



Browning[®]

Helical Concentric Gearmotors and Speed Reducers

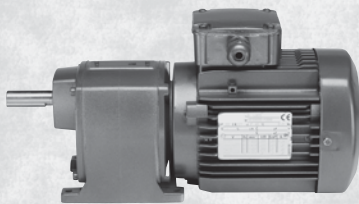


EMERSON[™]
Industrial Automation

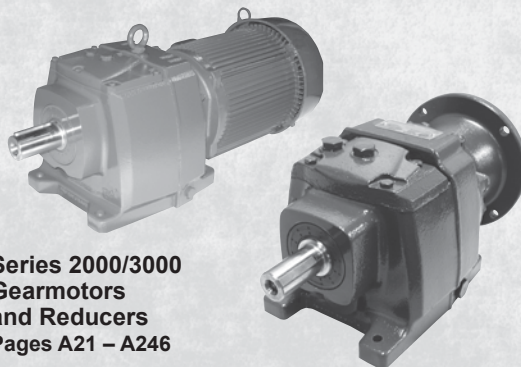
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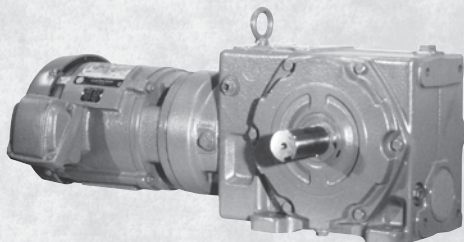
**Series 1000
Fractional Horsepower
AC and DC Gearmotors**
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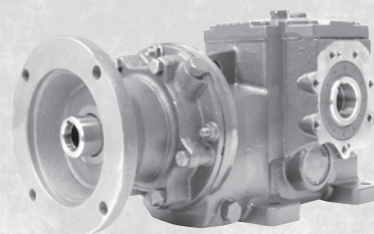
**Series 2000/3000
Gearmotors
and Reducers**
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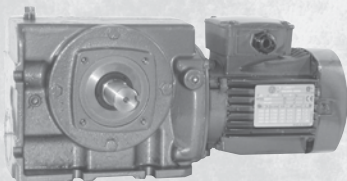
**Series 2000/3000
Gearmotors**
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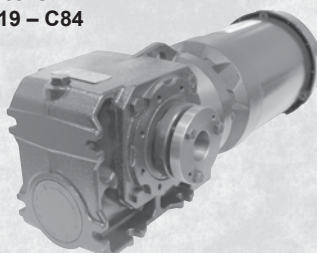
**Series 2000/3000
Reducers**
Pages B119 – B240



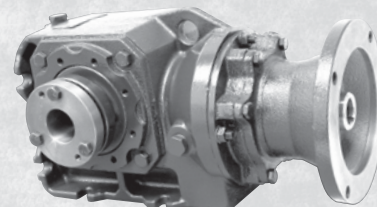
**Series 1000
Fractional Horsepower
Gearmotors**
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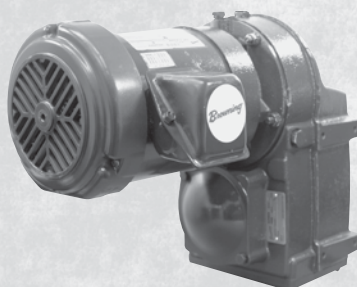
**Series 3000
Gearmotors**
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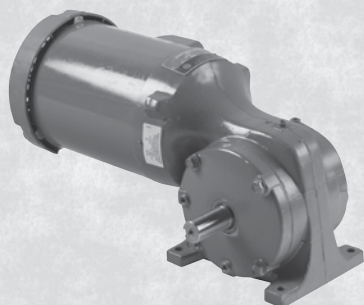
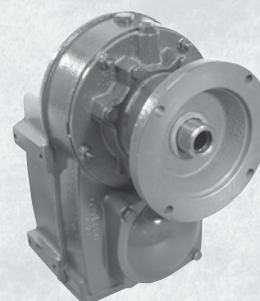
**Series 3000
Reducers**
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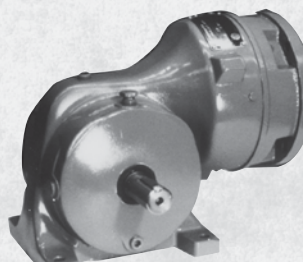
**Series 3000
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IRA Gearmotors
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IRA C-Face
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GBN

QIN

HWN

MBN

IRA

Technical

Browning®

CRES

Coatings *USDA and FDA Accepted*

These corrosion-resistant coating options are available today in all sizes for the complete line of Browning® and Morse® speed reducers and gearmotors. They complement our premium corrosion-resistant engineered solutions, including all the stainless steel Morse Raider® Plus offerings for the ultimate in corrosion resistance.



White Epoxy Coating - Corro-Duty® White

316 Stainless Coating - Corro-Duty® Gray



CbN Helical In-line Gearmotors and Speed Reducers

CbN Series

Industries

- Food Processing
- Warehousing
- Parcel and Package Sortation
- Water/Wastewater Treatment

Applications

- Positive Displacement Pumps
- Unit Handling Conveyors
- Oven Conveyors
- Low Speed Fans
- Industrial Door Openers





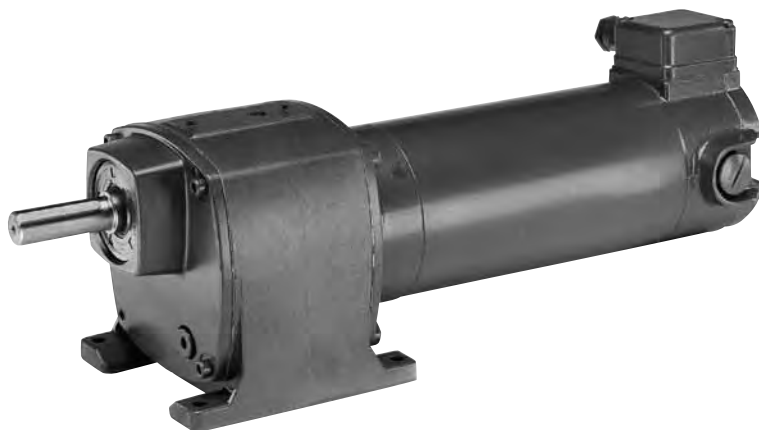
AC Three Phase

- 1/12 to 3/4 HP designs
- 60 Hz 208-230/460 & 575 VAC
- 50 Hz 380 VAC
- One to four reduction stages
- TEFC enclosure (meets IP55)
- "FO" motor conduit box
- Foot, face or flanged mounting
- Cut and ground helical gearing
- Factory filled with synthetic oil
- Double lipped oil seals
- Ball bearings throughout
- Approved by UL*, CSA and CE
- Class "F" insulation



AC Single Phase

- 1/12 to 1/2 HP designs
- Permanent split capacitor designs
- 60 Hz, 120/240 VAC
- TEFC enclosure (meets IP55)
- "FO" motor conduit box
- Capacitors mounted in box
- Foot, face or flanged mounting
- Cut and ground helical gearing
- Factory filled with synthetic oil
- Ball bearings throughout
- Approved by UL, CSA, CE



DC Permanent Magnet

- 1/12 to 3/4 HP designs
- 90 volt PM motor
- One to four reduction stages
- TEFC** enclosure (meets IP44)
- "FO" motor conduit box
- Foot, face or flanged mounting
- Cut and ground helical gearing
- Factory filled with synthetic oil
- Double lipped oil seals
- Ball bearings throughout
- CSA and CE compliant

**56 frames are TENV

* UL is believed to be a trade name and/or trademark of Underwriters Laboratories, Inc. and is NOT owned or controlled by Emerson Power Transmission
Emerson Power Transmission Corporation cannot and does not represent or warrant the accuracy of this information.

Three Phase Gearmotor

Ordering Description:

CbN - 1502 - S - A - 11.2 - T24 - 63 - 0.75 -

Gear Frame	Output Configuration	Mounting	Ratio	Motor Type		Motor Frame	HP	Mod
1502	S - foot mounted	A - any plane	nom ratio	T24 =	TEFC, 200-230/460, 60	56 63 71	0.08 = 1/12	see options
1503	B14 - face mounted			T24B =	TEFC 230/460, 60 with FCM Brake		0.12 = 1/8	
1504	56C - flanged			T5 =	TEFC, 575, 60		0.17 = 1/6	
1801	(NEMA 56C)			T53 =	TEFC, 380, 50		0.25 = 1/4	
1802	BS, BD1, BD2 - flanged			IGS2 =	TE1/230 IntelliGear		0.33 = 1/3	
1803	mounted			IG2 =	TE 3/230 IntelliGear		0.50 = 1/2	
1904				IG4 =	TE 3/460 IntelliGear		0.75 = 3/4	

Single Phase Gearmotor

CbN - 1502 - S - A - 11.2 - TS12 - 71 - 0.05 -

Gear Frame	Output Configuration	Mounting	Ratio	Motor Type		Motor Frame	HP	Mod
1502	S - foot mounted	A - any plane	nom ratio		TS12 = TEFC IP55 enclosure 120/240, 1/60 permanent split capacitor	56 63 71	0.08 = 1/12	see options
1503	B14 - face mounted						0.12 = 1/8	
1504	56C - flanged						0.17 = 1/6	
1801	(NEMA 56C)						0.25 = 1/4	
1802	BS, BD1, BD2 - flanged						0.33 = 1/3	
1803	mounted						0.50 = 1/2	
1904								

DC Gearmotors

CbN - 1502 - S - A - 11.2 - DC9 - 63L - 0.75 -

Gear Frame	Output Configuration	Mounting	Ratio	Motor Type		Motor Frame	HP	Mod
1502	S - foot mounted	A - any plane	nom ratio		DC9 = TE IP44, 90 VDC PM DC1 = TE IP44, 180 VDC PM	56S 56L 56VL 63S 63M 63L	0.08 = 1/12	See options
1503	B14 - face mounted						0.12 = 1/8	
1504	56C - flanged						0.17 = 1/6	
1801	(NEMA 56C)						0.25 = 1/4	
1802	BS, BD1, BD2 - flanged						0.33 = 1/3	
1803	mounted						0.50 = 1/2	
1904							0.75 = 3/4	

Options

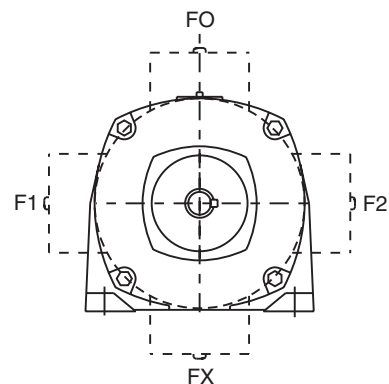
Gear Mounting Options

Options	Frame Size		
	15	18	19
Mounting			
B14 face	yes	yes	R.O.
56C flange	yes	yes	no
BS, BD1, BD2 flange	yes	yes	yes

Motor - Three Phase

Options	Frame Size		
	56	63	71
DC brake			
FCM integral design	yes****	yes****	yes****
50 Hz / 380 V ***	yes	yes	yes
Conduit box			
FO	std	std	std
F-1 or F-2	yes	yes	yes
FX	yes **	yes **	yes **
IntelliGear®			
P1 (run/stop/pot.)	no	no	yes
P2 (for./rev./stop/pot.)	no	no	yes
P3 (pot.only exterior)	no	no	yes
P4 (pot.only inside)	no	no	yes
R (0-10vdc or 4-20mA)	no	no	yes
RP (Profibus DP)	no	no	yes

Motor Conduit Box Locations



Motor - Single Phase

Options	Frame Size		
	56	63	71
Conduit box			
FO	std	std	std
F-1 or F-2	yes	yes	yes
FX	yes **	yes **	yes **

Motor - DC PM

Options	Frame Size	
	56	63
180 VDC		
180 VDC	no	yes*
Conduit box		
FO	std	std
F-1 or F-2	no	no
FX	yes **	yes **

* Motor HP > 1/3 only.

** See illustration at right and individual print pages for this option. Conduit box may extend down below feet.

*** @ 50 Hz the published HP may be achieved with 5/6 of output rpm shown and 5/6 of service factor and 1.2 times output torque.

**** Not available for 575V 3 phase motor designs

R.O. Refer application to Application Engineering for quotation.

1/12 HP

Output rpm	AGMA Class	Output Torque In. Lbs.	OHL Lbs.	Nominal Ratio	Frame Size			
					Gear	Motor		
						3 Phase	1 Phase	DC PM
529	I, II, III	7	297	3.15	1801	56	56	56S
413	I, II, III	9	306	4	1801	56	56	56S
370	I, II, III	10	322	4.5	1801	56	56	56S
337	I, II, III	11	333	5	1801	56	56	56S
304	I, II, III	12	344	5.6	1801	56	56	56S
272	I, II, III	14	356	6.3	1801	56	56	56S
241	I, II, III	16	369	7.1	1801	56	56	56S
218	I, II, III	17	384	8	1801	56	56	56S
192	I, II, III	19	399	9	1502	56	56	56S
177	I, II, III	21	415	10	1502	56	56	56S
150	I, II, III	24	415	11.2	1502	56	56	56S
137	I, II, III	27	415	12.5	1502	56	56	56S
125	I, II, III	29	415	14	1502	56	56	56S
111	I, II, III	33	415	16	1502	56	56	56S
101	I, II, III	36	415	18	1502	56	56	56S
91	I, II, III	41	415	20	1502	56	56	56S
81	I, II, III	46	415	22.4	1502	56	56	56S
71	I, II, III	52	415	25	1502	56	56	56S
62	I, II, III	59	415	28	1502	56	56	56S
54	I, II, III	68	415	31.5	1502	56	56	56S
47	I, II, III	76	385	35.5	1503	56	56	56S
43	I, II, III	84	385	40	1503	56	56	56S
38	I, II, III	95	385	45	1503	56	56	56S
35	I, II, III	103	385	50	1503	56	56	56S
30	I, II, III	122	385	56	1503	56	56	56S
27	I, II, III	133	385	63	1503	56	56	56S
25	I, II, III	146	385	71	1503	56	56	56S
22	I, II, III	165	385	80	1503	56	56	56S
20	I, II, III	182	385	90	1503	56	56	56S
18	I, II, III	203	385	100	1503	56	56	56S
16	I, II, III	228	385	112	1503	56	56	56S
14	I, II	258	385	125	1503	56	56	56S
14	III	258	600	125	1803	56	56	56S
12	I, II	296	385	140	1503	56	56	56S
12	III	296	600	140	1803	56	56	56S
11	I, II	339	385	160	1503	56	56	56S
11	III	339	600	160	1803	56	56	56S
9.7	I	366	280	180	1504	56	56	56S
9.7	II, III	366	600	180	1803	56	56	56S
8.6	I	411	280	200	1504	56	56	56S
8.6	II, III	411	600	200	1803	56	56	56S
6.6	I	519	280	250	1504	56	56	56S
5.9	I	525	280	315	1504	56	56	56S

3 Phase TEFC in 60 Hz 200-230/460V (T24) or 575V (T5).
 1 Phase TEFC are PSC 60 Hz 120/240V (TS12).
 DC are PM TENV for 90VDC (DC9).

1/8 HP

Output rpm	AGMA Class	Output Torque In. Lbs.	OHL Lbs.	Nominal Ratio	Frame Size			
					Gear	Motor		
						3 Phase	1 Phase	DC PM
529	I, II, III	12	296	3.15	1801	56	63	56L
413	I, II, III	15	305	4	1801	56	63	56L
370	I, II, III	17	320	4.5	1801	56	63	56L
337	I, II, III	19	332	5	1801	56	63	56L
304	I, II, III	21	343	5.6	1801	56	63	56L
272	I, II, III	22	354	6.3	1801	56	63	56L
241	I, II, III	26	367	7.1	1801	56	63	56L
218	I, II, III	29	382	8	1801	56	63	56L
192	I, II, III	32	397	9	1502	56	63	56L
177	I, II, III	35	415	10	1502	56	63	56L
150	I, II, III	41	415	11.2	1502	56	63	56L
137	I, II, III	45	415	12.5	1502	56	63	56L
125	I, II, III	49	415	14	1502	56	63	56L
111	I, II, III	56	415	16	1502	56	63	56L
101	I, II, III	62	415	18	1502	56	63	56L
91	I, II, III	69	415	20	1502	56	63	56L
81	I, II, III	77	415	22.4	1502	56	63	56L
71	I, II, III	87	415	25	1502	56	63	56L
62	I, II, III	100	415	28	1502	56	63	56L
54	I, II, III	114	415	31.5	1502	56	63	56L
47	I, II, III	128	385	35.5	1503	56	63	56L
43	I, II, III	142	385	40	1503	56	63	56L
38	I, II, III	161	385	45	1503	56	63	56L
35	I, II, III	174	385	50	1503	56	63	56L
30	I, II, III	206	385	56	1503	56	63	56L
27	I, II	225	385	63	1503	56	63	56L
27	III	225	600	63	1803	56	63	56L
25	I, II	247	385	71	1503	56	63	56L
25	III	247	600	71	1803	56	63	56L
22	I, II	278	385	80	1503	56	63	56L
22	III	278	600	80	1803	56	63	56L
20	I, II	307	385	90	1503	56	63	56L
20	III	307	600	90	1803	56	63	56L
18	I	342	385	100	1503	56	63	56L
18	II, III	342	600	100	1803	56	63	56L
16	I	385	385	112	1503	56	63	56L
16	II, III	385	600	112	1803	56	63	56L
14	I	436	385	125	1503	56	63	56L
14	II	436	600	125	1803	56	63	56L
12	I, II	500	600	140	1803	56	63	56L
11	I, II	572	600	160	1803	56	63	56L
9.7	I	676	600	180	1803	56	63	56L
8.6	I	765	600	200	1803	56	63	56L
6.6	I, II, III	974	1610	250	1904	56	63	56L
5.9	I, II, III	1150	1610	315	1904	56	63	56L

3 Phase TEFC in 60 Hz 200-230/460V (T24) or 575V (T5).
 1 Phase TEFC are PSC 60 Hz 120/240V (TS12).
 DC are PM TENV for 90VDC (DC9).

1/6 HP

Output rpm	AGMA Class	Output Torque In. Lbs.	OHL Lbs.	Nominal Ratio	Frame Size			
					Gear	Motor		
						3 Phase	1 Phase	DC PM
529	I, II, III	17	294	3.15	1801	63	63	56VL
413	I, II, III	22	304	4	1801	63	63	56VL
370	I, II, III	24	319	4.5	1801	63	63	56VL
337	I, II, III	26	330	5	1801	63	63	56VL
304	I, II, III	29	341	5.6	1801	63	63	56VL
272	I, II, III	33	353	6.3	1801	63	63	56VL
241	I, II, III	37	365	7.1	1801	63	63	56VL
218	I, II, III	41	380	8	1801	63	63	56VL
192	I, II, III	45	395	9	1502	63	63	56VL
177	I, II, III	49	415	10	1502	63	63	56VL
150	I, II, III	58	415	11.2	1502	63	63	56VL
137	I, II, III	63	415	12.5	1502	63	63	56VL
125	I, II, III	69	415	14	1502	63	63	56VL
111	I, II, III	78	415	16	1502	63	63	56VL
101	I, II, III	87	415	18	1502	63	63	56VL
91	I, II, III	96	415	20	1502	63	63	56VL
81	I, II, III	108	415	22.4	1502	63	63	56VL
71	I, II, III	123	415	25	1502	63	63	56VL
62	I, II, III	141	415	28	1502	63	63	56VL
54	I, II, III	161	415	31.5	1502	63	63	56VL
47	I, II, III	181	385	35.5	1503	63	63	56VL
43	I, II	200	385	40	1503	63	63	56VL
43	III	200	600	40	1802	63	63	56VL
38	I, II	227	385	45	1503	63	63	56VL
38	III	227	600	45	1802	63	63	56VL
35	I, II	246	385	50	1503	63	63	56VL
35	III	246	600	50	1803	63	63	56VL
30	I, II	290	385	56	1503	63	63	56VL
30	III	290	600	56	1803	63	63	56VL
27	I	317	385	63	1503	63	63	56VL
27	II, III	317	600	63	1803	63	63	56VL
25	I	347	385	71	1503	63	63	56VL
25	II, III	347	600	71	1803	63	63	56VL
22	I	391	385	80	1503	63	63	56VL
22	II, III	391	600	80	1803	63	63	56VL
20	I	433	385	90	1503	63	63	56VL
20	II	433	600	90	1803	63	63	56VL
18	I, II, III	482	600	100	1803	63	63	56VL
16	I, II	541	600	112	1803	63	63	56VL
14	I	611	600	125	1803	63	63	56VL
12	I	713	600	140	1803	63	63	56VL
10.9	I	810	600	160	1803	63	63	56VL
7.8	I, II, III	1168	1610	224	1904	63	63	56VL
6.9	I, II, III	1319	1610	250	1904	63	63	56VL
6.6	I, II, III	1379	1610	280	1904	63	63	56VL
5.9	I, II, III	1620	1610	315	1904	63	63	56VL

3 Phase TEFC in 60 Hz 200-230/460V (T24) or 575V (T5).
 1 Phase TEFC are PSC 60 Hz 120/240V (TS12).
 DC are PM TENV for 90VDC (DC9).

1/4 HP

Output rpm	AGMA Class	Output Torque In. Lbs.	OHL Lbs.	Nominal Ratio	Frame Size			
					Gear	Motor		
						3 Phase	1 Phase	DC PM
529	I, II, III	27	292	3.15	1801	63	71	63S
413	I, II, III	34	301	4	1801	63	71	63S
370	I, II, III	38	316	4.5	1801	63	71	63S
337	I, II, III	42	328	5	1801	63	71	63S
304	I, II, III	46	338	5.6	1801	63	71	63S
272	I, II, III	52	349	6.3	1801	63	71	63S
241	I, II, III	58	362	7.1	1801	63	71	63S
218	I, II, III	64	376	8	1801	63	71	63S
192	I, II, III	72	390	9	1502	63	71	63S
177	I, II, III	78	415	10	1502	63	71	63S
150	I, II, III	92	415	11.2	1502	63	71	63S
137	I, II, III	100	415	12.5	1502	63	71	63S
125	I, II, III	110	415	14	1502	63	71	63S
111	I, II, III	124	415	16	1502	63	71	63S
101	I, II, III	137	415	18	1502	63	71	63S
91	I, II, III	152	415	20	1502	63	71	63S
81	I, II, III	171	415	22.4	1502	63	71	63S
71	I, II	194	415	25	1502	63	71	63S
71	III	194	695	25	1802	63	71	63S
62	I, II	222	415	28	1502	63	71	63S
62	III	222	695	28	1802	63	71	63S
54	I	254	415	31.5	1502	63	71	63S
54	II, III	254	695	31.5	1802	63	71	63S
47	I	285	385	35.5	1503	63	71	63S
47	II, III	285	600	35.5	1802	63	71	63S
43	I	316	385	40	1503	63	71	63S
43	II, III	316	600	40	1802	63	71	63S
38	I	358	385	45	1503	63	71	63S
38	II, III	358	600	45	1802	63	71	63S
35	I	388	385	50	1503	63	71	63S
35	II, III	388	600	50	1803	63	71	63S
30	I, II	458	600	56	1803	63	71	63S
27	I, II	500	600	63	1803	63	71	63S
25	II	548	600	71	1803	63	71	63S
22	I	608	600	80	1803	63	71	63S
20	I	670	600	90	1803	63	71	63S
16.9	I	806	600	100	1803	63	71	63S
7.8	I, II, III	1717	1610	224	1904	63	71	63S
6.9	I, II, III	1940	1610	250	1904	63	71	63S
6.6	I, II, III	2015	1610	280	1904	63	71	63S
5.9	I, II	2390	1610	315	1904	63	71	63S

3 Phase TEFC in 60 Hz 200-230/460V (T24) or 575V (T5).

1 Phase TEFC are PSC 60 Hz 120/240V (TS12).

DC are PM TENV for 90VDC (DC9).

1/3 HP

Output rpm	AGMA Class	Output Torque In. Lbs.	OHL Lbs.	Nominal Ratio	Frame Size			
					Gear	Motor		
						3 Phase	1 Phase	DC PM
529	I, II, III	36	292	3.15	1801	71	71	63M
413	I, II, III	46	301	4	1801	71	71	63M
370	I, II, III	52	316	4.5	1801	71	71	63M
337	I, II, III	57	328	5	1801	71	71	63M
304	I, II, III	63	338	5.6	1801	71	71	63M
272	I, II, III	71	349	6.3	1801	71	71	63M
241	I, II, III	80	362	7.1	1801	71	71	63M
218	I, II, III	86	376	8	1801	71	71	63M
218	I, II, III	86	376	8	1502	71	71	63M
192	I, II, III	98	390	9	1502	71	71	63M
177	I, II, III	106	415	10	1502	71	71	63M
150	I, II, III	125	415	11.2	1502	71	71	63M
137	I, II, III	137	415	12.5	1502	71	71	63M
125	I, II, III	150	415	14	1502	71	71	63M
111	I, II, III	169	415	16	1502	71	71	63M
101	I, II, III	187	415	18	1502	71	71	63M
91	I, II	208	415	20	1502	71	71	63M
91	III	208	695	20	1802	71	71	63M
81	I, II	234	415	22.4	1502	71	71	63M
81	III	234	695	22.4	1802	71	71	63M
71	I, II	265	415	25	1502	71	71	63M
71	III	265	695	25	1802	71	71	63M
62	I	304	415	28	1502	71	71	63M
62	II, III	304	600	28	1802	71	71	63M
54	I	348	415	31.5	1502	71	71	63M
54	II, III	348	600	31.5	1802	71	71	63M
47	I	390	385	35.5	1503	71	71	63M
47	II, III	390	600	35.5	1802	71	71	63M
43	I, II	432	600	40	1802	71	71	63M
38	I, II	490	600	45	1802	71	71	63M
35	I, II	530	600	50	1803	71	71	63M
30	I, II	575	600	56	1803	71	71	63M
27	I	639	600	63	1803	71	71	63M
25	I	690	600	71	1803	71	71	63M
7.8	I, II	2266	1610	224	1904	71	71	63M
6.9	I, II	2562	1610	250	1904	71	71	63M
6.6	I, II	2638	1610	280	1904	71	71	63M
5.9	I	3157	1610	315	1904	71	71	63M

3 Phase TEFC in 60 Hz 200-230/460V (T24) or 575V (T5).
 1 Phase TEFC are PSC 60 Hz 120/240V (TS12).
 DC are PM TEFC for 90VDC (DC9) or 180VDC (DC1).
 IntelliGear® TEFC - NEMA 4/12 in 1/230V (IGS2), 3/230V (IG2), or 3/460V (IG4) input power.
 Note: For other speeds or larger capacity requirements refer to Series 3000 products.

1/2 HP

Output rpm	AGMA Class	Output Torque In. Lbs.	OHL Lbs.	Nominal Ratio	Frame Size			
					Gear	Motor		
						3 Phase	1 Phase	DC PM
529	I, II, III	56	178	3.15	1801	71	71	63M
413	I, II, III	71	183	4	1801	71	71	63M
370	I, II, III	80	190	4.5	1801	71	71	63M
337	I, II, III	88	196	5	1801	71	71	63M
304	I, II	97	201	5.6	1801	71	71	63M
272	I, II	108	207	6.3	1801	71	71	63M
241	I, II	120	415	7.1	1801	71	71	63M
241	III	120	415	7.1	1502	71	71	63M
218	I, II	133	415	8	1801	71	71	63M
218	III	133	415	8	1502	71	71	63M
192	I, II	151	415	9	1502	71	71	63M
192	III	151	695	9	1802	71	71	63M
177	I, II	163	415	10	1502	71	71	63M
177	III	163	695	10	1802	71	71	63M
150	I, II	192	415	11.2	1502	71	71	63M
150	III	192	695	11.2	1802	71	71	63M
137	I, II	210	415	12.5	1502	71	71	63M
137	III	210	695	12.5	1802	71	71	63M
125	I, II	230	415	14	1502	71	71	63M
125	III	230	695	14	1802	71	71	63M
111	I	259	415	16	1502	71	71	63M
111	II, III	259	695	16	1802	71	71	63M
101	I	287	415	18	1502	71	71	63M
101	II	287	695	18	1802	71	71	63M
91	I	320	415	20	1502	71	71	63M
91	II, III	320	695	20	1802	71	71	63M
81	I	359	415	22.4	1502	71	71	63M
81	II, III	359	695	22.4	1802	71	71	63M
71	I, II	407	695	25	1802	71	71	63M
62	I, II	467	695	28	1802	71	71	63M
54	I, II	534	695	31.5	1802	71	71	63M
47	I	603	600	35.5	1802	71	71	63M
43	I	660	600	40	1802	71	71	63M
38	I	709	600	45	1802	71	71	63M
35	I	760	600	50	1803	71	71	63M
7.8	I	3555	1610	224	1904	71	71	63M
6.9	I	4019	1610	250	1904	71	71	63M

3 Phase TEFC in 60 Hz 200-230/460V (T24) or 575V (T5).

1 Phase TEFC are PSC 60 Hz 120/240V (TS12).

DC are PM TEFC for 90VDC (DC9) or 180VDC (DC1).

IntelliGear® TEFC - NEMA 4/12 in 1/230V (IGS2), 3/230V (IG2), or 3/460V (IG4) input power.

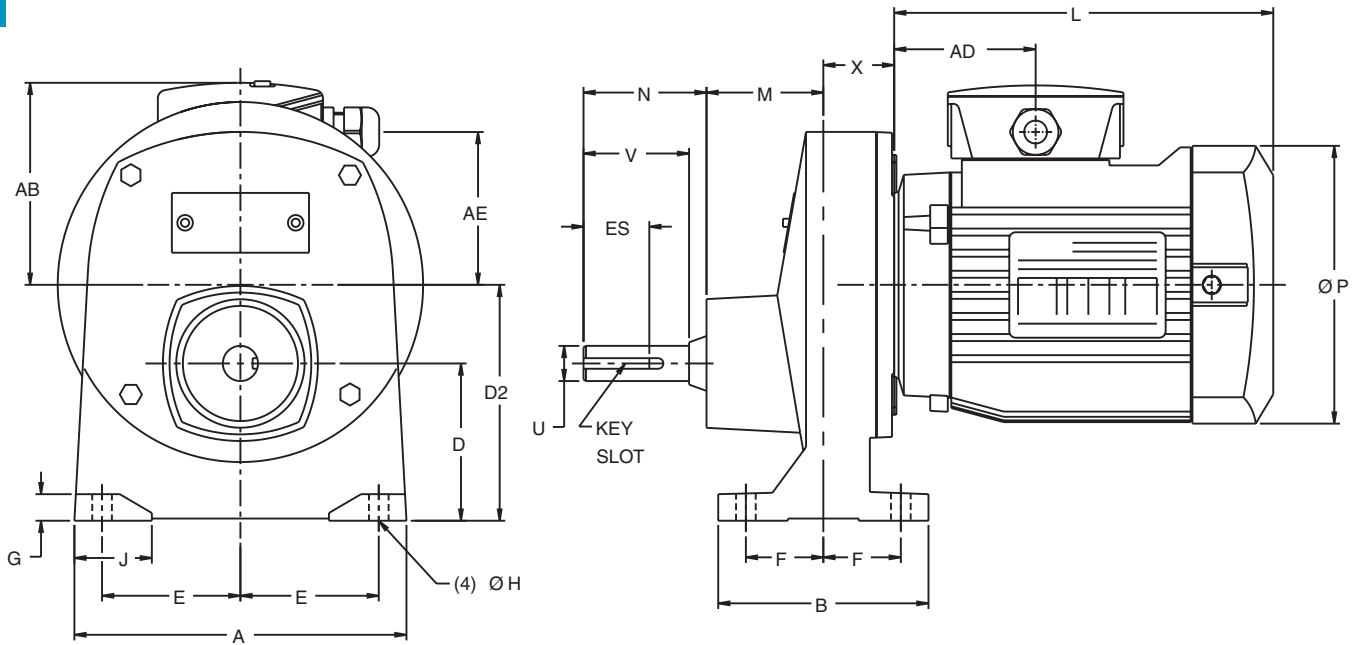
Note: For other speeds or larger capacity requirements refer to Series 3000 products.

3/4 HP

Output rpm	AGMA Class	Output Torque In. Lbs.	OHL Lbs.	Nominal Ratio	Frame Size		
					Gear	Motor	
						3 Phase	DC PM
529	I, II, III	85	169	3.15	1801	71	63L
413	I, II, III	109	180	4	1801	71	63L
370	I, II	121	185	4.5	1801	71	63L
337	I, II	133	189	5	1801	71	63L
304	I	148	192	5.6	1801	71	63L
272	I	165	192	6.3	1801	71	63L
241	I, II	183	415	7.1	1801	71	63L
241	I, II	183	415	7.1	1502	71	63L
241	III	183	695	7.1	1802	71	63L
218	I, II	202	415	8	1502	71	63L
218	III	202	695	8	1802	71	63L
192	I	230	415	9	1502	71	63L
192	II, III	230	484	9	1802	71	63L
177	I	248	415	10	1502	71	63L
177	II, III	248	493	10	1802	71	63L
150	I	293	415	11.2	1502	71	63L
150	II, III	293	495	11.2	1802	71	63L
137	I	320	415	12.5	1502	71	63L
137	II, III	320	499	12.5	1802	71	63L
125	I, II, III	351	500	14	1802	71	63L
111	I, II, III	395	500	16	1802	71	63L
101	I, II	438	495	18	1802	71	63L
91	I, II	487	488	20	1802	71	63L
77	I	590	477	22.4	1802	71	63L
68	I	664	462	25	1802	71	63L
61	I	748	442	28	1802	71	63L

3 Phase TEFC in 60 Hz 200-230/460V (T24) or 575V (T5).
 1 Phase TEFC are PSC 60 Hz 120/240V (TS12).
 DC are PM TEFC for 90VDC (DC9) or 180VDC (DC1).
 IntelliGear® TEFC - NEMA 4/12 in 1/230V (IGS2), 3/230V (IG2), or 3/460V (IG4) input power.
 Note: For other speeds or larger capacity requirements refer to Series 3000 products.

Three Phase Foot Mounted - Single Reduction



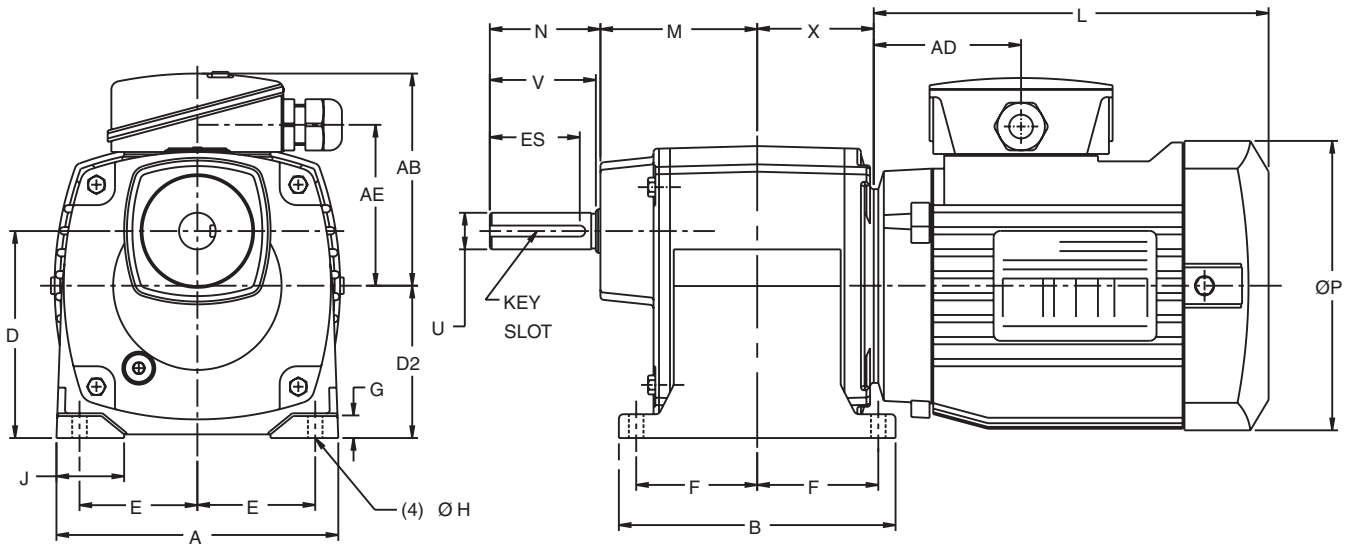
Basic Frame	A	B	D	D2	E	ES	F	G	H	J	M	N	U ²	Key Slot	V	X
1801	5.90	3.54	2.95	4.35	2.46	1.48	1.38	0.49	0.35	1.28	2.13	2.14	0.625	3/16 SQ.	1.88	1.34

Basic Motor Frame						
Frame	AB	AD	AE	P ⁴	"L (No Brake)	"L (With Brake)
56	3.74	2.11	2.87	4.33	6.14	7.99
63	3.94	2.50	3.06	4.96	6.77	8.47
71	4.33	2.64	3.43	5.51	7.30	9.04
71 ⁵	4.33	2.64	3.43	5.51	7.61	9.35

¹ All rough casting dimensions may vary by .25" due to casting variations.
² Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive.

³ Conduit box may be located on either side or on top of motor. Conduit openings may be located in steps of 90°, regardless of location.
⁴ Largest motor width.
⁵ This data applies for 0.75 HP motors only.

Double, Triple and Quad Reduction



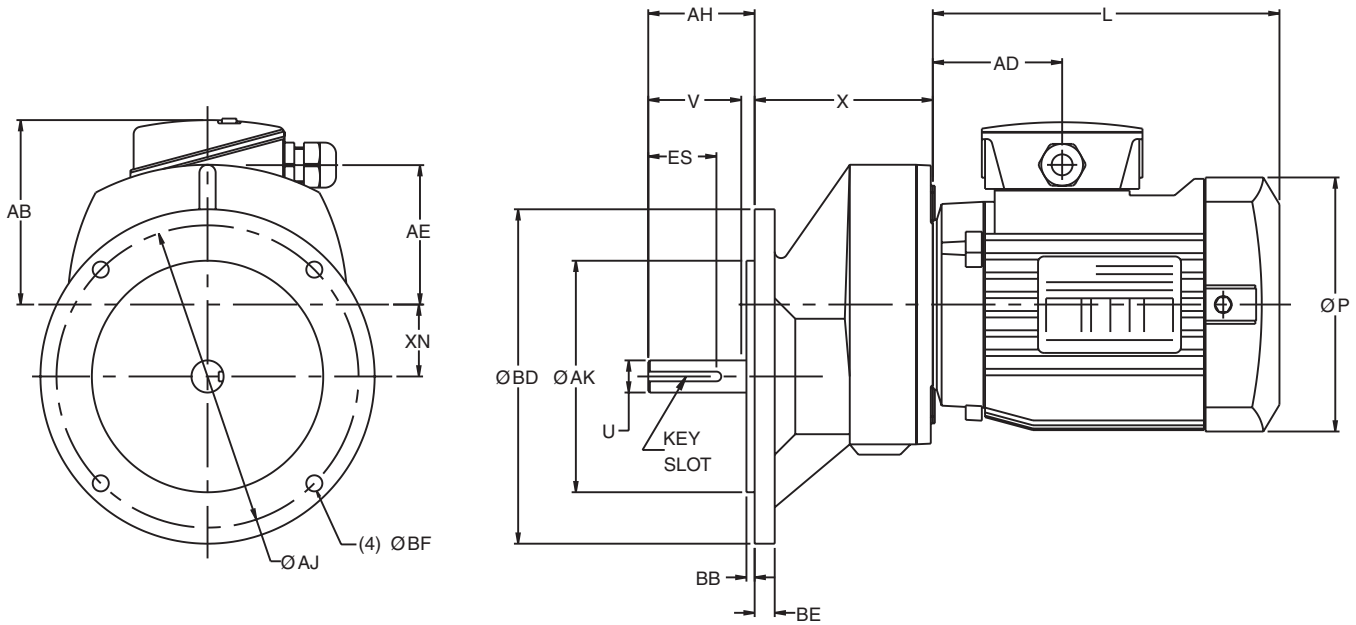
Basic Frame	A	B	D	D2	E	ES	F	G	H	J	M	N	U ²	Key Slot	V	X
1502,03,04	4.72	4.81	3.54	2.60	1.97	1.31	2.07	0.39	0.28	1.14	2.68	1.89	0.625	3/16 Sq.	1.81	1.99
1802	5.90	4.92	2.95	3.23	2.46	1.48	2.07	0.51	0.35	1.24	2.85	1.83	0.75	3/16 Sq.	1.75	1.63
1803	5.90	5.71	2.95	3.23	2.46	1.48	2.47	0.51	0.35	1.24	3.25	1.83	0.75	3/16 Sq.	1.75	2.03
1904	8.72	8.5	4.53	4.41	2.66	2.16	3.78	0.84	0.55	1.28	4.23	2.56	1.25	1/4 Sq.	2.50	7.78

Basic Motor Frame						
Frame	AB	AD	AE	P ⁴	"L (No Brake)	"L (With Brake)
56	3.74	2.11	2.87	4.33	6.14	7.99
63	3.94	2.50	3.06	4.96	6.77	8.47
71	4.33	2.64	3.43	5.51	7.30	9.04
71 ⁵	4.33	2.64	3.43	5.51	7.61	9.35

¹ For 1500 frame gearmotors with 71 frame motors, the motor fan is .106 inches below the plane of the reducer feet.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive.

⁴ Conduit box may be located on either side or on top of motor. Conduit openings may be located in steps of 90°, regardless of location.
⁵ This data applies for 0.75 HP motors only.
⁶ Largest motor width.

Flange Mounted - Single Reduction



Basic Frame	Flange Type	AH	AJ	AK	BB	BD	BE	BF	ES	U ²	Key	V	X	XN
1801	56C	2.06	5.875	4.50	.12	6.50	.39	3/8-16	1.48	.625	3/16 Sq.	1.88	3.54	1.40
	BS	2.06	4.53	3.74	.12	5.51	.31	.35	1.48	.625	3/16 Sq.	1.88	3.54	1.40
	BD1	2.06	3.94	3.15	.12	4.72	.39	.28	1.48	.625	3/16 Sq.	1.88	3.54	1.40
	BD2	2.06	5.12	4.33	.08	6.30	.39	.35	1.48	.625	3/16 Sq.	1.88	3.54	1.40
	BD3	2.06	6.50	5.12	.12	7.87	.31	.35	1.48	.625	3/16 Sq.	1.88	3.54	1.40

Basic Motor Frame						
Frame	AB	AD	AE	P ⁴	"L (No Brake)	"L (With Brake)
56	3.74	2.11	2.87	4.33	6.14	7.99
63	3.94	2.50	3.06	4.96	6.77	8.47
71	4.33	2.64	3.43	5.51	7.30	9.04
71 ⁵	4.33	2.64	3.43	5.51	7.61	9.35

¹ All rough casting dimensions may vary by .25" due to casting variations.

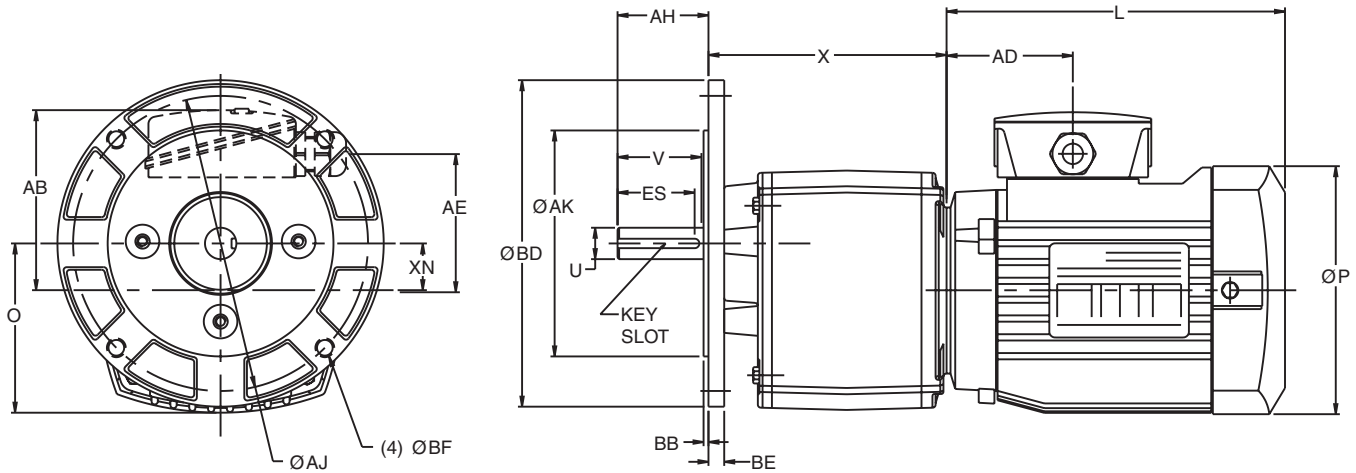
² Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive.

³ Conduit box may be located on either side or on top of motor. Conduit openings may be located in steps of 90°, regardless of location.

⁴ Largest motor width.

⁵ This data applies for 0.75 HP motors only.

**56C Flange Mounted -
Double, Triple and Quad Reduction**



Basic Frame	AH	AJ	AK	BB	BD	BE	BF	ES	O	U ²	Key Slot	V	X	XN
1502,03,04	1.81	5.875	4.50	0.10	6.50	0.32	3/8-16	1.31	3.31	0.625	3/16 Sq.	1.71	4.74	0.93
1802	2.06	5.875	4.50	0.12	6.50	0.39	3/8-16	1.48	2.48	0.625	3/16 Sq.	1.88	4.65	-0.28
1803	2.06	5.875	4.50	0.12	6.50	0.39	3/8-16	1.48	2.48	0.625	3/16 Sq.	1.88	5.43	-0.28

Basic Motor Frame						
Frame	AB	AD	AE	P ⁴	L (No Brake)	L (With Brake)
56	3.74	2.11	2.87	4.33	6.14	7.99
63	3.94	2.50	3.06	4.96	6.77	8.47
71	4.33	2.64	3.43	5.51	7.30	9.04
71 ⁵	4.33	2.64	3.43	5.51	7.61	9.35

¹ All rough casting dimensions may vary by .25" due to casting variations.

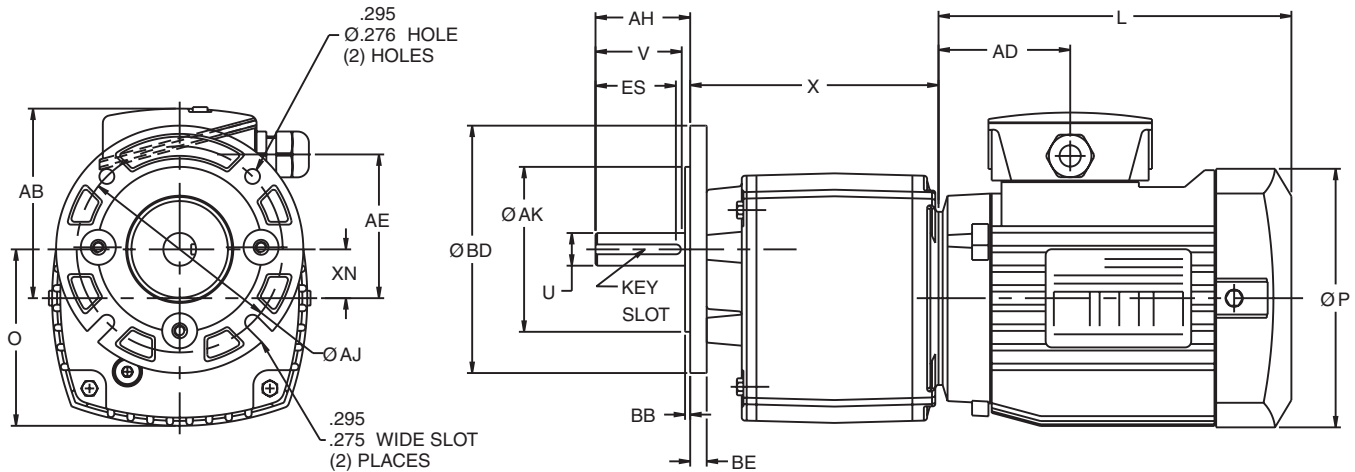
² Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive.

³ Conduit box may be located on either side or on top of motor. Conduit openings may be located in steps of 90°, regardless of location.

⁴ Largest motor width.

⁵ This data applies for 0.75 HP motors only.

**BS, BD1, BD2 Flange Mounted -
Double, Triple and Quad Reduction**



Basic Frame	Flange Type	AH	AJ	AK	BB	BD	BE	ES	O	U ²	Key	V	X	XN
1502,03,04	BS	1.81	3.94	3.15	0.10	4.72	0.32	1.31	3.32	0.625	3/16 Sq.	1.71	4.74	0.93
	BD1	1.81	3.35	2.756	0.10	4.13	0.32	1.31	3.32	0.625	3/16 Sq.	1.71	4.74	0.93
	BD2	1.81	4.53	3.74	0.10	5.51	0.32	1.31	3.32	0.625	3/16 Sq.	1.71	4.74	0.93
1802	BS	2.06	4.53	3.74	0.12	5.51	0.31	1.48	2.48	0.625	3/16 Sq.	1.88	4.65	-0.28
	BD1	2.06	3.94	3.15	0.10	4.72	0.28	1.48	2.48	0.625	3/16 Sq.	1.88	4.65	-0.28
	BD2	2.06	5.12	4.33	0.12	6.30	0.31	1.48	2.48	0.625	3/16 Sq.	1.88	4.65	-0.28
1803	BS	2.06	4.53	3.74	0.12	5.51	0.31	1.48	2.48	0.625	3/16 Sq.	1.88	5.44	-0.28
	BD1	2.06	3.94	3.15	0.10	4.72	0.28	1.48	2.48	0.625	3/16 Sq.	1.88	5.44	-0.28
	BD2	2.06	5.12	4.33	0.12	6.3	0.31	1.48	2.48	0.625	3/16 Sq.	1.88	5.44	-0.28
1904	BS	2.50	8.46	7.09	0.16	9.83	0.47	2.16	3.5	1.25	1/4 Sq.	2.34	12.46	0.12
	BD1	2.50	6.50	5.12	0.14	7.87	0.39	2.16	3.5	1.25	1/4 Sq.	2.34	12.46	0.12
	BD2	2.50	5.12	4.33	0.14	6.29	0.39	2.16	3.5	1.25	1/4 Sq.	2.34	12.46	0.12

Basic Motor Frame						
Frame	AB	AD	AE	P ⁴	L (No Brake)	L (With Brake)
56	3.74	2.11	2.87	4.33	6.14	7.99
63	3.94	2.50	3.06	4.96	6.77	8.47
71	4.33	2.64	3.43	5.51	7.30	9.04
71 ⁵	4.33	2.64	3.43	5.51	7.61	9.35

¹ All rough casting dimensions may vary by .25" due to casting variations.

² Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive.

³ Conduit box may be located on either side or on top of motor. Conduit openings may be located in steps of 90°, regardless of location.

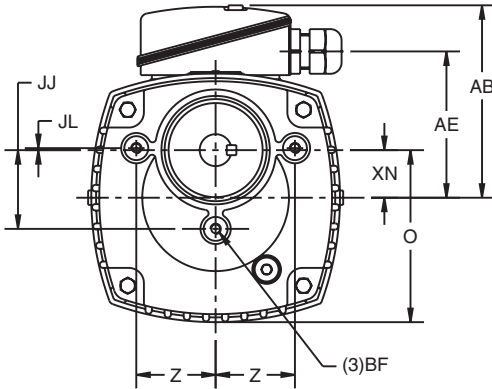
⁴ Largest motor width.

⁵ This data applies for 0.75 HP motors only.

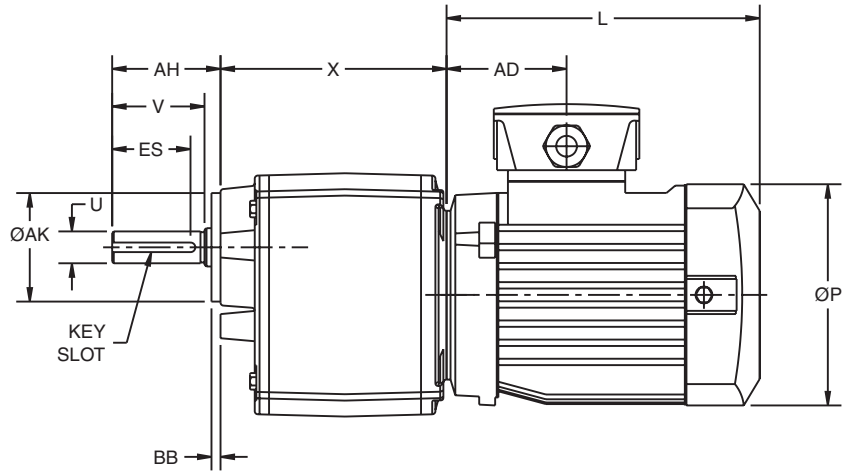
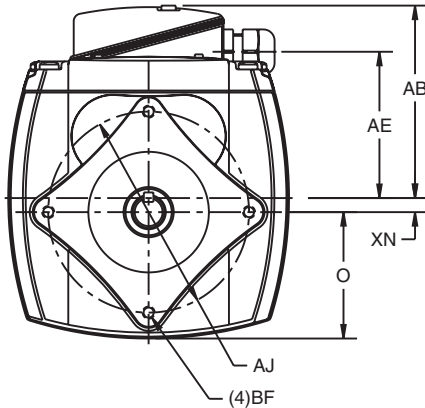
B14 Face Mounted -

Double, Triple and Quad Reduction

1502, 03, 04



1802
1803



Basic Frame	AH	AK	BB	ES	AJ	BF	U	Key Slot	V	X	XN	O	JJ	JL	Z
1502,03,04	2.13	2.126	0.18	1.31	N/A	0.04	0.625	3/16 Sq.	1.81	4.3	0.93	1.56	1.54	0.04	1.56
1802	2.53	2.362	0.39	1.42	3.937	M6 X .63	0.625	3/16 Sq.	1.50	4.17	0.28	2.48	-	-	-
1803	2.53	2.362	0.39	1.42	3.937	M6 X .63	0.625	3/16 Sq.	1.50	4.96	0.28	2.48	-	-	-

Basic Motor Frame						
Frame	AB	AD	AE	P ⁴	L (No Brake)	L (With Brake)
56	3.74	2.11	2.87	4.33	6.14	7.99
63	3.94	2.50	3.06	4.96	6.77	8.47
71	4.33	2.64	3.43	5.51	7.30	9.04
71 ⁵	4.33	2.64	3.43	5.51	7.61	9.35

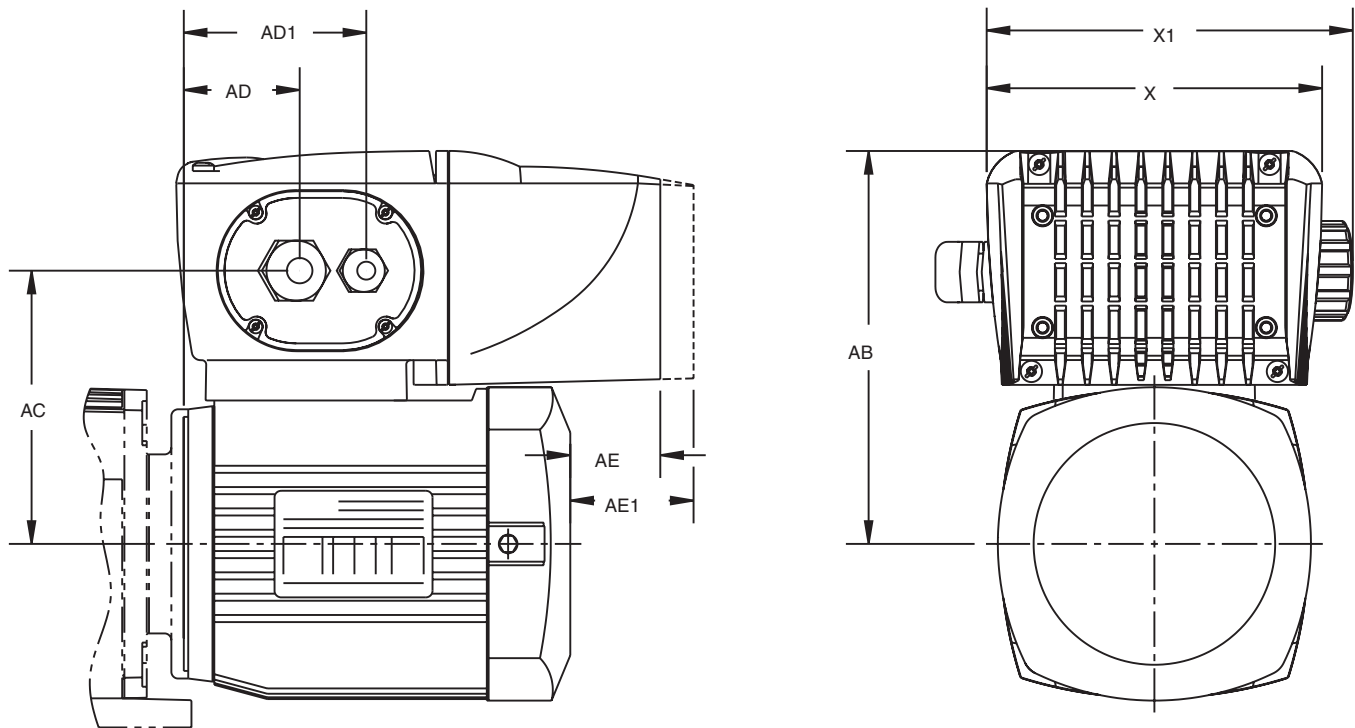
¹ All rough casting dimensions may vary by .25" due to casting variations.
² Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive.

³ Conduit box may be located on either side or on top of motor. Conduit openings may be located in steps of 90°, regardless of location.
⁴ Largest motor width.
⁵ This data applies for 0.75 HP motors only.

AC Motor Supplement Variable Speed Gearmotors

IntelliGear® Selection

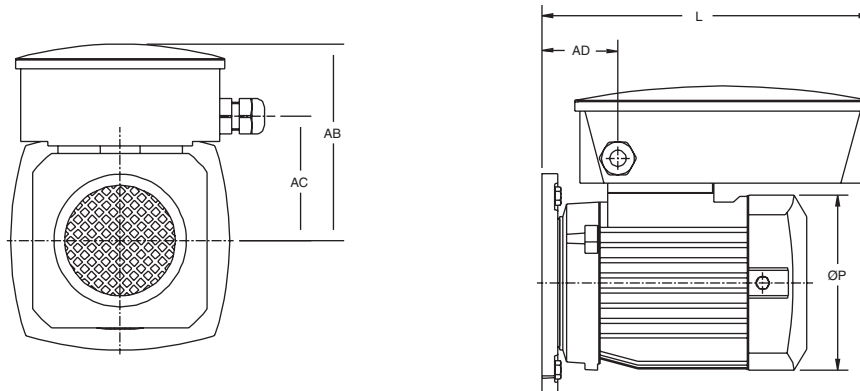
Input Power Phase/Voltage	Motor HP @ Max. Hz.	
	0.33	.50 to .75
1/230	31M	31M
3/230	31	31
3/460	31	31



Motor Frame	IntelliGear Drive Size	Dimension (inches)								Drive Added Weight (lb.)
		AB	AC	AD	AD1	AE	AE1	X	X1	
71 *	31 or 31M	6.91	4.81	2.04	3.22	1.58	2.17	5.91	6.45	7

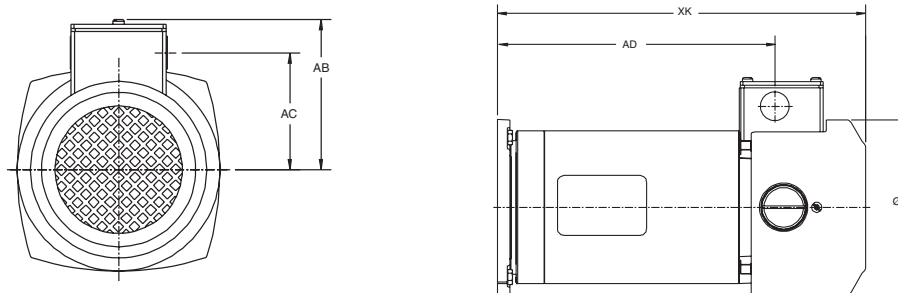
* Reduce AE and AE1 by .32" if motor HP is .75.
AE1 includes braking resistor installed.

AC Single Phase



Basic Motor Frame No Brake					
Frame	AB	AD	AE	P ⁴	L
56	4.88	1.45	3.08	4.33	7.71
63	5.07	1.85	3.28	4.96	8.11
71	5.51	1.85	3.72	5.44	8.11

D.C. TEFC



Basic Motor Frame						
Frame	AB	AD	AE	AF	P ⁴	L
56S	2.72	5.02	1.95	0.98	3.39	6.26
56	2.72	6.59	1.95	0.98	3.39	7.83
56VL	2.72	7.38	1.95	0.98	3.39	8.62
63S	3.90	6.00	3.13	1.30	5.41	8.82
63M	3.90	6.99	3.13	1.30	5.41	9.8
63L	3.90	8.17	3.13	1.30	5.41	10.98

¹ All rough casting dimensions may vary by .25" due to casting variations.

² Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive.

³ Conduit box may be located on 180° from location illustrated above.

⁴ Largest motor width.

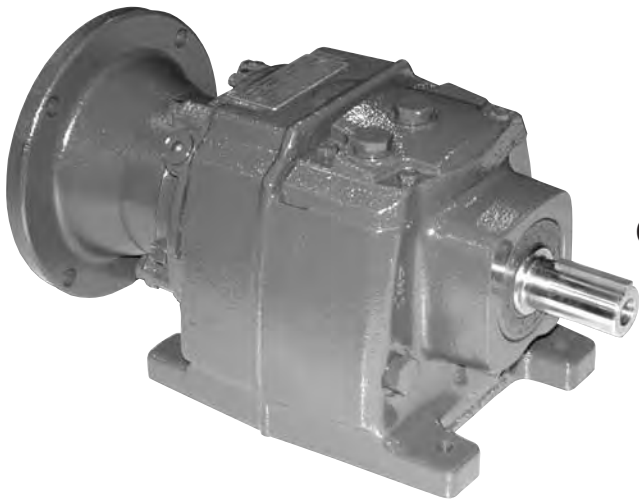


TEFC Three and Single Phase



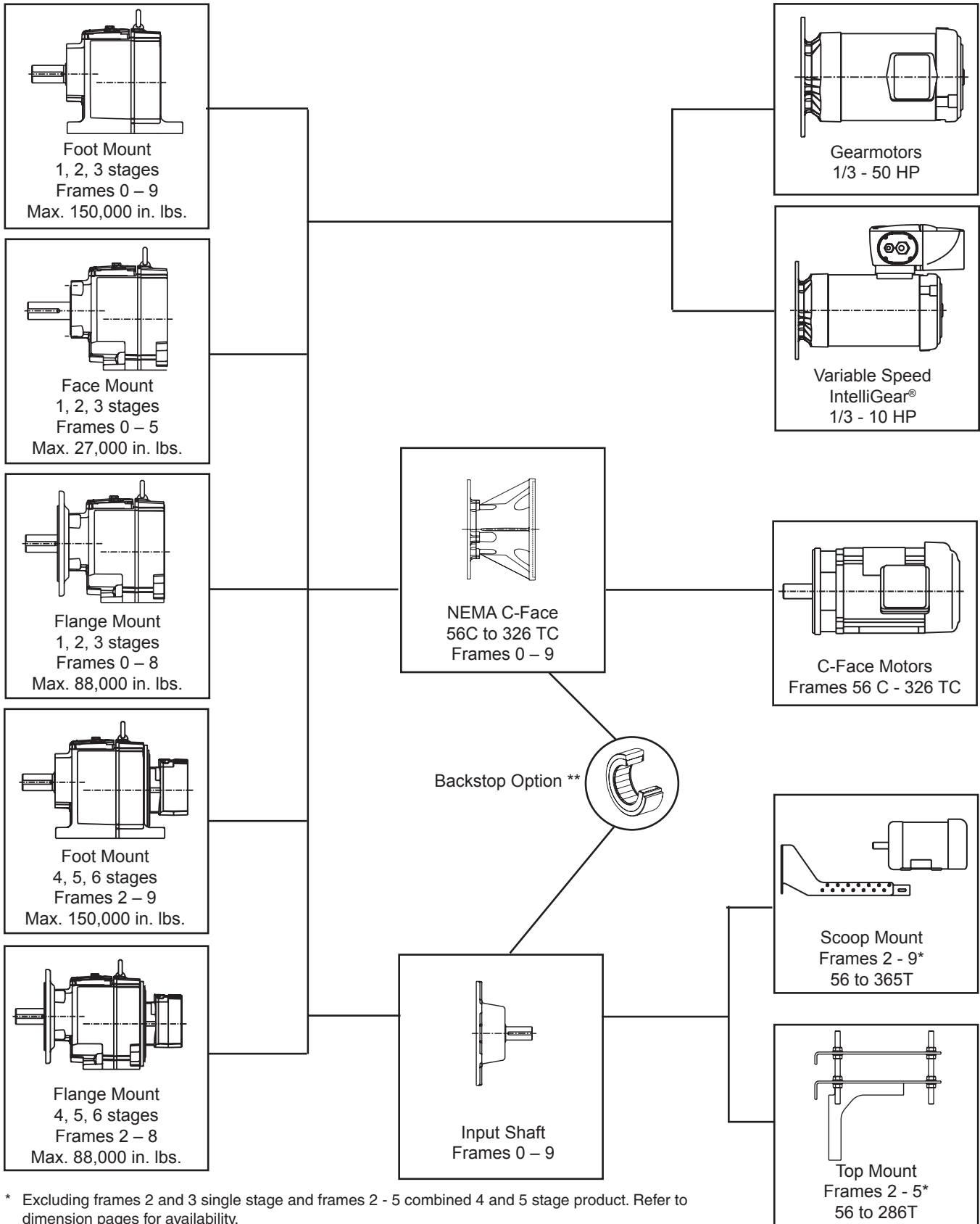
IntelliGear®

Gearmotor SectionPage A-20 - A-131



C-Face Reducer

Reducer SectionPage A-132 - A-243



* Excluding frames 2 and 3 single stage and frames 2 - 5 combined 4 and 5 stage product. Refer to dimension pages for availability.

** Frames 1 - 9: 1, 2, and 3 stages. Frames 4 - 9: 4, 5 and 6 stages.

Selection Information

General

CbN helical gearmotors and speed reducers incorporate the latest in design and manufacturing technologies to deliver an energy efficient, helical, gear train combined with either a constant or variable speed motor. This latest generation of CbN inline gearing is 98 percent efficient per gear stage and boasts total efficiency improvements over previous designs by delivering up to 40 percent more total speed reduction without added gear stages.

Gearmotors

Three phase CbN gearmotors are available with HE type high efficiency motors in non-hazardous enclosures starting 1/3 HP at standard lead-times. These motors comply with requirements in the US and Canada for energy efficiency to deliver superior operating cost savings, reduced motor temperature rise and 5:1 minimum constant torque output (60-11Hz) from PWM power supplies for the End User. There are several motor enclosure options within the HE umbrella including Corro-Duty® cast iron exterior construction for most hostile environments. These features are complimented by the standard use of inverter duty winding materials that comply with NEMA MG1 Part 31. Emerson also offers gearmotors with 1 phase TEFC motors to 5 HP and Explosionproof 3 phase gearmotors to 10 HP.

Housing

One-piece housings replace the classical two-piece designs to improve alignment and overhung load integrity in the most demanding applications. Extremely compact envelopes provide low profiles and the footprint to directly interchange with older CbN products for simple aftermarket replacements. All housings are cast, with frames made with high strength cast iron (frame 0 is aluminum). Motor interfaces are generally shorter than previous CbN designs.

Performance

These CbN designs deliver up to 35 percent more capacity than previous CbN products in equivalent frames. For replacements, this means longer life. For new applications, this means cost savings through possible downsizing. Each CbN unit is factory filled with synthetic lubricant, ready to operate in a wide band of ambient temperatures with minimal in-service maintenance.

Flexibility

Improvements in CbN designs begin with the expansion of flange mounting options available. Three phase motor designs now incorporate an upgraded wire and varnish treatment called Allguard®, making many of them suitable for inverter applications. C-Face inputs utilize a compact quill design with a non-metallic liner and metal key to eliminate fretting corrosion while delivering a compact length. Each housing can be oriented in different mounting positions by a minor adjustment in oil volume and relocation of breather/drain locations. Varidyne® inverter duty motor designs deliver up to 10:1 constant torque speed range gearmotors off-the-shelf.

Reliability

Gear housings 1 to 5 are fitted with normally closed breathers, excluding outside contaminants and preserving low internal operating pressure. All oil seals operate on plunge ground shaft surfaces to deliver extended life. Enhanced insulating materials and other standard features of our Varidyne Inverter duty motors carry a 3 year warranty when operating with PWM inverter power up to 575 VAC.

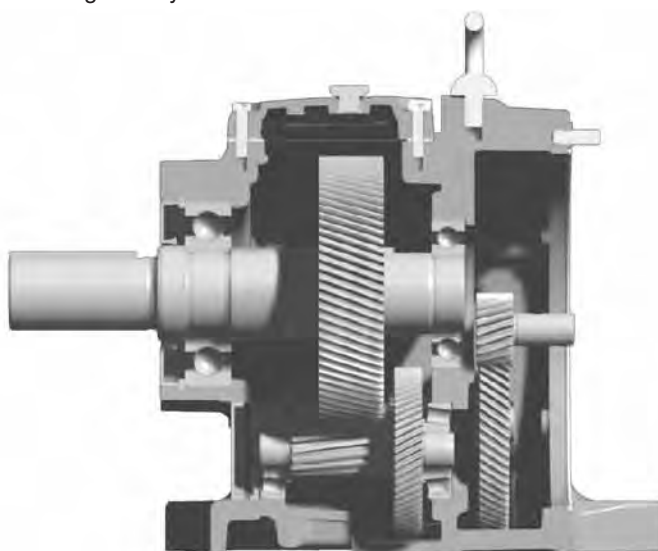
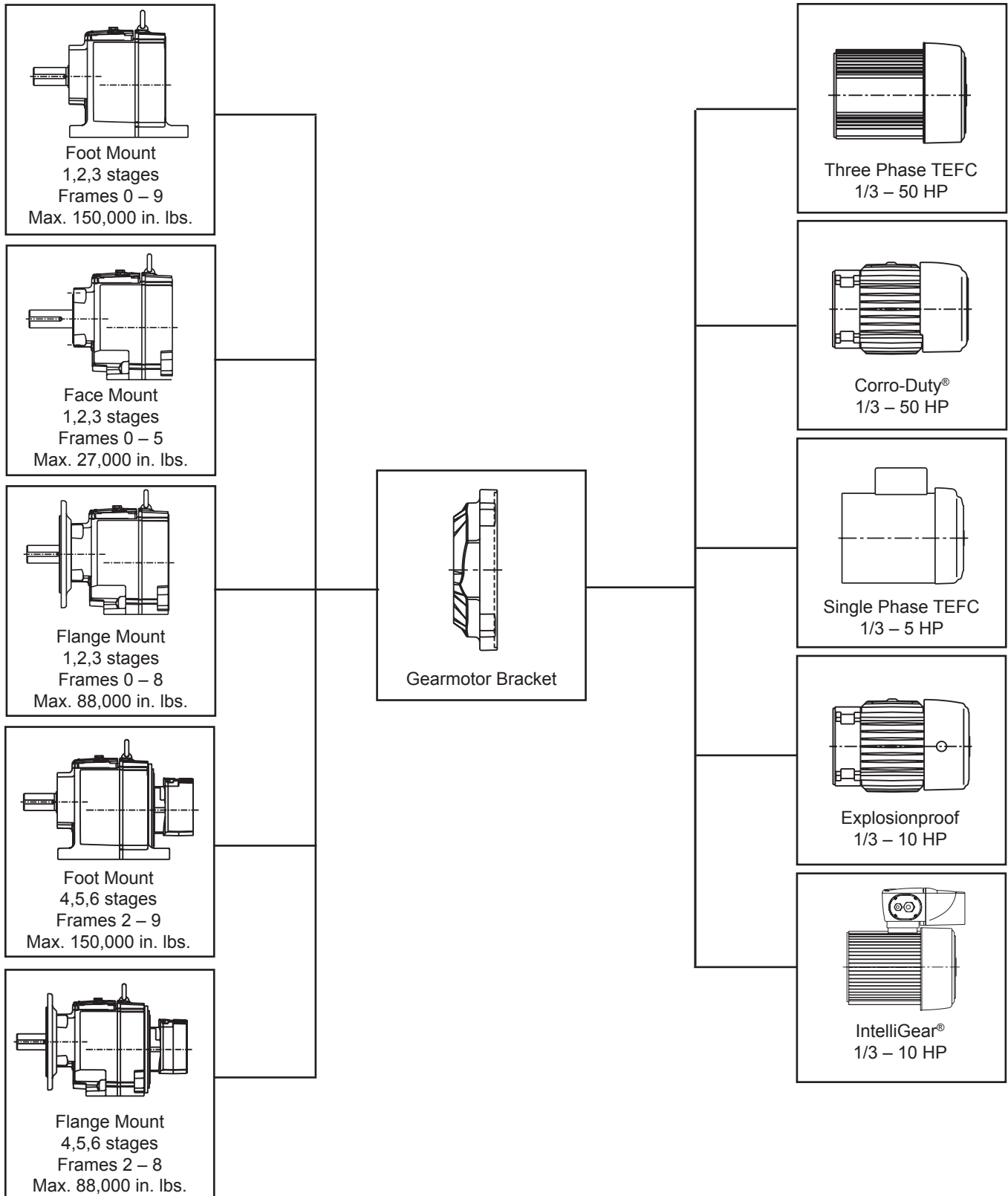


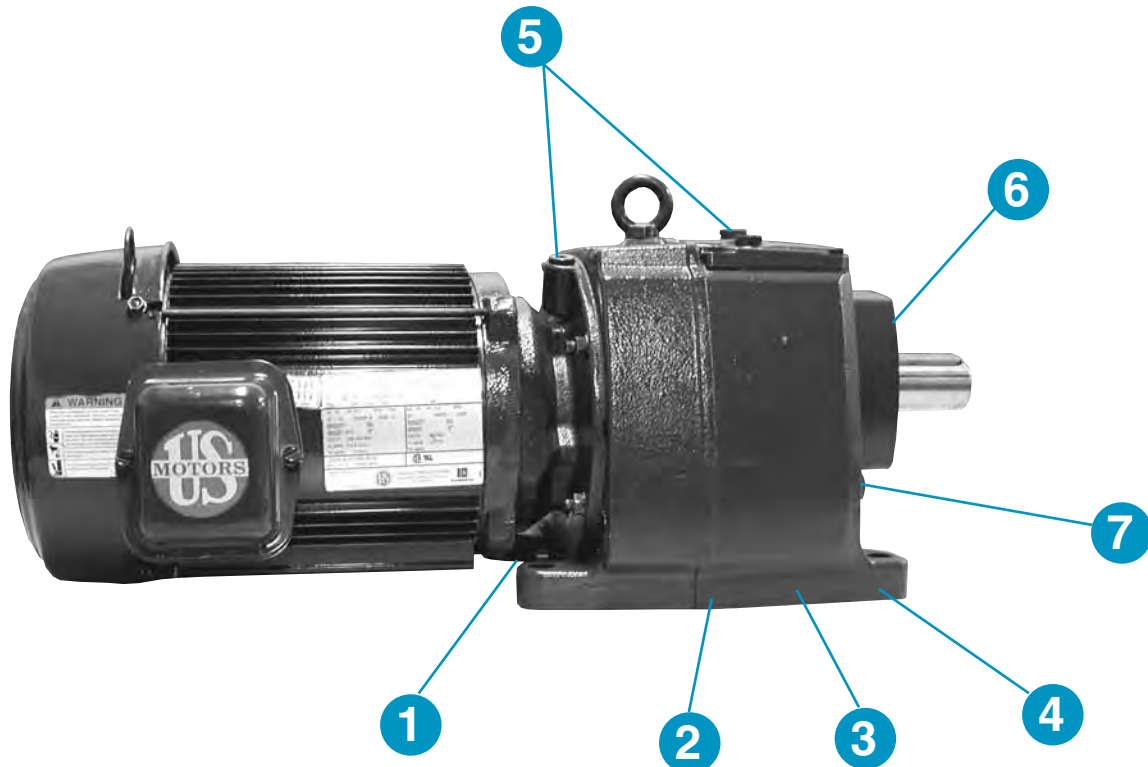
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Mounting Versatility and Size Range



**Type CbN In-line Helical
Series 2000/3000 Gearmotors Features...**



Design Features

- 1.** High Efficiency Motor Design Available
 - Any non-XP 3 phase gearmotor
- 2.** Innovative, self-locking, taper shaft connection (motor to gear) allows on-site replacement without removing oil, primary pinion, or disconnecting the load.
- 3.** Gearbox is delivered filled with synthetic oil, ready to use.
- 4.** Corrosion resistant, cast iron housings are one piece and ribbed for extra strength. (Size 0 housings are cast aluminum housings.)
- 5.** Gears are made of 8620, heat treated, nickel chromium, molybdenum steel. Helical gearing is skived, superfinished, or ground after case hardening to 58-62 Rc.
- 6.** Multiple breather locations. Breathers are normally closed during construction to exclude contaminants.
- 7.** Double lip seals are installed on plunge ground shafts.
- 8.** Magnetic drain plug is supplied as standard.

Gearmotors Motor Options

CbN
SERIES **2000**
3000



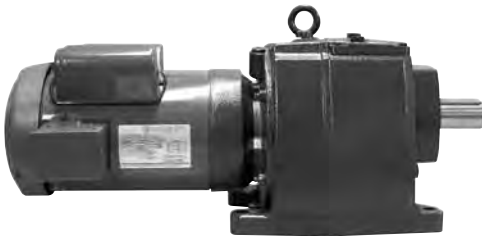
TEFC – Three Phase

- Suitable for general purpose industrial applications
- High Energy efficient design standard
- Premium efficiency design available > 2 HP
- 1.25 service factor through 5 HP; 1.15 service factor above 5 HP
- Premium class F Allguard® insulation standard
- 40°C ambient, NEMA B design, continuous duty
- Inverter duty motor per NEMA MG1 part 31 stocked
- Washdown gearmotors available to 2 HP



Corro-Duty®

- Designed for wet, corrosive applications and industries including waste treatment, mining and lumber.
- All cast iron construction (56 and 140 frames are rolled steel)
- High efficiency standard 1/3 HP and larger
- Premium efficiency option 3 HP and larger
- 1.15 service factor, class F Allguard® insulation
- Condensation drains in motor and conduit box
- 40°C ambient, NEMA design B, continuous duty
- Inverter duty version per NEMA MG1 part 31 stocked to 50 HP



TEFC – Single Phase

- For agricultural, light material handling, textile, and light pumping applications
- 1.25 service factor
(1.15 service factor, 1 HP, 48 frame)
(1.0 service factor, 2 HP and 1.15 service factor, 3-5 HP)
- Capacitor start
(capacitor run above 1/2 HP, 48 frame)
(capacitor run above 1/2 HP, 56 – 140 frames)
- Class B insulation, continuous duty, reversible



Explosionproof

- Ideal for the petro-chemical, grain, mining, and chemical industries
- Class I, group D, class II, groups F and G
- All cast iron construction (plastic fan cover)
- 1.0 service factor, class B insulation
- 40°C ambient, NEMA B design, continuous duty
- UL approved Inverter duty per NEMA MG1 part 31 available



IntelliGear®

- Variable speed gearmotor with NEMA 4/12 enclosure
- "Onboard" push button and remote speed changing options
- Pre-programmed 6:1 constant torque speed range
- Versions for 3/460V input power supplies from 1/3 to 10 HP
- 1/230V to 2 HP, 3/230V to 5 HP
- 1/115 V through 3/4 HP
- UL, CUL and CE
- Optional 10:1 and 15:1 speed ranges

Selection Information

1. Input HP
 - Based on application data.
2. Speed / ratio
 - Obtain either desired output speed (rpm) or gearbox ratio based on application.
3. Mechanical service factors - gears
 - There are three standard classifications for gearmotor applications:

Class I - Uniform loading, 3-10 hours per day, service factor 1.0 (minimum).

Class II - Uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day; service factor 1.4 (minimum).

Class III - Moderate shock loading over 10 hours per day or heavy shock loading up to 10 hours per day; service factor 2.0 (minimum).

- The tables on pages A-39 through A-41 are based on past operating experience within the industries listed and information gathered by AGMA. If the user has data reflecting greater severity than normal industry usage, then the AGMA class should be increased.
- Choose the AGMA class for your given application based on this criteria. If your application cannot be found, use the following table to determine the service factor.

Duty Cycle	Hours Operation	Uniform Load	Moderate Shock Load	Heavy Shock Load
		U	M	V
Continuous	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Frequent Starts/Stops*	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

*Greater than 10 per hour.

Size Selection

Step 1 - Locate gearmotor selection tables (pages A-42 - A-85) based on input HP.

Step 2 - Choose the appropriate nominal speed required.

Step 3 - Select the correct gearmotor based on AGMA class or service factor determined in selection information.

Step 4 - Verify overhung load ratings where required (see below).

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a gearmotor, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r}$$

Where:

- OHL = Overhung load (pounds)
- T = Torque (in. lbs.)
- r = Radius of driving member (in.)
- HP = Horsepower
- K = Drive type factor
- LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
V-Belt	1.50
Timing Belts	1.25

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Example

A horizontal, foot mounted gearmotor is required to operate a uniformly loaded, assembly conveyor at 44 rpm, 24 hours per day. An 8" diameter sprocket is mounted at the end of the shaft and drives the conveyor with a chain. The load is 3 HP and the customer requests a 230/460 volt, High Efficiency TEFC motor end.

Step 1...

The AGMA service classification table on page A-39 indicates that this is a Class II application.

Step 2...

The CbN gearmotor table on page A-62 indicates that a gear frame 3363 will do the job.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
44	I,II	1.4	4099	2305	40	3363	182T	T,S,C,X,IG

Step 3...

To check overhung load for the example:

$$r = \frac{\text{Sprocket Diameter}}{2} = \frac{8}{2} = 4$$

$$K = 1.0 \text{ (chain drive)}$$

$$LLF = 1.2 \text{ (sprocket on end of shaft)}$$

$$HP = 3$$

Torque formula:

$$\text{OHL} = \frac{63025 \times \text{HP} \times K \times \text{LLF}}{\text{rpm} \times r}$$

$$\text{OHL} = \frac{63025 \times 3 \times 1.0 \times 1.2}{44 \times 4} = 1289 \text{ lbs.}$$

The overhung load capacity of 2305 lbs. listed is greater than the calculated overhung load value of 1289 lbs.

Step 4...

Confirm that no modification is required.

Step 5...

Catalog designation (see "Ordering" page A-31):

CbN • 3363 • S • B3 • 40 • HT24 • 182T • 3

Selection Information

1. Determine installation environment
 - Control enclosure is NEMA 4/12
2. Input HP
 - For constant torque loads this is at maximum speed of range
3. Speed range
 - Confirm maximum and minimum of needed range.
4. Determine control power supply
 - Phase and voltage

Power Supply	Input HP's
1 ph / 115 v	.33 to .75
1 ph / 230 v	.33 to 2
3 ph / 230 v	.33 to 5
3 ph / 460 v	.33 to 10
3 ph / special	R. O.

5. Mechanical service factoring of gear
 - Refer to page A-27 for this procedure.

Note: IntelliGear application for 1 phase power supply is limited to 10 starts per hour.
6. Determine speed adjustment (see Section F)
 - Select from:
 - PD = Digital keypad with forward/reverse/stop/speed up/speed down/speed display on IntelliGear enclosure
 - P1 = Run/stop/speed pot. mounted on IntelliGear enclosure
 - P2 = Forward/reverse/stop/pot. mounted on IntelliGear enclosure
 - P3 = Speed pot. (only) mounted on IntelliGear enclosure (start/stop by others)
 - P4 = Speed pot. (only) mounted inside IntelliGear enclosure (start/stop by others)
 - R = Remote signal following (0-10VDC or 4-20mA supplied by others)
 - RP = Remote from fieldbus - Profibus DP

Size Selection

- Step 1 - Determine the maximum motor rpm from the following table based on the whether the application requires a speed range of 6:1, 10:1 or 15:1.

$$\text{Speed Range} = \frac{\text{Maximum Output Speed Required}}{\text{Minimum Output Speed Required}}$$

HP	IntelliGear Motor Speed Range		
	6:1 Speed Range	10:1 Speed Range	15:1 Speed Range
1/3 - 3/4 HP	1760 - 293 rpm	1760 - 176 rpm	2625 - 175 rpm
1 - 1 1/2 HP	1750 - 291 rpm	1750 - 175 rpm	2620 - 175 rpm
2 HP	1750 - 291 rpm	2585 - 255 rpm	N. A.
3 HP	1750 - 291 rpm	2630 - 263 rpm	N. A.
5 HP	2150 - 358 rpm	2605 - 260 rpm	N. A.
7.5 HP	2150 - 358 rpm	2670 - 267 rpm	N. A.
10 HP	2100 - 350 rpm	2600 - 260 rpm	N. A.

- Step 2 - Determine the gear ratio required. Use the maximum motor rpm from the table above.
- $$\text{Gear Ratio} = \frac{\text{Maximum Motor Speed}}{\text{Maximum Output Speed Req'd}}$$
- Step 3 - Locate gearmotor selection tables based on the input HP required at the ratio calculated in Step 2. Select the nominal gear ratio closest to the one calculated.
- Step 4 - Select correct gearmotor that meets or exceeds the AGMA class or service factor determined in the selection information.
- Step 5 - Verify overhung load rating where applicable per formulas on Page A-27.
- Step 6 - Confirm input power supply is compatible with HP of selection and record speed adjustment option desired for the application.
- Step 7 - Referring to Page A-35, determine if an alternate controller location is required for the application. Default location is "FO" (at 12 o'clock).

* Maximum motor rpm will be 2150 @ 74 Hz for 5HP IntelliGear.

Gearmotor Selection

Selection Example

A foot mounted gearmotor is required to operate a positive displacement pump from 220 to 40 rpm, 16 hours a day in a waste treatment plant. The output shaft will be coupled to the pump. The customer required approximately 4.7 HP at the maximum rpm. The job site power supply is 3 phase and 460 VAC. The control of speed requires the IntelliGear to follow a 4-20 mA signal supplied by a process control system.

Step 1...

The closest gearmotor HP to meet this application is a 5 HP design.

Step 2...

Determine the specific selection output rpm and ratio for 5 HP IntelliGear

$$\text{Maximum Speed} / 1.2 = \text{"selection table" rpm}$$

$$220 / 1.2 = \text{approx. 183 rpm}$$

Step 3...

The AGMA service classification indicates this is an AGMA Class II (1.4 minimum S.F.) application. From this information, on page A-66 a CbN 3242 and motor frame 184T with 10:1 nominal ratio is the correct gearmotor.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
181	I	1.3*	1804	782	10	3242	184T	T,S,C,X,IG

* The catalog "service factor" is @ 60 Hz. The 5 HP IntelliGear maximum rpm is @ 74 Hz. Adjust the "service factor" by (x 1.2) to calculate the service factor @ 74 Hz.

Step 4...

This application does not involve any OHL calculations due to coupling connection.

Step 5...

The power supply of 3 phase / 460 VAC is ok for 5 HP IntelliGear and the speed changing option will be "R" per table on the preceding page.

Step 6...

Catalog designation (see also "Ordering" on page A-31) will be

CbN • 3242 • S • B3 • 10 • IG4 • 184T • 5 w/"R" speed option

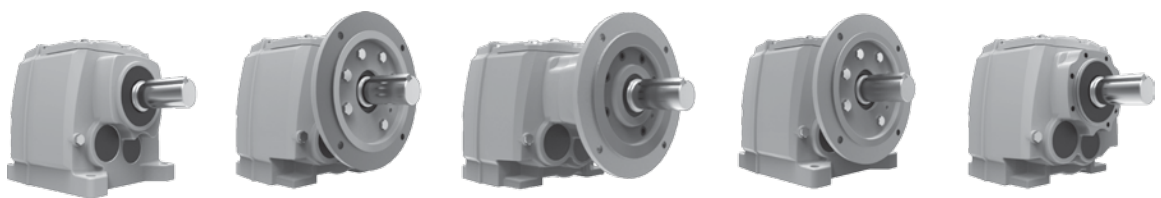
Catalog Nomenclature

CbN • 3122 • S • B3 • 40 • HT5 • 145T • 1.5

See Table Below
Prior to Ordering

See Page A-34
Prior to Ordering

Series	Gear Frame	Number of Reductions	Mounting Configuration For Gear (Housing and Shaft Extension)	Mounting Plane	Nom. Gear Ratio	Motor Design	Motor Frame	Motor HP
3 = 3000	0	1 = 1 stage	Refer to the illustrations below of the basic mounting options based on gear frame and stages of reduction. For Flanged gear mounting, refer to details for options that are available based on frame size, flange dimensions, and thrust loads for the application on page A-32.	See Page A-33	Determine from selection pages	Select motor based on enclosure, power supply, and the poles required	56	1/3
	1	2 = 2 stages					143T	1/2
	2	3 = 3 stages					145T	3/4
	3	4 = 4 stages					182T	1
	4	5 = 5 stages					184T	1 1/2
	5	6 = 6 stages					213T	2
2 = 2000	6						215T	3
	7						254T	5
	8						256T	7 1/2
	9						284T	10
							286T	15
							324T	20
			326T	25				
				30				
				40				
				50				



Gear Output	Foot Mounted	Flange Mount (footless)		Flange Mount (footed)	Face Mount (footless)
		Std. Thrust	High Thrust		
Configuration Code (inches)	S¹	See Page A-32	See Page A-32	See Page A-32	B14¹
Frame(s) Available	All	All	See Page A-32	See Page A-32	30 - 35

¹Inch output shaft. For output with metric shaft, insert "M" following last alpha character (i.e. metric footmount, S becomes SM).

Flange - No Feet

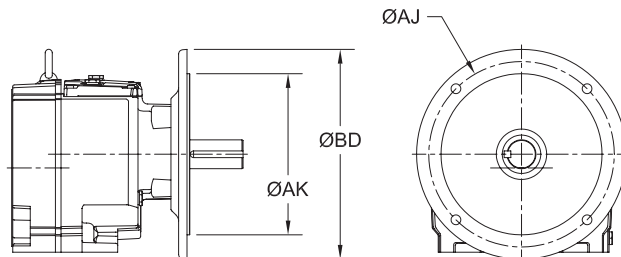
		Output Flange Dimensions Available													
			Inches	MM											
			BD	6.50	120	140	160	200	250	300	350	400	450	550	650
Reduction Stages	AK	4.50	80	95	110	130	180	230	250	300	350	450	550	550	
	AJ	5.875	100	115	130	165	215	254	300	350	400	500	600	600	
	Gear Frame														
Normal Thrust	Single	30	56C	BD1	BS	BD2	BD3								
		31			BD2	BS									
		32				BD2	BS								
		33					BD2	BS							
		34						BD2	BS						
	Multiple	35							BD2	BS					
		30	56C	BD1	BS	BD2	BD3								
		31		BD3	BD2	BD1	BS								
		32				BD2	BD1	BS							
		33					BD2	BD1	BS						
		34						BD2	BD1	BS					
		35							BD2	BD1	BS				
		26												BS	
		27												BS	
28													BS		
High Thrust	Multiple	33						BR							
		34							BR						
		35								BR					
		26											BR		
		27											BR		

Flange - Footed

		Output Flange Dimensions Available												
			Inches	MM										
			BD	6.50	120	140	160	200	250	300	350	400	450	550
Reduction Stages	AK	4.50	80	95	110	130	180	230	250	300	350	450	550	550
	AJ	5.875	100	115	130	165	215	254	300	350	400	500	600	600
	Gear Frame													
Normal Thrust	Single	31			SBD2	SBS								
		32				SBD2	SBS							
		33					SBD2	SBS						
		34						SBD2	SBS					
		35							SBD2	SBS				
	Multiple	30A		SBD1	SBS									
		31		SBD3	SBD2	SBD1								
		32					SBD1	SBS						
		33						SBD1	SBS					
		34							SBD1	SBS				
		35								SBD1	SBS			

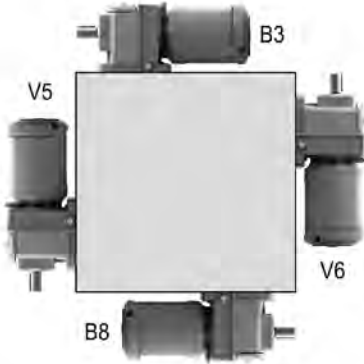
Shaded fields indicate factory lead-time applies

Note: For metric output shaft on any output nomenclature above, add "M" before any numeric designator. (i.e. metric shaft with BD1 flange = BDM1)

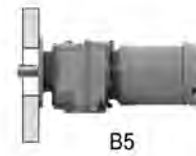


Mounting Positions

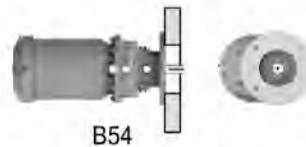
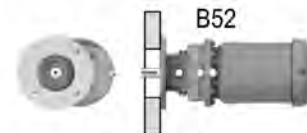
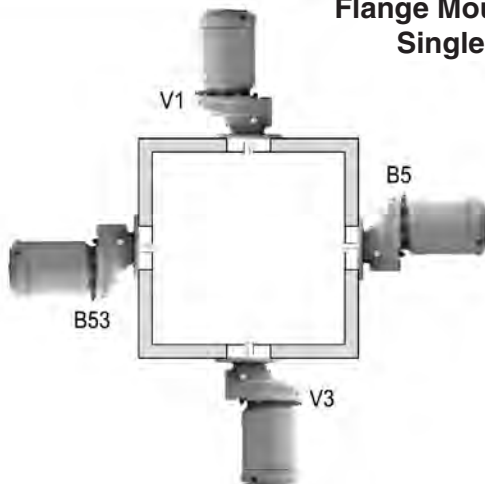
**Foot Mounted
(with/without flange)
Any Reduction**



**Flange Mounted (footless)
Multiple Reductions**



**Flange Mounted (footless)
Single Reduction**

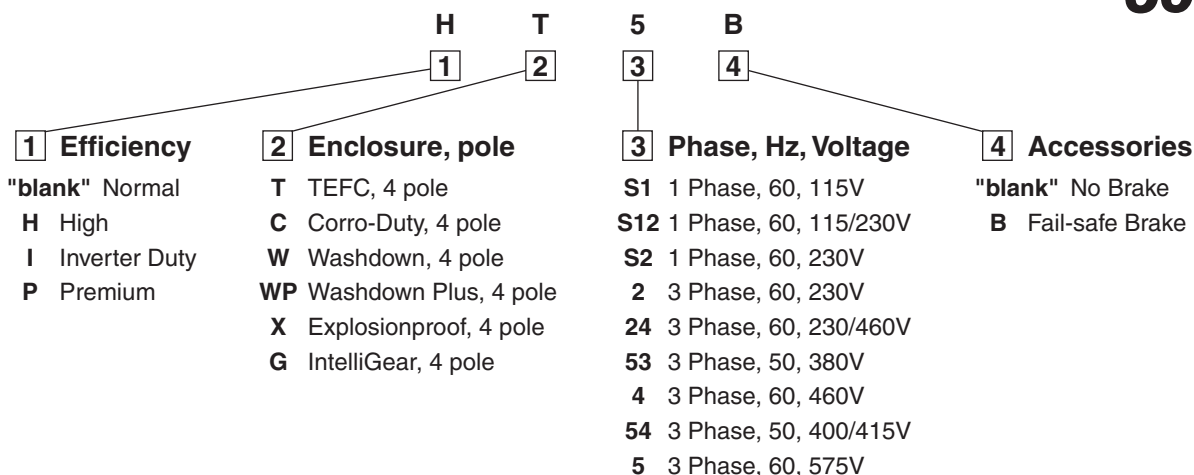




Standard Motor Input Types

CbN
SERIES **2000**
3000

Example: High Efficiency, TEFC, 3 phase 60 Hz, 575V, with Fall-safe Brake



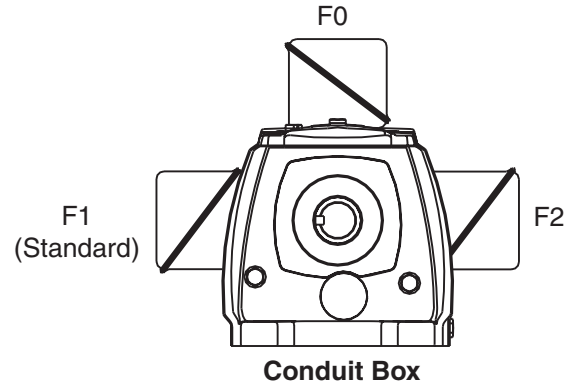
Base Design	Input Code	Motor HP															
		0.33	0.50	0.75	1	1.5	2	3	5	7.5	10	15	20	25	30	40	50
S Single Phase TEFC	TS12	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS12B	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS2	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
	TS2B	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
T 3 Phase TEFC	HT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	HT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24B	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T5	Y	Y	Y	Y ¹	-	-	-	-	-	-	-	-	-	-	-	-
	T5B	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T53	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	P	P	P	P	P	P	P
	T54	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	P	P	P	P	P	P
	IT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-
	IT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-
	PT24	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PT5	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y
	W24	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
	W5	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
WP24	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-	
WP5	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-	
C 3 Phase Corro-Duty	HC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	HC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	IC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	IC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	PC24	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	
	PC5	-	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	
X 3 Phase Explosionproof	X24	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	
	X5	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	
	IX24	P	P	P	P	P	P	P	P	P	P	-	-	-	-	-	
IG IntelliGear®	IGS1	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	
	IGS2	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	
	IG2	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	
	IG4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	

P = Production lead-time Y = Available from stock Y¹ = Motor frame is B56 - = not available

Electrical Connection Options

Conduit Box Location

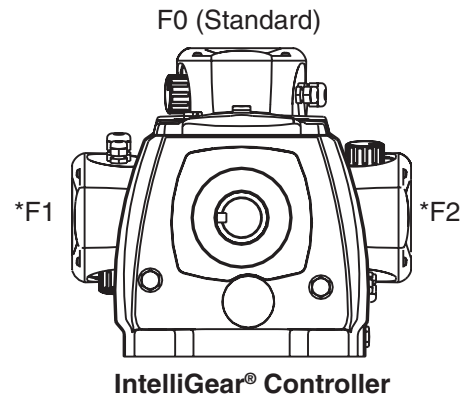
When ordering a conventional CbN gearmotor, specify the desired conduit box location when viewing unit output shaft in B3 or B5 position. If no option is specified, the "F1" location will be supplied.



IntelliGear Controller Location

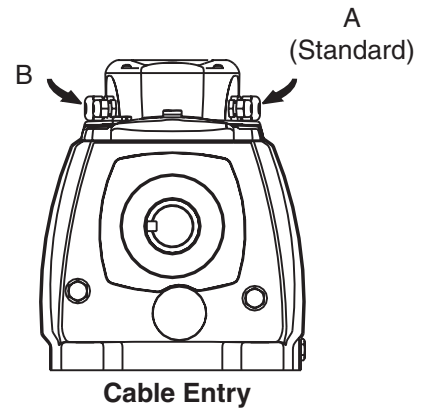
When ordering an IntelliGear® CbN gearmotor, you can specify the controller location and conduit entry location when viewing the unit output shaft in B3 or B5 position. If no options are specified, the "F0" controller location will be supplied.

* Refer to Application Engineering for de-rating guidance.



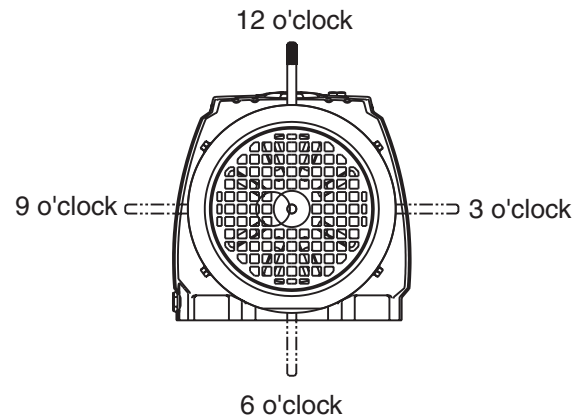
Cable Entry

IntelliGear cable entry can be from either side of the enclosure. If no option is specified, "A" will be supplied.



FCR DC Brake Manual Release Lever Location

Unit Type	Default Location	Optional Location(s)
CbN less IntelliGear	12 o'clock	3, 6, or 9 o'clock
CbN with IntelliGear	9 o'clock	3, 6, or 12 o'clock (lever can not be in same position as IntelliGear)



Modifications, Options and Accessories

Inverter Duty Gearmotors

Improvements in the motors for CbN gearmotors include an upgrade in the wire and varnish treatment used in all non-explosionproof three phase motors called Allguard. This makes the three phase gearmotor suitable for use with PWM inverters in many applications. A one year warranty will be extended for standard efficiency motors on constant torque applications over 3:1 range from 60-20 Hz. The same warranty is extended for high efficiency design motors on constant torque applications over 5:1 range from 60-12 Hz providing the following conditions are met:

- Motor is non-hazardous 3 phase > 48 frame
- Cable length to controller < 100 feet
- Line voltage is < 480 VAC
- Thermal protectors are not required

For all other conditions of operation (including 575 VAC) that exceed these parameters and all hazardous motor applications, select the inverter duty motor design under the motor Type required by the application. These designs include winding thermostats and will be covered by a three (3) year limited warranty of the motor as covered in the Standard Terms and Conditions, and full compliance with NEMA MG1 Part 31.

Motor Modifications

M1 Brakes

Design

These motor mounted brakes have a direct acting, spring set, electromagnetically released disc design. When power to the brake is interrupted, the brake will immediately set and hold. When power is restored to the brake then the brake will be released automatically.

Brake Enclosures

IP23 – suitable for indoors with relatively dry, clean and non-hazardous applications

IP55 – suitable for outdoor or indoor where gearmotor can be exposed to splashing liquids, dusts, and chemicals that are non-hazardous. Not suitable for washdown applications

Motor Modifications Continued

Operating Voltage

Brakemotors for fixed frequency operation will be arranged for operating with motor power as standard. If another lower voltage like 115 VAC is to be used for the brake on a 3 phase motor, state this voltage at order entry

Brakes for inverter duty brakemotors require a separate fixed frequency AC power source for the brake, but interlocked with starting of the motor. The standard brake design for inverter duty gearmotors will be arranged for single phase 115/230 VAC.

Mounting

Brakes for CbN gearmotors are suitable for the mounting ordered for the gearmotor. The standard brake will have a manual release included. Refer to the table on B-18 for the manual release mounting options available on the FCR type IP 55 brake design.

M2 Premium Efficiency Motors

High efficiency motor design is a standard option for three phase motors on 56 frames and larger motors in types “T” and “C” to meet the energy legislation in Canada and most end user specifications.

Premium efficiency motors are also optional starting at 3 HP.

M3 Washdown Duty Motors

See GM1 under Gearmotor Modifications

M4 Canopy Cap/Drip Cover

A canopy cap can be supplied for protection from dripping liquids entering the fan end of a gearmotor. It is recommended but not standard when gearmotor mounting is ordered to be “V”

M5 Frequency – 50 Hz

Motors for operation at 50 Hz are available. Refer all 3 phase requirements for 50 Hz to motor code T53 (380V) or T54 (400/415V). The published output speed in catalogs are based on 60 Hz. When operating or selecting a 50 Hz gearmotor, catalog output speed must be reduced by 5/6 for a given ratio. The service factor must also be reduced by 5/6 if the HP is maintained.

For all other 50 Hz voltages, refer to application engineering.

Non-Hazardous Motor Types	Motor Frame Size(s)	
	56-180T	210T
S	IP23	N/A
T	IP55	IP23
IG	IP55	N/A

Modifications, Options and Accessories

Motor Modifications Continued

M6 Voltage (3 phase only)

Standard voltages are listed in the table below. 200 VAC will be handled by 208-230/460V motors up to 10 HP. Refer all other voltages to the Pricing Group to confirm availability.

Frequency	3 Phase Voltages Thru 30 HP
60 Hz	200, 230, 460, 575
50 Hz	380, 400/415

M7 Motor Insulation

Emerson's 3 phase motors are built with a premium Class F insulation system for "T", "C" and "IG" types. All "S" and "X" type motors use a Class B insulation.

Tropical insulation treatment is available as a modification on any motor designs noted above

Class H insulation systems require production lead-times and are not available on explosions proof "X" designs.

M8 Space Heaters

Space heaters are recommended for gearmotors installed in very damp locations to prevent condensation from forming on the motor windings when the motor is not operating. Leads will be brought out to the standard motor conduit box. Space heater voltages (115, 230, and 460V) must be specified when an order is entered. This is available on motors > ¼ hp.

M9 Thermal Protection – Thermostats

This protection uses a bi-metallic disc thermostat embedded each phase of the motor winding and then connected by others into the holding circuit of the motor starter or VFD drive. The sensor is normally closed, and opens the control circuit to shut the motor down if the motor achieves over-temperature conditions based on the motor insulation class or design code. Thermostats give protection for running overloads, abnormally high ambient, voltage imbalance, high or low voltage, and ventilation failure. Thermostats do not give protection for locked rotor, starting overloads or single phasing.

Thermostats are standard in inverter duty motor designs (including IG) as well as explosionproof dual label motors type "X".

Gear Modifications

G11 Corro-Duty®

Corro-Duty treatment can be applied to a gearmotor or reducer when corrosive chemicals or unit will be operated outside in adverse environmental conditions. For gearmotors, the unit should start with specification of the Corro-Duty® type "C" motor design. Other special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
 - o Grey Option (default type)
 - 316 stainless steel paint (3 step)
 - Light grey semigloss finish
 - USDA and FDA approved
 - o White Option
 - Two step epoxy paint system
 - White gloss finish
 - USDA and FDA approved

For washdown application for gearmotors, refer to GM1 Washdown Duty Gearmotors and/or Washdown Duty Gearmotor PLUS.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the CbN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (refer to page A-244).

G15 Export Boxing

Export boxing can be provided for "under-deck" transport. When the quantity of CbN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Modifications, Options and Accessories

Gearmotor Modifications

Accessories

GM1 Washdown Duty Gearmotors

This three phase gearmotor design combine special features of the gear and motor required for washdown duty. These include:

- Special treatment of motor interior and windings
- Drains at low point(s) of the motor frame
- Labyrinth seal at motor SE bracket/shaft extension
- Special “protected” breather for gearcase
- Corro-Duty exterior multi-application paint treatment (see Corro-Duty® Reducer for color options).

Motor types “W24” or “W5” are used to order this design based on motor voltage. This is also available from 1/3 to 2 HP.

GM2 Washdown Duty Gearmotor PLUS

This three phase gearmotor design includes all the special features noted under GM1 above and the oil sump of the reducer will be filled before shipment with a FDA approved H1 rated synthetic lubricant for worm gearing. Volume of the oil will be dictated by the mounting position specified on the order.

Motor types “WP24” or “WP5” are used to order this design based on motor voltage. This is also available from 1/3 to 2 HP.

The following accessories can be ordered along with gearmotors and will be supplied loose for mounting by others

Description	Gear Frames	Part #
NPT Adapter (1/4" NPFT)	31 to 35	0436216
NPT Adapter (3/4" NPFT)	26 to 29	0436218
Oil Level View Port	31 to 35	0435936
	26 to 29	0435938

¹ These kits include all mounting hardware.

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class		Application	Load	Class		Application	Load	Class	
		Up to 10 hrs/day	Over 10 hrs/day			Up to 10 hrs/day	Over 10 hrs/day			Up to 10 hrs/day	Over 10 hrs/day
Agitators				Bucket				Conveyors - Uniformly Loaded or Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	U	I	II
Paper Mills	M	II	II	Conveyors, Uniform	U	I	II	Conveyors - Heavy Duty			
Pure Liquids	U	I	II	Conveyors, Heavy Duty	M	II	II	Not Uniformly Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	M	II	II
Liquids & Solids	M	II	II	Elevators Cont.	U	I	II	Live Roll (Package)	U	I	II
Liquids - Variable Density	M	II	II	Elevators Uniform	U	I	II	Reciprocating, shaker	V	III	III
				Elevators, Heavy Duty	M	II	II	Cookers (Brewing & Distilling) (Food)	U	I	II
Apron Conveyors				Calenders				Cooling Tower Fans			
Uniformly Loaded or Fed	U	I	II	Paper	U	-	II	Induced Draft	M	II	II
Heavy Duty	M	II	II	Super (Paper)	U	-	II	Forced Draft	Refer to Application Engr.		
Apron Feeders	M	II	II	Rubber	M	II	II	Couch (Paper)	M	-	II
				Textile	M	II	II	Cranes and Hoists			
Assembly Conveyors				Cane Knives	M	II	II	Main Hoists			
Uniformly Loaded or Fed	U	I	II	Can Filling Machines	U	I	II	Heavy Duty	V	III	III
Heavy Duty	M	II	II	Card Machines (Textile)	M	II	II	Medium Duty	M	II	II
Ball Mills	V	III	III	Car Dumpers	V	III	-	Reversing	V	II	II
Barking				Car Pullers	M	II	-	Skip Hoists	M	II	II
Drums	V	-	III	Cement Kilns	Refer to Application Engr.			Trolley Drive	M	II	II
Hydraulic Auxiliaries	V	-	III	Centrifugal				Bridge Drive	M	II	II
Mechanical	V	-	III	Blowers, Compressors, Discharge Elevators or Pumps	U	I	II	Crushers			
Barscreens (Sewage)	U	I	II	Chain Conveyors				Ore or Stone	V	III	III
				Uniformly Loaded or Fed	U	I	II	Cutters (Paper)	V	-	III
Batchers (Textile)	M	II	II	Heavy Duty	M	II	II	Cylinders (Paper)	M	-	II
Beaters and Pulpers (Paper)	U	-	II	Chemical Feeders (Sewage)	U	I	II	Dewatering Screens (Sewage)	M	II	II
Belt Conveyors				Clarifiers	U	I	II	Disc Feeders	U	I	II
Uniformly Loaded or Fed	U	I	II	Classifiers	M	II	II	Distilling	(See Brewing)		
Heavy Duty	M	II	II	Clay Working Industry				Double Acting Pumps			
Belt Feeders	M	II	II	Brick Press	V	III	III	2 or more Cylinders	M	II	II
Bending Rolls (Machine)	M	II	II	Briquette Machine	V	III	III	Single Cylinder	Refer to Application Engr.		
Bleachers (Paper)	M	-	II	Clay Working Machinery	M	II	II	Dough Mixer (Food)	M	II	II
Blowers				Pug Mill	M	II	II	Draw Bench (Metal Mills)			
Centrifugal	U	I	II	Collectors (Sewage)	U	I	II	Carriage & Main Drive	V	III	III
Lobe	M	II	II	Compressors				Dredges			
Vane	U	I	II	Centrifugal	U	I	II	Cable Reels	M	II	-
Bottling Machinery	U	I	II	Lobe	M	II	II	Conveyors	M	II	II
Brewing and Distilling				Reciprocating,				Cutter Head Drives	V	III	III
Bottling Machinery	U	I	II	Multi - Cylinder	M	II	II	Jig Drives	V	III	III
Brew Kettles, Cont. Duty	U	-	II	Single - Cylinder	V	III	III	Maneuvering Winches	M	II	-
Can Filling Machines	U	I	II	Concrete Mixers				Pumps	M	II	II
Cookers - Cont. Duty	U	-	II	Continuous	M	II	II	Screen Drives	V	III	III
Mash Tubs - Cont. Duty	U	-	II	Intermittent	U	I	-	Stackers	M	II	II
Scale Hoppers - Frequent Starts	M	II	II	Converting Machines (Paper)	M	-	II	Utility Winches	M	II	-
Brick Press (Clay Working)	V	III	III								
Briquette Machines (Clay Working)	V	III	III								



Gearmotors

CbN
SERIES **2000**
3000

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class	Application	Load	Class	Application	Load	Class
	Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day
Dryers (Paper)	U	-	II					
Dryers and Coolers (Mills, Rotary)	M	II	II					
Dyeing Machinery (Textile)	M	II	II					
Elevators								
Bucket - Uniform Load	U	I	II					
Bucket - Heavy Duty	M	II	II					
Bucket - Continuous	U	I	II					
Centrifugal Discharge	U	I	II					
Escalators	U	I	II					
Freight	M	II	II					
Gravity Discharge	U	I	II					
Man Lifts, Passenger	Refer to Application Engr.							
Escalators	U	I	II					
Fans								
Centrifugal	M	II	II					
Cooling Towers								
Induced Draft	M	II	II					
Forced Draft	Refer to Application Engineering							
Induced Draft	M	II	II					
Large (Mine, etc.)	M	II	II					
Large Industrial	M	II	II					
Light (Small Diameter)	U	I	II					
Feeders								
Apron, belt	M	II	II					
Disc	U	I	II					
Reciprocating	V	III	III					
Screw	M	II	II					
Felt								
Stretchers (Paper)	U	-	II					
Whippers (Paper)	U	-	II					
Flight								
Conveyors, Uniform	U	I	II					
Conveyors, Heavy	M	II	II					
Food Industry								
Beet Slicers	M	II	II					
Bottling, Can Filling Mach.	U	I	II					
Cereal Cookers	U	I	II					
Dough Mixers	M	II	II					
Meat Grinders	M	II	II					
Forming Machines (Metal Mills)	V	III	III					
Generators (Not welding)	U	I	II					
Gravity Discharge Elevators	U	I	II					
Grit Collectors (Sewage)	U	I	II					
Hammer Mills	V	III	III					
Induced Draft Fans	M	II	II					
Jordans (Paper)	U	-	II					
Kilns (Mills, Rotary) Cement	M	II	II	Refer to Application Engr.				
Laundry Washers and Tumblers	M	II	II					
Line Shafts								
Heavy Shock Load	V	III	III					
Moderate Shock Load	M	II	II					
Uniform Load	U	I	II					
Live Roll Conveyors								
Package	U	I	II					
Lobe Blower or Compressors	M	II	II					
Log Hauls (Paper and Lumber)	V	III	III					
Looms (Textile)	M	II	II					
Lumber Industry								
Barkers - Spindle Feed	V	II	III					
Barkers - Main Drive	V	III	III					
Carriage Drive	Refer to Application Engr.							
Conveyors								
Burner	V	II	III					
Main or Heavy Duty	V	II	III					
Main Log	V	III	III					
Re-Saw Merry-Go-Round	V	II	III					
Slab	V	III	III					
Transfer	V	II	III					
Chains - Floor	V	II	III					
Chains - Green	V	II	III					
Cut-Off Saws-Chain	V	II	III					
Cut-Off Saws-Drag	V	II	III					
Debarking Drums	V	III	III					
Feeds - Edger	V	II	III					
Feeds - Gang	V	III	III					
Feeds - Trimmer	V	II	III					
Log Deck	V	III	III					
Log Hauls - Incline, Well Type	V	III	III					
Log Turning Devices	V	III	III					
Planer Feed	V	II	III					
Planer Tilting Hoists	V	II	III					
Rolls - Live-Off Bearing								
Roll Cases	V	III	III					
Sorting Table	V	II	III					
Tipple Hoist	V	II	III					
Transfers - Chain	V	II	III					
Transfers - Craneway	V	II	III					
Tray Drives	V	II	III					
Machine Tools								
Auxiliary Drives	U	I	II					
Bending Rolls	M	II	II					
Main Drives	M	II	II					
Notching Press (Belted)	Refer to Application Engr.							
Plate Planers	V	III	III					
Punch Press (Geared)	V	III	III					
Tapping Machines	V	III	III					
Mangle (Textile)	M	II	II					
Mash Tubs (Brewing and Distilling)	U	-	II					
Meat Grinder (Food)	M	II	II					
Metal Mills								
Draw Bench Carriages & Main Drives	V	III	III					
Forming Machines	V	III	III					
Pinch, Dryer & Scrubber								
Rolls Reversing	Refer to Application Engr.							
Slitters	M	II	II					
Table Conveyors, Non-Reversing	M	II	III					
Reversing	V	-	III					
Wire Drawing & Flattening Machines	M	II	III					
Wire Winding Machines	M	II	II					
Mills, Rotary Type								
Ball, Pebble, Rod	V	III	III					
Cement Kilns	Refer to Application Engr.							
Coolers, Dryers, Kilns	V	II	II					
Tumbling Barrels	V	III	III					
Mixers (Also see Agitators)								
Concrete - Continuous	M	II	II					
Concrete - Intermittent	M	I	-					
Constant Density	U	I	II					
Variable Density	M	II	II					
Nappers (Textile)	M	II	II					
Oil Industry								
Chillers	M	II	II					
Oil Well Pumping	Refer to Application Engr.							
Paraffin Filter Press	M	II	II					
Rotary Kilns	M	II	II					
Ore Crushers	V	III	III					
Oven Conveyors								
Uniform	U	I	II					
Heavy Duty	M	II	II					

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class		Application	Load	Class		Application	Load	Class	
		Up to 10 hrs/day	Over 10 hrs/day			Up to 10 hrs/day	Over 10 hrs/day			Up to 10 hrs/day	Over 10 hrs/day
Paper Mills				Rod Mills	V	III	III	Soapers (Textile)	M	II	II
Agitator (Mixers)	M	II	II					Spinners (Textile)	M	II	II
Barker - Auxiliaries - Hyd.	V	-	III	Rotary				Steering Gears	M	II	II
Barker, Mechanical	V	-	III	Pumps, Gear, Lobe, Vane	U	I	II	Stock Chests (Paper)	U	-	II
Barking Drum	V	-	III	Screens (Sand or Gravel)	V	II	II	Stokers	U	I	II
Beater & Pulper	M	-	II					Stone Crushers	V	III	III
Bleacher	M	-	II	Rubber Industry				Suction Rolls (Paper)	U	-	II
Calenders	M	-	II	Mixer	V	III	III	Table Conveyors (Metal Mills)			
Calenders - Super	M	-	II	Rubber Calender	M	II	II	Non-Reversing	V	II	III
Converting Mach.-				Rubber Mill (2 or more)	M	II	II	Reversing	V	-	III
Except Cutters - Platers	M	-	II	Sheeter	M	II	II	Tenter Frames (Textile)			
Conveyors	M	-	II	Tire Building Machines	Refer to Application Engr.			Textile Industry			
Couch	M	-	II	Tire, Tube Press Openers	Refer to Application Engr.			Batchers	M	II	II
Cutters, Platers	V	-	III	Engr.				Calenders	M	II	II
Cylinders	U	-	II	Tubers & Strainers	M	II	II	Card Machines	M	II	II
Dryers	U	-	II					Cloth Finishing Mach. (Calenders, Dryers, Pads, Tenders, Washers)	M	II	II
Felt Stretchers	U	-	II	Sand Mullers	Refer to Application Engr.			Dry Cans	M	II	II
Felt Whippers	V	-	III	Screens				Dyeing Machinery	M	II	II
Jordans	M	-	II	Air Washing	U	I	II	Knitting Machinery	Refer to Application Engr.		
Log Haul	V	-	III	Rotary - Sand or Gravel	M	II	II	Looms, Mangles, Nappers	M	II	II
Presses	M	-	II	Traveling Water Intake	U	I	II	Range Drives	Refer to Application Engr.		
Pulp Machine Reels	M	-	II					Soapers, Spinners	M	II	II
Stock Chests	M	-	II	Screw Conveyors				Tenter Frames	M	II	II
Suction Rolls	M	-	II	Uniform	U	I	II	Winders	M	II	II
Washers & Thickeners	M	-	II	Heavy Duty or Feeder	M	II	II	Yarn Preparatory Mach. (Cards, Spinners, Slashers)	M	II	II
Winders	M	-	II					Thickeners (Sewage)	M	II	II
Passenger Elevators	Refer to Application Engr.			Scum Breakers (Sewage)	M	II	II	Tumbling Barrels	V	III	III
Pebble Mills	V	III	III					Vacuum Filters (sewage)	M	II	II
Plate Planers	V	III	III	Sewage Disposal				Vane Blowers	U	I	II
Presses (Paper)	V	-	III	Aerators	Refer to Application Engr.			Winches (Dredges)	M	II	-
Proportioning Pumps	M	II	II	Bar Screens	U	I	II	Winders (Paper)	U	-	II
Pub Mills (Clay)	M	II	II	Chemical Feeders	U	I	II	(Textile)	M	II	II
Pullers (Barge Haul)	V	III	III	Collectors	U	I	II	Windlass	M	II	II
Pulp Machine Reels	U	-	II	Dewatering Screens	M	II	II	Wire			
Pumps				Grit Collectors	U	I	II	Drawing Machines	M	II	III
Centrifugal	U	I	II	Scum Breakers	M	II	II	Winding Machines	M	II	II
Proportioning	M	II	II	Slow or Rapid Mixers	M	II	II				
Reciprocating				Sludge Collectors	U	I	II				
Single Act., 3 or more cyl.	M	II	II	Thickeners	M	II	II				
Double Act., 2 or more cyl.	M	II	II	Vacuum Filters	M	II	II				
Single Act., 1 or 2 cyl.	Refer to Application Engr.			Shaker Conveyors	V	III	III				
Rotary: Gear, Lobe, Vane	U	I	II	Sheeters (Rubber)	M	II	II				
Punch Press (Gear Driven)	V	III	III								
Reciprocating Conveyors, Feeders	V	III	III	Single Acting Pump							
				1 or 2 Cylinders	Refer to Application Engr.						
				3 or more Cylinders	M	II	II				
Reciprocating Compressors				Skip Hoist	M	II	II				
Multi-Cylinder	M	II	II	Slab Pushers	M	II	II				
Single cylinder	V	III	III	Slitters (Metal)	M	II	II				
				Sludge Collectors (Sewage)	U	I	II				

Applications not listed in this table, or where the user has data indicating the severity of this usage to be greater than average, should be referred to Application Engineering.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1411	I, II, III	3+	14	172	1.25	3001	56	T,S,C,X°,IG
1199	I, II, III	3+	17	181	1.4	3001	56	T,S,C,X°,IG
1136	I, II, III	3+	18	184	1.6	3001	56	T,S,C,X°,IG
956	I, II, III	3+	21	193	1.8	3001	56	T,S,C,X°,IG
893	I, II, III	3+	23	197	2	3001	56	T,S,C,X°,IG
799	I, II, III	3+	26	204	2.24	3001	56	T,S,C,X°,IG
686	I, II, III	3+	30	213	2.5	3001	56	T,S,C,X°,IG
636	I, II, III	3+	32	217	2.8	3001	56	T,S,C,X°,IG
540	I, II, III	3+	38	227	3.15	3001	56	T,S,C,X°,IG
482	I, II, III	3+	42	234	3.55	3001	56	T,S,C,X°,IG
429	I, II, III	3+	47	241	4	3001	56	T,S,C,X°,IG
382	I, II, III	3+	53	248	4.5	3001	56	T,S,C,X°,IG
338	I, II, III	3.0	60	255	5	3001	56	T,S,C,X°,IG
338	I, II, III	3.0	68	262	5.6	3001	56	T,S,C,X°,IG
273	I, II, III	3.0	75	267	6.3	3001	56	T,S,C,X°,IG
242	I, II, III	3.0	84	274	7.1	3001	56	T,S,C,X°,IG
215	I, II, III	2.7	95	280	8	3001	56	T,S,C,X°,IG
204	I, II, III	3+	98	522	9	3012	56	T,S,C,X°,IG
172	I, II, III	3+	116	550	10	3012	56	T,S,C,X°,IG
160	I, II, III	3+	125	562	11.2	3012	56	T,S,C,X°,IG
143	I, II, III	3+	140	582	12.5	3012	56	T,S,C,X°,IG
123	I, II, III	3+	162	600	14	3012	56	T,S,C,X°,IG
114	I, II, III	3+	175	600	16	3012	56	T,S,C,X°,IG
97	I, II, III	3+	206	600	18	3012	56	T,S,C,X°,IG
86	I, II, III	3+	231	600	20	3012	56	T,S,C,X°,IG
77	I, II, III	3.0	260	600	22.4	3012	56	T,S,C,X°,IG
68	I, II, III	2.7	292	600	25	3012	56	T,S,C,X°,IG
61	I, II, III	2.4	329	600	28	3012	56	T,S,C,X°,IG
52	I, II, III	2.1	371	600	31.5	3012	56	T,S,C,X°,IG
49	I, II	1.9	408	1211	35.5	3012	56	T,S,C,X°,IG
43	I, II	1.7	460	600	40	3012	56	T,S,C,X°,IG
45	III	3+	443	1211	40	3132	56	T,S,C,X, IG
39	I, II	1.5	517	600	45	3012	56	T,S,C,X°,IG
39	III	3.0	508	1260	45	3132	56	T,S,C,X,IG
36	I, II	1.6	549	600	50	3013	56	T,S,C,X°,IG
36	III	3.0	561	1296	50	3132	56	T,S,C,X,IG
32	I, II	1.4	615	600	56	3013	56	T,S,C,X°,IG
30	III	2.1	646	1345	56	3133	56	T,S,C,X,IG
27	I	1.2	716	600	63	3013	56	T,S,C,X°,IG
27	II	1.9	729	1345	63	3133	56	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575V

X° Explosionproof, CL1 group D, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 1/115V, 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
25	I	1.1	772	600	71	3013	56	T,S,C,X°,IG
25	II	1.8	774	1345	71	3133	56	T,S,C,X,IG
25	III	3+	766	1610	71	3253	56	T,S,C,X,IG
22	I	1.0	908	600	80	3013	56	T,S,C,X°,IG
22	II	1.6	919	1345	80	3133	56	T,S,C,X,IG
22	III	3+	870	1610	80	3253	56	T,S,C,X,IG
20	I, II	1.6	919	1345	90	3133	56	T,S,C,X,IG
20	III	3+	966	1610	90	3253	56	T,S,C,X,IG
18	I, II	1.5	1110	1345	100	3133	56	T,S,C,X,IG
18	III	3+	1097	1610	100	3253	56	T,S,C,X,IG
16	I, II	1.4	1239	1345	112	3133	56	T,S,C,X,IG
16	III	3+	1221	1610	112	3253	56	T,S,C,X,IG
14	I	1.2	1390	1345	125	3133	56	T,S,C,X,IG
14	II, III	2.9	1374	1610	125	3253	56	T,S,C,X,IG
12	I	1.1	1609	1345	140	3133	56	T,S,C,X,IG
12	II, III	2.5	1610	1610	140	3253	56	T,S,C,X,IG
11	I	1.0	1767	1345	160	3133	56	T,S,C,X,IG
11	II, III	2.3	1777	1610	160	3253	56	T,S,C,X,IG
10	I, II, III	2.1	1949	1610	180	3253	56	T,S,C,X,IG
8.6	I, II	1.8	2276	1610	200	3253	56	T,S,C,X,IG
8.6	III	2.7	2239	2305	200	3363	56	T,S,C,X,IG
7.9	I, II	1.8	2416	1610	224	3254	56	T,S,C,X°,IG
7.9	III	3+	2416	2905	224	3374	56	T,S,C,X°,IG
7.1	I, II	1.5	2701	1610	250	3254	56	T,S,C,X°,IG
7.1	III	2.6	2701	2905	250	3374	56	T,S,C,X°,IG
6.7	I, II	1.4	2843	1610	280	3254	56	T,S,C,X°,IG
6.7	III	2.5	2843	2905	280	3374	56	T,S,C,X°,IG
5.7	I	1.2	3368	1610	315	3254	56	T,S,C,X°,IG
5.7	II, III	2.1	3368	2905	315	3374	56	T,S,C,X°,IG
5.3	I	1.1	3619	1610	355	3254	56	T,S,C,X°,IG
5.3	II, III	2.0	3619	2905	355	3374	56	T,S,C,X°,IG
4.7	I	1.0	4046	1610	400	3254	56	T,S,C,X°,IG
4.7	II	1.7	4046	2905	400	3374	56	T,S,C,X°,IG
4.4	III	3+	4241	4340	400	3484	56	T,S,C,X,IG
4.1	I, II	1.5	4713	2905	450	3374	56	T,S,C,X°,IG
3.9	III	2.9	4845	4340	450	3484	56	T,S,C,X,IG
3.8	I, II	1.4	5073	2905	500	3374	56	T,S,C,X°,IG
3.4	III	2.6	5470	4340	500	3484	56	T,S,C,X,IG
3.2	I	1.2	5970	2905	560	3374	56	T,S,C,X°,IG
3.2	II, III	2.4	5804	4340	560	3484	56	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
2.9	I	1.1	6692	2905	630	3374	56	T,S,C,X°,IG
2.7	II, III	2.1	6893	4340	630	3484	56	T,S,C,X,IG
2.6	I, II	1.9	7288	4340	710	3484	56	T,S,C,X,IG
2.4	III	3+	7869	4580	710	3594	56	T,S,C,X,IG
2.2	I, II	1.7	8329	4340	800	3484	56	T,S,C,X,IG
2.1	III	3+	8785	4580	800	3594	56	T,S,C,X,IG
2.0	I, II	1.5	9298	4340	900	3484	56	T,S,C,X,IG
1.9	III	2.7	9849	4580	900	3594	56	T,S,C,X,IG
1.8	I, II	1.4	10423	4340	1000	3484	56	T,S,C,X,IG
1.6	II, III	2.4	11403	4580	1000	3594	56	T,S,C,X,IG
1.6	I	1.2	12069	4340	1120	3484	56	T,S,C,X,IG
1.5	II, III	2.1	12521	4580	1120	3594	56	T,S,C,X,IG
1.4	I	1.1	13253	4340	1250	3484	56	T,S,C,X,IG
1.3	II	1.9	14359	4580	1250	3594	56	T,S,C,X,IG
1.2	I, II	1.7	15845	4580	1400	3594	56	T,S,C,X,IG
1.1	I, II	1.7	16064	4580	1600	3595	56	T,S,C,X,IG
1.0	I, II	1.5	18177	4580	1800	3595	56	T,S,C,X,IG
.89	I	1.3	20421	4580	2000	3595	56	T,S,C,X,IG
.78	I	1.1	23594	4580	2240	3595	56	T,S,C,X,IG
.69	I	1.0	26638	4580	2500	3595	56	T,S,C,X,IG
.65	-	.97	28259	4580	2800	3595	56	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1411	I, II, III	3+	22	163	1.25	3001	56	T,S,C,X°,IG
1199	I, II, III	3+	26	171	1.4	3001	56	T,S,C,X°,IG
1136	I, II, III	3+	27	173	1.6	3001	56	T,S,C,X°,IG
956	I, II, III	3+	32	182	1.8	3001	56	T,S,C,X°,IG
893	I, II, III	3+	35	185	2	3001	56	T,S,C,X°,IG
799	I, II, III	3+	39	191	2.24	3001	56	T,S,C,X°,IG
686	I, II, III	3+	45	198	2.5	3001	56	T,S,C,X°,IG
636	I, II, III	3+	49	202	2.8	3001	56	T,S,C,X°,IG
540	I, II, III	3+	57	209	3.15	3001	56	T,S,C,X°,IG
482	I, II, III	3+	64	214	3.55	3001	56	T,S,C,X°,IG
429	I, II, III	3+	72	220	4	3001	56	T,S,C,X°,IG
382	I, II, III	3+	81	224	4.5	3001	56	T,S,C,X°,IG
338	I, II, III	2.0	91	229	5	3001	56	T,S,C,X°,IG
338	I, II, III	2.0	103	233	5.6	3001	56	T,S,C,X°,IG
273	I, II, III	2.0	113	236	6.3	3001	56	T,S,C,X°,IG
242	I, II, III	2.0	127	239	7.1	3001	56	T,S,C,X°,IG
215	I, II	1.8	143	241	8	3001	56	T,S,C,X°,IG
214	III	3+	141	505	8	3012	56	T,S,C,X°,IG
204	I, II, III	3+	148	513	9	3012	56	T,S,C,X°,IG
172	I, II, III	3+	176	540	10	3012	56	T,S,C,X°,IG
160	I, II, III	3+	189	551	11.2	3012	56	T,S,C,X°,IG
143	I, II, III	3+	211	569	12.5	3012	56	T,S,C,X°,IG
123	I, II, III	3+	246	584	14	3012	56	T,S,C,X°,IG
114	I, II, III	2.9	265	590	16	3012	56	T,S,C,X°,IG
97	I, II, III	2.5	312	600	18	3012	56	T,S,C,X°,IG
86	I, II, III	2.2	350	600	20	3012	56	T,S,C,X°,IG
77	I, II, III	2.0	393	600	22.4	3012	56	T,S,C,X°,IG
68	I, II	1.8	442	600	25	3012	56	T,S,C,X°,IG
69	III	2.0	439	1027	25	3122	56	T,S,C,X,IG
64	III	3+	471	1062	28	3132	56	T,S,C,X,IG
61	I, II	1.6	499	600	28	3012	56	T,S,C,X°,IG
57	I, II, III	3+	528	1097	31.5	3132	56	T,S,C,X,IG
52	I, II	1.4	562	600	31.5	3012	56	T,S,C,X°,IG
49	I	1.3	618	600	35.5	3012	56	T,S,C,X°,IG
49	II, III	2.9	611	1141	35.5	3132	56	T,S,C,X,IG
45	I, II, III	2.7	671	1170	40	3132	56	T,S,C,X,IG
43	I	1.1	697	589	40	3012	56	T,S,C,X°,IG
39	I	1.0	784	572	45	3012	56	T,S,C,X°,IG
39	II, III	2.0	770	1212	45	3132	56	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115V, 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
36	I	1.1	832	600	50	3013	56	T,S,C,X°,IG
36	II, III	2.0	850	1243	50	3132	56	T,S,C,X, IG
30	I, II	1.4	979	1297	56	3133	56	T,S,C,X, IG
30	III	3+	943	1610	56	3253	56	T,S,C,X,IG
27	I	1.3	1104	1335	63	3133	56	T,S,C,X,IG
27	II, III	3+	1087	1610	63	3253	56	T,S,C,X,IG
25	I	1.2	1172	1345	71	3133	56	T,S,C,X,IG
25	II, III	3.5	1161	1610	71	3253	56	T,S,C,X,IG
22	I	1.1	1392	1345	80	3133	56	T,S,C,X,IG
22	II, III	3+	1318	1610	80	3253	56	T,S,C,X,IG
20	I	1.0	1472	1345	90	3133	56	T,S,C,X,IG
20	II, III	2.7	1464	1610	90	3253	56	T,S,C,X,IG
18	I	1.0	1682	1345	100	3133	56	T,S,C,X,IG
18	II, III	2.4	1663	1610	100	3253	56	T,S,C,X,IG
16	I, II, III	2.2	1850	1610	112	3253	56	T,S,C,X,IG
14.2	I, II	1.9	2081	1610	125	3253	56	T,S,C,X,IG
14.1	III	2.9	2125	2305	125	3363	56	T,S,C,X,IG
12.1	I, II	1.6	2440	1610	140	3253	56	T,S,C,X,IG
12.4	III	2.6	2375	2305	140	3363	56	T,S,C,X,IG
11.0	I, II	1.5	2693	1610	160	3253	56	T,S,C,X,IG
10.8	III	2.2	2743	2305	160	3363	56	T,S,C,X,IG
10.0	I, II	1.4	2953	1610	180	3253	56	T,S,C,X,IG
9.7	III	2.0	3065	2305	180	3363	56	T,S,C,X,IG
8.7	I	1.2	3448	1610	200	3253	56	T,S,C,X,IG
8.7	II	1.8	3393	2305	200	3363	56	T,S,C,X,IG
8.7	III	2.2	3393	2905	200	3373	56	T,S,C,X,IG
7.9	I, II	1.2	3661	1610	224	3254	56	T,S,C,X°,IG
7.9	III	2.1	3661	2905	224	3374	56	T,S,C,X°,IG
7.2	III	3+	3914	4340	250	3484	56	T,S,C,X,IG
7.1	I, II	1.7	4092	2905	250	3374	56	T,S,C,X°,IG
6.7	I, II	1.7	4307	2905	280	3374	56	T,S,C,X°,IG
6.4	III	3+	4431	4340	280	3484	56	T,S,C,X,IG
5.7	I, II	1.4	5103	2905	315	3374	56	T,S,C,X°,IG
5.7	III	2.8	5000	4340	315	3484	56	T,S,C,X,IG
5.3	I	1.3	5467	2905	355	3374	56	T,S,C,X°,IG
5.0	II, III	2.5	5656	4340	355	3484	56	T,S,C,X,IG
4.7	I	1.2	6130	2905	400	3374	56	T,S,C,X°,IG
4.4	II, III	2.2	6426	4340	400	3484	56	T,S,C,X,IG
4.1	I	1.0	7140	2905	450	3374	56	T,S,C,X°,IG

◊ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575V

X° Explosionproof, CL1 group D, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 1/115V, 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
3.9	I, II	1.9	7342	4340	450	3484	56	T,S,C,X,IG
3.4	I, II	1.7	8288	4340	500	3484	56	T,S,C,X,IG
3.4	III	3+	8309	4580	500	3594	56	T,S,C,X,IG
3.2	I, II	1.6	8794	4340	560	3484	56	T,S,C,X,IG
2.9	III	2.7	9866	4580	560	3594	56	T,S,C,X,IG
2.7	I, II	1.4	10443	4340	630	3484	56	T,S,C,X,IG
2.7	III	2.6	10434	4580	630	3594	56	T,S,C,X,IG
2.6	I	1.3	11043	4340	710	3484	56	T,S,C,X,IG
2.4	III	2.3	11923	4580	710	3594	56	T,S,C,X,IG
2.2	I	1.1	12620	4340	800	3484	56	T,S,C,X,IG
2.1	II, III	2.0	13310	4580	800	3594	56	T,S,C,X,IG
2.0	I	1.0	14088	4340	900	3484	56	T,S,C,X,IG
1.9	II	1.8	14923	4580	900	3594	56	T,S,C,X,IG
1.88	III	2.1	14600	7634	900	2605A	56	T,S,C,X,IG
1.75	III	2.9	17026	10470	1000	2704A	56	T,S,C,X,IG
1.62	II	1.9	16798	7482	1000	2605A	56	T,S,C,X,IG
1.6	I, II	1.6	17278	4580	1000	3594	56	T,S,C,X,IG
1.5	I, II	1.4	18971	4580	1120	3594	56	T,S,C,X,IG
1.44	II	1.7	18719	7328	1120	2605A	56	T,S,C,X,IG
1.44	III	2.6	18719	10459	1120	2705A	56	T,S,C,X,IG
1.3	I	1.2	21756	4580	1250	3594	56	T,S,C,X,IG
1.2	I	1.1	24008	4580	1400	3594	56	T,S,C,X,IG
1.2	I	1.3	23764	6821	1400	2605A	56	T,S,C,X,IG
1.1	II, III	2.1	23634	10441	1400	2705A	56	T,S,C,X,IG
1.1	I	1.1	24340	4580	1600	3595	56	T,S,C,X,IG
1.0	I	1.0	27541	4580	1800	3595	56	T,S,C,X,IG
1.0	III	3.0+	28665	13088	1800	2805A	56	T,S,C,X,IG
.94	I	1.1	29559	6017	1800	2605A	56	T,S,C,X,IG
.94	II	1.6	30031	10421	1800	2705A	56	T,S,C,X,IG
.77	II, III	2.5	35141	12813	2240	2806A	56	T,S,C,X,IG
.74	I	1.3	37340	10395	2240	2705A	56	T,S,C,X,IG
.61	I	1.0	47496	10359	2800	2705A	56	T,S,C,X,IG
.61	II, III	2.0	44202	12318	2800	2806A	56	T,S,C,X,IG
.49	I, II	1.5	57792	11305	3550	2806A	56	T,S,C,X,IG
.49	III	2.5	57856	15664	3550	2906A	56	T,S,C,X,IG
.39	I	1.2	73473	9604	4500	2806A	56	T,S,C,X,IG
.39	II, III	2.0	73473	14983	4500	2906A	56	T,S,C,X,IG
.32	I, II	1.6	88228	14149	5600	2906A	56	T,S,C,X,IG
.27	I, II	1.4	102887	13102	6300	2906A	56	T,S,C,X,IG

◇ Standard Motor Types (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115V, 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1411	I, II, III	3+	33	150	1.25	3001	56	T,S,C,X°,IG
1199	I, II, III	3+	39	156	1.4	3001	56	T,S,C,X°,IG
1136	I, II, III	3+	41	158	1.6	3001	56	T,S,C,X°,IG
956	I, II, III	3+	48	165	1.8	3001	56	T,S,C,X°,IG
893	I, II, III	3+	52	167	2	3001	56	T,S,C,X°,IG
799	I, II, III	3+	58	171	2.24	3001	56	T,S,C,X°,IG
686	I, II, III	3+	67	176	2.5	3001	56	T,S,C,X°,IG
636	I, II, III	3+	73	179	2.8	3001	56	T,S,C,X°,IG
540	I, II, III	3+	86	183	3.15	3001	56	T,S,C,X°,IG
482	I, II, III	3+	96	186	3.55	3001	56	T,S,C,X°,IG
429	I, II, III	3+	108	188	4	3001	56	T,S,C,X°,IG
382	I, II, III	3.0	121	190	4.5	3001	56	T,S,C,X°,IG
338	I, II	1.4	137	191	5	3001	56	T,S,C,X°,IG
356	III	3+	130	427	5	3101	56	T,S,C,X,IG
301	I, II	1.4	154	191	5.6	3001	56	T,S,C,X°,IG
308	III	2.9	151	447	5.6	3101	56	T,S,C,X,IG
273	I, II	1.4	169	190	6.3	3001	56	T,S,C,X°,IG
280	III	2.7	165	459	6.3	3101	56	T,S,C,X,IG
242	I	1.3	191	188	7.1	3001	56	T,S,C,X°,IG
237	II, III	3+	180	469	7.1	3012	56	T,S,C,X°,IG
215	I	1.2	215	185	8	3001	56	T,S,C,X°,IG
214	II, III	3+	212	481	8	3012	56	T,S,C,X°,IG
204	I, III, III	3+	223	484	9	3012	56	T,S,C,X°,IG
172	I, III, III	2.9	264	493	10	3012	56	T,S,C,X°,IG
160	I, III, III	2.7	283	495	11.2	3012	56	T,S,C,X°,IG
143	I, III, III	2.4	317	499	12.5	3012	56	T,S,C,X°,IG
123	I, III, III	2.1	369	500	14	3012	56	T,S,C,X°,IG
114	I, II	1.9	398	500	16	3012	56	T,S,C,X°,IG
111	III	3.1	409	869	16	3122	56	T,S,C,X,IG
97	I, II	1.7	468	495	18	3012	56	T,S,C,X°,IG
96	III	2.6	474	903	18	3122	56	T,S,C,X,IG
87	I, II	1.5	525	488	20	3012	56	T,S,C,X°,IG
87	III	2.4	520	925	20	3122	56	T,S,C,X,IG
82	II, III	3.2	520	933	22.4	3132	56	T,S,C,X,IG
77	I	1.3	590	477	22.4	3012	56	T,S,C,X°,IG
69	I	1.2	664	462	25	3012	56	T,S,C,X°,IG
69	II	1.4	597	957	25	3122	56	T,S,C,X,IG
69	III	2.8	658	980	25	3132	56	T,S,C,X,IG
64	II, III	2.5	707	1020	28	3132	56	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575V

X° Explosionproof, CL1 group D, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
61	I	1.1	748	442	28	3012	56	T,S,C,X°,IG
57	I, II, III	2.2	792	1049	31.5	3132	56	T,S,C,X,IG
49	I, II	1.9	917	1086	35.5	3132	56	T,S,C,X,IG
49	III	3+	921	1500	35.5	3252	56	T,S,C,X,IG
45	I, II	1.8	1007	1109	40	3132	56	T,S,C,X,IG
45	III	3+	1016	1541	40	3252	56	T,S,C,X,IG
41	II, III	3+	1115	1580	45	3252	56	T,S,C,X,IG
39	I	1.3	1155	1142	45	3132	56	T,S,C,X,IG
36	I	1.3	1274	1166	50	3132	56	T,S,C,X,IG
35	II, III	3+	1302	1610	50	3252	56	T,S,C,X,IG
31	I, II, III	2.8	1414	1610	56	3253	56	T,S,C,X,IG
27	I, II, III	2.5	1630	1610	63	3253	56	T,S,C,X,IG
26	I, II, III	2.3	1742	1610	71	3253	56	T,S,C,X,IG
22	I, II, III	2.0	1977	1610	80	3253	56	T,S,C,X,IG
20	I, II	1.8	2196	1610	90	3253	56	T,S,C,X,IG
19	III	2.7	2335	2305	90	3363	56	T,S,C,X,IG
18	I, II	1.6	2494	1610	100	3253	56	T,S,C,X,IG
17	III	2.4	2450	2305	100	3363	56	T,S,C,X,IG
16	I, II	1.5	2775	1610	112	3253	56	T,S,C,X,IG
15	III	2.1	2769	2305	112	3363	56	T,S,C,X,IG
14	I	1.3	3122	1610	125	3253	56	T,S,C,X,IG
14	II	1.9	3188	2305	125	3363	56	T,S,C,X,IG
14	III	2.4	3188	2905	125	3373	56	T,S,C,X,IG
12	I	1.1	3659	1610	140	3253	56	T,S,C,X,IG
12	II	1.9	3563	2305	140	3363	56	T,S,C,X,IG
12	III	2.1	3563	2905	140	3373	56	T,S,C,X,IG
11.3	III	3+	3768	4340	160	3483	56	T,S,C,X,IG
11.0	I	1.0	4039	1610	160	3253	56	T,S,C,X,IG
10.8	II	1.5	3943	2305	160	3363	56	T,S,C,X,IG
10.8	II	1.9	3940	2905	160	3373	56	T,S,C,X,IG
10.2	II, III	3+	4183	4340	180	3483	56	T,S,C,X,IG
9.7	I	1.3	4598	2305	180	3363	56	T,S,C,X,IG
9.7	II	1.7	4598	2905	180	3373	56	T,S,C,X,IG
8.7	I	1.2	5089	2305	200	3363	56	T,S,C,X,IG
8.7	II	1.5	5089	2905	200	3373	56	T,S,C,X,IG
8.6	III	2.9	4959	4340	200	3483	56	T,S,C,X,IG
7.9	I, II	1.4	5492	2905	224	3374	56	T,S,C,X°,IG
7.6	III	2.5	5574	4340	224	3484	56	T,S,C,X,IG
7.2	II, III	2.4	5871	4340	250	3484	56	T,S,C,X,IG
7.1	I	1.2	6138	2905	250	3374	56	T,S,C,X°,IG
6.5	I	1.1	6685	2905	280	3374	56	T,S,C,X°,IG
6.4	II, III	2.1	6646	4340	280	3484	56	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

Gearmotors 3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
5.7	I, II	1.9	7500	4340	315	3484	56	T,S,C,X,IG
5.3	III	3+	8015	4580	315	3594	56	T,S,C,X,IG
5.0	I, II	1.7	8484	4340	355	3484	56	T,S,C,X,IG
4.7	III	3.0	9104	4580	355	3594	56	T,S,C,X,IG
4.4	I, II	1.5	9639	4340	400	3484	56	T,S,C,X,IG
4.1	III	2.6	10405	4580	400	3594	56	T,S,C,X,IG
3.9	I	1.3	11012	4340	450	3484	56	T,S,C,X,IG
3.6	II, III	2.3	11744	4580	450	3594	56	T,S,C,X,IG
3.4	I	1.1	12432	4340	500	3484	56	T,S,C,X,IG
3.4	II, III	2.2	12464	4580	500	3594	56	T,S,C,X,IG
3.2	I	1.1	13190	4340	560	3484	56	T,S,C,X,IG
3.1	III	2.2	14176	7661	560	2604A	56	T,S,C,X,IG
2.9	I, II	1.8	14800	4580	560	3594	56	T,S,C,X,IG
2.7	I, II	1.7	15651	4580	630	3594	56	T,S,C,X,IG
2.7	III	2.0	15795	7554	630	2604A	56	T,S,C,X,IG
2.4	I, II	1.5	18282	4580	710	3594	56	T,S,C,X,IG
2.4	II	1.8	17589	7421	710	2604A	56	T,S,C,X,IG
2.4	III	2.8	17888	10467	710	2704A	56	T,S,C,X,IG
2.1	I	1.3	20407	4580	800	3594	56	T,S,C,X,IG
2.1	II	1.6	19757	7236	800	2604A	56	T,S,C,X,IG
2.2	III	2.5	19948	10451	800	2704A	56	T,S,C,X,IG
1.9	I, II	1.4	21901	7027	900	2605A	56	T,S,C,X,IG
1.9	III	2.2	22584	10430	900	2704A	56	T,S,C,X,IG
1.9	I	1.2	22882	4580	900	3594	56	T,S,C,X,IG
1.7	II	1.9	25539	10404	1000	2704A	56	T,S,C,X,IG
1.7	III	3.0+	23976	13250	1000	2805A	56	T,S,C,X,IG
1.6	I	1.2	25197	6647	1000	2605A	56	T,S,C,X,IG
1.6	I	1.0	26492	4580	1000	3594	56	T,S,C,X,IG
1.6	III	3.0+	27590	13128	1120	2805A	56	T,S,C,X,IG
1.5	II	1.8	28078	10380	1120	2705A	56	T,S,C,X,IG
1.4	I	1.1	28078	6249	1120	2605A	56	T,S,C,X,IG
1.2	I, II	1.4	35451	10339	1400	2705A	56	T,S,C,X,IG
1.2	III	2.6	33816	12874	1400	2805A	56	T,S,C,X,IG
1.0	II, III	2.1	42997	12392	1800	2805A	56	T,S,C,X,IG
.94	I	1.1	45047	10294	1800	2705A	56	T,S,C,X,IG
.77	I, II	1.7	52712	11726	2240	2806A	56	T,S,C,X,IG
.77	III	2.7	52712	15848	2240	2906A	56	T,S,C,X,IG
.61	I	1.3	66302	10467	2800	2806A	56	T,S,C,X,IG
.61	II, III	2.2	66302	15319	2800	2906A	56	T,S,C,X,IG
.50	I, II	1.7	86784	14239	3550	2906A	56	T,S,C,X,IG
.39	I	1.3	110209	12481	4500	2906A	56	T,S,C,X,IG
.32	I	1.1	132342	10555	5600	2906A	56	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 1/115VAC, 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1411	I, II, III	3.1	44	137	1.25	3001	143T	T,S,C,X°,IG
1199	I, II, III	3.1	52	142	1.4	3001	143T	T,S,C,X°,IG
1136	I, II, III	3.1	54	143	1.6	3001	143T	T,S,C,X°,IG
956	I, II, III	3.1	64	148	1.8	3001	143T	T,S,C,X°,IG
893	I, II, III	3.1	69	150	2	3001	143T	T,S,C,X°,IG
799	I, II, III	3.1	77	152	2.24	3001	143T	T,S,C,X°,IG
686	I, II, III	3.1	90	155	2.5	3001	143T	T,S,C,X°,IG
636	I, II, III	3.1	97	156	2.8	3001	143T	T,S,C,X°,IG
540	I, II, III	3.0	114	158	3.15	3001	143T	T,S,C,X°,IG
482	I, II, III	2.7	128	158	3.55	3001	143T	T,S,C,X°,IG
429	I, II, III	2.6	144	157	4	3001	143T	T,S,C,X°,IG
382	I, II, III	2.2	162	156	4.5	3001	143T	T,S,C,X°,IG
338	I	1.0	182	153	5	3001	143T	T,S,C,X°,IG
356	I, II, III	2.6	174	419	5	3101	143T	T,S,C,X,IG
308	I, II, III	2.2	201	437	5.6	3101	143T	T,S,C,X,IG
301	I, II, III	1.0	205	149	5.6	3001	143T	T,S,C,X°,IG
273	I	1.0	226	145	6.3	3001	143T	T,S,C,X°,IG
280	I, II, III	2.0	221	448	6.3	3101	143T	T,S,C,X,IG
242	I	1.0	255	137	7.1	3001	143T	T,S,C,X°,IG
237	I, II, III	2.7	240	428	7.1	3012	143T	T,S,C,X°,IG
214	I, II, III	2.7	282	432	8	3012	143T	T,S,C,X°,IG
204	I, II, III	2.6	297	433	9	3012	143T	T,S,C,X°,IG
172	I, II, III	2.2	353	433	10	3012	143T	T,S,C,X°,IG
160	I, II, III	2.0	378	431	11.2	3012	143T	T,S,C,X°,IG
143	I, II	1.8	423	427	12.5	3012	143T	T,S,C,X°,IG
139	III	2.9	436	794	12.5	3122	143T	T,S,C,X,IG
124	I, II	1.6	492	416	14	3012	143T	T,S,C,X°,IG
124	III	2.6	487	816	14	3122	143T	T,S,C,X,IG
114	I, II	1.5	531	409	16	3012	143T	T,S,C,X°,IG
111	III	2.3	546	839	16	3122	143T	T,S,C,X,IG
97	I	1.3	625	388	18	3012	143T	T,S,C,X°,IG
96	II, III	2.0	632	869	18	3122	143T	T,S,C,X,IG
86	I	1.1	700	368	20	3012	143T	T,S,C,X,IG
87	II	1.8	694	887	20	3122	143T	T,S,C,X,IG
87	III	2.5	878	932	20	3132	143T	T,S,C,X,IG
82	II, III	2.4	739	924	22.4	3132	143T	T,S,C,X,IG
77	I	1.0	787	343	22.4	3012	143T	T,S,C,X°,IG
72	II, III	2.1	844	953	25	3132	143T	T,S,C,X,IG
69	I	1.0	795	914	25	3122	143T	T,S,C,X,IG
64	I, II	1.9	942	977	28	3132	143T	T,S,C,X,IG
58	I, II	1.7	1056	1001	31.5	3132	143T	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
58	III	3.8	1047	1398	31.5	3252	143T	T,S,C,X,IG
49	I, II	1.5	1223	1030	35.5	3132	143T	T,S,C,X,IG
49	III	3.3	1228	1456	35.5	3252	143T	T,S,C,X,IG
45	I	1.3	1343	1048	40	3132	143T	T,S,C,X,IG
45	II, III	3.0	1355	1493	40	3252	143T	T,S,C,X,IG
41	II, III	2.7	1486	1526	45	3252	143T	T,S,C,X,IG
39	I	1.0	1540	1072	45	3132	143T	T,S,C,X,IG
36	I	1.0	1699	1089	50	3132	143T	T,S,C,X,IG
35	II, III	2.3	1735	1583	50	3252	143T	T,S,C,X,IG
31	I, II, III	2.1	1886	1610	56	3253	143T	T,S,C,X,IG
27	I, II	1.9	2173	1610	63	3253	143T	T,S,C,X,IG
26	III	2.7	2238	2305	63	3363	143T	T,S,C,X,IG
26	I, II	1.7	2323	1610	71	3253	143T	T,S,C,X,IG
24	III	2.4	2364	2305	71	3363	143T	T,S,C,X,IG
22	I, II	1.5	2636	1610	80	3253	143T	T,S,C,X,IG
22	III	2.2	2653	2305	80	3363	143T	T,S,C,X,IG
20	I, II	1.4	2928	1610	90	3253	143T	T,S,C,X,IG
19	III	2.0	3003	2305	90	3363	143T	T,S,C,X,IG
18	I	1.2	3326	1610	100	3253	143T	T,S,C,X,IG
17	II	1.8	3266	2305	100	3363	143T	T,S,C,X,IG
17	III	2.2	3246	2905	100	3373	143T	T,S,C,X,IG
16	I	1.1	3700	1610	112	3253	143T	T,S,C,X,IG
15	II	1.6	3652	2305	112	3363	143T	T,S,C,X,IG
15	III	2.0	3632	2905	112	3373	143T	T,S,C,X,IG
14	I	1.0	4163	1610	125	3253	143T	T,S,C,X,IG
14	II	1.5	4251	2305	125	3363	143T	T,S,C,X,IG
14	II	1.8	4216	2905	125	3373	143T	T,S,C,X,IG
14	III	3+	4377	4340	125	3483	143T	T,S,C,X,IG
12.5	III	3.0	4750	4340	140	3483	143T	T,S,C,X,IG
12.4	I	1.3	4750	2305	140	3363	143T	T,S,C,X,IG
12.4	II	1.6	4720	2905	140	3373	143T	T,S,C,X,IG
11.3	III	2.7	5247	4340	160	3483	143T	T,S,C,X,IG
10.8	I	1.1	5258	2305	160	3363	143T	T,S,C,X,IG
10.8	II	1.4	5238	2905	160	3373	143T	T,S,C,X,IG
10.2	III	2.5	5826	4340	180	3483	143T	T,S,C,X,IG
9.7	I	1.0	6130	2305	180	3363	143T	T,S,C,X,IG
9.7	I	1.2	6105	2905	180	3373	143T	T,S,C,X,IG
8.7	I	1.1	6786	2905	200	3373	143T	T,S,C,X,IG
8.6	II, III	2.1	6906	4340	200	3483	143T	T,S,C,X,IG
7.9	I	1.0	6786	2905	224	3374	143T	T,S,C,X°,IG
7.7	II	1.9	7530	4340	224	3484	143T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
7.7	III	3+	7561	4580	224	3594	143T	T,S,C,X,IG
7.2	I, II	1.8	8002	4340	250	3484	143T	T,S,C,X,IG
6.8	III	3+	8558	4580	250	3594	143T	T,S,C,X,IG
6.4	I, II	1.6	9059	4340	280	3484	143T	T,S,C,X,IG
6.0	III	2.8	9658	4580	280	3594	143T	T,S,C,X,IG
5.7	I, II	1.4	10222	4340	315	3484	143T	T,S,C,X,IG
5.3	III	2.5	10924	4580	315	3594	143T	T,S,C,X,IG
5.0	I	1.2	11563	4340	355	3484	143T	T,S,C,X,IG
4.7	I, II, III	2.2	12408	4580	355	3594	143T	T,S,C,X,IG
4.4	I	1.1	13137	4340	400	3484	143T	T,S,C,X,IG
4.1	II	1.9	14181	4580	400	3594	143T	T,S,C,X,IG
3.9	-	0.95	15009	4340	450	3484	143T	T,S,C,X,IG
3.6	I, II	1.7	16003	4580	450	3594	143T	T,S,C,X,IG
3.5	III	2.9	17074	10470	500	2704A	143T	T,S,C,X,IG
3.4	I, II	1.6	16987	4580	500	3594	143T	T,S,C,X,IG
3	II	1.7	18901	7312	560	2604A	143T	T,S,C,X,IG
3	III	2.6	18768	10459	560	2704A	143T	T,S,C,X,IG
2.9	I	1.3	20105	4580	560	3594	143T	T,S,C,X,IG
2.7	I	1.3	21331	4580	630	3594	143T	T,S,C,X,IG
2.7	II	1.5	21060	7112	630	2604A	143T	T,S,C,X,IG
2.7	III	2.3	21426	10440	630	2704A	143T	T,S,C,X,IG
2.4	I	1.1	24376	4580	710	3594	143T	T,S,C,X,IG
2.4	II	1.4	23452	6857	710	2604A	143T	T,S,C,X,IG
2.4	III	2.1	23851	10424	710	2704A	143T	T,S,C,X,IG
2.1	-	0.99	27212	4580	800	3594	143T	T,S,C,X,IG
2.1	II	1.9	26597	10394	800	2704A	143T	T,S,C,X,IG
2.1	III	3.0+	25718	13194	800	2805A	143T	T,S,C,X,IG
2.0	III	3.0+	29234	13067	900	2805A	143T	T,S,C,X,IG
1.9	I	1.1	29201	6075	900	2605A	143T	T,S,C,X,IG
1.9	II	1.6	30113	10358	900	2704A	143T	T,S,C,X,IG
1.75	I, II	1.5	34052	10312	1000	2704A	143T	T,S,C,X,IG
1.72	III	2.8	31968	12955	1000	2805A	143T	T,S,C,X,IG
1.5	I	1.3	37437	10267	1120	2705A	143T	T,S,C,X,IG
1.5	II, III	2.4	36786	12733	1120	2805A	143T	T,S,C,X,IG
1.3	II, III	2.0	45087	12263	1400	2806A	143T	T,S,C,X,IG
1.1	I	1.0	47269	10193	1400	2705A	143T	T,S,C,X,IG
1.0	I, II	1.6	57330	11345	1800	2806A	143T	T,S,C,X,IG
1.0	III	2.5	57330	15684	1800	2906A	143T	T,S,C,X,IG
.77	I	1.3	70282	10008	2240	2806A	143T	T,S,C,X,IG
.77	II, III	2.0	70282	15138	2240	2906A	143T	T,S,C,X,IG
.61	I, II	1.6	88403	14138	2800	2906A	143T	T,S,C,X,IG
.50	I	1.2	115712	11963	3550	2906A	143T	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/230VAC, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
1411	I, II, III	2.0	66	110	1.25	3001	145T	T,S,C,X°,IG
1199	I, II, III	2.0	77	112	1.4	3001	145T	T,S,C,X°,IG
1136	I, II, III	2.0	81	113	1.6	3001	145T	T,S,C,X°,IG
956	I, II, III	2.0	97	114	1.8	3001	145T	T,S,C,X°,IG
893	I, II, III	2.0	104	114	2	3001	145T	T,S,C,X°,IG
799	I, II, III	2.0	116	114	2.24	3001	145T	T,S,C,X°,IG
686	I, II, III	2.0	135	112	2.5	3001	145T	T,S,C,X°,IG
636	I, II, III	2.0	146	111	2.8	3001	145T	T,S,C,X°,IG
540	I, II, III	2.0	171	106	3.15	3001	145T	T,S,C,X°,IG
509	I, II, III	2.4	182	364	3.55	3101	145T	T,S,C,X,IG
482	I, II	1.8	192	101	3.55	3001	145T	T,S,C,X°,IG
445	I, II, III	2.1	208	377	4	3101	145T	T,S,C,X,IG
429	I, II	1.7	216	95	4	3001	145T	T,S,C,X°,IG
401	I, II	1.9	232	389	4.5	3101	145T	T,S,C,X,IG
382	I, II	1.5	243	87	4.5	3001	145T	T,S,C,X°,IG
356	I, II	1.7	260	401	5	3101	145T	T,S,C,X,IG
351	III	4.1	259	596	5	3122	145T	T,S,C,X,IG
310	I, II, III	3+	293	616	5.6	3122	145T	T,S,C,X,IG
308	I, II	1.5	301	417	5.6	3101	145T	T,S,C,X,IG
280	I	1.3	331	426	6.3	3101	145T	T,S,C,X,IG
273	II, III	3+	333	637	6.3	3122	145T	T,S,C,X,IG
238	I, II	1.8	359	347	7.1	3012	145T	T,S,C,X°,IG
238	III	3+	365	652	7.1	3122	145T	T,S,C,X,IG
214	I, II	1.8	423	336	8	3012	145T	T,S,C,X°,IG
211	III	2.9	381	659	8	3122	145T	T,S,C,X,IG
204	I, II	1.7	445	332	9	3012	145T	T,S,C,X°,IG
199	III	2.7	456	689	9	3122	145T	T,S,C,X,IG
172	I,II	1.4	529	312	10	3012	145T	T,S,C,X°,IG
168	III	2.3	541	679	10	3122	145T	T,S,C,X,IG
160	I, II	1.4	567	302	11.2	3012	145T	T,S,C,X°,IG
159	III	2.2	572	726	11.2	3122	145T	T,S,C,X,IG
143	I	1.2	634	282	12.5	3012	145T	T,S,C,X°,IG
140	II	1.9	654	689	12.5	3122	145T	T,S,C,X,IG
140	III	2.5	645	781	12.5	3132	145T	T,S,C,X,IG
123	I	1.0	738	248	14	3012	145T	T,S,C,X°,IG
123	II	1.7	730	717	14	3122	145T	T,S,C,X,IG
123	III	2.3	737	801	14	3132	145T	T,S,C,X,IG
114	I	1.0	796	228	16	3012	145T	T,S,C,X°,IG
111	II	1.5	819	726	16	3122	145T	T,S,C,X,IG
109	III	2.1	831	813	16	3132	145T	T,S,C,X,IG
103	II, III	2.0	882	821	18	3132	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-34 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 115/230 volts, 145TY
 C Corro-Duty®, three phase, 230/460 or 575V
 X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
 IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
96	I	1.3	948	747	18	3122	145T	T,S,C,X,IG
88	I	1.2	1041	764	20	3122	145T	T,S,C,X,IG
88	II	1.7	1047	849	20	3132	145T	T,S,C,X,IG
88	III	2.1	1041	1175	20	3242	145T	T,S,C,X,IG
82	I, II	1.6	1108	857	22.4	3132	145T	T,S,C,X,IG
80	III	2.0	1193	1212	22.4	3242	145T	T,S,C,X,IG
72	I, II	1.4	1266	877	25	3132	145T	T,S,C,X,IG
72	III	3.1	1255	1256	25	3252	145T	T,S,C,X,IG
69	I, II	1.7	1317	1238	25	3242	145T	T,S,C,X,IG
65	I	1.3	1413	891	28	3132	145T	T,S,C,X,IG
65	II, III	2.8	1397	1288	28	3252	145T	T,S,C,X,IG
57	I	1.1	1585	905	31.5	3132	145T	T,S,C,X,IG
58	II, III	2.5	1571	1323	31.5	3252	145T	T,S,C,X,IG
49	I	1.0	1834	919	35.5	3132	145T	T,S,C,X,IG
49	II, III	2.2	1842	1368	35.5	3252	145T	T,S,C,X,IG
45	I, II, III	2.0	2033	1396	40	3252	145T	T,S,C,X,IG
41	I, II	1.8	2229	1420	45	3252	145T	T,S,C,X,IG
39	III	2.6	2265	2305	45	3363	145T	T,S,C,X,IG
35	I, II	1.5	2603	1459	50	3252	145T	T,S,C,X,IG
34	III	2.3	2601	2305	50	3363	145T	T,S,C,X,IG
31	I, II	1.4	2828	1492	56	3253	145T	T,S,C,X,IG
30	III	2.1	2929	2305	56	3363	145T	T,S,C,X,IG
27	I	1.2	3260	1511	63	3253	145T	T,S,C,X,IG
26	II	1.8	3181	2305	63	3363	145T	T,S,C,X,IG
26	III	2.2	3417	2905	63	3373	145T	T,S,C,X,IG
26	I	1.2	3484	1534	71	3253	145T	T,S,C,X,IG
24	II	1.6	3704	2305	71	3363	145T	T,S,C,X,IG
24	III	2.0	3699	2905	71	3373	145T	T,S,C,X,IG
22	I	1.0	3954	1555	80	3253	145T	T,S,C,X,IG
22	II	1.5	3979	2305	80	3363	145T	T,S,C,X,IG
22	II	1.9	4039	2905	80	3373	145T	T,S,C,X,IG
22	III	3+	4069	4340	80	3483	145T	T,S,C,X,IG
19	I	1.3	4504	2305	90	3363	145T	T,S,C,X,IG
19	II	1.7	4576	2905	90	3373	145T	T,S,C,X,IG
19	III	3+	4604	4340	90	3483	145T	T,S,C,X,IG
17	I	1.2	5136	2305	100	3363	145T	T,S,C,X,IG
17	II	1.5	5116	2905	100	3373	145T	T,S,C,X,IG
17	III	2.7	5258	4340	100	3483	145T	T,S,C,X,IG
16	II, III	2.5	5642	4340	112	3483	145T	T,S,C,X,IG
15	I	1.0	5813	2305	112	3363	145T	T,S,C,X,IG
15	I	1.3	5798	2905	112	3373	145T	T,S,C,X,IG
14	I	1.2	6324	2905	125	3373	145T	T,S,C,X,IG
14	II, III	2.2	6565	4340	125	3483	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts, 145TY

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies



Gearmotors

CbN
SERIES **2000**
3000

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
12.5	II, III	2.0	7125	4340	140	3483	145T	T,S,C,X,IG
12	I	1.1	7125	2905	140	3373	145T	T,S,C,X,IG
11.3	I, II	1.8	7870	4340	160	3483	145T	T,S,C,X,IG
11.0	III	3+	8067	4580	160	3593	145T	T,S,C,X,IG
10.2	I, II	1.6	8739	4340	180	3483	145T	T,S,C,X,IG
10.1	III	3+	8776	4580	180	3593	145T	T,S,C,X,IG
8.6	I, II	1.4	10359	4340	200	3483	145T	T,S,C,X,IG
8.6	III	2.6	10333	4580	200	3593	145T	T,S,C,X,IG
7.7	I	1.3	11295	4340	224	3484	145T	T,S,C,X,IG
7.7	II, III	2.4	11341	4580	224	3594	145T	T,S,C,X,IG
7.2	I	1.2	12002	4580	250	3484	145T	T,S,C,X,IG
6.8	I, II, III	2.1	12837	4580	250	3594	145T	T,S,C,X,IG
6.4	I	1.1	13588	4580	280	3484	145T	T,S,C,X,IG
6.0	III	2.2	14101	7666	280	2604A	145T	T,C,S,X,IG
6.0	I, II	1.9	14487	4580	280	3594	145T	T,S,C,X,IG
5.5	III	2.0	15845	7551	315	2604A	145T	T,C,S,X,IG
5.3	I, II	1.6	16386	4580	315	3594	145T	T,S,C,X,IG
4.7	I, II	1.4	18613	4580	355	3594	145T	T,S,C,X,IG
4.7	III	2.8	17838	10465	355	2704A	145T	T,C,S,X,IG
4.1	I	1.3	21271	4580	400	3594	145T	T,S,C,X,IG
3.9	II	1.4	22273	6988	450	2604A	145T	T,C,S,X,IG
3.9	III	2.2	22622	10430	450	2704A	145T	T,C,S,X,IG
3.6	I	1.1	24010	4580	450	3594	145T	T,S,C,X,IG
3.5	II	1.9	25611	10404	500	2704A	145T	T,C,S,X,IG
3.4	I	1.1	25481	4580	500	3594	145T	T,S,C,X,IG
3	II	1.7	28153	10379	560	2704A	145T	T,C,S,X,IG
3	III	3.0+	28751	13085	560	2805A	145T	T,C,S,X,IG
2.8	I, II	1.5	32139	10335	630	2704A	145T	T,C,S,X,IG
2.6	III	2.8	31391	12980	630	2805A	145T	T,C,S,X,IG
2.5	I, II	1.4	35776	10299	710	2704A	145T	T,C,S,X,IG
2.3	III	2.4	36573	12743	710	2805A	145T	T,C,S,X,IG
2.2	I	1.2	39895	10232	800	2704A	145T	T,C,S,X,IG
2.1	II, III	2.3	38577	12641	800	2805A	145T	T,C,S,X,IG
1.95	I	1.1	45169	10148	900	2704A	145T	T,C,S,X,IG
1.95	II, III	2.0	43850	12340	900	2805A	145T	T,C,S,X,IG
1.75	I, II	1.9	47952	12074	1000	2805A	145T	T,C,S,X,IG
1.75	III	2.9	48880	15972	1000	2905A	145T	T,C,S,X,IG
1.6	I, II	1.6	55179	11528	1120	2805A	145T	T,C,S,X,IG
1.6	III	2.6	55894	15736	1120	2906A	145T	T,C,S,X,IG
1.3	I	1.3	67631	10319	1400	2805A	145T	T,C,S,X,IG
1.3	II, III	2.1	68336	15228	1400	2905A	145T	T,C,S,X,IG
1.0	I, II	1.7	85994	14288	1800	2906A	145T	T,C,S,X,IG
.61	I	1.1	132605	10020	2800	2906A	145T	T,C,S,X,IG

◊ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1434	I, II, III	3+	86	260	1.25	3101	145T	T,S,C,X,IG
1411	I, II, III	1.5	88	84	1.25	3001	145T	T,S,C,X°,IG
1268	I, II, III	3+	97	270	1.4	3101	145T	T,S,C,X,IG
1199	I, II	1.5	103	83	1.4	3001	145T	T,S,C,X°,IG
1136	I, II	1.5	109	83	1.6	3001	145T	T,S,C,X°,IG
1122	III	3+	110	280	1.6	3101	145T	T,S,C,X,IG
994	II, III	3.0	124	291	1.8	3101	145T	T,S,C,X,IG
956	I, II	1.5	129	80	1.8	3001	145T	T,S,C,X°,IG
893	I, II	1.5	138	79	2	3001	145T	T,S,C,X°,IG
875	III	2.8	141	302	2	3101	145T	T,S,C,X,IG
799	I, II	1.5	155	75	2.24	3001	145T	T,S,C,X°,IG
764	III	2.7	161	313	2.24	3101	145T	T,S,C,X,IG
686	I, II	1.5	180	69	2.5	3001	145T	T,S,C,X°,IG
678	III	2.4	182	324	2.5	3101	145T	T,S,C,X,IG
637	I, II	1.5	194	65	2.8	3001	145T	T,S,C,X°,IG
637	III	2.3	193	330	2.8	3101	145T	T,S,C,X,IG
540	I, II	1.5	228	54	3.15	3001	145T	T,S,C,X°,IG
538	II	1.9	229	345	3.15	3101	145T	T,S,C,X,IG
510	I, II	1.8	243	351	3.55	3101	145T	T,S,C,X,IG
510	III	2.9	245	456	3.55	3201	145T	T,S,C,X,IG
482	I, II	1.4	256	45	3.55	3001	145T	T,S,C,X°,IG
446	I, II	1.6	277	363	4	3101	145T	T,S,C,X,IG
446	III	3+	271	543	4	3122	145T	T,S,C,X,IG
429	I	1.3	288	33	4	3001	145T	T,S,C,X°,IG
401	I, II	1.4	310	373	4.5	3101	145T	T,S,C,X,IG
395	III	3+	306	561	4.5	3122	145T	T,S,C,X,IG
356	I	1.3	347	383	5	3101	145T	T,S,C,X,IG
351	II, III	3.1	345	578	5	3122	145T	T,S,C,X,IG
309	I	1.1	402	397	5.6	3101	145T	T,S,C,X,IG
309	II, III	3.0	391	595	5.6	3122	145T	T,S,C,X,IG
280	I	1.0	441	405	6.3	3101	145T	T,S,C,X,IG
273	II, III	2.8	444	613	6.3	3122	145T	T,S,C,X,IG
238	I	1.3	479	265	7.1	3012	145T	T,S,C,X°,IG
238	II, III	2.5	507	632	7.1	3122	145T	T,S,C,X,IG
214	I	1.3	564	240	8	3012	145T	T,S,C,X°,IG
211	II, III	2.2	573	648	8	3122	145T	T,S,C,X,IG
204	I	1.3	594	230	9	3012	145T	T,S,C,X°,IG
199	II, III	2.1	608	656	9	3122	145T	T,S,C,X,IG
181	I, II, III	2.2	668	691	10	3132	145T	T,S,C,X,IG
172	I	1.1	705	192	10	3012	145T	T,S,C,X°,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
168	II	1.7	721	678	10	3122	145T	T,S,C,X,IG
160	I	1.0	755	173	11.2	3012	145T	T,S,C,X°,IG
160	II	1.6	763	685	11.2	3122	145T	T,S,C,X,IG
160	III	2.0	756	709	11.2	3132	145T	T,S,C,X,IG
141	I, II	1.9	859	727	12.5	3132	145T	T,S,C,X,IG
139	I, II	1.4	872	700	12.5	3122	145T	T,S,C,X,IG
128	II, II	2.3	973	1035	14	3242	145T	T,S,C,X,IG
124	I	1.3	973	711	14	3122	145T	T,S,C,X,IG
123	II	1.7	982	745	14	3132	145T	T,S,C,X,IG
111	I	1.1	1091	722	16	3122	145T	T,S,C,X,IG
114	II, III	2.1	1091	1062	16	3242	145T	T,S,C,X,IG
109	I, II	1.6	1108	760	16	3132	145T	T,S,C,X,IG
103	I, II	1.5	1176	767	18	3132	145T	T,S,C,X,IG
97	II	1.8	1264	1096	18	3242	145T	T,S,C,X,IG
96	I	1.0	1264	733	18	3122	145T	T,S,C,X,IG
91	III	2.8	1326	1139	20	3252	145T	T,S,C,X,IG
88	I	1.3	1397	785	20	3132	145T	T,S,C,X,IG
88	II	1.6	1387	1116	20	3242	145T	T,S,C,X,IG
82	I	1.2	1477	790	22.4	3132	145T	T,S,C,X,IG
82	II, III	2.6	1473	1166	22.4	3252	145T	T,S,C,X,IG
80	I, II	1.5	1591	1145	22.4	3242	145T	T,S,C,X,IG
72	I	1.0	1688	800	25	3132	145T	T,S,C,X,IG
72	II, III	2.4	1674	1197	25	3252	145T	T,S,C,X,IG
69	I	1.3	1756	1165	25	3242	145T	T,S,C,X,IG
65	I, II, III	2.1	1862	1222	28	3252	145T	T,S,C,X,IG
58	I, II	1.9	2095	1248	31.5	3252	145T	T,S,C,X,IG
54	III	2.7	2156	2305	31.5	3363	145T	T,S,C,X,IG
49	I, II	1.6	2455	1281	35.5	3252	145T	T,S,C,X,IG
47	III	2.4	2382	2305	35.5	3363	145T	T,S,C,X,IG
45	I, II	1.5	2710	1299	40	3252	145T	T,S,C,X,IG
43	III	2.2	2733	2305	40	3363	145T	T,S,C,X,IG
41	I	1.3	2972	1314	45	3252	145T	T,S,C,X,IG
39	II, III	2.0	3020	2305	45	3363	145T	T,S,C,X,IG
36	III	2.1	3366	2905	50	3372	145T	T,S,C,X,IG
35	I	1.2	3471	1335	50	3252	145T	T,S,C,X,IG
34	II	1.7	3468	2305	50	3363	145T	T,S,C,X,IG
32	III	3+	3704	4340	56	3483	145T	T,S,C,X,IG
31	I	1.1	3771	1357	56	3253	145T	T,S,C,X,IG
30	II	1.6	3905	2305	56	3363	145T	T,S,C,X,IG
30	II	1.9	3889	2905	56	3373	145T	T,S,C,X,IG

\diamond **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY
- C Corro-Duty®, three phase, 230/460 or 575V
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
27	III	3+	4328	4340	63	3483	145T	T,S,C,X,IG
26	I, II	1.4	4242	2305	63	3363	145T	T,S,C,X,IG
26	II	1.7	4215	2905	63	3373	145T	T,S,C,X,IG
25	III	2.9	4831	4340	71	3483	145T	T,S,C,X,IG
24	I	1.2	4728	2305	71	3363	145T	T,S,C,X,IG
24	I, II	1.5	4702	2905	71	3373	145T	T,S,C,X,IG
22	I	1.1	5306	2305	80	3363	145T	T,S,C,X,IG
22	II	1.4	5295	2905	80	3373	145T	T,S,C,X,IG
22	III	2.6	5425	4340	80	3483	145T	T,S,C,X,IG
19	I	1.0	6005	2305	90	3363	145T	T,S,C,X,IG
19	I	1.3	6101	2905	90	3373	145T	T,S,C,X,IG
19	II, III	2.3	6139	4340	90	3483	145T	T,S,C,X,IG
17	I	1.1	6847	2905	100	3373	145T	T,S,C,X,IG
17	II, III	2.0	7010	4340	100	3483	145T	T,S,C,X,IG
16	II	1.9	7523	4340	112	3483	145T	T,S,C,X,IG
16	III	3+	7418	4580	112	3593	145T	T,S,C,X,IG
15	I	1.0	7751	2905	112	3373	145T	T,S,C,X,IG
14	I, II	1.6	8753	4340	125	3483	145T	T,S,C,X,IG
14	III	3+	8265	4580	125	3593	145T	T,S,C,X,IG
13	III	2.9	9372	4580	140	3593	145T	T,S,C,X,IG
12	I, II	1.5	9500	4340	140	3483	145T	T,S,C,X,IG
11.3	I, II	1.4	10493	4340	160	3483	145T	T,S,C,X,IG
11.0	III	2.5	10757	4580	160	3593	145T	T,S,C,X,IG
10.2	I	1.2	11652	4340	180	3483	145T	T,S,C,X,IG
10.1	II, III	2.3	11701	4580	180	3593	145T	T,S,C,X,IG
8.7	I	1.1	13619	4340	200	3483	145T	T,S,C,X,IG
8.7	II, III	2.0	13632	4580	200	3593	145T	T,S,C,X,IG
7.6	-	.94	15175	4340	224	3484	145T	T,S,C,X,IG
7.6	I, II	1.8	15122	4580	224	3594	145T	T,S,C,X,IG
6.8	III	2.9	17207	10469	250	2704A	145T	T,S,C,X,IG
6.8	I, II	1.6	17117	4580	250	3594	145T	T,S,C,X,IG
6.2	I	1.1	19068	3253	280	3594	145T	T,S,C,X,IG
6.1	III	2.6	19001	10457	280	2704A	145T	T,S,C,X,IG
6.0	I, II	1.4	19317	4580	280	3594	145T	T,S,C,X,IG
5.5	I, II	1.5	21127	7106	315	2604A	145T	T,S,C,X,IG
5.3	III	2.3	21326	10440	315	2704A	145T	T,S,C,X,IG
5.3	I	1.2	21848	4580	315	3594	145T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575V
- S TEFC, single phase, 115/230V, 145TY
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies.

Gearmotors

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
4.7	I	1.1	24817	4580	355	3594	145T	T,S,C,X,IG
4.7	II, III	2.1	23784	10420	355	2704A	145T	T,S,C,X,IG
4.4	I	1.2	27040	6401	400	2604A	145T	T,S,C,X,IG
4.3	II	1.8	26641	10394	400	2704A	145T	T,S,C,X,IG
4	III	3.0+	26375	13171	400	2805A	145T	T,S,C,X,IG
3.9	I	1.1	29697	5994	450	2604A	145T	T,S,C,X,IG
3.9	II	1.6	30162	10397	450	2704A	145T	T,S,C,X,IG
3.5	III	3.0+	29365	13061	450	2805A	145T	T,S,C,X,IG
3.5	I, II	1.4	34149	10310	500	2704A	145T	T,S,C,X,IG
3.3	III	2.7	33351	12895	500	2805A	145T	T,S,C,X,IG
3.1	I	1.3	37537	10266	560	2704A	145T	T,S,C,X,IG
2.8	II, III	2.3	38334	12653	560	2805A	145T	T,S,C,X,IG
2.8	I	1.2	42852	10186	630	2704A	145T	T,S,C,X,IG
2.6	II, III	2.1	41855	12459	630	2805A	145T	T,S,C,X,IG
2.4	I	1.0	47702	10121	710	2704A	145T	T,S,C,X,IG
2.4	II	1.8	48765	12017	710	2805A	145T	T,S,C,X,IG
2.4	III	3.0+	45771	16066	710	2905A	145T	T,S,C,X,IG
2.1	I, II	1.7	51435	11823	800	2805A	145T	T,S,C,X,IG
2.1	III	2.8	51566	15886	800	2905A	145T	T,S,C,X,IG
2	I, II	1.5	58467	11244	900	2805A	145T	T,S,C,X,IG
2	III	2.4	59834	15588	900	2905A	145T	T,S,C,X,IG
1.6	I	1.2	73572	9591	1120	2805A	145T	T,C,S,X,IG
1.6	II	1.9	74525	14930	1120	2905A	145T	T,C,S,X,IG
1.3	I, II	1.6	91115	13961	1400	2905A	145T	T,C,S,X,IG
1.1	I, II	1.4	101509	13015	1600	2905A	145T	T,C,S,X,IG
1.0	I	1.3	114659	12066	1800	2905A	145T	T,C,S,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575V
- S TEFC, single phase, 115/230V, 145TY
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, Cl 1 group D, Cl 2 Grps F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 1/230V, 3/230V, or 3/460V power supplies.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1434	I, II, III	2.3	129	248	1.25	3101	182T	T,S,C,X,IG
1268	I, II, III	2.1	146	257	1.4	3101	182T	T,S,C,X,IG
1122	I, II, III	2.1	165	265	1.6	3101	182T	T,S,C,X,IG
994	I, II, III	2.0	186	275	1.8	3101	182T	T,S,C,X,IG
902	I, II, III	3+	205	370	2	3201	182T	T,S,C,X,IG
875	I, II	1.9	212	284	2	3101	182T	T,S,C,X,IG
792	I, II, III	3.0	234	382	2.24	3201	182T	T,S,C,X,IG
764	I, II	1.8	242	294	2.24	3101	182T	T,S,C,X,IG
686	I, II, III	2.6	270	397	2.5	3201	182T	T,S,C,X,IG
678	I, II	1.6	273	303	2.5	3101	182T	T,S,C,X,IG
639	I, II	1.5	290	308	2.8	3101	182T	T,S,C,X,IG
632	III	2.5	288	403	2.8	3201	182T	T,S,C,X,IG
566	I, II, III	2.2	327	415	3.15	3201	182T	T,S,C,X,IG
538	I	1.3	344	320	3.15	3101	182T	T,S,C,X,IG
510	I	1.2	364	324	3.55	3101	182T	T,S,C,X,IG
510	II, III	2.0	363	425	3.55	3201	182T	T,S,C,X,IG
450	II	1.7	412	437	4	3201	182T	T,S,C,X,IG
446	I	1.1	416	334	4	3101	182T	T,S,C,X,IG
446	III	2.3	406	514	4	3122	182T	T,S,C,X,IG
404	II	1.5	459	447	4.5	3201	182T	T,S,C,X,IG
401	I	1.0	464	341	4.5	3101	182T	T,S,C,X,IG
395	I, II, III	2.1	459	528	4.5	3122	182T	T,S,C,X,IG
391	III	2.8	473	1081	4.5	3301	182T	T,S,C,X,IG
359	I, II	1.4	516	457	5	3201	182T	T,S,C,X,IG
359	III	2.6	516	1108	5	3301	182T	T,S,C,X,IG
351	III	2.0	518	541	5	3122	182T	T,S,C,X,IG
318	III	3+	586	786	5.6	3242	182T	T,S,C,X,IG
318	III	2.3	582	1147	5.6	3301	182T	T,S,C,X,IG
314	III	3+	590	1778	5.6	3401	182T	T,S,C,X,IG
310	II, III	2.0	586	553	5.6	3122	182T	T,S,C,X,IG
306	I	1.2	605	470	5.6	3201	182T	T,S,C,X,IG
287	III	3+	666	811	6.3	3242	182T	T,S,C,X,IG
276	III	2.0	670	1193	6.3	3301	182T	T,S,C,X,IG
273	I,II	1.9	666	566	6.3	3122	182T	T,S,C,X,IG
251	I, II, III	3+	761	837	7.1	3242	182T	T,S,C,X,IG
238	I, II	1.6	761	577	7.1	3122	182T	T,S,C,X,IG
231	I, II	1.7	786	606	8	3132	182T	T,S,C,X,IG
218	III	2.7	859	860	8	3242	182T	T,S,C,X,IG
211	I, II	1.5	859	587	8	3122	182T	T,S,C,X,IG
199	I, II	1.4	911	591	9	3122	182T	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts, 184T frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

Gearmotors

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
204	II	1.6	889	619	9	3132	182T	T,S,C,X,IG
204	III	2.5	911	872	9	3242	182T	T,S,C,X,IG
181	I, II	1.5	1003	630	10	3132	182T	T,S,C,X,IG
180	III	2.2	1082	903	10	3242	182T	T,S,C,X,IG
168	I	1.2	1082	601	10	3122	182T	T,S,C,X,IG
161	I	1.1	1145	603	11.2	3122	182T	T,S,C,X,IG
161	II	1.4	1134	614	11.2	3132	182T	T,S,C,X,IG
161	III	2.0	1145	913	11.2	3242	182T	T,S,C,X,IG
142	I	1.2	1289	649	12.5	3132	182T	T,S,C,X,IG
142	II	1.7	1308	936	12.5	3242	182T	T,S,C,X,IG
142	III	2.5	1249	959	12.5	3252	182T	T,S,C,X,IG
128	II	1.6	1460	954	14	3242	182T	T,S,C,X,IG
128	III	2.3	1423	985	14	3252	182T	T,S,C,X,IG
123	I	1.1	1473	656	14	3132	182T	T,S,C,X,IG
114	II	1.4	1637	971	16	3242	182T	T,S,C,X,IG
110	I	1.1	1662	660	16	3132	182T	T,S,C,X,IG
110	III	2.1	1641	1012	16	3252	182T	T,S,C,X,IG
103	I	1.0	1764	660	18	3132	182T	T,S,C,X,IG
103	III	2.0	1753	1023	18	3252	182T	T,S,C,X,IG
97	I	1.2	1898	990	18	3242	182T	T,S,C,X,IG
91	I, II	1.9	1990	1044	20	3252	182T	T,S,C,X,IG
88	I	1.1	2081	1000	20	3242	182T	T,S,C,X,IG
88	III	3+	2037	2620	20	3372	182T	T,S,C,X,IG
81	I	1.0	2384	1012	22.4	3242	182T	T,S,C,X,IG
81	II	1.7	2210	1060	22.4	3252	182T	T,S,C,X,IG
81	III	3+	2270	2699	22.4	3372	182T	T,S,C,X,IG
72	I, II	1.6	2510	1077	25	3252	182T	T,S,C,X,IG
70	III	2.1	2543	2305	25	3372	182T	T,S,C,X,IG
65	I, II	1.4	2793	1089	28	3252	182T	T,S,C,X,IG
63	III	2.5	2548	2784	28	3372	182T	T,S,C,X,IG
58	I	1.3	3142	1098	31.5	3252	182T	T,S,C,X,IG
58	II, III	2.3	2884	2878	31.5	3372	182T	T,S,C,X,IG
54	I, II	1.8	3234	2305	31.5	3363	182T	T,S,C,X,IG
51	III	2.0	3137	2905	35.5	3372	182T	T,S,C,X,IG
49	I	1.1	3683	1105	35.5	3252	182T	T,S,C,X,IG
47	I, II	1.6	3781	2305	35.5	3363	182T	T,S,C,X,IG
46	III	3+	3966	4340	40	3482	182T	T,S,C,X,IG
45	I	1.0	4066	1105	40	3252	182T	T,S,C,X,IG
44	I, II	1.4	4099	2305	40	3363	182T	T,S,C,X,IG
44	I, II	1.7	3545	2905	40	3372	182T	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts, 184T frame

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
41	III	3+	4404	4340	45	3482	182T	T,S,C,X,IG
39	I	1.3	4557	2305	45	3363	182T	T,S,C,X,IG
39	II	1.6	4531	2905	45	3372	182T	T,S,C,X,IG
35	I	1.2	5202	2305	50	3363	182T	T,S,C,X,IG
35	II	1.4	4961	2905	50	3372	182T	T,S,C,X,IG
35	III	2.6	5221	4340	50	3482	182T	T,S,C,X,IG
32	II, III	2.5	5556	4340	56	3483	182T	T,S,C,X,IG
30	I	1.0	5858	2305	56	3363	182T	T,S,C,X,IG
30	I	1.3	5836	2905	56	3373	182T	T,S,C,X,IG
27	II, III	2.2	6493	4340	63	3483	182T	T,S,C,X,IG
26	I	1.1	6835	2905	63	3373	182T	T,S,C,X,IG
25	II	1.9	7247	4340	71	3483	182T	T,S,C,X,IG
25	III	3+	7091	4580	71	3593	182T	T,S,C,X,IG
24	I	1.0	7405	2305	71	3373	182T	T,S,C,X,IG
23	III	3+	7845	4580	80	3593	182T	T,S,C,X,IG
22	I, II	1.7	8138	4340	80	3483	182T	T,S,C,X,IG
20	III	2.9	9207	4580	90	3593	182T	T,S,C,X,IG
19	I, II	1.5	9207	4340	90	3483	182T	T,S,C,X,IG
18	III	2.7	9905	4580	100	3593	182T	T,S,C,X,IG
17	I, II	1.4	10516	4340	100	3483	182T	T,S,C,X,IG
16	I	1.3	11284	4340	112	3483	182T	T,S,C,X,IG
16	II, III	2.4	11126	4580	112	3593	182T	T,S,C,X,IG
14	I	1.1	13130	4340	125	3483	182T	T,S,C,X,IG
14	II, III	2.2	12396	4580	125	3593	182T	T,S,C,X,IG
13	II	1.9	14058	4580	140	3593	182T	T,S,C,X,IG
12.8	III	2.2	13932	7676	140	2603	182T	T,C,S,X,IG
12	I	1.0	14250	4340	140	3483	182T	T,S,C,X,IG
11	I, II	1.7	16135	4580	160	3593	182T	T,S,C,X,IG
11	III	2.1	16169	7528	160	2603	182T	T,C,S,X,IG
10	I, II	1.6	17552	4580	180	3593	182T	T,S,C,X,IG
9.4	III	2.7	17938	10464	180	2704A	182T	T,C,S,X,IG
9	I	1.3	20448	4580	200	3593	182T	T,S,C,X,IG
8.5	II	1.5	20429	7173	200	2604A	182T	T,C,S,X,IG
8.5	III	2.4	20529	10446	200	2704A	182T	T,C,S,X,IG
8	I	1.2	23257	4580	224	3594	182T	T,S,C,X,IG
7.7	I, II	1.4	22522	6961	224	2604A	182T	T,C,S,X,IG
7.7	III	2.2	22422	10432	224	2704A	182T	T,C,S,X,IG
7	I	1.0	26233	4580	250	3594	182T	T,S,C,X,IG
6.7	II	1.9	25811	10402	250	2704A	182T	T,C,S,X,IG
6.6	III	3.0+	24814	13224	250	2805A	182T	T,C,S,X,IG
6.1	II	1.7	28501	10375	280	2704A	182T	T,C,S,X,IG
5.9	I	1.1	28202	6231	280	2604A	182T	T,C,S,X,IG

◊ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts, 184T frame
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

Gearmotors

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
5.9	III	3.0+	28501	13094	280	2805A	182T	T,C,S,X,IG
5.3	I, II	1.5	31989	10337	315	2704A	182T	T,C,S,X,IG
5.1	III	2.8	31491	12976	315	2805A	182T	T,C,S,X,IG
4.7	I, II	1.4	35677	10291	355	2704A	182T	T,C,S,X,IG
4.3	I	1.2	39962	10231	400	2704A	182T	T,C,S,X,IG
4.1	III	2.5	34979	12820	355	2805A	182T	T,C,S,X,IG
4	II, III	2.2	39563	12588	400	2805A	182T	T,C,S,X,IG
3.9	I	1.1	45244	10147	450	2704A	182T	T,C,S,X,IG
3.5	II, III	2.0	44048	12328	450	2805A	182T	T,C,S,X,IG
3.5	III	2.9	49124	15965	500	2905A	182T	T,C,S,X,IG
3.3	I, II	1.8	50027	11927	500	2805A	182T	T,C,S,X,IG
3.1	III	2.6	54593	15783	560	2905A	182T	T,C,S,X,IG
2.8	I, II	1.5	57501	11330	560	2805A	182T	T,C,S,X,IG
2.8	III	2.3	61625	15517	630	2905A	182T	T,C,S,X,IG
2.6	I, II	1.4	62783	10835	630	2805A	182T	T,C,S,X,IG
2.5	II, III	2.1	68657	15214	710	2905A	182T	T,C,S,X,IG
2.3	I	1.2	73147	9647	710	2805A	182T	T,C,S,X,IG
2.2	I	1.2	77153	9091	800	2805A	182T	T,C,S,X,IG
2.2	II, III	1.9	77348	14783	800	2905A	182T	T,C,S,X,IG
2.0	I	1.0	87701	7253	900	2805A	182T	T,C,S,X,IG
2.0	II	1.6	89752	14051	900	2905A	182T	T,C,S,X,IG
1.7	I, II	1.5	97760	13496	1000	2905A	182T	T,C,S,X,IG
1.6	I	1.3	111788	12337	1120	2905A	182T	T,C,S,X,IG
1.3	I	1.1	136672	9447	1400	2905A	182T	T,C,S,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts, 184T frame

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
1434	I, II	1.4	215	222	1.25	3101	184T	T,S,C,X,IG
1423	III	2.4	217	298	1.25	3201	184T	T,S,C,X,IG
1268	I	1.3	243	229	1.4	3101	184T	T,S,C,X,IG
1207	II, III	2.2	256	311	1.4	3201	184T	T,S,C,X,IG
1129	II, III	2.3	273	316	1.6	3201	184T	T,S,C,X,IG
1122	I	1.2	275	236	1.6	3101	184T	T,S,C,X,IG
1000	II, III	2.1	309	324	1.8	3201	184T	T,S,C,X,IG
994	I	1.2	311	229	1.8	3101	184T	T,S,C,X,IG
902	II, III	2.1	342	332	2	3201	184T	T,S,C,X,IG
875	I	1.1	353	217	2	3101	184T	T,S,C,X,IG
792	II	1.8	390	340	2.24	3201	184T	T,S,C,X,IG
778	III	2.7	397	848	2.24	3301	184T	T,S,C,X,IG
764	I	1.1	403	200	2.24	3101	184T	T,S,C,X,IG
686	II	1.6	449	349	2.5	3201	184T	T,S,C,X,IG
678	I	1.0	455	179	2.5	3101	184T	T,S,C,X,IG
678	III	2.8	456	883	2.5	3301	184T	T,S,C,X,IG
632	I, II	1.5	480	353	2.8	3201	184T	T,S,C,X,IG
601	III	2.4	513	913	2.8	3301	184T	T,S,C,X,IG
566	I	1.3	545	360	3.15	3201	184T	T,S,C,X,IG
554	II, III	2.0	558	934	3.15	3301	184T	T,S,C,X,IG
510	I	1.2	605	365	3.55	3201	184T	T,S,C,X,IG
497	II, III	2.0	621	962	3.55	3201	184T	T,S,C,X,IG
450	II	1.4	676	455	4	3122	184T	T,S,C,X,IG
450	I	1.0	687	370	4	3201	184T	T,S,C,X,IG
450	III	3+	676	669	4	3242	184T	T,S,C,X,IG
443	I, II	1.9	697	993	4	3301	184T	T,S,C,X,IG
426	I, II, III	3+	725	1566	4	3401	184T	T,S,C,X,IG
395	I	1.3	766	462	4.5	3122	184T	T,S,C,X,IG
391	I, II, III	3+	789	1025	4.5	3301	184T	T,S,C,X,IG
383	II, III	2.8	790	687	4.5	3242	184T	T,S,C,X,IG
359	I, II	1.5	859	1045	5	3301	184T	T,S,C,X,IG
359	II, III	2.6	844	704	5	3242	184T	T,S,C,X,IG
351	I	1.2	863	466	5	3122	184T	T,S,C,X,IG
341	I, II, III	3+	906	1666	5	3401	184T	T,S,C,X,IG
318	I, II	1.4	971	1052	5.6	3301	184T	T,S,C,X,IG
318	II, III	2.3	953	720	5.6	3242	184T	T,S,C,X,IG
314	I, II, III	3.0	983	1726	5.6	3401	184T	T,S,C,X,IG
310	I	1.2	977	469	5.6	3122	184T	T,S,C,X,IG
287	II, III	2.1	1054	737	6.3	3242	184T	T,S,C,X,IG
276	I	1.2	1117	1055	6.3	3301	184T	T,S,C,X,IG

◊ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

Gearmotors

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
284	I, II, III	2.7	1086	1798	6.3	3401	184T	T,S,C,X,IG
273	I	1.1	1110	470	6.3	3122	184T	T,S,C,X,IG
256	I, II, III	2.3	1206	1855	7.1	3401	184T	T,S,C,X,IG
251	II	1.8	1203	752	7.1	3242	184T	T,S,C,X,IG
247	III	2.9	1225	1893	7.1	3362	184T	T,S,C,X,IG
238	I	1.0	1269	468	7.1	3122	184T	T,S,C,X,IG
231	I	1.0	1309	511	8	3132	184T	T,S,C,X,IG
229	III	2.1	1320	789	8	3252	184T	T,S,C,X,IG
218	II	1.6	1431	764	8	3242	184T	T,S,C,X,IG
204	I, II	1.5	1519	770	9	3242	184T	T,S,C,X,IG
194	II	1.9	1559	810	9	3252	184T	T,S,C,X,IG
191	III	2.3	1584	2031	9	3362	184T	T,S,C,X,IG
181	I	1.3	1804	782	10	3242	184T	T,S,C,X,IG
181	II	1.8	1663	818	10	3252	184T	T,S,C,X,IG
176	III	2.1	1721	2076	10	3362	184T	T,S,C,X,IG
162	I	1.2	1908	785	11.2	3242	184T	T,S,C,X,IG
161	II	1.6	1880	831	11.2	3252	184T	T,S,C,X,IG
158	II	1.9	1918	2136	11.2	3362	184T	T,S,C,X,IG
158	III	3.3	1906	2137	11.2	3372	184T	T,S,C,X,IG
145	I	1.5	2081	840	12.5	3252	184T	T,S,C,X,IG
143	I	1.0	2180	790	12.5	3242	184T	T,S,C,X,IG
141	II	1.7	2152	2200	12.5	3362	184T	T,S,C,X,IG
138	III	3.1	2187	2216	12.5	3372	184T	T,S,C,X,IG
128	I, II	1.4	2372	849	14	3252	184T	T,S,C,X,IG
125	III	2.8	2417	2273	14	3372	184T	T,S,C,X,IG
124	I, II	1.5	2436	2268	14	3362	184T	T,S,C,X,IG
114	II	1.4	2650	2315	16	3362	184T	T,S,C,X,IG
111	I	1.3	2734	855	16	3252	184T	T,S,C,X,IG
109	III	2.5	2775	2354	16	3372	184T	T,S,C,X,IG
104	I	1.2	2922	856	18	3252	184T	T,S,C,X,IG
97	II, III	2.3	3125	2422	18	3372	184T	T,S,C,X,IG
91	I	1.1	3316	855	20	3252	184T	T,S,C,X,IG
89	II, III	2.1	3395	2470	20	3372	184T	T,S,C,X,IG
82	I	1.0	3683	850	22.4	3252	184T	T,S,C,X,IG
80	II	1.9	3783	2532	22.4	3372	184T	T,S,C,X,IG
70	I	1.2	4239	2305	25	3362	184T	T,S,C,X,IG
70	II	1.7	4246	2596	25	3372	184T	T,S,C,X,IG
68	III	3+	4416	3733	25	3482	184T	T,S,C,X,IG
64	III	2.9	4739	3800	28	3482	184T	T,S,C,X,IG
63	I, II	1.5	4806	2663	28	3372	184T	T,S,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◊
58	II	1.4	5228	2708	31.5	3372	184T	T,S,C,X,IG
55	III	2.5	5515	3944	31.5	3482	184T	T,S,C,X,IG
54	I	1.1	5480	2305	31.5	3363	184T	T,S,C,X,IG
51	I	1.2	5908	2704	35.5	3372	184T	T,S,C,X,IG
51	II, III	2.3	5985	4021	35.5	3482	184T	T,S,C,X,IG
46	II, III	2.1	6611	4115	40	3482	184T	T,S,C,X,IG
44	I	1.0	6804	2749	40	3372	184T	T,S,C,X,IG
41	I, II	1.9	7340	4211	45	3482	184T	T,S,C,X,IG
41	III	3+	7376	4580	45	3592	184T	T,S,C,X,IG
35	I, II	1.6	8702	4340	50	3482	184T	T,S,C,X,IG
35	III	3+	8593	4580	50	3592	184T	T,S,C,X,IG
32	I, II	1.5	9261	4340	56	3483	184T	T,S,C,X,IG
31	III	2.3	9586	4580	56	3593	184T	T,S,C,X,IG
28	II, III	2.2	10400	4580	63	3593	184T	T,S,C,X,IG
27	I	1.3	10821	4340	63	3483	184T	T,S,C,X,IG
25	I	1.2	12079	4340	71	3483	184T	T,S,C,X,IG
25	II, III	2.1	11818	4580	71	3593	184T	T,S,C,X,IG
23	II, III	2.0	13074	4580	80	3593	184T	T,S,C,X,IG
22	I	1.0	13563	4340	80	3483	184T	T,S,C,X,IG
20	I, II	1.8	15124	4580	90	3593	184T	T,S,C,X,IG
20	III	2.3	14830	7620	90	2603	184T	T,C,S,X,IG
18	I, II	1.6	16509	4580	100	3593	184T	T,S,C,X,IG
17.7	III	2.0	16779	7483	100	2603	184T	T,C,S,X,IG
16	I, II	1.5	18543	4580	112	3593	184T	T,S,C,X,IG
16	III	2.9	18474	10461	112	2703	184T	T,C,S,X,IG
14	I	1.3	20661	4580	125	3593	184T	T,S,C,X,IG
14	II	1.6	21016	7117	125	2603	184T	T,C,S,X,IG
14	III	2.5	21016	10443	125	2703	184T	T,C,S,X,IG
12.8	I, II	1.5	23219	6884	140	2603	184T	T,C,S,X,IG
12.8	III	2.2	23219	10425	140	2703	184T	T,C,S,X,IG
12	I	1.0	23750	4580	140	3593	184T	T,S,C,X,IG
11	I	1.3	26948	6414	160	2603	184T	T,C,S,X,IG
11	II	1.9	26948	10391	160	2703	184T	T,C,S,X,IG
9.75	I	1.1	29564	6016	180	2604A	184T	T,C,S,X,IG
9.4	II	1.6	29897	10360	180	2704A	184T	T,C,S,X,IG
9.3	III	3.0+	29232	13067	180	2805A	184T	T,C,S,X,IG
8.5	I, II	1.4	34215	10310	200	2704A	184T	T,C,S,X,IG
8.3	III	2.7	33218	12901	200	2805A	184T	T,C,S,X,IG
7.7	I	1.3	37371	10268	224	2704A	184T	T,C,S,X,IG
7.3	II, III	2.3	37869	12678	224	2805A	184T	T,C,S,X,IG
6.7	I	1.1	43018	10184	250	2704A	184T	T,C,S,X,IG

◊ **Standard Motor Types** (see page A-34 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts
- C Corro-Duty®, three phase, 230/460 or 575V
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V
- IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

Gearmotors

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types ◇
6.6	II, III	2.2	41357	12488	250	2805A	184T	T,C,S,X,IG
6.4	III	3.0+	46227	16053	280	2905A	184T	T,C,S,X,IG
6.1	I	1.0	47502	10108	280	2704A	184T	T,C,S,X,IG
5.7	II	1.9	47502	12104	280	2805A	184T	T,C,S,X,IG
5.7	III	2.8	51924	15874	315	2905A	184T	T,C,S,X,IG
5.1	I, II	1.7	52485	11743	315	2805A	184T	T,C,S,X,IG
5.1	III	2.4	58923	15624	355	2905A	184T	T,C,S,X,IG
4.5	I, II	1.5	58298	11260	355	2805A	184T	T,C,S,X,IG
4.5	III	2.2	64457	15399	400	2905A	184T	T,C,S,X,IG
4.1	II	1.9	74223	14945	450	2905A	184T	T,C,S,X,IG
4.0	I, II	1.4	65939	10506	400	2805A	184T	T,C,S,X,IG
3.5	I	1.2	73413	9612	450	2805A	184T	T,C,S,X,IG
3.5	II	1.8	81873	14532	500	2905A	184T	T,C,S,X,IG
3.3	I	1.1	83378	8086	500	2805A	184T	T,C,S,X,IG
3.1	I, II	1.6	90989	13970	560	2905A	184T	T,C,S,X,IG
2.8	I, II	1.4	102708	13116	630	2905A	184T	T,C,S,X,IG
2.5	I	1.3	113445	13001	710	2905A	184T	T,C,S,X,IG
2.2	I	1.1	128910	12940	800	2905A	184T	T,C,S,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/230V, 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1423	I, II	1.6	325	264	1.25	3201	213T	T,C,X,IG
1413	III	3+	328	1078	1.25	3401	213T	T,C,X,IG
1389	II	1.9	334	688	1.25	3301	213T	T,C,X,IG
1264	III	3+	367	1127	1.4	3401	213T	T,C,X,IG
1207	I, II	1.5	384	272	1.4	3201	213T	T,C,X,IG
1199	II	1.8	386	717	1.4	3301	213T	T,C,X,IG
1129	I, II	1.5	410	275	1.6	3201	213T	T,C,X,IG
1125	III	3+	412	1162	1.6	3401	213T	T,C,X,IG
1087	I, II	1.8	425	738	1.6	3301	213T	T,C,X,IG
1008	III	3+	459	1198	1.8	3401	213T	T,C,X,IG
1000	I, II	1.4	463	280	1.8	3201	213T	T,C,X,IG
989	I, II	1.9	470	759	1.8	3301	213T	T,C,X,IG
902	I, II	1.4	513	284	2	3201	213T	T,C,X,IG
889	I, II, III	3+	521	1249	2	3401	213T	T,C,X,IG
836	I, II	1.9	539	778	2	3301	213T	T,C,X,IG
806	III	3+	575	1288	2.24	3401	213T	T,C,X,IG
792	I	1.2	585	288	2.24	3201	213T	T,C,X,IG
778	II	1.8	596	788	2.24	3301	213T	T,C,X,IG
689	II, III	3+	672	1342	2.5	3401	213T	T,C,X,IG
686	I	1.1	674	291	2.5	3201	213T	T,C,X,IG
678	II	1.9	684	800	2.5	3301	213T	T,C,X,IG
618	II, III	3+	750	1390	2.8	3401	213T	T,C,X,IG
601	I, II	1.6	770	807	2.8	3301	213T	T,C,X,IG
554	I	1.3	836	809	3.15	3301	213T	T,C,X,IG
550	II, III	3+	842	1424	3.15	3401	213T	T,C,X,IG
497	I	1.3	908	258	3.55	3301	213T	T,C,X,IG
486	II, III	3.0	953	1469	3.55	3401	213T	T,C,X,IG
452	I, II, III	2.1	1015	612	4	3242	213T	T,C,X,IG
443	I	1.3	1046	806	4	3301	213T	T,C,X,IG
426	I, II, III	2.7	1088	1518	4	3401	213T	T,C,X,IG
383	II	1.9	1148	623	4.5	3242	213T	T,C,X,IG
391	I	1.1	932	810	4.5	3301	213T	T,C,X,IG
381	III	3.0	1190	1621	4.5	3362	213T	T,C,X,IG
359	II	1.7	1295	631	5	3242	213T	T,C,X,IG
359	I	1.0	1264	806	5	3301	213T	T,C,X,IG
346	III	2.8	1312	1665	5	3362	213T	T,C,X,IG
341	III	2.1	1359	1608	5	3401	213T	T,C,X,IG
318	I, II	1.5	1465	639	5.6	3242	213T	T,C,X,IG
313	III	2.5	1449	1709	5.6	3362	213T	T,C,X,IG
287	I, II	1.4	1665	644	6.3	3242	213T	T,C,X,IG
284	I, II	1.8	1629	1724	6.3	3401	213T	T,C,X,IG
273	III	2.2	1663	1771	6.3	3362	213T	T,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
256	I, II	1.5	1809	1774	7.1	3401	213T	T,C,X,IG
251	I	1.2	1903	646	7.1	3242	213T	T,C,X,IG
247	II, III	2.0	1838	1816	7.1	3362	213T	T,C,X,IG
229	II	1.4	1980	695	8	3252	213T	T,C,X,IG
218	I	1.1	2147	644	8	3242	213T	T,C,X,IG
223	III	2.8	2035	1871	8	3372	213T	T,C,X,IG
215	II	1.7	2110	1879	8	3362	213T	T,C,X,IG
204	I	1.0	2278	643	9	3242	213T	T,C,X,IG
194	I	1.2	2339	699	9	3252	213T	T,C,X,IG
192	II	1.5	2376	1932	9	3362	213T	T,C,X,IG
192	III	2.6	2348	1639	9	3372	213T	T,C,X,IG
182	I	1.2	2495	699	10	3252	213T	T,C,X,IG
176	II	1.4	2581	1969	10	3362	213T	T,C,X,IG
175	III	2.4	2588	1984	10	3372	213T	T,C,X,IG
161	I	1.1	2820	697	11.2	3252	213T	T,C,X,IG
159	I	1.3	2877	2016	11.2	3362	213T	T,C,X,IG
159	II, III	2.2	2859	2031	11.2	3372	213T	T,C,X,IG
145	I	1.0	3122	692	12.5	3252	213T	T,C,X,IG
141	I	1.1	3228	2066	12.5	3362	213T	T,C,X,IG
138	II, III	2.1	3280	2095	12.5	3372	213T	T,C,X,IG
130	I, II, III	3+	3501	3025	14	3482	213T	T,C,X,IG
125	I	1.0	3654	2117	14	3362	213T	T,C,X,IG
125	II, III	1.9	3626	2140	14	3372	213T	T,C,X,IG
111	III	3+	4090	3146	16	3482	213T	T,C,X,IG
109	I, II	1.7	4163	2200	16	3372	213T	T,C,X,IG
99	III	3.0	4566	3231	18	3482	213T	T,C,X,IG
97	I, II	1.5	4688	2230	18	3372	213T	T,C,X,IG
89	I, II	1.4	5092	2164	20	3372	213T	T,C,X,IG
89	III	2.6	5127	3320	20	3482	213T	T,C,X,IG
80	I	1.3	5675	2059	22.4	3372	213T	T,C,X,IG
78	II, III	2.4	5801	3414	22.4	3482	213T	T,C,X,IG
71	I	1.1	6369	1919	25	3372	213T	T,C,X,IG
68	II, III	2.1	6625	3513	25	3482	213T	T,C,X,IG
65	III	3+	7014	4580	28	3592	213T	T,C,X,IG
64	I, II	1.9	7109	3564	28	3482	213T	T,C,X,IG
63	I	1.0	7209	1733	28	3372	213T	T,C,X,IG
58	I, II, III	3+	7815	4580	31.5	3592	213T	T,C,X,IG
55	I, II	1.6	8272	3669	31.5	3482	213T	T,C,X,IG
51	III	2.9	8863	4580	35.5	3592	213T	T,C,X,IG
51	I, II	1.5	8978	3723	35.5	3482	213T	T,C,X,IG
46	I, II	1.4	9916	3785	40	3482	213T	T,C,X,IG
45	III	2.5	10172	4580	40	3592	213T	T,C,X,IG
41	I	1.2	11011	3845	45	3482	213T	T,C,X,IG
41	II, III	2.3	11065	4580	45	3592	213T	T,C,X,IG
35	I	1.1	13052	3930	50	3482	213T	T,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/460V power supplies

7 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
35	II, III	2.0	12891	4580	50	3592	213T	T,C,X,IG
32	I	1.0	13891	3994	56	3483	213T	T,C,X,IG
31	II	1.6	14378	4580	56	3593	213T	T,C,X,IG
31	III	2.2	13957	7675	56	2603	213T	T,C,X,IG
28	I, II	1.5	15599	4580	63	3593	213T	T,C,X,IG
27	III	2.0	16347	7515	63	2603	213T	T,C,X,IG
25	I, II	1.4	17727	4580	71	3593	213T	T,C,X,IG
24	III	2.8	18279	10462	71	2703	213T	T,C,X,IG
23	I	1.3	19611	4580	80	3593	213T	T,C,X,IG
22	II	1.6	20618	7155	80	2603	213T	T,C,X,IG
22	III	2.3	20618	10446	80	2703	213T	T,C,X,IG
20	I	1.2	22685	4580	90	3593	213T	T,C,X,IG
20	II	1.4	22245	6991	90	2603	213T	T,C,X,IG
20	III	2.1	22245	10433	90	2703	213T	T,C,X,IG
18	I	1.1	24762	4580	100	3593	213T	T,C,X,IG
17.7	I	1.3	25168	6651	100	2603	213T	T,C,X,IG
17.7	II, III	2.1	25168	10408	100	2703	213T	T,C,X,IG
16.1	I	1.2	27711	6304	112	2603	213T	T,C,X,IG
16.1	II	1.9	27711	10383	112	2703	213T	T,C,X,IG
16.1	III	3.0+	27711	13124	112	2803	213T	T,C,X,IG
14.1	I	1.1	31755	6210	125	2603	213T	T,C,X,IG
14.1	II	1.7	31524	10342	125	2703	213T	T,C,X,IG
13.7	III	2.9	32541	12931	125	2803	213T	T,C,X,IG
12.8	I, II	1.5	34829	10302	140	2703	213T	T,C,X,IG
11	I	1.3	40422	10224	160	2703	213T	T,C,X,IG
9.4	I	1.1	44845	10154	180	2704A	213T	T,C,X,IG
9.3	II	2.0	43848	12340	180	2805A	213T	T,C,X,IG
9	III	2.9	50296	15928	200	2905A	213T	T,C,X,IG
8.3	I, II	1.8	49828	11942	200	2805A	213T	T,C,X,IG
8	III	2.6	54935	15771	224	2905A	213T	T,C,X,IG
7.3	I, II	1.6	56804	11391	224	2805A	213T	T,C,X,IG
7	III	2.2	64213	15410	250	2905A	213T	T,C,X,IG
6.6	I, II	1.4	62035	10909	250	2805A	213T	T,C,X,IG
6.4	II, III	2.1	69340	15182	280	2905A	213T	T,C,X,IG
5.7	I	1.3	71254	9888	280	2805A	213T	T,C,X,IG
5.7	II	1.8	77886	14954	315	2905A	213T	T,C,X,IG
5.1	I	1.1	78728	8855	315	2805A	213T	T,C,X,IG
5.1	I, II	1.6	88384	14139	355	2905A	213T	T,C,X,IG
4.5	I, II	1.5	96686	13574	400	2905A	213T	T,C,X,IG
4.1	I, II	1.3	111335	12379	450	2905A	213T	T,C,X,IG
3.5	I	1.2	122800	11219	500	2905A	213T	T,C,X,IG
3	I	1.1	136483	9475	560	2905A	213T	T,C,X,IG

◇ Standard Motor Types (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/460V power supplies

† 6 pole motor

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1423	I	1.2	434	230	1.25	3201	215T	T,C,X,IG
1413	III	3+	437	1059	1.25	3401	215T	T,C,X,IG
1389	I,II	1.4	446	616	1.25	3301	215T	T,C,X,IG
1264	I, II, III	3+	489	1106	1.4	3401	215T	T,C,X,IG
1207	I	1.1	512	222	1.4	3201	215T	T,C,X,IG
1199	II	1.4	514	629	1.4	3301	215T	T,C,X,IG
1129	I	1.1	546	216	1.6	3201	215T	T,C,X,IG
1125	II, III	3+	549	1139	1.6	3401	215T	T,C,X,IG
1087	I	1.3	567	637	1.6	3301	215T	T,C,X,IG
1008	II, III	3+	612	1173	1.8	3401	215T	T,C,X,IG
1000	I	1.1	618	200	1.8	3201	215T	T,C,X,IG
989	I,II	1.4	626	643	1.8	3301	215T	T,C,X,IG
902	I	1.0	684	183	2	3201	215T	T,C,X,IG
889	III	3+	694	1222	2	3401	215T	T,C,X,IG
836	I, II	1.4	718	648	2	3301	215T	T,C,X,IG
806	III	3+	767	1258	2.24	3401	215T	T,C,X,IG
778	I, II	1.4	794	648	2.24	3301	215T	T,C,X,IG
689	III	3+	896	1308	2.5	3401	215T	T,C,X,IG
678	I, II	1.4	912	645	2.5	3301	215T	T,C,X,IG
618	I, II, III	2.8	1000	1353	2.8	3401	215T	T,C,X,IG
601	I	1.2	1027	637	2.8	3301	215T	T,C,X,IG
554	I	1.0	1115	628	3.15	3301	215T	T,C,X,IG
550	II, III	2.6	1123	1384	3.15	3401	215T	T,C,X,IG
486	I, II, III	2.3	1271	1425	3.55	3401	215T	T,C,X,IG
452	I, II	1.6	1353	556	4	3242	215T	T,C,X,IG
442	III	2.6	1376	1516	4	3362	215T	T,C,X,IG
426	I, II, III	2.0	1451	1469	4	3401	215T	T,C,X,IG
383	I, II	1.4	1531	559	4.5	3242	215T	T,C,X,IG
381	III	2.3	1587	1572	4.5	3362	215T	T,C,X,IG
359	I	1.3	1727	559	5	3242	215T	T,C,X,IG
346	II, III	2.1	1749	1610	5	3362	215T	T,C,X,IG
318	I	1.2	1954	557	5.6	3242	215T	T,C,X,IG
313	II	1.9	1932	1649	5.6	3362	215T	T,C,X,IG
287	I	1.0	2220	551	6.3	3242	215T	T,C,X,IG
273	II	1.6	2217	1702	6.3	3362	215T	T,C,X,IG
247	I, II	1.5	2450	1740	7.1	3362	215T	T,C,X,IG
229	I	1.0	2650	600	8	3252	215T	T,C,X,IG
223	II, III	2.1	2714	1796	8	3372	215T	T,C,X,IG
215	I	1.3	2813	1791	8	3362	215T	T,C,X,IG
203	III	3+	2975	2607	9	3482	215T	T,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
192	I	1.1	3168	1833	9	3362	215T	T,C,X,IG
192	II, III	1.9	3131	1852	9	3372	215T	T,C,X,IG
176	I	1.0	3441	1862	10	3362	215T	T,C,X,IG
175	II	1.8	3451	1889	10	3372	215T	T,C,X,IG
162	III	3+	3728	2759	11.2	3482	215T	T,C,X,IG
159	I, II	1.7	3812	1926	11.2	3372	215T	T,C,X,IG
143	III	3.0	4228	2843	12.5	3482	215T	T,C,X,IG
138	I,II	1.5	4374	1880	12.5	3372	215T	T,C,X,IG
130	III	2.8	4667	2908	14	3482	215T	T,C,X,IG
125	I, II	1.4	4834	1798	14	3372	215T	T,C,X,IG
111	II, III	2.5	5454	3010	16	3482	215T	T,C,X,IG
109	I	1.3	5550	1655	16	3372	215T	T,C,X,IG
99	II, III	2.2	6087	3079	18	3482	215T	T,C,X,IG
97	I	1.1	6250	1499	18	3372	215T	T,C,X,IG
89	I	1.0	6789	1370	20	3372	215T	T,C,X,IG
89	II, III	2.0	6836	3150	20	3482	215T	T,C,X,IG
79	III	3+	7627	4268	22.4	3592	215T	T,C,X,IG
78	I, II	1.8	7735	3221	22.4	3482	215T	T,C,X,IG
73	III	3+	8325	4401	25	3592	215T	T,C,X,IG
68	I, II	1.6	8833	3292	25	3482	215T	T,C,X,IG
65	III	2.8	9352	4471	28	3592	215T	T,C,X,IG
64	I, II	1.4	9479	3327	28	3482	215T	T,C,X,IG
58	II, III	2.4	10420	4580	31.5	3592	215T	T,C,X,IG
55	I	1.2	11029	3394	31.5	3482	215T	T,C,X,IG
51	I	1.1	11970	3424	35.5	3482	215T	T,C,X,IG
51	II, III	2.2	11817	4580	35.5	3592	215T	T,C,X,IG
46	I	1.0	13222	3455	40	3482	215T	T,C,X,IG
45	II	1.9	13562	4580	40	3592	215T	T,C,X,IG
44	III	2.3	13389	7708	40	2603	215T	T,C,X,IG
41	I, II	1.7	14753	4580	45	3592	215T	T,C,X,IG
39	III	2.0	15321	7587	45	2603	215T	T,C,X,IG
35	I, II	1.5	17188	4580	50	3592	215T	T,C,X,IG
35	II	1.8	16847	7478	50	2603	215T	T,C,X,IG
35	III	2.6	16847	10471	50	2703	215T	T,C,X,IG
31	I	1.2	19170	4580	56	3593	215T	T,C,X,IG
31	II	1.8	18609	7337	56	2603	215T	T,C,X,IG
31	III	2.3	18609	10460	56	2703	215T	T,C,X,IG
28	I	1.1	20799	4580	63	3593	215T	T,C,X,IG
27	II	1.5	21796	7038	63	2603	215T	T,C,X,IG
27	III	2.1	21796	10437	63	2703	215T	T,C,X,IG
25	I	1.0	23637	4580	71	3593	215T	T,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
24	I, II	1.4	24030	6749	71	2603	215T	T,C,X,IG
24	III	2.1	24372	10415	71	2703	215T	T,C,X,IG
22	I	1.2	27490	6336	80	2603	215T	T,C,X,IG
22	II	1.9	27490	10386	80	2703	215T	T,C,X,IG
22	III	3.0+	27422	13134	80	2803	215T	T,C,X,IG
20	I	1.1	31327	6280	90	2603	215T	T,C,X,IG
20	II	1.8	29660	10363	90	2703	215T	T,C,X,IG
20	III	3.0+	29693	13049	90	2803	215T	T,C,X,IG
17.7	I	1.0	33834	6150	100	2603	215T	T,C,X,IG
17.7	II	1.6	33558	10318	100	2703	215T	T,C,X,IG
17.3	III	2.6	34236	12855	100	2803	215T	T,C,X,IG
16.1	I, II	1.4	36947	10274	112	2703	215T	T,C,X,IG
16.1	III	2.3	36947	12725	112	2803	215T	T,C,X,IG
14.1	I	1.2	42032	10199	125	2703	215T	T,C,X,IG
13.7	II, III	2.2	43388	12368	125	2803	215T	T,C,X,IG
12.8	I	1.1	46602	10150	140	2703	215T	T,C,X,IG
9.3	I, II	1.5	58464	11245	180	2805A	215T	T,C,X,IG
9.3	III	2.5	57621	15673	180	2905A	215T	T,C,X,IG
9.1	II, III	2.1	67061	15286	200	2905A	215T	T,C,X,IG
8.3	I	1.3	66437	10452	200	2805A	215T	T,C,X,IG
8	II, III	2.0	73247	14994	224	2905A	215T	T,C,X,IG
7.3	I	1.2	75738	9295	224	2805A	215T	T,C,X,IG
7.1	II	1.7	85617	14311	250	2905A	215T	T,C,X,IG
6.6	I	1.1	82714	8203	250	2805A	215T	T,C,X,IG
6.4	I, II	1.6	92454	13871	280	2905A	215T	T,C,X,IG
5.7	I, II	1.4	103847	13025	315	2905A	215T	T,C,X,IG
5.1	I	1.2	117846	11749	355	2905A	215T	T,C,X,IG
4.5	I	1.1	128914	10499	400	2905A	215T	T,C,X,IG
4.1	I	1.0	140650	10010	450	2905A	215T	T,C,X,IG

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575V

IG IntelliGear® variable speed for 3/460V power supplies

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1413	I, II, III	2.6	655	1020	1.25	3401	254T	T,C
1264	I, II, III	2.7	733	1063	1.4	3401	254T	T,C
1125	I, II, III	2.8	824	1093	1.6	3401	254T	T,C
1008	I, II, III	2.4	919	1123	1.8	3401	254T	T,C
889	I, II, III	2.4	1042	1166	2	3401	254T	T,C
806	I, II, III	2.3	1150	1198	2.24	3401	254T	T,C
689	I, II, III	2.0	1344	1241	2.5	3401	254T	T,C
618	I, II	1.9	1500	1279	2.8	3401	254T	T,C
550	I, II	1.7	1684	1304	3.15	3401	254T	T,C
486	I, II	1.5	1906	1321	3.55	3401	254T	T,C
448	I, II, III	2.6	2028	1994	4	3482	254T	T,C
442	I, II	1.7	2064	1430	4	3362	254T	T,C
426	I	1.3	2176	1303	4	3401	254T	T,C
400	II, III	2.8	2268	2050	4.5	3482	254T	T,C
397	I	1.2	2336	1272	4.5	3401	254T	T,C
381	I, II	1.5	2380	1473	4.5	3362	254T	T,C
356	II, III	2.8	2548	2109	5	3482	254T	T,C
346	I, II	1.4	2624	1501	5	3362	254T	T,C
341	I	1.1	2718	1244	5	3401	254T	T,C
319	I, II, III	2.4	2842	2164	5.6	3482	254T	T,C
314	I	1.0	2950	1190	5.6	3401	254T	T,C
313	I	1.2	2898	1512	5.6	3262	254T	T,C
282	I, II, III	2.4	3223	2226	6.3	3482	254T	T,C
273	I	1.1	3326	1426	6.3	3362	254T	T,C
255	I, II, III	2.3	3558	2274	7.1	3482	254T	T,C
227	III	2.6	3990	2399	8	3482	254T	T,C
223	I, II	1.4	4071	1445	8	3372	254T	T,C
203	II, III	2.6	4462	2459	9	3482	254T	T,C
193	I	1.3	4696	1316	9	3372	254T	T,C
181	II, III	2.4	5013	2518	10	3482	254T	T,C
175	I	1.2	5176	1207	10	3372	254T	T,C
162	II, III	2.2	5592	2573	11.2	3482	254T	T,C
159	I	1.1	5718	1076	11.2	3372	254T	T,C
143	II, III	2.0	6342	2632	12.5	3482	254T	T,C
138	I	1.0	6561	858	12.5	3372	254T	T,C
130	I, II	1.9	7001	2676	14	3482	254T	T,C
125	III	3+	7251	3570	14	3592	254T	T,C
115	III	3.0	7867	3695	16	3592	254T	T,C
111	I, II	1.6	8181	2738	16	3482	254T	T,C
102	III	2.8	8941	3781	18	3592	254T	T,C
99	I, II	1.5	9131	2775	18	3482	254T	T,C
92	II, III	2.4	9891	3869	20	3592	254T	T,C
89	I	1.3	10254	2809	20	3482	254T	T,C

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

Gearmotors

15 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
79	II, III	2.3	11441	3958	22.4	3592	254T	T,C
78	I	1.2	11602	2835	22.4	3482	254T	T,C
73	II, III	2.1	12488	4047	25	3592	254T	T,C
70	III	2.4	13017	7730	25	2602	254T	T,C
68	I	1.0	13249	2852	25	3482	254T	T,C
65	II	1.8	14029	4090	28	3592	254T	T,C
64	I	1.0	14220	2854	28	3482	254T	T,C
63	III	2.1	14314	7653	28	2602	254T	T,C
58	I, II	1.7	15631	4175	31.5	3592	254T	T,C
55	III	2.0	16388	7512	31.5	2602	254T	T,C
51	I, II	1.5	17726	4214	35.5	3592	254T	T,C
51	III	2.3	17592	10467	35.5	2703	254T	T,C
45	I	1.3	20345	4253	40	3592	254T	T,C
44	II	1.6	20084	7206	40	2603	254T	T,C
44	III	2.4	20084	10450	40	2703	254T	T,C
41	I	1.2	22129	4285	45	3592	254T	T,C
39	II	1.4	22982	6910	45	2603	254T	T,C
39	III	2.1	22982	10427	45	2703	254T	T,C
35	I	1.0	25780	4310	50	3592	254T	T,C
35	II, III	2.0	25270	10407	50	2703	254T	T,C
32	I	1.2	27914	6274	56	2603	254T	T,C
32	II	1.8	27914	10381	56	2703	254T	T,C
32	III	3.0+	27711	13124	56	2803	254T	T,C
28	I	1.0	32621	6195	63	2603	254T	T,C
28	II	1.6	32693	10381	63	2703	254T	T,C
28	III	2.7	32236	12944	63	2803	254T	T,C
24	I, II	1.4	36558	10279	71	2703	254T	T,C
24	III	2.4	36761	12734	71	2803	254T	T,C
22	I	1.2	41235	10212	80	2703	254T	T,C
22	II, III	2.1	41134	12501	80	2803	254T	T,C
20	I	1.2	44478	10110	90	2703	254T	T,C
20	II, III	2.1	44100	16101	90	2803	254T	T,C
17.7	I	1.0	51300	10015	100	2703	254T	T,C
17.3	II	1.8	51353	11829	100	2803	254T	T,C
17.3	III	2.8	51353	15893	100	2903	254T	T,C
16.1	I, II	1.7	55421	11508	112	2803	254T	T,C
16.1	III	2.5	55421	15753	112	2903	254T	T,C
13.7	I, II	1.5	65082	10598	125	2803	254T	T,C
13.7	III	2.2	65082	15373	125	2903	254T	T,C
9.75	I, II	1.7	86431	14261	180	2905	254T	T,C
9	I	1.4	100592	13282	200	2905	254T	T,C
8	I	1.3	109870	12511	224	2905	254T	T,C
7	I	1.1	128426	10560	250	2905	254T	T,C
6.2	I	1.0	138680	9144	280	2905	254T	T,C

◇ Standard Motor Types (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1411	III	1.9	875	981	1.25	3401	256T	T,C
1268	III	2.1	974	1020	1.4	3401	256T	T,C
1122	III	2.1	1101	1041	1.6	3401	256T	T,C
1006	I, II	1.8	1228	1045	1.8	3401	256T	T,C
978	III	2.8	1264	1202	1.8	3501	256T	T,C
888	I, II	1.8	1391	1045	2	3401	256T	T,C
875	III	2.6	1412	1238	2	3501	256T	T,C
806	I, II	1.7	1532	1039	2.24	3401	256T	T,C
778	III	2.5	1588	1277	2.24	3501	256T	T,C
717	III	2.4	1722	1304	2.5	3501	256T	T,C
689	I,II	1.5	1793	1021	2.5	3401	256T	T,C
632	III	2.3	1955	1346	2.8	3501	256T	T,C
618	I, II	1.4	1998	996	2.8	3401	256T	T,C
570	III	2.1	2167	1380	3.15	3501	256T	T,C
550	I	1.3	2245	971	3.15	3401	256T	T,C
493	III	2.0	2506	1427	3.55	3501	256T	T,C
486	I	1.1	2541	930	3.55	3401	256T	T,C
448	II	1.9	2704	1914	4	3482	256T	T,C
430	III	3+	2814	2484	4	3592	256T	T,C
426	I	1.0	2901	874	4	3401	256T	T,C
400	II, III	2.1	3022	1961	4.5	3482	256T	T,C
356	I, II, III	2.1	3395	2009	5	3482	256T	T,C
319	I, II	1.8	3789	2052	5.6	3482	256T	T,C
307	III	2.9	3941	2709	5.6	3592	256T	T,C
282	I, II	1.8	4294	2099	6.3	3482	256T	T,C
274	III	2.7	4412	2793	6.3	3592	256T	T,C
255	I, II	1.7	4744	2134	7.1	3482	256T	T,C
244	III	2.4	4965	2858	7.1	3592	256T	T,C
222	I, II	1.9	5456	2267	8	3482	256T	T,C
221	III	3+	5476	2998	8	3592	256T	T,C
203	I, II	1.9	5947	2310	9	3482	256T	T,C
193	III	3+	6272	3078	9	3592	256T	T,C
181	I, II	1.8	6687	2352	10	3482	256T	T,C
176	III	3.0	6873	3160	10	3592	256T	T,C
162	I, II	1.7	7454	2387	11.2	3482	256T	T,C
158	III	2.8	7682	3235	11.2	3592	256T	T,C
143	I, II	1.5	8457	2421	12.5	3482	256T	T,C
141	III	2.6	8595	3319	12.5	3592	256T	T,C
130	I, II	1.4	9335	2443	14	3482	256T	T,C
125	III	2.4	9667	3382	14	3592	256T	T,C
111	I	1.2	10905	2466	16	3482	256T	T,C
102	II, III	2.1	11921	3476	16	3592	256T	T,C
99	I	1.1	12177	2472	18	3482	256T	T,C
99	II	1.8	13186	3537	18	3592	256T	T,C

◇ **Standard Motor Types** (see page A-34 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575V

Gearmotors

20 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
92	II, III	2.0	13186	3594	20	3592	256T	T,C
89	I	1.0	13670	2468	20	3482	256T	T,C
79	I, II	1.7	15254	3647	22.4	3592	256T	T,C
79	III	2.0	15251	7585	22.4	2602	256T	T,C
73	I, II	1.6	16651	3692	25	3592	256T	T,C
70	II	1.8	17356	7439	25	2602	256T	T,C
68	III	2.8	17771	10465	25	2702	256T	T,C
65	I, II	1.4	18704	3710	28	3592	256T	T,C
63	II	1.7	19085	7296	28	2602	256T	T,C
63	III	2.4	19223	10456	28	2702	256T	T,C
58	I	1.3	20841	3732	31.5	3592	256T	T,C
55	I, II	1.5	21851	7032	31.5	2602	256T	T,C
54	III	2.2	22404	10432	31.5	2702	256T	T,C
51	I	1.1	23635	3733	35.5	3592	256T	T,C
51	I	1.3	23456	6857	35.5	2603	256T	T,C
51	II	1.9	23456	10423	35.5	2703	256T	T,C
49	III	3.0+	23999	13250	35.5	2803	256T	T,C
45	-	0.97	27127	3722	40	3592	256T	T,C
44	I	1.2	26778	6437	40	2603	256T	T,C
43	II	1.8	26778	10393	40	2703	256T	T,C
43	III	3.0+	27524	13131	40	2803	256T	T,C
39	I	1.1	29827	6150	45	2603	256T	T,C
39	II	1.6	30643	10352	45	2703	256T	T,C
39	III	2.9	30236	13027	45	2803	256T	T,C
35	I, II	1.5	33693	10316	50	2703	256T	T,C
35	III	2.6	33354	12895	50	2803	256T	T,C
31	I, II	1.4	37219	10270	56	2703	256T	T,C
31	III	2.3	36947	12725	56	2803	256T	T,C
28	I	1.1	43591	10174	63	2703	256T	T,C
28	II, III	2.0	42981	12393	63	2803	256T	T,C
24	I	1.1	46356	10015	71	2703	256T	T,C
24	II	1.9	49015	12000	71	2803	256T	T,C
24	III	3.0	48952	15968	71	2903	256T	T,C
22	I, II	1.7	54845	11556	80	2803	256T	T,C
22	III	2.6	54775	15774	80	2903	256T	T,C
20	I, II	1.6	59387	11161	90	2803	256T	T,C
20	III	2.3	59387	15606	90	2903	256T	T,C
17.3	I, II	1.4	67015	10222	100	2803	256T	T,C
17.3	III	2.1	68471	15222	100	2903	256T	T,C
16.1	I	1.3	73895	9548	112	2803	256T	T,C
16.1	II, III	2.0	73895	14962	112	2903	256T	T,C
13.7	I	1.1	86775	7443	125	2803	256T	T,C
13.7	II	1.8	86775	14240	125	2903	256T	T,C
9.75	I	1.2	115241	12009	180	2905	256T	T,C
9	I	1.1	134123	9812	200	2905	256T	T,C

◇ Standard Motor Types (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1411	I, II	1.5	1094	827	1.25	3401	284T	T,C
1367	III	2.5	1129	1062	1.25	3501	284T	T,C
1268	I, II	1.7	1218	827	1.4	3401	284T	T,C
1199	III	2.4	1288	1101	1.4	3501	284T	T,C
1122	I, II	1.7	1376	822	1.6	3401	284T	T,C
1094	III	2.3	1412	1128	1.6	3501	284T	T,C
1006	I, II	1.4	1535	811	1.8	3401	284T	T,C
978	III	2.2	1579	1161	1.8	3501	284T	T,C
888	I, II	1.5	1738	788	2	3401	284T	T,C
875	III	2.1	1765	1194	2	3501	284T	T,C
806	I, II	1.4	1915	763	2.24	3401	284T	T,C
778	III	2.0	1985	1228	2.24	3501	284T	T,C
717	I, II	1.9	2153	1252	2.5	3501	284T	T,C
689	I	1.2	2241	715	2.5	3401	284T	T,C
632	I, II	1.9	2444	1288	2.8	3501	284T	T,C
618	I	1.1	2497	660	2.8	3401	284T	T,C
570	I, II	1.7	2709	1286	3.15	3501	284T	T,C
550	I	1.0	2806	614	3.15	3401	284T	T,C
545	III	3.0+	2832	7440	3.15	2602	284T	T,C
493	I, II	1.6	3132	1259	3.55	3501	284T	T,C
487	III	3.0+	3905	7431	3.55	2602	284T	T,C
486	n/a	0.91	3176	540	3.55	3401	284T	T,C
448	I, II	1.6	3380	1834	4	3482	284T	T,C
430	III	3+	3518	2421	4	3592	284T	T,C
400	I, II	1.7	3777	1872	4.5	3482	284T	T,C
376	III	3+	4028	2488	4.5	3592	284T	T,C
356	I, II	1.7	4244	1909	5	3482	284T	T,C
343	III	3.0	4408	2557	5	3592	284T	T,C
319	I, II	1.4	4737	1940	5.6	3482	284T	T,C
307	III	2.3	4927	2621	5.6	3592	284T	T,C
282	I, II	1.5	5368	1973	6.3	3482	284T	T,C
274	III	2.2	5515	2693	6.3	3592	284T	T,C
255	I, II	1.4	5929	1994	7.1	3482	284T	T,C
244	III	2.0	6206	2749	7.1	3592	284T	T,C
222	I, II	1.5	6820	2134	8	3482	284T	T,C
221	III	3.0	6846	2892	8	3592	284T	T,C
203	I, II	1.5	7433	2162	9	3482	284T	T,C
193	III	2.6	7840	2959	9	3592	284T	T,C
181	I, II	1.4	8358	2185	10	3482	284T	T,C
176	III	2.4	8592	3025	10	3592	284T	T,C
162	I	1.3	9318	2201	11.2	3482	284T	T,C
158	II, III	2.2	9603	3085	11.2	3592	284T	T,C
143	I	1.2	10571	2210	12.5	3482	284T	T,C
141	II, III	2.1	10744	3149	12.5	3592	284T	T,C
130	I	1.1	11669	2210	14	3482	284T	T,C

◇ **Standard Motor Types** (see page A-34 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575V

Gearmotors

25 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
126	III	2.5	12014	7467	14	2602	284T	T,C
125	II	1.9	12084	3195	14	3592	284T	T,C
111	I	1.0	13631	2193	16	3482	284T	T,C
113	II	1.9	13371	3257	16	3592	284T	T,C
107	III	2.3	14089	7552	16	2602	284T	T,C
96	III	2.0	15731	7559	18	2602	284T	T,C
92	I, II	1.5	16483	3292	18	3592	284T	T,C
92	I, II	1.6	16483	3320	20	3592	284T	T,C
85	II	1.8	17805	7404	20	2602	284T	T,C
85	III	2.8	17805	10465	20	2702	284T	T,C
79	I, II	1.4	19067	3336	22.4	3592	284T	T,C
79	I, II	1.6	19188	7287	22.4	2602	284T	T,C
78	III	2.4	19275	10455	22.4	2702	284T	T,C
73	I	1.2	20813	3337	25	3592	284T	T,C
70	I, II	1.4	21695	7048	25	2602	284T	T,C
68	III	2.2	22214	10433	25	2702	284T	T,C
63	I	1.3	23856	6811	28	2602	284T	T,C
63	II, III	2.0	23890	10418	28	2702	284T	T,C
55	I	1.2	27313	6362	31.5	2602	284T	T,C
55	II	1.8	28005	10380	31.5	2702	284T	T,C
55	III	3.0+	26948	13151	31.5	2803	284T	T,C
51	I	1.0	29297	6015	35.5	2603	284T	T,C
51	II	1.5	29321	10367	35.5	2703	284T	T,C
49	III	2.8	29999	13037	35.5	2803	284T	T,C
44	I, II	1.4	33473	10319	40	2703	284T	T,C
43	II, III	2.6	34405	12847	40	2803	284T	T,C
39	I	1.3	38303	10255	45	2703	284T	T,C
39	II, III	2.3	37795	12682	45	2803	284T	T,C
35	I, II, III	2.0	41693	12469	50	2803	284T	T,C
35	III	3.0+	41640	16179	50	2903	284T	T,C
32	III	2.9	46125	16054	56	2903	284T	T,C
28	I, II	1.7	53726	11646	63	2803	284T	T,C
28	III	2.6	53658	15813	63	2903	284T	T,C
24	I, II	1.5	61268	10984	71	2803	284T	T,C
24	III	2.4	61190	15531	71	2903	284T	T,C
22	I, II	1.4	68556	10213	80	2803	284T	T,C
22	III	2.0	68468	15218	80	2903	284T	T,C
20	I	1.3	74234	9502	90	2803	284T	T,C
20	II	1.8	74234	14944	90	2903	284T	T,C
17.3	I	1.1	85589	7677	100	2803	284T	T,C
17.3	II	1.8	85589	14319	100	2903	284T	T,C
16.1	I, II	1.5	92368	13877	112	2903	284T	T,C
13.7	I, II	1.4	108469	12635	125	2903	284T	T,C

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1411	I	1.3	1313	638	1.25	3401	286T	T,C
1389	II, III	2.1	1334	1030	1.25	3501	286T	T,C
1268	I, II	1.4	1461	621	1.4	3401	286T	T,C
1199	III	2.0	1546	1066	1.4	3501	286T	T,C
1122	I, II	1.4	1652	603	1.6	3401	286T	T,C
1094	I, II	1.9	1694	1091	1.6	3501	286T	T,C
1006	I	1.2	1842	577	1.8	3401	286T	T,C
978	I, II	1.8	1895	1112	1.8	3501	286T	T,C
888	I	1.2	2086	530	2	3401	286T	T,C
875	I, II	1.8	2118	1112	2	3501	286T	T,C
806	I	1.1	2298	486	2.24	3401	286T	T,C
778	I, II	1.7	2382	1104	2.24	3501	286T	T,C
717	I, II	1.6	2584	1095	2.5	3501	286T	T,C
689	I	1.0	2689	409	2.5	3401	286T	T,C
648	I, II	1.6	2859	1070	2.8	3501	286T	T,C
618	N/A	0.95	2996	325	2.8	3401	286T	T,C
570	I, II	1.4	3251	1041	3.15	3501	286T	T,C
540	III	3.0+	3290	7030	3.15	2602	286T	T,C
493	I, II	1.4	3759	984	3.55	3501	286T	T,C
487	III	3.0+	3730	7025	3.55	2602	286T	T,C
448	I	1.3	4055	1755	4	3482	286T	T,C
430	III	2.8	4221	2358	4	3592	286T	T,C
400	I, II	1.4	4533	1783	4.5	3482	286T	T,C
376	III	2.6	4833	2418	4.5	3592	286T	T,C
356	I, II	1.4	5093	1809	5	3482	286T	T,C
343	III	2.5	5290	2478	5	3592	286T	T,C
319	I	1.2	5684	1829	5.6	3482	286T	T,C
307	II	1.9	5912	2533	5.6	3592	286T	T,C
282	I	1.2	6441	1846	6.3	3482	286T	T,C
274	II	1.8	6617	2594	6.3	3592	286T	T,C
255	I	1.1	7115	1854	7.1	3482	286T	T,C
244	II	1.6	7447	2639	7.1	3592	286T	T,C
222	I	1.3	8184	2001	8	3482	286T	T,C
221	II, III	2.5	8215	2785	8	3592	286T	T,C
203	I	1.3	8920	2013	9	3482	286T	T,C
193	II, III	2.2	9408	2839	9	3592	286T	T,C
181	I	1.2	10030	2018	10	3482	286T	T,C
176	II, III	2.0	10310	2891	10	3592	286T	T,C
162	I	1.1	11181	2015	11.2	3482	286T	T,C
158	II	1.9	11523	2935	11.2	3592	286T	T,C
152	III	2.6	11928	6945	11.2	2602	286T	T,C
143	I	1.0	12685	1999	12.5	3482	286T	T,C
141	II	1.7	12893	2979	12.5	3592	286T	T,C
139	III	2.4	13069	6985	12.5	2602	286T	T,C
130	N/A	0.93	14002	1977	14	3482	286T	T,C

◇ **Standard Motor Types** (see page A-34 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575V

Gearmotors

30 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
126	III	2.1	14417	7013	14	2602	286T	T,C
125	I, II	1.6	14500	3007	14	3592	286T	T,C
115	I, II	1.4	15783	3038	16	3592	286T	T,C
108	II	1.9	16907	7019	16	2602	286T	T,C
108	III	2.9	16699	10472	16	2702	286T	T,C
102	I	1.3	17882	3048	18	3592	286T	T,C
96	II	1.6	18877	6990	18	2602	286T	T,C
95	III	2.6	19085	10457	18	2702	286T	T,C
92	I	1.3	19780	3045	20	3592	286T	T,C
85	I, II	1.5	21367	6919	20	2602	286T	T,C
85	III	2.3	21367	10440	20	2702	286T	T,C
79	I	1.1	22881	3026	22.4	3592	286T	T,C
79	II	1.4	22891	6854	22.4	2602	286T	T,C
78	III	2.0	23130	10426	22.4	2702	286T	T,C
73	I	1.0	24976	2764	25	3592	286T	T,C
70	I	1.2	26034	6539	25	2602	286T	T,C
70	II	1.8	26656	10394	25	2702	286T	T,C
70	III	3.0+	25524	13200	25	2803	286T	T,C
63	I	1.1	28627	6166	28	2602	286T	T,C
63	II	1.7	28835	10372	28	2702	286T	T,C
61	III	3.0	28982	13076	28	2803	286T	T,C
55	I, II	1.5	33606	10317	31.5	2702	286T	T,C
55	III	2.7	32337	12940	31.5	2803	286T	T,C
51	I	1.3	35185	10297	35.5	2703	286T	T,C
49	II, III	2.4	35998	12771	35.5	2803	286T	T,C
44	I	1.2	40168	10228	40	2703	286T	T,C
43	II, III	2.1	41286	12492	40	2803	286T	T,C
39	I	1.1	45680	10025	45	2703	286T	T,C
39	II, III	2.0	45354	12246	45	2803	286T	T,C
35	I	1.0	51000	9825	50	2703	286T	T,C
35	II	1.7	50031	11927	50	2803	286T	T,C
35	III	2.8	49968	15936	50	2903	286T	T,C
32	I, II	1.6	55421	11508	56	2803	286T	T,C
32	III	2.4	55350	15753	56	2903	286T	T,C
28	I, II	1.4	64471	10662	63	2803	286T	T,C
28	III	2.2	64389	15399	63	2903	286T	T,C
24	I	1.3	73522	9597	71	2803	286T	T,C
24	II, III	2.0	73428	14980	71	2903	286T	T,C
22	I	1.1	82267	8281	80	2803	286T	T,C
22	II	1.8	82162	14510	80	2903	286T	T,C
20	I, II	1.7	89080	14094	90	2903	286T	T,C
17.3	I, II	1.5	102707	13116	100	2903	286T	T,C
16.1	I, II	1.4	110842	12424	112	2903	286T	T,C
13.7	I	1.2	130163	10341	125	2903	286T	T,C

◇ Standard Motor Types (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1367	I, II	1.5	1807	819	1.25	3501	324T	T,C
1199	I, II	1.5	2061	812	1.4	3501	324T	T,C
1094	I, II	1.4	2259	802	1.6	3501	324T	T,C
978	I, II	1.4	2527	784	1.8	3501	324T	T,C
875	I	1.3	2824	757	2	3501	324T	T,C
778	I	1.3	3176	718	2.24	3501	324T	T,C
717	I	1.2	3445	684	2.5	3501	324T	T,C
632	I	1.2	3911	617	2.8	3501	324T	T,C
570	I	1.1	4334	550	3.15	3501	324T	T,C
552	II, III	2.5	4387	5810	3.15	2602	324T	T,C
493	I	1.0	5012	431	3.55	3501	324T	T,C
489	II, III	2.2	4951	5855	3.55	2602	324T	T,C
430	I, II, III	2.1	5629	2233	4	3592	324T	T,C
376	I, II, III	2.0	6445	2278	4.5	3592	324T	T,C
348	III	3.0+	6957	9868	5	2702	324T	T,C
343	I, II	1.9	7053	2321	5	3592	324T	T,C
307	I, II	1.4	7883	2358	5.6	3592	324T	T,C
274	I	1.3	8823	2395	6.3	3592	324T	T,C
274	II,III	3.0	8740	6065	6.3	2602	324T	T,C
246	II,III	2.8	9860	6107	7.1	2602	324T	T,C
244	I	1.2	9930	2419	7.1	3592	324T	T,C
221	I, II	1.9	10953	2571	8	3592	324T	T,C
217	III	2.5	11147	6163	8	2602	324T	T,C
193	I, II	1.6	12543	2600	9	3592	324T	T,C
191	III	2.2	12682	6199	9	2602	324T	T,C
176	I, II	1.5	13747	2623	10	3592	324T	T,C
175	III	2.1	13829	6208	10	2602	324T	T,C
158	I, II	1.4	15365	2636	11.2	3592	324T	T,C
152	I, II	1.6	15904	6194	11.2	2602	324T	T,C
152	III	3.0+	15604	6180	11.2	2702	324T	T,C
141	I	1.3	17190	2639	12.5	3592	324T	T,C
140	II	1.6	17425	6162	12.5	2602	324T	T,C
140	III	2.7	17287	9831	12.5	2702	324T	T,C
125	I	1.2	19334	2632	14	3592	324T	T,C
125	I, II	1.6	19223	6105	14	2602	324T	T,C
125	III	2.4	19223	9739	14	2702	324T	T,C
115	I	1.1	21044	2601	16	3592	324T	T,C
108	I, II	1.4	22542	5954	16	2602	324T	T,C
108	III	2.2	22265	9571	16	2702	324T	T,C
102	I	1.0	23842	2535	18	3592	324T	T,C
97	I	1.2	25170	5801	18	2602	324T	T,C
97	II	1.6	25446	9270	18	2702	324T	T,C
97	III	3.0+	24755	13225	18	2803A	324T	T,C
86	I	1.1	28410	5710	20	2602	324T	T,C

◇ **Standard Motor Types** (see page A-34 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575V

Gearmotors

40 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
86	II	1.6	28489	8894	20	2702	324T	T,C
78	I	1.0	32000	5595	22.4	2602	324T	T,C
78	II	1.6	31189	8710	22.4	2702	324T	T,C
78	III	2.8	29965	13038	22.4	2803	324T	T,C
69	I, II	1.4	34494	8625	25	2702	324T	T,C
69	III	2.5	34032	12864	25	2803	324T	T,C
61	I	1.3	38366	8500	28	2702	324T	T,C
61	II, III	2.3	38642	12637	28	2803	324T	T,C
55	I	1.1	43966	8401	31.5	2702	324T	T,C
55	II, III	2.0	43117	12385	31.5	2803	324T	T,C
49	I, II	1.9	47998	12070	35.5	2803	324T	T,C
49	III	2.8	47998	16000	35.5	2903	324T	T,C
43	I, II	1.7	55048	11539	40	2803	324T	T,C
43	III	2.6	55048	15767	40	2903	324T	T,C
39	I, II	1.5	60472	11060	45	2803	324T	T,C
39	III	2.3	60472	15563	45	2903	324T	T,C
36	I, II	1.4	66709	10422	50	2803	324T	T,C
36	II, III	2.1	66709	15301	50	2903	324T	T,C
32	I	1.2	73895	9548	56	2803	324T	T,C
32	II, III	2.0	73895	14962	56	2903	324T	T,C
28	I, II	1.6	85962	14290	63	2903	324T	T,C
24	I, II	1.5	98029	13476	71	2903	324T	T,C
22	I, II	1.4	107921	12527	80	2903	324T	T,C

◇ **Standard Motor Types** (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575V

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL ▲ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
552	I, II, III	2.0	5480	5410	3.15	2602	326T	T,C
489	I, II	1.8	6186	5455	3.6	2602	326T	T,C
432	I, II	1.6	7002	5505	4	2602	326T	T,C
381	I, II	1.5	7940	5505	4.5	2602	326T	T,C
348	I	1.3	8693	5540	5	2602	326T	T,C
348	II, III	2.8	8705	9120	5	2702	326T	T,C
304	I	1.2	9951	5580	5.6	2602	326T	T,C
277	I, II, III	2.4	10925	5623	6.3	2602	326T	T,C
246	I, II, III	2.2	12326	5641	7.1	2602	326T	T,C
217	I, II, III	2.0	13933	5636	8	2602	326T	T,C
193	I, II	1.8	15852	5600	9	2602	326T	T,C
193	III	2.9	15541	9086	9	2702	326T	T,C
175	I, II	1.7	17287	5555	10	2602	326T	T,C
170	III	2.7	17805	8990	10	2702	326T	T,C
153	I	1.2	19880	5442	11.2	2602	326T	T,C
153	II, III	2.5	19534	8890	11.2	2702	326T	T,C
140	I	1.2	21781	5338	12.5	2602	326T	T,C
140	II, III	2.2	21609	8727	12.5	2702	326T	T,C
125	I	1.2	24029	5196	14	2602	326T	T,C
125	II, III	2.0	24029	8552	14	2702	326T	T,C
109	I	1.1	28178	4889	16	2602	326T	T,C
109	I	1.2	27832	8256	16	2702	326T	T,C
109	II, III	2.4	27486	13132	16	2803A	326T	T,C
97	I	1.2	31808	7809	18	2702	326T	T,C
97	II, III	2.3	30943	12998	18	2803A	326T	T,C
86	I	1.2	35611	7766	20	2702	326T	T,C
78	I, II, III	2.2	37456	12699	22.4	2803	326T	T,C
69	I	1.1	43590	7510	25	2702	326T	T,C
69	II, III	2.0	42540	12419	25	2803	326T	T,C
61	I	1.0	47600	7500	28	2702	326T	T,C
61	II	1.9	48303	12049	28	2803	326T	T,C
61	III	2.9	48303	15990	28	2903	326T	T,C
55	I, II	1.7	53896	15807	31.5	2803	326T	T,C
55	III	2.6	53896	15807	31.5	2903	326T	T,C
49	I, II	1.5	59997	11104	35.5	2803	326T	T,C
49	III	2.3	59997	15882	35.5	2903	326T	T,C
43	I	1.3	68810	10183	40	2803	326T	T,C
43	II, III	2.2	68810	15206	40	2903	326T	T,C
39	I	1.2	76411	10010	45	2803	326T	T,C
39	II, III	2.0	75166	14928	45	2903	326T	T,C
36	I, II	1.8	83386	14445	50	2903	326T	T,C
32	I, II	1.6	92368	13877	56	2903	326T	T,C
28	I	1.3	107452	12723	63	2903	326T	T,C
23	I	1.2	137112	9382	80	2903	326T	T,C
19.4	I	1.0	154160	7855	100	2903	326T	T,C

◇ Standard Motor Types (see page A-34 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

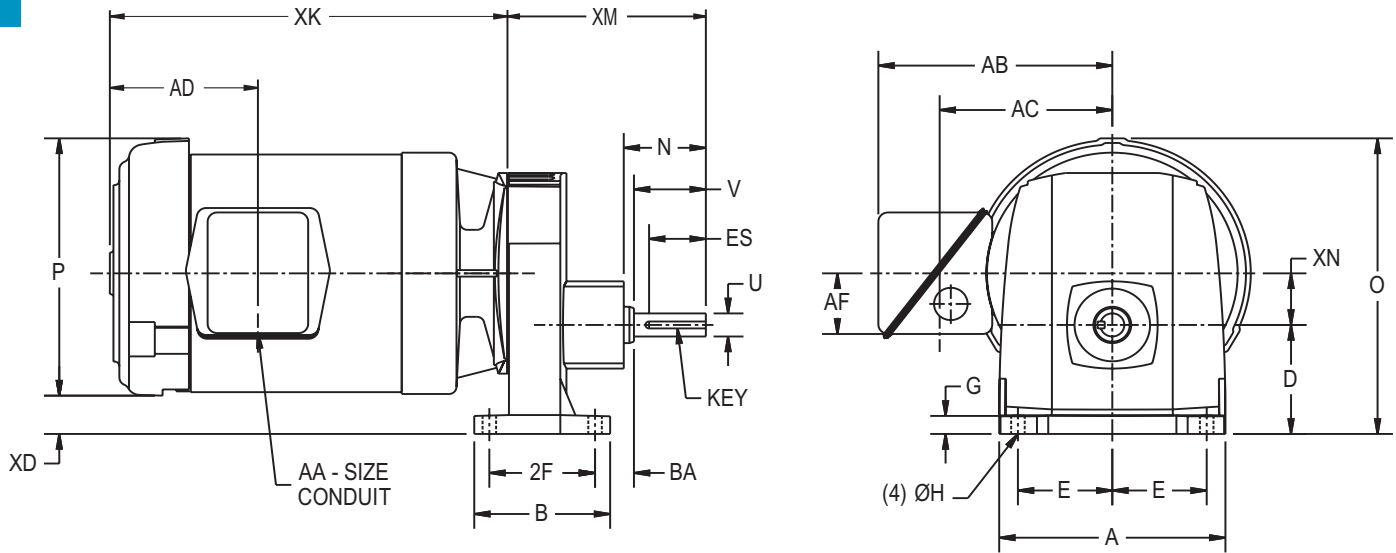
C Corro-Duty®, three phase, 230/460 or 575V

▲ Overhung loads are at shaft midpoint

Three Phase Gearmotor

Foot Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
30	5.90	3.54	2.95	2.46	.49	.35	2.14	.625	1.88	1.01	2.76	1.48	1.40	5.75	3/16 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	8.01	7.22	3/4	6.10	4.50	3.86	1.64	1.04
B56	T	11.04	8.01	7.22	3/4	6.10	4.50	3.86	1.64	1.04
143T,145T	T	11.04	8.01	7.22	3/4	6.10	4.50	3.86	1.64	1.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

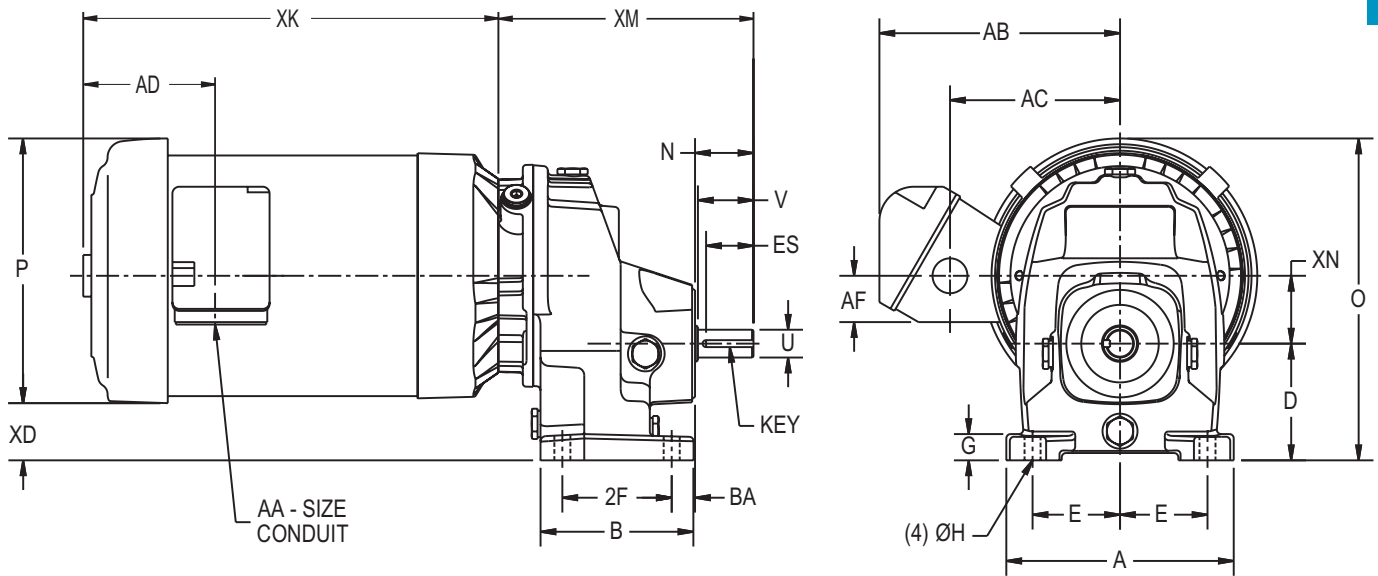
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
31	6.14	4.13	3.15	2.36	.71	.43	1.58	.750	1.50	.71	2.95	1.28	1.83	6.89	3/16 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	8.64	7.22	3/4	6.10	4.21	3.86	.94	1.65
B56	T	11.04	8.64	7.22	3/4	6.10	4.21	3.86	.94	1.65
143T,145T	T	11.04	8.64	7.22	3/4	6.10	4.21	3.86	.94	1.65
182T,184T	T	14.04	9.76	9.56	3/4	7.52	6.27	5.13	2.13	.64

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

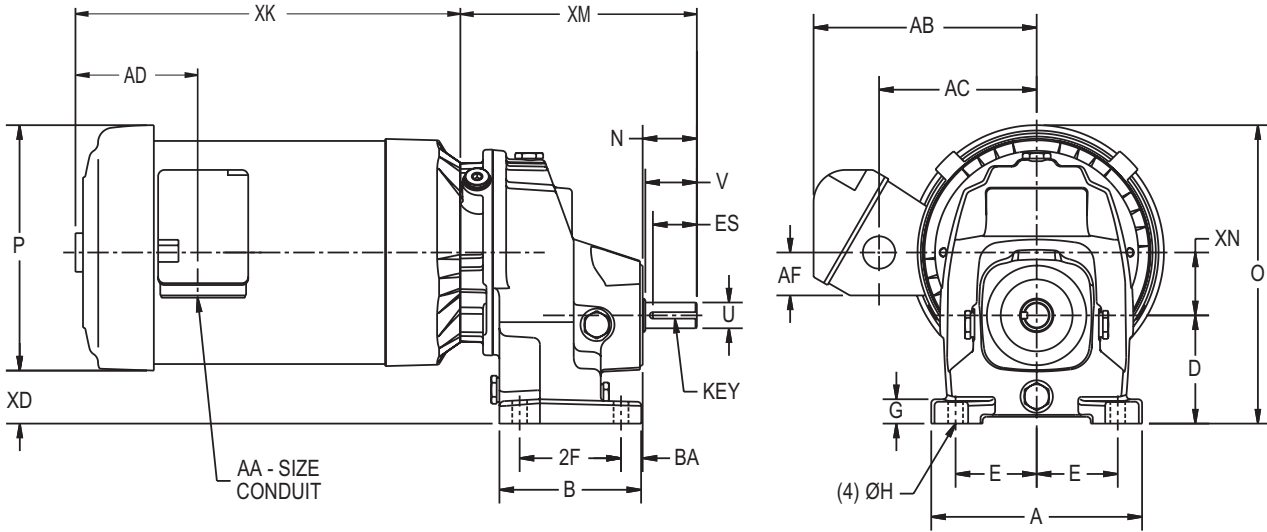
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
32	7.08	4.48	3.54	2.76	.77	.55	2.08	1.000	2.00	.75	3.15	1.56	2.48	7.51	1/4 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	9.68	7.22	3/4	6.10	4.50	3.86	1.64	2.75
B56	T	11.04	9.68	7.22	3/4	6.10	4.50	3.86	1.64	2.75
143T,145T	T	11.04	9.68	7.22	3/4	6.10	4.50	3.86	1.64	2.75
182T,184T	T	14.04	10.81	9.56	3/4	7.52	6.27	5.13	2.13	1.68
213T	T	16.15	11.65	11.25	3/4	8.42	7.17	5.6	2.13	.96
215T	T	17.65	11.65	11.25	3/4	8.42	7.17	5.6	2.13	1.09

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

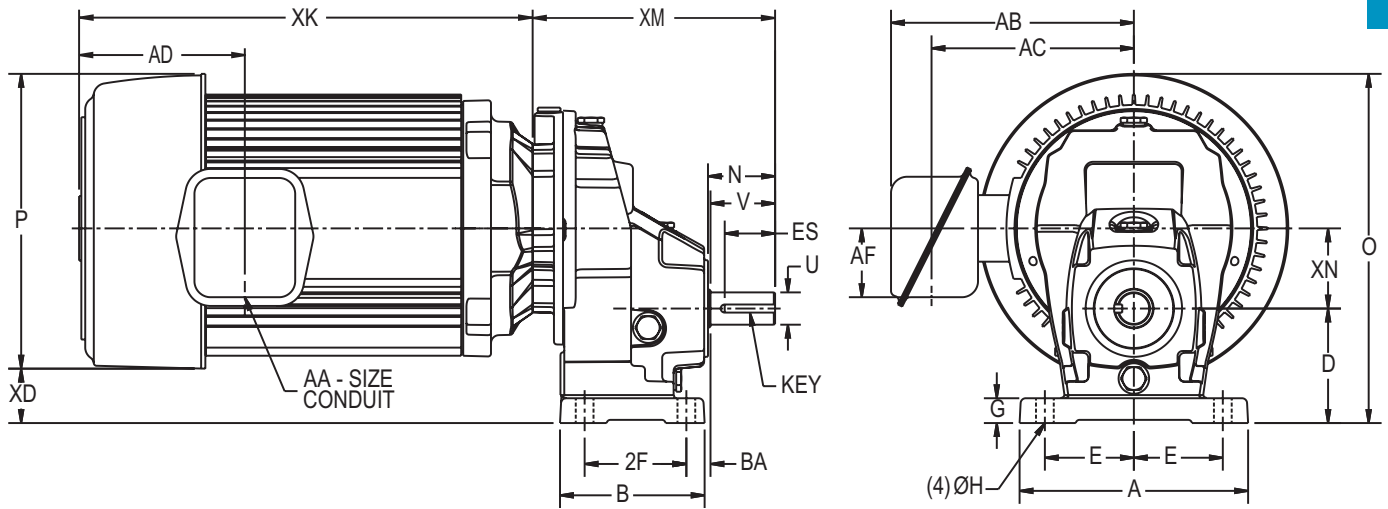
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
33	9.69	5.30	4.41	3.74	1.00	.63	2.83	1.38	2.75	1.09	3.94	2.40	2.76	8.91	5/16 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
182T,184T	T	14.04	11.95	9.56	3/4	7.52	6.27	5.13	2.13	2.83
213T	T	16.15	12.79	11.25	1	8.42	7.16	5.60	2.13	2.10
215T	T	17.65	12.79	11.25	1	8.42	7.16	5.60	2.13	2.10
254T	T	20.58	13.86	13.38	1 1/4	9.79	7.68	8.29	1.81	1.17
256T	T	22.33	13.86	13.38	1 1/4	9.79	7.68	8.29	1.81	1.17

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

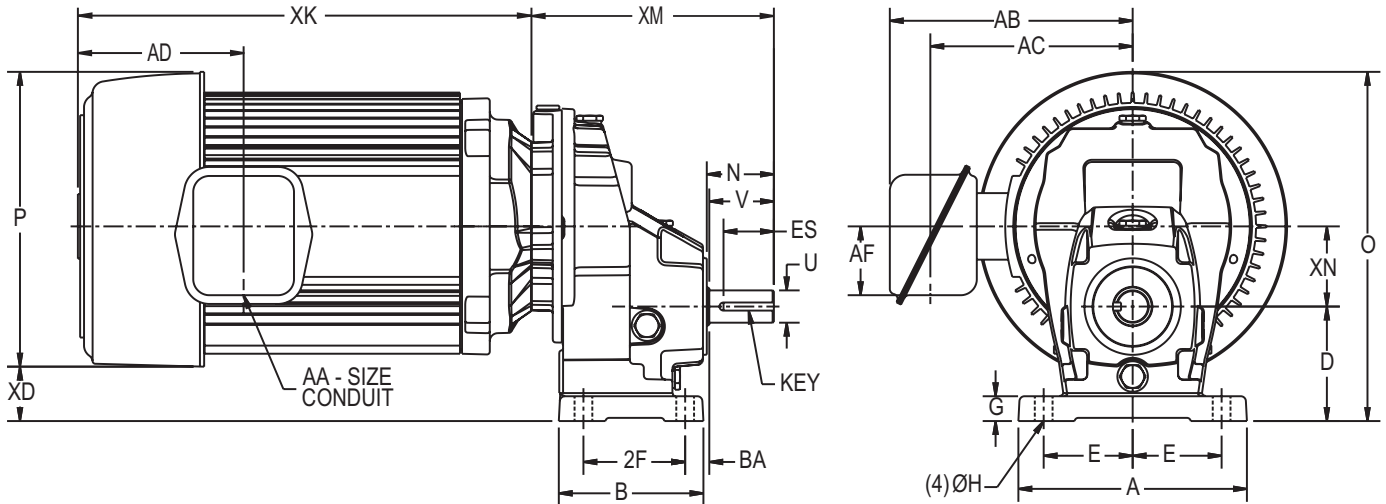
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Single Reduction

CbN
SERIES **2000**
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Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM		Key
														182T-215T	254T-286T	
34	11.02	6.59	5.20	4.25	1.34	.71	3.06	1.50	3.00	1.10	4.92	2.56	3.43	9.98	10.63	3/8 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
182T, 184T	T	14.04	13.90	9.56	3/4	7.52	6.27	5.13	2.13	4.28
213T	T	16.15	14.25	11.25	1	8.42	7.17	5.6	2.13	3.56
215T	T	17.65	14.25	11.25	1	8.42	7.17	5.6	2.13	3.56
254T	T	19.61	15.31	13.38	1 1/4	9.79	7.68	8.29	1.81	2.62
256T	T	21.36	15.31	13.38	1 1/4	9.79	7.68	8.29	1.81	2.62
284T, 286T	T	24.71	15.96	14.66	1 1/2	11.33	9.16	13.19	2.63	1.34

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

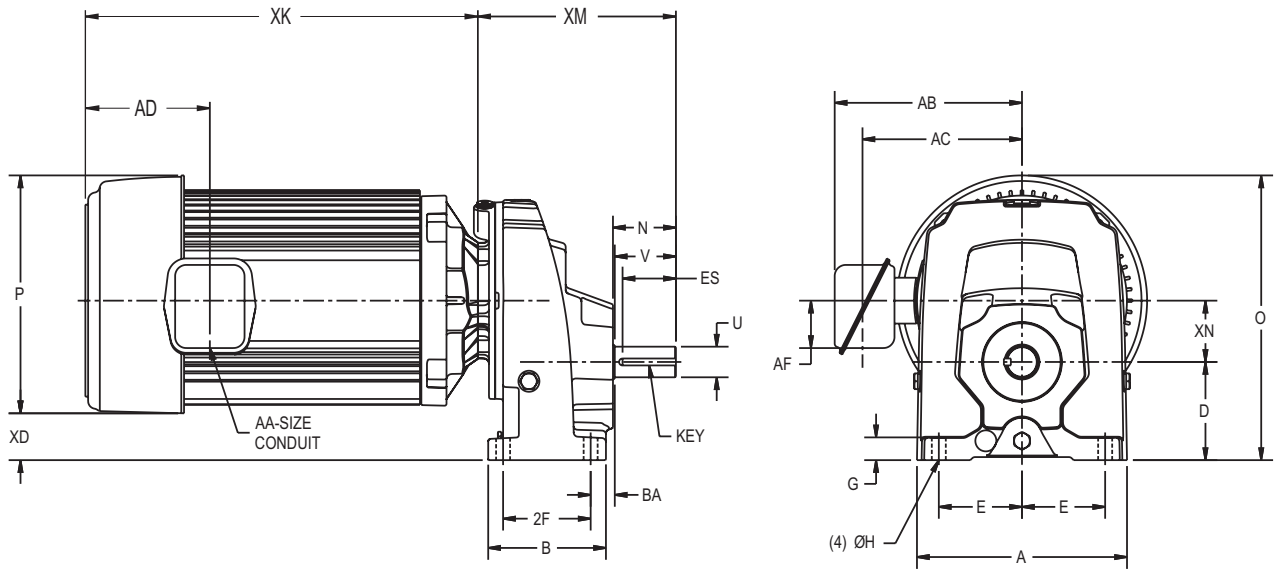
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Single Reduction



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM		Key
														213T-215T	254T-324T	
35	13.65	7.76	6.30	5.12	1.61	.79	3.56	1.750	3.50	1.18	6.30	3.06	4.33	10.84	11.36	3/8 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
213T	T	16.15	17.37	11.25	1	8.42	7.17	5.6	2.13	5.57
215T	T	17.65	17.37	11.25	1	8.42	7.17	5.6	2.13	5.57
254T	T	19.61	17.37	13.38	1 1/4	9.79	7.68	8.29	1.81	4.63
256T	T	21.36	17.37	13.38	1 1/4	9.79	7.68	8.29	1.81	4.63
284T, 286T	T	24.71	17.99	14.66	1 1/2	11.33	9.16	13.19	2.63	3.37
324T	T	24.96	18.81	16.34	2	14.30	10.69	14.16	3.25	2.85

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

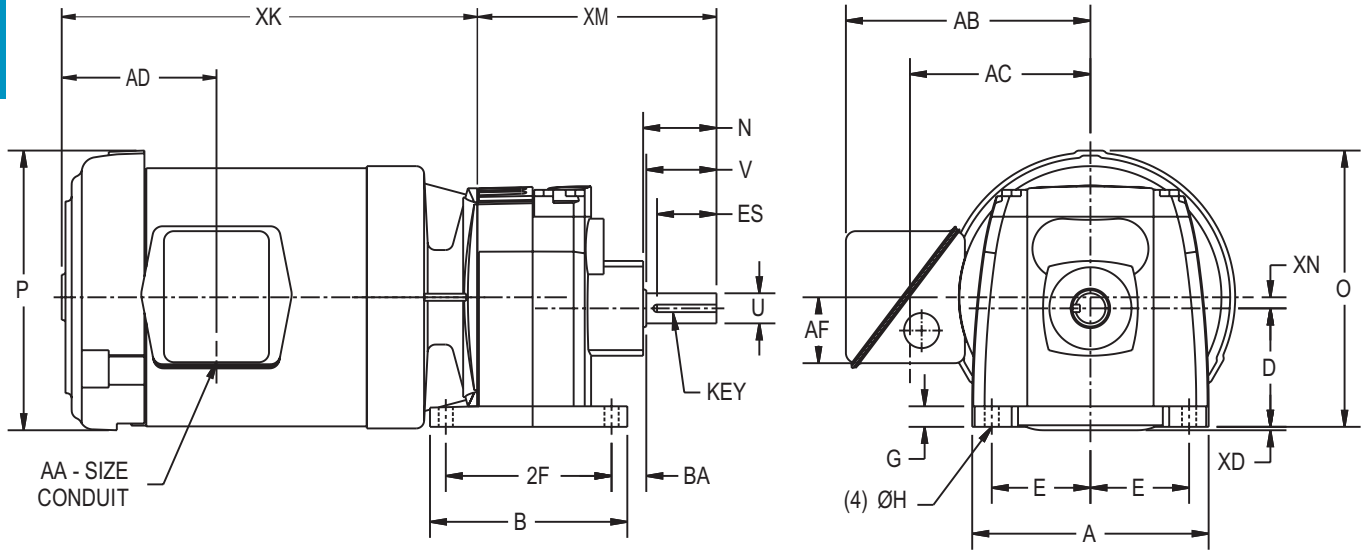
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
3012	5.90	4.92	2.95	2.46	.51	.35	1.83	.750	1.75	.87	4.13	1.48	.28	6.54	3/16 Sq.
3013	5.90	5.71	2.95	2.46	.51	.35	1.83	.750	1.75	.87	4.92	1.48	.28	7.33	3/16 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	6.88	7.22	1/2	6.10	4.50	3.86	1.64	.08
B56	T	11.04	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.08
143T,145T	T	11.04	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.08

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

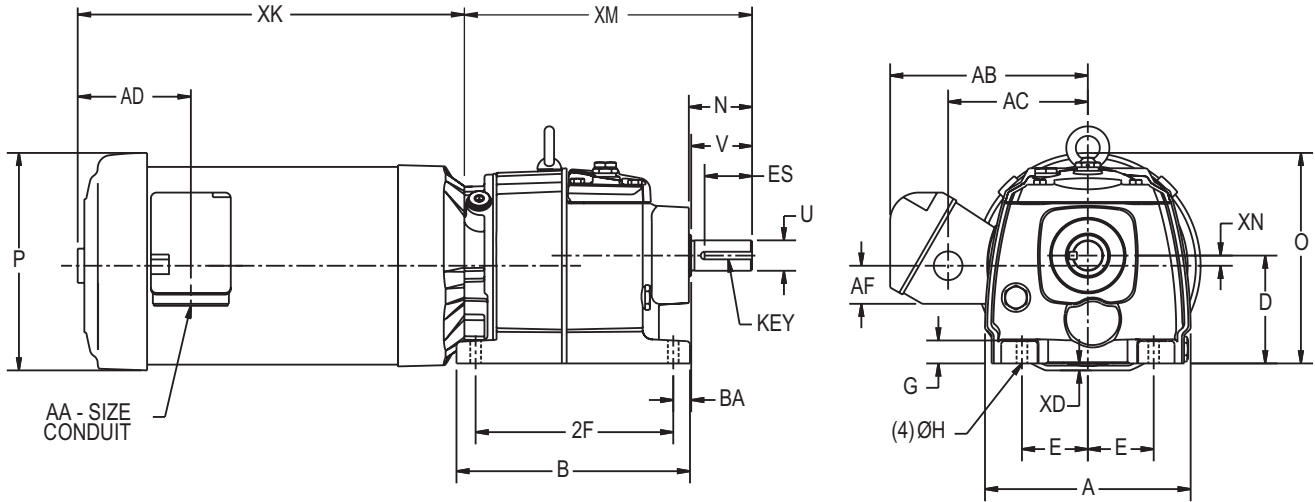
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Double/Triple Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	XN	N	U ³	V	BA	2F	ES	XM	Key
31	6.76	7.68	3.54	2.17	.75	.35	.33	2.08	1.000	2.00	.59	6.50	1.56	9.46	1/4 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	6.87	7.22	3/4	6.10	4.21	3.86	.94	.10
B56	T	11.04	6.87	7.22	3/4	6.10	4.21	3.86	.94	.10
143T,145T	T	11.04	6.87	7.22	3/4	6.10	4.21	3.86	.94	.10
182T,184T	T	14.04	7.99	9.56	3/4	7.52	6.27	5.13	2.13	1.13

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

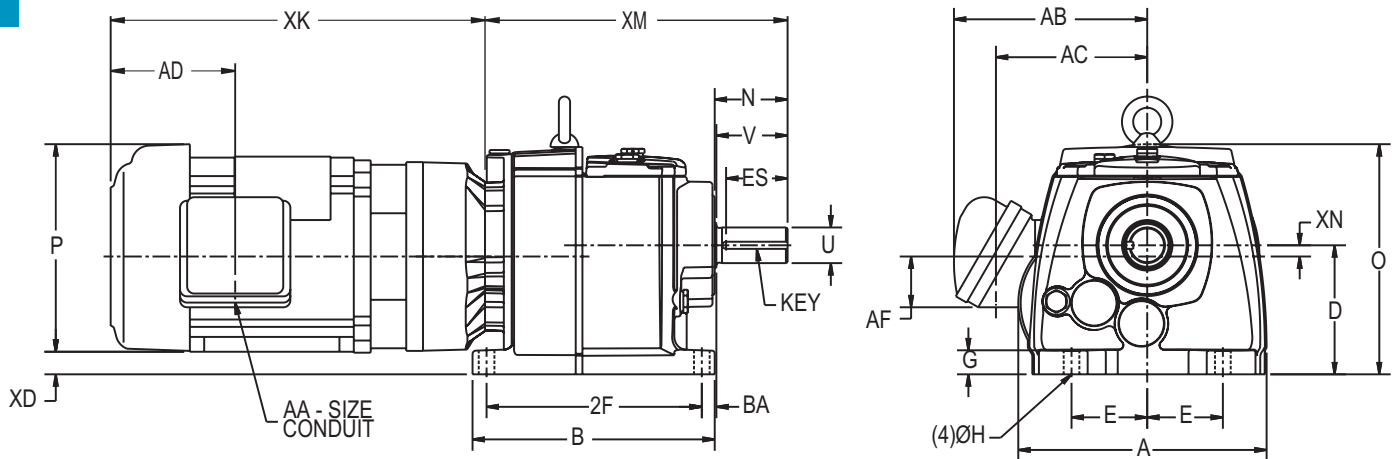
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
32	8.72	8.50	4.53	2.66	.84	.55	2.56	1.250	2.50	.51	7.56	2.16	.39	10.63	1/4 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	7.98	7.22	3/4	6.10	4.50	3.86	1.64	.87
B56	T	11.04	7.98	7.22	3/4	6.10	4.50	3.86	1.64	.87
143T,145T	T	11.04	7.98	7.22	3/4	6.10	4.50	3.86	1.64	.87
182T,184T	T	14.04	8.92	9.56	3/4	7.52	6.27	5.13	2.13	1.08
213T	T	16.15	9.76	11.25	1	8.42	7.17	5.60	2.13	2.05
215T	T	17.65	9.76	11.25	1	8.42	7.17	5.60	2.13	2.05

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

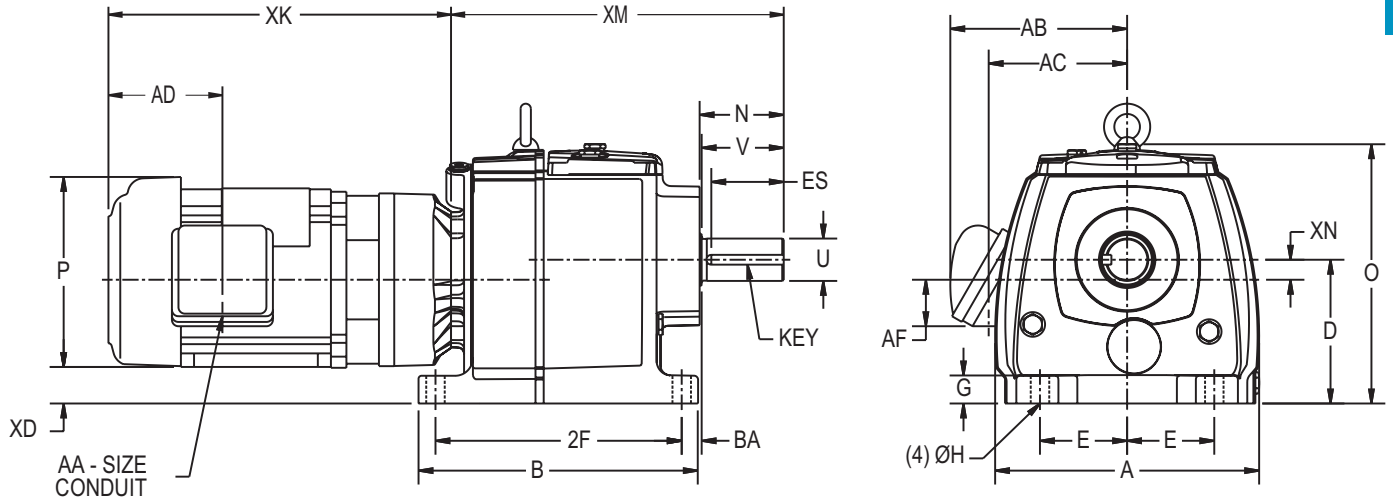
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
3362,3363	10.13	10.72	5.51	3.35	1.07	.71	3.08	1.50	3.00	.77	9.45	2.56	.77	12.62	3/8 Sq.
3372,3373	10.13	10.72	5.51	3.35	1.07	.71	3.23	1.63	3.15	.77	9.45	2.78	.77	12.77	3/8 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	9.94	7.22	3/4	6.10	4.50	3.86	1.64	1.47
B56	T	11.04	9.94	7.22	3/4	6.10	4.50	3.86	1.64	1.47
143T,145T	T	11.04	9.94	7.22	3/4	6.10	4.50	3.86	1.64	1.47
182T,184T	T	14.04	9.94	9.56	3/4	7.52	6.27	5.13	2.13	.40
213T	T	16.15	10.37	11.25	1	8.42	7.16	5.60	2.13	.32
215T	T	17.65	10.37	11.25	1	8.42	7.16	5.60	2.13	.32
254T	T	20.58	11.44	13.38	1 1/4	9.79	7.68	8.29	1.81	1.25
256T	T	22.33	11.44	13.38	1 1/4	9.79	7.68	8.29	1.81	1.25

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

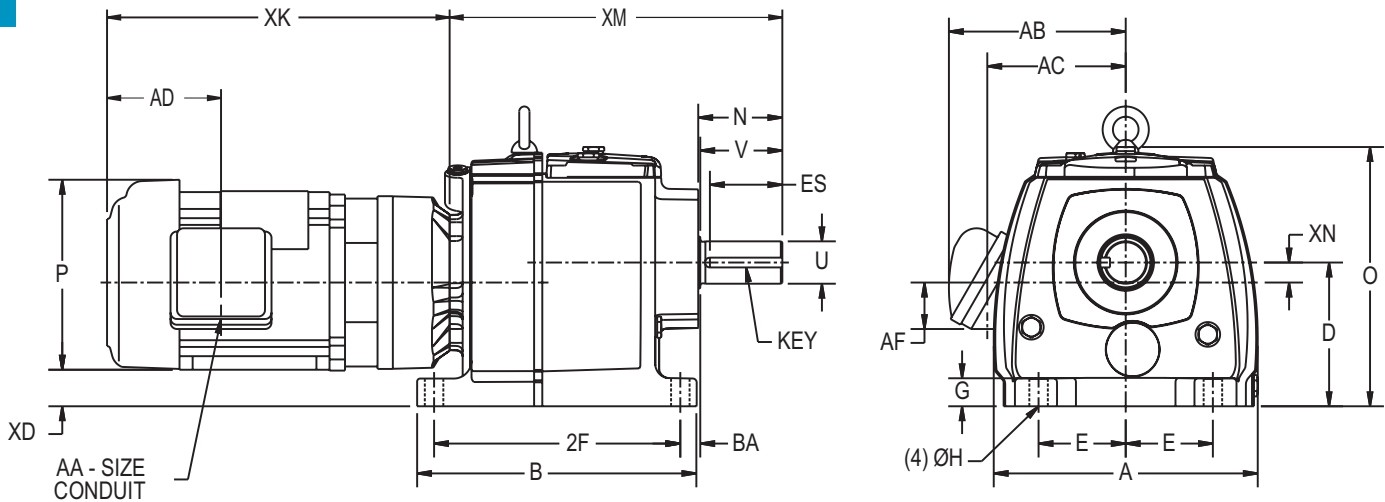
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Double/Triple Reduction

CbN
SERIES 2000
3000



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM		Key
														143T-256T	284T-324T	
34	11.97	10.87	7.09	4.53	1.37	.71	3.58	2.125	3.50	.98	9.25	3.06	1.02	14.34	14.69	1/2 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	11.89	7.22	0.75	6.10	4.50	3.86	1.64	2.75
B56	T	11.04	11.89	7.22	0.75	6.10	4.50	3.86	1.64	2.75
143T,145T	T	11.04	11.89	7.22	0.75	6.10	4.50	3.86	1.64	2.75
182T,184T	T	14.04	11.89	9.56	0.75	7.52	6.27	5.13	2.13	1.72
213T	T	16.15	11.89	11.25	1	8.42	7.17	5.60	2.13	1.00
215T	T	17.65	11.89	11.25	1	8.42	7.17	5.60	2.13	1.00
254T	T	19.61	12.75	13.38	1.25	9.79	7.68	8.29	1.81	.06
256T	T	21.36	12.75	13.38	1.25	9.79	7.68	8.29	1.81	.06
284T, 286T	T	24.71	13.44	14.66	1 1/2	11.33	9.16	13.19	2.63	-1.22

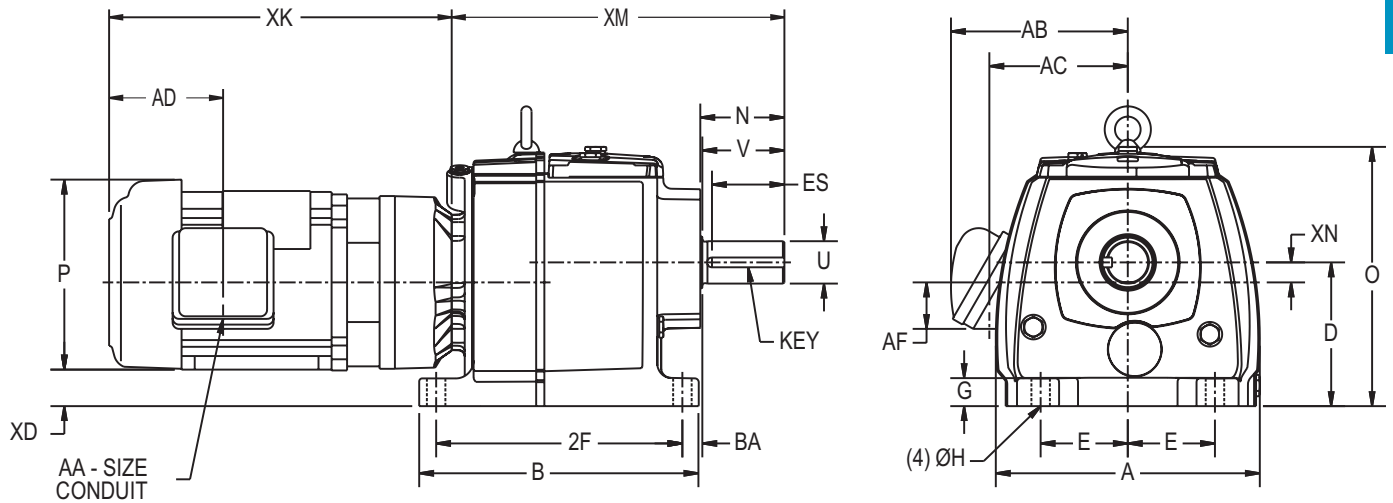
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

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⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM		Key
														143T-256T	284T-324T	
35	14.19	12.89	8.86	5.51	1.73	.87	4.81	2.38	4.72	1.10	11.02	4.19	1.14	16.60	17.12	5/8 Sq.

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
B56	T	11.04	14.84	7.22	3/4	6.10	4.50	3.86	1.64	4.40
143T,145T	T	11.04	14.84	7.22	3/4	6.10	4.50	3.86	1.64	4.40
182T,184T	T	14.04	14.84	9.56	3/4	7.52	6.27	5.13	2.13	3.38
213T	T	16.15	14.84	11.25	1	8.42	7.17	5.60	2.13	2.65
215T	T	17.65	14.84	11.25	1	8.42	7.17	5.60	2.13	2.65
254T	T	19.61	14.84	13.38	1 1/4	9.79	7.68	8.29	1.81	1.72
256T	T	21.36	14.84	13.38	1 1/4	9.79	7.68	8.29	1.81	1.72
284T, 286T	T	24.71	15.01	14.66	1 1/2	11.33	9.16	13.19	2.63	.39

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

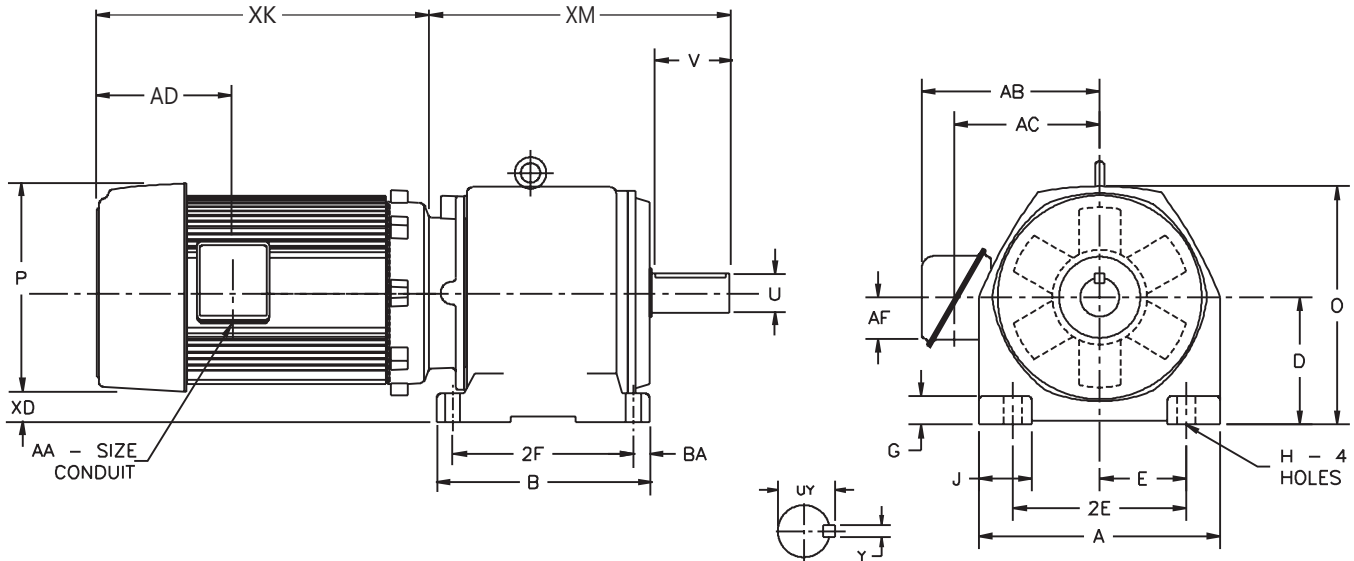
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Double/Triple Reduction

CbN
SERIES **2000**
3000

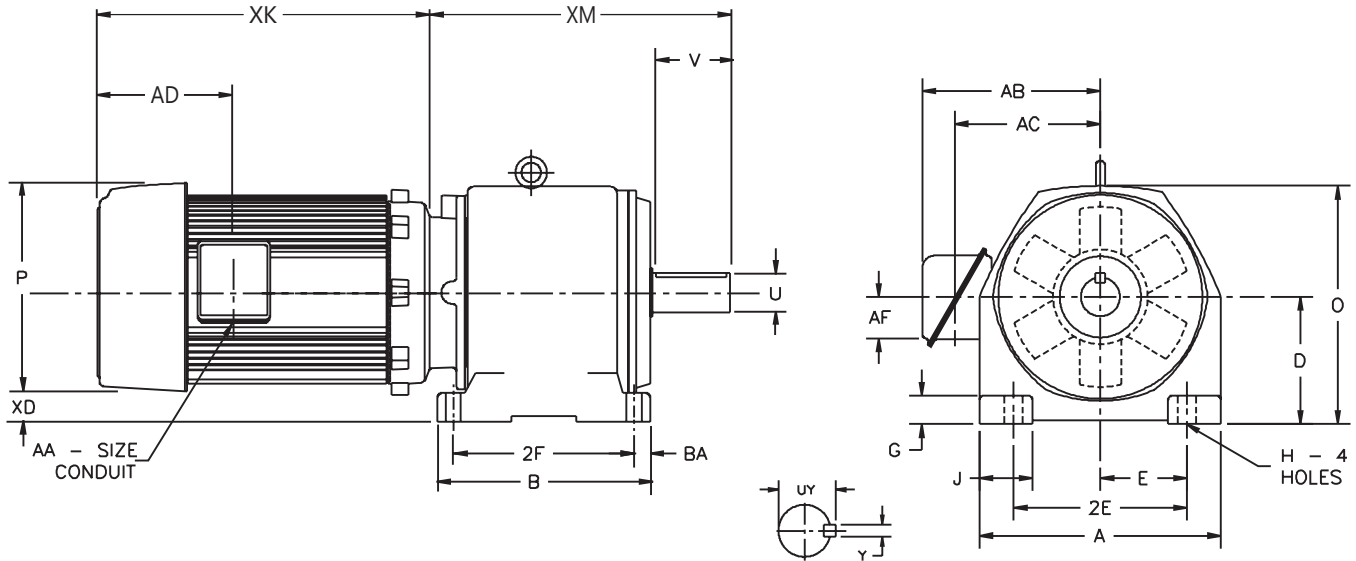


Gear Frame	A	B	D ¹	E	2E	2F	G	H	J	U ³	V	Y	BA	UY	XM	
															2602	2603
26	17.13	15.94	8.86	6.99	13.98	13.98	1.97	0.94	3.74	2.875	5.75	3/4	2.36	3.20	22.46	22.73

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD	Weight Lb.
182T,184T	T	16.48	16.78	9.56	3/4	7.51	6.31	5.13	2.13	4.52	366
213T	T	16.94	16.78	11.25	1	8.25	6.39	5.60	1.56	3.80	400
215T	T	18.44	16.78	11.25	1	8.25	6.39	5.60	1.56	3.80	408
254T	T	19.61	16.78	13.38	1 1/4	9.96	7.72	8.29	1.81	2.86	458
256T	T	21.36	16.78	13.38	1 1/4	9.96	7.72	8.29	1.81	2.86	508
284T, 286T	T	24.71	16.78	14.66	1 1/2	11.33	9.16	13.19	2.63	1.57	768
324T,326T	T	24.96	27.60	17.20	2	14.99	11.34	14.16	3.63	0.67	1,800

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".
⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.
⁵ Largest motor width.



Gear Frame	A	B	D ¹	E	2E	2F	G	H	J	U ³	V	Y	BA	UY	XM	
															2702	2703
27	19.69	17.72	9.84	8.27	16.54	15.35	2.17	1.02	4.33	3.50	7.00	7/8	2.56	3.882	25.09	25.36

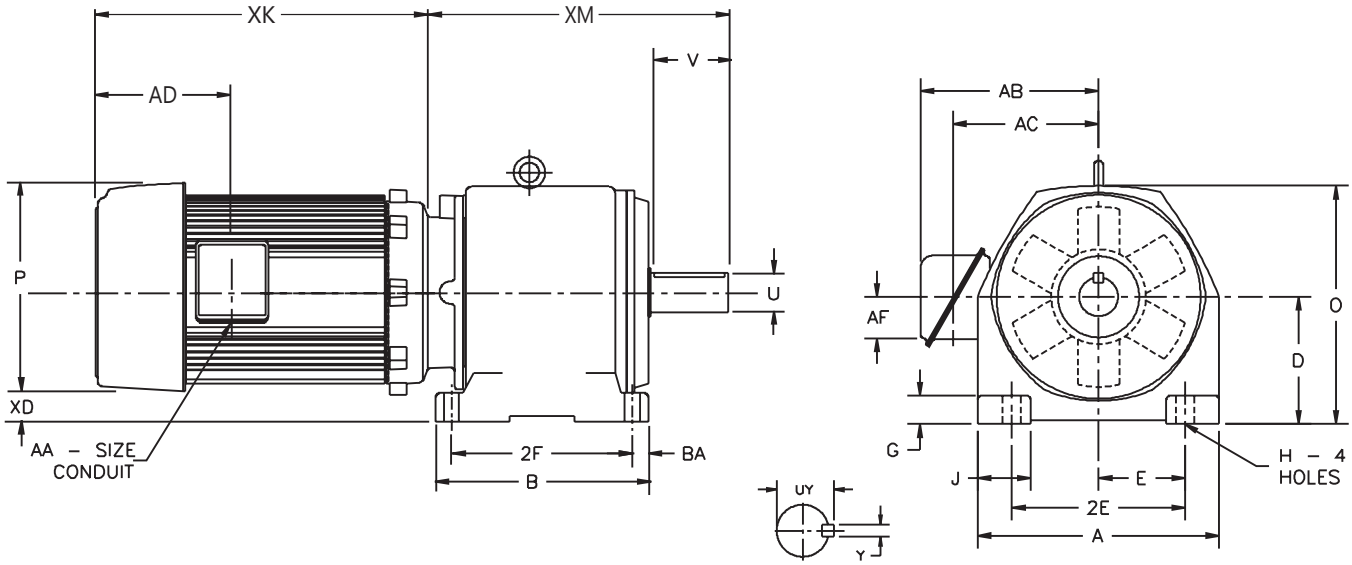
Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD	Weight Lb.
182T,184T	T	16.48	18.50	9.56	3/4	7.51	6.31	5.13	2.13	5.50	465
213T	T	16.94	18.50	11.25	1	8.25	6.39	5.6	1.56	4.78	499
215T	T	18.44	18.50	11.25	1	8.25	6.39	5.6	1.56	4.78	507
254T	T	19.61	18.50	13.38	1 1/4	9.96	7.72	8.29	1.81	3.84	557
256T	T	21.36	18.50	13.38	1 1/4	9.96	7.72	8.29	1.81	3.84	607
284T, 286T	T	24.71	18.50	14.66	1 1/2	11.33	9.16	13.19	2.63	2.56	867
324T,326T	T	24.96	27.60	17.20	2	14.99	11.34	14.16	3.63	1.65	1,800

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".
⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.
⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Triple Reduction

CbN
SERIES **2000**
3000

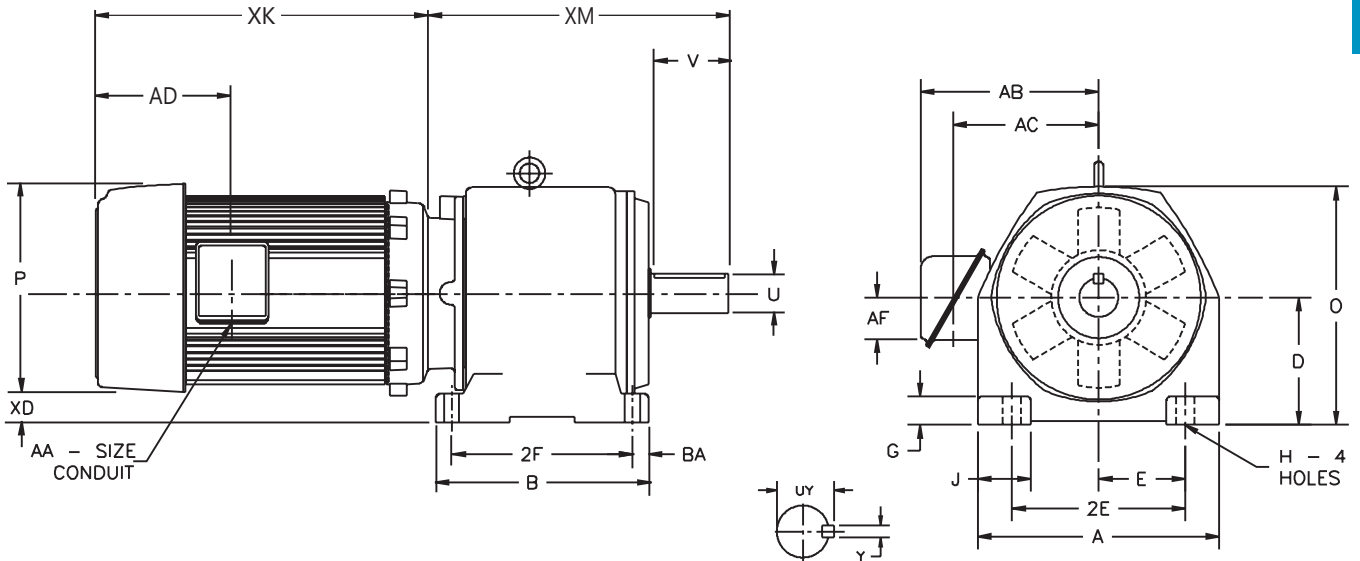


Gear Frame	A	B	D ¹	E	2E	2F	G	H	J	U ³	V	Y	BA	UY	XM
28	23.62	21.65	12.40	10.04	20.08	18.90	2.56	1.02	4.92	4.00	8.00	1	3.35	4.436	29.67

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD	Weight Lb.
213T	T	16.94	23.47	11.25	1	8.25	6.39	5.6	1.56	7.34	818
215T	T	18.44	23.47	11.25	1	8.25	6.39	5.6	1.56	7.34	826
254T	T	19.61	23.47	13.38	1 1/4	9.96	7.72	8.29	1.81	6.40	876
256T	T	21.36	23.47	13.38	1 1/4	9.96	7.72	8.29	1.81	6.40	926
284T,286T	T	24.71	23.47	14.66	1 1/2	11.33	9.16	13.19	2.63	5.11	1,186
324T,326T	T	24.96	27.60	17.20	2	14.99	11.34	14.16	3.63	4.21	1,800

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".
⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.
⁵ Largest motor width.



Gear Frame	A	B	D ¹	E	2E	2F	G	H	J	U ³	V	Y	BA	UY	XM
29	25.98	26.38	14.76	9.85	19.69	22.83	2.95	1.39	6.30	4.75	9.50	1 1/4	2.36	5.291	34.91

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD	Weight Lb.
254T	T	19.61	27.60	13.38	1 1/4	9.96	7.72	8.29	1.81	8.76	1,360
256T	T	21.36	27.60	13.38	1 1/4	9.96	7.72	8.29	1.81	8.76	1,410
284T,286T	T	24.71	27.60	14.66	1 1/2	11.33	9.16	13.19	2.63	7.47	1,660
324T,326T	T	27.36	27.60	17.20	2	14.99	11.34	14.16	3.63	6.57	1,800

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

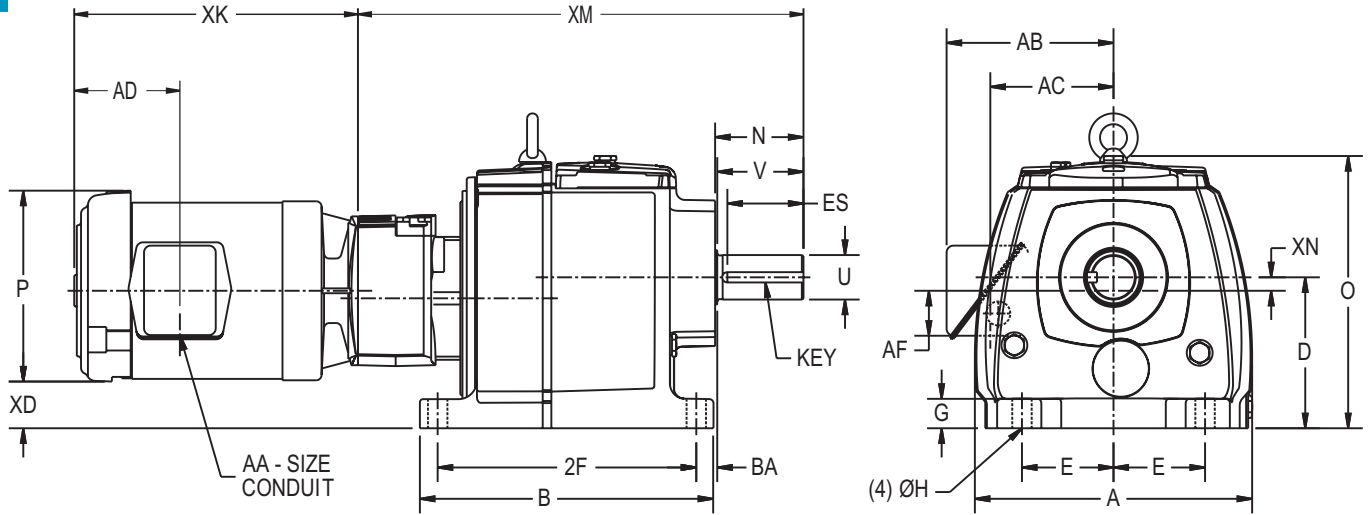
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Combined Reduction



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
32	8.72	8.50	4.53	2.66	.84	.55	2.56	1.250	2.50	.51	7.56	2.16	.12	14.71	1/4 Sq.
33	10.13	10.72	5.51	3.35	1.07	.71	3.23	1.625	3.15	.77	9.45	2.78	.49	16.86	3/8 Sq.
34	11.97	10.87	7.09	4.53	1.37	.71	3.58	2.125	3.50	.98	9.25	3.06	1.35	21.31	1/2 Sq.

Frame	Motor Type ⁴	XK	O			P ⁵	AA	AB	AC	AD	AF	XD		
			32	33	34							32	33	34
56	T	9.79	8.07	9.94	11.89	7.22	3/4	6.10	4.50	3.86	1.64	1.1	1.71	2.42
B56	T	11.04	8.07	9.94	11.89	7.22	3/4	6.10	4.50	3.86	1.64	1.1	1.71	2.42
143T,145T	T	11.04	8.07	9.94	11.89	7.22	3/4	6.10	4.50	3.86	1.64	1.1	1.71	2.42

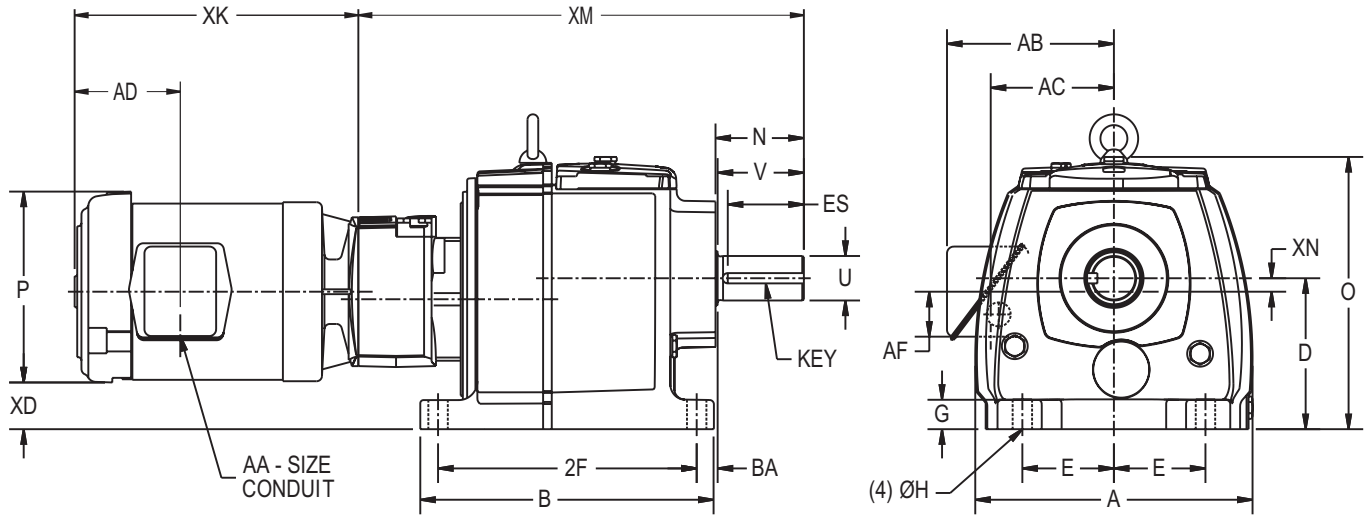
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.



Gear Frame	A	B	D ¹	E	G	H	N	U ³	V	BA	2F	ES	XN	XM	Key
35	14.19	12.89	8.86	5.51	1.73	.87	4.81	2.375	4.72	1.10	11.02	4.19	1.47	23.72	5/8 Sq.

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	11.89	7.22	3/4	6.10	4.50	3.86	1.64	4.07
B56	T	11.04	11.89	7.22	3/4	6.10	4.50	3.86	1.64	4.07
143T,145T	T	11.04	11.89	7.22	3/4	6.10	4.50	3.86	1.64	4.07

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

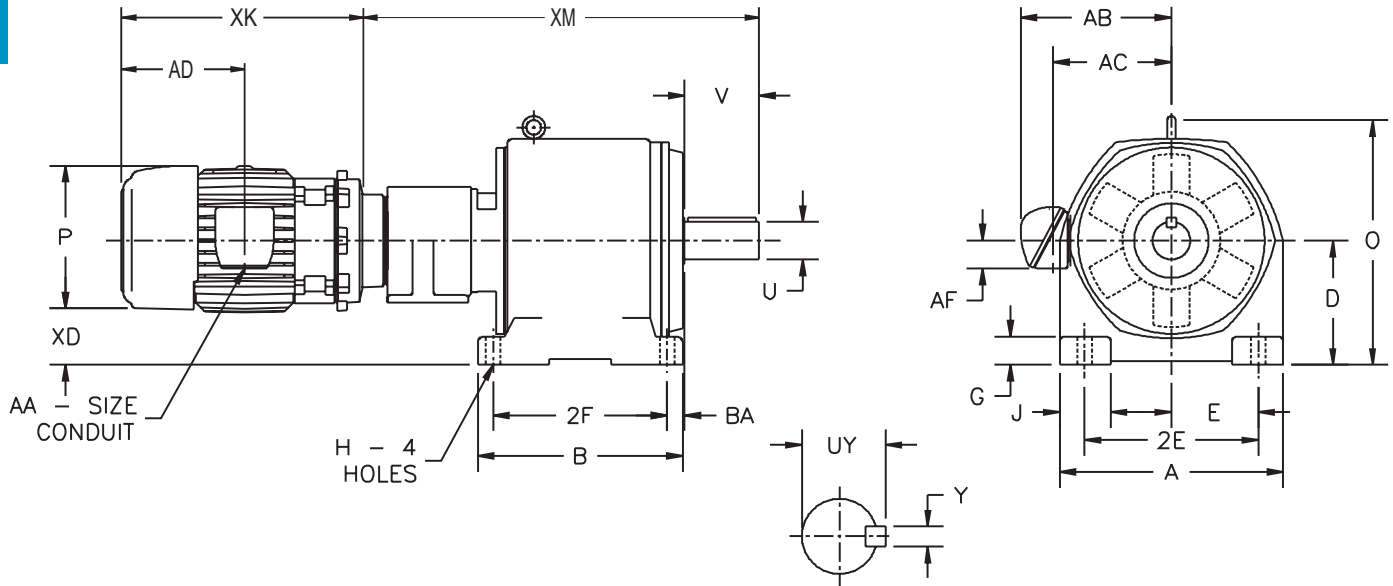
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Combined Reduction

CbN
SERIES **2000**
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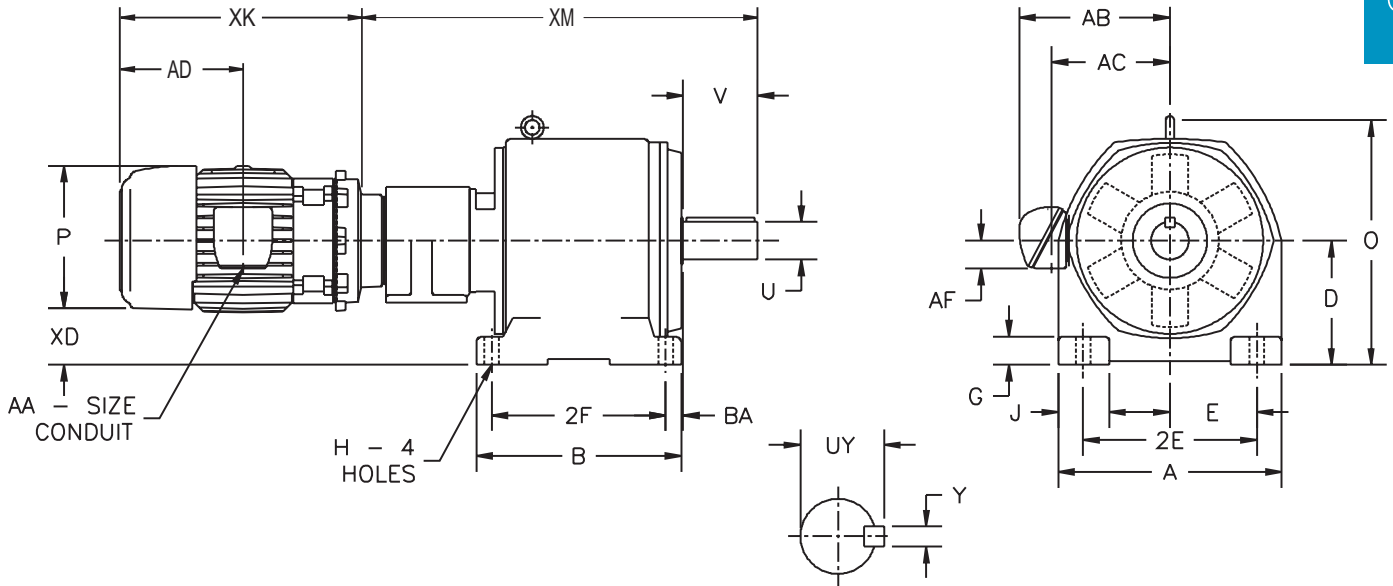
Gear Frame	A	B	D ¹	E	2E	2F	G	H	J	U ³	V	Y	BA	UY	XM
26	17.13	15.94	8.86	6.99	13.98	13.98	1.97	0.94	3.74	2.875	5.75	3/4	2.36	3.200	29.89

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD	Weight Lb.
56	T	9.79	16.78	7.22	3/4	5.01	4.06	3.86	1.13	5.55	399
B56	T	11.04	16.78	7.22	3/4	5.01	4.06	3.86	1.13	5.55	408
143T,145T	T	11.04	16.78	7.22	3/4	5.01	4.06	3.86	1.13	5.55	408

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".
⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.
⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Combined Reduction



Gear Frame	A	B	D 1	E	2E	2F	G	H	J	U ³	V	Y	BA	UY	XM
27	19.69	17.72	9.84	8.27	16.54	15.35	2.17	1.02	4.33	3.50	7.00	7/8	2.56	3.882	32.53

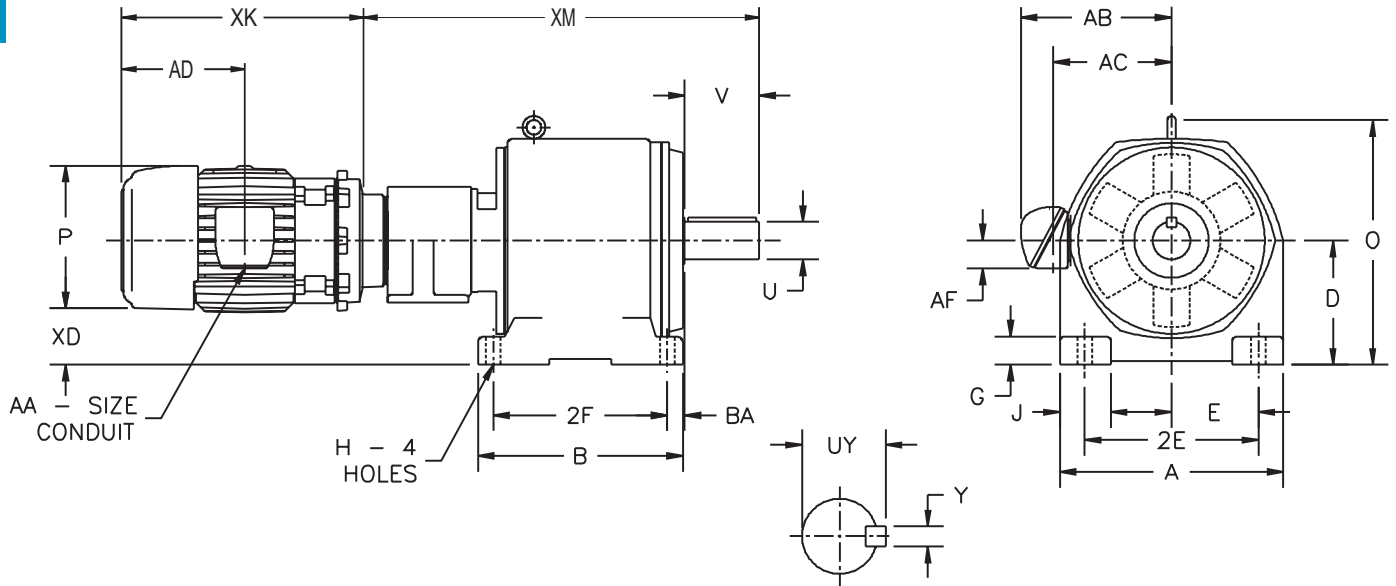
Frame	Motor Type ⁴	XK	O	P5	AA	AB	AC	AF	BS	XD	Weight Lb.
56	T	9.79	18.50	7.22	3/4	5.01	4.06	1.13	28.90	6.53	454
B56	T	11.04	18.50	7.22	3/4	5.01	4.06	1.13	30.15	6.53	463
143T,145T	T	11.04	18.50	7.22	3/4	5.01	4.06	1.13	30.15	6.53	463
182T,184T	T	14.04	18.50	9.56	3/4	7.51	6.31	2.13	31.88	5.50	488
213T	T	16.15	18.50	11.25	1	8.25	6.39	1.56	33.52	4.78	522

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".
⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.
⁵ Largest motor width.

Three Phase Gearmotor Foot Mounted - Combined Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	2E	2F	G	H	J	U ³	V	Y	BA	UY	XM
28	23.62	21.65	12.40	10.04	20.08	18.90	2.56	1.02	4.92	4.00	8.00	1	3.35	4.436	37.86

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD	Weight Lb.
56	T	9.79	23.47	7.22	3/4	5.01	4.06	3.86	1.13	9.09	799
B56	T	11.04	23.47	7.22	3/4	5.01	4.06	3.86	1.13	9.09	808
143T,145T	T	11.04	23.47	7.22	3/4	5.01	4.06	3.86	1.13	9.09	808
182T,184T	T	14.04	23.47	9.56	3/4	7.51	6.31	5.13	2.13	8.06	833
213T	T	16.15	23.47	11.25	1	8.25	6.39	5.6	1.56	7.34	867
215T	T	17.65	23.47	11.25	1	8.25	6.39	5.6	1.56	7.34	880

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

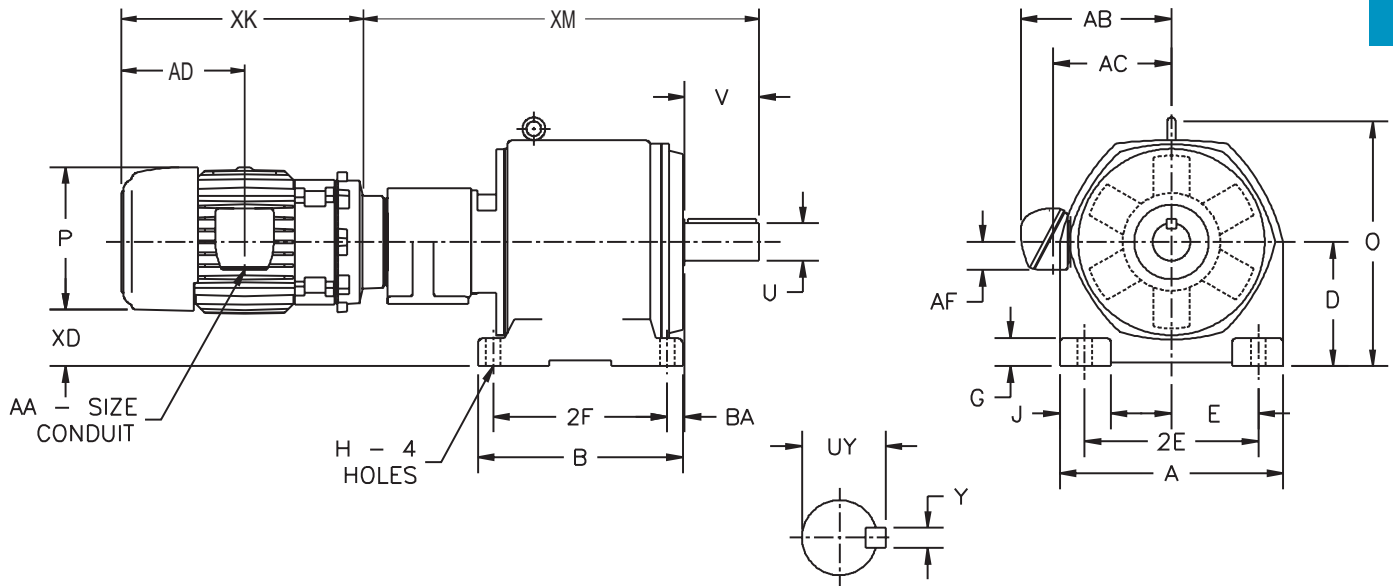
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor

Foot Mounted - Combined Reduction



Gear Frame	A	B	D ¹	E	2E	2F	G	H	J	U ³	V	Y	BA	UY	XM	
															56-215T	254T-256T
29	25.98	26.38	14.76	9.85	19.69	22.83	2.95	1.39	6.30	4.75	9.50	1 1/4	2.36	5.291	43.1	43.45

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	23.47	7.22	3/4	5.01	4.06	3.86	1.13	11.45
B56	T	11.04	23.47	7.22	3/4	5.01	4.06	3.86	1.13	11.45
143T,145T	T	11.04	23.47	7.22	3/4	5.01	4.06	3.86	1.13	11.45
182T,184T	T	14.04	23.47	9.56	3/4	7.51	6.31	5.13	2.13	10.42
213T	T	16.15	23.47	11.25	1	8.25	6.39	5.6	1.56	9.70
215T	T	17.65	23.47	11.25	1	8.25	6.39	5.6	1.56	9.70

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

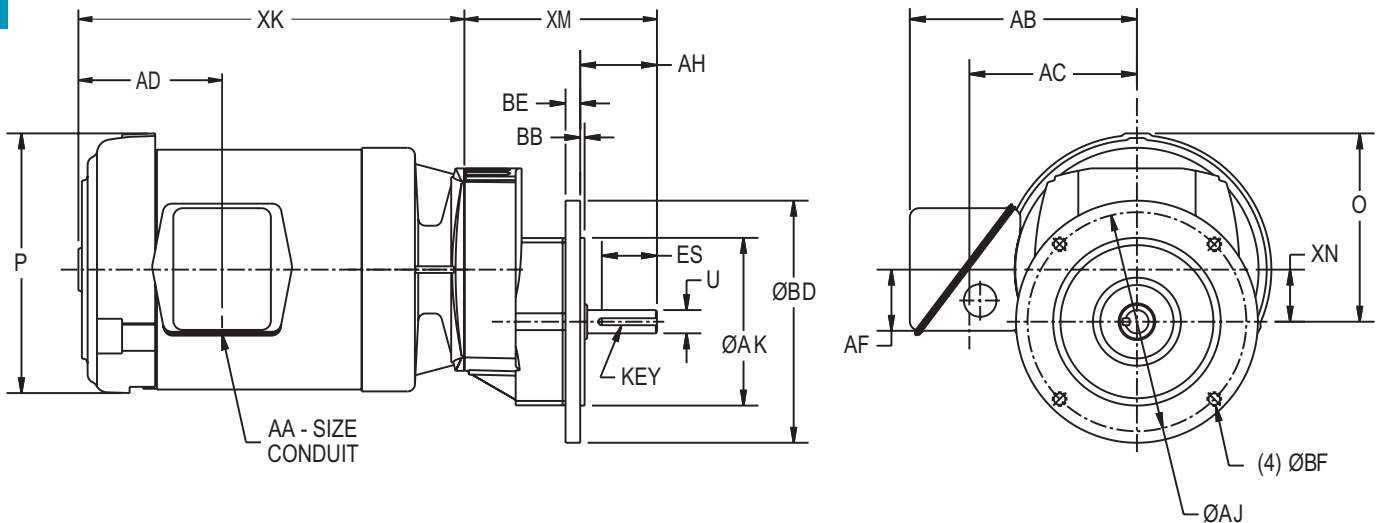
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Single Reduction

CbN
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Gear Frame	U ³	AH	ES	XN	XM	Key
30	.625	2.06	1.48	1.40	5.75	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
56C	4.50	5.875	.12	6.50	.39	3/8-16
BS	3.74	4.53	.12	5.51	.31	.35
BD1	3.15	3.94	.12	4.72	.39	.28
BD2	4.33	5.12	.08	6.30	.39	.35
BD3	5.12	6.50	.12	7.87	.31	.35

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	5.05	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	5.05	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	5.05	7.22	3/4	6.10	4.50	3.86	1.64

² All rough casting dimensions may vary by .25" due to casting variations.

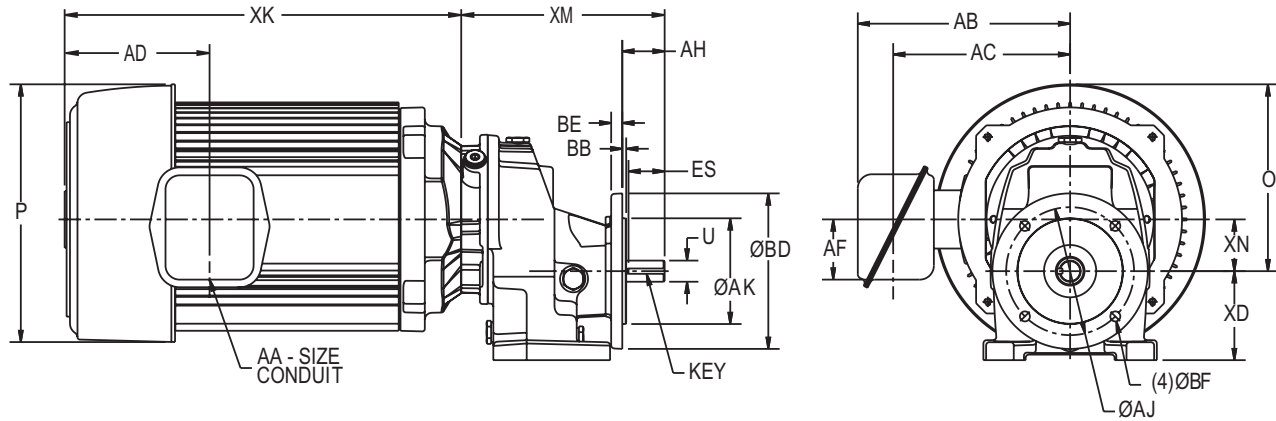
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130. Standard as shown with conduit opening down.

⁵ Largest motor width.

Three Phase Gearmotor

Flange Mounted - Single Reduction



Gear Frame	U ³	AH	ES	XD	XN	XM	Key
31	.75	1.50	1.28	3.15	1.83	7.20	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	4.33	5.12	.14	6.29	.39	.35
BD2	3.74	4.53	.14	5.50	.39	.35

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	5.49	7.22	3/4	6.10	4.21	3.86	.83
B56	T	11.04	5.49	7.22	3/4	6.10	4.21	3.86	.83
143T,145T	T	11.04	5.49	7.22	3/4	6.10	4.21	3.86	.83
182T,184T	T	14.04	6.61	9.56	3/4	7.52	6.27	5.13	2.13

² All rough casting dimensions may vary by .25" due to casting variations.

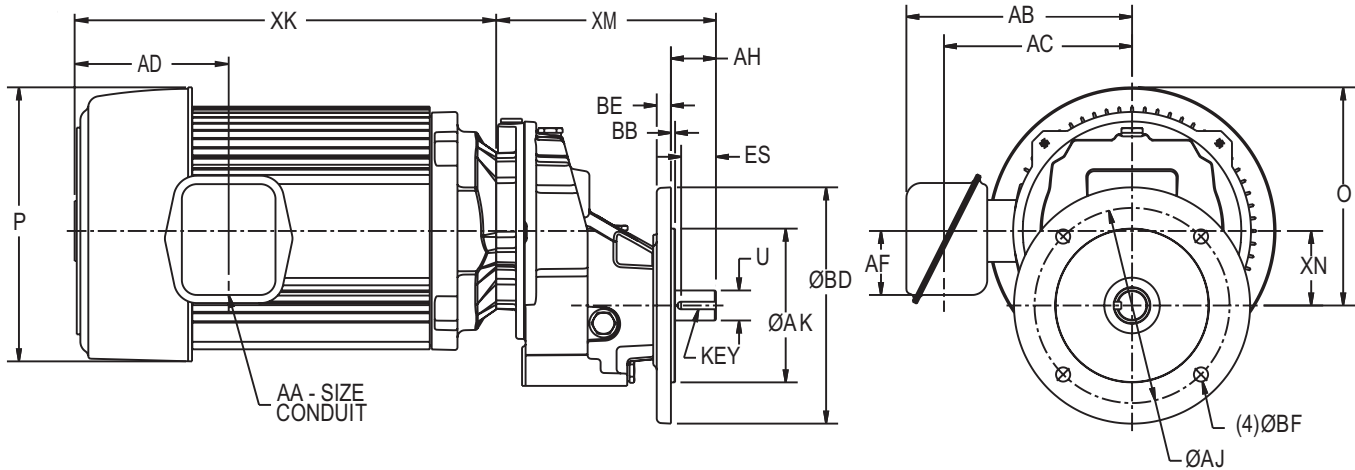
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	U ³	AH	ES	XD	XN	XM	Key
32	1.00	1.50	1.16	3.54	2.48	7.32	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	5.12	6.50	.14	7.87	.47	.47
BD2	4.33	5.12	.14	6.29	.39	.35

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	6.22	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	6.22	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	6.22	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	7.26	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	8.11	11.25	1	8.42	7.17	5.6	2.13
215T	T	17.65	8.11	11.25	1	8.42	7.17	5.6	2.13

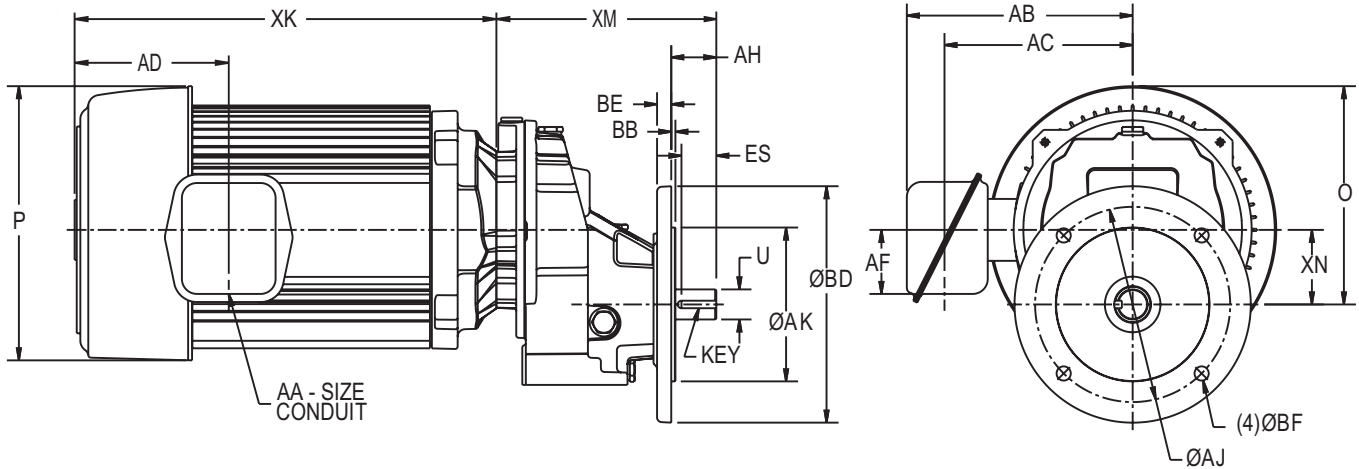
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Single Reduction



Gear Frame	D	U ³	AH	ES	XN	XM	Key
33	4.41	1.375	2.75	2.40	2.76	9.3	5/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	.16	9.83	.47	.55
BD2	5.12	6.50	.16	7.86	.47	.43

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
182T,184T	T	14.04	7.54	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	8.39	11.25	1	8.42	7.16	5.60	2.13
215T	T	17.65	8.39	11.25	1	8.42	7.16	5.60	2.13
254T	T	20.58	9.45	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	22.33	9.45	13.38	1 1/4	9.79	7.68	8.29	1.81

² All rough casting dimensions may vary by .25" due to casting variations.

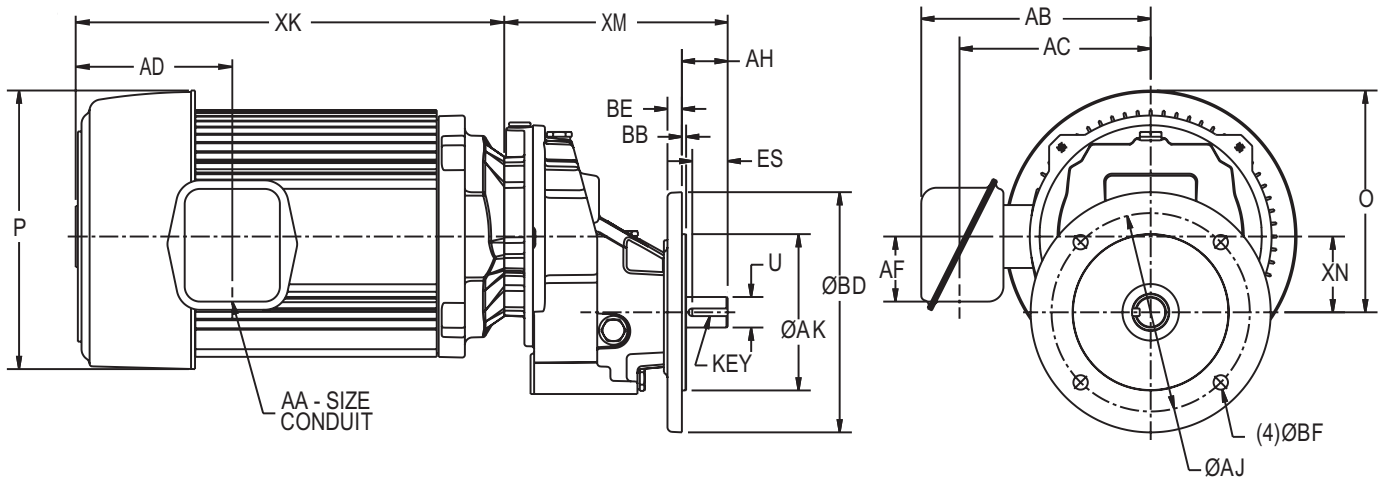
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	XD	U ³	AH	ES	XN	XM		Key
						182T-215T	254T-324T	
34	5.20	1.50	3.00	2.56	3.43	11.05	11.4	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	.16	11.80	59	.55
BD2	7.09	8.46	.16	9.84	59	.55

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
182T,184T	T	14.04	8.70	9.56	3/4	7.52	6.27	5.13	2.13	4.28
213T	T	16.15	9.05	11.25	1	8.42	7.17	5.60	2.13	3.56
215T	T	17.65	9.05	11.25	1	8.42	7.17	5.60	2.13	2.62
254T	T	19.61	10.12	13.38	1 1/4	9.79	7.68	8.29	1.81	2.62
256T	T	21.36	10.12	13.38	1 1/4	9.79	7.68	8.29	1.81	2.62
284T	T	21.86	10.12	13.38	1 1/2	10.71	8.18	8.29	2.13	2.62
286T	T	23.36	10.12	13.38	1 1/2	10.71	8.18	8.29	2.13	2.62

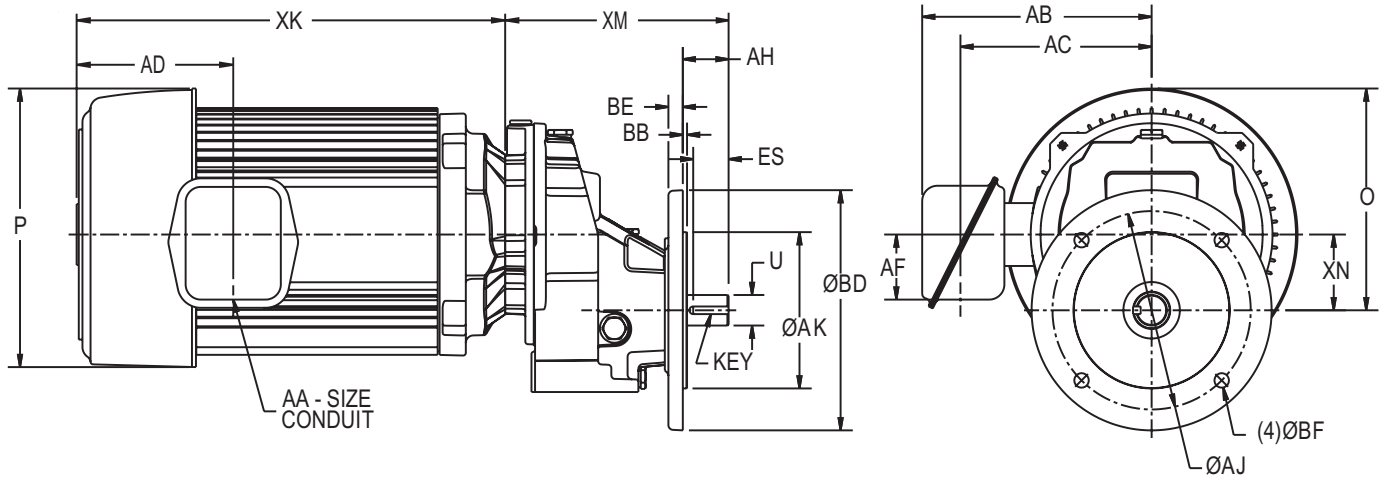
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Single Reduction



Gear Frame	XD	U ³	AH	ES	XN	XM		Key
						213T-215T	254T-324T	
35	6.30	1.750	3.50	3.06	4.33	12.04	12.56	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	.20	13.78	.71	.71
BD2	9.06	10.43	.20	11.81	.71	.55

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
213T	T	16.15	11.07	11.25	1	8.42	7.17	5.6	2.13
215T	T	17.65	11.07	11.25	1	8.42	7.17	5.6	2.13
254T	T	19.61	11.07	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	21.36	11.07	13.38	1 1/4	9.79	7.68	8.29	1.81
284T, 286T	T	24.71	11.66	14.66	1 1/2	11.33	9.16	13.19	2.63

² All rough casting dimensions may vary by .25" due to casting variations.

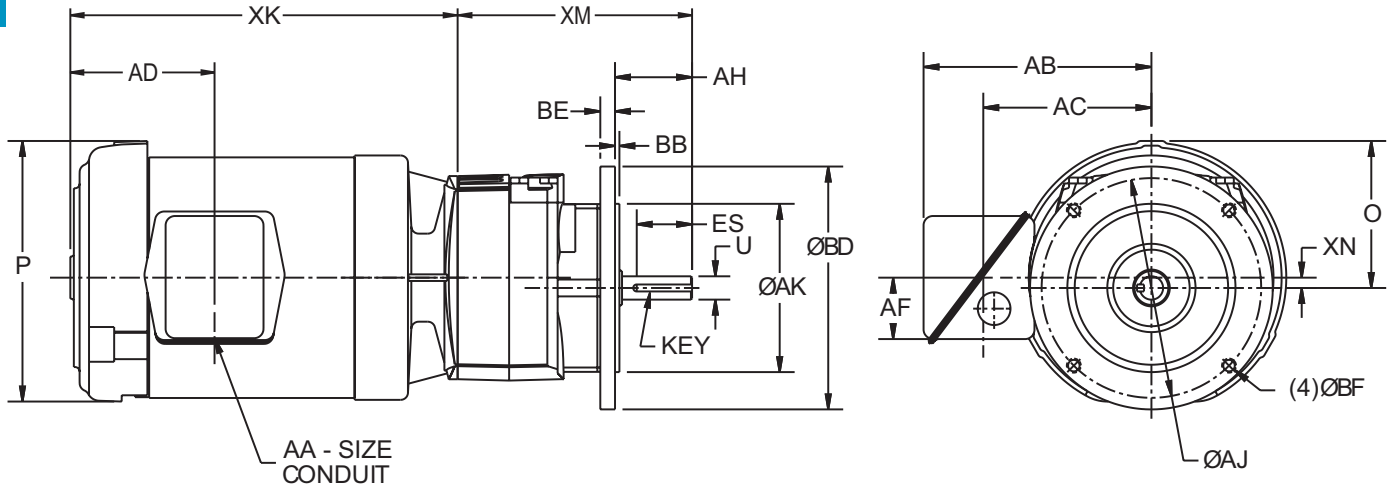
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Double/Triple Reduction

CbN
SERIES **2000**
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Gear Frame	U ³	AH	ES	XN	XM	Key
3012	.625	2.06	1.48	.28	6.85	3/16 Sq.
3013	.625	2.06	1.48	.28	7.64	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
56C	4.50	5.875	.12	6.50	.39	3/8-16
BS	3.74	4.53	.12	5.51	.31	.35
BD1	3.15	3.94	.10	4.72	.28	.28
BD2	4.33	5.12	.12	6.30	.31	.35
BD3	5.12	6.50	.12	7.87	.31	.35

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	3.93	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	3.93	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	3.93	7.22	3/4	6.10	4.50	3.86	1.64

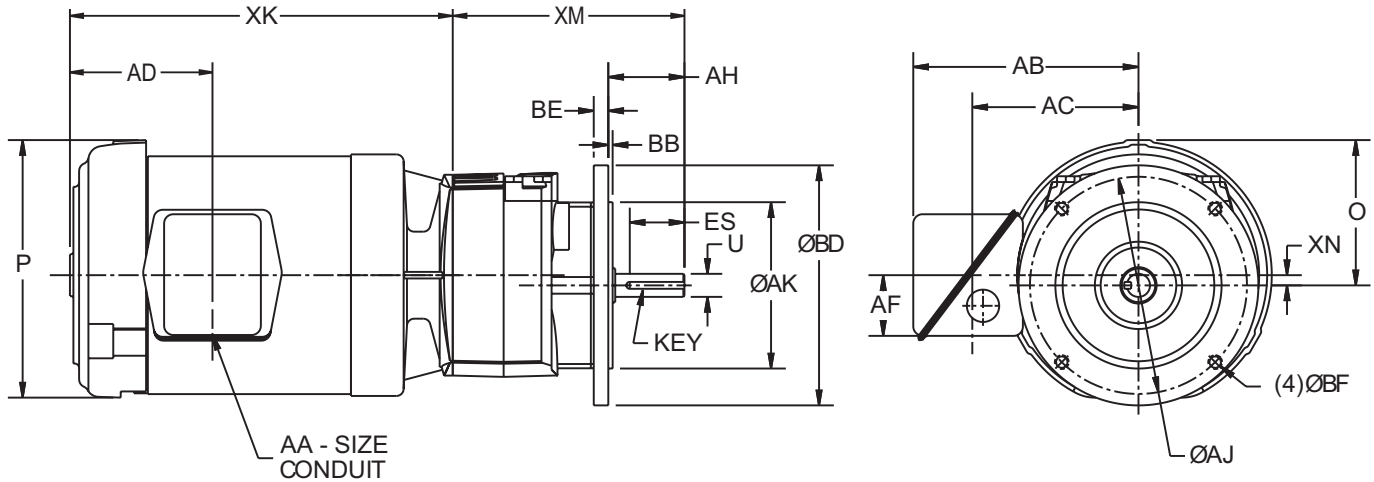
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Flange Mounted - Double/Triple Reduction



Gear Frame	U ³	AH	ES	XD	XN	XM	Key
31	1.00	1.50	1.16	3.54	.33	9.27	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	5.12	6.50	.14	7.87	.47	.47
BD1	4.33	5.12	.14	6.29	.39	.35
BD2	3.74	4.53	.14	5.50	.39	.35
BD3	3.15	3.96	.10	4.72	.39	.28

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	3.33	7.22	3/4	6.14	4.21	3.86	1.77
B56	T	11.04	3.33	7.22	3/4	6.14	4.21	3.86	1.77
143T,145T	T	11.04	3.33	7.22	3/4	6.14	4.21	3.86	1.77
182T,184T	T	14.04	4.45	9.56	3/4	7.52	6.27	5.13	2.13

² All rough casting dimensions may vary by .25" due to casting variations.

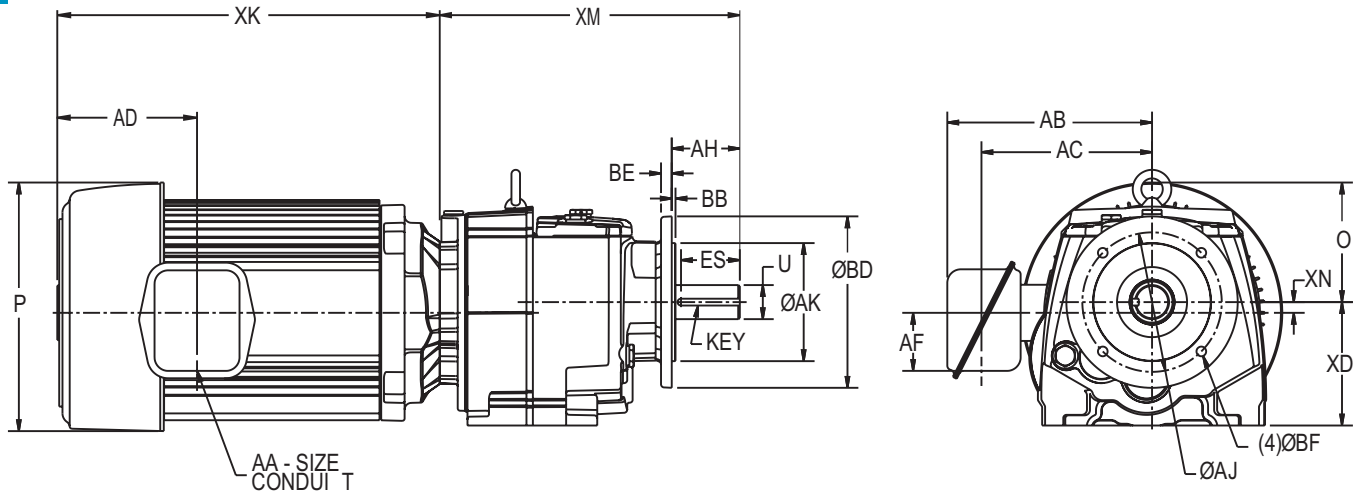
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Double/Triple Reduction

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Gear Frame	D	U ³	AH	ES	XD	XN	XM	Key
32	4.53	1.250	2.50	2.16	4.53	0.39	11.02	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	.16	9.83	.47	.55
BD1	5.12	6.50	.14	7.87	.39	.47
BD2	4.33	5.12	.14	6.29	.39	.35

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	3.50	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	3.50	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	3.50	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	4.39	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	6.02	11.25	1	8.42	7.17	5.60	2.13
215T	T	17.65	6.02	11.25	1	8.42	7.17	5.60	2.13

² All rough casting dimensions may vary by .25" due to casting variations.

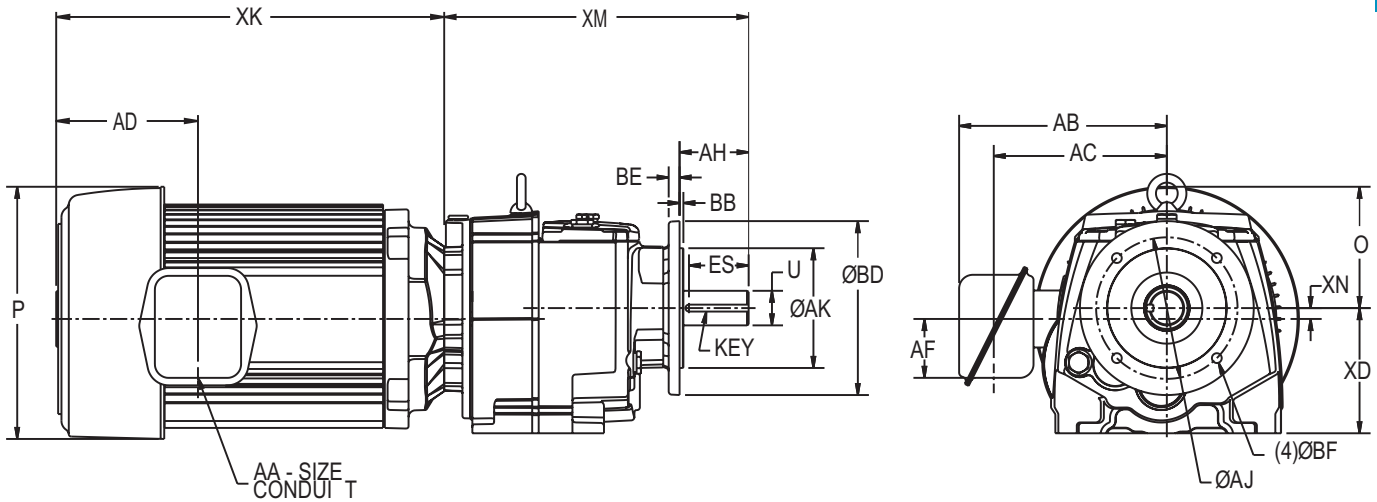
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor

Flange Mounted - Double/Triple Reduction



Gear Frame	U ³	AH	ES	XD	XN	XM	Key
3362,3363	1.50	3.00	2.56	5.51	.77	13.64	3/8 Sq.
3372,3373	1.625	3.15	2.78	5.51	.77	13.79	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	.16	11.80	.47	.55
BD1	7.09	8.46	.16	9.83	.47	.55
BD2	5.12	6.50	.14	7.86	.47	.47

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	4.43	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	4.43	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	4.43	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	4.43	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	4.86	11.25	1	8.42	7.16	5.6	2.13
215T	T	17.65	4.86	11.25	1	8.42	7.16	5.6	2.13
254T	T	20.58	5.93	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	22.33	5.93	13.38	1 1/4	9.79	7.68	8.29	1.81

² All rough casting dimensions may vary by .25" due to casting variations.

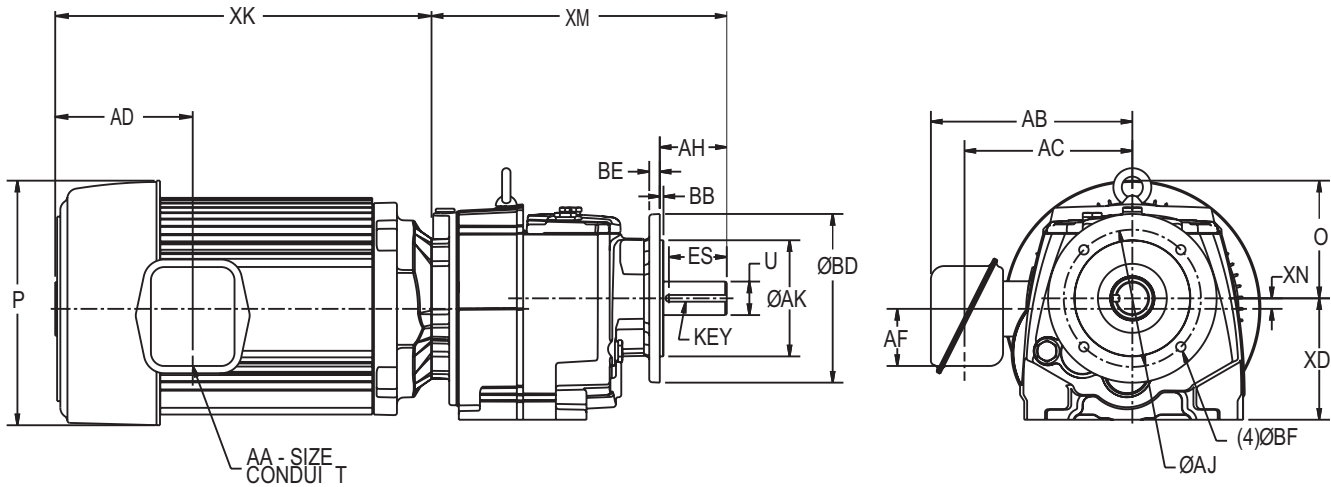
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Double/Triple Reduction

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Gear Frame	U ³	AH	ES	XD	XN	XM		Key
						56-215T	254T-286T	
34	2.125	3.50	3.06	7.09	1.02	15.09	15.44	1/2 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	.16	13.77	.59	.71
BD1	9.06	10.43	.16	11.80	.59	.55
BD2	7.09	8.46	.16	9.83	.59	.55

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	4.80	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	4.80	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	4.80	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	4.80	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	4.80	11.25	1	8.42	7.17	5.6	2.13
215T	T	17.65	4.80	11.25	1	8.42	7.17	5.6	2.13
254T	T	19.61	5.67	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	21.36	5.67	13.38	1 1/4	9.79	7.68	8.29	1.81
284T, 286T	T	24.71	6.31	14.66	1 1/2	11.33	9.16	13.19	2.63

² All rough casting dimensions may vary by .25" due to casting variations.

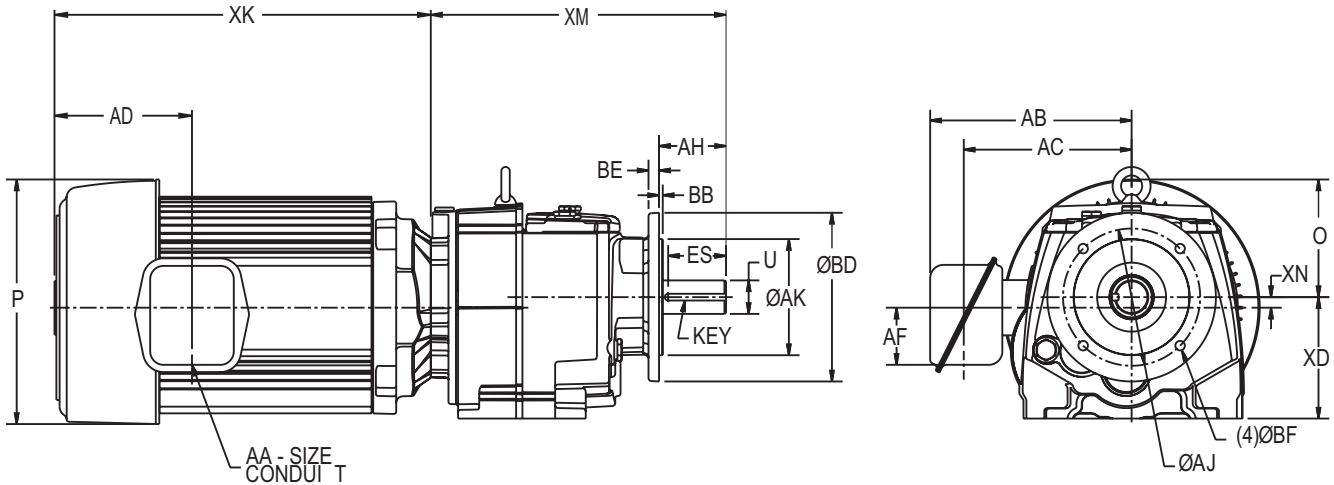
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor

Flange Mounted - Double/Triple Reduction



Gear Frame	U ³	AH	ES	XD	XN	XM		Key
						143T-215T	254T-324T	
35	2.375	4.72	4.19	8.86	1.14	17.6	18.12	5/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	.20	15.75	.71	.71
BD1	9.84	11.81	.20	13.78	.71	.71
BD2	9.06	10.43	.20	11.81	.71	.55

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
B56	T	11.04	5.98	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	5.98	7.22	3/4	6.10	4.50	3.86	1.64
182T,184T	T	14.04	5.98	9.56	3/4	7.52	6.27	5.13	2.13
213T	T	16.15	5.98	11.25	1	8.42	7.17	5.6	2.13
215T	T	17.65	5.98	11.25	1	8.42	7.17	5.6	2.13
254T	T	19.61	5.98	13.38	1 1/4	9.79	7.68	8.29	1.81
256T	T	21.36	5.98	13.38	1 1/4	9.79	7.68	8.29	1.81
284T, 286T	T	24.71	6.19	14.66	1 1/2	11.33	9.16	13.19	2.63

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

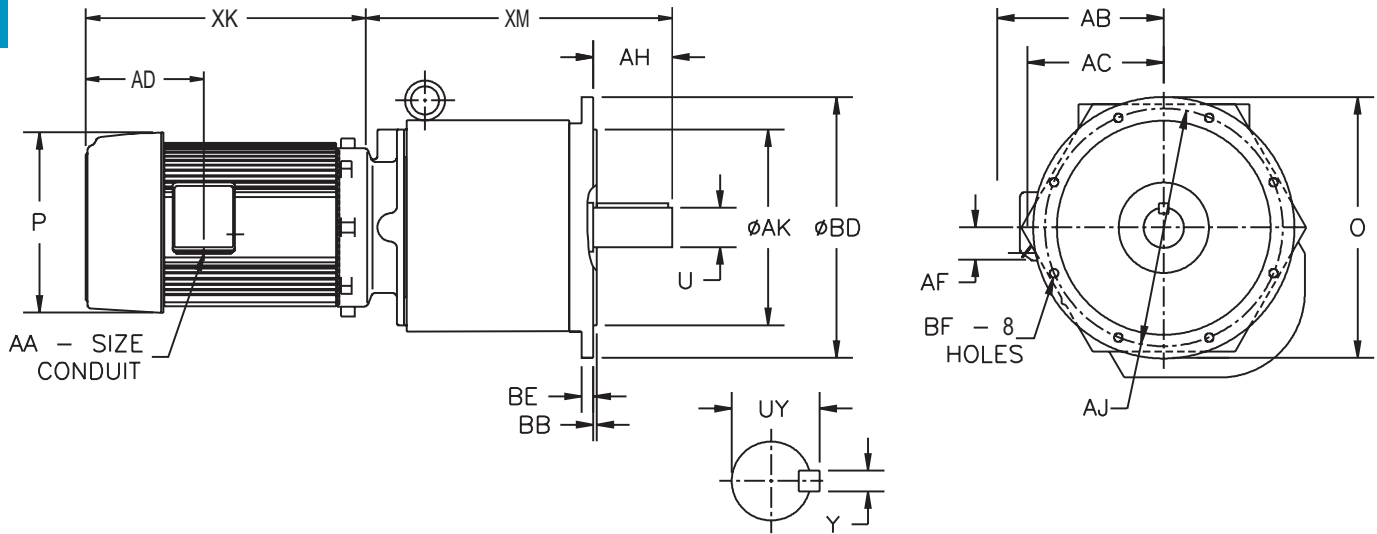
⁵ Largest motor width.



Three Phase Gearmotor

BS Flange Mounted - Double/Triple Reduction

CbN
SERIES **2000**
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Gear Frame	U ³	Y	AH	AJ	AK	BB	BD	BE	BF	XM		UY
										2602	2603	
26	2.875	3/4	5.75	19.69	17.72	0.20	21.65	0.75	0.70	23.84	24.11	3.20

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AF	AD	Weight Lb.
182T,184T	T	16.48	21.65	9.56	3/4	7.51	6.31	2.13	5.13	360
213T	T	16.94	21.65	11.25	1	8.25	6.39	1.56	5.60	400
215T	T	18.44	21.65	11.25	1	8.25	6.39	1.56	5.60	408
254T	T	19.61	21.65	13.38	1 1/4	9.96	7.72	1.81	8.30	458
256T	T	21.36	21.65	13.38	1 1/4	9.96	7.72	1.81	8.30	508
284T, 286T	T	24.71	21.65	14.66	1 1/2	11.33	9.16	13.19	2.63	768
324T,326T	T	24.96	27.60	17.20	2	14.99	11.34	14.16	3.63	1,800

² All rough casting dimensions may vary by .25" due to casting variations.

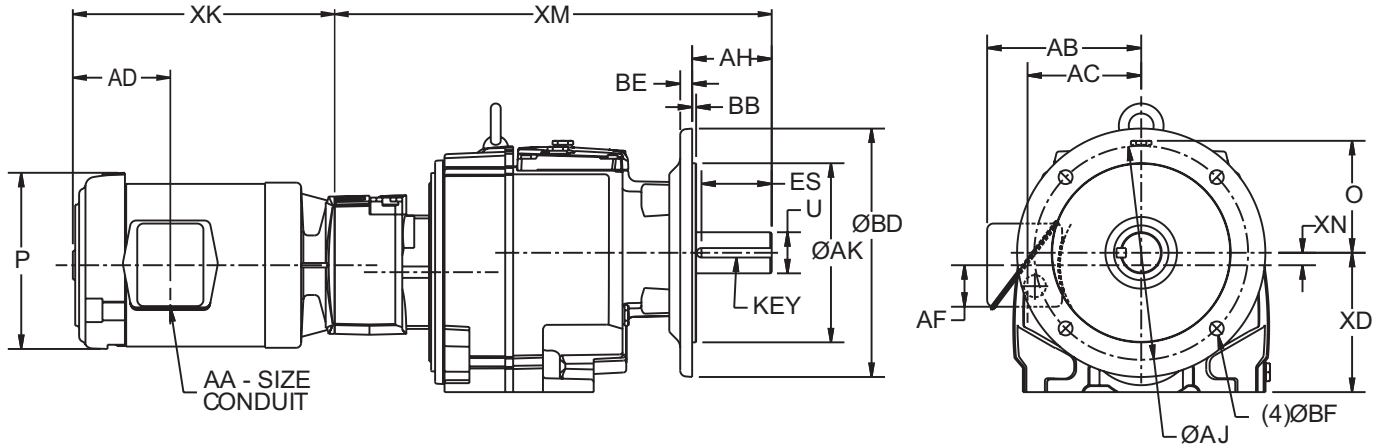
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Combined Reduction

CbN
SERIES **2000**
3000



Gear Frame	U ³	AH	ES	XD	XN	XM	Key
32	1.250	2.50	2.16	4.53	.12	15.1	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	.16	9.83	.47	.55
BD1	5.12	6.50	.14	7.87	.39	.47
BD2	4.33	5.12	.14	6.29	.39	.35

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	3.54	7.22	3/4	6.10	4.50	3.86	1.64

² All rough casting dimensions may vary by .25" due to casting variations.

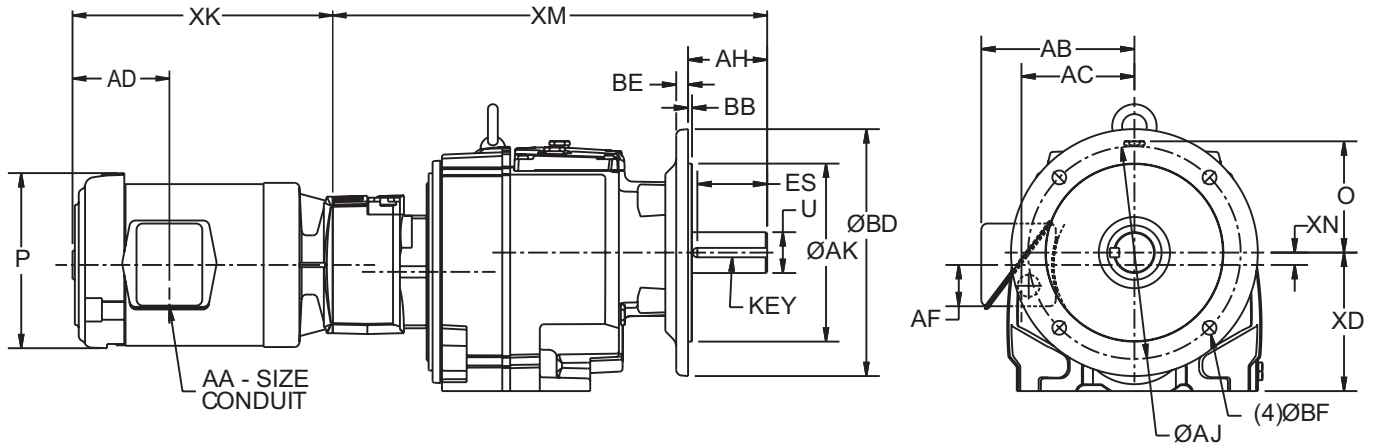
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Combined Reduction

CbN
SERIES **2000**
3000



Gear Frame	U ³	AH	ES	XD	XN	XM	Key
33	1.625	3.15	2.78	5.51	.49	17.88	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	.16	11.80	.47	.55
BD1	7.09	8.46	.16	9.83	.47	.55
BD2	5.12	6.50	.14	7.86	.47	.47

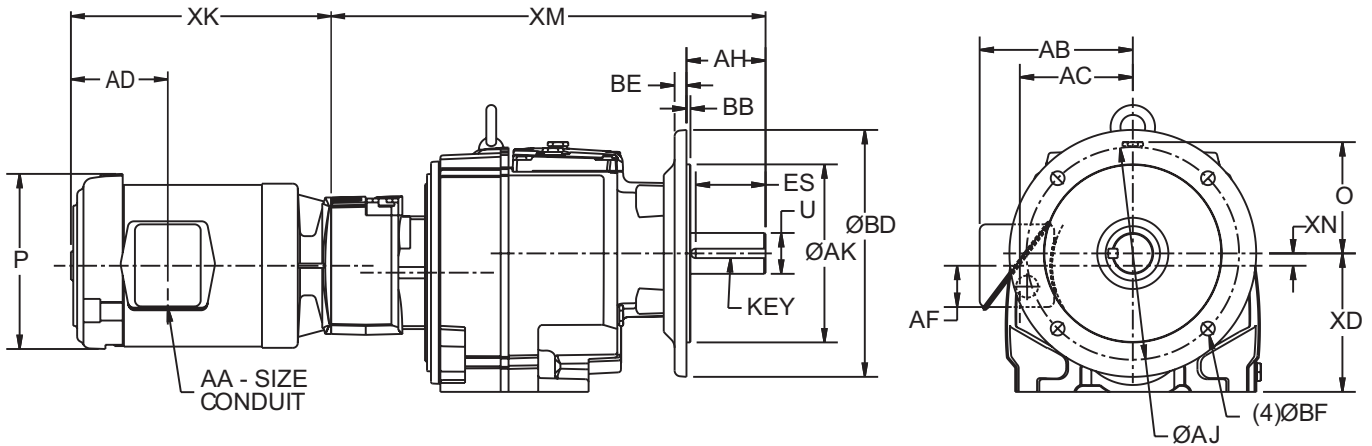
Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	4.43	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	4.43	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	4.43	7.22	3/4	6.10	4.50	3.86	1.64

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.



Gear Frame	U ³	AH	ES	XD	XN	XM	Key
34	2.125	3.50	3.06	7.09	1.35	22.06	1/2 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	.16	13.77	.59	.71
BD1	9.06	10.43	.16	11.80	.59	.55
BD2	7.09	8.46	.16	9.83	.59	.55

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	4.80	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	4.80	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	4.80	7.22	3/4	6.10	4.50	3.86	1.64

² All rough casting dimensions may vary by .25" due to casting variations.

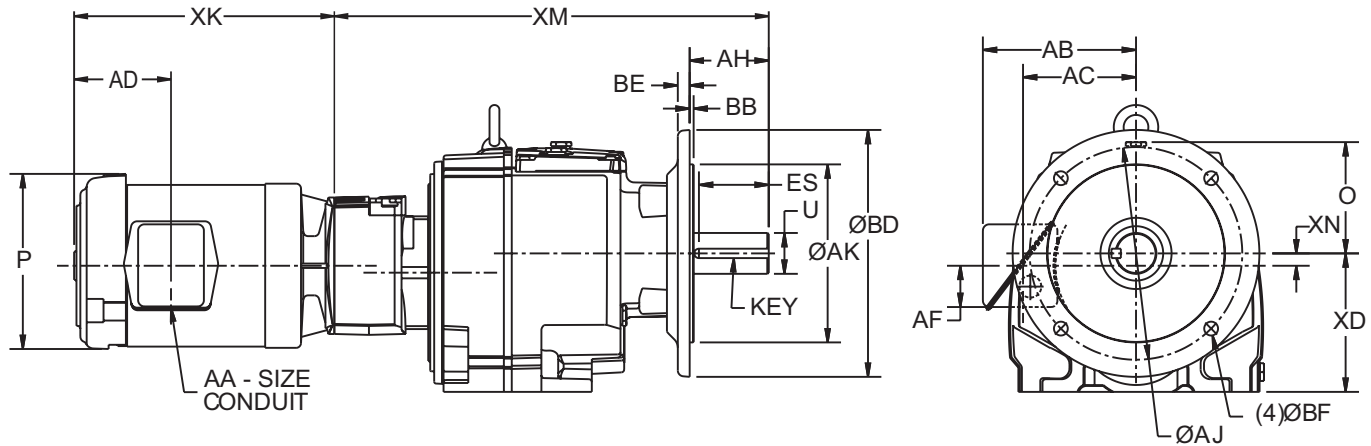
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor Flange Mounted - Combined Reduction

CbN
SERIES **2000**
3000



Gear Frame	U ³	AH	ES	XD	XN	XM	Key
35	2.875	4.72	4.19	8.86	1.47	24.73	5/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	.20	15.75	.71	.71
BD1	9.84	11.81	.20	13.78	.71	.71
BD2	9.06	10.43	.20	11.81	.71	.55

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF
56	T	9.79	5.98	7.22	3/4	6.10	4.50	3.86	1.64
B56	T	11.04	5.98	7.22	3/4	6.10	4.50	3.86	1.64
143T,145T	T	11.04	5.98	7.22	3/4	6.10	4.50	3.86	1.64
182T	T	12.04	5.98	9.56	3/4	7.52	6.27	5.13	2.13

² All rough casting dimensions may vary by .25" due to casting variations.

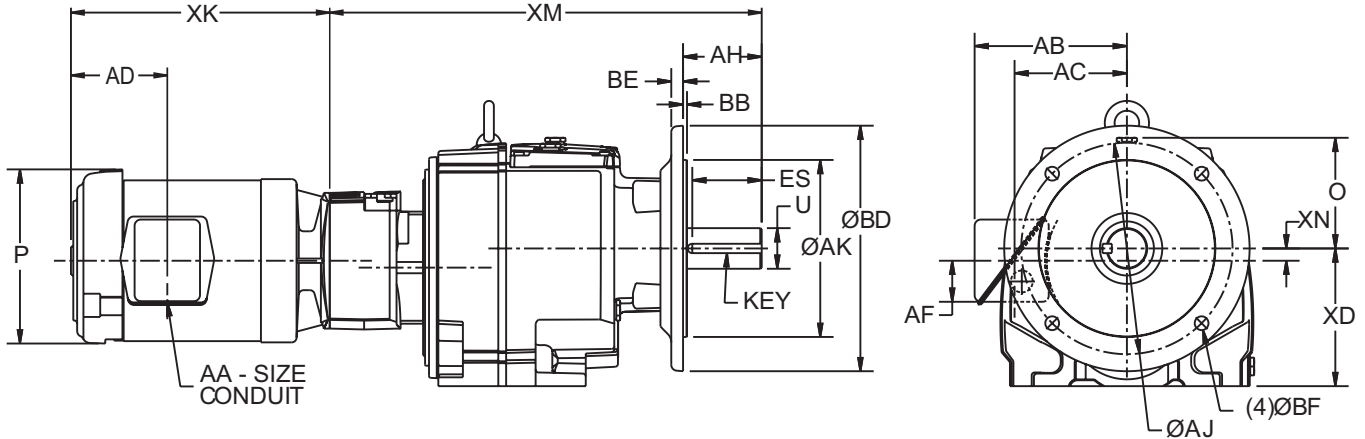
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor

BS Flange Mounted - Combined Reduction



Gear Frame	U ³	Y	AH	AJ	AK	BB	BD	BE	BF	XM	UY	N	μ°
26	2.875	3/4	5.75	19.69	17.72	0.20	21.65	0.75	0.70	31.29	3.200	8	22.5°

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AF	AD	Weight Lb.
56	T	9.79	21.65	7.22	3/4	5.01	4.06	1.13	3.86	399
B56	T	11.04	21.65	7.22	3/4	5.01	4.06	1.13	3.86	408
143T,145T	T	11.04	21.65	7.22	3/4	5.01	4.06	1.13	3.86	408

² All rough casting dimensions may vary by .25" due to casting variations.

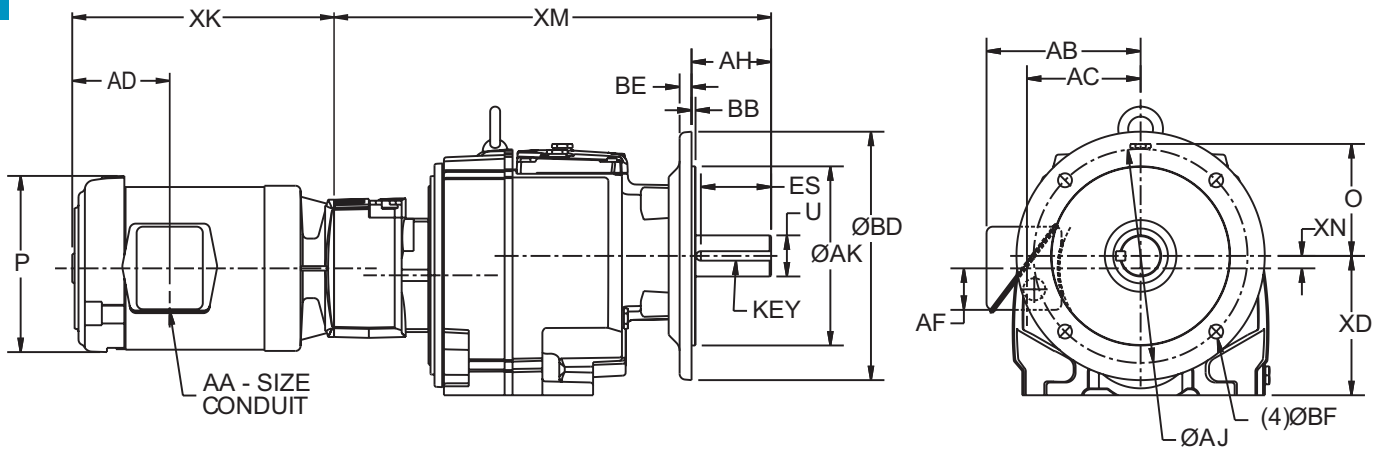
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor BS Flange Mounted - Combined Reduction

CbN
SERIES 2000
3000



Gear Frame	U ³	Y	AH	AJ	AK	BB	BD	BE	BF	XM	UY
27	3.50	7/8	7.00	19.69	17.72	0.20	21.65	0.79	0.70	32.53	3.882

Frame	Motor Type ⁴	XK	O	P ⁵	AA	AB	AC	AF	AD	Weight Lb.
56	T	9.79	21.65	7.22	3/4	5.01	4.06	1.13	3.86	454
B56	T	11.04	21.65	7.22	3/4	5.01	4.06	1.13	3.86	463
143T,145T	T	11.04	21.65	7.22	3/4	5.01	4.06	1.13	3.86	463
182T,184T	T	14.04	21.65	9.56	3/4	7.51	6.31	2.13	5.13	488
213T	T	16.15	21.65	11.25	1.00	8.25	6.39	1.56	5.6	522

² All rough casting dimensions may vary by .25" due to casting variations.

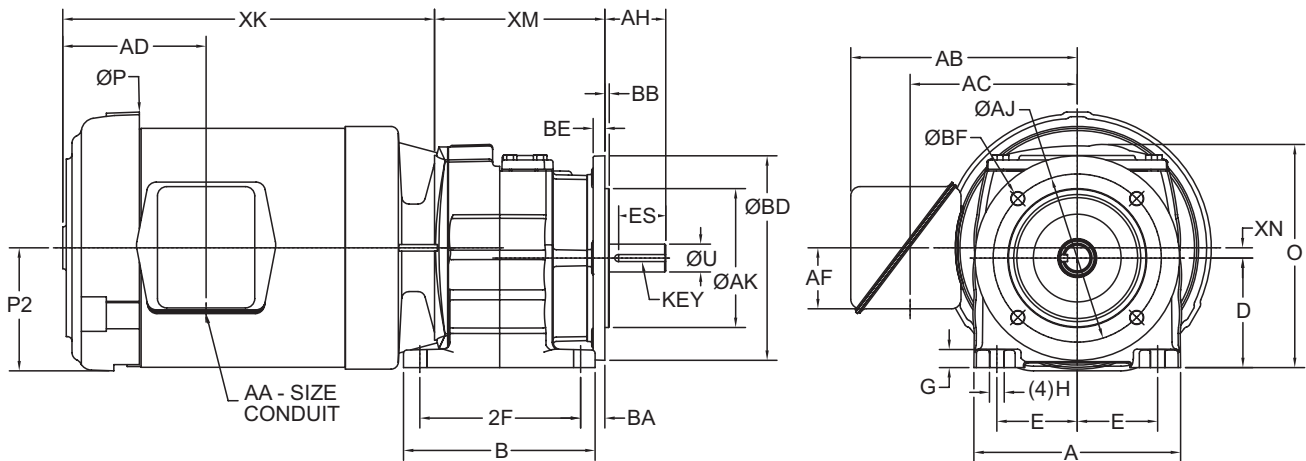
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ For any motor type other than T (3 phase TEFC) or type T and S with brakes, refer to pages A-128 to A-130.

⁵ Largest motor width.

Three Phase Gearmotor

Foot Flange Mounted - Double Reduction



Gear Frame	A	B	D ¹	E	2F	G	H	U ³	ES	XM	XN	Key
3012A	5.62	5.16	2.95	2.165	4.33	.47	.35	0.750	1.25	4.81	.276	3/16 Sq

Flange Type	AH	AJ	AK	BA	BB	BD	BE	BF
BD1	1.52	3.94	3.15	.65	.12	4.72	.28	.28
BS	1.52	4.53	2.74	.65	.12	5.51	.31	.35

Motor Frame	Type ⁴	XK	O	P ⁵	AA	AB	AC	AD	AF	XD
56	T	9.79	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.09
B56	T	11.04	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.09
143T,145T	T	11.04	6.88	7.22	3/4	6.10	4.50	3.86	1.64	.09

¹ Dimension "D" will never be exceeded, but may vary from value shown. When exact dimension is required, shims up to .03" may be required.

² All rough casting dimensions may vary by .25" due to casting variations.

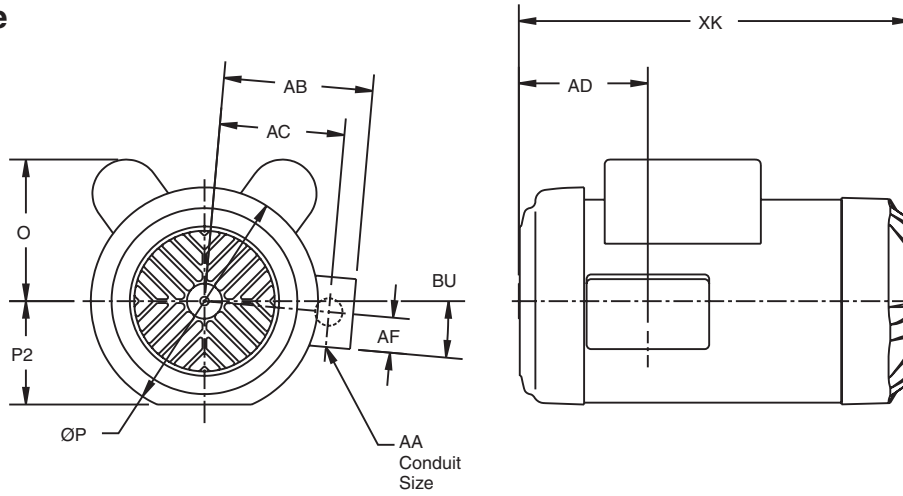
³ Shaft extension tolerance +.0000", -.0005" up to 1.5" diameter.

⁴ For any motor types other than T (3 phase TEFC) or for T and S with brakes, refer to pages A-128 to A130.

⁵ Largest motor width.

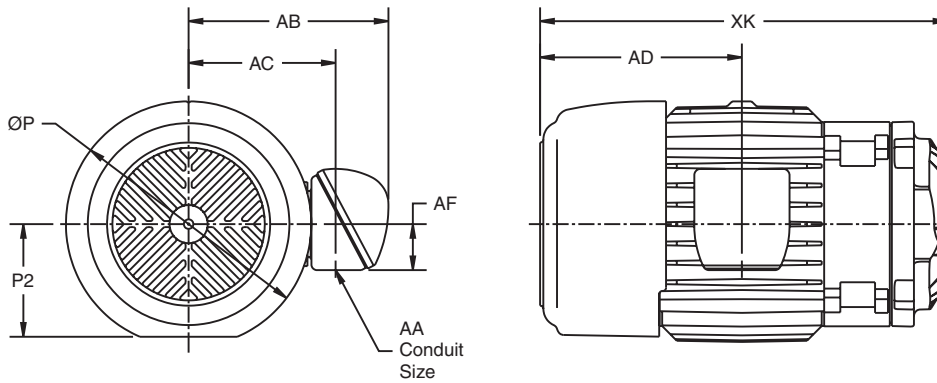
Alternate Motor Dimensions

Single Phase



Motor Frame	HP	O	P	P2	AA	AB	AC	AD	AF	BU	XK
56	1/3, 1/2	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	9.52 ²
	3/4	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02 ²
143T	1	5.09	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02 ²
145TY	1 1/2, 2	4.53	7.28	3.31	3/4	4.78	3.83	4.14	1.13	5°	12.52
184T	3, 5	5.11	9.56	4.39	3/4	8.58	6.45	7.14	3.09	N/A	16.54

Corro-Duty®



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.41	3.44	3/4	6.50	4.59	3.72	1.25	10.21 ²
143T, 145T	7.41	3.44	3/4	6.50	4.59	3.72	1.25	11.21 ²
182T, 184T	9.57	4.33	3/4 ³	7.80	6.00	7.79	2.32	14.23
213T, 215T	11	5.44	1	9.47	7.15	9.63	2.00	19.67
254T, 256T	13.31	6.58	1 1/2	11.33	8.51	12.44	2.63	24.26 ¹
284T, 286T	14.66	7.29	1 1/2	11.33	9.16	13.19	2.63	24.71

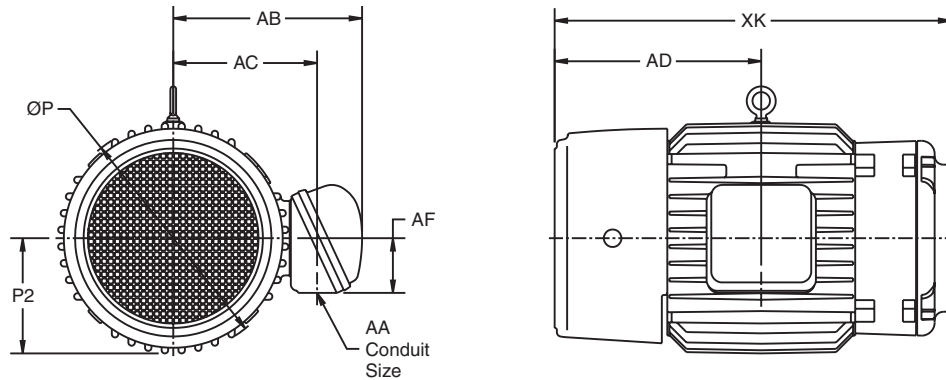
¹ XK = 23.29 on CbN 33 all reductions.

² XK will increase by .58" if applied to frames 32 and 33 combined units.

³ This frame has two openings in conduit box.

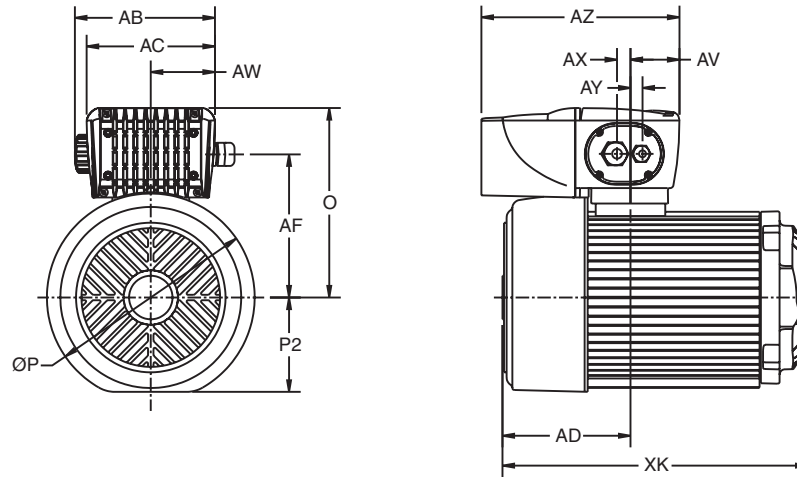
Alternate Motor Dimensions

Explosion Proof



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.15 ²
143T, 145T	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.90 ²
182T, 184T	9.50	4.56	3/4	7.70	5.79	7.75	2.25	15.70
213T, 215T	11.12	5.44	1	9.06	6.81	8.68	2.63	18.72

IntelliGear®

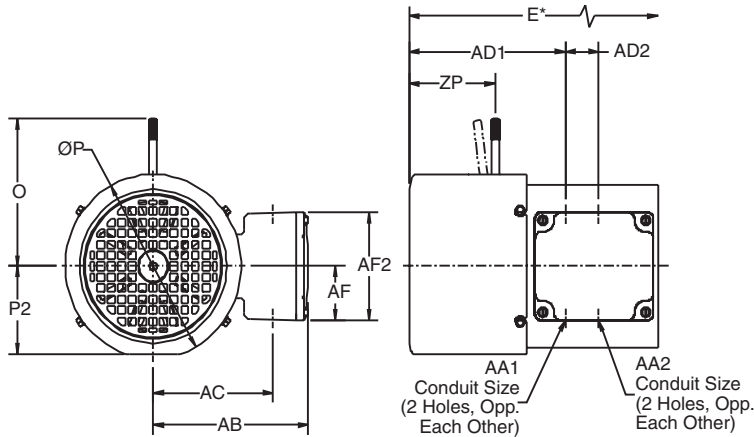


Motor Frame	Controller	O	P	P2	AB	AC	AD	AF	AV	AW	AX	AY	AZ	XK
56	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	9.79 ²
143T, 145T	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	11.04 ²
56	2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	9.79
145T	2, 2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	11.04
182T, 184T	2	8.72	9.56	4.78	6.45	5.91	5.89	6.58	2.25	2.95	.62	.55	9.12	14.05
	3	11.16	9.56	4.78	8.97	8.44	10.01	7.37	2.83	4.22	.62	.55	13.10	14.05
213T	3	11.99	11.25	4.98	8.97	8.44	11.73	8.11	2.83	4.22	.62	.55	13.10	16.15
215T	3	11.99	11.25	4.98	8.97	8.44	13.23	8.11	2.83	4.22	.62	.55	13.10	17.65

² XK will increase by .58" if applied to frames 32 and 33 combined units.

Input Power Phase/Voltage	Motor HP @ Max. Hz					
	0.33 to 0.50	0.75	1	1.5 to 2	3 to 5	7.5 to 10
1/115	1M	2M	-	-	-	-
1/230	1M	1M	1M	2M	-	-
3/230	1	1	1	2	3	-
3/460	1	1	1	1	2	3

Dimensional Supplement



DC FCR Brake with Type "T" Motor

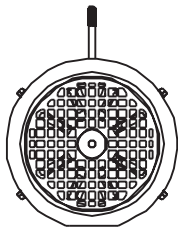
Motor Frame	E*	O	P	AA1	
				Size	Qty
56-143/145T	2.63	5.80	7.24	3/4 NPT	2
182/184T	1.95	7.3	9.23	3/4 NPT	1

Motor Frame	AA2		AB	AC	AD1
	Size	Qty			
56-143/145T	1/2 NPT	2	6.38	4.94	6.43
182/184T	3/4 NPT	1	7.8	6.14	8.84

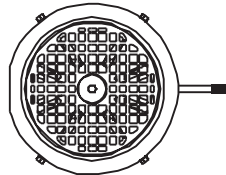
Motor Frame	AD2	AF	AF2	P2	ZP
56-143/145T	1.38	2.13	4.25	3.46	3.54
182/184T	1.81	2.32	4.65	N/A	4.41

*Add "E" to XK of equivalent three phase frame motor.

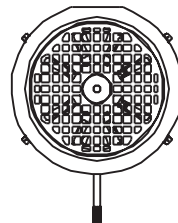
Manual Release Lever Position



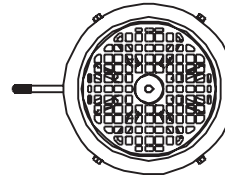
12 o'clock



3 o'clock

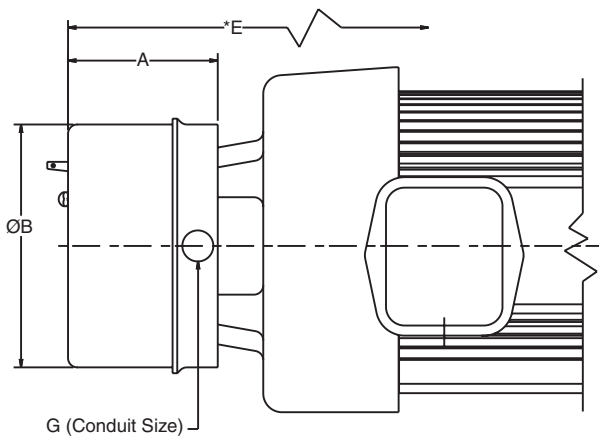


6 o'clock



9 o'clock

See page B-35 for specifying the o'clock position on orders.



AC Brake with Type "T" and "S" Motor

Motor Type	Motor Frame	Brake Torque (ft. lbs.)	A	B	E*	G
S	56	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
	143T/145T 145TY	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
		10	4.01	6.54	4.56	1/2
	184T	15	4.01	6.54	4.56	1/2
T	213T	25	7.38	9.38	8.75	1/2
	215T	35	7.38	9.38	8.75	1/2

* Dimension "E" represents the additional length of motor with brake mounted. Add "E" to XK of equivalent three phase frame motor.

Product Weights (Lbs.)

Foot Mounted Single Reduction - TEFC Three Phase Motor

Gear Frame	Motor Frame											
	56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T
30	33	35	42	-	-	-	-	-	-	-	-	-
31	51	55	62	77	87	-	-	-	-	-	-	-
32	56	58	65	80	90	-	-	-	-	-	-	-
33	-	83	85	100	110	147	155	205	-	-	-	-
34	-	-	-	-	113	150	163	213	258	448	498	-
35	-	-	-	-	-	200	213	253	308	498	548	728

Foot Mounted Multiple Reduction - TEFC Three Phase Motor

Gear Frame	Stages	Motor Frame											
		56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	320T
30	2, 3	39	41	48	-	-	-	-	-	-	-	-	-
31	2, 3	65	67	75	90	100	-	-	-	-	-	-	-
32	2, 3	78	80	87	102	112	144	152	-	-	-	-	-
	4, 5	86	88	-	-	-	-	-	-	-	-	-	-
33	2, 3	107	109	115	132	142	184	192	240	-	-	-	-
	4, 5	117	119	-	-	-	-	-	-	-	-	-	-
34	2, 3	130	132	138	156	166	204	212	249	299	489	539	-
	4, 5	129	131	138	-	-	-	-	-	-	-	-	-
35	2, 3	-	225	230	249	259	290	298	348	398	588	638	818
	4, 5	234	236	243	257	267	-	-	-	-	-	-	-
26 - 29	2, 3 4, 5, 6	Refer to dimension print pages											

Weight Adders

Optional Motor Types

Type	Motor Frame												
	56	143T	145T	145TY	182T	184T	213T	215T	254T	256T	284T	286T	320T
C Corro-Duty	8	9	11	11	52	50	73	70	190	165	-	-	RO
X Explosionproof	19	21	25	-	33	30	50	50	-	-	-	-	-
S Single Phase	6	11	-	5	-	17	-	-	-	-	-	-	-
IG IntelliGear	7	15	18	20	31	30	51	53	-	-	-	-	-

B14 and Flange Mounted

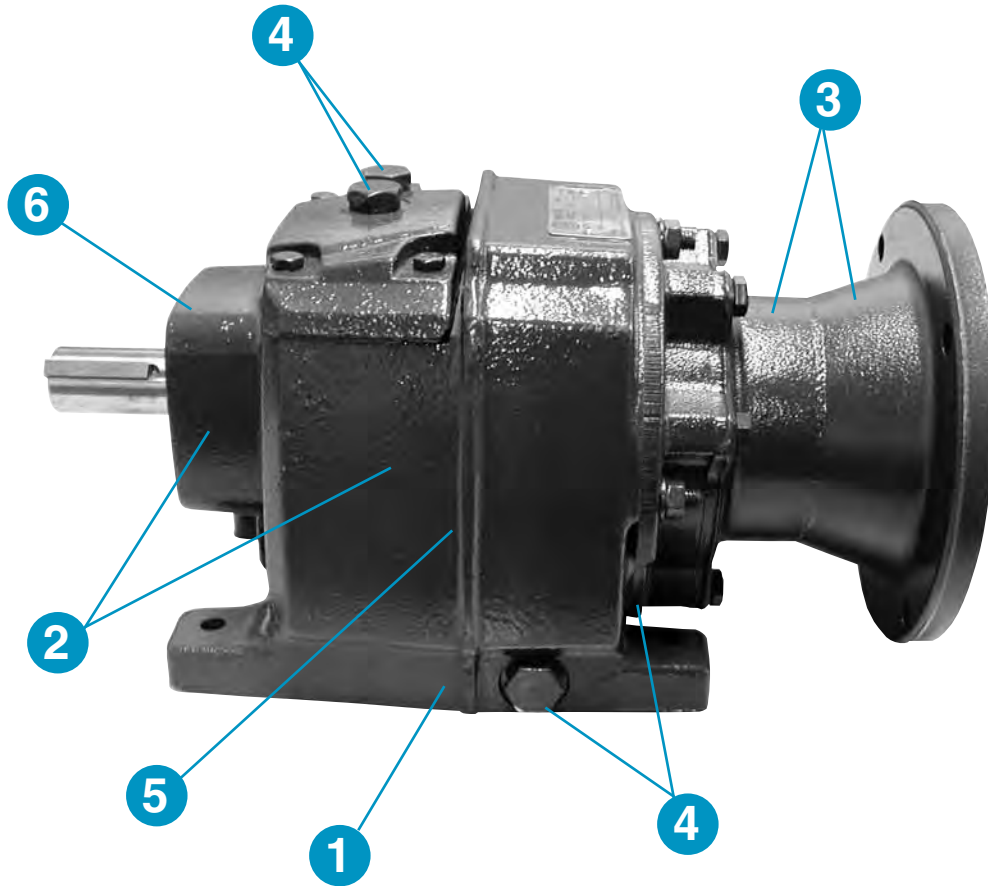
Single Reduction

Gear Frame	B14 Face Mount	Flange Mount
30	0	1
31	-1	3
32	-1	4
33	-1	8
34	-2	8
35	-2	9

Multiple and Combined

Gear Frame	B14 Face Mount	Flange Mount
30	0	1
31	-1	2
32	-1	4
33	-3	8
34	-5	8
35	-6	9

Type CbN Helical In-line Series 2000/3000 Speed Reducer Features...



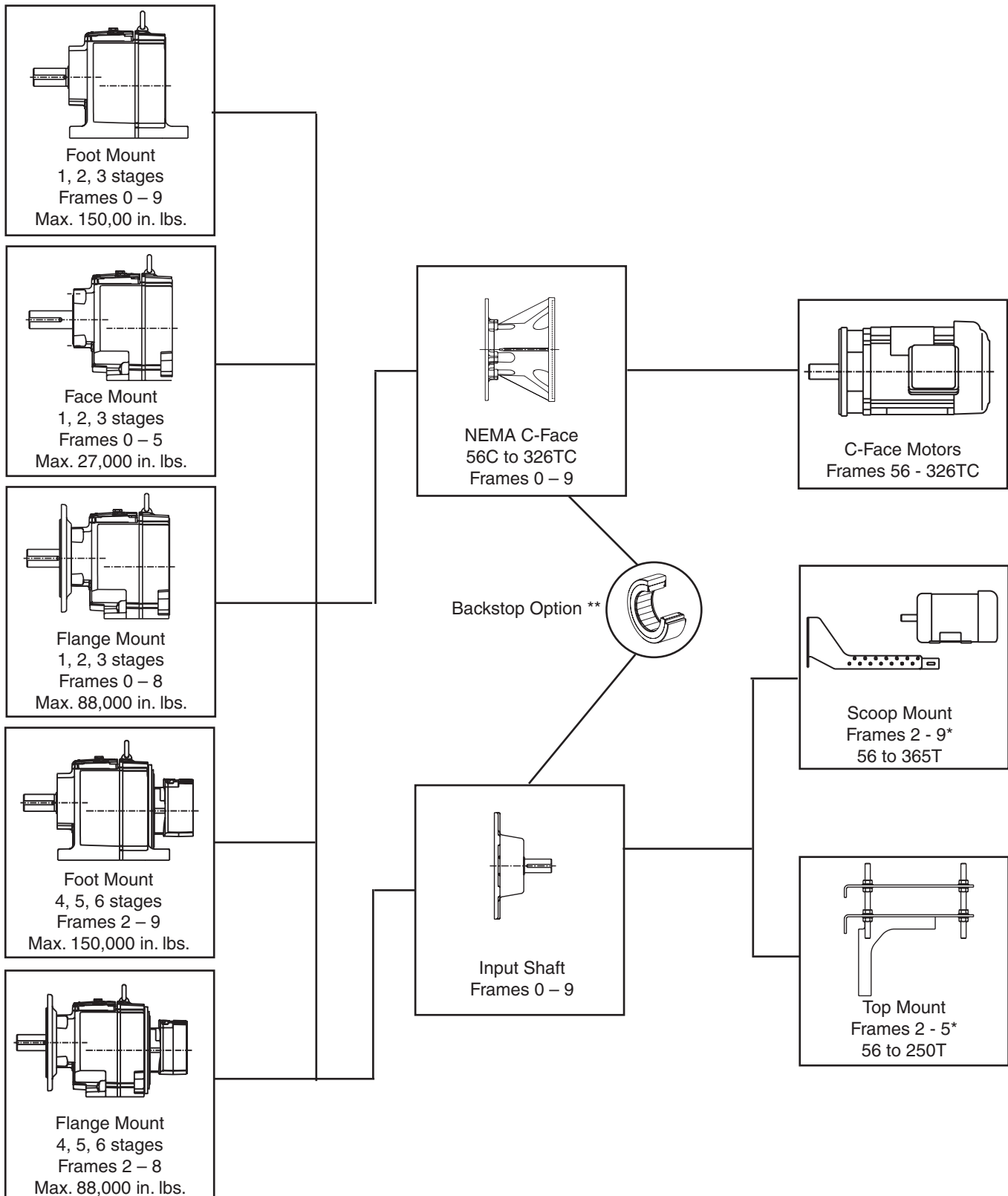
Design Features

1. Gear reducers are delivered factory filled with synthetic hydrocarbon lubricant.
2. Cast one-piece housing/endshield construction provides added strength and rigidity.
3. Series 3000 C-Face reducers utilize compact quill construction with two bearings for support and the quill has a non-metallic liner to eliminate fretting.
4. Oversized plugs and magnetic drain plug make normal maintenance easier.
5. All gears are keyed to shafts and finished to provide quiet operation.
6. Oversized bearings are used to help provide longer life.

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B14 Face Mount	A-234 - A-235
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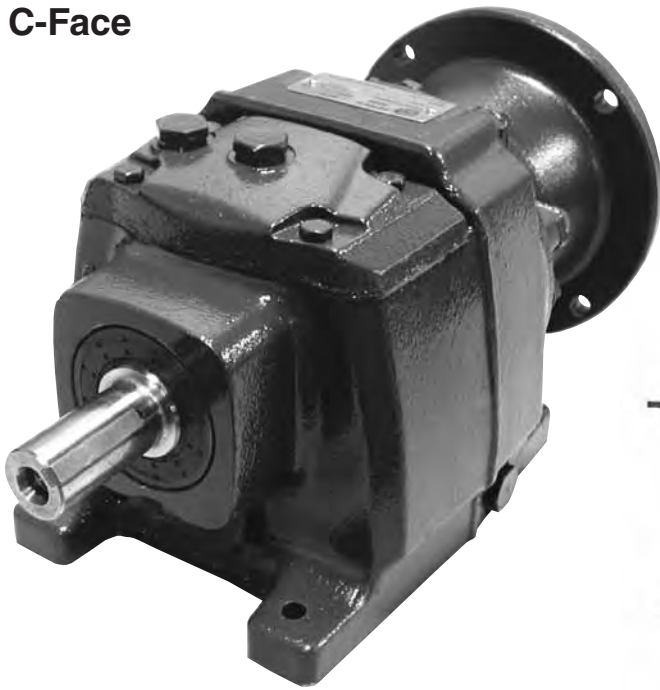
Mounting Versatility and Size Range



* Excluding frames 2 and 3 single stage and frames 2 - 5 combined 4 and 5 stage product. Refer to dimension pages for availability.

** Frames 1 - 9: 1, 2, and 3 stages. Frames 4 - 9: 4 and 5 stages only.

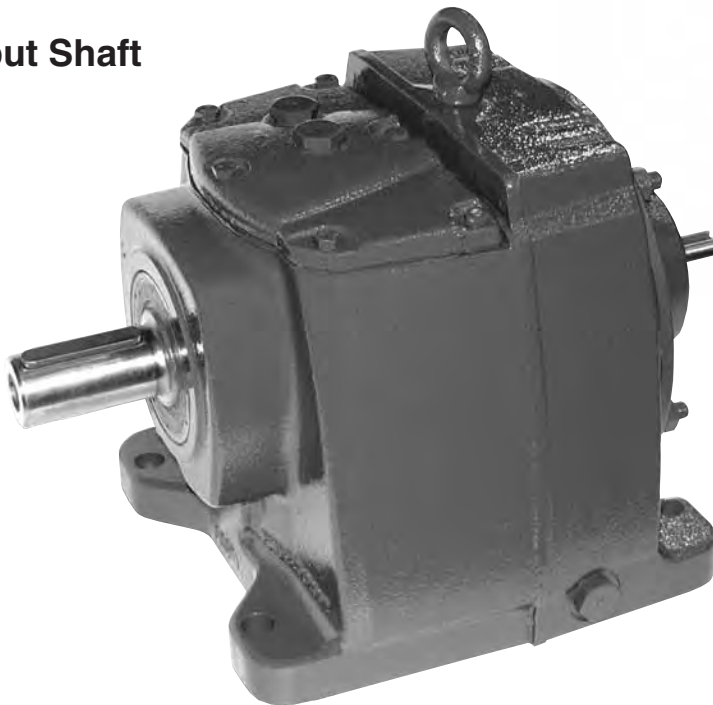
C-Face



Top
Mount



Input Shaft



Selection Information

1. Input HP

- Based on application data.

2. Speed/Ratio

- Obtain either desired output speed (RPM) or gearbox ratio based on application.

3. Service Factor

- Determine the required service factor using either the AGMA application classification chart (pages A-142 to A-144), or the duration of operation, load type, and drive type with the table below:

Prime Mover	Hours of Operation	Uniform Load U	Moderate Shock Load M	Heavy Shock Load V
Electric Motor	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Internal Combustion Engine	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

Size Selection

Step 1

- Locate speed reducer selection tables (pages A-146 to A-163) based on input speed to gearbox.

Step 2

- Choose the nominal ratio appropriate for the speeds required.

Step 3

- Select the gear unit size for the chosen ratio and the known input speed so that the mechanical power rating P (hp) satisfies the following:

$$P \geq P_m \cdot SF$$

P = mechanical power rating (hp) of gearbox

P_m = motor power (hp)

SF = required service factor

Note: Size selection based on absorbed power (Pa) or absorbed torque (Ta) at the low speed shaft instead of motor power (Pm) is allowed when the former is known with sufficient accuracy and if the number of start operations is limited. When Ta is applied in size selection, verify if:

$$T \geq T_a \cdot SF$$

T = torque rating (in. lbs.) at low speed shaft

T_a = absorbed torque (in. lbs.) at low speed shaft (based on input hp)

SF = required service factor

Size Selection (cont.)

Step 4

- Verify overhung load ratings where required (see page A-137).

Example

1. Application Data

Rotary lobe pump, 10+ hours per day, speed reducer direct coupled to load, foot mounted, 1.25 service factor.

Motor rating: TEFC, 230/460 volt, 7 1/2 HP, 1750 RPM, 213TC frame footed¹.

Output speed: 280 RPM

2. Size Selection

280 RPM required output

Equals 6.3:1 ratio	6.1	3242
PM • SF = P	Example	
7.5 HP x 1.25 = 9.4 HP	10.45	2208
3242 (10.45 HP) > 9.4 HP	pg. A-146	
Select CbN 3242		

(There are no thermal or OHL considerations.)

3. Catalog Designation

(see "ordering" page A-138)

CbN • 3242 • S • B3 • 6.3 • U • 213TC

¹ CbN frame 3242 with 210TC motor required a footed motor with motor outboard foot supported.

When a sprocket, sheave, pulley or pinion is mounted on any shaft of a reducer, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

Where:

- OHL = Overhung load (pounds)
- T = Torque (in. lbs.)
- r = Radius of driving member (in.)
- HP = Horsepower
- K = Drive type factor
- LLF = Load location factor

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{RPM \times r}$$

OHL capacities are calculated at gear capacity rounded to the closest motor HP at mid shaft. For capacity when HP is known, refer to gearmotor selection tables.

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Timing Belt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Single Reduction Overhung Load (lbs.)

Output R.P.M.	Reducer Size					
	0	1	2	3	4	5
	30	31	32	33	34	35
>1000	84	222	230	500	580	802
801-1000	80	229	250	600	615	757
551-800	75	240	288	648	674	1041
451-550	54	320	360	668	874	1234
351-450	33	334	370	806	1244	1495
<350	153	366	457	786	1560	1744

Multiple Reduction Overhung Load (lbs.)

Output R.P.M.	Reducer Size												
	0	1		2		3		4	5	6	7	8	9
	3012	3122	313X	3242	325X	336X	337X	34	35	26	27	28	29
301-450	-	455	-	460	-	890	-	1755	1983	4200	6500	-	-
201-300	-	469	-	557	-	1200	-	1829	2065	4400	7000	9000	-
151-200	129	591	619	670	699	1233	1233	2013	2065	4670	7500	12000	-
101-150	138	603	649	685	692	1296	1296	2015	2163	4900	7500	12000	-
51-100	388	701	714	850	856	1305	1305	2472	2213	5800	9000	12000	14000
31-50	600	-	1030	-	1105	-	1305	3424	3733	6000	11000	12000	20000
16-30	600	-	1297	-	1357	-	1905	3670	4580	6000	11000	12000	20000
<15	600	-	1345	-	1610	-	1905	4340	4580	6000	11000	12000	20000

Minimum OHL capacity based on minimum recommended sheave diameter and unit driven by maximum motor HP.

Speed Reducers Catalog Nomenclature

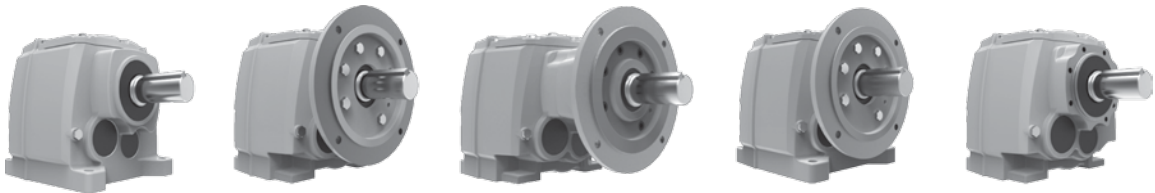
CbN • 3 1 2 2 • S • B3 • 40 • U • 143TC

See below and next
page prior to ordering

See page 141
prior to ordering

Series	Gear Frame	Number of Reductions	Mounting Configuration For Gear (housing and Shaft Extension)	Mounting Position	Nom. Gear Ratio	Gear Input	Motor Frame
3 = 3000	0	1 = 1 stage	Refer to the illustrations below of the basic mounting options based on gear frame and stages of reduction. For Flanged gear mounting, refer to details for options that are available based on frame size, flange dimensions, and thrust loads for the application	See Page A-140	Determine from selection pages	AP = Input shaft	Req'd for any order for c-face or scoop reducer
	1	2 = 2 stages				AD = Input shaft w/backstop*	
	2	3 = 3 stages				SP = Scoop mount	
	3	4 = 4 stages				SD = Scoop mount w/backstop*	
	4	5 = 5 stages				U = C-face	
	5	6 = 6 stages				UD = C-face w/backstop*	
2 = 2000	6					TM = Top mount	
	7					TD = Top mount w/backstop*	
	8						
	9						

* For units with backstops, specify output shaft rotation.



Gear Output	Foot Mounted	Flange Mount (footless)		Flange Mount (footed)	Face Mount (footless)
		Std. Thrust	High Thrust		
Configuration Code (inches)	S¹	See Page A-139	See Page A-139	See Page A-139	B14¹
Frame(s) Available	All	All	See Page A-139	See Page A-139	30 - 35

¹Inch output shaft. For output with metric shaft, insert "M" following last alpha character (i.e. metric footmount, S becomes SM).

Flange - No Feet

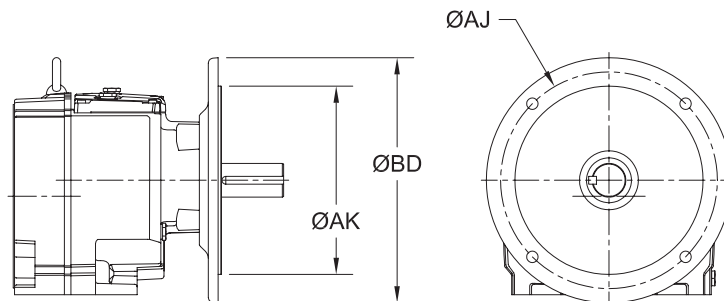
		Output Flange Dimensions Available											
		Inches	MM										
			120	140	160	200	250	300	350	400	450	550	650
Reduction Stages	BD	6.50	120	140	160	200	250	300	350	400	450	550	650
	AK	4.50	80	95	110	130	180	230	250	300	350	450	550
	AJ	5.875	100	115	130	165	215	254	300	350	400	500	600
Gear Frame													
Normal Thrust	Single	30	56C	BD1	BS	BD2	BD3						
		31			BD2	BS							
		32				BD2	BS						
		33					BD2	BS					
		34						BD2	BS				
	35							BD2	BS				
	Multiple	30	56C	BD1	BS	BD2	BD3						
		31		BD3	BD2	BD1	BS						
		32				BD2	BD1	BS					
		33					BD2	BD1	BS				
		34						BD2	BD1	BS			
		35							BD2	BD1	BS		
		26											BS
		27											BS
High Thrust	Multiple	33						BR					
		34							BR				
		35								BR			
		26										BR	
		27										BR	

Flange - Footed

		Output Flange Dimensions Available											
		Inches	MM										
			120	140	160	200	250	300	350	400	450	550	650
Reduction Stages	BD	6.50	120	140	160	200	250	300	350	400	450	550	650
	AK	4.50	80	95	110	130	180	230	250	300	350	450	550
	AJ	5.875	100	115	130	165	215	254	300	350	400	500	600
Gear Frame													
Normal Thrust	Single	31			SBD2	SBS							
		32				SBD2	SBS						
		33					SBD2	SBS					
		34						SBD2	SBS				
		35							SBD2	SBS			
	Multiple	30A		SBD1	SBS								
		31		SBD3	SBD2	SBD1							
		32					SBD1	SBS					
		33						SBD1	SBS				
		34							SBD1	SBS			
		35								SBD1	SBS		

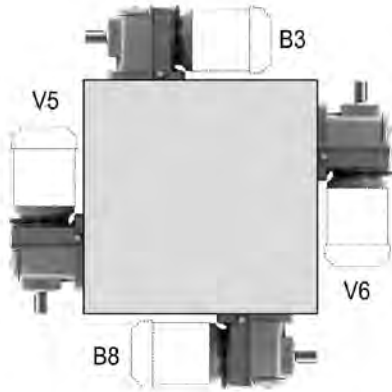
Shaded fields indicate factory lead-time applies

Note: For metric output shaft on any output nomenclature above, add "M" before any numeric designator. (i.e. metric shaft with BD1 flange = BDM1)



Speed Reducers
Mounting Positions

Foot Mounted
(with/without flange)
Any Reduction

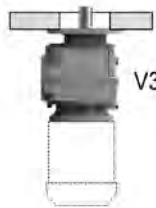


B6



B7

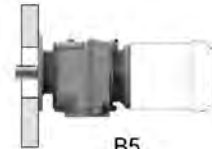
Flange Mounted
(footless)
Multiple Reductions



V3

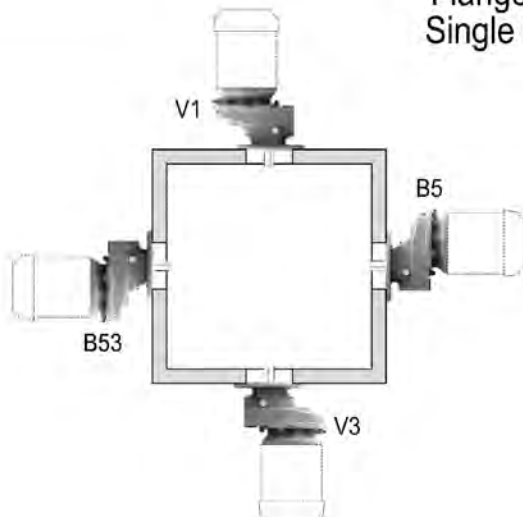


V1



B5

Flange Mounted
Single Reduction

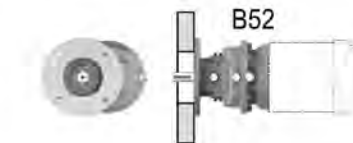


V1

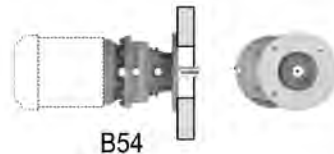
B5

B53

V3



B52



B54

C-Face Reducer Availability

Gear Frame	Reduction Stages	AC Motor Frames Sizes						
		56C	140TC	180TC	210TC	250TC	280TC	320TC
30	1,2,3	X	X ¹	-	-	-	-	-
31	1,2,3	X	X	X ³	-	-	-	-
32	1,2,3	X	X	X	X ³	-	-	-
	4,5	X	-	-	-	-	-	-
33	1,2,3	X	X	X	X ²	-	-	-
	4,5	X	X	-	-	-	-	-
34	1,2,3	X	X	X	X	X	X ³	-
	4,5	X	X	-	-	-	-	-
35	1	X	X	X	X	X	X ³	X ³
	2,3	X	X	X	X	X	X	X ³
	4,5	X	X	X	-	-	-	-
26	2,3	-	-	X	X	X	X	X
	4,5,6	X	X	X	X	-	-	-
27	2,3	-	-	X	X	X	X	X
	4,5,6	X	X	X	X	-	-	-
28	3	-	-	-	X	X	X	X
	4,5,6	X	X	X	X	X	-	-
29	3	-	-	-	X	X	X	X
	4,5,6	X	X	X	X	X	-	-

Scoop Mount Reducer Availability

Gear Frame	Reduction Stages	AC Motor Frames Sizes							
		56	140T	180T	210T	250T	280T	320T	360T
32	2,3	X	X	-	-	-	-	-	-
33	2,3	X	X	X	-	-	-	-	-
34	1,2,3	-	X	X	X	-	-	-	-
35	1	-	-	X	X	X	-	-	-
	2,3	-	X	X	X	X	X	-	-
26	2,3	-	-	X	X	X	X	X	-
	4,5,6	-	X	X	-	-	-	-	-
27	2,3	-	-	X	X	X	X	X	-
	4,5,6	-	X	X	X	-	-	-	-
28	3	-	-	-	-	X	X	X	X
	4,5,6	-	X	X	X	-	-	-	-
29	3	-	-	-	-	X	X	X	X
	4,5,6	-	X	X	X	-	-	-	-

Top Mount Reducer Availability

Gear Frame	Reduction Stages	AC Motor Frames Sizes							
		56	140T	180T	210T	250T	280T	320T	360T
32	2,3	X	X	X	-	-	-	-	-
33	2,3	X	X	X	X	-	-	-	-
34	1	-	X	X	X	-	-	-	-
	2,3	-	X	X	X	X	-	-	-
35	1	-	X	X	X	X	X	-	-
	2,3	-	X	X	X	X	X	-	-
26,27	2,3	-	-	RO	RO	RO	RO	RO	-
	4,5,6	X	X	X	-	-	-	-	-
28,29	3	-	-	-	RO	RO	RO	RO	RO
	4,5,6	-	X	X	X	-	-	-	-

¹ Not available on 3012 with ratios of 31.5, 35.5, 40,45. Use frame 3013 in these requirements

² When using this frame with 3301 gear, a footed motor with outboard foot supported.

³ Motor selected must be a footed C-face motor with outboard foot supported

Backstop can be supplied in this input.



Speed Reducers

CbN
SERIES **2000**
3000

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class	Application	Load	Class	Application	Load	Class	
		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day			Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Agitators (Mixers)									
Pure Liquids		—	1.00	1.25					
Liquids & Solids		1.00	1.25	1.50					
Liquids - Variable Density		1.00	1.25	1.50					
Blowers									
Centrifugal		1.00	1.25	—					
Lobe		1.00	1.25	1.50					
Vane		—	1.00	1.25					
Brewing and Distillers									
Bottling Machinery		—	1.00	1.25					
Brew Kettles, Continuous Duty		—	1.00	1.25					
Cookers - Continuous Duty		—	1.00	1.25					
Mash Tubs - Continuous Duty		—	1.00	1.25					
Scale Hoppers, Frequent Starts		1.00	1.25	1.50					
Can Filling Machines		—	1.00	1.25					
Car Dumpers		1.25	1.50	1.75					
Car Pullers		1.00	1.25	1.50					
Clarifiers		—	1.00	1.25					
Classifiers		1.00	1.25	1.50					
Clayworking Industry									
Brick Press		1.25	1.50	1.75					
Briquette Machine		1.25	1.50	1.75					
Pug Mill		1.00	1.25	1.50					
Compactors		1.50	1.75	2.00					
Compressors									
Centrifugal		—	1.00	1.25					
Lobe		1.00	1.25	1.50					
Reciprocating, Multi - Cylinder		1.00	1.25	1.50					
Reciprocating, Single - Cylinder		1.25	1.50	1.75					
Conveyors - General Purpose									
Uniformly Loaded or Fed		—	1.00	1.25					
Not Uniformly Fed		1.00	1.25	1.50					
Reciprocating or Shaker		1.25	1.50	1.75					
Cranes									
Dry Dock									
Main Hoist		1.25	1.50	1.75					
Auxiliary		1.25	1.50	1.75					
Boom Hoist		1.25	1.50	1.75					
Slewing Drive		1.25	1.50	1.75					
Traction Drive		1.50	1.50	1.50					
Container									
Main Hoist		Refer To Application Engineering							
Cranes (Continued)									
Boom Hoist									Refer To Application
Engineering									
Trolley Drive									Refer To Application
Engineering									
(Gantry Drive)									
(Traction Drive)									Refer To Application
Engineering									
Mill Duty									
Main									Refer To Application
Engineering									
Auxiliary									Refer To Application
Engineering									
Bridge & Trolley Travel									Refer To Application
Engineering									
Industrial Duty									
Main							1.25	1.50	1.75
Auxiliary									Refer To Application
Engineering									
Bridge & Trolley Travel									Refer To Application
Engineering									
Industrial Duty									
Main							1.25	1.50	1.75
Auxiliary									Refer To Application
Engineering									
Bridge & Trolley Travel									Refer To Application
Engineering									
Crusher									
Stone or Ore							1.50	1.75	2.00
Dredges									
Cable Reels							1.00	1.25	1.50
Conveyors							1.00	1.25	1.50
Cutter Head Drives							1.25	1.50	1.75
Pumps 1.00							1.25	1.50	1.75
Screen Drives							1.25	1.50	1.75
Stackers							1.00	1.25	1.50
Winches							1.00	1.25	1.50
Elevators									
Bucket							1.00	1.25	1.50
Centrifugal Discharge							—	1.00	1.25
Escalators									Refer To Application
Engineering									
Freight									Refer To Application
Engineering									
Gravity Discharge							—	1.00	1.25
Extruders									
General							1.25	1.25	1.25
Plastics									
(a) Variable Speed Drive							1.50	1.50	1.50
(b) Fixed Speed Drive							1.75	1.75	1.75
Rubber									
(a) Continuous Screw Operation							1.50	1.50	1.50
(b) Intermittent Screw Operation							1.75	1.75	1.75
Fans									
Centrifugal							—	1.00	1.25
Cooling Towers									Refer To Application Engineering
Forced Draft							1.25	1.25	1.25
Induced Draft							1.00	1.25	1.50
Industrial & Mine							1.00	1.25	1.50



Speed Reducers

CbN
SERIES **2000**
3000

CbN Series

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class	Application			Load	Class	Application		
			Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day			Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Feeders										
Apron	—		1.25	1.50						
Belt	1.00		1.25	1.50						
Disc	—		1.00	1.25						
Reciprocating	1.25		1.50	1.75						
Screw	1.00		1.25	1.50						
Food Industry										
Cereal Cooker	—		1.00	1.25						
Dough Mixers	1.00		1.25	1.50						
Meat Grinders	1.00		1.25	1.50						
Slicers	1.00		1.25	1.50						
Generators and Executors										
	—		1.00	1.25						
Hammer Mills										
	1.50		1.50	1.75						
Hoists										
Heavy Duty	1.25		1.50	1.75						
Medium Duty	1.00		1.25	1.50						
Skip Hoist	1.00		1.25	1.50						
Laundry Tumblers										
	1.00		1.25	1.50						
Laundry Washers										
	1.00		1.25	1.50						
Lumber Industry										
Barkers										
- Spindle Feed	1.25		1.25	1.25						
- Main Drive	1.50		1.50	1.50						
Conveyors										
- Burner	1.25		1.25	1.50						
- Main or Heavy Duty	1.50		1.50	1.50						
- Main Log	1.50		1.50	1.50						
- Re-Saw, Merry-Go-Round	1.25		1.25	1.50						
- Slab	1.50		1.50	1.75						
- Transfer	1.25		1.25	1.50						
Chains										
- Floor	1.50		1.50	1.50						
- Green	1.50		1.50	1.50						
Cut-Off Saws										
- Chain	1.50		1.50	1.50						
- Drag	1.50		1.50	1.50						
Debarking Drums										
	1.50		1.50	1.75						
Feeds										
- Edger	1.25		1.25	1.50						
- Gang	1.50		1.50	1.50						
- Trimmer	1.25		1.25	1.50						
Log Deck	1.50		1.50	1.50						
Log Hauls - Incline-Well Type	1.50		1.50	1.50						
Log Turning Devices	1.50		1.50	1.50						
Planner Feed	1.25		1.25	1.25						
Planer Tilting Hoists	1.50		1.50	1.50						
Rolls - Live-Off Bearing.-Roll Cases	1.50		1.50	1.50						
Sorting Table	1.25		1.25	1.50						
Tipple Hoist	1.25		1.25	1.50						
Transfers										
- Chain	1.50		1.50	1.50						
- Causeway	1.50		1.50	1.50						
Tray Drives	1.25		1.25	1.50						
Veneer Lathe Drives			Refer To Application Engineering							
Metal Mills										
Draw Bench Carriage & Main Drive	1.00		1.25	1.50						
Runout Table										
Non-reversing										
Group Drives	1.00		1.25	1.50						
Individual Drives	1.50		1.50	1.75						
Reversing										
Slab Pushers	1.25		1.25	1.50						
Shears	1.50		1.50	1.75						
Wire Drawing	1.00		1.25	1.50						
Wire Winding Machine	1.00		1.25	1.50						
Metal Strip Processing Machinery										
Bridles	1.25		1.25	1.50						
Coilers & Uncoilers	1.00		1.00	1.25						
Edge Trimmers	1.00		1.25	1.50						
Flatteners	1.00		1.25	1.50						
Loopers (Accumulators)	1.00		1.00	1.00						
Pinch Rolls	1.00		1.25	1.50						
Scrap Choppers	1.00		1.25	1.50						
Shears	1.50		1.50	1.75						
Slitters	1.00		1.25	1.50						
Mills, Rotary Type										
Ball & Rod										
Spur Ring Gear	1.50		1.50	1.75						
Helical Ring Gear	1.50		1.50	1.50						
Direct Connected	1.50		1.50	1.75						
Cement Kilns	1.50		1.50	1.50						
Dryers & Coolers	1.50		1.50	1.50						
Mixers, Concrete										
	1.00		1.25	1.50						
Paper Mills										
Agitator (Mixer)	1.50		1.50	1.50						
Agitator for Pure Liquids	1.25		1.25	1.25						
Barkers - Mechanical	1.75		1.75	1.75						
Barking Drums	1.75		1.75	1.75						
Beater	1.50		1.50	1.50						
Breaker Stack	1.25		1.25	1.25						
❖ Calender	1.25		1.25	1.25						
Chipper	1.75		1.75	1.75						
Chip Feeder	1.50		1.50	1.50						
Coating Rolls	1.25		1.25	1.25						
Conveyors										
Chip, Bark, Chemical	1.25		1.25	1.25						
Log (Including Slab)	1.75		1.75	1.75						
Couch Rolls	1.25		1.25	1.25						
Cutter	1.75		1.75	1.75						
Cylinder Molds	1.25		1.25	1.25						
❖ Dryers										
Paper Machine	1.25		1.25	1.25						
Conveyor Type	1.25		1.25	1.25						
Embossor	1.25		1.25	1.25						
Extruder	1.50		1.50	1.50						
Fourdrinier Rolls (Includes Lump Breaker, Dandy Roll, Wire Turning, and Return Rolls)										
	1.25		1.25	1.25						
Jordan	1.25		1.25	1.25						
Kiln Drive	1.50		1.50	1.50						
Mt. Hope Roll	1.25		1.25	1.25						



Speed Reducers

CbN
SERIES **2000**
3000

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class	Application	Load	Class	Application	Load	Class
Paper Mills (Continued)						Rubber Industry		
Paper Rolls		1.25	1.25	1.25		Intensive Internal Mixers		
Platter		1.50	1.50	1.50		(a) Batch Mixers	1.50	1.75 1.75
Presses - Felt & Suction		1.25	1.25	1.25		(b) Continuous Mixers	1.25	1.50 1.50
Pulper		1.50	1.50	1.75		Mixing Mill - 2 Smooth Rolls - (If corrugated rolls are used, (then use the same service factors that are used for a Cracker-Warmer)	1.50	1.50 1.50
Pumps - Vacuum		1.50	1.50	1.50		Batch Drop Mill - 2 Smooth Rolls	1.50	1.50 1.50
Reel (Surface Type)		1.25	1.25	1.50		Cracker Warmer - 1 Corrugated Roll	1.75	1.75 1.75
Screens						Cracker - 2 Corrugated Rolls	1.75	1.75 1.75
Chip		1.50	1.50	1.50		Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25 1.25
Rotary		1.50	1.50	1.50		Refiner - 2 Rolls	1.50	1.50 1.50
Vibrating		1.75	1.75	1.75		Calenders	1.50	1.50 1.50
Size Press		1.25	1.25	1.25				
Super Calender (See Note)		1.25	1.25	1.25		Sand Miller	1.00	1.25 1.50
Thickner								
(AC Motor)		1.50	1.50	1.50		Sewage Disposal		
(DC Motor)		1.25	1.25	1.25		Bar Screens	—	1.00 1.25
Washer						Chemical Feeders	—	1.00 1.25
(AC Motor)		1.50	1.50	1.50		Dewatering Screens	1.00	1.25 1.50
(DC Motor)		1.25	1.25	1.25		Scum Breakers	1.00	1.25 1.50
Wind and Unwind Stand		1.00	1.00	1.00		Slow or Rapid Mixers	1.00	1.25 1.50
Winders (Surface Type)		1.25	1.25	1.25		Sludge Collectors	1.00	1.00 1.25
❖ Yankee Dryers		1.25	1.25	1.25		Thickeners	1.00	1.25 1.50
						Vacuum Filters	1.00	1.25 1.50
Plastics Industry - Primary Processing						Screens		
Intensive Internal Mixers						Air Washing	—	1.00 1.25
(a) Batch Mixers		1.75	1.75	1.75		Rotary - Stone or Gravel	1.00	1.25 1.50
(b) Continuous Mixers		1.50	1.50	1.50		Traveling Water Intake	—	1.00 1.25
Batch Drop Mill - 2 Smooth Rolls		1.25	1.25	1.25				
Continuous Feed, Holding & Blend Mill		1.25	1.25	1.25		Sugar Industry		
Compounding Mills		1.25	1.25	1.25		Beet Slicer	1.50	1.50 1.75
Calenders		1.50	1.50	1.50		Cane Knives	1.50	1.50 1.50
						Crushers	1.50	1.50 1.50
Plastics Industry - Secondary Processing						Mills (Low Speed End)		
Blow Molders		1.50	1.50	1.50				
Coating		1.25	1.25	1.25		Textile Industry		
Film		1.25	1.25	1.25		Batchers	1.00	1.25 1.50
Pipe		1.25	1.25	1.25		Calenders	1.00	1.25 1.50
Pre-Plasticizers		1.50	1.50	1.50		Cards	1.00	1.25 1.50
Rods		1.25	1.25	1.25		Dry Cans	1.00	1.25 1.50
Sheet		1.25	1.25	1.25		Dryers	1.00	1.25 1.50
Tubing		1.25	1.25	1.50		Dyeing Machinery	1.00	1.25 1.50
						Looms	1.00	1.25 1.50
Pullers - Barge Haul		1.00	1.50	1.75		Mangles	1.00	1.25 1.50
						Nappers	1.00	1.25 1.50
Pumps						Pads	1.00	1.25 1.50
Centrifugal		—	1.00	1.25		Slashers	1.00	1.25 1.50
Proportioning		1.00	1.25	1.50		Soapers	1.00	1.25 1.50
Reciprocating						Spinners	1.00	1.25 1.50
Single Acting, 3 or more cylinders		1.00	1.25	1.50		Tenter Frames	1.00	1.25 1.50
Double Acting, 2 or more cylinders		1.00	1.25	1.50		Washers	1.00	1.25 1.50
Rotary						Winders	1.00	1.25 1.50
- Gear		—	1.00	1.50				
- Lobe		—	1.00	1.25				
- Vane		—	1.00	1.25				

❖ Anti-friction bearings only.

NOTE: A service factor of 1.0 may be applied at the base of a super calender, operating over a speed range where part of the range is constant horsepower and part of the range is constant torque, provided that the constant horsepower part is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating over the entire speed range at constant torque, or where the constant horsepower speed range is less than 1.5 to 1.



CbN Helical Inline Gearmotors and Speed Reducers

CbN Series

Industries

- Food Processing
- Warehousing
- Parcel and Package Sortation
- Water/Wastewater Treatment

Applications

- Positive Displacement Pumps
- Unit Handling Conveyors
- Oven Conveyors
- Low Speed Fans
- Industrial Door Openers





Speed Reducers

Motor RPM 1750

CbN
SERIES **2000**
3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer													
		0		1		2		3		4		5			
1400	1.25	1.24	3001	1.22	3101			1.23	3201			1.26	3301		
		3.06	134	6.78	292			11.98	520			14.42	643		
1250	1.4	1.46	3001	1.38	3101			1.45	3201			1.46	3301		
		3.06	158	6.37	310			11.06	567			13.73	706		
1094	1.6	1.54	3001	1.56	3101			1.55	3201			1.61	3301		
		3.06	166	6.15	338			11.39	623			13.43	761		
972	1.8	1.83	3001	1.76	3101			1.75	3201			1.77	3301		
		3.06	198	5.91	367			10.58	654			12.83	803		
875	2	1.96	3001	2	3101			1.94	3201			2.04	3301		
		3.06	212	5.65	399			10.35	708			14.33	1030		
781	2.24	2.19	3001	2.29	3101			2.21	3201			2.25	3301		
		3.06	237	5.37	434			9.08	708			13.63	1083		
700	2.5	2.55	3001	2.58	3101			2.55	3201			2.58	3301		
		3.06	275	4.86	442			7.88	708			13.96	1273		
625	2.8	2.75	3001	2.74	3101			2.77	3201			2.91	3301		
		3.06	297	4.58	443			7.37	708			11.99	1232		
556	3.15	3.24	3001	3.25	3101			3.09	3201			3.16	3301		
		2.98	340	3.86	442			6.5	708			10.1	1127		
493	3.55	3.63	3001	3.44	3101			3.43	3201			3.52	3301		
		2.72	348	3.65	442			5.85	708			9.79	1217		
438	4	4.08	3001	3.93	3101			3.89	3201			3.95	3301		
		2.58	372	3.19	442			5.15	708			9.42	1315		
				3.91	3122			3.87	3242			3.96	3362		
389	4.5	4.58	3001	4.36	3101			4.33	3201			4.47	3301		
		2.24	362	2.86	442			4.63	708			8.4	1327		
				4.43	3122			4.57	3242			4.59	3362		
350	5	5.17	3001	4.92	3101			4.88	3201			4.87	3301		
		1.05	192	2.55	442			4.11	708			7.73	1327		
				4.99	3122			4.88	3242			5.06	3362		
313	5.6	5.82	3001	5.69	3101			5.71	3201			5.5	3301		
		1.05	216	2.2	442			3.51	708			6.78	1315		
				5.65	3122			5.51	3242			5.59	3362		
278	6.3	6.4	3001	6.25	3101			6.31	3201			6.33	3301		
		1	226	2.01	442			3.18	708			5.94	1327		
				6.42	3122			6.1	3242			6.41	3362		
246	7.1	7.22	3001	7.17	3101			6.92	3201			7.06	3301		
		0.98	250	1	253			2.9	708			5.31	1327		
		7.38	3012	7.34	3122			6.96	3242			7.09	3362		
219	8	2.69	683	4.93	1251			9.17	2208			14.73	3615		
		8.13	3001	7.91	3101			8.06	3201			7.83	3301		
		0.88	252	1	279			2.48	708			4.8	1327		
194	9	8.16	3012	8.28	3122	7.57	3132	8.02	3242	7.63	3252	8.14	3362	7.85	3372
		2.69	762	4.37	1252	5.18	1359	7.95	2208	10.28	2718	12.83	3615	21.22	5767
		8.59	3012	8.79	3122	8.57	3132	8.57	3242	9.02	3252	9.16	3362	9.06	3372
175	10	2.56	763	4.11	1252	4.79	1421	7.44	2208	9.26	2891	11.39	3615	19.35	6069
		10.2	3012	10.43	3122	9.67	3132	9.72	3242	9.62	3252	9.95	3362	9.98	3372
		2.17	768	3.46	1252	4.42	1480	6.56	2208	8.84	2947	10.49	3615	18.13	6266

Exact ratio	Gear frame
Input H.P.	Output torque

Motor RPM 1750 (Continued)

Exact Ratio rpm, HP and Torque													
rpm	Nom. Ratio	Size of CbN 3000 Reducer											
		4		5		6		7		8		9	
1400	1.25	1.24	3401	1.28	3501								
		38.4	1679	61.53	2770								
1250	1.4	1.38	3401	1.46	3501								
		41.22	2015	59.42	3062								
1094	1.6	1.56	3401	1.6	3501								
		41.74	2292	57.18	3230								
972	1.8	1.74	3401	1.79	3501								
		35.43	2171	55.44	3496								
875	2	1.97	3401	2	3501								
		36.29	2521	52.88	3735								
781	2.24	2.17	3401	2.25	3501								
		34.03	2610	50.13	3982								
700	2.5	2.54	3401	2.44	3501								
		30.62	2745	48.17	4152								
625	2.8	2.83	3401	2.77	3501								
		28.35	2836	46.17	4522								
556	3.15	3.18	3401	3.07	3501	3.17	2602						
		25.76	2894	42.96	4655	100	10891						
493	3.55	3.6	3401	3.55	3501	358	2602						
		22.84	2903	40.6	5088	90	11202						
438	4	4.11	3401	3.88	3501								
		20	2903	38.16	5221								
		3.91	3482	4.07	3592	4.05	2602						
389	4.5	38.77	5249	66.63	9371	80	11064						
		4.41	3401	4.35	3501								
		18.63	2903	33.97	5221								
350	5	4.37	3482	4.66	3592	4.6	2602						
		41.6	6299	66.63	10727	77	11980						
		5.13	3401	4.85	3501								
313	5.6	16.01	2903	30.49	5221								
		4.91	3482	5.1	3592	5.02	2602	4.97	2702				
		42.14	7168	66.63	11960	65.7	11357	143	24720				
278	6.3	5.57	3401	5.5	3501								
		14.76	2903	26.29	5103								
		5.48	3482	5.7	3592	5.75	2602						
246	7.1	35.76	6786	57.53	11350	57.7	11171						
		6.15	3401	6.31	3501								
		13.36	2903	23.43	5221								
219	8	6.21	3482	6.38	3592	6.32	2602	6.38	2702				
		36.63	7883	53.87	11903	120	26171	143	31147				
		6.83	3401	6.87	3501								
194	9	11.32	2730	21.54	5221								
		6.86	3482	7.18	3592	7.13	2602	7.24	2702				
		34.35	8160	48.81	12133	110	26880	143	35103				
175	10	8.1	3401	8	3501								
		9.47	2708	18.48	5221								
		7.69	3482	7.92	3592	8.07	2602	8.1	2702	8.28	2803A		
175	10	38.77	10329	66.63	18252	99.7	27577	143	39552	143.2	40102		
		8.6	3482	9.07	3592	9.17	2602	8.99	2702				
		38.41	11446	64.65	20305	90.6	28197	143	44496				
175	10	9.67	3482	9.94	3592	10	2602	10.3	2702	10.19	2803A		
		35.65	11933	60.86	20956	84.9	29352	133	45825	148.2	49333		

If shaded, mechanical H.P. may exceed thermal H.P. limit. Refer to page A-164.

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

CbN
SERIES **2000**
3000

Motor RPM 1750 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer													
		0		1		2		3		4		5			
156	11.2	10.92	3012	11.04	3122	10.94	3132	10.8	3242	10.88	3252	11.09	3362	11.03	3372
		2.03	769	3.28	1252	4.07	1542	5.9	2208	8.18	3082	9.41	3615	16.56	6330
140	12.5	12.23	3012	12.61	3122	12.43	3132	12.27	3242	12.04	3252	12.45	3362	12.65	3372
		1.82	772	2.87	1252	3.74	1609	5.2	2208	7.64	3186	8.39	3615	15.46	6774
125	14	14.24	3012	14.08	3122	14.2	3132	13.65	3242	13.72	3252	14.09	3362	13.98	3372
		1.57	776	2.57	1252	3.42	1681	4.67	2208	7.02	3335	7.41	3615	14.12	6839
109	16	15.35	3012	15.79	3122	16.03	3132	15.36	3242	15.82	3252	15.33	3362	16.05	3372
		1.46	777	2.29	1252	3.15	1750	4.15	2208	6.38	3492	6.81	3615	12.68	7052
97	18	18.06	3012	18.28	3122	17.01	3132	18	3242	16.9	3252	17.33	3362	18.08	3372
		1.25	781	1.98	1252	2.98	1753	3.54	2208	6.1	3571	6.03	3615	11.39	7132
88	20	20.24	3012	20.07	3122	20.2	3132	19.87	3242	19.18	3252	19.95	3362	19.64	3372
		1.12	783	1.8	1252	2.52	1762	3.21	2208	5.6	3719	5.23	3615	10.49	7132
78	22.4	22.76	3012	23.01	3122	21.36	3132	21.79	3242	21.31	3252	22.29	3362	21.89	3372
		1	786	1	796	2.39	1765	2.93	2208	5.22	3850	4.68	3615	9.41	7132
70	25	25.59	3012	25.39	3122	24.41	3132	25.44	3242	24.2	3252	24.68	3362	24.56	3372
		0.89	787	1	878	2.09	1771	2.51	2208	4.72	3952	4.23	3615	8.39	7132
63	28	28.85	3012			27.25	3132			26.93	3252			27.8	3372
		0.79	789			1.88	1776			4.25	3964			7.41	7132
56	31.5	33.48	3012			30.55	3132			30.29	3252	32.32	3363	30.24	3372
		0.7	791			1.68	1780			3.79	3977	5.4	5910	6.81	7132
49	35.5	35.73	3012			35.37	3132			35.51	3252	37.29	3363	34.18	3372
		0.64	793			1.46	1786			3.25	3993	4.73	5965	6.03	7132
44	40	40.32	3012			38.84	3132			39.2	3252	41.1	3363	39.36	3372
		0.57	794			1.33	1790			2.95	4002	4.3	6010	5.23	7132
39	45	45.36	3012			44.54	3132			42.98	3252	45.4	3363	43.98	3372
		0.51	796			1	1540			2.69	4010	3.97	6070	4.68	7132
35	50	49.16	3013			49.15	3132			50.19	3252	52.09	3363	48.68	3372
		0.53	796			1	1699			2.32	4024	3.46	6100	4.23	7132
31	56	55.04	3013			57.83	3133			55.7	3253	57.6	3363	57.57	3373
		0.47	798			0.69	1351			2.13	4032	3.13	6100	3.77	7383
28	63	64.07	3013			65.25	3133			64.2	3253	66.11	3363	66.1	3373
		0.4	800			0.63	1406			1.85	4038	2.73	6100	3.36	7525
25	71	69.09	3013			69.24	3133			68.61	3253	74.4	3363	74.44	3373
		0.37	801			0.61	1434			1.73	4038	2.42	6100	3.02	7611
22	80	81.29	3013			82.23	3133			77.86	3253	80.86	3363	80.87	3373
		0.32	803			0.54	1519			1.53	4038	2.2	6100	2.78	7611
19	90	91.08	3013			86.97	3133			86.48	3253	90.12	3363	90.1	3373
		0.29	804			0.52	1547			1.37	4038	2	6100	2.5	7611
18	100	102.43	3013			99.4	3133			98.24	3253	101.13	3363	101.13	3373
		0.25	806			0.48	1618			1.21	4038	1.78	6100	2.22	7611
16	112	115.16	3013			110.94	3133			109.3	3253	114.47	3363	114.47	3373
		0.23	807			0.45	1678			1.09	4038	1.57	6100	1.96	7611
14	125	129.81	3013			124.4	3133			122.96	3253	124.53	3363	124.53	3373
		0.2	808			0.41	1744			0.97	4038	1.45	6100	1.8	7611
12.5	140	146.18	3013			144.02	3133			144.13	3253	141	3363	140.74	3373
		0.18	809			0.37	1804			0.82	4038	1.28	6100	1.6	7611
10.9	160	160.8	3013			158.13	3133			159.1	3253	162.1	3363	162.06	3373
		0.17	810			0.34	1804			0.75	4038	1.1	6100	1.39	7611
9.7	180	181.46	3013			181.32	3133			174.46	3253	181	3363	181.09	3373
		0.14	811			0.29	1804			0.68	4038	1	6100	1.24	7611
8.8	200	204.14	3013			200.11	3133			203.72	3253	200.44	3363	200.44	3373
		0.13	812			0.27	1804			0.58	4038	0.9	6100	1.12	7611

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

CbN
SERIES **2000**
3000

CbN Series

Motor RPM 1750 (Continued)

Exact Ratio rpm, HP and Torque													
rpm	Nom. Ratio	Size of CbN 3000 Reducer				Size of CbN 2000 Reducer							
		4		5		6		7		8		9	
156	11.2	10.78	3482	11.1	3592	11.5	2602	11.3	2702	11.53	2803A		
		33.16	12381	56.06	21544	63.2	24473	121	46921	143.1	55835		
140	12.5	12.23	3482	12.43	3592	12.6	2602	12.5	2702	13.06	2803A		
		30.33	12844	52.23	22478	63.2	27313	110	47704	136.4	60319		
125	14	13.5	3482	13.96	3592	13.9	2602	13.9	2702	14.82	2803A		
		28	13089	47.77	23128	63.2	30591	100	48464	129.7	65066		
109	16	15.77	3482	15.17	3592	16.3	2602	16.1	2702	16.59	2803A		
		24.63	13452	45.28	23788	55.65	30782	63.2	34961	122.9	69027		
97	18	17.61	3482	17.24	3592	18.2	2602	18.4	2702	18.43	2803A		
		22.21	13540	41.48	24761	49.95	31088	63.2	39331	117.9	73530		
88	20	19.77	3482	19.07	3592	20.6	2602	20.6	2702	21.13	2803A		
		19.86	13601	36.51	24111	44.51	30774	63.2	43701	113.2	76671		
78	22.4	22.37	3482	22.06	3592	22.2	2602	22.3	2702	22.14	2803	22.1	2903
		17.64	13663	33.75	25783	41.38	32048	63.63	49279	113	85690	143	108493
70	25	25.55	3482	24.08	3592	25.1	2602	25.7	2702	25.1	2803	25.1	2903
		15.52	13727	31.03	25876	36.75	31766	55.47	47948	102	86597	143	121026
63	28	27.42	3482	27.05	3592	27.6	2602	28	2702	28.5	2803	28.5	2903
		14.49	13760	27.74	25987	33.51	32439	51.52	49874	94.34	89428	143	135549
56	31.5	31.9	3482	30.14	3592	31.6	2602	32.4	2702	31.8	2803	31.8	2903
		12.52	13826	25	26088	29.45	32075	44.36	48308	84.68	90301	134	142509
49	35.5	34.62	3482	34.18	3592	35.5	2603	35.5	2703	35.4	2803	35.4	2903
		11.56	13861	22.14	26199	26.16	31439	38.65	46444	76.52	91967	123	148250
44	40	38.24	3482	39.23	3592	39.5	2603	40	2703	40.6	2803	40.6	2903
		10.5	13901	19.37	26314	23.88	32334	35.35	47865	67.06	90808	108	146426
39	45	42.46	3482	42.67	3592	45.2	2603	45.2	2703	44.6	2803	44.6	2903
		9.48	13941	17.85	26381	21.54	32810	32.19	49034	61.19	93211	98.68	150332
35	50	50.34	3482	49.71	3592	49.7	2603	49.7	2703	49.2	2803	49.2	2903
		8.03	14004	15.39	26496	19.64	33241	30.15	51028	55.63	94159	89.74	151893
31	56	54.71	3483	56.63	3593	54.9	2603	54.9	2703	56	2803	56	2903
		7.55	14033	11.64	22403	17.84	33813	27.6	52331	50.36	95468	81.25	154036
28	63	63.93	3483	61.44	3593	64.3	2603	64.3	2703	63.4	2803	63.4	2903
		6.48	14084	11.13	23239	15.3	32621	23.68	50501	43.52	92811	63.2	134791
25	71	71.36	3483	69.82	3593	71.9	2603	71.9	2703	72.3	2803	72.3	2903
		5.82	14118	10.32	24473	13.7	32932	21.21	50992	38.3	92061	61.83	148618
22	80	80.13	3483	77.24	3593	81.1	2603	81.1	2703	80.9	2803	80.9	2903
		5.2	14152	9.74	25562	12.18	32987	18.86	51087	34.3	92905	55.39	150009
19	90	90.66	3483	89.35	3593	87.5	2603	87.5	2703	87.6	2803	90	2903
		4.61	14187	8.63	26204	11.31	34460	17.52	53374	31.74	96701	51.25	156159
18	100	103.54	3483	97.53	3593	99	2603	99	2703	101	2803	101	2903
		4.04	14222	8.03	26602	10.02	33934	15.53	52569	27.61	93462	44.59	150964
16	112	111.11	3483	109.55	3593	109	2603	109	2703	112	2803	112	2903
		3.77	14240	7.25	26991	9.13	34599	14.14	53607	25.61	97106	41.37	156868
14	125	129.28	3483	122.06	3593	124	2603	124	2703	128	2803	128	2903
		3.25	14277	6.52	27049	8	33870	12.4	52486	22	93102	35.55	150433
12.5	140	140.31	3483	138.42	3593	137	2603	140	2703				
		3	14295	5.77	27115	7.28	34490	11.28	53454				
10.9	160	154.98	3483	158.87	3593	159	2603	159	2703				
		2.72	14317	5.03	27173	6.3	34139	9.77	52921				
9.7	180	172.09	3483	172.82	3593								
		2.45	14339	4.63	27212								
8.8	200	203.99	3483	201.34	3593								
		2.07	14373	3.99	27274								

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-164.

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers Motor RPM 1450

CbN
SERIES **2000**
3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer															
		0		1		2		3									
1160	1.25	1.24	3001	1.22	3101			1.23	3201			1.26	3301				
		2.54	134	5.62	292			10.54	552			12.7	684				
1036	1.4	1.46	3001	1.38	3101			1.45	3201			1.46	3301				
		2.54	158	5.61	330			9.74	602			11.82	750				
906	1.6	1.54	3001	1.56	3101			1.55	3201			1.61	3301				
		2.54	167	5.41	359			10.03	661			11.29	809				
806	1.8	1.83	3001	1.76	3101			1.75	3201			1.77	3301				
		2.54	198	5.2	390			9.31	694			12.63	854				
725	2	1.96	3001	2	3101			1.94	3201			2.04	3301				
		2.54	212	4.54	424			8.57	708			12	1095				
647	2.24	2.19	3001	2.29	3101			2.21	3201			2.25	3301				
		2.54	237	4.54	442			7.52	708			12	1151				
580	2.5	2.55	3001	2.58	3101			2.55	3201			2.58	3301				
		2.54	276	4.03	442			6.53	708			12.06	1327				
518	2.8	2.75	3001	2.74	3101			2.77	3201			2.91	3301				
		2.54	298	3.79	443			6.11	708			10.56	1309				
460	3.15	3.24	3001	3.25	3101			3.09	3201			3.16	3301				
		2.49	343	3.19	442			5.38	708			8.89	1198				
408	3.55	3.63	3001	3.44	3101			3.43	3201			3.52	3301				
		2.27	351	3.02	442			4.85	708			8.62	1293				
363	4	4.08	3001	3.93	3101			3.89	3201			3.95	3301				
		2.16	375	2.64	442			4.27	708			7.88	1327				
				3.91	3122			3.87	3242			3.96	3362				
322	4.5			5.62	919			13.65	2150			21.74	3615				
		4.58	3001	4.36	3101			4.33	3201			4.47	3301				
		1.87	365	2.37	442			3.83	708			6.96	1327				
290	5			4.43	3122			4.57	3242			4.59	3362				
				5.56	1030			11.55	2208			18.85	3615				
		5.17	3001	4.92	3101			4.88	3201			4.87	3301				
259	5.6	0.84	178	2.11	442			3.41	708			6.4	1327				
				4.99	3122			4.88	3242			5.06	3362				
				5.4	1128			10.83	2208			17.1	3615				
230	6.3	5.82	3001	5.69	3101			5.71	3201			5.5	3301				
		0.84	201	1.82	442			2.91	708			5.62	1318				
				5.65	3122			5.51	3242			5.59	3362				
204	7.1			5.2	1228			9.58	2208			15.48	3615				
		6.4	3001	6.25	3101			6.31	3201			6.33	3301				
		0.81	221	1.66	442			2.63	708			4.92	1327				
181	8			4.66	1252			6.1	3242			6.41	3362				
				4.66	1252			8.66	2208			13.49	3615				
		7.22	3001	7.17	3101			6.92	3201			7.06	3301				
161	9	0.81	249	0.81	247			2.4	708			4.4	1327				
				7.38	3012	7.34	3122			6.96	3242			7.09	3362		
				2.23	683	4.08	1252			7.59	2208			12.2	3615		
145	10	8.13	3001	7.91	3101			8.06	3201			7.83	3301				
		0.81	254	0.81	273			2.06	708			3.98	1327				
				8.16	3012	8.28	3122	7.57	3132	8.02	3242	7.63	3252	8.14	3362	7.85	3372
145	10	2.25	766	3.62	1252	4.53	1435	6.59	2208	9	2871	10.63	3615	18.57	6091		
		8.59	3012	8.79	3122	8.57	3132	8.57	3242	9.02	3252	9.16	3362	9.06	3372		
		2.14	768	3.41	1252	4.19	1501	6.17	2208	8.1	3054	9.44	3615	16.94	6410		

Exact ratio	Gear frame
Input H.P.	Output torque

Exact Ratio rpm, HP and Torque											
rpm	Nom. Ratio	Size of CbN 3000 Reducer									
		4		5		6		7		8	
1160	1.25	1.24	3401	1.28	3501						
		32.27	1703	54.01	2935						
1036	1.4	1.38	3401	1.46	3501						
		34.63	2043	52.14	3243						
906	1.6	1.56	3401	1.6	3501						
		35.06	2324	50.12	3417						
806	1.8	1.74	3401	1.79	3501						
		29.75	2200	48.68	3705						
725	2	1.97	3401	2	3501						
		30.46	2554	46.41	3955						
647	2.24	2.17	3401	2.25	3501						
		28.55	2643	43.98	4217						
580	2.5	2.54	3401	2.44	3501						
		25.69	2779	42.27	4397						
518	2.8	2.83	3401	2.77	3501						
		23.77	2870	40.49	4786						
460	3.15	3.18	3401	3.07	3501	3.17	2602				
		21.41	2903	37.67	4926	82	10891				
408	3.55	3.6	3401	3.55	3501	3.58	2602				
		18.92	2903	34.51	5221	75	11202				
363	4	4.11	3401	3.88	3501						
		16.57	2903	31.62	5221						
		3.91	3482	4.07	3592	4.05	2602				
		32.58	5324	56.21	9371	65	11064				
322	4.5	4.41	3401	4.35	3501						
		15.44	2903	28.15	5221						
		4.37	3482	4.66	3592	4.6	2602				
		34.96	6388	55.21	10727	62	11980				
290	5	5.13	3401	4.85	3501						
		13.27	2903	25.26	5221						
		4.91	3482	5.1	3592	5.02	2602	4.97	2702		
		35.39	7266	56.21	11760	54	11357	119	24720		
259	5.6	5.57	3401	5.5	3501						
		12.23	2903	21.78	5103						
		5.48	3482	5.7	3592	5.75	2602				
		30.03	6877	48.35	11513	47	11171				
230	6.3	6.15	3401	6.31	3501						
		11.07	2903	19.41	5221						
		6.21	3482	6.38	3592	6.32	2602	6.38	2702		
		30.75	7986	45.26	12071	105.5	27747	118.5	31151		
204	7.1	6.83	3401	6.87	3501						
		9.38	2730	17.84	5221						
		6.86	3482	7.18	3592	7.13	2602	7.24	2702		
		28.82	8264	41	12301	96.2	28499	118.5	35107		
181	8	8.1	3401	8	3501						
		7.91	2731	15.32	5221						
		7.69	3482	7.92	3592	8.07	2602	8.1	2702	8.28	2803A
		32.58	10477	55.21	18253	87.59	29238	118.5	39557	139	48399
161	9	8.6	3482	9.07	3592	9.17	2602	8.99	2702		
		33.43	12023	55.21	20894	79.6	29895	118.5	44502		
145	10	9.67	3482	9.94	3592	10	2602	10.3	2702	10.19	2803A
		31.03	12535	52.96	22009	74.07	30906	110.9	46303	130.6	54381

If shaded, mechanical H.P. may exceed thermal H.P. limit.
Refer to page A-164.

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

Motor RPM 1450 (Continued)

CbN
SERIES **2000**
3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer													
		0		1		2		2		3		3			
129	11.2	10.92	3012	11.04	3122	10.94	3132	10.8	3242	10.88	3252	11.09	3362	11.03	3372
		1.69	774	2.71	1252	3.56	1630	4.89	2208	7.16	3255	7.8	3615	14.51	6685
116	12.5	12.23	3012	12.61	3122	12.43	3132	12.27	3242	12.04	3252	12.45	3362	12.65	3372
		1.52	776	2.37	1252	3.27	1700	4.31	2208	6.69	3365	6.95	3615	13.43	7101
104	14	14.24	3012	14.08	3122	14.2	3132	13.65	3242	13.72	3252	14.09	3362	13.98	3372
		1.31	779	2.13	1252	2.95	1753	3.87	2208	6.14	3522	6.14	3615	12.2	7127
91	16	15.35	3012	15.79	3122	16.03	3132	15.36	3242	15.82	3252	15.33	3362	16.05	3372
		1.22	781	1.9	1252	2.63	1759	3.44	2208	5.58	3689	5.64	3615	10.63	7132
81	18	18.06	3012	18.28	3122	17.01	3132	18	3242	16.9	3252	17.33	3362	18.08	3372
		1.04	784	1.64	1252	2.48	1763	2.93	2208	5.34	3772	4.99	3615	9.44	7132
73	20	20.24	3012	20.07	3122	20.2	3132	19.87	3242	19.18	3252	19.95	3362	19.64	3372
		0.93	786	1.49	1252	2.1	1770	2.66	2208	4.9	3928	4.34	3615	8.69	7132
65	22.4	22.76	3012	23.01	3122	21.36	3132	21.79	3242	21.31	3252	22.29	3362	21.89	3372
		0.83	788	0.81	778	1.99	1773	2.42	2208	4.45	3958	3.88	3615	7.8	7132
58	25	25.59	3012	25.39	3122	24.41	3132	25.44	3242	24.2	3252	24.68	3362	24.56	3372
		0.74	790	0.81	858	1.74	1779	2.08	2208	3.93	3972	3.51	3615	6.95	7132
52	28	28.85	3012			27.25	3132			26.93	3252			27.8	3372
		0.66	792			1.57	1783			3.54	3983			6.14	7132
46	31.5	33.48	3012			30.55	3132			30.29	3252	32.32	3363	30.24	3372
		0.58	794			1.4	1788			3.16	3995	4.6	6001	5.64	7132
41	35.5	35.73	3012			35.37	3132			35.51	3252	37.29	3363	34.18	3372
		0.53	795			1.21	1793			2.7	4010	3.99	6100	4.99	7132
36	40	40.32	3012			38.84	3132			39.2	3252	41.1	3363	39.36	3372
		0.47	797			1.11	1796			2.45	4018	3.62	6100	4.34	7132
32	45	45.36	3012			44.54	3132			42.98	3252	45.4	3363	43.98	3372
		0.42	798			0.81	1505			2.24	4026	3.28	6100	3.88	7132
29	50	49.16	3013			49.15	3132			50.19	3252	52.09	3363	48.68	3372
		0.4	796			0.81	1661			1.93	4038	2.86	6100	3.51	7132
26	56	55.04	3013			57.83	3133			55.7	3253	57.6	3363	57.57	3373
		0.35	798			0.73	1719			1.77	4038	2.58	6100	3.13	7389
23	63	64.07	3013			65.25	3133			64.2	3253	66.11	3363	66.1	3373
		0.3	800			0.67	1784			1.53	4038	2.25	6100	2.79	7525
20	71	69.09	3013			69.24	3133			68.61	3253	74.4	3363	74.44	3373
		0.28	801			0.64	1804			1.44	4038	2	6100	2.5	7611
18	80	81.29	3013			82.23	3133			77.86	3253	80.86	3363	80.86	3373
		0.24	803			0.54	1804			1.26	4038	1.84	6100	2.3	7611
16	90	91.08	3013			86.97	3133			86.48	3253	90.12	3363	90.12	3373
		0.22	804			0.51	1804			1.14	4038	1.65	6100	2.07	7611
15	100	102.43	3013			99.4	3133			98.24	3253	101.13	3363	101.13	3373
		0.19	806			0.44	1804			1	4038	1.47	6100	1.84	7611
13	112	115.16	3013			110.94	3133			109.3	3253	114.47	3363	114.47	3373
		0.17	807			0.4	1804			0.9	4038	1.3	6100	1.63	7611
12	125	129.81	3013			124.4	3133			122.96	3253	124.53	3363	124.53	3373
		0.15	808			0.23	1804			0.8	4038	1.19	6100	1.5	7611
10	140	146.18	3013			144.02	3133			144.13	3253	141	3363	140.74	3373
		0.13	809			0.21	1804			0.68	4038	1.06	6100	1.32	7611
9.1	160	160.8	3013			158.13	3133			159.1	3253	162.1	3363	162.06	3373
		0.12	810			0.19	1804			0.62	4038	0.92	6100	1.15	7611
8.1	180	181.46	3013			181.32	3133			174.46	3253	181	3363	181.09	3373
		0.11	811			0.18	1804			0.56	4038	0.82	6100	1.03	7611
7.3	200	204.14	3013			200.11	3133			203.72	3253	200.44	3363	200.44	3373
		0.1	812			0.17	1804			0.48	4038	0.74	6100	0.93	7611

Exact ratio	Gear frame
Input H.P.	Output torque

Motor RPM 1450 (Continued)

Exact Ratio rpm, HP and Torque													
rpm	Nom. Ratio	Size of CbN 3000 Reducer				Size of CbN 2000 Reducer							
		4		5		6		7		8		9	
129	11.2	10.78	3482	11.1	3592	11.5	2602	11.3	2702	11.53	2803A		
		28.86	13006	48.37	22434	52.37	24475	101.4	47392	126.2	59450		
116	12.5	12.23	3482	12.43	3592	12.6	2602	12.5	2702	13.06	2803A		
		26.28	13433	45.25	23504	52.37	27315	92.34	48164	120.2	64169		
104	14	13.5	3482	13.98	3592	13.9	2602	13.9	2702	14.82	2803A		
		23.91	13489	40.99	23956	52.37	30593	83.73	48912	114.28	69219		
91	16	15.77	3482	15.17	3592	16.3	2602	16.1	2702	16.59	2803A		
		20.59	13574	38.91	24673	46.48	31032	52.37	34964	108.35	73433		
81	18	17.61	3482	17.24	3592	18.2	2602	18.4	2702	18.43	2803A		
		18.52	13631	35.59	25646	41.71	31328	52.37	39334	103.9	78224		
73	20	19.77	3482	19.07	3592	20.6	2602	20.6	2702	21.13	2803A		
		16.56	13688	30.63	24416	37.15	31000	52.37	43705	99.8	81567		
65	22.4	22.37	3482	22.06	3592	22.2	2602	22.3	2702	22.14	2803	22.1	2903
		14.7	13746	28.15	25956	34.53	32276	53.12	49653	93	85690	120	108439
58	25	25.55	3482	24.08	3592	25.1	2602	25.7	2702	25.1	2803	25.1	2903
		12.93	13806	25.88	26044	30.66	31980	46.29	48290	88.94	90848	118.5	121041
52	28	27.42	3482	27.05	3592	27.6	2602	28	2702	28.5	2803	28.5	2903
		12.08	13836	23.12	26142	27.94	32649	42.98	50218	78.76	90098	118.5	135565
46	31.5	31.9	3482	30.14	3592	31.6	2602	32.4	2702	31.8	2803	31.8	2903
		10.42	13898	20.83	26239	24.55	32271	36.99	48619	70.66	90945	113.93	146632
41	35.5	34.62	3482	34.18	3592	35.5	2603	35.5	2703	35.4	2803	35.4	2903
		9.63	13930	18.44	26345	22.98	33332	33.95	49241	63.84	92594	102.95	149326
36	40	38.24	3482	39.23	3592	39.5	2603	40	2703	40.6	2803	40.6	2903
		8.74	13967	16.13	26451	20.48	33472	31.05	50748	55.92	91391	90.21	147428
32	45	42.46	3482	42.67	3592	45.2	2603	45.2	2703	44.6	2803	44.6	2903
		7.89	14005	14.87	26513	17.94	32472	27.76	51042	51.01	93786	82.3	151319
29	50	50.34	3482	49.71	3592	49.7	2603	49.7	2703	49.2	2803	49.2	2903
		6.68	14063	12.81	26619	16.35	33406	25.31	51711	46.36	94714	74.82	152848
26	56	54.71	3483	56.63	3593	54.9	2603	54.9	2703	56	2803	56	2903
		6.28	14090	10.19	23664	14.85	33973	22.99	52598	41.96	96006	67.76	154962
23	63	63.93	3483	61.44	3593	64.3	2603	64.3	2703	63.4	2803	63.4	2903
		5.39	14137	9.75	24558	12.73	32765	19.71	50740	36.35	93300	52.37	134802
20	71	71.36	3483	69.82	3593	71.9	2603	71.9	2703	72.3	2803	72.3	2903
		4.84	14169	9.03	25850	11.4	33070	17.66	51222	31.89	92518	51.5	149406
18	80	80.13	3483	77.24	3593	81.1	2603	81.1	2703	80.9	2803	80.9	2903
		4.32	14201	8.49	26894	10.13	33118	15.7	51305	28.56	93343	46.13	150765
16	90	90.66	3483	89.35	3593	87.5	2603	87.5	2703	87.6	2803	90	2903
		3.83	14233	7.36	26982	9.41	34592	14.57	53594	26.42	97141	42.67	156918
15	100	103.54	3483	97.53	3593	99	2603	99	2703	101	2803	101	2903
		3.36	14265	6.76	27027	8.34	34056	12.92	52774	22.97	93861	37.12	151652
13	112	111.11	3483	109.55	3593	109	2603	109	2703	112	2803	112	2903
		3.13	14282	6.03	27080	7.59	34719	11.76	53807	21.31	97505	34.43	157557
12	125	129.28	3483	122.06	3593	124	2603	124	2703	128	2803	128	2903
		2.7	14316	5.42	27133	6.65	33980	10.31	52670	18.3	93458	29.58	151049
10	140	140.31	3483	138.42	3593	137	2603	140	2703				
		2.49	14333	4.79	27195	6.05	34597	9.38	53633				
9.1	160	154.98	3483	158.87	3593	159	2603	159	2703				
		2.26	14353	4.18	27248	5.24	34239	8.12	53086				
8.1	180	172.09	3483	172.82	3593								
		2.04	14373	3.85	27283								
7.3	200	203.99	3483	201.34	3593								
		1.72	14404	3.31	27345								

If shaded, mechanical H.P. may exceed thermal H.P. limit. Refer to page A-164.

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers Motor RPM 1160

CbN
SERIES **2000**
3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer													
		0		1		2		3							
928	1.25	1.24	3001	1.22	3101	1.23	3201	1.26	3301						
		2.03	134	5.33	346	9.36	612	11.27	758						
829	1.4	1.46	3001	1.38	3101	1.45	3201	1.46	3301						
		2.03	158	4.97	365	8.64	668	10.72	832						
725	1.6	1.54	3001	1.56	3101	1.55	3201	1.61	3301						
		2.03	166	4.8	399	8.58	708	10.49	897						
644	1.8	1.83	3001	1.76	3101	1.75	3201	1.77	3301						
		2.03	198	4.61	432	7.59	708	10.02	947						
580	2	1.96	3001	2	3101	1.94	3201	2.04	3301						
		2.03	212	4.15	442	6.86	708	11.2	1214						
518	2.24	2.19	3001	2.29	3101	2.21	3201	2.25	3301						
		2.03	237	3.63	442	6.02	708	10.65	1276						
464	2.5	2.55	3001	2.58	3101	2.55	3201	2.58	3301						
		2.03	276	3.22	442	5.22	708	9.65	1327						
414	2.8	2.75	3001	2.74	3101	2.77	3201	2.91	3301						
		2.03	297	3.04	443	4.89	708	8.57	1327						
368	3.15	3.24	3001	3.25	3101	3.09	3201	3.16	3301						
		2.02	348	2.56	442	4.31	708	7.89	1327						
327	3.55	3.63	3001	3.44	3101	3.43	3201	3.52	3301						
		1.84	356	2.42	442	3.88	708	7.08	1327						
290	4	4.08	3001	3.93	3101	3.89	3201	3.95	3301						
		1.75	380	2.11	442	3.41	708	6.31	1327						
				3.91	3122	3.87	3242	3.96	3362						
258	4.5	4.58	3001	4.36	3101	4.33	3201	4.47	3301						
		1.51	368	1.89	442	3.07	708	5.57	1327						
				4.43	3122	4.57	3242	4.59	3362						
232	5	5.17	3001	4.92	3101	4.88	3201	4.87	3301						
		0.65	179	1.69	442	2.73	708	5.12	1327						
				4.99	3122	4.88	3242	5.06	3362						
207	5.6	5.82	3001	5.69	3101	5.71	3201	5.5	3301						
		0.65	201	1.46	442	2.33	708	4.53	1327						
				5.65	3122	5.51	3242	5.59	3362						
184	6.3	6.4	3001	6.25	3101	6.31	3201	6.33	3301						
		0.65	221	1.33	442	2.11	708	3.93	1327						
				6.42	3122	6.1	3242	6.41	3362						
163	7.1	7.22	3001	7.17	3101	6.92	3201	7.06	3301						
		0.65	249	0.65	248	1.92	708	3.52	1327						
		7.38	3012	7.34	3122	6.96	3242	7.09	3362						
145	8	2.03	781	3.26	1252	6.08	2208	9.76	3615						
		8.13	3001	7.91	3101	8.06	3201	7.83	3301						
		0.59	254	0.65	274	1.65	708	3.18	1327						
129	9	8.16	3012	8.28	3122	7.57	3132	8.02	3242	7.63	3252	8.14	3362	7.85	3372
		1.82	775	2.89	1252	3.98	1575	5.27	2208	7.9	3151	8.5	3615	16.3	6685
		8.59	3012	8.79	3122	8.57	3132	8.57	3242	9.02	3252	9.16	3362	9.06	3372
116	10	1.73	775	2.73	1252	3.68	1648	4.93	2208	7.11	3352	7.55	3615	14.87	7035
		10.2	3012	10.43	3122	9.67	3132	9.72	3242	9.62	3252	9.95	3362	9.98	3372
		1.46	777	2.3	1252	3.4	1716	4.35	2208	6.8	3417	6.95	3615	13.66	7120
104	11.2	10.92	3012	11.04	3122	10.94	3132	10.8	3242	10.88	3252	11.09	3362	11.03	3372
		1.37	780	2.17	1252	3.07	1756	3.91	2208	6.29	3573	6.24	3615	12.38	7132

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

CbN
SERIES **2000**
3000

CbN Series

Motor RPM 1160 (Continued)

Exact Ratio rpm, HP and Torque													
rpm	Nom. Ratio	Size of CbN 3000 Reducer				Size of CbN 2000 Reducer							
		4		5		6		7		8		9	
928	1.25	1.24	3401	1.26	3501								
		26.45	1744	44.17	2999								
829	1.4	1.38	3401	1.46	3501								
		28.35	2091	44.17	3432								
725	1.6	1.56	3401	1.6	3501								
		28.7	2378	43.14	3677								
644	1.8	1.74	3401	1.79	3501								
		24.33	2249	41.91	3986								
580	2	1.97	3401	2	3501								
		24.9	2610	39.95	4256								
518	2.24	2.17	3401	2.25	3501								
		23.33	2699	37.85	4537								
464	2.5	2.54	3401	2.44	3501								
		20.96	2835	36.38	4731								
414	2.8	2.83	3401	2.77	3501								
		19.23	2903	34.85	5150								
368	3.15	3.18	3401	3.07	3501	3.17	2602						
		17.13	2903	31.94	5221	65.9	10891						
327	3.55	3.6	3401	3.55	3501	3.58	2602						
		15.14	2903	27.61	5221	60	11202						
290	4	4.11	3401	3.88	3501								
		13.26	2903	25.3	5221								
		3.91	3482	4.07	3592	4.05	2602						
258	4.5	26.69	5452	44.17	9372	52	11064						
		4.41	3401	4.35	3601	4.6	2602						
		12.35	2903	22.52	5221	50	11980						
232	5	4.37	3482	4.66	3592								
		28.62	6538	44.17	10728								
		5.13	3401	4.85	3501								
207	5.6	10.62	2903	20.21	5221								
		4.91	3482	5.1	3592	5.02	2602	4.97	2702				
		28.96	7433	44.17	11761	43	11357	95	24720				
184	6.3	5.57	3401	5.5	3501								
		9.78	2903	17.42	5101								
		5.48	3482	5.7	3592	5.75	2602						
163	7.1	24.56	7031	39.63	11796	37	11171						
		6.15	3401	6.31	3501								
		8.86	2903	15.53	5221								
145	8	6.21	3482	6.38	3592	6.32	2602	6.38	2702				
		25.13	8159	37.06	12354	90.33	29684	94.8	31135				
		6.83	3401	6.87	3501								
129	9	7.5	2729	14.27	5221								
		6.86	3482	7.18	3592	7.13	2602	7.24	2702				
		23.55	8439	33.56	12584	82.3	30488	94.8	35088				
116	10	8.1	3401	8	3501								
		6.42	2769	12.25	5221								
		7.69	3482	7.92	3592	8.07	2602	8.1	2702	8.28	2803A		
104	11.2	26.69	10729	44.17	18254	73.9	30663	94.75	39536	114.96	48636		
		8.6	3482	9.07	3592	9.17	2602	8.99	2702				
		28.62	12867	44.17	20895	65.1	30556	94.8	44478				
104	11.2	9.67	3482	9.94	3592	10	2602	10.3	2702	10.19	2803A		
		26.68	13476	44.17	22907	59.9	31231	89.76	46815	98.22	51118		
104	11.2	10.78	3482	11.1	3592	11.5	2602	11.3	2702	11.53	2803A		
		24.03	13536	39.63	22973	41.88	24465	81.99	47896	94.9	55883		

If shaded, mechanical H.P. may exceed thermal H.P. limit. Refer to page A-164.

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

Motor RPM 1160 (Continued)

CbN
SERIES **2000**
3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer													
		0		1		2		3		3		3			
93	12.5	12.23	3012	12.61	3122	12.43	3132	12.27	3242	12.04	3252	12.45	3362	12.65	3372
		1.22	776	1.9	1252	2.71	1762	3.44	2208	5.87	3693	5.56	3615	10.79	7132
83	14	14.24	3012	14.08	3122	14.2	3132	13.65	3242	13.72	3252	14.09	3362	13.98	3372
		1.06	787	1.7	1252	2.38	1769	3.1	2208	5.39	3866	4.91	3615	9.76	7132
73	16	15.35	3012	15.79	3122	16.03	3132	15.36	3242	15.82	3252	15.33	3362	16.05	3372
		0.98	785	1.52	1252	2.12	1774	2.75	2208	4.79	3960	4.51	3615	8.5	7132
64	18	18.06	3012	18.28	3122	17.01	3132	18	3242	16.9	3252	17.33	3362	18.08	3372
		0.84	791	1.31	1252	2	1776	2.35	2208	4.49	3967	3.99	3615	7.55	7132
58	20	20.24	3012	20.07	3122	20.2	3132	19.87	3242	19.18	3252	19.95	3362	19.64	3372
		0.75	792	1.19	1252	1.69	1784	2.13	2208	3.97	3980	3.47	3615	6.95	7132
52	22.4	22.76	3012	23.01	3122	21.36	3132	21.79	3242	21.31	3252	22.29	3362	21.89	3372
		0.67	795	0.65	780	1.6	1786	1.94	2208	3.59	3991	3.1	3615	6.24	7132
46	25	25.59	3012	25.39	3122	24.41	3132	25.44	3242	24.2	3252	24.68	3362	24.56	3372
		0.59	787	0.65	861	1.4	1791	1.66	2208	3.17	4003	2.8	3615	5.56	7132
41	28	28.85	3012			27.25	3132			26.93	3252			27.8	3372
		0.53	798			1.26	1795			2.85	4013			4.91	7132
37	31.5	33.48	3012			30.55	3132			30.29	3252	31.84	3363	30.24	3372
		0.47	821			1.13	1799			2.54	4023	3.93	6416	4.51	7132
33	35.5	35.73	3012			35.37	3132			35.51	3252	35.18	3363	34.18	3372
		0.43	801			0.98	1803			2.18	4036	3.4	6100	3.99	7132
29	40	40.32	3012			38.84	3132			39.2	3252	41.1	3363	39.36	3372
		0.38	799			0.89	1804			1.97	4038	2.9	6100	3.47	7132
26	45	45.36	3012			44.54	3132			42.98	3252	45.4	3363	43.98	3372
		0.34	804			0.65	1510			1.8	4038	2.63	6100	3.1	7132
23	50	49.16	3013			49.15	3132			50.19	3252	52.09	3363	48.68	3372
		0.32	803			0.65	1666			1.54	4038	2.29	6100	2.8	7132
21	56	55.04	3013			57.83	3133			55.7	3253	57.6	3363	57.57	3373
		0.28	787			0.54	1592			1.41	4038	2.07	6100	2.5	7389
18	63	64.07	3013			65.25	3133			64.2	3253	66.11	3363	66.1	3373
		0.24	785			0.5	1657			1.23	4038	1.9	6100	2.18	7389
16	71	69.09	3013			69.24	3133			68.61	3253	74.4	3363	74.44	3373
		0.23	812			0.48	1690			1.15	4038	1.7	6100	2	7611
15	80	81.29	3013			82.23	3133			77.86	3253	80.86	3363	80.86	3373
		0.19	789			0.42	1790			1.01	4038	1.52	6100	1.84	7611
13	90	91.08	3013			86.97	3133			86.48	3253	90.12	3363	90.12	3373
		0.17	791			0.4	1804			0.91	4038	1.34	6100	1.65	7611
12	100	102.43	3013			99.4	3133			98.24	3253	101.13	3363	101.13	3373
		0.15	785			0.35	1804			0.8	4038	1.23	6100	1.47	7611
10	112	115.16	3013			110.94	3133			109.3	3253	114.47	3363	114.47	3373
		0.14	823			0.32	1804			0.72	4038	1.09	6100	1.3	7611
9.3	125	129.81	3013			124.4	3133			122.96	3253	124.53	3363	124.53	3373
		0.12	796			0.28	1804			0.64	4038	0.96	6100	1.19	7611
8.3	140	146.18	3013			144.02	3133			144.13	3253	141	3363	140.74	3373
		0.11	821			0.24	1804			0.55	4038	0.85	6100	1.06	7611
7.3	160	160.8	3013			158.13	3133			159.1	3253	162.1	3363	162.06	3373
		0.1	821			0.22	1804			0.5	4038	0.77	6100	0.92	7611
6.4	180	181.46	3013			181.32	3133			174.46	3253	181	3363	181.09	3373
		0.09	834			0.19	1804			0.45	4038	0.66	6100	0.82	7611
5.8	200	204.14	3013			200.11	3133			203.72	3253	200.44	3363	200.44	3373
		0.08	834			0.18	1804			0.39	4038	0.59	6100	0.74	7611

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

CbN
SERIES **2000**
3000

CbN Series

Motor RPM 1160 (Continued)

Exact Ratio rpm, HP and Torque													
rpm	Nom. Ratio	Size of CbN 3000 Reducer				Size of CbN 2000 Reducer							
		4		5		6		7		8		9	
93	12.5	12.23	3482	12.43	3592	12.6	2602	12.5	2702	13.06	2803A		
		21.29	13603	37.06	24062	41.88	27305	74.7	48656	90.4	60319		
83	14	13.5	3482	13.98	3592	13.9	2602	13.9	2702	14.82	2803A		
		19.36	13653	33.55	24504	41.88	30582	67.64	49390	85.94	65066		
73	16	15.77	3482	15.17	3592	16.3	2602	16.1	2702	16.59	2803A		
		16.66	13728	31.82	25221	37.5	31297	41.88	34950	81.48	69027		
64	18	17.61	3482	17.24	3592	18.2	2602	18.4	2702	18.43	2803A		
		14.98	13778	28.89	26018	33.6	31583	41.88	39319	78.13	73530		
58	20	19.77	3482	19.07	3592	20.6	2602	20.6	2702	21.13	2803A		
		13.39	13829	25.02	24929	29.95	31240	41.88	43688	75.1	76673		
52	22.4	22.37	3482	22.06	3592	22.2	2602	22.3	2702	22.14	2803	22.1	2903
		11.88	13880	22.77	26239	27.8	32517	42.84	50049	75	85690	96.1	108439
46	25	25.55	3482	24.08	3592	25.1	2602	25.7	2702	25.1	2803	25.1	2903
		10.44	13932	20.91	26310	24.7	32206	37.31	48653	71.8	91605	94.75	120977
41	28	27.42	3482	27.05	3592	27.6	2602	28	2702	28.5	2803	28.5	2903
		9.75	13959	18.69	26407	22.5	32870	34.64	50583	63.5	90809	94.75	135494
37	31.5	31.9	3482	30.14	3592	31.6	2602	32.4	2702	31.8	2803	31.8	2903
		8.41	14014	16.82	26487	19.8	32477	29.8	48949	56.96	91629	91.88	147806
33	35.5	34.62	3482	34.18	3592	35.5	2603	35.5	2703	35.4	2803	35.4	2903
		7.76	14042	14.88	26575	18.71	33928	28.96	52505	51.44	93259	82.99	150468
29	40	38.24	3482	39.23	3592	39.5	2603	40	2703	40.6	2803	40.6	2903
		7.04	14074	13.02	26673	16.48	33666	25.51	52113	45.04	92008	72.69	148490
26	45	42.46	3482	42.67	3592	45.2	2603	45.2	2703	44.6	2803	44.6	2903
		6.36	14107	11.99	26726	14.4	33159	22.34	51340	41.07	94393	66.3	152364
23	50	50.34	3482	49.71	3592	49.7	2603	49.7	2703	49.2	2803	49.2	2903
		5.38	14158	10.33	26823	13.2	33581	20.36	52001	37.32	95301	60.25	153858
21	56	54.71	3483	56.63	3593	54.9	2603	54.9	2703	56	2803	56	2903
		5.06	14181	9.02	26186	11.9	34142	18.49	52879	33.77	96574	54.52	155941
18	63	63.93	3483	61.44	3593	64.3	2603	64.3	2703	63.4	2803	63.4	2903
		4.34	14223	8.56	26947	10.2	32917	15.85	50993	29.16	93816	41.88	134750
16	71	71.36	3483	69.82	3593	71.9	2603	71.9	2703	72.3	2803	72.3	2903
		3.9	14250	7.55	27009	8.16	33216	14.19	51464	25.65	93000	41.43	150237
15	80	80.13	3483	77.24	3593	81.1	2603	81.1	2703	80.9	2803	80.9	2903
		3.48	14278	6.84	27062	8.14	33255	12.61	51464	22.96	93804	37.1	151561
13	90	90.66	3483	89.35	3593	87.5	2603	87.5	2703	87.6	2803	90	2903
		3.08	14306	5.92	27133	7.56	34731	11.71	53825	21.23	97604	34.31	715771
12	100	103.54	3483	97.53	3593	99	2603	99	2703	101	2803	101	2903
		2.7	14334	5.44	27177	6.69	34185	10.38	52989	18.46	94280	29.84	152375
10	112	111.11	3483	109.55	3593	109	2603	109	2703	112	2803	112	2903
		2.52	14349	4.85	27221	6.1	34845	9.44	54017	17.12	97925	27.67	158283
9.3	125	129.28	3483	122.06	3593	124	2603	124	2703	128	2803	128	2903
		2.17	14378	4.36	27265	5.34	34095	8.28	52863	14.7	93832	23.76	151696
8.3	140	140.31	3483	138.42	3593	137	2603	140	2703				
		2	14393	3.85	27319	4.84	34709	7.53	53821				
7.3	160	154.98	3483	158.87	3593	159	2603	159	2703				
		1.81	14410	3.36	27372	4.2	34342	6.52	53259				
6.4	180	172.09	3483	172.82	3593								
		1.64	14428	3.09	27398								
5.8	200	203.99	3483	201.34	3593								
		1.38	14455	2.66	27451								

If shaded, mechanical H.P. may exceed thermal H.P. limit. Refer to page A-164.

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

Motor RPM 870

CbN
SERIES **2000**
3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer															
		0		1		2		3		4		5					
696	1.25	1.24	3001	1.22	3101	1.23	3201	1.26	3301								
		1.52	134	4.27	370	7.5	654	9.03	810								
621	1.4	1.46	3001	1.38	3101	1.45	3201	1.46	3301								
		1.52	158	3.9	391	6.87	708	8.6	890								
544	1.6	1.54	3001	1.56	3101	1.55	3201	1.61	3301								
		1.52	166	3.85	425	6.44	708	8.41	959								
483	1.8	1.83	3001	1.76	3101	1.75	3201	1.77	3301								
		1.52	197	3.54	442	5.7	708	8.6	1083								
435	2	1.96	3001	2	3101	1.94	3201	2.04	3301								
		1.52	212	3.12	442	5.14	708	8.98	1298								
388	2.24	2.19	3001	2.29	3101	2.21	3201	2.25	3301								
		1.52	237	2.73	442	4.51	708	8.31	1327								
348	2.5	2.55	3001	2.58	3101	2.55	3201	2.58	3301								
		1.52	276	2.42	442	3.92	708	7.24	1327								
311	2.8	2.75	3001	2.74	3101	2.77	3201	2.91	3301								
		1.52	298	2.28	443	3.66	708	6.42	1327								
276	3.15	3.24	3001	3.25	3101	3.09	3201	3.16	3301								
		1.52	350	1.92	442	3.23	708	5.91	1327								
245	3.55	3.63	3001	3.44	3101	3.43	3201	3.52	3301								
		1.39	351	1.81	442	2.91	708	5.31	1327								
218	4	4.08	3001	3.93	3101	3.89	3201	3.95	3301								
		1.32	375	1.59	442	2.56	708	4.73	1327								
				3.91	3122	3.87	3242	3.96	3362								
193	4.5	4.58	3001	4.36	3101	4.33	3201	4.47	3301								
		1.14	365	1.42	442	2.3	708	4.18	1327								
				4.43	3122	4.57	3242	4.59	3362								
174	5	5.17	3001	4.92	3101	4.88	3201	4.87	3301								
		0.49	178	1.27	442	2.04	708	3.84	1327								
				4.99	3122	4.88	3242	5.06	3362								
155	5.6	5.82	3001	5.69	3101	5.71	3201	5.5	3301								
		0.49	201	1.09	442	1.74	708	3.4	1327								
				5.65	3122	5.51	3242	5.59	3362								
138	6.3	6.4	3001	6.25	3101	6.31	3201	6.33	3301								
		0.49	221	1	442	1.58	708	2.95	1327								
				6.42	3122	6.1	3242	6.41	3362								
122	7.1	7.22	3001	7.17	3101	6.92	3201	7.06	3301								
		0.49	249	0.49	248	1.44	708	2.64	1327								
		7.38	3012	7.34	3122	6.96	3242	7.09	3362								
109	8	1.52	733	2.45	1252	4.56	2208	7.32	3615								
		8.13	3001	7.91	3101	8.06	3201	7.83	3301								
		0.45	254	0.49	274	1.23	708	2.39	1327								
97	9	8.16	3012	8.28	3122	8.02	3242	8.14	3362	7.85	3372						
		1.37	779	2.17	1252	3.17	1673	6.38	3615	13.01	7100						
				7.57	3132	8.02	3242	8.14	3362	7.85	3372						
87	10	8.59	3012	8.79	3122	8.57	3132	8.57	3242	9.02	3252	9.16	3362	9.06	3372		
		1.3	780	2.05	1252	2.93	1750	3.7	2208	5.67	3352	5.66	3615	11.31	7132		
				8.57	3122	8.57	3132	8.57	3242	9.02	3252	9.16	3362	9.06	3372		
78	11.2	10.2	3012	10.43	3122	9.67	3132	9.72	3242	9.62	3252	9.95	3362	9.98	3372		
		1.1	783	1.72	1252	2.61	1760	3.26	2208	5.41	3417	5.21	3615	10.26	7132		
				10.92	3012	11.04	3122	10.94	3132	10.8	3242	10.88	3252	11.09	3362	11.03	3372
		1.03	784	1.63	1252	2.32	1766	2.93	2208	5.01	3573	4.68	3615	9.29	7132		

Exact ratio	Gear frame
Input H.P.	Output torque

Motor RPM 870 (Continued)

Exact Ratio rpm, HP and Torque													
rpm	Nom. Ratio	Size of CbN 3000 Reducer				Size of CbN 2000 Reducer							
		4		5		6		7		8		9	
696	1.25	1.24	3401	1.28	3501								
		20.12	1770	33.12	2998								
621	1.4	1.38	3401	1.46	3501								
		21.57	2121	33.12	3432								
544	1.6	1.56	3401	1.6	3501								
		21.82	2411	32.35	3677								
483	1.8	1.74	3401	1.79	3501								
		18.49	2279	31.43	3986								
435	2	1.97	3401	2	3501								
		18.92	2644	29.96	4256								
388	2.24	2.17	3401	2.25	3501								
		17.72	2734	28.39	4537								
348	2.5	2.54	3401	2.44	3501								
		15.92	2870	27.29	4731								
311	2.8	2.83	3401	2.77	3501								
		14.42	2903	25.15	4956								
276	3.15	3.18	3401	3.07	3501	3.17	2602						
		12.84	2903	23.95	5221	50.5	11130						
245	3.55	3.6	3401	3.55	3501	3.58	2602						
		11.35	2903	20.71	5221	45.6	11340						
218	4	4.11	3401	3.88	3501								
		9.94	2903	18.97	5221								
		3.91	3482	4.07	3592	3.58	2602						
193	4.5	20.31	5532	33.12	9370	45.6	11340						
		4.41	3401	4.35	3501								
		9.26	2903	16.89	5221								
174	5	4.37	3482	4.66	3592	4.6	2602						
		21.78	6632	33.12	10725	33.9	10820						
		5.13	3401	4.85	3501								
155	5.6	7.96	2903	15.16	5221								
		4.91	3482	5.1	3592	5.02	2602	4.97	2702				
		22.03	7537	33.12	11758	33.4	11660	71.2	24500				
138	6.3	5.57	3401	5.5	3501								
		7.34	2903	13.07	5103								
		5.48	3482	5.7	3592	5.75	2602						
122	7.1	18.67	7126	30.16	11968	29.3	11680						
		6.15	3401	6.31	3501								
		6.64	2903	11.65	5221								
109	8	6.21	3482	6.38	3592	6.32	2602	6.38	2702				
		19.1	8267	28.19	12531	70.15	30734	71.1	31134				
		6.83	3401	6.87	3501								
97	9	5.63	2731	10.17	5221								
		6.86	3482	7.18	3592	7.13	2602	7.24	2702				
		17.89	8547	25.52	12761	62.51	30866	71.1	35087				
87	10	8.1	3401	8	3501								
		4.85	2792	9.19	5221								
		7.69	3482	7.92	3592	8.07	2602	8.1	2702	8.28	2803A		
78	11.2	20.31	10887	33.12	18250	55.55	30908	71.1	39535	86.22	48614		
		8.6	3482	9.07	3592	9.17	2602	8.99	2702				
		21.78	13051	33.12	20890	49.19	30788	71.1	44477				
78	11.2	9.67	3482	9.94	3592	10	2602	10.3	2702	10.19	2803A		
		20.18	13589	33.12	22902	45.24	31459	67.8	47176	73.66	51113		
		10.78	3482	11.1	3592	11.5	2602	11.3	2702	11.53	2803A		
		18.17	13645	30.16	23310	31.41	24465	62	48251	71.15	55863		

If shaded, mechanical H.P. may exceed thermal H.P. limit. Refer to page A-164.

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

Motor RPM 870 (Continued)

CbN
SERIES **2000**
3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer													
		0		1		2		3							
70	12.5	12.23	3012	12.61	3122	12.43	3132	12.27	3242	12.04	3252	12.45	3362	12.65	3372
		0.92	786	1.42	1252	2.05	1772	2.58	2208	4.68	3923	4.17	3615	8.09	7132
62	14	14.24	3012	14.08	3122	14.2	3132	13.65	3242	13.72	3252	14.09	3362	13.98	3372
		0.8	789	1.28	1252	1.8	1777	2.32	2208	4.15	3866	3.68	3615	7.32	7132
54	16	15.35	3012	15.79	3122	16.03	3132	15.36	3242	15.82	3252	15.33	3362	16.05	3372
		0.74	790	1.14	1252	1.6	1782	2.06	2208	3.61	3960	3.39	3615	6.38	7132
48	18	18.06	3012	18.28	3122	17.01	3132	18	3242	16.9	3252	17.33	3362	18.08	3372
		0.63	793	0.98	1252	1.51	1785	1.76	2208	3.39	3967	3	3615	5.66	7132
44	20	20.24	3012	20.07	3122	20.2	3132	19.87	3242	19.18	3252	19.95	3362	19.64	3372
		0.56	794	0.9	1252	1.27	1791	1.6	2208	2.99	3980	2.6	3615	5.21	7132
39	22.4	22.76	3012	23.01	3122	21.36	3132	21.79	3242	21.31	3252	22.29	3362	21.89	3372
		0.5	796	0.49	780	1.21	1793	1.45	2208	2.7	3991	2.33	3615	4.68	7132
35	25	25.59	3012	25.39	3122	24.41	3132	25.44	3242	24.2	3252	24.68	3362	24.56	3372
		0.45	798	0.49	861	1.06	1798	1.25	2208	2.38	4003	2.1	3615	4.17	7132
31	28	28.85	3012			27.25	3132			26.93	3252			27.8	3372
		0.4	799			0.95	1801			2.15	4013			3.68	7132
28	31.5	33.48	3012			30.55	3132			30.29	3252	31.84	3363	30.24	3372
		0.35	800			0.85	1804			1.91	4023	2.81	6100	3.39	7132
25	35.5	35.73	3012			35.37	3132			35.51	3252	35.18	3363	34.18	3372
		0.32	800			0.73	1804			1.63	4036	2.54	6100	3	7132
22	40	40.32	3012			38.84	3132			39.2	3252	41.1	3363	39.36	3372
		0.28	800			0.67	1804			1.48	4038	2.21	6100	2.6	7132
19	45	45.36	3012			44.54	3132			42.98	3252	45.4	3363	43.98	3372
		0.25	800			0.59	1804			1.35	4038	2	6100	2.33	7132
17	50	49.16	3013			49.15	3132			50.19	3252	52.09	3363	48.68	3372
		0.24	796			0.52	1804			1.16	4038	1.74	6100	2.1	7132
16	56	55.04	3013			57.83	3133			55.7	3253	57.6	3363	57.57	3373
		0.21	798			0.46	1804			1.06	4038	1.55	6100	1.88	7389
14	63	64.07	3013			65.25	3133			64.2	3253	66.11	3363	66.1	3373
		0.18	800			0.4	1804			0.92	4038	1.43	6100	1.64	7389
12	71	69.09	3013			69.24	3133			68.61	3253	74.4	3363	74.44	3373
		0.17	801			0.38	1804			0.86	4038	1.28	6100	1.5	7611
11	80	81.29	3013			82.23	3133			77.86	3253	80.86	3363	80.86	3373
		0.14	803			0.32	1804			0.76	4038	1.14	6100	1.38	7611
10	90	91.08	3013			86.97	3133			86.48	3253	90.12	3363	90.12	3373
		0.13	804			0.3	1804			0.68	4038	1.01	6100	1.24	7611
9	100	102.43	3013			99.4	3133			98.24	3253	101.13	3363	101.13	3373
		0.12	806			0.27	1804			0.6	4038	0.93	6100	1.1	7611
8	112	115.16	3013			110.94	3133			109.3	3253	114.47	3363	114.47	3373
		0.1	807			0.24	1804			0.54	4038	0.82	6100	0.97	7611
7	125	129.81	3013			124.4	3133			122.96	3253	124.53	3363	124.53	3373
		0.09	808			0.16	1380			0.48	4038	0.71	6100	0.89	7611
6.2	140	146.18	3013			144.02	3133			144.13	3253	141	3363	140.74	3373
		0.08	809			0.15	1438			0.41	4038	0.64	6100	0.79	7611
5.4	160	160.8	3013			158.13	3133			159.1	3253	162.1	3363	162.06	3373
		0.07	810			0.14	1497			0.37	4038	0.58	6100	0.69	7611
4.8	180	181.46	3013			181.32	3133			174.46	3253	181	3363	181.09	3373
		0.07	811			0.11	1560			0.34	4038	0.49	6100	0.61	7611
4.4	200	204.14	3013			200.11	3133			203.72	3253	200.44	3363	200.44	3373
		0.06	812			0.11	1628			0.29	4038	0.45	6100	0.56	7611

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

CbN
SERIES **2000**
3000

CbN Series

Motor RPM 870 (Continued)

Exact Ratio rpm, HP and Torque													
rpm	Nom. Ratio	Size of CbN 3000 Reducer				Size of CbN 2000 Reducer							
		4		5		6		7		8		9	
70	12.5	12.23	3482	12.43	3592	12.6	2602	12.5	2702	13.06	2803A		
		16.09	13706	28.2	24410	31.41	27305	56.4	49002	67.8	60297		
62	14	13.5	3482	13.98	3592	13.9	2602	13.9	2702	14.82	2803A		
		14.62	13752	25.51	24847	31.41	30582	51.1	49727	64.5	65092		
54	16	15.77	3482	15.17	3592	16.3	2602	16.1	2702	16.59	2803A		
		12.58	13821	24.19	25563	28.3	31483	31.41	34950	61.1	69025		
48	18	17.61	3482	17.24	3592	18.2	2602	18.4	2702	18.43	2803A		
		11.31	13867	21.82	26206	25.37	31762	31.41	39319	58.6	73424		
44	20	19.77	3482	19.07	3592	20.6	2602	20.6	2702	21.13	2803A		
		10.1	13914	19.01	25248	22.58	31407	31.41	43688	56.3	80890		
39	22.4	22.37	3482	22.06	3592	22.2	2602	22.3	2702	22.14	2803	22.1	2903
		8.96	13961	17.18	26404	20.98	32686	32.3	50327	56.2	85690	72.1	108439
35	25	25.55	3482	24.08	3592	25.1	2602	25.7	2702	25.1	2803	25.1	2903
		7.87	14008	15.78	26475	18.61	32364	26.1	48906	54.12	92136	71.1	120973
31	28	27.42	3482	27.05	3592	27.6	2602	28	2702	28.5	2803	28.5	2903
		7.35	14033	14.1	26560	16.9	33025	26.1	50838	47.89	91306	71.1	135489
28	31.5	31.9	3482	30.14	3592	31.6	2602	32.4	2702	31.8	2803	31.8	2903
		6.34	14083	12.69	26634	14.9	32621	22.45	49178	42.94	92106	69.3	148627
25	35.5	34.62	3482	34.18	3592	35.5	2603	35.5	2703	35.4	2803	35.4	2903
		5.85	14108	11.22	26717	14.09	34072	21.82	52745	38.77	93723	62.6	151266
22	40	38.24	3482	39.23	3592	39.5	2603	40	2703	40.6	2803	40.6	2903
		5.31	14138	9.81	26802	12.41	33801	19.21	52337	33.94	92439	54.8	149231
19	45	42.46	3482	42.67	3592	45.2	2603	45.2	2703	44.6	2803	44.6	2903
		4.79	14169	9.04	26855	10.86	33284	16.82	51547	30.94	94816	50	153093
17	50	50.34	3482	49.71	3592	49.7	2603	49.7	2703	49.2	2803	49.2	2903
		4.05	14215	7.78	26941	9.9	33701	15.33	52202	28.11	95710	45.4	154562
16	56	54.71	3483	56.63	3593	54.9	2603	54.9	2703	56	2803	56	2903
		3.81	14236	6.92	26776	8.98	34260	13.92	53074	25.43	96969	41.1	156622
14	63	63.93	3483	61.44	3593	64.3	2603	64.3	2703	63.4	2803	63.4	2903
		3.27	14274	6.44	27053	7.7	33022	11.93	51168	21.95	94175	31.4	134750
12	71	71.36	3483	69.82	3593	71.9	2603	71.9	2703	72.3	2803	72.3	2903
		2.93	14299	5.68	27115	6.89	33316	10.68	51632	19.3	93335	31.2	150815
11	80	80.13	3483	77.24	3593	81.1	2603	81.1	2703	80.9	2803	80.9	2903
		2.62	14324	5.15	27162	6.12	33351	9.49	51693	17.26	94125	27.9	152115
10	90	90.66	3483	89.35	3593	87.5	2603	87.5	2703	87.6	2803	90	2903
		2.32	14349	4.46	27227	5.68	34827	8.61	53986	15.98	97925	25.8	158272
9	100	103.54	3483	97.53	3593	99	2603	99	2703	101	2803	101	2903
		2.03	14375	4.09	27260	5.03	34275	7.8	53138	13.89	94570	22.5	152877
8	112	111.11	3483	109.55	3593	109	2603	109	2703	112	2803	112	2903
		1.89	14388	3.65	27304	4.58	34932	7.1	54162	12.88	98216	20.8	158786
7	125	129.28	3483	122.06	3593	124	2603	124	2703	128	2803	128	2903
		1.63	14415	3.28	27348	4.01	34175	6.23	52997	11.05	94092	17.9	152145
6.2	140	140.31	3483	138.42	3593	137	2603	140	2703				
		1.5	14428	2.9	27395	3.65	34787	5.66	53950				
5.4	160	154.98	3483	158.87	3593	159	2603	159	2703				
		1.36	14444	2.53	27442	3.16	34414	4.9	53379				
4.8	180	172.09	3483	172.82	3593								
		1.23	14460	2.33	27463								
4.4	200	203.99	3483	201.34	3593								
		1.04	14485	2	27510								

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

Combined - Motor RPM 1750

CbN
SERIES **2000**
3000

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer								Size of CbN 2000 Reducer							
		2		3		4		5		6		7		8		9	
12.5	140												136.8	2805A	150.7	2905A	
														19.956	88500	29.169	142500
10.9	160													168.3	2805A	168.6	2905A
														16.222	88500	26.082	142500
9.7	180									179.6	2604A	186.3	2704A	189.1	2805A	189.1	2905A
										5.294	31500	7.97	49200	14.44	88500	23.249	142500
8.8	200									206.1	2604A	205.4	2704A	210.9	2805A	192.9	2905A
										4.613	31500	7.231	49200	12.944	88500	22.786	142500
7.8	224	223.5	3254	223.2	3374	229.4	3484	228.2	3594	227.8	2604A	226.9	2704A	239.2	2805A	218.9	2905A
		0.545	4038	0.964	7132	1.869	14206	3.556	26890	4.174	31500	6.546	49200	11.415	88500	20.08	142500
7	250	247.2	3254	246.8	3374	241.5	3484	258.3	3594	261.5	2604A	260.3	2704A	264.1	2805A	245	2905A
		0.493	4038	0.872	7132	1.775	14206	3.142	26890	3.636	31500	5.705	49200	10.339	88500	18.713	148600
6.3	280	260.2	3254	259.8	3374	273.4	3484	291.5	3594	294.5	2604A	287.7	2704A	308.6	2805A	274	2905A
		0.468	4038	0.829	7132	1.568	14206	2.784	26890	3.229	31500	5.162	49200	8.849	88500	16.733	148600
5.6	315	308.9	3254	308.4	3374	308.5	3484	329.7	3594	319.9	2604A	330.3	2704A	344.4	2805A	307.8	2905A
		0.395	4038	0.698	7132	1.39	14206	2.462	26890	2.972	31500	4.496	49200	7.928	88500	14.894	148600
4.9	355	330.8	3254	330.2	3374	349	3484	374.5	3594	356.5	2604A	372	2704A	386.8	2805A	343.4	2905A
		0.368	4038	0.652	7132	1.229	14206	2.167	26890	2.667	31500	3.992	49200	7.059	88500	13.351	148600
4.4	400	370.4	3254	369.8	3374	396.5	3484	428	3594	400.1	2604A	404	2704A	437.6	2805A	389.4	2905A
		0.329	4038	0.582	7132	1.081	14206	1.896	26890	2.376	31500	3.675	49200	6.239	88500	11.774	148600
3.9	450	431.3	3254	430.6	3374	453	3484	483.1	3594	452.8	2604A	450.3	2704A	499.7	2805A	429.9	2905A
		0.283	4038	0.5	7132	0.946	14206	1.68	26890	2.099	31500	3.298	49200	5.464	88500	10.665	148600
3.5	500	465	3254	464.2	3374	511.4	3484	512.7	3594	492.6	2604A	505.3	2704A	536.3	2805A	502.3	2905A
		0.262	4038	0.464	7132	0.838	14206	1.583	26890	1.93	31500	2.938	49200	5.091	88500	9.127	148600
3.1	560	547	3254	546.1	3374	542.6	3484	608.8	3594	556.7	2604A	572	2704A	624	2805A	560.7	2905A
		0.223	4038	0.394	7132	0.79	14206	1.333	26890	1.708	31500	2.596	49200	4.376	88500	8.177	148600
2.8	630	613.1	3254	612.1	3374	644.4	3484	643.8	3594	641.1	2604A	622.2	2704A	677.3	2805A	629.6	2905A
		0.199	4038	0.352	7132	0.665	14206	1.261	26890	1.483	31500	2.386	49200	4.032	88500	7.282	148600
2.5	710	689.4	3254	688.3	3374	681.4	3484	735.7	3594	716.3	2604A	703.2	2704A	748.1	2805A	712.4	2905A
		0.177	4038	0.313	7132	0.629	14206	1.103	26890	1.327	31500	2.112	49200	3.65	88500	6.436	148600
2.2	800	775.1	3254	773.8	3374	778.7	3484	821.3	3594	792.9	2604A	809.8	2704A	830.7	2805A	813.5	2905A
		0.157	4038	0.278	7132	0.551	14206	0.988	26890	1.199	31500	1.834	49200	3.287	88500	5.636	148600
1.9	900	873.9	3254	872.4	3374	869.3	3484	920.8	3594	927	2605A	904.8	2704A	873	2805A	873	2905A
		0.139	4038	0.247	7132	0.493	14206	0.881	26890	1.048	31500	1.641	49200	3.255	92100	5.252	148600
1.8	1000	983.8	3254	982.2	3374	974.5	3484	1066.1	3594	1076.7	2605A	1001.6	2704A	1015.8	2805A	1015.8	2905A
		0.124	4038	0.219	7132	0.44	14206	0.761	26890	0.903	31500	1.483	49200	2.797	92100	4.513	148600
1.6	1120	1082.3	3254	1080.5	3374	1128.3	3484	1170.6	3594	1212.5	2605A	1184.6	2705A	1102.5	2805A	1102.5	2905A
		0.113	4038	0.199	7132	0.38	14206	0.693	26890	0.802	31500	1.328	51000	2.577	92100	4.158	148600
1.4	1250	1221.3	3254	1219.3	3374	1239	3484	1342.4	3594	1317.1	2605A	1360.1	2705A	1217.7	2805A	1217.7	2905A
		0.1	4038	0.177	7132	0.346	14206	0.605	26890	0.738	31500	1.157	51000	2.333	92100	3.765	148600

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

CbN
SERIES **2000**
3000

CbN Series

Combined - Motor RPM 1750 (Continued)

Exact Ratio rpm, HP and Torque

rpm	Nom. Ratio	Size of CbN 3000 Reducer															
		2	3	4	5	6	7	8	9								
1.3	1400	1374	3255	1371.7	3375	1420.8	3484	1481.4	3594	1467.8	2605A	1531.6	2705A	1352.2	2805A	1352.2	2905A
		0.091	4038	0.171	7611	0.302	14206	0.548	26890	0.662	31500	1.027	51000	2.101	92100	3.391	148600
1.1	1600	1498.6	3255	1555.6	3375	1567.9	3484	1536.3	3595	1647.3	2605A	1663.7	2705A	1602.8	2805A	1602.8	2905A
		0.083	4038	0.151	7611	0.273	14206	0.554	27563	0.59	31500	0.946	51000	1.773	92100	2.86	148600
0.97	1800	1779.5	3255	1847.1	3375	1695.5	3485	1738	3595	1864.6	2605A	1854.1	2705A	1742.1	2806A	1742.1	2906A
		0.07	4038	0.127	7611	0.264	14507	0.489	27563	0.521	31500	0.849	51000	1.668	92100	2.691	148600
0.88	2000	1905.1	3255	1977.5	3375	1926.4	3485	1974.8	3595	2028.4	2605A	2080.8	2705A	1984	2806A	2035.7	2906A
		0.065	4038	0.119	7611	0.232	14507	0.431	27563	0.479	31500	0.756	51000	1.465	92100	2.303	148600
0.78	2240	2133.6	3255	2214.7	3375	2200.7	3485	2256	3595	2292.4	2605A	2355.3	2705A	2272.1	2806A	2272.2	2906A
		0.058	4038	0.106	7611	0.203	14507	0.377	27563	0.424	31500	0.668	51000	1.279	92100	2.064	148600
0.7	2500	2484.3	3255	2578.7	3375	2484.3	3485	2546.7	3595	2639.7	2605A	2562.2	2705A	2551.6	2806A	2551.6	2906A
		0.05	4038	0.091	7611	0.18	14507	0.334	27563	0.368	31500	0.614	51000	1.139	92100	1.838	148600
0.63	2800	2678	3255	2779.7	3375	2636.2	3485	2702.4	3595	2949.6	2605A	2895.6	2705A	2886.9	2806A	2887	2906A
		0.047	4038	0.084	7611	0.17	14507	0.315	27563	0.329	31500	0.543	51000	1.007	92100	1.624	148600
0.56	3150	3150.7	3255	3270.5	3375	3130.6	3485	3209.2	3595	3264.9	2605A	3334.3	2705A	3296.8	2806A	3296.9	2906A
		0.04	4038	0.072	7611	0.143	14507	0.265	27563	0.298	31500	0.472	51000	0.881	92100	1.422	148600
0.49	3550	3531.1	3255	3665.3	3375	3310.4	3485	3393.5	3595	3556.2	2606A	3725.8	2705A	3537.9	2806A	3538	2906A
		0.035	4038	0.064	7611	0.135	14507	0.251	27563	0.3	33800	0.422	51000	0.821	92100	1.325	148600
0.44	4000	3970.7	3255	4121.6	3375	3783.1	3485	3878	3595	4085.6	2606A	4124.1	2705A	4116.5	2806A	4116.6	2906A
		0.031	4038	0.057	7611	0.118	14507	0.219	27563	0.265	34260	0.382	51000	0.706	92100	1.139	148600
0.39	4500	4464.4	3255	4634.1	3375	4223.2	3485	4329.2	3595	4437.9	2606A	4437.9	2706A	4467.8	2806A	4467.9	2906A
		0.028	4038	0.051	7611	0.106	14507	0.196	27563	0.244	34260	0.378	53100	0.65	92100	1.049	148600
0.35	5000	5033.2	3255	5224.4	3375	4734.6	3485	4853.5	3595	4946	2606A	4946	2706A	4934.9	2806A	4935	2906A
		0.025	4038	0.045	7611	0.095	14507	0.175	27563	0.219	34260	0.339	53100	0.589	92100	0.95	148600
0.31	5600	5666.5	3255	5881.8	3375	5481.6	3485	5619.2	3595	5550.8	2606A	5550.8	2706A	5479.8	2806A	5479.9	2906A
		0.022	4038	0.04	7611	0.082	14507	0.151	27563	0.195	34260	0.302	53100	0.53	92100	0.856	148600
0.28	6300	6233.5	3255	6470.3	3375	6019.4	3485	6170.5	3595	6282.9	2606A	6282.9	2706A	6495.5	2806A	6495.7	2906A
		0.02	4038	0.036	7611	0.074	14507	0.138	27563	0.172	34260	0.267	53100	0.447	92100	0.722	148600
0.25	7100	7034.2	3255	7301.6	3375	6904.4	3485	7077.7	3595	6834.8	2606A	6834.8	2706A	6911.6	2806A		
		0.018	4038	0.032	7611	0.065	14507	0.12	27563	0.158	34260	0.245	53100	0.433	94800		
0.22	8000	7913.5	3255	8214.2	3375	7617.3	3485	7808.5	3595	7724.3	2606A	7724.3	2706A	7674.8	2806A		
		0.016	4038	0.029	7611	0.059	14507	0.109	27563	0.14	34260	0.217	53100	0.39	94800		
0.19	9000	8576.5	3256	8982.1	3376	8891.1	3486	8876.4	3596	8894.6	2606A	8894.6	2706A	9097.4	2806A		
		0.015	4038	0.027	7611	0.051	14401	0.097	27333	0.122	34260	0.188	53100	0.329	94800		
0.18	10000	9602.3	3256	9967.2	3376	9932.4	3486	9912.3	3596	9938.9	2606A	9938.9	2706A				
		0.013	4038	0.024	7611	0.046	14401	0.087	27333	0.109	34260	0.169	53100				

Exact ratio	Gear frame
Input H.P.	Output torque

Speed Reducers

Thermal Power Rating (Pt)

Nominal Ratio	Reducer Size				
	5	6	7	8	9
	Pt (hp)	Pt (hp)	Pt (hp)	Pt (hp)	Pt (hp)
3.15	-	65	84	-	-
3.55	-	65	84	-	-
4	46	65	84	-	-
4.5	46	65	83	-	-
5	46	65	83	-	-
5.6	46	65	83	-	-
6.3	46	65	83	-	-
7.1	45	64	83	-	-
8	45	64	82	95	-
9	44	64	80	95	-
10	43	63	78	95	-
11.2	43	62	76	95	-
12.5	43	60	76	95	-
14	43	59	76	95	-
16	43	-	-	95	-
18	-	-	-	70	-
20	-	-	-	70	-
22.4	-	-	-	70	105
25	-	-	-	70	105
28	-	-	-	70	105
31.5	-	-	-	70	105
35.5	-	-	-	70	105
40	-	-	-	-	105

Gear Modifications

G11 Corro-Duty

Corro-Duty® gear reducers are designed for applications in food processing, chemical, poultry and any other industries that will be subjected to extreme humidity, washdown, steam, detergents, and mild acids. Construction of the Corro-Duty reducer includes the normally closed breather in the gear case. The exterior of the entire unit is then painted in one of the two options chosen at order entry:

- Option #1 - Corro-Duty grey
 - 3 step paint system using 316 stainless steel paint
 - Light grey semigloss finish
 - USDA and FDA approved
- Option #2 - Corro-Duty white
 - 2 step paint system using epoxy paint
 - White gloss finish
 - USDA and FDA approved

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the CbN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (Refer to page A-244).

G12b Washdown FG Service Reducer

When this modification is specified, a reducer will be built with all the features detailed above under G11 and G12a. When ordering, state the paint finish that is to be provided.

G15 Export Boxing

Export boxing can be provided for “under-deck” transport. When the quantity of HWN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

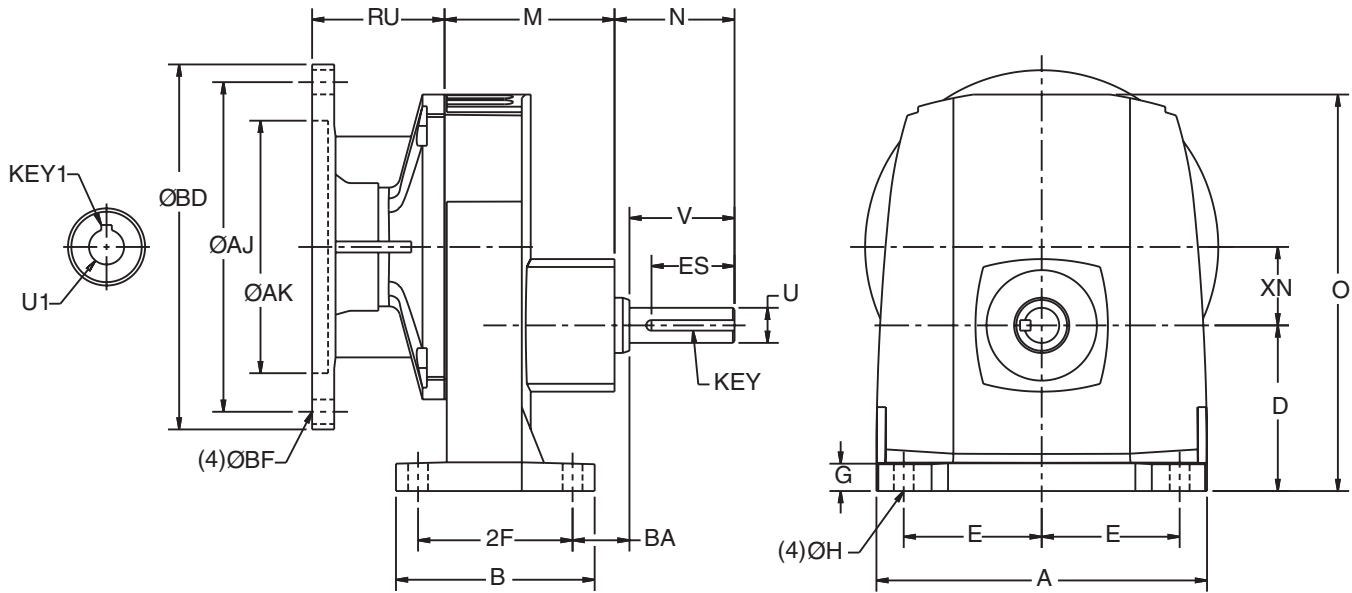
Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Accessories

The following accessories can be ordered along with reducer and will be supplied loose for mounting by others

Description	Gear Frames	Part #
NPT Adapter (1/4" NPFT)	31 to 35	0436216
NPT Adapter (3/4" NPFT)	26 to 29	0436218
Oil Level View Port	31 to 35	0435936
	26 to 29	0435938
Scoop Guard Kit (scoop mount reducers)	32 to 35	0965634
	26/27 to 280T	0965635
	26/27 w/ 320T	0965637
	28/29 to 280T	0965636
	28/29 w/ 320T	0965637
	28/29 w/ 360T	0965638
	26 - 29 Comb.	0965634

C-Face Reducer Foot Mounted - Single Reduction



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
30	5.90	3.54	2.95	2.46	0.49	0.35	3.03	2.14	7.07	0.63	1.88	1.01	2.76	1.48	1.40	3/16 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	3.33	0.44	4.50	6.50	0.625	3/16 Sq.
140TC ⁴	5.875	3.33	0.44	4.50	6.50	0.875	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

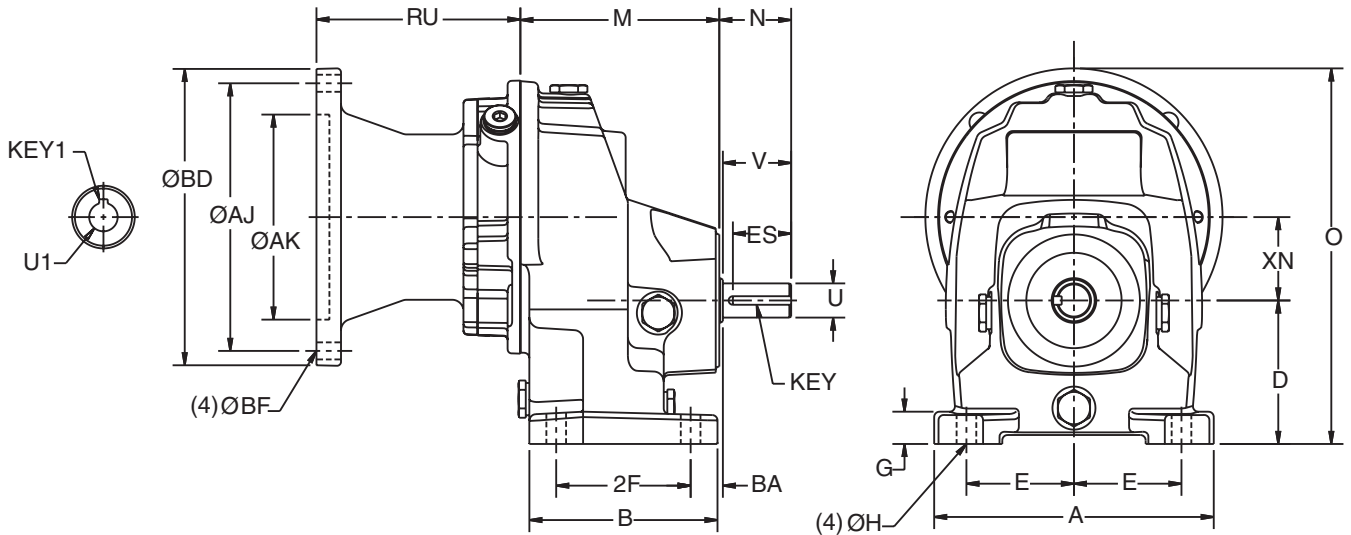
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Not available in ratios 5.6 through 8:1.

C-Face Reducer

Foot Mounted - Single Reduction



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
31	6.14	4.13	3.15	2.36	0.71	0.43	4.37	1.58	8.24	0.75	1.50	0.71	2.95	1.28	1.83	3/16 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC ⁴	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

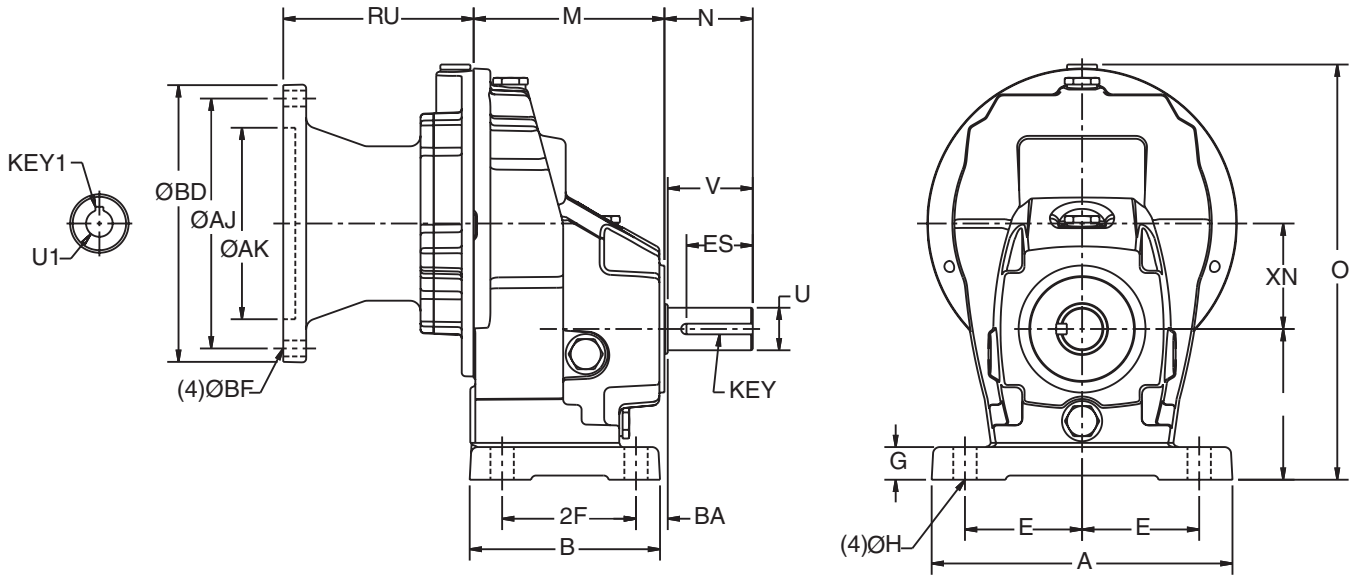
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

C-Face Reducer Foot Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
32	7.08	4.48	3.54	2.76	0.77	0.55	4.49	2.08	9.76	1.00	2.00	0.75	3.15	1.56	2.48	1/4 Sq.

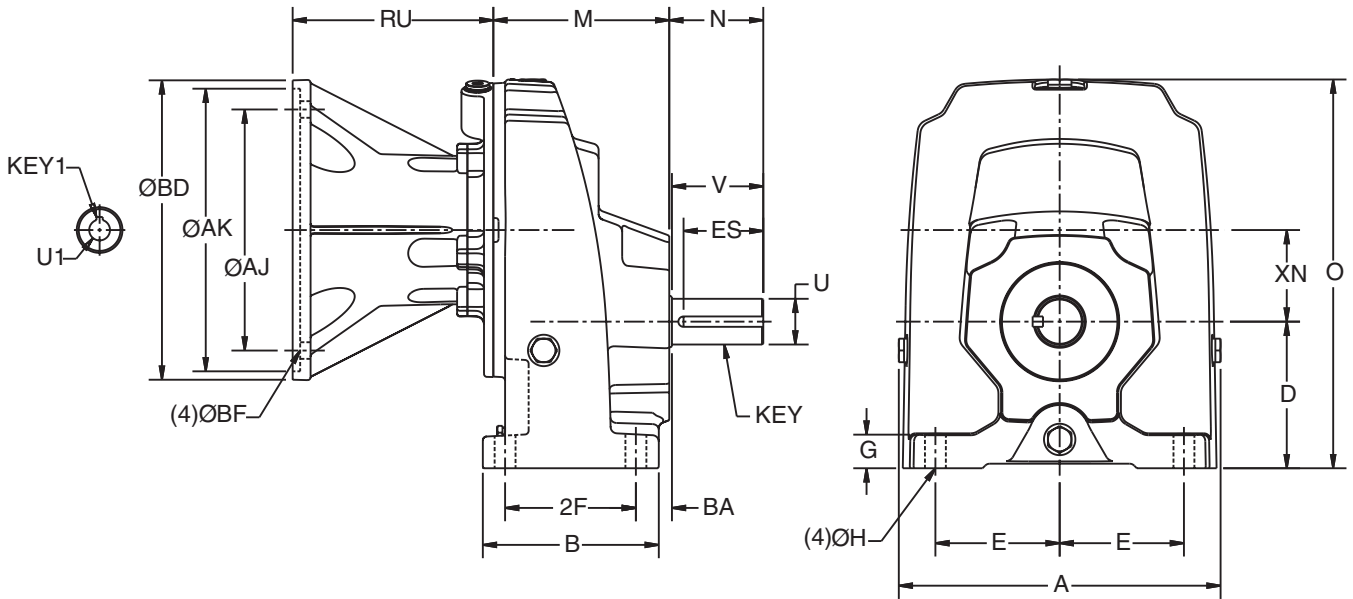
Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.
210TC ⁴	7.250	6.20	0.57	8.50	9.00	1.375	5/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
33	9.69	5.30	4.41	3.74	1.00	0.63	5.30	2.83	11.69	1.38	2.75	1.09	3.94	2.40	2.76	5/16 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.32	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.32	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.25	6.04	0.57	8.50	9.00	1.125	1/4 Sq.
210TC ⁴	7.25	6.04	0.57	8.50	9.00	1.375	5/16 Sq.

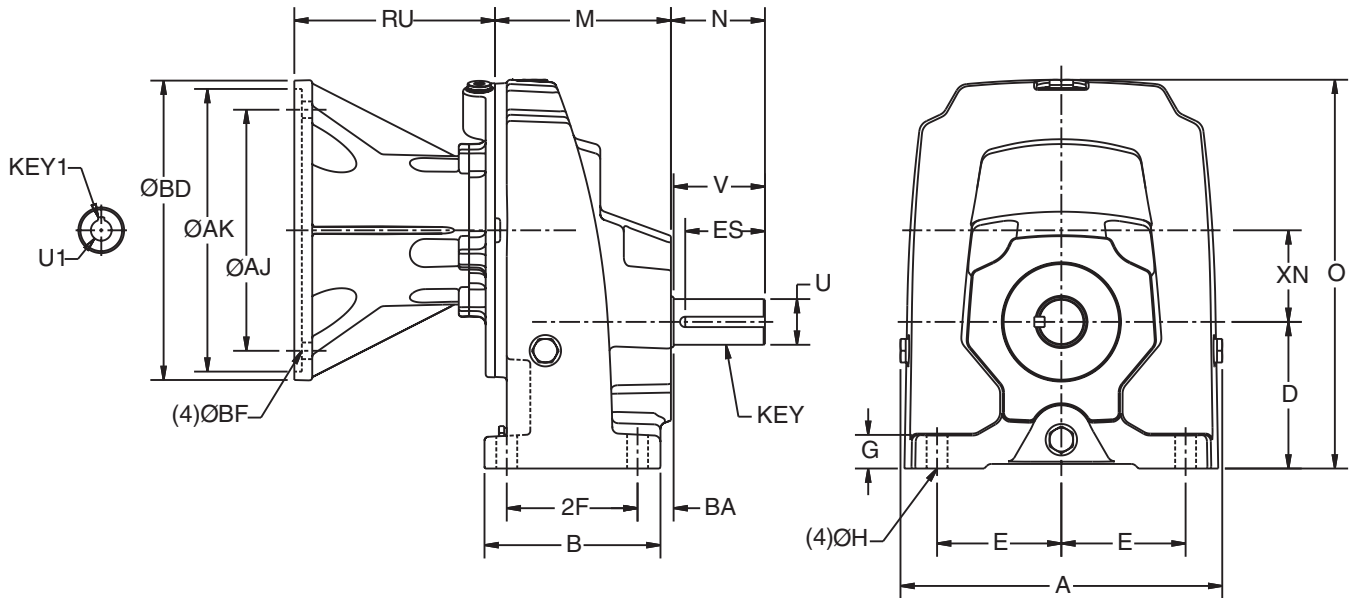
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

C-Face Reducer Foot Mounted - Single Reduction



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
34	11.02	6.59	5.20	4.25	1.34	0.71	6.26	3.06	13.90	1.50	3.00	1.10	4.92	2.56	3.43	3/8 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
182/184TC	7.25	6.22	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.25	6.22	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.25	7.43	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC ⁴	9.00	8.40	0.57	10.50	11.25	1.875	1/2 Sq.

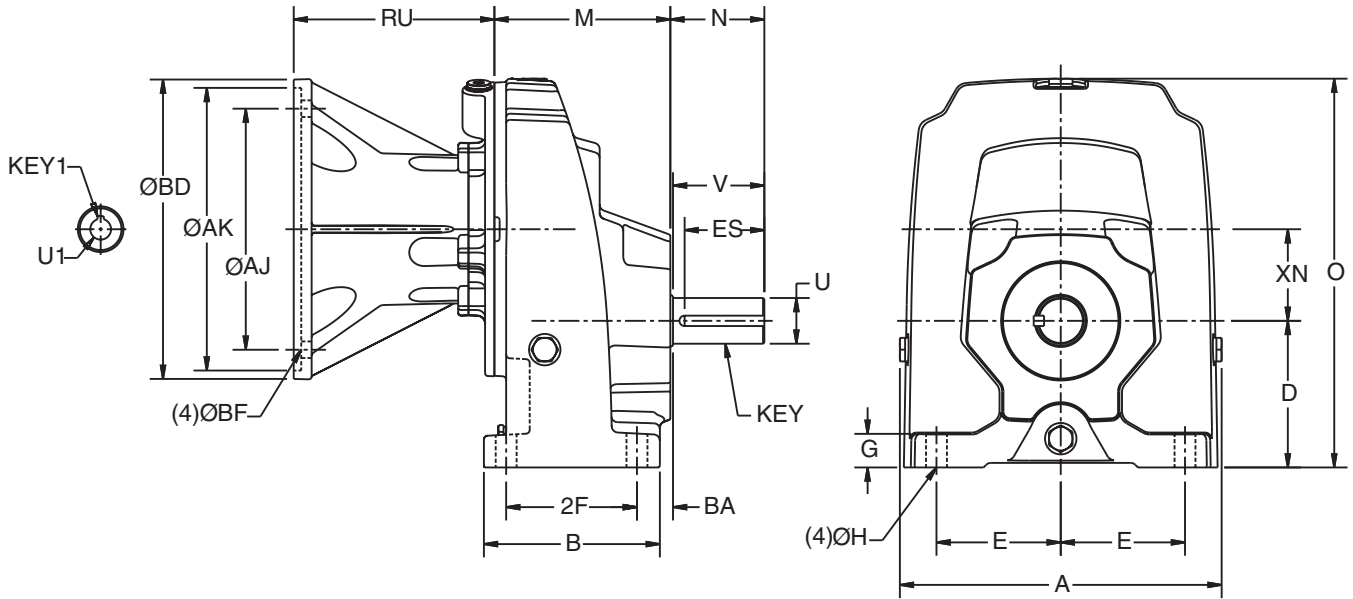
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Single Reduction



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
35	13.65	7.76	6.30	5.12	1.61	0.79	6.83	3.56	17.37	1.75	3.50	1.18	6.30	3.06	4.33	3/8 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
213/215TC	7.25	5.87	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.25	7.09	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC ⁴	9.00	8.06	0.57	10.50	11.25	1.875	1/2 Sq.
324/326TC ⁴	11.00	8.79	0.69	12.50	13.38	2.125	1/2 Sq.

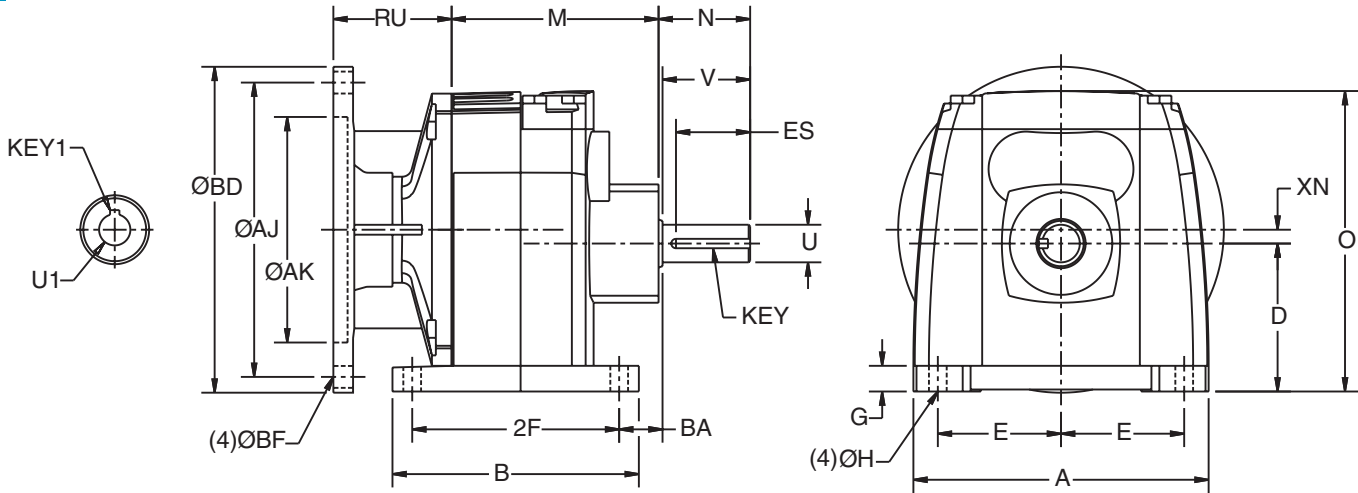
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
3012	5.90	4.92	2.95	2.46	0.51	0.35	4.13	1.83	6.00	0.75	1.75	0.87	4.13	1.48	0.28	3/16 Sq.
3013	5.90	5.71	2.95	2.46	0.51	0.35	4.92	1.83	6.00	0.75	1.75	0.87	4.92	1.48	0.28	3/16 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	3.33	0.44	4.50	6.50	0.625	3/16 Sq.
140TC ⁴	5.875	3.33	0.44	4.50	6.50	0.875	3/16 Sq.

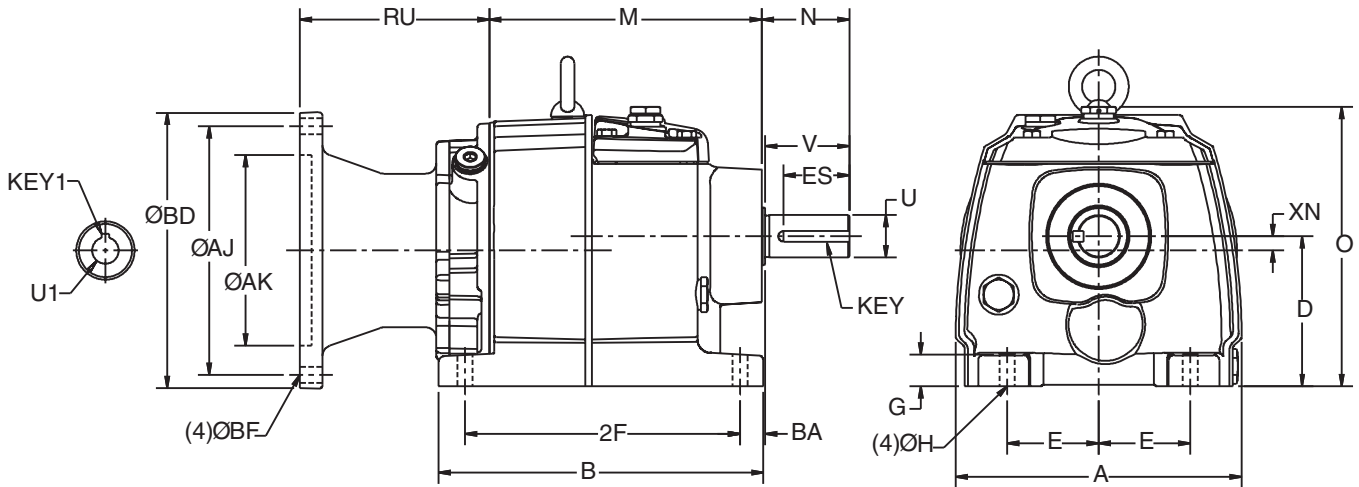
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Not available for ratio 31.5 to 45:1 in 3012. Use 3013 for 35.5 to 45:1.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
31	6.76	7.68	3.54	2.17	0.75	0.35	6.44	2.08	6.60	1.00	2.00	0.59	6.50	1.56	0.33	1/4 Sq.

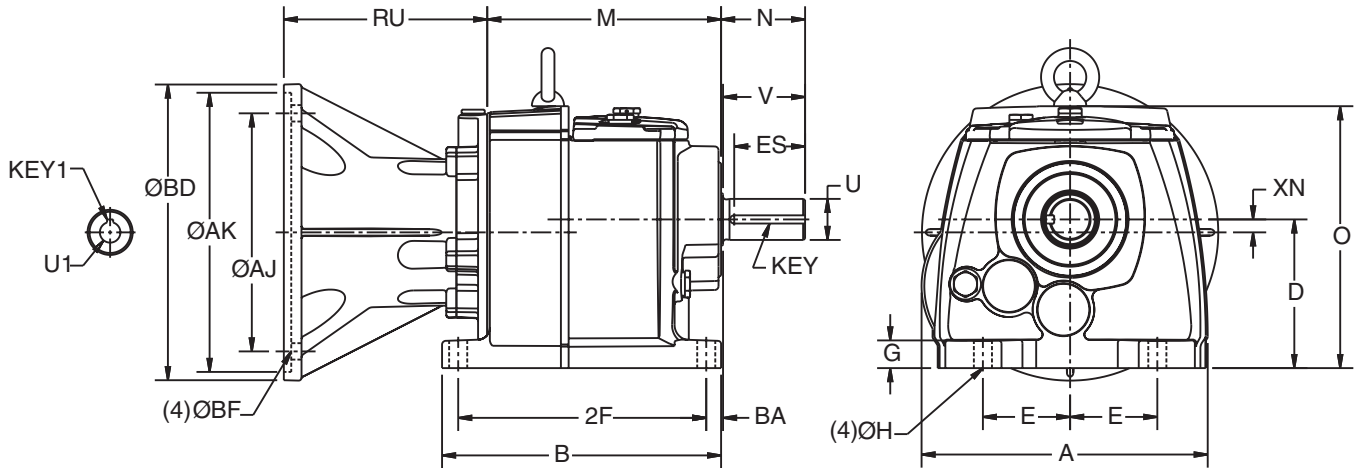
Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.88	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.88	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC ⁴	7.25	6.20	0.57	8.50	9.00	1.125	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
32	8.72	8.50	4.53	2.66	0.84	0.55	7.13	2.56	7.97	1.25	2.50	0.51	7.56	2.16	0.39	1/4 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.25	6.20	0.57	8.50	9.00	1.125	1/4 Sq.
210TC ⁴	7.25	6.20	0.57	8.50	9.00	1.375	5/16 Sq.

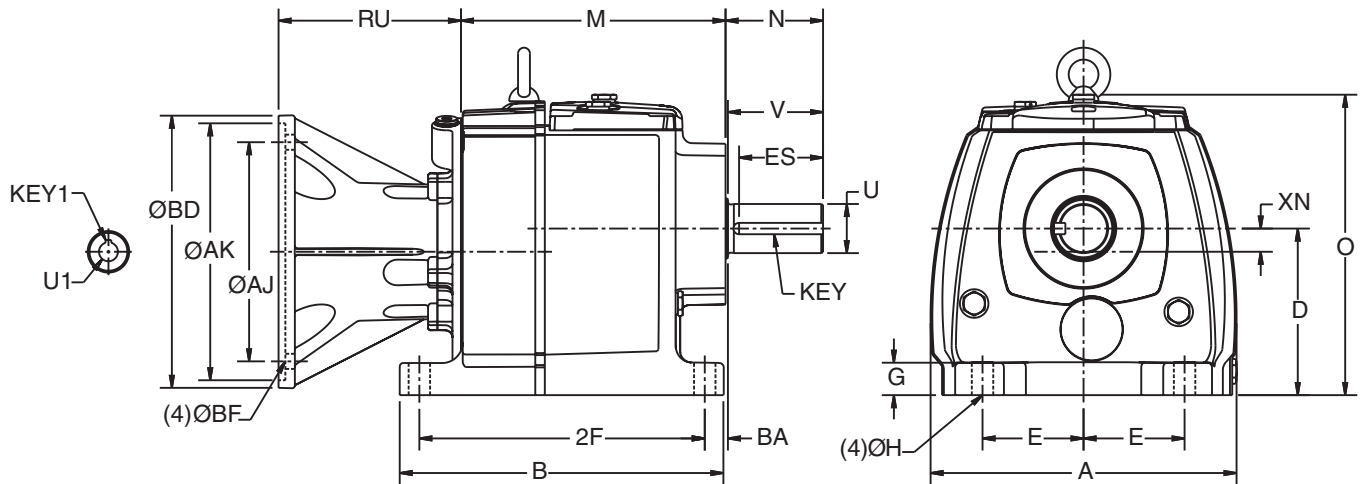
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Double/Triple Reduction



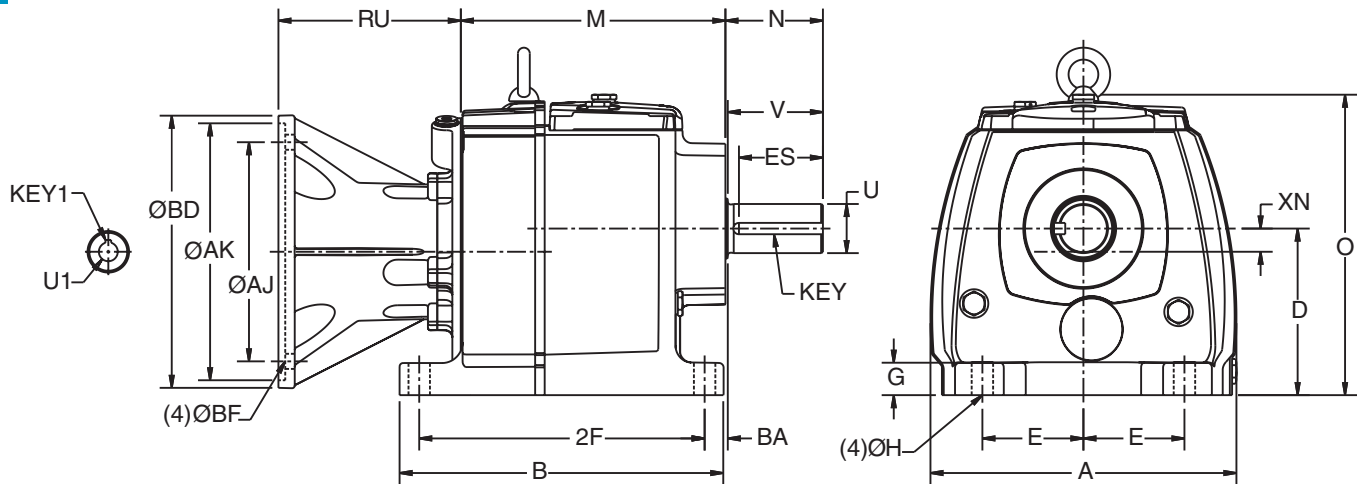
Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
3362,3363	10.13	10.72	5.51	3.35	1.07	0.71	8.76	3.08	9.94	1.50	3.00	0.77	9.45	2.56	0.77	3/8 Sq.
3372,3373	10.13	10.72	5.51	3.35	1.07	0.71	8.76	3.23	9.94	1.63	3.15	0.77	9.45	2.78	0.77	3/8 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.32	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.32	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.25	6.04	0.57	8.50	9.00	1.125	1/4 Sq.
210TC	7.25	6.04	0.57	8.50	9.00	1.375	5/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
34	11.97	10.87	7.09	4.53	1.37	0.71	9.80	3.58	11.89	2.13	3.50	0.98	9.25	3.06	1.02	1/2 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.50	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	5.875	4.50	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	7.250	6.22	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.250	6.22	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.250	7.43	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC ⁴	9.000	8.40	0.57	10.50	11.25	1.875	1/2 Sq.

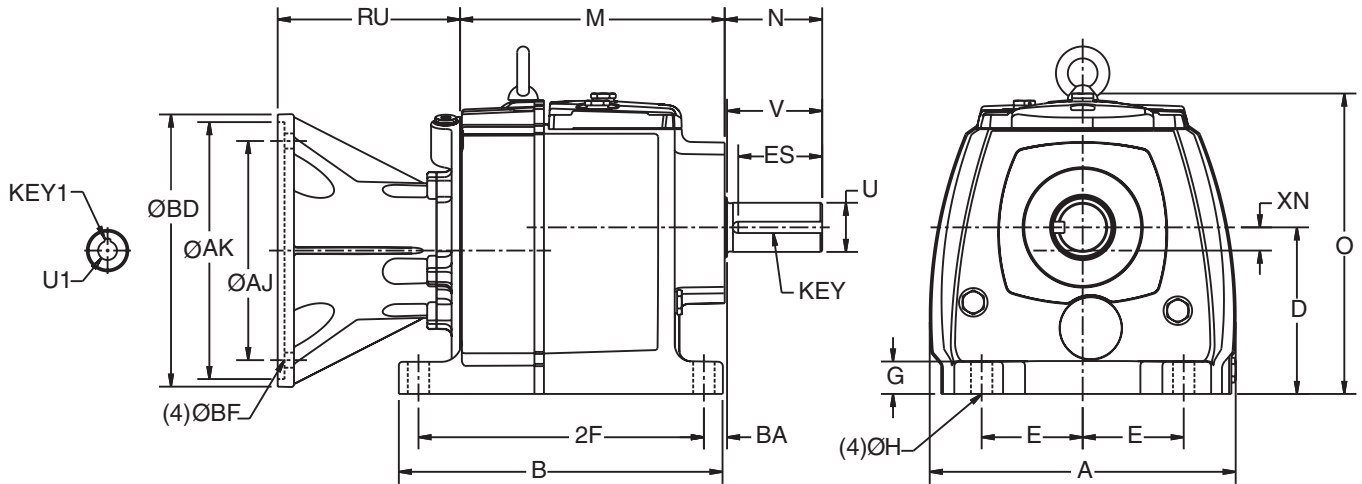
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
35	14.19	12.89	8.86	5.51	1.73	0.87	11.34	4.81	14.84	2.38	4.72	1.10	11.02	4.15	1.14	5/8 Sq.

Motor Frame	AJ	RU	BF	AK	BD	U1	Key1
56C	5.875	4.14	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	5.875	4.14	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	7.250	5.87	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.250	5.87	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.250	7.09	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC	9.000	8.06	0.57	10.50	11.25	1.875	1/2 Sq.
324/326TC ⁴	11.000	8.79	0.69	12.50	13.38	2.125	1/2 Sq.

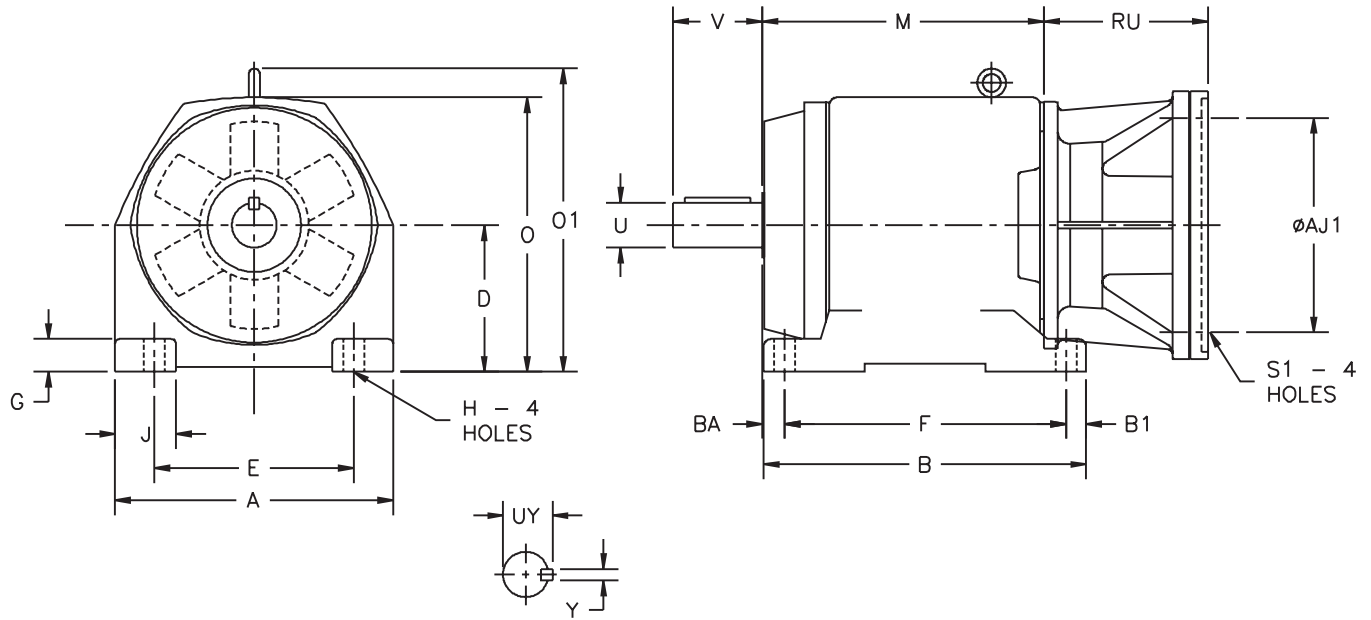
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Use foot mounted motor, utilizing separate support of motor feet for this motor frame.

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	B1	D	E	F	G	H	J	M	O	O1	U ³	V	Y	BA	UY	Weight Lb.
26	17.13	15.94	0.98	8.86	13.98	13.98	1.97	0.94	3.74	14.92	16.78	18.9	2.875	5.75	3/4	2.36	3.2	264
27	19.69	17.72	1.18	9.84	16.54	15.35	2.17	1.02	4.33	16.3	18.5	21.06	3.5	7	7/8	2.56	3.882	363
28	23.62	21.65	1.38	12.4	20.08	18.9	2.56	1.02	4.92	19.88	23.47	25.59	4	8	1	3.35	4.436	660
29	25.98	26.38	1.77	14.76	19.69	22.83	2.95	1.38	6.30	23.62	27.6	29.72	4.75	9.5	1 1/4	2.36	5.291	1045

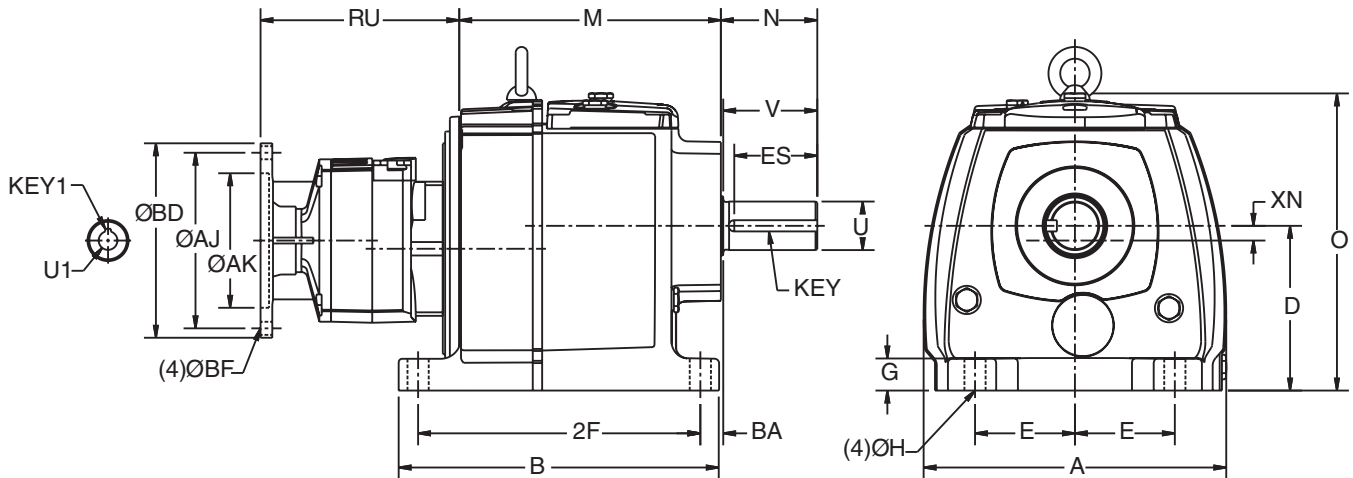
Motor Frame	RU				S1	AJ1
	N26	N27	N28	N29		
182 - 184TC	8.18	8.18	-	-	0.500	7.250
213 - 215TC	8.18	8.18	7.91	7.91	0.500	7.250
254 - 256TC	8.18	8.18	7.91	7.91	0.500	7.250
284 - 286TC	9.15	9.15	8.88	8.88	0.500	9.000
324 - 326TC	9.61	9.61	9.61	9.61	0.625	11.000

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Combined Reduction



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
32	8.72	8.50	4.53	2.66	0.84	0.55	7.13	2.56	7.97	1.25	2.50	0.51	7.56	2.16	0.39	1/4 Sq.
33	10.13	10.72	5.51	3.35	1.07	0.71	8.76	3.23	9.94	1.63	3.15	0.77	9.45	2.78	0.49	3/4 Sq.

Motor Frame	RU	AJ	BF	AK	BD	U1	Key1
56C	7.79	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	7.79	5.875	0.44	4.50	6.50	0.875	3/16 Sq.

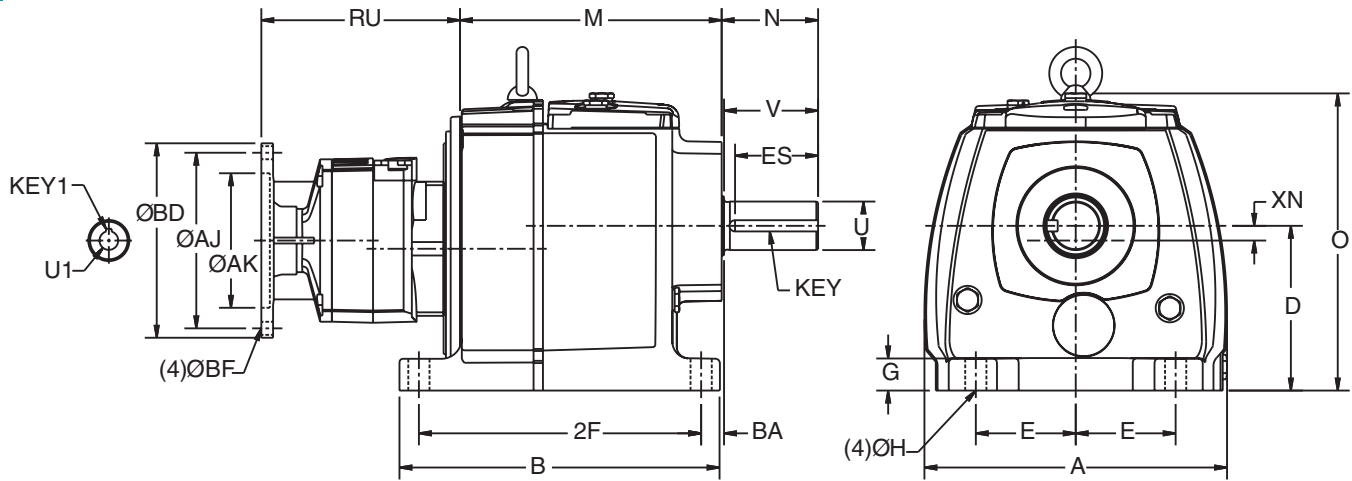
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

C-Face Reducer Foot Mounted - Combined Reduction

CbN
SERIES **2000**
3000



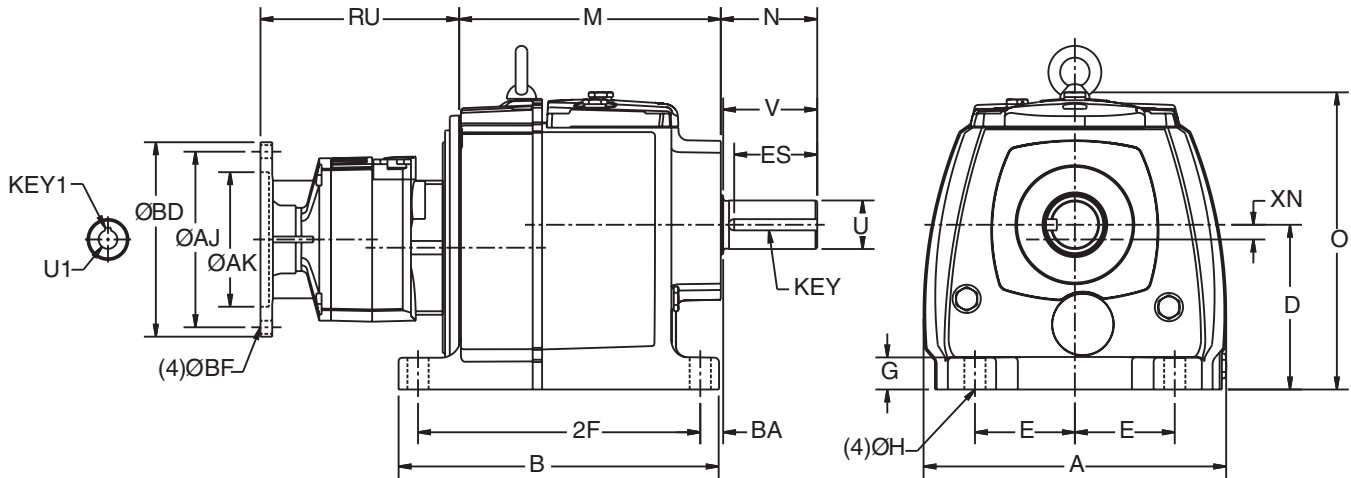
Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
34	11.97	10.87	7.09	4.53	1.37	0.71	9.80	3.58	11.89	2.13	3.50	0.98	9.25	3.12	1.35	1/2 Sq.

Motor Frame	RU	AJ	BF	AK	BD	U1	Key1
56C	11.46	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	11.46	5.875	0.44	4.50	6.50	0.875	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".



Gear Frame	A	B	D ¹	E	G	H	M	N	O	U ³	V	BA	2F	ES	XN	Key
35	14.19	12.89	8.86	5.51	1.73	0.87	11.34	4.81	14.84	2.38	4.72	1.10	11.02	4.19	1.47	5/8 Sq.

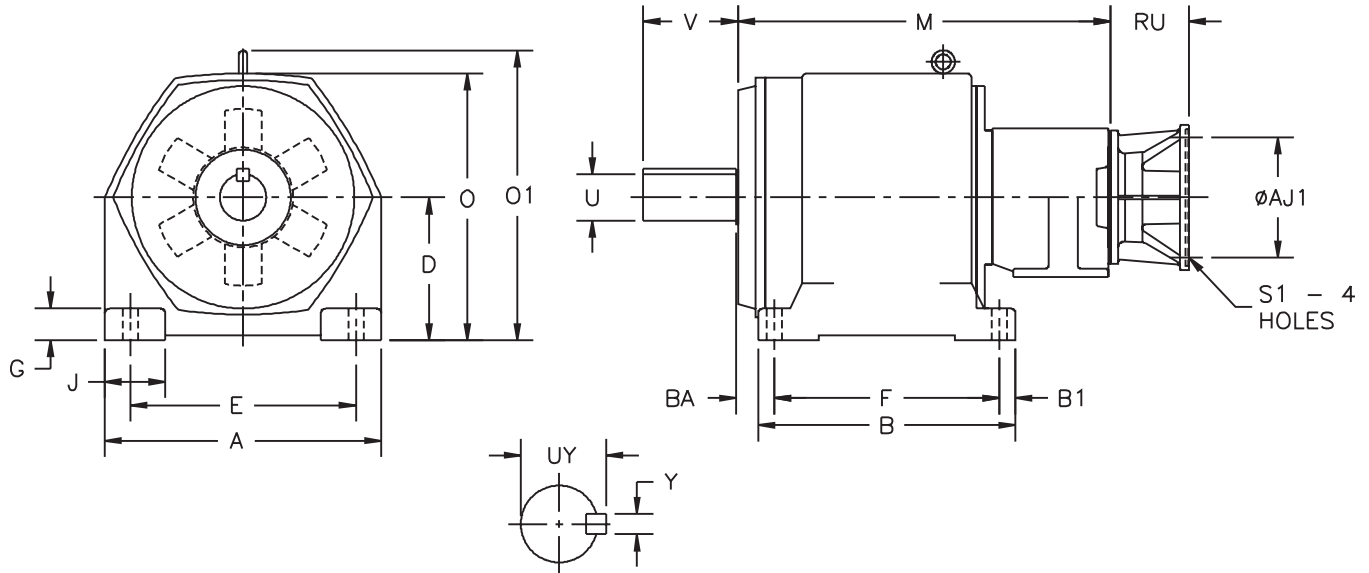
Motor Frame	RU	AJ	BF	AK	BD	U1	Key1
56C	11.11	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	11.11	5.875	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	12.83	7.25	0.57	8.50	9.00	1.125	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Combined Reduction



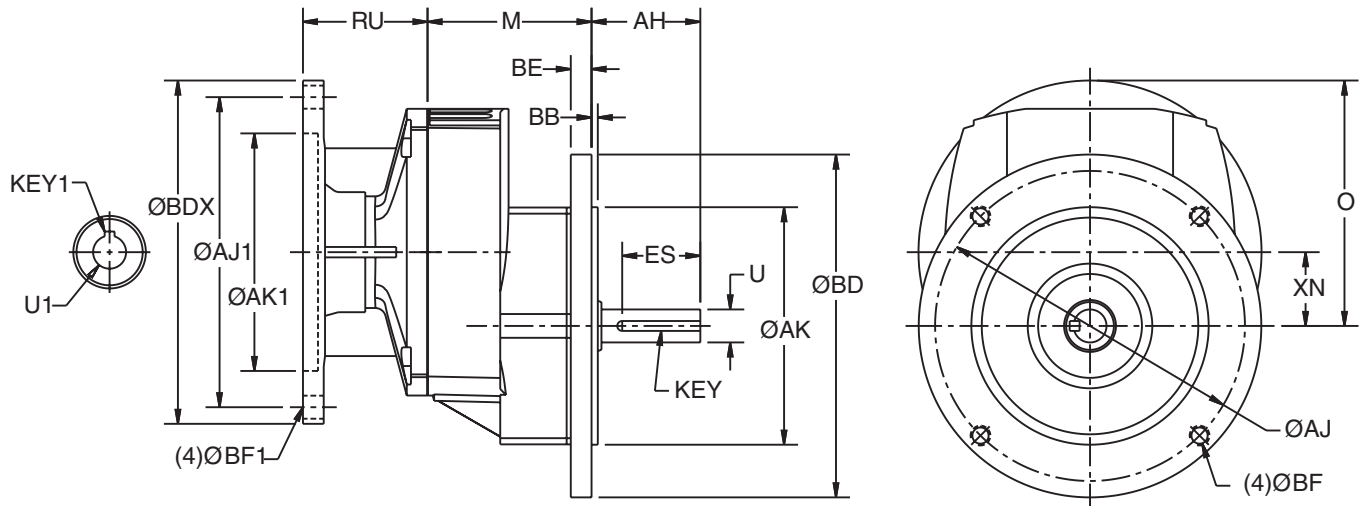
Gear Frame	A	B	B1	D	E	F	G	H	J	M	O	O1	U ³	V	Y	BA	UY	Weight Lb.
26	17.13	15.94	0.98	8.86	13.98	13.98	1.97	0.94	3.74	23.36	16.78	18.9	2.875	5.75	3/4	2.36	3.2	475
27	19.69	17.72	1.18	9.84	16.54	15.35	2.17	1.02	4.33	24.75	18.5	21.06	3.5	7	7/8	2.56	3.882	555
28	23.62	21.65	1.38	12.40	20.08	18.90	2.56	1.02	4.92	28.90	23.47	25.59	4	8	1	3.35	4.436	920
29	25.98	26.38	1.77	14.76	19.69	22.83	2.95	1.38	6.30	32.64	27.6	29.72	4.75	9.5	1 1/4	2.36	5.291	1305

Motor Frame	RU				S1	AJ1
	N26	N27	N28	N29		
56C	4.32	4.32	4.50	4.50	0.375	5.875
143 - 145TC	4.32	4.32	4.50	4.50	0.375	5.875
182 - 184TC	6.04	6.04	6.22	6.22	0.500	7.250
213 - 215TC	6.04	6.04	6.22	6.22	0.500	7.250
254 - 256TC	-	-	7.43	7.43	0.500	7.250

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".



Gear Frame	M	O	U ³	AH	ES	XN	Key
30	3.50	4.65	0.625	2.06	1.48	1.40	3/16

Flange Type	AK	AJ	BB	BD	BE	BF
56C	4.50	5.88	0.12	6.50	0.39	3/8-16
BS	3.74	4.53	0.12	5.51	0.31	0.35
BD1	3.15	3.94	0.12	4.72	0.39	0.28
BD2	4.33	5.12	0.08	6.30	0.39	0.35
BD3	5.12	6.50	0.12	7.87	0.31	0.35

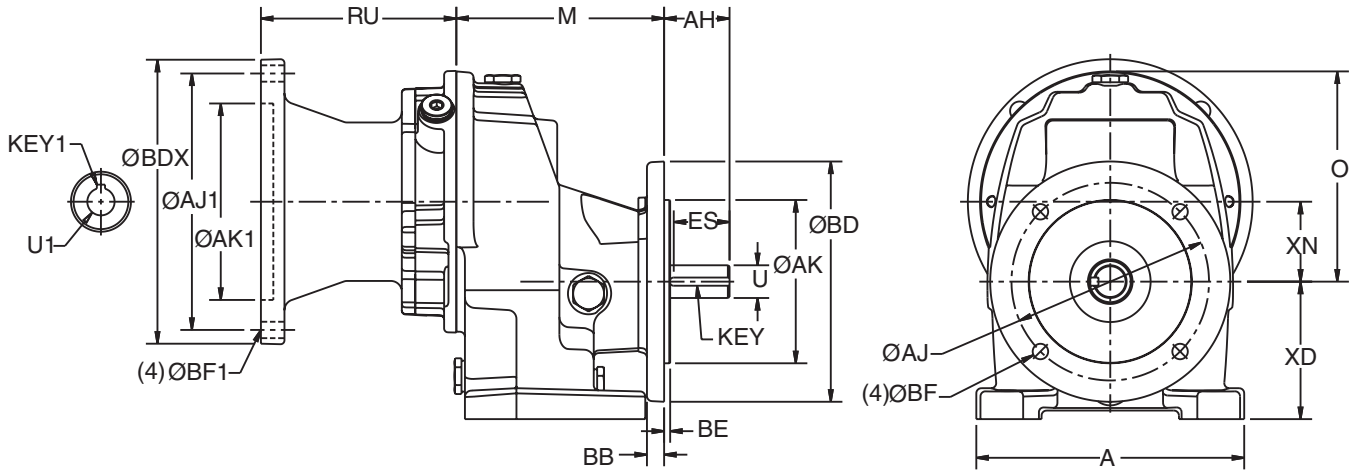
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	3.33	0.44	4.50	6.50	0.625	3/16 Sq.
140TC ¹	5.875	3.33	0.44	4.50	6.50	0.875	3/16 Sq.

¹ Not available on ratios 5.6 through 8:1.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

C-Face Reducer Flange Mounted - Single Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
31	6.14	4.76	4.82	0.75	1.50	1.28	3.15	1.83	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	4.33	5.12	0.14	6.29	0.39	0.35
BD2	3.74	4.53	0.14	5.50	0.39	0.35

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC ⁴	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.

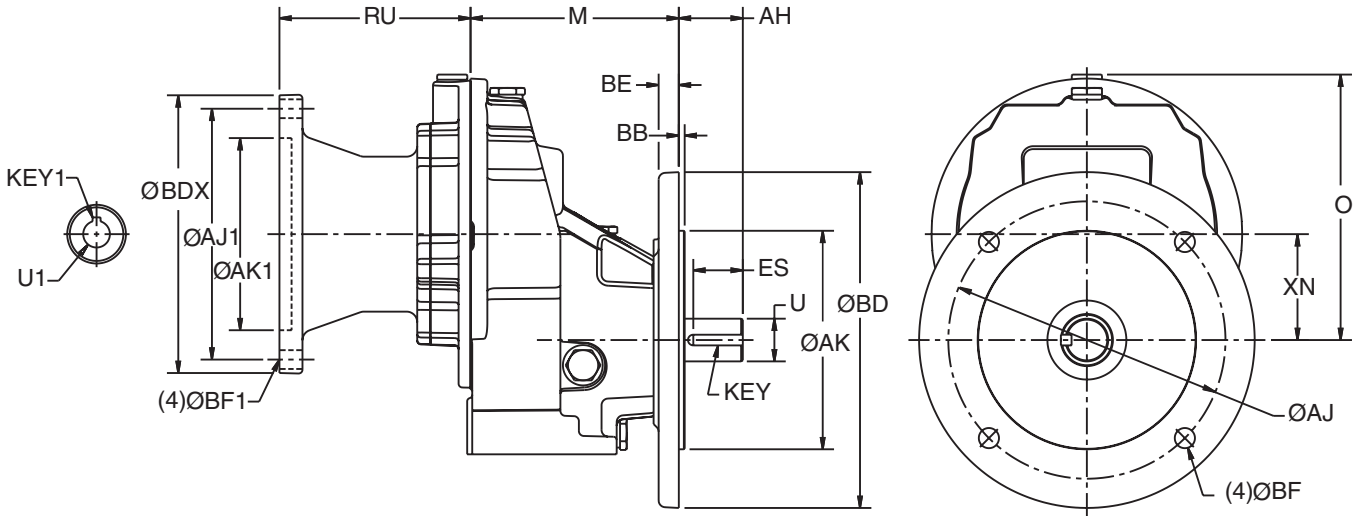
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.

C-Face Reducer

Flange Mounted - Single Reduction



Gear Frame	M	O	U ³	AH	ES	XN	Key
32	4.88	6.22	1.00	1.50	1.16	2.48	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	5.12	6.5	0.14	7.87	0.47	0.47
BD2	4.33	5.12	0.14	6.29	0.39	0.35

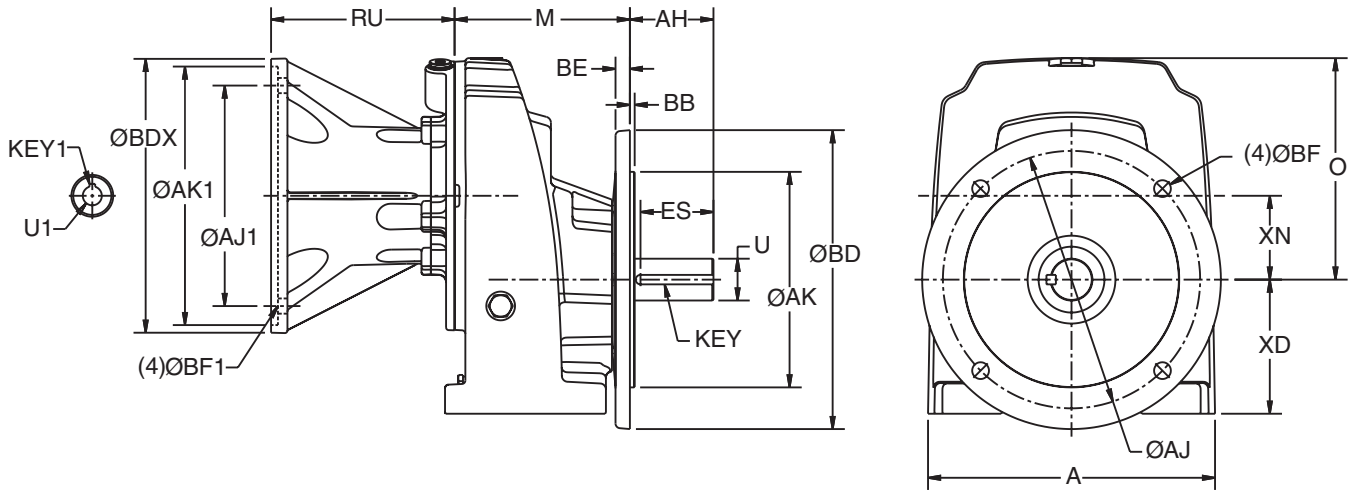
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.
210TC ⁴	7.250	6.20	0.57	8.50	9.00	1.375	5/16 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.

C-Face Reducer Flange Mounted - Single Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
33	9.44	5.77	7.28	1.375	2.75	2.40	4.41	2.76	5/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55
BD2	5.12	6.50	0.16	7.86	0.47	0.43

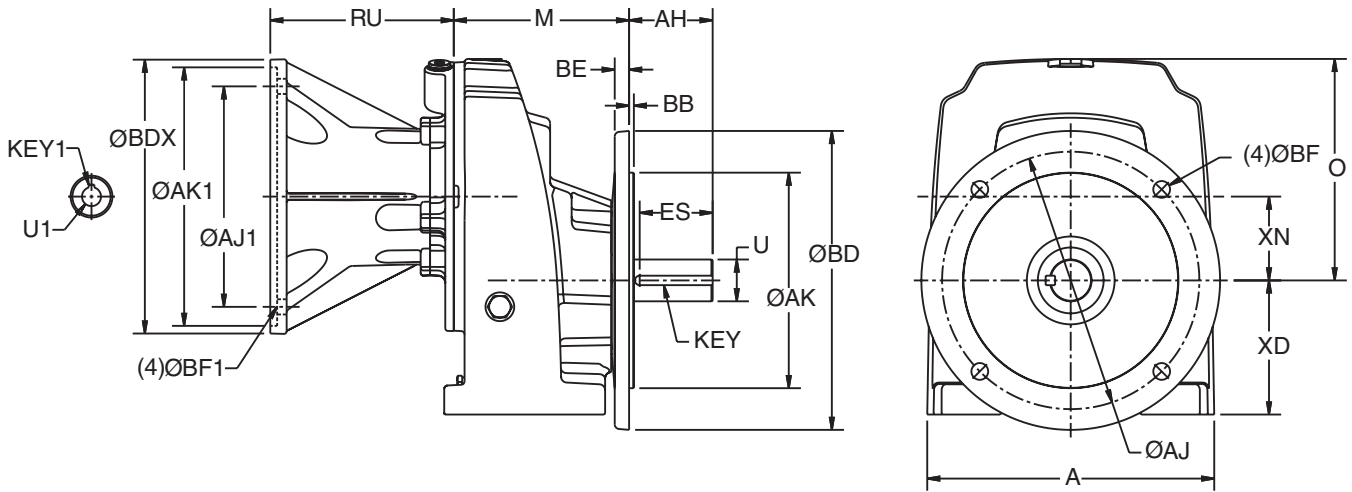
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.32	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.32	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.04	0.57	8.50	9.00	1.125	1/4 Sq.
210TC ⁴	7.250	6.04	0.57	8.50	9.00	1.375	5/16 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.

Flange Mounted - Single Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
34	11.02	7.09	8.70	1.50	3.00	2.56	5.20	3.43	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
182/184TC	7.25	6.22	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.25	6.22	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.25	7.43	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC ⁴	9.00	8.40	0.57	10.50	11.25	1.875	1/2 Sq.

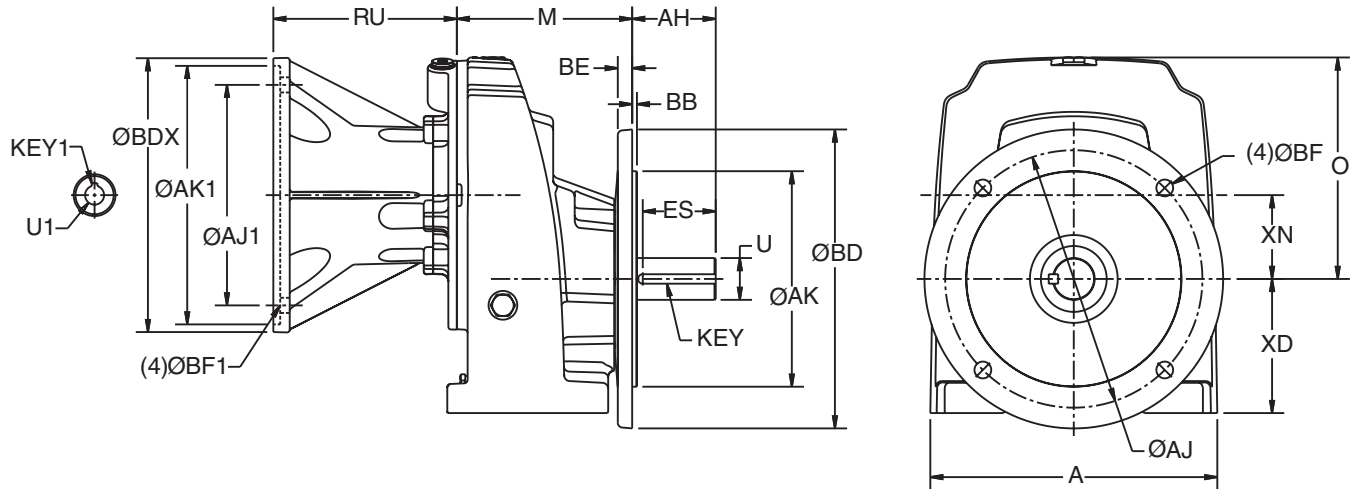
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.

C-Face Reducer Flange Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
35	13.65	7.89	11.07	1.75	3.50	3.06	6.30	4.33	3/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

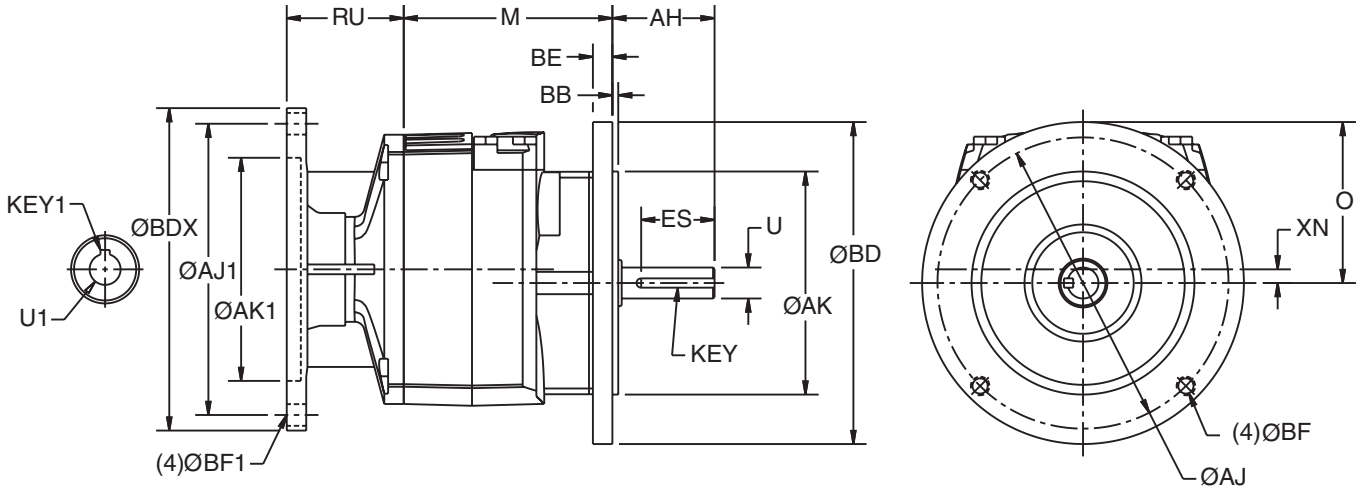
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
213/215TC	7.25	5.87	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.25	7.09	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC	9.00	8.06	0.57	10.50	11.25	1.875	1/2 Sq.
324/326TC ⁴	11.00	8.79	0.69	12.50	13.38	2.125	1/2 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.

Flange Mounted - Double/Triple Reduction



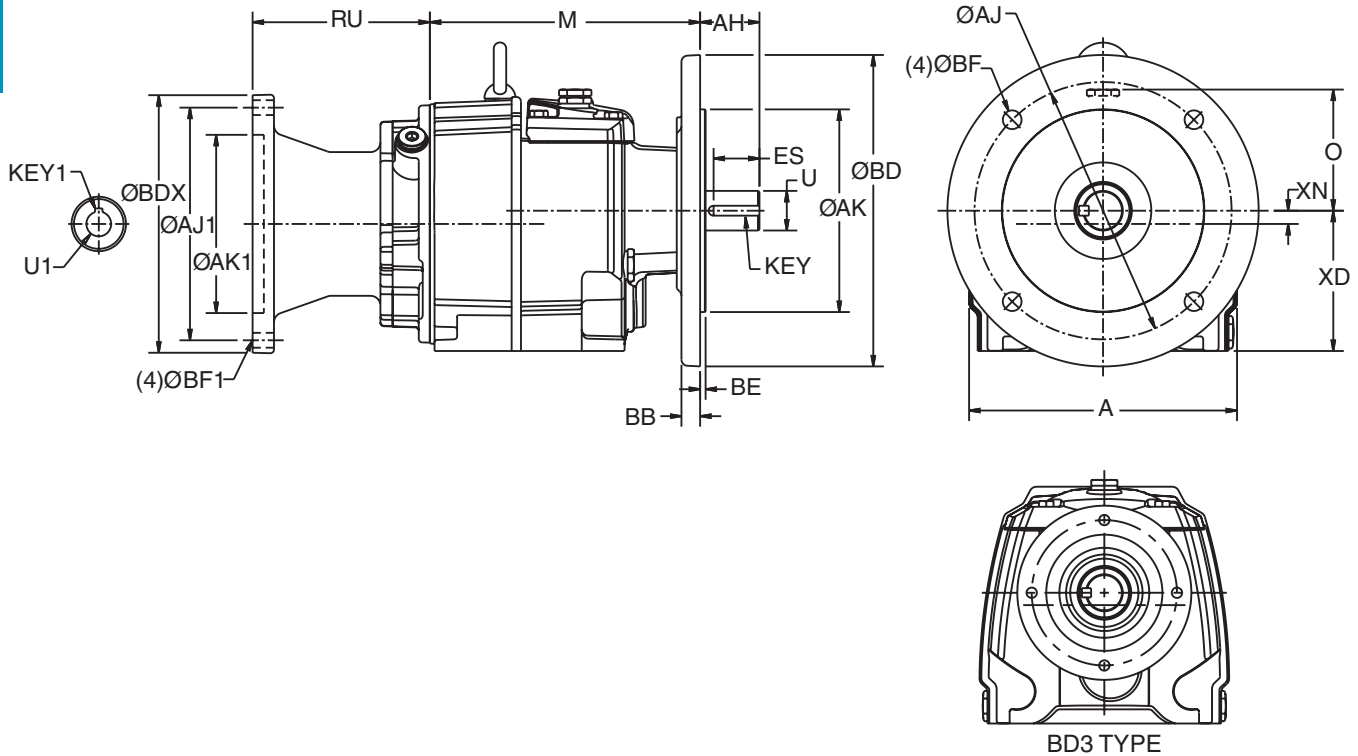
Gear Frame	M	O	U ³	AH	ES	XN	Key
3012	4.21	3.25	0.63	2.06	1.48	0.28	3/16 Sq.
3013	5.00	3.25	0.63	2.06	1.48	0.28	3/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
56C	4.50	5.88	0.12	6.50	0.39	3/8-16
BS	3.74	4.53	0.12	5.51	0.31	0.35
BD1	3.15	3.94	0.10	4.72	0.28	0.28
BD2	4.33	5.12	0.12	6.30	0.31	0.35
BD3	5.12	6.50	0.12	7.87	0.31	0.35

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	3.33	0.44	4.50	6.50	0.625	3/16 Sq.
140TC ¹	5.875	3.33	0.44	4.50	6.50	0.875	3/16 Sq.

¹ Not available on ratios 31.5 to 45:1 in 3012. Use 3013 for 35.5 to 45:1. ³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".
² All rough casting dimensions may vary by .25" due to casting variations.

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
31	6.77	6.83	3.06	1.00	1.50	1.16	3.54	0.33	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	5.12	6.50	0.14	7.87	0.47	0.47
BD1	4.33	5.12	0.14	6.29	0.39	0.35
BD2	3.74	4.53	0.14	5.50	0.39	0.35
BD3	3.15	3.94	0.10	4.72	0.39	0.28

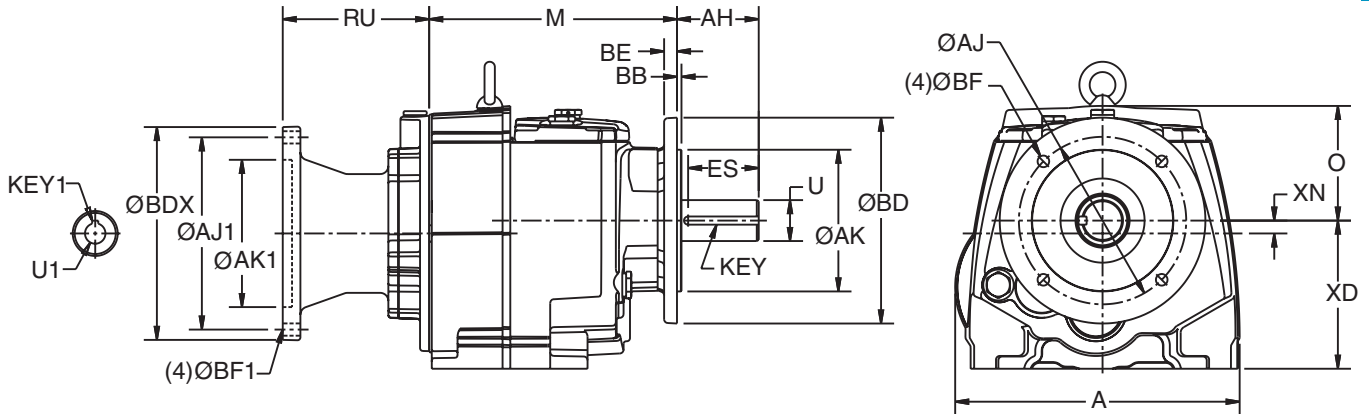
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.88	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.88	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC ⁴	7.25	6.20	0.57	8.50	9.00	1.125	1/4 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
32	8.70	7.58	3.50	1.25	2.50	2.16	4.53	0.39	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47
BD2	4.33	5.12	0.14	6.29	0.39	0.35

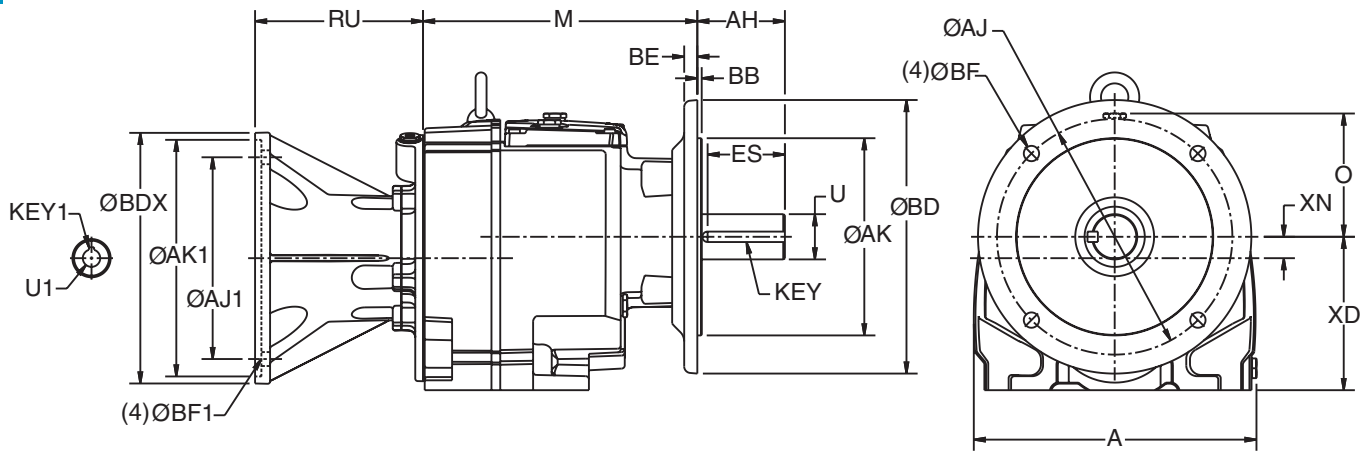
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.48	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.48	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.20	0.57	8.50	9.00	1.125	1/4 Sq.
210TC ⁴	7.250	6.20	0.57	8.50	9.00	1.375	5/16 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
3362,3363	10.16	9.86	4.43	1.50	3.00	2.56	5.51	0.77	3/4 Sq.
3372,3373	10.16	9.86	4.43	1.63	3.15	2.78	5.51	0.77	3/4 Sq.

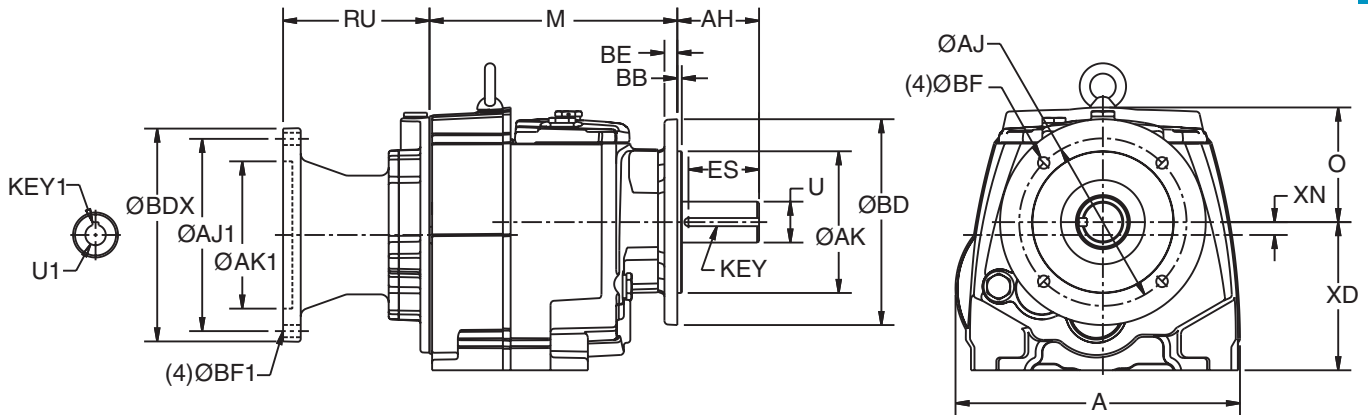
Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.80	0.47	0.55
BD1	7.09	8.46	0.16	9.83	0.47	0.55
BD2	5.12	6.50	0.14	7.86	0.47	0.47

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.32	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	5.875	4.32	0.44	4.50	6.50	0.875	3/16 Sq.
180TC	7.250	6.04	0.57	8.50	9.00	1.125	1/4 Sq.
210TC	7.250	6.04	0.57	8.50	9.00	1.375	5/16 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
34	11.97	10.63	4.80	2.13	3.50	3.06	7.09	1.02	1/2 Sq.

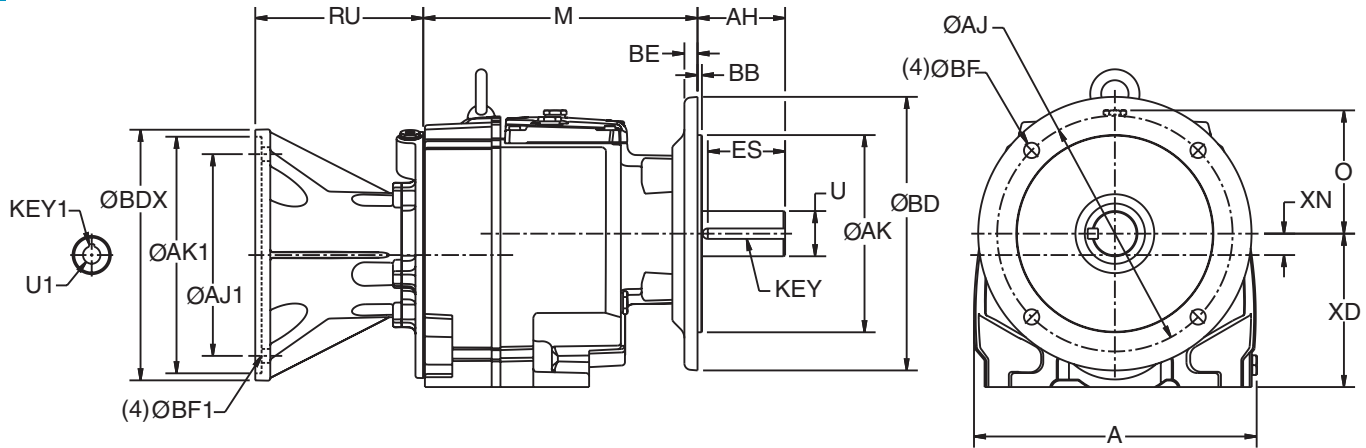
Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.50	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	5.875	4.50	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	7.250	6.22	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.250	6.22	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.250	7.43	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC ⁴	9.000	8.40	0.57	10.50	11.25	1.875	1/2 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
35	14.19	12.40	5.98	2.375	4.72	4.19	8.86	1.14	5/8 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

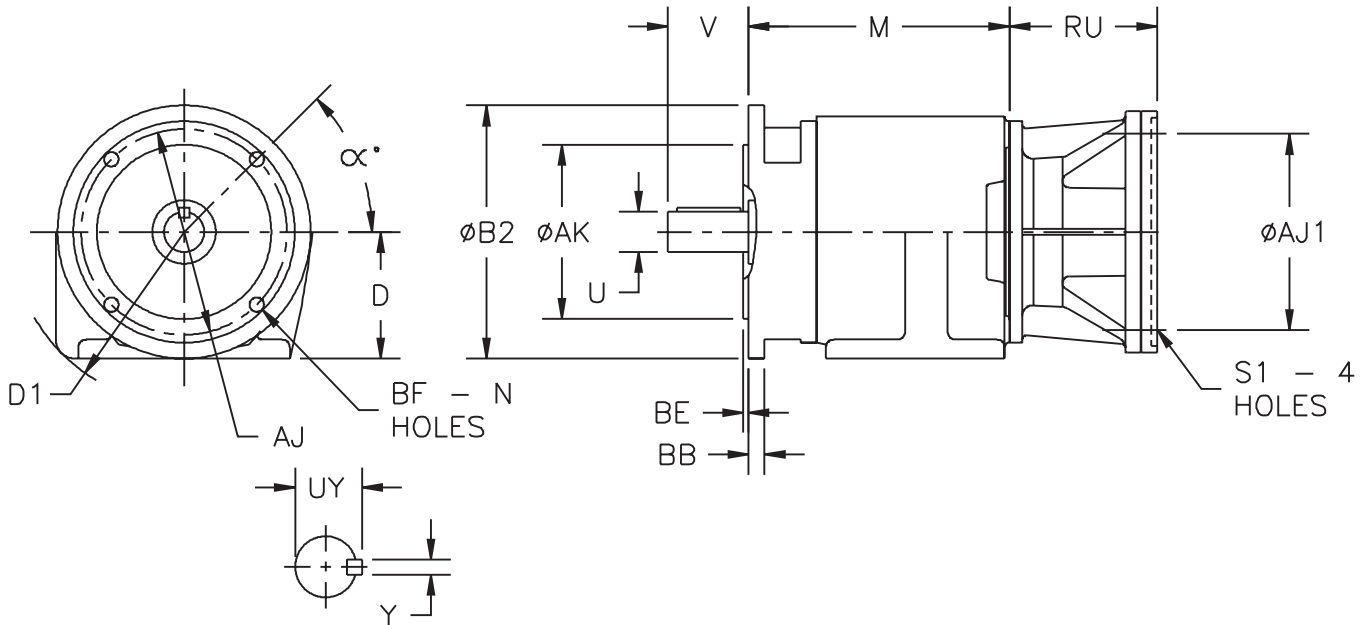
Motor Frame	AJ1	RU	BF1	AK1	BDX	U1	Key1
56C	5.875	4.14	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	5.875	4.14	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	7.250	5.87	0.57	8.50	9.00	1.125	1/4 Sq.
213/215TC	7.250	5.87	0.57	8.50	9.00	1.375	5/16 Sq.
254/256TC	7.250	7.09	0.57	8.50	9.00	1.625	3/8 Sq.
284/286TC	9.000	8.06	0.57	10.50	11.25	1.875	1/2 Sq.
324/326TC ⁴	11.000	8.79	0.69	12.50	13.38	2.125	1/2 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

⁴ Permitted in vertical mounting only.

BS Flange Mounted - Double/Triple Reduction



Gear Frame	B2	D	D'	M	N	U ³	V	Y	AJ	AK	BB	BE	BF	UY	μ	Weight Lb.
26	21.65	8.86	12.13	14.92	8	2.875	5.75	3/4	19.685	17.717	0.748	0.197	0.700	3.200	22.5°	260
27	21.65	9.84	13.94	16.30	8	3.5	7	7/8	19.685	17.717	0.787	0.197	0.700	3.882	22.5°	352
28	25.98	12.40	16.70	19.88	8	4	8	1	23.622	21.654	0.945	0.236	0.940	4.436	22.5°	64

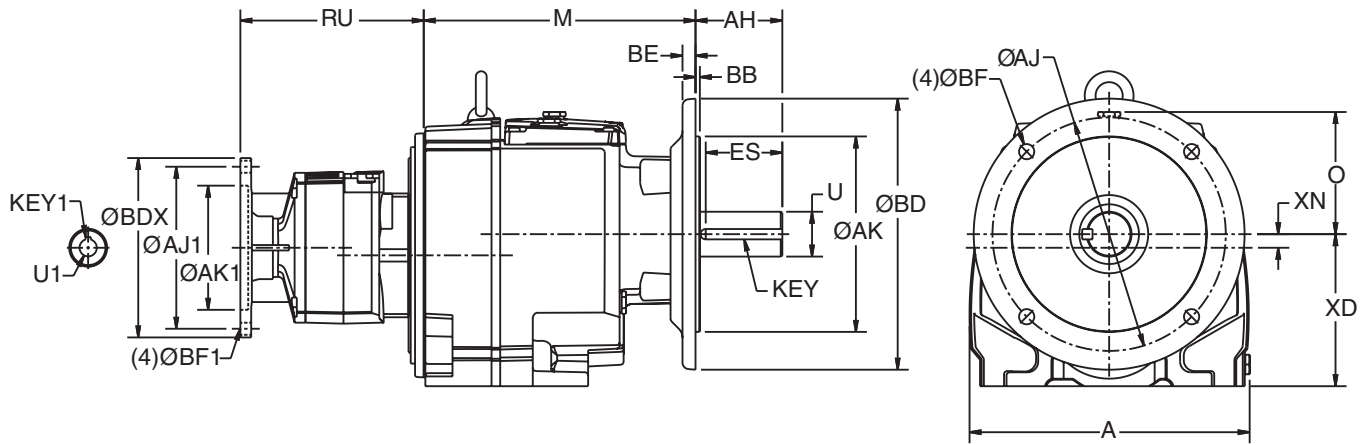
Motor Frame	RU			S1	AJ1
	N26	N27	N28		
182 - 184TC	8.18	8.18	-	0.500	7.250
213 - 215TC	8.18	8.18	7.91	0.500	7.250
254 - 256TC	8.18	8.18	7.91	0.500	7.250
284 - 286TC	9.15	9.15	8.88	0.500	9.000
324 - 326TC	9.61	9.61	9.61	0.625	11.000

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Combined Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
3254,3255	8.70	7.58	3.50	1.25	2.50	2.16	4.53	0.12	1/4 Sq.
3374,3375	10.16	9.86	4.43	1.63	3.15	2.78	5.51	0.49	3/8 Sq.

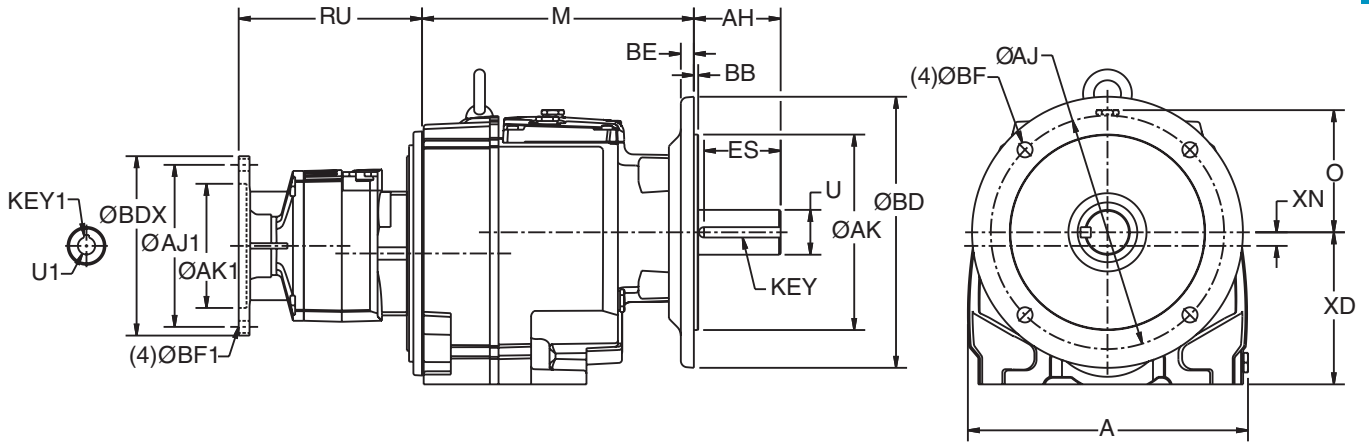
Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

Motor Frame	RU	AJ1	BF1	AK1	BDX	U1	Key1
56C	7.79	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
140TC	7.79	5.875	0.44	4.50	6.50	0.875	3/16 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Combined Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
34	11.97	10.63	4.80	2.13	3.50	3.06	7.09	1.35	1/2 Sq.

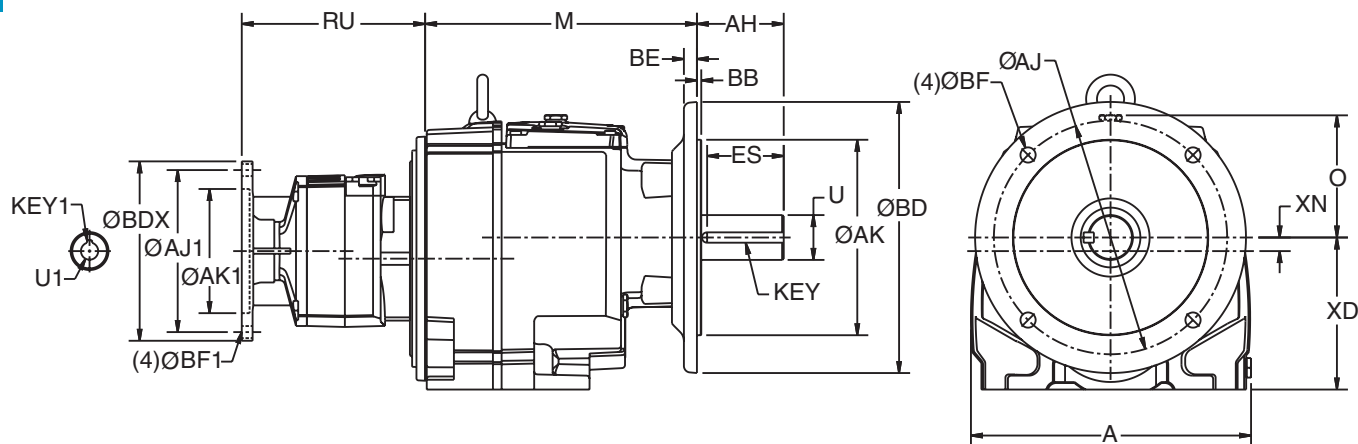
Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

Motor Frame	RU	AJ1	BF1	AK1	BDX	U1	Key1
56C	11.46	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	11.46	5.875	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	13.18	7.25	0.57	8.50	9.00	1.125	1/4 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Combined Reduction



Gear Frame	A	M	O	U ³	AH	ES	XD	XN	Key
35	14.19	12.40	5.98	2.375	4.72	4.19	8.86	1.47	5/8 Sq.

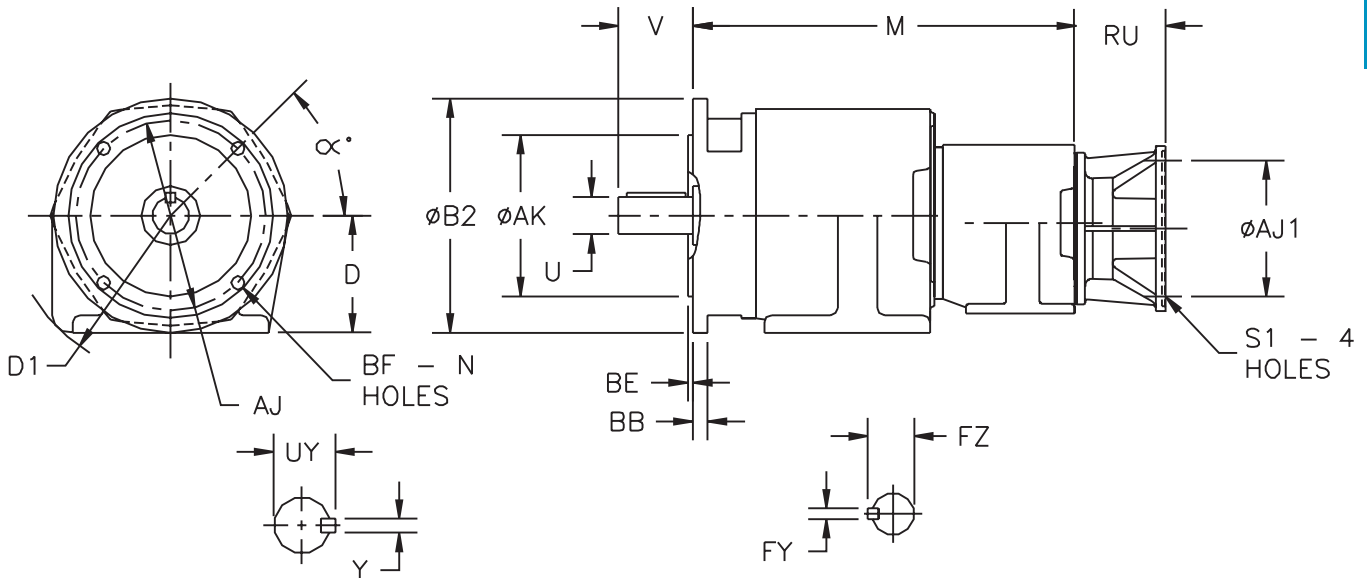
Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

Motor Frame	RU	AJ1	BF1	AK1	BDX	U1	Key1
56C	11.11	5.875	0.44	4.50	6.50	0.625	3/16 Sq.
143/145TC	11.11	5.875	0.44	4.50	6.50	0.875	3/16 Sq.
182/184TC	12.83	7.25	0.57	8.50	9.00	1.125	1/4 Sq.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

BS Flange Mounted - Combined Reduction



Gear Frame	B2	D	D ¹	M	N	U ³	V	Y	AJ	AK	BB	BE	BF	UY	μ	Weight Lb.
26	21.65	8.86	12.13	24.75	8	2.875	5.75	3/4	19.685	17.717	0.748	0.197	0.70	3.2	22.5°	260
27	21.65	9.84	13.94	24.75	8	3.5	7	7/8	19.685	17.717	0.787	0.197	0.70	3.882	22.5°	352
28	25.98	12.40	16.70	35.47	8	4	8	1	23.622	21.654	0.945	0.236	0.94	4.436	22.5°	649

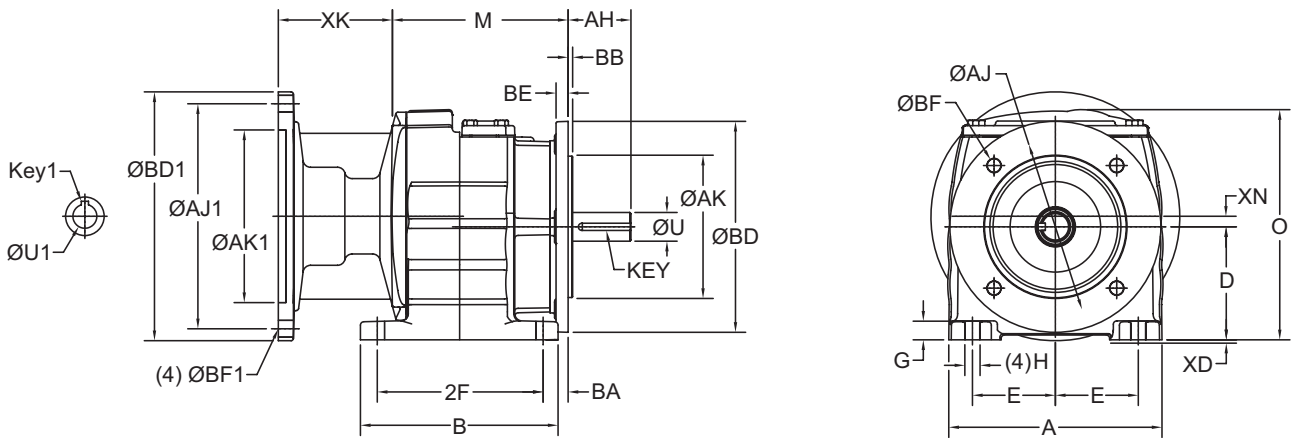
Motor Frame	RU			S1	AJ1
	N26	N27	N28		
56C	4.32	4.32	4.50	0.375	5.875
143 - 145TC	4.32	4.32	4.50	0.375	5.875
182 - 184TC	6.04	6.04	6.22	0.500	7.250
213 - 215TC	6.04	6.04	6.22	0.500	7.250
254 - 256TC	-	-	7.43	0.500	7.250

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required. Shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000";-.0005" up to 1.5" diameter inclusive. Larger diameters: +.000";-.001".

Foot Flange Mounted - Double Reduction



Gear Frame	A	B	D ¹	E	2F	G	H	O	U ³	ES	M	XN	Key
3012A	5.62	5.16	2.95	2.165	4.33	.47	.35	6.476	0.750	1.25	4.81	.276	3/16 Sq

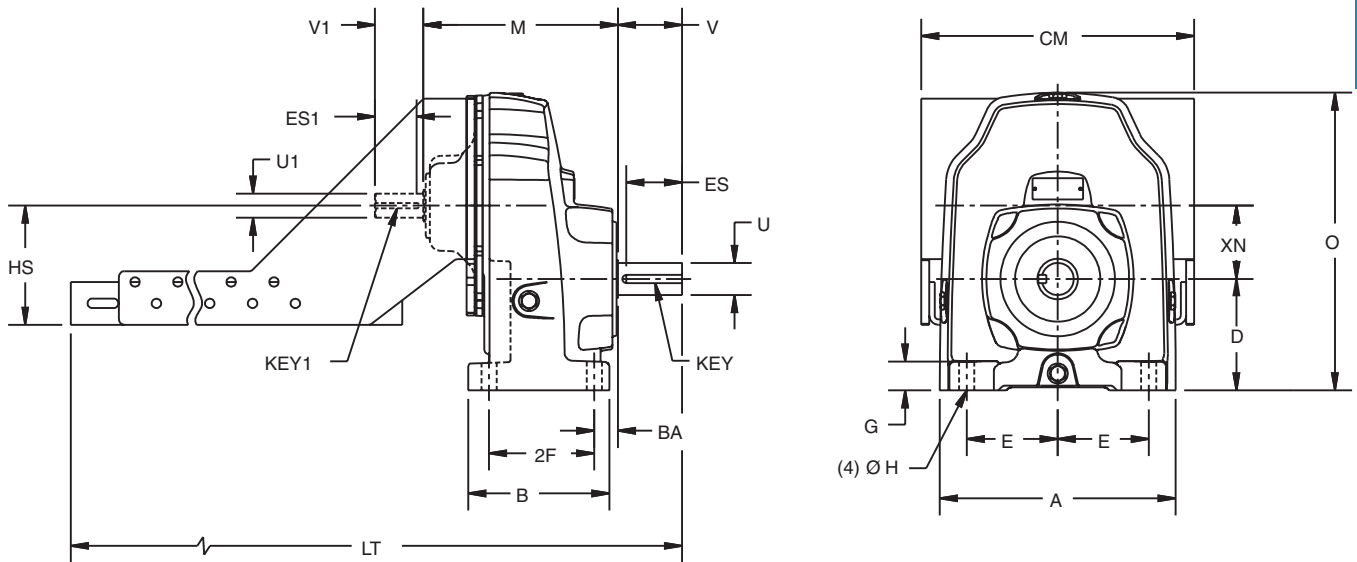
Flange Type	AH	AJ	AK	BA	BB	BD	BE	BF
BD1	1.52	3.94	3.15	.65	.12	4.72	.28	.28
BS	1.52	4.53	2.74	.65	.12	5.51	.31	.35

Motor Frame	AJ1	AK1	BDX	BF1	RU	U1	Key1
56C	5.875	4.50	6.50	0.44	3.33	.625	3/16 Sq
143,145TC ⁴	5.875	4.50	6.50	0.44	3.33	.875	3/16 Sq

¹ Dimension "D" will never be exceeded, but may vary from value shown. ³ Shaft extension tolerance +.0000", -.0005" up to 1.5" diameter. When exact dimension is required, shims up to .03" may be required. ⁴ Not available in ratios from 31.5 through 45:1.
² All rough casting dimensions may vary by .25" due to casting variations.

Scoop Mount Reducer Foot Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	M	O	U ³	U1 ³	V	V1	BA	2F	ES	ES1	XN	Key	Key1
34	11.02	6.59	5.20	4.25	1.34	0.71	9.10	13.90	1.50	1.13	3.00	2.25	1.10	4.92	2.56	1.94	3.43	3/8 Sq.	1/4 Sq.

Motor Frame					
182/184T			213/215T		
CM	HS	LT	CM	HS	LT
12.75	5.56	34.98	12.75	5.56	35.38

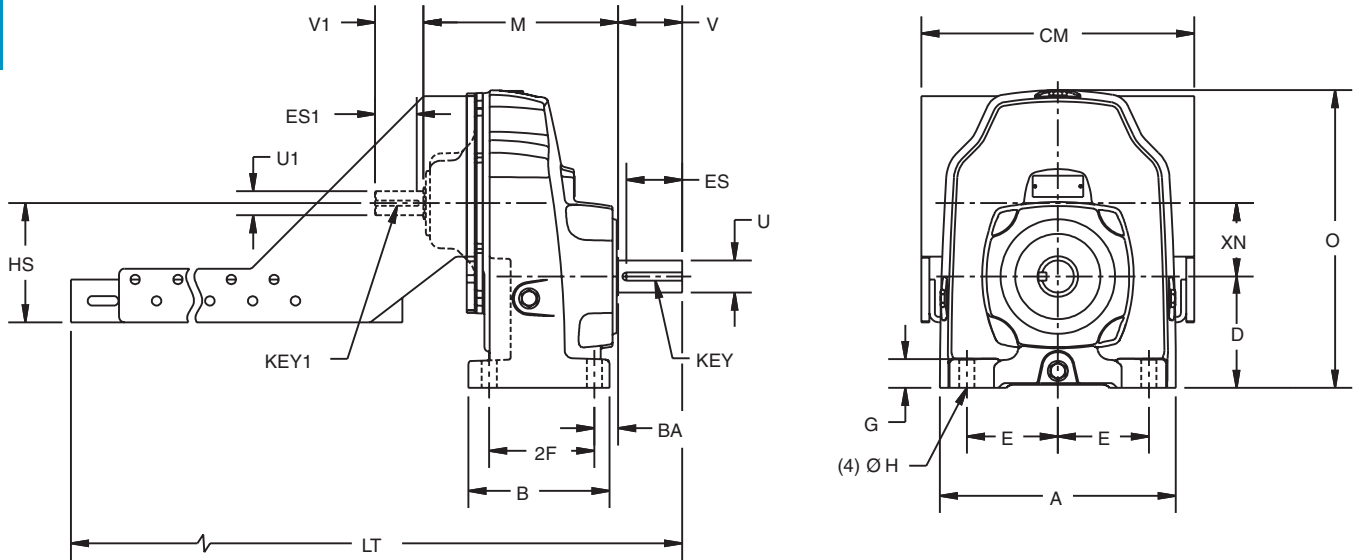
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Scoop Mount Reducer Foot Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	M	O	U ³	U1 ³	V	V1	BA	2F	ES	ES1	XN	Key	Key1
35	13.65	7.76	6.30	5.12	1.61	0.79	10.38	17.37	1.75	1.38	3.50	2.75	1.18	6.30	3.06	2.31	4.33	3/8 Sq.	5/16 Sq.

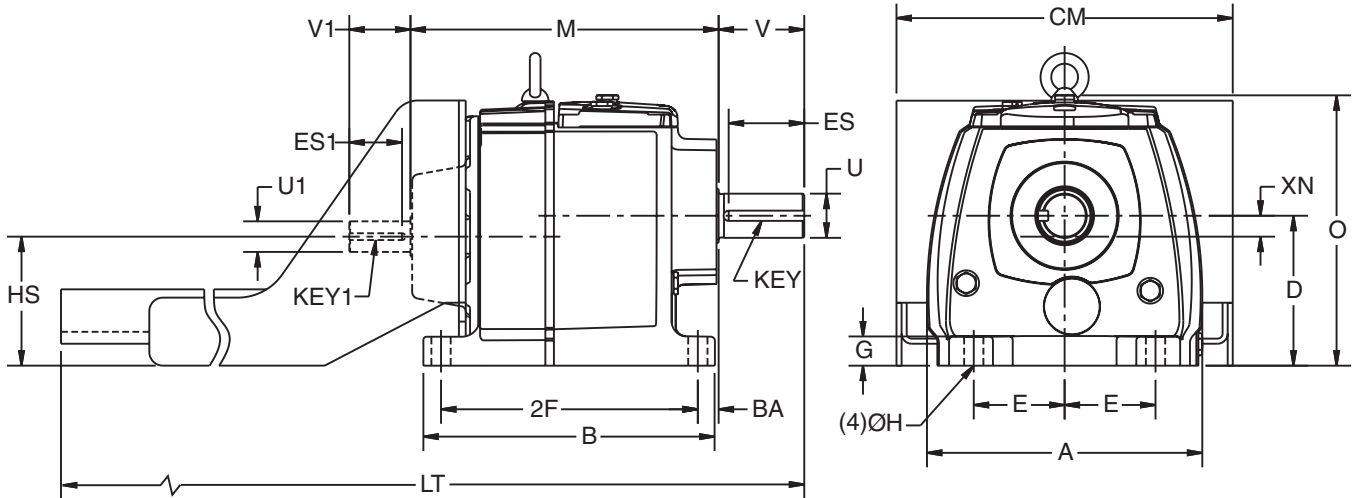
Motor Frame								
213/215T			254/256T			284T/286T		
CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	37.28	17.00	7.44	41.70	17.00	7.44	41.83

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	M	O	U ³	U1 ³	V	V1	BA	2F	ES	ES1	XN	Key	Key1
32	8.72	8.50	4.53	2.66	0.84	0.55	9.11	7.97	1.25	0.63	2.50	1.25	0.51	7.56	2.16	1.00	0.39	1/4 Sq.	3/16 Sq.
3362,3363	10.13	10.72	5.51	3.35	1.07	0.71	11.34	9.94	1.50	1.13	3.00	2.25	0.77	9.45	2.56	1.94	0.77	3/8 Sq.	1/4 Sq.
3372,3373	10.13	10.72	5.51	3.35	1.07	0.71	11.34	9.94	1.63	1.13	3.15	2.25	0.77	9.45	2.78	1.94	0.77	3/8 Sq.	1/4 Sq.
34	11.97	10.87	7.09	4.53	1.37	0.71	12.66	11.89	2.13	1.13	3.50	2.25	0.98	9.25	3.06	1.94	1.02	1/2 Sq.	1/4 Sq.

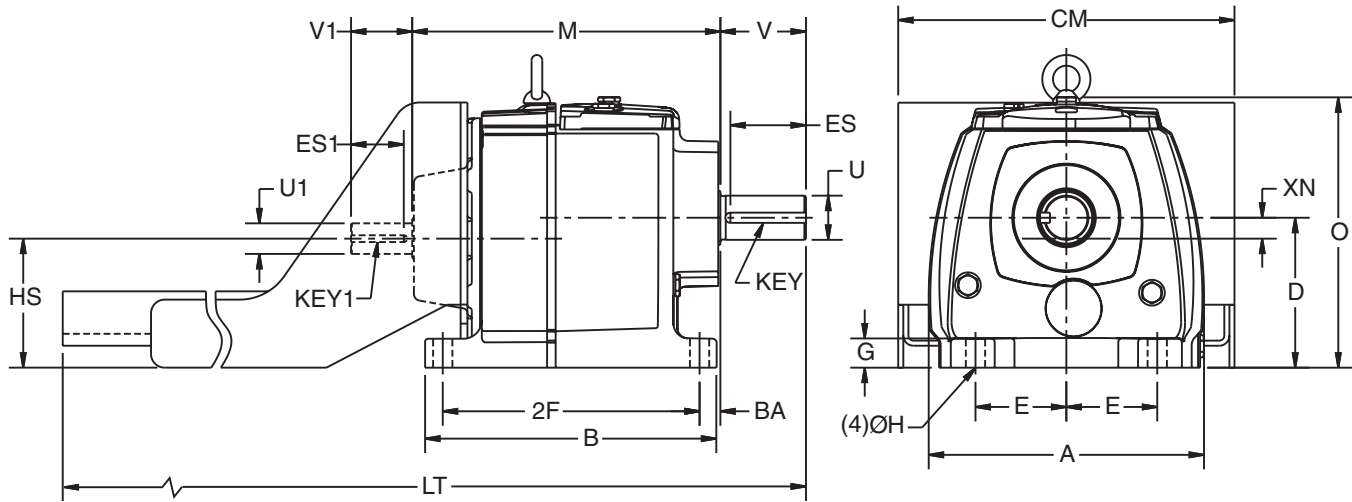
Gear Frame	Motor Frame								
	143/145T			182/184T			213/215T		
	CM	HS	LT	CM	HS	LT	CM	HS	LT
32	11.38	3.75	27.97	-	-	-	-	-	-
3362,3363	12.38	4.74	37.31	12.38	4.74	37.31	-	-	-
3372,3373	12.38	4.74	37.46	12.38	4.74	37.46	-	-	-
34	12.75	5.56	40.04	12.75	5.56	39.04	12.75	5.56	39.44

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	M	O	U ³	U1 ³	V	V1	BA	2F	ES	ES1	XN	Key	Key1
35	14.19	12.89	8.86	5.51	1.73	0.87	14.95	14.84	2.38	1.38	4.72	2.75	1.10	11.02	4.19	2.31	1.14	5/8 Sq.	5/16 Sq.

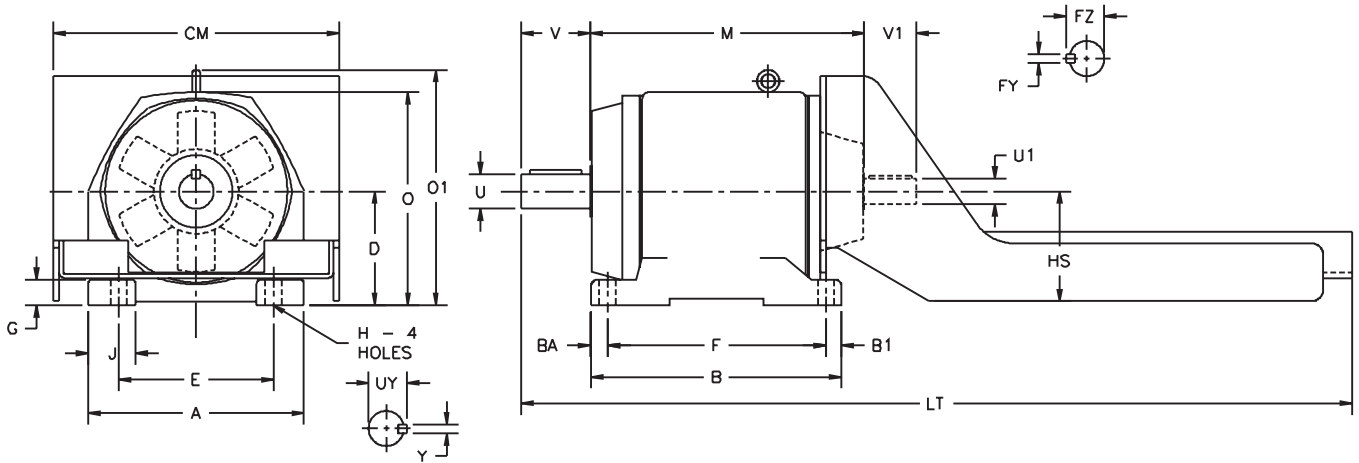
Motor Frame														
143/145T			182/184T			213/215T			254/256T			284/286T		
CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	44.08	12.75	5.56	43.08	12.75	5.56	43.41	17.00	7.44	47.83	17.00	7.44	47.96

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	B1	D	E	F	G	H	J	M	O	O1
26	17.13	15.94	0.98	8.86	13.98	13.98	1.97	0.94	3.74	16.93	16.78	18.9
27	19.69	17.72	1.18	9.84	16.54	15.35	2.17	1.02	4.33	18.3	18.5	21.06
28	23.62	21.65	1.38	12.4	20.08	18.9	2.56	1.02	4.92	22.25	23.47	25.59
29	25.98	26.38	1.77	14.76	19.69	22.83	2.95	1.38	6.3	25.98	27.6	29.72

Gear Frame	U ³	U1 ³	V	V1	Y	FY	FZ	UY	Weight - Lb.					
									182/184T	213/215T	254/256T	284/286T	324/326T	364/365T
26	2.875	1.875	5.75	3.75	3/4	1/2	2.091	3.2	396	396	420	420	498	
27	3.5	1.875	7	3.75	7/8	1/2	2.091	3.882	405	405	425	425	503	
28	4	2.375	8	4.75	1	5/8	2.646	4.436			892	892	916	916
29	4.75	2.375	9.5	4.75	1 1/4	5/8	2.646	5.291			1375	1375	1400	1400

Gear Frame	Motor Frame																	
	182/184T			213/215T			254/256T			284/286T			324/326T			364/365T		
	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT
26	15	6.63	47.00	15.00	6.63	50.38	17.00	7.63	50.75	17.00	7.63	51.88	21.31	9.5	53.25			
27	15	6.63	49.50	15.00	6.63	53.00	17.00	7.63	53.38	17.00	7.63	55.88	21.31	9.5	55.88			
28							19.06	8.50	60.25	19.06	8.50	60.38	21.31	9.5	61.75	21.31	10.5	62.75
29							19.06	8.50	65.50	19.06	8.50	65.63	21.31	9.5	67	21.31	10.5	68.00

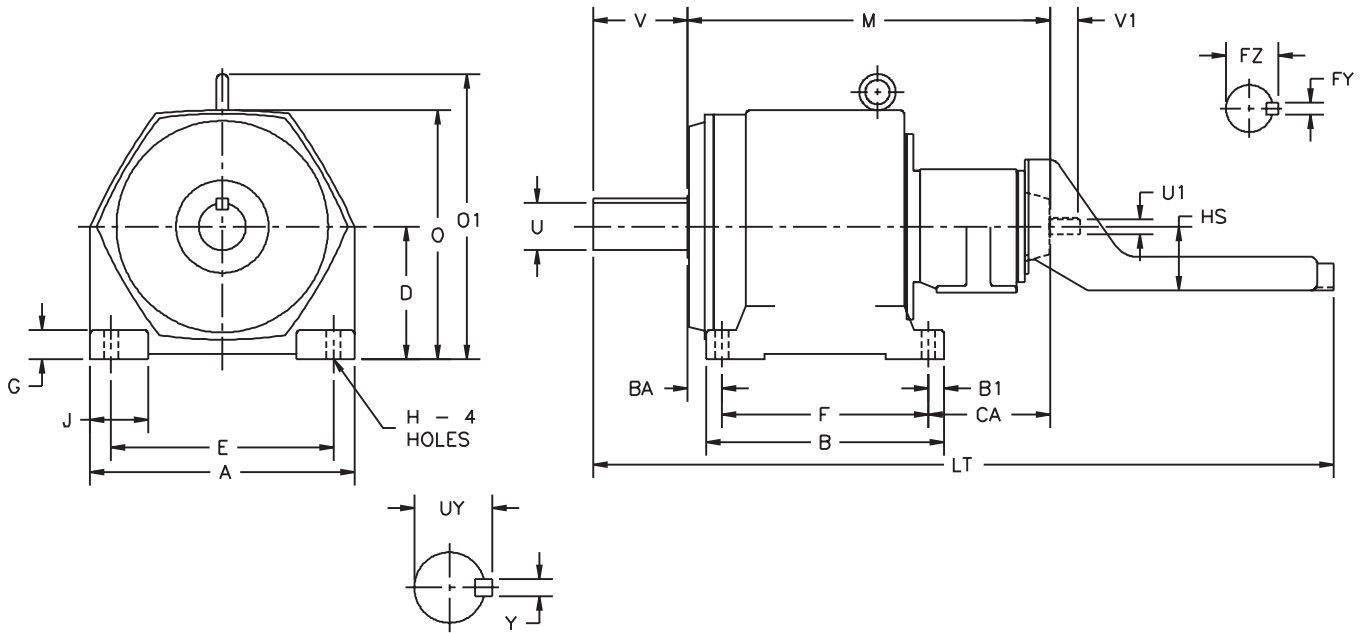
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Scoop Mount Reducer Foot Mounted - Combined Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	B1	D	E	F	G	H	J	M	O	O1	U ³	U1 ³	V	V1	Y	FY	FZ	UY	Weight Lb
26	17.13	15.94	0.98	8.86	13.98	13.98	1.97	0.94	3.74	25.80	16.78	18.9	2.875	1.125	5.75	2.25	3/4	1/4	1.236	3.2	410
27	19.69	17.72	1.18	9.84	16.54	15.35	2.17	1.02	4.33	27.19	18.5	21.06	3.5	1.125	7	2.25	7/8	1/4	1.236	3.882	465
28	23.62	21.65	1.38	12.4	20.08	18.9	2.56	1.02	4.92	31.56	23.47	25.59	4	1.125	8	2.25	1	1/4	1.236	4.436	825
29	25.98	26.38	1.77	14.76	19.69	22.83	2.95	1.38	6.30	35.30	27.6	29.72	4.75	1.125	9.5	2.25	1 1/4	1/4	1.236	5.291	121

Size	Motor Frame					
	143/145T		182/184T		213/215T	
	HS	LT	HS	LT	HS	LT
26	4.75	51.00	4.75	51.25	-	-
27	4.75	53.62	4.75	53.87	5.56	59.20
28	5.56	63.03	5.56	62.03	5.56	62.16
29	5.56	68.16	5.56	67.16	5.56	68.41

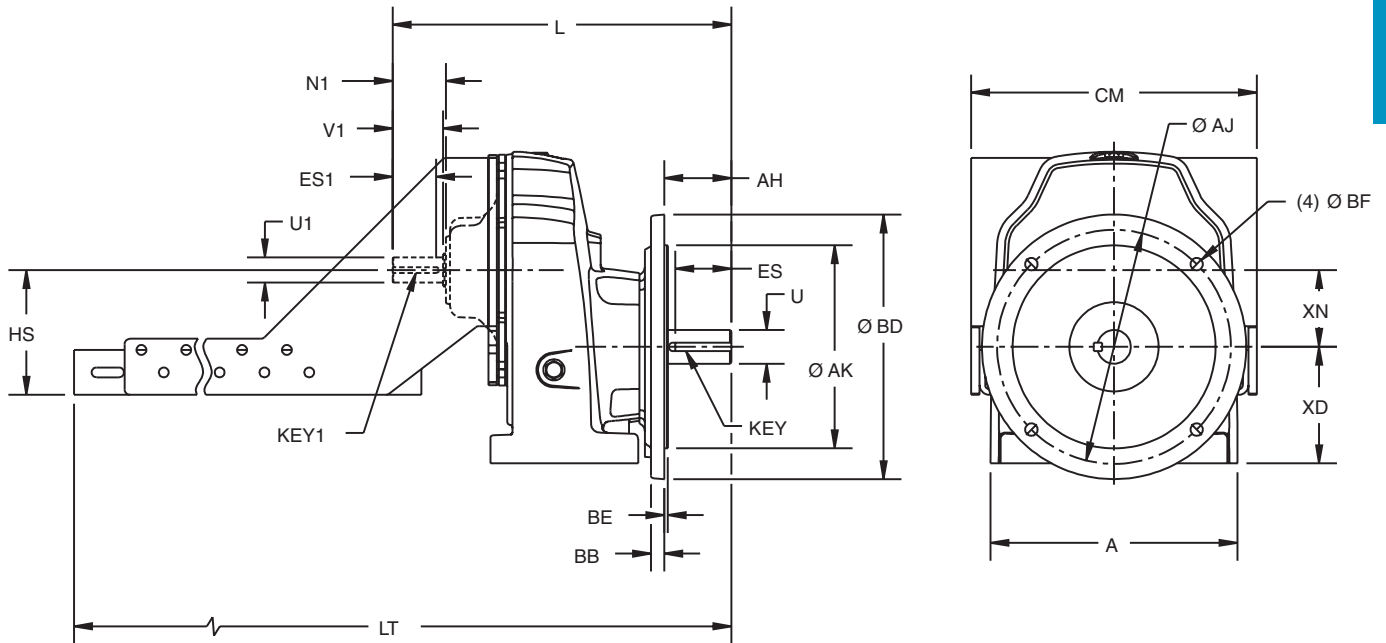
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Scoop Mount Reducer

Flange Mounted - Single Reduction



Gear Frame	A	L	N1	U ³	U1 ³	V1	AH	ES	ES1	XD	XN	Key	Key1
34	11.02	15.12	2.37	1.50	1.13	2.25	3.00	2.56	1.94	5.20	3.43	3/8 Sq.	1/4 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

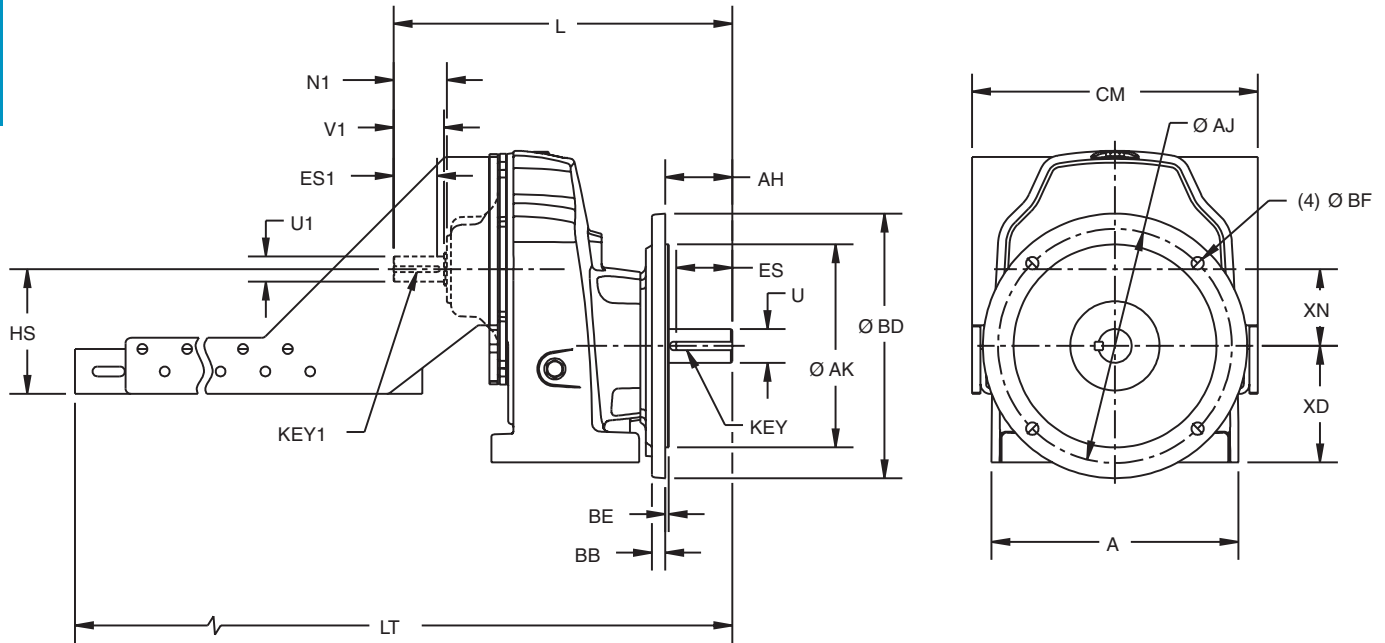
Motor Frame					
182/184T			213/215T		
CM	HS	LT	CM	HS	LT
12.75	5.56	35.75	12.75	5.56	36.05

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Scoop Mount Reducer Flange Mounted - Single Reduction

CbN
SERIES **2000**
3000



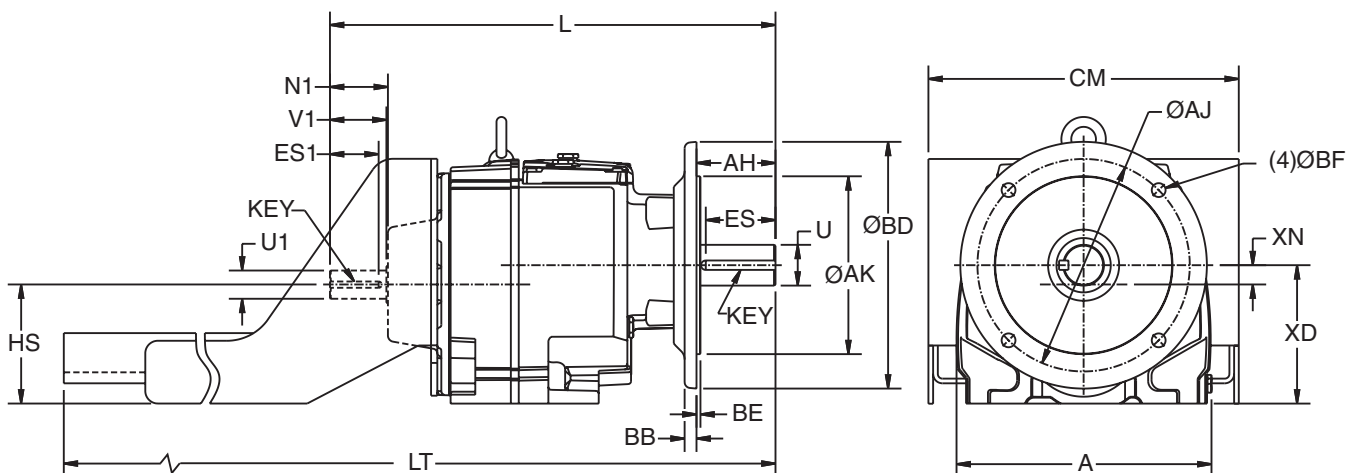
Gear Frame	A	L	N1	U ³	U1 ³	V1	AH	ES	ES1	XD	XN	Key	Key1
35	13.65	17.90	2.92	1.75	1.38	2.75	3.50	3.06	2.31	6.30	4.33	3/8 Sq.	5/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

Motor Frame								
213/215T			254/256T			284/286T		
CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	38.85	17.00	7.44	43.27	17.00	7.44	43.40

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".



Gear Frame	A	L	N1	U ³	U1 ³	V1	AH	ES	ES1	XD	XN	Key	Key1
32	8.70	13.25	1.29	1.25	0.63	1.25	2.50	2.16	1.00	4.53	0.39	1/4 Sq.	3/16 Sq.
3362,3363	10.16	17.61	2.31	1.50	1.13	2.25	3.00	2.56	1.94	5.51	0.77	3/8 Sq.	1/4 Sq.
3372,3373	10.16	17.76	2.31	1.63	1.13	2.25	3.15	2.78	1.94	5.51	0.77	3/8 Sq.	1/4 Sq.

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

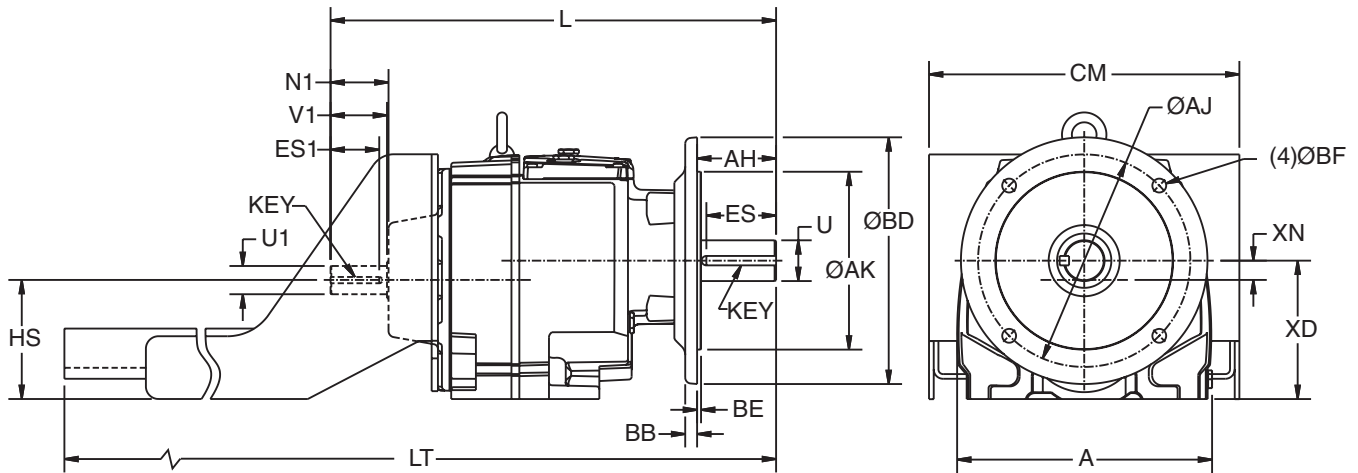
Gear Frame	Motor Frame					
	143/145T			182/184T		
	CM	HS	LT	CM	HS	LT
32	11.38	3.75	28.36	-	-	-
3362,3363	12.38	4.74	38.33	12.38	4.74	38.33
3372,3373	12.38	4.74	38.48	12.38	4.74	38.48

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Scoop Mount Reducer

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U ³	U1 ³	V1	AH	ES	ES1	XD	XN	Key	Key1
34	11.97	19.16	2.37	2.125	1.12	2.25	3.50	3.06	1.94	7.09	1.02	1/2 Sq.	1/4 Sq.

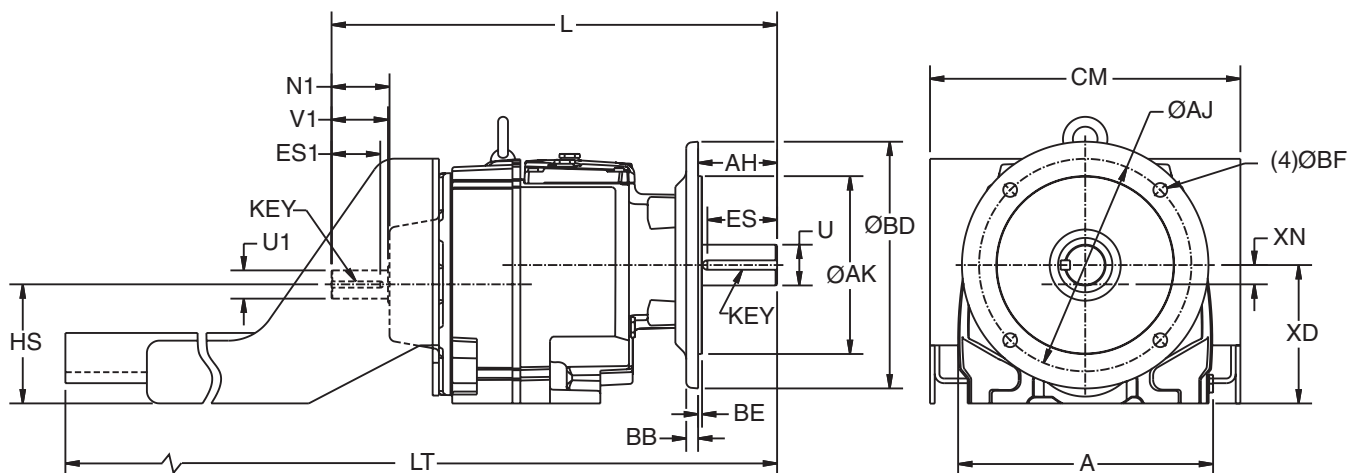
Flange Type	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55
BD2	7.09	8.46	0.16	9.83	0.59	0.55

Motor Frame								
143/145T			182/184T			213/215T		
CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	40.79	12.75	5.56	39.79	12.75	5.56	40.19

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U ³	U1 ³	V1	AH	ES	ES1	XD	XN	Key	Key1
35	14.19	23.42	2.92	2.375	1.375	2.75	4.72	4.19	2.31	8.86	1.14	5/8 Sq.	5/16 Sq.

Flange Type	AK	AJ	BB	BD	BE	BF
BS	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.84	11.81	0.20	13.78	0.71	0.71
BD2	9.06	10.43	0.20	11.81	0.71	0.55

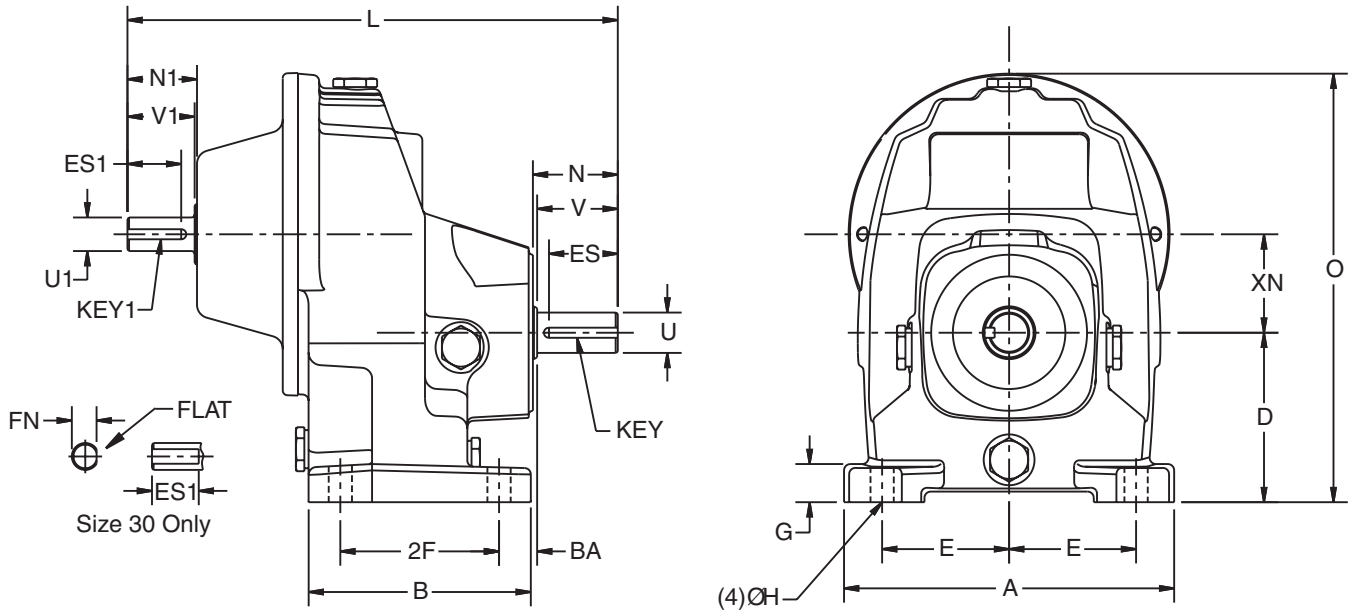
Motor Frame														
56, 143/145T			182/184T			213/215T			254/256T			284/286T		
CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT	CM	HS	LT
12.75	5.56	45.05	12.75	5.56	44.05	12.75	5.56	44.38	17.00	7.44	48.80	17.00	7.44	48.93

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer Foot Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	L	N	N1	O	U ³
30	5.90	3.54	2.95	2.46	0.49	0.35	8.77	2.14	1.12	7.07	0.625
31	6.14	4.13	3.15	2.36	0.71	0.43	9.12	1.58	1.29	7.97	0.75
32	7.28	4.48	3.54	2.76	0.77	0.55	9.74	2.08	1.29	9.67	1.00
33	9.69	5.30	4.41	3.74	1.02	0.63	12.88	2.83	2.31	11.69	1.375
34	11.02	6.59	5.20	4.25	1.34	0.71	14.35	3.06	2.37	13.90	1.500
35	13.65	7.76	6.30	5.12	1.61	0.79	16.73	3.60	2.92	17.37	1.75

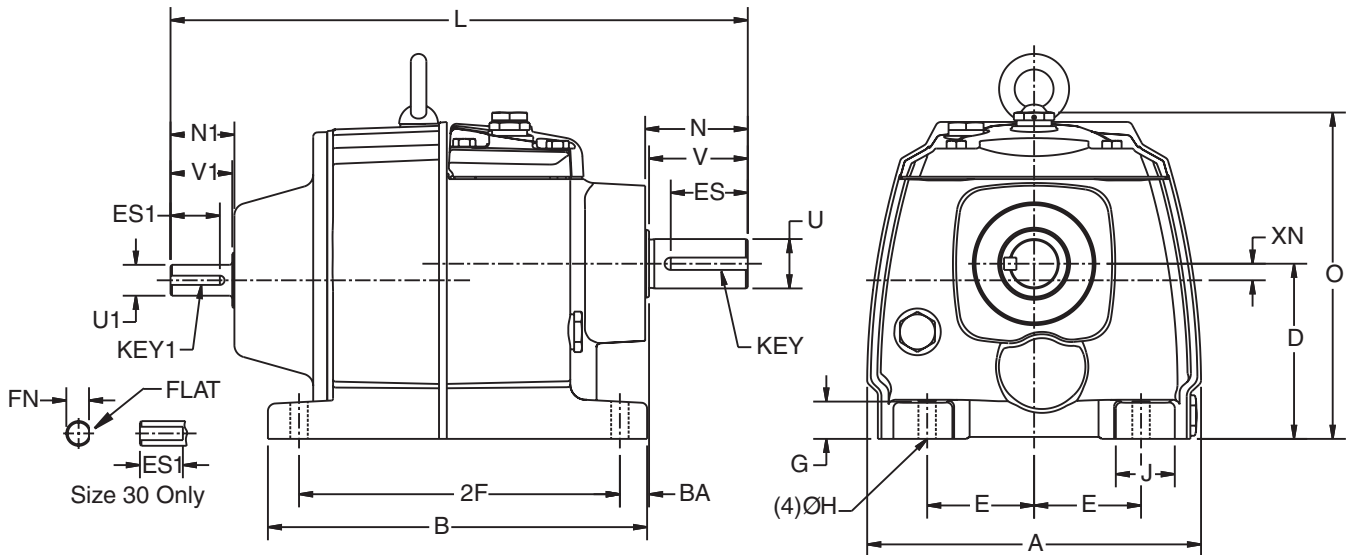
Gear Frame	U1 ³	V	V1	BA	ES	ES1	2F	FN	XN	Key	Key1
30	0.500	1.87	1.00	1.01	1.48	0.87	2.76	0.46	1.40	3/16 Sq.	N/A
31	0.625	1.50	1.25	0.71	1.28	1.00	2.95	N/A	1.83	3/16 Sq.	3/16 Sq.
32	0.625	2.00	1.25	0.75	1.56	1.00	3.15	N/A	2.48	1/4 Sq.	3/16 Sq.
33	1.125	2.75	2.25	1.08	2.40	1.94	3.94	N/A	2.76	5/16 Sq.	1/4 Sq.
34	1.125	3.00	2.25	1.10	2.56	1.94	4.92	N/A	3.43	3/8 Sq.	1/4 Sq.
35	1.375	3.50	2.75	1.18	3.06	2.31	6.30	N/A	4.33	3/8 Sq.	5/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	J	L	N	N1	O	U ³
3012	5.90	4.92	2.95	2.46	0.51	0.35	1.10	9.56	1.83	1.12	6.00	0.75
3013	5.90	5.71	2.95	2.46	0.51	0.35	1.10	10.35	1.83	1.12	6.00	0.75
31	6.76	7.68	3.54	2.17	0.75	0.35	1.38	11.69	2.08	1.29	6.60	1.00
32	8.72	8.50	4.53	2.66	0.84	0.55	2.56	12.86	2.56	1.29	7.97	1.25
3362,3363	10.13	10.72	5.51	3.35	1.07	0.71	2.56	16.59	3.08	2.31	9.94	1.50
3372,3373	10.13	10.72	5.51	3.35	1.07	0.71	2.56	16.74	3.23	2.31	9.94	1.63
34	11.97	10.87	7.09	4.53	1.37	0.71	1.81	18.41	3.58	2.37	11.89	2.13
35	14.19	12.89	8.86	5.51	1.73	0.87	3.33	22.45	4.75	2.92	14.84	2.37

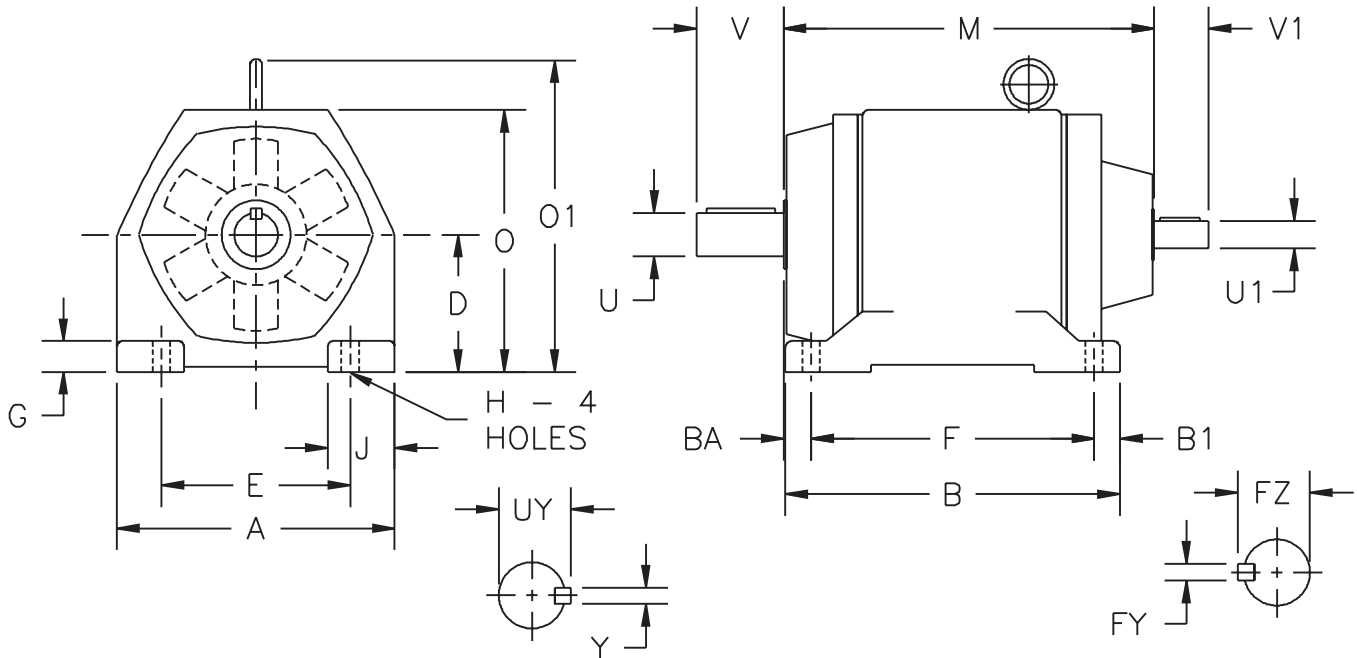
Gear Frame	U1 ³	V	V1	BA	ES	ES1	2F	FN	XN	Key	Key1
3012	0.500	1.75	1.00	0.87	1.48	0.87	4.13	0.46	0.28	3/16 Sq.	N/A
3013	0.500	1.75	1.00	0.87	1.48	0.87	4.92	0.46	0.28	3/16 Sq.	N/A
31	0.625	2.00	1.25	0.59	1.56	1.00	6.50	N/A	0.33	1/4 Sq.	3/16 Sq.
32	0.625	2.50	1.25	0.51	2.16	1.00	7.56	N/A	0.39	1/4 Sq.	3/16 Sq.
3362,3363	1.125	3.00	2.25	0.77	2.56	1.94	9.45	N/A	0.77	3/8 Sq.	1/4 Sq.
3372,3373	1.125	3.15	2.25	0.77	2.78	1.94	9.45	N/A	0.77	3/8 Sq.	1/4 Sq.
34	1.125	3.50	2.25	0.98	3.06	N/A	9.25	1.94	1.02	1/2 Sq.	1/4 Sq.
35	1.375	4.72	2.75	1.10	4.19	2.31	11.02	N/A	1.14	5/8 Sq.	5/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	B1	D ¹	E	F	G	H	J	M	O	O1	U ³	U1 ³	V	V1
26	17.13	15.94	0.98	8.86	13.98	13.98	1.97	0.94	3.74	16.93	16.78	18.9	2.875	1.875	5.75	3.75
27	19.69	17.72	1.18	9.84	16.54	15.35	2.17	1.02	4.33	18.3	18.5	21.06	3.5	1.875	7	3.75
28	23.62	21.65	1.38	12.4	20.08	18.9	2.56	1.02	4.92	22.25	23.47	25.59	4	2.375	8	4.75
29	25.98	26.38	1.77	14.76	19.69	22.83	2.95	1.38	6.30	25.98	27.6	29.72	4.75	2.375	9.5	4.75

Gear Frame	Y	BA	FY	FZ	UY	Weight Lb.
26	3/4	2.36	1/2	2.091	3.2	308
27	7/8	2.56	1/2	2.091	3.882	407
28	1	3.35	5/8	2.646	4.436	726
29	1 1/4	2.36	5/8	2.646	5.291	1210

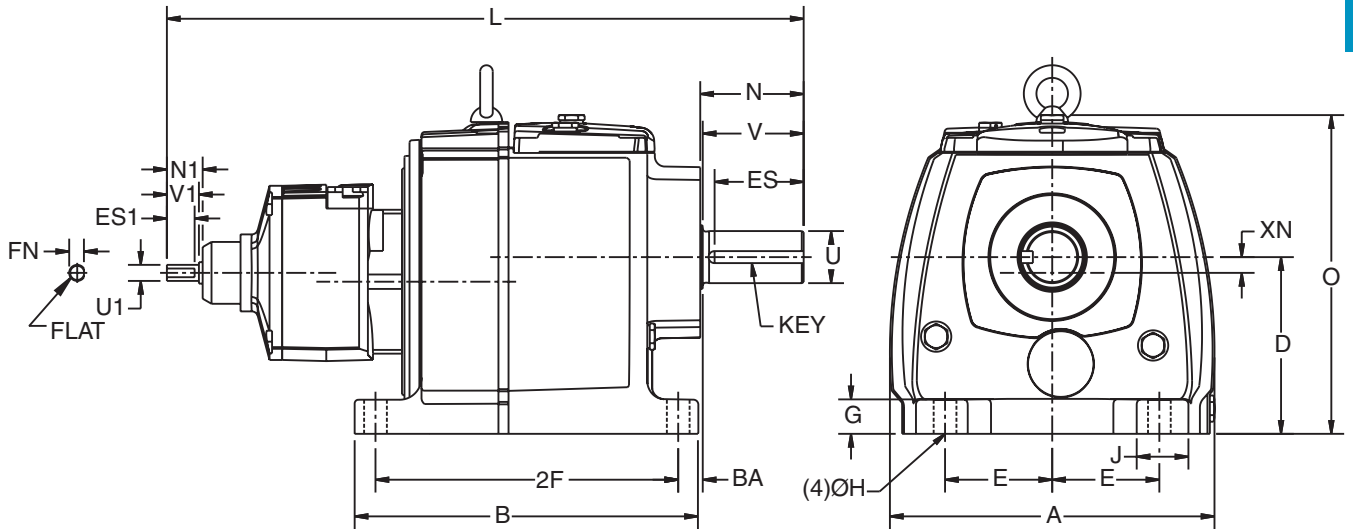
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer

Foot Mounted - Combined Reduction



Gear Frame	A	B	D ¹	E	G	H	J	L	N	N1	O
32	8.72	8.50	4.53	2.66	0.84	0.55	2.56	17.73	2.56	1.12	7.97
33	10.13	10.72	5.51	3.35	1.07	0.71	2.56	19.88	3.23	1.12	9.94

Gear Frame	U ³	U1 ³	V	V1	BA	2F	FN	ES	ES1	XN	Key
32	1.25	0.50	2.50	1.00	0.51	7.56	0.46	2.16	0.87	0.12	1/4 Sq.
33	1.625	0.50	3.15	1.00	0.77	9.45	0.46	2.78	0.87	0.49	3/8 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

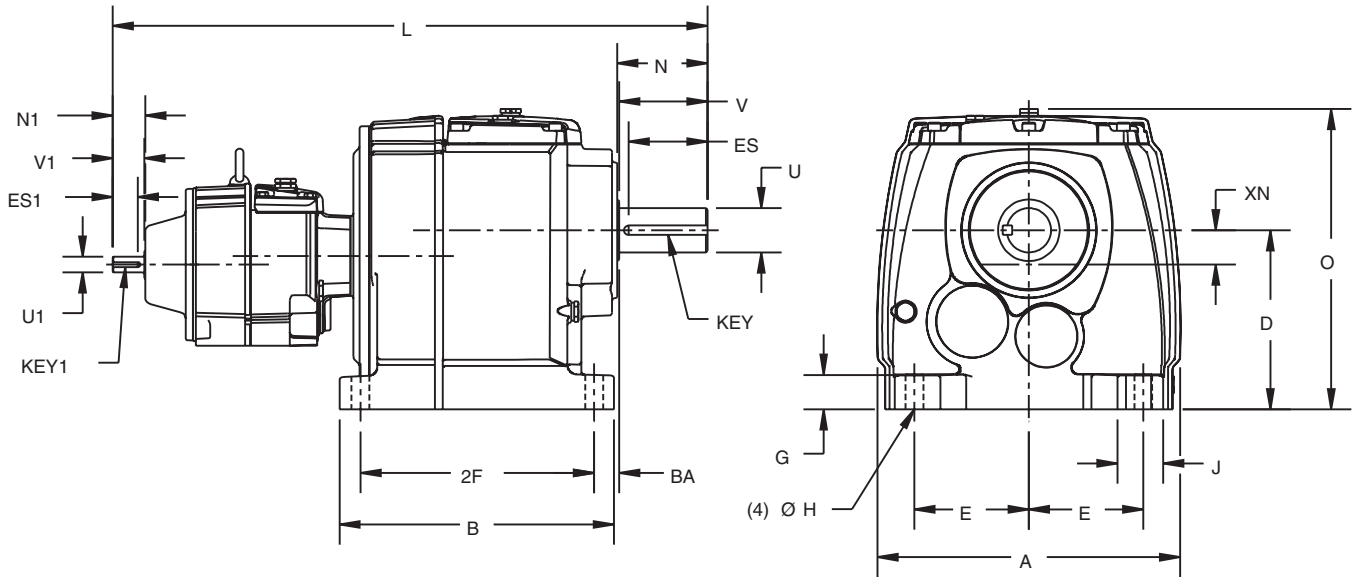
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer

Foot Mounted - Combined Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	B	D ¹	E	G	H	J	L	N	N1	O	U ³
34	11.97	10.87	7.09	4.53	1.37	0.71	1.81	23.54	3.58	1.29	11.89	2.125

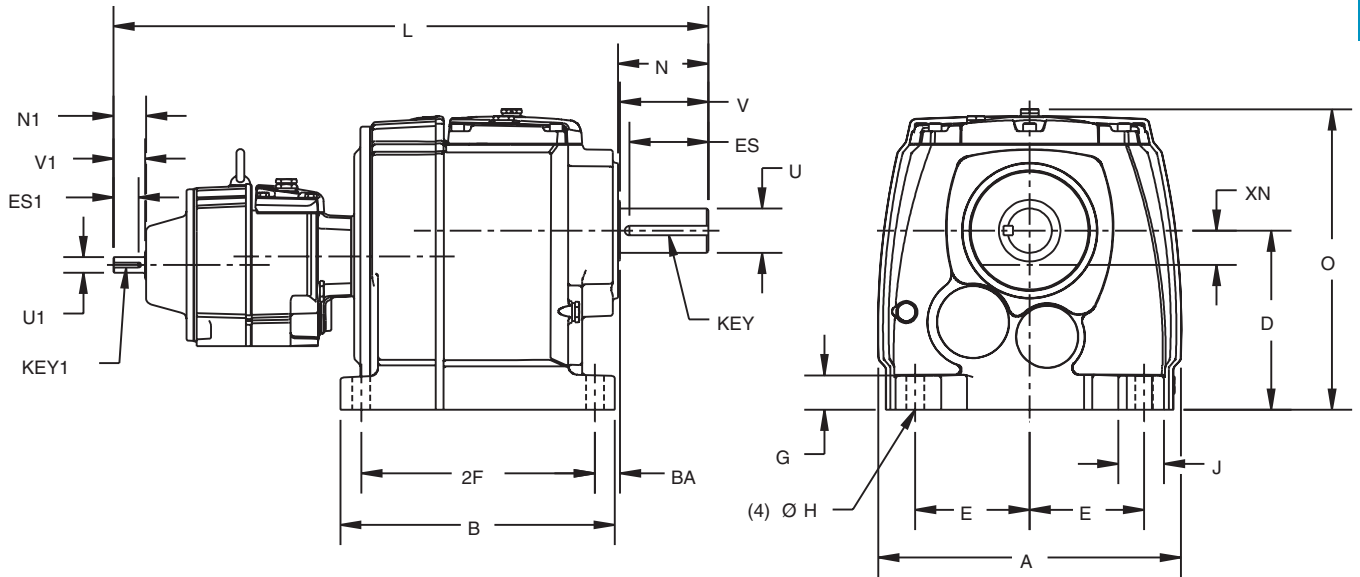
Gear Frame	U1 ³	V	V1	BA	2F	ES	ES1	XN	Key	Key1
34	0.625	3.50	1.25	0.98	9.25	3.06	1.00	1.35	1/2 Sq.	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer Foot Mounted - Combined Reduction



Gear Frame	A	B	D ¹	E	G	H	J	L	N	N1	O
35	14.19	12.89	8.86	5.51	1.73	0.87	3.33	25.95	4.81	1.29	14.84

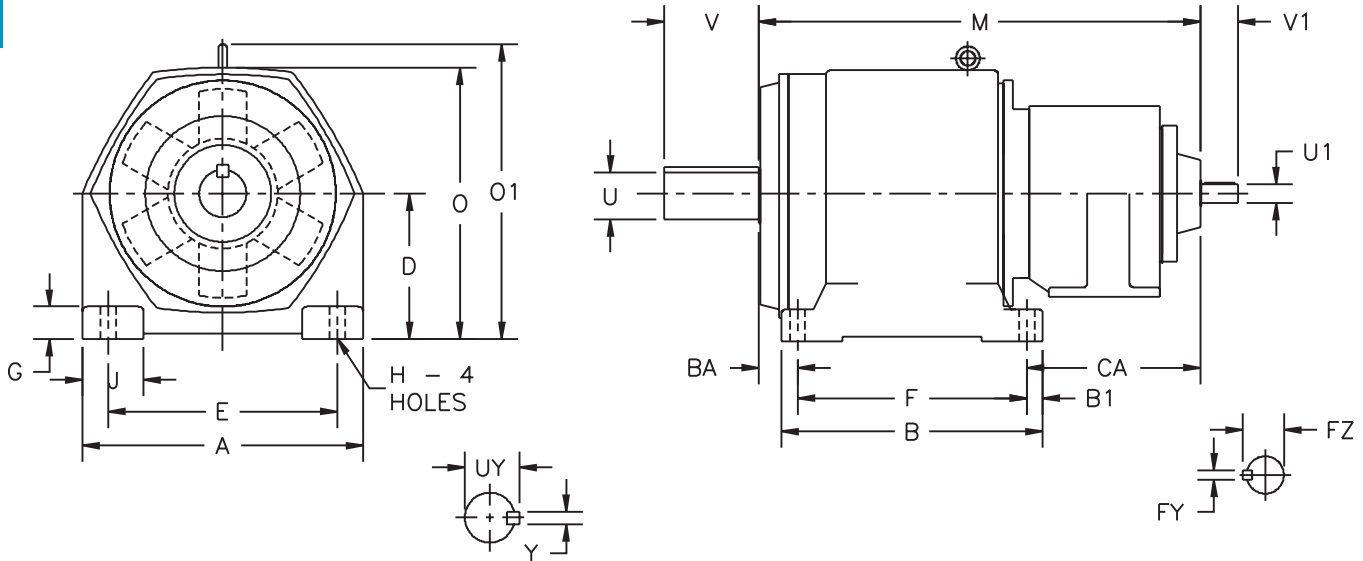
Gear Frame	U ³	U1 ³	V	V1	BA	2F	ES	ES1	XN	Key	Key1
35	2.375	0.625	4.72	1.25	1.10	11.02	4.19	1.00	1.47	5/8 Sq.	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer Foot Mounted - Combined Reduction



Gear Frame	A	B	B1	D ¹	E	F	G	H	J	M	O	O1	U ³	U1 ³	V	V1
26	17.13	15.94	0.98	8.86	13.98	13.98	1.97	0.94	3.74	25.80	16.78	18.9	2.875	1.125	5.75	2.25
27	19.69	17.72	1.18	9.84	16.54	15.35	2.17	1.02	4.33	27.19	18.5	21.06	3.5	1.125	7	2.25
28	23.62	21.65	1.38	12.4	20.08	18.9	2.56	1.02	4.92	31.56	23.47	25.59	4	1.125	8	2.25
29	25.98	26.38	1.77	14.76	19.69	22.83	2.95	1.38	6.30	35.30	27.6	29.72	4.75	1.125	9.5	2.25

Gear Frame	Y	BA	CA	FY	FZ	UY	Weight Lb.
26	3/4	2.36	9.47	1/4	1.236	3.2	375
27	7/8	2.56	9.27	1/4	1.236	3.882	430
28	1	3.35	9.32	1/4	1.236	4.436	775
29	1 1/4	2.36	10.10	1/4	1.236	5.291	1160

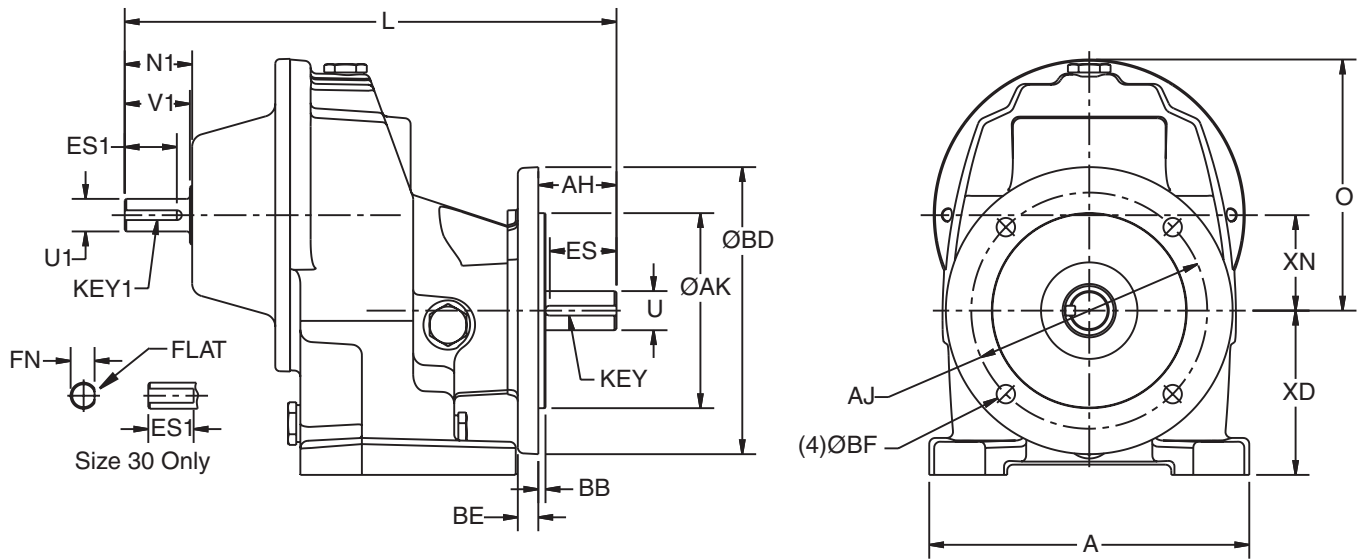
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer

Flange Mounted - Single Reduction



Gear Frame	A	L	N1	O	U ³	U1 ³	V1
30	-	8.77	1.12	4.11	0.63	0.50	1.00
31	6.14	9.44	1.29	4.82	0.75	0.63	1.25
32	8.70	9.55	1.29	7.38	1.00	0.63	1.25
33	9.44	13.27	2.31	7.28	1.38	1.13	2.25

Gear Frame	AH	ES	ES1	FN	XD	XN	Key	Key1
30	2.06	1.48	0.87	0.46	2.24	1.40	3/16 Sq.	N/A
31	1.50	1.28	1.00	N/A	3.15	1.83	3/16 Sq.	3/16 Sq.
32	1.50	1.16	1.00	N/A	2.68	2.48	1/4 Sq.	3/16 Sq.
33	2.75	2.40	1.94	N/A	4.41	2.76	5/16 Sq.	1/4 Sq.

Flange Type	30						31					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
56C	4.50	5.88	0.12	6.50	0.39	3/8-16	-	-	-	-	-	-
BS	3.74	4.53	0.12	5.51	0.31	0.35	4.33	5.12	0.14	6.29	0.39	0.35
BD1	4.33	5.12	0.08	6.30	0.39	0.35	-	-	-	-	-	-
BD2	3.15	3.94	0.12	4.72	0.39	0.28	3.74	4.53	0.14	5.50	0.39	0.35
BD3	5.12	6.50	0.12	7.87	0.31	0.35	-	-	-	-	-	-

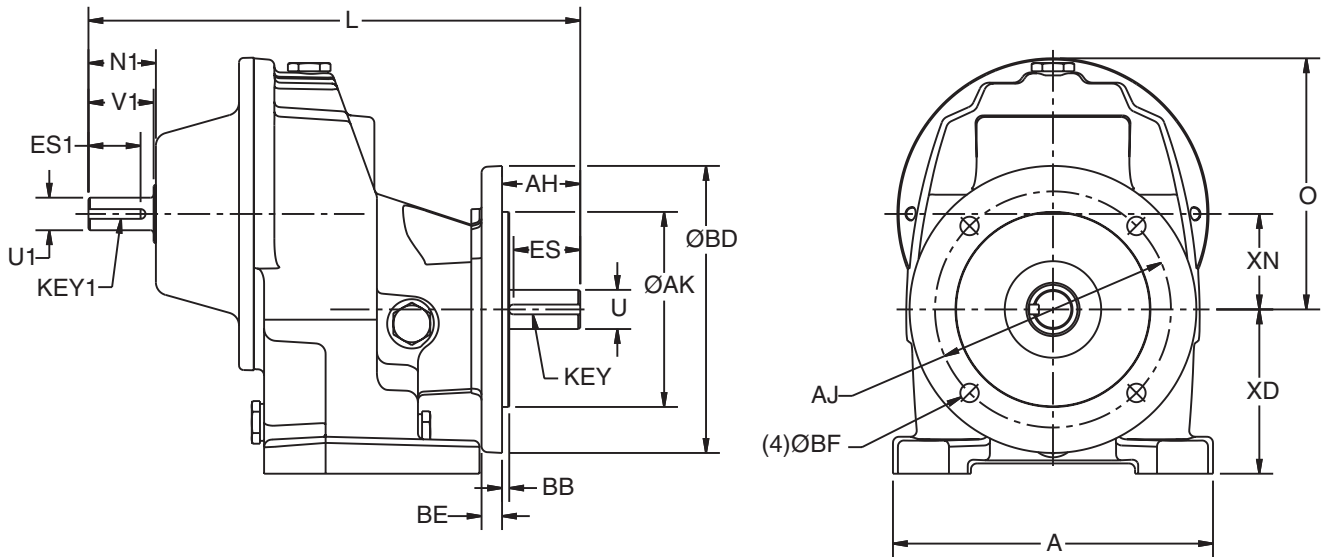
Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	5.12	6.50	0.14	7.87	0.47	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.16	7.86	0.47	0.43

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer Flange Mounted - Single Reduction

CbN
SERIES **2000**
3000



Gear Frame	A	L	N1	O	U ³	U1 ³	V1
34	11.02	15.12	2.37	8.70	1.50	1.125	2.25
35	13.65	17.90	2.92	11.07	1.75	1.375	2.75

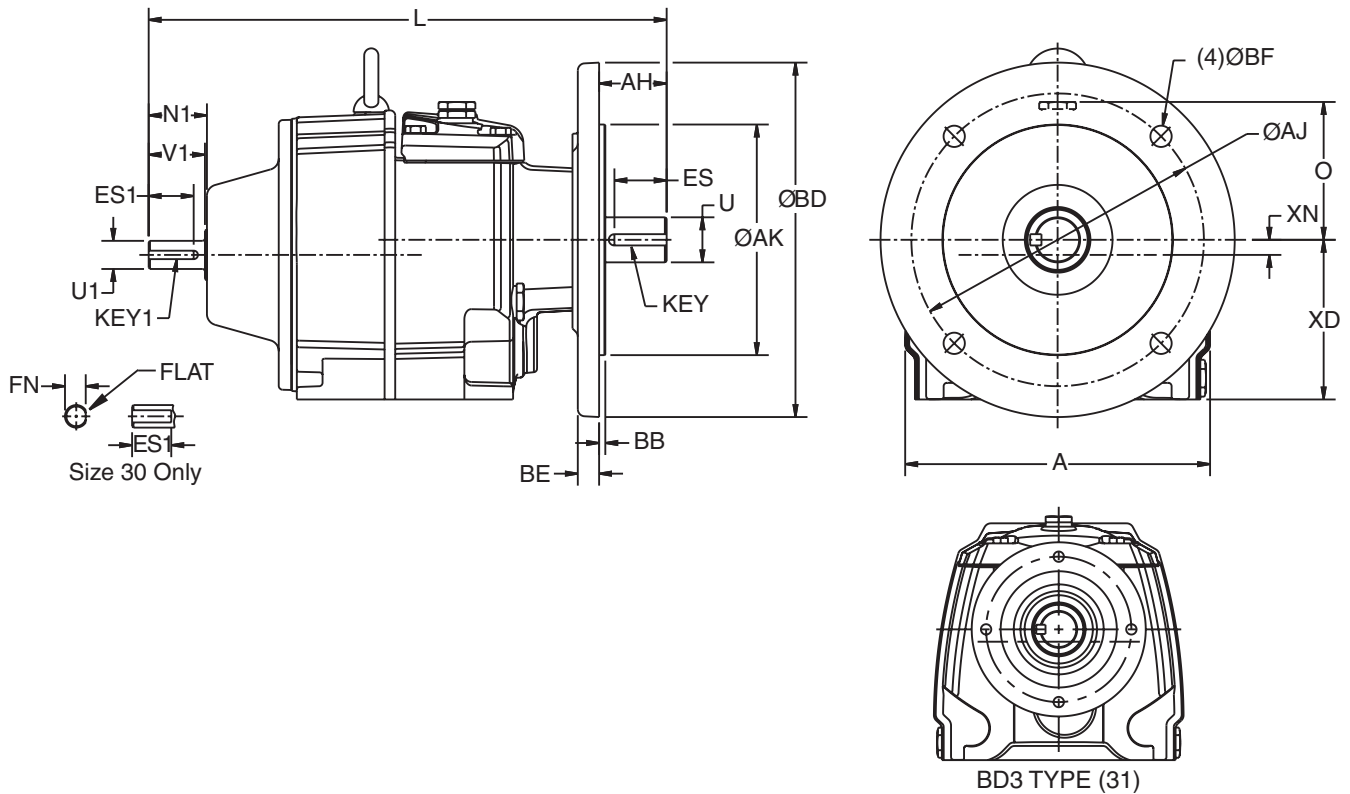
Gear Frame	AH	ES	ES1	XD	XN	Key	Key1
34	3.00	2.56	1.94	5.20	3.43	3/8 Sq.	1/4 Sq.
35	3.50	3.06	2.31	6.30	4.33	3/8 Sq.	5/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.80	0.59	0.55	9.84	11.81	0.20	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.20	11.81	0.71	0.55

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	O	U ³	U1 ³	V1
3012	5.51	9.87	1.12	3.04	0.625	0.500	1.00
3013	5.51	10.66	1.12	3.04	0.625	0.500	1.00
31	6.77	11.50	1.29	3.06	1.000	0.625	1.20

Gear Frame	AH	ES	ES1	FN	XD	XN	Key	Key1
3012	2.07	1.48	0.87	0.46	2.48	0.28	3/16 Sq.	N/A
3013	2.07	1.48	0.87	0.46	2.48	0.28	3/16 Sq.	N/A
31	1.50	1.16	1.00	N/A	3.54	0.33	1/4 Sq.	3/16 Sq.

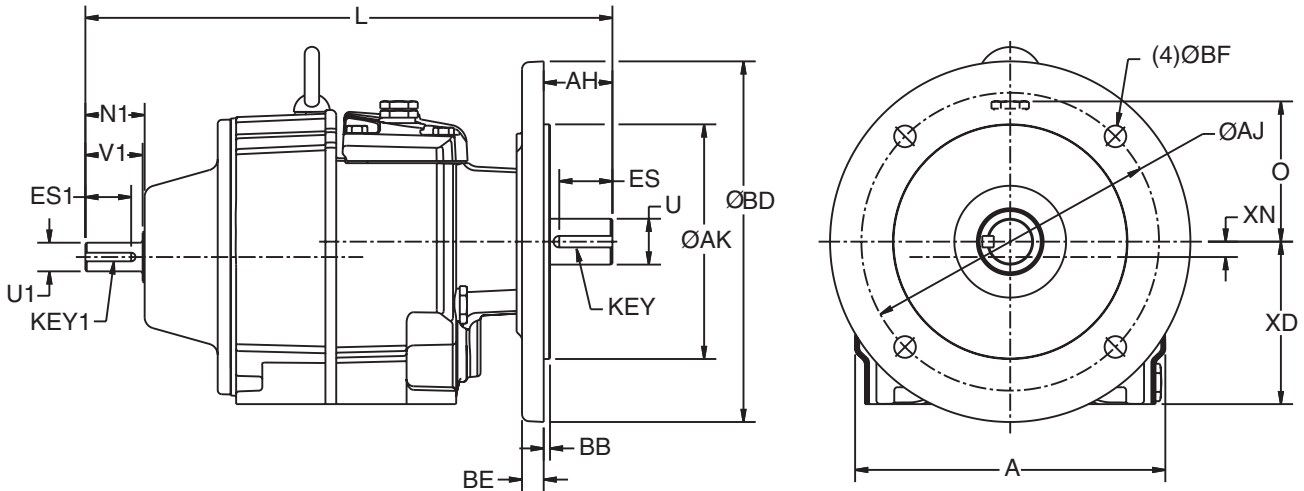
Flange Type	30						31					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
56C	4.50	5.88	0.12	6.50	0.39	3/8-16	-	-	-	-	-	-
BS	3.74	4.53	0.12	5.51	0.31	0.35	5.12	6.50	0.14	7.87	0.47	0.47
BD1	3.15	3.94	0.10	4.72	0.28	0.28	4.33	5.12	0.14	6.29	0.39	0.35
BD2	4.33	5.12	0.12	6.30	0.31	0.35	3.74	4.53	0.14	5.50	0.39	0.35
BD3	5.12	6.50	0.12	7.87	0.31	0.35	3.15	3.94	0.10	4.72	0.39	0.28

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	O	U ³	U1 ³	V1
32	8.70	13.25	1.29	3.50	1.250	0.625	1.25
3362,3363	10.16	17.62	2.31	4.43	1.500	1.125	2.25
3372,3373	10.16	17.77	2.31	4.43	1.625	1.125	2.25

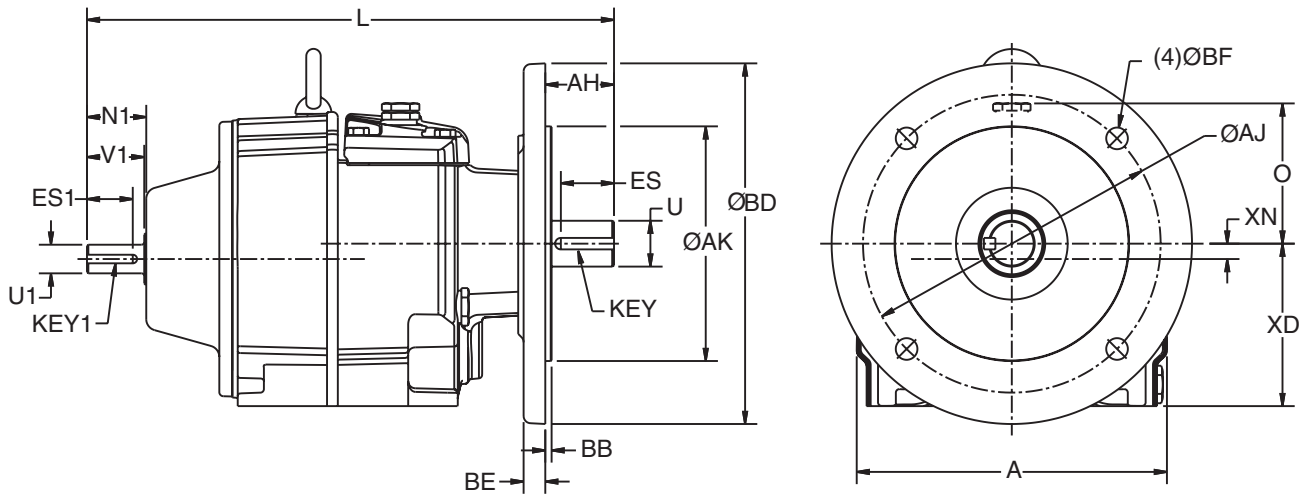
Gear Frame	AH	ES	ES1	FN	XD	XN	Key	Key1
32	2.50	2.16	1.00	N/A	4.53	0.39	1/4 Sq.	3/16 Sq.
3362,3363	3.00	2.56	1.94	N/A	5.51	0.77	3/8 Sq.	1/4 Sq.
3372,3373	3.15	2.78	1.94	N/A	5.51	0.77	3/8 Sq.	1/4 Sq.

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	O	U ³	U1 ³	V1
34	11.97	19.16	2.37	4.80	2.125	1.125	2.25
35	14.19	23.42	2.92	5.98	2.375	1.375	2.75

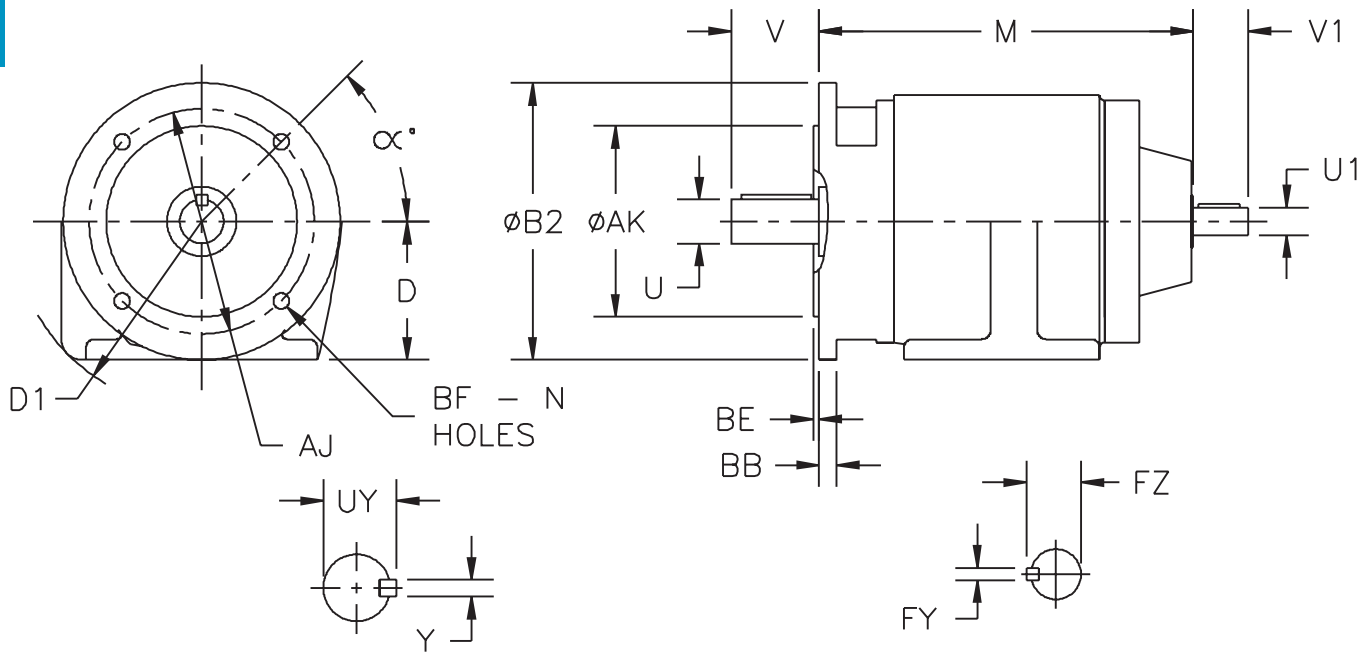
Gear Frame	AH	ES	ES1	XD	XN	Key	Key1
34	3.5	3.06	1.94	7.09	1.02	1/2 Sq.	1/4 Sq.
35	4.72	4.19	2.31	8.86	1.14	5/8 Sq.	5/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55	9.84	11.81	0.20	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.20	11.81	0.71	0.55

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

BS Flange Mounted - Double/Triple Reduction



Gear Frame	B2	D	D1	M	N	U ³	U ¹³	V	V1	Y	AJ	AK	BB	BE	BF
26	21.65	8.86	12.13	14.92	8	2.875	1.875	5.75	3.75	3/4	19.685	17.717	0.748	0.197	0.70
27	21.65	9.84	13.94	16.30	8	3.500	1.875	7.00	3.75	7/8	19.685	17.717	0.787	0.197	0.70
28	25.98	12.40	16.70	19.88	8	4.000	2.375	8.00	4.75	1	23.622	21.654	0.945	0.236	0.94

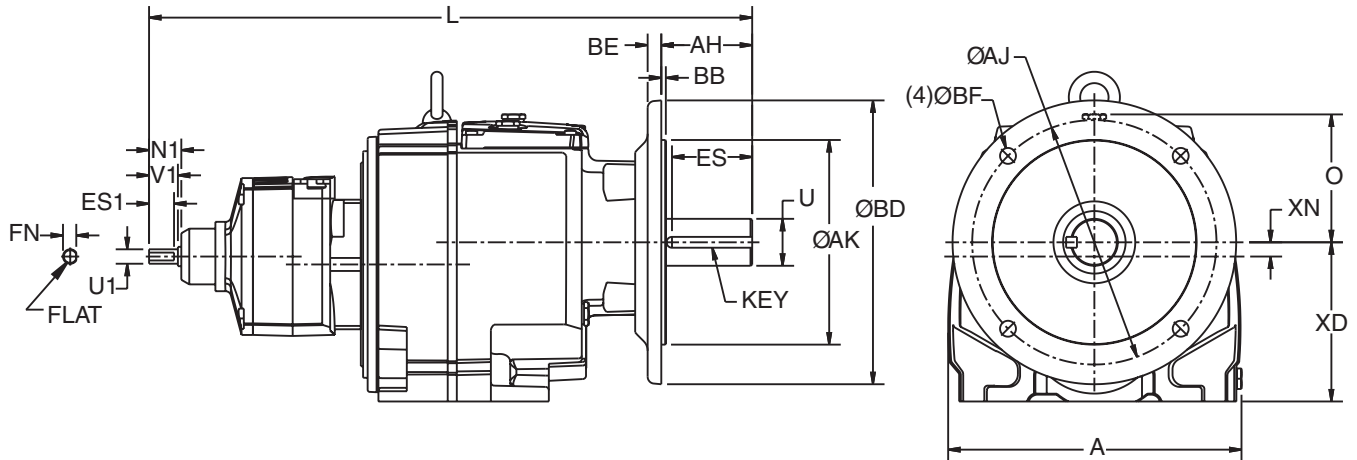
Gear Frame	FY	FZ	UY	μ	Weight Lb.
26	1/2	2.091	3.200	22.5°	308
27	1/2	2.091	3.882	22.5°	407
28	5/8	2.646	4.436	22.5°	726

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Input Shaft Reducer

Flange Mounted - Combined Reduction



Gear Frame	A	L	N1	O	U ³	U1 ³	V1	XD
32	8.70	18.13	1.12	3.50	1.25	0.50	1.00	4.53
33	10.16	20.90	1.12	4.43	1.63	0.50	1.00	5.51

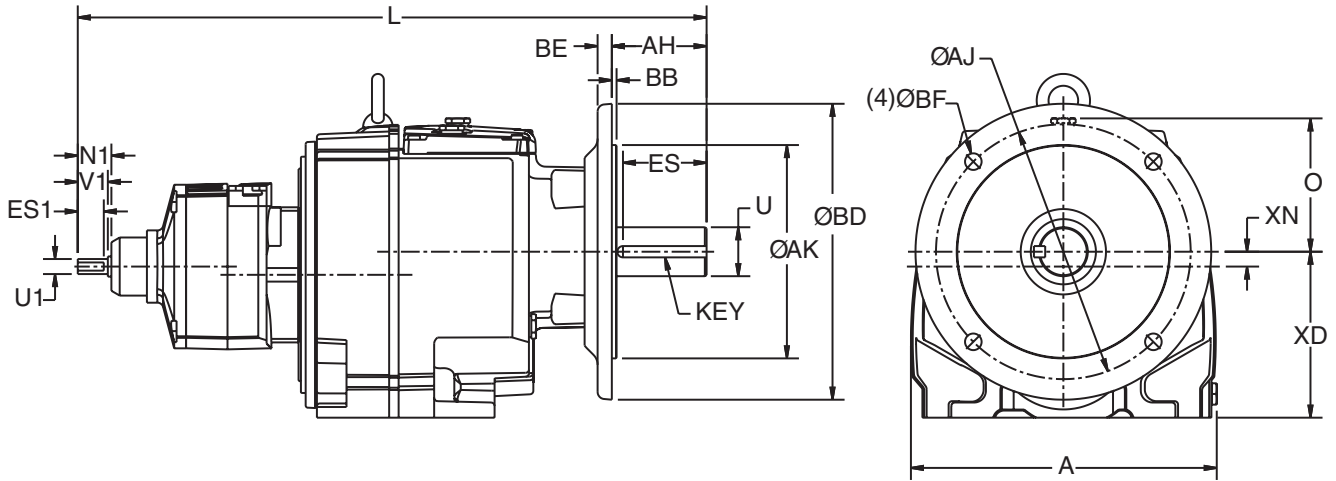
Gear Frame	AH	ES	ES1	FN	XN	Key
32	2.50	2.16	0.86	0.46	0.12	1/4 Sq.
33	3.15	2.78	0.86	0.46	0.49	3/8 Sq.

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Combined Reduction



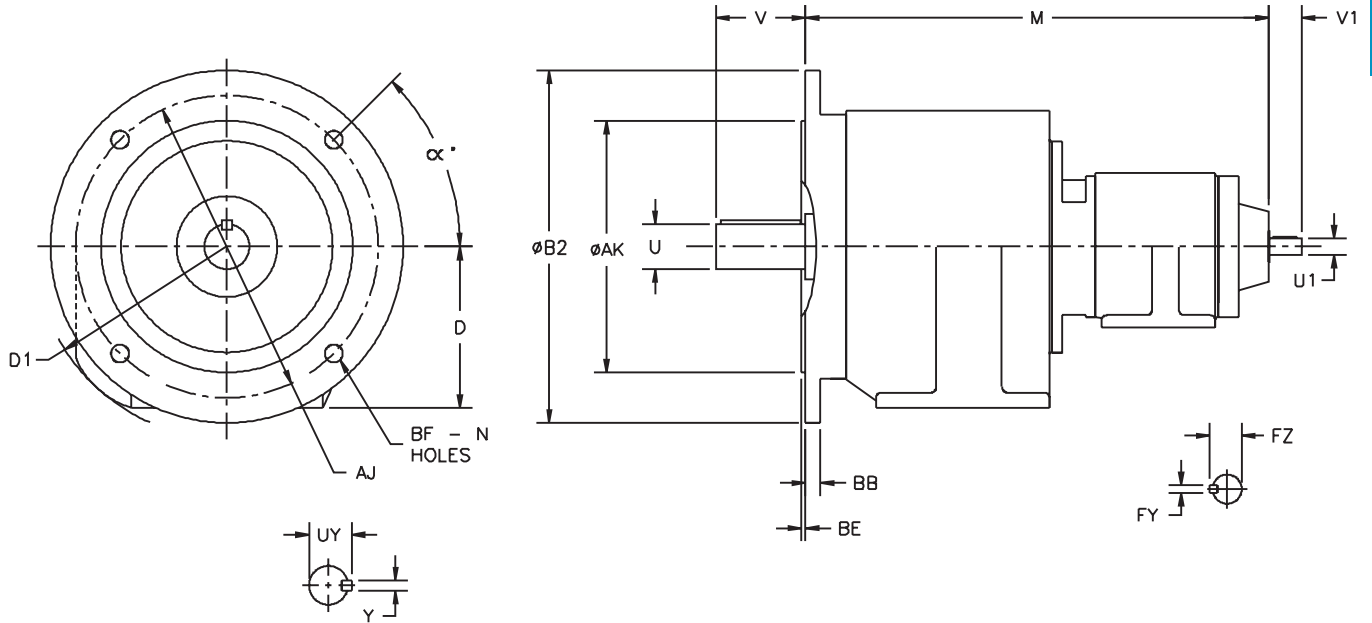
Gear Frame	A	L	N1	O	U ³	U1 ³	V1
34	11.97	24.29	1.29	4.80	2.125	1.125	1.25
35	14.19	26.86	1.29	5.98	2.125	0.625	1.25

Gear Frame	AH	ES	ES1	XD	XN	Key	Key1
34	3.50	3.06	1.00	7.09	1.35	1/2 Sq.	3/16 Sq.
35	4.72	4.19	1.00	8.86	1.47	5/8 Sq.	3/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55	9.84	11.81	0.20	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.20	11.81	0.71	0.55

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".



Gear Frame	B2	D	D1	M	N	U ³	U1 ³	V	V1	Y	AJ	AK	BB	BE	BF
26	21.65	8.86	12.13	27.19	8	2.875	1.125	5.75	2.25	3/4	19.685	17.717	0.748	0.197	0.70
27	21.65	9.84	13.94	27.19	8	3.5	1.125	7	2.25	7/8	19.685	17.717	0.787	0.197	0.70
28	25.98	12.40	16.70	38.13	8	4	1.125	8	2.25	1	23.622	21.654	0.945	0.236	0.94

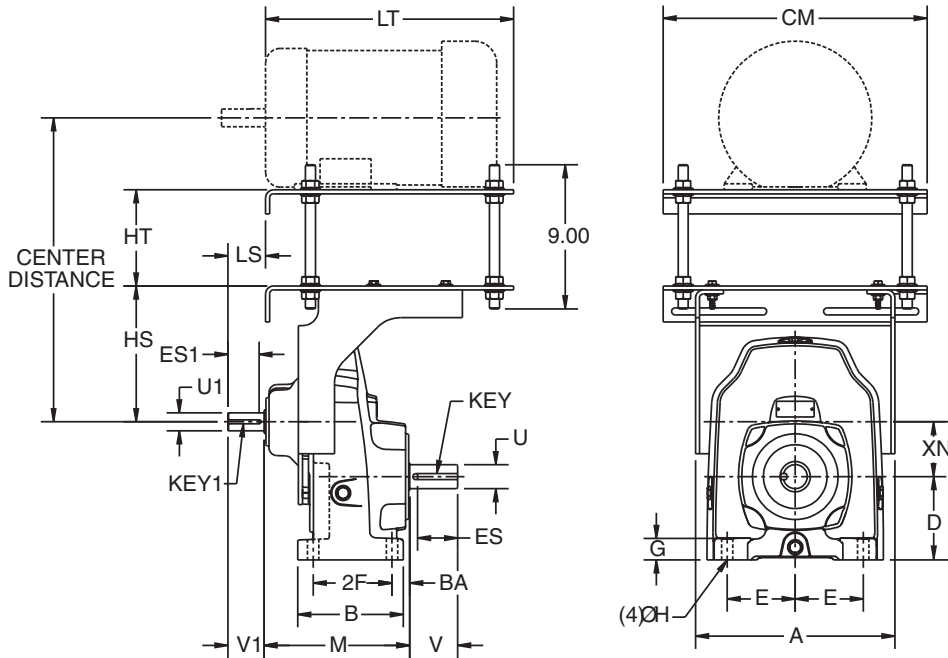
Gear Frame	FY	FZ	UY	μ	Weight Lb.
26	1/4	1.236	3.2	22.5°	340
27	1/4	1.236	3.882	22.5°	450
28	1/4	1.236	4.436	22.5°	760

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Top Mount Reducer Foot Mounted - Single Reduction



Gear Frame	A	B	D ¹	E	G	H	M	U ³	U1 ³	V	V1	BA
34	12.47	6.59	5.20	4.25	1.34	0.71	9.10	1.50	1.13	3.00	2.25	1.10
35	15.45	7.76	6.30	5.12	1.61	0.79	10.38	1.75	1.38	3.50	2.75	1.18

Gear Frame	CM	2F	HS	HT		LS	LT	ES	ES1	XN	Key	Key1
				Min.	Max.							
34	16.50	4.92	14.48	1.89	7.36	2.35	15.50	2.56	1.94	3.43	3/8 Sq.	1/4 Sq.
35	20.00	6.30	10.48	1.89	7.36	2.72	20.25	3.06	2.31	4.33	3/8 Sq.	5/16 Sq.

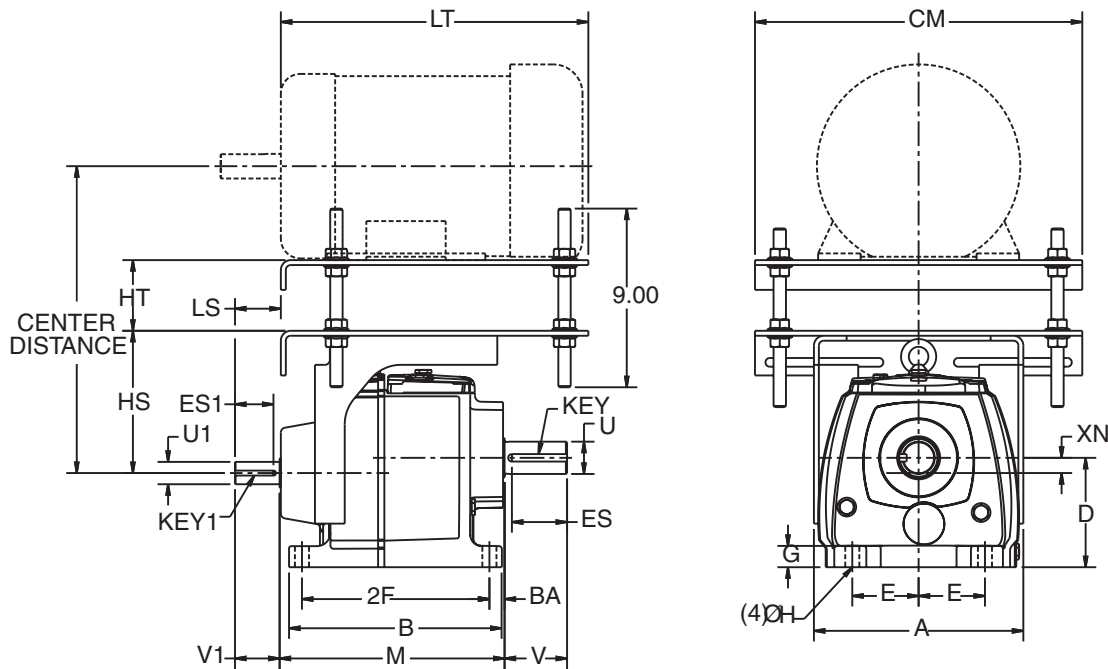
Motor Frame	34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.
143/145T	13.87	19.34	15.87	21.34
182/184T	14.87	20.34	16.87	22.34
213/215T	15.62	21.09	17.62	23.09
254/256T	-	-	18.62	24.09
284/286T	-	-	19.37	24.84

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	M	U ³	U1 ³	V	V1	BA
32	10.56	8.50	4.53	2.66	0.84	0.55	9.11	1.25	0.63	2.50	1.25	0.51
3362,3363	10.56	10.72	5.51	3.35	1.07	0.71	11.34	1.50	1.13	3.00	2.25	0.77
3372,3373	10.56	10.72	5.51	3.35	1.07	0.71	11.34	1.63	1.13	3.15	2.25	0.77

Gear Frame	CM	2F	HS	HT		LS	LT	ES	ES1	XN	Key	Key1
				Min.	Max.							
32	16.50	7.56	7.14	1.64	7.61	1.29	15.50	2.16	1.00	0.39	1/4 Sq.	3/16 Sq.
3362,3363	16.50	9.45	7.17	1.64	7.61	2.31	15.50	2.56	1.94	0.77	3/8 Sq.	1/4 Sq.
3372,3373	16.50	9.45	7.17	1.64	7.61	2.31	15.50	2.78	1.94	0.77	3/8 Sq.	1/4 Sq.

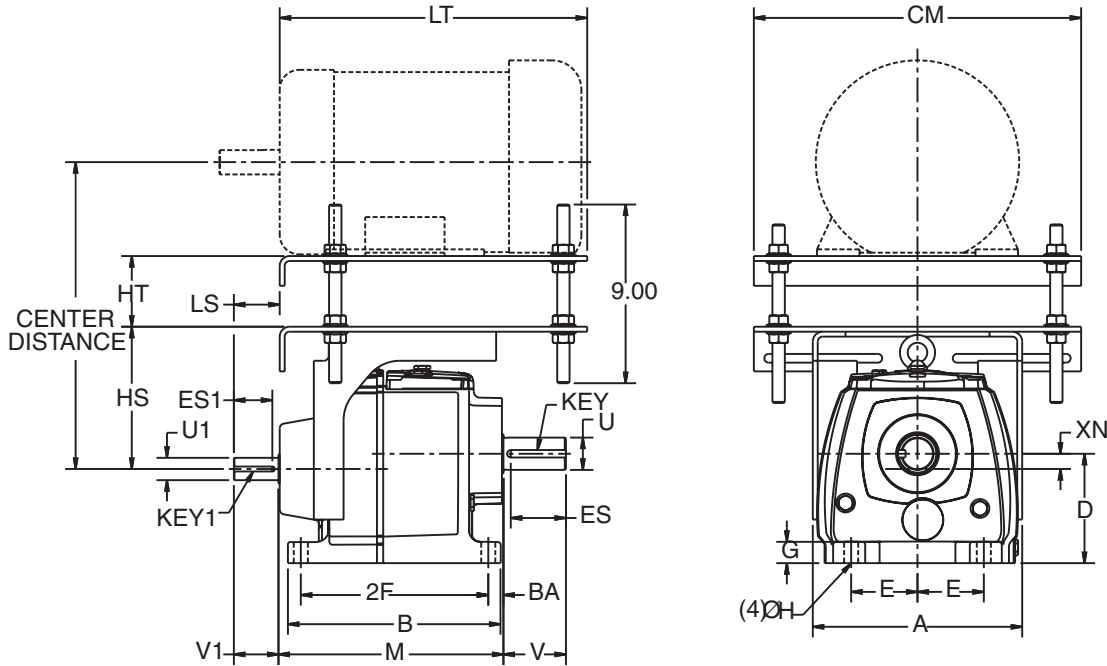
Motor Frame	32 Center Distance		33 Center Distance	
	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28
143/145T	12.28	18.25	12.31	18.28
182/184T	13.28	19.25	13.31	19.28
213/215T	-	-	14.06	20.03

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Foot Mounted - Double/Triple Reduction



Gear Frame	A	B	D ¹	E	G	H	M	U ³	U1 ³	V	V1	BA
34	12.47	10.87	7.09	4.53	1.37	0.71	12.66	2.13	1.13	3.50	2.25	0.98
35	15.45	12.89	8.86	5.51	1.73	0.87	14.95	2.38	1.38	4.72	2.75	1.10

Gear Frame	CM	2F	HS	HT		LS	LT	ES	ES1	XN	Key	Key1
				Min.	Max.							
34	16.50	9.25	14.48	1.89	7.36	2.35	15.50	3.06	1.94	1.02	1/2 Sq.	1/4 Sq.
35	20.00	11.02	10.48	1.89	7.36	2.72	20.25	4.19	2.31	1.14	5/8 Sq.	5/16 Sq.

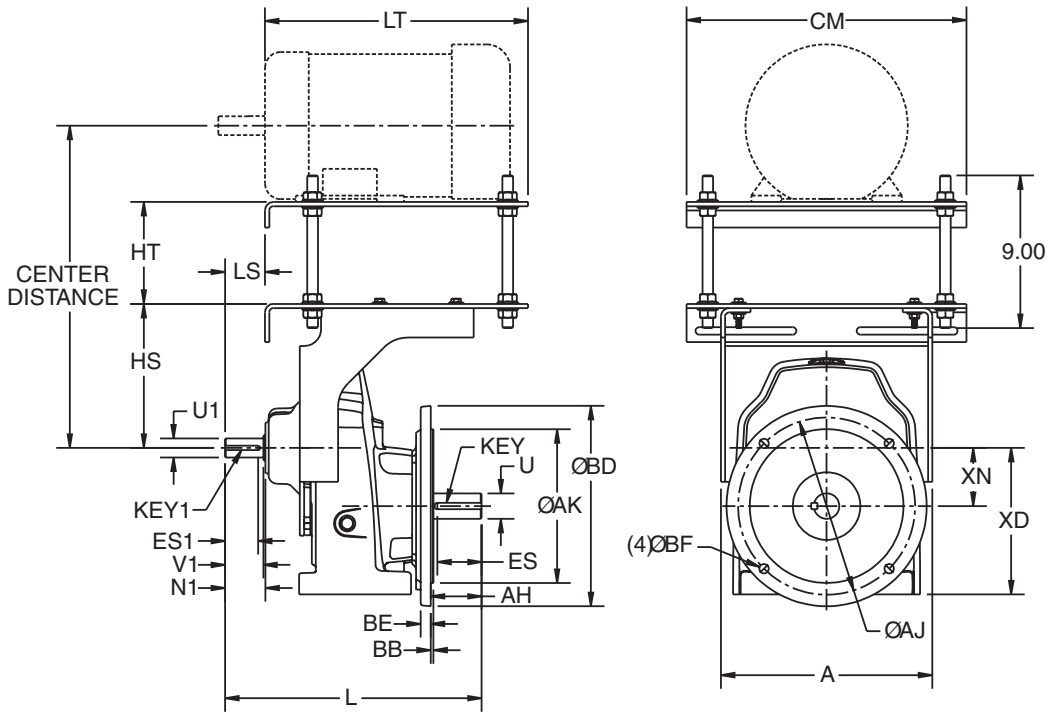
Motor Frame	34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.
143/145T	13.87	19.34	15.87	21.34
182/184T	14.87	20.34	16.87	22.34
213/215T	15.62	21.09	17.62	23.09
254/256T	16.62	22.09	18.62	24.09
284/286T	-	-	19.37	24.84

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Single Reduction



Gear Frame	A	L	N1	U ³	U1 ³	V1	AH	CM	ES
34	12.47	15.12	2.37	1.50	1.13	2.25	3.00	16.50	2.56
35	15.45	17.90	2.92	1.75	1.38	2.75	3.50	20.00	3.06

Gear Frame	ES1	XD	HS	HT		LS	LT	XN	Key	Key1
				Min.	Max.					
34	1.94	5.20	14.48	1.89	7.36	2.35	15.50	3.43	3/8 Sq.	1/4 Sq.
35	2.31	6.30	10.48	1.89	7.36	2.72	20.25	4.33	3/8 Sq.	5/16 Sq.

Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.06	10.43	0.16	11.8	0.59	0.55	9.84	11.81	0.2	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.2	11.81	0.71	0.55

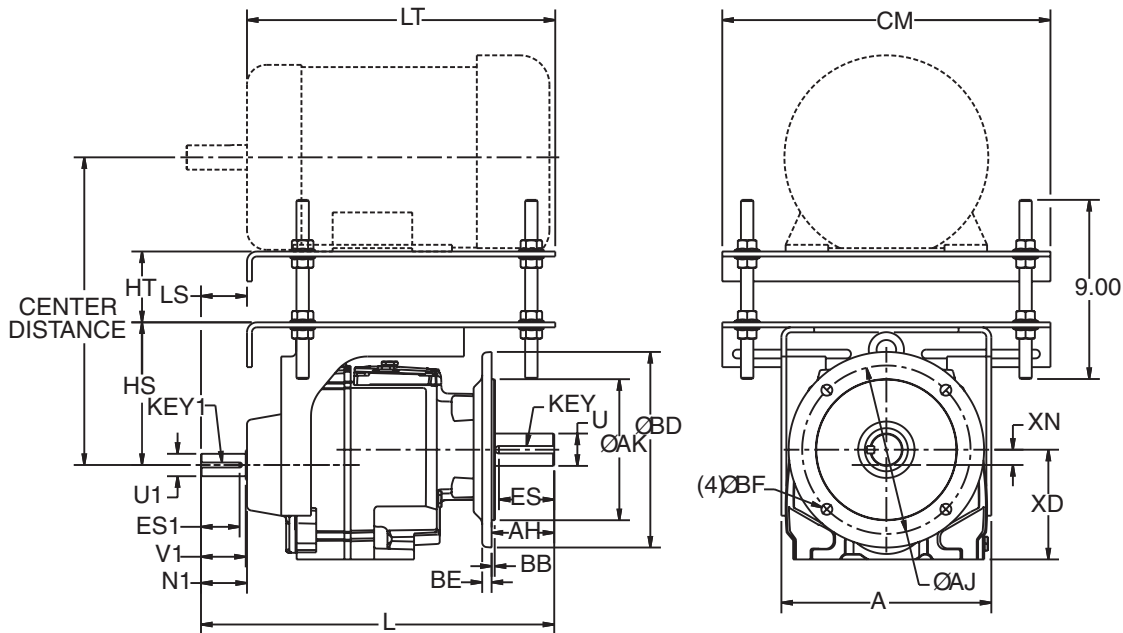
Motor Frame	34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.
143/145T	13.87	19.34	15.87	21.34
182/184T	14.87	20.34	16.87	22.34
213/215T	15.62	21.09	17.62	23.09
254/256T	-	-	18.62	24.09
284/286T	-	-	19.37	24.84

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U ³	U1 ³	V1	AH	CM	ES
32	10.56	13.25	1.29	1.25	0.63	1.25	2.50	16.50	2.16
3362,3363	10.56	17.61	2.31	1.50	1.13	2.25	3.00	16.50	2.56
3372,3373	10.56	17.76	2.31	1.63	1.13	2.25	3.15	16.50	2.78

Gear Frame	ES1	XD	HS	HT		LS	LT	XN	Key	Key1
				Min.	Max.					
32	1.00	4.53	7.14	1.64	7.61	1.29	15.50	0.39	1/4 Sq.	3/16 Sq.
3362,3363	1.94	5.51	7.17	1.64	7.61	2.31	15.50	0.77	3/8 Sq.	1/4 Sq.
3372,3373	1.94	5.51	7.17	1.64	7.61	2.31	15.50	0.77	3/8 Sq.	1/4 Sq.

Flange Type	32						33					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	7.09	8.46	0.16	9.83	0.47	0.55	9.06	10.43	0.16	11.80	0.47	0.55
BD1	5.12	6.50	0.14	7.87	0.39	0.47	7.09	8.46	0.16	9.83	0.47	0.55
BD2	4.33	5.12	0.14	6.29	0.39	0.35	5.12	6.50	0.14	7.86	0.47	0.47

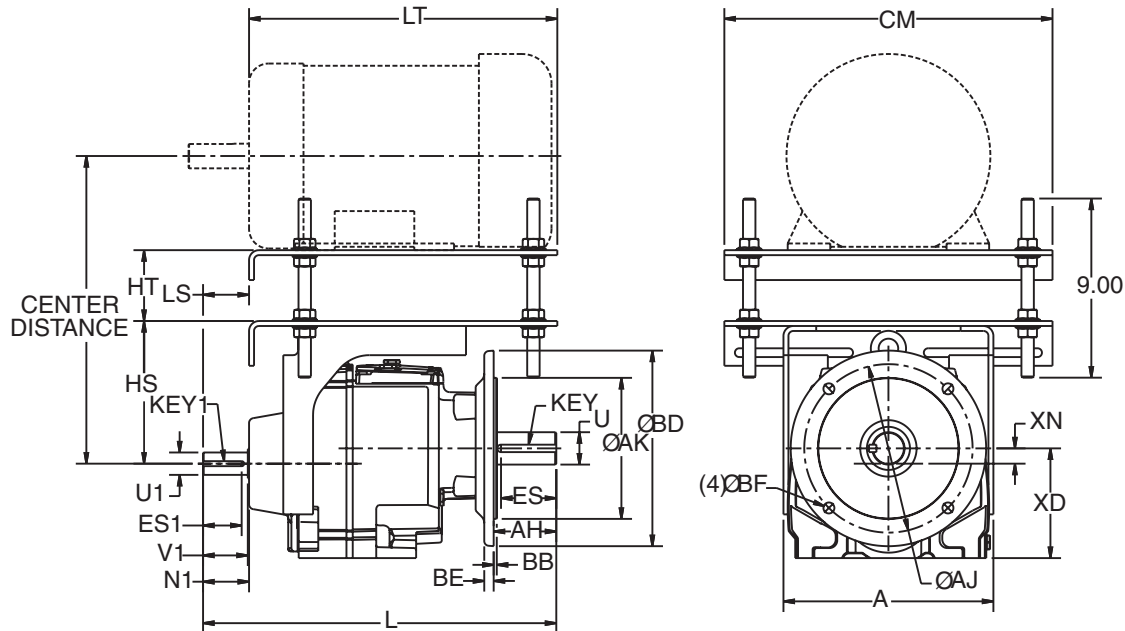
Motor Frame	32 Center Distance		33 Center Distance	
	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28
143T, 145T	12.28	18.25	12.31	18.28
182T, 184T	13.28	19.25	13.31	19.28
213T, 215T	-	-	14.06	20.03

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

Flange Mounted - Double/Triple Reduction



Gear Frame	A	L	N1	U ³	U1 ³	V1	AH	CM	ES
34	12.47	19.16	2.37	2.13	1.13	2.25	3.50	16.50	3.06
35	15.45	23.42	2.92	2.13	1.38	2.75	4.72	20.00	4.19

Gear Frame	ES1	XD	HS	HT		LS	LT	XN	Key	Key1
				Min.	Max.					
34	1.94	7.09	14.48	1.89	7.36	2.35	15.5	1.02	1/2 Sq.	1/4 Sq.
35	2.31	8.86	10.48	1.89	7.36	2.72	20.25	1.14	5/8 Sq.	5/16 Sq.

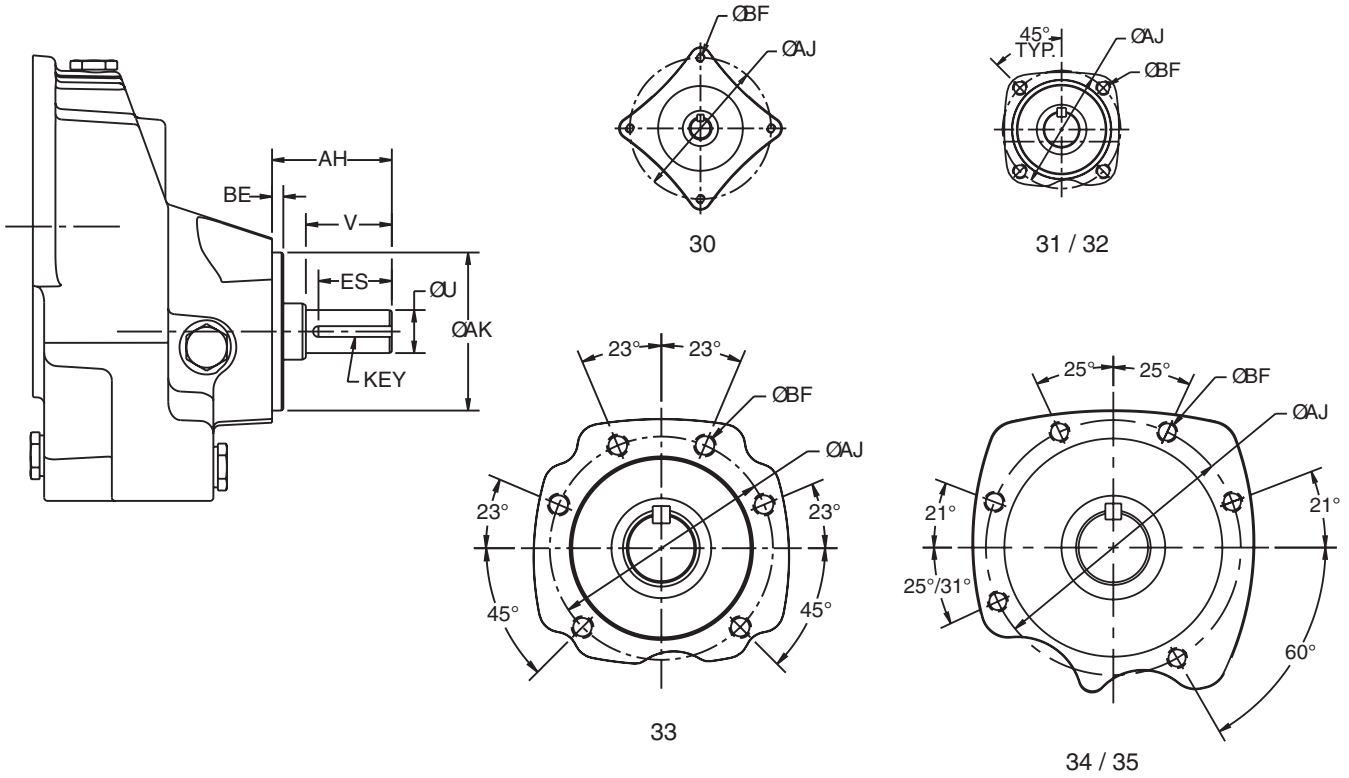
Flange Type	34						35					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
BS	9.84	11.81	0.16	13.77	0.59	0.71	11.81	13.78	0.20	15.75	0.71	0.71
BD1	9.06	10.43	0.16	11.80	0.59	0.55	9.84	11.81	0.20	13.78	0.71	0.71
BD2	7.09	8.46	0.16	9.83	0.59	0.55	9.06	10.43	0.20	11.81	0.71	0.55

Motor Frame	34 Center Distance		35 Center Distance	
	Min.	Max.	Min.	Max.
143/145T	13.87	19.34	15.87	21.34
182/184T	14.87	20.34	16.87	22.34
213/215T	15.62	21.09	17.62	23.09
254/256T	16.62	22.09	18.62	24.09
284/286T	-	-	19.37	24.84

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

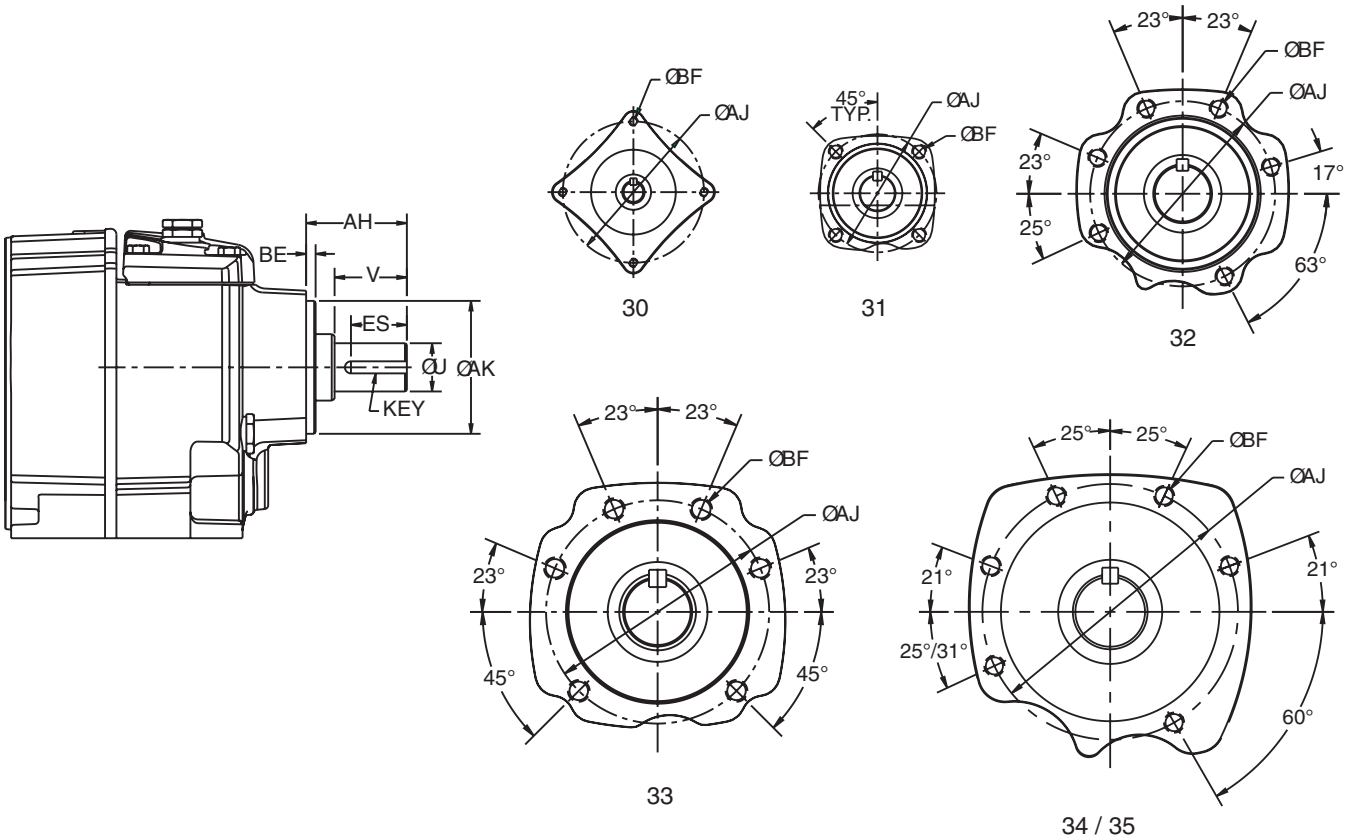
³ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".



Gear Frame	U ¹	V	AH	AJ	AK ²	BE	BF	ES	Key
30	0.625	1.88	2.53	3.937	2.362	0.12	M6x.63	1.42	3/16 Sq.
31	0.750	1.50	2.09	3.268	2.756	0.2	M10x.87	1.28	3/16 Sq.
32	1.000	2.00	2.09	3.268	2.756	0.2	M10x.87	1.56	1/4 Sq.
33	1.375	2.75	3.34	4.724	3.937	0.31	M10x.87	2.40	5/16 Sq.
34	2.125	3.00	4.10	5.984	5.118	0.28	M12x.87	2.56	3/8 Sq.
35	2.375	3.50	4.84	7.480	6.100	0.3	M16x1.06	3.06	3/8 Sq.

¹ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

² Tolerance is J6.



Gear Frame	U ¹	V	AH	AJ	AK ²	BE	BF	ES	Key
30	0.625	1.50	2.53	3.937	2.362	0.39	M6x.63	1.42	3/16 Sq.
31	1.000	1.50	2.09	3.268	2.756	0.20	M10x.87	1.16	1/4 Sq.
32	1.250	2.50	3.09	3.937	3.228	0.14	M10x.87	2.16	1/4 Sq.
3362,3363	1.500	3.00	3.91	4.842	3.937	-0.14	M10x.87	2.56	3/8 Sq.
3372,3373	1.625	3.15	4.06	4.842	3.937	-0.14	M10x.87	2.78	3/8 Sq.
34	2.125	3.50	4.60	5.984	5.118	0.28	M12x.87	3.06	1/2 Sq.
35	2.375	4.72	6.09	7.480	6.100	0.30	M16x1.06	4.19	5/8 Sq.

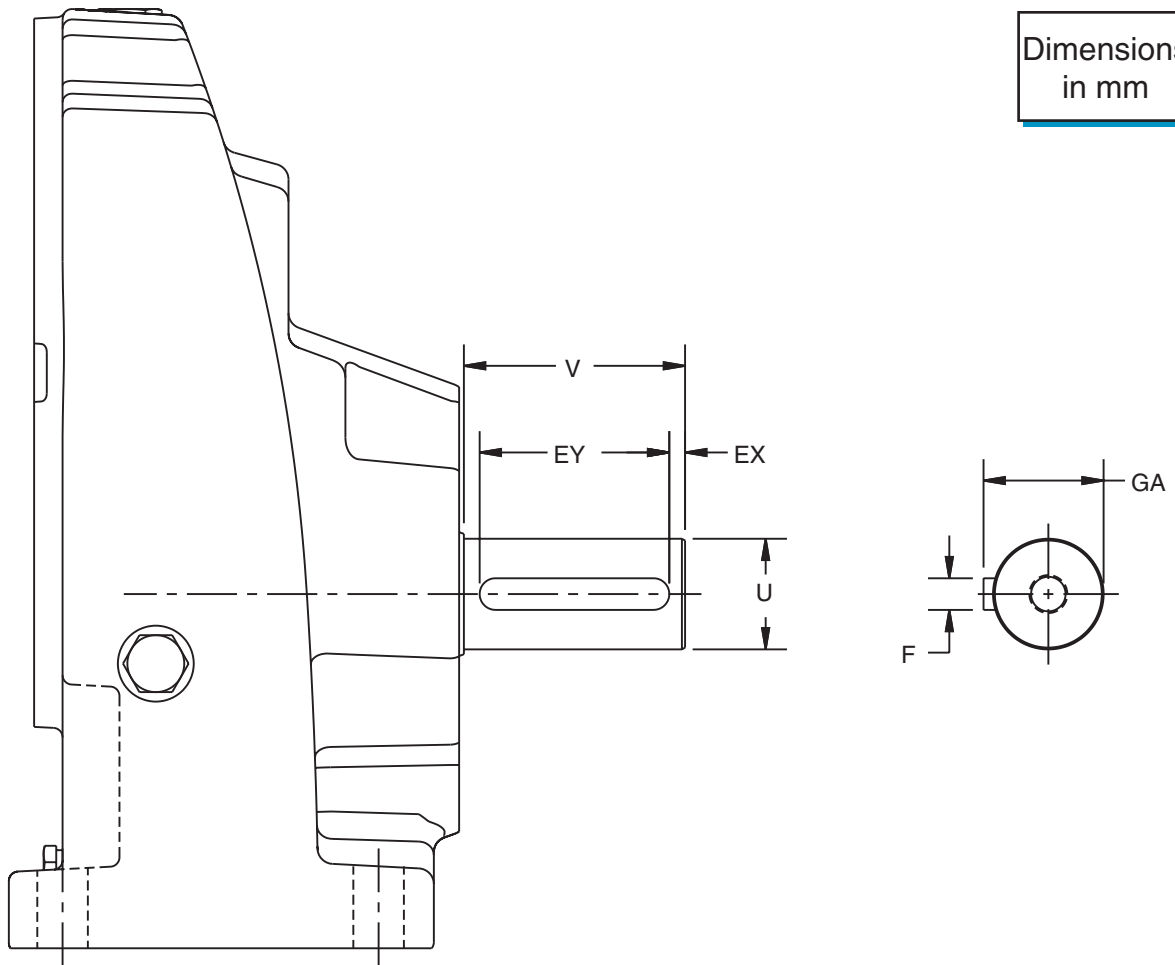
¹ Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

² Tolerance is J6.

Metric Output Shaft Dimensions SM Foot Mounted - Single Reduction

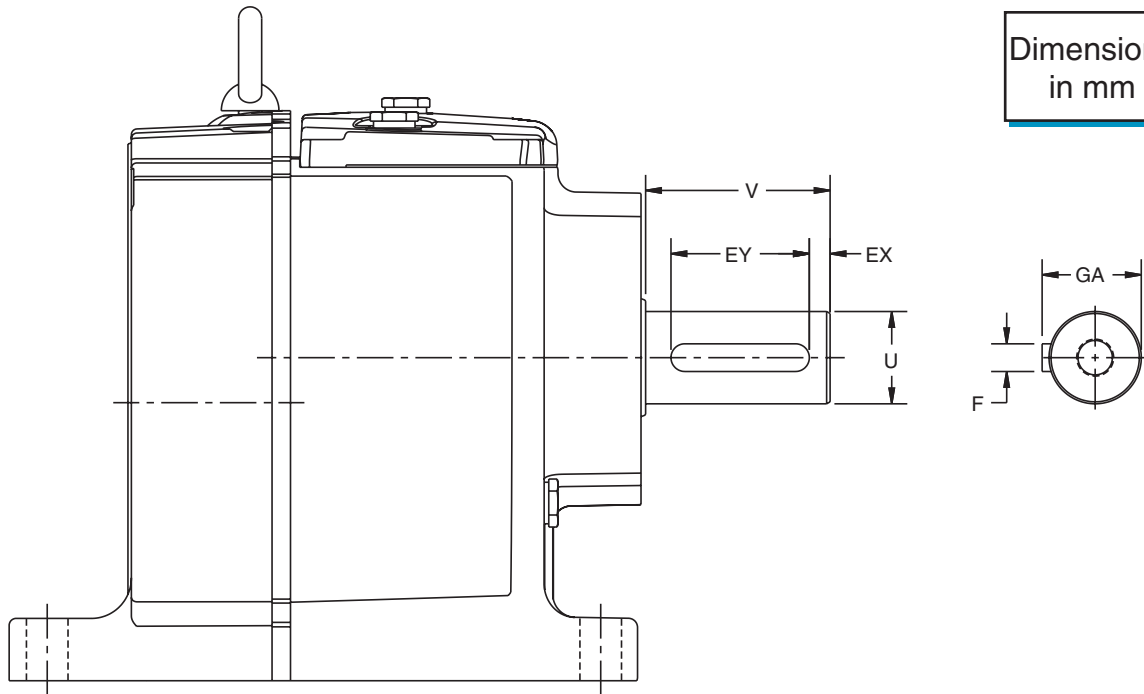
CbN
SERIES **2000**
3000

Dimensions
in mm



Gear Frame	F	U	GA	V	EX	EY
30	5	16j6	18	40	7	25
31	6	20j6	22,5	40	7	30
32	8	25j6	28	50	5	40
33	10	35k6	38	70	5	60
34	12	40k6	43	80	3	72
35	14	45	48.5	90	5	80

Dimensions
in mm

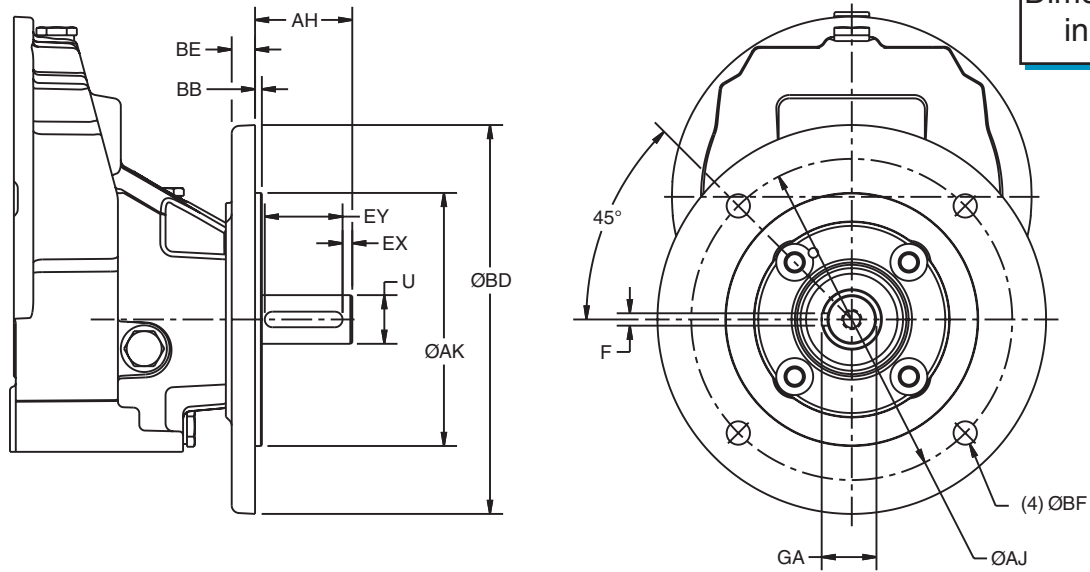


Gear Frame	F	U	GA	V	EX	EY
30	6	20j6	22,5	40	7	25
31	8	25j6	28	50	5	40
32	8	30j6	33	60	6	45
33	12	40k6	43	80	9	60
34	14	50k6	53,5	100	3	90
35	18	60m6	64	120	4	110
26	20	70 m6	74,5	140	5	130
27	25	90 m6	95	170	5	160
28	28	100 m6	106	210	5	200
29	32	120 m6	127	210	5	200

Metric Output Shaft Dimensions Flange Mounted - Single Reduction

CbN
SERIES **2000**
3000

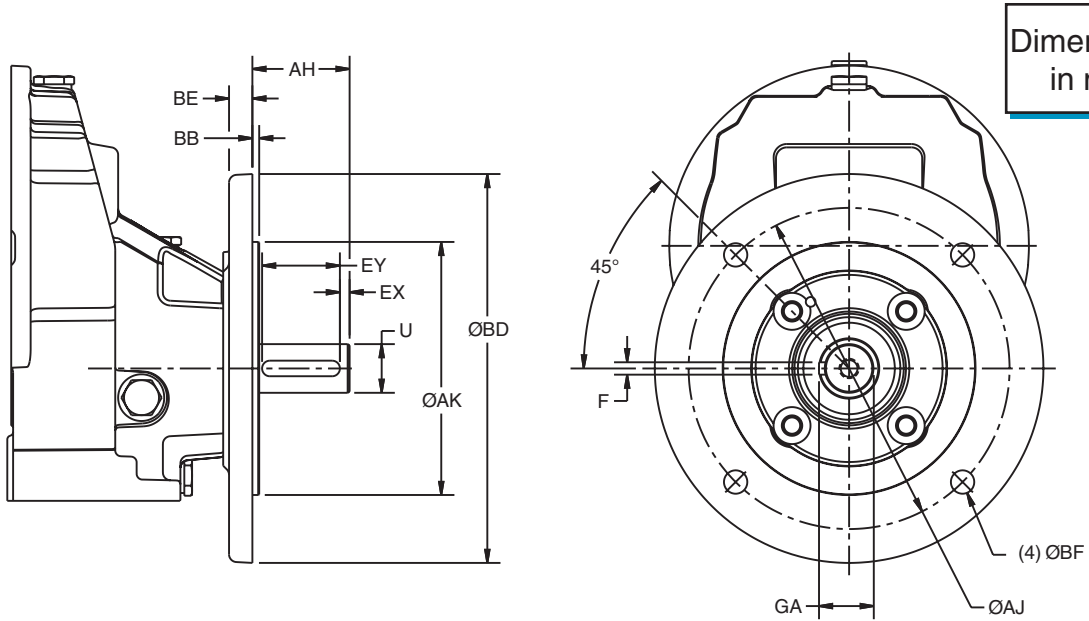
Dimensions
in mm



Gear Frame	F	U	AH	GA	EX	EY
30	5	16j6	40	18	7	25
31	6	20j6	40	22.5	7	30
32	8	25j6	50	28	5	40
33	10	35k6	70	38	5	60

Gear Frame	BSM						BDM1					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
30	95j6	115	3	140	8	9	80j6	100	3	120	10	7
31	110j6	130	3.5	160	10	9	-	-	-	-	-	-
32	130j6	165	3.5	200	12	12	-	-	-	-	-	-
33	180j6	215	4	250	12	14	-	-	-	-	-	-

Gear Frame	BDM2						BDM3					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
30	110j6	130	2	160	10	9	130j6	165	3	200	8	9
31	95j6	115	3	140	10	9	-	-	-	-	-	-
32	110j6	130	3.5	160	9	9	-	-	-	-	-	-
33	130j6	165	3.5	200	12	11	-	-	-	-	-	-

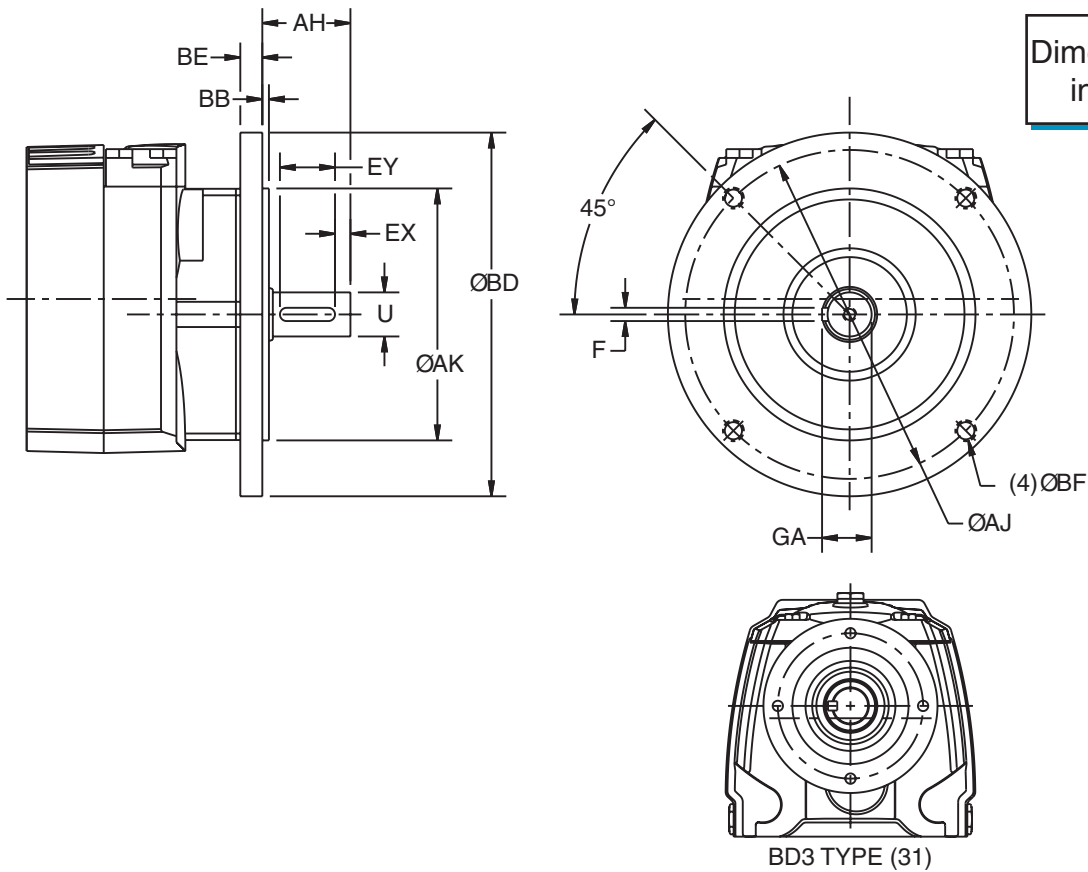


Gear Frame	F	U	AH	GA	EX	EY
34	12	40k6	80	43	3	72
35	14	45	90	48.5	5	80

Gear Frame	BSM						BDM2					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
34	230j6	265	4	300	15	14	180j6	215	4	250	15	14
35	250	300	5	350	18	18	230	265	5	300	18	14

Metric Output Shaft Dimensions

Flange Mounted - Multiple Reduction

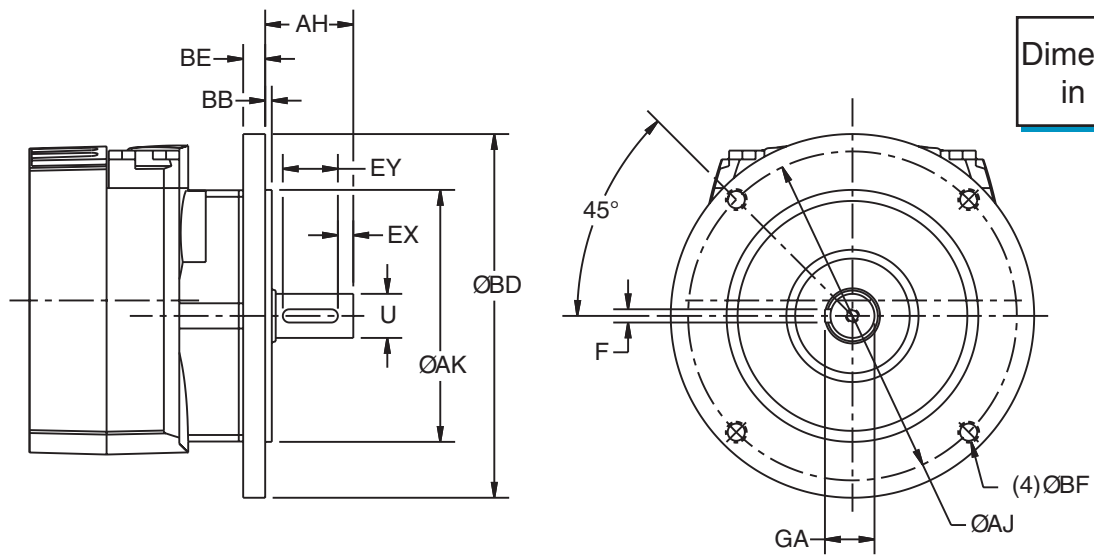


Gear Frame	F	U	AH	GA	EX	EY
30	6	20j6	40	22.5	7	25
31	8	25j6	50	28	5	40
32	8	30j6	60	33	6	45
33	12	40k6	80	43	9	6

Gear Frame	BSM						BDM1						BDM2					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
30	95j6	115	3	140	8	9	80j6	100	2.5	120	7	7	110j6	130	3	160	8	9
31	130j6	165	3.5	200	10	11	110j6	130	3.5	160	10	9	95j6	115	3.5	140	10	9
32	180j6	215	4	250	12	14	130j6	165	3.5	200	10	11	110j6	130	3.5	160	10	9
33	230j6	265	4	300	12	14	180j6	215	4	250	12	14	130j6	165	3.5	200	12	11

Gear Frame	BDM3					
	AK	AJ	BB	BD	BE	BF
31 (1)	80j6	100	2.5	120	10	7

(1) Refer to illustration above for correct hole orientation in BDM3 flange.



Dimensions
in mm

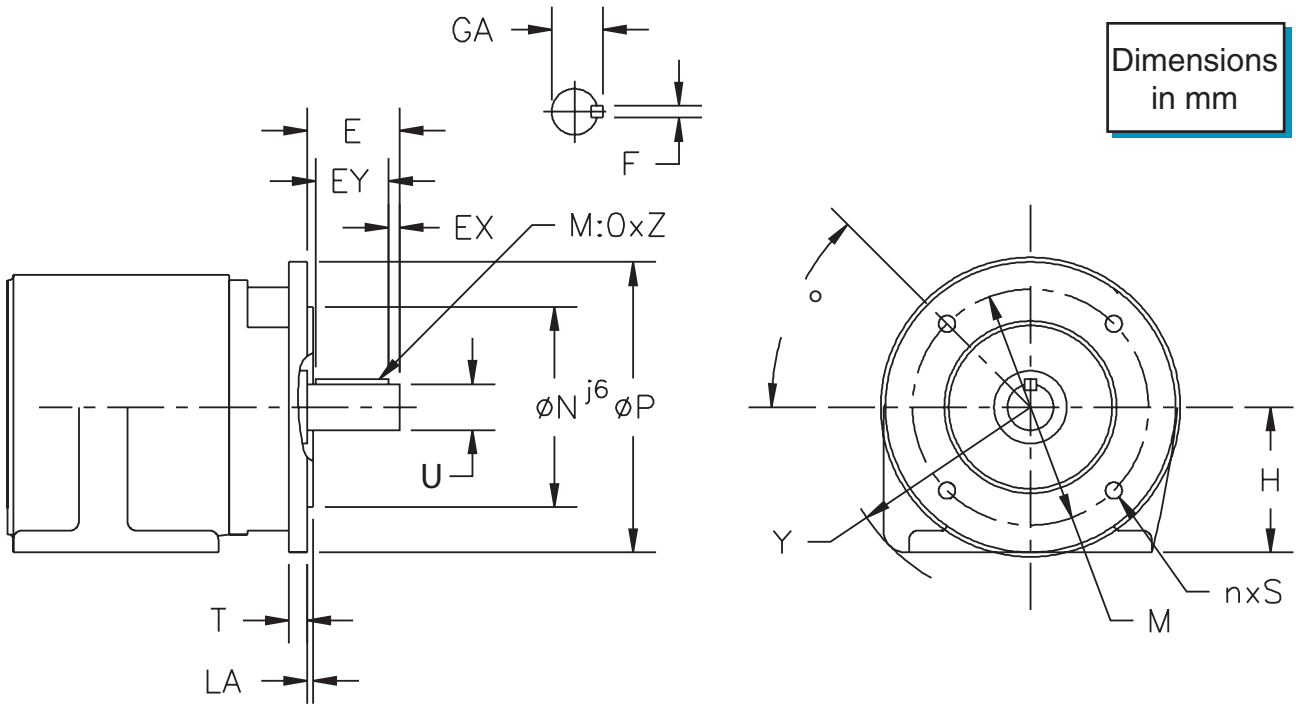
Gear Frame	F	U	AH	GA	EX	EY
34	14	50k6	100	53.5	9	85
35	18	60m6	120	64	4	110

Gear Frame	BS						BD1						BD2					
	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF	AK	AJ	BB	BD	BE	BF
34	250	300	4	350	15	18	230	265	4	300	15	14	180	215	4	250	15	14
35	300	350	5	400	18	18	250	300	5	350	15	18	230	265	5	300	15	14

Metric Output Shaft Dimensions

BSM Flange Mounted - Multiple Reduction

Dimensions
in mm



Gear Frame	Flange									
	H	Y	M	N	P	n*	S	LA	T	μ
26	225	308	500	450	550	8	18	19	5	22.5°
27	250	354	500	450	550	8	18	20	5	22.5°
28	315	424	600	550	660	8	24	24	6	22.5°

*n = 4: a = 45° - n = 22°30'.

Gear Frame	Output Shaft							
	U	E	EY	EX	GA	F	M:O	Z
26	70m6	140	130	5	74,5	20	20	42
27	90m6	170	160	5	95	25	24	50
28	100m6	210	200	5	106	28	24	50

Product Weights (Lbs.)

Foot Mounted Single Reduction

C-Face Reducers

Gear Frame	Input Size				
	56/140TC	180/210TC	250TC	280TC	320TC
30	11	-	-	-	-
31	24	30	-	-	-
32	35	44	-	-	-
33	53	62	69	-	-
34	-	63	68	70	-
35	-	88	89	92	100

Input Shaft

Gear Frame	Style
	AP
30	9
31	23
32	28
33	55
34	66
35	89

Foot Mounted Multiple Reduction

C-Face Reducers

Gear Frame	Stages	Input Size				
		56/140TC	180/210TC	250TC	280TC	320TC
30	2, 3	17	-	-	-	-
31	2, 3	45	53	-	-	-
32	2, 3	57	66	-	-	-
	4, 5	63	-	-	-	-
33	2, 3	85	94	101	-	-
	4, 5	90	-	-	-	-
34	2, 3	93	95	98	100	-
	4, 5	130	-	-	-	-
35	2, 3	160	163	166	168	178
	4, 5	197	205	-	-	-
26 - 29	2, 3	Refer to dimension print pages				
	4, 5, 6					

Input Shaft

Gear Frame	Stages	Style		
		AP	Scoop	Top Mt.
30	2, 3	15	-	-
31	2, 3	37	-	-
32	2, 3	50	75	97
	4, 5	55	-	-
33	2, 3	87	120	134
	4, 5	92	-	-
34	2, 3	99	151	169
	4, 5	149	-	-
35	2, 3	198	250	172
	4, 5	235	-	-
26	2, 3	308	400	-
	4, 5, 6	375	410	-

Weight Adders

B14 and Flange Mounted

Single Reduction

Gear Frame	B14 Face Mount	Flange Mount
30	0	1
31	-1	3
32	-1	4
33	-1	8
34	-2	8
35	-2	9

Multiple and Combined

Gear Frame	B14 Face Mount	Flange Mount
30	0	1
31	-1	2
32	-1	4
33	-3	8
34	-5	8
35	-6	9

CbN gearing is shipped with one of the following synthetic lubricants per the table below and fitted with a magnetic drain. Each reducer is filled according to the mounting position specified when ordered. Refer to the unit nameplate and charts on pages A-244 and A-245 for the mounting position arrangement of your unit.

In the case of synthetic oil, the lubricant does not require changing, but it is recommended that the oil level be checked periodically.

Standard Synthetic Gear Oil (Non-Food Grade)

No Backstop

Manufacturer	-25° F to 125° F (-30° C to 50° C)
Fuchs*	Sintogear* 125
Mobil*	Mobilgear* SHC 150
Shell*	Omala* Fluids HD 150

With Backstop (1)

Manufacturer	-25° F to 125° F (-30° C to 50° C)
Shell*	Omala RL 100
Mobil*	SHC 629

Synthetic Gear Oil (Food Grade)

No Backstop

Manufacturer	22°F to 125°F (-20°C to 50°C)
Mobil*	SHC Cibus 150

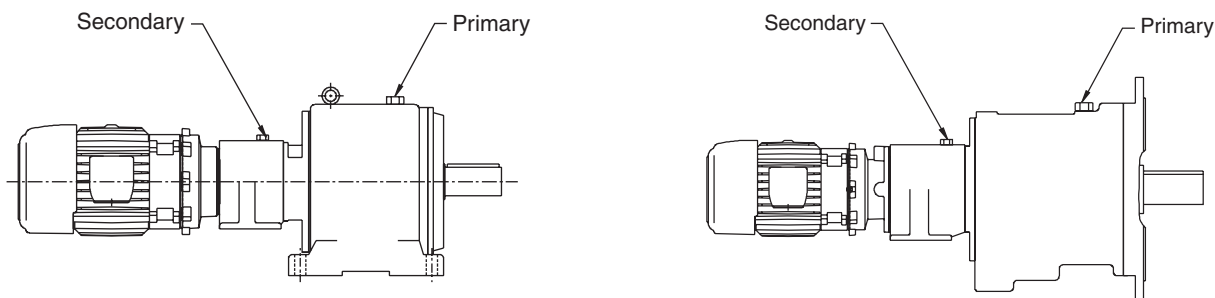


- Never mix synthetic oil and mineral oil.
- Never use extreme pressure (EP) oil in a reducer with a backstop.
- Refer to installation and maintenance manual for mineral oil selection.

Oil Capacities (U.S. Quarts)

Reduction Stages	Gear Frame	Mounting Positions											
		B3	B5	B6	B7	B8	B52	B53	B54	V1	V3	V5	V6
One	30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
	31	0.34	0.34	0.53	0.53	0.74	0.53	0.74	0.53	0.58	1.06	0.58	1.06
	32	0.26	0.26	0.63	0.63	1.06	0.63	1.06	0.63	0.69	1.27	0.69	1.27
	33	0.95	0.95	1.48	1.48	2.01	1.48	2.01	1.48	2.22	2.22	2.22	2.22
	34	1.06	1.06	1.59	1.59	2.64	1.59	2.64	1.59	2.22	2.22	2.22	2.22
	35	1.27	1.17	3.84	3.84	5.69	2.55	3.95	2.55	2.91	3.95	5.12	6.04
Two	30	.64	.64	.64	.64	.64	.64	.64	.64	.64	.64	.64	.64
	31	0.63	0.63	1.00	0.90	1.16	-	-	-	1.22	1.48	1.22	1.48
	32	1.00	1.00	1.85	1.64	2.38	-	-	-	2.38	2.85	2.38	2.85
	33	1.69	1.69	3.49	3.12	4.76	-	-	-	4.76	4.65	4.76	4.65
	34	2.32	2.32	5.39	4.97	7.93	-	-	-	8.24	7.82	8.24	7.82
	35	4.10	4.90	9.80	8.80	14.40	-	-	-	14.5	15.70	15.30	16.30
	26	6.55	6.34	16.80	15.90	25.90	-	-	-	21.5	21.10	25.40	27.90
	27	8.77	8.45	23.60	22.90	37.30	-	-	-	31.00	27.30	36.20	39.20
Three	30	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74
	31	0.63	0.63	1.30	0.90	1.16	-	-	-	1.22	1.48	1.22	1.48
	32	1.00	1.00	2.40	1.64	2.38	-	-	-	2.38	2.85	2.38	2.85
	33	1.69	1.69	4.60	3.12	4.76	-	-	-	4.76	4.65	4.76	4.65
	34	2.32	2.32	6.97	4.97	7.93	-	-	-	8.24	7.82	8.24	7.82
	35	3.61	4.65	9.18	8.83	14.3	-	-	-	14.40	15.80	15.00	15.50
	26	5.92	5.71	15.90	16.00	25.7	-	-	-	21.30	21.30	27.10	28.40
	27	7.93	7.61	22.20	23.00	37.00	-	-	-	31.40	27.50	38.70	39.90
	28	14.60	13.90	44.90	45.20	72.9	-	-	-	52.80	56.00	83.50	72.90
	29	18.00	-	72.90	68.70	122.00	-	-	-	-	-	125.00	109.00

* The following are believed to be the trademarks and/or trade names of their respective owners and are not owned or controlled by Emerson Power Transmission. Fuchs and Sintogear: Fuchs Petrolube AG; Mobil and Mobilgear: Exxon Mobil Corporation; Shell and Omala: Shell Oil Company.



Foot Mounted Combined Units (U.S. Quarts)

Reduction Stages	Gear Frame	Composition		Mounting Positions											
				B3		B8		B6		B7		V5		V6	
		Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.
Four	3254	3252	3012	0.95	.64	2.3	.64	2.4	.64	1.6	.64	2.4	.64	2.65	.64
	3374	3372	3012	1.74	.64	5	.64	4.6	.64	2.9	.64	4.7	.64	4.4	.64
	3484	3482	3132	2.32	0.63	7.93	1.16	5.39	1	4.97	0.9	8.24	1.22	7.82	1.48
	3594	3592	3132	4.1	0.63	14.4	1.16	9.8	1	8.8	0.9	15.3	1.22	16.3	1.48
	2604A	2602	3372	6.55	1.69	25.87	4.76	16.8	3.49	15.9	3.13	25.34	4.76	27.88	4.65
	2704A	2702	3372	8.76	1.69	37.28	4.76	23.6	3.49	22.9	3.13	36.22	4.76	39.18	4.65
Five	3255	3253	3012	0.95	.64	2.3	.64	2.4	.64	1.6	.64	2.4	.64	2.65	.64
	3375	3373	3012	1.74	.64	5	.64	4.6	.64	2.9	.64	4.7	.64	4.4	.64
	3485	3483	3132	2.32	0.63	7.93	1.16	6.97	1.00	4.97	0.9	8.24	1.22	7.82	1.48
	3595	3593	3132	3.61	0.63	14.3	1.16	9.18	1.00	8.83	0.9	15	1.22	15.5	1.48
	2605A	2602	3373	6.55	1.69	25.87	4.76	16.8	4.62	15.9	3.13	25.34	4.76	27.88	4.65
	2705A	2702	3373	8.76	1.69	37.28	4.76	23.6	4.62	22.9	3.13	36.22	4.76	39.18	4.65
	2805A	2803	3482	14.57	2.32	72.86	7.93	44.9	5.39	45.2	4.97	83.42	8.24	72.86	7.82
2905A	2903	3482	17.95	2.32	121.44	7.93	72.9	5.39	68.7	4.97	124.61	8.24	108.77	7.82	
Six	2606A	2603	3373	5.91	1.69	25.66	4.76	15.9	4.62	16	3.13	27.03	4.76	28.41	4.65
	2706A	2703	3373	7.92	1.69	36.96	4.76	22.2	4.62	23	3.13	38.65	4.76	39.92	4.65
	2806A	2803	3483	14.57	2.32	72.86	7.93	44.9	6.97	45.2	4.97	83.42	8.24	72.86	7.82
	2906A	2903	3483	17.95	2.32	121.44	7.93	72.9	6.97	68.7	4.97	124.61	8.24	108.77	7.82

Flanged Mounted Combined Units (U.S. Quarts)

Reduction Stages	Gear Frame	Composition		Mounting Positions					
				B5		V1		V3	
		Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.
Four	3254	3252	3012	0.95	.64	2.4	.64	2.65	.64
	3374	3372	3012	1.5	.64	4.7	.64	4.4	.64
	3484	3482	3132	2.32	0.63	8.24	1.22	7.82	1.48
	3594	3592	3132	4.9	0.63	14.5	1.22	15.7	1.48
	2604A	2602	3372	6.34	1.69	21.12	4.76	21.12	4.65
	2704A	2702	3372	8.45	1.69	31.68	4.76	27.24	4.65
Five	3255	3253	3012	0.95	.64	2.4	.64	2.65	.64
	3375	3373	3012	1.5	.64	4.7	.64	4.4	.64
	3485	3483	3132	2.32	0.63	8.24	1.22	7.82	1.48
	3595	3593	3132	4.65	0.63	14.4	1.22	15.8	1.48
	2605A	2602	3373	6.34	1.69	21.12	4.76	21.12	4.65
	2705A	2702	3373	8.45	1.69	31.68	4.76	27.24	4.65
	2805A	2803	3482	13.94	2.32	52.8	8.24	55.97	7.82
Six	2606A	2603	3373	5.2	1.69	18.59	4.76	21.33	4.65
	2706A	2703	3373	7.6	1.69	25.77	4.76	27.46	4.65
	2806A	2803	3483	13.94	2.32	52.8	8.24	55.97	7.82



OtN Helical-Bevel Right Angle Gearmotors and Speed Reducers

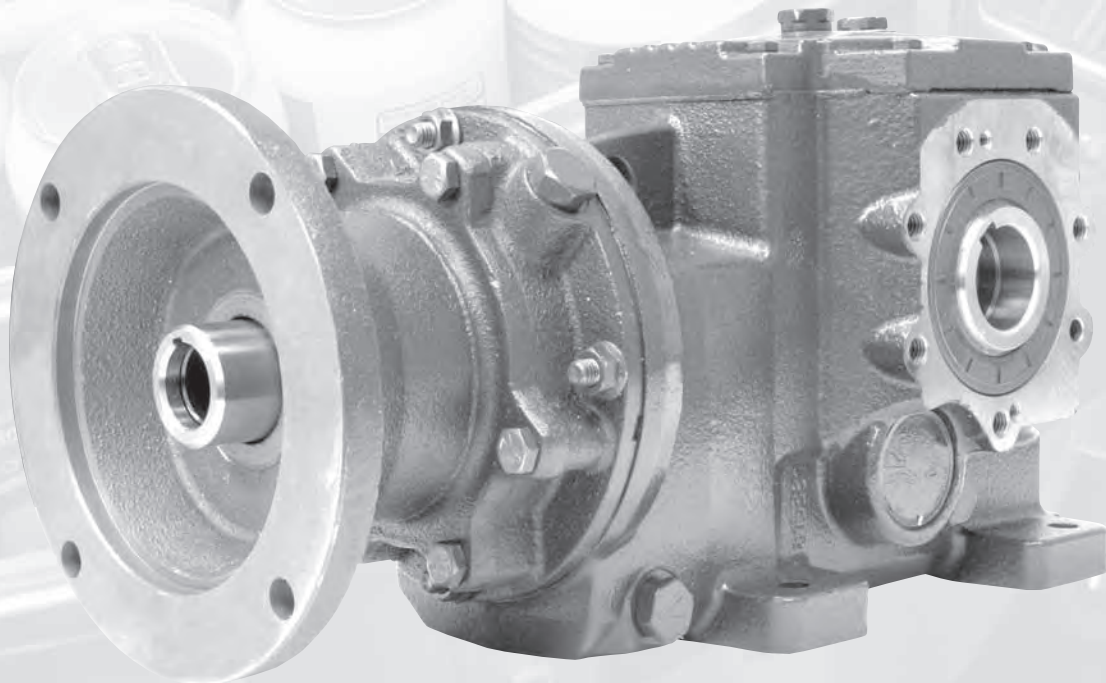
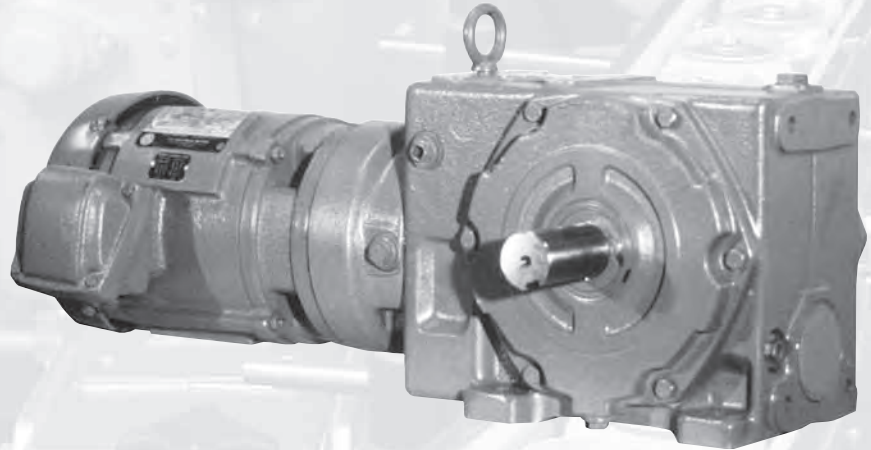
OtN Series

Industries

- Food and Beverage
- Warehousing
- Parcel and Package Sortation
- Oil
- Recycling
- Airport
- Waste Treatment

Applications

- Unit Handling Conveyors
- Mixers and Agitators
- Turntables
- Chain Conveyors
- Screw Conveyors
- Baggage Handling Conveyor
- Sludge Collection Tanks

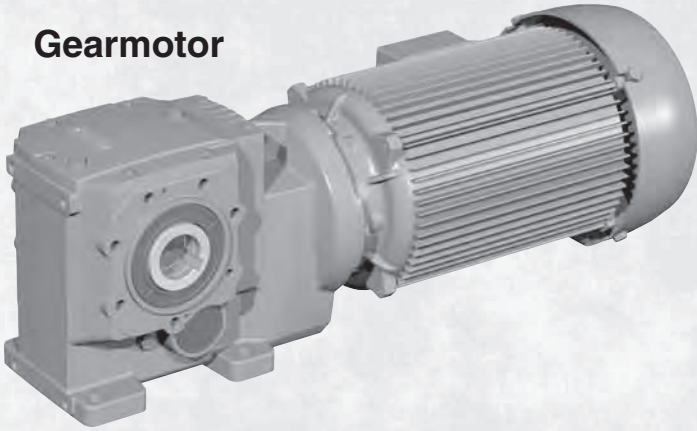




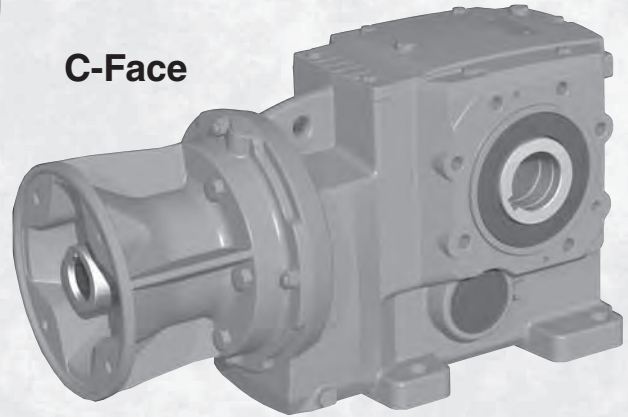
OtN Helical-Bevel Right Angle Gearmotors and Speed Reducers

OtN Series

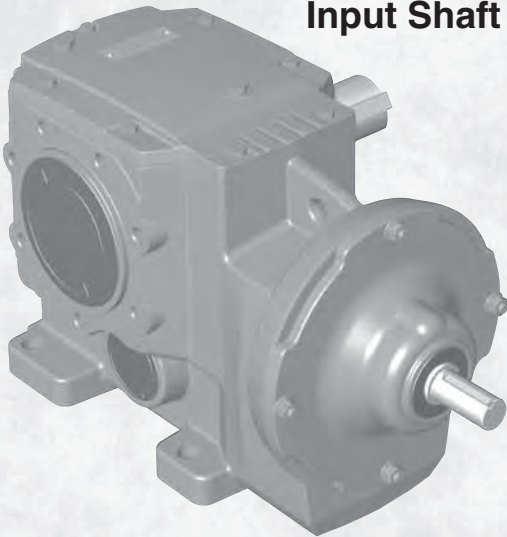
Gearmotor



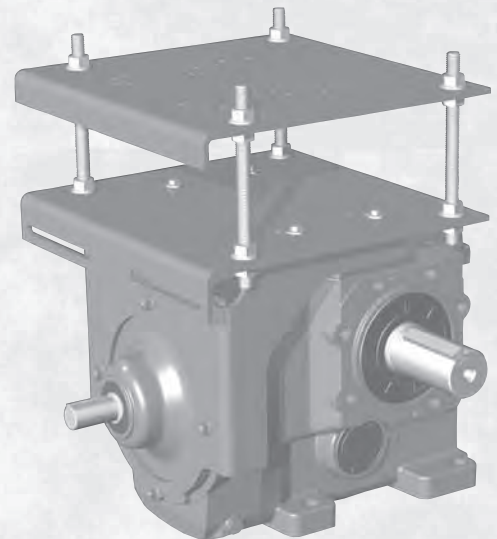
C-Face



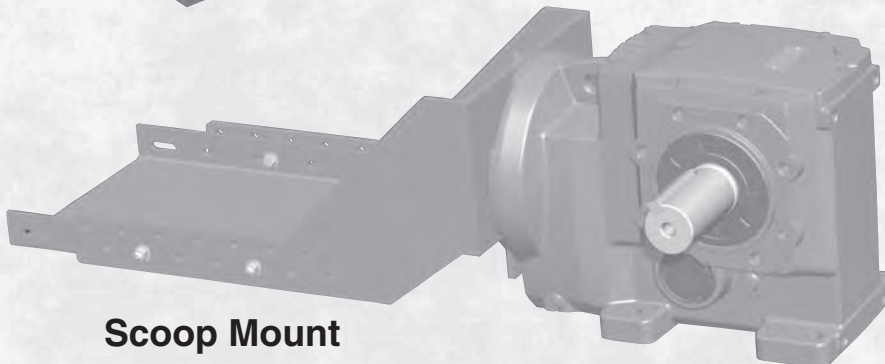
Input Shaft

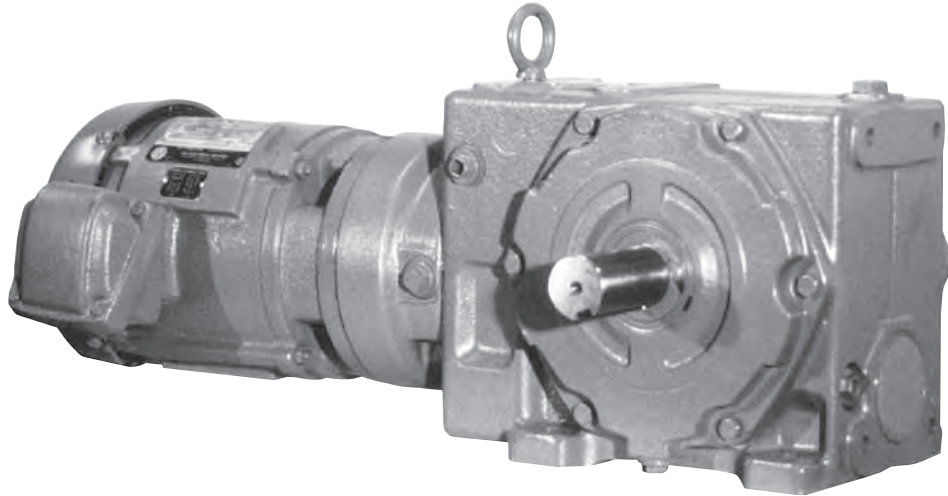


Top Mount

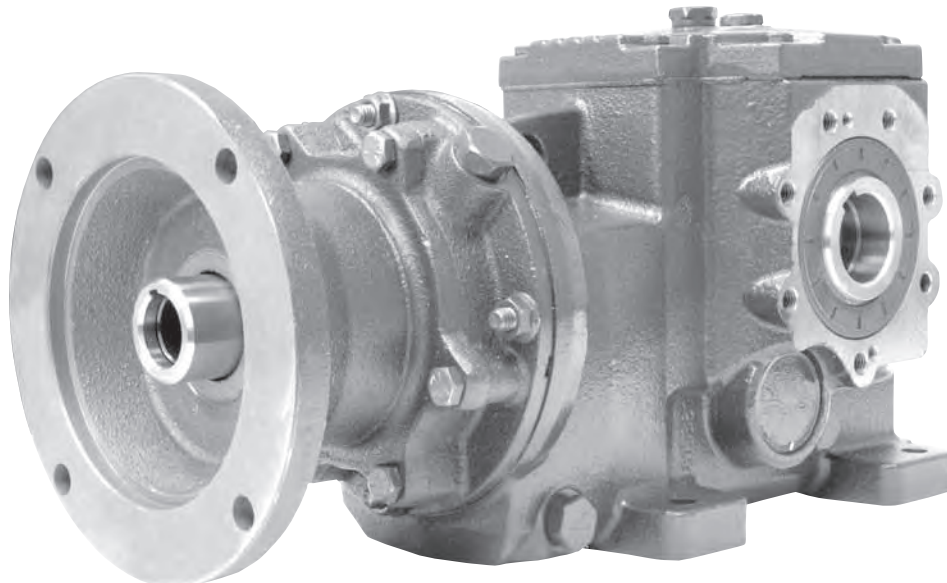


Scoop Mount





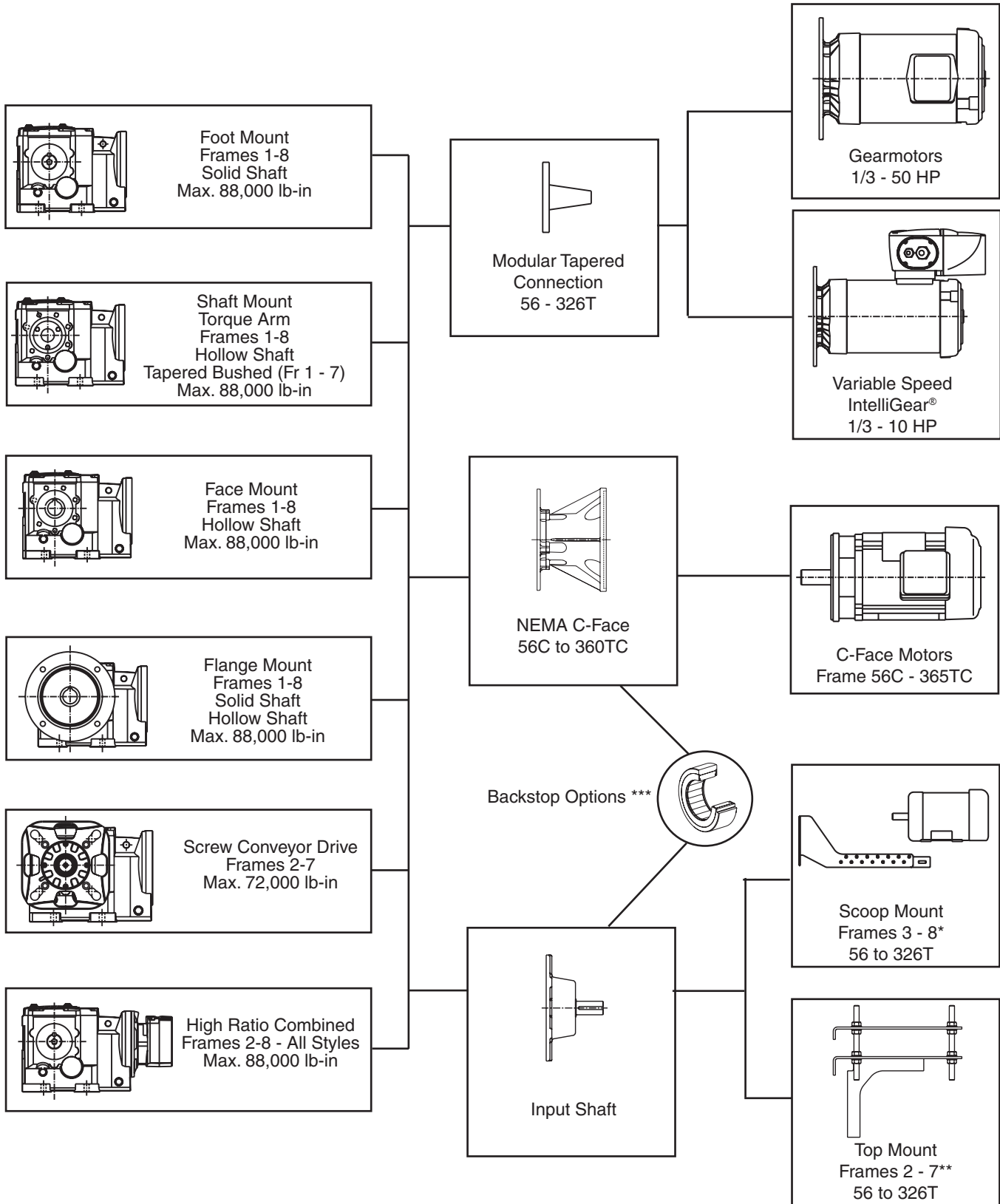
Gearmotor SectionPage B-6 - B-117



Reducer SectionPage B-118 - B-240

Mounting Versatility and Size Range

OtN Series



* Not available for frames 2 - 5, 5-stage or frames 4 - 6, 6-stage.

** Only available for frames 3 - 7, 3-stage and frame 2 in 2 stage.

*** Not available for frames 3245 and 3365A. Available input shaft or scoop mount only for frames 6 - 8.

General Information

General

OtN helical-bevel right angle gearmotors and speed reducers incorporate the latest in design and manufacturing technologies to deliver an energy efficient, reliable, helical-bevel gear train. This gearing can be combined with either a constant or variable speed motor if a gearmotor is desired. The latest generation of OtN gearing is 98% efficient per gear stage, with two, three, five or six stages available for ratios of 3.55:1 to 10,000:1. OtN is available in a wide variety of mounting arrangements that include foot mount, face mount, flange mount or shaft mount with a torque arm. The output can be left, right, or dual solid shaft or shaft mounted with hollow quill or new tapered bushed.

Gearmotors

Three phase OtN gearmotors are available with HE type high efficiency motors in non-hazardous enclosures starting at 1/3 HP at standard lead-times. These motors comply with requirements in the US and Canada for energy efficiency to deliver superior operating cost savings, reduced motor temperature rise and 5:1 minimum constant torque output (60-11 Hz) from PWM power supplies for the End User. There are several motor enclosure options within the HE umbrella including Corro-Duty® cast iron exterior construction for most hostile environments. These features are complimented by the standard use of inverter duty winding materials that comply with NEMA MG1 Part 31. Emerson also offers gearmotors with 1 phase TEFC motors to 5 HP and Explosionproof 3 phase gearmotors to 10HP.

Housing

The unique housing design allows the OtN3000 to directly interchange with many popular competitive products, while offering a version that also replaces the OtN2000 sizes that it replaces. This allows for simple aftermarket replacement of both OtN2000 and many of the more common helical-bevel products from other manufacturers. All housings are cast from high-strength cast iron. Additionally, the new, quill style c-face of OtN3000 is often shorter than competitive designs, while allowing room for a fully rated backstop.

Performance

OtN designs deliver ratings that are amongst the highest in the industry for similar frame sizes. For replacements, this means that dimensional replacements generally meet or exceed the original unit ratings for long life. In new applications, this can mean cost savings through downsizing versus the competition. Each OtN unit is

also supplied factory-filled with high quality synthetic lubricant, an extra cost option for competitive units. This offers operation over a wide temperature range with minimal maintenance required.

Screw Conveyor Drives

The OtN3000 units may be ordered in a CEMA screw conveyor drive version. The same variety of screw conveyor drive shafts, sealing cartridges and trough ends are available as the Browning TorqTaper® Plus shaft mount product line. Now there's a screw conveyor drive available with a full range of gear ratios and a gearmotor, c-face, input shaft, scoop mount or top mount input. The standard tapered roller bearings in this version provide heavy thrust load capability - an important feature for many screw conveyor applications.

Flexibility

The new OtN3000 offers a shaft-mounted version that incorporates the tapered bushing system from the Browning TorqTaper Plus shaft mount reducer. This extends each frame size to be usable on a variety of shaft sizes. It also provides a proven bushing system with a centering ring that reduces wobbling on the shaft for reduced wear and tear. All sizes are also available with a hollow quill sized to match popular competitive units. The bushed version of OtN3000 includes a bushing to match the OtN2000 equivalent frame size for replacements. The shaft-mounted units all include feet on the housing base and they can be tied down to the machine frame using a face mount, flange mount, or torque arm. There are two flanges available for most OtN3000 frame sizes, one of which is competitively interchangeable. Also, for applications requiring the gearmotors to be powered by an inverter (VFD), all Allguard® three phase motor designs now incorporate an upgraded wire and varnish treatment. Housings can be mounted in a variety of positions as well, with only a change in the breather and drain plug positions and a change in oil volume.

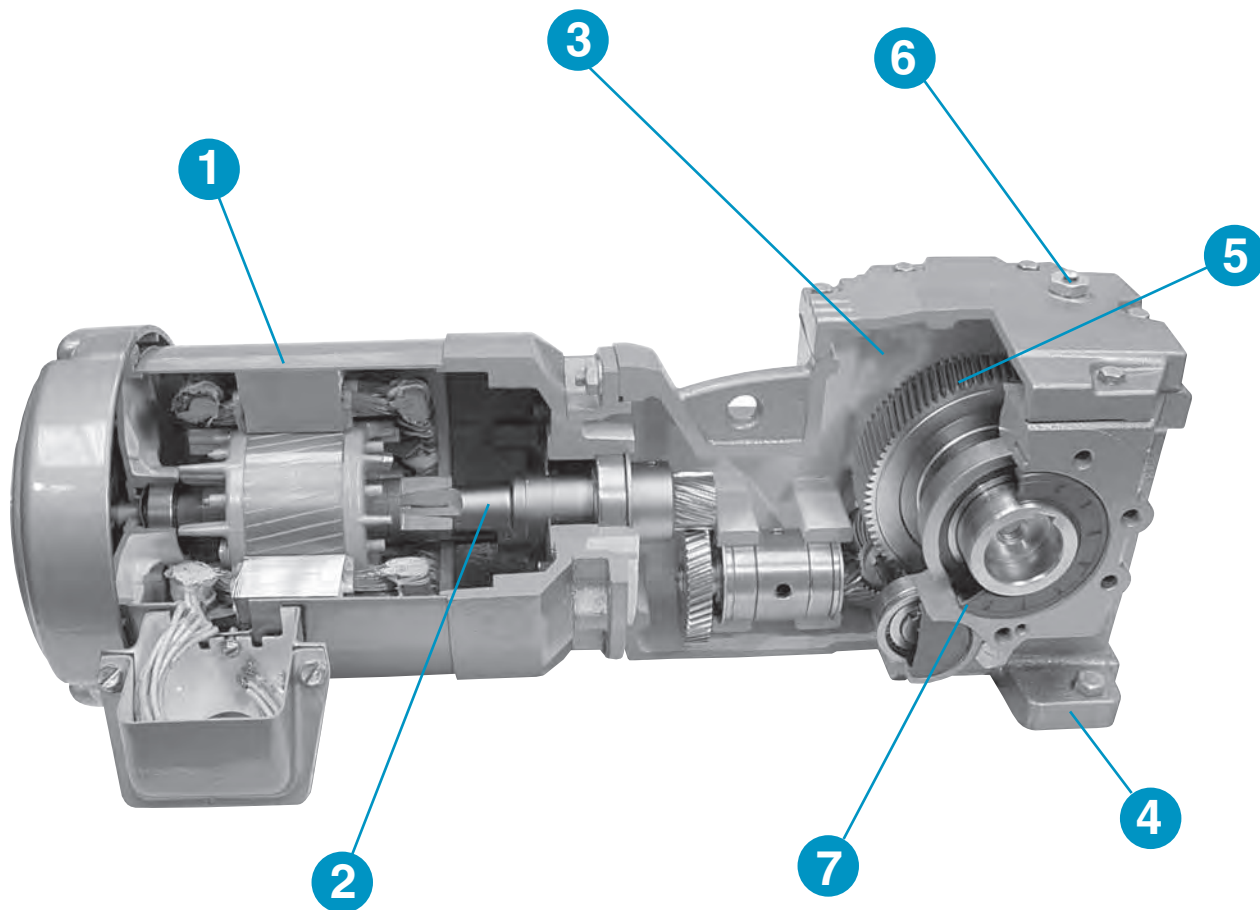
Reliability

Gear housing sizes 1-5 are fitted with normally closed breathers to exclude contaminants, while preserving low internal operating pressure. All oil seals operate on plunge ground shaft surfaces to deliver extended life. Enhanced insulating materials and other standard features of our premium Varidyne® inverter duty motors allow Emerson to extend an industry leading 3-year motor warranty, even when using these motors with PWM inverter power up to 575 VAC.

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Type OtN Helical-Bevel Series 2000/3000 Gearmotor Features...

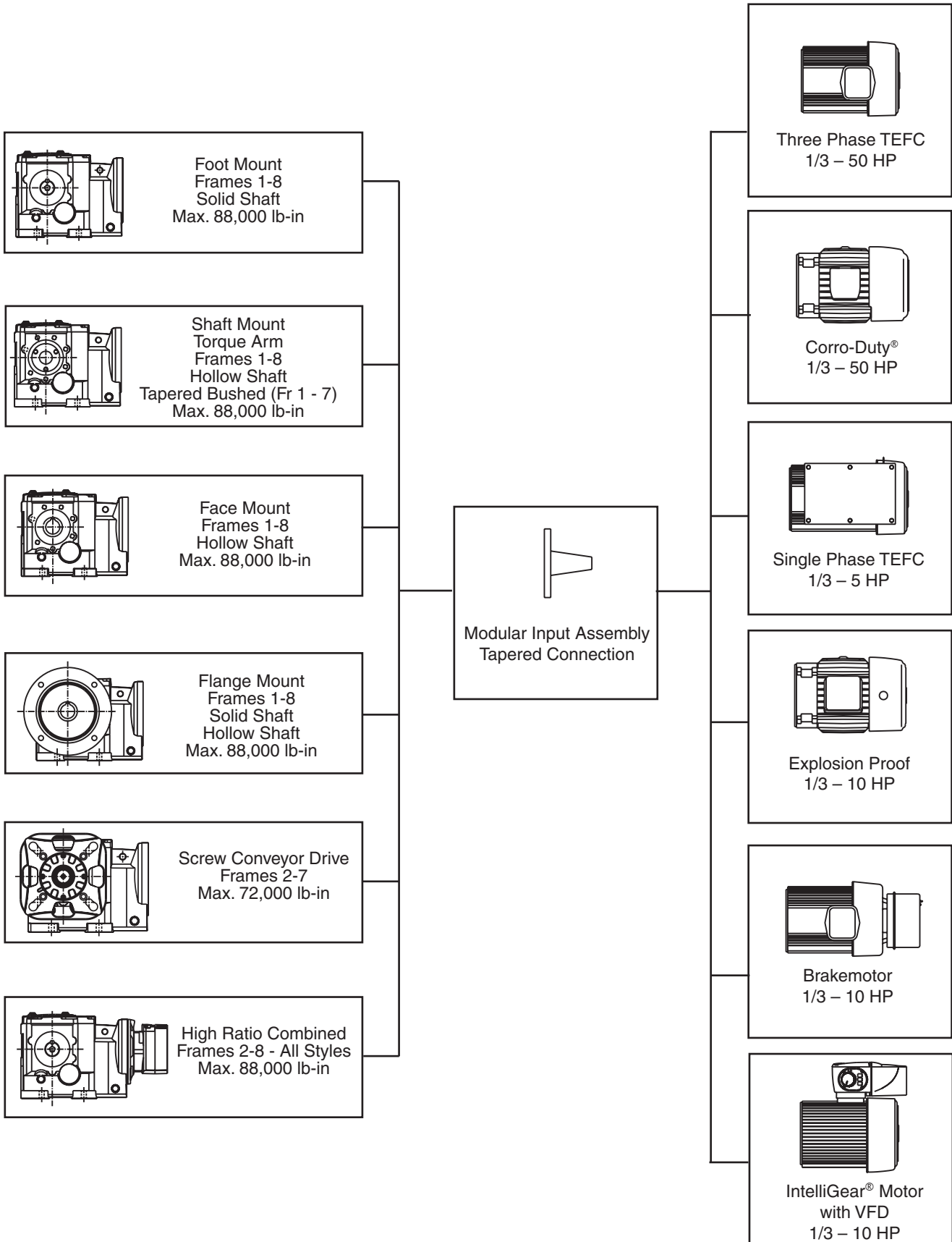


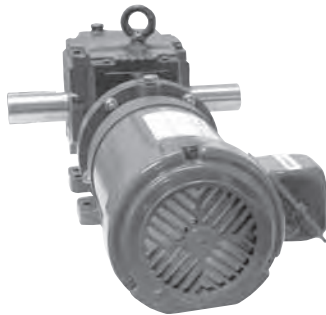
Design Features

- 1. High Efficiency Motor Design Available**
 - Any 3 phase non-XP gearmotor.
- 2. Innovative Self-Locking, Self-Aligning Taper Shaft Motor Connection**
 - Easy on-site motor replacement.
 - Change motor without draining oil, breaking the gearcase seal, or changing primary pinion.
- 3. Gearbox Supplied Factory Filled with Synthetic Oil**
 - Wide temperature range and longer life.
- 4. Corrosion and Shock Resistant Cast Iron Housing**
 - One piece, reinforced and ribbed for extra strength.
- 5. High Efficiency Helical-Bevel Gears. 98% per Stage**
 - Helical gearing is case hardened and then skived, superfinished or ground.
 - All gears heat shrunk on shafts or mounted on self-locking tapered shafts and keyed for high shock load capability.
- 6. Normally Closed Breather with Multiple Locations (Optional OtN2000)**
- 7. Double Lip Seals on Heat Treated, Plunge Ground Shafts**

Mounting Versatility and Size Range

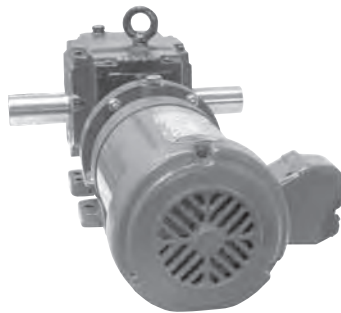
OtN Series





TEFC – Three Phase

- Suitable for general purpose industrial applications
- High efficient design standard
- 1.25 service factor through 5 HP; 1.15 service factor above 5 HP
- Available for 50 Hz, 190/380 VAC through 30 HP
- Premium class F Allguard® insulation standard
- Premium efficiency available as option 3 HP and larger
- Inverter duty option per NEMA MG1 part 31 stocked
- Washdown gearmotor available to 2 HP



Corro-Duty®

- Designed for wet, corrosive applications and industries including waste treatment, mining and lumber.
- All cast iron construction (56 and 140 frames are rolled steel)
- High efficiency standard 1/3 HP and above
- Premium efficient option 3 HP and larger
- 1.15 service factor, class F Allguard motor insulation
- Condensation drains in motor and conduit box
- 40°C ambient, NEMA design B, continuous duty
- Inverter duty version per NEMA MG1 part 31 stocked to 20 HP



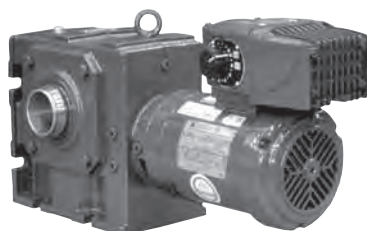
TEFC – Single Phase

- For agricultural, light material handling, textile, and light pumping applications
- 1.25 service factor
(1.0 service factor, 2 HP and 1.15 service factor, 3 - 5 HP)
- Capacitor start
(capacitor run above 1/2 HP, 48 frame)
(capacitor run above 1/2 HP, 56 – 180T frames)
- Class B insulation, continuous duty, reversible



Explosion Proof

- Ideal for the petro-chemical, grain, mining, and chemical industries
- Class I, group D, class II, groups F and G
- All cast iron construction (plastic fan cover)
- 1.0 service factor, class B insulation
- 40°C ambient, NEMA B design, continuous duty
- UL* approved Inverter duty per NEMA MG1 part 31 available



IntelliGear®

- Variable speed gearmotor with NEMA 4/12 enclosure
- "Onboard" push button and remote speed changing options
- Pre-programmed 6:1 constant torque speed range
- Versions for 3/460V input power supplies from 1/3 to 10 HP
- 1/230V and 3/230V to 5 HP
- 1/115 V through 3/4 HP
- UL, CUL and CE
- Optional 10:1 and 15:1 speed ranges

Selection Information

1. Input HP
 - Based on application data
2. Speed / ratio
 - Obtain either desired output speed (RPM) or gearbox ratio based on application.
3. Mechanical service factors - gears
 - There are three standard classifications for gearmotor applications:

Class I - uniform loading, 3-10 hours per day, service factor 1.0 (minimum).

Class II - uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day; service factor 1.4 (minimum).

Class III - moderate shock loading over 10 hours per day or heavy shock loading up to 10 hours per day; service factor 2.0 (minimum).

- The tables on pages B-27 through B-29 are based on past operating experience within the industries listed and information gathered by AGMA. If the user has data reflecting greater severity than normal industry usage, then the AGMA class should be increased.
- Choose the AGMA class for your given application based on this criteria. If your application cannot be found, use the following table to determine the service factor.

Duty Cycle	Hours Operation	Uniform Load U	Moderate Shock Load M	Heavy Shock Load V
Continuous	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Frequent Starts/Stops*	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

*Greater than 10 per hour

Size Selection

- Step 1 - Locate gearmotor selection tables (pages B-30 - B-62) based on motor HP.
- Step 2 - Choose the appropriate nominal speed or ratio required.
- Step 3 - Select the correct gearmotor based on AGMA class or service factor determined from selection information.
- Step 4 - Verify overhung load ratings where required (see below).

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a gearmotor, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

- A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

- B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r}$$

Where:

- OHL = Overhung load (pounds)
- T = Torque (in. lbs.)
- r = Radius of driving member (in.)
- HP = Horsepower
- K = Drive type factor
- LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
V-Belt	1.50
Timing Belts	1.25

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Selection Example

A right angle, foot mounted gearmotor is required to operate a uniformly loaded belt conveyor at 30 RPM, 24 hours per day. An 11" diameter sprocket is mounted at the end of the shaft and drives the conveyor with a chain drive. The customer has specified a 230/460 VAC, 3-phase, TEFC high efficiency motor rated 5 HP. Shaft extension is to be on the right, viewing the motor fan cover. The unit will be in the normal floor mounted position with the motor horizontal and the mounting feet on the bottom.

Refer to AGMA service classification table on page B-27.

Application	Load	Class	
Conveyors – Uniformly Loaded or Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	U	Up to 10 Hrs/Day	Over 10 Hrs/Day
		I	II

Since this application operates 24 hours per day, a Class II service factor is required.

Step 1... Locate a gearmotor for 5 HP on page B-50.

Step 2... Find a nominal speed closest to the 30 RPM output required.

Step 3... Select the row in the table for Class II service factor.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types
31	I,II	1.4	9661	2875	56	3473	184T	T,C,S,X,IG
28	I	1.3	10491	2875	63	3473	184T	T,C,S,X,IG

30 rpm falls between these two lines in the selection table, but the 28 rpm line doesn't meet the Class II service factor requirement. Size 3473 gear frame with 56:1 nominal ratio and 31 rpm output is the best selection.

Step 4... Verify that the Overhung Load Rating is sufficient for the applied load.

$$r = \frac{\text{Sprocket Diameter}}{2} = \frac{11}{2} = 5.5"$$

$$K = 1.0 \text{ (chain drive)}$$

$$LLF = 1.2 \text{ (sprocket on end of shaft)}$$

$$HP = 5$$

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r} = \frac{63025 \times 5 \times 1.0 \times 1.2}{31 \times 5.5} = 2217.9 \text{ lbs.}$$

Since the gearmotor output OHL rating is 2875 lbs (see selection table) and this is greater than the applied OHL of 2217.9 lbs, the selection is fine. If the OHL rating was too low, the sprocket diameter or gear frame could be increased.

Complete the Process by Building a Complete Part Number

Catalog designation (see "Catalog Nomenclature" page B-14):

OtN • 3473 • S2 • B33G • 56 • HT24 • 184T • 5

The codes indicate the following: Frame 3473 OtN Gearmotor, S2 = the standard output shaft and mounting dimensions, B = Floor Mount, 33 = No Faces or Flanges, G = Single Shaft on Right Facing Motor Fan, 56:1 Ratio, HT24 = High efficiency TEFC Motor, 184T Motor Frame, 5 HP. (Page B-16 shows mounting positions, page B-15 explains output shaft and face or flange positions, and page B-17 shows motor types.)

Gearmotor Selection

Selection Information

- Determine installation environment
 - Control enclosure is NEMA 4/12
- Input HP
 - For constant torque loads this is at maximum speed of range. Therefore, the gear ratio should be selected to closely match the required maximum speed.
- Speed range
 - Confirm maximum and minimum of needed range.
- Determine control power supply
 - Phase and voltage

Power Supply	Input HP's
1 ph / 115 v	.33 to .75
1 ph / 230 v	.33 to 2
3 ph / 230 v	.33 to 5
3 ph / 460 v	.33 to 10
3 ph / special	R. O.

- Mechanical service factoring of gear
 - Refer to page B-10 for this procedure.

Note: IntelliGear application for 1 phase power supply is limited to 10 starts per hour where the unit is started via AC power mains contractor.

- Determine speed adjustment option
 - Select from:
 - PD = Digital keypad with forward/reverse/stop/speed up/speed down/speed display on IntelliGear enclosure
 - P1 = Run/stop/speed pot. mounted on IntelliGear enclosure
 - P2 = Forward/reverse/stop/pot. mounted on IntelliGear enclosure
 - P3 = Speed pot. (only) mounted on IntelliGear enclosure (start/stop by others)
 - P4 = Speed pot. (only) mounted inside IntelliGear enclosure (start/stop by others)
 - R = Remote signal following (0-10VDC or 4-20mA supplied by others)
 - RP = Remote from fieldbus - Profibus DP

Size Selection

- Step 1 - Determine the maximum motor rpm from the following table based on the whether the application requires a speed range of 6:1, 10:1 or 15:1.

$$\text{Speed Range} = \frac{\text{Maximum Output Speed Required}}{\text{Minimum Output Speed Required}}$$

HP	IntelliGear Motor Speed Range		
	6:1 Speed Range	10:1 Speed Range	15:1 Speed Range
1/3 - 3/4 HP	1760 - 293 rpm	1760 - 176 rpm	2625 - 175 rpm
1 - 1 1/2 HP	1750 - 291 rpm	1750 - 175 rpm	2620 - 175 rpm
2 HP	1750 - 291 rpm	2585 - 255 rpm	N. A.
3 HP	1750 - 291 rpm	2630 - 263 rpm	N. A.
5 HP	2150 - 358 rpm	2605 - 260 rpm	N. A.
7.5 HP	2150 - 358 rpm	2670 - 267 rpm	N. A.
10 HP	2100 - 350 rpm	2600 - 260 rpm	N. A.

- Step 2 - Determine the gear ratio required. Use the maximum motor rpm from the table above.
- $$\text{Gear Ratio} = \frac{\text{Maximum Motor Speed}}{\text{Maximum Output Speed Req'd.}}$$
- Step 3 - Locate gearmotor selection tables based on the input HP required at the ratio calculated in Step 2. Select the nominal gear ratio closest to the one calculated.
- Step 4 - Select the correct gearmotor that meets or exceeds the AGMA class or service factor determined in the selection information.
- Step 5 - Verify overhung load rating where applicable per formulas on page B-10.
- Step 6 - Confirm input power supply is compatible with HP of selection and select the speed adjustment option desired for the application.
- Step 7 - Referring to page B-18, determine if an alternative controller location is required for the application. (Note that the default location is "FO" – the 12 o'clock position.)

Selection Example

A right angle, flange mounted gearmotor is required to operate a mixer for a variable density solution. The mixer operates 8 hours per day, and the speed range is 12-56 rpm. The mixer shaft will be directly coupled to the gearmotor output shaft on the right side viewed from the motor end. The customer has specified a 2 HP gearmotor with a TEFC motor, and the power supply is 460 VAC, 3-phase. The flange is to be located on the right, viewing the motor fan cover, and the OD required is 250 mm. The unit will be mounted on its side with the motor horizontal and the output shaft vertical down. Viewed from the top of the gearcase housing, the motor will be mounted to the right.

Refer to AGMA service classification table on page B-28.

Application	Load	Class	
		Up to 10 Hrs/Day	Over 10 Hrs/Day
Mixers (Also see Agitators):			
Concrete - Continuous	M	II	II
Concrete - Intermittent	M	I	-
Constant Density	U	I	II
Variable Density	M	II	II

Since this mixer is variable density and operates 8 hours per day, a Class II service factor is required.

Step 1... Calculate the speed range required: 56 rpm max./12 rpm min. = 4.7:1, so an IntelliGear with 6:1 range is required. This means the motor top speed will be 1750 rpm for a 2 HP IntelliGear.

Step 2... The ideal gear ratio is 1750 rpm / 56 rpm = 31.25:1.

Step 3... Locate gearmotor for 2 HP on page B-44, and find a nominal ratio close to 31.25:1.

Step 4... Select the row in the table for Class II service factor.

Output rpm	AGMA Class	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types
57	III	3+	2072	2090	31.5	3363	145T	T,C,S,X,IG
56	I, II	1.5	2178	2071	31.5	3242	145T	T,C,S,X,IG
53	III	3+	2228	2090	35.5	3363	145T	T,C,S,X,IG

Note that 31.25:1 ratio is closest to 31.5:1 nominal ratio. There are two choices at this ratio, and both meet the Class II service factor requirement. This means that the smaller Size 3242 gear frame will be the most economical selection.

Step 5... For a direct coupled application, it is not necessary to consider the Overhung Load Rating.

Step 6... The power supply is 460 VAC/3-phase, and there is an IntelliGear available for this voltage at 2 HP. (See the footnote at the bottom of page B-44.)

Complete the Process by Building a Complete Part Number

Catalog designation (see "Catalog Nomenclature" page B-14):

OtN • 3242 • S2 • T63G • 31.5 • IG4 • 145T • 2

The codes indicate the following: Frame 3242 OtN Gearmotor, S2 = the standard output shaft and mounting dimensions, T = Flange mount with output shaft down, 63 = Flange on right side, G = Single Output Shaft on the right side, 31.5:1 Nominal Ratio, IG4 = 460 VAC/3-Phase IntelliGear, 145T Motor Frame, 2 HP. (Page B-16 shows mounting positions, page B-15 explains output shaft and face or flange positions, and page B-17 shows motor types.)

OtN • 34 7 3 • S2 • B 33 G • 22.4 • HT24 • 145T • 1.5 • G11

See pages B-15 - B-16

OtN Series

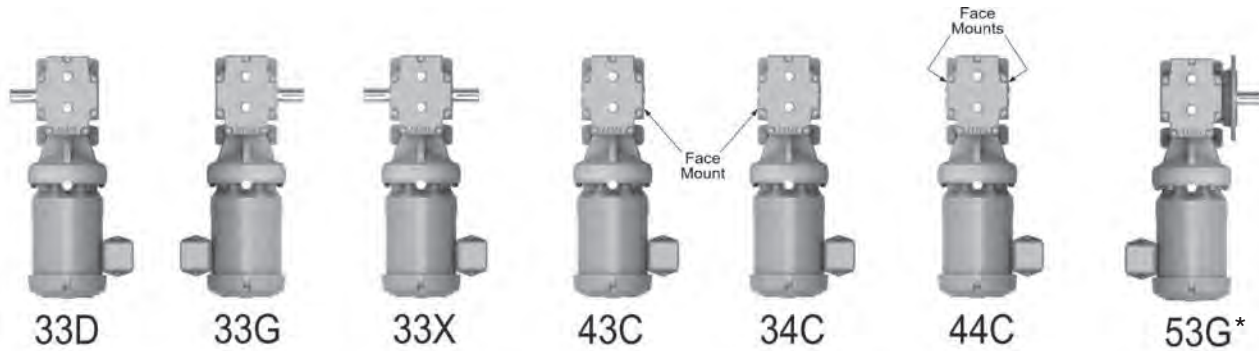
Browning Right-Angle Helical-Bevel	Series	Reducer Size	Stages	Shaft & Foot Dimensions ¹	Mounting Position	Output Face/Flange Right-Left Viewed From Input End	Output Shaft Configuration Viewed from Input End	Nominal Gear Ratio	Input Type	Motor Frame	Motor HP	Modification(s)	
SERIES 3000	31	3	2 = 2 stages	S2 = Industry interchange dimensions	B = Floor mount	3 = Standard round	G = Shaft right	22.4 = 22.4:1 Use nominal ratio selected from gearmotor selection tables	Motor type selected from catalog designations column in standard motor input from table on page B-17			Select from modifications listed on pages B-18 to B-21	
	32	4	3(A) = 3 stages		P = Ceiling mount	4 = Face mount	D = Shaft left						
	33	6	5 = 5 stages		H = Wall mount, input left	5 = Standard dimension flange mount	X = Dual shaft						
	34	7	6 = 6 stages	S1 = OtN2000 replacement dimensions	T = Wall mount, input right	6 = Alternate dimension flange mount	C = Finish bore						
	35	8			V = Input vertical up	7 = Screw conveyor adapter	B = Tapered bushed						
	36	9			W = Input vertical down		S = Screw conveyor shaft						
	37	0											
SERIES 2000			3 = 3 stages	S1 = All Series 2000 Units									
	28	0	5A = 5 stages										
			6A = 6 stages										

¹ Shaft and critical mounting dimensions match either OtN2000 or SEW® "K" Series units. These dimensions include the mounting base, output flanges, output shaft diameter, distance from housing center line to shaft tip, and output quill diameter. The B14 mounting faces and overall product envelope (height, width, depth) do NOT match.

SEW is believed to be a trade name of SEW-Eurodrive GMBH & Co. and is NOT owned or controlled by Emerson. Emerson cannot and does not represent or warrant the accuracy of this information.

Output Flange Sizes

Flange Dimensions (mm)										
BD	140	165	200	250	300	350	400	450	550	
AK	95	110	130	180	230	250	300	350	450	
AJ	115	130	165	215	265	300	350	400	500	
Gear Frame	Output Flange Type Designation Code									
31	6	5								
32			5	6						
33				5	6					
34					5	6				
35						5	6			
36								5		
37								5		
28										5



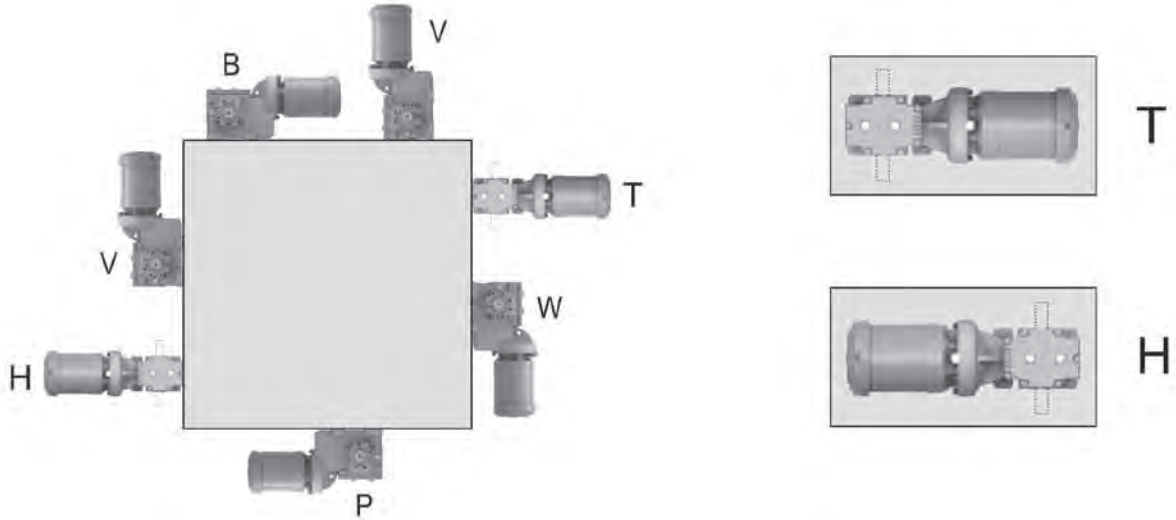
Examples Above are Top Views

OtN Frame	Foot Mounted			Face Mounted				Flange Mounted						Shaft Mounted		Screw Conveyor Drive		
	Solid Shaft			Hollow Shaft				Solid Shaft			Hollow Shaft			Hollow	Bushed	73S	37S	
	33G	33D	33X	33C	34C	43C	44C	53G	35D	38D ²	83G ²	53C	35C	55C	33C			33B**
31	●	●	●	●	●	●	●	●	●	-	-	●	●	●	●	●	-	-
32	●	●	●	●	●	●	●	●	●	-	-	●	●	●	●	●	●	●
33	●	●	●	●	●	●	●	●	●	-	-	●	●	●	●	1	●	●
33A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-
34	●	●	●	●	●	●	●	●	●	▲	-	●	●	●	●	●	●	●
35	●	●	●	●	●	●	●	●	●	▲	-	●	●	●	●	●	●	●
36	●	●	●	●	●	●	●	●	●	-	▲	●	●	●	●	●	●	●
37	●	●	●	●	●	●	●	●	●	-	▲	●	●	●	●	●	●	●
28	●	●	●	●	●	●	●	●	●	-	-	●	●	●	●	-	-	-

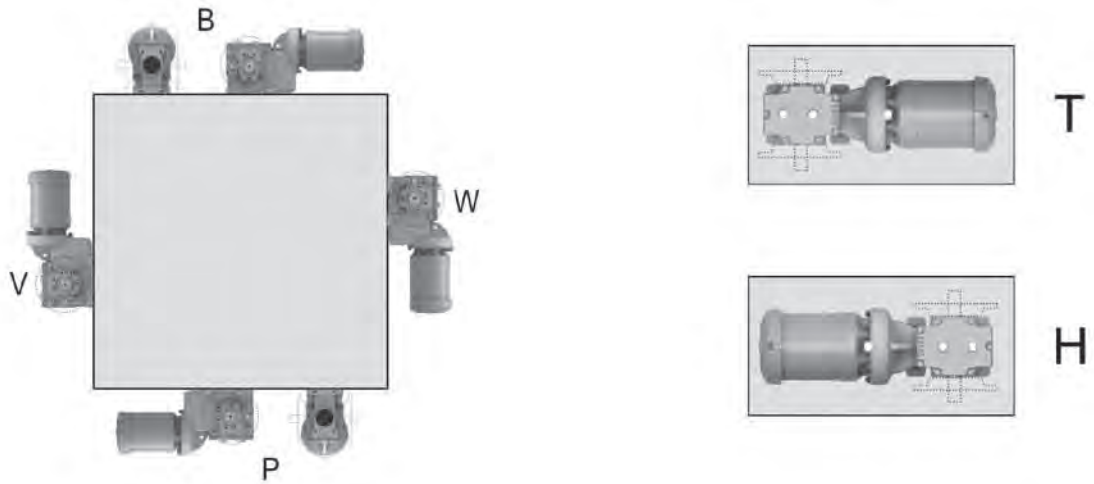
If shaded, the alternative flange can be specified by replacing "5" with "6" in the coding

- This is available at normal lead-time
- ▲ Refer to customer service for lead-time for extended flange product
- * See note for shaded field for flange option
- ** Bushing can be assembled on either side of reducer during field mounting
- 1 Effective 2/1/10 the frame 33 bushed design will be using the 33A frame and 115 SMTP bushing system
- 2 Extended Flange design

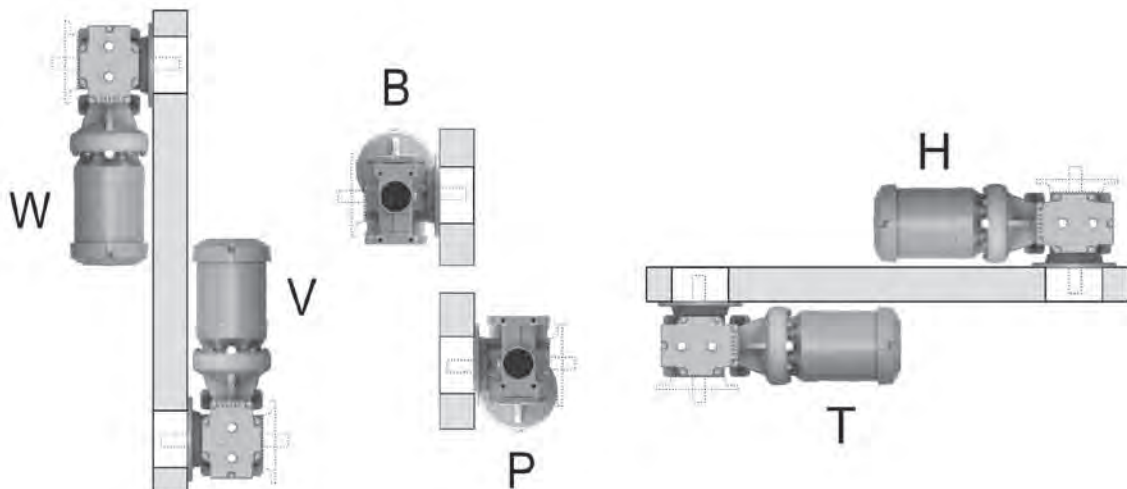
Foot Mount



Foot Mount with Face or Flange



Flange, Face or Shaft Mount

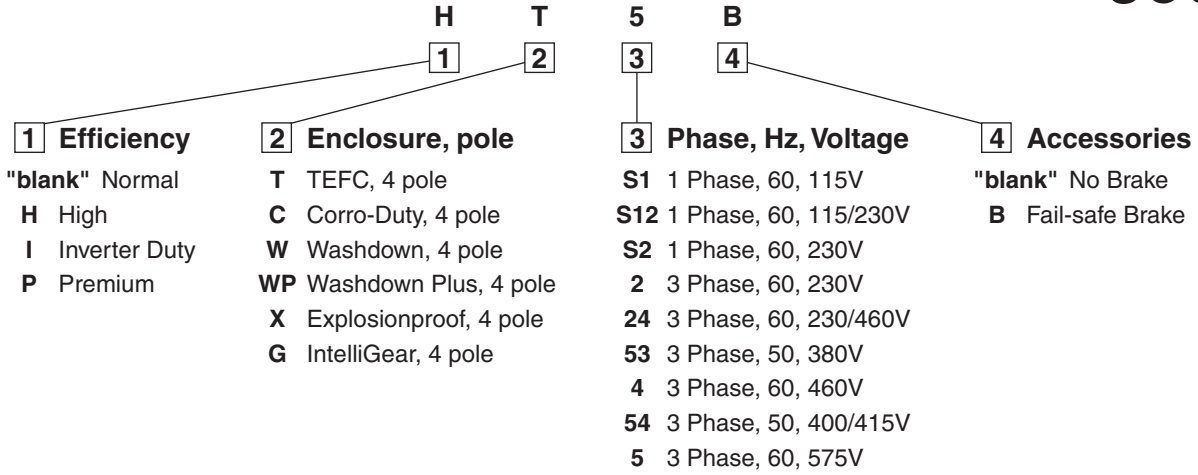




Standard Motor Input Types

OtN
SERIES **2000**
3000

Example: High Efficiency, TEFC, 3 phase 60 Hz, 575V, with Fail-safe Brake



OtN Series

Base Design	Input Code	Motor HP															
		0.33	0.50	0.75	1	1.5	2	3	5	7.5	10	15	20	25	30	40	50
S Single Phase TEFC	TS12	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS12B	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS2	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
	TS2B	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
T 3 Phase TEFC	HT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	HT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24B	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T5	Y	Y	Y	Y ¹	-	-	-	-	-	-	-	-	-	-	-	-
	T5B	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T53	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	P	P	P	P	P	P	P
	T54	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	P	P	P	P	P	P
	IT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-
	IT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-
	PT24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PT5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	W24	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
	W5	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
	WP24	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
	WP5	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
C 3 Phase Corro-Duty®	HC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PC24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PC5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
X 3 Phase Explosionproof	X24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	X5	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
	IX24	P	P	P	P	P	P	P	P	P	P	-	-	-	-	-	-
IG IntelliGear®	IGS1	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
	IGS2	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	IG2	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	IG4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-

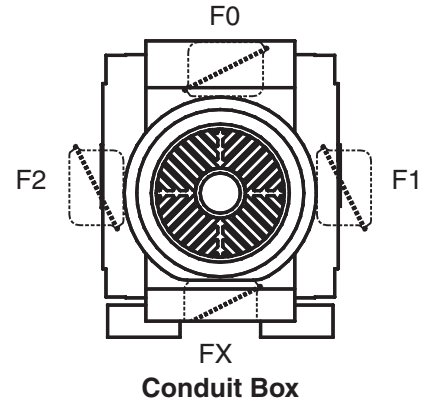
P = Production lead-time Y = Available from stock Y¹ = Motor frame is B56 - = not available

Electrical Connection Options

Conduit Box Location

When ordering a conventional OtN gearmotor, specify the desired conduit box location when viewing fan cover guard of motor. If no option is specified, the conduit box location per gearbox mounting will be supplied as shown in the table below.

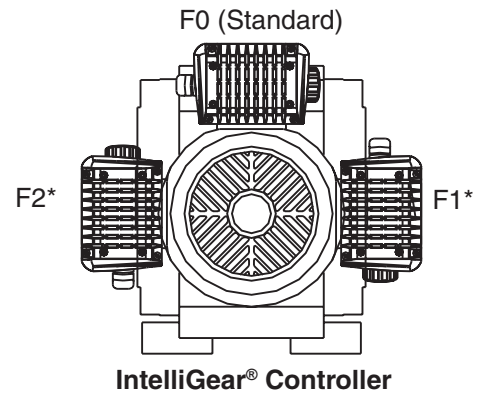
Output Arrangement	Standard Conduit Box Location
33D, 35D, 36D, 33X, 55X, 66X, 33B, 33C, 34C, 44C, 35C, 36C, 55C, 66C, 73S	F-1
33G, 53G, 63G, 43C, 53C, 63C, 73S	F-2



Controller Location

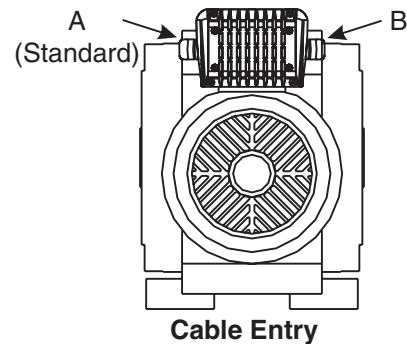
When ordering an IntelliGear® Series 2000 or 3000 gearmotor, you can specify the controller location and conduit entry location when viewing the fan cover guard of motor. If no options are specified, the "F0" controller location will be supplied.

* Refer to Application Engineering for de-rating guidance in the F1 or F2 IntelliGear locations.



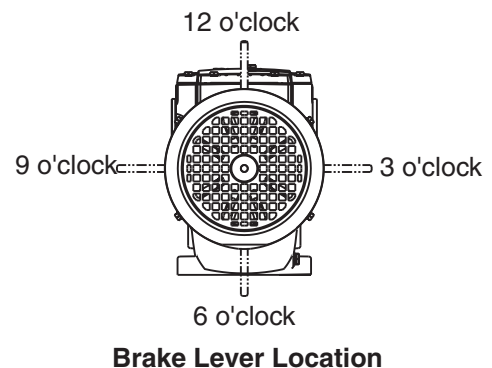
Cable Entry

IntelliGear Cable Entry can be from either side of enclosure. If no option is specified, "A" will be supplied.



FCR Brake Release Lever Positioning

Unit Type	Default Location	Optional Location(s)
OtN less IntelliGear	12 o'clock	3, 6, or 9 o'clock
OtN with IntelliGear	9 o'clock	3, 6, or 12 o'clock (but lever can not be in same position as the IntelliGear)



Modifications, Options and Accessories

Inverter Duty Gearmotors

Improvements in the motors for OtN gearmotors include an upgrade in the wire and varnish treatment used in all Allguard® non-explosionproof three phase motors. This makes the three phase gearmotor suitable for use with PWM inverters in many applications. A one year warranty will be extended for standard efficiency motors on constant torque applications over 3:1 range from 60-20 Hz. The same warranty is extended for high efficiency design motors on constant torque applications over 5:1 range from 60-12 Hz providing the following conditions are met:

- Motor is non-hazardous 3 phase > 48 frame
- Cable length to controller < 100 feet
- Line voltage is < 480 VAC
- Thermal protectors are not required

For all other conditions of operation (including 575 VAC) that exceed these parameters and all hazardous motor applications, select the inverter duty motor design under the motor Type required by the application. These designs include winding thermostats and will be covered by a three (3) year limited warranty of the motor as covered in the Standard Terms and Conditions, and full compliance with NEMA MG1 Part 31.

Motor Modifications

M1 Brakes

Design

These motor mounted brakes have a direct acting, spring set, electromagnetically released disc design. When power to the brake is interrupted, the brake will immediately set and hold. When power is restored to the brake then the brake will be released automatically.

Brake Enclosures

IP23 – suitable for indoors with relatively dry, clean and non-hazardous applications

IP55 – suitable for outdoor or indoor where gearmotor can be exposed to splashing liquids, dusts, and chemicals that are non-hazardous. Not suitable for washdown applications

Non-Hazardous Motor Types	Motor Frame Size(s)	
	56-180T	210T
S	IP23	N/A
T	IP55	IP23
IG	IP55	N/A

Motor Modifications Continued

Operating Voltage

Brakemotors for fixed frequency operation will be arranged for operating with motor power as standard. If another lower voltage like 115 VAC is to be used for the brake on a 3 phase motor, state this voltage at order entry

Brakes for inverter duty brakemotors require a separate fixed frequency AC power source for the brake, but interlocked with starting of the motor. The standard brake design for inverter duty gearmotors will be arranged for single phase 115/230 VAC.

Mounting

Brakes for OtN gearmotors are suitable for the mounting ordered for the gearmotor. The standard brake will have a manual release included. Refer to the table on B-18 for the manual release mounting options available on the FCR type IP 55 brake design.

M2 Premium Efficiency Motors

High efficiency motor design is a standard option for three phase motors on 56 frames and larger motors in types “T” and “C” to meet the energy legislation in Canada and most end user specifications.

Premium efficiency motors are also optional starting at 3 HP.

M3 Washdown Duty Motors

See GM1 under Gearmotor Modifications

M4 Canopy Cap/Drip Cover

A canopy cap can be supplied for protection from dripping liquids entering the fan end of a gearmotor. It is recommended but not standard when gearmotor mounting is ordered to be “V”

M5 Frequency – 50 Hz

Motors for operation at 50 Hz are available. Refer all 3 phase requirements for 50 Hz to motor code T53 (380V) or T54 (400/415V). The published output speed in catalogs are based on 60 Hz. When operating or selecting a 50 Hz gearmotor, catalog output speed must be reduced by 5/6 for a given ratio. The service factor must also be reduced by 5/6 if the HP is maintained.

For all other 50 Hz voltages, refer to application engineering.

Modifications, Options and Accessories

Motor Modifications Continued

M6 Voltage (3 phase only)

Standard voltages are listed in the table below. 200 VAC will be handled by 208-230/460V motors up to 10 HP. Refer all other voltages to the Pricing Group to confirm availability.

Frequency	3 Phase Voltages Thru 30 HP
60 Hz	200, 230, 460, 575
50 Hz	380, 400/415

M7 Motor Insulation

Emerson's 3 phase motors are built with a premium Class F insulation system for "T", "C" and "IG" types. All "S" and "X" type motors use a Class B insulation.

Tropical insulation treatment is available as a modification on any motor designs noted above

Class H insulation systems require production lead-times and are not available on explosions proof "X" designs.

M8 Space Heaters

Space heaters are recommended for gearmotors installed in very damp locations to prevent condensation from forming on the motor windings when the motor is not operating. Leads will be brought out to the standard motor conduit box. Space heater voltages (115, 230, and 460V) must be specified when an order is entered. This is available on motors > ¼ hp.

M9 Thermal Protection – Thermostats

This protection uses a bi-metallic disc thermostat embedded each phase of the motor winding and then connected by others into the holding circuit of the motor starter or VFD drive. The sensor is normally closed, and opens the control circuit to shut the motor down if the motor achieves over-temperature conditions based on the motor insulation class or design code. Thermostats give protection for running overloads, abnormally high ambient, voltage imbalance, high or low voltage, and ventilation failure. Thermostats do not give protection for locked rotor, starting overloads or single phasing.

Thermostats are standard in inverter duty motor designs (including IG) as well as explosionproof dual label motors type "X".

Gear Modifications

G11 Corro-Duty

Corro-Duty treatment can be applied to a gearmotor or reducer when corrosive chemicals or unit will be operated outside in adverse environmental conditions. For gearmotors, the unit should start with specification of the Corro-Duty® type "C" motor design. Other special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
 - o Grey Option (default type)
 - 316 stainless steel paint (3 step)
 - Light grey semigloss finish
 - USDA and FDA approved
 - o White Option
 - Two step epoxy paint system
 - White gloss finish
 - USDA and FDA approved

For washdown application for gearmotors, refer to GM1 Washdown Duty Gearmotors and/or Washdown Duty Gearmotor PLUS.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the OtN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (refer to page B-240).

G15 Export Boxing

Export boxing can be provided for "under-deck" transport. When the quantity of OtN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Modifications, Options and Accessories

Gearmotor Modifications

GM1 Washdown Duty Gearmotors

This three phase gearmotor design combines special features of the gear and motor required for washdown duty. These include:

- Special treatment of motor interior and windings
- Drains at low point(s) of the motor frame
- Labyrinth seal at motor SE bracket/shaft extension
- Special “protected” breather for gearcase
- Corro-Duty exterior multi-application paint treatment (see Corro-Duty® Reducer for color options).

Motor types “W24” or “W5” are used to order this design based on motor voltage. This is available from 1/3 to 2 HP.

GM2 Washdown Duty Gearmotor PLUS

This three phase gearmotor design includes all the special features noted under GM1 above and the oil sump of the reducer will be filled before shipment with a FDA approved H1 rated synthetic lubricant for helical gearing (150). Volume of the oil will be dictated by the mounting position specified on the order.

Motor types “WP24” or “WP5” are used to order this design based on motor voltage. This is also available from 1/3 to 2 HP.

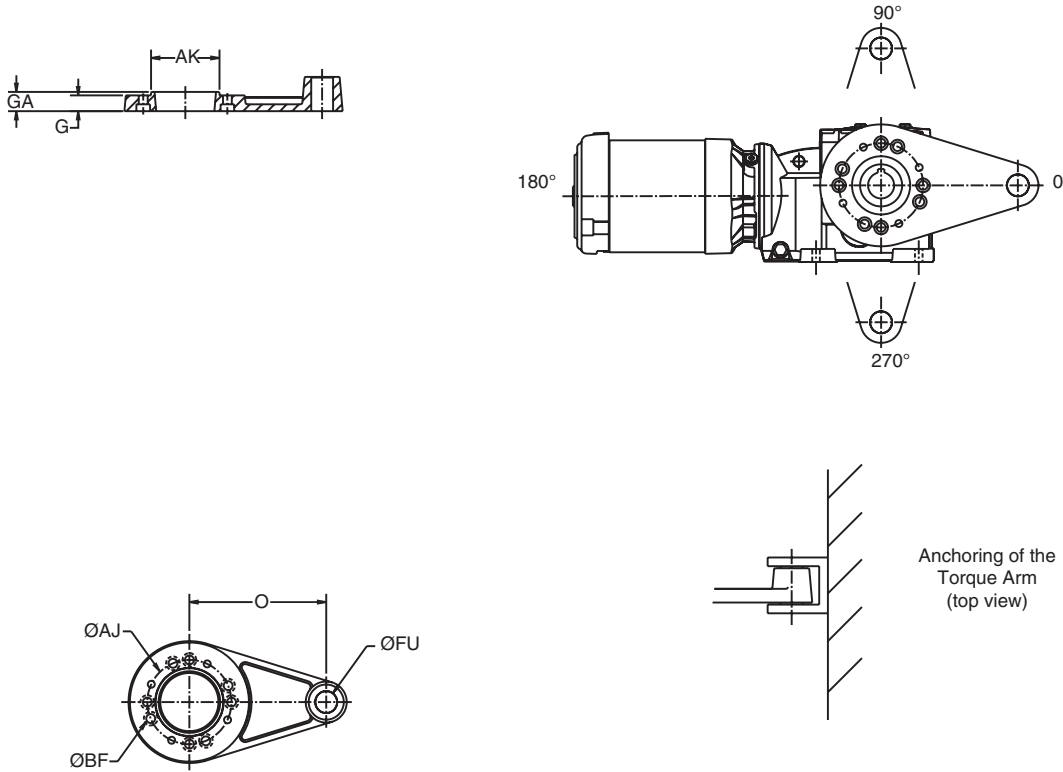
Accessories

The following accessories can be ordered along with gearmotors and will be supplied loose for mounting by others

Description	Gear Frames	Part #
NPT Adapter (1/4" NPFT)	31 to 35	0436216
NPT Adapter (3/4" NPFT)	36, 37, 28	0436218
Bushing Guard Kit ¹ (includes 2 guards to protect both sides)	32	XS9142
	33	XS9143
	34	XS9144
	35	XS9145
	36	XS9160
Oil Level View Port	31 to 35	0435936
	36, 37, 28	0435938

¹ These kits include all mounting hardware.

Torque Reaction Arm



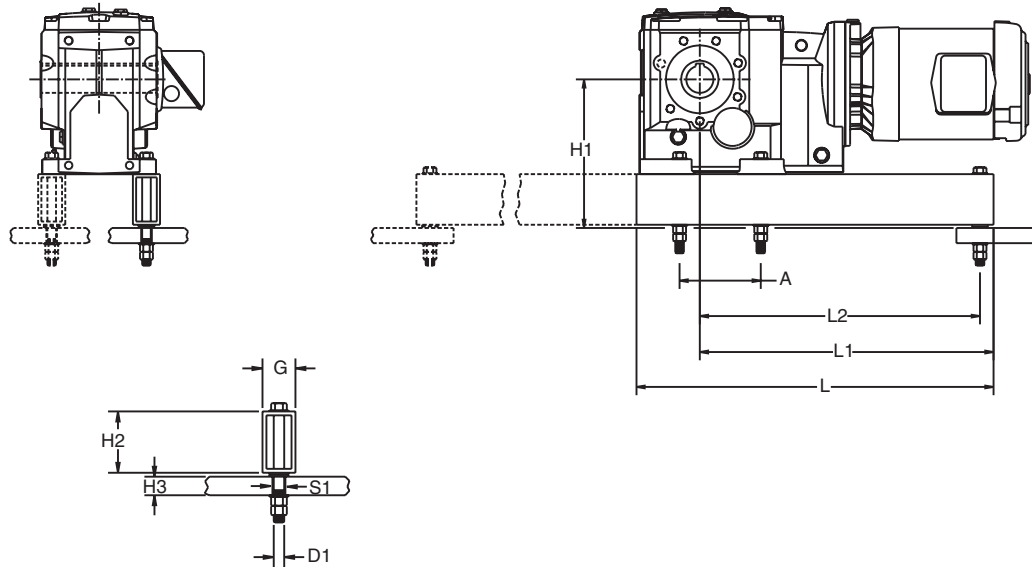
- Torque arm can be assembled in any of the three positions shown in the drawing above relative to the input (motor) when called out on the order.
- Torque arm can be affixed to either side of the 33C or 33B gear housing.
- If a torque arm is requested on an assembly order, it will be supplied loose for mounting by others.
- See page 23 for optional Torque Arm designs for frames 36 and 37.

Series 3000

OtN Frame	Part ID # Kit	G	O	AJ	AK	BF	FU	GA
31	ROC100KT001	-	5.118	3.74	3.246	.35	.394	.63
32	ROC200KT001	.63	5.118	3.94	3.150	.43	.394	.79
33	ROC300KT001	.91	7.874	4.84	3.937	.51	.630	1.10
34	ROC400KT001	-	9.842	5.98	5.118	.51	.630	.91
35	ROC500KT001	-	12.205	7.48	6.102	.67	.630	.908
36	ROC600KT001	0.79	13.78	9.06	5.905	.63	.940	.98
37	ROC700KT001	1.02	17.72	9.06	7.087	.87	.940	1.22

Torque Reaction Arm

OtN Series



- Torque arm can be assembled with attachment point on the input side or 180° opposite this, as shown above.
- Torque arm can be attached onto feet on either side of the gear housing as you face opposite the input (motor).
- If the torque arm is requested on an assembly order, it will be supplied loose for mounting by others.

Gear Frame	Part Number	A	D1	G	H1	H2	H3 max.	L	L1	L2	S1 min.
36	0986479	13.98	.75	2.50	13.61	4.50	1.50	35.83	27.46	26.08	0.81
37	0986479	16.54	.75	2.50	14.59	4.50	1.50	35.83	26.18	24.80	0.81
28	0986480	20.08	.88	4.00	18.67	6.00	1.88	43.31	31.69	30.12	0.94

Screw Conveyor Drive Shafts²

Gear Frame	1 1/2" Dia. Shaft for 6" - 10" Dia. Screw	2" Dia. Shaft for 9" - 12" Dia. Screw	2 7/16" Dia. Shaft for 12" - 14" Dia. Screw	3" Dia. Shaft for 12" - 20" Dia. Screw	3 7/16" Dia. Shaft for 18" - 24" Dia. Screw
32	107DSP108__	107DSP200__	107DSP207__	107DSP300__	N/A
33	107DSP108__	107DSP200__	107DSP207__	107DSP300__	N/A
34	115DSP108__	115DSP200__	115DSP207__	115DSP300__	N/A
35	N/A	207DSP200__	207DSP207__	207DSP300__	207DSP307__
36	N/A	215DSP200__	215DSP207__	215DSP300__	215DSP307__
37	N/A	N/A	N/A	307DSP300__	307DSP307__
28	Not Available				

² Complete the shaft part number by adding shaft type as follows:

- Standard — 2 hole steel shaft = leave blank (example 107DSP108)
- 3 hole steel shaft = add -3 (example 107DSP108-3)
- Optional — 2 hole stainless steel shaft = add SS (example 107DSP108SS)
- 3 hole stainless steel shaft = add -3SS (example 107DSP108-3SS)

Screw Conveyor Accessories

Gear Frame	Optional Seal Cartridges		Felt Seal ¹
	Waste Pack Kit	Packing Gland Kit	
32	107WWP	107PGP	FR200
33	107WWP	107PGP	FR200
34	115-203WWP	115-203PGP	FR210
35	207-407WWP	207-407PGP	FR308
36	207-407WWP	207-407PGP	FR308
37	207-407WWP	207-407PGP	FR308
28	Not Available		

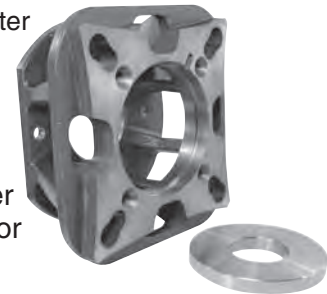
¹ Felt seal can only be added to the waste pack seal cartridge kit.

OtN Screw Conveyor Drives May Be Assembled in the Field

Required Components Include: OtN 73S or 37S gearmotor with screw conveyor adapter
Screw conveyor drive shaft

Optional Components Include: Waste pack
Packing gland
Felt seal

Screw Conveyor Adapter
(Included with type 73S or 37S gear unit)



Waste Pack Kit



Packing Gland Kit



Screw Conveyor Drive Shaft Kit

Screw Conveyor Thrust Ratings

Gear Frame	Maximum Thrust Rating (Lbs.)
32	2000
33	3000
34	4000
35	5000
36	6500
37	11000

Output tapered roller bearing standard - all sizes.



**Formed Hot Roll
Plate Steel**

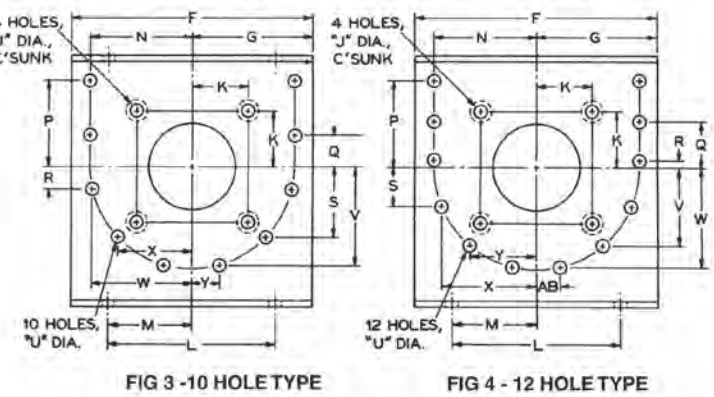
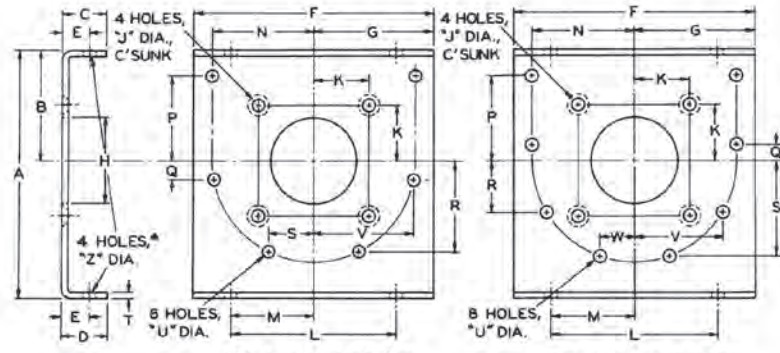


Table No. 33

Specifications

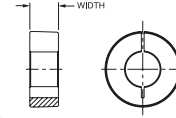
Part No.	Conveyor Screw Dia.	Drive Shaft Dia.	Fig.	Type	Dimensions										
					A	B	C	D	E	F	G	H	J	K	L
SCTE06 x 1 1/2"	6"	1 1/2"	1	6-Hole	10 1/8"	4 1/2"	1 1/2"	1 3/4"	1"	9 3/4"	4 7/8"	1 3/4"	9/16"	2"	8 1/8"
SCTE09 x 1 1/2"	9	1 1/2"	2	8-Hole	14	6 1/8	1 5/8	2 5/8	1 1/2	13 3/4	6 7/8	1 3/4	9/16	2	9 3/8
SCTE09 x 2	9	2	2	8-Hole	14	6 1/8	1 5/8	2 5/8	1 1/2	13 3/4	6 7/8	2 1/4	11/16	2	9 3/8
SCTE10 x 1 1/2"	10	1 1/2"	2	8-Hole	15 1/4	6 3/8	2 3/8	2 7/8	1 3/4	14 3/4	7 3/8	1 3/4	9/16	2	9 1/2
SCTE10 x 2	10	2	2	8-Hole	15 1/4	6 3/8	2 7/8	2 7/8	1 3/4	14 3/4	7 3/8	2 1/4	11/16	2	9 1/2
SCTE12 x 2	12	2	2	8-Hole	17 3/8	7 3/4	2	2 3/4	1 5/8	17 1/4	8 5/8	2 1/4	11/16	2	9 1/2
SCTE12 x 2 7/16	12	2 7/16	2	8-Hole	17 3/8	7 3/4	2	2 3/4	1 5/8	17 1/4	8 5/8	2 11/16	11/16	2	13/16
SCTE12 x 3	12	3	2	8-Hole	17 3/8	7 3/4	2	2 3/4	1 5/8	17 1/4	8 5/8	3 1/4	13/16	3	12 1/4
SCTE14 x 2 7/16	14	2 7/16	2	8-Hole	20 1/8	9 1/4	2	2 7/8	1 5/8	19 1/4	9 5/8	2 11/16	11/16	2	13/16
SCTE14 x 3	14	3	2	8-Hole	20 1/8	9 1/4	2	2 7/8	1 5/8	19 1/4	9 5/8	3 1/4	13/16	3	13 1/2
SCTE16 x 3	16	3	2	8-Hole	22 5/8	10 5/8	2 1/2	3 1/4	2	21 1/4	10 5/8	3 1/4	13/16	3	14 7/8
SCTE18 x 3	18	3	3	10-Hole	25 1/2	12 1/8	2 1/2	3 1/4	2	24 1/4	12 1/8	3 1/4	13/16	3	16
SCTE18 x 3 7/16	18	3 7/16	3	10-Hole	25 1/2	12 1/8	2 1/2	3 1/4	2	24 1/4	12 1/8	3 11/16	13/16	3	16
SCTE20 x 3	20	3	3	10-Hole	28 1/2	13 1/2	2 1/2	3 3/4	2 1/4	26 1/4	13 1/8	3 1/4	13/16	3	19 1/4
SCTE20 x 3 7/16	20	3 7/16	3	10-Hole	28 1/2	13 1/2	2 1/2	3 3/4	2 1/4	26 1/4	13 1/8	3 11/16	13/16	3	19 1/4
SCTE24 x 3 7/16	24	3 7/16	4	12-Hole	34 5/8	16 1/2	2 1/2	4 1/8	2 1/2	30 1/4	15 1/8	3 11/16	13/16	3	20

Part No.	Dimensions														Wt. Lbs.
	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	AB	
SCTE06 x 1 1/2"	4 1/16"	4 7/16"	3 15/32"	5/8"	3 15/16"	2 1/32"	3/16"	7/16"	4 25/64"	-	-	-	7/16"	-	6.7
SCTE09 x 1 1/2"	4 11/16	6 1/4	4 15/16	13/16	3 13/64	5 45/64	1/4	7/16	5 23/64	2 9/16"	-	-	9/16	-	17.8
SCTE09 x 2	4 11/16	6 1/4	4 15/16	13/16	3 13/64	5 45/64	1/4	7/16	5 23/64	2 9/16	-	-	9/16	-	17.7
SCTE10 x 1 1/2"	4 3/4	6 5/8	4 1/8	5/8	3 3/8	6 1/8	1/4	7/16	5 45/64	2 17/32	-	-	9/16	-	20.6
SCTE10 x 2	4 3/4	6 5/8	4 1/8	5/8	3 3/8	6 1/8	1/4	7/16	5 45/64	2 17/32	-	-	9/16	-	20.5
SCTE12 x 2	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	11/16	-	33.8
SCTE12 x 2 7/16	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	11/16	-	33.3
SCTE12 x 3	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	11/16	-	33.3
SCTE14 x 2 7/16	6 3/4	8 15/16	6 23/32	1 3/32	4 11/16	8 27/64	5/16	9/16	7 39/64	3	-	-	11/16	-	42.4
SCTE14 x 3	6 3/4	8 15/16	6 23/32	1 3/32	4 11/16	8 27/64	5/16	9/16	7 39/64	3	-	-	11/16	-	42.2
SCTE16 x 3	7 7/16	10	8	1 5/8	4 57/64	9 17/64	5/16	11/16	8 23/32	3 3/4	-	-	11/16	-	51.1
SCTE18 x 3	8	11	9 1/2	3 9/16	2 25/64	7 37/64	5/16	11/16	10 47/64	10 47/64	7 63/64"	2 15/16"	11/16	-	67.9
SCTE18 x 3 7/16	8	11	9 1/2	3 9/16	2 25/64	7 37/64	5/16	11/16	10 47/64	10 47/64	7 63/64"	2 15/16"	11/16	-	67.7
SCTE20 x 3	9 5/8	12 3/16	10 23/32	4 15/32	2 13/64	8 3/16	3/8	11/16	11 23/32	11 63/64	9 1/32	3 11/32	13/16	-	96.9
SCTE20 x 3 7/16	9 5/8	12 3/16	10 23/32	4 15/32	2 13/64	8 3/16	3/8	11/16	11 23/32	11 63/64	9 1/32	3 11/32	13/16	-	96.7
SCTE24 x 3 7/16	10	14 1/4	13 23/32	7 19/32	31/32	5 33/64	3/8	11/16	10 7/8	13 55/64	13 1/8	9 7/32	▲13/16	3 5/16"	133.0

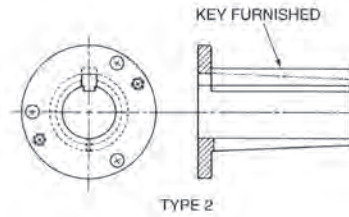
Notes: Browning trough ends are drilled to fit CEMA Standard Troughs. The center holes are drilled to fit Browning screw conveyor drives.

▲ Figure 4 has 2 "Z" holes in bottom flange only; no holes in top flange.

Each Series 3000 OtN can be ordered with a Tapered Bushed Output. This “33B” mounting configuration will include the appropriate bushing kit unassembled when a bore is defined at order entry. The table below shows the various stocked bushing bores for each OtN frame that can be specified. Each bushing kit is supplied with bushing, hardware for mounting and a stabilizer ring. If bushings are required as a spare or bore changed in the field, refer to the OtN 3000 frame and select the required kit from below.



Stabilizer Ring



OtN Frame	Meas. Unit	Bushing Number	Bore ¹	Shaft Keyseat Required	Type	
31	Inch	105TBP100	1"	1/4 x 1/8 x 2 1/2	2	
		105TBP103	1 3/16"	1/4 x 1/8 x 2 1/2	2	
		105TBP104	1 1/4"	1/4 x 1/8 x 2 1/2	2	
		105TBP105	1 5/16"	5/16 x 5/32 x 2 1/2	2	
	Metric *	105TBP30MM	30 mm	8 x 3.5 x 65 (mm)	2	
32 & 33	Inch	107TBP105	1 5/16"	5/16 x 5/32 x 3 7/8	2	
		107TBP106	1 3/8"	5/16 x 5/32 x 3 7/8	2	
		107TBP107	1 7/16"	3/8 x 3/16 x 3 7/8	2	
		Metric *	107TBP30MM	30 mm	8 x 3.5 x 100 (mm)	2
		107TBP35MM	35 mm	10 x 4 x 100 (mm)	2	
33A	Inch	115TBP107	1 7/16	3/8 x 3/16 x 4 1/8	2	
		115TBP108	1 1/2	3/8 x 3/16 x 4 1/8	2	
		115TBP110	1 5/8	3/8 x 3/16 x 4 1/8	2	
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2	
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2	
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2	
			115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2
		Metric *	115TBP40MM	40 mm	12 x 4 x 105 (mm)	2
		115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2	
34	Inch	115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2	
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2	
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2	
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2	
		Metric *	115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2

OtN Frame	Meas. Unit	Bushing Number	Bore ¹	Shaft Keyseat Required	Type	
35	Inch	207TBP200	2	1/2 x 1/4 x 5 1/8	2	
		207TBP202	2 1/8	1/2 x 1/4 x 5 1/8	2	
		207TBP203	2 3/16	1/2 x 1/4 x 5 1/8	2	
		207TBP204	2 1/4	1/2 x 1/4 x 5 1/8	2	
		207TBP207	2 7/16	5/8 x 5/16 x 5 1/8	2	
		Metric *	207TBP50MM	50 mm	14 x 4.5 x 130 (mm)	2
		207TBP60MM	60 mm	18 x 5.5 x 130 (mm)	2	
36	Inch	215TBP207	2 7/16	5/8 X 5/16 X 5 5/8	2	
		215TBP208	2 1/2	5/8 X 5/16 X 5 5/8	2	
		215TBP211	2 11/16	5/8 X 5/16 X 5 5/8	2	
			215TBP215	2 15/16	3/4 X 3/8 X 5 5/8	2
		Metric *	215TBP60MM	60 mm	18 x 5.5 x 140 (mm)	2
		215TBP70MM	70 mm	20 x 6 x 140 (mm)	2	
37	Inch	307TBP214	2 7/8	3/4 x 3/8 x 6 3/4	2	
		307TBP215	2 15/16	3/4 x 3/8 x 6 3/4	2	
		307TBP300	3	3/4 x 3/8 x 6 3/4	2	
		307TBP306	3 3/8	7/8 x 7/16 x 6 3/4	2	
		307TBP307	3 7/16	7/8 x 7/16 x 6 3/4	2	
				307TBP75MM	75 mm	20 x 6 x 170 (mm)
		Metric *	307TPB80MM	80 mm	22 x 7 x 170 (mm)	2
			307TBP85MM	85 mm	22 x 7 x 170 (mm)	2

¹ Bushing bore shown must be selected by customer based on complete application details.
 * Metric bushings have metric bores and require metric keyseats as shown in mm.



Gearmotors

OtN
SERIES **2000**
3000

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class		Application	Load	Class		Application	Load	Class				
		Up to 10 hrs/day	Over 10 hrs/day			Up to 10 hrs/day	Over 10 hrs/day			Up to 10 hrs/day	Over 10 hrs/day			
Agitators				Bucket				Conveyors - Uniformly Loaded or Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	U	I	II			
Paper Mills	M	II	II	Conveyors, Uniform	U	I	II	Conveyors - Heavy Duty Not Uniformly Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	M	II	II			
Pure Liquids	U	I	II	Conveyors, Heavy Duty	M	II	II	Live Roll (Package)	U	I	II			
Liquids & Solids	M	II	II	Elevators Cont.	U	I	II	Reciprocating, shaker	V	III	III			
Liquids - Variable Density	M	II	II	Elevators Uniform	U	I	II	Cookers (Brewing and Distilling) (Food)	U	I	II			
				Elevators, Heavy Duty	M	II	II	Cooling Tower Fans						
Apron Conveyors				Calenders				Induced Draft	M	II	II			
Uniformly Loaded or Fed	U	I	II	Paper	U	-	II	Forced Draft	Refer to Application Engineering					
Heavy Duty	M	II	II	Super (Paper)	U	-	II	Couch (Paper)	M	-	II			
Apron Feeders	M	II	II	Rubber	M	II	II	Cranes and Hoists						
Assembly Conveyors				Textile	M	II	II	Main Hoists						
Uniformly Loaded or Fed	U	I	II	Cane Knives	M	II	II	Heavy Duty	V	III	III			
Heavy Duty	M	II	II	Can Filling Machines	U	I	II	Medium Duty	M	II	II			
Ball Mills	V	III	III	Card Machines (Textile)	M	II	II	Reversing	V	II	II			
Barking				Car Dumpers	V	III	-	Skip Hoists	M	II	II			
Drums	V	-	III	Car Pullers	M	II	-	Trolley Drive	M	II	II			
Hydraulic Auxiliaries	V	-	III	Cement Kilns	Refer to Application Engineering						Bridge Drive	M	II	II
Mechanical	V	-	III	Centrifugal				Crushers						
Barscreens (Sewage)	U	I	II	Blowers, Compressors, Discharge Elevators or Pumps	U	I	II	Ore or Stone	V	III	III			
Batchers (Textile)	M	II	II	Chain Conveyors				Cutters (Paper)	V	-	III			
Beaters and Pulpers (Paper)	U	-	II	Uniformly Loaded or Fed	U	I	II	Cylinders (Paper)	M	-	II			
Belt Conveyors				Heavy Duty	M	II	II	Dewatering Screens (Sewage)	M	II	II			
Uniformly Loaded or Fed	U	I	II	Chemical Feeders (Sewage)	U	I	II	Disc Feeders	U	I	II			
Heavy Duty	M	II	II	Clarifiers	U	I	II	Distilling	(See Brewing)					
Belt Feeders	M	II	II	Classifiers	M	II	II	Double Acting Pumps						
Bending Rolls (Machine)	M	II	II	Clay Working Industry				2 or more Cylinders	M	II	II			
Bleachers (Paper)	M	-	II	Brick Press	V	III	III	Single Cylinder	Refer to Application Engineering					
Blowers				Briquette Machine	V	III	III	Dough Mixer (Food)	M	II	II			
Centrifugal	U	I	II	Clay Working Machinery	M	II	II	Draw Bench (Metal Mills)						
Lobe	M	II	II	Pug Mill	M	II	II	Carriage & Main Drive	V	III	III			
Vane	U	I	II	Collectors (Sewage)	U	I	II	Dredges						
Bottling Machinery	U	I	II	Compressors				Cable Reels	M	II	-			
Brewing and Distilling				Centrifugal	U	I	II	Conveyors	M	II	II			
Bottling Machinery	U	I	II	Lobe	M	II	II	Cutter Head Drives	V	III	III			
Brew Kettles, Cont. Duty	U	-	II	Reciprocating,				Jig Drives	V	III	III			
Can Filling Machines	U	I	II	Multi - Cylinder	M	II	II	Maneuvering Winches	M	II	-			
Cookers - Cont. Duty	U	-	II	Single - Cylinder	V	III	III	Pumps	M	II	II			
Mash Tubs - Cont. Duty	U	-	II	Concrete Mixers				Screen Drives	V	III	III			
Scale Hoppers - Frequent Starts	M	II	II	Continuous	M	II	II	Stackers	M	II	II			
Brick Press (Clay Working)	V	III	III	Intermittent	U	I	-	Utility Winches	M	II	-			
Briquettes Machines (Clay Working)	V	III	III	Converting Machines (Paper)	M	-	II							

OtN Series

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class	Application	Load	Class	Application	Load	Class
	Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day
Dryers (Paper)	U	- II	Hammer Mills	V	III III	Machine Tools		
Dryers and Coolers (Mills, Rotary)	M	II II	Induced Draft Fans	M	II II	Auxiliary Drives	U	I II
Dyeing Machinery (Textile)	M	II II	Jordans (Paper)	U	- II	Bending Rolls	M	II II
Elevators			Kilns (Mills, Rotary)	M	II II	Main Drives	M	II II
Bucket - Uniform Load	U	I II	Cement	Refer to Application Engineering		Notching Press (Belted)	Refer to Application Engr.	
Bucket - Heavy Duty	M	II II	Laundry Washers and Tumblers	M	II II	Plate Planers	V	III III
Bucket - Continuous	U	I II	Line Shafts			Punch Press (Geared)	V	III III
Centrifugal Discharge	U	I II	Heavy Shock Load	V	III III	Tapping Machines	V	III III
Escalators	U	I II	Moderate Shock Load	M	II II	Mangle (Textile)	M	II II
Freight	M	II II	Uniform Load	U	I II	Mash Tubs (Brewing and Distilling)	U	- II
Gravity Discharge	U	I II	Live Roll Conveyors			Meat Grinder (Food)	M	II II
Man Lifts, Passenger	Refer to Application Engr.		Package	U	I II	Metal Mills		
Escalators	U	I II	Lobe Blower or Compressors	M	II II	Draw Bench Carriages & Main Drives	V	III III
Fans			Log Hauls (Paper and Lumber)	V	III III	Forming Machines	V	III III
Centrifugal	M	II II	Looms (Textile)	M	II II	Pinch, Dryer & Scrubber		
Cooling Towers			Lumber Industry			Rolls Reversing	Refer to Application Engineering	
Induced Draft	M	II II	Barkers - Spindle Feed	V	II III	Slitters	M	II II
Forced Draft	Refer to Application Engr.		Barkers - Main Drive	V	III III	Table Conveyors, Non-Reversing	M	II III
Induced Draft	M	II II	Conveyors			Reversing	V	- III
Large (Mine, etc.)	M	II II	Burner	V	II III	Wire Drawing & Flattening Machines	M	II III
Large Industrial	M	II II	Main or Heavy Duty	V	II III	Wire Winding Machines	M	II II
Light (Small Diameter)	U	I II	Main Log	V	III III	Mills, Rotary Type		
Feeders			Re-Saw Merry-Go-Round	V	II III	Ball, Pebble, Rod	V	III III
Apron, belt	M	II II	Slab	V	III III	Cement Kilns	Refer to Application Engineering	
Disc	U	I II	Transfer	V	II III	Coolers, Dryers, Kilns	V	II II
Reciprocating	V	III III	Chains - Floor	V	II III	Tumbling Barrels	V	III III
Screw	M	II II	Chains - Green	V	II III	Mixers (Also see Agitators)		
Felt			Cut-Off Saws-Chain	V	II III	Concrete - Continuous	M	II II
Stretchers (Paper)	U	- II	Cut-Off Saws-Drag	V	II III	Concrete - Intermittent	M	I -
Whippers (Paper)	U	- II	Debarking Drums	V	III III	Constant Density	U	I II
Flight			Feeds - Edger	V	II III	Variable Density	M	II II
Conveyors, Uniform	U	I II	Feeds - Gang	V	III III	Nappers (Textile)	M	II II
Conveyors, Heavy	M	II II	Feeds - Trimmer	V	II III	Oil Industry		
Food Industry			Log Deck	V	III III	Chillers	M	II II
Beet Slicers	M	II II	Log Hauls - Incline, Well Type	V	III III	Oil Well Pumping	Refer to Application Engineering	
Bottling, Can Filling Mach.	U	I II	Log Turning Devices	V	III III	Paraffin Filter Press	M	II II
Cereal Cookers	U	I II	Planner Feed	V	II III	Rotary Kilns	M	II II
Dough Mixers	M	II II	Planer Tilting Hoists	V	II III	Ore Crushers	V	III III
Meat Grinders	M	II II	Rolls - Live-Off Bearing			Oven Conveyors		
Forming Machines (Metal Mills)	V	III III	Roll Cases	V	III III	Uniform	U	I II
Generators (Not welding)	U	I II	Sorting Table	V	II III	Heavy Duty	M	II II
Gravity Discharge Elevators	U	I II	Tipple Hoist	V	II III			
Grit Collectors (Sewage)	U	I II	Transfers - Chain	V	II III			
			Transfers - Craneway	V	II III			
			Tray Drives	V	II III			

AGMA Application Classifications

U: Uniform load			M: Moderate shock load			V: Heavy shock load		
Application	Load	Class	Application	Load	Class	Application	Load	Class
	Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day
Paper Mills			Rod Mills	V	III	Soapers (Textile)	M	II
Agitator (Mixers)	M	II						
Barker - Auxiliaries - Hyd.	V	-	Rotary			Spinners (Textile)	M	II
Barker, Mechanical	V	-	Pumps, Gear, Lobe, Vane	U	I			
Barking Drum	V	-	Screens (Sand or Gravel)	V	II	Steering Gears	M	II
Beater & Pulper	M	-						
Bleacher	M	-	Rubber Industry			Stock Chests(Paper)	U	-
Calenders	M	-	Mixer	V	III			
Calenders - Super	M	-	Rubber Calender	M	II	Stokers	U	I
Converting Mach.-			Rubber Mill (2 or more)	M	II			
Except Cutters - Platers	M	-	Sheeter	M	II	Stone Crushers	V	III
Conveyors	M	-	Tire Building Machines	Refer to Application Engr.				
Couch	M	-	Tire, Tube Press Openers	Refer to Application		Suction Rolls(Paper)	U	-
Cutters, Platers	V	-	Engr.					
Cylinders	U	-	Tubers & Strainers	M	II	Table Conveyors		
Dryers	U	-				(Metal Mills) Non-Reversing	V	II
Felt Stretchers	U	-	Sand Mullers	Refer to Application Engr.		Reversing	V	-
Felt Whippers	V	-						
Jordans	M	-	Screens			Tenter Frames		
Log Haul	V	-	Air Washing	U	I	(Textile)	M	II
Presses	M	-	Rotary - Sand or Gravel	M	II			
Pulp Machine Reels	M	-	Traveling Water Intake	U	I	Textile Industry		
Stock Chests	M	-				Batchers	M	II
Suction Rolls	M	-	Screw Conveyors			Calenders	M	II
Washers & Thickeners	M	-	Uniform	U	I	Card Machines	M	II
Winders	M	-	Heavy Duty or Feeder	M	II	Cloth Finishing Mach. (Cal-		
						enders, Dryers, Pads,		
Passenger Elevators	Refer to Application Engr.		Scum Breakers			Tenters, Washers)	M	II
			(Sewage)	M	II	Dry Cans	M	II
Pebble Mills	V	III				Dyeing Machinery	M	II
			Sewage Disposal			Knitting Machinery	Refer to Application Engr.	
Plate Planers	V	III	Aerators	Refer to Application Engr.		Looms, Mangles, Nappers	M	II
			Bar Screens	U	I	Range Drives	Refer to Application Engr.	
Presses (Paper)	V	-	Chemical Feeders	U	I	Soapers, Spinners	M	II
			Collectors	U	I	Tenter Frames	M	II
Proportioning Pumps	M	II	Dewatering Screens	M	II	Winders	M	II
			Grit Collectors	U	I	Yarn Preparatory Mach.		
Pub Mills (Clay)	M	II	Scum Breakers	M	II	(Cards, Spinners, Slashers)	M	II
			Slow or Rapid Mixers	M	II			
Pullers (Barge Haul)	V	III	Sludge Collectors	U	I	Thickeners (Sewage)	M	II
			Thickeners	M	II			
Pulp Machine Reels	U	-	Vacuum Filters	M	II	Tumbling Barrels	V	III
Pumps			Shaker Conveyors	V	III	Vacuum Filters		
Centrifugal	U	I				(sewage)	M	II
Proportioning	M	II	Sheeters (Rubber)	M	II			
Reciprocating						Vane Blowers	U	I
Single Act., 3 or more cyl.	M	II	Single Acting Pump					
Double Act., 2 or more cyl.	M	II	1 or 2 Cylinders	Refer to Application Engr.		Winches (Dredges)	M	II
Single Act., 1 or 2 cyl.	Refer to Application Engr.		3 or more Cylinders	M	II			
Rotary: Gear, Lobe, Vane	U	I				Winders		
			Skip Hoist	M	II	(Paper)	U	-
Punch Press						(Textile)	M	II
(Gear Driven)	V	III	Slab Pushers	M	II			
						Windlass	M	II
Reciprocating			Slitters (Metal)	M	II			
Conveyors, Feeders	V	III				Wire		
			Sludge Collectors			Drawing Machines	M	II
Reciprocating Compressors			(Sewage)	U	I	Winding Machines	M	II
Multi-Cylinder	M	II						
Single cylinder	V	III						

Applications not listed in this table, or where the user has data indicating the severity of this usage to be greater than average, should be referred to Application Engineering.

1/3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

OtN Series

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
472	I, II, III	3+	42	1825	3.55	3242	56	T,C,S,X,IG
374	I, II, III	3+	53	1955	4.5	3242	56	T,C,S,X,IG
343	I, II, III	3+	58	1294	5	3132	56	T,C,S,X,IG
313	I, II, III	3+	64	2062	5.6	3242	56	T,C,S,X,IG
272	I, II, III	3+	73	1294	6.3	3132	56	T,C,S,X,IG
242	I, II, III	3+	82	1294	7.1	3132	56	T,C,S,X,IG
230	I, II, III	3+	87	1294	8	3132	56	T,C,S,X,IG
203	I, II, III	3+	98	1294	9	3132	56	T,C,S,X,IG
180	I, II, III	3+	111	1294	10	3132	56	T,C,S,X,IG
159	I, II, III	3+	126	1294	11.2	3132	56	T,C,S,X,IG
140	I, II, III	3+	143	1294	12.5	3132	56	T,C,S,X,IG
122	I, II, III	3+	163	1294	14	3132	56	T,C,S,X,IG
109	I, II, III	3+	184	1294	16	3132	56	T,C,S,X,IG
102	I, II, III	3+	195	1294	18	3132	56	T,C,S,X,IG
86	I, II, III	3+	232	1294	20	3132	56	T,C,S,X,IG
81	I, II, III	3+	245	1294	22.4	3132	56	T,C,S,X,IG
71	I, II, III	3+	281	1294	25	3132	56	T,C,S,X,IG
64	I, II, III	3+	313	1294	28	3132	56	T,C,S,X,IG
57	I, II, III	3+	350	1294	31.5	3132	56	T,C,S,X,IG
49	I, II, III	3+	406	1294	35.5	3132	56	T,C,S,X,IG
45	I, II, III	3+	446	1294	40	3132	56	T,C,S,X,IG
39	I, II, III	3+	511	1294	45	3132	56	T,C,S,X,IG
35	I, II, III	3+	564	1294	50	3132	56	T,C,S,X,IG
32	I, II, III	3+	605	1490	56	3243	56	T,C,S,X,IG
27	I, II, III	3+	719	1490	63	3243	56	T,C,S,X,IG
26	I, II, III	3+	761	1490	71	3243	56	T,C,S,X,IG
23	I, II, III	3+	869	1490	80	3243	56	T,C,S,X,IG
20	I, II, III	3+	970	1490	90	3243	56	T,C,S,X,IG
18	I, II, III	3+	1087	1490	100	3243	56	T,C,S,X,IG
15	I, II, III	3+	1264	1490	112	3243	56	T,C,S,X,IG
14	I, II, III	2.9	1387	1490	125	3243	56	T,C,S,X,IG
12	I, II, III	2.5	1588	1490	140	3243	56	T,C,S,X,IG
11	I, II, III	2.3	1745	1490	160	3243	56	T,C,S,X,IG
10.1	I, II, III	3+	1869	2090	180	3365	56	T,C,S,X,IG
9.8	I, II, III	2.1	1912	1490	180	3245	56	T,C,S,X°,IG
8.9	I, II, III	3+	2106	2090	200	3365	56	T,C,S,X,IG
8.9	I, II	1.9	2116	1490	200	3245	56	T,C,S,X°,IG
8.5	I, II	1.8	2224	1490	224	3245	56	T,C,S,X°,IG
7.9	I, II, III	3+	2385	2090	224	3365	56	T,C,S,X,IG
7.1	I, II	1.5	2643	1490	250	3245	56	T,C,S,X°,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Frame Size Motor	Std. Motor Types \diamond
6.9	I, II, III	2.6	2707	2090	250	3365	56	T,C,S,X,IG
6.7	I, II	1.4	2825	1490	280	3245	56	T,C,S,X°,IG
6.1	I, II, III	2.3	3094	2090	280	3365	56	T,C,S,X,IG
5.9	I	1.2	3169	1490	315	3245	56	T,C,S,X°,IG
5.4	I, II, III	2.0	3491	2090	315	3365	56	T,C,S,X,IG
5.1	I	1.1	3685	1490	355	3245	56	T,C,S,X°,IG
5.1	I, II	1.9	3706	2090	355	3365	56	T,C,S,X,IG
4.7	I	1.0	3975	1490	400	3245	56	T,C,S,X°,IG
4.5	I, II, III	3+	4147	2875	400	3475	56	T,C,S,X,IG
4.3	I, II	1.6	4405	2090	400	3365	56	T,C,S,X,IG
4.0	I, II	1.5	4662	2090	450	3365	56	T,C,S,X,IG
4.0	I, II, III	3+	4695	2875	450	3475	56	T,C,S,X,IG
3.6	I, II, III	2.8	5178	2875	500	3475	56	T,C,S,X,IG
3.5	I	1.3	5329	2090	500	3365	56	T,C,S,X,IG
3.2	I, II, III	2.4	5887	2875	560	3475	56	T,C,S,X,IG
3.2	I	1.2	5941	2090	560	3365	56	T,C,S,X,IG
2.8	I	1.1	6661	2090	630	3365	56	T,C,S,X,IG
2.8	I, II, III	2.1	6725	2875	630	3475	56	T,C,S,X,IG
2.5	I, II	1.9	7594	2875	710	3475	56	T,C,S,X,IG
2.4	I, II, III	2.9	7961	4100	800	3585	56	T,C,S,X,IG
2.3	I, II	1.8	8057	2875	800	3475	56	T,C,S,X,IG
2.0	I, II, III	2.5	9303	4100	900	3585	56	T,C,S,X,IG
2.0	I, II	1.5	9572	2875	900	3475	56	T,C,S,X,IG
1.9	I, II	1.4	10120	2875	1000	3475	56	T,C,S,X,IG
1.8	I, II, III	2.2	10485	4100	1000	3585	56	T,C,S,X,IG
1.6	I, II, III	2.0	11871	4100	1120	3585	56	T,C,S,X,IG
1.5	I	1.1	12730	2875	1120	3475	56	T,C,S,X,IG
1.4	I, II	1.7	13482	4100	1250	3585	56	T,C,S,X,IG
1.3	I, II	1.7	14170	4100	1400	3585	56	T,C,S,X,IG
1.3	I	1.0	14557	2875	1250	3475	56	T,C,S,X,IG
1.2	I, II	1.5	16104	4100	1600	3585	56	T,C,S,X,IG
1	I	1.3	18403	4100	1800	3585	56	T,C,S,X,IG
0.91	I	1.1	20766	4100	2000	3585	56	T,C,S,X,IG
0.85	I	1.1	22034	4100	2240	3585	56	T,C,S,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
472	I, II, III	3+	64	1825	3.55	3242	56	T,C,S,X,IG
374	I, II, III	3+	81	1955	4.5	3242	56	T,C,S,X,IG
343	I, II, III	3+	88	1294	5	3132	56	T,C,S,X,IG
313	I, II, III	3+	97	2062	5.6	3242	56	T,C,S,X,IG
272	I, II, III	3+	111	1294	6.3	3132	56	T,C,S,X,IG
242	I, II, III	3+	125	1294	7.1	3132	56	T,C,S,X,IG
230	I, II, III	3+	132	1294	8	3132	56	T,C,S,X,IG
203	I, II, III	3+	149	1294	9	3132	56	T,C,S,X,IG
180	I, II, III	3+	168	1294	10	3132	56	T,C,S,X,IG
159	I, II, III	3+	190	1294	11.2	3132	56	T,C,S,X,IG
140	I, II, III	3+	216	1294	12.5	3132	56	T,C,S,X,IG
122	I, II, III	3+	247	1294	14	3132	56	T,C,S,X,IG
109	I, II, III	3+	278	1294	16	3132	56	T,C,S,X,IG
102	I, II, III	3+	296	1294	18	3132	56	T,C,S,X,IG
86	I, II, III	3+	351	1294	20	3132	56	T,C,S,X,IG
81	I, II, III	3+	372	1294	22.4	3132	56	T,C,S,X,IG
71	I, II, III	3+	425	1294	25	3132	56	T,C,S,X,IG
64	I, II, III	3+	474	1294	28	3132	56	T,C,S,X,IG
57	I, II, III	3+	531	1294	31.5	3132	56	T,C,S,X,IG
49	I, II, III	3+	615	1294	35.5	3132	56	T,C,S,X,IG
45	I, II, III	3+	676	1294	40	3132	56	T,C,S,X,IG
39	I, II, III	2.0	774	1294	45	3132	56	T,C,S,X,IG
35	I, II, III	2.0	854	1294	50	3132	56	T,C,S,X,IG
32	I, II, III	3+	917	1490	56	3243	56	T,C,S,X,IG
27	I, II, III	3+	1090	1490	63	3243	56	T,C,S,X,IG
26	I, II, III	3+	1152	1490	71	3243	56	T,C,S,X,IG
23	I, II, III	3+	1317	1490	80	3243	56	T,C,S,X,IG
20	I, II, III	2.7	1469	1490	90	3243	56	T,C,S,X,IG
18	I, II, III	2.4	1647	1490	100	3243	56	T,C,S,X,IG
15	I, II, III	2.1	1915	1490	112	3243	56	T,C,S,X,IG
14	I, II	1.9	2102	1490	125	3243	56	T,C,S,X,IG
14	I, II, III	3+	2119	2090	125	3363	56	T,C,S,X,IG
13	I, II, III	3+	2322	2090	140	3363	56	T,C,S,X,IG
12	I, II	1.7	2407	1490	140	3243	56	T,C,S,X,IG
11	I, II	1.5	2644	1490	160	3243	56	T,C,S,X,IG
11	I, II, III	2.6	2712	2090	160	3363	56	T,C,S,X,IG
10	I, II, III	2.5	2832	2090	180	3365	56	T,C,S,X,IG
10	I, II	1.4	2897	1490	180	3245	56	T,C,S,X°,IG
7.9	I, II, III	2.0	3614	2090	224	3365	56	T,C,S,X,IG
7.1	I	1.0	4004	1490	250	3245	56	T,C,S,X°,IG

◇ **Standard Motor Types** (see page B-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
7.0	I, II, III	3+	4069	2875	250	3475	56	T,C,S,X,IG
6.9	I, II	1.7	4102	2090	250	3365	56	T,C,S,X,IG
6.1	I, II, III	3+	4655	2875	280	3475	56	T,C,S,X,IG
6.1	I, II	1.5	4688	2090	280	3365	56	T,C,S,X,IG
5.4	I, II, III	2.7	5241	2875	315	3475	56	T,C,S,X,IG
5.4	I	1.3	5290	2090	315	3365	56	T,C,S,X,IG
5.1	I, II, III	2.6	5567	2875	355	3475	56	T,C,S,X,IG
5.1	I	1.3	5616	2090	355	3365	56	T,C,S,X,IG
4.5	I, II, III	2.3	6283	2875	400	3475	56	T,C,S,X,IG
4.3	I	1.1	6674	2090	400	3365	56	T,C,S,X,IG
4.2	I, II, III	3+	6723	4100	450	3585	56	T,C,S,X,IG
4.0	I	1.0	7064	2090	450	3365	56	T,C,S,X,IG
4.0	I, II, III	2.0	7113	2875	450	3475	56	T,C,S,X,IG
3.6	I, II	1.8	7846	2875	500	3475	56	T,C,S,X,IG
3.6	I, II, III	2.9	7976	4100	500	3585	56	T,C,S,X,IG
3.4	I, II, III	2.7	8432	4100	560	3585	56	T,C,S,X,IG
3.2	I, II	1.6	8920	2875	560	3475	56	T,C,S,X,IG
3.0	I, II, III	2.4	9636	4100	630	3585	56	T,C,S,X,IG
2.8	I, II	1.4	10190	2875	630	3475	56	T,C,S,X,IG
2.6	I, II, III	2.1	10759	4100	710	3585	56	T,C,S,X,IG
2.5	I	1.2	11508	2875	710	3475	56	T,C,S,X,IG
2.4	I, II	1.9	12061	4100	800	3585	56	T,C,S,X,IG
2.3	I	1.2	12208	2875	800	3475	56	T,C,S,X,IG
2.0	I, II	1.7	14096	4100	900	3585	56	T,C,S,X,IG
2.0	I	1.0	14503	2875	900	3475	56	T,C,S,X,IG
1.9	I, II, III	2.2	14420	6060	900	3695	56	T,C,S,X,IG
1.8	I, II	1.5	15887	4100	1000	3585	56	T,C,S,X,IG
1.6	I	1.3	17986	4100	1120	3585	56	T,C,S,X,IG
1.6	II, III	2.3	17482	6060	1120	3695	56	T,C,S,X,IG
1.5	I, II, III	3+	18816	6750	1120	3705	56	T,C,S,X,IG
1.4	I	1.1	20428	4100	1250	3585	56	T,C,S,X,IG
1.4	II	1.9	20411	6060	1250	3695	56	T,C,S,X,IG
1.3	II, III	3+	21128	6880	1250	3705	56	T,C,S,X,IG
1.3	I	1.1	21470	4100	1400	3585	56	T,C,S,X,IG
1.2	I	1.0	24400	4100	1600	3585	56	T,C,S,X,IG
1.2	III	3+	23878	7130	1400	3705	56	T,C,S,X,IG
1.2	II	1.7	24481	6060	1400	3695	56	T,C,S,X,IG
1.1	I, II	1.6	26157	5982	1600	3695	56	T,C,S,X,IG
1.1	III	2.9	26434	6801	1600	3705	56	T,C,S,X,IG
1.0	I, II	1.4	29673	5794	1800	3695	56	T,C,S,X,IG

\diamond Standard Motor Types (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X[°] Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
0.95	III	2.5	30129	6472	1800	3705	56	T,C,S,X,IG
0.86	I	1.2	32961	5605	2000	3695	56	T,C,S,X,IG
0.82	II, III	2.6	34735	6248	2000	3705	56	T,C,S,X,IG
0.80	II, III	2.5	35061	11255	2240	2806A	56	T,C,S,X,IG
0.77	II, III	2.0	37112	6026	2240	3705	56	T,C,S,X,IG
0.76	I	1.1	37453	5608	2240	3695	56	T,C,S,X,IG
0.72	II, III	2.3	38730	10727	2500	2806A	56	T,C,S,X,IG
0.68	I	1.0	41669	5606	2500	3695	56	T,C,S,X,IG
0.68	II	1.8	42125	5804	2500	3705	56	T,C,S,X,IG
0.65	III	2.1	43005	10137	2800	2806A	56	T,C,S,X,IG
0.61	I, II	1.6	46780	5521	2800	3705	56	T,C,S,X,IG
0.54	I, II	1.4	53144	5521	3150	3705	56	T,C,S,X,IG
0.50	II	1.6	55830	8785	3550	2806A	56	T,C,S,X,IG
0.48	I	1.3	59118	5521	3550	3705	56	T,C,S,X,IG
0.44	II	1.4	63168	8750	4000	2806A	56	T,C,S,X,IG
0.43	I	1.1	66508	5521	4000	3705	56	T,C,S,X,IG
0.39	I	1.2	72132	8785	4500	2806A	56	T,C,S,X,IG
0.37	I	1.0	77967	5521	4500	3705	56	T,C,S,X,IG
0.36	I	1.1	77412	8756	5000	2806A	56	T,C,S,X,IG
0.31	I	1.0	90078	8785	5600	2806A	56	T,C,S,X,IG

OtN Series

\diamond **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X[°] Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
472	I, II, III	3+	96	1825	3.55	3242	56	T,C,S,X,IG
374	I, II, III	3+	121	1955	4.5	3242	56	T,C,S,X,IG
343	I, II, III	3+	132	1294	5	3132	56	T,C,S,X,IG
313	I, II, III	3+	145	2063	5.6	3242	56	T,C,S,X,IG
272	I, II, III	3+	167	1294	6.3	3132	56	T,C,S,X,IG
242	I, II, III	3+	187	1294	7.1	3132	56	T,C,S,X,IG
230	I, II, III	3+	198	1294	8	3132	56	T,C,S,X,IG
203	I, II, III	3+	224	1294	9	3132	56	T,C,S,X,IG
180	I, II, III	3+	252	1294	10	3132	56	T,C,S,X,IG
159	I, II, III	3+	285	1294	11.2	3132	56	T,C,S,X,IG
140	I, II, III	3+	324	1294	12.5	3132	56	T,C,S,X,IG
122	I, II, III	3+	371	1294	14	3132	56	T,C,S,X,IG
109	I, II, III	3+	417	1294	16	3132	56	T,C,S,X,IG
102	I, II, III	3+	443	1294	18	3132	56	T,C,S,X,IG
86	I, II, III	3+	526	1294	20	3132	56	T,C,S,X,IG
81	I, II, III	3.0	558	1294	22.4	3132	56	T,C,S,X,IG
71	I, II, III	2.7	638	1294	25	3132	56	T,C,S,X,IG
64	I, II, III	2.5	710	1294	28	3132	56	T,C,S,X,IG
57	I, II, III	2.3	796	1294	31.5	3132	56	T,C,S,X,IG
49	I, II, III	2.1	923	1294	35.5	3132	56	T,C,S,X,IG
45	I, II	1.9	1014	1294	40	3132	56	T,C,S,X,IG
44	III	3+	1004	1490	40	3243	56	T,C,S,X,IG
39	I,	1.3	1162	1294	45	3132	56	T,C,S,X,IG
39	II, III	3+	1149	1490	45	3243	56	T,C,S,X,IG
35	I,	1.3	1281	1294	50	3132	56	T,C,S,X,IG
34	II, III	3+	1297	1490	50	3243	56	T,C,S,X,IG
32	I, II, III	2.8	1375	1490	56	3243	56	T,C,S,X,IG
27	I, II, III	2.4	1635	1490	63	3243	56	T,C,S,X,IG
26	I, II, III	2.3	1729	1490	71	3243	56	T,C,S,X,IG
23	I, II, III	2.0	1975	1490	80	3243	56	T,C,S,X,IG
20	I, II, III	3+	2179	2090	90	3363	56	T,C,S,X,IG
20	I, II	1.8	2204	1490	90	3243	56	T,C,S,X,IG
18	I, II, III	2.9	2451	2090	100	3363	56	T,C,S,X,IG
18	I, II	1.6	2471	1490	100	3243	56	T,C,S,X,IG
15	I, II	1.4	2873	1490	112	3243	56	T,C,S,X,IG
15	I, II, III	2.5	2873	2090	112	3363	56	T,C,S,X,IG

◇ **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
14	I	1.3	3152	1490	125	3243	56	T,C,S,X,IG
14	I, II, III	2.2	3178	2090	125	3363	56	T,C,S,X,IG
13	I, II, III	2.1	3483	2090	140	3363	56	T,C,S,X,IG
12	I	1.1	3610	1490	140	3243	56	T,C,S,X,IG
11	I, II, III	3+	3915	2875	160	3473	56	T,C,S,X,IG
11	I	\$1.0	3966	1490	160	3243	56	T,C,S,X,IG
11	I, II	1.8	4068	2090	160	3363	56	T,C,S,X,IG
10.2	I, II, III	3+	4200	2875	180	3475	56	T,C,S,X,IG
10.1	I, II	1.7	4248	2090	180	3365	56	T,C,S,X,IG
9.0	I, II, III	3+	4737	2875	200	3475	56	T,C,S,X,IG
8.9	I, II	1.5	4786	2090	200	3365	56	T,C,S,X,IG
8.0	I, II, III	2.6	5372	2875	224	3475	56	T,C,S,X,IG
7.9	I	1.3	5420	2090	224	3365	56	T,C,S,X,IG
7.0	I, II, III	2.3	6104	2875	250	3475	56	T,C,S,X,IG
6.9	I	1.1	6153	2090	250	3365	56	T,C,S,X,IG
6.1	I, II, III	2.0	6983	2875	280	3475	56	T,C,S,X,IG
6.1	I	1.0	7032	2090	280	3365	56	T,C,S,X,IG
5.8	I, II, III	3+	7374	4100	315	3585	56	T,C,S,X,IG
5.4	I, II	1.8	7862	2875	315	3475	56	T,C,S,X,IG
5.1	I, II	1.7	8350	2875	355	3475	56	T,C,S,X,IG
5.1	I, II, III	2.7	8423	4100	355	3585	56	T,C,S,X,IG
4.5	I, II	1.5	9425	2875	400	3475	56	T,C,S,X,IG
4.5	I, II, III	2.4	9498	4100	400	3585	56	T,C,S,X,IG
4.2	I, II, III	2.3	10084	4100	450	3585	56	T,C,S,X,IG
4.0	I	1.3	10670	2875	450	3475	56	T,C,S,X,IG
3.6	I	1.2	11768	2875	500	3475	56	T,C,S,X,IG
3.6	I, II	1.9	11964	4100	500	3585	56	T,C,S,X,IG
3.4	I, II	1.8	12647	4100	560	3585	56	T,C,S,X,IG
3.2	I	1.1	13380	2875	560	3475	56	T,C,S,X,IG
3.0	I, II	1.6	14454	4100	630	3585	56	T,C,S,X,IG
2.9	III	2.7	14771	6060	630	3695	56	T,C,S,X,IG
2.6	III	2.4	16432	6060	710	3695	56	T,C,S,X,IG
2.6	I, II	1.4	16139	4100	710	3585	56	T,C,S,X,IG
2.4	I	1.3	18092	4100	800	3585	56	T,C,S,X,IG
2.3	II, III	2.2	18483	6060	800	3695	56	T,C,S,X,IG
2.0	I	1.1	21144	4100	900	3585	56	T,C,S,X,IG
2.0	II	1.8	21657	6060	900	3695	56	T,C,S,X,IG
1.8	III	3+	23317	7780	900	3705	56	T,C,S,X,IG
1.8	I	1.0	23830	4100	1000	3585	56	T,C,S,X,IG
1.8	II	1.7	23903	6060	1000	3695	56	T,C,S,X,IG

◇ **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
1.7	III	2.8	25734	7672	1000	3705	56	T,C,S,X,IG
1.6	I, II	1.5	26222	6060	1120	3695	56	T,C,S,X,IG
1.5	III	2.6	28224	7556	1120	3705	56	T,C,S,X,IG
1.4	I	1.3	30617	6060	1250	3695	56	T,C,S,X,IG
1.3	II, III	2.4	31691	7342	1250	3705	56	T,C,S,X,IG
1.2	II, III	2.1	35818	7130	1400	3705	56	T,C,S,X,IG
1.2	I	1.1	36721	6060	1400	3695	56	T,C,S,X,IG
1.1	I	1.0	39236	6060	1600	3695	56	T,C,S,X,IG
1.1	II	1.9	39651	6801	1600	3705	56	T,C,S,X,IG
1.0	II, III	2.1	41657	12100	1800	2806A	56	T,C,S,X,IG
1.0		0.92	44510	6060	1800	3695	56	T,C,S,X,IG
0.95	I, II	1.7	45193	6472	1800	3705	56	T,C,S,X,IG
0.86	I, II	1.8	48476	11782	2000	2806A	56	T,C,S,X,IG
0.82	I, II	1.4	52103	6248	2000	3705	56	T,C,S,X,IG
0.80	I, II	1.7	52592	11255	2240	2806A	56	T,C,S,X,IG
0.77	I, II	1.4	55667	6248	2240	3705	56	T,C,S,X,IG
0.72	I, II	1.5	58095	10727	2500	2806A	56	T,C,S,X,IG
0.68	I	1.2	63187	6248	2500	3705	56	T,C,S,X,IG
0.65	I, II	1.4	64508	10137	2800	2806A	56	T,C,S,X,IG
0.61	I	1.1	70170	6248	2800	3705	56	T,C,S,X,IG
0.55	I	1.2	76471	8785	3150	2806A	56	T,C,S,X,IG
0.54		0.95	79717	6248	3150	3705	56	T,C,S,X,IG
0.50	I	1.1	83745	8550	3550	2806A	56	T,C,S,X,IG
0.44		0.94	94752	8400	4000	2806A	56	T,C,S,X,IG

◇ **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
472	I, II, III	3+	128	1808	3.55	3242	143T	T,C,S,X,IG
374	I, II, III	3+	162	1933	4.5	3242	143T	T,C,S,X,IG
343	I, II, III	3+	176	1294	5	3132	143T	T,C,S,X,IG
313	I, II, III	3+	194	2036	5.6	3242	143T	T,C,S,X,IG
272	I, II, III	3+	222	1294	6.3	3132	143T	T,C,S,X,IG
242	I, II, III	3+	250	1294	7.1	3132	143T	T,C,S,X,IG
230	I, II, III	3+	263	1294	8	3132	143T	T,C,S,X,IG
203	I, II, III	3+	298	1294	9	3132	143T	T,C,S,X,IG
180	I, II, III	3+	336	1294	10	3132	143T	T,C,S,X,IG
159	I, II, III	3+	380	1294	11.2	3132	143T	T,C,S,X,IG
140	I, II, III	3+	432	1294	12.5	3132	143T	T,C,S,X,IG
122	I, II, III	2.9	494	1294	14	3132	143T	T,C,S,X,IG
109	I, II, III	2.7	557	1294	16	3132	143T	T,C,S,X,IG
102	I, II, III	2.6	591	1294	18	3132	143T	T,C,S,X,IG
86	I, II, III	2.3	702	1294	20	3132	143T	T,C,S,X,IG
81	I, II, III	2.2	743	1294	22.4	3132	143T	T,C,S,X,IG
71	I, II, III	2.0	851	1294	25	3132	143T	T,C,S,X,IG
64	I, II	1.9	947	1294	28	3132	143T	T,C,S,X,IG
64	III	3+	925	1428	28	3243	143T	T,C,S,X,IG
57	I, II	1.7	1061	1294	31.5	3132	143T	T,C,S,X,IG
57	III	3+	1044	1471	31.5	3243	143T	T,C,S,X,IG
50	III	3+	1178	1490	35.5	3243	143T	T,C,S,X,IG
49	I, II	1.6	1231	1294	35.5	3132	143T	T,C,S,X,IG
45	I, II	1.5	1352	1294	40	3132	143T	T,C,S,X,IG
44	III	2.9	1339	1490	40	3243	143T	T,C,S,X,IG
39	I	1.0	1549	1294	45	3132	143T	T,C,S,X,IG
39	II, III	2.6	1532	1490	45	3243	143T	T,C,S,X,IG
35	I	1.0	1708	1294	50	3132	143T	T,C,S,X,IG
34	II, III	2.3	1729	1490	50	3243	143T	T,C,S,X,IG
32	I, II, III	2.1	1834	1490	56	3243	143T	T,C,S,X,IG
29	I, II, III	3+	2068	2090	63	3363	143T	T,C,S,X,IG
27	I, II	1.8	2180	1490	63	3243	143T	T,C,S,X,IG
26	I, II, III	3+	2298	2090	71	3363	143T	T,C,S,X,IG
26	I, II	1.7	2305	1490	71	3243	143T	T,C,S,X,IG
23	I, II, III	2.7	2610	2090	80	3363	143T	T,C,S,X,IG
23	I, II	1.5	2634	1490	80	3243	143T	T,C,S,X,IG
20	I, II, III	2.4	2905	2090	90	3363	143T	T,C,S,X,IG
20	I	1.3	2939	1490	90	3243	143T	T,C,S,X,IG
18	I, II, III	2.2	3268	2090	100	3363	143T	T,C,S,X,IG
18	I	1.2	3295	1490	100	3243	143T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
16	I, II, III	3+	3661	2875	112	3473	143T	T,C,S,X,IG
15	I	1.0	3830	1490	112	3243	143T	T,C,S,X,IG
15	I, II	1.9	3830	2090	112	3363	143T	T,C,S,X,IG
14	I, II, III	3+	4203	2875	125	3473	143T	T,C,S,X,IG
14	I, II	1.7	4237	2090	125	3363	143T	T,C,S,X,IG
13	I, II	1.5	4644	2090	140	3363	143T	T,C,S,X,IG
13	I, II, III	3+	4712	2875	140	3473	143T	T,C,S,X,IG
11	I, II, III	2.7	5220	2875	160	3473	143T	T,C,S,X,IG
11	I	1.3	5424	2090	160	3363	143T	T,C,S,X,IG
10.2	I, II, III	2.5	5599	2875	180	3475	143T	T,C,S,X,IG
10.1	I	1.2	5664	2090	180	3365	143T	T,C,S,X,IG
9.0	I, II, III	2.2	6316	2875	200	3475	143T	T,C,S,X,IG
8.9	I	1.1	6381	2090	200	3365	143T	T,C,S,X,IG
8.0	I, II, III	2.0	7162	2875	224	3475	143T	T,C,S,X,IG
7.9	I	1.0	7227	2090	224	3365	143T	T,C,S,X,IG
7.4	I, II, III	3+	7650	4100	250	3585	143T	T,C,S,X,IG
7.0	I, II	1.7	8139	2875	250	3475	143T	T,C,S,X,IG
6.6	I, II, III	2.6	8627	4100	280	3585	143T	T,C,S,X,IG
6.1	I, II	1.5	9310	2875	280	3475	143T	T,C,S,X,IG
5.8	I, II, III	2.3	9831	4100	315	3585	143T	T,C,S,X,IG
5.4	I	1.3	10482	2875	315	3475	143T	T,C,S,X,IG
5.1	I	1.3	11133	2875	355	3475	143T	T,C,S,X,IG
5.1	I, II, III	2.0	11231	4100	355	3585	143T	T,C,S,X,IG
4.5	I	1.1	12566	2875	400	3475	143T	T,C,S,X,IG
4.5	I, II	1.8	12664	4100	400	3585	143T	T,C,S,X,IG
4.2	I, II	1.7	13445	4100	450	3585	143T	T,C,S,X,IG
4.1	III	2.9	13738	6060	450	3695	143T	T,C,S,X,IG
4.0	I	1.0	14226	2875	450	3475	143T	T,C,S,X,IG
3.7	II, III	2.6	15593	6060	500	3695	143T	T,C,S,X,IG
3.6	I, II	1.4	15951	4100	500	3585	143T	T,C,S,X,IG
3.4	I, II	1.4	16863	4100	560	3585	143T	T,C,S,X,IG
3.3	III	2.3	17319	6060	560	3695	143T	T,C,S,X,IG
3.0	I	1.2	19272	4100	630	3585	143T	T,C,S,X,IG
2.9	II, III	2.0	19695	6060	630	3695	143T	T,C,S,X,IG
2.6	II	1.8	21909	7691	710	3695	143T	T,C,S,X,IG
2.6	I	1.1	21518	4100	710	3585	143T	T,C,S,X,IG
2.4	III	3+	23569	7745	710	3705	143T	T,C,S,X,IG
2.3	I, II	1.6	24643	6060	800	3695	143T	T,C,S,X,IG
2.1	III	2.8	26532	7595	800	3705	143T	T,C,S,X,IG

◇ Standard Motor Types (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
2.0	I, II	1.4	28875	6060	900	3695	143T	T,C,S,X,IG
1.8	III	2.4	31089	7460	900	3705	143T	T,C,S,X,IG
1.8	I	1.2	31870	6060	1000	3695	143T	T,C,S,X,IG
1.7	II, III	2.1	34312	7242	1000	3705	143T	T,C,S,X,IG
1.6	I	1.1	34963	6060	1120	3695	143T	T,C,S,X,IG
1.5	II	1.9	37632	7023	1120	3705	143T	T,C,S,X,IG
1.4	I	1.0	40823	6060	1250	3695	143T	T,C,S,X,IG
1.4	III	2.2	40888	12100	1250	2806A	143T	T,C,S,X,IG
1.3	II	1.8	42255	6602	1250	3705	143T	T,C,S,X,IG
1.2	I, II	1.6	47757	6181	1400	3705	143T	T,C,S,X,IG
1.2	II	1.9	46259	12100	1400	2806A	143T	T,C,S,X,IG
1.1	II	1.4	52868	6181	1600	3705	143T	T,C,S,X,IG
1.1	II	1.7	51746	12100	1600	2806A	143T	T,C,S,X,IG
1.0	I, II	1.6	55543	12100	1800	2806A	143T	T,C,S,X,IG
0.95	I	1.3	60258	6181	1800	3705	143T	T,C,S,X,IG
0.86	II	1.4	64635	11782	2000	2806A	143T	T,C,S,X,IG
0.82	I	1.1	69470	6181	2000	3705	143T	T,C,S,X,IG
0.80	I	1.3	70123	11255	2240	2806A	143T	T,C,S,X,IG
0.77	I	1.0	74223	6181	2240	3705	143T	T,C,S,X,IG
0.72	I	1.1	77460	10727	2500	2806A	143T	T,C,S,X,IG
0.65	I	1.0	86010	10137	2800	2806A	143T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty[®], three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear[®] variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.



Gearmotors

OtN
SERIES 2000
3000

1 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
472	I, II, III	3+	192	2071	3.55	3242	145T	T,C,S,X,IG
374	I, II, III	3+	243	2071	4.5	3242	145T	T,C,S,X,IG
343	I, II, III	3+	264	1294	5	3132	145T	T,C,S,X,IG
313	I, II, III	3+	290	2071	5.6	3242	145T	T,C,S,X,IG
272	I, II, III	3.2	333	1294	6.3	3132	145T	T,C,S,X,IG
242	I, II, III	3.0	375	1294	7.1	3132	145T	T,C,S,X,IG
230	I, II, III	2.9	395	1294	8	3132	145T	T,C,S,X,IG
203	I, II, III	2.7	447	1294	9	3132	145T	T,C,S,X,IG
180	I, II, III	2.5	504	1294	10	3132	145T	T,C,S,X,IG
159	I, II, III	2.3	570	1294	11.2	3132	145T	T,C,S,X,IG
140	I, II, III	2.1	648	1294	12.5	3132	145T	T,C,S,X,IG
124	III	3+	731	1146	14	3242	145T	T,C,S,X,IG
122	I, II	1.9	742	1294	14	3132	145T	T,C,S,X,IG
109	I, II	1.8	835	1294	16	3132	145T	T,C,S,X,IG
112	III	3+	809	1189	16	3242	145T	T,C,S,X,IG
102	I, II	1.7	887	1294	18	3132	145T	T,C,S,X,IG
99	III	3+	918	1198	18	3242	145T	T,C,S,X,IG
89	III	3.1	1022	1258	20	3242	145T	T,C,S,X,IG
86	I, II	1.5	1053	1294	20	3132	145T	T,C,S,X,IG
81	I, II	1.5	1115	1294	22.4	3132	145T	T,C,S,X,IG
79	III	3+	1151	1291	22.4	3242	145T	T,C,S,X,IG
71	I, II	1.4	1276	1294	25	3132	145T	T,C,S,X,IG
67	III	2.4	1348	1306	25	3242	145T	T,C,S,X,IG
64	I	1.3	1421	1294	28	3132	145T	T,C,S,X,IG
61	II, III	2.1	1488	1340	28	3242	145T	T,C,S,X,IG
57	I	1.2	1592	1294	31.5	3132	145T	T,C,S,X,IG
56	II, III	2.0	1634	2071	31.5	3242	145T	T,C,S,X,IG
50	III	2.2	1769	1403	35.5	3243	145T	T,C,S,X,IG
49	I	1.1	1846	1294	35.5	3132	145T	T,C,S,X,IG
48	II	1.7	1908	2071	35.5	3242	145T	T,C,S,X,IG
46	I, II, III	3+	1947	2090	40	3363	145T	T,C,S,X,IG
44	I, II	1.9	2008	1433	40	3243	145T	T,C,S,X,IG
40	I, II, III	3+	2222	2090	45	3363	145T	T,C,S,X,IG
39	I, II	1.7	2298	1461	45	3243	145T	T,C,S,X,IG
35	I, II, III	2.7	2557	2090	50	3363	145T	T,C,S,X,IG
34	I, II	1.5	2593	1483	50	3243	145T	T,C,S,X,IG
33	I, II, III	2.6	2735	2090	56	3363	145T	T,C,S,X,IG
32	I, II	1.4	2751	1490	56	3243	145T	T,C,S,X,IG
29	I, II, III	2.3	3102	2090	63	3363	145T	T,C,S,X,IG
27	I	1.2	3269	1490	63	3243	145T	T,C,S,X,IG

OtN Series

\diamond **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase).

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

OtN Series

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
26	I, II, III	2.0	3447	2090	71	3363	145T	T,C,S,X,IG
26	I	1.1	3457	1490	71	3243	145T	T,C,S,X,IG
23	I, II	1.8	3915	2090	80	3363	145T	T,C,S,X,IG
23	I, II, III	3+	3940	2875	80	3473	145T	T,C,S,X,IG
23	I	1.0	3951	1490	80	3243	145T	T,C,S,X,IG
20	I, II	1.6	4357	2090	90	3363	145T	T,C,S,X,IG
20	I, II, III	3+	4459	2875	90	3473	145T	T,C,S,X,IG
18	I, II, III	2.9	4851	2875	100	3473	145T	T,C,S,X,IG
18	I, II	1.4	4901	2090	100	3363	145T	T,C,S,X,IG
16	I, II, III	2.6	5491	2875	112	3473	145T	T,C,S,X,IG
15	I	1.2	5745	2090	112	3363	145T	T,C,S,X,IG
14	I, II, III	2.3	6305	2875	125	3473	145T	T,C,S,X,IG
14	I	1.1	6356	2090	125	3363	145T	T,C,S,X,IG
13	I	1.0	6966	2090	140	3363	145T	T,C,S,X,IG
13	I, II, III	2.0	7067	2875	140	3473	145T	T,C,S,X,IG
11	I, II	1.8	7830	2875	160	3473	145T	T,C,S,X,IG
10.2	I, II	1.7	8399	2875	180	3475	145T	T,C,S,X,IG
10	I, II, III	2.7	8497	4100	180	3585	145T	T,C,S,X,IG
9.5	I, II, III	2.5	8985	4100	200	3585	145T	T,C,S,X,IG
9.0	I, II	1.5	9473	2875	200	3475	145T	T,C,S,X,IG
8.4	I, II, III	2.2	10157	4100	224	3585	145T	T,C,S,X,IG
8.0	I	1.3	10743	2875	224	3475	145T	T,C,S,X,IG
7.4	I, II, III	2.0	11475	4100	250	3585	145T	T,C,S,X,IG
7.0	I	1.2	12208	2875	250	3475	145T	T,C,S,X,IG
6.6	I, II	1.8	12940	4100	280	3585	145T	T,C,S,X,IG
6.1	I	1.0	13966	2875	280	3475	145T	T,C,S,X,IG
5.8	I, II	1.5	14747	4100	315	3585	145T	T,C,S,X,IG
5.8	III	2.7	14835	6060	315	3695	145T	T,C,S,X,IG
5.1	III	2.4	16651	6060	355	3695	145T	T,C,S,X,IG
5.1	I, II	1.4	16847	4100	355	3585	145T	T,C,S,X,IG
4.5	I	1.2	18995	4100	400	3585	145T	T,C,S,X,IG
4.4	II, III	2.1	19288	6060	400	3695	145T	T,C,S,X,IG
4.2	I	1.1	20167	4100	450	3585	145T	T,C,S,X,IG
4.1	II	1.9	20607	6060	450	3695	145T	T,C,S,X,IG
3.8	III	3+	22218	7679	450	3705	145T	T,C,S,X,IG
3.7	II	1.7	23390	6060	500	3695	145T	T,C,S,X,IG
3.6	I	1.0	23927	4100	500	3585	145T	T,C,S,X,IG
3.4	III	2.9	25197	7515	500	3705	145T	T,C,S,X,IG

◇ **Standard Motor Types** (see page B-15 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase).
C Corro-Duty®, three phase, 230/460 or 575 volts
X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
3.3	I, II	1.5	25978	6060	560	3695	145T	T,C,S,X,IG
3.1	III	2.6	27980	7344	560	3705	145T	T,C,S,X,IG
2.9	I	1.3	29543	6060	630	3695	145T	T,C,S,X,IG
2.7	II, III	2.3	31789	7018	630	3705	145T	T,C,S,X,IG
2.6	I	1.2	32863	6060	710	3695	145T	T,C,S,X,IG
2.4	II, III	2.1	35354	7148	710	3705	145T	T,C,S,X,IG
2.3	I	1.1	36965	6060	800	3695	145T	T,C,S,X,IG
2.2	II, III	2.3	38528	12100	800	2805A	145T	T,C,S,X,IG
2.1	I, II	1.8	39797	6778	800	3705	145T	T,C,S,X,IG
2.0	III	2.1	41848	12100	900	2805A	145T	T,C,S,X,IG
2.0		0.9	43313	6060	900	3695	145T	T,C,S,X,IG
1.8	I, III	1.6	46634	6431	900	3705	145T	T,C,S,X,IG
1.7	II	1.8	47950	11903	1000	2806A	145T	T,C,S,X,IG
1.7	I, II	1.4	51468	6208	1000	3705	145T	T,C,S,X,IG
1.6	I, II	1.7	53501	11534	1120	2806A	145T	T,C,S,X,IG
1.5	I	1.3	56449	6208	1120	3705	145T	T,C,S,X,IG
1.4	I, II	1.5	60105	10829	1250	2806A	145T	T,C,S,X,IG
1.3	I	1.2	63383	6208	1250	3705	145T	T,C,S,X,IG
1.2	I	1.3	68001	10129	1400	2806A	145T	T,C,S,X,IG
1.2	I	1.1	71635	6208	1400	3705	145T	T,C,S,X,IG
1.1	I	1.1	77620	8362	1600	2806A	145T	T,C,S,X,IG
1.1	I	1.0	79302	6208	1600	3705	145T	T,C,S,X,IG
1.0	I	1.1	83314	6601	1800	2806A	145T	T,C,S,X,IG
0.86		0.9	96953	6000	2000	2806A	145T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase).

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
472	I, II, III	3+	257	2071	3.55	3242	145T	T,C,S,X,IG
374	I, II, III	3+	324	2071	4.5	3242	145T	T,C,S,X,IG
343	I, II, III	2.8	353	1294	5	3132	145T	T,C,S,X,IG
313	I, II, III	3+	387	2071	5.6	3242	145T	T,C,S,X,IG
272	I, II, III	2.4	445	1294	6.3	3132	145T	T,C,S,X,IG
242	I, II, III	2.3	500	1294	7.1	3132	145T	T,C,S,X,IG
230	I, II, III	2.2	527	1294	8	3132	145T	T,C,S,X,IG
203	I, II, III	2.0	596	1294	9	3132	145T	T,C,S,X,IG
180	I, II	1.9	672	1294	10	3132	145T	T,C,S,X,IG
179	III	3+	664	1013	10	3243	145T	T,C,S,X,IG
159	I, II	1.7	761	1294	11.2	3132	145T	T,C,S,X,IG
141	III	3+	857	2071	12.5	3242	145T	T,C,S,X,IG
140	I, II	1.6	864	1294	12.5	3132	145T	T,C,S,X,IG
124	III	3+	975	2071	14	3242	145T	T,C,S,X,IG
122	I, II	1.5	989	1294	14	3132	145T	T,C,S,X,IG
112	II, III	3.0	1079	2071	16	3242	145T	T,C,S,X,IG
109	I	1.3	1113	1294	16	3132	145T	T,C,S,X,IG
102	I	1.3	1182	1294	18	3132	145T	T,C,S,X,IG
99	II, III	2.6	1224	2071	18	3242	145T	T,C,S,X,IG
89	II, III	2.3	1362	2071	20	3242	145T	T,C,S,X,IG
86	I	1.2	1404	1294	20	3132	145T	T,C,S,X,IG
81	I	1.1	1487	1294	22.4	3132	145T	T,C,S,X,IG
76	II, III	2.0	1583	2071	22.4	3242	145T	T,C,S,X,IG
73	III	2.3	1632	1238	25	3243	145T	T,C,S,X,IG
71	I	1.0	1701	1294	25	3132	145T	T,C,S,X,IG
67	II	1.8	1798	2071	25	3242	145T	T,C,S,X,IG
64		0.91	1895	1294	28	3132	145T	T,C,S,X,IG
64	III	2.0	1848	1252	28	3243	145T	T,C,S,X,IG
61	I, II	1.6	1985	2071	28	3242	145T	T,C,S,X,IG
57	III	3+	2072	2090	31.5	3363	145T	T,C,S,X,IG
56	I, II	1.5	2178	2071	31.5	3242	145T	T,C,S,X,IG
53	III	3+	2228	2090	35.5	3363	145T	T,C,S,X,IG
50	II	1.7	2356	1291	35.5	3243	145T	T,C,S,X,IG
48	I	1.3	2545	2071	35.5	3242	145T	T,C,S,X,IG
46	I, II, III	2.7	2597	2090	40	3363	145T	T,C,S,X,IG
44	I, II	1.5	2678	1306	40	3243	145T	T,C,S,X,IG
40	I, II, III	2.4	2963	2090	45	3363	145T	T,C,S,X,IG
39	I	1.3	3064	1316	45	3243	145T	T,C,S,X,IG
35	I, II, III	2.1	3410	2090	50	3363	145T	T,C,S,X,IG
34	I	1.1	3457	1319	50	3243	145T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase)
C Corro-Duty®, three phase, 230/460 or 575 volts
X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
33	I, II	1.9	3647	2090	56	3363	145T	T,C,S,X,IG
32	I	1.1	3668	1319	56	3243	145T	T,C,S,X,IG
31	II, III	3+	3864	2875	56	3473	145T	T,C,S,X,IG
29	I, II	1.7	4135	2090	63	3363	145T	T,C,S,X,IG
28	III	3+	4196	2875	63	3473	145T	T,C,S,X,IG
26	I, II	1.5	4596	2090	71	3363	145T	T,C,S,X,IG
25	III	3+	4678	2875	71	3473	145T	T,C,S,X,IG
23	I, II	1.4	5220	2090	80	3363	145T	T,C,S,X,IG
23	III	2.7	5254	2875	80	3473	145T	T,C,S,X,IG
20	I	1.2	5810	2090	90	3363	145T	T,C,S,X,IG
20	II, III	2.4	5946	2875	90	3473	145T	T,C,S,X,IG
18	II, III	2.2	6468	2875	100	3473	145T	T,C,S,X,IG
18	I	1.1	6535	2090	100	3363	145T	T,C,S,X,IG
16	I, II	1.9	7322	2875	112	3473	145T	T,C,S,X,IG
14	III	2.8	8203	4100	125	3583	145T	T,C,S,X,IG
14	I, II	1.7	8406	2875	125	3473	145T	T,C,S,X,IG
13	III	2.5	9084	4100	140	3583	145T	T,C,S,X,IG
13	I, II	1.5	9423	2875	140	3473	145T	T,C,S,X,IG
11	I, II	1.4	10440	2875	160	3473	145T	T,C,S,X,IG
11	III	2.1	10779	4100	160	3583	145T	T,C,S,X,IG
10.2	I	1.3	11199	2875	180	3475	145T	T,C,S,X,IG
10	II, III	2.0	11329	4100	180	3585	145T	T,C,S,X,IG
9.5	I, II	1.9	11980	4100	200	3585	145T	T,C,S,X,IG
9.0	I	1.1	12631	2875	200	3475	145T	T,C,S,X,IG
8.4	I, II	1.7	13543	4100	224	3585	145T	T,C,S,X,IG
8.0	I	1.0	14324	2875	224	3475	145T	T,C,S,X,IG
7.4	I, II	1.5	15301	4100	250	3585	145T	T,C,S,X,IG
7.3	III	2.5	15558	6060	250	3695	145T	T,C,S,X,IG
6.6	I	1.3	17254	4100	280	3585	145T	T,C,S,X,IG
6.4	II, III	2.3	17633	6060	280	3695	145T	T,C,S,X,IG
5.8	I	1.2	19663	4100	315	3585	145T	T,C,S,X,IG
5.8	II, III	2.0	19447	6060	315	3695	145T	T,C,S,X,IG
5.1	I, II	1.8	22202	6060	355	3695	145T	T,C,S,X,IG
5.1	I	1	22463	4100	355	3585	145T	T,C,S,X,IG
4.8	III	3+	23895	7599	355	3705	145T	T,C,S,X,IG
5.1	I, II	1.4	22398	6060	355	2605A	145T	T,C,S,X,IG

◇ **Standard Motor Types** (see page B-15 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase)
C Corro-Duty®, three phase, 230/460 or 575 volts
X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
4.4	I, II	1.5	25718	6060	400	3695	145T	T,C,S,X,IG
4.1	I, II	1.4	27476	6060	450	3695	145T	T,C,S,X,IG
4.1	III	2.6	27671	7426	400	3705	145T	T,C,S,X,IG
3.8	III	2.5	29624	7256	450	3705	145T	T,C,S,X,IG
3.7	I	1.3	31187	6060	500	3695	145T	T,C,S,X,IG
3.4	II, III	2.2	33596	6944	500	3705	145T	T,C,S,X,IG
3.3	I	1.1	34637	6060	560	3695	145T	T,C,S,X,IG
3.1	II, III	2.0	37307	6611	560	3705	145T	T,C,S,X,IG
2.9	I	1.0	39390	6060	630	3695	145T	T,C,S,X,IG
2.9	III	2.3	39000	12100	630	2805A	145T	T,C,S,X,IG
2.7	II	1.7	42385	6611	630	3705	145T	T,C,S,X,IG
2.6		0.9	43818	6060	710	3695	145T	T,C,S,X,IG
2.6	III	2.0	43298	12095	710	2805A	145T	T,C,S,X,IG
2.4	I, II	1.6	47138	6219	710	3705	145T	T,C,S,X,IG
2.1	II	1.4	53063	6219	800	3705	145T	T,C,S,X,IG
2.0	I, II	1.6	55798	11109	900	2805A	145T	T,C,S,X,IG
1.8	I	1.2	62178	6219	900	3705	145T	T,C,S,X,IG
1.7	II	1.4	63933	10356	1000	2806A	145T	T,C,S,X,IG
1.7	I	1.1	68624	6219	1000	3705	145T	T,C,S,X,IG
1.6	I	1.2	71335	9603	1120	2806A	145T	T,C,S,X,IG
1.5		0.97	75265	6219	1120	3705	145T	T,C,S,X,IG
1.4	I	1.1	80140	8980	1250	2806A	145T	T,C,S,X,IG
1.2		0.98	90668	8357	1400	2806A	145T	T,C,S,X,IG

Otn Series

◇ **Standard Motor Types** (see page B-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase)
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12
 Δ Overhung load rating is at shaft midpoint.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
472	I, II, III	3+	385	1756	3.55	3242	182T	T,C,S,X,IG
374	I, II, III	3+	485	1868	4.5	3242	182T	T,C,S,X,IG
343	I, II	1.9	529	1294	5	3132	182T	T,C,S,X,IG
313	I, II, III	3+	581	1957	5.6	3242	182T	T,C,S,X,IG
272	I, II	1.6	667	1294	6.3	3132	182T	T,C,S,X,IG
265	III	3+	686	1294	6.3	3242	182T	T,C,S,X,IG
248	III	3+	731	1294	7.1	3242	182T	T,C,S,X,IG
242	I, II	1.5	750	1294	7.1	3132	182T	T,C,S,X,IG
230	I, II	1.5	790	1294	8	3132	182T	T,C,S,X,IG
220	III	3+	827	2071	8	3242	182T	T,C,S,X,IG
203	I	1.3	894	1294	9	3132	182T	T,C,S,X,IG
198	II, III	3+	916	2071	9	3242	182T	T,C,S,X,IG
180	I, II, III	1.2	1008	1294	10	3132	182T	T,C,S,X,IG
173	III	3.0	1048	2071	10	3242	182T	T,C,S,X,IG
159	I	1.1	1141	1294	11.2	3132	182T	T,C,S,X,IG
151	II, III	2.6	1203	2071	11.2	3242	182T	T,C,S,X,IG
141	II, III	2.5	1286	2071	12.5	3242	182T	T,C,S,X,IG
140	I	1.1	1297	1294	12.5	3132	182T	T,C,S,X,IG
124	I, II, III	2.2	1462	2071	14	3242	182T	T,C,S,X,IG
122		0.9	1483	1294	14	3132	182T	T,C,S,X,IG
112	I, II, III	2.0	1618	2071	16	3242	182T	T,C,S,X,IG
99	I, II	1.7	1836	2071	18	3242	182T	T,C,S,X,IG
94	III	3.3	1889	2090	20	3363	182T	T,C,S,X,IG
89	I, II	1.6	2043	2071	20	3242	182T	T,C,S,X,IG
79	I, II	1.4	2303	2071	22.4	3242	182T	T,C,S,X,IG
75	III	2.9	2366	2090	22.4	3363	182T	T,C,S,X,IG
73	I, II	1.5	2500	1074	25	3243	182T	T,C,S,X,IG
72	III	2.8	2468	2090	25	3363	182T	T,C,S,X,IG
67	I	1.2	2697	2071	25	3242	182T	T,C,S,X,IG
64	II	1.4	2773	1077	28	3243	182T	T,C,S,X,IG
61	I	1.1	2977	2071	28	3242	182T	T,C,S,X,IG
61	II, III	2.5	2915	2090	28	3363	182T	T,C,S,X,IG
57	II, III	2.3	3112	2090	31.5	3363	182T	T,C,S,X,IG
57	I	1.2	3132	1075	31.5	3243	182T	T,C,S,X,IG
51	II, III	2.0	3518	2090	35.5	3363	182T	T,C,S,X,IG
50	I	1.1	3539	1068	35.5	3243	182T	T,C,S,X,IG
46	I, II	1.8	3895	2090	40	3363	182T	T,C,S,X,IG
44	I	1.0	4017	1052	40	3243	182T	T,C,S,X,IG
44	II, III	3+	4057	2875	40	3473	182T	T,C,S,X,IG
40	I, II	1.6	4444	2090	45	3363	182T	T,C,S,X,IG

◇ **Standard Motor Types** (see page B-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 230 volts (Note that single phase motor has 184T frame.)
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12
 Δ Overhung load rating is at shaft midpoint.

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
40	III	3+	4485	2875	45	3473	182T	T,C,S,X,IG
35	I, II	1.4	5115	2090	50	3363	182T	T,C,S,X,IG
35	III	2.6	5146	2875	50	3473	182T	T,C,S,X,IG
33	I	1.3	5471	2090	56	3363	182T	T,C,S,X,IG
31	I, II, III	2.4	5796	2875	56	3473	182T	T,C,S,X,IG
29	I	1.1	6203	2090	63	3363	182T	T,C,S,X,IG
28	I, II, III	2.2	6295	2875	63	3473	182T	T,C,S,X,IG
26	I	1.0	6895	2090	71	3363	182T	T,C,S,X,IG
25	I, II, III	2.0	7017	2875	71	3473	182T	T,C,S,X,IG
23	I, II	1.8	7881	2875	80	3473	182T	T,C,S,X,IG
22	I, II, III	2.8	8196	4100	80	3583	182T	T,C,S,X,IG
20	I, II, III	2.6	8796	4100	90	3583	182T	T,C,S,X,IG
20	I, II	1.6	8918	2875	90	3473	182T	T,C,S,X,IG
18	I, II	1.5	9701	2875	100	3473	182T	T,C,S,X,IG
17	I, II, III	2.2	10271	4100	100	3583	182T	T,C,S,X,IG
16	I	1.3	10983	2875	112	3473	182T	T,C,S,X,IG
16	I, II, III	2.1	11084	4100	112	3583	182T	T,C,S,X,IG
14	I, II	1.9	12305	4100	125	3583	182T	T,C,S,X,IG
14	I	1.1	12610	2875	125	3473	182T	T,C,S,X,IG
14	III	3+	12304	13249	125	3693	182T	T,C,S,X,IG
13	III	2.9	13728	13249	140	3693	182T	T,C,S,X,IG
13	I, II	1.7	13627	4100	140	3583	182T	T,C,S,X,IG
13	I	1.0	14135	2875	140	3473	182T	T,C,S,X,IG
11	III	2.5	15965	6060	160	3693	182T	T,C,S,X,IG
11	I, II	1.4	16169	4100	160	3583	182T	T,C,S,X,IG
10.1	I	1.3	16993	4100	180	3585	182T	T,C,S,X,IG
9.7	II, III	2.3	17502	6060	180	3695	182T	T,C,S,X,IG
9.5	I	1.3	17970	4100	200	3585	182T	T,C,S,X,IG
9.2	II, III	2.0	18572	6060	200	3695	182T	T,C,S,X,IG
8.4	I	1.1	20314	4100	224	3585	182T	T,C,S,X,IG
7.7	II	1.9	21879	6060	224	3695	182T	T,C,S,X,IG
7.6	III	3+	22462	7666	224	3705	182T	T,C,S,X,IG
7.4	I	1.0	22951	4100	250	3585	182T	T,C,S,X,IG
7.3	II	1.7	23337	6060	250	3695	182T	T,C,S,X,IG
6.7	III	2.9	25490	7526	250	3705	182T	T,C,S,X,IG
6.4	I, II	1.5	26449	6060	280	3695	182T	T,C,S,X,IG
6.0	II, III	2.6	28322	7353	280	3705	182T	T,C,S,X,IG
5.8	I	1.3	29172	6060	315	3695	182T	T,C,S,X,IG
5.3	II, III	2.3	32228	7120	315	3705	182T	T,C,S,X,IG
5.1	I	1.2	33303	6060	355	3695	182T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
S TEFC, single phase, 230 volts (Note that single phase motor has 184T frame.)
C Corro-Duty[®], three phase, 230/460 or 575 volts
X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
IG IntelliGear[®] variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
4.8	II, III	2.0	35842	6788	355	3705	182T	T,C,S,X,IG
4.4	I	1.0	38577	6060	400	3695	182T	T,C,S,X,IG
4.4	II, III	2.3	39065	12100	400	2805A	182T	T,C,S,X,IG
4.1		0.97	41213	6060	450	3695	182T	T,C,S,X,IG
4.1	I, III	1.8	41506	6343	400	3705	182T	T,C,S,X,IG
4.1	III	2.1	41995	12100	450	2805A	182T	T,C,S,X,IG
3.8	I, II	1.6	44436	5884	450	3705	182T	T,C,S,X,IG
3.4	I, II	1.5	50394	4965	500	3705	182T	T,C,S,X,IG
3.2	I, II	1.7	52933	11247	560	2805A	182T	T,C,S,X,IG
3.1	I	1.3	55960	4965	560	3705	182T	T,C,S,X,IG
2.9	II	1.5	58500	10705	630	2805A	182T	T,C,S,X,IG
2.7	I	1.2	63578	4965	630	3705	182T	T,C,S,X,IG
2.6	II	1.4	64945	9862	710	2805A	182T	T,C,S,X,IG
2.4	I	1.0	70707	4965	710	3705	182T	T,C,S,X,IG
2.2	I	1.2	77055	8945	800	2805A	182T	T,C,S,X,IG
2.1		0.92	79595	4965	800	3705	182T	T,C,S,X,IG
2.0	I	1.1	82022	6767	900	2806A	182T	T,C,S,X,IG
1.7		0.92	95900	6100	1000	2806A	182T	T,C,S,X,IG

◇ **Standard Motor Types** (see page B-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 230 volts (Note that single phase motor has 184T frame.)
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12
 Δ Overhung load rating is at shaft midpoint.

5 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
472	I, II, III	4.2	641	1704	3.55	3242	184T	T,C,S,X,IG
374	I, II, III	3.7	809	1803	4.5	3242	184T	T,C,S,X,IG
343	I	1.1	882	1294	5	3132	184T	T,C,S,X,IG
313	I, II, III	3.3	968	1850	5.6	3242	184T	T,C,S,X,IG
265	I, II, III	2.8	1143	1906	6.3	3242	184T	T,C,S,X,IG
248	I, II, III	2.6	1219	1977	7.1	3242	184T	T,C,S,X,IG
220	I, II, III	2.3	1378	2028	8	3242	184T	T,C,S,X,IG
198	I, II, III	2.1	1526	2070	9	3242	184T	T,C,S,X,IG
179	III	3.3	1655	1771	10	3363	184T	T,C,S,X,IG
173	I, II	1.8	1746	2071	10	3242	184T	T,C,S,X,IG
151	I, II	1.6	2005	2071	11.2	3242	184T	T,C,S,X,IG
142	III	2.7	2082	1866	12.5	3363	184T	T,C,S,X,IG
141	I, II	1.5	2144	2071	12.5	3242	184T	T,C,S,X,IG
124	I	1.3	2437	2071	14	3242	184T	T,C,S,X,IG
118	II, III	2.4	2505	1941	14	3363	184T	T,C,S,X,IG
112	I	1.2	2697	2071	16	3242	184T	T,C,S,X,IG
109	II, III	2.3	2725	1963	16	3363	184T	T,C,S,X,IG
99	I	1.0	3060	2071	18	3242	184T	T,C,S,X,IG
94	II, III	2.0	3148	2026	18	3363	184T	T,C,S,X,IG
86	I, II, III	2.0	3441	2057	20	3363	184T	T,C,S,X,IG
86	I	1.0	3457	800	20	3243	184T	T,C,S,X,IG
82	I, II, III	3+	3610	2875	22.4	3473	184T	T,C,S,X,IG
75	I, II	1.7	3949	2090	22.4	3363	184T	T,C,S,X,IG
72	I, II	1.7	4118	2090	25	3363	184T	T,C,S,X,IG
71	III	3+	4203	2875	25	3473	184T	T,C,S,X,IG
61	III	2.7	4847	2875	28	3473	184T	T,C,S,X,IG
61	I, II	1.5	4864	2090	28	3363	184T	T,C,S,X,IG
57	I, II	1.4	5186	2090	31.5	3363	184T	T,C,S,X,IG
56	III	2.5	5339	2875	31.5	3473	184T	T,C,S,X,IG
51	I	1.2	5864	2090	35.5	3363	184T	T,C,S,X,IG
50	III	2.3	5898	2875	35.5	3473	184T	T,C,S,X,IG
46	I	1.1	6491	2090	40	3363	184T	T,C,S,X,IG
44	I, II, III	2.0	6762	2875	40	3473	184T	T,C,S,X,IG
41	III	3+	7220	4100	45	3583	184T	T,C,S,X,IG
40	I, II	1.8	7474	2875	45	3473	184T	T,C,S,X,IG
35	III	2.7	8440	4100	50	3583	184T	T,C,S,X,IG
35	I, II	1.6	8576	2875	50	3473	184T	T,C,S,X,IG
32	III	2.4	9406	4100	56	3583	184T	T,C,S,X,IG
31	I, II	1.4	9661	2875	56	3473	184T	T,C,S,X,IG
28	I	1.3	10491	2875	63	3473	184T	T,C,S,X,IG
28	II, III	2.1	10576	4100	63	3583	184T	T,C,S,X,IG

◇ Standard Motor Types (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
25	III	3+	11796	12633	71	3693	184T	T,C,S,X,IG
25	I	1.2	11694	2875	71	3473	184T	T,C,S,X,IG
25	II	1.9	11966	4100	71	3583	184T	T,C,S,X,IG
23	III	3+	12864	12956	80	3693	184T	T,C,S,X,IG
23	I	1.1	13135	2875	80	3473	184T	T,C,S,X,IG
22	II	1.7	13660	4100	80	3583	184T	T,C,S,X,IG
21	III	2.7	14457	13249	90	3693	184T	T,C,S,X,IG
20	II	1.6	14660	4100	90	3583	184T	T,C,S,X,IG
20	I	1.0	14864	2875	90	3473	184T	T,C,S,X,IG
18	II, II	2.5	16118	13249	100	3693	184T	T,C,S,X,IG
17	I	1.3	17118	4100	100	3583	184T	T,C,S,X,IG
16	II, III	2.2	18304	13249	112	3693	184T	T,C,S,X,IG
16	I	1.2	18474	4100	112	3583	184T	T,C,S,X,IG
14	III	3+	20846	18242	125	3703	184T	T,C,S,X,IG
14	II	1.9	21016	13249	125	3693	184T	T,C,S,X,IG
14	I	1.1	20508	4100	125	3583	184T	T,C,S,X,IG
13	I	1.0	22711	4100	140	3583	184T	T,C,S,X,IG
13	II	1.8	22880	13249	140	3693	184T	T,C,S,X,IG
13	III	3+	22880	18242	140	3703	184T	T,C,S,X,IG
12	III	2.9	25761	18242	160	3703	184T	T,C,S,X,IG
11	I, II	1.5	26609	13249	160	3693	184T	T,C,S,X,IG
9.7	I, II	1.4	29171	6060	180	3695	184T	T,C,S,X,IG
9.4	III	2.3	31693	7264	180	3705	184T	T,C,S,X,IG
9.1	I	1.2	30954	6060	200	3695	184T	T,C,S,X,IG
8.1	II, III	2.0	36608	6936	200	3705	184T	T,C,S,X,IG
7.8	I	1.1	36464	6060	224	3695	184T	T,C,S,X,IG
7.6	II, III	2.0	37437	6633	224	3705	184T	T,C,S,X,IG
7.3	I	1.0	38895	6060	250	3695	184T	T,C,S,X,IG
7.1	II, III	2.2	40204	12100	250	2805A	184T	T,C,S,X,IG
6.7	II	1.7	42483	6069	250	3705	184T	T,C,S,X,IG
6.3	III	2.0	44925	12100	280	2805A	184T	T,C,S,X,IG
6.0	I, II	1.5	47203	5563	280	3705	184T	T,C,S,X,IG
5.6	II	1.8	50459	11731	315	2805A	184T	T,C,S,X,IG
5.3	I, II	1.4	53714	5563	315	3705	184T	T,C,S,X,IG
5.0	II	1.6	57132	11235	355	2805A	184T	T,C,S,X,IG
4.8	I	1.2	59737	5563	355	3705	184T	T,C,S,X,IG
4.4	II	1.4	65108	10453	400	2805A	184T	T,C,S,X,IG
4.1	I	1.1	69177	5563	400	3705	184T	T,C,S,X,IG
4.1	I	1.3	69992	9173	450	2805A	184T	T,C,S,X,IG
3.8	I	1.0	74060	5563	450	3705	184T	T,C,S,X,IG
3.5	I	1.1	81385	8064	500	2805A	184T	T,C,S,X,IG
3.2	I	1.0	88221	7431	560	2805A	184T	T,C,S,X,IG
2.9		0.91	97499	6671	630	2805A	184T	T,C,S,X,IG

\diamond Standard Motor Types (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA

4/12

Δ Overhung load rating is at shaft midpoint.

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
472	I, II, III	2.8	962	1639	3.55	3242	213T	T,C,X,IG
374	I, II, III	2.5	1214	1721	4.5	3242	213T	T,C,X,IG
313	I, II, III	2.2	1462	1735	5.6	3242	213T	T,C,X,IG
265	I, II, III	1.9	1714	1834	6.3	3242	213T	T,C,X,IG
248	I, II	1.7	1828	1854	7.1	3242	213T	T,C,X,IG
220	I, II	1.5	2067	1889	8	3242	213T	T,C,X,IG
198	I, II	1.4	2290	1916	9	3242	213T	T,C,X,IG
179	II, III	2.2	2483	1644	10	3363	213T	T,C,X,IG
173	I	1.2	2619	1947	10	3242	213T	T,C,X,IG
151	I	1.1	3008	1974	11.2	3242	213T	T,C,X,IG
142	I, II	1.8	3123	1707	12.5	3363	213T	T,C,X,IG
142	III	3.1	3123	2875	12.5	3473	213T	T,C,X,IG
141		0.99	3215	2071	12.5	3242	213T	T,C,X,IG
118	I, II	1.6	3763	1750	14	3363	213T	T,C,X,IG
115	I, II, III	3+	3864	2875	14	3473	213T	T,C,X,IG
113	I, II, III	3+	3941	2875	16	3473	213T	T,C,X,IG
109	I, II	1.6	4093	1765	16	3363	213T	T,C,X,IG
100	I, II, III	2.6	4449	2875	18	3473	213T	T,C,X,IG
94	I	1.3	4729	1786	18	3363	213T	T,C,X,IG
87	I, II, III	2.4	5110	2875	20	3473	213T	T,C,X,IG
86	I	1.3	5161	1794	20	3363	213T	T,C,X,IG
82	I, II, III	2.1	5415	2875	22.4	3473	213T	T,C,X,IG
75	I	1.1	5923	1800	22.4	3363	213T	T,C,X,IG
72	I	1.1	6178	1799	25	3363	213T	T,C,X,IG
71	I, II, III	2.0	6305	2875	25	3473	213T	T,C,X,IG
65	I, II, III	3+	6890	4100	28	3583	213T	T,C,X,IG
61	II	1.8	7271	2875	28	3473	213T	T,C,X,IG
61	I	1.0	7296	1785	28	3363	213T	T,C,X,IG
57	III	2.8	7754	4100	31.5	3583	213T	T,C,X,IG
56	I, II	1.7	8008	2875	31.5	3473	213T	T,C,X,IG
51	III	2.6	8644	4100	35.5	3583	213T	T,C,X,IG
50	I, II	1.5	8847	2875	35.5	3473	213T	T,C,X,IG
45	III	2.3	9813	4100	40	3583	213T	T,C,X,IG
44	I	1.3	10144	2875	40	3473	213T	T,C,X,IG
41	II, III	2.1	10830	4100	45	3583	213T	T,C,X,IG
40	I	1.2	11211	2875	45	3473	213T	T,C,X,IG
37	III	3+	12152	11250	50	3693	213T	T,C,X,IG
35	II	1.8	12660	4100	50	3583	213T	T,C,X,IG
35	I	1.0	12864	2875	50	3473	213T	T,C,X,IG
32	III	2.8	13830	11485	56	3693	213T	T,C,X,IG

◇ **Standard Motor Types** (see page B-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

7 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
32	I,II	1.6	14110	4100	56	3583	213T	T,C,X,IG
29	III	2.6	15279	11667	63	3693	213T	T,C,X,IG
28	I, II	1.4	15864	4100	63	3583	213T	T,C,X,IG
25	II, III	2.2	17694	12097	71	3693	213T	T,C,X,IG
25	I	1.3	17948	4100	71	3583	213T	T,C,X,IG
23	II, III	2.1	19296	12349	80	3693	213T	T,C,X,IG
21	I, II	1.8	21685	12686	90	3693	213T	T,C,X,IG
20	III	3+	22219	18242	90	3703	213T	T,C,X,IG
18	I, II	1.6	24177	12995	100	3693	213T	T,C,X,IG
18	III	3.0	24914	18242	100	3703	213T	T,C,X,IG
16	I, II	1.5	27456	13249	112	3693	213T	T,C,X,IG
14	II, III	2.4	31269	18242	125	3703	213T	T,C,X,IG
14	I	1.3	31524	13249	125	3693	213T	T,C,X,IG
13	I	1.2	34320	13249	140	3693	213T	T,C,X,IG
13	II, III	2.1	34320	18242	140	3703	213T	T,C,X,IG
12	II	1.9	38642	18242	160	3703	213T	T,C,X,IG
12	III	2.4	37112	12100	160	2805A	213T	T,C,X,IG
11	I	1.0	39913	13249	160	3693	213T	T,C,X,IG
10	II, III	2.1	41262	5907	180	2805A	213T	T,C,X,IG
9.7		0.90	43757	6060	180	3695	213T	T,C,X,IG
9.4	I, II	1.6	45657	5903	180	3705	213T	T,C,X,IG
9.1	II	1.9	46878	11964	200	2805A	213T	T,C,X,IG
8.1	I, II	1.4	52738	5907	200	3705	213T	T,C,X,IG
7.6	I	1.3	56156	5903	224	3705	213T	T,C,X,IG
7.1	II	1.5	60306	10821	250	2805A	213T	T,C,X,IG
6.7	I	1.1	63725	5907	250	3705	213T	T,C,X,IG
6.3	I	1.3	67387	10059	280	2805A	213T	T,C,X,IG
6.0	I	1.0	70805	5907	280	3705	213T	T,C,X,IG
5.6	I	1.2	75688	8819	315	2805A	213T	T,C,X,IG
5.0	I	1.0	85698	7220	355	2805A	213T	T,C,X,IG
4.4		0.91	97662	6850	400	2805A	213T	T,C,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

10 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
472	I, II, III	2.1	1283	1575	3.55	3242	215T	T,C,X,IG
374	I, II	1.9	1618	1639	4.5	3242	215T	T,C,X,IG
313	I, II	1.6	1936	1670	5.6	3242	215T	T,C,X,IG
265	I, II	1.4	2285	1719	6.3	3242	215T	T,C,X,IG
248	I	1.3	2437	1731	7.1	3242	215T	T,C,X,IG
220	I	1.2	2756	1750	8	3242	215T	T,C,X,IG
198	I	1.0	3053	1762	9	3242	215T	T,C,X,IG
179	III	2.5	3311	2761	10	3473	215T	T,C,X,IG
179	I, II	1.7	3311	1539	10	3363	215T	T,C,X,IG
173		0.91	3492	1850	10	3242	215T	T,C,X,IG
142	I	1.3	4169	1549	12.5	3363	215T	T,C,X,IG
142	I, II, III	2.3	4169	2875	12.5	3473	215T	T,C,X,IG
118	I	1.2	5017	1558	14	3363	215T	T,C,X,IG
115	I, II, III	2.2	5152	2875	14	3473	215T	T,C,X,IG
113	I, II, III	2.2	5254	2875	16	3473	215T	T,C,X,IG
109	I	1.2	5457	1557	16	3363	215T	T,C,X,IG
100	I, II, III	2.0	5932	2875	18	3473	215T	T,C,X,IG
94	I	1.0	6305	1546	18	3363	215T	T,C,X,IG
88	I, II, III	2.9	6779	4100	20	3583	215T	T,C,X,IG
87	I, II	1.8	6813	2875	20	3473	215T	T,C,X,IG
86	I	1.0	6881	1532	20	3363	215T	T,C,X,IG
82	I, II	1.6	7220	2875	22.4	3473	215T	T,C,X,IG
74	I, II, III	2.6	8000	4100	22.4	3583	215T	T,C,X,IG
72	III	2.6	8237	4100	25	3583	215T	T,C,X,IG
71	I, II	1.5	8406	2875	25	3473	215T	T,C,X,IG
65	I, II, III	2.3	9186	4100	28	3583	215T	T,C,X,IG
61	I	1.3	9694	2875	28	3473	215T	T,C,X,IG
57	I, II, III	2.1	10338	4100	31.5	3583	215T	T,C,X,IG
56	I	1.3	10677	2875	31.5	3473	215T	T,C,X,IG
51	I, II	1.9	11525	4100	35.5	3583	215T	T,C,X,IG
50	I	1.1	11796	2875	35.5	3473	215T	T,C,X,IG
45	I, II	1.7	13084	4100	40	3583	215T	T,C,X,IG
45	III	2.9	13287	10115	40	3693	213T	T,C,X,IG
44	I	1.0	13525	2875	40	3473	215T	T,C,X,IG
41	I, II	1.6	14440	4100	45	3583	215T	T,C,X,IG
40	III	2.6	14948	10414	45	3693	215T	T,C,X,IG
37	III	2.4	16202	10619	50	3693	215T	T,C,X,IG
35	I	1.3	16880	4100	50	3583	215T	T,C,X,IG
32	III	2.1	18440	10941	56	3693	215T	T,C,X,IG
32	I, II	1.6	14110	4100	56	3583	215T	T,C,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

10 HP (Continued)

OtN Series

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
29	II	1.9	20372	11187	63	3693	215T	T,C,X,IG
28	I	1.1	21151	4100	63	3583	215T	T,C,X,IG
28	III	3.3	21422	16900	63	3703	215T	T,C,X,IG
25	III	3.1	23355	17304	71	3703	215T	T,C,X,IG
25	I, II	1.7	23592	11541	71	3693	215T	T,C,X,IG
23	I, II	1.5	25727	11743	80	3693	215T	T,C,X,IG
22	III	2.7	27253	18036	80	3703	215T	T,C,X,IG
21	I, II	1.4	28914	12005	90	3693	215T	T,C,X,IG
20	III	2.5	29625	18242	90	3703	215T	T,C,X,IG
18	I	1.2	32235	12236	100	3693	215T	T,C,X,IG
18	II, III	2.2	33218	18242	100	3703	215T	T,C,X,IG
16	I	1.1	36608	12485	112	3693	215T	T,C,X,IG
16	II, III	2.0	36947	18242	112	3703	215T	T,C,X,IG
14		0.95	42031	12500	125	3693	215T	T,C,X,IG
14	I, II	1.8	41693	18242	125	3703	215T	T,C,X,IG
14	III	2.3	39390	12100	125	2805A	215T	T,C,X,IG
13	I, II	1.6	45760	18242	140	3703	215T	T,C,X,IG
13	III	2.0	43948	12100	140	2805A	215T	T,C,X,IG
12	I,II	1.4	51522	18242	160	3703	215T	T,C,X,IG
12	II	1.8	49482	11066	160	2805A	215T	T,C,X,IG
10	I, II	1.6	55016	11066	180	2805A	215T	T,C,X,IG
9.4	I	1.2	60876	18242	180	3705	215T	T,C,X,IG
9.1	II	1.4	62504	10496	200	2805A	215T	T,C,X,IG
8.3	I	1.3	69015	9258	224	2805A	215T	T,C,X,IG
8.1	I	1.0	70317	18242	200	3705	215T	T,C,X,IG
7.6		0.98	74874	18242	224	3705	215T	T,C,X,IG
7.1	I	1.1	80408	7994	250	2805A	215T	T,C,X,IG
6.3	I	1.0	89849	7361	280	2805A	215T	T,C,X,IG

\diamond **Standard Motor Types** (see page B-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12
 Δ Overhung load rating is at shaft midpoint.

15 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

OtN Series

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
185	III	3+	4815	3659	10	3583	254T	T,C
184	I, II	1.7	4835	2545	10	3473	254T	T,C
142	I, II	1.5	6254	2641	12.5	3473	254T	T,C
142	III	3+	6254	3874	12.5	3583	254T	T,C
117	III	2.6	7576	4022	14	3583	254T	T,C
115	I, II	1.5	7728	2698	14	3473	254T	T,C
113	I, II	1.5	7881	2702	16	3473	254T	T,C
113	III	2.3	7881	4051	16	3583	254T	T,C
100	I	1.3	8898	2720	18	3473	254T	T,C
94	II, III	2.2	9508	4100	18	3583	254T	T,C
88	II, III	2.0	10169	4100	20	3583	254T	T,C
87	I	1.2	10220	2728	20	3473	254T	T,C
82	I	1.1	10830	2726	22.4	3473	254T	T,C
82	II, III	3+	10867	8265	22.4	3693	254T	T,C
74	II	1.8	11999	4100	22.4	3583	254T	T,C
72	I, II	1.7	12355	4100	25	3583	254T	T,C
71	I	1.0	12609	2705	25	3473	254T	T,C
70	III	3.0	12695	8586	25	3693	254T	T,C
65	I, II	1.6	13779	4100	28	3583	254T	T,C
61	III	2.5	14523	8863	28	3693	254T	T,C
57	I, II	1.4	15508	4100	31.5	3583	254T	T,C
56	III	2.3	15945	9052	31.5	3693	254T	T,C
51	I	1.3	17287	4100	35.5	3583	254T	T,C
50	II, III	2.1	17773	9261	35.5	3693	254T	T,C
45	I	1.1	19626	4100	40	3583	254T	T,C
45	II, III	2.0	19906	9489	40	3693	254T	T,C
41	I	1.0	21660	4100	45	3583	254T	T,C
41	III	2.9	21582	14612	45	3703	254T	T,C
40	II	1.7	22394	9709	45	3693	254T	T,C
37	I, II	1.6	24273	9853	50	3693	254T	T,C
37	III	2.7	24222	15056	50	3703	254T	T,C

\diamond **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

15 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
32	I, II	1.4	27624	10073	56	3693	254T	T,C
31	III	2.8	28386	15687	56	3703	254T	T,C
29	I	1.3	30519	10227	63	3693	254T	T,C
28	II, III	2.2	32093	16170	63	3703	254T	T,C
25	I,	1.1	35343	10429	71	3693	254T	T,C
25	II, III	2.0	34988	16508	71	3703	254T	T,C
23	I	1.0	38542	10530	80	3693	254T	T,C
22	II	1.8	40827	17107	80	3703	254T	T,C
22	III	2.1	41184	12100	80	2803	254T	T,C
21		0.92	43315	9588	90	3693	254T	T,C
20	I, II	1.6	44382	17426	90	3703	254T	T,C
20	III	2	44438	12100	90	2803	254T	T,C
18	I, II	1.5	49765	17855	100	3703	254T	T,C
17	I, II	1.7	51912	11787	100	2803	254T	T,C
16	I	1.3	55350	18241	112	3703	254T	T,C
16	II	1.7	53714	11431	112	2805A	254T	T,C
14	I	1.2	62460	18242	125	3703	254T	T,C
14	II	1.5	59086	10522	125	2805A	254T	T,C
13	I	1.1	68553	18242	140	3703	254T	T,C
13	I	1.3	65922	9916	140	2805A	254T	T,C
12		0.96	77186	18242	160	3703	254T	T,C
12	I	1.2	74223	8075	160	2805A	254T	T,C
10	I	1.1	82525	8075	180	2805A	254T	T,C

OtN Series

◇ **Standard Motor Types** (see page B-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts
 Δ Overhung load rating is at shaft midpoint.

20 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

OtN Series

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
185	II, III	2.7	6420	3469	10	3583	256T	T,C
184	I	1.3	6447	2329	10	3473	256T	T,C
142	I	1.2	8339	2361	12.5	3473	256T	T,C
142	II, III	2.3	8339	3626	12.5	3583	256T	T,C
120	III	2.3	9885	7146	14	3693	256T	T,C
117	II	1.9	10101	3722	14	3583	256T	T,C
115	I	1.1	10304	2352	14	3473	256T	T,C
113	I	1.1	10508	2349	16	3473	256T	T,C
113	II	1.8	10508	3739	16	3583	256T	T,C
109	III	2.0	10833	7410	16	3693	256T	T,C
100	I	1.0	11864	2323	18	3473	256T	T,C
99	III	3+	11916	10341	18	3703	256T	T,C
98	II	1.9	12120	7610	18	3693	256T	T,C
94	II	1.6	12677	3803	18	3583	256T	T,C
91	II	1.9	13000	7734	20	3693	256T	T,C
88	III	3+	13474	10865	20	3703	256T	T,C
88	I, II	1.5	13559	3819	20	3583	256T	T,C
82	II	1.8	14489	7923	22.4	3693	256T	T,C
77	III	3+	15302	11987	22.4	3703	256T	T,C
74	I	1.3	15999	3837	22.4	3583	256T	T,C
72	I	1.3	16474	3837	25	3583	256T	T,C
73	III	3+	16250	12186	25	3703	256T	T,C
70	II	1.6	16927	8187	25	3693	256T	T,C
65	I	1.2	18372	3826	28	3583	256T	T,C
65	III	3+	18213	12568	28	3703	256T	T,C
61	II	1.5	19364	8406	28	3693	256T	T,C
58	III	2.7	20583	12981	31.5	3703	256T	T,C
57	I	1.1	20677	3793	31.5	3583	256T	T,C
56	II	1.8	21260	8551	31.5	3693	256T	T,C
51	III	2.5	23020	13401	35.5	3703	256T	T,C
50	I, II	1.6	23697	8709	35.5	3693	256T	T,C
46	III	2.3	25796	13749	40	3703	256T	T,C
45	I, II	1.5	26541	8862	40	3693	256T	T,C
41	II, III	2.2	28775	14121	45	3703	256T	T,C
40	I	1.3	29859	9004	45	3693	256T	T,C
37	I	1.2	32364	9090	50	3693	256T	T,C
37	II, III	2.0	32296	14512	50	3703	256T	T,C
32	I	1.1	36833	9203	56	3693	256T	T,C
31	II, III	2.1	37848	15041	56	3703	256T	T,C
29	I	1.0	40692	8210	63	3693	256T	T,C
28	II	1.6	42791	15440	63	3703	256T	T,C
27	III	2.0	43874	12100	63	2803	256T	T,C
25	I, II	1.5	46650	15713	71	3703	256T	T,C
25	II	1.8	47530	12098	71	2803	256T	T,C
22	I	1.3	54436	16179	80	3703	256T	T,C
22	II	1.6	54912	11550	80	2803	256T	T,C
20	I	1.2	59176	16417	90	3703	256T	T,C
20	II	1.5	59251	11173	90	2803	256T	T,C
18	I	1.1	66353	16723	100	3703	256T	T,C
17	I	1.3	69149	10135	100	2803	256T	T,C
16	I	1.0	73681	16800	112	3703	256T	T,C
16	I	1.2	71619	9382	112	2805A	256T	T,C
14	I	1.1	78781	7249	125	2805A	256T	T,C
13	I	1.0	87896	6616	140	2805A	256T	T,C

\diamond Standard Motor Types (see page B-15 for product codes) Δ Overhung load rating is at shaft midpoint.
T TEFC, three phase, 208-230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts



Gearmotors

25 HP

OtN
SERIES **2000**
3000

OtN Series

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
185	I, II, III	2.2	8025	3278	10	3583	284T	T,C
161	I, II, III	2.4	9225	6549	11.2	3693	284T	T,C
142	I, II	1.8	10423	3379	12.5	3583	284T	T,C
138	III	2.2	10748	6793	12.5	3693	284T	T,C
120	III	2.1	12357	7012	14	3693	284T	T,C
117	I, II	1.5	12626	3422	14	3583	284T	T,C
113	I, II	1.4	13135	3427	16	3583	284T	T,C
113	III	2.9	13118	10592	16	3703	284T	T,C
109	II	1.9	13541	7154	16	3693	284T	T,C
99	III	2.8	14896	10172	18	3703	284T	T,C
98	II	1.9	15149	7324	18	3693	284T	T,C
94	I	1.3	15847	3427	18	3583	284T	T,C
91	II	1.9	16250	7427	20	3693	284T	T,C
88	I	1.2	16948	3416	20	3583	284T	T,C
88	III	2.8	16842	11341	20	3703	284T	T,C
82	II	1.9	18112	7581	22.4	3693	284T	T,C
77	III	2.8	19127	11726	22.4	3703	284T	T,C
74	I	1.1	19999	3362	22.4	3583	284T	T,C
72	I	1.0	20592	3347	25	3583	284T	T,C
73	III	2.8	20312	11909	25	3703	284T	T,C
70	II	1.8	21158	7788	25	3693	284T	T,C
65		0.93	22786	3295	28	3583	284T	T,C
65	III	2.4	22766	12287	28	3703	284T	T,C
61	I, II	1.5	24205	7949	28	3693	284T	T,C
58	III	2.2	25729	12630	31.5	3703	284T	T,C
56	I, II	1.4	26575	8049	31.5	3693	284T	T,C
51	II, III	2.0	28775	13004	35.5	3703	284T	T,C
50	I	1.3	29622	8150	35.5	3693	284T	T,C
46	II	1.9	32245	13309	40	3703	284T	T,C
45	I	1.2	33176	8236	40	3693	284T	T,C
44	III	2.6	33388	12100	40	2803	284T	T,C
41	II	1.7	35969	13631	45	3703	284T	T,C
40	I	1.0	37323	8300	45	3693	284T	T,C
40	III	2.3	37032	12100	45	2803	284T	T,C
37	I	1.0	40455	8410	50	3693	284T	T,C
37	II	1.6	40370	13961	50	3703	284T	T,C
34	III	2.0	43048	12100	50	2803	284T	T,C
31	I, II	1.7	47310	14395	56	3703	284T	T,C
30	II	1.8	49065	11996	56	2803	284T	T,C
28	I	1.3	53488	14710	63	3703	284T	T,C
27	II	1.6	54912	11550	63	2803	284T	T,C
25	I	1.2	58313	14171	71	3703	284T	T,C
25	II	1.5	59488	12098	71	2803	284T	T,C
22	I	1.1	68045	15250	80	3703	284T	T,C
22	I	1.3	68640	10203	80	2803	284T	T,C
20	I	1.0	73261	15250	90	3703	284T	T,C
20	I	1.2	74064	9525	90	2803	284T	T,C
16	I	1	89524	8259	112	2805A	284T	T,C

◇ Standard Motor Types (see page B-15 for product codes) Δ Overhung load rating is at shaft midpoint.
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts

30 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

OtN Series

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
185	I, II	1.8	9618	3278	10	3583	286T	T,C
178	III	2.2	9963	6223	10	3693	286T	T,C
161	III	2.0	11070	6375	11.2	3693	286T	T,C
142	I, II	1.5	12492	3379	12.5	3583	286T	T,C
142	III	2.7	12492	9787	12.5	3703	286T	T,C
138	II	1.9	12898	6590	12.5	3693	286T	T,C
128	III	2.4	13914	10079	14	3703	286T	T,C
120	II	1.7	14828	6779	14	3693	286T	T,C
117	I	1.3	15191	3422	14	3583	286T	T,C
113	I	1.2	15728	3427	16	3583	286T	T,C
113	III	2.4	15742	10418	16	3703	286T	T,C
109	II	1.6	16250	6898	16	3693	286T	T,C
99	III	2.3	17875	10770	18	3703	286T	T,C
98	II	1.6	18179	7038	18	3693	286T	T,C
94	I	1.1	18908	3427	18	3583	286T	T,C
91	II	1.6	19500	7120	20	3693	286T	T,C
88	I	1.0	20197	3416	20	3583	286T	T,C
88	III	2.3	20210	11111	20	3703	286T	T,C
82	I, II	1.6	21734	7239	22.4	3693	286T	T,C
77	III	2.3	22953	11465	22.4	3703	286T	T,C
74		0.88	23968	3363	22.4	3583	286T	T,C
73	III	2.3	24374	11632	25	3703	286T	T,C
70	I, II	1.5	25390	7388	25	3693	286T	T,C
65	II, III	2.0	27320	11946	28	3703	286T	T,C
61	I	1.2	29046	7492	28	3693	286T	T,C
58	II	1.8	30874	12278	31.5	3703	286T	T,C
56	I	1.2	31890	7547	31.5	3693	286T	T,C
54	III	2.6	33007	12100	31.5	2803	286T	T,C
51	II	1.7	34530	12606	35.5	3703	286T	T,C
50	I	1.1	35546	7591	35.5	3693	286T	T,C
49	III	2.4	36257	12100	35.5	2803	286T	T,C
46	I, II	1.6	38694	12869	40	3703	286T	T,C
45		0.97	39812	7600	40	3693	286T	T,C
44	III	2.2	40015	12100	40	2803	286T	T,C
41	I, II	1.5	43163	13140	45	3703	286T	T,C
40	III	2.0	44382	12100	45	2803	286T	T,C
37	I, II	1.4	48444	13410	50	3703	286T	T,C
34	II	1.7	51593	12100	50	2803	286T	T,C
31	I	1.2	56772	13750	56	3703	286T	T,C
30	II	1.5	58803	11207	56	2803	286T	T,C
28	I	1.1	64186	13970	63	3703	286T	T,C
27	I	1.3	65811	10511	63	2803	286T	T,C
25	I	1.0	69975	14121	71	3703	286T	T,C
25	I	1.2	71295	9872	71	2803	286T	T,C
22	I	1.1	82264	8263	80	2803	286T	T,C
20		0.98	88764	7630	90	2803	286T	T,C

\diamond Standard Motor Types (see page B-15 for product codes) Δ Overhung load rating is at shaft midpoint.
T TEFC, three phase, 208-230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts

40 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
178	I, II	1.6	13284	5910	10	3693	324T	T,C
173	III	2.3	13677	9100	10	3703	324T	T,C
161	I, II	1.5	14760	6026	11.2	3693	324T	T,C
152	III	2.1	15573	9314	11.2	3703	324T	T,C
142	III	2.1	16656	9503	12.5	3703	324T	T,C
138	I, II	1.4	17198	6184	12.5	3693	324T	T,C
128	I, II	1.8	18552	9763	14	3703	324T	T,C
120	I	1.3	19770	6313	14	3693	324T	T,C
113	II	1.8	20989	10060	16	3703	324T	T,C
111	III	2.6	21260	12100	16	2803	324T	T,C
109	I	1.2	21666	6387	16	3693	324T	T,C
99	II	1.7	23833	10363	18	3703	324T	T,C
98	I	1.1	24239	6466	18	3693	324T	T,C
91	II	1.2	25999	6506	20	3693	324T	T,C
88	II	1.8	26947	10652	20	3703	324T	T,C
87	III	2.6	27218	12100	20	2803	324T	T,C
82	I	1.2	28979	6555	22.4	3693	324T	T,C
77	II	1.8	30603	10943	22.4	3703	324T	T,C
77	III	2.6	30874	12100	22.4	2803	324T	T,C
73	II	1.7	32499	11078	25	3703	324T	T,C
70	I	1.1	33853	6589	25	3693	324T	T,C
69	III	2.5	34530	12100	25	2803	324T	T,C
65	I, II	1.5	36426	11375	28	3703	324T	T,C
62	III	2.2	38322	12100	28	2803	324T	T,C
61		0.94	38728	6615	28	3693	324T	T,C
58	I, II	1.4	41166	11576	31.5	3703	324T	T,C
54	III	2.0	44009	12100	31.5	2803	324T	T,C
51	I	1.3	46041	11812	35.5	3703	324T	T,C
49	II	1.8	48343	12042	35.5	2803	324T	T,C
46	I	1.2	51593	11989	40	3703	324T	T,C
44	II	1.6	53353	11670	40	2803	324T	T,C
41	I	1.1	57551	12158	45	3703	324T	T,C
40	II	1.5	59176	11173	45	2803	324T	T,C
37	I	1.0	64592	12308	50	3703	324T	T,C
34	I	1.3	68790	10175	50	2803	324T	T,C
31		0.91	75696	12410	56	3703	324T	T,C
30	I	1.1	78405	8889	56	2803	324T	T,C
27	I	1.0	87748	8256	63	2803	324T	T,C
25		0.92	95060	8055	71	2803	324T	T,C

\diamond **Standard Motor Types** (see page B-15 for product codes)

T TEFC, three phase, 230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

50 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

OtN Series

Output RPM	AGMA Class	Service Factor	Output Torque in - lbs	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
175	I	1.3	16605	5596	10	3693	326T	T,C
175	II	1.9	17096	8860	10	3703	326T	T,C
161	I	1.2	18450	5678	11.2	3693	326T	T,C
152	II	1.7	19466	9075	11.2	3703	326T	T,C
142	II	1.6	20820	9219	12.5	3703	326T	T,C
138	I	1.1	21497	5778	12.5	3693	326T	T,C
128	II	1.4	23190	9446	14	3703	326T	T,C
120	I	1.0	24713	5646	14	3693	326T	T,C
113	I, II	1.4	26236	9702	16	3703	326T	T,C
111	III	2.1	26575	12100	16	2803	326T	T,C
109	I	1.0	27083	8510	16	3693	326T	T,C
99	I, II	1.4	29791	9957	18	3703	326T	T,C
91	I	0.94	32499	5401	20	3693	326T	T,C
88	II	1.4	33684	10192	20	3703	326T	T,C
87	III	2.1	34023	12683	20	2803	326T	T,C
82	I	1.0	36223	5310	22.4	3693	326T	T,C
77	II	1.4	38254	10421	22.4	3703	326T	T,C
77	III	2.1	38593	12100	22.4	2803	326T	T,C
73	I, III	1.4	40624	10523	25	3703	326T	T,C
69	II, III	2.0	43163	12100	25	2803	326T	T,C
65	I	1.2	45533	10704	28	3703	326T	T,C
62	II	1.8	47903	12073	28	2803	326T	T,C
58	I	1.1	51457	10874	31.5	3703	326T	T,C
54	III	1.6	55012	11536	31.5	2803	326T	T,C
51	I	1.0	57551	11012	35.5	3703	326T	T,C
49	II	1.4	60428	11057	35.5	2803	326T	T,C
46		0.94	64491	11158	40	3703	326T	T,C
44	I	1.3	66691	10414	40	2803	326T	T,C
40	I	1.2	73970	9525	45	2803	326T	T,C
34	I	1.0	85988	8892	50	2803	326T	T,C

\diamond **Standard Motor Types** (see page B-15 for product codes)

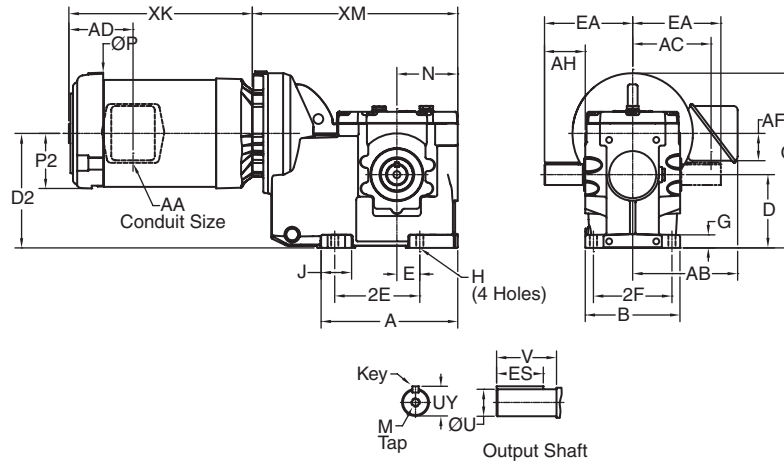
T TEFC, three phase, 230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

2-Stage Output Shafted Foot Mount OtN31 - 32

Standard conduit box location will be opposite shaft extension unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
3132	S2	1.000	1.10	1.77	1.83	4.33	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.38	2.45	5.31	1/4 Sq.	2.03	1/2-13 X 1.12

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

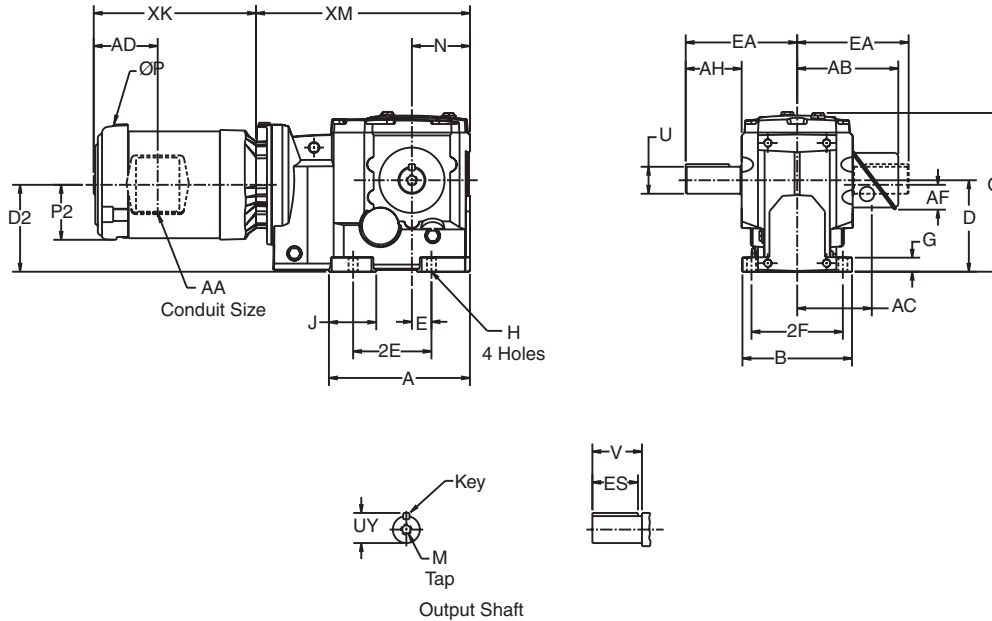
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Output Shafted Foot Mount OtN32 - 33

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	10.98
	S3	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	12.90
33	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	12.90

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 x 1.12
	S3	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 x 1.38
33	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 x 1.38

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

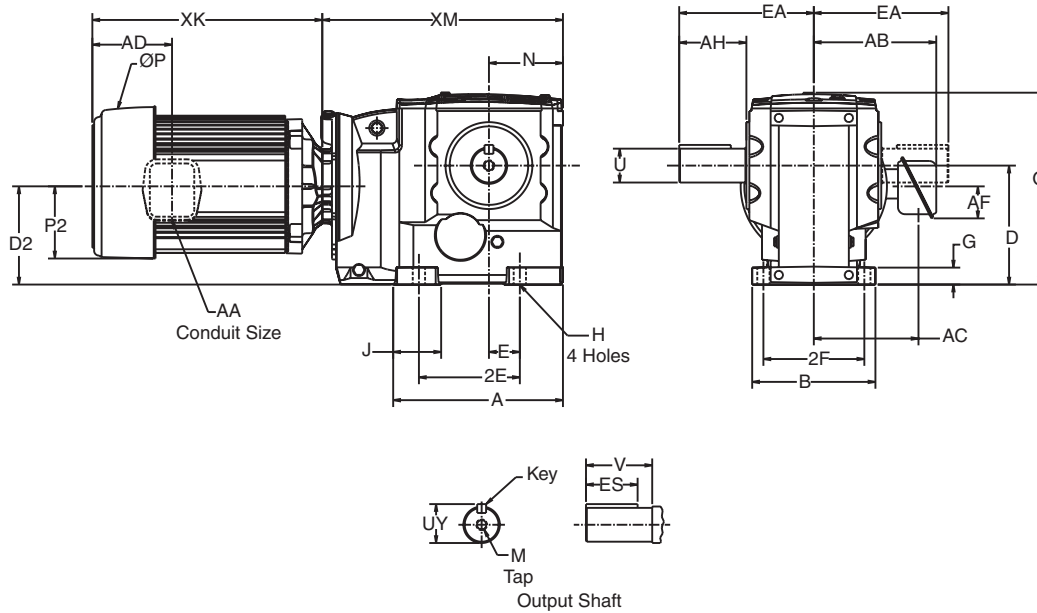
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Output Shafted Foot Mount OtN34 - 35

Standard conduit box location will be opposite shaft extension unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	
														56T-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	14.56	-
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49		
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	16.90	17.25
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20		

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
34	S2	2.000	2.21	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

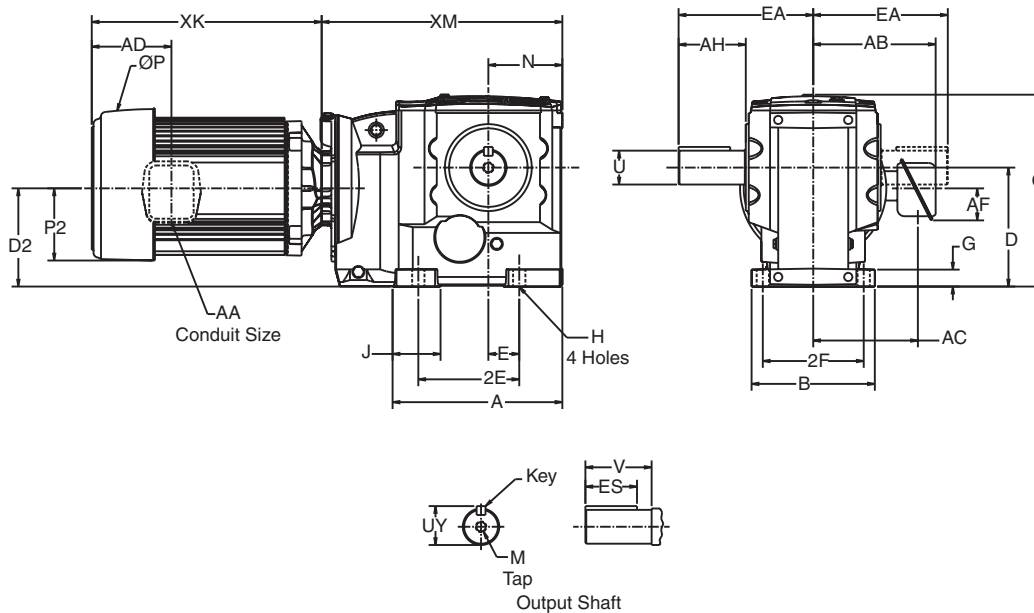
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Output Shafted Foot Mount OtN36-37, 28

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM		
														182T/184T	213T-215T	254T-UP
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.38	23.38	23.73
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	-	29.06	29.41
28	S1	23.23	16.14	12.4	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	-	33.04	28.95

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.200	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.010	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
28	S1	3.875	4.426	7.99	8.18	17.06	1.00 SQ.	7.25	1-8 X 1.97

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.20	7.78	2.00	14.99	11.34	14.16	3.63	27.36

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

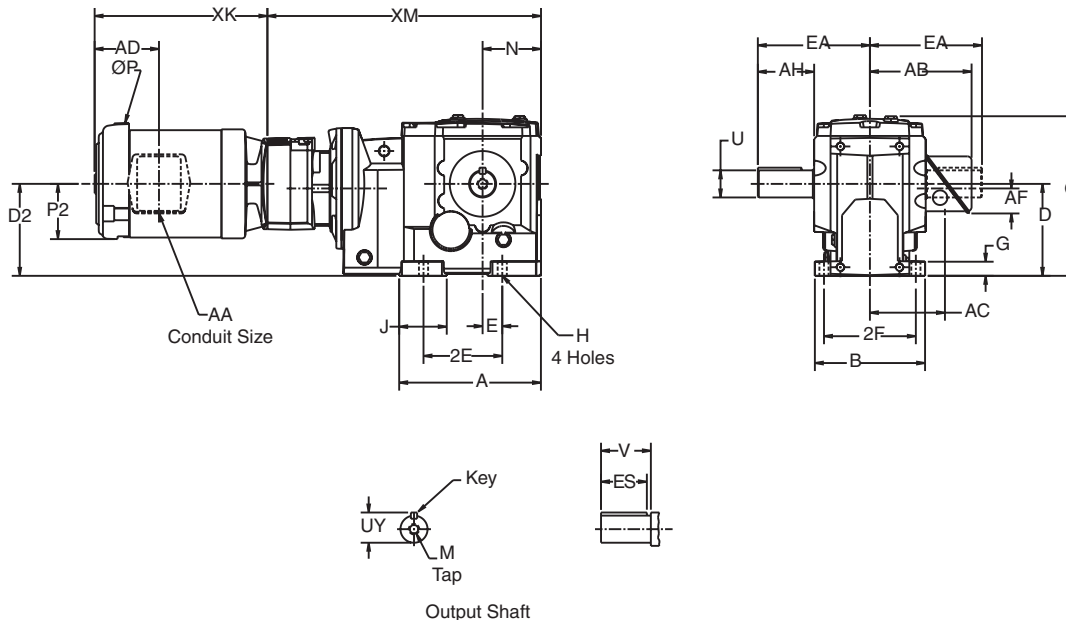
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

Combined Output Shafted Foot Mount OtN32 - 33

Standard conduit box location will be opposite shaft extension unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	14.49
	S1	8.08	5.88	4.92	4.87	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	19.90
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90
	S1	8.08	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

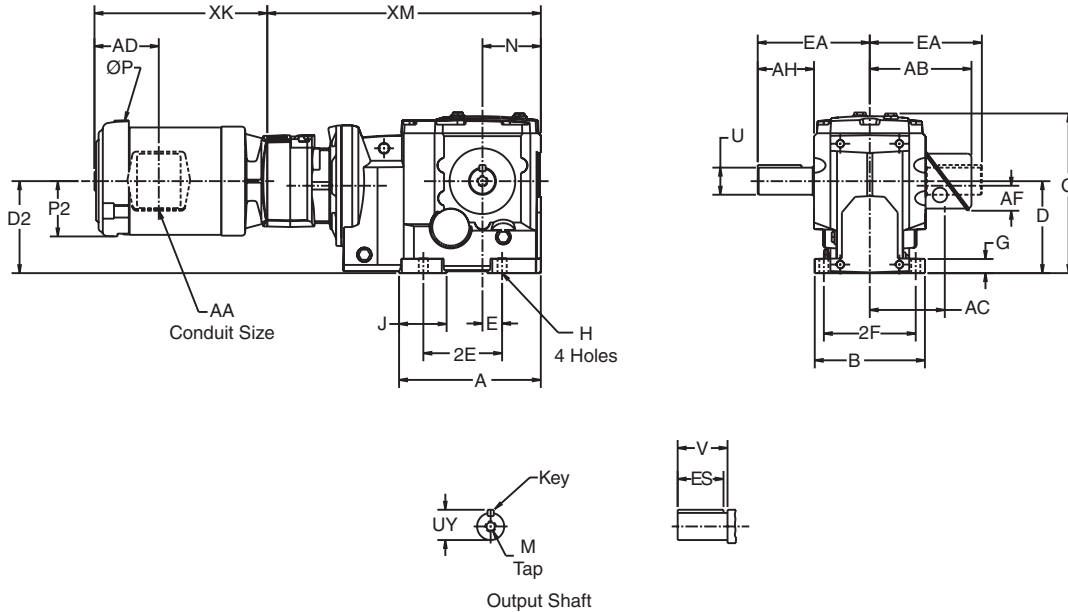
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

Combined Output Shafted Foot Mount OtN34 - 35

Standard conduit box location will be opposite shaft extension unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
	S1	10.69	9.60	6.30	7.16	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	23.87
	S1	13.07	10.98	7.87	9.00	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	23.87

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
34	S2	2.000	2.21	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

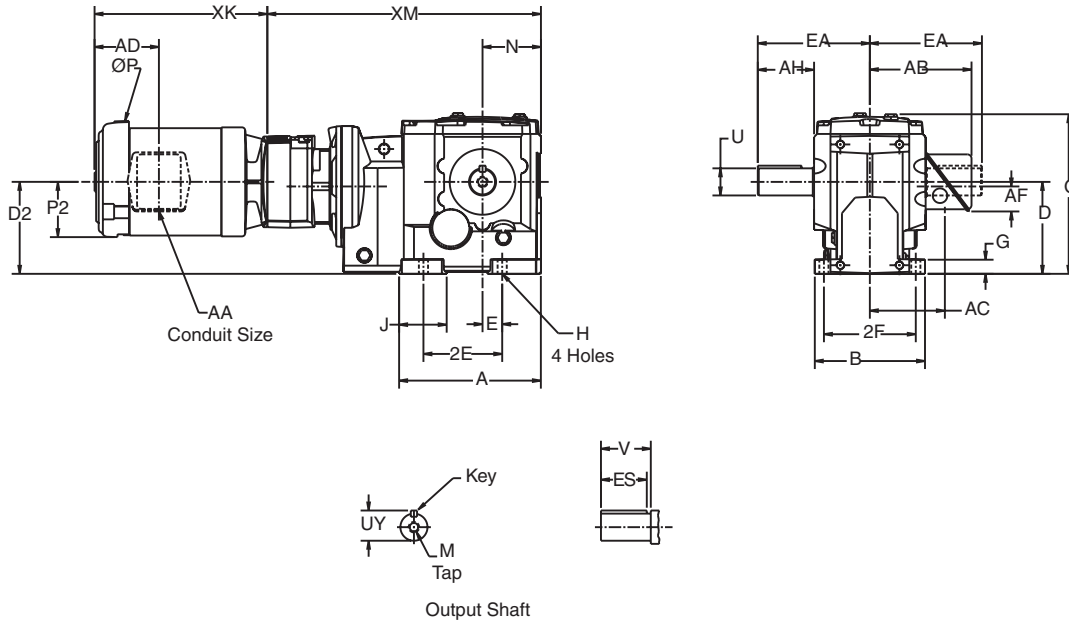
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

Combined Output Shafted Foot Mount OtN36 - 37, 28A

Standard conduit box location will be opposite shaft extension unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	
														56 -215T	254T-UP
36	S1	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	31.04	-
37	S1	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	36.37	-
28A	S1	23.23	16.14	12.4	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	37.14	37.49

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
28A	S1	3.875	4.426	7.99	8.18	17.06	1.00 SQ.	7.25	1-8 X 1.97

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	28	13.38	6	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	28	13.38	6	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

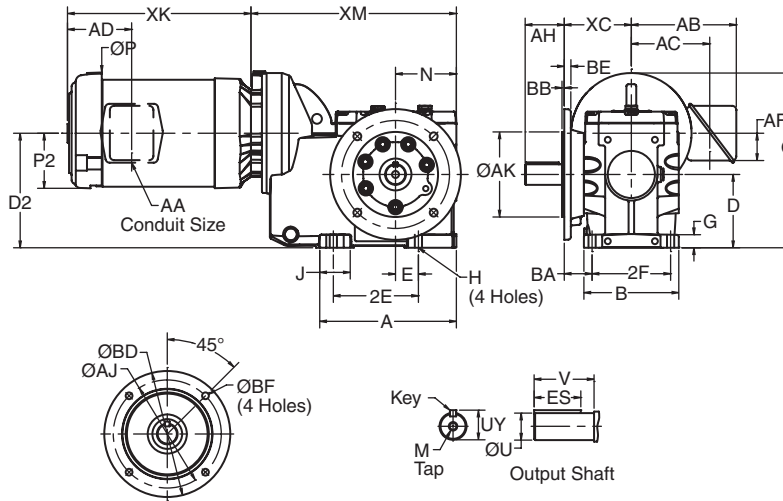
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

2-Stage Output Shafted Flange Mount OtN31 - 32

Standard conduit box location will be opposite flange unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	4.04	12.36

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
3132	S2	1.000	1.10	1.97	1.97	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.36	2.35	1/4 Sq.	2.03	1/2-13 X 1.13

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
3132	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
3242	6	7.087	8.46	.16	9.84	.47	.55

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

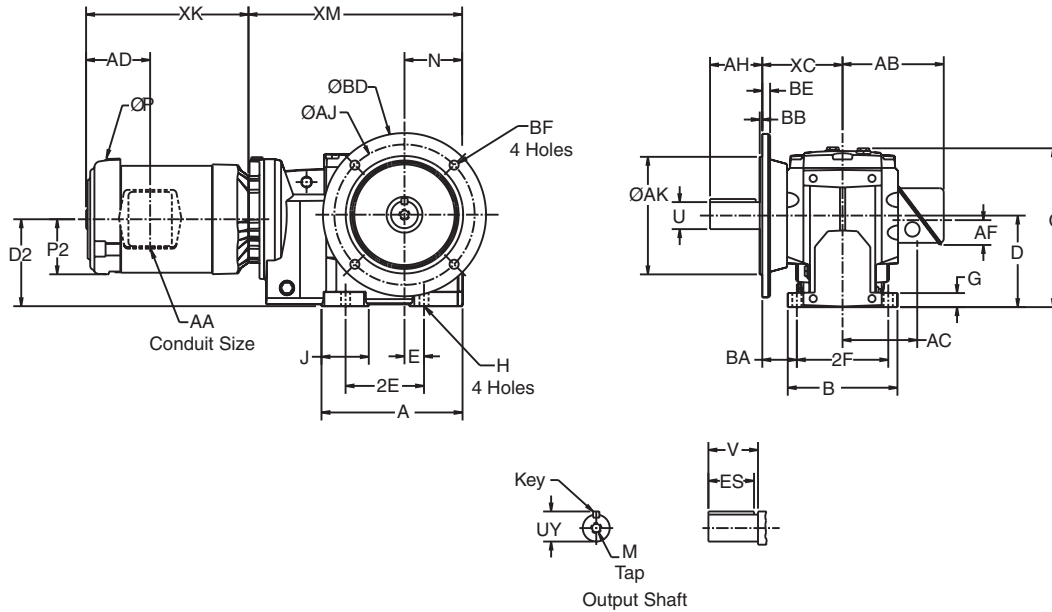
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Output Shafted Flange Mount OtN32 - 33

Standard conduit box location will be opposite flange unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1,S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	10.98
33	S1,S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	12.90

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55

Motor Frame	Motor Type ⁴	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

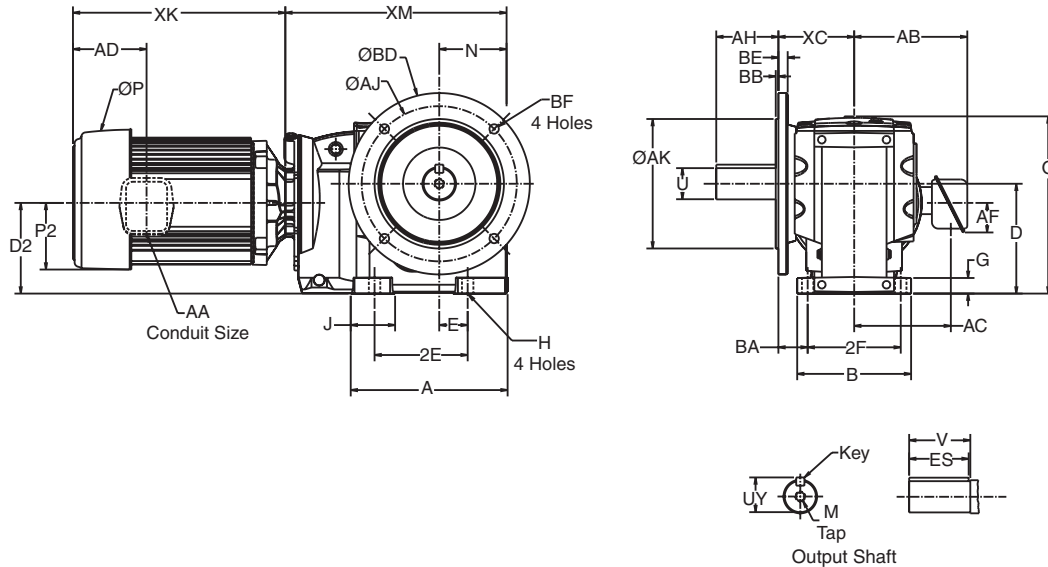
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Output Shafted Flange Mount OtN34 - 35

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM	
																56T-215T	254T-286T
34	S1,S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.19	.87	3.45	13.58	5.20	2.22	5.76	16.90	17.25

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

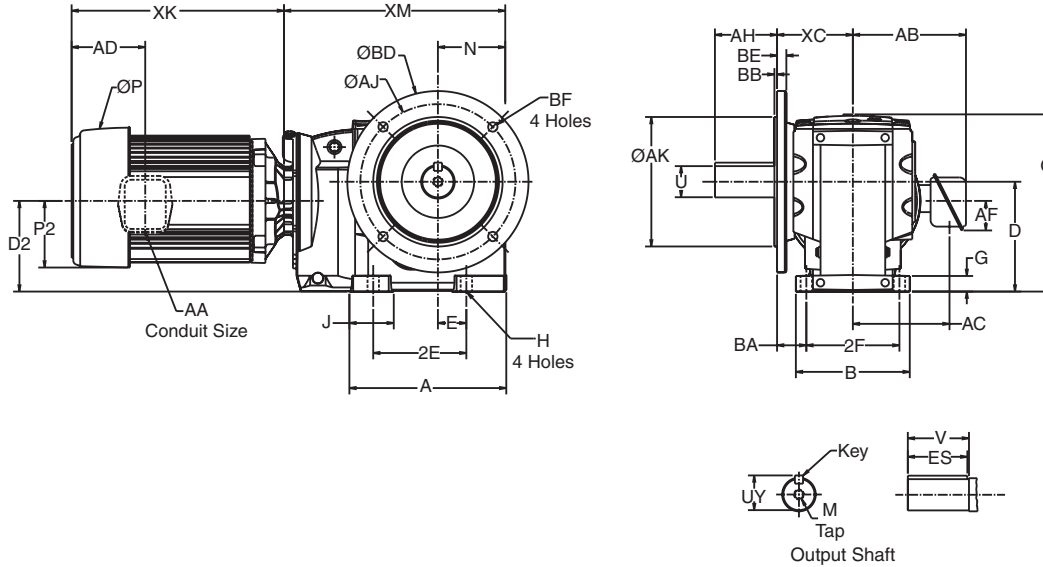
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Output Shafted Flange Mount OtN36 - 37, 28

Standard conduit box location will be opposite flange unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM		
																182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	-	29.06	29.41
28	S1	23.23	16.14	12.4	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	11.51	-	33.04	28.95

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
36	S2	2.875	3.200	7.68	5.51	3/4 SQ.	5.00	3/4-10 X 1.61
37	S2	3.625	4.010	8.88	6.69	7/8 SQ.	6.00	1-8 X 2.13
28	S1	4.000	4.438	8.00	8.00	1.00 SQ.	7.25	1-8 X 1.97

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36	5	13.78	15.75	.236	17.70	.79	.71
37	5	13.78	15.75	.236	17.70	.79	.63
28	5	17.72	19.69	.240	21.65	.94	.71

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

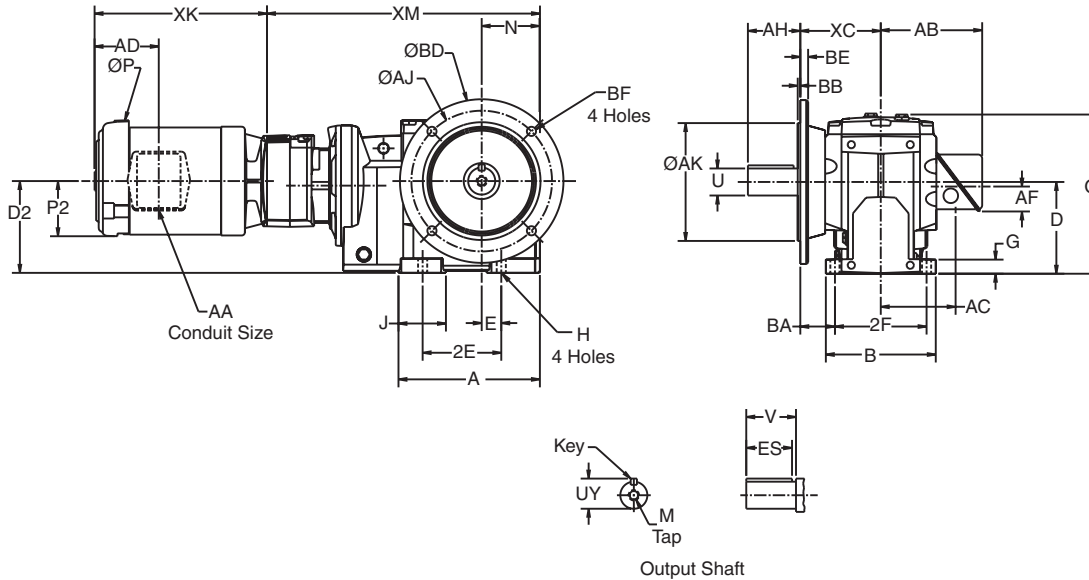
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

Combined Output Shafted Flange Mount OtN32 - 33

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1,S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	14.49
33	S1,S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	19.90

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55

Motor Frame	Motor Type ⁴	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

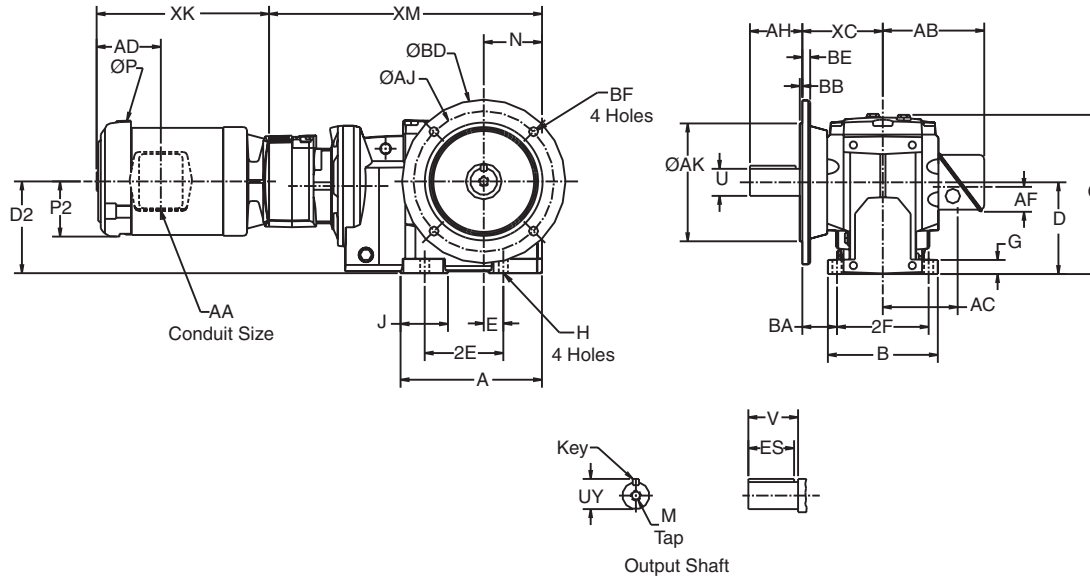
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

Combined Output Shafted Flange Mount OtN34 - 35

Standard conduit box location will be opposite flange unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
34	S1, S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.19	.87	3.45	13.58	5.20	2.22	5.76	23.87

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
34	S2	2.000	2.21	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

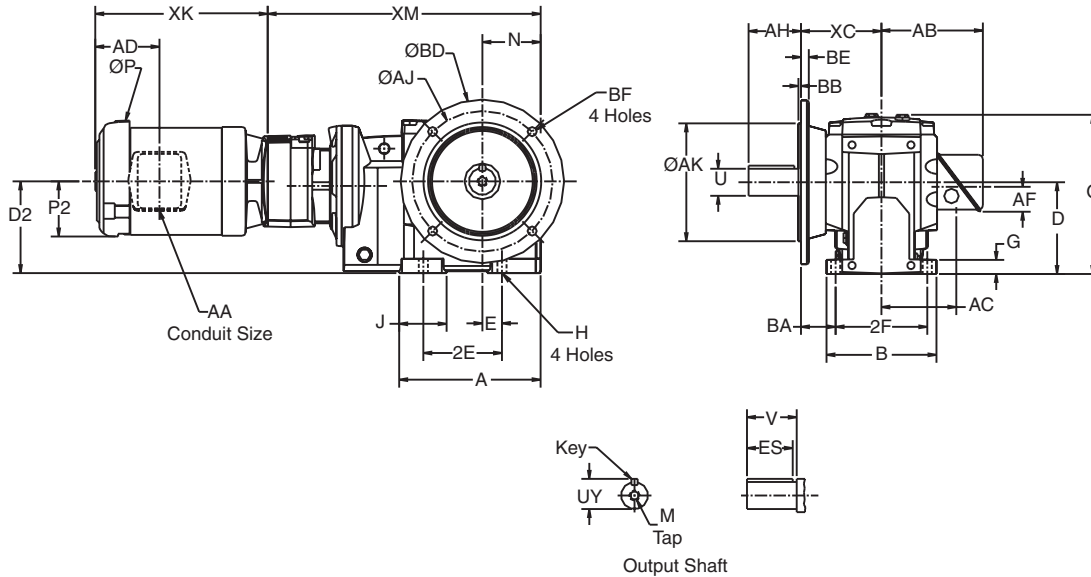
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

Combined Output Shafted Flange Mount OtN36 - 27, 28A

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM	
																56 -215T	254T-UP
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	31.04	-
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	36.37	-
28A	S2	23.23	16.14	12.4	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	11.51	37.14	37.49

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 SQ.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 SQ.	6.00	1-8 X 2.13
28A	S1	4.000	4.438	8.00	8.00	1.00 SQ.	7.25	1-8 X 1.97

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36	5	13.780	15.75	.236	17.70	.79	.71
37	5	13.780	15.75	.236	17.70	.79	.63
28A	5	17.72	19.69	.240	21.65	.94	.71

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	28	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	28	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

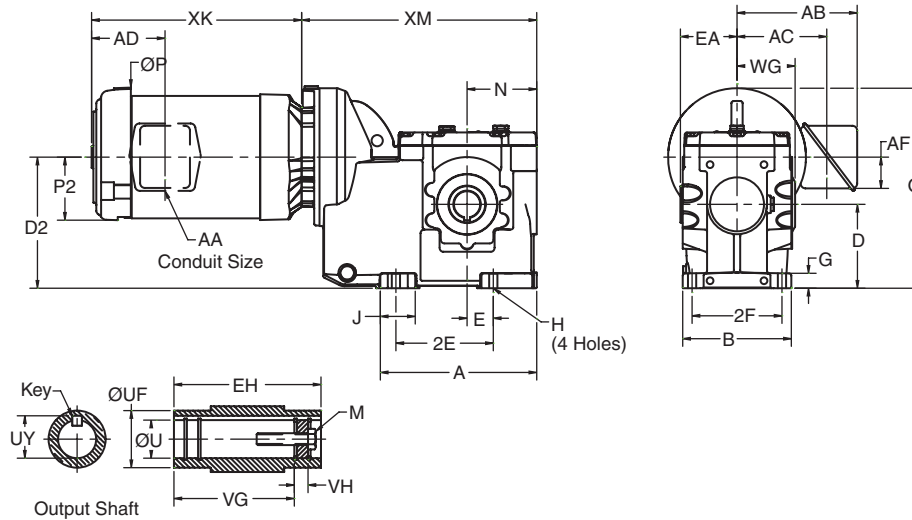
² All rough casting dimensions may vary by .25" due to casting variations.

³ Shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter: "U", +.000"; -.001".

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

2-Stage Finished Bore Hollow Shaft OtN31 - 32

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,7}	UF	UY	VG	VH	Key ⁵	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Motor Frame	Motor Type ⁸	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to page B-26 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output key not supplied.

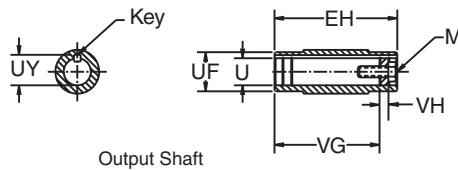
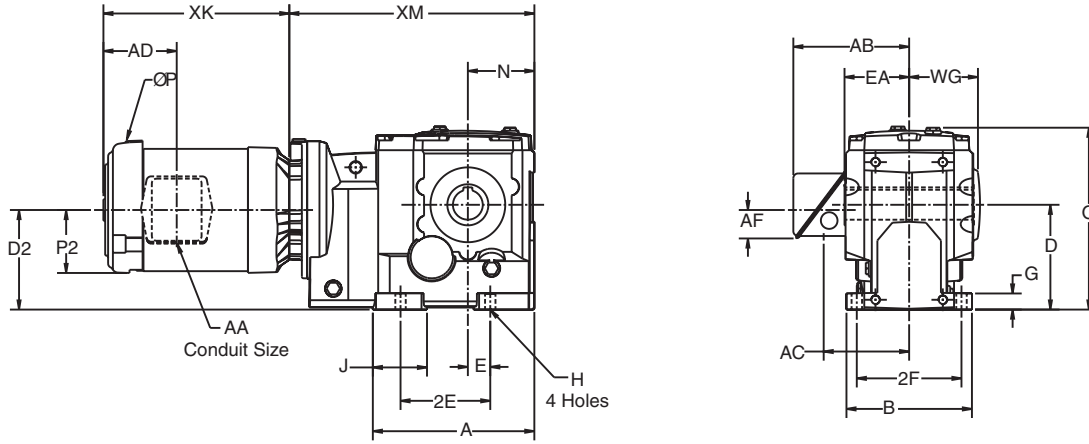
⁶ For details of the torque arm kit, refer to page B-22.

⁷ Output bore tolerance: +.0020", -.0000" for all diameters.

⁸ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Finished Bore Hollow Shaft OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.



Output Shaft

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	10.98
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	12.90

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,7}	UF	UY	VG	VH	Key ⁵	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Motor Frame	Motor Type ⁸	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to page B-26 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

⁴ Driven shaft entry can be from either side of the gear reducer housing

by reversing positioning of the snap rings and washer illustrated.

⁵ Output key not supplied.

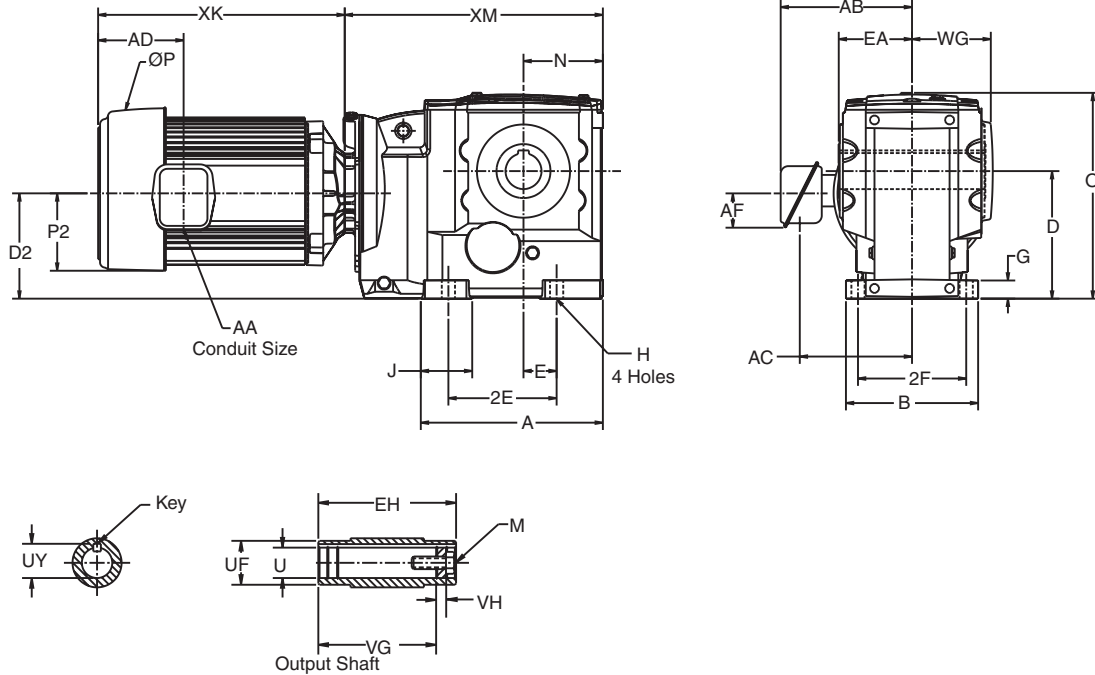
⁶ For details of the torque arm kit, refer to page B-22.

⁷ Output bore tolerance: +.0020", - .0000" for all diameters.

⁸ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Finished Bore Hollow Shaft OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56T-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U ^{3 7}	UF	UY	VG	VH	Key ⁵	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

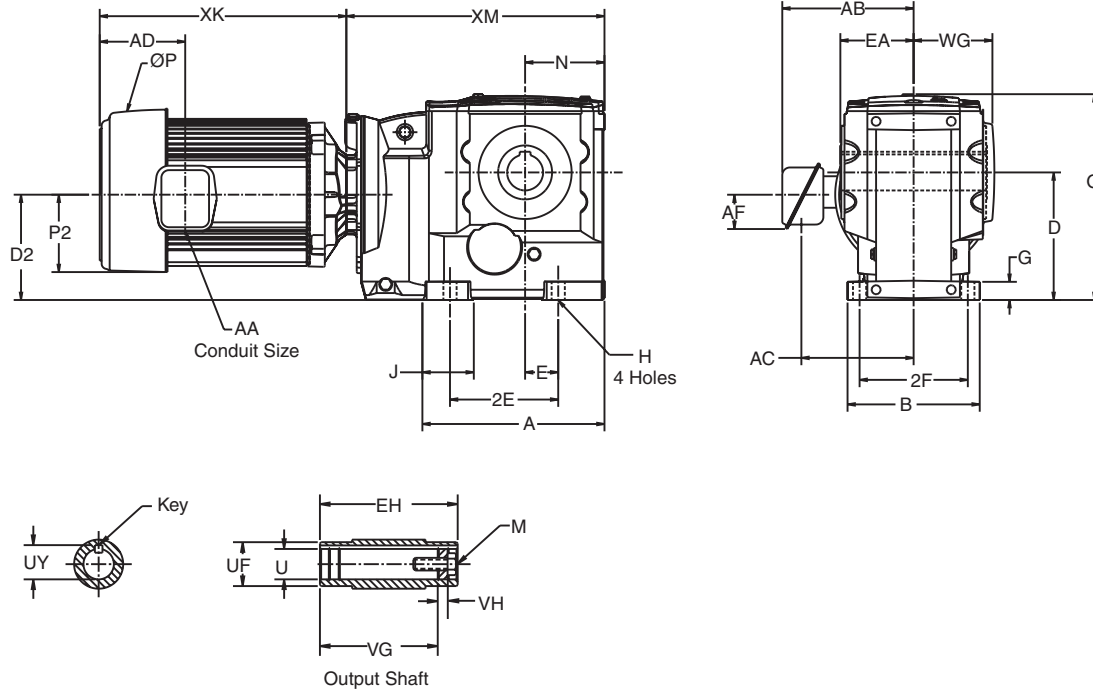
Motor Frame	Motor Type ⁸	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to page B-26 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
⁴ Driven shaft entry can be from either side of the gear reducer housing

by reversing positioning of the snap rings and washer illustrated.
⁵ Output key supplied on frame 34 only.
⁶ For details of the torque arm kit, refer to page B-22.
⁷ Output bore tolerance: +.0020", -.0000" for all diameters.
⁸ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

3-Stage Finished Bore Hollow Shaft OtN36 - 37, 28

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	WG	XM		
															182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	-	29.06	29.41
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	-	33.04	28.95

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,7}	UF	UY	VG	VH	Key ⁸	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

Motor Frame	Motor Type ⁴	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing

by reversing positioning of the snap rings and washer illustrated.

⁵ For details of the torque arm kit, refer to pages B-22 and B-23.

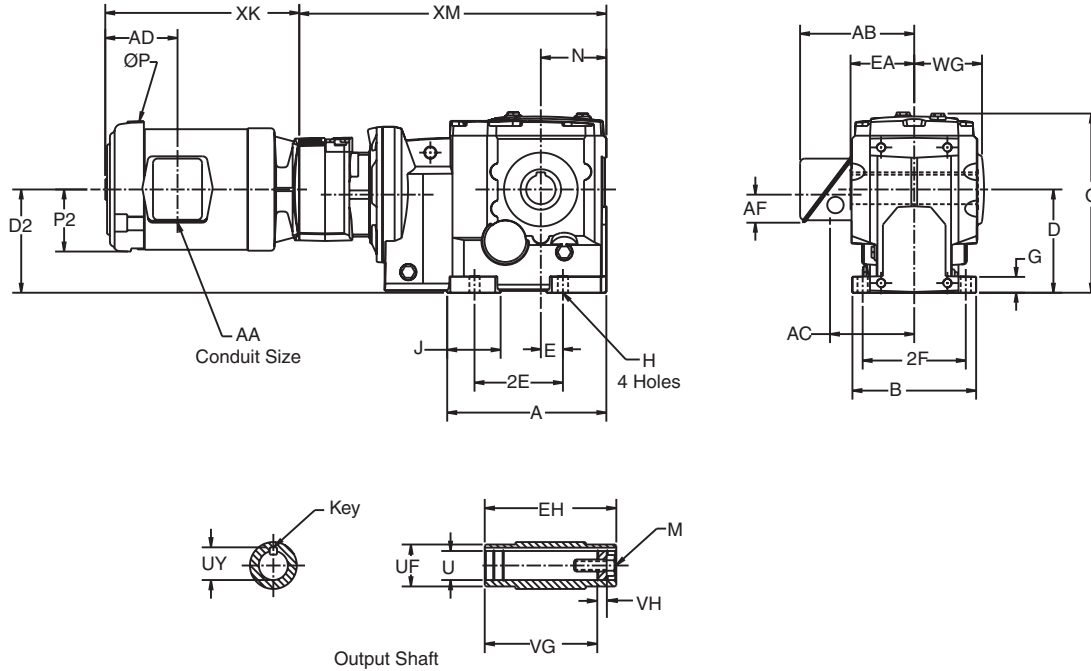
⁶ Output bore tolerance: +.0020", -.0000" for all diameters.

⁷ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁸ Key not supplied with reducer.

Combined Finished Bore Hollow Shaft OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	19.90

Output Shaft

Gear Frame	Version	EA	EH	U ³ ⁶	UF	UY	VG	VH	Key ⁸	M
32	S2	2.98	5.96	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Motor Frame	Motor Type ⁷	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to page B-26 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ For details of the torque arm kit, refer to page B-22.

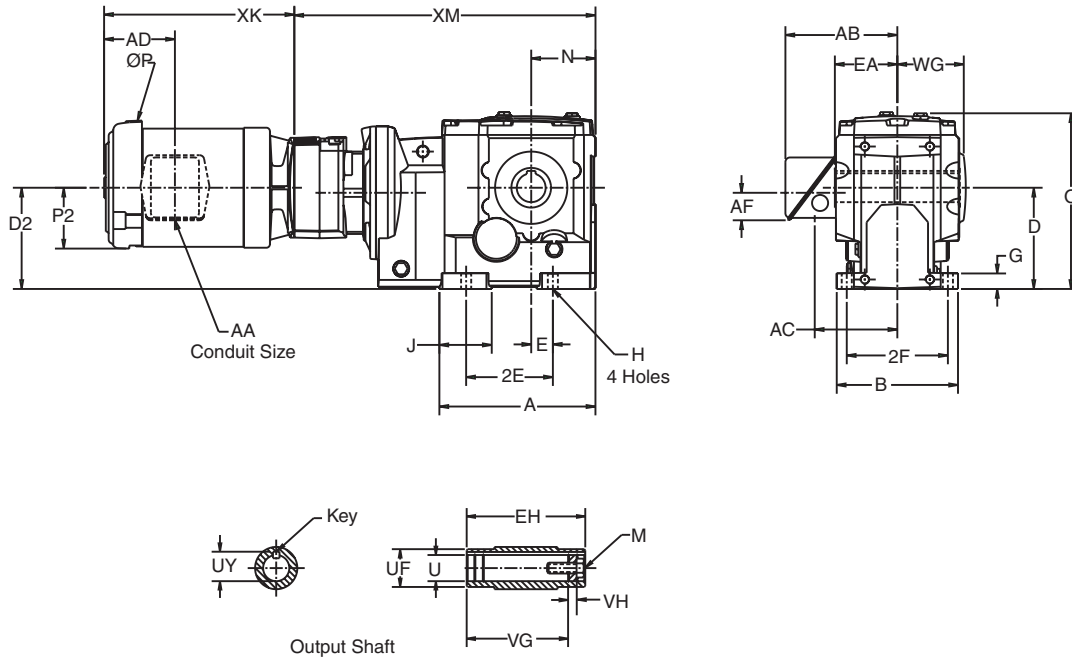
⁶ Output bore tolerance: +.0020", - .0000" for all diameters.

⁷ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁸ Output key not supplied.

Combined Finished Bore Hollow Shaft
OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Output Shaft

Gear Frame	Version	EA	EH	U ^{3 7}	UF	UY	VG	VH	Key ⁵	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

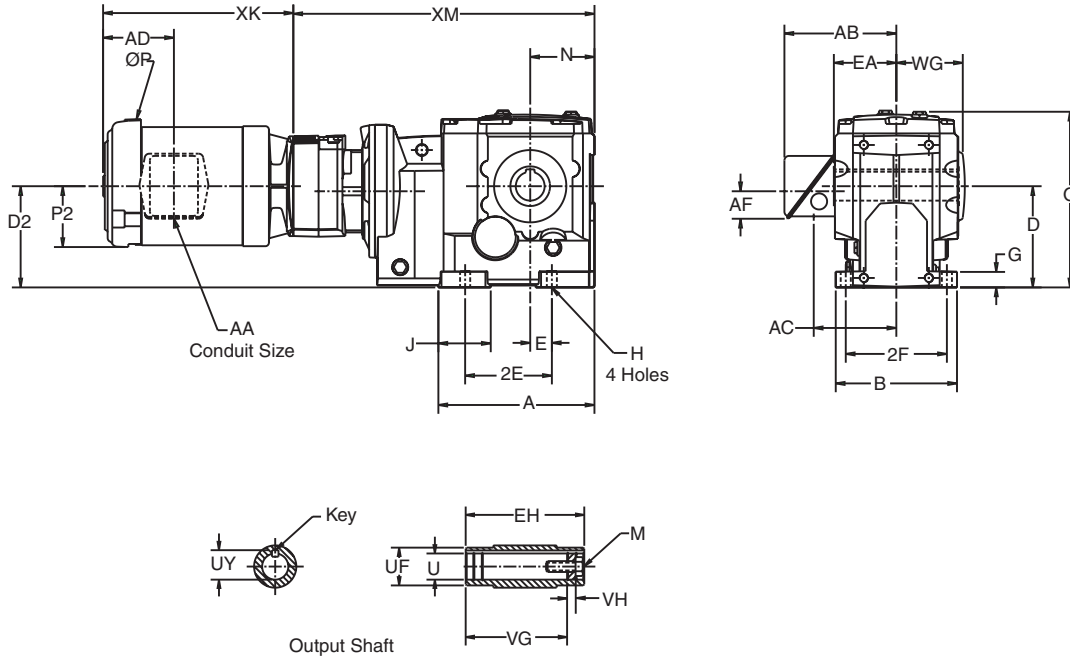
Motor Frame	Motor Type ⁸	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to page B-26 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
⁴ Driven shaft entry can be from either side of the gear reducer housing

by reversing positioning of the snap rings and washer illustrated.
⁵ Output key supplied on frame 34 only.
⁶ For details of the torque arm kit, refer to page B-22.
⁷ Output bore tolerance: +.0020", - .0000" for all diameters.
⁸ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

Combined Finished Bore Hollow Shaft OtN36 - 37, 28A

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56 -215T	254T-UP
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	31.04	-
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	36.37	-
28A	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	37.14	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,7}	UF	UY	VG	VH	Key ⁵	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

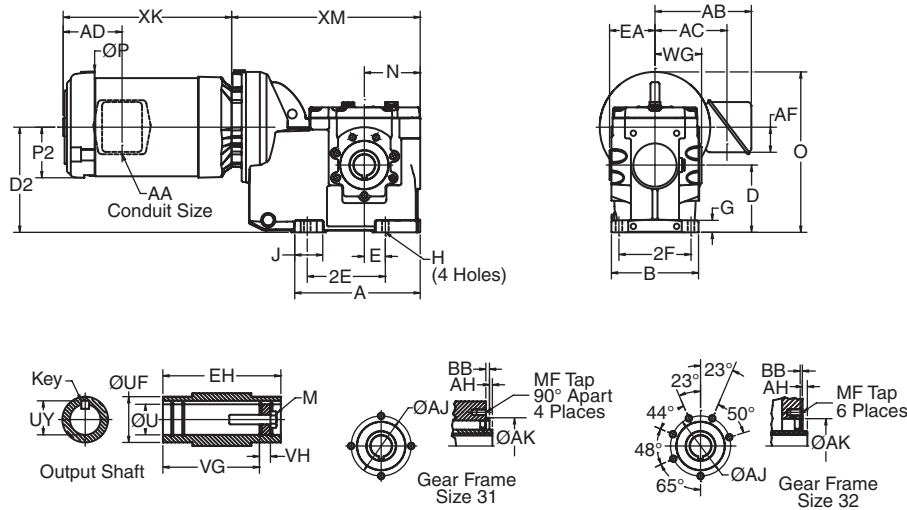
Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	28	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	28	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing

by reversing positioning of the snap rings and washer illustrated.
⁴ For details of the torque arm kit, refer to pages B-22 and B-23.
⁵ Output bore tolerance: +.0020", -.0000" for all diameters.
⁶ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

2-Stage Finished Bore Hollow Shaft Face Mount - OtN31 - 32

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁶	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

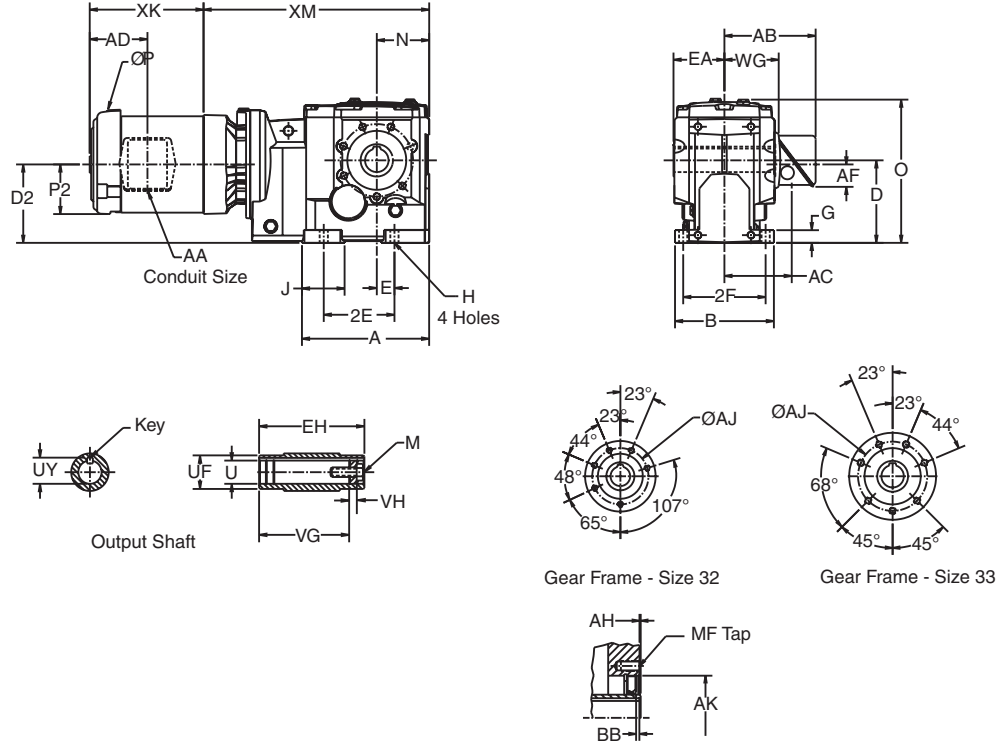
⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁵ Output bore tolerance: +.0020", - .0000" for all diameters.

⁶ Output key not supplied.

3-Stage Finished Bore Hollow Shaft Face Mount - OtN32 - 33

Standard conduit box location will be opposite face mounting unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	10.98
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	12.90

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁶	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Face Mount

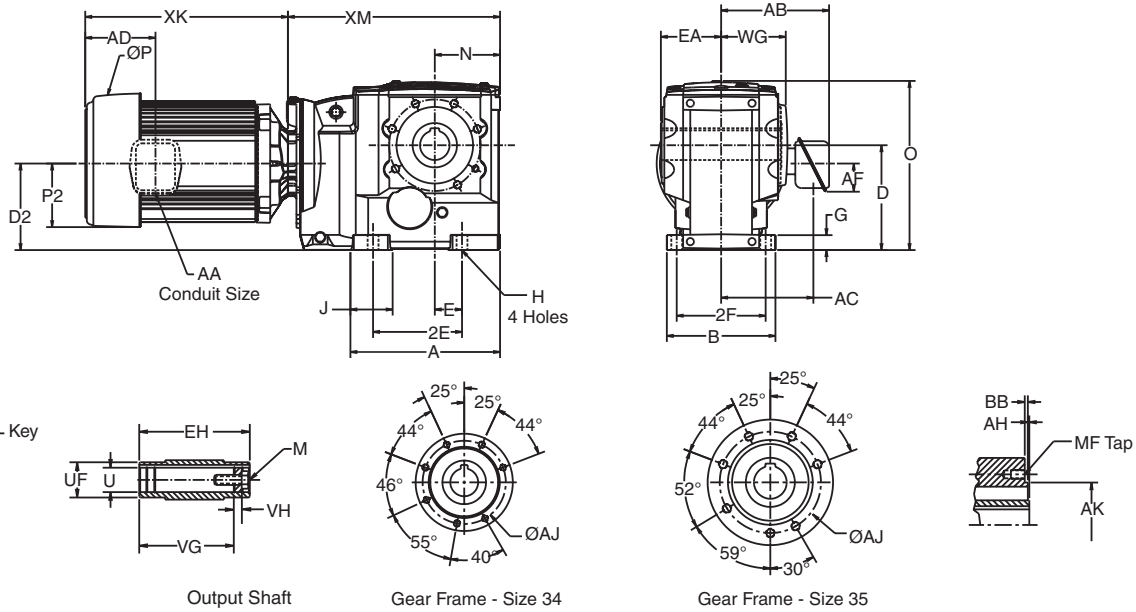
Gear Frame	Flange Code	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁵ Output bore tolerance: +.0020", - .0000" for all diameters.
⁶ Output key not supplied.

**3-Stage Finished Bore Hollow Shaft
Face Mount - OtN34 - 35**

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56T-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U ⁶	UF	UY	VG	VH	Key ⁵	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors, **B-86**

refer to pages B-114 to B-116.

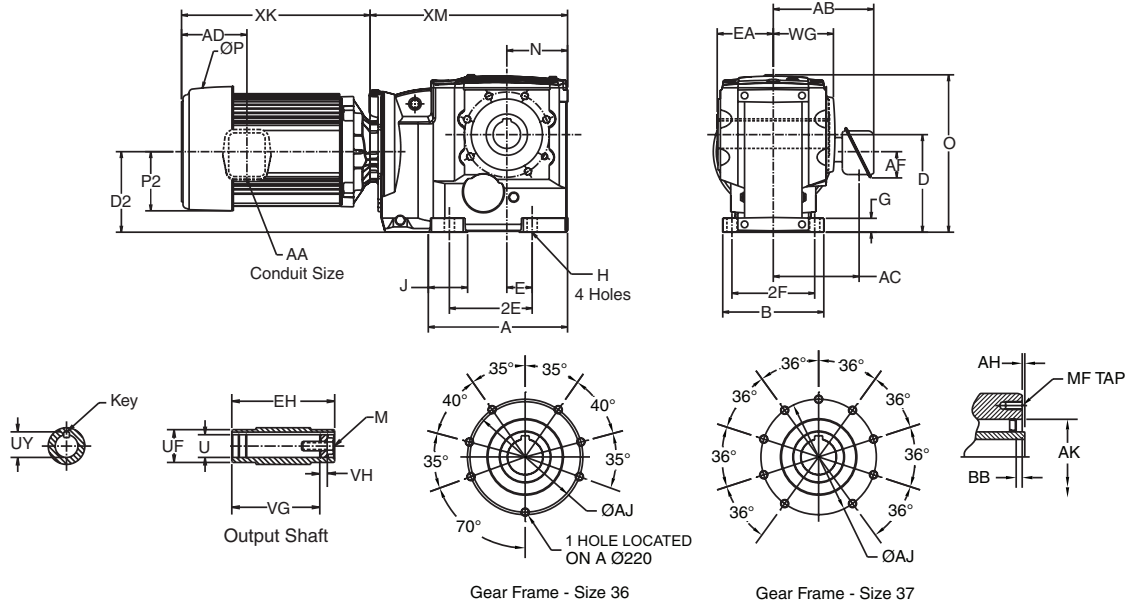
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output key supplied on frame 34 only.

⁶ Output bore tolerance: +.0020", - .0000" for all diameters.

3-Stage Finished Bore Hollow Shaft Face Mount - OtN36 - 37, 28

Standard conduit box location will be opposite face mounting unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	WG	XM		
															182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	-	29.06	29.41
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	-	33.04	28.95

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,7}	UF	UY	VG	VH	Key ⁵	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
28	S1	.08	15.75	13.78	.20	M16-2.0 x .22

Motor Frame	Motor Type ⁴	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

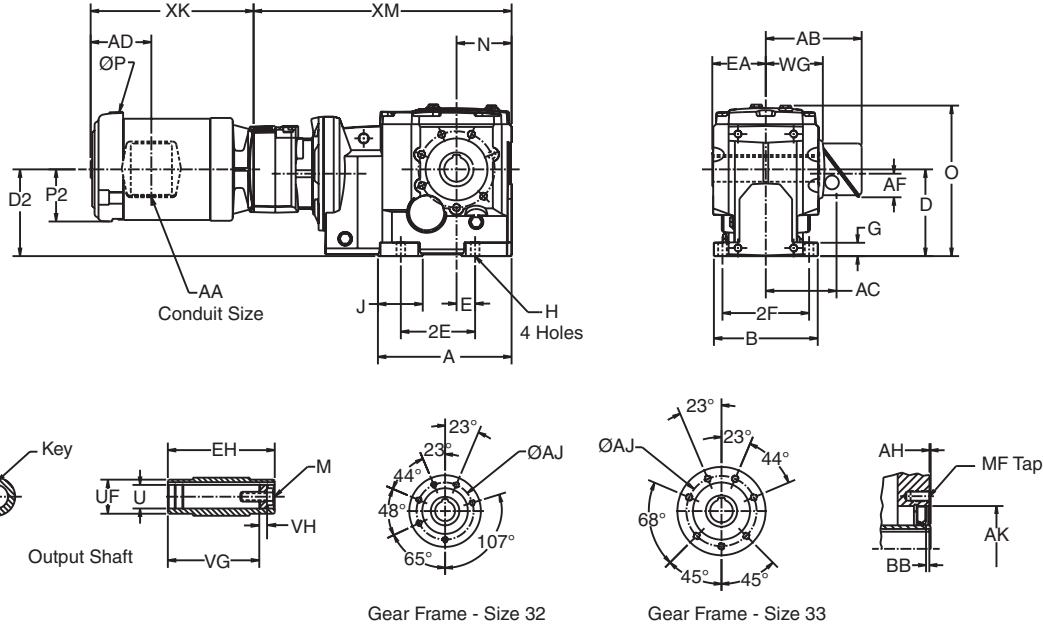
refer to pages B-114 to B-116.

⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerance: +.0020", - .0000" for all diameters.

Combined Finished Bore Hollow Shaft
Face Mount - OtN32 - 33

Standard conduit box location will be opposite face mounting unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	19.90

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁶	M
32	S2	2.98	5.96	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

refer to pages B-114 to B-116.

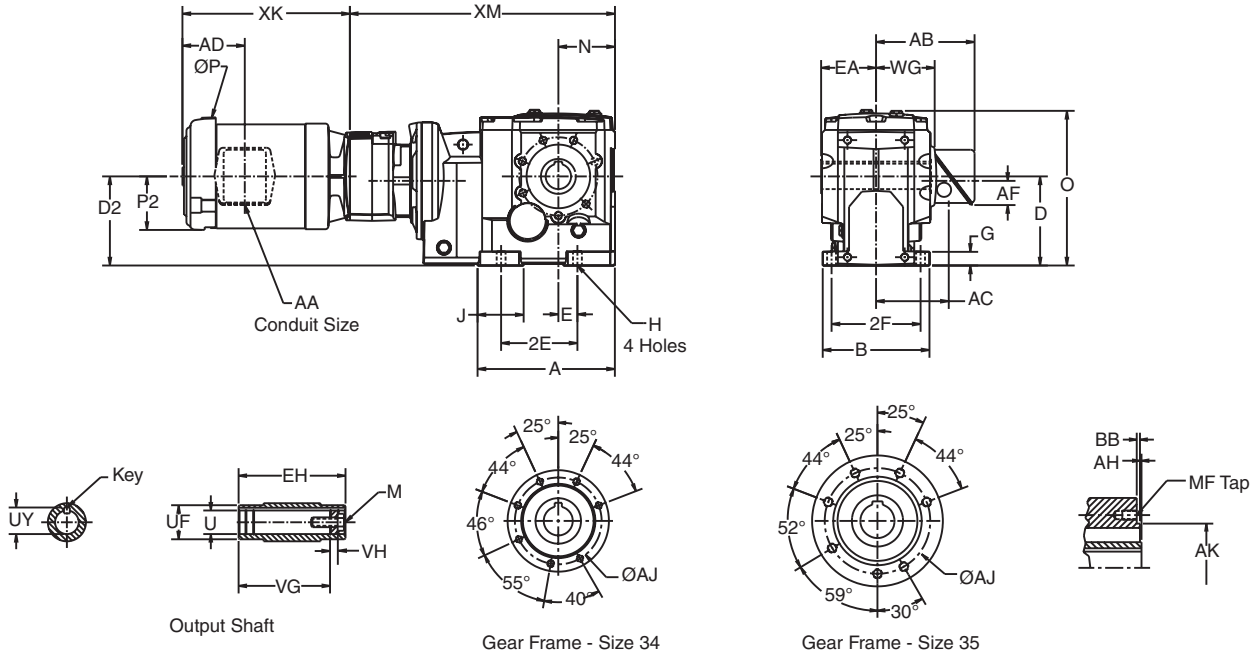
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerance: +.0020", -.0000" for all diameters.

⁶ Output key not supplied.

Combined Finished Bore Hollow Shaft Face Mount - OtN34 - 35

Standard conduit box location will be opposite face mounting unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Output Shaft

Gear Frame	Version	EA	EH	U ⁶	UF	UY	VG	VH	Key ⁵	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

refer to pages B-114 to B-116.

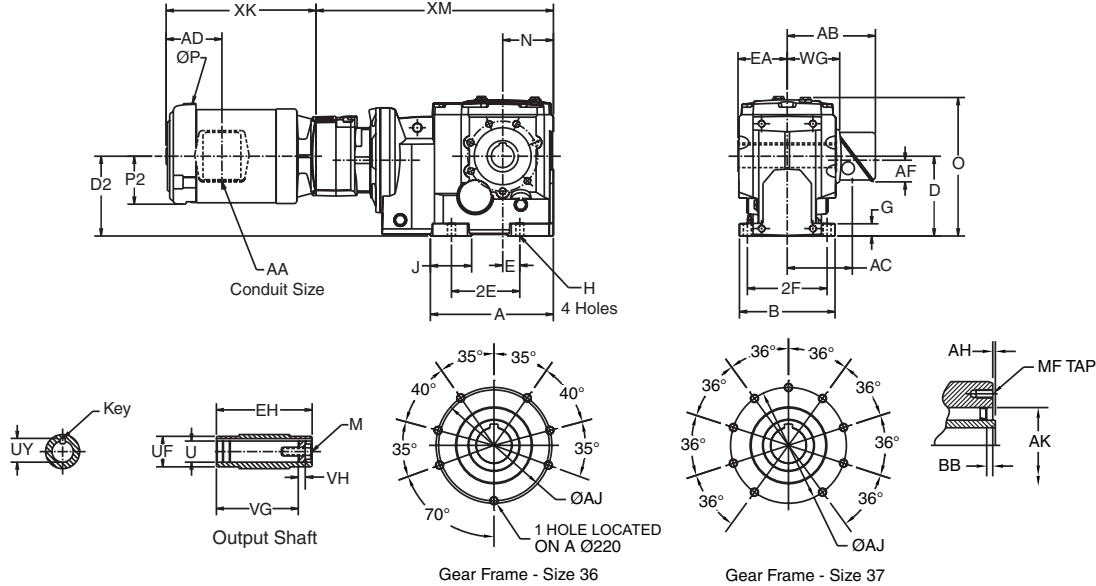
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output key supplied only on frame 34 "S2" version.

⁶ Output bore tolerance: +.0020", - .0000" for all diameters.

Combined Finished Bore Hollow Shaft Face Mount - OtN36 - 37, 28A

Standard conduit box location will be opposite face mounting unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	WG	XM	
															56 -215T	254T-UP
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	31.04	-
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	36.37	-
28A	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	37.14	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,7}	UF	UY	VG	VH	Key ⁵	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
28A	S1	.08	15.75	13.78	.20	M16-2.0 x .22

Motor Frame	Motor Type ⁴	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	28	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	28	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

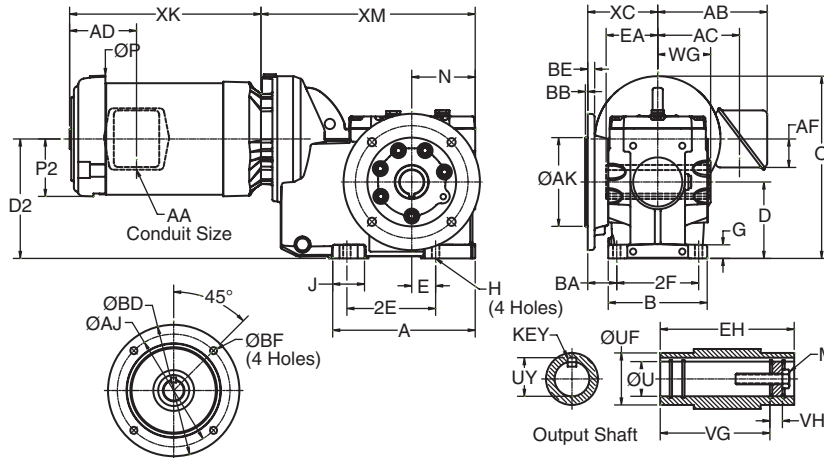
refer to pages B-114 to B-116.

⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerance: +.0020", - .0000" for all diameters.

2-Stage Finished Bore Hollow Shaft Flange Mount - OtN31 - 32

Standard conduit box location will be opposite flange unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	2.85	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	3.22	4.04	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁶	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
3132	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
3242	6	7.087	8.46	.16	9.84	.47	.55

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

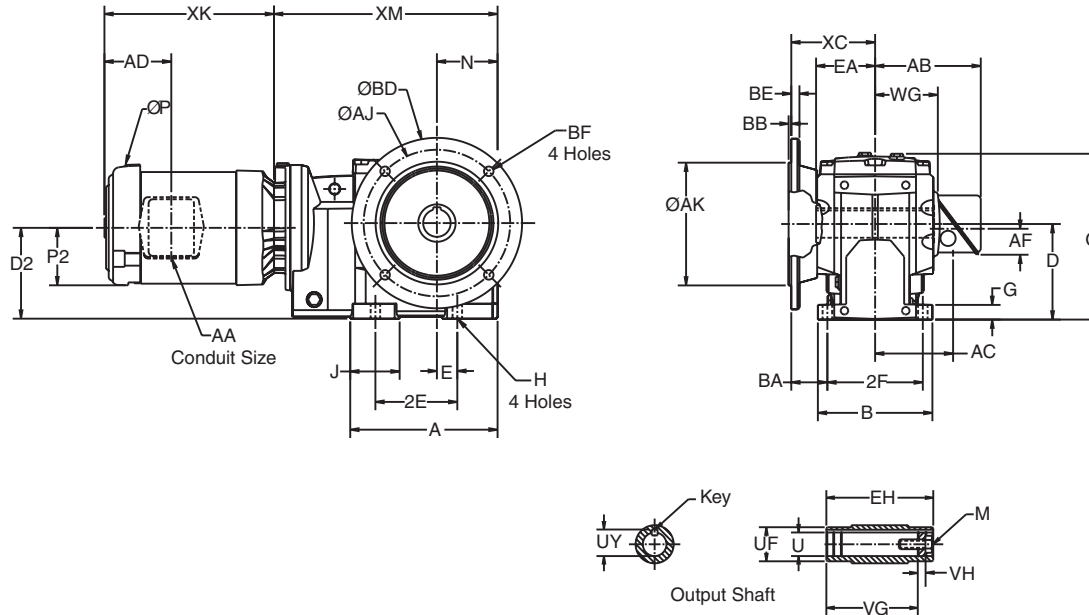
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerance: +.0020", - .0000" for all diameters.

⁶ Output key not supplied.

3-Stage Finished Bore Hollow Shaft Flange Mount - OtN32 - 33

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	10.98
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	12.90

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key	M
32	S2	2.98	5.96	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

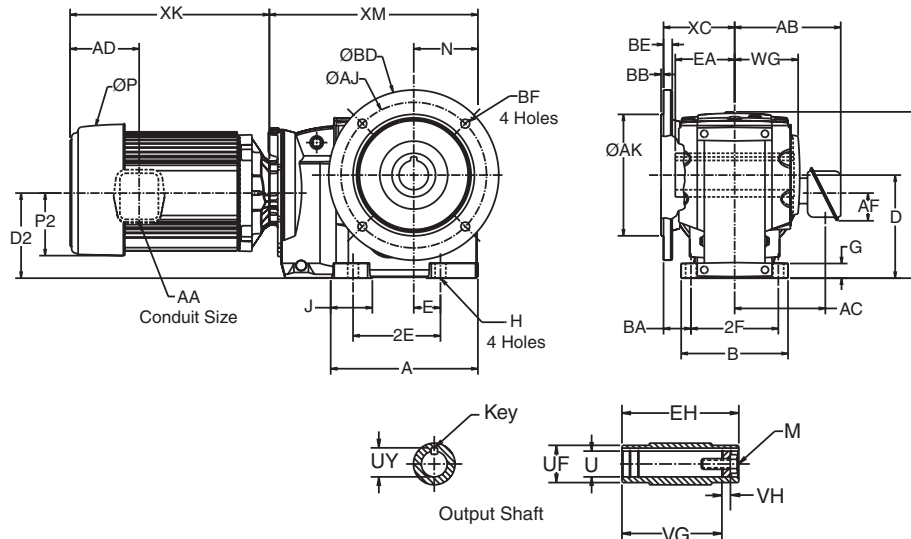
³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerance: +.0020", -.0000" for all diameters.

3-Stage Finished Bore Hollow Shaft Flange Mount - OtN34 - 35

Standard conduit box location will be opposite flange unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM	
																	56T-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.76	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U ⁶	UF	UY	VG	VH	Key ⁵	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
34	5	9.055	10.43	.16	11.80	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T	T	35	13.38	6.00	1.50	10.58	8.18	8.29	2.13	21.86
286T	T	35	13.38	6.00	1.50	10.33	7.93	8.29	2.13	23.36

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

refer to pages B-114 to B-116.

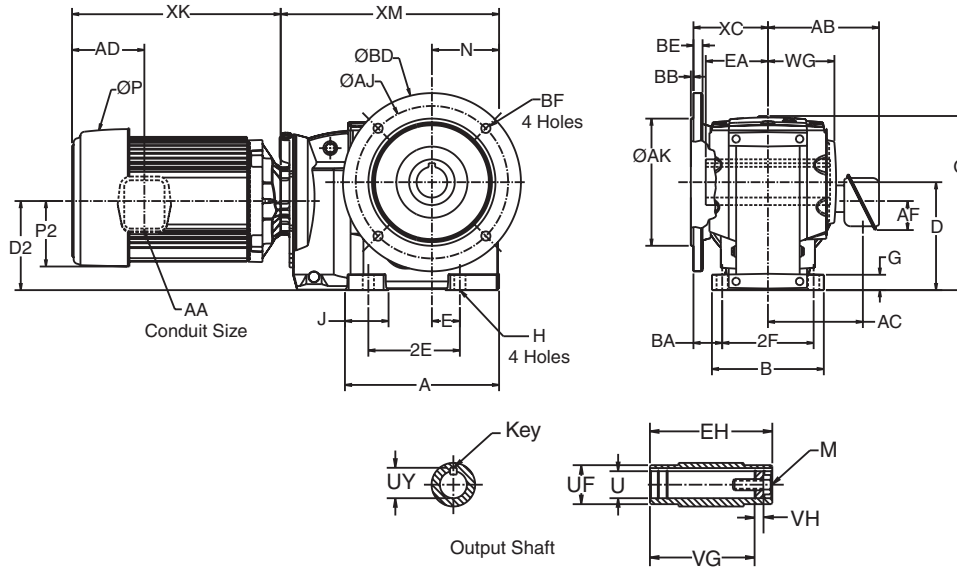
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output key supplied on frame 34 only.

⁶ Output bore tolerance: +.0020", -.0000" for all diameters.

3-Stage Finished Bore Hollow Shaft Flange Mount - OtN36 - 37, 28

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM		
																	182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	-	29.06	29.41
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	9.49	11.51	-	33.04	28.95

Output Shaft

Gear Frame	Version	EA	EH	U ^{4,5}	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36	5	13.780	15.75	.236	17.70	.79	.71
37	5	13.780	15.75	.236	17.70	.79	.63
28	5	17.72	19.69	.240	21.65	.94	.71

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	24.96

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

refer to pages B-114 to B-116.

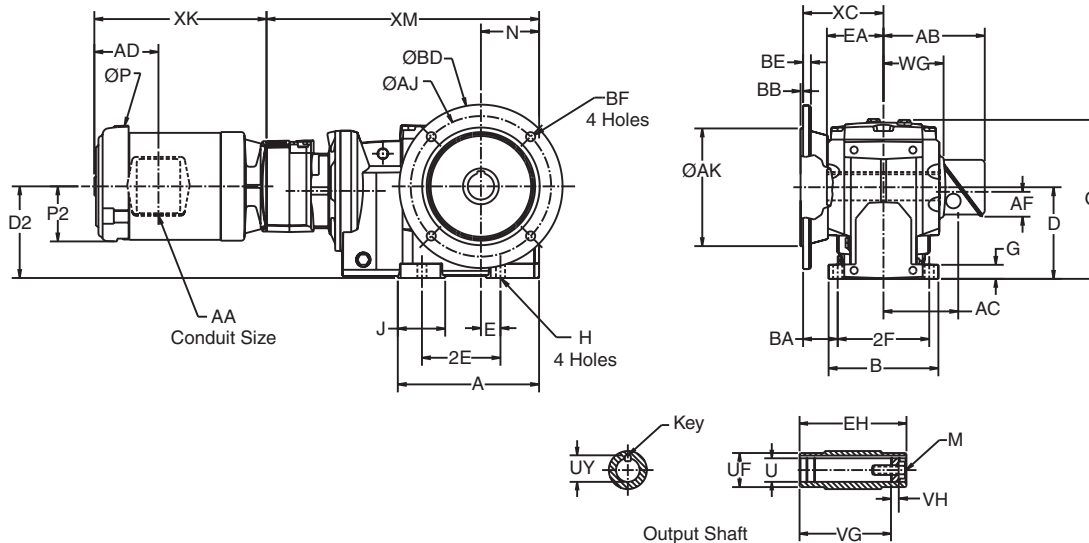
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerance: +.0020", - .0000" for all diameters.

⁶ Output shaft key not supplied.

Combined Finished Bore Hollow Shaft Flange Mount - OtN32 - 33

Standard conduit box location will be opposite flange unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	19.90

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁶	M
32	S2	2.98	5.96	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55

Motor Frame	Motor Type ³	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

refer to pages B-114 to B-116.

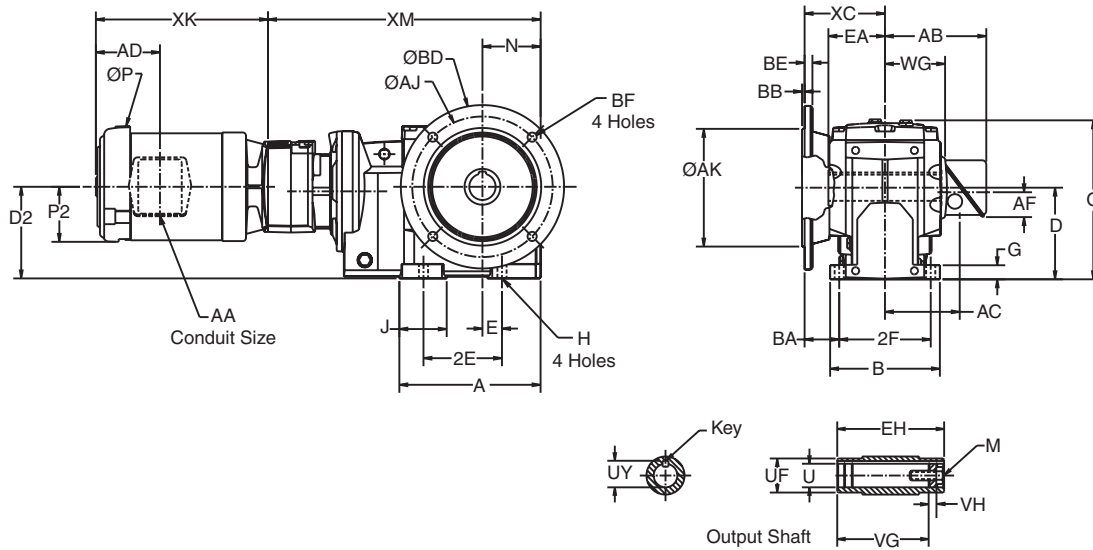
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerance: +.0020", -.0000" for all diameters.

⁶ Output key not supplied.

Combined Finished Bore Hollow Shaft Flange Mount - OtN34 - 35

Standard conduit box location will be opposite flange unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.76	23.87

Output Shaft

Gear Frame	Version	EA	EH	U ⁶	UF	UY	VG	VH	Key ⁵	M
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
34	5	9.055	10.43	.16	11.80	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Motor Frame	Motor Type ³	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

refer to pages B-114 to B-116.

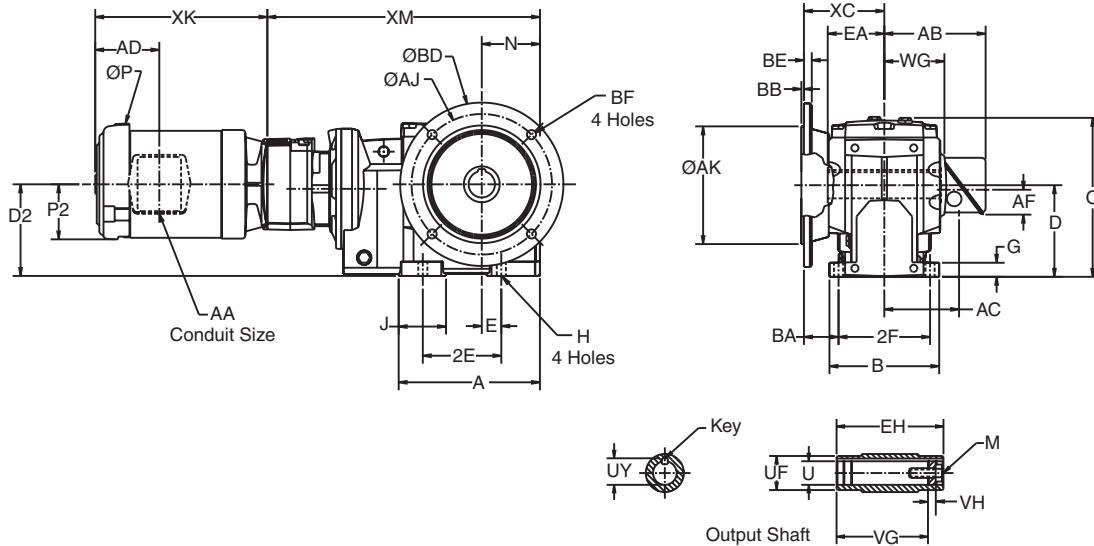
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output key supplied only on frame 34 "S2" version.

⁶ Output bore tolerance: +.0020", - .0000" for all diameters.

Combined Finished Bore Hollow Shaft Flange Mount - OtN36 - 37, 28A

Standard conduit box location will be opposite flange unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM	
																	56 -215T	254T-UP
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	31.04	-
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	36.37	-
28A	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	9.49	11.51	37.14	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,7}	UF	UY	VG	VH	Key ⁵	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36	5	13.780	15.75	.236	17.70	.79	.71
37	5	13.780	15.75	.236	17.70	.79	.63
28A	5	17.72	19.69	.240	21.65	.94	.71

Motor Frame	Motor Type ⁴	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	28	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	28	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors,

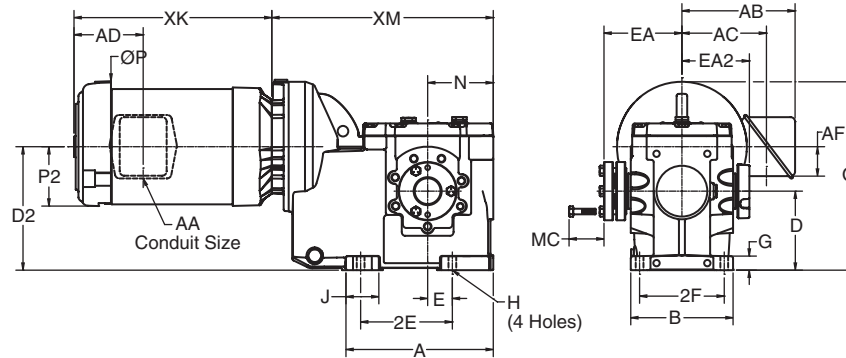
refer to pages B-114 to B-116.

⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerance: +.0020", - .0000" for all diameters.

2-Stage Bushed Shaft Mount OtN31 - 32

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
3132	S2	4.25	3.80	1.50	1	1 5/16
3242	S2	4.85	4.27	1.75	1 5/16	1 7/16

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁴ Refer to page B-26 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The "MC" dimension shows spacing required to install or remove the bushing from the reducer.

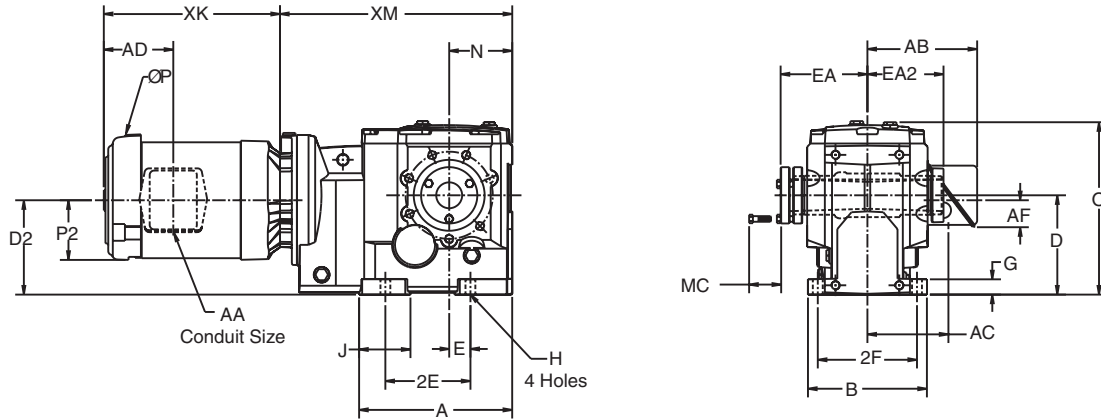
⁶ Bushing and dust cap can be installed opposite of how they are shown above.

⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.

⁸ For details of the torque arm kit, refer to page B-22.

3-Stage Taper Bushed Shaft Mount OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	37.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	10.98
33 (A)	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	12.90

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33	S2	4.82	4.23	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	0.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	0.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁴ Refer to page B-26 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The "MC" dimension shows spacing required to install or remove the bushing from the reducer.

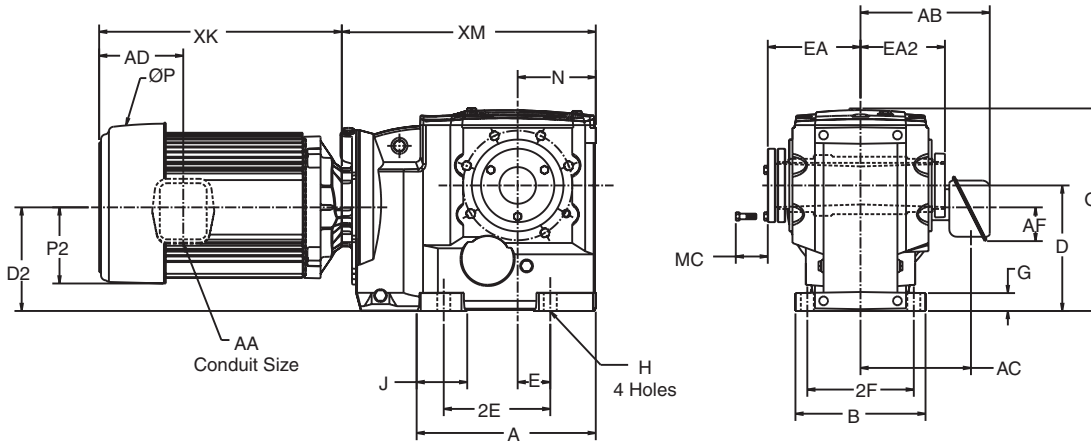
⁶ Bushing and dust cap can be installed opposite of how they are shown above.

⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.

⁸ For details of the torque arm kit, refer to page B-22.

3-Stage Taper Bushed Shaft Mount OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	
														56-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.62	1.88	2	2 7/16

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁴ Refer to page B-26 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The "MC" dimension shows spacing required to install or remove the bushing from the reducer.

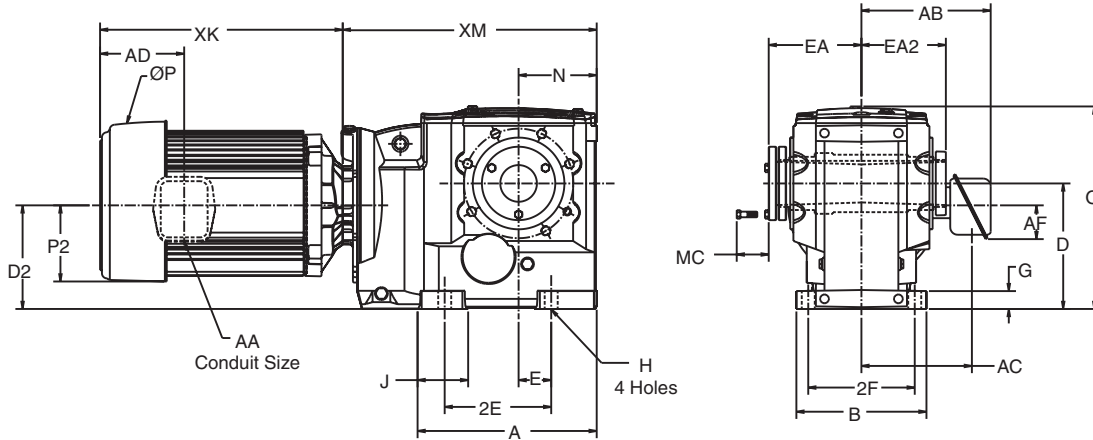
⁶ Bushing and dust cap can be installed opposite of how they are shown above.

⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.

⁸ For details of the torque arm kit, refer to page B-22.

3-Stage Taper Bushed Shaft Mount OtN36 - 37

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	XM		
														182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	-	29.06	29.41

Output Shaft

Gear Frame	Version	EA	EA ₂	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16

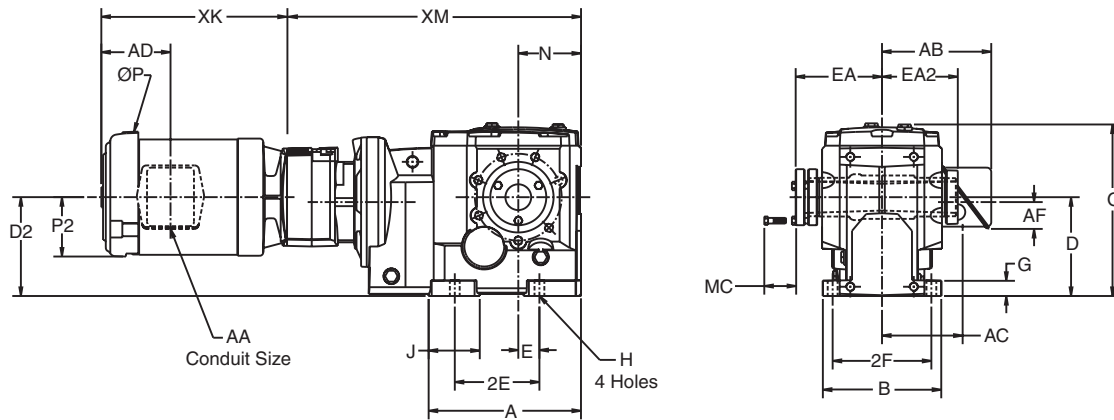
Motor Frame	Motor Type ³	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.
⁴ Refer to page B-26 by gear frame for listing of all inch and metric bushing bore sizes available.
⁵ The "MC" dimension shows spacing required to install or remove the bushing from the reducer.
⁶ Bushing and dust cap can be installed opposite of how they are shown above.
⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.
⁸ For details of the torque arm kit, refer to pages B-22 and B-23.

Combined Taper Bushed Shaft Mount OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	14.49
33 (A)	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33	S2	4.82	4.23	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33 (A)	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33 (A)	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33 (A)	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁴ Refer to page B-26 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The "MC" dimension shows spacing required to install or remove the bushing from the reducer.

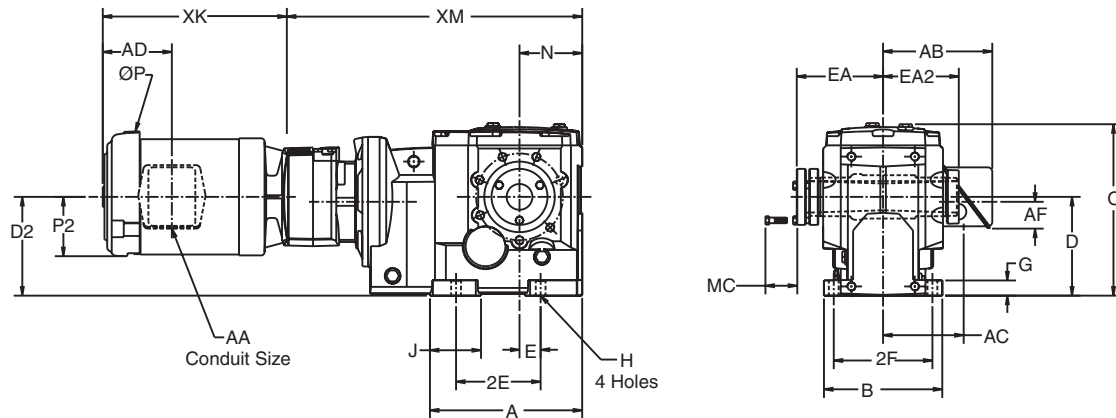
⁶ Bushing and dust cap can be installed opposite of how they are shown above.

⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.

⁸ For details of the torque arm kit, refer to page B-22.

Combined Taper Bushed Shaft Mount OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	23.87

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.62	1.88	2	2 7/16

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁴ Refer to page B-26 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The "MC" dimension shows spacing required to install or remove the bushing from the reducer.

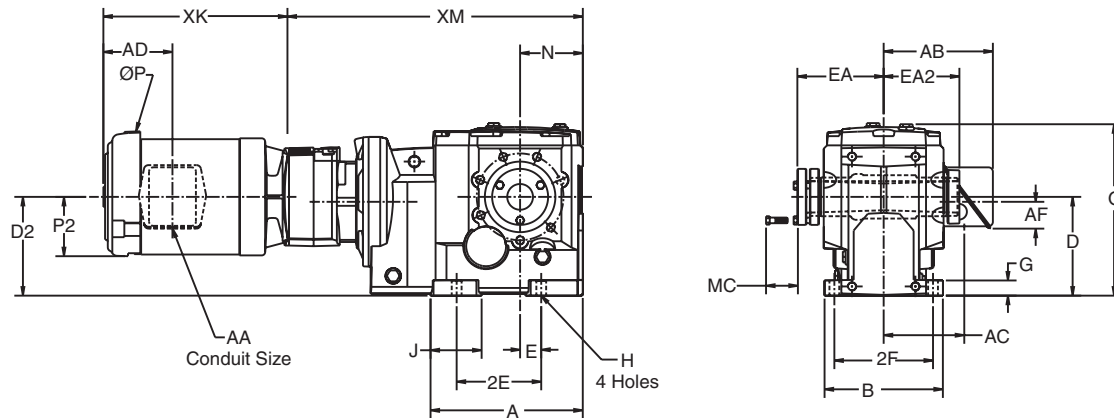
⁶ Bushing and dust cap can be installed opposite of how they are shown above.

⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.

⁸ For details of the torque arm kit, refer to page B-22.

Combined Taper Bushed Shaft Mount OtN36 - 37

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	36.37

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁴ Refer to page B-26 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The "MC" dimension shows spacing required to install or remove the bushing from the reducer.

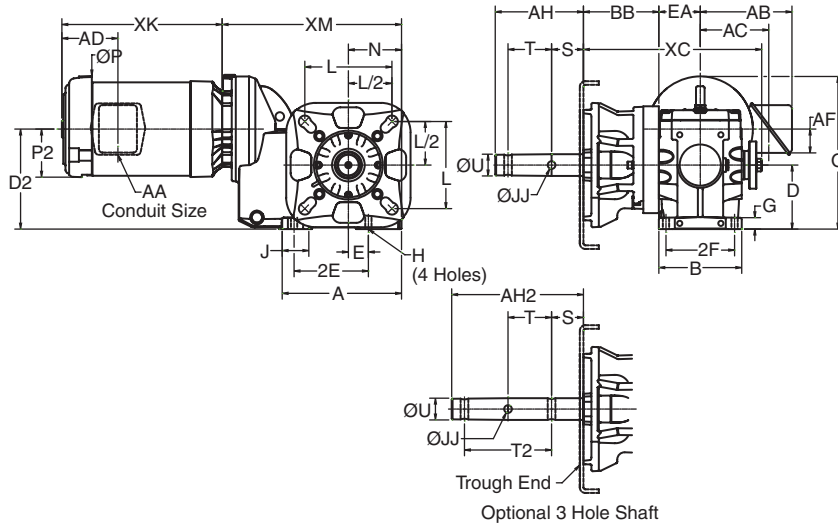
⁶ Bushing and dust cap can be installed opposite of how they are shown above.

⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to Installation Manual for requirements.

⁸ For details of the torque arm kit, refer to pages B-22 and B-23.

2-Stage CEMA Screw Conveyor Drive OtN32

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	2.85	7.35	12.36

Screw Conveyor

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
3242	6-10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12-14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	32	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

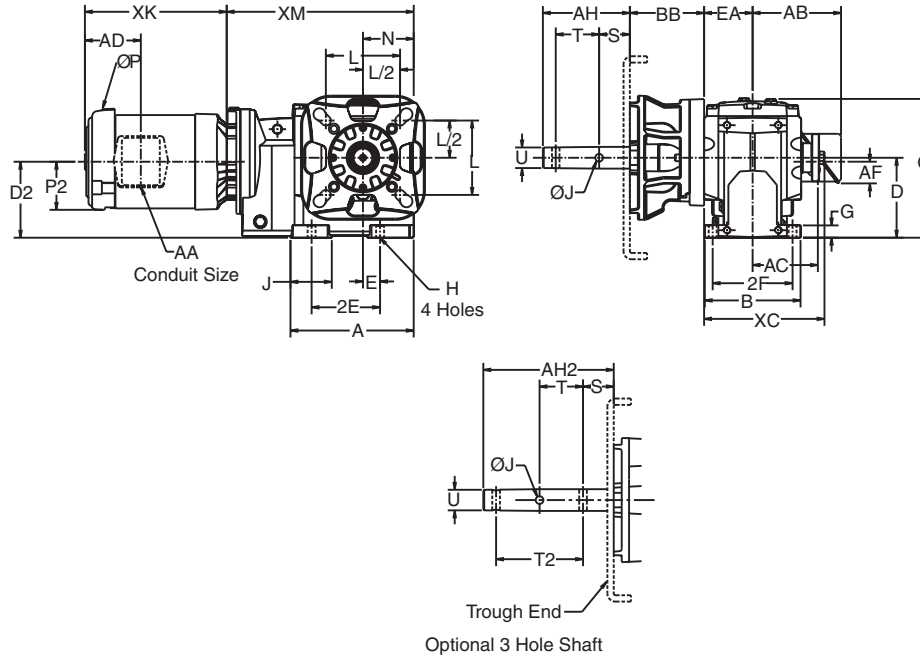
³ Refer to pages B-24 and B-25 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁵ Thrust ratings for each gear frame size are listed on page B-24.

3-Stage CEMA Screw Conveyor Drive OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.



Optional 3 Hole Shaft

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	2.85	7.35	10.98
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.35	8.30	12.90

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
32, 33	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	33	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

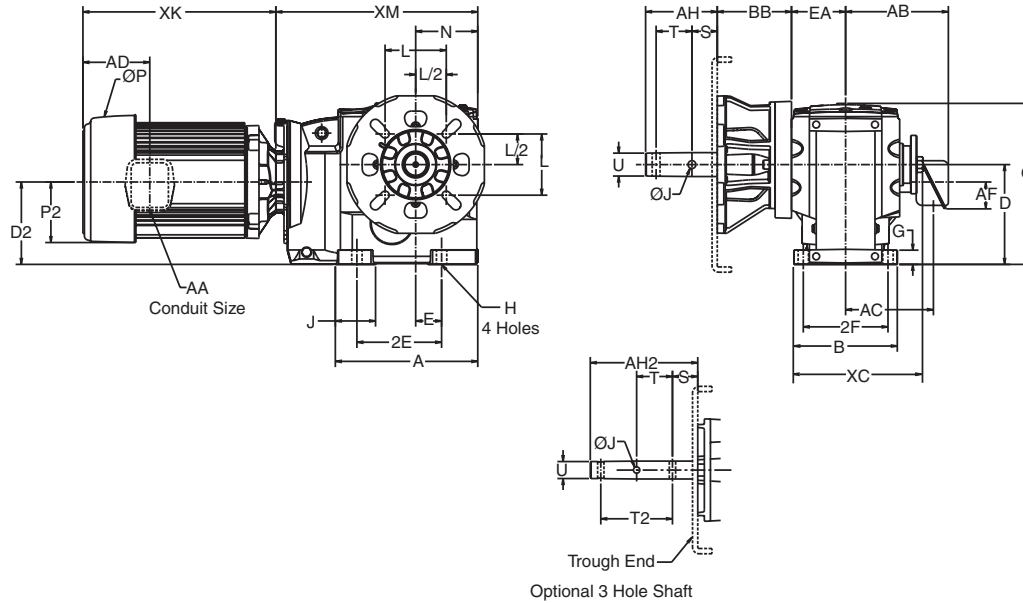
³ Refer to pages B-24 and B-25 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁵ Thrust ratings for each gear frame size are listed on page B-24.

3-Stage CEMA Screw Conveyor Drive OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	EA	XC	XM	
																56-215T	254T-286T
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.07	9.84	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	4.43	11.00	16.90	17.25

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T ₂	AH	AH ₂	BB
34	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21

Motor Frame	Motor Type ⁴	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	20.58
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	34	13.38	6.00	1.25	9.79	7.68	8.29	1.81	22.33
	T	35	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

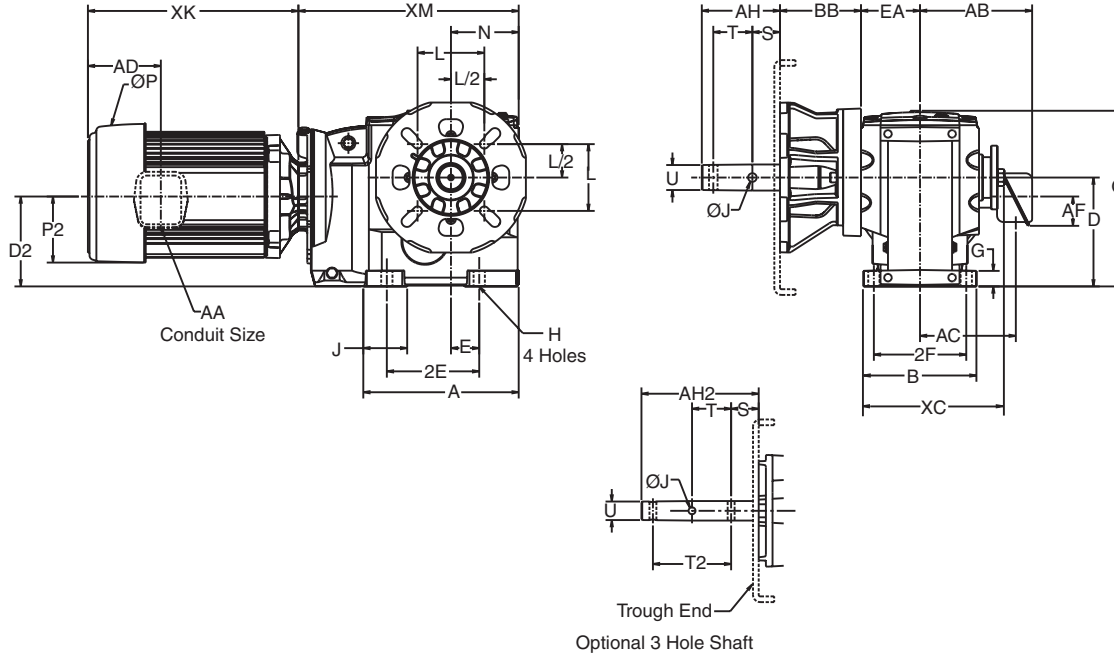
³ Refer to pages B-24 and B-25 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁵ Thrust ratings for each gear frame size are listed on page B-24.

3-Stage CEMA Screw Conveyor Drive OtN36 - 37

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	EA	XC	XM	
																182T/184T	213T-326T
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.02	13.14	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	6.61	14.76	-	29.06

Screw Conveyor

Gear Frame	Screw Dia.	JJ	L	U	S	T	T ₂	AH	AH ₂	BB
36	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.67
	12, 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.67
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.67
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	6.67
37	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	7.94
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	7.94

Motor Frame	Motor Type ⁴	Gear Frame	P	P ₂	AA	AB	AC	AD	AF	XK
182T/184T	T	36	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36
284T/286T	T	35 - 37	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	All	17.2	7.78	2.00	14.99	11.34	14.16	3.63	27.36

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

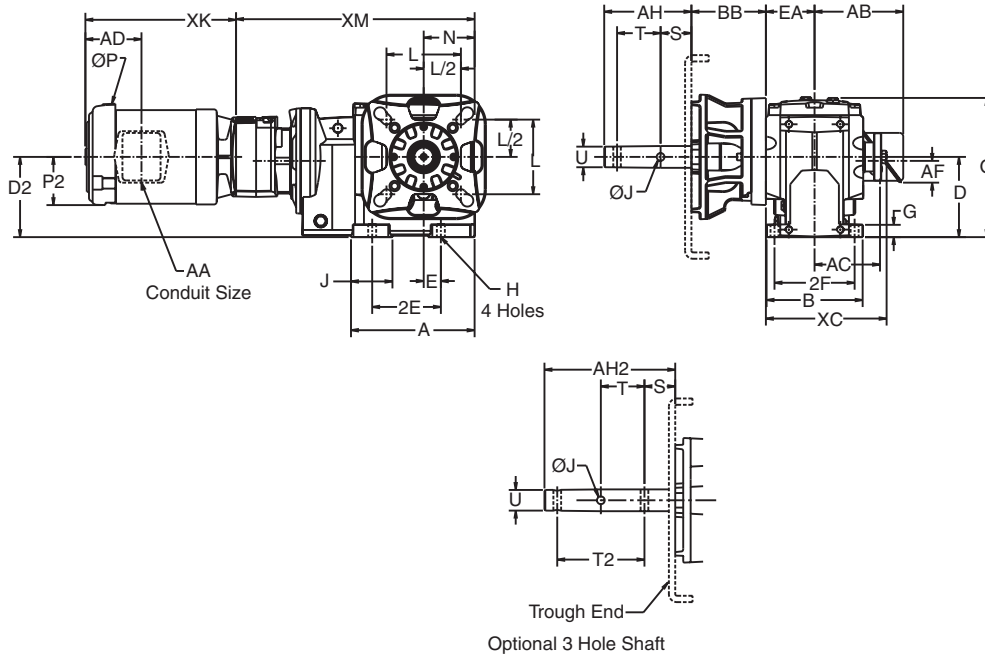
³ Refer to pages B-24 and B-25 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁵ Thrust ratings for each gear frame size are listed on page B-24.

Combined CEMA Screw Conveyor Drive OtN32 - 33

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	2.85	7.35	14.49
33	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.35	8.30	19.90

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
32, 33	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	10.37
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	32	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.62
	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	33	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

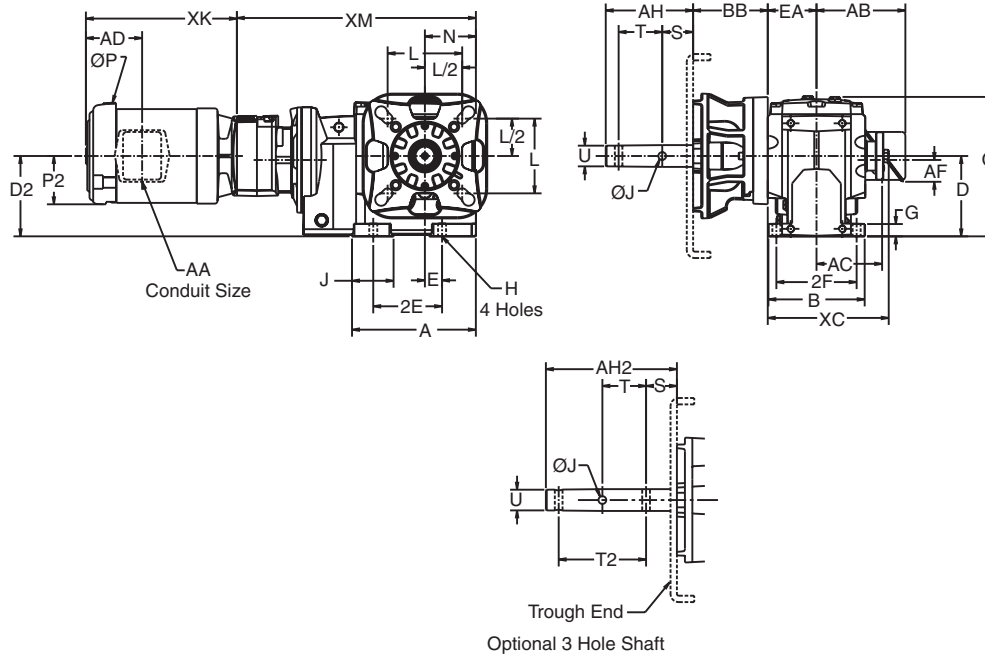
³ Refer to pages B-24 and B-25 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁵ Thrust ratings for each gear frame size are listed on page B-24.

Combined CEMA Screw Conveyor Drive OtN34 - 35

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.07	9.84	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	4.43	11.00	23.87

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
34	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	Any	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	35	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

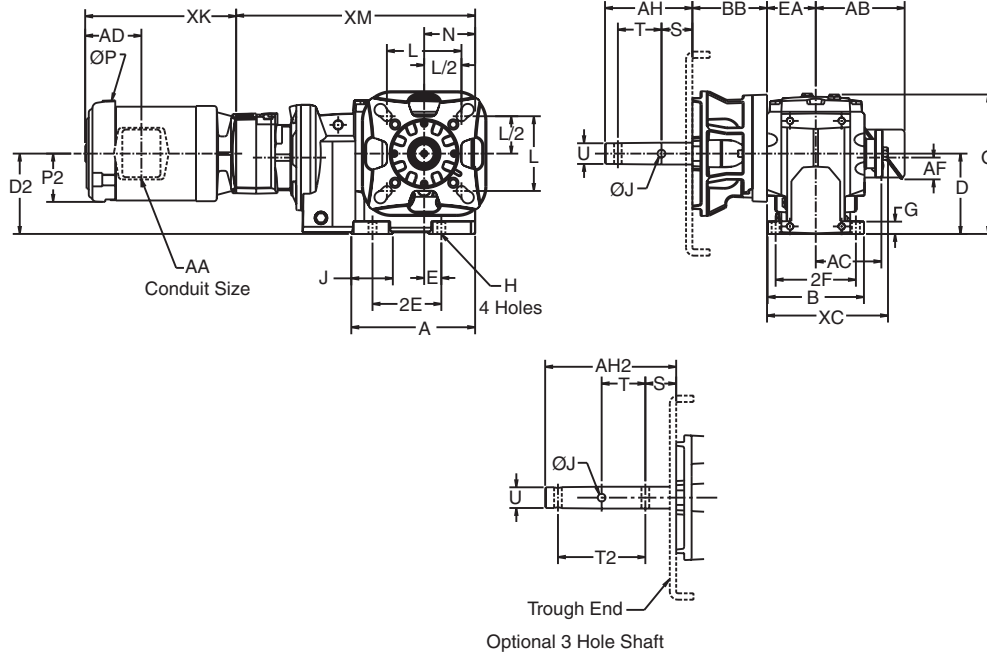
³ Refer to pages B-24 and B-25 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁵ Thrust ratings for each gear frame size are listed on page B-24.

Combined CEMA Screw Conveyor Drive OtN36 - 37

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM		
																182T/184T	213T-215T	254T-UP
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.02	13.14	23.38	23.38	23.73
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	6.61	14.76	-	29.06	29.41

Screw Conveyor

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
36	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.67
	12, 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.67
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.67
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	6.67
37	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	7.94
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	7.94

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	1.77	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

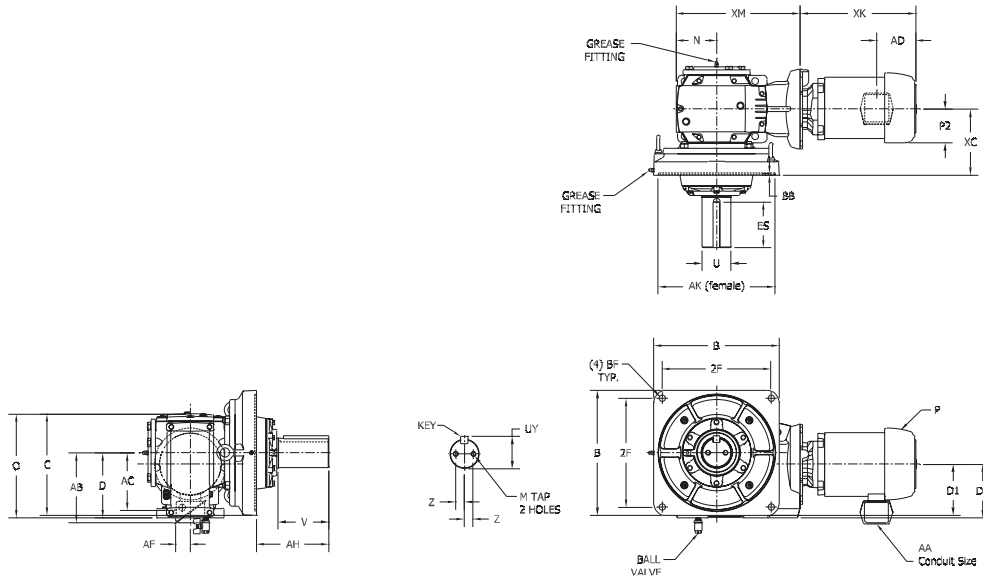
³ Refer to pages B-24 and B-25 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Motor dimensions for other than "Type T" three phase TEFC motors, refer to pages B-114 to B-116.

⁵ Thrust ratings for each gear frame size are listed on page B-24.

3-Stage Extended Flange Mount OtN34 - 35 (38D)

OtN Series



Gear Frame	Version	C	D	D1	O	N	XC	XM	
								56 - 215T	254T-326T
34	S2	13.01	7.09	6.86	12.05	4.49	7.92	14.56	-
35	S2	13.28	8.35	6.59	13.58	5.20	8.51	16.90	17.25

Output Shaft

Gear Frame	Version	U ¹	UY	V	AH	Key	ES	M	Z
34	S2	3.250	2.831	5.75	8.60	3/4 Sq.	3.25	1/2-13	1.00
35	S2	3.750	3.261	6.50	9.37	7/8 Sq.	4.00	5/8-11	1.13

Output Flange

Gear Frame	Flange Code	AK	2F	BB	B ²	BF
34	8	15.000	14.00	0.25	16.09	0.81
35	8	15.000	14.00	0.25	16.09	0.81

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.31	3.31	0.75	6.10	4.50	3.86	1.77	9.79
B56	T	Any	7.31	3.31	0.75	6.10	4.50	3.86	1.77	11.04
143T/145T	T	Any	7.31	3.31	0.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	Any	9.56	4.34	0.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	Any	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61 ⁴
256T	T	Any	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36 ⁴
284T/286T	T	35	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26

¹ Output shaft extension tolerances +.000", -.001".

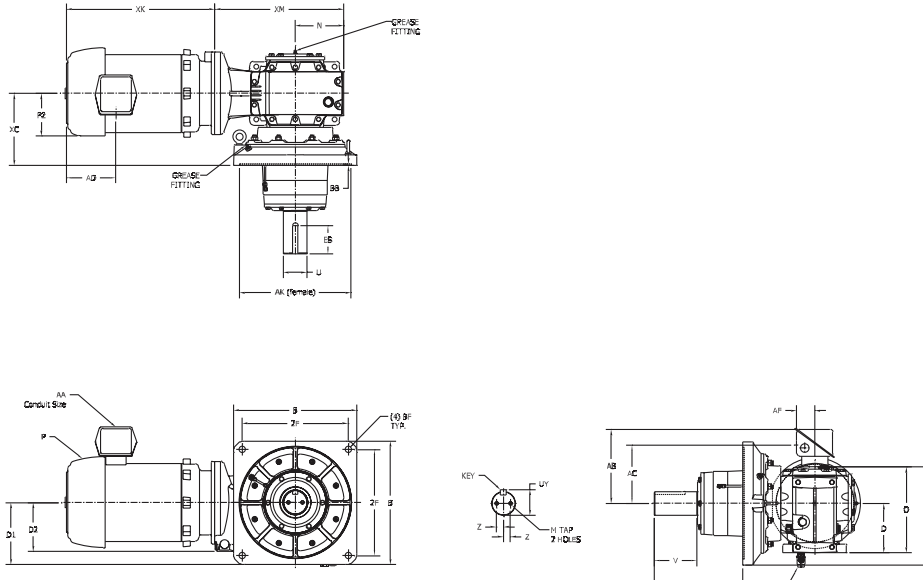
² Rough casting dimensions may vary up to .25" due to casting variations.

³ Motor dimensions for other than type "T" three phase TEFC motors, refer to pages B-114 to B-116.

⁴ On frame 34, increase the XK by .97"

3-Stage Extended Flange Mount OtN36 - 37 (83G)

OtN Series



Gear Frame	Version	C	D	D1	O	N	XC	XM	
								56 - 215T	254T-326T
36	S2	18.51	8.86	11.07	16.30	8.74	12.92	23.38	23.73
37	S2	19.67	9.84	12.21	18.45	10.04	13.51	29.06	29.41

Output Shaft

Gear Frame	Version	U ¹	UY	V	AH	Key	ES	M	Z
36	S2	4.250	3.690	7.50	15.34	1 Sq.	5.00	5/8-11	1.25
37	S2	5.750	4.901	10.00	18.21	1 1/2 Sq.	7.00	3/4-10	1.50

Output Flange

Gear Frame	Flange Code	AK	2F	BB	B ²	BF
36	8	20.000	19.00	0.28	22.13	1.13
37	8	20.000	19.00	0.28	22.13	1.13

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
143T/145T	T	36	7.31	3.31	0.75	6.10	4.50	3.86	1.77	11.04
182T/184T	T	36	9.56	4.34	0.75	6.10	4.50	5.13	1.77	14.04
213T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	16.15
215T	T	Any	11.25	5.06	1.00	8.42	7.17	5.60	2.42	17.65
254T	T	Any	13.38	6.00	1.25	9.79	7.68	8.29	1.81	19.61 ⁴
256T	T	Any	13.38	6.00	1.25	9.79	7.68	8.29	1.81	21.36 ⁴
284T/286T	T	Any	14.62	7.29	1.50	11.33	8.51	12.44	2.63	24.26
324T/326T	T	Any	17.20	7.78	2.00	14.99	11.34	14.16	3.63	27.36

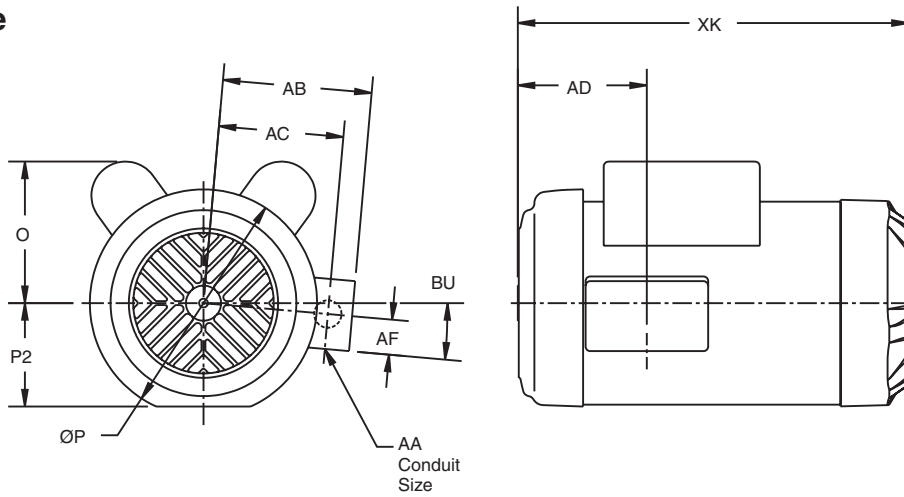
¹ Output shaft extension tolerances +.000", -.001".

² Rough casting dimensions may vary up to .25" due to casting variations.

³ Motor dimensions for other than type "T" three phase TEFC motors, refer to pages B-114 to B-116.

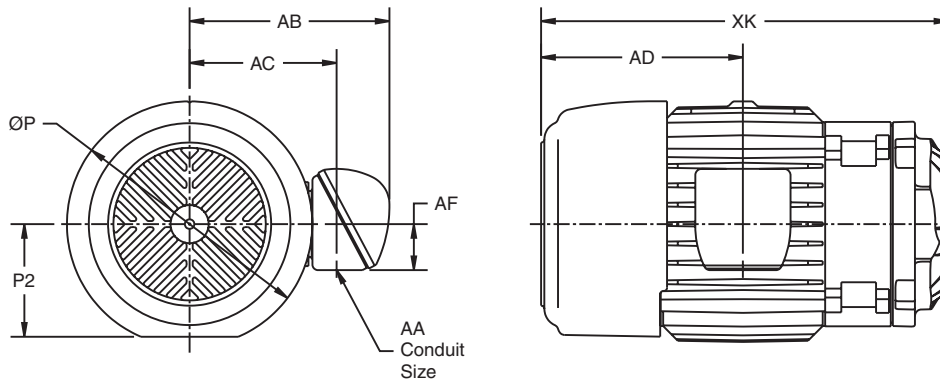
Alternate Motor Dimensions

Single Phase



Motor Frame	HP	O	P	P2	AA	AB	AC	AD	AF	BU	XK
56	1/3, 1/2	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	9.52 ²
	3/4	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02 ²
143T	1	5.09	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02 ²
145TY	1 1/2, 2	4.53	7.28	3.31	3/4	4.78	3.83	4.14	1.13	5°	12.52
184T	3, 5	5.11	9.56	4.39	3/4	8.58	6.45	7.14	3.09	N/A	16.54

Corro-Duty®



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.41	3.44	3/4	6.50	4.59	3.72	1.25	10.21 ²
143T, 145T	7.41	3.44	3/4	6.50	4.59	3.72	1.25	11.21 ²
182T, 184T	9.57	4.33	3/4 ³	7.80	6.00	7.79	2.32	14.23
213T, 215T	11	5.44	1	9.47	7.15	9.63	2.00	19.67
254T, 256T	13.31	6.58	1 1/2	11.33	8.51	12.44	2.63	24.26 ¹
284T, 286T	14.62	7.29	1 1/2	11.33	9.16	13.19	2.63	24.71

¹ XK = 23.29 on OtN 34 three stage and 27A combined.

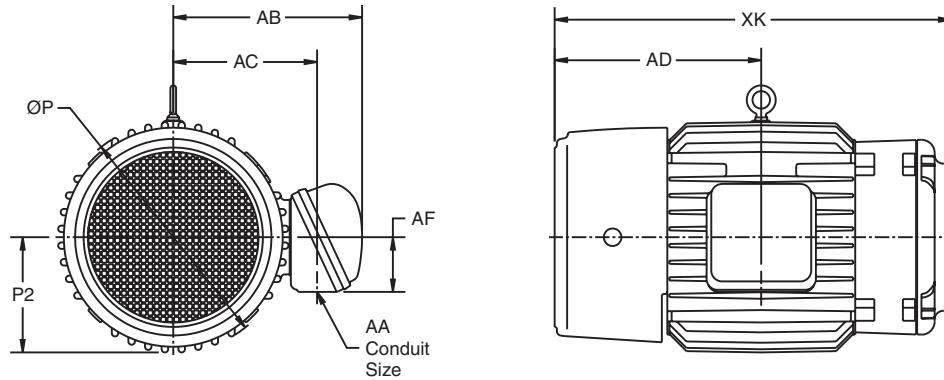
² XK will increase by .58" if used on 32 combined units.

³ There are 2 conduit openings on this frame size.

Alternate Motor Dimensions

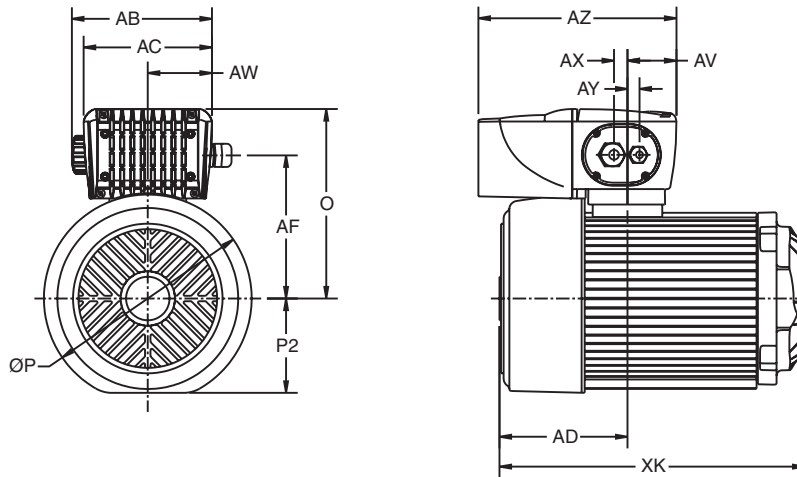
OtN Series

Explosion Proof



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.15 ²
143T, 145T	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.90 ²
182T, 184T	9.50	4.56	3/4	7.70	5.79	7.75	2.25	15.70
213T, 215T	11.12	5.44	1	9.06	6.81	8.68	2.63	18.72

IntelliGear®



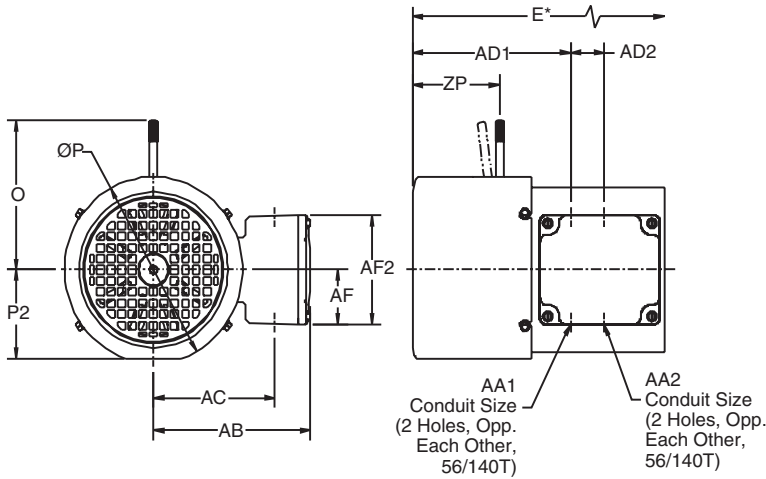
Motor Frame	Controller	O	P	P2	AB	AC	AD	AF	AV	AW	AX	AY	AZ	XK
56	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	9.79 ²
143T, 145T	1	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	11.04 ²
56	2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	9.79
143T, 145T	2, 2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	11.04
182T, 184T	2	8.72	9.56	4.78	6.45	5.91	5.89	6.58	2.25	2.95	.62	.55	9.12	14.05
	3	11.16	9.56	4.78	8.97	8.44	10.01	7.37	2.83	4.22	.62	.55	13.10	14.05
213T	3	11.99	11.25	4.98	8.97	8.44	11.73	8.11	2.83	4.22	.62	.55	13.10	16.15
215T	3	11.99	11.25	4.98	8.97	8.44	13.23	8.11	2.83	4.22	.62	.55	13.10	17.65

Input Power Phase/Voltage	Motor HP @ Max. Hz					
	0.33 to 0.50	0.75	1	1.5 to 2	3 to 5	7.5 to 10
1/115	1M	2M	-	-	-	-
1/230	1M	1M	1M	2M	-	-
3/230	1	1	1	2	3	-
3/460	1	1	1	1	2	3

¹ XK = 22.58 on OtN 34 three stage and 27A combined.

² XK will increase by .58" if used on 32 combined.

Dimensional Supplement



DC FCR Brake with Type "T" Motor

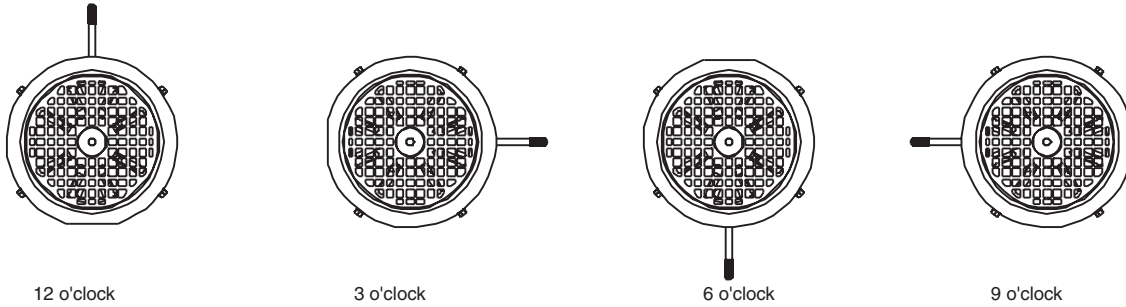
Motor Frame	E*	O	P	AA1	
				Size	Qty
56-143/145T	2.63	5.80	7.24	3/4 NPT	2
182/184T	1.95	7.3	9.23	3/4 NPT	1

Motor Frame	AA2		AB	AC	AD1
	Size	Qty			
56-143/145T	1/2 NPT	2	6.38	4.94	6.43
182/184T	3/4 NPT	1	7.8	6.14	8.84

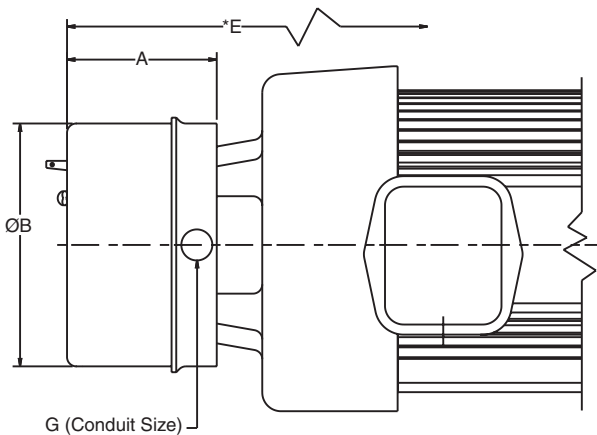
Motor Frame	AD2	AF	AF2	P2	ZP
56-143/145T	1.38	2.13	4.25	3.46	3.54
182/184T	1.81	2.32	4.65	N/A	4.41

*Add "E" to XK or C of equivalent three phase frame motor.

Manual Release Lever Position



See page B-18 for specifying the o'clock position on orders.



AC Brake with Type "T" and "S" Motor

Motor Frame	Motor Type	Brake Torque (ft. lbs.)	A	B	E*	G
56	S	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
143T/145T 145TY		3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
184T	T	10	4.01	6.54	4.56	1/2
213T		15	4.01	6.54	4.56	1/2
215T		25	7.38	9.38	8.75	1/2
		35	7.38	9.38	8.75	1/2

* Dimension "E" represents the additional length of motor with brake mounted. Add this amount to the gearmotor length "C". Add "E" to XK or C of equivalent three phase frame motor.

TEFC Three Phase Gearmotors

Gear Frame	Reduction Stages	Motor Frame												
		56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
31	2	65	74	76	98	101	-	-	-	-	-	-	-	-
32	2	70	79	81	103	106	136	149	-	-	-	-	-	-
	3	77	86	88	110	116	-	-	-	-	-	-	-	-
33	5	85	-	-	-	-	-	-	-	-	-	-	-	-
	3	99	108	110	133	139	167	180	-	-	-	-	-	-
34	5.6	129	138	140	-	-	-	-	-	-	-	-	-	-
	3	147	156	158	181	187	215	228	273	323	-	-	-	-
35	5.6	176	185	188	-	-	-	-	-	-	-	-	-	-
	3	-	231	233	252	258	286	299	344	394	584	604	-	-
36	5.6	240	250	253	275	281	-	-	-	-	-	-	-	-
	3	-	-	-	490	500	539	552	604	654	753	773	845	910
37	5.6	509	511	518	533	543	575	583	-	-	-	-	-	-
	3	-	-	-	726	736	775	788	840	890	949	969	1081	1146
28	5.6	745	747	754	769	779	811	819	-	-	-	-	-	-
	3	-	-	-	-	-	862	875	920	970	1160	1180	1380	1440
28	5.6	930	940	943	985	991	993	1000	-	-	-	-	-	-

Motor Options

Motor Type	Motor Frame													
	56	143T	145T	145TY	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
C Corro-Duty	8	9	11	-	52	50	73	70	190	165	0	0	0	0
X Explosionproof	19	21	25	-	33	30	50	50	-	-	-	-	-	-
S Single Phase	6	11	-	10	-	17	-	-	-	-	-	-	-	-
IG Intelligear	7	15	18	-	31	30	51	53	-	-	-	-	-	-

Gear Options

Gear Frame	Std Flange Mount	Extended Flange Mount	Footed S1	37S or 73S SCD
31	3	-	-	-
32	4	-	-	35
33	5	-	2	35
34	7	87	3	42
35	8	89	5	75
36	10	115	-	109
37	12	117	-	130
28	15	-	-	-

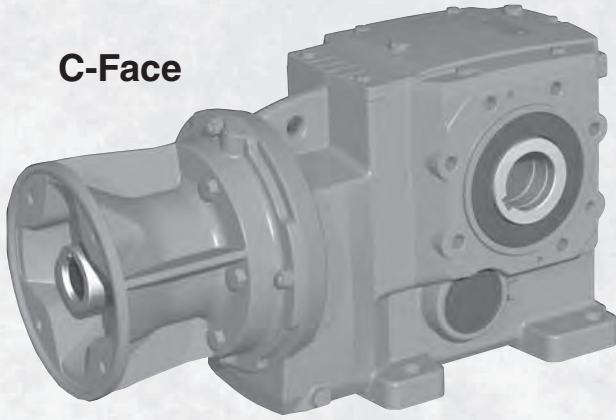
** Frames 36 and 37 are only available in S1 design with feet. Refer to upper table for weights on these frames

Browning[®]

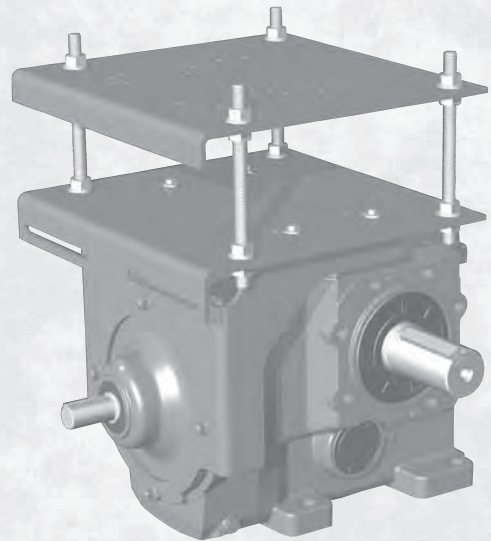
OtN Helical-Bevel Right Angle Speed Reducers

OtN Series

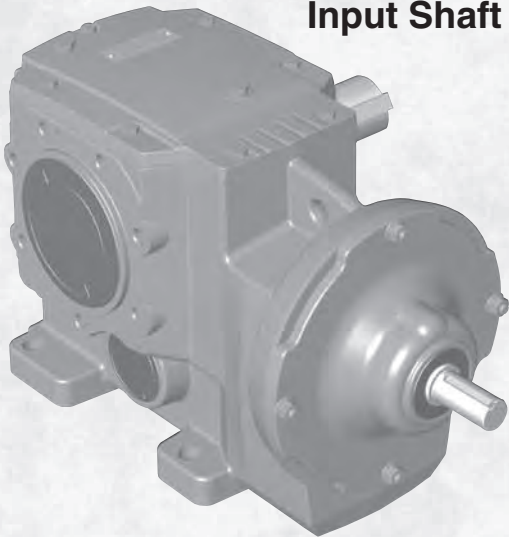
C-Face



Top Mount



Input Shaft



Scoop Mount

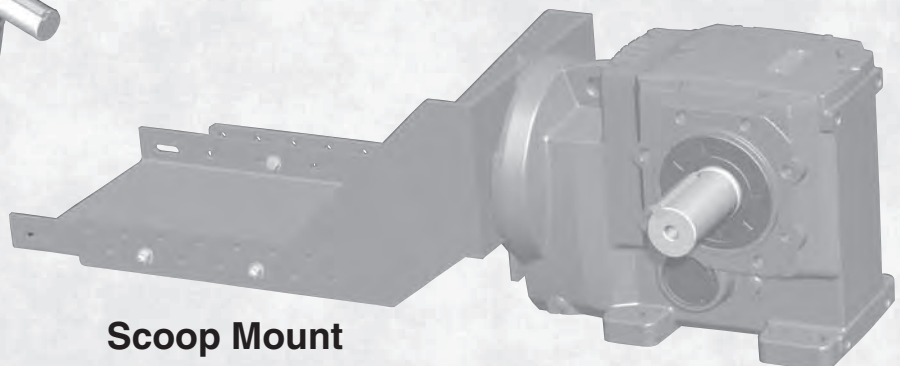
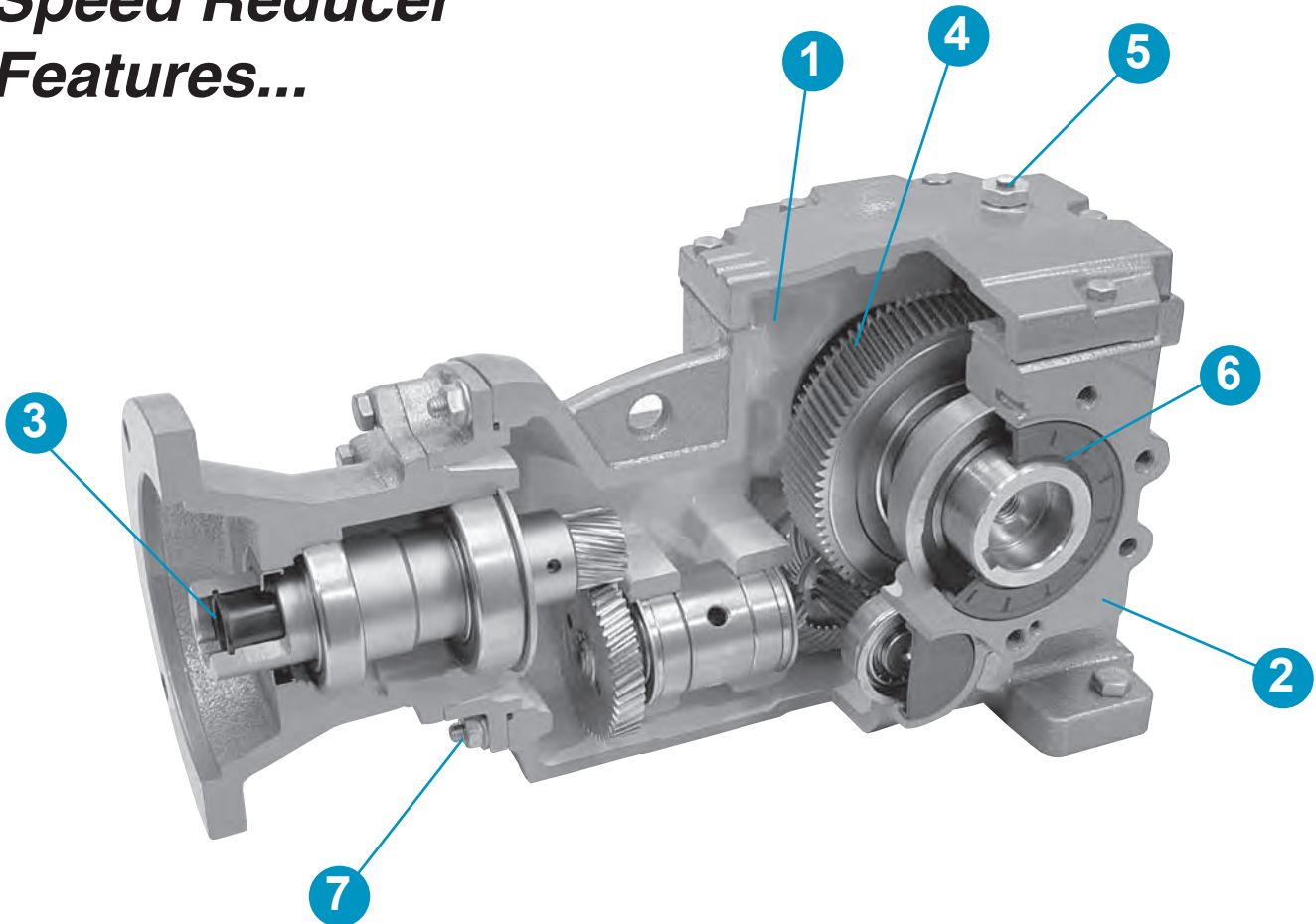


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**Type OtN Helical-Bevel
Speed Reducer
Features...**

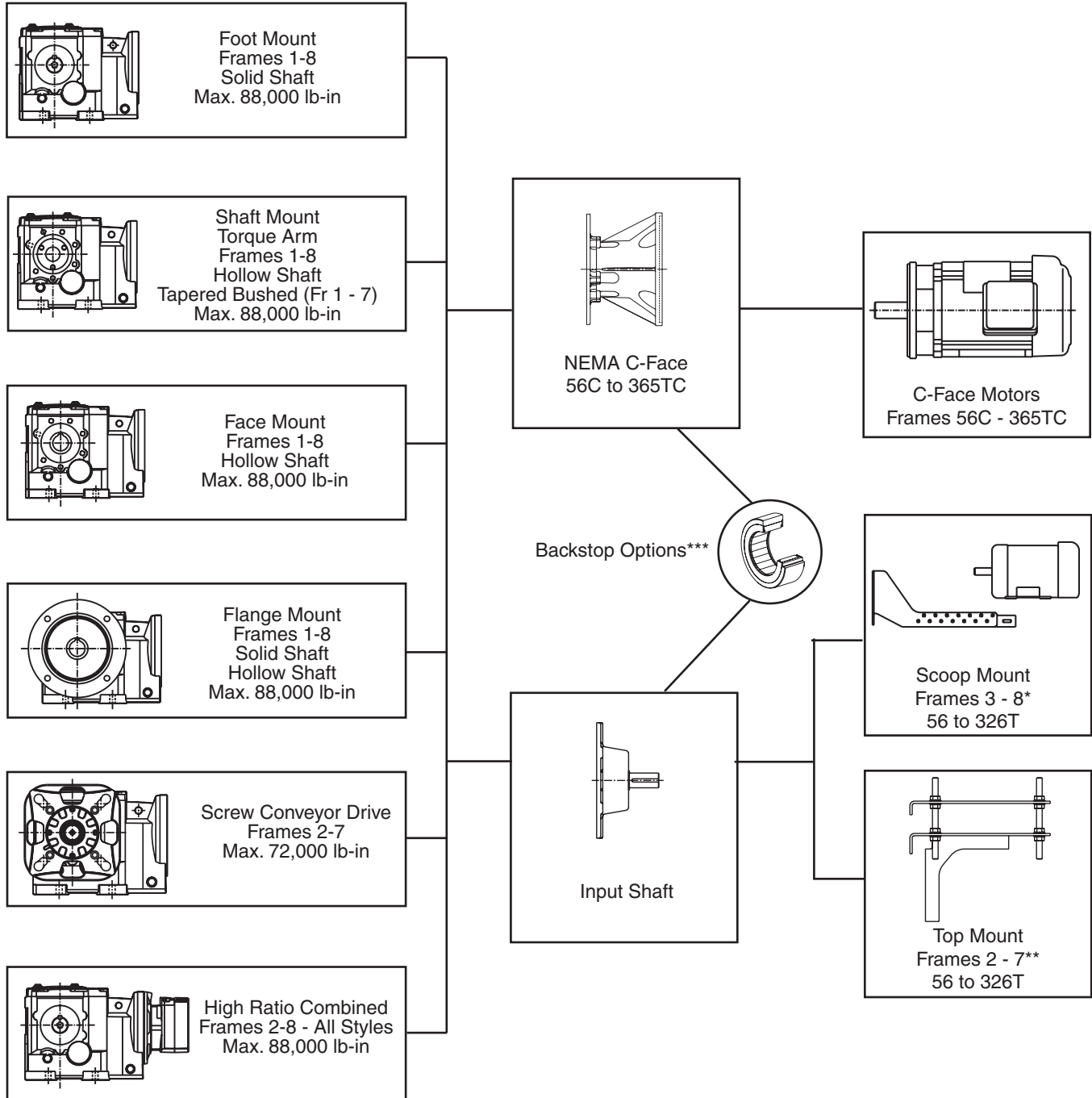
OtN Series



Design Features

- 1. Gearcase Supplied Factory Filled with Synthetic Oil**
 - Wide temperature range and longer life.
- 2. Corrosion and Shock Resistant Cast Iron Housing**
 - One-piece, reinforced and ribbed for extra strength.
- 3. Series 3000 C-Face Reducers with Compact Quill Design**
 - Non-metallic liner to eliminate fretting.
 - Shorter design.
 - Two bearings for support.
- 4. High Efficiency Helical-Bevel Gears. 98% per Stage**
 - Helical gearing is case hardened and then skived, superfinished or ground.
 - All gears heat shrunk on shafts or mounted on self-locking tapered shafts and keyed for high shock load capability.
- 5. Normally Closed Breather with Multiple Locations (Optional OtN2000)**
- 6. Double Lip Seals on Heat Treated, Plunge Ground Shafts**
- 7. Magnetic Drain Plug Standard**

Mounting Versatility and Size Range



* Not available for frames 2 - 5, 5-stage or frames 4 - 6, 6-stage.
 ** Only available for frames 3 - 7, 3-stage, and frame 2 in 2 stage.
 *** Not available for frames 3245 and 3365A. Available input shaft or scoop mount only for frames 6 - 8.

Selection Information

- Input HP**
 - Based on application data.
- Speed/Ratio**
 - Obtain either desired output speed (rpm) or gearbox ratio based on application.
- Service Factor**
 - Determine the required service factor using either the AGMA application classification chart (pages B-134 - B-136), or the duration of operation, load type, and drive type with the table below:

Prime Mover	Hours of Operation	Uniform Load U	Moderate Shock Load M	Heavy Shock Load V*
Electric Motor	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Internal Combustion Engine	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

Size Selection

Step 1

- Locate speed reducer selection tables (pages B-137 - B-144) based on input speed to gearbox.

Step 2

- Choose the nominal ratio appropriate for the speeds required.

Step 3

- Select the gear unit size for the chosen ratio and the known input speed so that the mechanical power rating P (hp) satisfies the following:

$$P \geq P_m \cdot SF$$

P = mechanical power rating (hp) of gearbox

P_m = motor power (hp)

SF = required service factor

Note: Size selection based on absorbed power (Pa) or absorbed torque (Ta) at the low speed shaft instead of motor power (Pm) is allowed when the former is known with sufficient accuracy and if the number of start operations is limited. When Ta is applied in size selection, verify if:

$$T \geq T_a \cdot SF$$

T = torque rating (in. lbs.) at low speed shaft

T_a = absorbed torque (in. lbs.) at low speed shaft

SF = required service factor

* Applications with reversing or frequent starts and stops should not utilize a C-Face reducer design.

Size Selection (cont.)

Step 4

- Verify overhung load ratings where required (see page B-123).

Example

1. Application Data

Bottling conveyor, 24-hrs/day operation. Requires right angle hollow shaft mounted speed reducer to be mounted directly to the conveyor drive shaft with a torque arm. The customer prefers a c-face mounted motor.

Motor rating: 5 HP, 1750 rpm, 184TC Footless Frame, 230/460 VAC, 3-Phase, 60 Hz, TEFC

Output speed: 44 rpm

2. Size Selection

Nominal Ratio: Locate nominal rpm closest to 44 rpm. 40:1 nominal ratio is the proper selection.

Service Factor: Using AGMA application classification chart (page B-134) under the "Brewing and Distilling" heading, bottling machinery that operates over 10 hours/day should have a 1.25 service factor.

Rating Req'd: Minimum reducer rating required is
 $P = P_m \times SF$
 $P = 5 \text{ HP} \times 1.25 = 6.25 \text{ HP}$

Catalog Rating:

Exact ratio	Gear Frame	39.9	3473
Input H.P.	Output Torque	9.96	13453

Selection: OtN3473 is rated 9.96 HP input /13453 lb-in output with 39.9:1 ratio. 1750 rpm / 39.9 = 43.9 rpm output speed. 9.96 / 5 = 1.99 SF.

3. Catalog Designation

Reducer: OtN-3473-S2-B33C-40-U-184TC (See page B-123)

Torque Arm: ROC400KT001 (See page B-129)

Overhung Load Capacities

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a reducer, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

Where:

- OHL = Overhung load (pounds)
- T = Torque (in. lbs.)
- r = Radius of driving member (in.)
- HP = Horsepower
- K = Drive type factor
- LLF = Load location factor

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{rpm \times r}$$

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Timing Belt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

OtN Series

Overhung Load (lbs.)									
Output RPM	Frame								
	Two Stages		Three of More Stages						
	31	32	32	33	34	35	36	37	28
301 - 550	1366	1358	-	-	-	-	-	-	-
175 - 300	1366	1579	-	-	-	-	4497	7097	-
151 - 175	1366	825	825	1392	1653	2565	5126	7834	-
101-150	1366	834	834	1549	1707	2815	5253	8124	10350
51 - 100	1366	902	902	1737	1892	3339	5689	9273	12100
31-50	1366	1148	1148	2090	2435	4100	6595	11017	12100
16-30	1366	1490	1490	2090	2875	4100	8584	12910	12100
5-15	-	-	1490	2090	2875	4100	12209	16982	12100
< 5	-	-	1490	2090	2875	4100	13249	18242	12100

OHL capacities above are calculated at gear capacity rounded to the closest motor HP at mid shaft. For capacity when HP is known, refer to gearmotor selection tables.

Ordering

OtN • 34 7 3 • S2 • B 33 G • 22.4 • U • 145TC • G11

See pages B-125 and B-126

OtN Series

Browning Right-Angle Helical-Bevel	Series	Reducer Size	Stages	Shaft & Foot Dimensions ¹	Mounting Position	Output Face/Flange Right-Left Viewed From Input End	Output Shaft Configuration Viewed from Input End	Nominal Gear Ratio	Input Type	Motor Frame	Modification(s)
OtN Series	SERIES 3000	31	3	2 = 2 stages	S2 = Industry interchange dimensions S1 = OtN2000 replacement dimensions	B = Floor mount P = Ceiling mount H = Wall mount, input left T = Wall mount, input right V = Input vertical up W = Input vertical down	3 = Standard round 4 = Face mount 5 = Standard dimension flange mount 6 = Alternate dimension flange mount 7 = Screw conveyor adapter	22.4 = 22.4:1 Use nominal ratio selected from reducer selection tables	AP = Input Shaft AD = Input Shaft w/backstop SP = Scoop Mount SD = Scoop Mount w/backstop U = C-Face UD = C-Face w/backstop TM = Top mount TMD = Top Mount w/backstop	C-Face 56C-365TC Scoop Mount 143T-326T Top Mount 56-286T See Page B-127	Select from modifications listed on page B-128
		32	4	3(A) = 3 stages							
		33	6	5 = 5 stages							
		34	7	6 = 6 stages							
		35	8								
		36	9								
		37	0								
	SERIES 2000	28	0	3 = 3 stages 5A = 5 stages 6A = 6 stages	S1 = All Series 2000 Units						

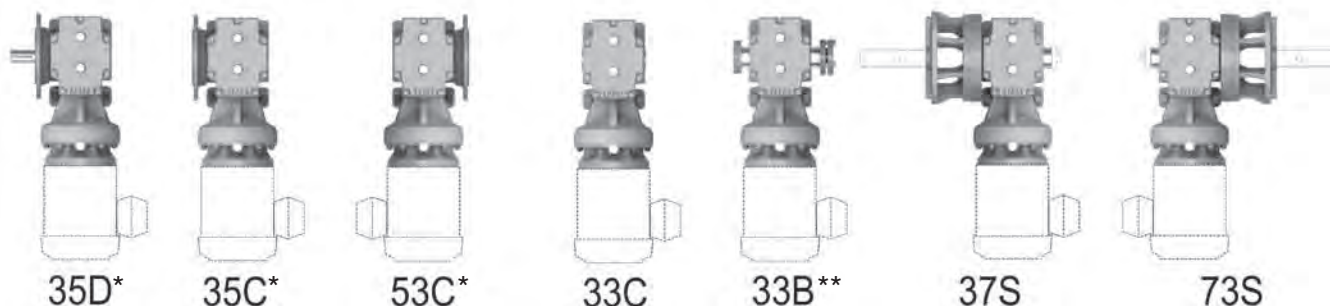
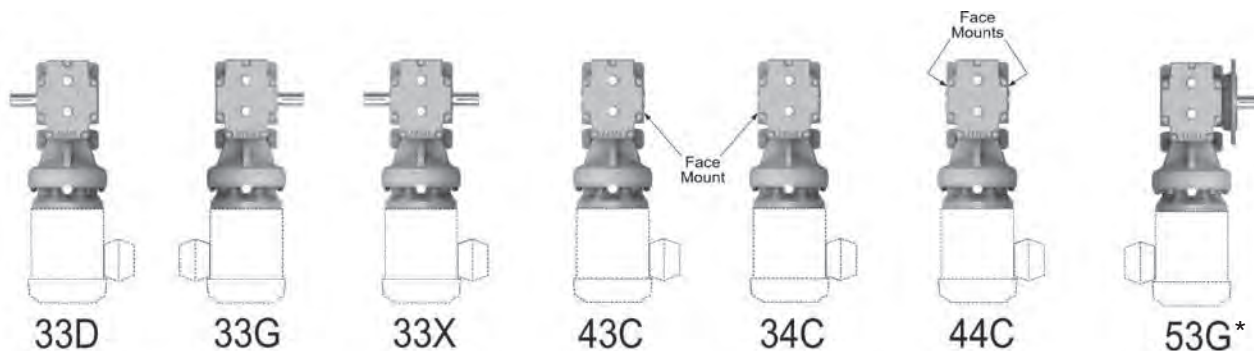
¹ Shaft and critical mounting dimensions match either OtN2000 or SEW "K" Series units. These dimensions include the mounting base, output flanges, output shaft diameter, distance from housing center line to shaft tip, and output quill diameter. B14 mounting faces and overall product envelope (height, width, depth) do NOT match.

SEW is believed to be a trade name of SEW-Eurodrive GMBH & Co. and is NOT owned or controlled by Emerson.

Emerson cannot and does not represent or warrant the accuracy of this information.

Output Flange Sizes

Flange Dimensions (mm)										
BD	140	165	200	250	300	350	400	450	550	
AK	95	110	130	180	230	250	300	350	450	
AJ	115	130	165	215	265	300	350	400	500	
Gear Frame	Output Flange Type Designation Code									
31	6	5								
32			5	6						
33				5	6					
34					5	6				
35						5	6			
36								5		
37								5		
28										5



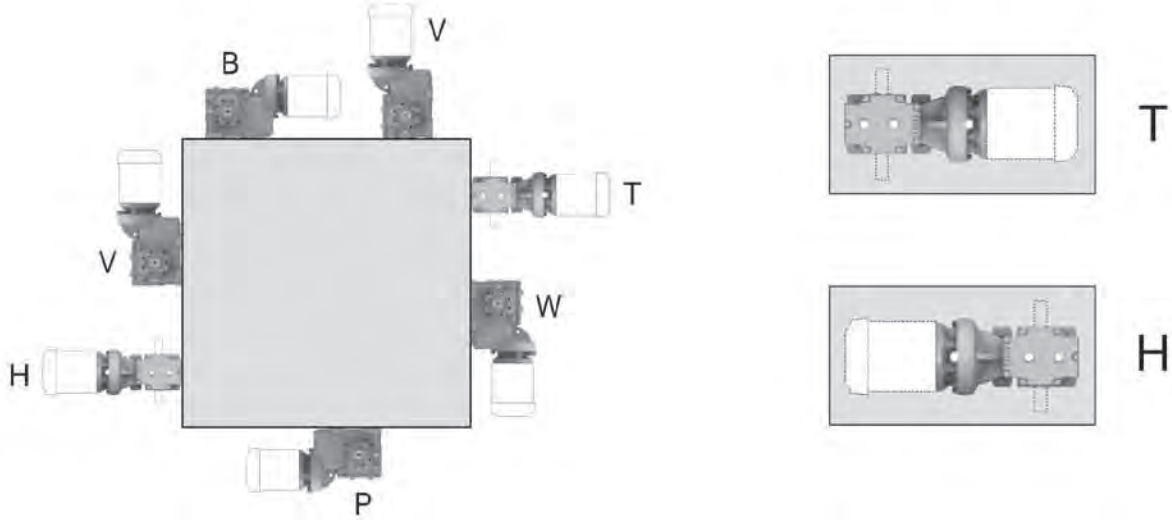
Examples Above are Top Views (with C-Face motor)

OtN Frame	Foot Mounted			Face Mounted				Flange Mounted						Shaft Mounted		Screw Conveyor Drive		
	Solid Shaft			Hollow Shaft				Solid Shaft			Hollow Shaft			Hollow	Bushed	73S	37S	
	33G	33D	33X	33C	34C	43C	44C	53G	35D	38D ²	83G ²	53C	35C	55C	33C			33B**
31	●	●	●	●	●	●	●	●	●	-	-	●	●	●	●	●	-	-
32	●	●	●	●	●	●	●	●	●	-	-	●	●	●	●	●	●	●
33	●	●	●	●	●	●	●	●	●	-	-	●	●	●	●	1	●	●
33A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	●	-	-
34	●	●	●	●	●	●	●	●	●	▲	-	●	●	●	●	●	●	●
35	●	●	●	●	●	●	●	●	●	▲	-	●	●	●	●	●	●	●
36	●	●	●	●	●	●	●	●	●	-	▲	●	●	●	●	●	●	●
37	●	●	●	●	●	●	●	●	●	-	▲	●	●	●	●	●	●	●
28	●	●	●	●	●	●	●	●	●	-	-	●	●	●	●	-	-	-

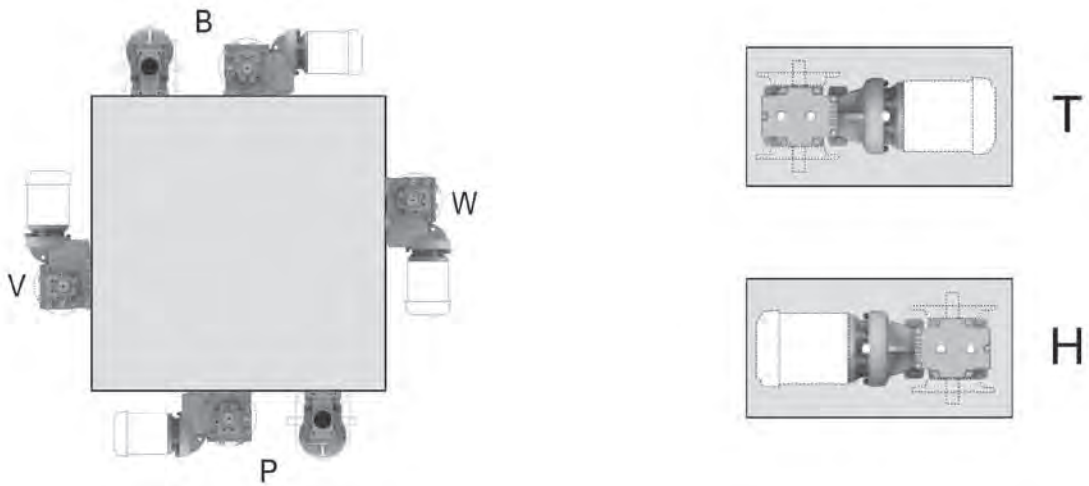
If shaded, the alternative flange can be specified by replacing "5" with "6" in the coding

- This is available at normal lead-time
- ▲ Refer to customer service for lead-time for extended flange product
- * See note for shaded field for flange option
- ** Bushing can be assembled on either side of reducer during field mounting
- 1 Effective 2/1/10 the frame 33 bushed design will be using the 33A frame and 115 SMTP bushing system
- 2 Extended Flange design

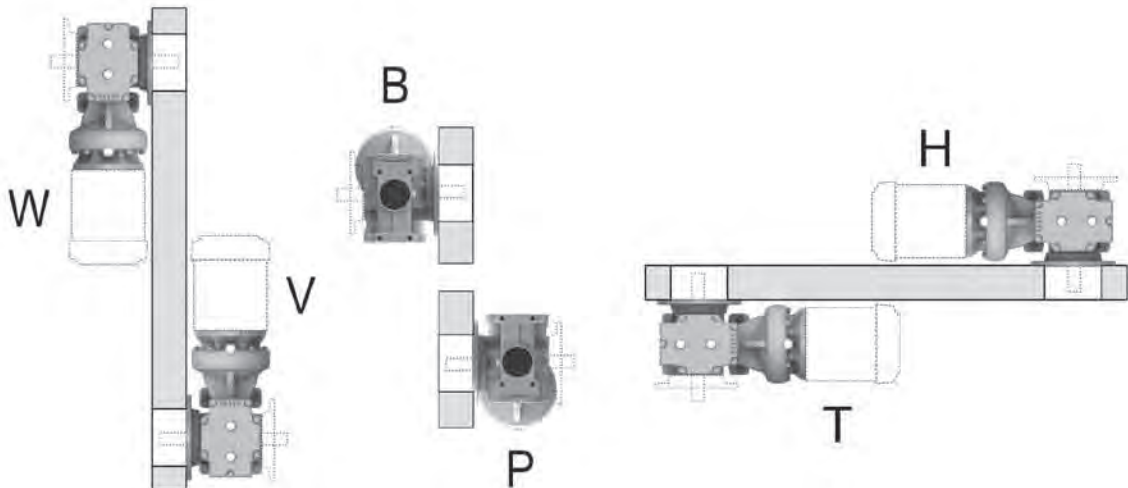
Foot Mount



Foot Mount with Face or Flange



Flange, Face or Shaft Mount





Speed Reducers

Catalog Nomenclature

OtN
SERIES 2000
3000

OtN Series

C-Face Frames								
Gear Frame	AC Motor Frame Sizes							
	56C	140TC	180TC	210TC	250TC	280TC	320TC	360TC
3132	X	X						
3242	X	X	X					
3243	X	X	X					
3245	X	X						
3363 (A)	X	X	X	X				
3365	X	X	X					
3473	X	X	X	X				
3475/3476	X	X	X					
3583	X	X	X	X	X	X		
3585/3586	X	X	X					
3693			X	X	X	X	X	
3695/3696	X	X	X	X				
3703			X	X	X	X	X	X
3705/3706	X	X	X					
2803				X	X	X	X	
2805/2806	X	X	X	X	X			

Scoop Mount Frames								
Gear Frame ¹	AC Motor Frame Sizes							
	56	140T	180T	210T	250T	280T	320T	
3363 (A)	X	X						
3473	X	X	X					
3583		X	X	X				
3693		X	X	X	X	X		
3695/3696	X	X						
3703		X	X	X	X	X	X	
3705/3706		X						
2803					X	X	X	
2805/2806		X	X					

Top Mount Frames								
Gear Frame ¹	AC Motor Frame Sizes							
	56	140T	180T	210T	250T	280T	320T	
3242	X	X						
3363 (A)	X	X	X					
3473	X	X	X	X				
3583		X	X	X	X			
3693		X	X	X	X	X	X	
3695/3696	X	X	X					
3703			X	X	X	X	X	
3705/3706	X	X	X					
2803					X			
2805/2806		X	X					

¹ Frames not listed on the above tables are not offered in this configuration
 X Available in this input design for frame of motor noted.

Modifications, Options and Accessories

Gear Modifications

G11 Corro-Duty® Reducer

Corro-Duty treatment can be applied to a reducer when the unit will be subjected to harsh chemicals or used outside. Special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
 - o Grey Option (default type)
 - 316 stainless steel paint (3 step)
 - Light grey semigloss finish
 - USDA and FDA approved
 - o White Option
 - Two step epoxy paint system
 - White gloss finish
 - USDA and FDA approved

For washdown application, refer to G12b Washdown FG Service Reducer modification.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the OtN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (refer to page B-240).

G12b Washdown FG Service Reducer

When this modification is specified, a reducer will be built with all the features detailed above under G11 and G12a. When ordering, state the paint finish that is to be provided.

G15 Export Boxing

Export boxing can be provided for “under-deck” transport. When the quantity of OtN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

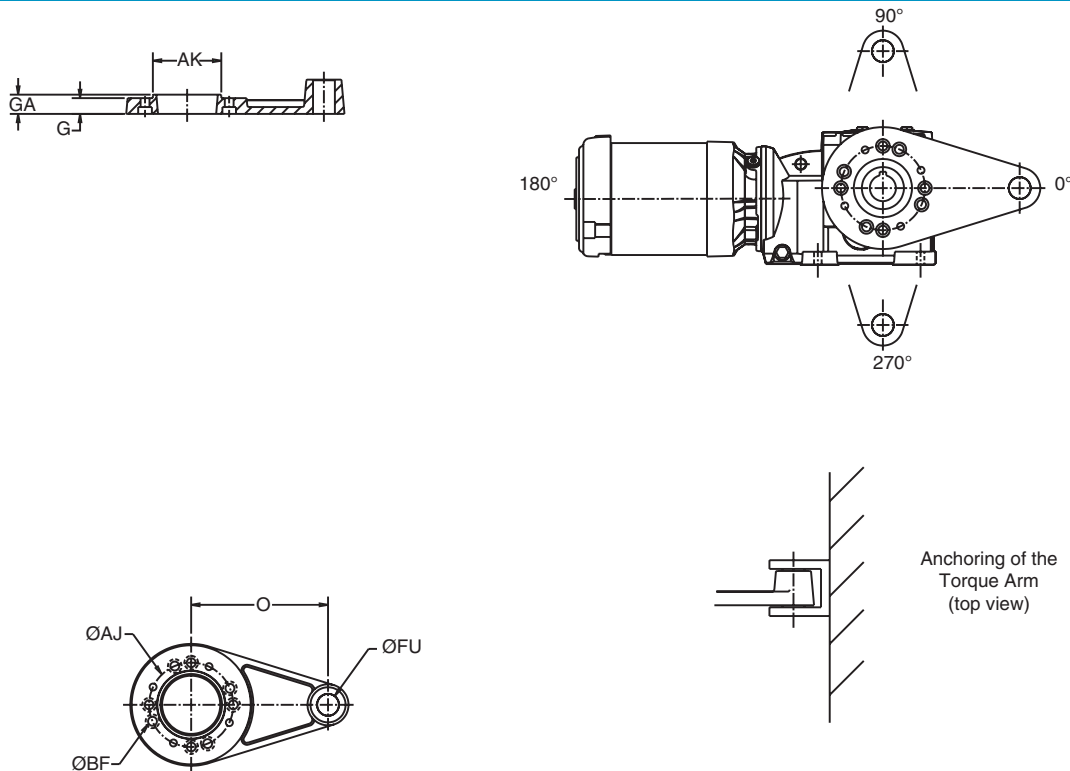
Accessories

The following accessories can be ordered along with reducers and will be supplied loose for mounting by others:

Description	Gear Frames	Part #
NPT Adapter (1/4" NPFT)	31 to 35	0436216
NPT Adapter (3/4" NPFT)	36, 37, 28	0436218
Bushing Guard Kit ¹ (includes 2 guards to protect both sides)	31	XS9154
	32	XS9134
	33	XS9135
	33A	XS9768
	34	XS9136
	35	XS9137
	36	XS9158
Oil Level View Port	31 to 35	0435936
	36, 37, 28	0435938
Coupling Guard Kit (scoop mount reducers)	33 to 35	0965634
	36/37 up to 250T	0965635
	36/37 280-320T	0965636
	36/37 combined	0965634

¹These kits include all mounting hardware.

Torque Reaction Arm



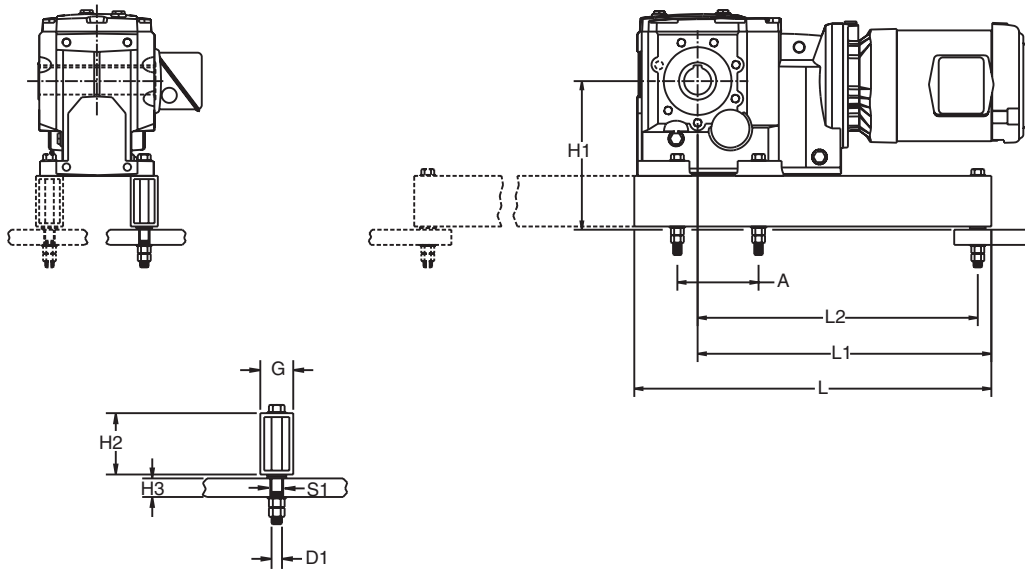
- Torque arm can be assembled in any of the three positions shown in the drawing above relative to the input (motor) when called out on the order.
- Torque arm can be affixed to either side of the 33C or 33B gear housing.
- If torque arm is requested on an assembly order, it will be supplied loose for mounting by others.
- See page 130 for optional torque arm design for frames 36 and 37.

Series 3000

OtN Frame	Part ID # Kit	G	O	AJ	AK	BF	FU	GA
31	ROC100KT001	-	5.118	3.74	3.246	.35	.394	.63
32	ROC200KT001	.63	5.118	3.94	3.150	.43	.394	.79
33	ROC300KT001	.91	7.874	4.84	3.937	.51	.630	1.10
34	ROC400KT001	-	9.842	5.98	5.118	.51	.630	.91
35	ROC500KT001	-	12.205	7.48	6.102	.67	.630	.908
36	ROC600KT001	0.79	13.78	9.06	5.905	.63	.940	.98
37	ROC700KT001	1.02	17.72	9.06	7.087	.87	.940	1.22

Torque Reaction Arm

OtN Series



- Torque arm can be assembled with attachment point on the input side or 180° opposite this, as shown above.
- Torque arm can be attached onto feet on either side of the gear housing as you face opposite the input (motor).
- If a torque arm is requested on a assembly order, it will be supplied loose for mounting by others.

Gear Frame	Part Number	A	D1	G	H1	H2	H3 max.	L	L1	L2	S1 min.
36	0986479	13.98	.75	2.50	13.61	4.50	1.50	35.83	27.46	26.08	0.81
37	0986479	16.54	.75	2.50	14.59	4.50	1.50	35.83	26.18	24.80	0.81
28	0986480	20.08	.88	4.00	18.67	6.00	1.88	43.31	31.69	30.12	0.94

Screw Conveyor Drive Shafts²

Gear Frame	1 1/2" Dia. Shaft for 6" - 10" Dia. Screw	2" Dia. Shaft for 9" - 12" Dia. Screw	2 7/16" Dia. Shaft for 12" - 14" Dia. Screw	3" Dia. Shaft for 12" - 20" Dia. Screw	3 7/16" Dia. Shaft for 18" - 24" Dia. Screw
32	107DSP108__	107DSP200__	107DSP207__	107DSP300__	N/A
33	107DSP108__	107DSP200__	107DSP207__	107DSP300__	N/A
34	115DSP108__	115DSP200__	115DSP207__	115DSP300__	N/A
35	N/A	207DSP200__	207DSP207__	207DSP300__	207DSP307__
36	N/A	215DSP200__	215DSP207__	215DSP300__	215DSP307__
37	N/A	N/A	N/A	307DSP300__	307DSP307__
28	Not Available				

² Complete the shaft part number by adding shaft type as follows:

- Standard — 2 hole steel shaft = leave blank (example 107DSP108)
- Optional — 3 hole steel shaft = add -3 (example 107DSP108-3)
- Optional — 2 hole stainless steel shaft = add SS (example 107DSP108SS)
- Optional — 3 hole stainless steel shaft = add -3SS (example 107DSP108-3SS)

Screw Conveyor Accessories

Gear Frame	Optional Seal Cartridges		Felt Seal ¹
	Waste Pack Kit	Packing Gland Kit	
32	107WWP	107PGP	FR200
33	107WWP	107PGP	FR200
34	115-203WWP	115-203PGP	FR210
35	207-407WWP	207-407PGP	FR308
36	207-407WWP	207-407PGP	FR308
37	207-407WWP	207-407PGP	FR308
28	Not Available		

¹ Felt seal can only be added to the waste pack seal cartridge kit.

OtN Screw Conveyor Drives May Be Assembled in the Field

Required Components Include: OtN 73S or 37S gearmotor with screw conveyor adapter
Screw conveyor drive shaft

Optional Components Include: Waste pack
Packing gland
Felt seal

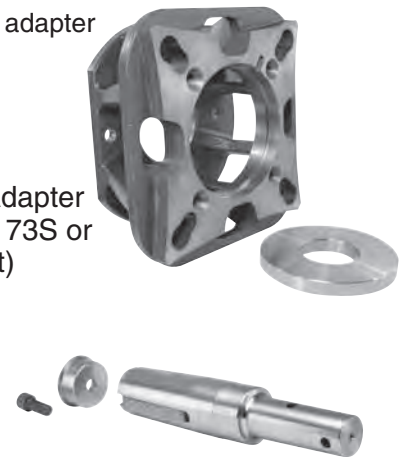
Screw Conveyor Adapter
(Included with type 73S or 37S gear unit)



Waste Pack Kit



Packing Gland Kit



Screw Conveyor Drive Shaft Kit

Screw Conveyor Thrust Ratings

Gear Frame	Maximum Thrust Rating (Lbs.)
32	2000
33	3000
34	4000
35	5000
36	6500
37	11000

Output tapered roller bearing standard - all sizes.



**Formed Hot Roll
Plate Steel**

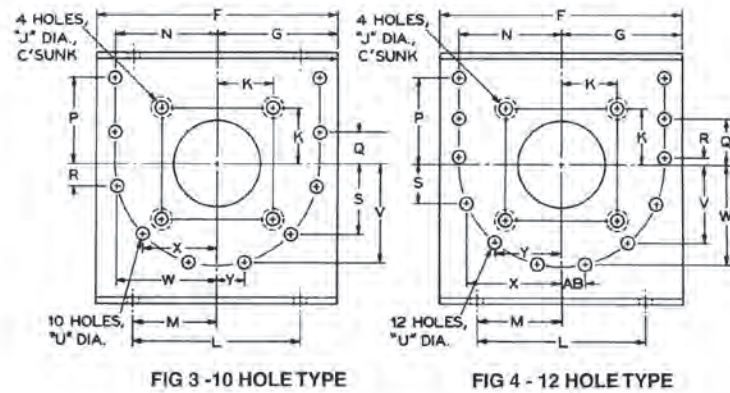
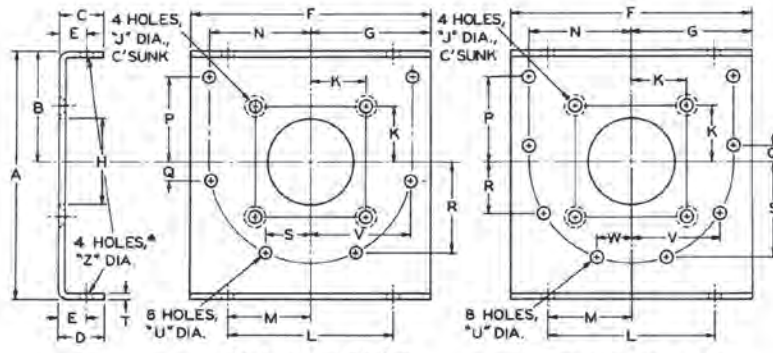


Table No. 33

Specifications

Part No.	Conveyor Screw Dia.	Drive Shaft Dia.	Fig.	Type	Dimensions												
					A	B	C	D	E	F	G	H	J	K	L		
SCTE06 x 1 1/2"	6"	1 1/2"	1	6-Hole	10 1/8"	4 1/2"	1 1/2"	1 3/4"	1"	9 3/4"	4 7/8"	1 3/4"	9/16"	2"	8 1/8"		
SCTE09 x 1 1/2"	9	1 1/2"	2	8-Hole	14	6 1/8"	1 5/8"	2 5/8"	1 1/2"	13 3/4"	6 7/8"	1 3/4"	9/16"	2	9 3/8"		
SCTE09 x 2	9	2	2	8-Hole	14	6 1/8"	1 5/8"	2 5/8"	1 1/2"	13 3/4"	6 7/8"	2 1/4"	1 1/16"	2	9 3/8"		
SCTE10 x 1 1/2"	10	1 1/2"	2	8-Hole	15 1/4"	6 3/8"	2 3/8"	2 7/8"	1 3/4"	14 3/4"	7 3/8"	1 3/4"	9/16"	2	9 1/2"		
SCTE10 x 2	10	2	2	8-Hole	15 1/4"	6 3/8"	2 7/8"	2 7/8"	1 3/4"	14 3/4"	7 3/8"	2 1/4"	1 1/16"	2 9/16"	9 1/2"		
SCTE12 x 2	12	2	2	8-Hole	17 3/8"	7 3/4"	2	2 3/4"	1 5/8"	17 1/4"	8 5/8"	2 1/4"	1 1/16"	2 9/16"	12 1/4"		
SCTE12 x 2 7/16	12	2 7/16	2	8-Hole	17 3/8"	7 3/4"	2	2 3/4"	1 5/8"	17 1/4"	8 5/8"	2 1 1/16"	1 1/16"	2 13/16"	12 1/4"		
SCTE12 x 3	12	3	2	8-Hole	17 3/8"	7 3/4"	2	2 3/4"	1 5/8"	17 1/4"	8 5/8"	3 1/4"	1 3/16"	3	12 1/4"		
SCTE14 x 2 7/16	14	2 7/16	2	8-Hole	20 1/8"	9 1/4"	2	2 7/8"	1 5/8"	19 1/4"	9 5/8"	2 1 1/16"	1 1/16"	2 13/16"	13 1/2"		
SCTE14 x 3	14	3	2	8-Hole	20 1/8"	9 1/4"	2	2 7/8"	1 5/8"	19 1/4"	9 5/8"	3 1/4"	1 3/16"	3	13 1/2"		
SCTE16 x 3	16	3	2	8-Hole	22 5/8"	10 5/8"	2 1/2"	3 1/4"	2	21 1/4"	10 5/8"	3 1/4"	1 3/16"	3	14 7/8"		
SCTE18 x 3	18	3	3	10-Hole	25 1/2"	12 1/8"	2 1/2"	3 1/4"	2	24 1/4"	12 1/8"	3 1/4"	1 3/16"	3	16		
SCTE18 x 3 7/16	18	3 7/16	3	10-Hole	25 1/2"	12 1/8"	2 1/2"	3 1/4"	2	24 1/4"	12 1/8"	3 1 1/16"	1 3/16"	3 3/8"	16		
SCTE20 x 3	20	3	3	10-Hole	28 1/2"	13 1/2"	2 1/2"	3 3/4"	2 1/4"	26 1/4"	13 1/8"	3 1/4"	1 3/16"	3	19 1/4"		
SCTE20 x 3 7/16	20	3 7/16	3	10-Hole	28 1/2"	13 1/2"	2 1/2"	3 3/4"	2 1/4"	26 1/4"	13 1/8"	3 1 1/16"	1 3/16"	3 3/8"	19 1/4"		
SCTE24 x 3 7/16	24	3 7/16	4	12-Hole	34 5/8"	16 1/2"	2 1/2"	4 1/8"	2 1/2"	30 1/4"	15 1/8"	3 1 1/16"	1 3/16"	3 3/8"	20		

Part No.	Dimensions															Wt. Lbs.
	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	AB		
SCTE06 x 1 1/2"	4 1/16"	4 7/16"	3 15/32"	5/8"	3 15/16"	2 1/32"	3/16"	7/16"	4 25/64"	-	-	-	7/16"	-	6.7	
SCTE09 x 1 1/2"	4 11/16	6 1/4	4 15/16	13/16	3 13/64	5 45/64	1/4	7/16	5 23/64	2 9/16"	-	-	9/16"	-	17.8	
SCTE09 x 2	4 11/16	6 1/4	4 15/16	13/16	3 13/64	5 45/64	1/4	7/16	5 23/64	2 9/16"	-	-	9/16"	-	17.7	
SCTE10 x 1 1/2"	4 3/4	6 5/8	4 1/8	5/8	3 3/8	6 1/8	1/4	7/16	5 45/64	2 17/32	-	-	9/16"	-	20.6	
SCTE10 x 2	4 3/4	6 5/8	4 1/8	5/8	3 3/8	6 1/8	1/4	7/16	5 45/64	2 17/32	-	-	9/16"	-	20.5	
SCTE12 x 2	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	1 1/16"	-	33.8	
SCTE12 x 2 7/16	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	1 1/16"	-	33.5	
SCTE12 x 3	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	1 1/16"	-	33.3	
SCTE14 x 2 7/16	6 3/4	8 15/16	6 23/32	1 3/32	4 11/16	8 27/64	5/16	9/16	7 39/64	3	-	-	1 1/16"	-	42.4	
SCTE14 x 3	6 3/4	8 15/16	6 23/32	1 3/32	4 11/16	8 27/64	5/16	9/16	7 39/64	3	-	-	1 1/16"	-	42.2	
SCTE16 x 3	7 7/16	10	8	1 5/8	4 57/64	9 17/64	5/16	1 1/16	8 23/32	3 3/4	-	-	1 1/16"	-	51.1	
SCTE18 x 3	8	11	9 1/2	3 9/16	2 25/64	7 37/64	5/16	1 1/16	10 19/32	10 47/64	7 63/64"	2 15/16"	1 1/16"	-	67.9	
SCTE18 x 3 7/16	8	11	9 1/2	3 9/16	2 25/64	7 37/64	5/16	1 1/16	10 19/32	10 47/64	7 63/64"	2 15/16"	1 1/16"	-	67.7	
SCTE20 x 3	9 5/8	12 3/16	10 23/32	4 15/32	2 13/64	8 3/16	3/8	1 1/16	11 23/32	11 63/64	9 1/32	3 11/32	1 3/16"	-	96.9	
SCTE20 x 3 7/16	9 5/8	12 3/16	10 23/32	4 15/32	2 13/64	8 3/16	3/8	1 1/16	11 23/32	11 63/64	9 1/32	3 11/32	1 3/16"	-	96.7	
SCTE24 x 3 7/16	10	14 1/4	13 23/32	7 19/32	31/32	5 33/64	3/8	1 1/16	10 7/8	13 55/64	13 1/8	9 7/32	▲13/16"	3 5/16"	133.0	

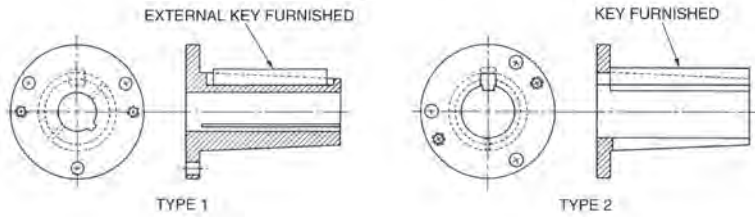
Notes: Browning trough ends are drilled to fit CEMA Standard Troughs. The center holes are drilled to fit Browning screw conveyor drives.

▲2, "Z" holes in bottom flange only; no holes in top flange.

Each Series 3000 OtN can be ordered with a Tapered Bushed Output. This "33B" mounting configuration will include the appropriate bushing kit unassembled when a bore is defined at order entry. The table below shows the various stocked bushing bores for each OtN frame that can be specified. Each bushing kit is supplied with bushing, hardware for mounting and a stabilizer ring. If bushings are required as a spare or bore changed in the field, refer to the OtN 3000 frame and select the required kit from below.



Stabilizer Ring



OtN Series

OtN Frame	Meas. Unit	Bushing Number	Bore ¹	Shaft Keyseat Required	Type
31	Inch	105TBP100	1"	1/4 x 1/8 x 2 1/2	2
		105TBP103	1 3/16"	1/4 x 1/8 x 2 1/2	2
		105TBP104	1 1/4"	1/4 x 1/8 x 2 1/2	2
		105TBP105	1 5/16"	5/16 x 5/32 x 2 1/2	2
	Metric *	105TBP30MM	30 mm	8 x 3.5 x 65 (mm)	2
32 & 33	Inch	107TBP105	1 5/16"	5/16 x 5/32 x 3 7/8	2
		107TBP106	1 3/8"	5/16 x 5/32 x 3 7/8	2
		107TBP107	1 7/16"	3/8 x 3/16 x 3 7/8	2
	Metric *	107TBP30MM	30 mm	8 x 3.5 x 100 (mm)	2
		107TBP35MM	35 mm	10 x 4 x 100 (mm)	2
33A	Inch	115TBP107	1 7/16	3/8 x 3/16 x 4 1/8	2
		115TBP108	1 1/2	3/8 x 3/16 x 4 1/8	2
		115TBP110	1 5/8	3/8 x 3/16 x 4 1/8	2
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2
	Metric *	115TBP40MM	40 mm	12 x 4 x 105 (mm)	2
		115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2
34	Inch	115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2
	Metric *	115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2

OtN Frame	Meas. Unit	Bushing Number	Bore ¹	Shaft Keyseat Required	Type
35	Inch	207TBP200	2	1/2 x 1/4 x 5 1/8	2
		207TBP202	2 1/8	1/2 x 1/4 x 5 1/8	2
		207TBP203	2 3/16	1/2 x 1/4 x 5 1/8	2
		207TBP204	2 1/4	1/2 x 1/4 x 5 1/8	2
		207TBP207	2 7/16	5/8 x 5/16 x 5 1/8	2
	Metric *	207TBP50MM	50 mm	14 x 4.5 x 130 (mm)	2
		207TBP60MM	60 mm	18 x 5.5 x 130 (mm)	2
36	Inch	215TBP207	2 7/16	5/8 X 5/16 X 5 5/8	2
		215TBP208	2 1/2	5/8 X 5/16 X 5 5/8	2
		215TBP211	2 11/16	5/8 X 5/16 X 5 5/8	2
		215TBP215	2 15/16	3/4 X 3/8 X 5 5/8	2
	Metric *	215TBP60MM	60 mm	18 x 5.5 x 140 (mm)	2
		215TBP70MM	70 mm	20 x 6 x 140 (mm)	2
37	Inch	307TBP214	2 7/8	3/4 x 3/8 x 6 3/4	2
		307TBP215	2 15/16	3/4 x 3/8 x 6 3/4	2
		307TBP300	3	3/4 x 3/8 x 6 3/4	2
		307TBP306	3 3/8	7/8 x 7/16 x 6 3/4	2
		307TBP307	3 7/16	7/8 x 7/16 x 6 3/4	2
		307TBP75MM	75 mm	20 x 6 x 170 (mm)	2
	Metric *	307TPB80MM	80 mm	22 x 7 x 170 (mm)	2
		307TBP85MM	85 mm	22 x 7 x 170 (mm)	2

¹ Bushing bore shown must be selected by customer based on complete application details.
* Metric bushings have metric bores and require metric keyseats as shown in mm.

AGMA Application Classifications

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Agitators (Mixers)				Cranes (Continued)			
Pure Liquids	—	1.00	1.25	Boom Hoist	Refer to Application Engineering		
Liquids & Solids	1.00	1.25	1.50	Trolley Drive	Refer to Application Engineering		
Liquids - Variable Density	1.00	1.25	1.50	(Gantry Drive)			
				(Traction Drive)	Refer to Application Engineering		
Blowers				Mill Duty			
Centrifugal	1.00	1.25	—	Main	Refer to Application Engineering		
Lobe	1.00	1.25	1.50	Auxiliary	Refer to Application Engineering		
Vane	—	1.00	1.25	Bridge & Trolley Travel	Refer to Application Engineering		
Brewing and Distilling				Industrial Duty			
Bottling Machinery	—	1.00	1.25	Main	1.25	1.50	1.75
Brew Kettles, Continuous Duty	—	1.00	1.25	Auxiliary	Refer to Application Engineering		
Cookers - Continuous Duty	—	1.00	1.25	Bridge & Trolley Travel	Refer to Application Engineering		
Mash Tubs - Continuous Duty	—	1.00	1.25				
Scale Hoppers, Frequent Starts	1.00	1.25	1.50	Crusher			
Can Filling Machines	—	1.00	1.25	Stone or Ore	1.50	1.75	2.00
Car Dumpers	1.25	1.50	1.75	Dredges			
Car Pullers	1.00	1.25	1.50	Cable Reels	1.00	1.25	1.50
Clarifiers	—	1.00	1.25	Conveyors	1.00	1.25	1.50
Classifiers	1.00	1.25	1.50	Cutter Head Drives	1.25	1.50	1.75
Clay Working Industry				Pumps	1.00	1.25	1.50
Brick Press	1.25	1.50	1.75	Screen Drives	1.25	1.50	1.75
Briquette Machine	1.25	1.50	1.75	Stackers	1.00	1.25	1.50
Pug Mill	1.00	1.25	1.50	Winches	1.00	1.25	1.50
Compactors	1.50	1.75	2.00	Elevators			
Compressors				Bucket	1.00	1.25	1.50
Centrifugal	—	1.00	1.25	Centrifugal Discharge	—	1.00	1.25
Lobe	1.00	1.25	1.50	Escalators	Refer to Application Engineering		
Reciprocating, Multi - Cylinder	1.00	1.25	1.50	Freight	Refer to Application Engineering		
Reciprocating, Single - Cylinder	1.25	1.50	1.75	Gravity Discharge	—	1.00	1.25
Conveyors - General Purpose				Extruders			
Uniformly Loaded or Fed	—	1.00	1.25	General	1.25	1.25	1.25
Not Uniformly Fed	1.00	1.25	1.50	Plastics			
Reciprocating or Shaker	1.25	1.50	1.75	(a) Variable Speed Drive	1.50	1.50	1.50
				(b) Fixed Speed Drive	1.75	1.75	1.75
Cranes				Rubber			
Dry Dock				(a) Continuous Screw Operation	1.50	1.50	1.50
Main Hoist	1.25	1.50	1.75	(b) Intermittent Screw Operation	1.75	1.75	1.75
Auxiliary	1.25	1.50	1.75	Fans			
Boom Hoist	1.25	1.50	1.75	Centrifugal	—	1.00	1.25
Slewing Drive	1.25	1.50	1.75	Cooling Towers	Refer to Application Engineering		
Traction Drive	1.50	1.50	1.50	Forced Draft	1.25	1.25	1.25
Container				Induced Draft	1.00	1.25	1.50
Main Hoist	Refer to Application Engineering			Industrial & Mine	1.00	1.25	1.50



Speed Reducers

OtN
SERIES **2000**
3000

AGMA Application Classifications

OtN Series

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Feeders				Metal Mills			
Apron	—	1.25	1.50	Draw Bench Carriage & Main Drive	1.00	1.25	1.50
Belt	1.00	1.25	1.50	Runout Table			
Disc	—	1.00	1.25	Non-reversing			
Reciprocating	1.25	1.50	1.75	Group Drives	1.00	1.25	1.50
Screw	1.00	1.25	1.50	Individual Drives	1.50	1.50	1.75
				Reversing	1.50	1.50	1.75
Food Industry				Slab Pushers	1.25	1.25	1.50
Cereal Cooker	—	1.00	1.25	Shears	1.50	1.50	1.75
Dough Mixers	1.00	1.25	1.50	Wire Drawing	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50	Wire Winding Machine	1.00	1.25	1.50
Slicers	1.00	1.25	1.50				
				Metal Strip Processing Machinery			
Generators and Exciters	—	1.00	1.25	Bridles	1.25	1.25	1.50
				Coilers & Uncoilers	1.00	1.00	1.25
Hammer Mills	1.50	1.50	1.75	Edge Trimmers	1.00	1.25	1.50
				Flatteners	1.00	1.25	1.50
Hoists				Loopers (Accumulators)	1.00	1.00	1.00
Heavy Duty	1.25	1.50	1.75	Pinch Rolls	1.00	1.25	1.50
Medium Duty	1.00	1.25	1.50	Scrap Choppers	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50	Shears	1.50	1.50	1.75
				Slitters	1.00	1.25	1.50
Laundry Tumblers	1.00	1.25	1.50				
				Mills, Rotary Type			
Laundry Washers	1.00	1.25	1.50	Ball & Rod			
				Spur Ring Gear	1.50	1.50	1.75
Lumber Industry				Helical Ring Gear	1.50	1.50	1.50
Barkers				Direct Connected	1.50	1.50	1.75
- Spindle Feed	1.25	1.25	1.25	Cement Kilns	1.50	1.50	1.50
- Main Drive	1.50	1.50	1.50	Dryers & Coolers	1.50	1.50	1.50
Conveyors							
- Burner	1.25	1.25	1.50	Mixers, Concrete	1.00	1.25	1.50
- Main or Heavy Duty	1.50	1.50	1.50				
- Main Log	1.50	1.50	1.50	Paper Mills			
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50	Agitator (Mixer)	1.50	1.50	1.50
- Slab	1.50	1.50	1.75	Agitator for Pure Liquids	1.25	1.25	1.25
- Transfer	1.25	1.25	1.50	Barkers - Mechanical	1.75	1.75	1.75
Chains				Barking Drums	1.75	1.75	1.75
- Floor	1.50	1.50	1.50	Beater	1.50	1.50	1.50
- Green	1.50	1.50	1.50	Breaker Stack	1.25	1.25	1.25
Cut-Off Saws				❖ Calender	1.25	1.25	1.25
- Chain	1.50	1.50	1.50	Chipper	1.75	1.75	1.75
- Drag	1.50	1.50	1.50	Chip Feeder	1.50	1.50	1.50
Debarking Drums	1.50	1.50	1.75	Coating Rolls	1.25	1.25	1.25
Feeds				Conveyors			
- Edger	1.25	1.25	1.50	Chip, Bark, Chemical	1.25	1.25	1.25
- Gang	1.50	1.50	1.50	Log (Including Slab)	1.75	1.75	1.75
- Trimmer	1.25	1.25	1.50	Couch Rolls	1.25	1.25	1.25
Log Deck	1.50	1.50	1.50	Cutter	1.75	1.75	1.75
Log Hauls - Incline-Well Type	1.50	1.50	1.50	Cylinder Molds	1.25	1.25	1.25
Log Turning Devices	1.50	1.50	1.50	❖ Dryers			
Planner Feed	1.25	1.25	1.25	Paper Machine	1.25	1.25	1.25
Planer Tilting Hoists	1.50	1.50	1.50	Conveyor Type	1.25	1.25	1.25
Rolls - Live-Off Bearing.-Roll Cases	1.50	1.50	1.50	Embossor	1.25	1.25	1.25
Sorting Table	1.25	1.25	1.50	Extruder	1.50	1.50	1.50
Tipple Hoist	1.25	1.25	1.50	Fourdrinier Rolls (Includes Lump Breaker, Dandy Roll, Wire Turning, and Return Rolls)	1.25	1.25	1.25
Transfers				Jordan	1.25	1.25	1.25
- Chain	1.50	1.50	1.50	Kiln Drive	1.50	1.50	1.50
- Causeway	1.50	1.50	1.50	Mt. Hope Roll	1.25	1.25	1.25
Tray Drives	1.25	1.25	1.50				
Veneer Lathe Drives	Refer to Application Engineering						

AGMA Application Classifications

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Paper Mills (Continued)				Rubber Industry			
Paper Rolls	1.25	1.25	1.25	Intensive Internal Mixers			
Platter	1.50	1.50	1.50	(a) Batch Mixers	1.50	1.75	1.75
Presses - Felt & Suction	1.25	1.25	1.25	(b) Continuous Mixers	1.25	1.50	1.50
Pulper	1.50	1.50	1.75	Mixing Mill - 2 Smooth Rolls - (If corrugated rolls are used, then use the same service factors that are used for a Cracker-Warmer)	1.50	1.50	1.50
Pumps - Vacuum	1.50	1.50	1.50	Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50
Reel (Surface Type)	1.25	1.25	1.50	Cracker Warmer - 1 Corrugated Roll	1.75	1.75	1.75
Screens				Cracker - 2 Corrugated Rolls	1.75	1.75	1.75
Chip	1.50	1.50	1.50	Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25
Rotary	1.50	1.50	1.50	Refiner - 2 Rolls	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75	Calenders	1.50	1.50	1.50
Size Press	1.25	1.25	1.25				
Super Calender (See Note)	1.25	1.25	1.25	Sand Miller	1.00	1.25	1.50
Thickner							
(AC Motor)	1.50	1.50	1.50	Sewage Disposal			
(DC Motor)	1.25	1.25	1.25	Bar Screens	—	1.00	1.25
Washer				Chemical Feeders	—	1.00	1.25
(AC Motor)	1.50	1.50	1.50	Dewatering Screens	1.00	1.25	1.50
(DC Motor)	1.25	1.25	1.25	Scum Breakers	1.00	1.25	1.50
Wind and Unwind Stand	1.00	1.00	1.00	Slow or Rapid Mixers	1.00	1.25	1.50
Winders (Surface Type)	1.25	1.25	1.25	Sludge Collectors	1.00	1.00	1.25
❖ Yankee Dryers	1.25	1.25	1.25	Thickeners	1.00	1.25	1.50
				Vacuum Filters	1.00	1.25	1.50
Plastics Industry - Primary Processing				Screens			
Intensive Internal Mixers				Air Washing	—	1.00	1.25
(a) Batch Mixers	1.75	1.75	1.75	Rotary - Stone or Gravel	1.00	1.25	1.50
(b) Continuous Mixers	1.50	1.50	1.50	Traveling Water Intake	—	1.00	1.25
Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25				
Continuous Feed, Holding & Blend Mill	1.25	1.25	1.25	Sugar Industry			
Compounding Mills	1.25	1.25	1.25	Beet Slicer	1.50	1.50	1.75
Calenders	1.50	1.50	1.50	Cane Knives	1.50	1.50	1.50
				Crushers	1.50	1.50	1.50
Plastics Industry - Secondary Processing				Mills (Low Speed End)	1.50	1.50	1.50
Blow Molders	1.50	1.50	1.50				
Coating	1.25	1.25	1.25	Textile Industry			
Film	1.25	1.25	1.25	Batchers	1.00	1.25	1.50
Pipe	1.25	1.25	1.25	Calenders	1.00	1.25	1.50
Pre-Plasticizers	1.50	1.50	1.50	Cards	1.00	1.25	1.50
Rods	1.25	1.25	1.25	Dry Cans	1.00	1.25	1.50
Sheet	1.25	1.25	1.25	Dryers	1.00	1.25	1.50
Tubing	1.25	1.25	1.50	Dyeing Machinery	1.00	1.25	1.50
				Looms	1.00	1.25	1.50
Pullers - Barge Haul	1.00	1.50	1.75	Mangles	1.00	1.25	1.50
				Nappers	1.00	1.25	1.50
Pumps				Pads	1.00	1.25	1.50
Centrifugal	—	1.00	1.25	Slashers	1.00	1.25	1.50
Proportioning	1.00	1.25	1.50	Soapers	1.00	1.25	1.50
Reciprocating				Spinners	1.00	1.25	1.50
Single Acting, 3 or more cylinders	1.00	1.25	1.50	Tenter Frames	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50	Washers	1.00	1.25	1.50
Rotary				Winders	1.00	1.25	1.50
- Gear	—	1.00	1.50				
- Lobe	—	1.00	1.25				
- Vane	—	1.00	1.25				

❖ Anti-friction bearings only.

Note: A service factor of 1.0 may be applied at the base of a super calender, operating over a speed range where part of the range is constant horsepower and part of the range is constant torque, provided that the constant horsepower part is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating over the entire speed range at constant torque, or where the constant horsepower speed range is less than 1.5 to 1.



Specifications

Motor rpm 1750

OtN
SERIES 2000
3000

OtN Series

Gear Frame																	
Nom. RPM	Nom. Ratio	31		32		33	34	35	36	37	28						
				Double	Triple												
493	3.55			3.71 21.23	3242 2723												
389	4.5			4.68 18.59	3242 3008												
350	5	5.1 5.53	3132 975							RO		RO					
313	5.6			5.60 16.27	3242 3150					RO		RO					
278	6.3	6.43 4.83	3132 1074	6.61 13.95	3242 3188					RO		RO					
246	7.1	7.23 4.5	3132 1125	7.05 13.08	3242 3188					RO		RO					
219	8	7.62 4.37	3132 1151	7.97 11.57	3242 3188					RO		RO					
194	9	8.62 4.02	3132 1198	8.83 10.44	3242 3187					RO		RO					
175	10	9.72 3.73	3132 1253	10.10 9.13	3242 3188			9.78 15.62	3363 5172	9.51 25.2	3473 8113	9.47 54.65	3583 17520	9.81 64.96	3693 21573	10.1 92.68	3703 31689
156	11.2	11 3.45	3132 1312	11.60 7.95	3242 3188									10.9 61.20	3693 22583	11.5 85.80	3703 33403
140	12.5	12.5 3.18	3132 1374	12.40 7.44	3242 3190			12.3 13.31	3363 5542	12.3 23.08	3473 9610	12.3 45.48	3583 18938	12.7 55.94	3693 24051	12.3 82.31	3703 34274
125	14	14.3 2.91	3132 1439	14.10 6.54	3242 3188			14.8 12.06	3363 6042	15.2 22.45	3473 11552	14.9 38.69	3583 19516	14.6 51.34	3693 25375	13.7 72.29	3703 33528
109	16	16.1 2.69	3132 1497	15.60 5.91	3242 3188	16.1 6.07	3243 3308	16.1 11.68	3363 6366	15.5 22.27	3473 11686	15.5 35.13	3583 18434	16 48.54	3693 26292	15.5 71.65	3703 37597
97	18	17.1 2.61	3132 1543	17.70 5.21	3242 3188			18.6 10.01	3363 6303	17.5 19.65	3473 11641	18.7 32.7	3583 20701	17.9 46.68	3693 28287	17.6 68.88	3703 41040
88	20	20.3 2.31	3132 1621	19.70 4.68	3242 3188	20.4 5.11	3243 3529	20.3 9.92	3363 6817	20.1 18.14	3473 12343	20 29.43	3583 19926	19.2 48.50	3693 31524	19.9 70.18	3703 47279
78	22.4	21.5 2.24	3132 1665	22.20 4.15	3242 3185	22.9 4.72	3243 3659	23.3 8.61	3363 6791	21.3 15.9	3473 11465	23.6 26.36	3583 21060	21.4 47.99	3693 34767	22.6 70.01	3703 53564
70	25	24.6 2.03	3132 1727	26.00 3.55	3242 3191	24.1 4.53	3243 3696	24.3 8.48	3363 6976	24.8 15.23	3473 12787	24.3 25.63	3583 21084	25 44.31	3693 37501	24 69.80	3703 56711
63	28	27.4 1.90	3132 1800	28.70 3.21	3242 3185	27.3 4.08	3243 3771	28.7 7.47	3363 7258	28.6 13.43	3473 13003	27.1 23.4	3583 21468	28.6 37.44	3693 36250	26.9 58.43	3703 53210
56	31.5	30.7 1.75	3132 1857	31.50 2.93	3242 3191	30.8 3.69	3243 3848	30.6 6.89	3363 7137	31.5 12.61	3473 13447	30.5 21.2	3583 21890	31.4 35.02	3693 37226	30.4 54.12	3703 55697
49	35.5	35.6 1.58	3132 1945	36.80 2.51	3242 3194	34.8 3.3	3243 3888	34.6 5.93	3363 6946	34.8 11.41	3473 13442	34 19.34	3583 22261	35 32.08	3693 38011	34.4 50.08	3703 58321
44	40	39.1 1.46	3132 1974			39.5 2.92	3243 3905	38.3 5.37	3363 6963	39.9 9.96	3473 13453	38.6 17.11	3583 22358	39.2 29.26	3693 38830	38.1 46.88	3703 60467
39	45	44.8 1.00	3132 1549			45.2 2.56	3243 3917	43.7 4.72	3363 6983	44.1 9.01	3473 13451	42.6 15.55	3583 22426	44.1 26.16	3693 39055	42.5 43.69	3703 62860
35	50	49.4 1.00	3132 1708			51 2.27	3243 3919	50.3 4.11	3363 6999	50.6 7.85	3473 13447	49.8 13.37	3583 22540	47.8 24.20	3693 39160	47.7 40.56	3703 65497
31	56					54.1 2.14	3243 3919	53.8 3.85	3363 7012	57 7.06	3473 13623	55.5 12.03	3583 22603	54.4 21.34	3693 39300	55.9 36.50	3703 69073
28	63					64.3 1.81	3243 3940	61 3.41	3363 7042	61.9 6.58	3473 13789	62.4 10.73	3583 22667	60.1 19.37	3693 39410	63.2 32.99	3703 70583
25	71					68 1.71	3243 3936	67.8 3.07	3363 7046	69 6.01	3473 14039	70.6 9.52	3583 22753	69.6 16.79	3693 39561	68.9 30.73	3703 71678
22	80					77.7 1.5	3243 3946	77 2.71	3363 7064	77.5 5.37	3473 14089	80.6 8.36	3583 22811	75.9 15.43	3693 39647	80.4 26.78	3703 72890
19	90					86.7 1.35	3243 3962	85.7 2.44	3363 7079	87.7 4.76	3473 14132	86.5 7.81	3583 22870	85.3 13.77	3693 39764	87.4 24.68	3703 73023
18	100					97.2 1.21	3243 3982	96.4 2.17	3363 7082	95.4 4.38	3473 14146	101 6.71	3583 22943	95.1 12.38	3693 39857	98 22.08	3703 73253
16	112					113 1.04	3243 3978	113 1.86	3363 7115	108 3.88	3473 14186	109 6.23	3583 22989	108 10.93	3693 39962	109 19.90	3703 73431
14	125					124 0.95	3243 3988	125 1.68	3363 7109	124 3.39	3473 14231	121 5.62	3583 23021	124 9.54	3693 40047	123 17.68	3703 73619
12.5	140					142 0.83	3243 3990	137 1.54	3363 7142	139 3.03	3473 14258	134 5.09	3583 23090	135 8.78	3693 40126	135 16.14	3703 73763
10.9	160					156 0.76	3243 4014	160 1.32	3363 7150	154 2.74	3473 14285	159 4.3	3583 23146	157 7.57	3693 40234	152 14.37	3703 73944

Exact ratio	Gear Frame
Input H.P.	Output Torque



Specifications

Motor rpm 1450

OtN
SERIES **2000**
3000

OtN Series

Gear Frame																			
Nom. RPM	Nom. Ratio	31		32		33	34	35	36	37	28								
				Double	Triple														
408	3.55			3.71 18.48	3242 2861														
322	4.5			4.68 16.18	3242 3160														
290	5	5.1 4.81	3132 1024							RO	RO								
259	5.6			5.60 13.64	3242 3187					RO	RO								
230	6.3	6.43 4.21	3132 1130	6.61 11.56	3242 3188					RO	RO								
204	7.1	7.23 3.92	3132 1183	7.05 10.84	3242 3189					RO	RO								
181	8	7.62 3.8	3132 1208	7.97 9.59	3242 3189					RO	RO								
161	9	8.62 3.5	3132 1259	8.83 8.65	3242 3187					RO	RO								
145	10	9.72 3.25	3132 1318	10.10 7.56	3242 3186			9.78 13.6	3363 5434	9.51 21.23	3473 8249	9.47 47.56	3583 19577	9.81 55.21	3693 22129	10.1 80.66	3703 33285		
129	11.2	11 3	3132 1377	11.60 6.59	3242 3190									10.9 53.26	3693 23719	11.5 74.67	3703 35085		
116	12.5	12.5 2.77	3132 1445	12.40 6.16	3242 3187			12.3 11.59	3363 5825	12.3 17.72	3473 8905	12.3 39.58	3583 19891	12.7 48.69	3693 25265	12.3 71.64	3703 36003	12.7 86.72	2803 45000
104	14	14.3 2.53	3132 1510	14.10 5.42	3242 3189			14.8 10.01	3363 6053	15.2 15.76	3473 9788	14.9 32.82	3583 19980	14.6 44.69	3693 26659	13.7 62.92	3703 35219		
91	16	16.1 2.34	3132 1572	15.60 4.90	3242 3190	16.1 5.26	3243 3460	16.1 9.05	3363 5953	15.5 15.58	3473 9867	15.5 30.58	3583 19366	16 42.25	3693 27620	15.5 62.36	3703 39492	15.7 85.74	2803 55000
81	18	17.1 2.27	3132 1620	17.70 4.32	3242 3191			18.6 8.03	3363 6102	17.5 13.85	3473 9903	18.7 27.49	3583 21003	17.9 40.63	3693 29715	17.6 59.95	3703 43110		
73	20	20.3 2.01	3132 1703	19.70 3.88	3242 3189	20.4 4.45	3243 3709	20.3 7.76	3363 6436	20.1 12.98	3473 10660	20 25.61	3583 20927	19.2 41.74	3693 32744	19.9 61.08	3703 49662	20.1 86.45	2803 71000
65	22.4	21.5 1.95	3132 1749	22.20 3.44	3242 3187	22.9 4.1	3243 3836	23.3 6.81	3363 6483	21.3 12.07	3473 10504	23.6 22.31	3583 21512	21.4 41.77	3693 36522	22.6 61.02	3703 56345	22.8 85.88	2803 80000
58	25	24.6 1.77	3132 1817	26.00 2.94	3242 3190	24.1 3.93	3243 3870	24.3 6.75	3363 6702	24.8 11.2	3473 11349	24.3 22.28	3583 22120	25 37.74	3693 38549	24 60.75	3703 59570	25.5 82.54	2803 86000
52	28	27.4 1.65	3132 1886	28.70 2.66	3242 3186	27.3 3.48	3243 3882	28.7 5.87	3363 6883	28.6 10.14	3473 11849	27.1 20.07	3583 22222	28.6 32.59	3693 38082	26.9 50.85	3703 55888	28.3 74.38	2803 86000
46	31.5	30.7 1.52	3132 1947	31.50 2.43	3242 3194	30.8 3.09	3243 3888	30.6 5.5	3363 6876	31.5 9.48	3473 12201	30.5 17.9	3583 22306	31.4 30.28	3693 38847	30.4 47.10	3703 58502	32.5 65.52	2803 87000
41	35.5	35.6 1.38	3132 2050	36.80 2.08	3242 3194	34.8 2.75	3243 3910	34.6 4.93	3363 6969	34.8 8.84	3473 12669	34 16.12	3583 22393	35 27.27	3693 38997	34.4 43.58	3703 61252	35.7 59.65	2803 87000
36	40	39.1 1.26	3132 2056			39.5 2.43	3243 3922	38.3 4.47	3363 6995	39.9 8.03	3473 13091	38.6 14.25	3583 22474	39.2 24.43	3693 39128	38.1 40.80	3703 63512	39.4 54.04	2803 87000
32	45	44.8 0.83	3132 1552			45.2 2.13	3243 3934	43.7 3.93	3363 7017	44.1 7.49	3473 13496	42.6 12.95	3583 22540	44.1 21.79	3693 39262	42.5 38.02	3703 66020	43.7 48.73	2803 87000
29	50	49.4 0.83	3132 1711			51 1.89	3243 3938	50.3 3.42	3363 7029	50.6 6.78	3473 14017	49.8 11.13	3583 22646	47.8 20.15	3693 39353	47.7 35.30	3703 68796	50.8 41.92	2803 87000
26	56					54.1 1.78	3243 3935	53.8 3.2	3363 7034	57 6.04	3473 14066	55.5 10.02	3583 22721	54.4 17.77	3693 39497	55.9 31.74	3703 72492	57.9 36.78	2803 87000
23	63					64.3 1.5	3243 3941	61 2.83	3363 7053	61.9 5.56	3473 14062	62.4 8.93	3583 22767	60.1 16.12	3693 39583	63.2 28.17	3703 72741	64.8 32.86	2803 87000
20	71					68 1.42	3243 3945	67.8 2.55	3363 7064	69 5	3473 14096	70.6 7.92	3583 22846	69.6 13.97	3693 39726	68.9 25.90	3703 72911	70.2 30.33	2803 87000
18	80					77.7 1.25	3243 3968	77 2.25	3363 7079	77.5 4.47	3473 14154	80.6 6.96	3583 22920	75.9 12.84	3693 39818	80.4 22.28	3703 73189	81 26.59	2803 88000
16	90					86.7 1.12	3243 3967	85.7 2.03	3363 7108	87.7 3.95	3473 14154	86.5 6.49	3583 22937	85.3 11.45	3693 39905	87.4 20.54	3703 73347	87.4 24.64	2803 88000
15	100					97.2 1	3243 3971	96.4 1.81	3363 7129	95.4 3.64	3473 14188	101 5.58	3583 23027	95.1 10.29	3693 39982	98 18.37	3703 73554	102.1 21.10	2803 88000
13	112					113 0.86	3243 3971	113 1.54	3363 7110	108 3.22	3473 14209	109 5.18	3583 23069	108 9.09	3693 40111	109 16.55	3703 73705		
12	125					124 0.79	3243 4002	125 1.4	3363 7150	124 2.81	3473 14236	121 4.67	3583 23087	124 7.93	3693 40176	123 14.71	3703 73925		
10.4	140					142 0.69	3243 4003	137 1.28	3363 7165	139 2.51	3473 14255	134 4.23	3583 23159	135 7.30	3693 40265	135 13.42	3703 74022		
9.1	160					156 0.63	3243 4015	160 1.1	3363 7191	154 2.27	3473 14283	159 3.57	3583 23192	157 6.29	3693 40348	152 11.95	3703 74214		

Exact ratio	Gear Frame
Input H.P.	Output Torque



Specifications

OtN SERIES 2000 3000

Motor rpm 1160

OtN Series

Gear Frame																	
Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37		28	
				Double	Triple												
327	3.55			3.71	3242												
				16.01	3098												
258	4.5			4.68	3242												
				13.04	3183												
232	5	5.1	3132									RO		RO			
		4.17	1109														
207	5.6			5.60	3242							RO		RO			
				10.91	3187												
184	6.3	6.43	3132	6.61	3242							RO		RO			
		3.64	1221	9.25	3189												
163	7.1	7.23	3132	7.05	3242							RO		RO			
		3.39	1278	8.67	3188												
145	8	7.62	3132	7.97	3242							RO		RO			
		3.29	1308	7.67	3188												
129	9	8.62	3132	8.83	3242							RO		RO			
		3.03	1362	6.92	3187												
116	10	9.72	3132	10.10	3242		9.78	3363	9.51	3473	9.47	3583	9.81	3693	10.1	3703	
		2.81	1425	6.05	3187		11.78	5884	17.42	8461	39.91	19303	44.17	22130	69.89	36051	
104	11.2	11	3132	11.60	3242							10.9	3693	11.5	3703		
		2.6	1492	5.27	3189							44.17	24589	64.69	37994		
93	12.5	12.5	3132	12.40	3242		12.3	3363	12.3	3473	12.3	3583	12.7	3693	12.3	3703	12.7
		2.4	1565	4.93	3189		9.62	6043	15.36	9649	33.05	20762	42.17	27352	62.07	38991	69.38
83	14	14.3	3132	14.10	3242		14.8	3363	15.2	3473	14.9	3583	14.6	3693	13.7	3703	
		2.2	1641	4.33	3184		8.43	6372	14.71	11419	26.8	20394	38.70	28857	54.51	38140	
73	16	16.1	3132	15.60	3242	16.1	3243	16.1	3363	15.5	3473	15.5	3583	16	3693	15.5	3703
		2.03	1705	3.92	3190	4.55	3741	8.1	6660	14.59	11550	26.49	20970	36.59	29900	54.02	42763
64	18	17.1	3132	17.70	3242			18.6	3363	17.5	3473	18.7	3583	17.9	3693	17.6	3703
		1.97	1757	3.45	3185			6.78	6441	12.58	11243	22.2	21202	35.19	32170	51.94	46687
58	20	20.3	3132	19.70	3242	20.4	3243	20.3	3363	20.1	3473	20	3583	19.2	3693	19.9	3703
		1.74	1842	3.10	3185	3.7	3855	6.64	6884	12.03	12349	21.56	22022	36.16	35458	52.91	53774
52	22.4	21.5	3132	22.20	3242	22.9	3243	23.3	3363	21.3	3473	23.6	3583	21.4	3693	22.6	3703
		1.69	1895	2.75	3184	3.32	3883	5.74	6830	10.46	11379	18.66	22491	35.16	38428	52.71	60839
46	25	24.6	3132	26.00	3242	24.1	3243	24.3	3363	24.8	3473	24.3	3583	25	3693	24	3703
		1.53	1963	2.35	3187	3.16	3889	5.6	6950	10.09	12780	18	22339	30.46	38891	52.63	64510
41	28	27.4	3132	28.70	3242	27.3	3243	28.7	3363	28.6	3473	27.1	3583	28.6	3693	26.9	3703
		1.42	2029	2.13	3189	2.8	3904	4.76	6977	8.9	13000	16.2	22422	26.68	38970	44.05	60517
37	31.5	30.7	3132	31.50	3242	30.8	3243	30.6	3363	31.5	3473	30.5	3583	31.4	3693	30.4	3703
		1.27	2034	1.94	3187	2.49	3917	4.48	7001	8.36	13449	14.44	22493	24.43	39177	40.81	63361
33	35.5	35.6	3132	36.80	3242	34.8	3243	34.6	3363	34.8	3473	34	3583	35	3693	34.4	3703
		1.11	2061	1.66	3186	2.21	3928	3.97	7015	7.66	13614	13	22574	21.98	39290	37.75	66322
29	40	39.1	3132			39.5	3243	38.3	3363	39.9	3473	38.6	3583	39.2	3693	38.1	3703
		1.01	2060			1.95	3934	3.59	7022	6.82	13898	11.49	22651	19.69	39420	35.35	68786
26	45	44.8	3132			45.2	3243	43.7	3363	44.1	3473	42.6	3583	44.1	3693	42.5	3703
		0.66	1542			1.71	3947	3.16	7053	6.21	13987	10.44	22714	17.55	39527	32.94	71498
23	50	49.4	3132			51	3243	50.3	3363	50.6	3473	49.8	3583	47.8	3693	47.7	3703
		0.66	1701			1.52	3959	2.75	7065	5.45	14084	8.96	22789	16.23	39621	29.64	72207
21	56					54.1	3243	53.8	3363	57	3473	55.5	3583	54.4	3693	55.9	3703
						1.43	3951	2.58	7089	4.85	14119	8.06	22846	14.30	39730	25.58	73029
18	63					64.3	3243	61	3363	61.9	3473	62.4	3583	60.1	3693	63.2	3703
						1.21	3974	2.28	7103	4.48	14163	7.19	22914	12.98	39841	22.69	73238
16	71					68	3243	67.8	3363	69	3473	70.6	3583	69.6	3693	68.9	3703
						1.14	3959	2.05	7098	4.02	14166	6.37	22968	11.24	39954	20.86	73403
15	80					77.7	3243	77	3363	77.5	3473	80.6	3583	75.9	3693	80.4	3703
						1	3968	1.81	7118	3.59	14210	5.6	23052	10.32	40004	17.94	73665
13	90					86.7	3243	85.7	3363	87.7	3473	86.5	3583	85.3	3693	87.4	3703
						0.9	3985	1.63	7134	3.18	14243	5.22	23061	9.21	40123	16.53	73785
12	100					97.2	3243	96.4	3363	95.4	3473	101	3583	95.1	3693	98	3703
						0.8	3971	1.45	7139	2.93	14276	4.49	23161	8.27	40167	14.77	73925
10	112					113	3243	113	3363	108	3473	109	3583	108	3693	109	3703
						0.69	3982	1.24	7156	2.59	14286	4.16	23158	7.30	40265	13.31	74095
9	125					124	3243	125	3363	124	3473	121	3583	124	3693	123	3703
						0.63	3990	1.12	7150	2.26	14312	3.75	23174	6.37	40341	11.82	74252
8.3	140					142	3243	137	3363	139	3473	134	3583	135	3693	135	3703
						0.55	3989	1.03	7207	2.02	14340	3.4	23268	5.86	40403	10.79	74394
7.3	160					156	3243	160	3363	154	3473	159	3583	157	3693	152	3703
						0.5	3984	0.88	7191	1.82	14314	2.87	23306	5.05	40492	9.60	74524

Exact ratio Gear Frame
Input H.P. Output Torque



Specifications

Motor rpm 870

OtN
SERIES 2000
3000

OtN Series

Gear Frame														
Nom. RPM	Nom. Ratio	31		32		33	34	35	36	37	28			
				Double	Triple									
245	3.55			3.71	3242									
				12.31	3176									
193	4.5			4.68	3242									
				9.79	3186									
174	5	5.1	3132							RO	RO			
		3.41	1209											
155	5.6			5.60	3242					RO	RO			
				8.19	3190									
138	6.3	6.43	3132	6.61	3242					RO	RO			
		2.98	1333	6.93	3186									
123	7.1	7.23	3132	7.05	3242					RO	RO			
		2.78	1398	6.50	3187									
109	8	7.62	3132	7.97	3242					RO	RO			
		2.7	1431	5.75	3187									
97	9	8.62	3132	8.83	3242					RO	RO			
		2.48	1487	5.19	3187									
87	10	9.72	3132	10.10	3242	9.78	3363	9.51	3473	9.47	3583	9.81	3693	10.1
		2.3	1555	4.54	3189	9.11	6067	13.07	8464	30.73	19817	33.12	22125	57.21
78	11.2	11	3132	11.60	3242							10.9	3693	11.5
		2.13	1629	3.95	3187							33.12	24583	51.04
70	12.5	12.5	3132	12.40	3242	12.3	3363	12.3	3473	12.3	3583	12.7	3693	12.3
		1.96	1704	3.70	3191	7.32	6131	12.57	10528	25.21	21115	33.12	28643	49.10
62	14	14.3	3132	14.10	3242	14.8	3363	15.2	3473	14.9	3583	14.6	3693	13.7
		1.8	1790	3.25	3187	6.47	6521	11.3	11696	21.29	21601	31.68	31496	44.62
54	16	16.1	3132	15.60	3242	16.1	3243	16.1	3363	15.5	3473	15.5	3583	16
		1.66	1859	2.94	3190	3.53	3870	6.29	6896	11.05	11663	20.88	22039	29.96
48	18	17.1	3132	17.70	3242	18.6	3363	17.5	3473	18.7	3583	17.9	3693	17.6
		1.61	1915	2.59	3188	5.22	6612	9.82	11702	16.81	21406	28.34	34544	42.51
44	20	20.3	3132	19.70	3242	20.4	3243	20.3	3363	20.1	3473	20	3583	19.2
		1.42	2005	2.33	3192	2.81	3904	5.05	6981	9.2	12592	16.45	22404	29.30
39	22.4	21.5	3132	22.20	3242	22.9	3243	23.3	3363	21.3	3473	23.6	3583	21.4
		1.35	2019	2.06	3180	2.51	3914	4.31	6838	8.37	12140	14.05	22579	26.81
35	25	24.6	3132	26.00	3242	24.1	3243	24.3	3363	24.8	3473	24.3	3583	25
		1.19	2036	1.76	3182	2.39	3922	4.23	7000	7.94	13409	13.62	22537	23.05
31	28	27.4	3132	28.70	3242	27.3	3243	28.7	3363	28.6	3473	27.1	3583	28.6
		1.08	2058	1.60	3193	2.11	3923	3.6	7036	7.08	13789	12.25	22606	20.22
28	31.5	30.7	3132	31.50	3242	30.8	3243	30.6	3363	31.5	3473	30.5	3583	31.4
		0.97	2071	1.46	3198	1.88	3943	3.38	7043	6.48	13900	10.92	22680	18.47
25	35.5	35.6	3132	36.80	3242	34.8	3243	34.6	3363	34.8	3473	34	3583	35
		0.83	2055	1.25	3199	1.67	3957	2.99	7045	5.92	14029	9.83	22759	16.61
22	40	39.1	3132			39.5	3243	38.3	3363	39.9	3473	38.6	3583	39.2
		0.75	2039			1.47	3954	2.71	7068	5.19	14101	8.68	22815	14.87
19	45	44.8	3132			45.2	3243	43.7	3363	44.1	3473	42.6	3583	44.1
		0.5	1558			1.29	3971	2.38	7082	4.71	14144	7.88	22859	13.26
17	50	49.4	3132			51	3243	50.3	3363	50.6	3473	49.8	3583	47.8
		0.5	1718			1.14	3959	2.07	7090	4.11	14162	6.77	22958	12.25
16	56					54.1	3243	53.8	3363	57	3473	55.5	3583	54.4
						1.08	3979	1.94	7107	3.66	14206	6.08	22978	10.79
14	63					64.3	3243	61	3363	61.9	3473	62.4	3583	60.1
						0.91	3984	1.72	7145	3.37	14205	5.42	23031	9.79
12	71					68	3243	67.8	3363	69	3473	70.6	3583	69.6
						0.86	3982	1.55	7156	3.03	14237	4.81	23124	8.48
11	80					77.7	3243	77	3363	77.5	3473	80.6	3583	75.9
						0.75	3968	1.36	7131	2.7	14249	4.22	23162	7.78
10	90					86.7	3243	85.7	3363	87.7	3473	86.5	3583	85.3
						0.68	4015	1.23	7178	2.39	14273	3.94	23208	6.94
9	100					97.2	3243	96.4	3363	95.4	3473	101	3583	95.1
						0.6	3971	1.09	7155	2.2	14292	3.38	23247	6.24
8	112					113	3243	113	3363	108	3473	109	3583	108
						0.52	4001	0.93	7156	1.95	14341	3.14	23307	5.50
7	125					124	3243	125	3363	124	3473	121	3583	124
						0.48	4053	0.84	7150	1.7	14355	2.83	23318	4.80
6.2	140					142	3243	137	3363	139	3473	134	3583	135
						0.42	4061	0.77	7183	1.52	14387	2.56	23360	4.41
5.4	160					156	3243	160	3363	154	3473	159	3583	157
						0.38	4037	0.66	7191	1.37	14367	2.16	23387	3.80

Exact ratio	Gear Frame
Input H.P.	Output Torque



Specifications

OtN
SERIES **2000**
3000

Combined - Motor rpm 1750

OtN Series

Gear Frame															
Nom. RPM	Nom. Ratio	32		33		34		35		36		37		28	
16	112													110	2805A
														24.955	88650
14	125													121	2805A
														22.678	88650
12.5	140													135	2805A
														20.290	88650
10.9	160													152	2805A
														18.053	88650
9.7	180	178	3245	174	3365	172	3475	174	3585	180	3695	187	3705	169	2805A
		0.686	3960	1.252	7060	2.523	14065	4.051	22845	6.817	39775	12.067	73140	16.184	88650
8.8	200	197	3245	196	3365	194	3475	184	3585	191	3695	216	3705	192	2805A
		0.620	3960	1.111	7060	2.237	14065	3.831	22845	6.425	39775	10.447	73140	14.245	88650
7.8	224	207	3245	222	3365	220	3475	208	3585	225	3695	230	3705	212	2805A
		0.590	3960	0.981	7060	1.972	14065	3.389	22845	5.454	39775	9.811	73140	12.901	88650
7.0	250	246	3245	252	3365	250	3475	235	3585	240	3695	261	3705	247	2805A
		0.497	3960	0.864	7060	1.736	14065	2.999	22845	5.113	39775	8.646	73140	11.073	88650
6.3	280	263	3245	288	3365	286	3475	265	3585	272	3695	290	3705	276	2805A
		0.465	3960	0.756	7060	1.517	14065	2.660	22845	4.512	39775	7.781	73140	9.910	88650
5.6	315	295	3245	325	3365	322	3475	302	3585	300	3695	330	3705	310	2805A
		0.414	3960	0.670	7060	1.348	14065	2.334	22845	4.090	39775	6.838	73140	8.823	88650
4.9	355	343	3245	345	3365	342	3475	345	3585	341	3695	367	3705	351	2805A
		0.356	3960	0.631	7060	1.286	14259	2.043	22845	3.599	39775	6.149	73140	7.792	88650
4.4	400	370	3245	410	3365	386	3475	389	3585	395	3695	425	3705	400	2805A
		0.330	3960	0.531	7060	1.140	14259	1.812	22845	3.107	39775	5.309	73140	6.838	88650
3.9	450	435	3245	434	3365	437	3475	413	3585	422	3695	455	3705	430	2805A
		0.281	3960	0.502	7060	1.007	14259	1.707	22845	2.908	39775	4.959	73140	6.361	88650
3.5	500	488	3245	496	3365	482	3475	490	3585	479	3695	516	3705	500	2805A
		0.250	3960	0.439	7060	0.914	14286	1.438	22845	2.562	39775	4.373	73140	5.470	88650
3.1	560	549	3245	553	3365	548	3475	518	3585	532	3695	573	3705	542	2805A
		0.223	3960	0.394	7060	0.804	14286	1.361	22845	2.307	39775	3.938	73140	5.046	88650
2.8	630	617	3245	620	3365	626	3475	592	3585	605	3695	651	3705	599	2805A
		0.198	3960	0.351	7060	0.704	14286	1.191	22845	2.028	39775	3.466	73140	4.566	88650
2.5	710	718	3245	734	3365	707	3475	661	3585	673	3695	724	3705	665	2805A
		0.173	4032	0.303	7215	0.623	14286	1.066	22845	1.823	39775	3.117	73140	4.113	88650
2.2	800	793	3245	829	3365	750	3475	741	3585	757	3695	815	3705	789	2805A
		0.157	4032	0.269	7215	0.588	14286	0.951	22845	1.621	39775	2.769	73140	3.466	88650
1.9	900	835	3245	937	3365	891	3475	866	3585	887	3695	955	3705	857	2806A
		0.149	4032	0.238	7215	0.495	14286	0.835	23447	1.383	39775	2.363	73140	3.264	88650
1.8	1000	991	3245	1010	3365	942	3475	976	3585	979	3695	1054	3705	1002	2806A
		0.126	4032	0.221	7246	0.468	14286	0.741	23447	1.253	39775	2.141	73140	2.792	88650
1.6	1120	1062	3245	1116	3365	1185	3475	1105	3585	1074	3695	1156	3705	1118	2806A
		0.117	4032	0.200	7246	0.376	14436	0.655	23447	1.143	39775	1.952	73140	2.502	88650
1.4	1250	1189	3245	1175	3365	1355	3475	1255	3585	1254	3695	1298	3705	1256	2806A
		0.105	4032	0.190	7246	0.329	14436	0.576	23447	0.979	39775	1.792	75388	2.227	88650
1.3	1400	1384	3245	1394	3365	1529	3475	1319	3585	1504	3695	1467	3705	1421	2806A
		0.090	4032	0.160	7246	0.291	14436	0.550	23500	0.836	40747	1.585	75388	1.968	88650
1.1	1600	1493	3245	1494	3365	1622	3475	1499	3585	1607	3695	1624	3705	1622	2806A
		0.083	4032	0.150	7246	0.275	14436	0.484	23500	0.782	40747	1.432	75388	1.725	88650
0.97	1800	1756	3245	1673	3365	1926	3475	1713	3585	1823	3695	1851	3705	1741	2806A
		0.071	4032	0.134	7246	0.231	14436	0.423	23500	0.690	40747	1.257	75388	1.607	88650
0.88	2000	1968	3245	1947	3365	2037	3475	1933	3585	2025	3695	2134	3705	2026	2806A
		0.063	4032	0.115	7246	0.219	14436	0.375	23500	0.621	40747	1.090	75388	1.381	88650
0.78	2240	2213	3245	2100	3365	2329	3475	2051	3585	2301	3695	2280	3705	2198	2806A
		0.056	4032	0.106	7246	0.191	14436	0.353	23500	0.546	40747	1.020	75388	1.273	88650

Exact ratio	Gear Frame
Input H.P.	Output Torque



Specifications

OtN
SERIES **2000**
3000

Combined - Motor rpm 1750 (Continued)

OtN Series

Gear Frame															
Nom. RPM	Nom. Ratio	32		33		34		35		36		37		28	
0.70	2500	2488	3245	2470	3365	2599	3475	2436	3585	2560	3695	2588	3705	2428	2806A
		0.050	4032	0.091	7246	0.171	14436	0.298	23500	0.491	40747	0.899	75388	1.152	88650
0.63	2800	2804	3245	2768	3365	2914	3475	2576	3585	2880	3695	2874	3705	2696	2806A
		0.044	4032	0.081	7246	0.153	14436	0.281	23500	0.437	40747	0.809	75388	1.038	88650
0.56	3150	3158	3245	3113	3365	3374	3475	2944	3585	2946	3696	3265	3705	3196	2806A
		0.039	4032	0.072	7246	0.132	14436	0.246	23500	0.427	40747	0.712	75388	0.875	88650
0.49	3550	3474	3245	3500	3365	3705	3475	3286	3585	3480	3696	3632	3705	3500	2806A
		0.036	4032	0.064	7246	0.120	14436	0.221	23500	0.361	40747	0.640	75388	0.799	88650
0.44	4000	3920	3245	3945	3365	4248	3475	3685	3585	4196	3696	4086	3705	3960	2806A
		0.032	4032	0.057	7246	0.105	14436	0.197	23500	0.300	40747	0.569	75388	0.706	88650
0.39	4500	4410	3245	4443	3365	4437	3476	4266	3585	4645	3696	4790	3705	4522	2806A
		0.028	4032	0.050	7246	0.103	14419	0.170	23500	0.271	40747	0.486	75388	0.619	88650
0.35	5000	4779	3246	4887	3365	5071	3476	4684	3585	5295	3696	5268	3706	4853	2806A
		0.027	4032	0.046	7246	0.090	14419	0.155	23500	0.237	40747	0.442	75388	0.576	88650
0.31	5600	5350	3246	5515	3365	5721	3476	5371	3585	6103	3696	5954	3706	5647	2806A
		0.024	4032	0.041	7246	0.080	14419	0.135	23500	0.206	40747	0.391	75388	0.495	88650
0.28	6300	6229	3246	6204	3365	6071	3476	6625	3586	6521	3696	6592	3706	6128	2806A
		0.020	4032	0.036	7246	0.075	14419	0.111	23385	0.193	40747	0.353	75388	0.456	88650
0.25	7100	6717	3246	7014	3366	7210	3476	7008	3586	7401	3696	7513	3706	6769	2806A
		0.019	4032	0.032	7207	0.063	14419	0.105	23385	0.170	40747	0.310	75388	0.413	88650
0.22	8000	7902	3246	7888	3366	7626	3476	8009	3586	8220	3696	8660	3706	7517	2806A
		0.016	4032	0.029	7207	0.060	14419	0.092	23385	0.153	40747	0.269	75388	0.372	88650
0.19	9000	8854	3246	8868	3366	8715	3476	8938	3586	9338	3696	9254	3706	8910	2806A
		0.014	4032	0.026	7207	0.052	14419	0.083	23385	0.135	40747	0.251	75388	0.314	88650
0.18	10000	9958	3246	9997	3366	9727	3476	10023	3586	10389	3696	10502	3706		
		0.013	4032	0.023	7207	0.047	14419	0.074	23385	0.121	40747	0.221	75388		

Exact ratio	Gear Frame
Input H.P.	Output Torque



Specifications

OtN
SERIES **2000**
3000

Combined - Motor rpm 1450

OtN Series

Gear Frame															
Nom. RPM	Nom. Ratio	32		33		34		35		36		37		28	
16	112													110	2805A
														20.677	88650
14	125													121	2805A
														18.791	88650
12.5	140													135	2805A
														16.811	88650
10.9	160													152	2805A
														14.958	88650
8.1	180	178	3245	174	3365	172	3475	174	3585	180	3695	187	3705	169	2805A
		0.569	3960	1.037	7060	2.090	14065	3.356	22845	5.649	39775	9.998	73140	13.409	88650
7.3	200	197	3245	196	3365	194	3475	184	3585	191	3695	216	3705	192	2805A
		0.514	3960	0.921	7060	1.853	14065	3.174	22845	5.323	39775	8.656	73140	11.803	88650
6.5	224	207	3245	222	3365	220	3475	208	3585	225	3695	230	3705	212	2805A
		0.489	3960	0.813	7060	1.634	14065	2.808	22845	4.519	39775	8.129	73140	10.689	88650
5.8	250	246	3245	252	3365	250	3475	235	3585	240	3695	261	3705	247	2805A
		0.412	3960	0.716	7060	1.438	14065	2.485	22845	4.237	39775	7.164	73140	9.175	88650
5.2	280	263	3245	288	3365	286	3475	265	3585	272	3695	290	3705	276	2805A
		0.385	3960	0.627	7060	1.257	14065	2.204	22845	3.738	39775	6.447	73140	8.211	88650
4.6	315	295	3245	325	3365	322	3475	302	3585	300	3695	330	3705	310	2805A
		0.343	3960	0.555	7060	1.117	14065	1.934	22845	3.389	39775	5.666	73140	7.310	88650
4.1	355	343	3245	345	3365	342	3475	345	3585	341	3695	367	3705	351	2805A
		0.295	3960	0.523	7060	1.066	14259	1.693	22845	2.982	39775	5.094	73140	6.456	88650
3.6	400	370	3245	410	3365	386	3475	389	3585	395	3695	425	3705	400	2805A
		0.274	3960	0.440	7060	0.944	14259	1.501	22845	2.574	39775	4.399	73140	5.665	88650
3.2	450	435	3245	434	3365	437	3475	413	3585	422	3695	455	3705	430	2805A
		0.233	3960	0.416	7060	0.834	14259	1.414	22845	2.409	39775	4.109	73140	5.270	88650
2.9	500	488	3245	496	3365	482	3475	490	3585	479	3695	516	3705	500	2805A
		0.207	3960	0.364	7060	0.758	14286	1.192	22845	2.123	39775	3.623	73140	4.532	88650
2.6	560	549	3245	553	3365	548	3475	518	3585	532	3695	573	3705	542	2805A
		0.184	3960	0.326	7060	0.666	14286	1.127	22845	1.911	39775	3.263	73140	4.181	88650
2.3	630	617	3245	620	3365	626	3475	592	3585	605	3695	651	3705	599	2805A
		0.164	3960	0.291	7060	0.583	14286	0.986	22845	1.681	39775	2.872	73140	3.783	88650
2.0	710	718	3245	734	3365	707	3475	661	3585	673	3695	724	3705	665	2805A
		0.144	4032	0.251	7215	0.517	14286	0.883	22845	1.511	39775	2.582	73140	3.408	88650
1.8	800	793	3245	829	3365	750	3475	741	3585	757	3695	815	3705	789	2805A
		0.130	4032	0.222	7215	0.487	14286	0.788	22845	1.343	39775	2.294	73140	2.872	88650
1.6	900	835	3245	937	3365	891	3475	866	3585	887	3695	955	3705	857	2806A
		0.123	4032	0.197	7215	0.410	14286	0.692	23447	1.146	39775	1.958	73140	2.704	88650
1.5	1000	991	3245	1010	3365	942	3475	976	3585	979	3695	1054	3705	1002	2806A
		0.104	4032	0.183	7246	0.388	14286	0.614	23447	1.039	39775	1.774	73140	2.313	88650
1.3	1120	1062	3245	1116	3365	1185	3475	1105	3585	1074	3695	1156	3705	1118	2806A
		0.097	4032	0.166	7246	0.311	14436	0.542	23447	0.947	39775	1.617	73140	2.073	88650
1.2	1250	1189	3245	1175	3365	1355	3475	1255	3585	1254	3695	1298	3705	1256	2806A
		0.087	4032	0.158	7246	0.272	14436	0.478	23447	0.811	39775	1.485	75388	1.845	88650
1.0	1400	1384	3245	1394	3365	1529	3475	1319	3585	1504	3695	1467	3705	1421	2806A
		0.074	4032	0.133	7246	0.241	14436	0.455	23500	0.693	40747	1.314	75388	1.631	88650
0.9	1600	1493	3245	1494	3365	1622	3475	1499	3585	1607	3695	1624	3705	1622	2806A
		0.069	4032	0.124	7246	0.228	14436	0.401	23500	0.648	40747	1.187	75388	1.429	88650
0.81	1800	1756	3245	1673	3365	1926	3475	1713	3585	1823	3695	1851	3705	1741	2806A
		0.059	4032	0.111	7246	0.192	14436	0.351	23500	0.571	40747	1.041	75388	1.331	88650
0.73	2000	1968	3245	1947	3365	2037	3475	1933	3585	2025	3695	2134	3705	2026	2806A
		0.052	4032	0.095	7246	0.181	14436	0.311	23500	0.514	40747	0.903	75388	1.144	88650
0.65	2240	2213	3245	2100	3365	2329	3475	2051	3585	2301	3695	2280	3705	2198	2806A
		0.047	4032	0.088	7246	0.158	14436	0.293	23500	0.453	40747	0.845	75388	1.054	88650

Exact ratio	Gear Frame
Input H.P.	Output Torque

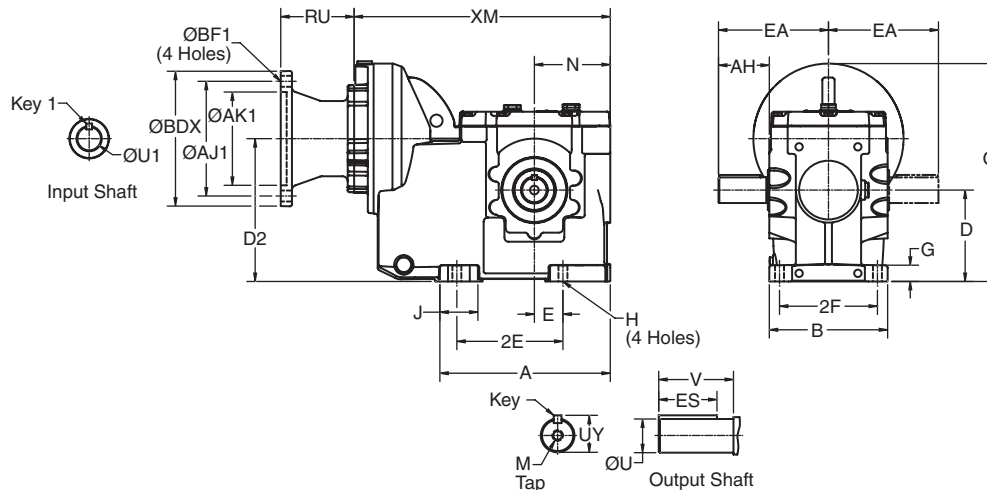
Combined - Motor rpm 1450 (Continued)

OtN Series

Gear Frame															
Nom. RPM	Nom. Ratio	32		33		34		35		36		37		28	
0.58	2500	2488 0.041	3245 4032	2470 0.075	3365 7246	2599 0.142	3475 14436	2436 0.247	3585 23500	2560 0.407	3695 40747	2588 0.745	3705 75388	2428 0.955	2806A 88650
0.52	2800	2804 0.037	3245 4032	2768 0.067	3365 7246	2914 0.127	3475 14436	2576 0.233	3585 23500	2880 0.362	3695 40747	2874 0.671	3705 75388	2696 0.860	2806A 88650
0.46	3150	3158 0.033	3245 4032	3113 0.060	3365 7246	3374 0.109	3475 14436	2944 0.204	3585 23500	2946 0.354	3696 40747	3265 0.590	3705 75388	3196 0.725	2806A 88650
0.41	3550	3474 0.030	3245 4032	3500 0.053	3365 7246	3705 0.100	3475 14436	3286 0.183	3585 23500	3480 0.299	3696 40747	3632 0.531	3705 75388	3500 0.662	2806A 88650
0.36	4000	3920 0.026	3245 4032	3945 0.047	3365 7246	4248 0.087	3475 14436	3685 0.163	3585 23500	4196 0.248	3696 40747	4086 0.472	3705 75388	3960 0.585	2806A 88650
0.32	4500	4410 0.023	3245 4032	4443 0.042	3365 7246	4437 0.085	3476 14419	4266 0.141	3585 23500	4645 0.224	3696 40747	4790 0.402	3705 75388	4522 0.513	2806A 88650
0.29	5000	4779 0.022	3246 4032	4887 0.038	3365 7246	5071 0.074	3476 14419	4684 0.128	3585 23500	5295 0.197	3696 40747	5268 0.366	3706 75388	4853 0.478	2806A 88650
0.26	5600	5350 0.020	3246 4032	5515 0.034	3365 7246	5721 0.066	3476 14419	5371 0.112	3585 23500	6103 0.171	3696 40747	5954 0.324	3706 75388	5647 0.410	2806A 88650
0.23	6300	6229 0.017	3246 4032	6204 0.030	3365 7246	6071 0.062	3476 14419	6625 0.092	3586 23385	6521 0.160	3696 40747	6592 0.292	3706 75388	6128 0.378	2806A 88650
0.25	7100	6717 0.016	3246 4032	7014 0.027	3366 7207	7210 0.052	3476 14419	7008 0.087	3586 23385	7401 0.141	3696 40747	7513 0.257	3706 75388	6769 0.342	2806A 88650
0.22	8000	7902 0.013	3246 4032	7888 0.024	3366 7207	7626 0.049	3476 14419	8009 0.076	3586 23385	8220 0.127	3696 40747	8660 0.223	3706 75388	7517 0.308	2806A 88650
0.19	9000	8854 0.012	3246 4032	8868 0.021	3366 7207	8715 0.043	3476 14419	8938 0.068	3586 23385	9338 0.112	3696 40747	9254 0.208	3706 75388	8910 0.260	2806A 88650
0.18	10000	9958 0.011	3246 4032	9997 0.019	3366 7207	9727 0.039	3476 14419	10023 0.061	3586 23385	10389 0.100	3696 40747	10502 0.184	3706 75388		

Exact ratio	Gear Frame
Input H.P.	Output Torque

2-Stage Output Shafted Foot Mount OtN31 - 32



OtN Series

Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
3132	S2	1.000	1.10	1.77	1.83	4.33	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.38	2.45	5.31	1/4 Sq.	2.03	1/2-13 X 1.12

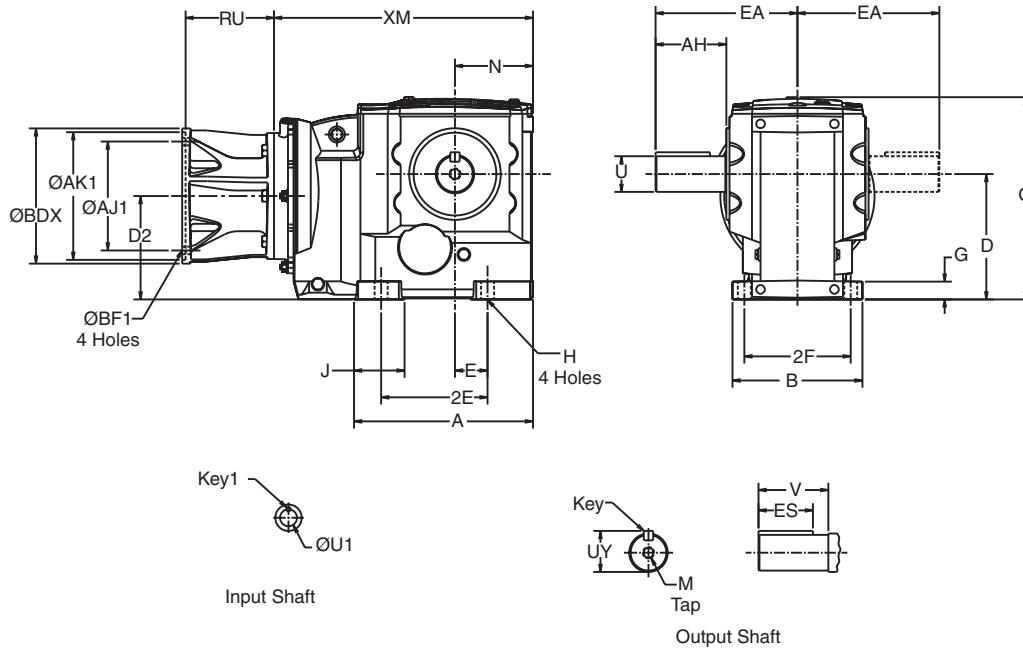
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.
³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

3-Stage Output Shafted Foot Mount OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	
														56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	12.90	-
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54		
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	14.56	-
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49		
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	16.90	17.25
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20		

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

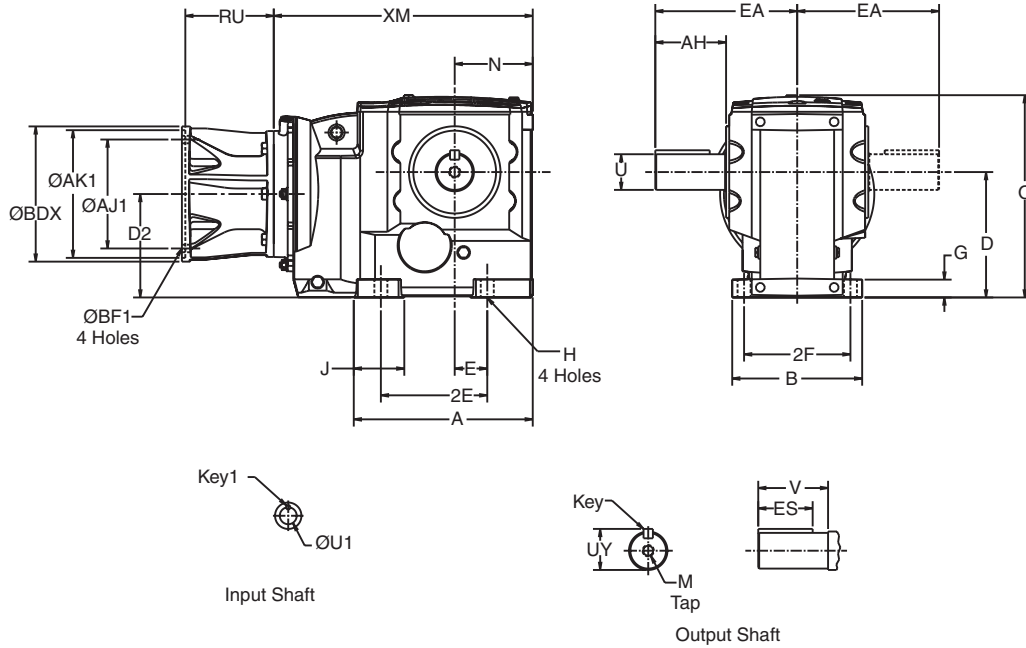
C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary. ² All rough casting dimensions may vary by .25" due to casting variations. ³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

3-Stage Output Shafted Foot Mount
OtN36 - 37, 28

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	
														182-215TC	254-365TC
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.38	23.73
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	23.38	29.06
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	30.05	30.05

Output Shaft

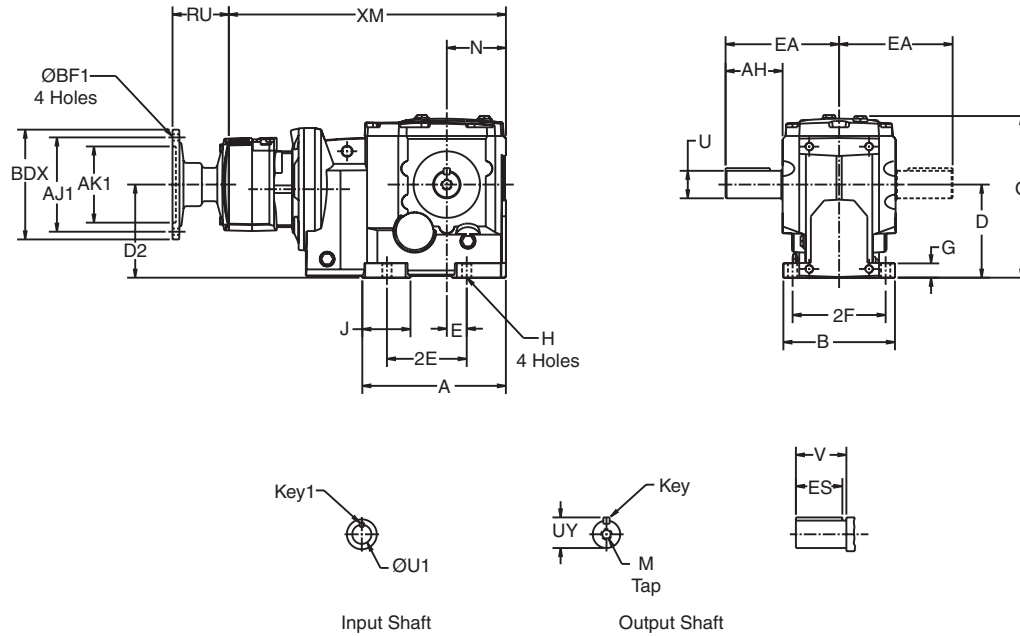
Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
28	S1	3.875	4.426	7.99	8.18	17.06	1.00 SQ.	7.25	1-8 X 1.97

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375	8.45	13.38	5/8 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary. ² All rough casting dimensions may vary by .25" due to casting variations. ³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

Combined Output Shafted Foot Mount OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90 ⁴
	S1	8.08	8.58	4.92	4.87	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
	S1	10.69	9.60	6.30	7.16	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	23.87
	S1	13.07	10.98	7.87	9.00	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 X 1.12
33,33A	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32,33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32,33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

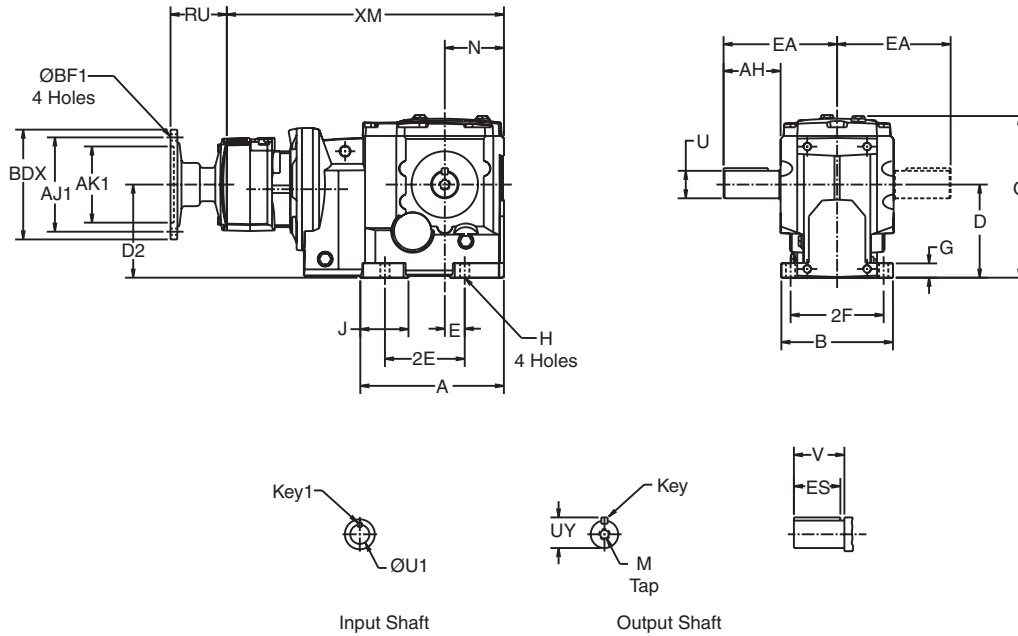
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ XM dimension when gear frame 33A is used will be 16.42.

Combined Output Shafted Foot Mount OtN36 - 37, 28A

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	
														56-215TC	254-256TC
36	S1	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	31.04	-
37	S1	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	36.37	-
28A	S1	23.23	16.14	12.4	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	37.14	37.49

Output Shaft

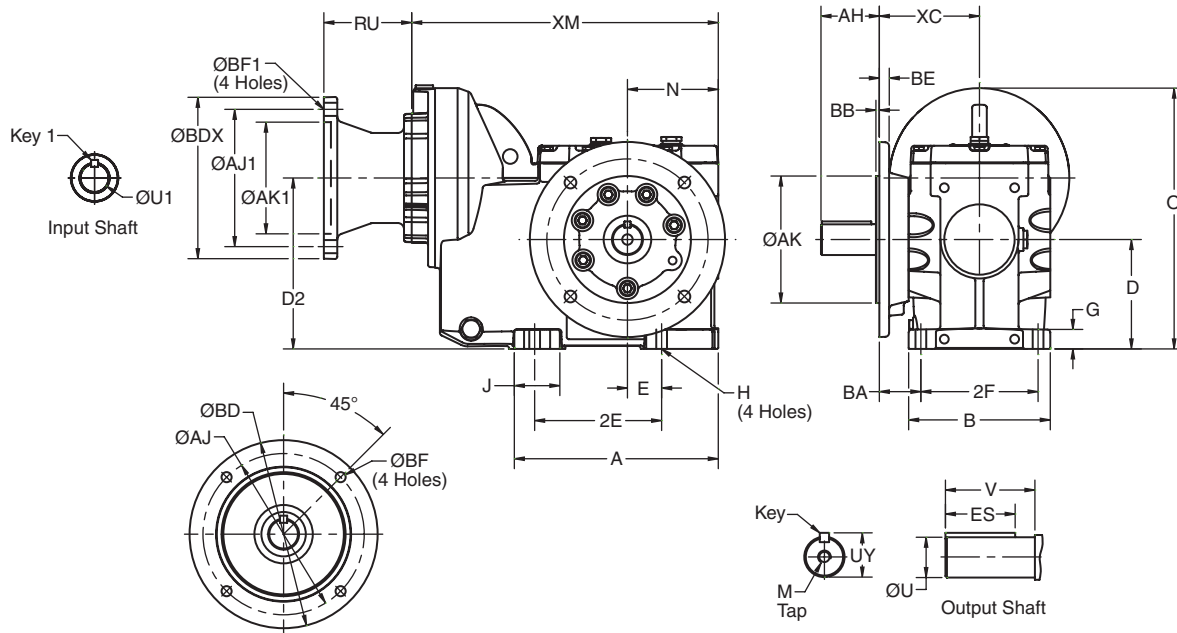
Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13
28A	S1	3.875	4.426	7.99	8.18	17.06	1.00 SQ.	7.25	1-8 X 1.97

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	28A	9.00	10.50	.50	1.875	7.09	11.02	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary. ² All rough casting dimensions may vary by .25" due to casting variations. ³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

2-Stage Output Shafted Flange Mount
OtN31 - 32

OtN Series



Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	4.04	12.36

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
3132	S2	1.000	1.10	1.97	1.97	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.36	2.35	1/4 Sq.	2.03	1/2-13 X 1.13

Output Flange

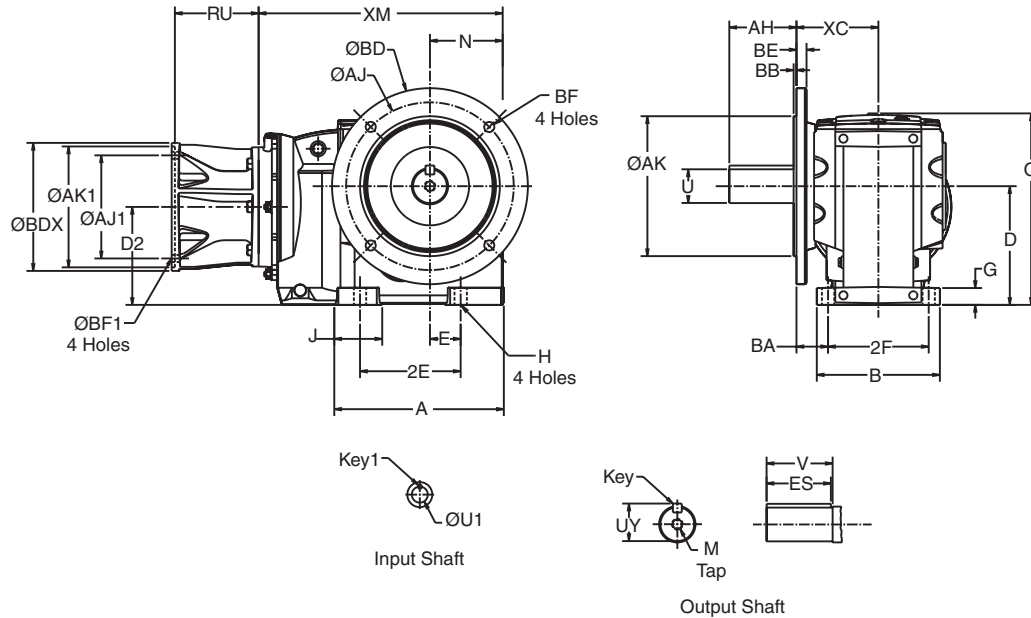
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
3132	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
3242	6	7.087	8.46	.16	9.84	.47	.55

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary. ³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

² All rough casting dimensions may vary by .25" due to casting variations.

3-Stage Output Shafted Flange Mount OtN32 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM	
																56C-215TC	254TC-286TC
32	S1,S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	10.98	-
33	S1,S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	12.90	-
34	S1,S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	16.90	17.25

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

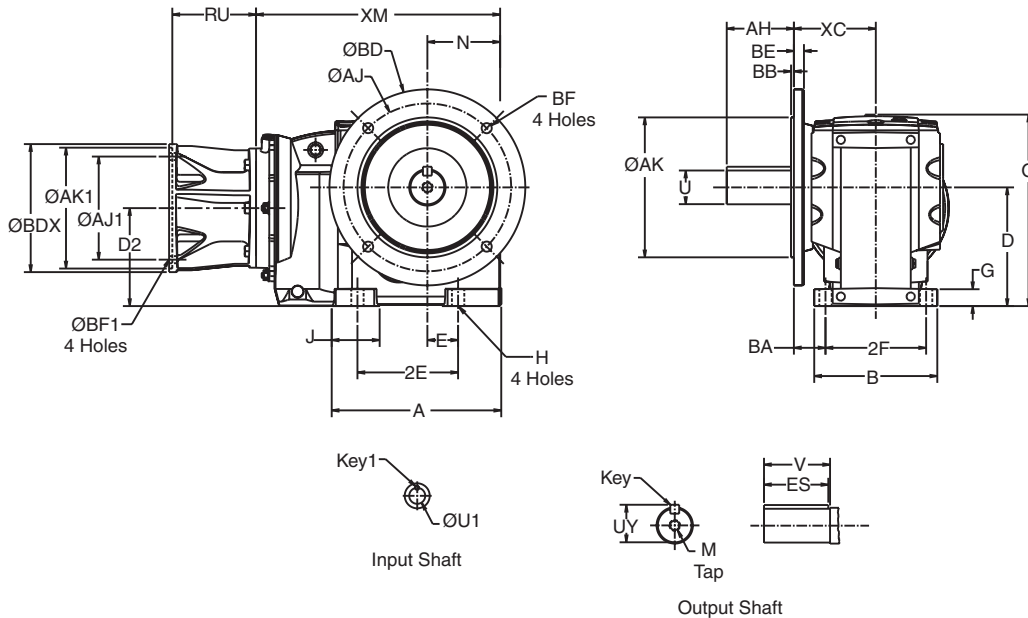
C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.
³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

3-Stage Output Shafted Flange Mount OtN36 - 37, 28



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM	
																182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	23.38	29.06
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	11.51	30.05	30.05

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 SQ.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 SQ.	6.00	1-8 X 2.13
28	S1	4.000	4.438	8.00	8.00	1.00 SQ.	7.25	1-8 X 1.97

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36	5	13.780	15.75	.236	17.70	.79	.71
37	5	13.780	15.75	.236	17.70	.79	.63
28	5	17.72	19.69	.240	21.65	.94	.71

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁴	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375 ⁴	8.45	13.38	5/8 Sq.

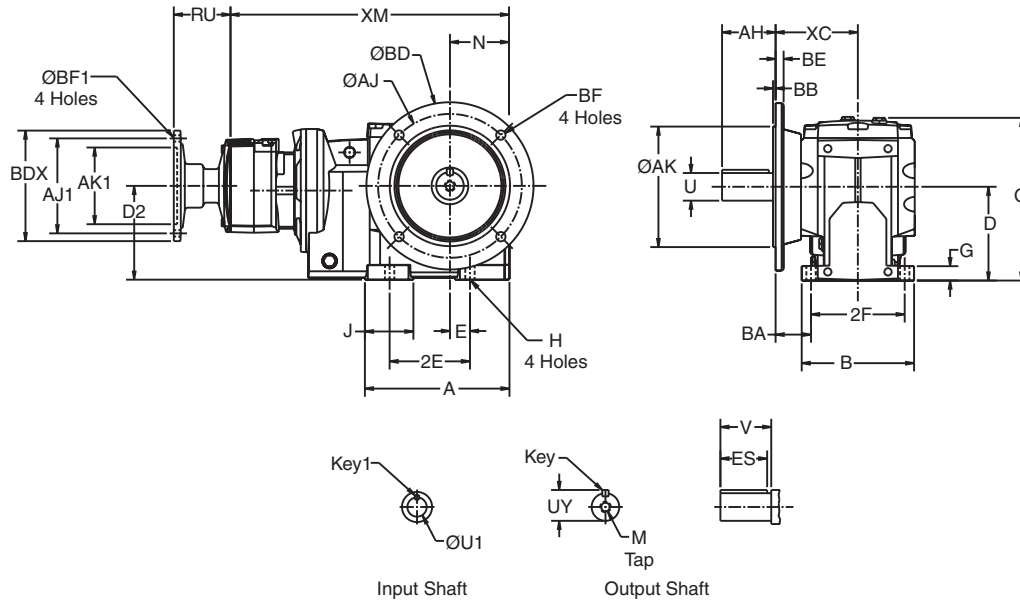
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Frame 36 and 37 utilize coupling input. This is input bore for coupling provided.

Combined Output Shafted Flange Mount OtN32 - 35



OtN Series

Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1,S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	14.49
33,33A	S1,S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	19.90 ⁴
34	S1,S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	23.87

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33,33A	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33,33A	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32,33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32,33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

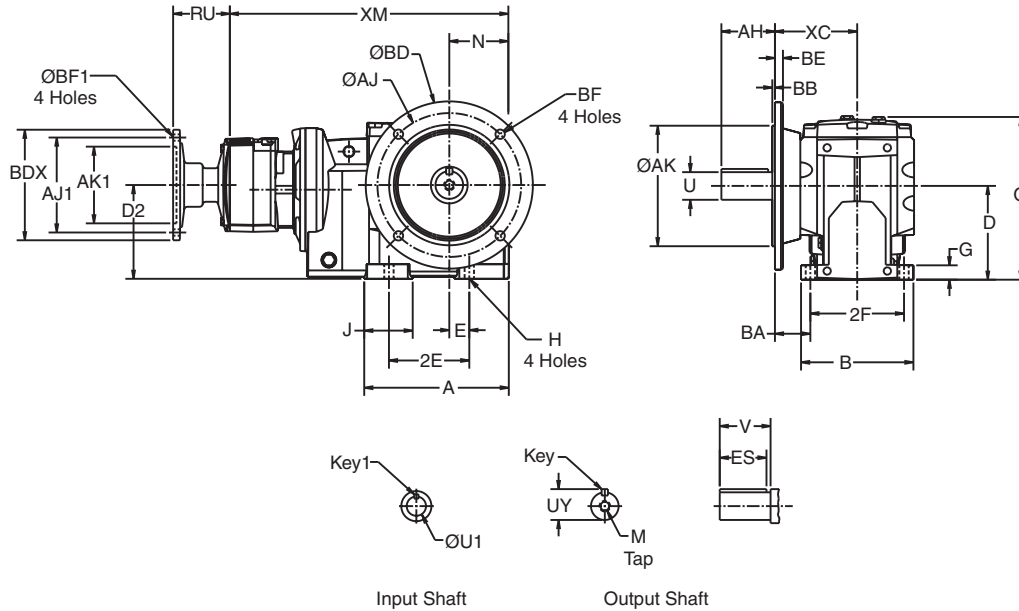
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ XM dimension when gear frame 33A is used will be 16.42.

Combined Output Shafted Flange Mount OtN36 - 37, 28A

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM	
																56-215TC	254-256TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	31.04	-
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	36.37	-
28A	S1	23.23	16.14	12.4	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	11.51	37.14	37.49

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 SQ.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 SQ.	6.00	1-8 X 2.13
28A	S1	4.000	4.438	8.00	8.00	1.00 SQ.	7.25	1-8 X 1.97

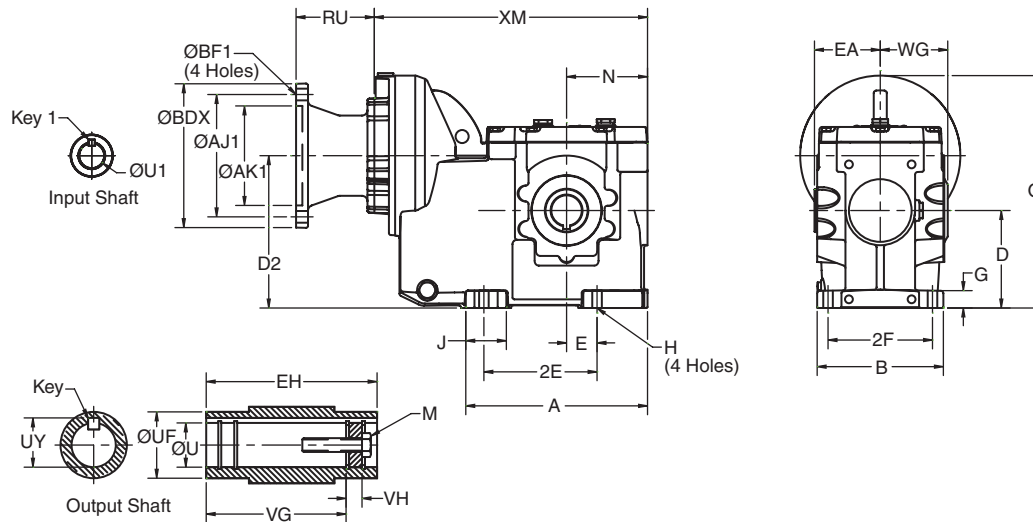
Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36	5	13.780	15.75	.236	17.70	.79	.71
37	5	13.780	15.75	.236	17.70	.79	.63
28A	5	17.72	19.69	.240	21.65	.94	.71

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	28A	9.00	10.50	.50	1.875	7.09	11.02	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary. ² All rough casting dimensions may vary by .25" due to casting variations. ³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

2-Stage Finished Bore Hollow Shaft OtN31 - 32



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,5,6}	UF	UY	VG	VH	Key ⁷	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ For details of the torque arm kit, refer to page B-129.

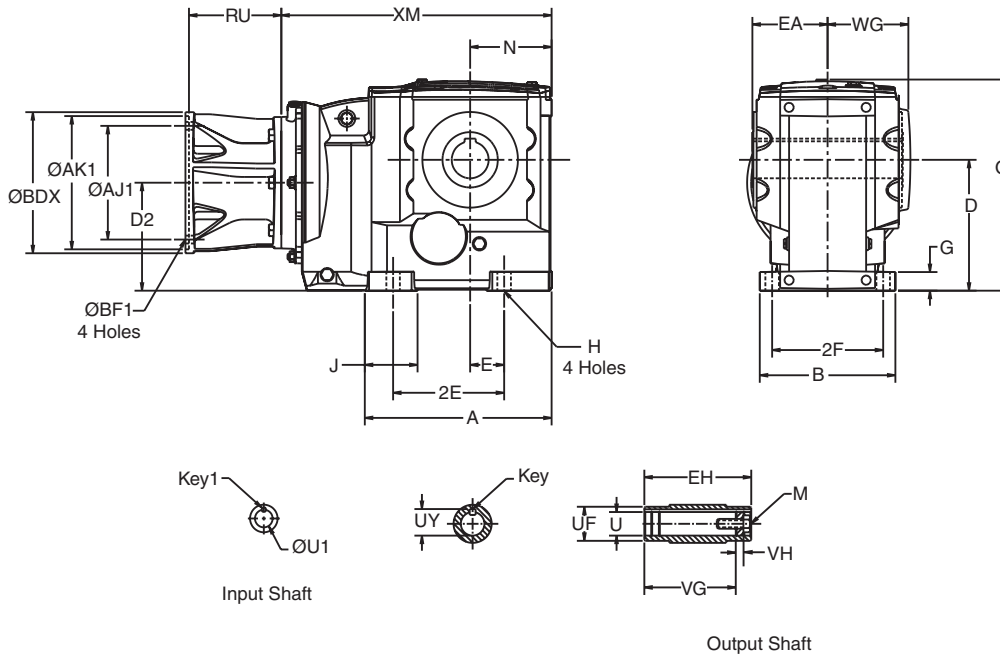
⁵ Output bore tolerances: +.0020", -.0000" for all diameters.

⁶ Refer to page B-133 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

⁷ Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft
OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	16.90	17.25

Output Shaft

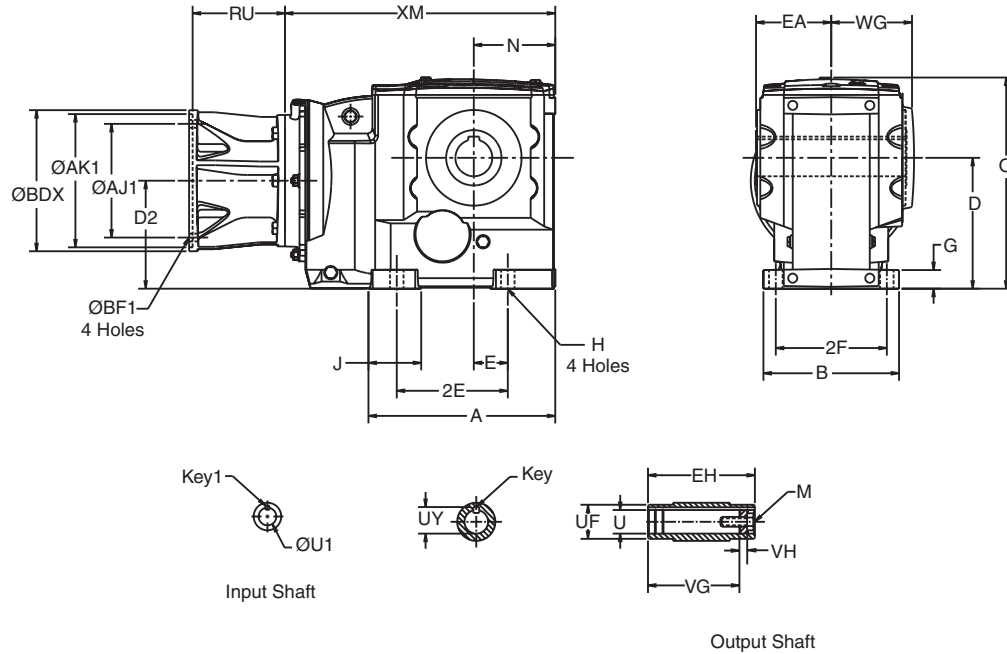
Gear Frame	Version	EA	EH	U ^{6,7}	UF	UY	VG	VH	Key ⁴	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output key supplied only on frame 34 in "S2" version.
⁵ For details of the torque arm kit, refer to page B-129.
⁶ Output bore tolerances: +.0020", -.0000" for all diameters.
⁷ Refer to page B-133 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

3-Stage Finished Bore Hollow Shaft OtN36 - 37, 28



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	23.38	29.06
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	30.05	30.05

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,5}	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁷	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375 ⁷	8.45	13.38	5/8 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

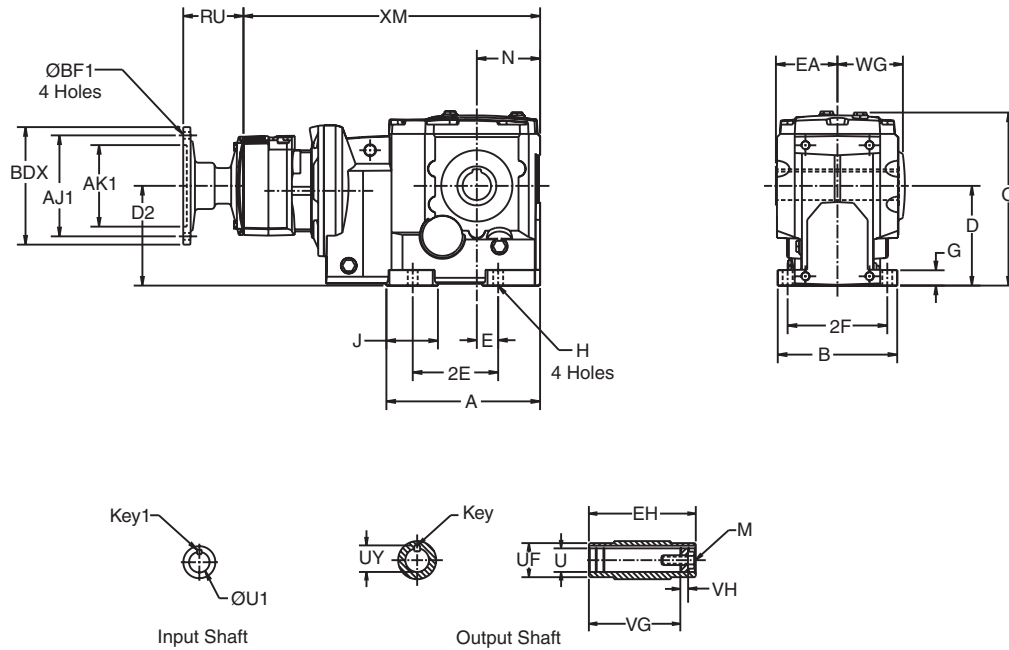
⁴ For details of the torque arm kit, refer to pages B-129 and B-130.

⁵ Output bore tolerances: +.0020", -.0000" for all diameters.

⁶ Key not supplied with reducer.

⁷ Frame 36 and 37 utilize coupling input. This is input bore for coupling provided.

Combined Finished Bore Hollow Shaft
OtN32 - 35



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	19.90 ⁸
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,7}	UF	UY	VG	VH	Key ⁵	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33,33A	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

C-Face Input

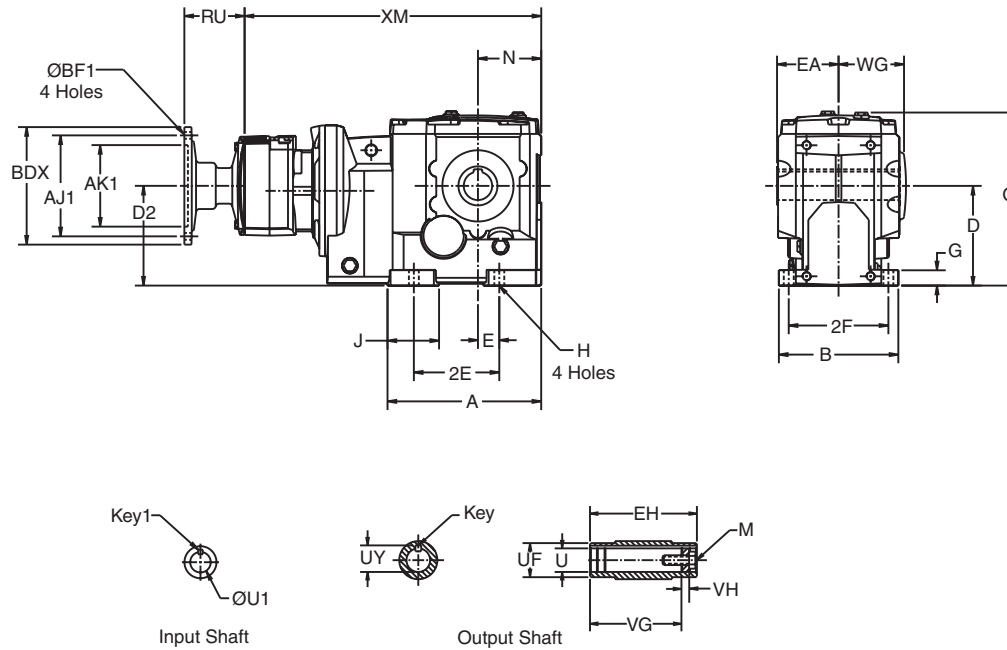
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32,33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32,33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to page B-133 by gear frame for Tapered Bushed designs if driven shaft varies from "U" dimension offered above.

⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁵ Output key supplied only on frame 34 in "S2" version.
⁶ For details of the torque arm kit, refer to page B-129.
⁷ Output bore tolerances: +.0020", -.0000" for all diameters.
⁸ XM dimension when gear frame 33A is used will be 16.42.

Combined Finished Bore Hollow Shaft OtN36 - 37, 28A

OtN Series



Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56-215TC	254-256TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	31.04	-
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	36.37	-
28A	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	37.14	37.49

Output Shaft

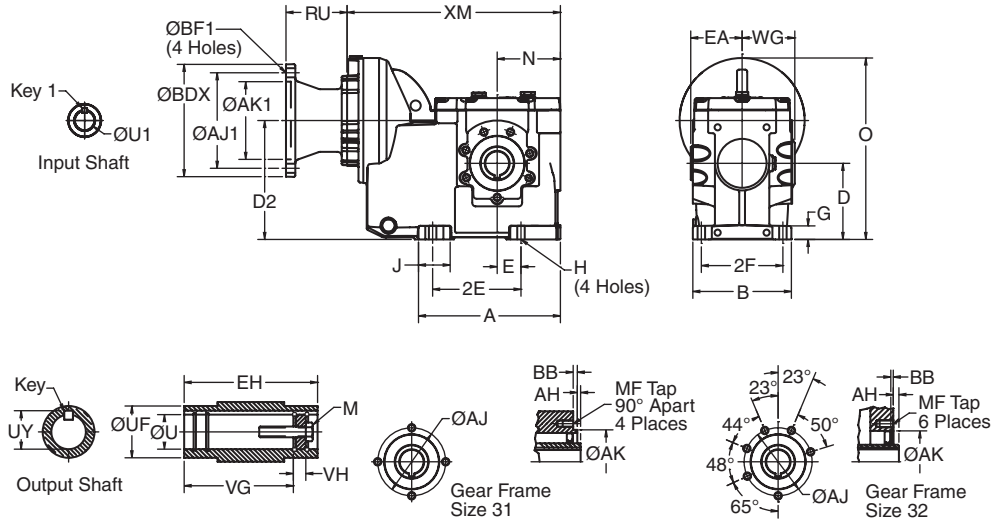
Gear Frame	Version	EA	EH	U ^{3,5}	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	28A	9.00	10.50	.50	1.875	7.09	11.02	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing

by reversing positioning of the snap rings and washer illustrated.
⁴ For details of the torque arm kit, refer to pages B-129 and B-130.
⁵ Output bore tolerances: +.0020", -.0000" for all diameters.
⁶ Key not supplied with reducer.

2-Stage Finished Bore Hollow Shaft Face Mount
OtN31 - 32



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4}	UF	UY	VG	VH	Key ⁵	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00

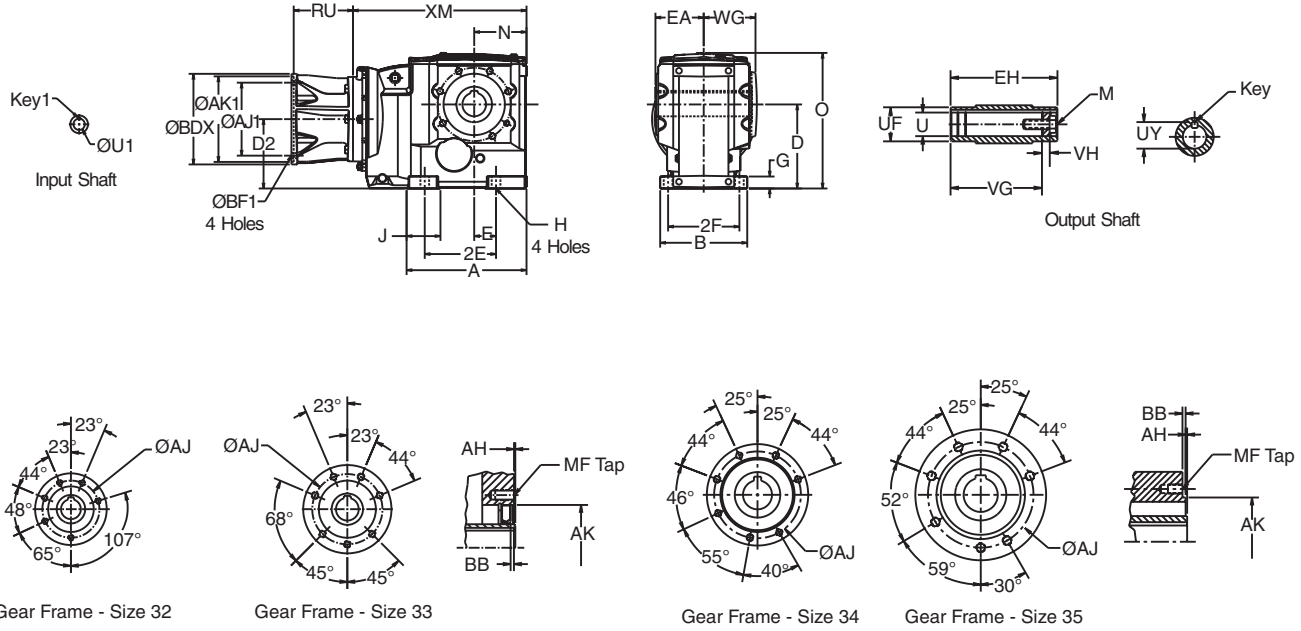
Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
31	S2	.20	3.740	3.35	.14	M8-1.25 X 12
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output bore tolerances: +.0020", -.0000" for all diameters.
⁵ Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Face Mount
OtN32 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁵	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

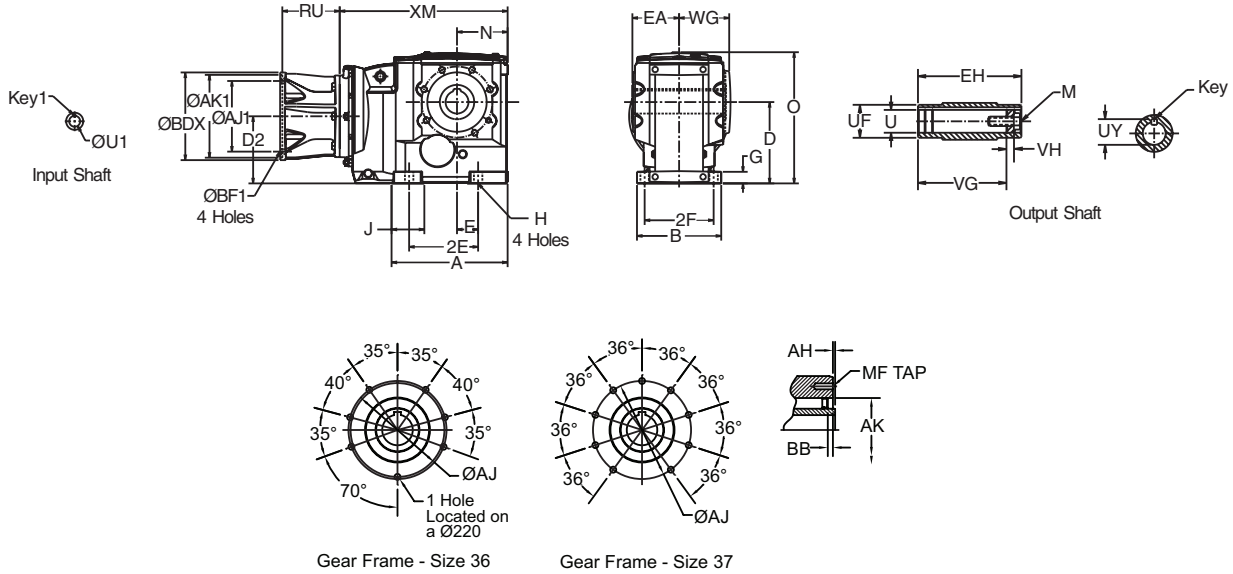
C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing

by reversing positioning of the snap rings and washer illustrated.
⁴ Output bore tolerances: +.0020", -.0000" for all diameters.
⁵ Output key supplied only on frame 34 in "S2" version.

3-Stage Finished Bore Hollow Shaft Face Mount
OtN36 - 37, 28



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	23.38	29.06
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	30.05	30.05

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4}	UF	UY	VG	VH	Key ⁵	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

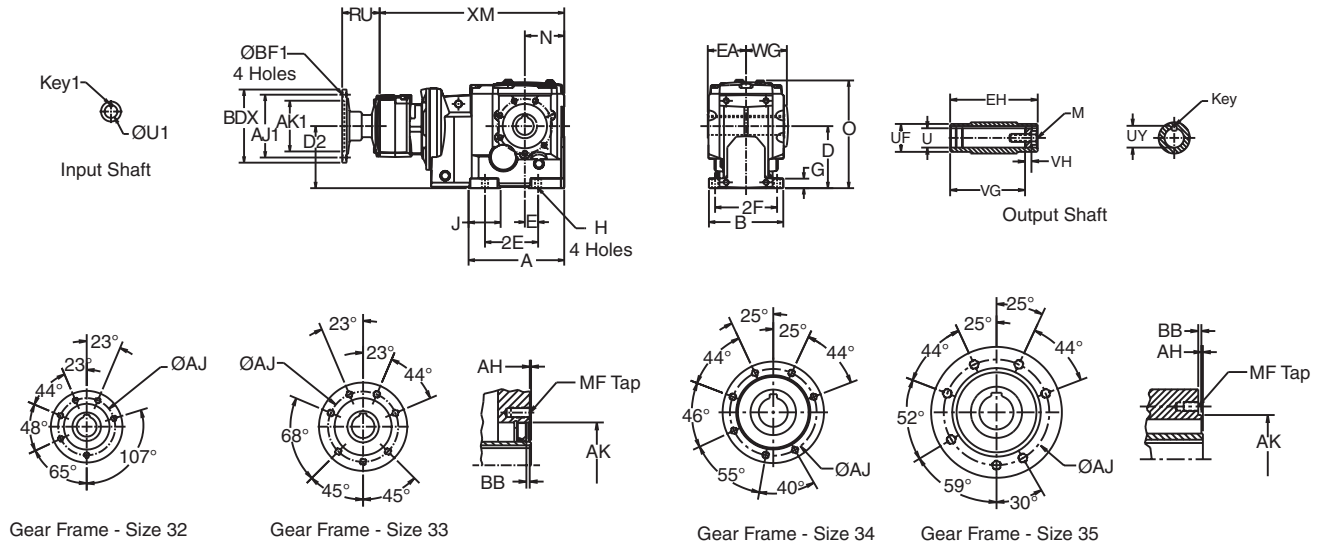
Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
28	S1	.08	15.75	13.78	.20	M16-2.0 x .22

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	36,37	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁶	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375 ⁶	8.45	13.38	5/8 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output bore tolerances: +.0020", -.0000" for all diameters.
⁵ Key not supplied with reducer.
⁶ Frame 36 and 37 utilize coupling input. This is input bore for coupling provided.

Combined Finished Bore Hollow Shaft Face Mount OtN32 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	19.90 ³
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Output Shaft

Gear Frame	Version	EA	EH	U ^{4,5}	UF	UY	VG	VH	Key ⁶	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33,33A	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33,33A	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32,33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32,33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

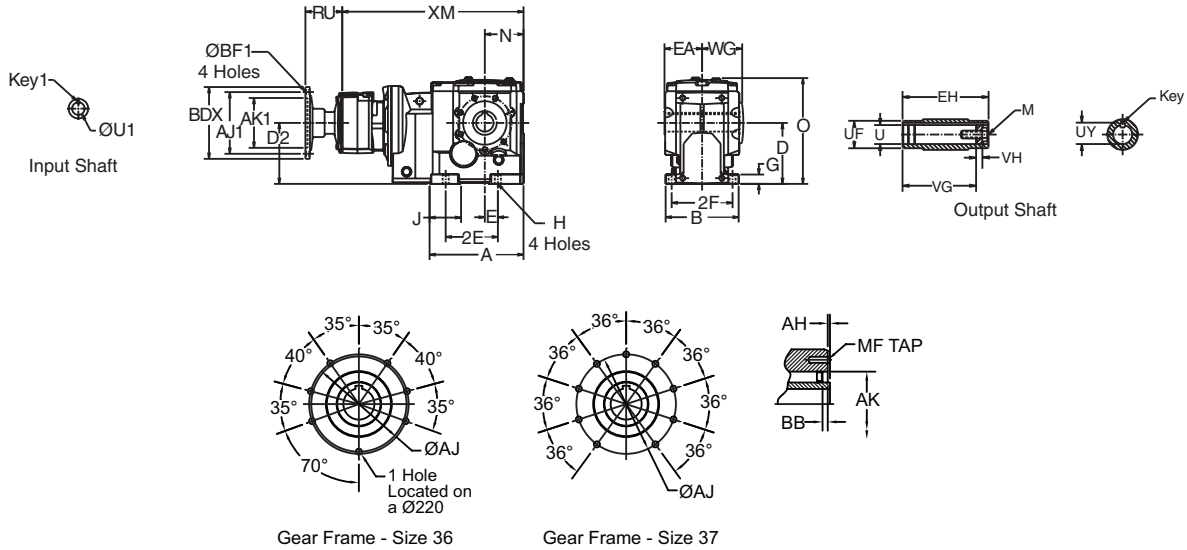
³ XM dimension when gear frame 33A is used will be 16.42.

⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁵ Output bore tolerances: +.0020", -.0000" for all diameters.

⁶ Output key supplied only on frame 34 in "S2" version.

Combined Finished Bore Hollow Shaft Face Mount
OtN36 - 37, 28A



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	
															56-215TC	254-256TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	31.04	-
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	36.37	-
28A	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	37.14	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4}	UF	UY	VG	VH	Key ⁵	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

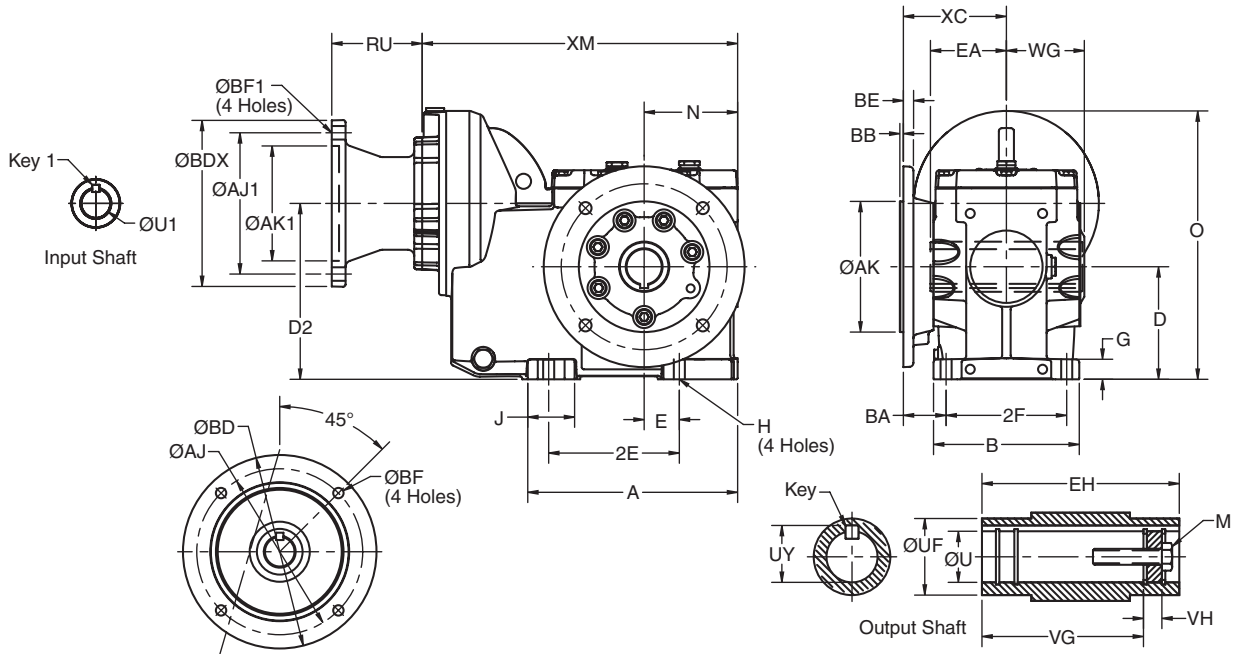
Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
36	S2	.20	9.06	5.91	.28	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	M20-2.5 X 35
28A	S1	.08	15.75	13.78	.20	M16-2.0 x .22

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	28A	9.00	10.50	.50	1.875	7.09	11.02	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output bore tolerances: +.0020", -.0000" for all diameters.
⁵ Key not supplied with reducer.

2-Stage Finished Bore Hollow Shaft Flange Mount
OtN31 - 32



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	2.85	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	3.22	4.04	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4}	UF	UY	VG	VH	Key ⁵	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
31	5	4.331	5.12	.14	6.50	.39	.35
31	6	3.740	4.53	.14	5.51	.44	.35
32	5	5.118	6.50	.14	7.87	.39	.47
32	6	7.087	8.46	.16	9.84	.47	.55

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

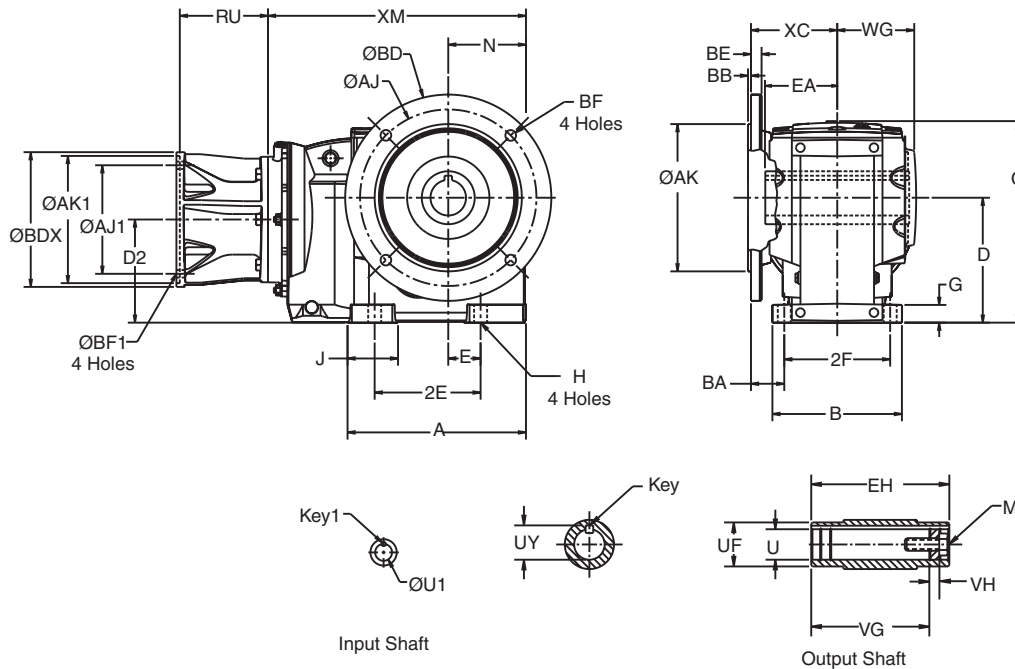
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output bore tolerances: +.0020", -.0000" for all diameters.

⁵ Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Flange Mount
OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM	
																	56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,5}	UF	UY	VG	VH	Key ⁴	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

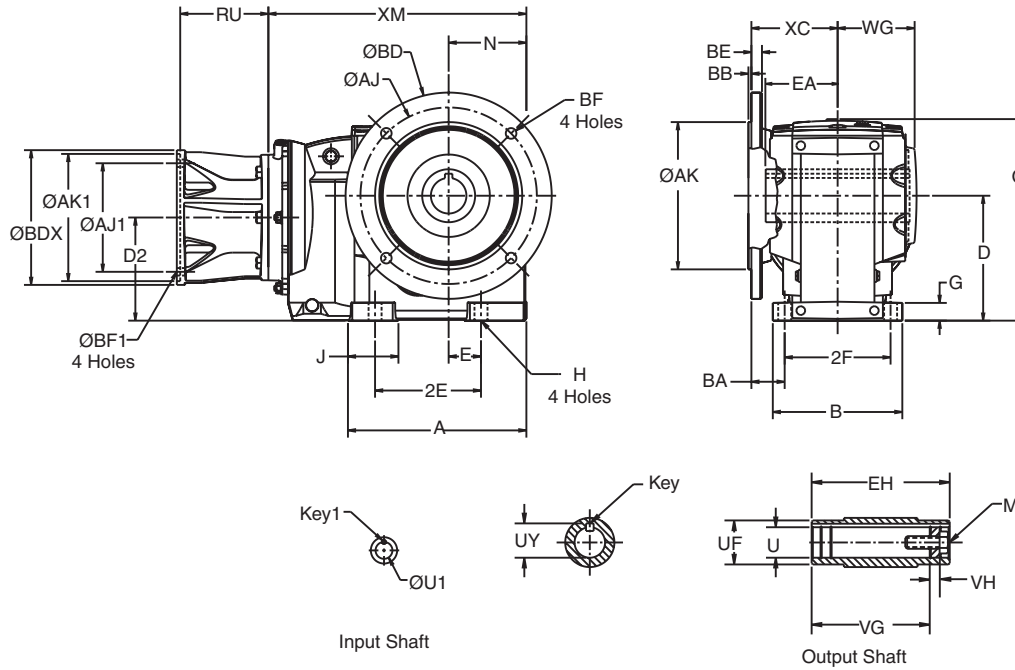
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output key supplied only on frame 34 in "S2" version.

⁵ Output bore tolerances: +.0020", -.0000" for all diameters.

3-Stage Finished Bore Hollow Shaft Flange Mount OtN36 - 37, 28



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM	
																	182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	23.38	29.06
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	9.49	11.51	30.05	30.05

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4}	UF	UY	VG	VH	Key ⁵	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

Output Flange

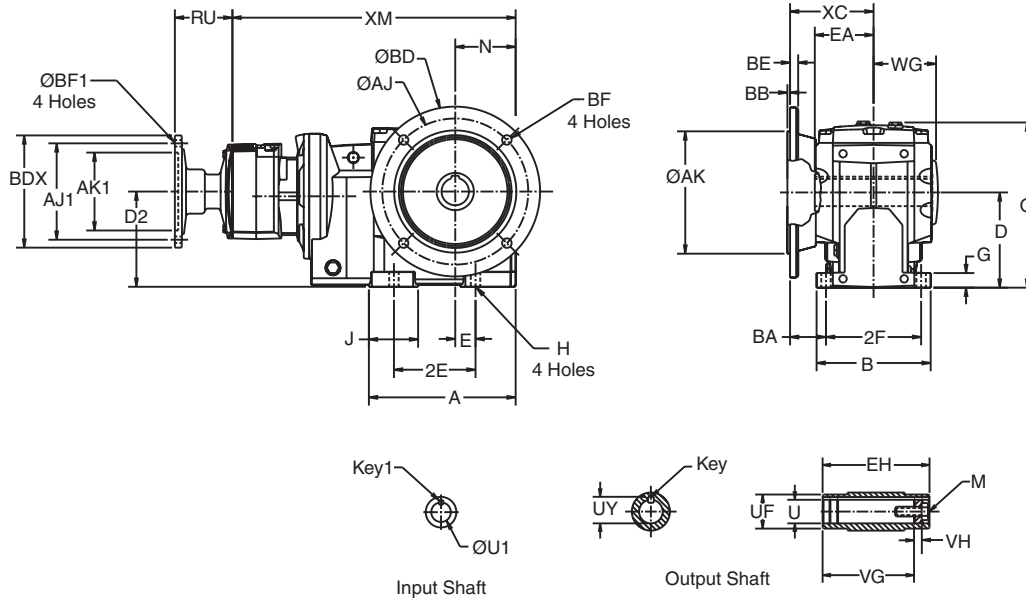
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36	5	13.78	15.75	.236	17.70	.79	.71
37	5	13.78	15.75	.236	17.70	.79	.63
28	5	17.72	19.69	.240	21.65	.94	.71

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁶	8.45	13.38	1/2 Sq.
364TC/365TC	All	11.00	12.50	.625	2.375 ⁶	8.45	13.38	5/8 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output bore tolerances: +.0020", -.0000" for all diameters.
⁵ Key not supplied with reducer.
⁶ Frame 36 and 37 utilize coupling input. This is input bore for coupling provided.

Combined Finished Bore Hollow Shaft Flange Mount
OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	19.90 ³
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	23.87

Output Shaft

Gear Frame	Version	EA	EH	U ⁶	UF	UY	VG	VH	Key ⁵	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33,33A	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

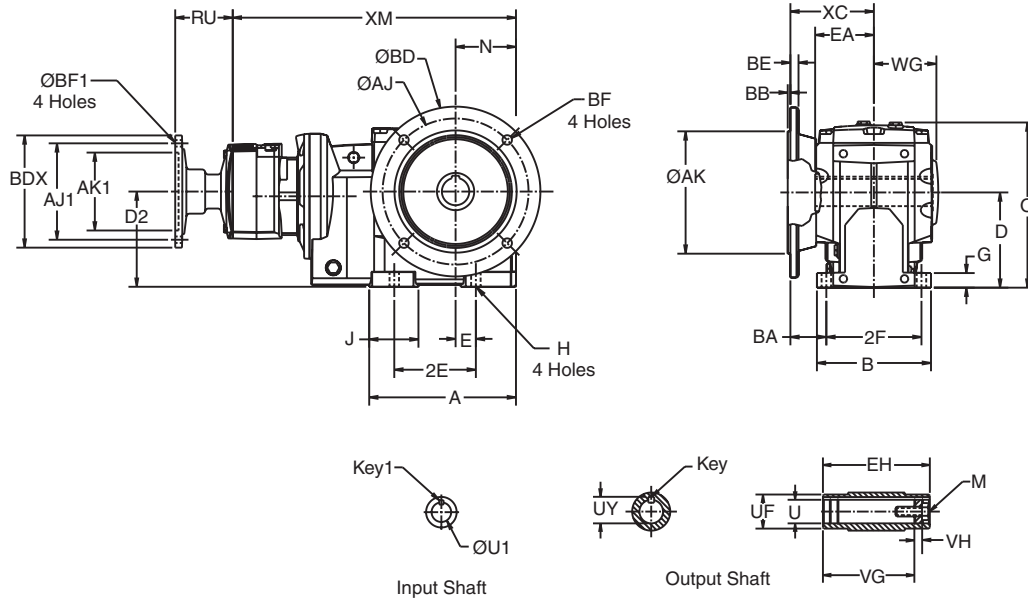
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33,33A	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32,33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32,33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ XM dimension when gear frame 33A is used will be 16.42.
⁴ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁵ Output key supplied only on frame 34 in "S2" version.
⁶ Output bore tolerances: +.0020", -.0000" for all diameters.

Combined Finished Bore Hollow Shaft Flange Mount OtN36 - 37, 28A



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM	
																	56-215TC	254-256TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	31.04	-
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	36.37	-
28A	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	9.49	11.51	37.14	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4}	UF	UY	VG	VH	Key ⁵	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 X 7/8 X 5 1/2	1-8 X 2.13

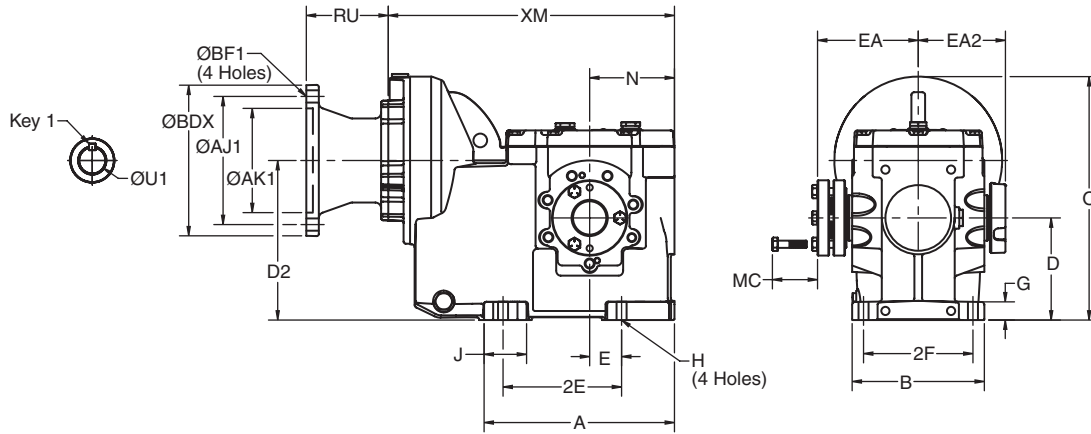
Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
36	5	13.780	15.75	.236	17.70	.79	.71
37	5	13.780	15.75	.236	17.70	.79	.63
28A	5	17.72	19.69	.240	21.65	.94	.71

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	28A	9.00	10.50	.50	1.875	7.09	11.02	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output bore tolerances: +.0020", -.0000" for all diameters.
⁵ Key not supplied with reducer.

2-Stage Bushed Shaft Mount
OtN31 - 32



OtN Series

Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁴	Bushing Bores ³	
					Min.	Max.
3132	S2	4.25	3.80	1.50	1	1 5/16
3242	S2	4.85	4.27	1.75	1 5/16	1 7/16

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.

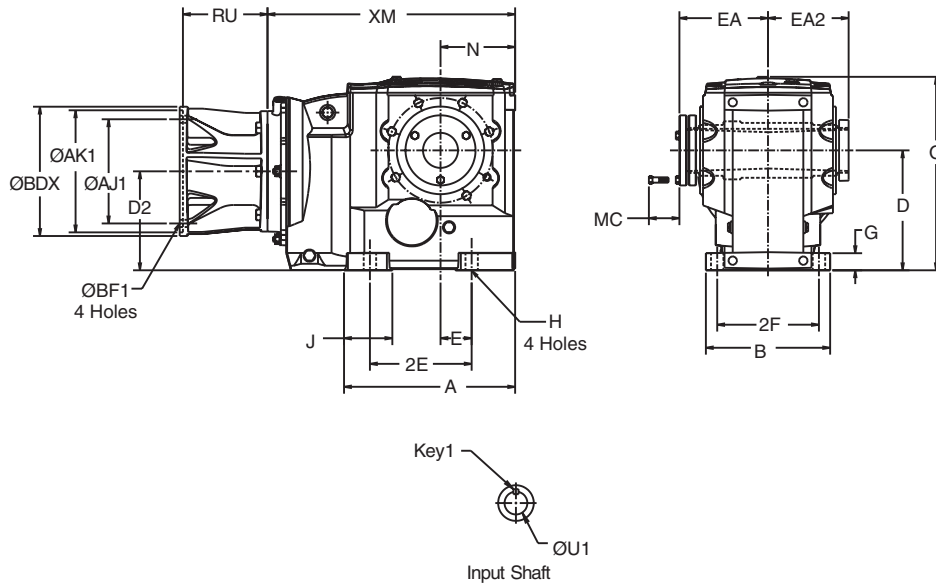
⁴ The MC dimension shows spacing required to install or remove the bushing from the reducer.

⁵ Bushing and dust cap can be installed opposite of how they are shown above.

⁶ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.

⁷ For details of the torque arm kit, refer to page B-129.

3-Stage Taper Bushed Shaft Mount OtN32 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	
														56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	10.98	-
33 (A)	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	16.90	17.25

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁴	Bushing Bores ³	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33	S2	4.82	4.23	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.620	1.88	2	2 7/16

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33,34,35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.

⁴ The MC dimension shows spacing required to install or remove the

bushing from the reducer.

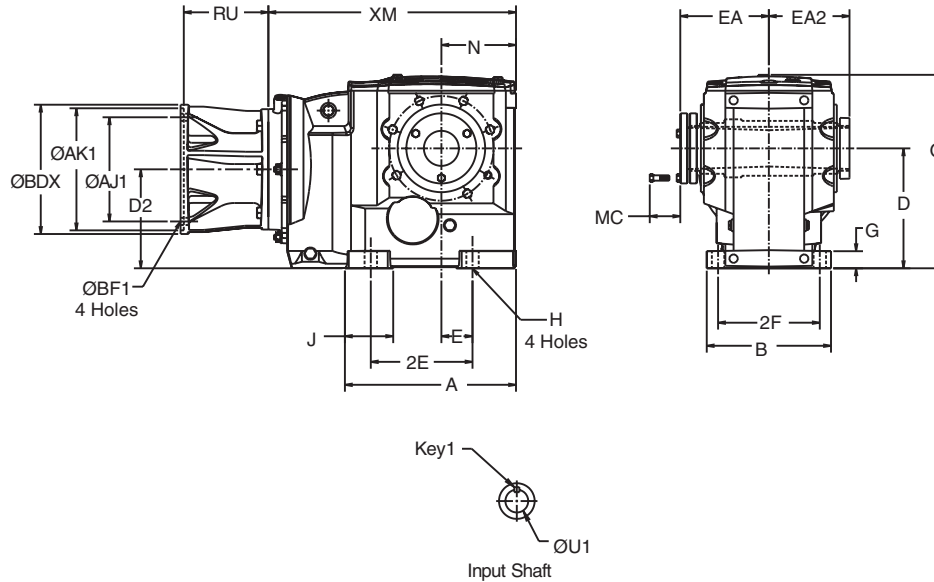
⁵ Bushing and dust cap can be installed opposite of how they are shown above.

⁶ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.

⁷ For details of the torque arm kit, refer to page B-129.

3-Stage Taper Bushed Shaft Mount
OtN36 - 37

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	
														182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	23.38	29.06

Output Shaft

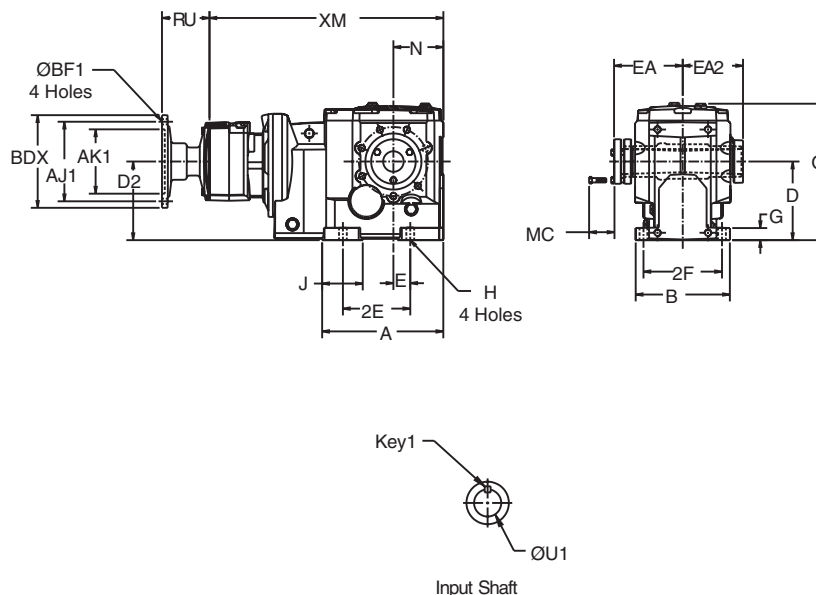
Gear Frame	Version	EA	EA2	MC ⁴	Bushing Bores ³	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁸	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375 ⁸	8.45	13.38	5/8 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.
⁴ The MC dimension shows spacing required to install or remove the bushing from the reducer.

⁵ Bushing and dust cap can be installed opposite of how they are shown above.
⁶ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁷ For details of the torque arm kit, refer to pages B-129 and B-130.
⁸ Frame 36 and 37 utilize coupling input. This is input bore for coupling provided.

Combined Taper Bushed Shaft Mount OtN32 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	14.49
33, 33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90 ⁸
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	23.87

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁴	Bushing Bores ³	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33	S2	4.82	4.23	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.620	1.88	2	2 7/16

C-Face Input

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32, 33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32, 33A	5.88	4.50	.38	.825	3.33	6.50	3/16 Sq.
	33,34,35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33,34,35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.

⁴ The MC dimension shows spacing required to install or remove the bushing from the reducer.

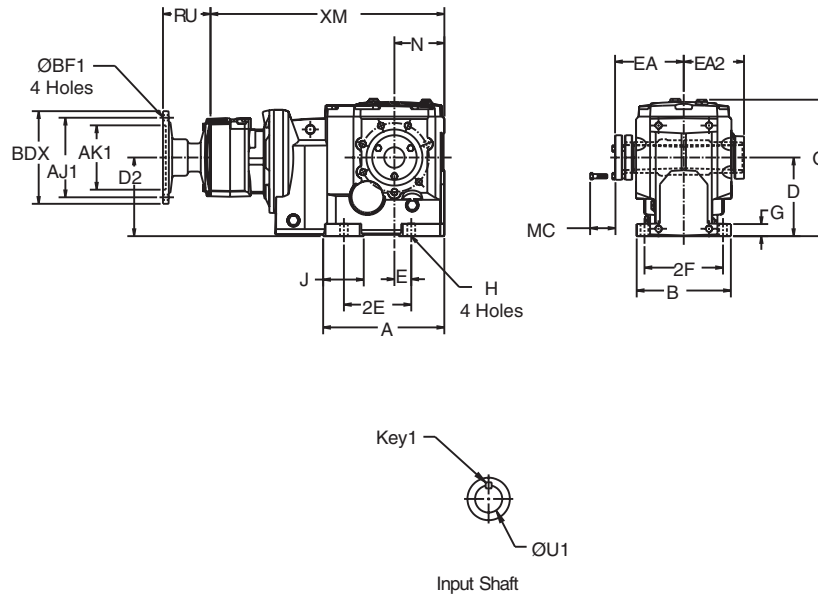
⁵ Bushing and dust cap can be installed opposite of how they are shown above.

⁶ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.

⁷ For details of the torque arm kit, refer to page B-129.

⁸ XM dimension when gear frame 33A is used will be 16.42.

Combined Taper Bushed Shaft Mount
OtN36 - 37



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
														56-215TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	36.37

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁴	Bushing Bores ³	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16

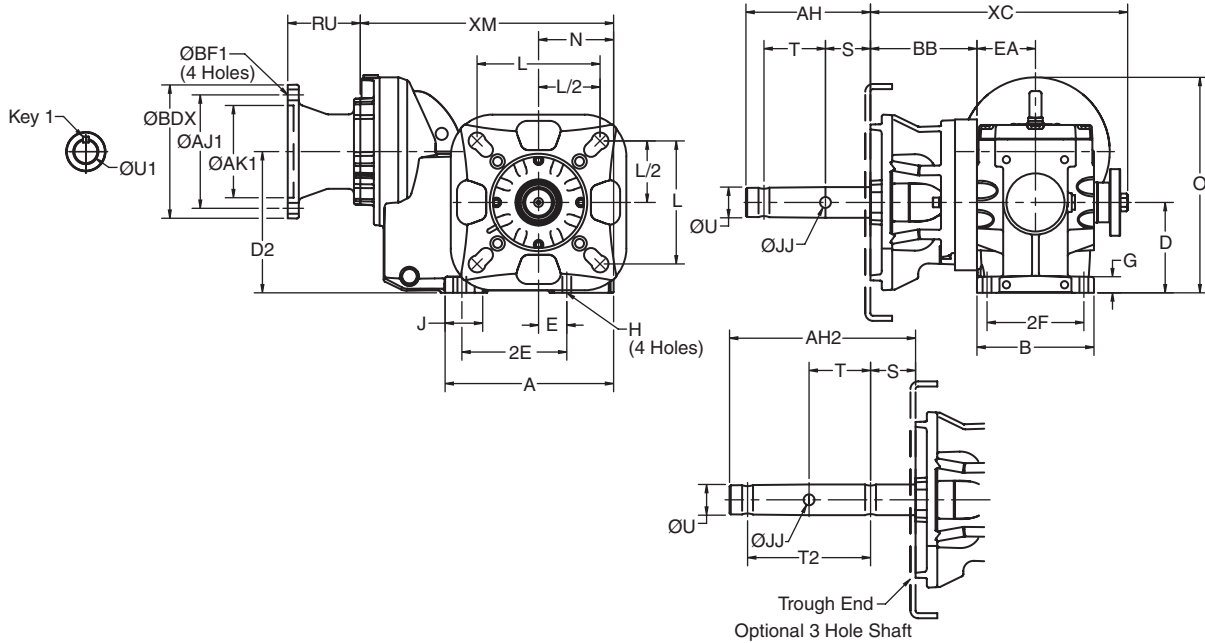
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.
⁴ The MC dimension shows spacing required to install or remove the bushing from the reducer.

⁵ Bushing and dust cap can be installed opposite of how they are shown above.
⁶ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁷ For details of the torque arm kit, refer to pages B-129 and B-130.
⁸ XM dimension when gear frame 33A is used will be 16.42.

2-Stage CEMA Screw Conveyor Drive OtN32

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	EA	XC	XM
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	2.85	7.35	12.36

Output Shaft

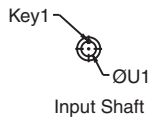
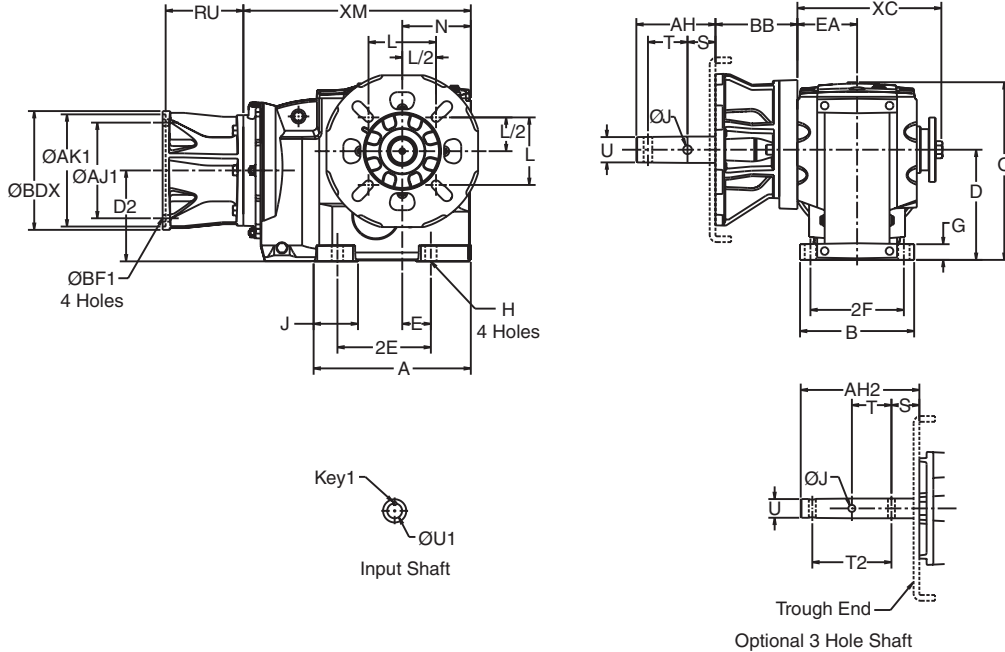
Gear Frame	Screw Dia.	JJ	L	U	S	T	T ₂	AH	AH ₂	BB
3242	6-10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12-14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	32	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.
⁴ Thrust ratings for each gear frame size are listed on page B-131.

3-Stage CEMA Screw Conveyor Drive OtN32 - 35

Standard conduit box location will be F1 unless specified otherwise.



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM	
																56C-215TC	254TC-286TC
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	2.85	7.35	10.98	-
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.35	8.30	12.90	-
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.07	9.84	14.56	-
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	4.43	11.00	16.90	17.25

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
32, 33	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
34	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	Any	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	Any	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	Any	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	33, 34, 35	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

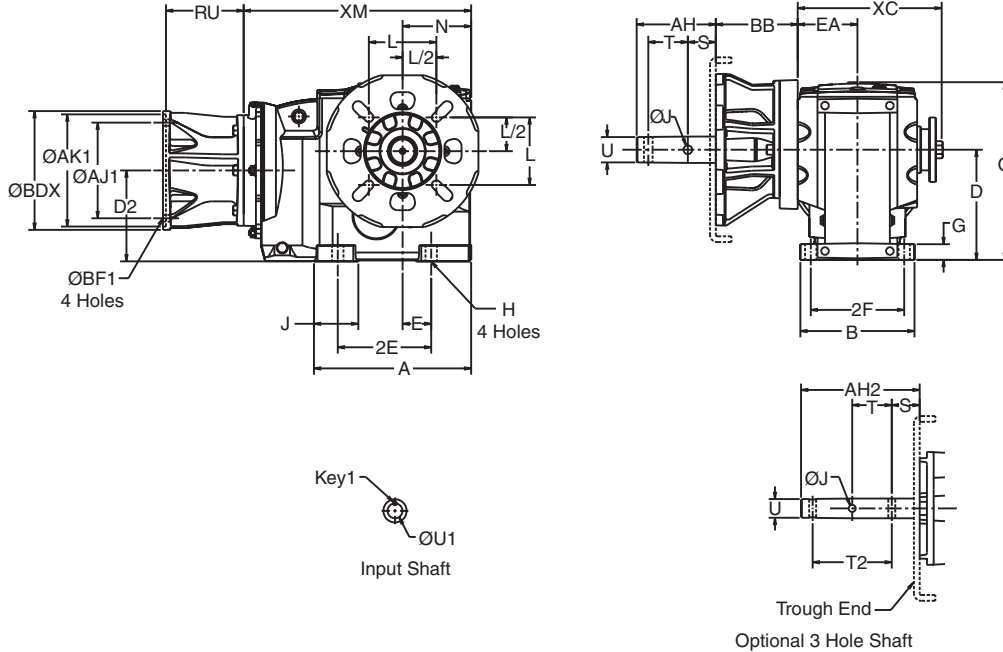
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Thrust ratings for each gear frame size are listed on page B-131.

3-Stage CEMA Screw Conveyor Drive OtN36 - 37

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM	
																182-215TC	254-365TC
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.02	13.14	23.38	23.73
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	6.61	14.76	23.38	29.06

Screw Conveyor

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
36	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.67
	12, 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.67
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.67
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	6.67
37	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	7.94
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	7.94

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁵	8.45	13.38	1/2 Sq.
364TC/365TC	All	11.00	12.50	.625	2.375 ⁵	8.45	13.38	5/8 Sq.

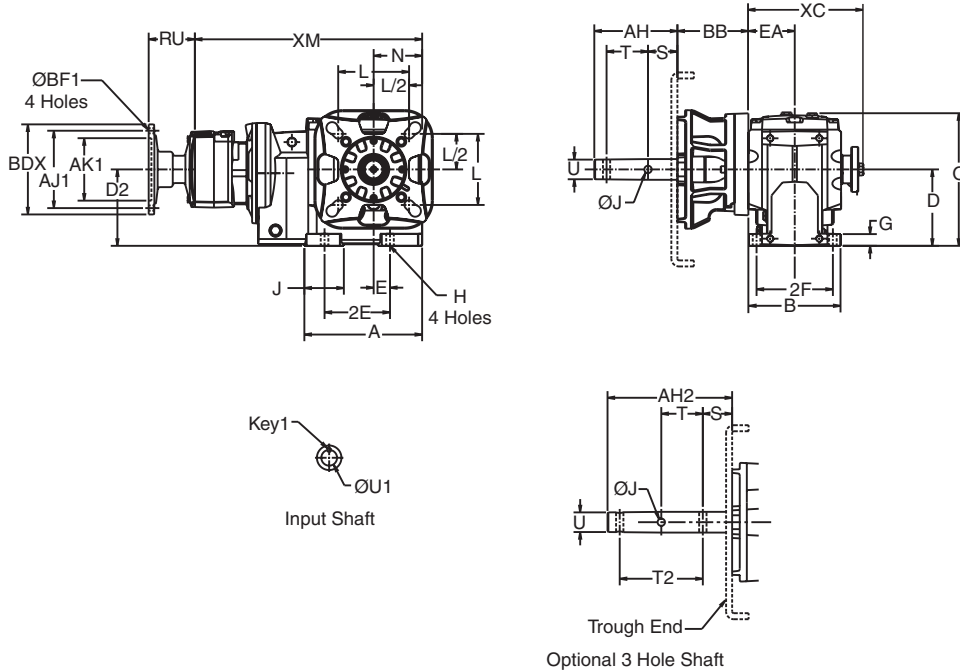
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.
⁴ Thrust ratings for each gear frame size are listed on page B-131.

⁵ Frame 36 and 37 utilize coupling input. This is input bore for coupling provided.

Combined CEMA Screw Conveyor Drive OtN32 - 35

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	2.85	7.35	14.49
33, 33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.35	8.30	19.90 ⁵
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.07	9.84	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	4.43	11.00	23.87

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
32, 33, 33A	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
34	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	32, 33A	5.88	4.50	.38	.625	3.33	6.50	3/16 Sq.
	33, 34, 35	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	32, 33A	5.88	4.50	.38	.875	3.33	6.50	3/16 Sq.
	33, 34, 35	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	33, 34, 35	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

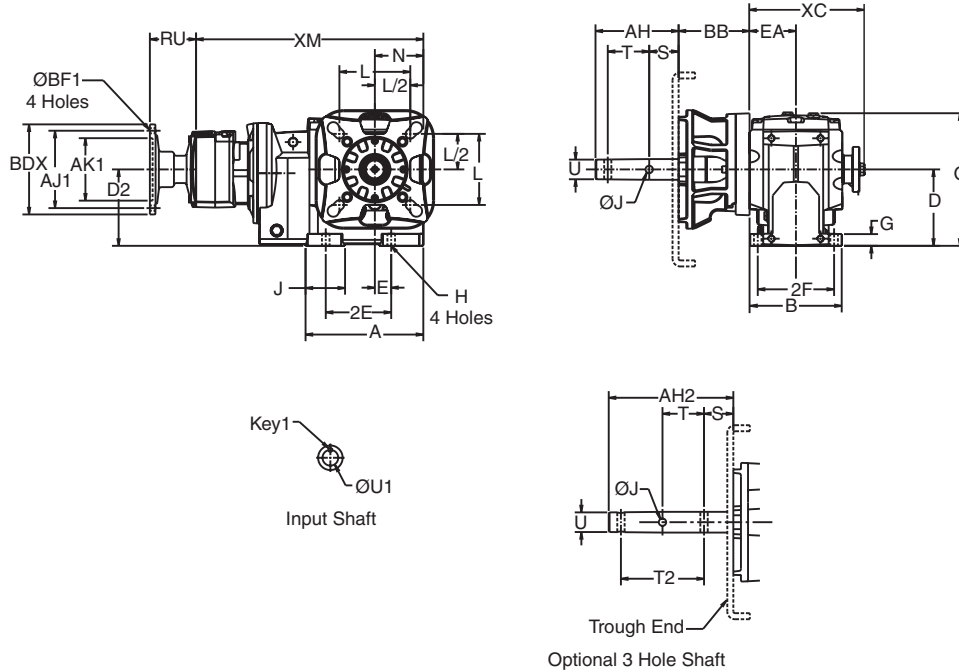
³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Thrust ratings for each gear frame size are listed on page B-131.

⁵ XM dimension is 16.42 for gear frame 33A.

Combined CEMA Screw Conveyor Drive OtN36 - 37

Standard conduit box location will be F1 unless specified otherwise.



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
																56-215TC
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.02	13.14	31.04
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	6.61	14.76	36.37

Screw Conveyor

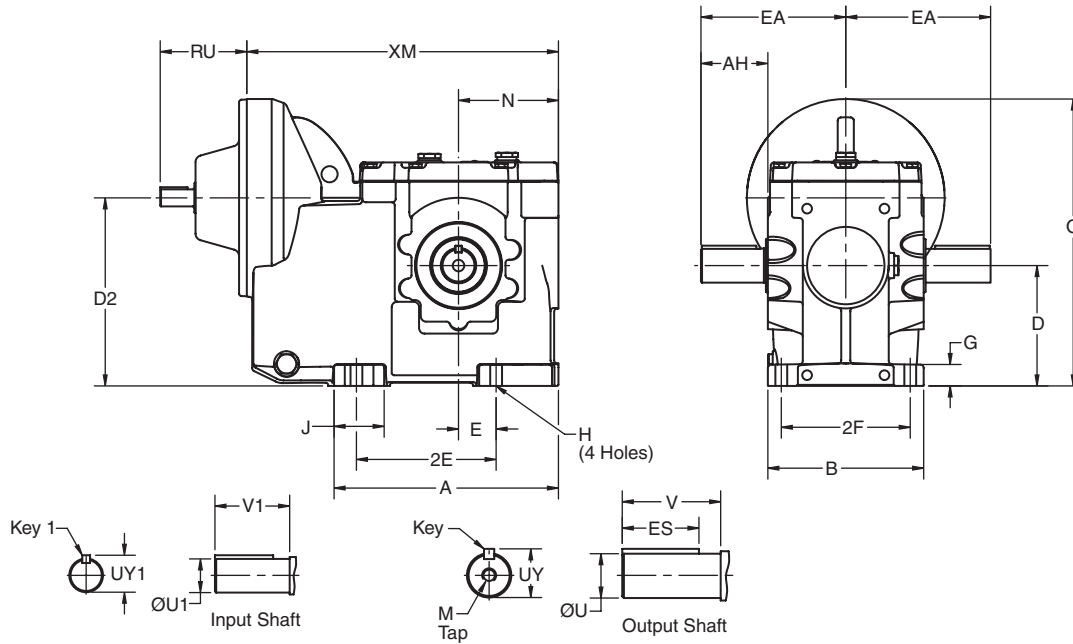
Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
36	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.67
	12, 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.67
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.67
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	6.67
37	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	7.94
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	7.94

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.
⁴ Thrust ratings for each gear frame size are listed on page B-131.

2-Stage Output Shafted Foot Mount OtN31 - 32

OtN Series



Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
3132	S2	1.000	1.10	1.77	1.83	4.33	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.38	2.45	5.31	1/4 Sq.	2.03	1/2-13 X 1.12

Input Shaft

Gear Frame	Version	RU	U ⁴	UY ₁	V ₁	Key ₁
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

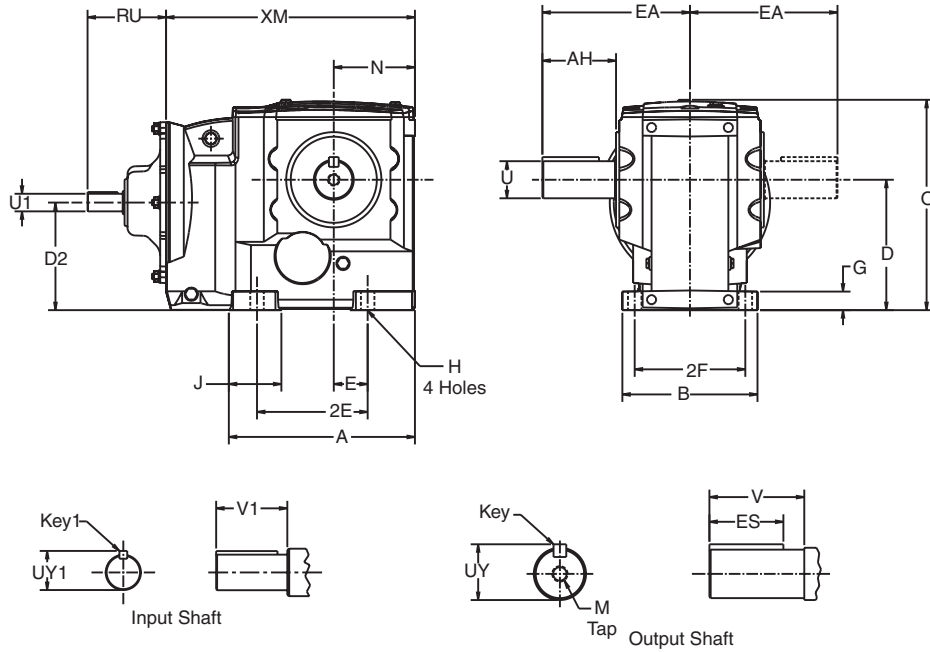
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U₁", +.000"; -.001".

3-Stage Output Shafted Foot Mount OtN32 - 37 and OtN28

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	10.04
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	15.95
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	15.95
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	27.16

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 Sq.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 Sq.	6.00	1-8 X 2.13
28	S1	3.875	4.426	7.99	8.19	17.06	1.00 Sq.	7.25	1-8 X 1.97

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S1,S2	3.17	.625	.705	1.25	3/16 Sq.
34	S1,S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S1,S2	5.03	1.125	1.236	2.25	1/4 Sq.
36	S1	7.56	1.875	2.101	3.75	1/2 Sq.
37	S1	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

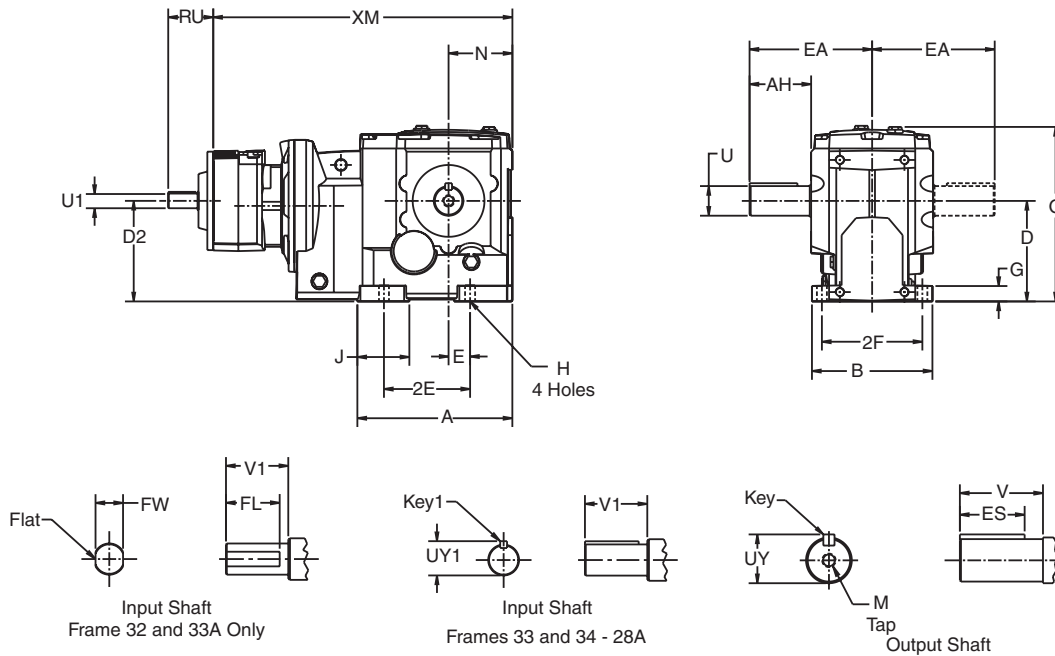
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

Combined Output Shafted Foot Mount OtN32 - 37 and OtN28A

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.72	.73	.43	2.34	8.09	3.03	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.90 ⁴
	S1	8.08	8.58	4.92	4.87	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	19.90 ⁴
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
	S1	10.69	9.60	6.30	7.16	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	23.87
	S1	13.07	10.98	7.87	9.00	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	23.87
36	S1	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	30.10
37	S1	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	37.49

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
32	S2	1.250	1.354	2.36	2.46	5.31	1/4 Sq.	2.06	1/2-13 X 1.12
33,33A	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 Sq.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 Sq.	6.00	1-8 X 2.13
28A	S1	3.875	4.426	7.99	8.19	17.06	1.00 Sq.	7.25	1-8 X 1.97

Input Shaft

Gear Frame	Version	RU	U1 ⁵	FL	FW	UY1	V1	Key1
32,33A	S2	3.60	.500	.86	.46	-	1.00	-
33	S1,S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S1,S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S1,S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
36	S1	3.17	.625	-	-	.714	1.25	3/16 Sq.
37	S1	3.17	.625	-	-	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	-	-	1.236	2.25	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to

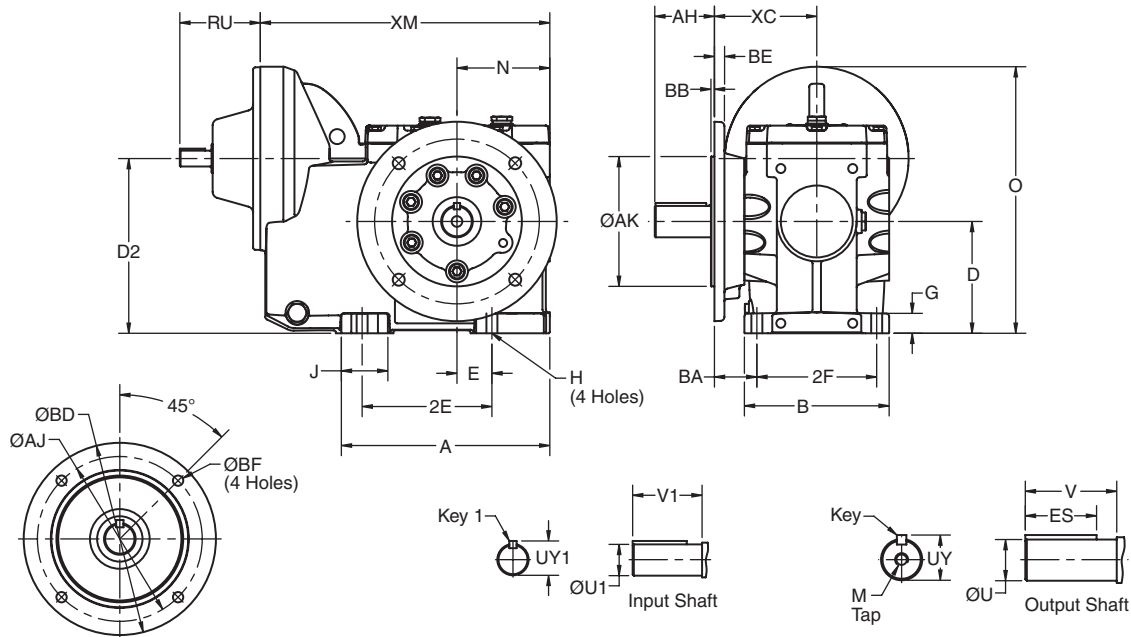
1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ XM dimension when gear frame 33A is used will be 16.42.

⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

2-Stage Output Shafted Flange Mount OtN31 - 32

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	4.04	12.36

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
3132	S2	1.000	1.10	1.97	1.97	1/4 Sq.	1.34	3/8-16 X .87
3242	S2	1.250	1.35	2.36	2.35	1/4 Sq.	2.03	1/2-13 X 1.13

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
3132	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
3242	6	7.087	8.46	.16	9.84	.47	.55

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

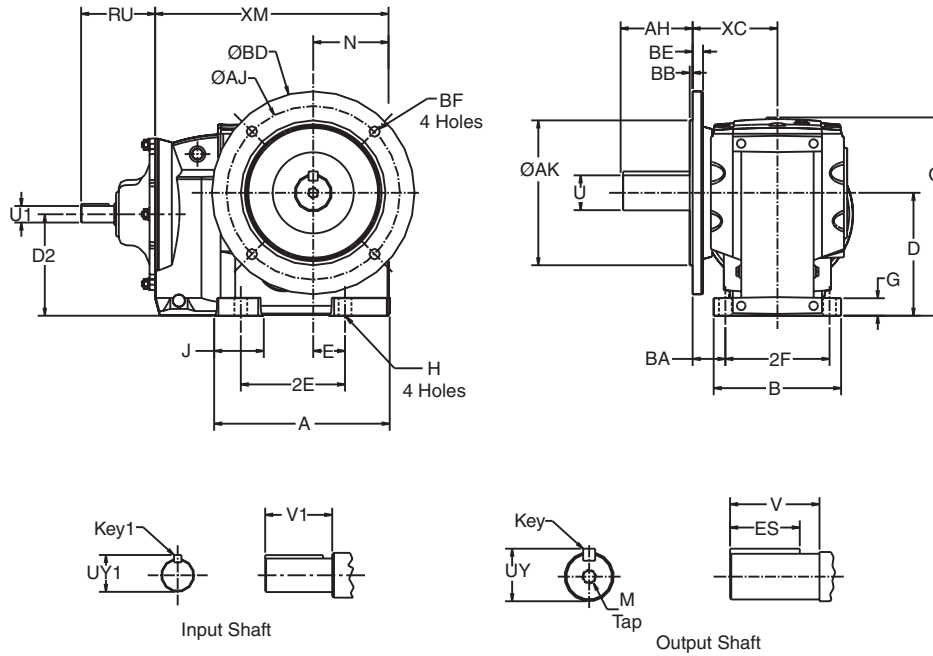
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Output Shafted Flange Mount OtN32 - 35



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1, S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	10.04
33	S1, S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	11.97
34	S1, S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	15.95

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-11 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-11 X 1.61
35	S2	2.375	2.646	4.72	4.72	5/8 Sq.	3.81	3/4-11 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

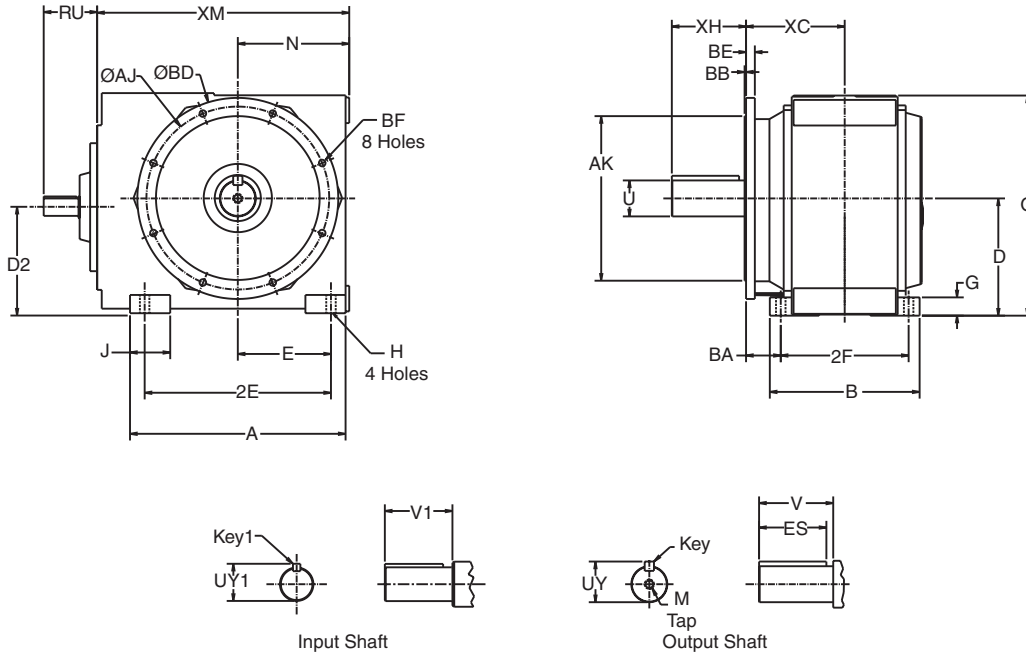
Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
32	S1,S2	3.17	.625	.705	1.25	3/16 Sq.
33	S1,S2	3.17	.625	.705	1.25	3/16 Sq.
34	S1,S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Output Shafted Flange Mount OtN36 - 37 and OtN 28



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	11.51	27.16

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 Sq.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 Sq.	6.00	1-8 X 2.13
28	S1	4.000	4.436	8.00	8.00	1.00 Sq.	7.25	1-8 X 1.97

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36	5	15.75	13.780	.236	17.70	.79	.71
37	5	15.75	13.780	.236	17.70	.79	.63
28	5	19.69	17.72	.24	21.65	.94	.71

Input Shaft

Gear Frame	Version	RU	U ¹ ⁴	UY1	V1	Key1
36	S1	7.56	1.875	2.101	3.75	1/2 Sq.
37	S1	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

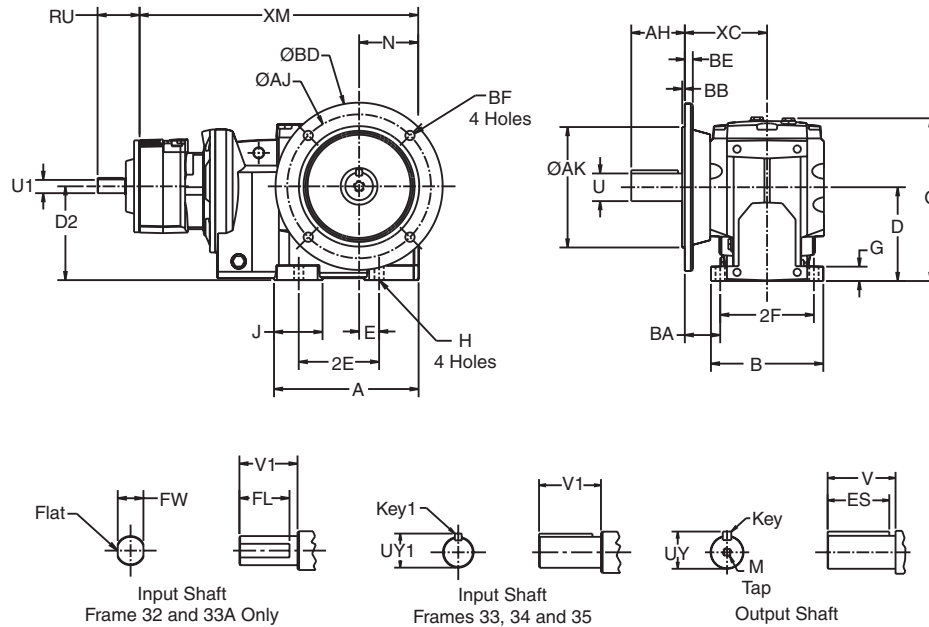
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

Combined Output Shafted Flange Mount OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
32	S1,S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	4.04	14.49
33,33A	S1,S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	19.90 ⁴
34	S1,S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	23.87

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
32	S2	1.250	1.354	2.38	2.36	1/4 Sq.	2.06	1/2-13 X 1.12
	S1	1.250	1.354	1.77	1.75	1/4 Sq.	1.45	1/2-13 X 1.12
33,33A	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33,33A	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁵	FL	FW	UY1	V1	Key1
32,33A	S1,S2	3.60	.500	.86	.46	-	1.00	-
33	S1,S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S1,S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

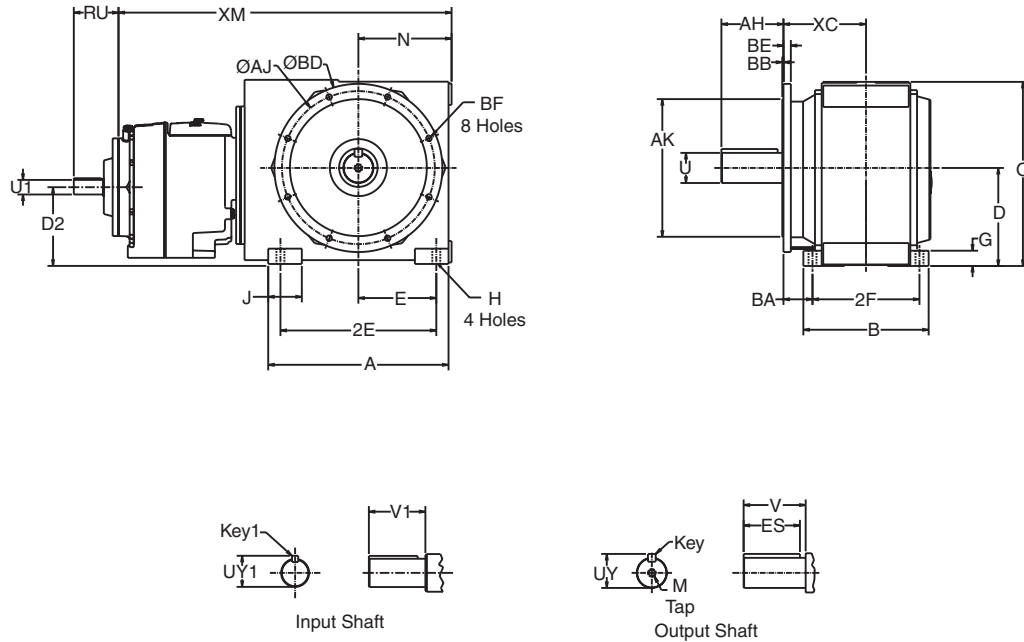
³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to

1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ XM dimension when gear frame 33A is used will be 16.42.

⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

Combined Output Shafted Flange Mount OtN36 - 37 and OtN28A



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	11.51	37.49

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 Sq.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 Sq.	6.00	1-8 X 2.13
28A	S1	4.000	4.436	8.00	8.00	1.00 Sq.	7.25	1-8 X 1.97

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36	5	15.75	13.780	.236	17.70	.79	.71
37	5	15.75	13.780	.236	17.70	.79	.63
28A	5	19.69	17.72	.24	21.65	.94	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
36	S1	3.17	.625	.714	1.25	3/16 Sq.
37	S1	3.17	.625	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	1.236	2.25	1/4 Sq.

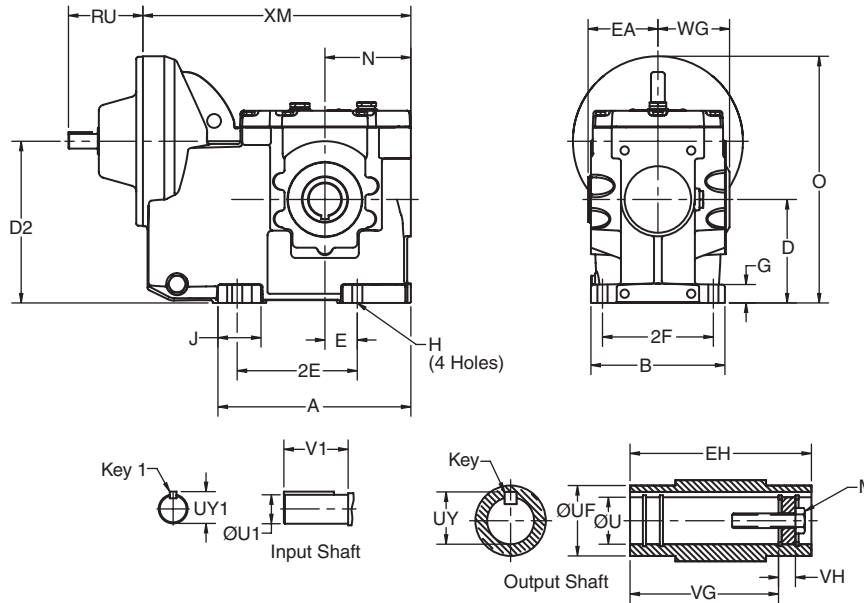
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

2-Stage Finished Bore Hollow Shaft
OtN31 - 32



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4,6}	UF	UY	VG	VH	Key ⁸	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.

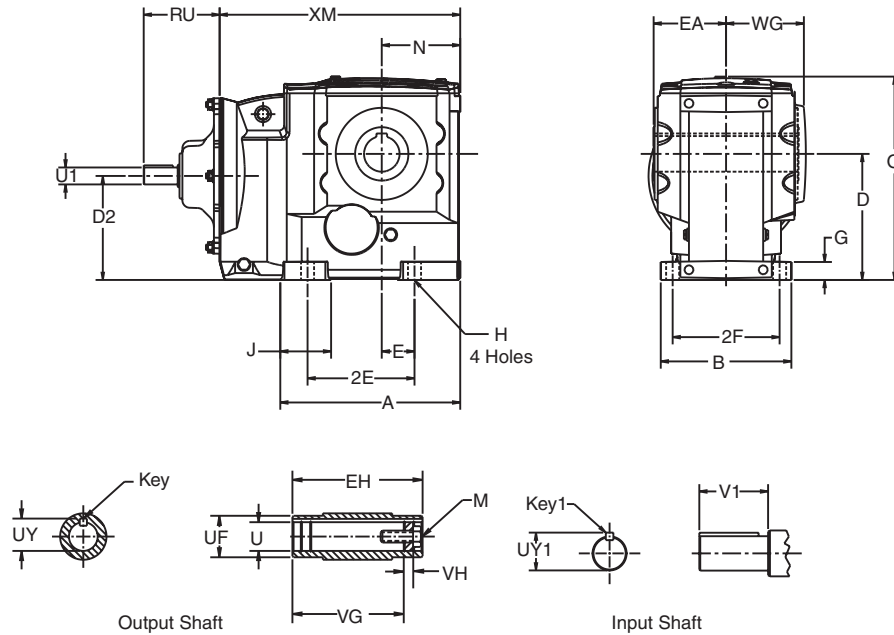
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

⁶ Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

⁷ For details of the torque arm kit, refer to page B-129.

⁸ Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Mount OtN32 - 35 and OtN26 - 28



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	10.04
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	27.16

Output Shaft

Gear Frame	Version	EA	EH	U ^{4,7}	UF	UY	VG	VH	Key ⁵	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00

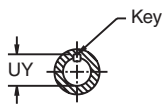
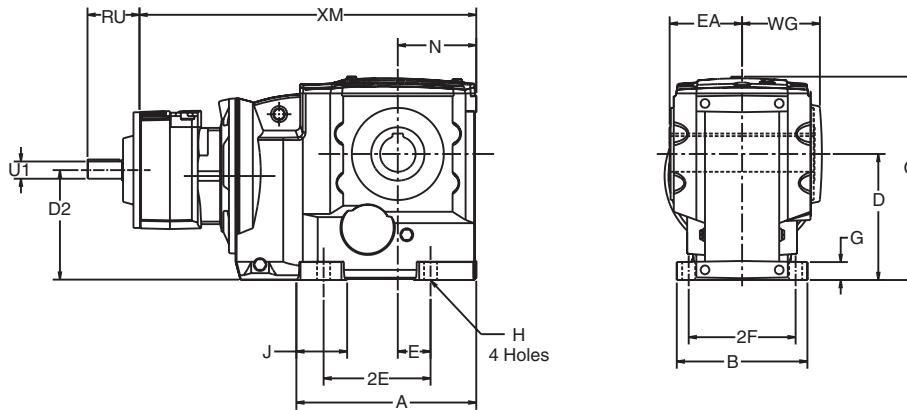
Input Shaft

Gear Frame	Version	RU	U1 ⁶	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

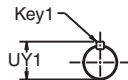
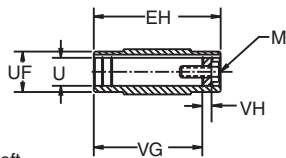
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Output key supplied only on frame 34 in "S2" version.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁷ Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above. (Frames 32 - 35 only).
⁸ For details of the torque arm kit, refer to pages B-129 and B-130.

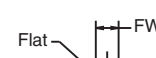
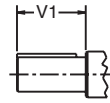
Combined Finished Bore Hollow Shaft
OtN32 - 37 and OtN28A



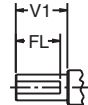
Output Shaft



Input Shaft
Frames 33 and 34-28A



Input Shaft
Frame 32 and 33A Only



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.22	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	19.90 ⁷
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ^{4,8}	UF	UY	VG	VH	Key ⁵	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33,33A	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

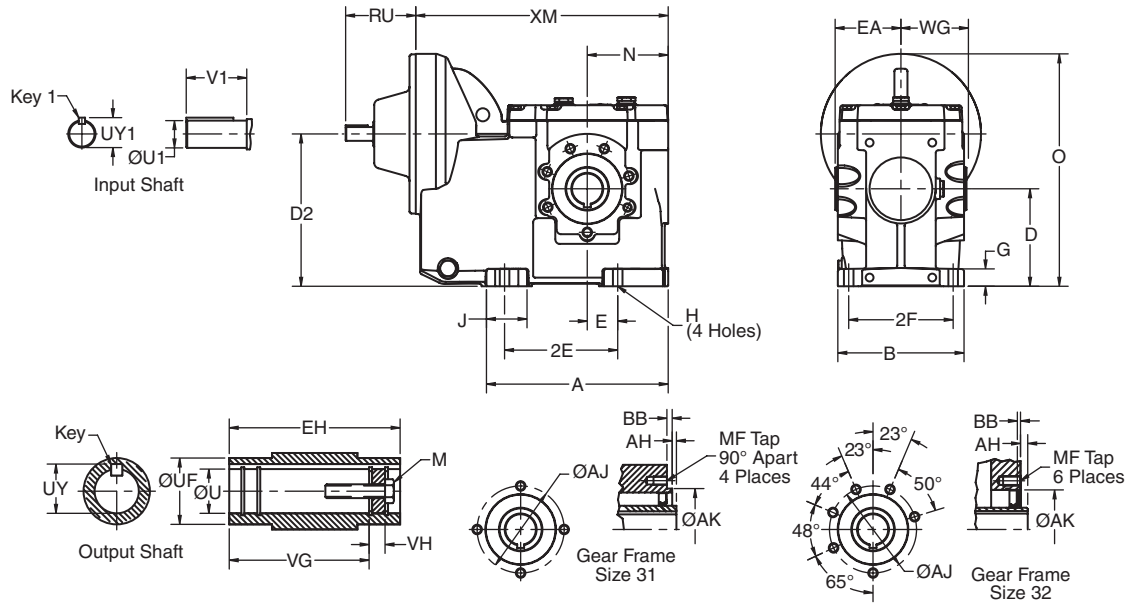
Input Shaft

Gear Frame	Version	RU	U1 ⁶	FL	FW	UY1	V1	Key1
32,33A	S2	3.60	.500	.86	.46	-	1.00	-
33	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
36	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.
37	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	-	-	1.236	2.25	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Output key supplied only on frame 34 in "S2" version.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁷ XM dimension when gear frame 33A is used will be 16.42.
⁸ Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above. (Frames 32 - 37 only).
⁹ For details of the torque arm kit, refer to pages B-129 and B-130.

2-Stage Finished Bore Hollow Shaft Face Mount OtN31 - 32



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	2.85	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4}	UF	UY	VG	VH	Key ⁶	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
31	S2	.20	3.740	3.35	.14	M8-1.25 X 12
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22

Input Shaft

Gear Frame	Version	RU	U ^{1,5}	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

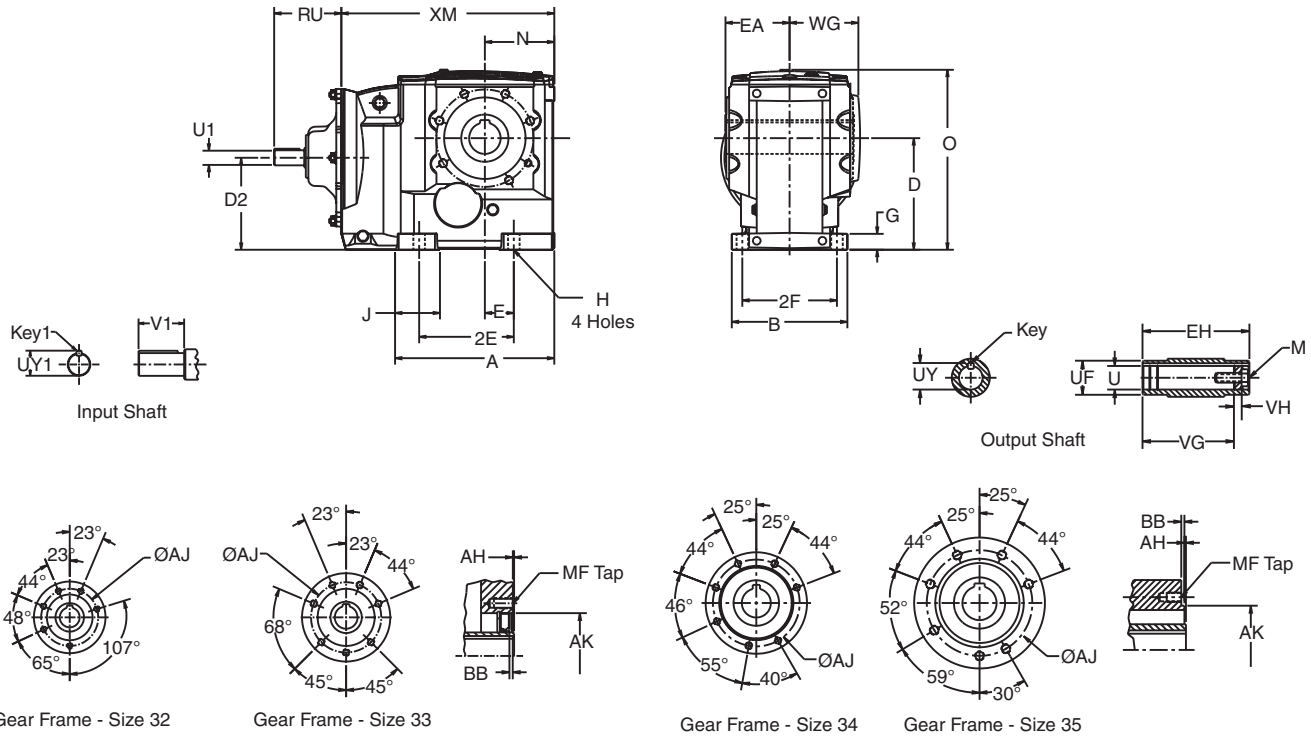
⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.

⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

⁶ Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Face Mount
OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	10.04
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁵	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Input Shaft

Gear Frame	Version	RU	U1 ⁶	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer

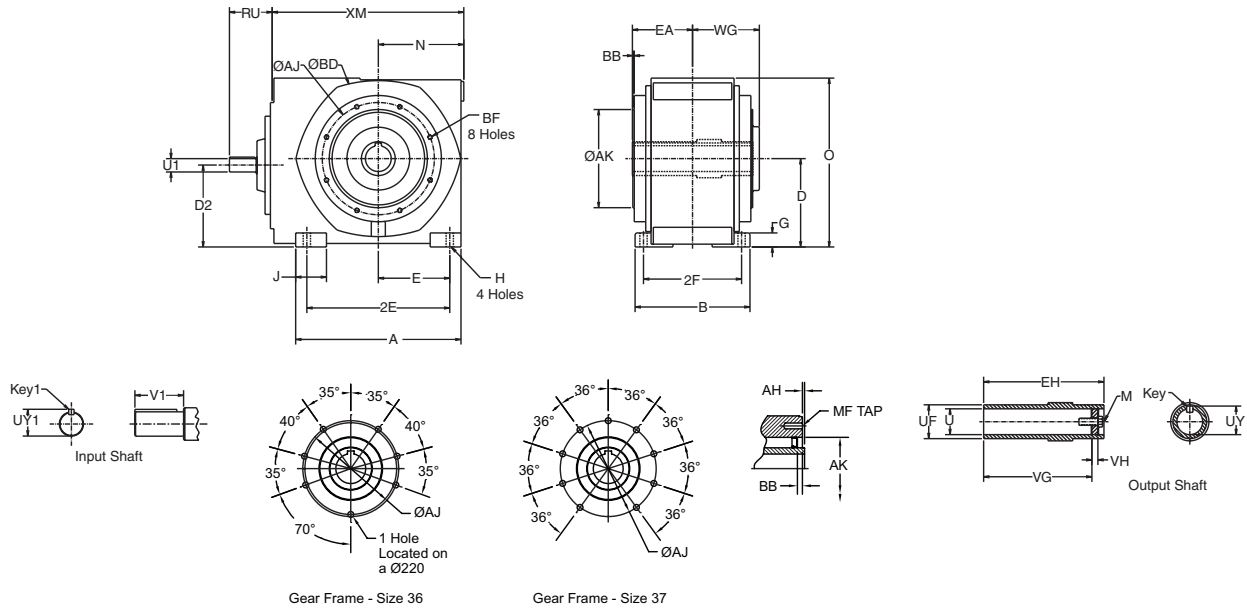
housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.

⁵ Output key supplied only on frame 34 in "S2" version.

⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Finished Bore Hollow Shaft Face Mount OtN36 - 37 and OtN28



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	27.16

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	BD	MF
36	S2	.20	9.06	5.91	.28	-	M16-2.0 X 27
37	S2	.20	9.06	7.09	.28	-	M20-2.5 X 35
28	S1	-	15.75	13.78	.20	17.72	M16-2.0 X 22

Output Shaft

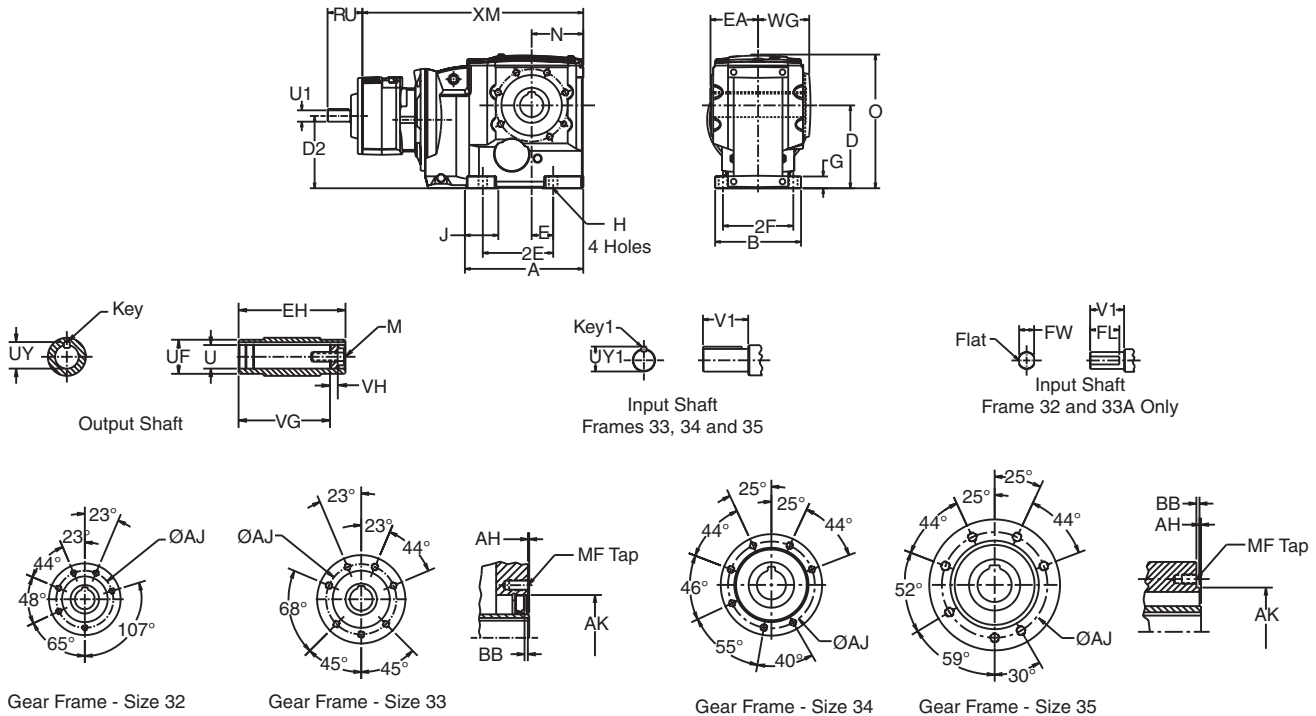
Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Input Shaft

Gear Frame	Version	RU	U ¹ ⁶	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output finished bore tolerance: +.0020", -0.0000 for all diameters.
⁵ Input shaft extension tolerances: +.0000"; -0.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -0.001".
⁶ Key not supplied with reducer.

Combined Finished Bore Hollow Shaft Face Mount OtN32 - 35



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	3.15	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	19.90 ⁷
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	23.87

Face Mount

Gear Frame	Version	AH	AJ	AK	BB	MF
32	S2	.12	3.94	3.15	.16	M10-1.50 X 22
33,33A	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁵	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33,33A	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

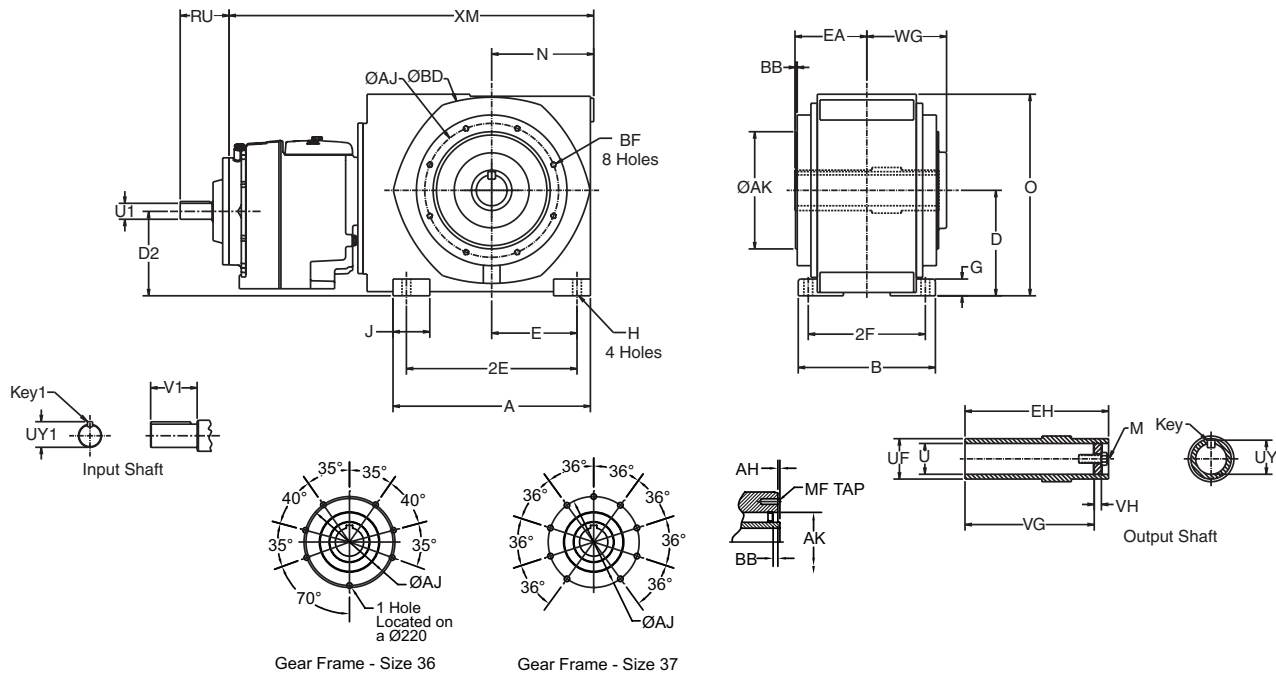
Input Shaft

Gear Frame	Version	RU	U1 ⁶	FL	FW	UY1	V1	Key1
32,33A	S2	3.60	.500	.86	.46	-	1.00	-
33	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer

housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Output key supplied only on frame 34 in "S2" version.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁷ XM dimension when gear frame 33A is used will be 16.42.

Combined Finished Bore Hollow Shaft Face Mount OtN36 - 37 and OtN 28A



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	37.49

Face Mount

Gear Frame	Version	AJ	AK	BB	BD	MF
36	S2	9.06	5.91	.28	-	M16-2.00 X 27
37	S2	9.06	7.09	.28	-	M20-2.50 X 35
28A	S1	15.75	13.78	.20	17.72	M16-2.00 X 22

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Input Shaft

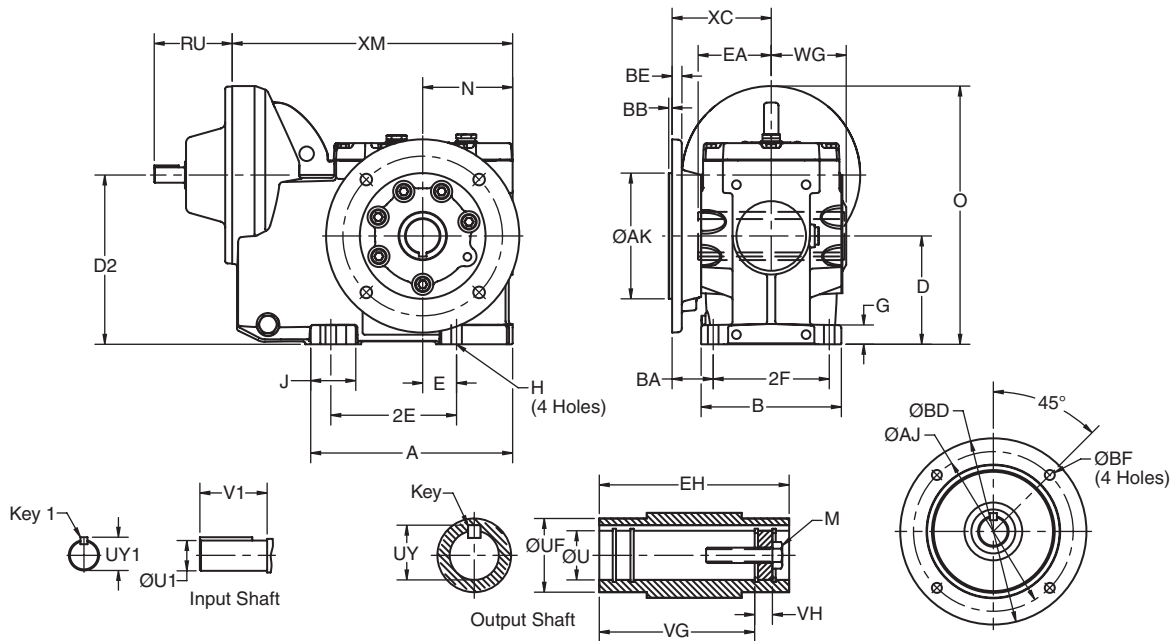
Gear Frame	Version	RU	U1 ⁶	UY1	V1	Key1
36	S1	3.17	.625	.714	1.25	3/16 Sq.
37	S1	3.17	.625	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	1.236	2.25	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer

housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁶ Key not supplied with reducer.

2-Stage Finished Bore Hollow Shaft Flange Mount OtN31 - 32

OtN Series



Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	1.54	2.85	3.50	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	1.67	3.22	4.04	12.36

Output Shaft

Gear Frame	Version	EA	EH	U ^{3,4}	UF	UY	VG	VH	Key ⁶	M
3132	S2	2.56	5.12	1.250	1.77	1.372	4.31	.37	1/4 X 1/4 X 1 1/2	7/16-14 X 1.00
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Output Flange

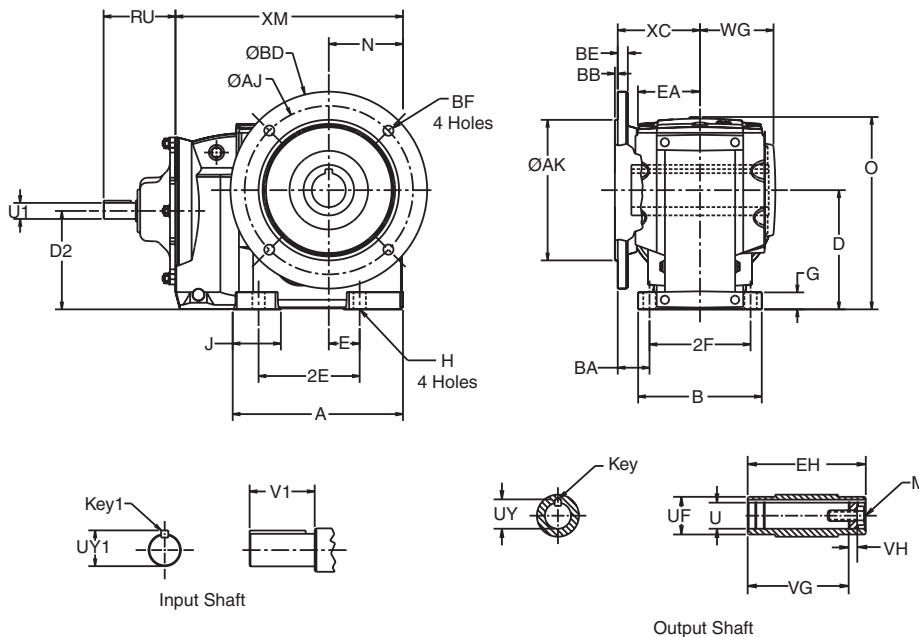
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
3132	5	4.331	5.12	.14	6.50	.39	.35
3132	6	3.740	4.53	.14	5.51	.44	.35
3242	5	5.118	6.50	.14	7.87	.39	.47
3242	6	7.087	8.46	.16	9.84	.47	.55

Input Shaft

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁶ Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Flange Mount OtN32 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	10.04
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	15.95

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁵	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

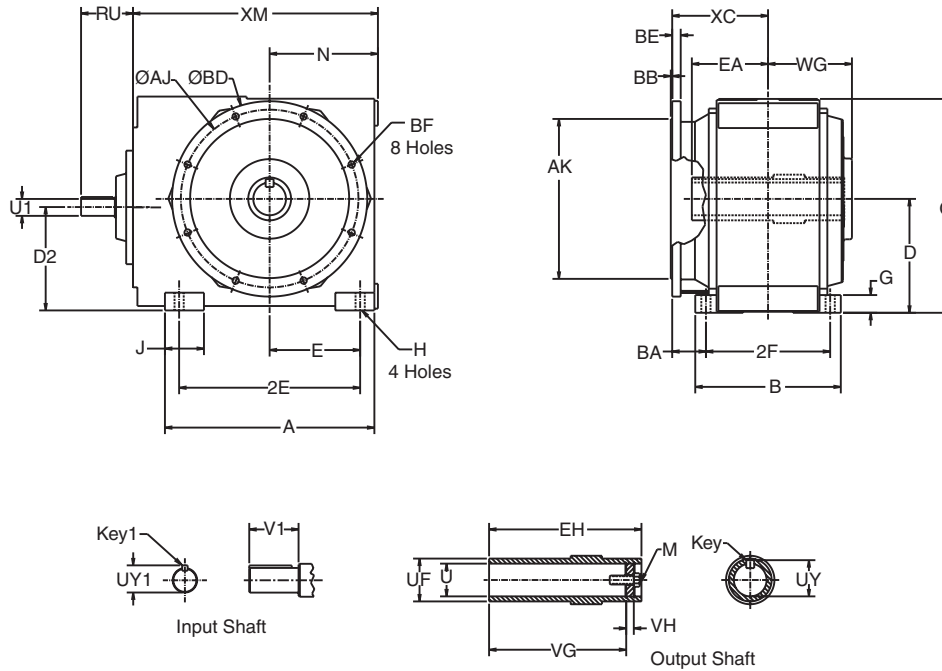
Input Shaft

Gear Frame	Version	RU	U ¹⁶	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer

housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Output key supplied only on frame 34 in "S2" version.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Finished Bore Hollow Shaft Flange Mount
OtN36 - 37 and OtN28



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	9.49	11.51	27.16

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁴	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36	5	15.75	13.780	.236	17.70	.79	.71
37	5	15.75	13.780	.236	17.70	.79	.63
28	5	19.69	17.72	.24	21.65	.94	.71

Input Shaft

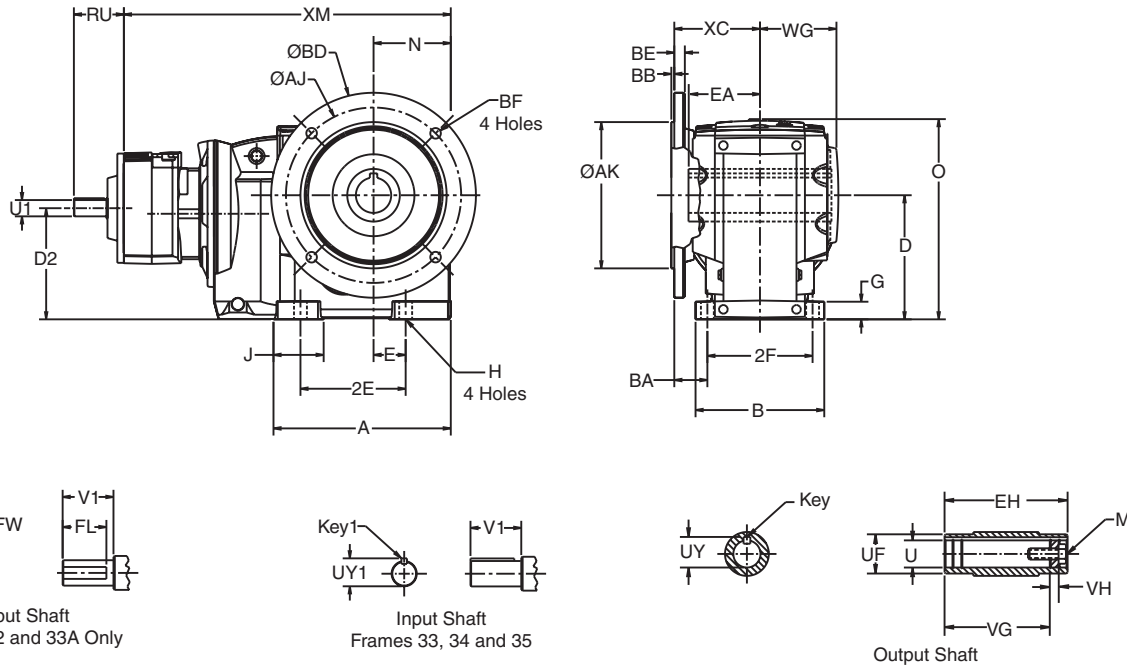
Gear Frame	Version	RU	U1 ⁶	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer

housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output key supplied only on frame 34 in "S2" version.
⁵ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

Combined Finished Bore Hollow Shaft Flange Mount OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	1.81	3.22	4.04	14.49
33,33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	19.90 ⁷
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	23.87

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁴	M
32	S2	2.98	5.95	1.375	1.96	1.523	5.20	.55	5/16 X 5/16 X 1 13/16	1/2-13 X 1.00
33,33A	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

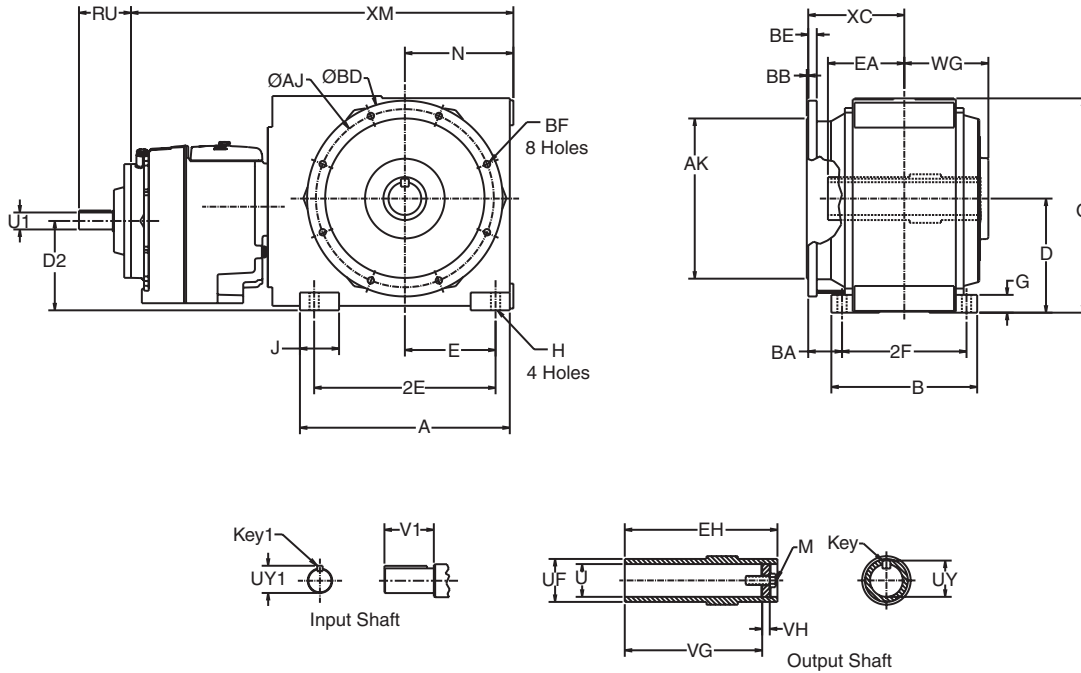
Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
32	5	5.118	6.50	.14	7.87	.39	.47
	6	7.087	8.46	.16	9.84	.47	.55
33,33A	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁶	FL	FW	UY1	V1	Key1
32,33A	S2	3.60	.500	.86	.46	-	1.00	-
33	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output key supplied only on frame 34 in "S2" version.
⁵ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁶ Input shaft extension tolerances: +.0000", -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁷ XM dimension when gear frame 33A is used will be 16.42.

Combined Finished Bore Hollow Shaft Flange Mount OtN36 - 37 and OtN 28A



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	9.49	11.51	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 /12	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 /12	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36	5	15.75	13.780	.236	17.70	.79	.71
37	5	15.75	13.780	.236	17.70	.79	.63
28A	5	19.69	17.72	.24	21.65	.94	.71

Input Shaft

Gear Frame	Version	RU	U ¹⁶	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	1.236	2.25	1/4 Sq.

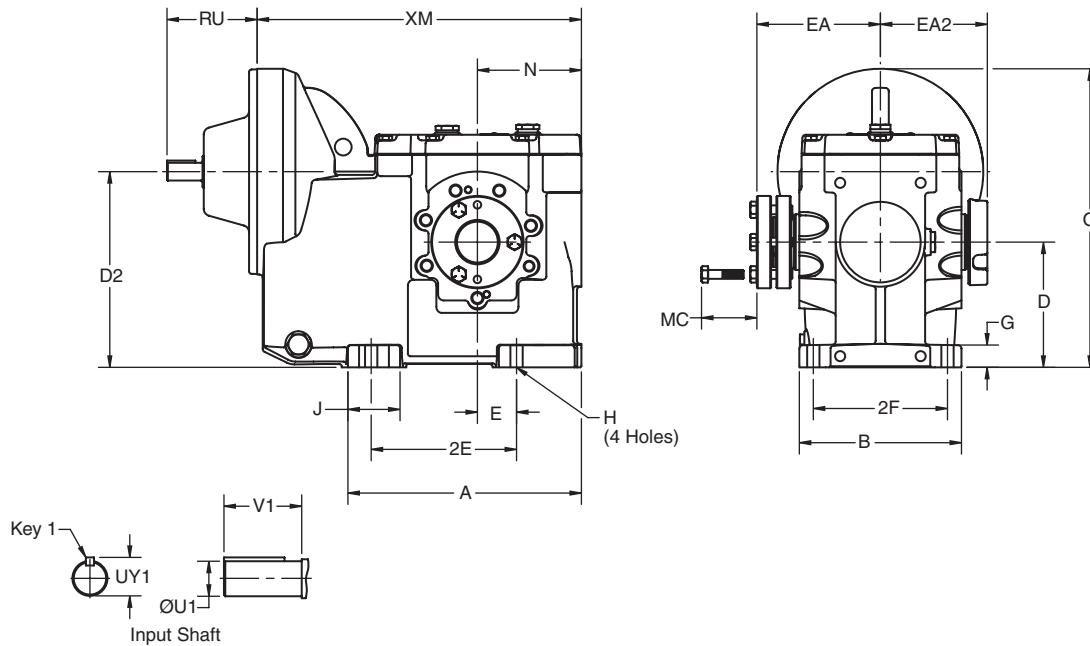
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer

housing by reversing positioning of the snap rings and washer illustrated.
⁴ Output key supplied only on frame 34 in "S2" version.
⁵ Output finished bore tolerance: +.0020", -.0000" for all diameters.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

Input Shaft Reducer

2-Stage Bushed Shaft Mount

OtN31 - 32



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
3132	S2	5.88	4.65	3.15	4.98	1.97	3.94	3.94	.56	.35	1.53	8.01	3.15	10.59
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
3132	S2	4.25	3.80	1.50	1	1 5/16
3242	S2	4.85	4.27	1.75	3/4	1 7/16

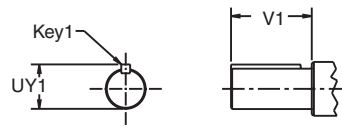
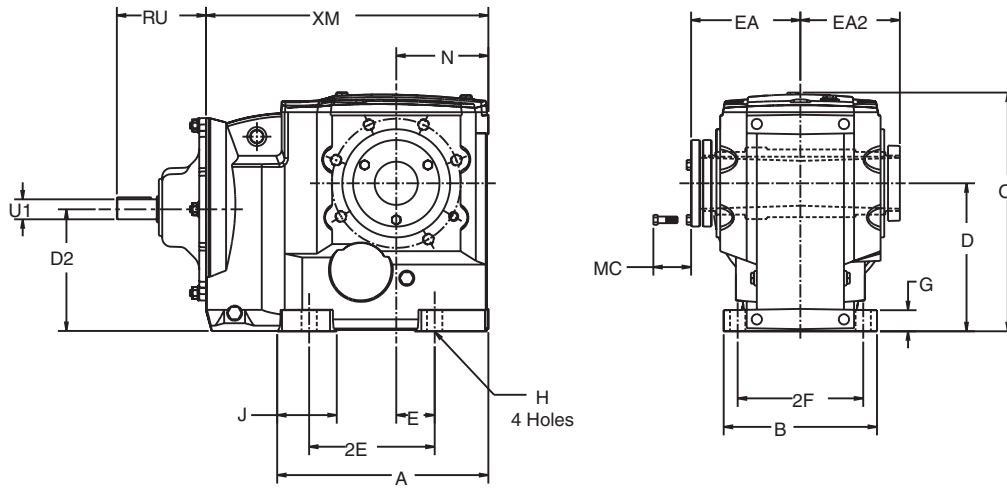
Input Shaft

Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
31	S2	3.17	.625	.705	1.25	3/16 Sq.
32	S2	3.17	.625	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁴ Refer to page B-132 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The MC dimension shows spacing required to install or remove the bushing from the reducer.
⁶ Bushing and dust cap can be installed opposite of how they are shown above.
⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁸ For details of the torque arm kit, refer to page B-129.

3-Stage Taper Bushed Shaft Mount OtN32 - 37



Input Shaft

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	10.04
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	15.95
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
32	S2	4.85	4.27	1.75	3/4	1 7/16
34	S2	5.84	5.27	1.88	15/16	1 15/16
35	S2	6.17	5.620	1.88	1 3/8	2 7/16
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16

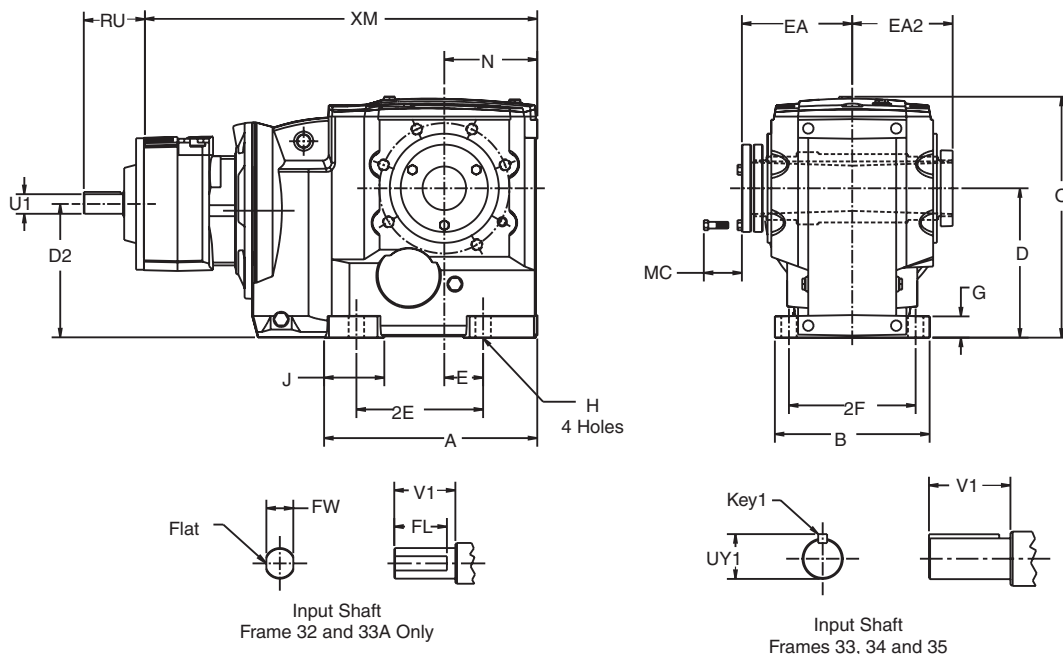
Input Shaft

Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁴ Refer to page B-133 by gear frame for listing of all inch and metric

bushing bore sizes available.
⁵ The MC dimension shows spacing required to install or remove the bushing from the reducer.
⁶ Bushing and dust cap can be installed opposite of how they are shown above.
⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁸ For details of the torque arm kit, refer to page B-129.

Combined Taper Bushed Shaft Mount OtN32 - 37



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	14.49
33, 33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	19.99
34	S2	10.13	7.87	7.09	5.57	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	21.55
35	S2	11.92	8.66	8.35	6.56	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	23.87
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	35.43

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
32	S2	4.85	4.27	1.75	1 5/16	1 7/16
33	S2	4.82	4.23	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	1 5/16	1 15/16
35	S2	6.17	5.620	1.88	1 3/8	2 7/16
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16

Input Shaft

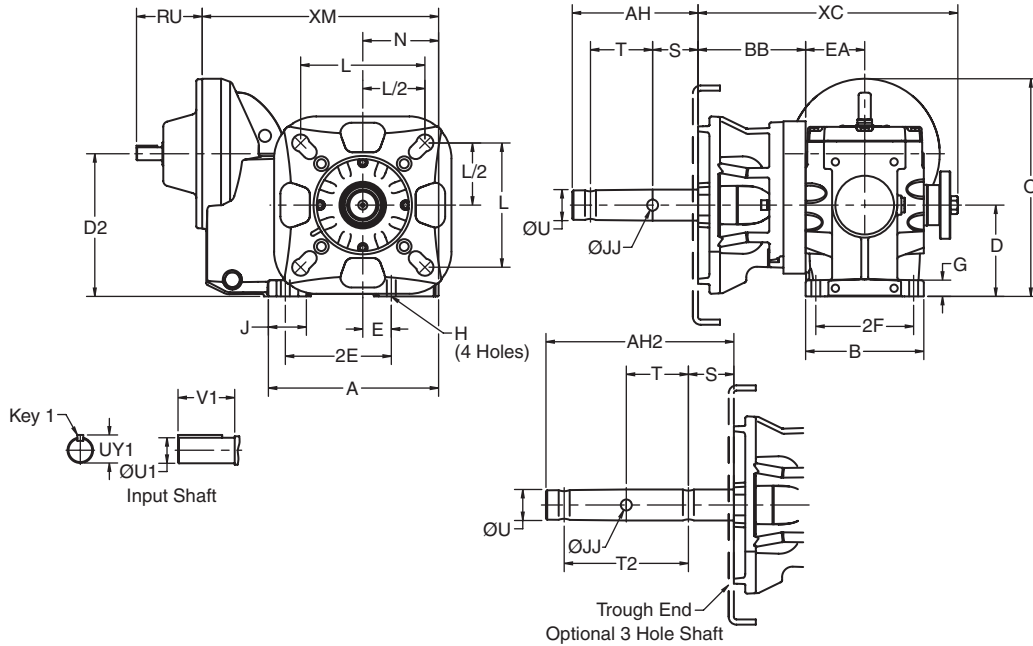
Gear Frame	Version	RU	U1 ³	FL	FW	UY1	V1	Key1
32, 33A	S2	3.60	.500	.86	.46	-	1.00	-
33	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
36	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.
37	S2	3.17	.625	-	-	.714	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁴ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The MC dimension shows spacing required to install or remove the bushing from the reducer.
⁶ Bushing and dust cap can be installed opposite of how they are shown above.
⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁸ For details of the torque arm kit, refer to page B-129.
⁹ XM dimension when gear frame 33A is used will be 16.42.

2-Stage CEMA Screw Conveyor Drive OtN32

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	2.85	7.35	12.36

Output Shaft

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
3242	6-10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12-14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13

Input Shaft

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

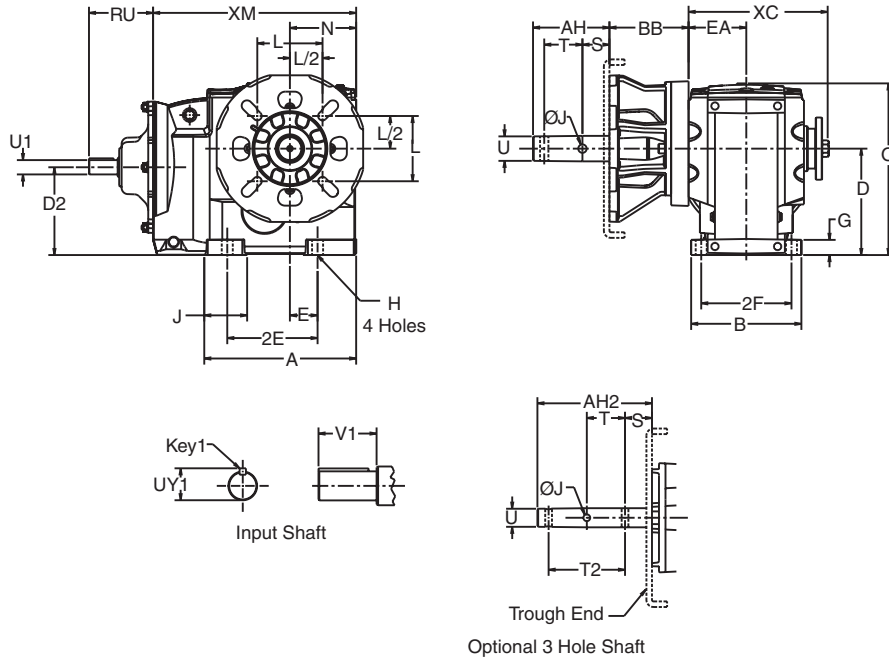
³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Thrust ratings for each gear frame size are listed on page B-131.

⁵ Input shaft extension tolerance (U1): +.0000"/-.0005" up to 1.5" diameter; larger diameters +.000"; -.001".

3-Stage CEMA Screw Conveyor Drive OtN32 - 33

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
32	S2	7.81	5.71	4.41	3.78	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	2.85	7.35	10.84
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.35	8.30	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.07	9.84	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	4.43	11.00	15.95

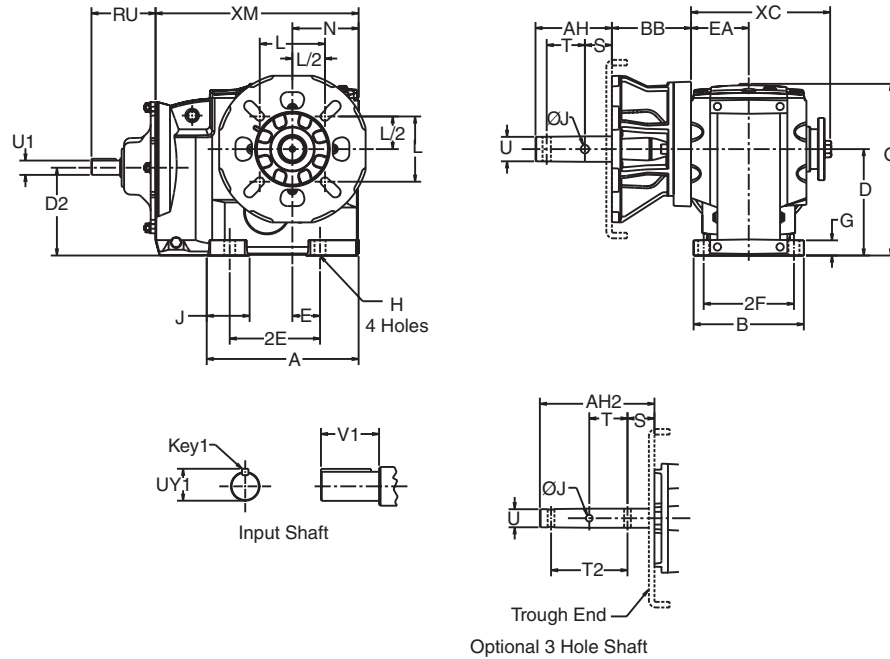
Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
32,33	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
34	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
32	S2	3.17	.625	.705	1.25	3/16 Sq.
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.
⁴ Thrust ratings for each gear frame size are listed on page B-131.
⁵ Input shaft extension tolerance (U1): +.0000"/-.0005" up to 1.5" diameter; larger diameters +.000"; -.001".

3-Stage CEMA Screw Conveyor Drive
OtN36-37



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.02	13.14	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	6.61	14.76	28.44

Screw Conveyor

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
36	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.67
	12, 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.67
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.67
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	6.67
37	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	7.94
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	7.94

Input Shaft

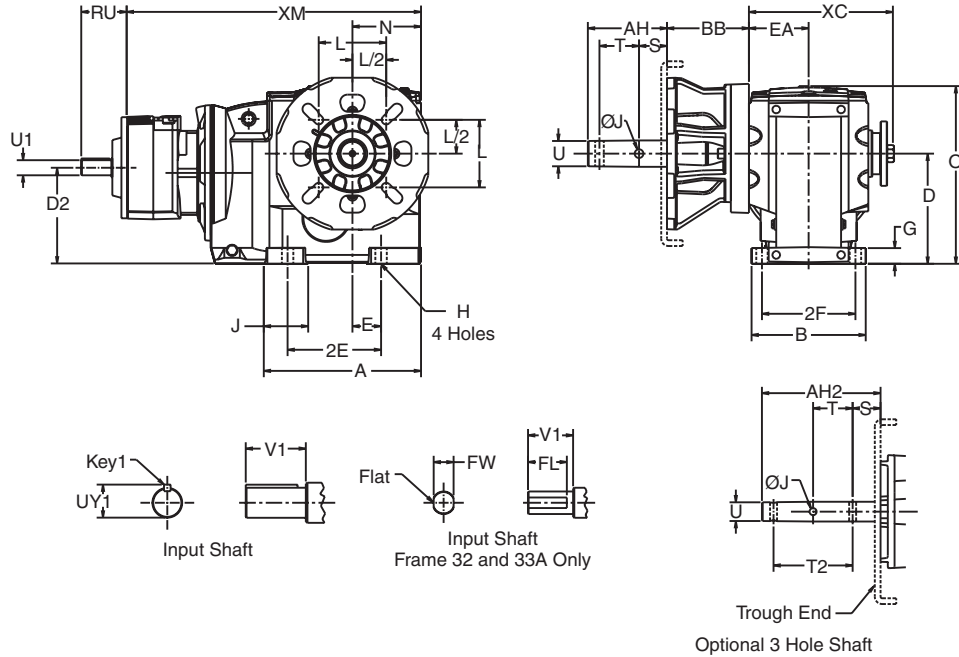
Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.
⁴ Thrust ratings for each gear frame size are listed on page B-131.
⁵ Input shaft extension tolerance (U1): +.0000"/-.0005" up to 1.5" diameter; larger diameters +.000"; -.001".

Combined CEMA Screw Conveyor Drive OtN32 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
32	S2	7.81	5.71	4.41	4.06	1.38	5.12	4.71	.73	.43	2.34	8.09	3.03	2.85	7.35	14.49
33, 33A	S2	8.50	6.61	5.51	4.91	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.35	8.30	19.90 ⁵
34	S2	10.13	7.87	7.09	4.87	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.07	9.84	21.55
35	S2	11.92	8.66	8.35	5.57	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	4.43	11.00	23.87

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
32, 33, 33A	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
34	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21

Gear Frame	Version	RU	U1 ⁶	FL	FW	UY1	V1	Key1
32, 33A	S2	2.92	.500	.86	.46	-	1.00	-
33	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
34	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.
35	S2	3.17	.625	-	-	.705	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts,

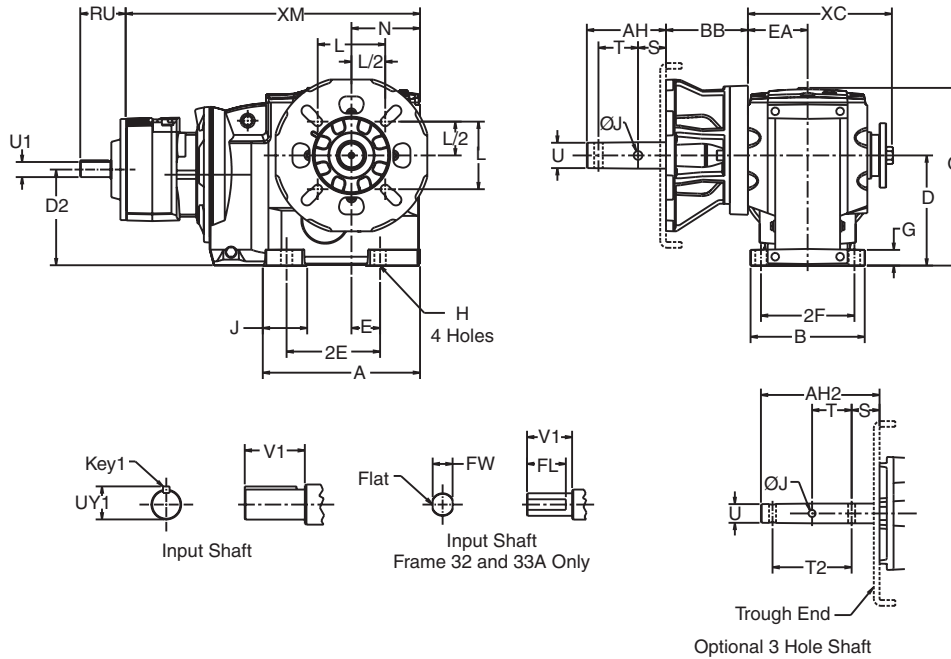
trough ends and other accessories available for each gear frame size.

⁴ Thrust ratings for each gear frame size are listed on page B-131.

⁵ XM dimension is 16.42 for gear frame 33A.

⁶ Input shaft extension tolerance (U1): +.0000"/-.0005" up to 1.5" diameter; larger diameters +.000"; -.001".

Combined CEMA Screw Conveyor Drive OtN36 - 37



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.02	13.14	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	6.61	14.76	35.43

Screw Conveyor

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
36	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.67
	12, 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.67
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.67
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	6.67
37	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	7.94
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	7.94

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	3.17	.625	.714	1.25	3/16 Sq.
37	3.17	.625	.714	1.25	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

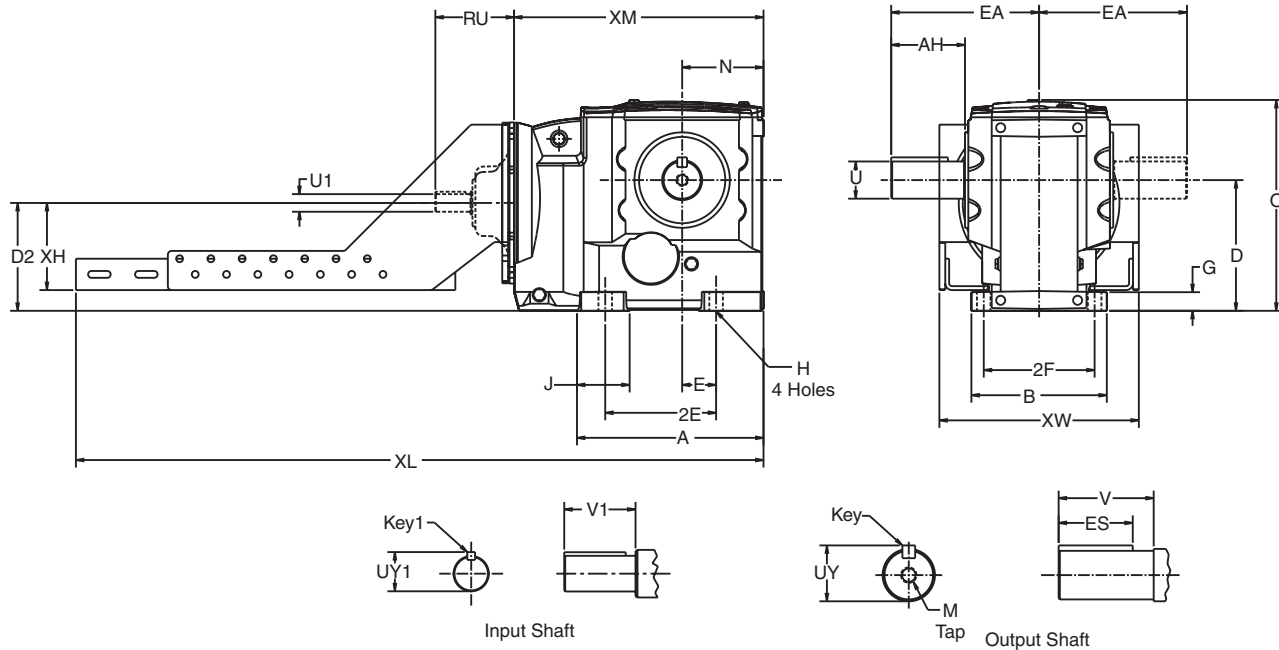
³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Thrust ratings for each gear frame size are listed on page B-131.

⁵ Input shaft extension tolerance (U1): +.0000"/-.0005" up to 1.5" diameter; larger diameters +.000"; -.001".

3-Stage Output Shafted Foot Mount OtN33 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	15.95
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	15.95

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
33	S1,S2	3.17	.625	.71	1.25	3/16 Sq.
	S1,S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S1,S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

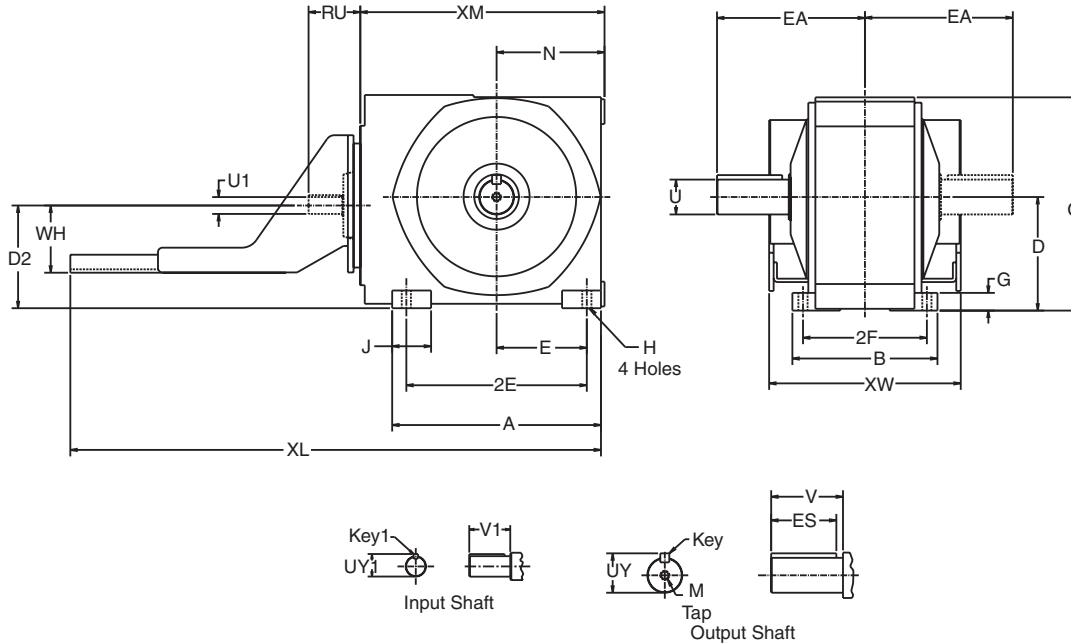
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Output Shafted Foot Mount OtN36 - 37 and OtN28

OtN Series



Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	XM
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	27.16

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	KEY	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 Sq.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 Sq.	6.00	1-8 X 2.13
28	S1	3.875	4.426	7.99	8.19	17.06	1.00 Sq.	7.25	1-8 X 1.97

Input Shaft

Gear Frame	Version	RU	U ¹	UY ¹	V ¹	Key ¹
36	S1	7.56	1.875	2.101	3.75	1/2 Sq.
37	S1	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

Motor Frame

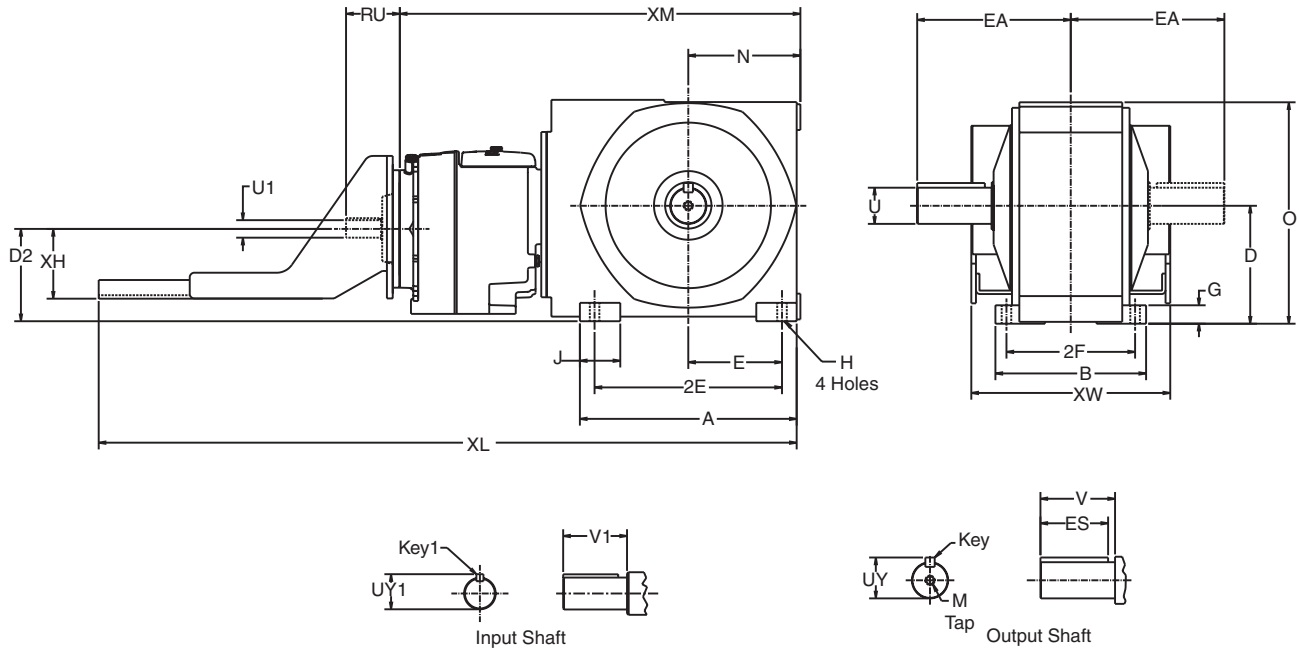
Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
28	-	-	-	-	-	-	8.50	58.91	19.06	8.50	59.04	19.06	9.50	60.41	21.31

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".
⁴ Input shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter. Larger diameter "U¹", +.000"; -.001".

Combined Output Shafted Foot Mount OtN36 - 37 and OtN28A

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
36	S1	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	30.10
37	S1	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	37.49

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 Sq.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 Sq.	6.00	1-8 X 2.13
28A	S1	3.875	4.426	7.99	8.19	17.06	1.00 Sq.	7.25	1-8 X 1.97

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
36	S1	3.17	.625	.714	1.25	3/16 Sq.
37	S1	3.17	.625	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	3.75	48.39	11.38	-	-	-	-	-	-
37	3.75	53.72	11.38	-	-	-	-	-	-
28A	5.50	53.22	12.75	5.50	52.82	12.75	5.50	53.22	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

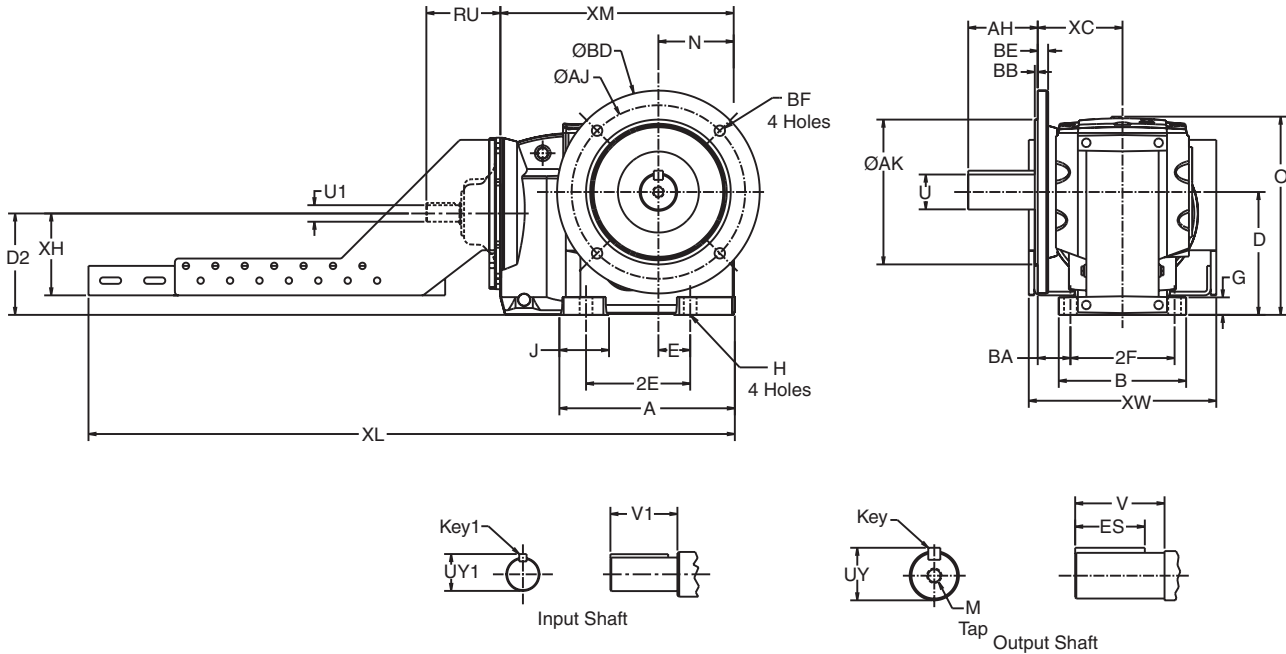
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Output Shafted Flange Mount
OtN33 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
33	S1,S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.24	4.84	11.97
34	S1,S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	5.18	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.76	15.95

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
33	S2	1.625	1.783	3.25	3.15	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	2.28	3/8 Sq.	2.19	5/8-11 X 1.38
34	S2	2.000	2.210	3.94	3.94	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.28	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.72	4.72	5/8 Sq.	3.81	3/4-10 X 1.61

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
33	S1,S2	3.17	.625	.705	1.25	3/16 Sq.
34	S1,S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

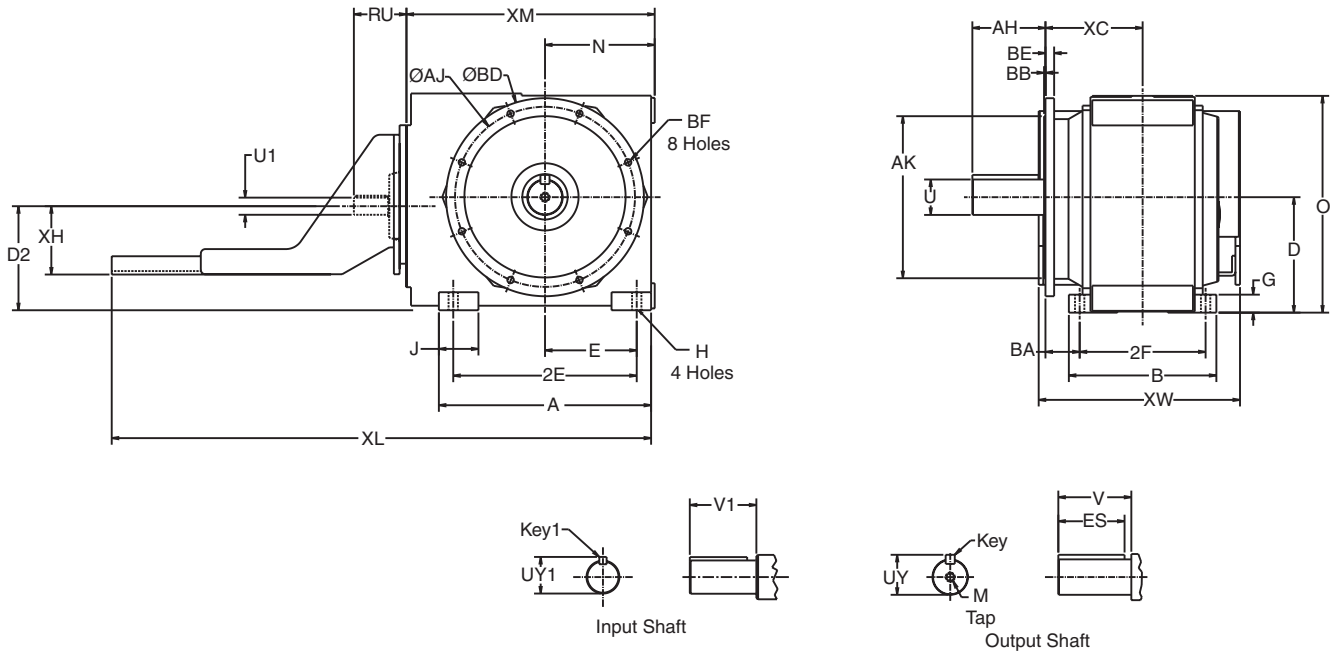
Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".
⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Output Shafted Flange Mount OtN36 - 37 and OtN28

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	11.51	27.16

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 Sq.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 Sq.	6.00	1-8 X 2.13
28	S1	4.000	4.436	8.00	8.00	1.00 Sq.	7.25	1-8 X 1.97

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36	5	15.75	13.780	.236	17.70	.79	.71
37	5	15.75	13.780	.236	17.70	.79	.71
28	5	19.69	17.72	.24	21.65	.94	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

Motor Frame

Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
28	-	-	-	-	-	-	8.50	58.91	19.06	8.50	59.04	19.06	9.50	60.41	21.31

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

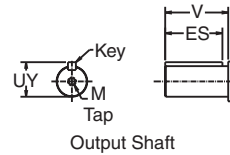
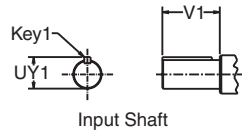
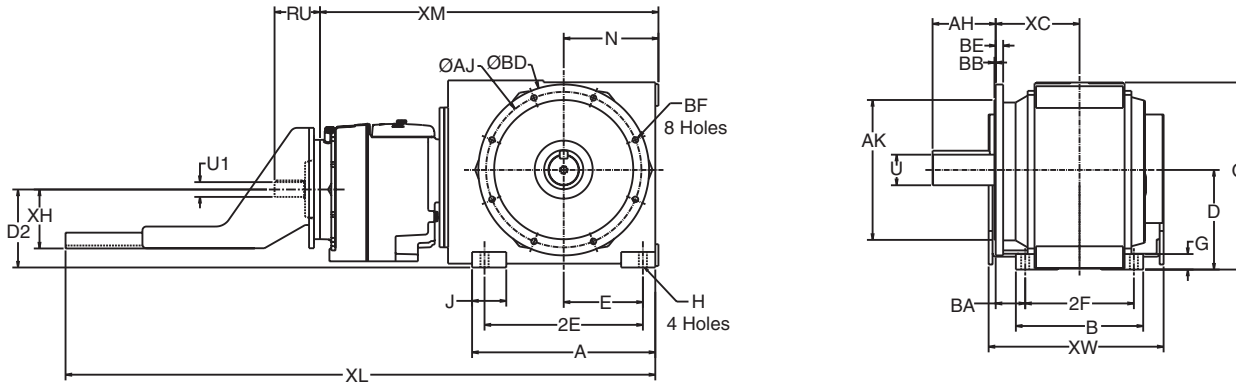
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

Combined Output Shafted Flange Mount OtN36 - 37 and OtN28

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	XC	XM
36	S2	17.06	11.41	8.86	S2	8.46	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	9.17	-
37	S2	20.58	12.99	9.84	S2	10.57	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	9.76	-
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	11.51	37.49

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	Key	ES	M
36	S2	2.875	3.20	7.68	5.51	3/4 Sq.	5.00	3/4-10 X 1.61
37	S2	3.625	4.01	8.88	6.69	7/8 Sq.	6.00	1-8 X 2.13
28A	S1	4.000	4.436	8.00	8.00	1.00 Sq.	7.25	1-8 X 1.97

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36	5	15.75	13.780	.236	17.70	.79	.71
37	5	15.75	13.780	.236	17.70	.79	.71
28A	5	19.69	17.72	.24	21.65	.94	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	3.75	48.39	11.38	-	-	-	-	-	-
37	3.75	53.72	11.38	-	-	-	-	-	-
28A	5.50	53.22	12.75	5.50	52.82	12.75	5.50	53.22	12.75

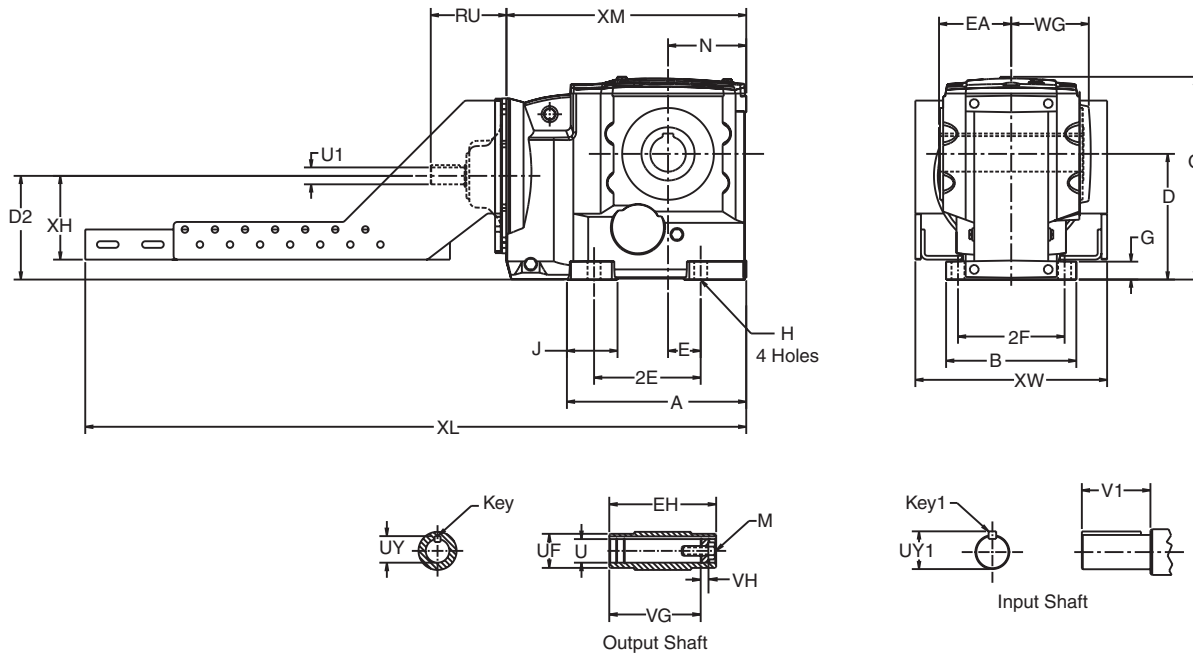
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Finished Bore Hollow Shaft OtN33 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95

Output Shaft

Gear Frame	Version	EH	U ^{4,7}	UY	EA	UF	VG	VH	Key ⁵	M
33	S2	6.94	1.500	1.674	3.47	2.16	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	8.97	2.000	2.210	4.49	2.56	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	9.66	2.375	2.656	4.83	3.54	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Input Shaft

Gear Frame	Version	RU	U1 ⁶	UY1	V1	Key1
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.

⁵ Output key supplied only on frame 34 "S2" version.

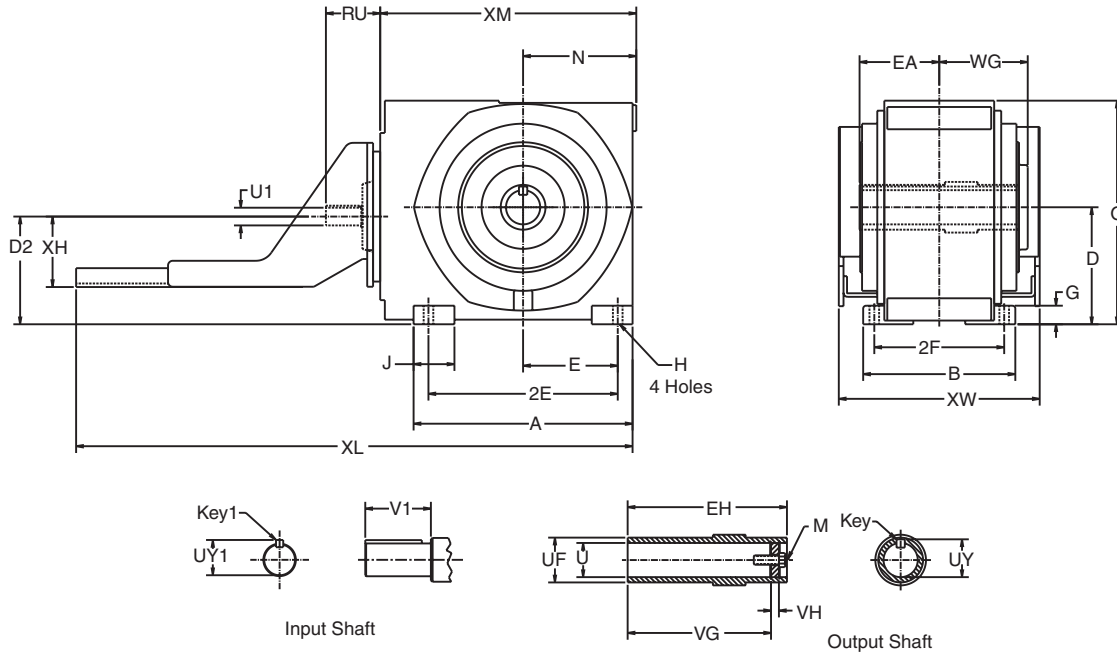
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

⁷ Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

⁸ For details of the torque arm kit, refer to page B-198.

3-Stage Finished Bore Hollow Shaft OtN36 - 37 and OtN28

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	27.16

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁷	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Input Shaft

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

Motor Frame

Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
28	-	-	-	-	-	-	8.50	58.91	19.06	8.50	59.04	19.06	9.50	60.41	21.31

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.

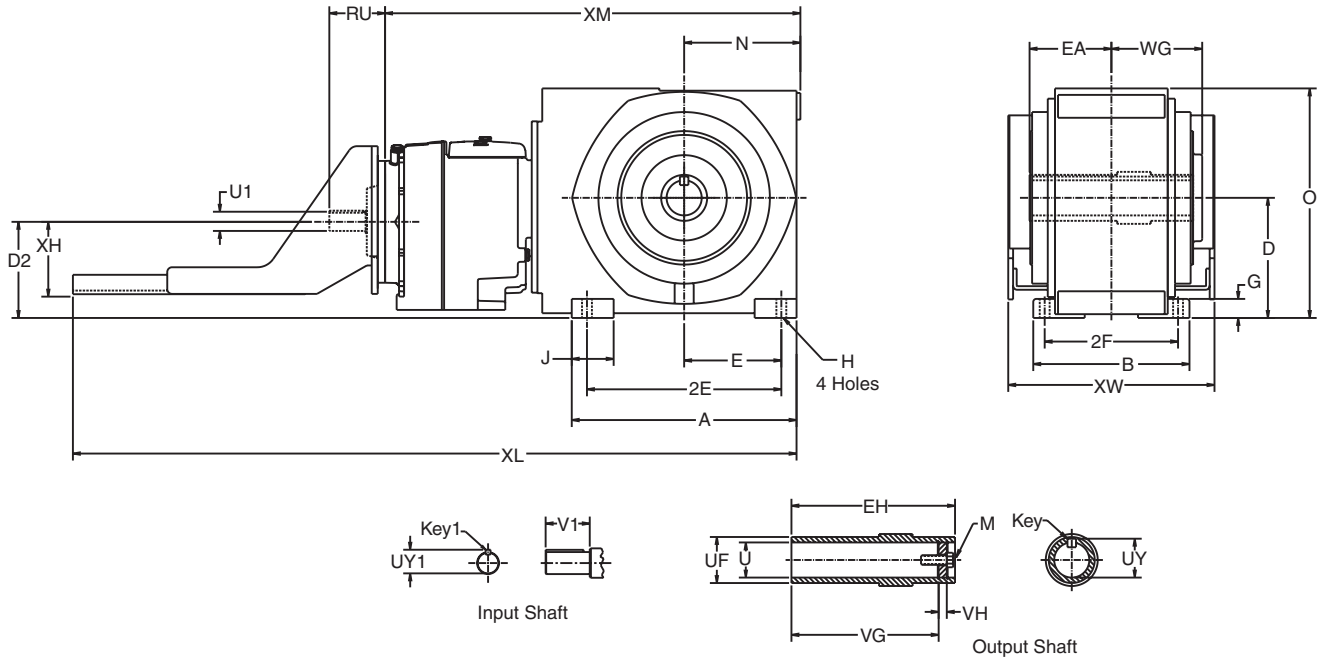
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

⁶ For details of the torque arm kit, refer to page B-129.

⁷ Key not supplied with reducer.

Combined Finished Bore Hollow Shaft OtN36 - 37 and OtN28A

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁷	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Input Shaft

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	3.75	48.39	11.38	-	-	-	-	-	-
37	3.75	53.72	11.38	-	-	-	-	-	-
28A	5.50	53.22	12.75	5.50	52.82	12.75	5.50	53.22	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.

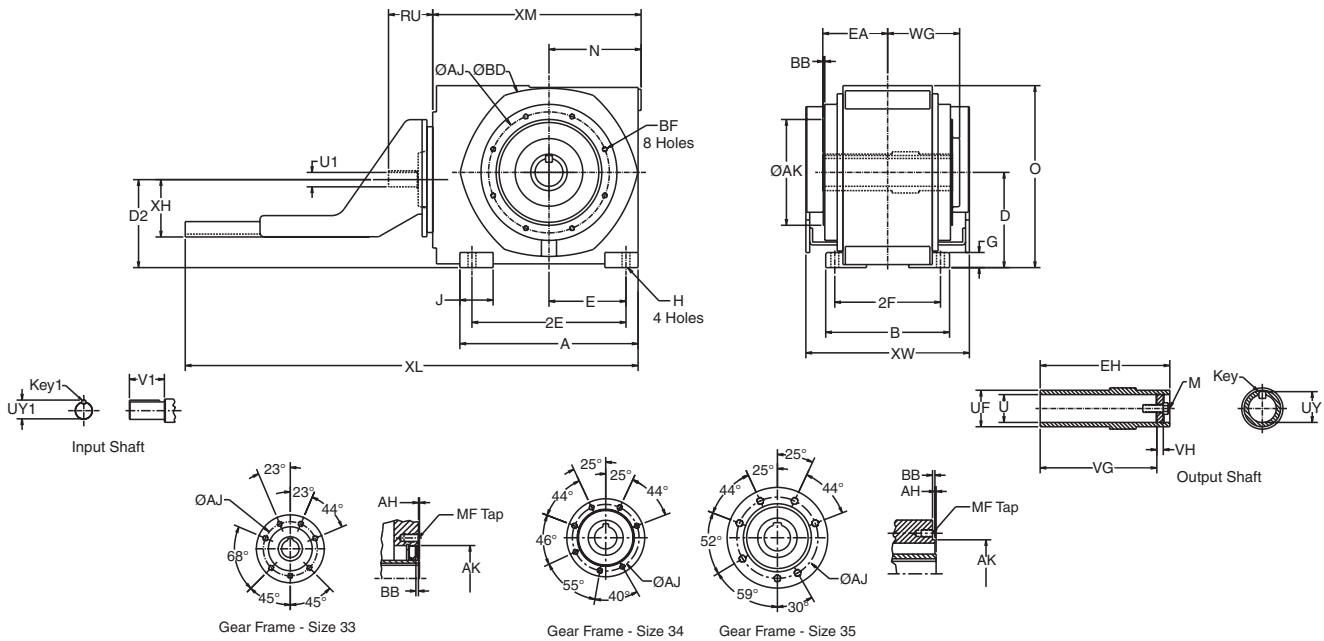
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

⁶ For details of the torque arm kit, refer to page B-129.

⁷ Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Face Mount
OtN33 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁴	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Face

Gear Frame	Version	AH	AJ	AK	BB	MF
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Input Shaft

Gear Frame	Version	RU	U1 ⁶	UY1	V1	KEY ¹
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

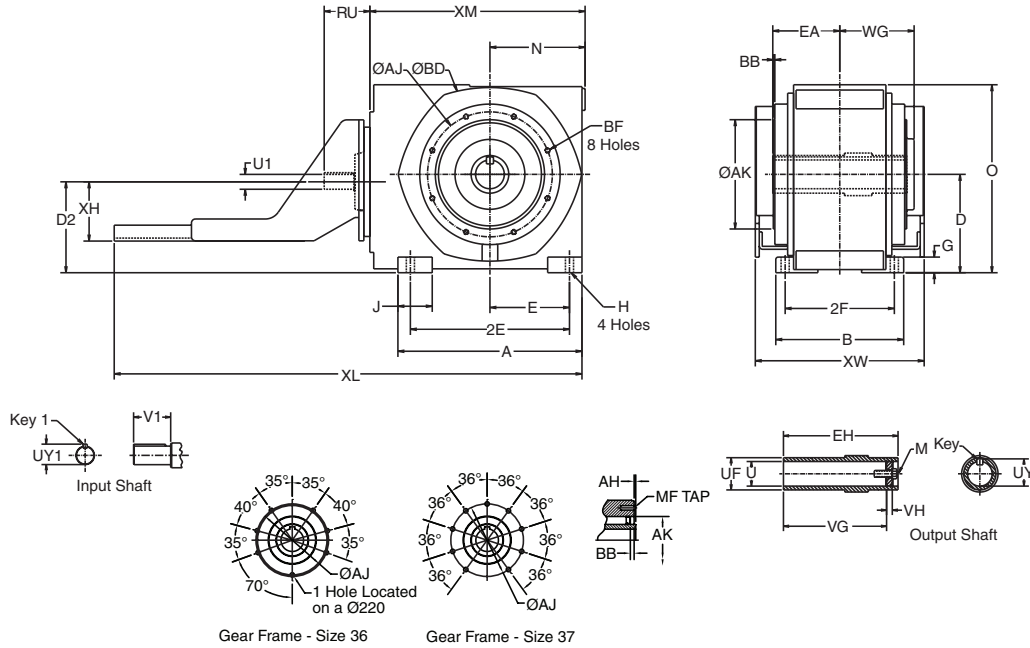
Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output key supplied only on frame 34 "S2" version.
⁵ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Finished Bore Hollow Shaft Face Mount OtN36 - 37 and OtN28



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	27.16

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
36	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8 X 1.25

Output Face

Gear Frame	Version	AJ	AK	BB	BD	BF
36	S2	9.06	5.91	.28	-	M16-2.0 X 27
37	S2	9.06	7.09	.28	-	M20-2.5 X 35
28	S1	15.75	13.78	.20	17.72	M16-2.00 X 22

Input Shaft

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

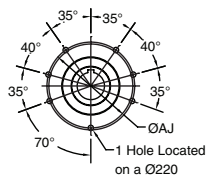
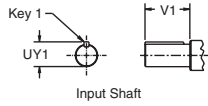
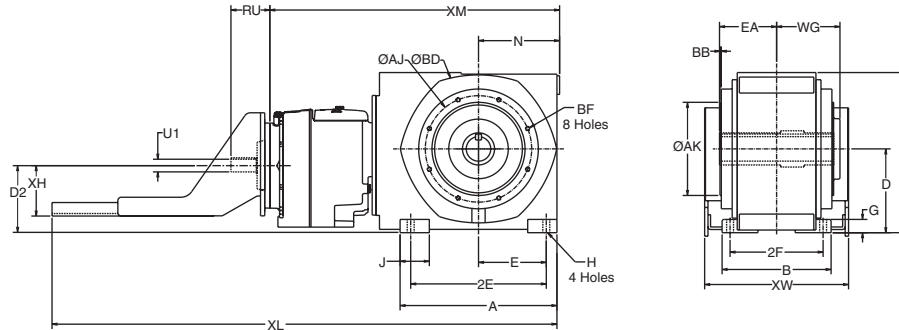
Motor Frame

Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
28	-	-	-	-	-	-	8.50	58.91	19.06	8.50	59.04	19.06	9.50	60.41	21.31

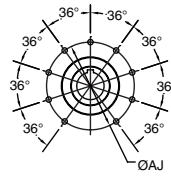
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁶ Key not supplied with reducer.

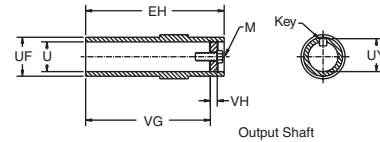
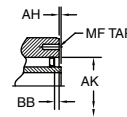
Combined Finished Bore Hollow Shaft Face Mount OtN36 - 37 and OtN 28A



Gear Frame - Size 36



Gear Frame - Size 37



Output Shaft

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	WG	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.78	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	7.44	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	9.49	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Output Face

Gear Frame	Version	AJ	AK	BB	BD	BF
36	S2	9.06	5.91	.28	-	M16-2.0 X 27
37	S2	9.06	7.09	.28	-	M20-2.5 X 35
28A	S1	15.75	13.78	.20	17.72	M16-2.00 X 22

Input Shaft

Gear Frame	Version	RU	U ⁵	UY ₁	V ₁	Key ₁
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	1.236	2.25	1/4 Sq.

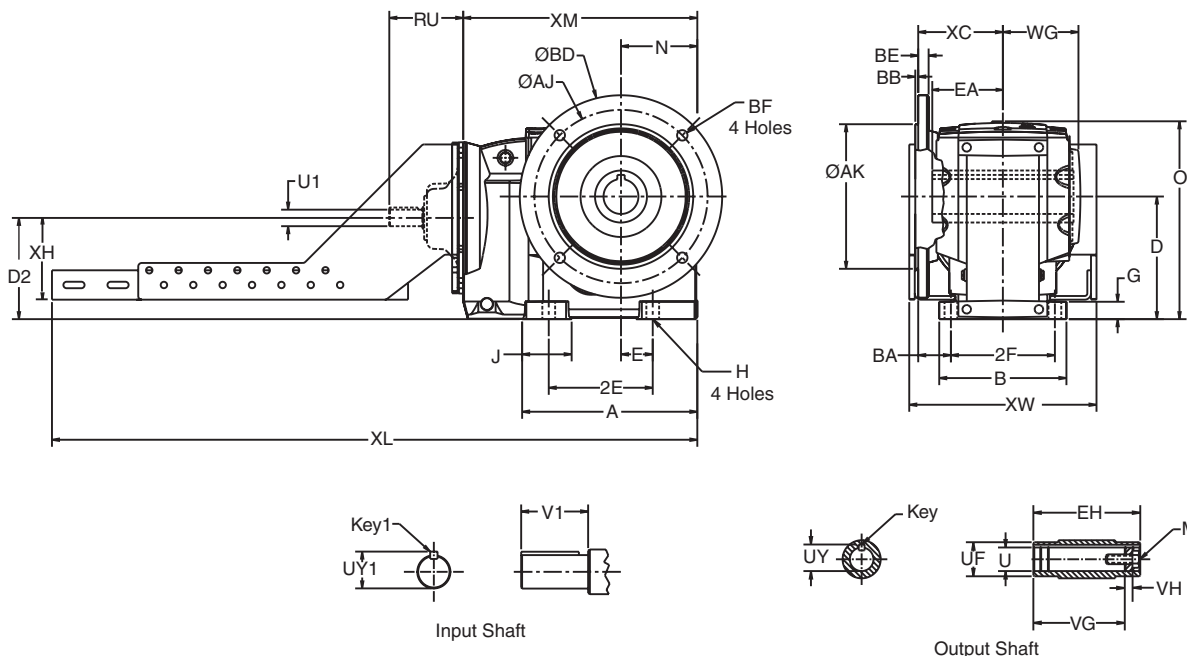
Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	3.75	48.39	11.38	-	-	-	-	-	-
37	3.75	53.72	11.38	-	-	-	-	-	-
28A	5.50	53.22	12.75	5.50	52.82	12.75	5.50	53.22	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U₁", +.000"; -.001".
⁶ Key not supplied with reducer.

3-Stage Finished Bore Hollow Shaft Flange Mount OtN33 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	2.08	3.73	4.84	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	1.93	4.66	5.18	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	2.22	5.15	5.77	15.95

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁴	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Flange

Gear Frame	Flange Code	AK	AJ	BB	BD	BE	BF
33	5	7.087	8.46	.16	9.84	.47	.55
	6	9.055	10.43	.16	11.81	.47	.55
34	5	9.055	10.43	.16	11.81	.59	.55
	6	9.842	11.80	.16	13.77	.59	.71
35	5	9.842	11.80	.20	13.77	.71	.71
	6	11.810	13.77	.20	15.75	.71	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁶	UY1	V1	Key1
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

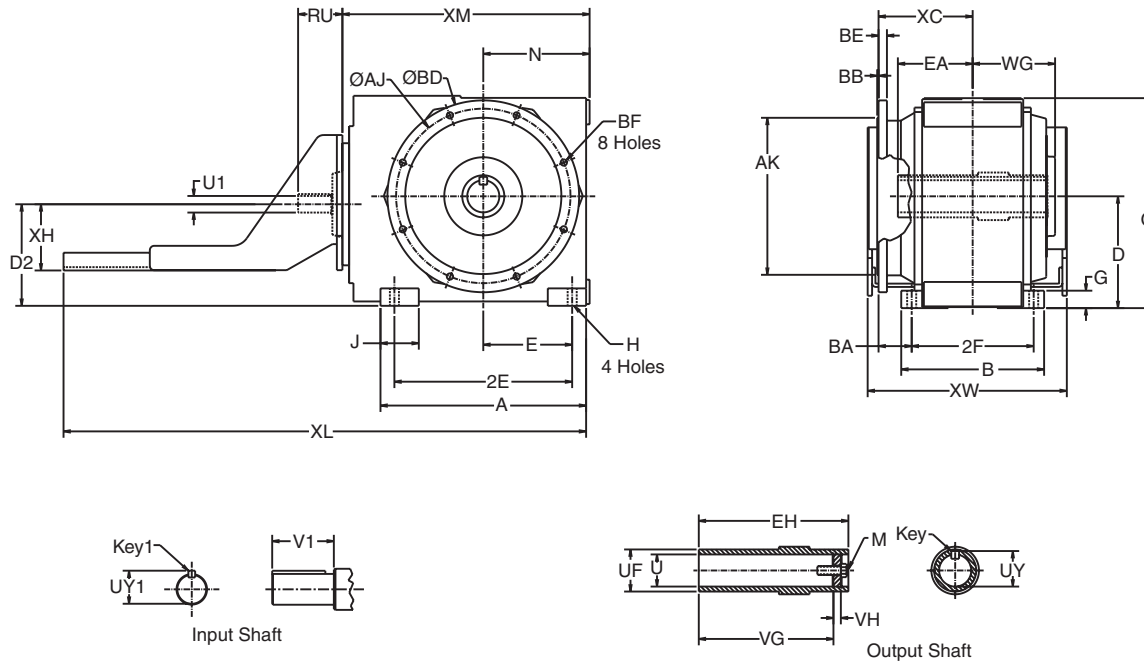
⁴ Output key supplied only on frame 34 "S2" version.

⁵ Output finished bore tolerance: +.0020", -.0000 for all diameters.

⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Finished Bore Hollow Shaft Flange Mount OtN36 - 37 and OtN28

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	28.44
28	S1	23.23	16.14	12.40	11.42	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	9.49	11.51	27.16

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00
28	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36	5	15.75	13.780	.236	17.70	.79	.71
37	5	15.75	13.780	.236	17.70	.79	.71
28	5	19.69	17.72	.24	21.65	.94	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.
28	S1	7.11	2.375	2.646	4.75	5/8 Sq.

Motor Frame

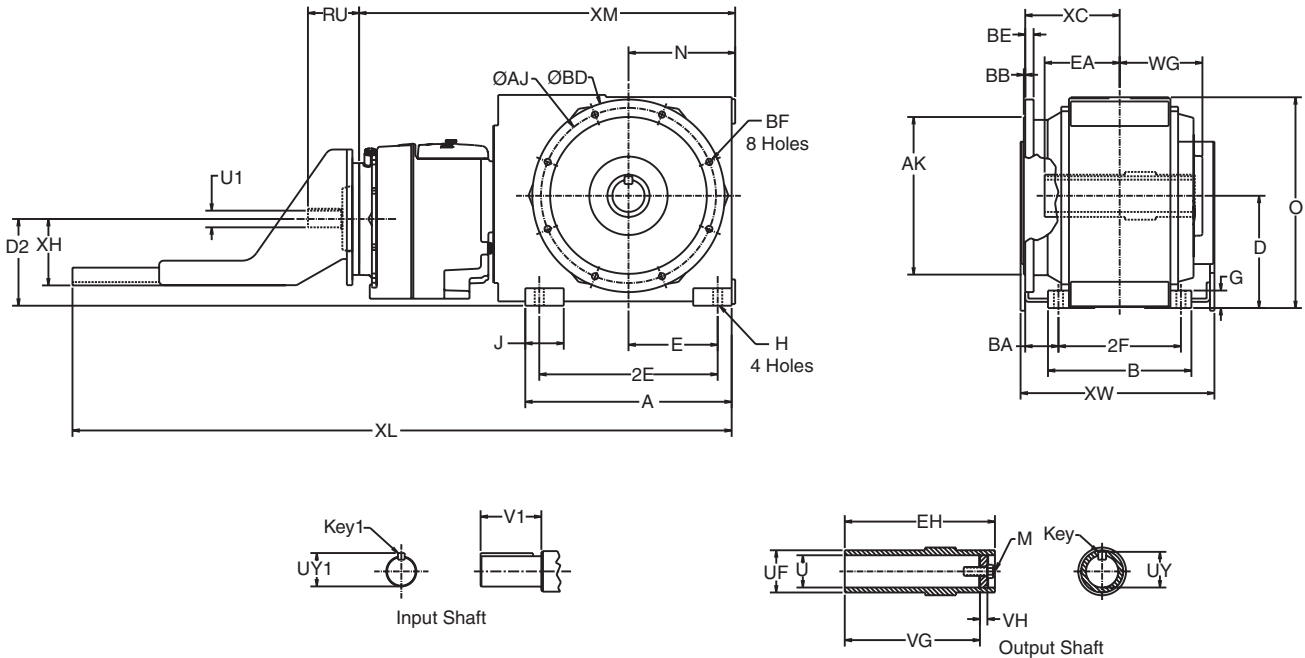
Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06
28	-	-	-	-	-	-	8.50	58.91	19.06	8.50	59.04	19.06	9.50	60.41	21.31

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁶ Key not supplied with reducer.

Combined Finished Bore Hollow Shaft Flange Mount OtN36 - 37 and OtN28A

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	BA	WG	XC	XM
36	S2	17.06	11.41	8.86	8.46	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	4.45	6.78	9.17	30.10
37	S2	20.58	12.99	9.84	10.57	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	4.45	7.44	9.76	35.43
28A	S1	23.23	16.14	12.40	10.40	10.04	20.08	13.78	1.97	1.02	4.33	23.70	12.01	3.74	9.49	11.51	37.49

Output Shaft

Gear Frame	Version	EA	EH	U ⁴	UF	UY	VG	VH	Key ⁶	M
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5/12	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5/12	3/4-10 X 2.00
28A	S1	8.45	16.90	3.625	4.35	4.009	14.95	1.02	7/8 Sq.	1-8

Output Flange

Gear Frame	Flange Code	AJ	AK	BB	BD	BE	BF
36	5	15.75	13.780	.236	17.70	.79	.71
37	5	15.75	13.780	.236	17.70	.79	.71
28A	5	19.69	17.72	.24	21.65	.94	.71

Input Shaft

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
36	S2	3.17	.625	.714	1.25	3/16 Sq.
37	S2	3.17	.625	.714	1.25	3/16 Sq.
28A	S1	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

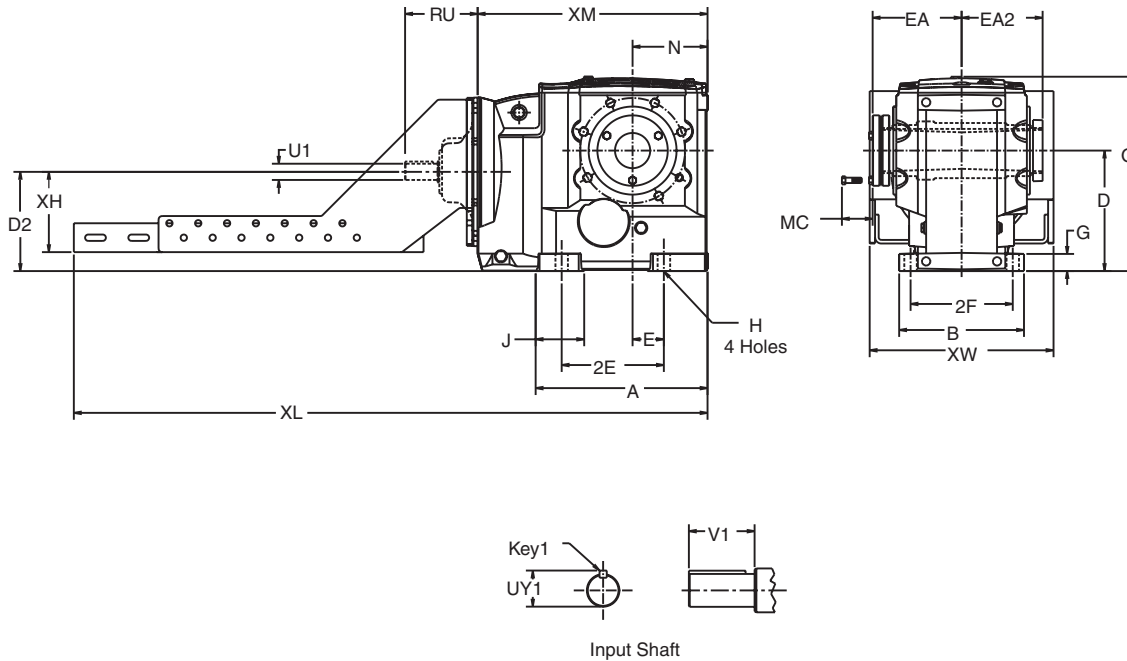
Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	3.75	48.39	11.38	-	-	-	-	-	-
37	3.75	53.72	11.38	-	-	-	-	-	-
28A	5.50	53.22	12.75	5.50	52.82	12.75	5.50	53.22	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁶ Key not supplied with reducer.

3-Stage Taper Bushed Shaft Mount OtN33 - 35

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
33 (A)	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.2	15.95

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
33	S2	4.82	4.23	1.75	3/4	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	15/16	1 15/16
35	S2	6.17	5.620	1.88	1 3/8	2 7/16

Input Shaft

Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

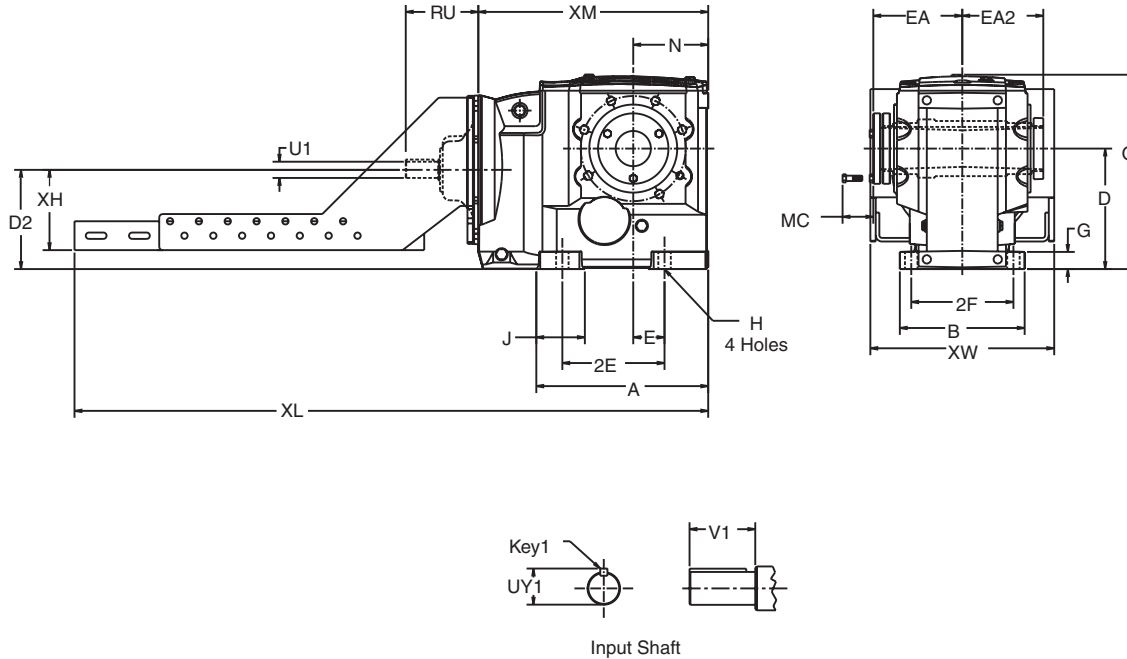
Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33 (A)	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Input shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁴ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The MC dimension shows spacing required to install or remove the bushing from the reducer.
⁶ Bushing and dust cap can be installed opposite of how they are shown above.
⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁸ For details of the torque arm kit, refer to page B-129.

3-Stage Taper Bushed Shaft Mount

OtN36 - 37



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
36	S2	6.81	7.83	1.88	2 7/16	2 15/16
37	S2	9.50	8.86	2.25	2 7/8	3 7/16

Input Shaft

Gear Frame	RU	U1 ³	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

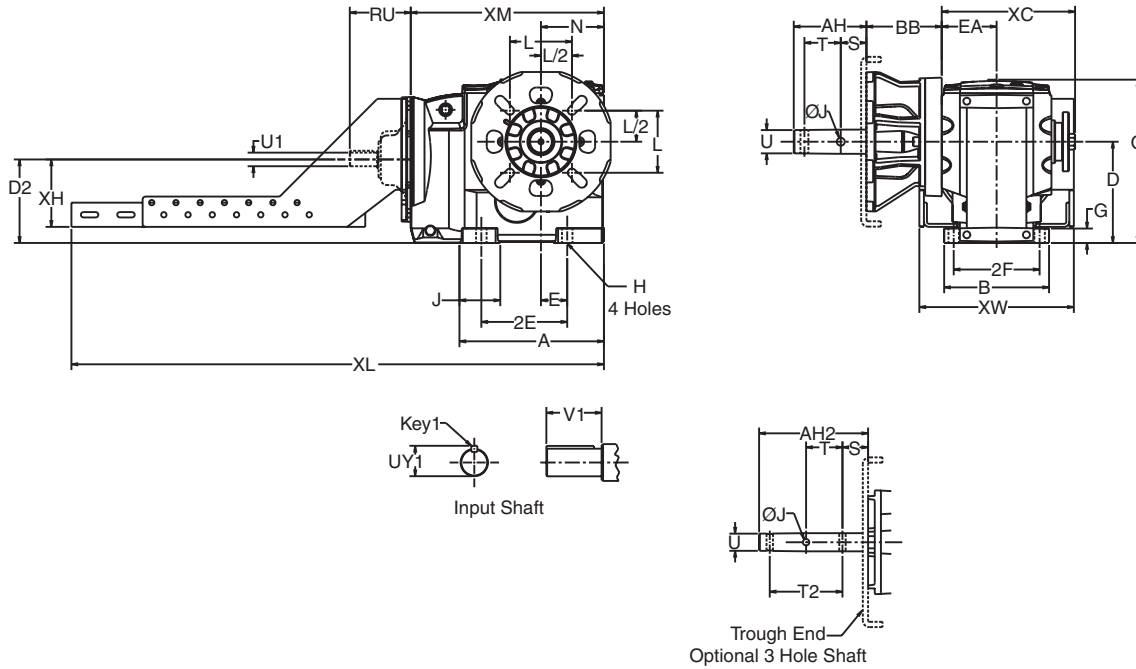
Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Input shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁴ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The MC dimension shows spacing required to install or remove the bushing from the reducer.
⁶ Bushing and dust cap can be installed opposite of how they are shown above.
⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁸ For details of the torque arm kit, refer to page B-129.

3-Stage CEMA Screw Conveyor Drive
OtN33 - 35

OtN Series



Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.35	8.30	11.97
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.07	9.84	13.78
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	4.43	11.00	15.95

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
33	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
34	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

Motor Frame

Gear Frame	143T-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
33	3.75	30.25	11.38	-	-	-	-	-	-
34	4.74	39.25	12.38	4.74	39.25	12.38	-	-	-
35	5.50	42.61	12.75	5.50	41.61	12.75	5.50	42.01	12.75

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

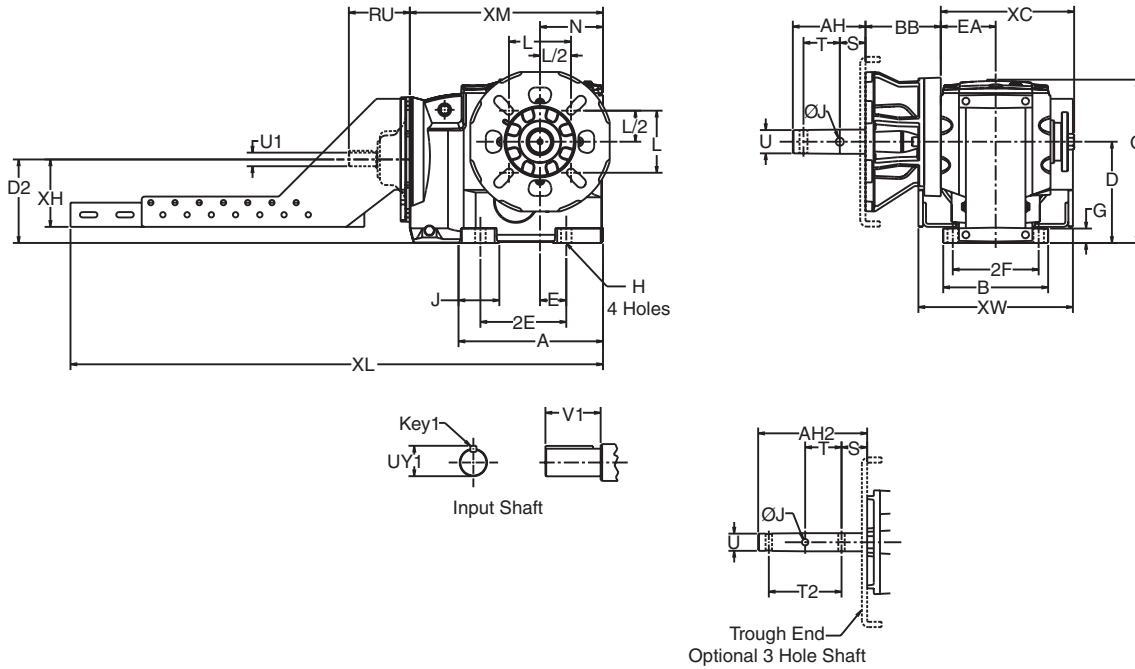
² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Thrust ratings for each gear frame size are listed on page B-131.

⁵ Input shaft extension tolerances: +.0000"/-.0005" up to 1.5" diameter; large diameters +.000"/-.001".

3-Stage CEMA Screw Conveyor Drive OtN36 - 37



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM
36	S2	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	6.02	13.14	23.11
37	S2	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	6.61	14.76	28.44

Screw Conveyor

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
36	9-12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.67
	12, 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.67
	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.67
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	6.67
37	12-20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	7.94
	18-24	.91	6.75	3.44	3.88	4.00	8.00	9.13	13.13	7.94

Input Shaft

Gear Frame	RU	U1 ⁵	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

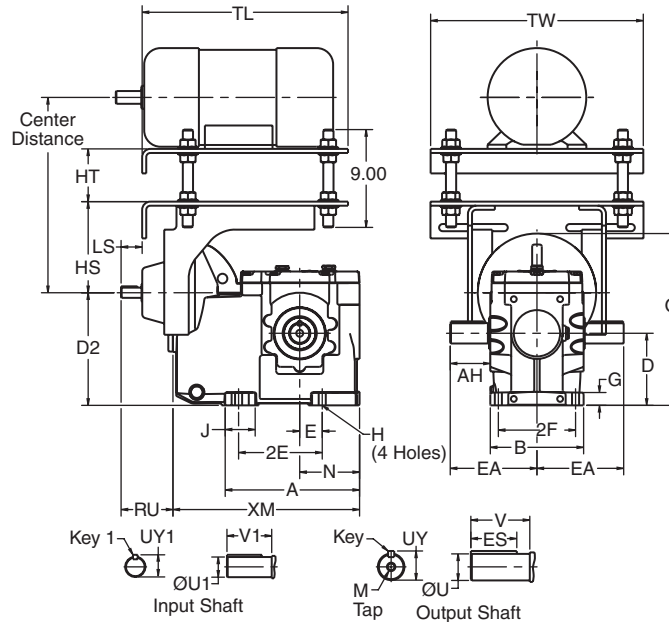
Motor Frame

Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	55.06	15.00	6.63	55.06	15.00	6.63	55.06	15.00	8.50	59.06	19.06	8.50	59.06	19.06
37	6.63	60.4	15.00	6.63	60.4	15.00	6.63	60.4	15.00	8.50	64.4	19.06	8.50	64.4	19.06

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.
⁴ Thrust ratings for each gear frame size are listed on page B-131.
⁵ Input shaft extension tolerances: +.0000"/-.0005" up to 1.5" diameter; large diameters +.000"/-.001".

2-Stage Output Shafted Foot Mount
OtN32



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	LS	HS	HT	TL	TW
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36	1.29	7.14	6.00	15.5	16.5

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
3242	S2	1.250	1.35	2.38	2.45	5.31	1/4 Sq.	2.03	1/2-13 X 1.12

Input Shaft

Gear Frame	Version	RU	U1 ⁴	UY1	V1	Key1
3242	S2	3.17	.625	.705	1.25	3/16 Sq.

Motor Frame	Center Distance	
	Min.	Max.
56	12.28	18.25
B56	12.28	18.25
182T/184T	13.28	19.25

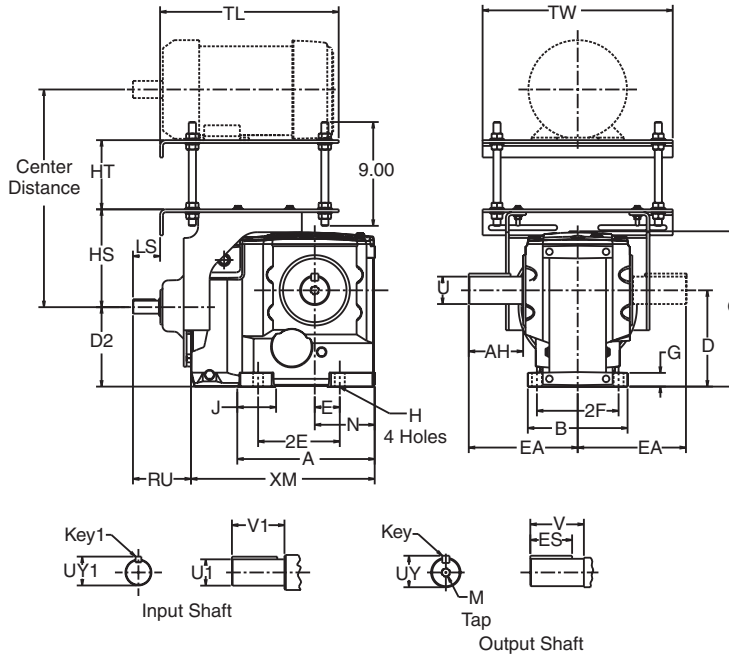
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

3-Stage Output Shafted Foot Mount OtN33 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	XM	LS	HS	HT	TL	TW
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97	1.29	7.14	6.00	15.50	16.50
	S1	8.08	8.58	4.92	5.20	3.35	6.69	6.10	.79	.55	2.27	10.43	3.54	11.97					
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78	2.31	7.17	6.00	15.50	16.50
	S1	10.69	9.60	6.30	7.49	4.53	9.06	7.68	1.18	.71	3.19	13.39	4.49	13.78					
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	15.95	2.35	8.48	6.00	15.50	16.50
	S1	13.07	10.98	7.87	9.33	5.51	11.02	9.06	1.40	.87	4.05	16.22	5.20	15.95					

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
33	S2	1.625	1.783	3.25	3.39	6.73	3/8 Sq.	2.78	5/8-11 X 1.38
	S1	1.500	1.657	3.18	3.19	7.12	3/8 Sq.	2.78	5/8-11 X 1.38
34	S2	2.000	2.210	3.63	3.76	8.11	1/2 Sq.	3.06	3/4-10 X 1.61
	S1	1.750	1.909	3.56	3.66	8.46	3/8 Sq.	3.56	3/4-10 X 1.61
35	S2	2.375	2.638	4.61	4.74	9.45	5/8 Sq.	3.81	3/4-10 X 1.61
	S1	2.375	2.638	5.73	5.27	10.57	5/8 Sq.	4.81	3/4-10 X 1.61

Input Shaft

Gear Frame	Version	RU	U ⁴	UY ¹	V ¹	Key ¹
33	S1,S2	3.17	.625	.70	1.25	3/16 Sq.
34	S1,S2	4.75	1.125	1.24	2.25	1/4 Sq.
35	S1,S2	5.03	1.125	1.24	2.25	1/4 Sq.

Motor Frame	33		34		35	
	Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

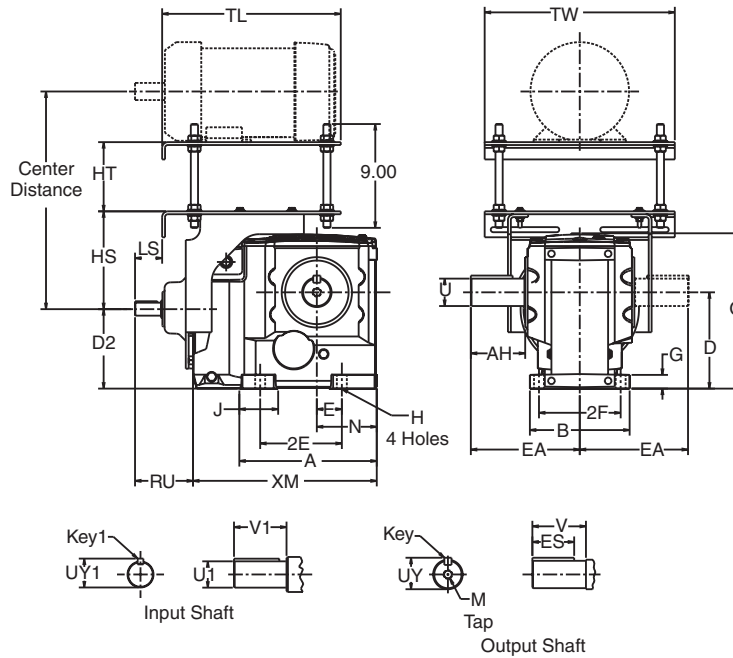
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".

⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U¹", +.000"; -.001".

3-Stage Output Shafted Foot Mount
OtN36 - 37



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM
36	S1	17.06	11.41	8.86	8.86	6.99	13.98	9.45	1.57	.87	3.87	16.26	8.74	23.11
37	S1	20.58	12.99	9.84	10.98	8.27	16.54	10.63	1.93	.94	4.78	18.29	10.04	28.44

Output Shaft

Gear Frame	Version	U ³	UY	V	AH	EA	Key	ES	M
36	S1	2.875	3.20	5.75	5.92	11.94	3/4 SQ.	5.00	3/4-10 X 1.61
37	S1	3.625	4.01	6.86	7.04	13.66	7/8 SQ.	6.00	1-8 X 2.13

Input Shaft

Gear Frame	RU	U1 ⁴	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Top Mount

Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00

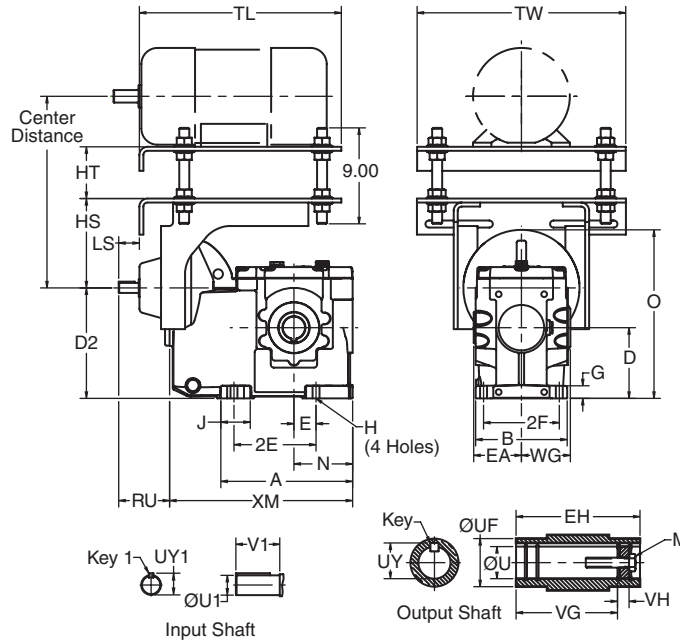
Motor Frame	36		37	
	Center Distance		Center Distance	
	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73
213T/215T	17.48	23.48	17.48	23.48
254T/256T	18.48	24.48	18.48	24.48
284T/286T	19.23	25.23	19.23	25.23
324T/326T	20.23	26.23	20.23	26.23

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.

³ Output shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter "U". Larger diameter "U", +.000"; -.001".
⁴ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

2-Stage Finished Bore Hollow Shaft OtN32

OtN Series



Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	WG	XM	LS	HS	HT	TL	TW
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	3.22	12.36	1.29	7.14	6.00	15.5	16.5

Output Shaft

Gear Frame	Version	EA	EH	U ³⁷	UF	UY	VG	VH	Key ⁵	M
3242	S2	2.97	5.94	1.375	1.96	1.523	5.06	.37	5/16 X 5/16 1 13/16	1/2-13 X 1.00

Input Shaft

Gear Frame	Version	RU	U ¹⁴	UY1	V1	Key1
3242	S2	3.17	.625	.705	1.25	3/16 Sq.

Motor Frame	Center Distance	
	Min.	Max.
56	12.28	18.25
B56	12.28	18.25
182T/184T	13.28	19.25

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

² All rough casting dimensions may vary by .25" due to casting variations.

³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.

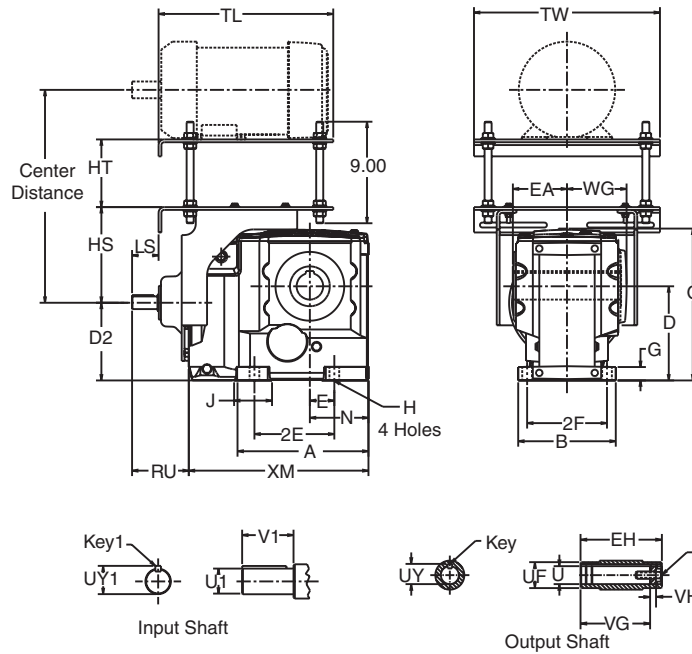
⁵ Output key supplied only on frame 34 "S2" version.

⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

⁷ Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.

⁸ For details of the torque arm kit, refer to page B-129.

3-Stage Finished Bore Hollow Shaft
OtN33 - 35



OtN Series

Gear Frame	Version	A	B	D'	D2	E	2E	2F	G	H	J	O	N	WG	XM	LS	HS	HT	TL	TW
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.73	11.97	1.29	7.14	6.00	15.50	16.50
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78	2.31	7.17	6.00	15.50	16.50
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95	2.35	8.48	6.00	15.50	16.50

Output Shaft

Gear Frame	Version	EA	EH	U ^{4,7}	UF	UY	VG	VH	Key ⁵	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.656	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00
36	S2	6.22	12.44	2.750	3.93	3.037	10.89	1.23	5/8 X 5/8 X 5 1/2	3/4-10 X 2.00
37	S2	6.80	13.59	3.625	4.72	4.019	11.90	1.23	7/8 X 7/8 X 5 1/2	3/4-10 X 2.00

Input Shaft

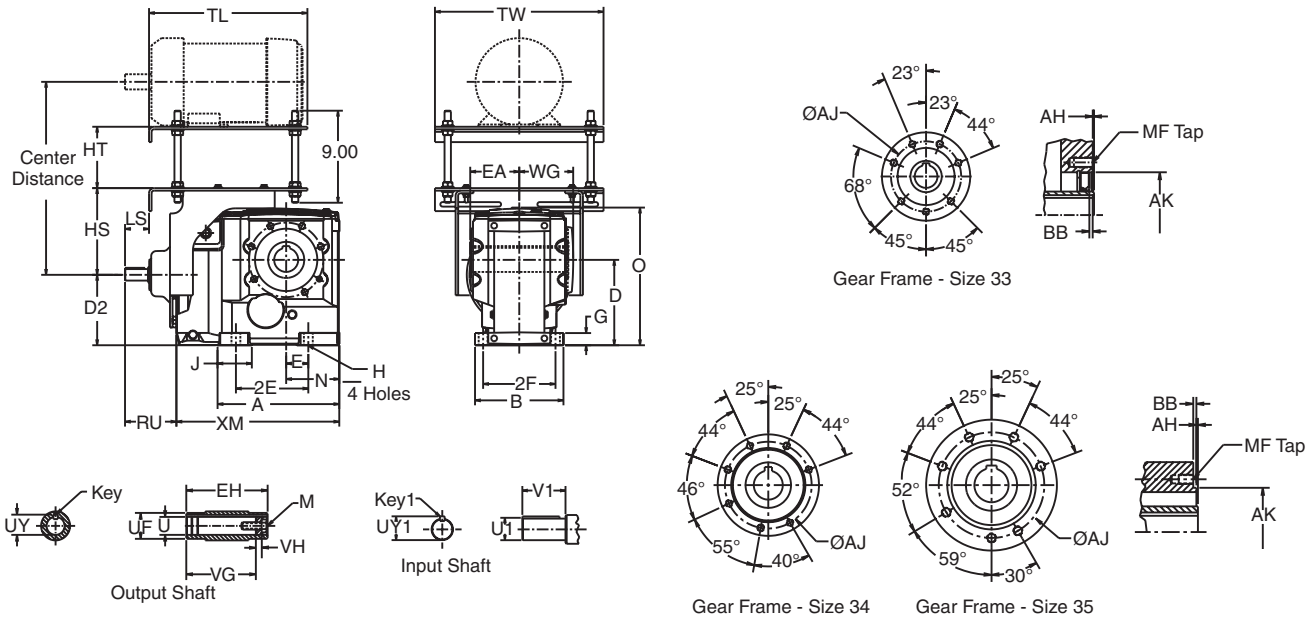
Gear Frame	Version	RU	U1 ⁶	UY1	V1	Key1
33	S2	3.17	.625	.70	1.25	3/16 Sq.
34	S2	4.75	1.125	1.24	2.25	1/4 Sq.
35	S2	5.03	1.125	1.24	2.25	1/4 Sq.

Motor Frame	33		34		35	
	Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁵ Output key supplied only on frame 34 "S2" version.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁷ Refer to Tapered Bushed designs if driven shaft varies from "U" dimensions offered above.
⁸ For details of the torque arm kit, refer to page B-129.

3-Stage Finished Bore Hollow Shaft Face Mount OtN33 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	WG	XM	LS	HS	HT	TL	TW
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.63	11.97	1.29	7.14	6.00	15.50	16.50
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.66	13.78	2.31	7.17	6.00	15.50	16.50
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	5.15	15.95	2.35	8.48	6.00	15.50	16.50

Output Shaft

Gear Frame	Version	EA	EH	U ⁵	UF	UY	VG	VH	Key ⁴	M
33	S2	3.47	6.94	1.500	2.16	1.674	5.96	.55	3/8 X 3/8 X 2 1/4	5/8-11 X 1.75
34	S2	4.49	8.97	2.000	2.56	2.210	7.44	.79	1/2 X 7/16 X 2 5/8	5/8-11 X 1.75
35	S2	4.83	9.66	2.375	3.54	2.638	8.15	.94	5/8 X 5/8 X 3 5/8	3/4-10 X 2.00

Output Face

Gear Frame	Version	AH	AJ	AK	BB	MF
33	S2	.12	4.84	3.94	.16	M12-1.75 X 22
34	S2	.14	5.98	5.12	.28	M12-1.75 X 22
35	S2	.13	7.48	6.10	.28	M16-2.00 X 27

Input Shaft

Gear Frame	Version	RU	U1 ⁶	UY1	V1	Key1
33	S2	3.17	.625	.705	1.25	3/16 Sq.
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

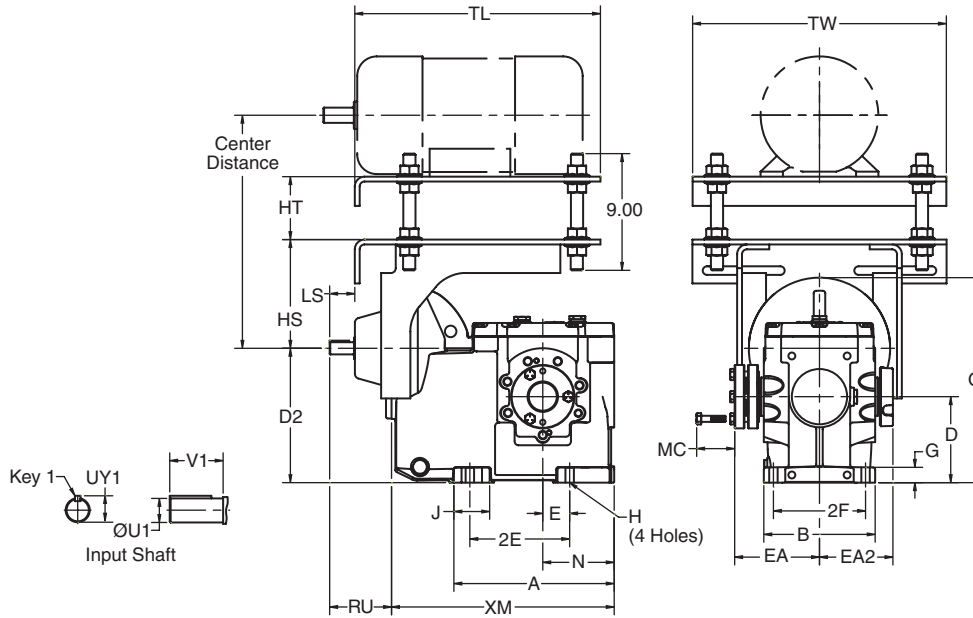
Motor Frame	33		34		35	
	Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Driven shaft entry can be from either side of the gear reducer housing by reversing positioning of the snap rings and washer illustrated.

⁴ Output key supplied only on frame 34 "S2" version.
⁵ Output finished bore tolerance: +.0020", -.0000 for all diameters.
⁶ Input shaft extension tolerances: +.0000"; -.0005" up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".

Top Mount Reducer
2-Stage Bushed Shaft Mount
OtN32

OtN Series



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	LS	HS	HT	TL	TW
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	12.36	1.29	7.14	6.00	15.5	16.5

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
3242	S2	4.85	4.27	1.75	1 5/16	1 7/16

Input Shaft

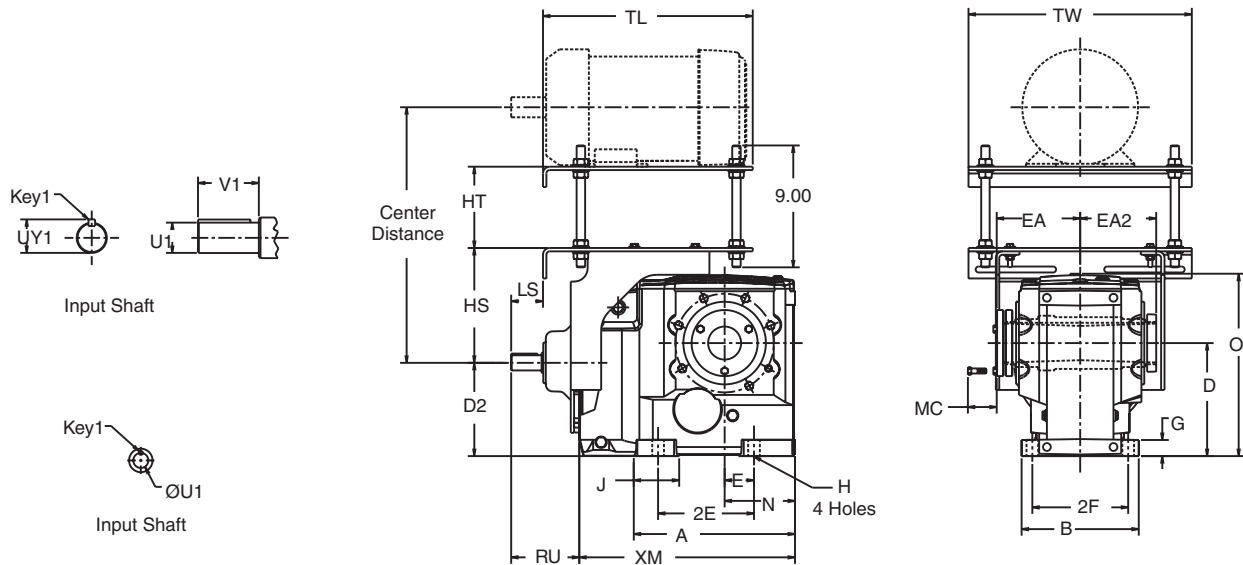
Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
3242	S2	3.17	.625	.705	1.25	3/16 Sq.

Motor Frame	Center Distance	
	Min.	Max.
56	12.28	18.25
B56	12.28	18.25
182T/184T	13.28	19.25

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Input shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁴ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The MC dimension shows spacing required to install or remove the bushing from the reducer.
⁶ Bushing and dust cap can be installed opposite of how they are shown above.
⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁸ For details of the torque arm kit, refer to page B-129.

3-Stage Taper Bushed Shaft Mount OtN33 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	XM	LS	HS	HT	TL	TW
33 (A)	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	11.97	1.29	7.14	6.00	15.50	16.50
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	13.78	2.31	7.17	6.00	15.50	16.50
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.45	13.58	5.20	15.95	2.35	8.48	6.00	15.50	16.50

Output Shaft

Gear Frame	Version	EA	EA2	MC ⁵	Bushing Bores ⁴	
					Min.	Max.
33	S2	4.82	4.23	1.75	1 5/16	1 7/16
33A	S2	5.76	5.18	1.88	1 7/16	1 15/16
34	S2	5.84	5.27	1.88	1 11/16	1 15/16
35	S2	6.17	5.620	1.88	2	2 7/16

Input Shaft

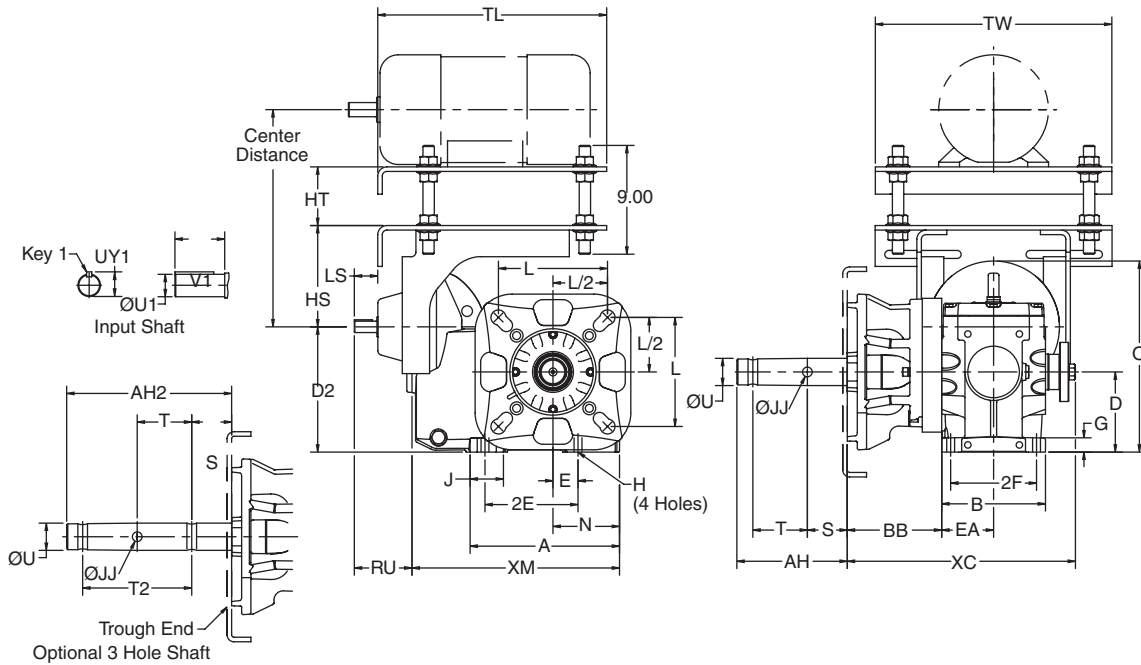
Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
33 (A)	S2	3.17	.625	.70	1.25	3/16 Sq.
34	S2	4.75	1.125	1.24	2.25	1/4 Sq.
35	S2	5.03	1.125	1.24	2.25	1/4 Sq.

Motor Frame	33		34		35	
	Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
B56	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.26	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Input shaft extension tolerances: +.0000"; -.0005" for shafts up to 1.5" diameter. Larger diameter "U1", +.000"; -.001".
⁴ Refer to page B-133 by gear frame for listing of all inch and metric bushing bore sizes available.

⁵ The MC dimension shows spacing required to install or remove the bushing from the reducer.
⁶ Bushing and dust cap can be installed opposite of how they are shown above.
⁷ Driven shaft entry can be from either side of the gear reducer housing. Refer to installation manual for requirements.
⁸ For details of the torque arm kit, refer to page B-129.

2-Stage CEMA Screw Conveyor Drive OtN32



Gear Frame	Version	A	B	D ¹	D2	E	2E	2F	G	H	J	O	N	EA	XC	XM	LS	HS	HT	TL	TW
3242	S2	8.22	5.71	4.41	6.89	1.38	5.12	4.72	.79	.43	1.83	10.51	3.66	2.85	7.35	12.36	1.29	7.14	6.00	15.5	16.5

Output Shaft

Gear Frame	Screw Dia.	JJ	L	U	S	T	T2	AH	AH2	BB
	3242	6-10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00
9-12		.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
12-14		.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
12-20		.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13

Input Shaft

Gear Frame	Version	RU	U1 ⁵	UY1	V1	Key1
3242	S2	3.17	.625	.705	1.25	3/16 Sq.

Motor Frame	Center Distance	
	Min.	Max.
56	12.28	18.25
B56	12.28	18.25
182T/184T	13.28	19.25

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.

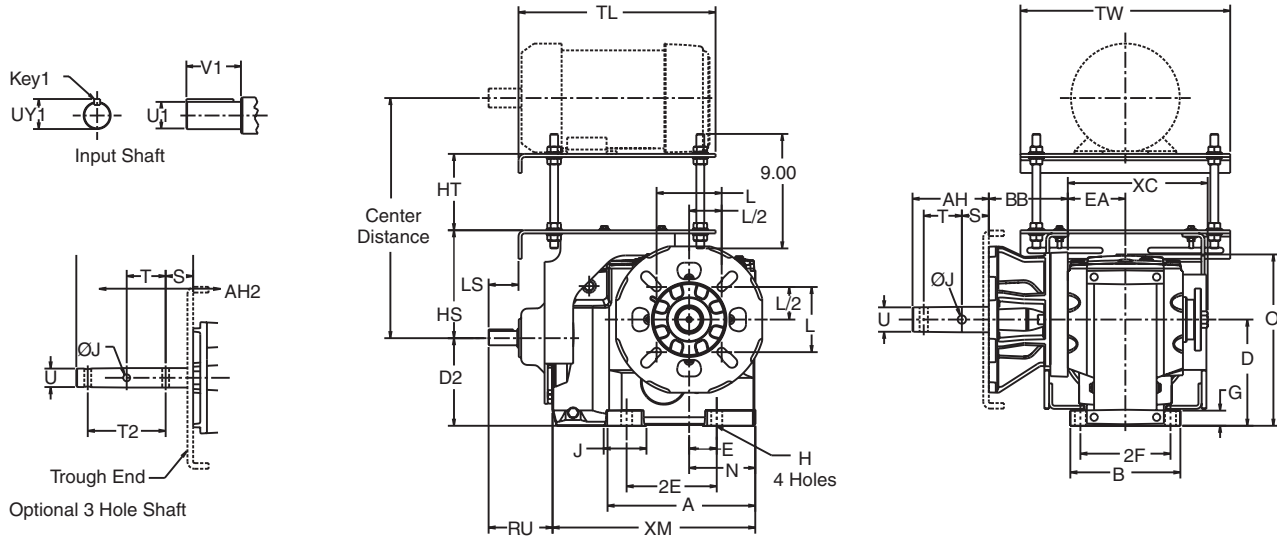
² All rough casting dimensions may vary by .25" due to casting variations.

³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

⁴ Thrust ratings for each gear frame size are listed on page B-131.

⁵ Input shaft extension tolerances: +.0000"/-.0005" up to 1.5" diameter; larger diameters +.000"/-.001".

3-Stage CEMA Screw Conveyor Drive OtN33 - 35



OtN Series

Gear Frame	Version	A	B	D ¹	D ₂	E	2E	2F	G	H	J	O	N	EA	XC	XM	LS	HS	HT	TL	TW
33	S2	8.50	6.61	5.51	5.24	1.18	4.72	5.51	.85	.55	2.86	9.69	3.54	3.35	8.30	11.97	1.29	7.14	6.00	15.50	16.50
34	S2	10.13	7.87	7.09	5.90	1.57	5.91	6.50	1.07	.71	2.67	12.05	4.49	4.07	9.84	13.78	2.31	7.17	6.00	15.50	16.50
35	S2	11.92	8.66	8.35	6.89	2.17	7.09	7.09	1.18	.87	3.37	13.58	5.20	4.43	11.00	15.95	2.35	8.48	6.00	15.50	16.50

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T ₂	AH	AH ₂	BB
32, 33	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
34	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.00	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21

Input Shaft

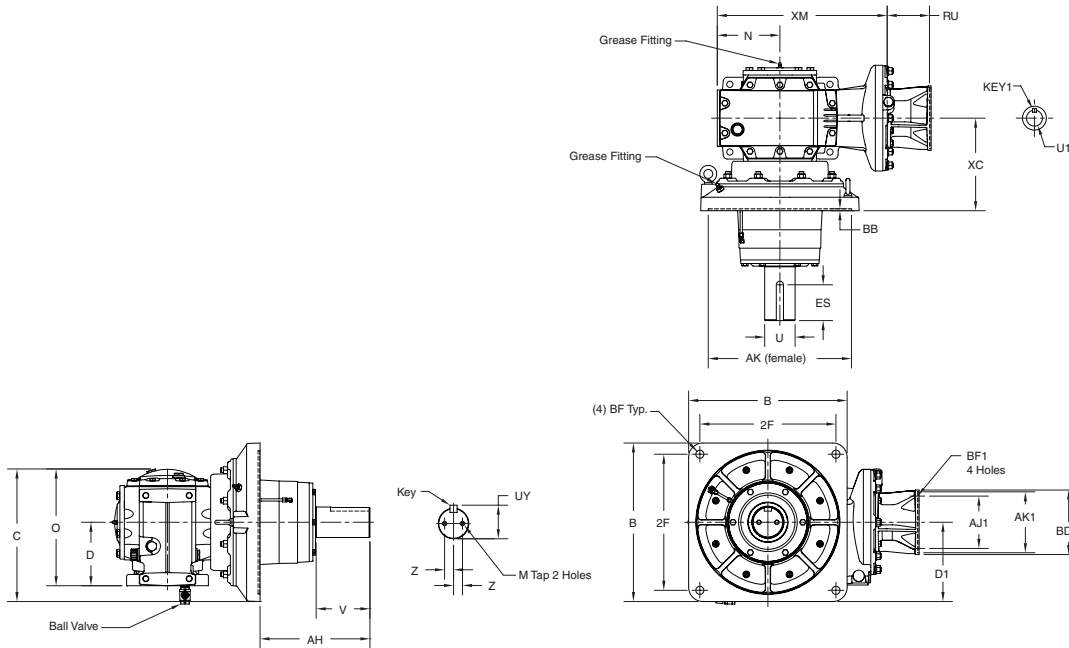
Gear Frame	Version	RU	U ⁵	UY ₁	V ₁	Key ₁
33	S2	3.17	.625	.70	1.25	3/16 Sq.
34	S2	4.75	1.125	1.24	2.25	1/4 Sq.
35	S2	5.03	1.125	1.24	2.25	1/4 Sq.

Motor Frame	33		34		35	
	Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34
182T/184T	13.28	19.26	13.31	19.28	14.87	20.34
213T/215T	-	-	14.06	20.03	15.62	21.09
254T/256T	-	-	-	-	16.62	22.09

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to .03" may be necessary.
² All rough casting dimensions may vary by .25" due to casting variations.
³ Refer to pages B-131 and B-132 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.
⁴ Thrust ratings for each gear frame size are listed on page B-131.
⁵ Input shaft extension tolerances: +.0000"/-.0005" up to 1.5" diameter; larger diameters +.000"/-.001".

3-Stage Extended Flange Mount OtN34 - 35 (38D)

OtN Series



Gear Frame	Version	C	D	D1	O	N	XC	XM	
								56C-215TC	254TC-364TC
34	S2	13.01	7.09	6.86	12.05	4.49	7.92	14.56	-
35	S2	13.28	8.35	6.59	13.58	5.20	8.51	16.90	17.25

Output Shaft

Gear Frame	Version	U ¹	UY	V	AH	Key	ES	M	Z
34	S2	3.250	2.831	5.75	8.60	3/4 Sq.	3.25	1/2-13	1.00
35	S2	3.750	3.261	6.5	9.37	7/8 Sq.	4.00	5/8-11	1.13

Output Flange

Gear Frame	Flange Code	AK	2F	BB	B ²	BF
34	8	15.000	14.00	0.25	16.09	0.81
35	8	15.000	14.00	0.25	16.09	0.81

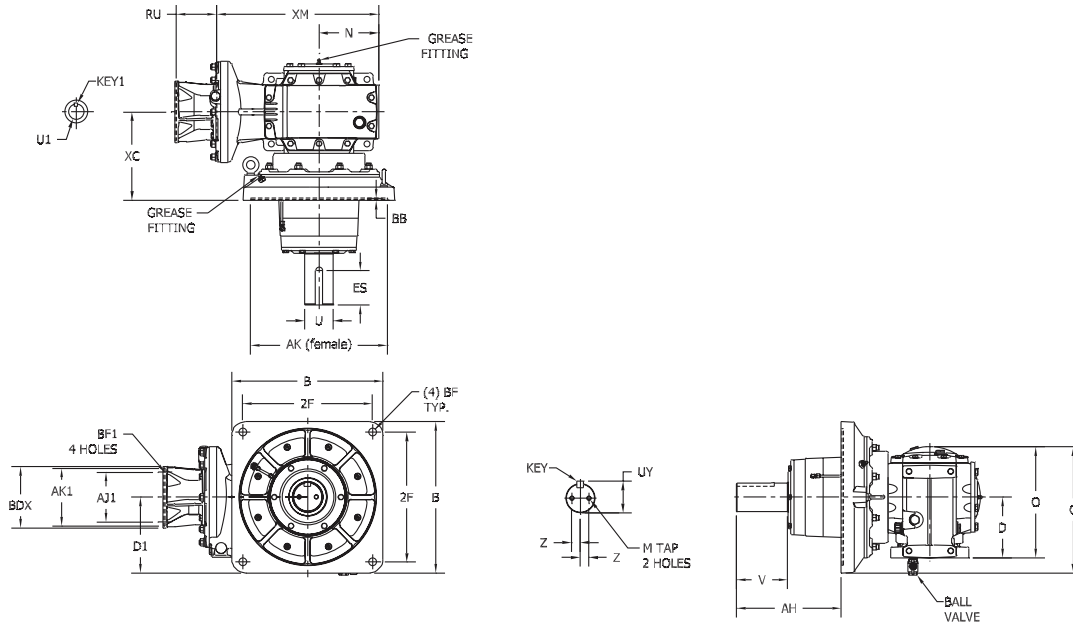
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	0.38	0.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	0.38	0.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	0.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	0.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	35	7.25	8.50	0.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	35	9.00	10.5	0.50	1.875	7.09	11.25	1/2 Sq.

¹ Output shaft extension tolerances +.000", -.001".

² Rough casting dimensions may vary up to .25" due to casting variations

3-Stage Extended Flange Mount OtN36 - 37 (83G)

OtN Series



Gear Frame	Version	C	D	D1	O	N	XC	XM	
								56C-215TC	254TC-364TC
36	S2	18.51	8.86	11.07	16.30	8.74	12.92	23.38	23.73
37	S2	19.67	9.84	12.21	18.45	10.04	13.51	23.38	29.06

Output Shaft

Gear Frame	Version	U ¹	UY	V	AH	Key	ES	M	Z
36	S2	4.250	3.690	7.5	15.34	1 Sq.	5.00	5/8-11	1.25
37	S2	5.750	4.901	10	18.21	1 1/2 Sq.	7.00	3/4-10	1.50

Output Flange

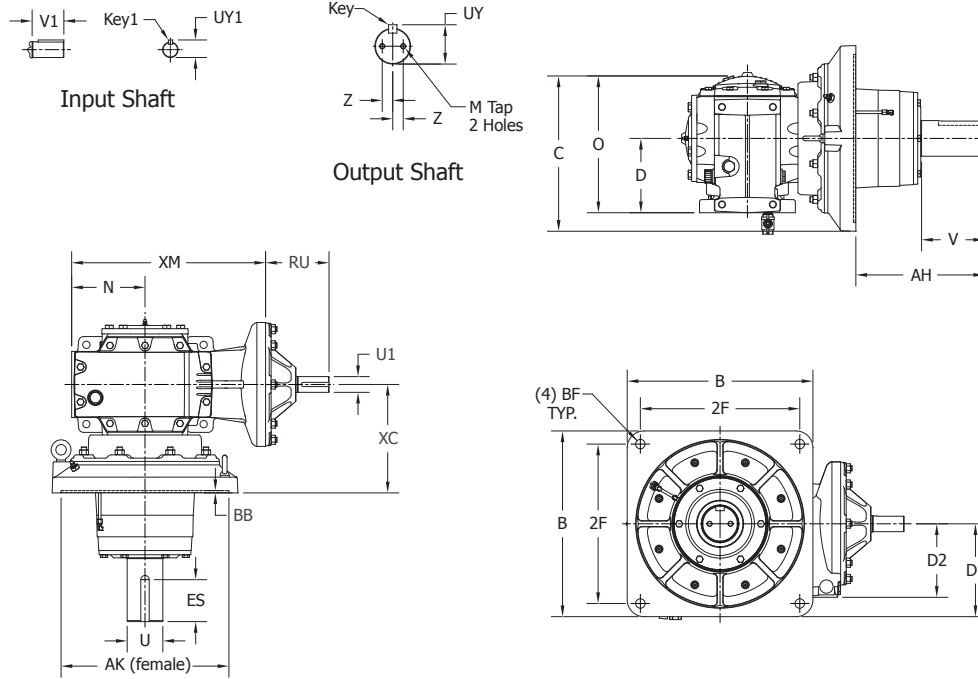
Gear Frame	Flange Code	AK	2F	BB	B ²	BF
36	8	20.000	19.00	0.28	22.13	1.13
37	8	20.000	19.00	0.28	22.13	1.13

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
182TC/184TC	All	7.25	8.50	0.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	0.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	0.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.5	0.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.5	0.625	2.125	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.5	0.625	2.375	8.45	13.38	5/8 Sq.

¹ Output shaft extension tolerances +.000", -.001".

² Rough casting dimensions may vary up to .25" due to casting variations

3-Stage Extended Flange Mount OtN 34 - 35 (38D)



Gear Frame	Version	C	D	D1	D2	O	N	XC	XM
34	S2	13.01	7.09	6.86	5.90	12.05	4.49	7.92	21.55
35	S2	13.28	8.35	6.59	6.89	13.58	5.20	8.51	23.87

Output Shaft

Gear Frame	Version	U ¹	UY	V	AH	Key	ES	M	Z
34	S2	3.250	2.831	5.75	8.60	3/4 Sq.	3.25	1/2-13	1.00
35	S2	3.750	3.261	6.50	9.37	7/8 Sq.	4.00	5/8-11	1.13

Output Flange

Gear Frame	Flange Code	AK	2F	BB	B ²	BF
34	8	15.000	14.00	0.25	16.09	0.81
35	8	15.000	14.00	0.25	16.09	0.81

AP Input

Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
34	S2	4.75	1.125	1.236	2.25	1/4 Sq.
35	S2	5.03	1.125	1.236	2.25	1/4 Sq.

¹ Output shaft tolerance; +.000", -.001"

² Rough casting dimensions may vary up to .25" due to casting variations

³ Input shaft tolerances: +.0000", -.0005" for shafts up to 1.5" diameter. Larger diameter U1, +.000", -.001"

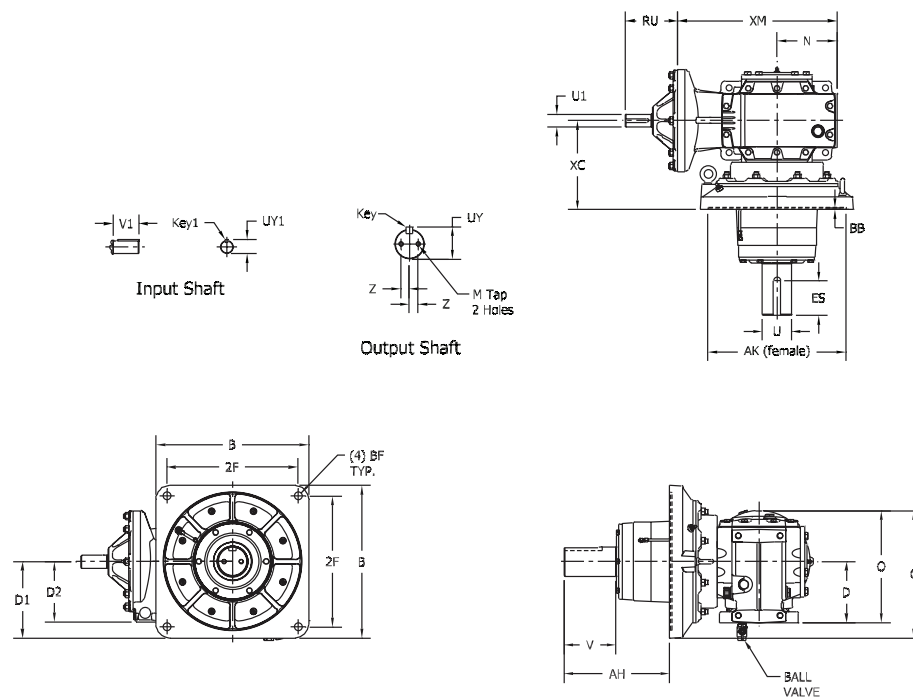
AP Input Shaft Reducer

3-Stage Extended Flange Mount

OtN 36 - 37 (83G)

OtN
SERIES 2000
3000

OtN Series



Gear Frame	Version	C	D	D1	D2	O	N	XC	XM
36	S2	18.51	8.86	11.07	8.82	16.30	8.74	12.92	30.10
37	S2	19.67	9.84	12.21	10.98	18.45	10.04	13.51	35.43

Gear Frame	Version	U ¹	UY	V	AH	Key	ES	M	Z
36	S2	4.250	3.690	7.50	15.34	1 Sq.	5.00	5/8-11	1.25
37	S2	5.750	4.901	10.00	18.21	1 1/2 Sq.	7.00	3/4-10	1.50

Gear Frame	Flange Code	AK	2F	BB	B ²	BF
36	8	20.000	19.00	0.28	22.13	1.13
37	8	20.000	19.00	0.28	22.13	1.13

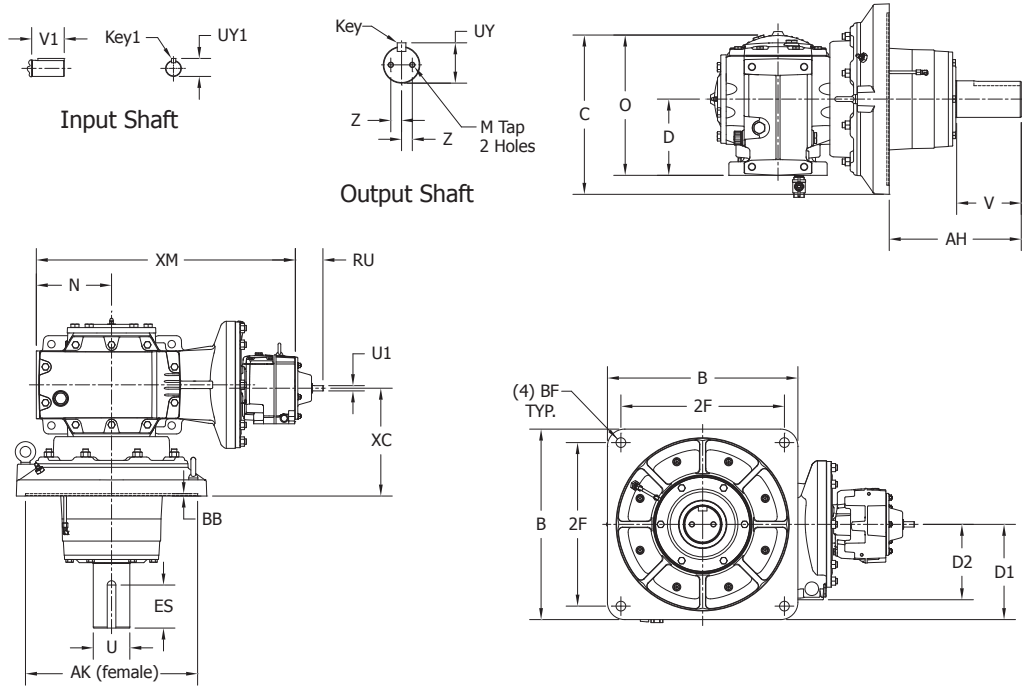
Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
36	S2	7.56	1.875	2.101	3.75	1/2 Sq.
37	S2	7.56	1.875	2.101	3.75	1/2 Sq.

¹ Output shaft tolerance; +.000", -.001"

² Rough casting dimensions may vary up to .25" due to casting variations

³ Input shaft tolerances: +.0000", -.0005" for shafts up to 1.5" diameter. Larger diameter U1, +.000", -.001"

Combined Reduction Extended Flange Mount OtN 34 - 35 (38D)



Gear Frame	Version	C	D	D1	D2	O	N	XC	XM
34	S2	13.01	7.09	6.86	5.90	12.05	4.49	7.92	14.49
35	S2	13.28	8.35	6.89	6.89	13.58	5.20	8.51	19.90

Output Shaft

Gear Frame	Version	U ¹	UY	V	AH	Key	ES	M	Z
34	S2	3.250	2.831	5.75	8.60	3/4 Sq.	3.25	1/2-13	1.00
35	S2	3.750	3.261	6.50	9.37	7/8 Sq.	4.00	5/8-11	1.13

Output Flange

Gear Frame	Flange Code	AK	2F	BB	B ²	BF
34	8	15.000	14.00	0.25	16.09	0.81
35	8	15.000	14.00	0.25	16.09	0.81

AP Input

Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
34	S2	3.17	0.625	0.705	1.25	3/16 Sq.
35	S2	3.17	0.625	0.705	1.25	3/16 Sq.

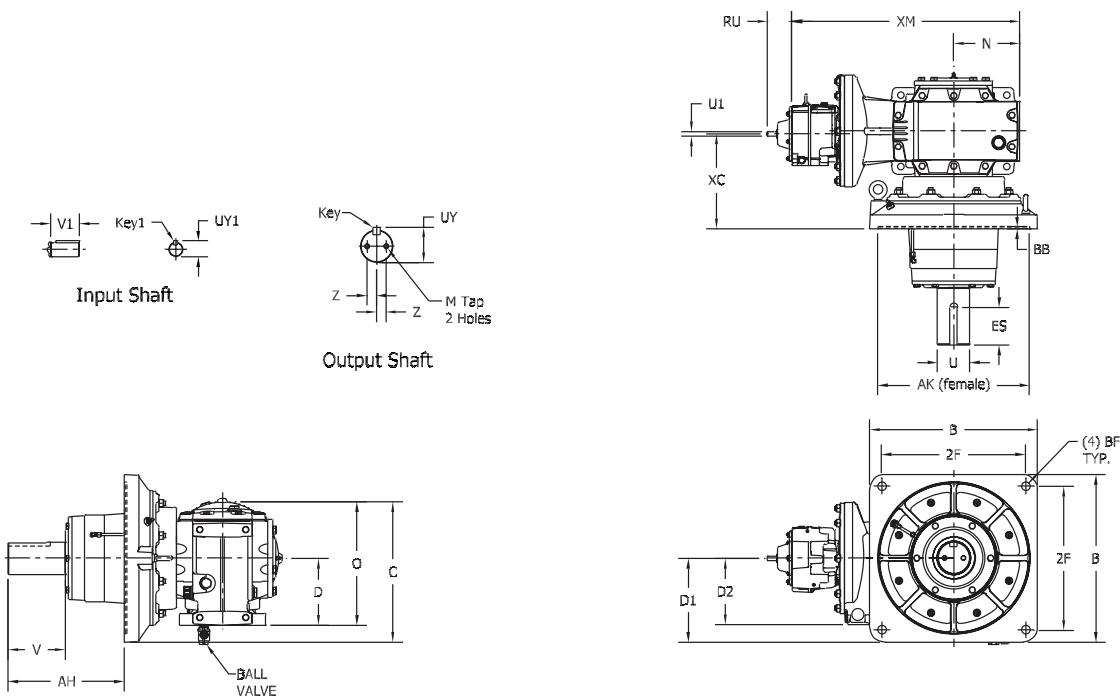
¹ Output shaft tolerance; +.000", -.001"

² Rough casting dimensions may vary up to .25" due to casting variations

³ Input shaft tolerances: +.0000", -.0005" for shaft with U1 up to 1.5"

Combined Reduction Extended Flange Mount OtN 36 - 37 (83G)

OtN Series



Gear Frame	Version	C	D	D1	D2	O	N	XC	XM
36	S2	18.51	8.86	8.82	8.82	16.30	8.74	12.92	21.55
37	S2	19.67	9.84	10.98	10.98	18.45	10.04	13.51	23.87

Output Shaft

Gear Frame	Version	U ¹	UY	V	AH	Key	ES	M	Z
36	S2	4.250	3.690	7.50	15.34	1 Sq.	5.00	5/8-11	1.25
37	S2	5.750	4.901	10.00	18.21	1 1/2 Sq.	7.00	3/4-10	1.50

Output Flange

Gear Frame	Flange Code	AK	2F	BB	B ²	BF
36	8	20.000	19.00	0.28	22.13	1.13
37	8	20.000	19.00	0.28	22.13	1.13

AP Input

Gear Frame	Version	RU	U1 ³	UY1	V1	Key1
36	S2	3.17	0.625	0.714	1.25	3/16 Sq.
37	S2	3.17	0.625	0.714	1.25	3/16 Sq.

¹ Output shaft tolerance; +.000", -.001"
² Rough casting dimensions may vary up to .25" due to casting variations
³ Input shaft tolerances: +.0000", -.0005" for shaft with U1 up to 1.5"

C-Face Reducers

Gear Frame	Reduction Stages	Input Size							
		56C	140TC	180TC	210TC	250TC	280TC	320TC	360TC
31	2	44	44	-	-	-	-	-	-
32	2	49	49	55	-	-	-	-	-
	3	56	56	62	-	-	-	-	-
	5	64	64	-	-	-	-	-	-
33 (A)	3	68	68	77	77	-	-	-	-
	5,6	98	98	-	-	-	-	-	-
34	3	118	118	127	127	-	-	-	-
	5,6	147	147	-	-	-	-	-	-
35	3	190	190	199	199	204	206	-	-
	5,6	210	210	219	-	-	-	-	-
36	3	-	351	360	360	365	367	-	-
	5,6	401	401	419	419	-	-	-	-
37	3	-	-	540	540	545	547	575	575
	5,6	576	576	585	585	-	-	-	-
28	3	-	-	-	850	855	857	885	-
	5,6	860	860	869	869	-	-	-	-

Input Shaft Reducers

Gear Frame	Reduction Stages	Style		
		AP/AD	Scoop	Top Mt.
31	2	40	-	-
32	2	45	-	100
	3	52	-	-
	5	60	-	-
33 (A)	3	74	99	121
	5,6	104	-	-
34	3	123	156	170
	5,6	151	-	-
35	3	195	247	266
	5,6	215	-	-
36	3	363	405	RO
	5,6	415	448	462
37	3	558	578	RO
	5,6	602	635	649
28	3	770	863	RO
	5,6	789	841	859

Gear Options

Gear Frame	Std Flange Mount	Extended Flange Mount	Footed S1	37S or 73S SCD
31	3	-	-	-
32	4	-	-	35
33	5	-	2	35
34	7	87	3	42
35	8	89	5	75
36	10	115	-	109
37	12	117	-	130
28	15	-	-	-

Lubrication

Series 3000 OtN gearing except extended flange designs are shipped with one of the following synthetic lubricants per the table below and fitted with a magnetic drain. Each reducer is filled according to the mounting position specified when ordered. Refer to unit nameplate and the chart on page B-16 or B-121 for mounting position arrangement for your unit.

In the case of synthetic oil, the lubricant does not require changing but it is recommended that proper oil level be checked periodically.

Standard Synthetic Gear Oil (Non-Food Grade)

No Backstop	
Manufacturer	-25° F to 125° F (-30° C to 50° C)
Fuchs*	Sintogear* 125
Mobil*	Mobilgear* SHC 150
Shell*	Omala* Fluids HD 150

With Backstop (1)	
Manufacturer	-25° F to 125° F (-30° C to 50° C)
Shell*	Omala* RL 100
Mobil*	SHC 629

Standard Synthetic Gear Oil (H1 Rated Food Grade Requirements)

No Backstop	
Manufacturer	22° F to 125° F (-20° C to 50° C)
Mobil*	SHC Cibus 150

CAUTION

- Never mix synthetic oil and mineral oil.
- Never use extreme pressure (EP) oil in a reducer with a backstop.
- Refer to installation and maintenance manual for mineral oil selection.

Foot Mounted Triple Reduction Designs - US Quarts (Litre = Quart x .946)

Gear Frame Size	Mounting Config.	Mounting Position					
		B	P	H	T	V	W
3132	S2	0.95	1.06	0.95	0.80	1.64	1.11
3242	S2	1.96	2.06	1.74	2.06	3.12	2.48
3243	S1, S2	0.55	1.82	1.50	1.50	2.00	1.40
3363	S2	1.16	3.70	3.49	2.96	3.96	2.75
	S1	3.70	1.16	2.96	3.49	3.96	2.75
3473	S2	1.37	6.45	5.39	4.65	6.76	3.91
	S1	6.45	1.37	4.65	5.39	6.76	3.91
3583	S2	2.85	8.88	5.39	7.72	11.42	6.61
	S1	8.88	2.65	7.72	5.39	11.42	6.61
3693	S1, S2	6.08	19.24	14.28	12.90	23.36	13.95
3703	S1, S2	10.58	25.00	20.30	17/97	35.94	25.05
2803	S1	11.50	78.00	76.00	82.50	83.00	72.50

Face, Flange¹ or Shaft Mounted Triple Reduction Designs - US Quarts (Litre = Quart x .946)

Gear Frame Size	Mounting Config.	Mounting Position					
		B	P	H	T	V	W
3132	S2	0.95	1.06	0.95	0.80	1.64	1.11
3242	S2	1.96	2.06	1.74	2.06	3.12	2.48
3243	S2, S1	0.55	1.82	1.50	1.50	2.00	1.40
3363	S2, S1	1.16	3.70	3.49	2.96	3.96	2.75
3363A	S2	1.16	3.70	3.49	2.96	3.96	2.75
3473	S2, S1	1.37	6.45	5.39	4.65	6.76	3.91
3583	S2, S1	2.85	8.88	5.39	7.72	11.42	6.61
3693	S2	6.08	19.24	14.28	12.90	23.36	13.95
3703	S2	10.58	25.00	20.30	17/97	35.94	25.05
2803	S1	11.50	78.00	76.00	82.50	83.00	72.50

¹ This table defines oil volumes for types "5", "6" and "7" flanged gearing. For Extended Flange type "8" designs refer to Form 9388 Extended Flanged installation manual

*The following are believed to be the trademarks and/or trade names of their respective owners and are not owned or controlled by Emerson Power Transmission. Fuchs and Sintogear: Fuchs Petrolube AG; Mobil and Mobilgear: Exxon Mobil Corporation; Shell and Omala: Shell Oil Company.

Browning®

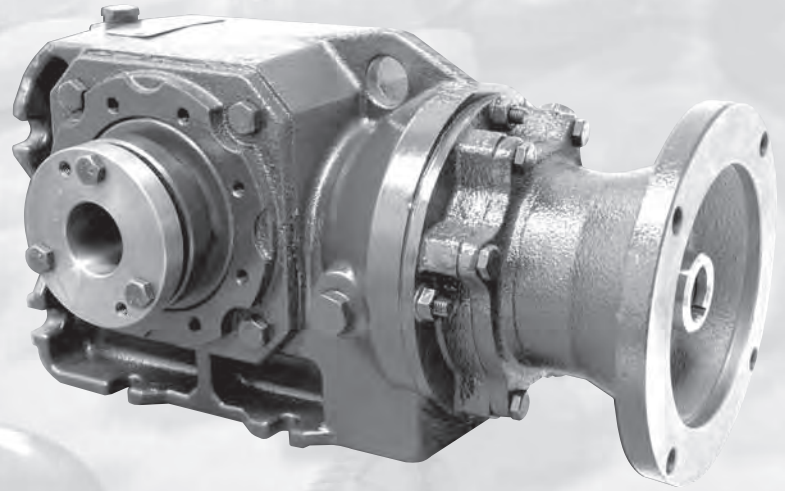
HWN Helical Worm Right Angle Gearmotors and Speed Reducers

Industries

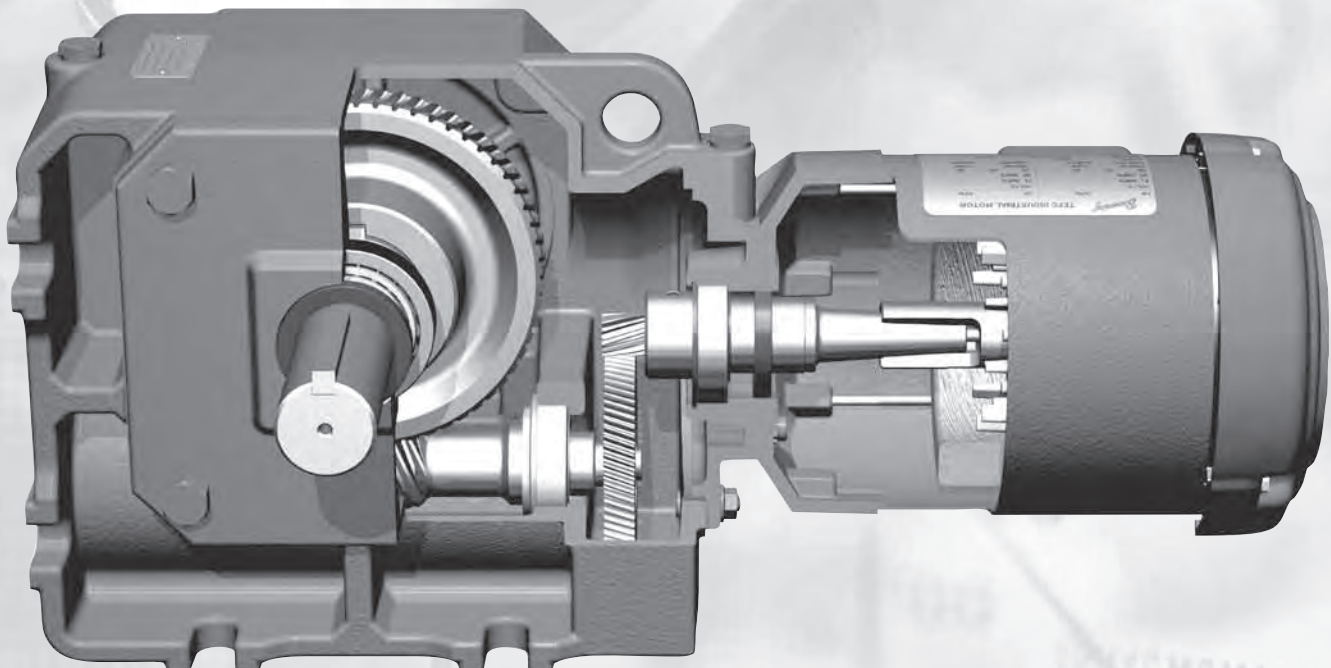
- Food and Beverage
- Poultry
- Warehousing
- Parcel and Package Sortation
- Recycling

Applications

- Unit Handling Conveyors
- Turntables
- Chain Conveyors
- Radial Stackers

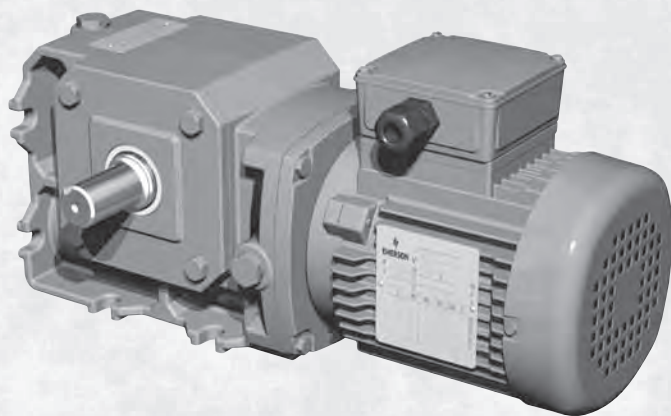


HWN Series





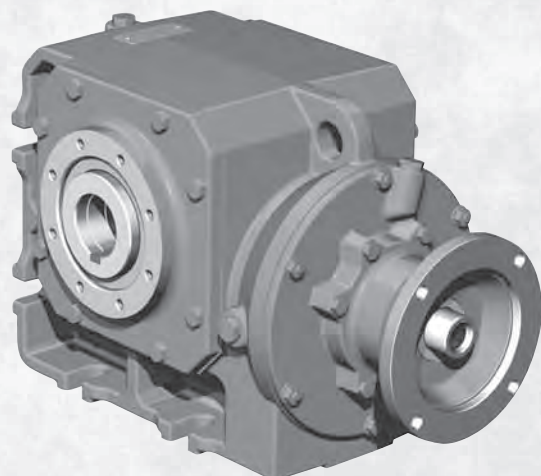
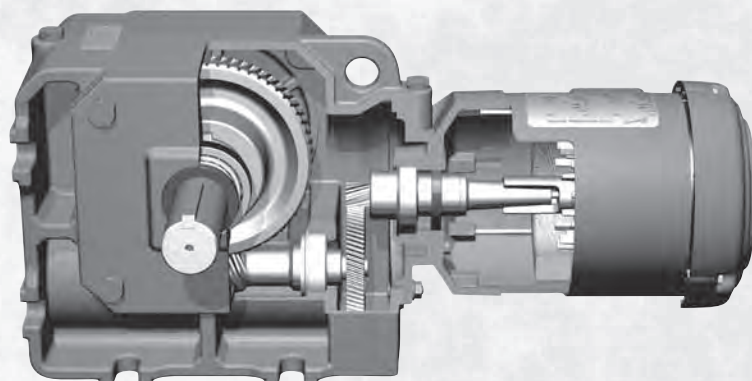
HWN Helical Worm Right Angle Gearmotors and Speed Reducers



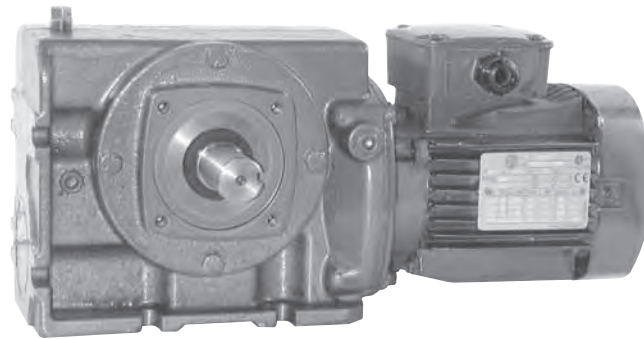
**HWN1000 Gearmotors
Fractional HP, IEC Frame
1-Phase AC, 3-Phase AC or DC**

HWN Series

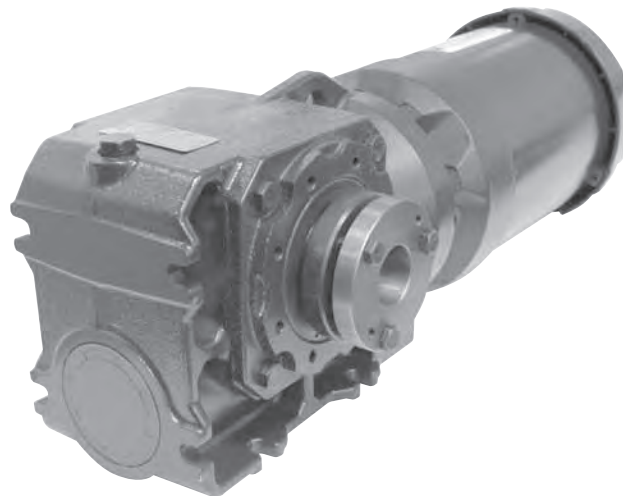
**HWN3000 Gearmotors
1/3 - 20 HP, NEMA Frame
3-Phase AC in TEFC,
Corro-Duty®, True Inverter
Duty or Explosionproof
1-Phase, Brakemotor or
IntelliGear® Variable Speed**



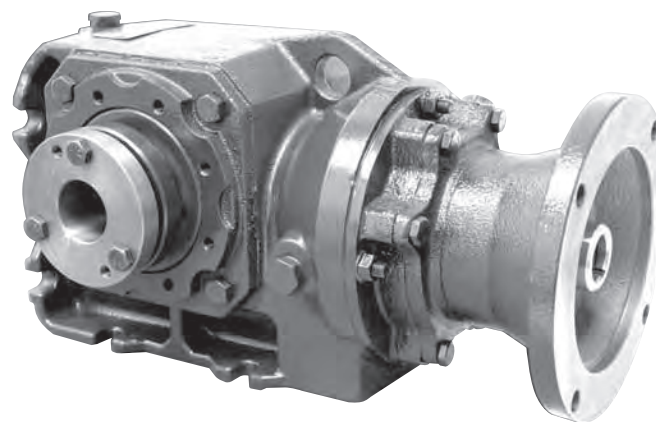
**HWN3000 Speed Reducers
NEMA Quill Style C-Face, Scoop Mount or
Top Mount
Input Shaft**



HWN1000 Gearmotor Section.....Page C-4 - C-17



HWN3000 Gearmotor Section.....Page C-20 - C-84



HWN3000 Reducer Section.....Page C-85 - C-148

Electrical Technical Data..... Page F-1 - F-12

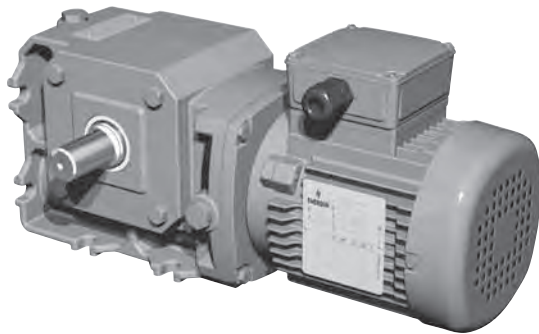
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Product Features

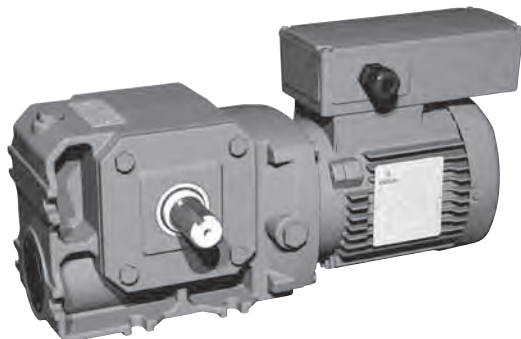
Advanced Gearing

- High quality helical and worm gearing for smooth, quiet operation.
- Output tapered roller bearings for high OHL capability.
- Factory filled with synthetic oil.
- Cast iron housing with multiple plane integral feet.



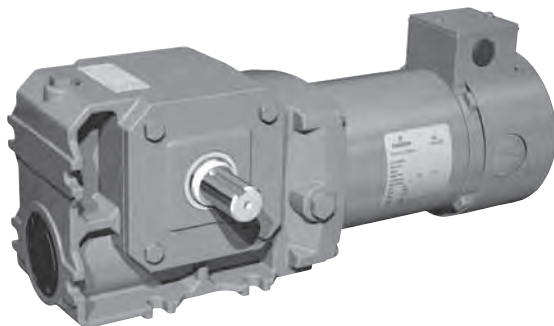
3-Phase TEFC AC Gearmotor

- 1/6 - 3/4 HP IEC frame motor design
- IP55 enclosure with gasketed conduit box
- 208-230/460 VAC or 575 VAC @ 60 Hz
- 380 VAC @ 50 Hz
- Approved by UL*, CSA, and CE
- Top "FO" conduit box position
- Class F inverter grade insulation



1-Phase TEFC AC Gearmotor

- 1/6 - 1/2 HP IEC frame motor design
- Permanent split capacitor for high starting torque
- IP55 enclosure with gasketed conduit box
- 120/240 VAC @ 60 Hz
- Approved by UL, CSA, and CE
- Top "FO" conduit box position
- Class F insulation



DC Permanent Magnet Gearmotor

- 1/6 - 3/4 HP IEC frame motor design
- IP44 enclosure: 56 frame TENV – 63 frames TEFC
- 90 VDC (1/6 - 3/4 HP) or 180 VDC (1/3 - 3/4 HP)
- Approved by CSA and CE
- Top "FO" conduit box position

HWN Series

* UL is believed to be a trade name and/or trademark of Underwriters Laboratories, Inc., and is NOT owned or controlled by Emerson Power Transmission.

		Motor Horsepower									
		1/6		1/4		1/3		1/2		3/4	
Three Phase AC Motor Frame		63		63		71		71		71	
Single Phase AC Motor Frame		63		71		71		71		Not Available	
DC Motor Frame		56VL		63S		63M		63M		63L	
Output rpm	Nominal Ratio										
281	6.3									153	4.1
239	7.1									179	4.1
227	8									188	4.1
191	9									222	4.1
178	10									237	4.1
159	11.2									265	4.1
137	12.5									307	3.8
127	14									330	3.6
108	16							257	4.8	385	3.2
96	18							287	4.4	431	2.9
86	20							322	4.0	482	2.7
76	22.4							360	3.7	540	2.5
64	25					272	4.9	407	3.2	611	2.2
59	28					289	4.7	434	3.1	651	2.1
53	31.5					321	4.3	481	2.9	722	1.9
46	35.5					371	3.9	556	2.6	834	1.7
42	40			298	4.9	398	3.7	597	2.4	895	1.6
36	50			347	4.3	462	3.2	694	2.2	1040	1.4
32	56			385	4	513	3.0	770	2.0	1155	1.3
29	63			430	3.6	573	2.7	859	1.8	1289	1.2
25	71	319	4.9	478	3.3	638	2.5	957	1.6	1435	1.1
23	80	358	4.4	536	3.0	715	2.2	1073	1.5	1609	1.0
20	90	399	4.0	599	2.7	799	2.0	1198	1.3		
18	100	435	3.7	652	2.5	869	1.9	1304	1.2		
16	112	494	3.3	741	2.2	988	1.7	1483	1.1		
13	125	485	3.1	727	2.0	969	1.5	1454	1.0		
12	140	534	2.8	801	1.9	1067	1.4				
11	160	592	2.6	888	1.7	1184	1.3				
10	180	661	2.3	991	1.6	1321	1.2				
8.4	200	724	2.2	1085	1.4	1447	1.1				
7.5	224	822	1.9	1233	1.3	1644	1.0				
6.8	250	883	1.8	1324	1.2						
6.0	280	988	1.6	1482	1.1						
5.4	315	1119	1.4	1679	1.0						

(In. Lbs of Output Torque)	Gearmotor Service Factor
----------------------------	--------------------------

- Notes:
1. IntelliGear® Motor Frame is the same as the three phase AC Motors.
 2. For larger HP's and higher torque ratings, refer to HWN3000 series.
 3. For NEMA gearmotor frames or speed reducers with NEMA C-Face, input shaft, scoop mount or top mount inputs, refer to HWN3000 series.

Overhung Load

- Shafted units all rated 1200 lbs. at shaft midpoint, regardless of output speed.
- Use one of the following formulas to calculate the overhung load applied:

If applied torque is known $OHL = \frac{T \times K \times LLF}{r}$

Using motor HP rating $OHL = \frac{HP \times 63,025 \times K \times LLF}{output\ rpm \times r}$

Where:

OHL = Overhung load applied (pounds)

T = Torque (lb.-in.)

r = Radius of driving member (in.)

HP = Horsepower

K = Drive type factor (see table below).

LLF = Load location factor (see table below).

Driving Member	Value of K
Chain Drive	1.00
Pinion	1,25
V-Belt	1.50
Timing Belt	1.25

Load Location	Value of LLF
End of Shaft Extension	1.20
Center of Shaft Extension	1.00
Shaft Extension Shoulder	0.80

Product Weights for HWN1842

Three Phase Motor

Frame	HP	Weight (lbs.)
63	1/6, 1/4	44
71	1/3, 1/2	49
71	3/4	69

Single Phase Motor

Frame	HP	Weight (lbs.)
63	1/6	45
71	1/4, 1/3, 1/2	52

DC Motor

Frame	HP	Weight (lbs.)
56VL	1/6	44
63S	1/4	52
63M	1/3, 1/2	55
63L	3/4	60

IntelliGear®

Frame	HP	Weight (lbs.)
71	1/3, 1/2	55
71	3/4	59

Ordering Description

HWN • 1842 • S2 • B 44 C • 22.4 • T24 • 71 • 0.75 •

See Tables A and B

Gear Type	Gear Frame	Housing Type	Mounting Position			Nominal Gear Ratio	Motor Type	Motor Frame	HP	Modifications
			Gearbox Position	Face/Flange Right-Left Viewed From Input End	Output Shaft Configuration Viewed from Input End					
Helical Worm	1842	S2 = Housing with Breather	B = Floor Mount	3 = Standard Round	G = Shaft right	22.4 = 22.4:1 Use nominal ratio selected from selection tables	T24 = TEFC IP55 208-230/460 VAC, 3-Phase, 60 Hz	56VL	0.16 = 1/6	See modifications described on page C-9
		S3 = Housing with Expansion Chamber	P = Ceiling Mount	4 = Face Mount	D = Shaft left		T5 = TEFC IP55 575 VAC, 3-Phase, 60 Hz	63	0.25 = 1/4	
		H = Wall Mount, input left	5 = Flange Mount	X = Dual shaft	T53 = TEFC IP55 380 VAC, 3-Phase, 50 Hz		63S	0.33 = 1/3		
		T = Wall Mount, input right		C = Finished bore	IG2 = TEFC IntelliGear 230 VAC, 3-Phase		63M	0.50 = 1/2		
		V = Input vertical up		B = Tapered bushed	IG4 = TEFC IntelliGear 460 VAC, 3-Phase		63L	0.75 = 3/4		
		W = Input vertical down			IGS2 = TEFC IntelliGear 230 VAC, 1-Phase		71			
					DC9 = TE IP44, 90 VDC/Permanent Magnet					
					DC1 = TE IP44 180 VDC/Permanent Magnet					

Note: T38 380VAC/3-Phase/50 Hz selection will operate at 5/6 of the output speed listed in the ratings table.

Table A - Gearbox Position

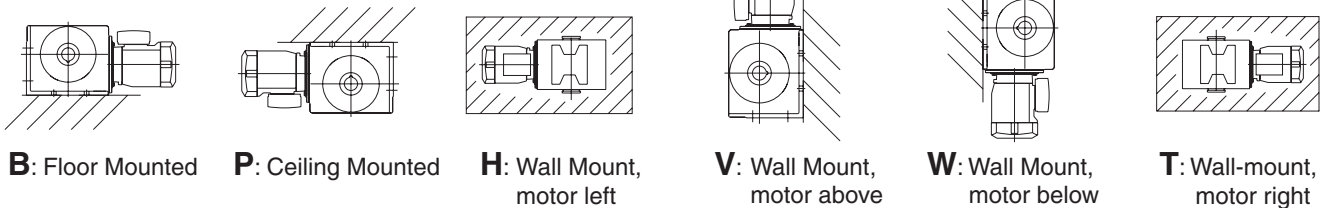
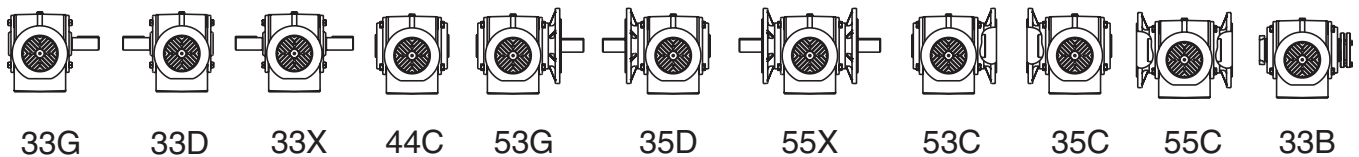


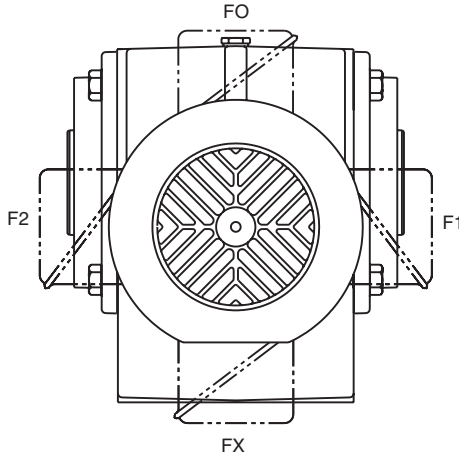
Table B - Mounting and Output Shaft Arrangements (viewed from motor fan end)



Codes for Addition to End of Ordering Description

Motor Conduit Box Locations

Standard position is F0 or add F1, F2, or FX to part number for alternatives. With FX position, conduit box may extend below gearmotor feet.



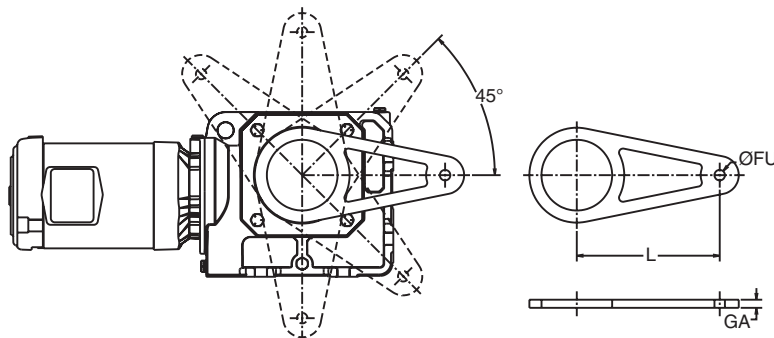
Viewed from Motor Fan Cover

Options

- Modification Code FCM
 - Fail-safe, integral brake for three phase gearmotors (except 575 VAC)
- IntelliGear® operator control option codes
 - PD Digital keypad display with fwd/rev/stop/speed up/down and program setup.
 - P1 Run/stop/speed pot.
 - P2 Run forward/run reverse/stop/speed pot.
 - P3 Speed pot. (run/stop by customer's dry contact or starter)
 - P4 Internal speed pot. (run/stop by customer's dry contact or starter)
 - R Blank operator panel (4-20mA or 0-10 VDC speed ref.)
 - RP Profibus DP interface

Torque Arm

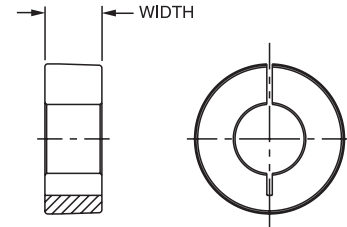
Order separately – part #NH9010



Torque Arm Option

L	FU	GA
5.12	.41	.25

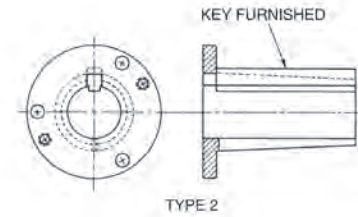
Each Series 1000 HWN can be ordered with a Tapered Bushed Output. This “33B” mounting configuration will include the appropriate bushing kit unassembled when a bore is defined at order entry. The table below shows the various stocked bushing bores that can be specified. Each bushing kit is supplied with bushing, hardware for mounting and a stabilizer ring. If bushings are required as a spare or bore changed in the field, select the required kit from below.



Stabilizer Ring

• **Unique, patented single bushing mounting system**

- Mounts from either side
- Tapered stabilizer ring minimizes wobble and resists fretting corrosion
- End cap seals quill end from contamination

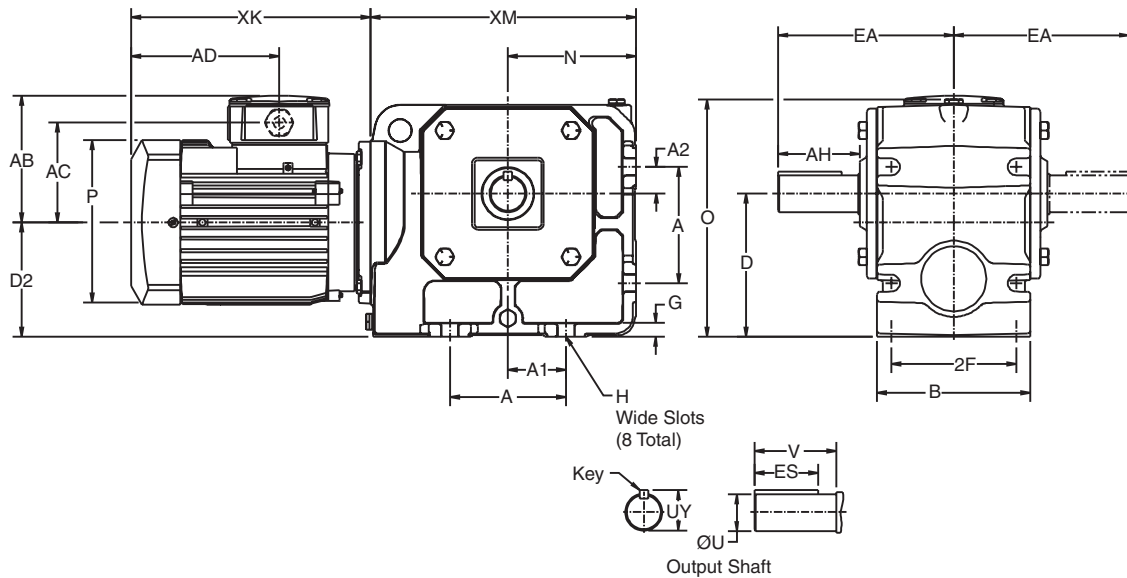


HWN Series

HWN Frame	Mea. Unit	Bushing No.	Bore	Shaft Keyseat Required	Type	Stabilizer Ring Width	Bolt Torque		Weight (Lbs.)
							Bolt Size	Ft.-lbs.	
1842	Inch	107TBP102	1 1/8	1/4 x 1/8 x 3 7/8	2	0.793	5/16 - 18 x 1 1/4	16	2
		107TBP103	1 3/16	1/4 x 1/8 x 3 7/8	2				1.9
		107TBP104	1 1/4	1/4 x 1/8 x 3 7/8	2				1.8
		107TBP105	1 5/16	5/16 x 5/32 x 3 7/8	2				1.6
		107TBP106	1 3/8	5/16 x 5/32 x 3 7/8	2				1.5
		107TBP107	1 7/16	3/8 x 3/16 x 3 7/8	2				1.5
	Metric *	107TBP30MM	30 mm	8 x 4 x 94 (mm)	2				1.9
		107TBP35MM	35 mm	10 x 5 x 94 (mm)	2				1.5

* Metric bushings have metric bores and require metric keyseats as shown in mm.

2-Stage Output Shafted Foot Mount



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	XM
1842	3.15	1.38	0.59	4.54	3.94	2.95	3.94	0.38	0.46	4.0	6.68	8.10

Output Shaft

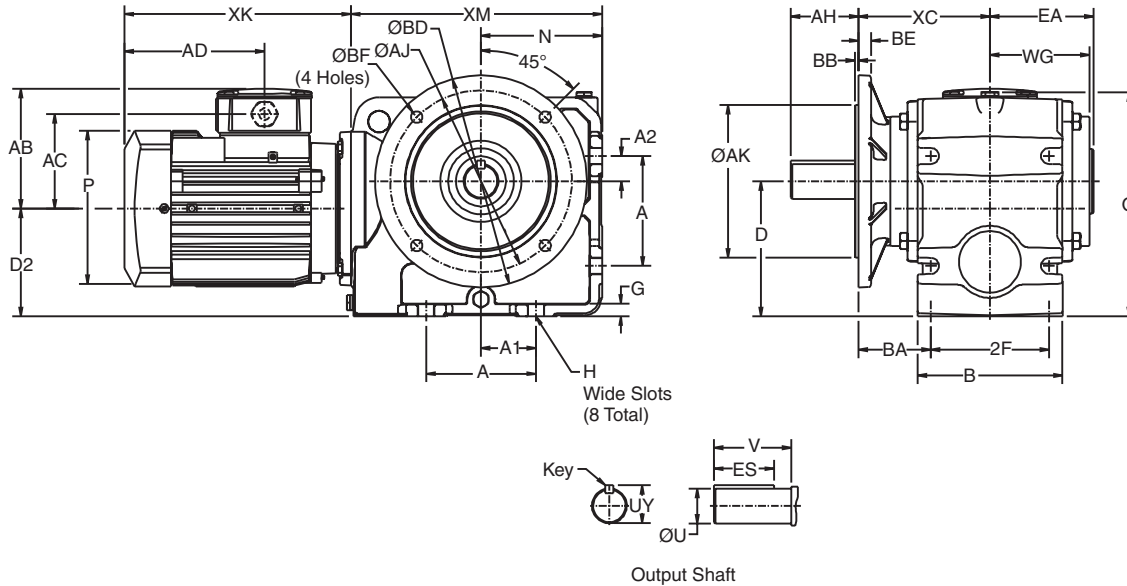
Gear Frame	U ³	V	AH	EA	ES	UY	Key
1842	1.000	1.82	1.99	4.53	1.50	1.11	1/4 Sq

Motor Frame	Motor Type ⁴	HP	P ⁵	AB	AC	AD	XK	
							Without Brake	With Brake
63	T24,T53,T5	1/6, 1/4	4.96	3.94	3.06	4.27	7.20	8.90
71	T24,T53,T5	1/3, 1/2	5.51	4.33	3.43	4.66	7.73	9.47
71	T24,T53,T5	3/4	5.51	4.25	3.35	4.97	8.04	9.78

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ For dimensions of other motor types, see pages C-16 or C-17.
⁵ Dimension "P" shows largest motor width.
⁶ Conduit box may be located as shown on the top, on either side, or on the bottom. Conduit openings may be located in steps of 90° by rotating the conduit box, regardless of location.

2-Stage Output Shafted Flange Mount



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	EA	WG	XM
1842	3.15	1.38	0.59	4.54	3.94	2.95	3.94	0.38	0.46	4.00	6.68	3.17	2.98	8.10

Output Shaft

Gear Frame	U ³	V	AH	ES	UY	Key
1842	1.000	1.97	1.95	1.75	1.11	1/4 Sq.

Flange

AJ	AK	BA	BB	BD	BE	BF	XC
5.120	4.331	2.07	0.14	6.30	0.39	0.35	4.04

Motor Frame	Motor Type ⁴	HP	P ⁵	AB	AC	AD	XK	
							Without Brake	With Brake
63	T24,T53,T5	1/6, 1/4	4.96	3.94	3.06	4.27	7.20	8.90
71	T24,T53,T5	1/3, 1/2	5.51	4.33	3.43	4.66	7.73	9.47
71	T24,T53,T5	3/4	5.51	4.25	3.35	4.97	8.04	9.78

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

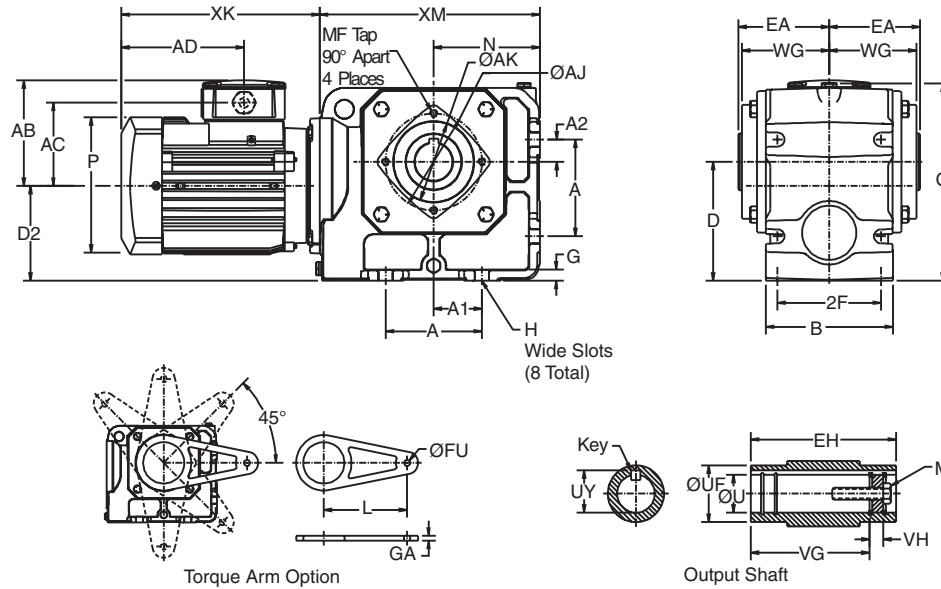
³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ For dimensions of other motor types, see pages C-16 or C-17.

⁵ Dimension "P" shows largest motor width.

⁶ Conduit box may be located as shown on the top, on either side, or on the bottom. Conduit openings may be located in steps of 90° by rotating the conduit box, regardless of location.

2-Stage Finished Bore Hollow Shaft Face Mount



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
1842	3.15	1.38	0.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
1842	7/16-14 x 1	1.25	3.17	6.34	2.125	1.37	5.58	0.63	1/4 Sq.

Torque Arm

L	FU	GA
5.12	.41	.25

Face Mount

AJ	AK	MF
3.625	3.000	5/16-18 x .56

Motor Frame	Motor Type ⁴	HP	P ⁵	AB	AC	AD	XK	
							Without Brake	With Brake
63	T24, T53, T5	1/6, 1/4	4.96	3.94	3.06	4.27	7.20	8.90
71	T24, T53, T5	1/3, 1/2	5.51	4.33	3.43	4.66	7.73	9.47
71	T24, T53, T5	3/4	5.51	4.25	3.35	4.97	8.04	9.78

HWN Series

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ For dimensions of other motor types, see pages C-16 or C-17.

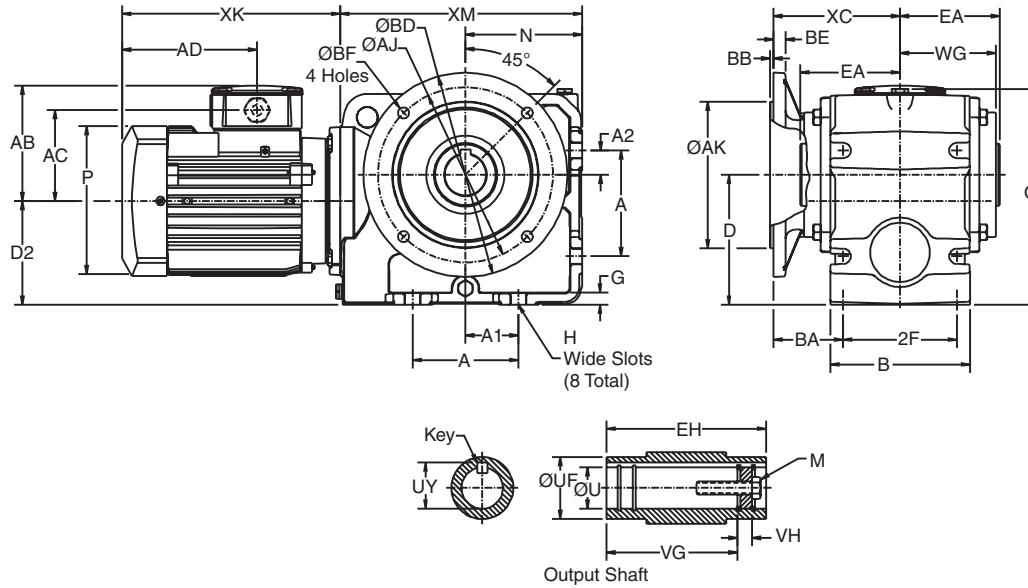
⁵ Dimension "P" shows largest motor width.

⁶ Conduit box may be located as shown on the top, on either side, or on the bottom. Conduit openings may be located in steps of 90° by rotating the conduit box, regardless of location.

⁷ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁸ For details of torque arm, refer to page C-9.

2-Stage Finished Bore Hollow Shaft Flange Mount



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
1842	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
1842	7/16-14 x 1	1.250	3.17	6.34	2.125	1.37	5.58	.63	1/4 Sq.

Flange

AJ	AK	BA	BB	BD	BE	BF	XC
5.120	4.331	2.07	.14	6.30	.39	.35	4.04

Motor Frame	Motor Type ⁴	HP	P ⁵	AB	AC	AD	XK	
							Without Brake	With Brake
63	T24,T53,T5	1/6, 1/4	4.96	3.94	3.06	4.27	7.20	8.90
71	T24,T53,T5	1/3, 1/2	5.51	4.33	3.43	4.66	7.73	9.47
71	T24,T53,T5	3/4	5.51	4.25	3.35	4.97	8.04	9.78

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

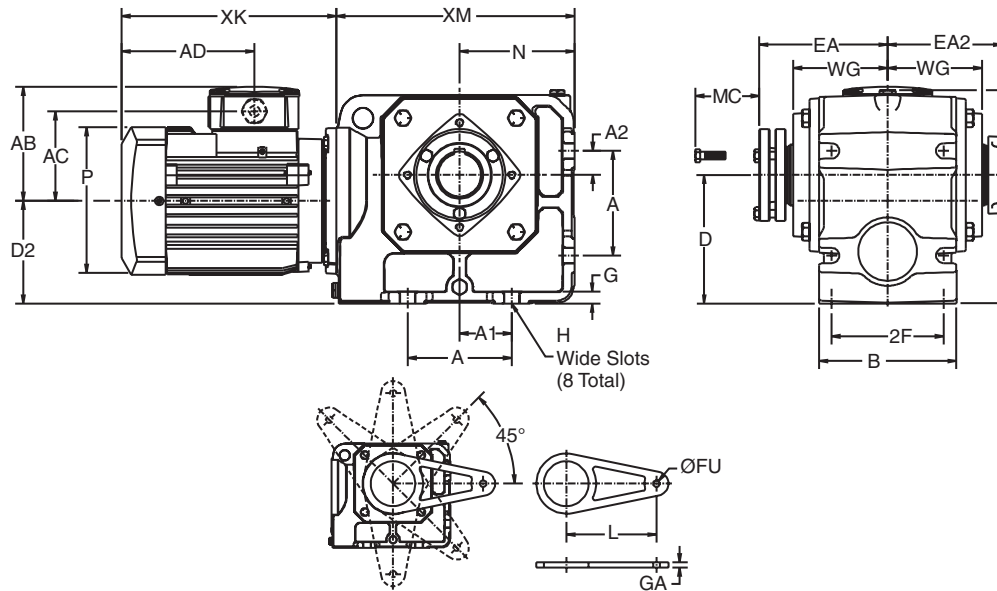
⁴ Motor dimensions shown are for type T24, T38 or T57. For dimensions of other motor types, see pages C-16 or C-17.

⁵ Dimension "P" shows largest motor width.

⁶ Conduit box may be located as shown on the top, on either side, or on the bottom. Conduit openings may be located in steps of 90° by rotating the conduit box, regardless of location.

⁷ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

2-Stage Taper Bushed Shaft Mount



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
1842	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10

Output Shaft

Gear Frame	EA	EA2	MC ⁸	Bushing Bores ³	
				Min.	Max.
1842	4.92	4.34	1.75	1/8	1 7/16

Torque Arm

L	FU	GA
5.12	.41	.25

Motor Frame	Motor Type ⁴	HP	P5	AB	AC	AD	XK	
							Without Brake	With Brake
63	T24,T53,T5	1/6, 1/4	4.96	3.94	3.06	4.27	7.20	8.90
71	T24,T53,T5	1/3, 1/2	5.51	4.33	3.43	4.66	7.73	9.47
71	T24,T53,T5	3/4	5.51	4.25	3.35	4.97	8.04	9.78

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Refer to page C-10 for a listing of all inch and metric bushing bore sizes available.

⁴ For dimensions of other motor types, see pages C-16 or C-17.

⁵ Dimension "P" shows largest motor width.

⁶ Conduit box may be located as shown on the top, on either side,

or on the bottom. Conduit openings may be located in steps of 90° by rotating the conduit box, regardless of location.

⁷ Driven shaft entry can be from either side of gear housing.

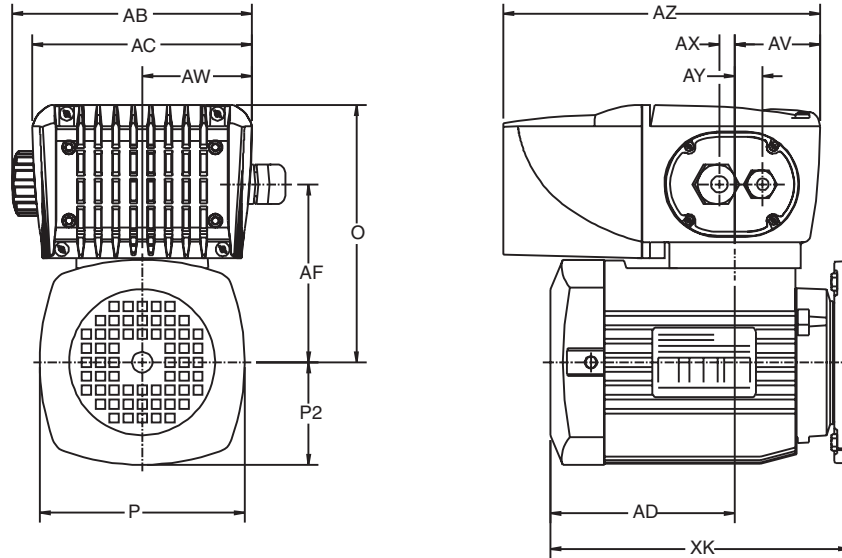
⁸ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁹ Bushing and dust cap can be installed opposite of how they are shown above.

¹⁰ For details of torque arm, refer to page C-9.

Alternate Motor Dimensions

IntelliGear®



HWN Series

Motor Frame	HP	Controller	O	P ⁵	P2	AB	AC	AD
71	1/3, 1/2	1, 1M	6.91	5.51	2.76	6.45	5.91	4.65
71	3/4	1, 1M	6.91	5.51	2.76	6.45	5.91	4.97

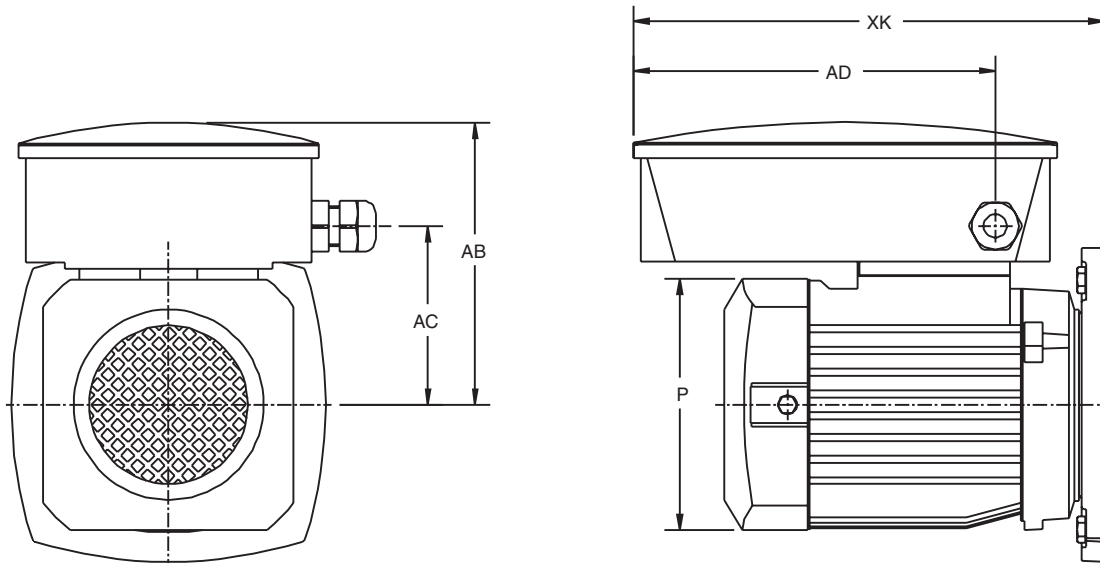
Motor Frame	HP	AF	AV	AW	AX	AY	AZ	XK
71	1/3, 1/2	4.78	2.25	2.95	0.62	0.55	8.53	7.72
71	3/4	4.78	2.25	2.95	0.62	0.55	8.53	8.04

Input Power Phase/Voltage	Motor HP @ Max. HZ	
	0.33 to 0.50	0.75
1/230	1M	1M
3/230	1	1
3/460	1	1

⁵ Dimension "P" shows largest motor width.

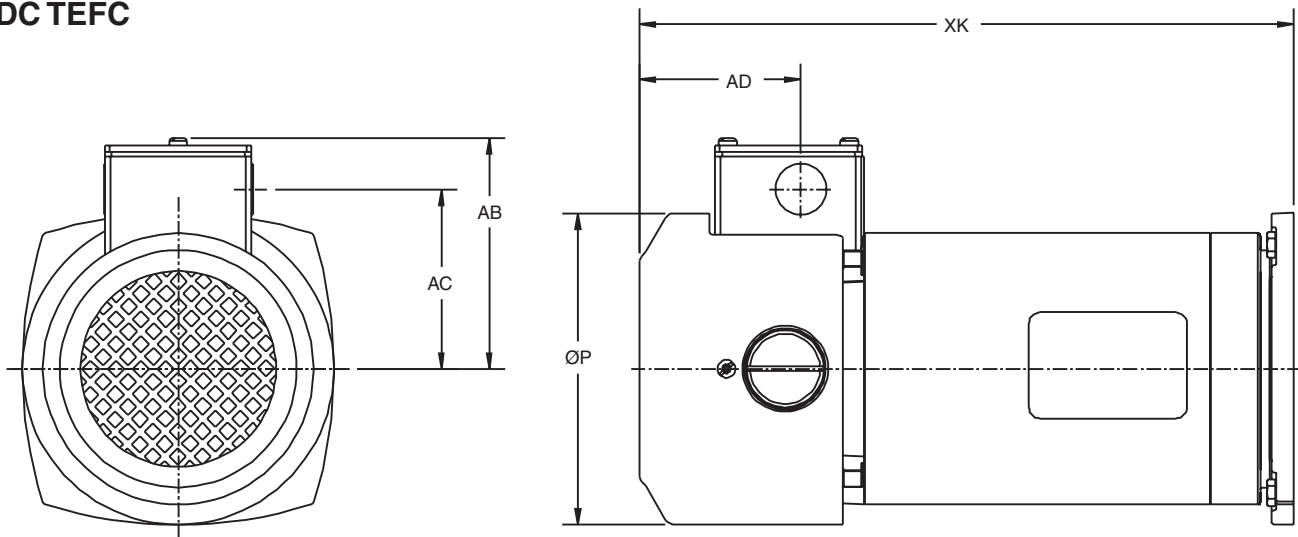
Alternate Motor Dimensions

Single Phase AC TEFC



Motor Frame	HP	P ⁵	AB	AC	AD	XK
63	1/6	4.96	5.07	3.28	6.26	8.54
71	1/4, 1/3, 1/2	5.51	5.51	3.72	6.26	8.54

DC TEFC



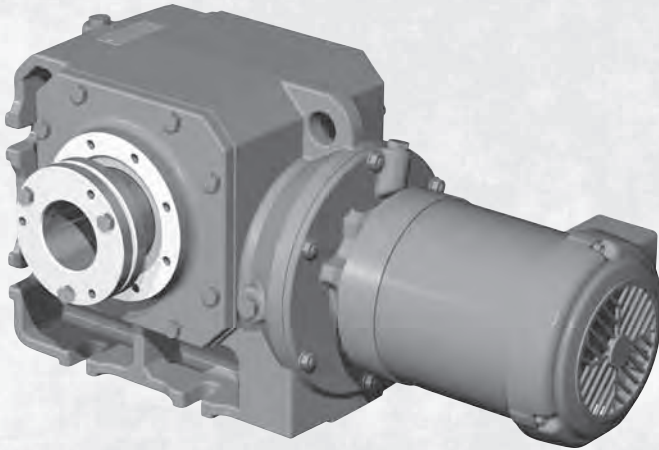
Motor Frame	HP	P ⁵	AB	AC	AD	XK
56VL	1/6	3.42	2.84	2.19	1.24	9.05
63S	1/4	5.41	4.02	3.13	2.81	9.25
63M	1/3, 1/2	5.41	4.02	3.13	2.81	10.24
63L	3/4	5.41	4.02	3.13	2.81	11.42

⁵ Dimension "P" shows largest motor width.

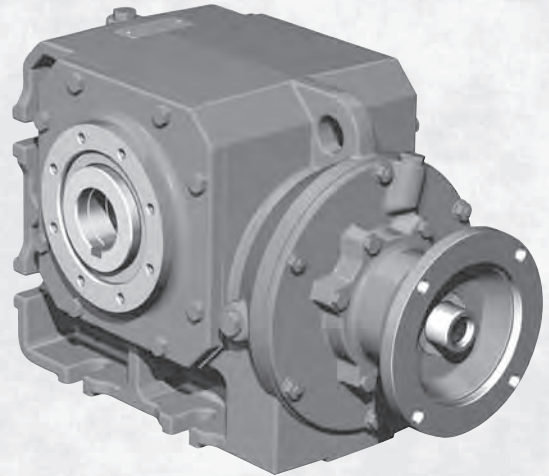


HWN Helical Worm Right Angle Gearmotors and Speed Reducers

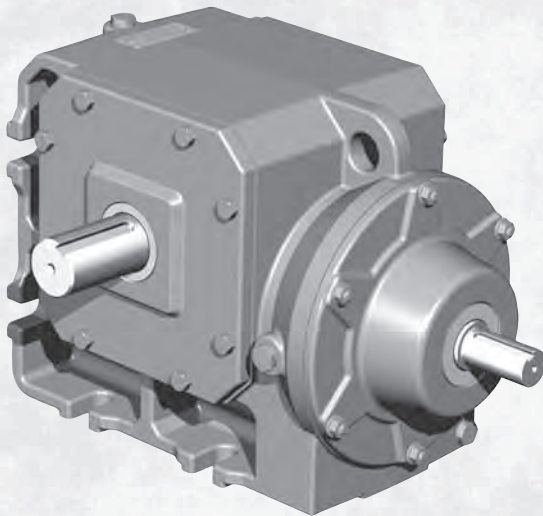
Gearmotor



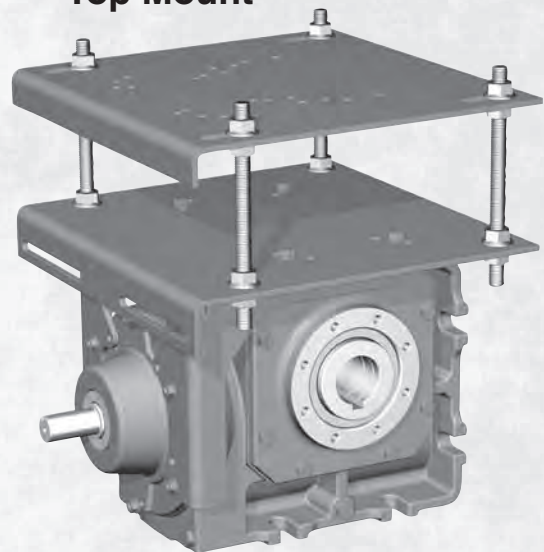
C-Face



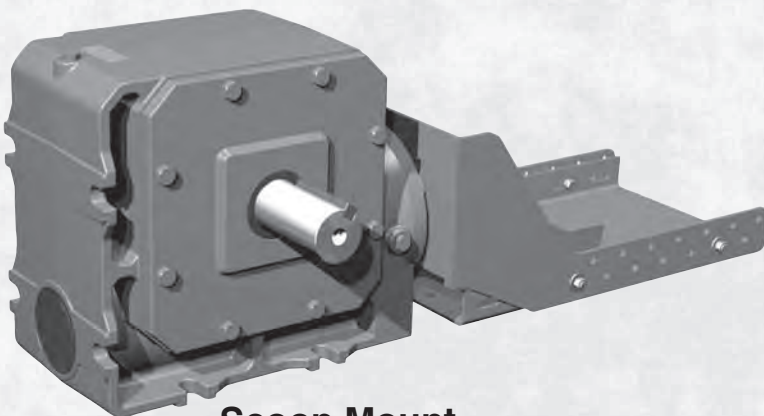
Input Shaft



Top Mount

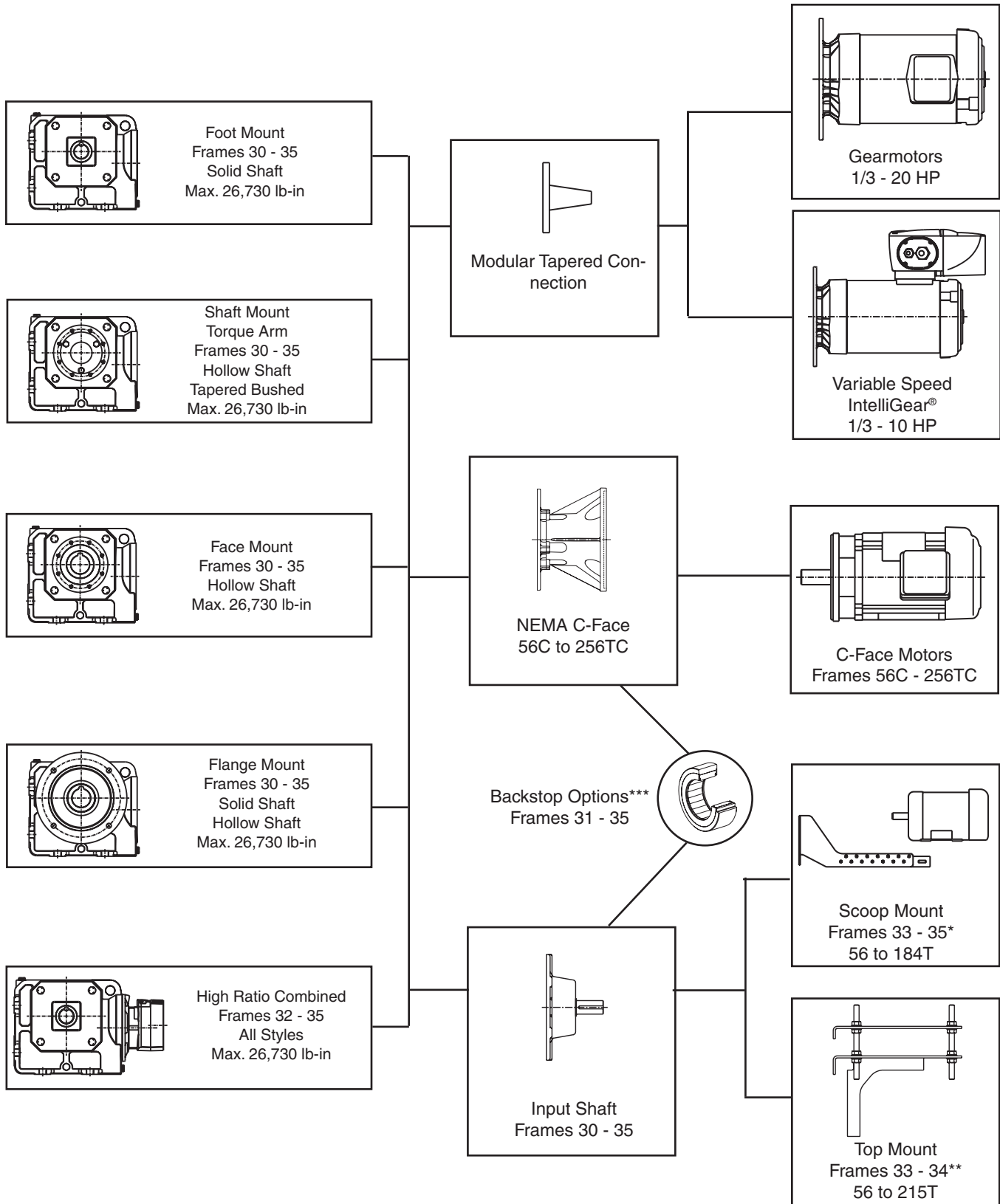


Scoop Mount



HWN Series

Mounting Versatility and Size Range



HWN Series

* Only available for frames 33 - 35, 2-stage.
 ** Only available for frames 33 - 34, 2-stage.
 *** Not available for frames 3264, 3265, 3304-A or 3305.



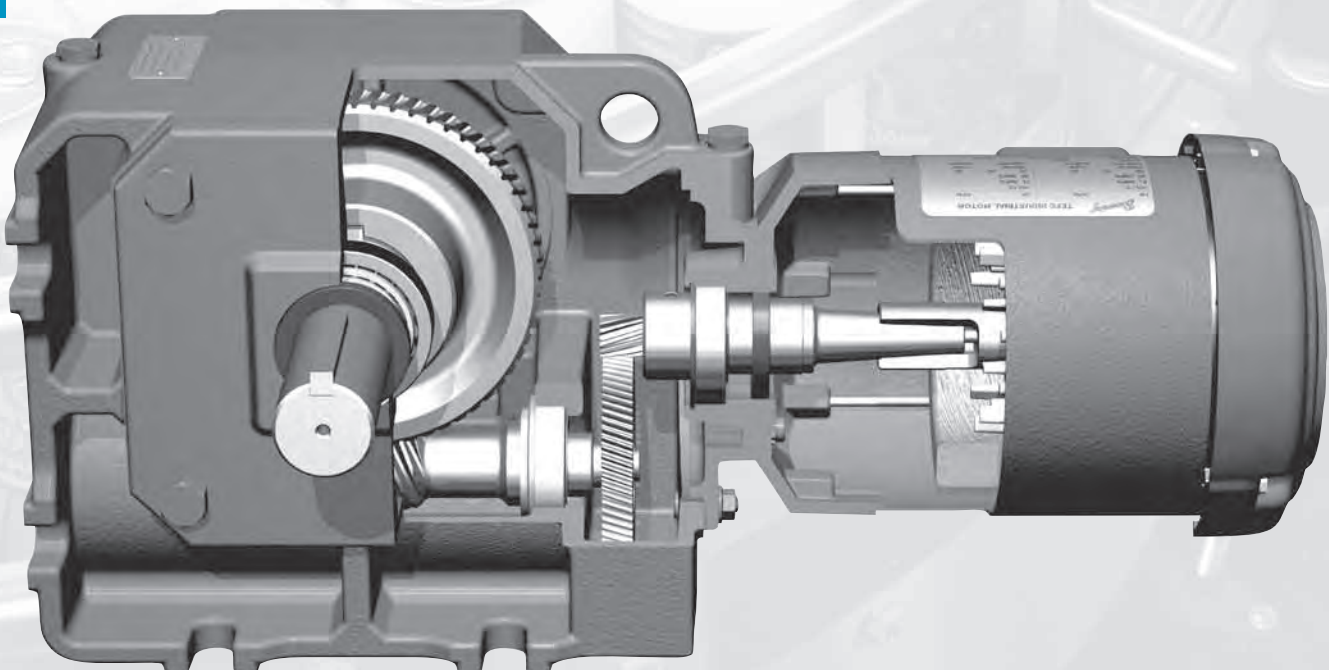
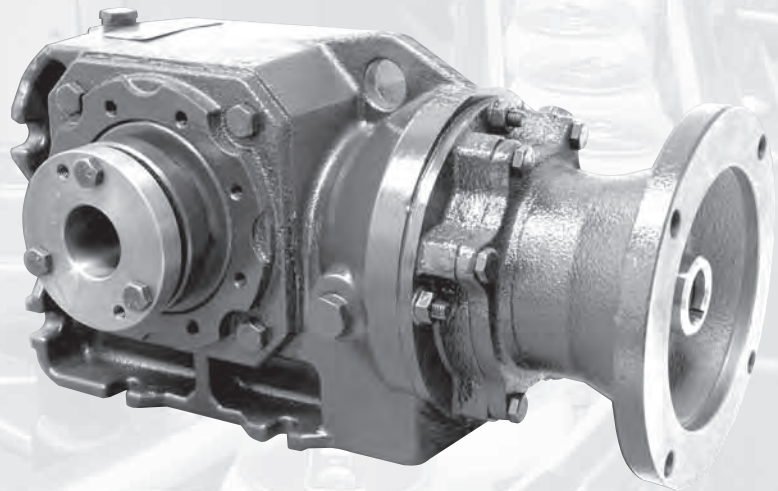
HWN Helical Worm Right Angle Gearmotors and Speed Reducers

Industries

- Food and Beverage
- Poultry
- Warehousing
- Parcel and Package Sortation
- Recycling

Applications

- Unit Handling Conveyors
- Turntables
- Chain Conveyors
- Radial Stackers

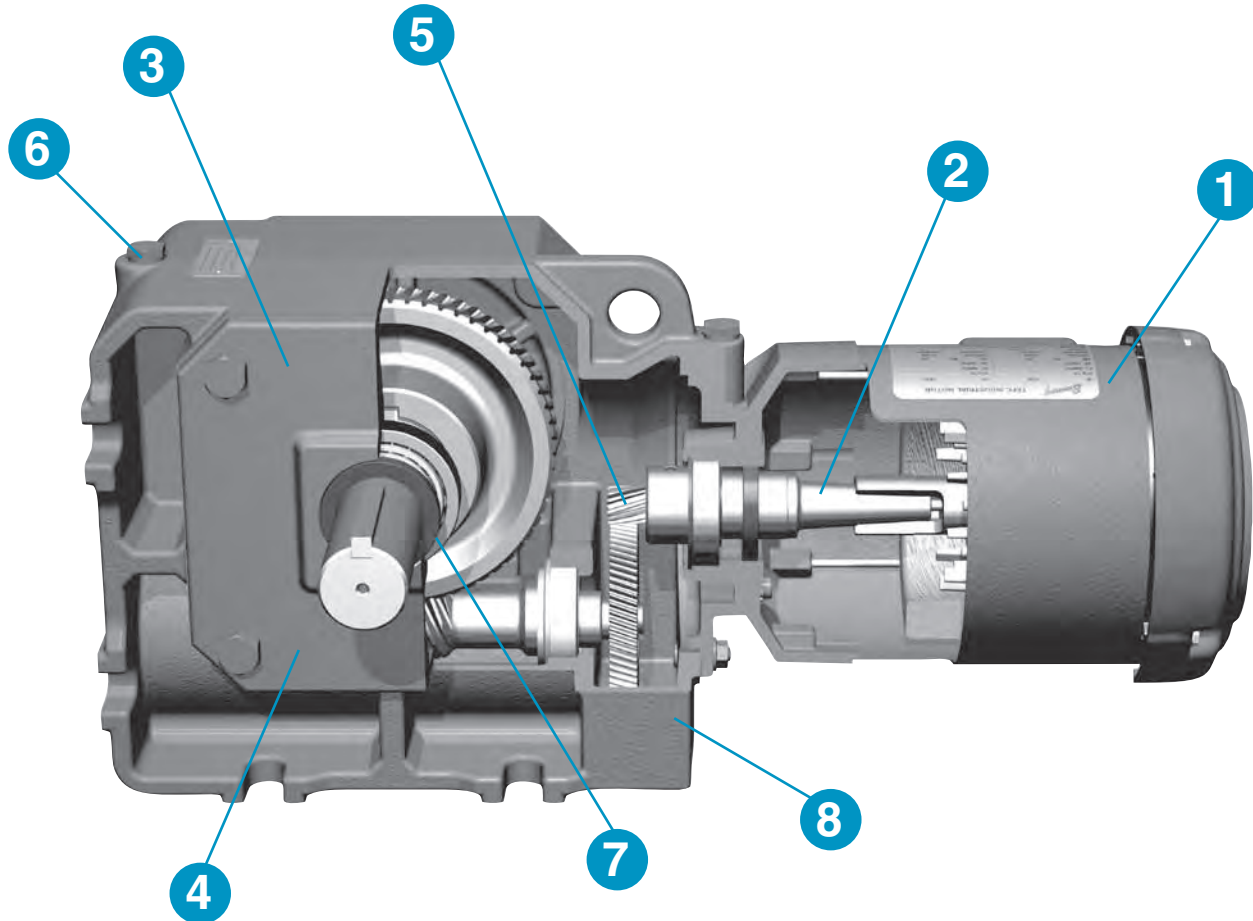


HWN Series

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HWN Series Gearmotor Features...



HWN Series

Design Features

- 1. High Efficiency Motor Designs Available**
 - Any 3 phase non-XP gearmotor.
- 2. Innovative Self-Locking, Self-Aligning Taper Shaft Motor Connection**
 - Easy on-site motor replacement.
 - Change motor without draining oil, breaking the gearcase seal, or changing primary pinion.
- 3. Gearcase Supplied Factory Filled with Synthetic Oil**
 - Wide temperature range and long life
- 4. Corrosion and Shock Resistant Cast Iron Housing**
 - Reinforced and ribbed for extra strength.
- 5. Helical Worm Gear Sets**
 - Worm gear sets offer superior shock load capability.
 - Helical stage improves gear efficiency of total reduction train.
- 6. Normally Closed Breather with Multiple Locations**
- 7. Double Lip Seals on Heat Treated, Plunge Ground Shafts**
- 8. Magnetic Drain Plug Standard**

General Information

General

HWN3000 helical-worm right angle gearmotors and speed reducers incorporate the latest in design and manufacturing technologies to deliver an energy efficient, reliable, helical-worm gear train. This gearing can be combined with either a constant or variable speed motor if a gearmotor is desired. The latest generation of HWN gearing delivers higher efficiency than worm gear units, especially compared to worm gear units with more than one gear stage (i.e. above 60:1 ratio). HWN3000 is available with two, four, or five stages with practical efficiencies in ratios of 6.3:1 to 12,500:1. In addition, the worm gear final gear stage gives HWN3000 the inherently high shock load capability typical of worm gear units. HWN is available in a wide variety of mounting arrangements that include foot mount, face mount, flange mount or shaft mount with a torque arm. The output can be left, right, or dual solid shaft or shaft mounted with hollow quill or tapered bushing.

Gearmotors

Three phase HWN gearmotors are available with HE type high efficiency motors in non-hazardous enclosures starting at 1/3 HP at standard lead-times. These motors comply with requirements in the US and Canada for energy efficiency to deliver superior operating cost savings, reduced motor temperature rise and 5:1 minimum constant torque output (60-11 Hz) from PWM power supplies for the End User. There are several motor enclosure options within the HE umbrella including Corro-Duty® cast iron exterior construction for most hostile environments. These features are complimented by the standard use of inverter duty winding materials that comply with NEMA MG1 Part 31. Emerson also offers gearmotors with 1 phase TEFC motors to 5 HP and Explosionproof 3 phase gearmotors to 10 HP.

Housing

All housings are cast from high-strength cast iron. This gives HWN3000 excellent overhung load integrity and high performance in the most demanding applications. The mounting dimensions allow the HWN3000 to directly interchange with many popular competitive products, while retaining dimensions that also allow it to replace the HWN2000 that it replaces. This allows for simple aftermarket replacement of both HWN2000 and many of the more common helical-worm products from other manufacturers.

Additionally, the new, quill style c-face is often shorter than competitive unit designs, while allowing room for a fully rated backstop.

Performance

HWN3000 designs deliver ratings that are amongst the highest in the industry for similar frame sizes. For replacements, this means that dimensional replacements generally meet or exceed the original unit ratings for long life. In new applications, this can mean cost savings through downsizing versus the competition. Each HWN3000 unit is also supplied factory-filled with high quality synthetic lubricant, an extra cost option for competitive units. This offers operation over a wide temperature range with minimal maintenance required.

Flexibility

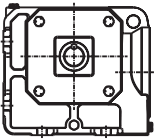
The new HWN3000 offers a shaft-mounted version that incorporates the tapered bushing system from the Browning TorqTaper Plus shaft mount reducer. This extends each frame size to be usable on a variety of shaft sizes. It also provides a proven bushing system with a centering ring that reduces wobbling on the shaft for reduced wear and tear. All sizes are also available with a hollow quill that matches both the HWN2000 quill size and many popular competitive units. The shaft mounted units all include feet on the housing base and they can be tied down to the machine frame using a face mount, flange mount, or torque arm. The output flanges available in each frame size are also competitively interchangeable. For applications requiring the gearmotors to be powered by an inverter (VFD), all Allguard® three phase motor designs now incorporate an upgraded wire and varnish treatment. Housings can be mounted in a variety of positions as well, with only a change in the breather and drain plug positions and a change in oil volume.

Reliability

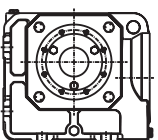
Gear housings are fitted with normally closed breathers to exclude contaminants, while preserving low internal operating pressure. All oil seals operate on plunge ground shaft surfaces to deliver extended life. Enhanced insulating materials and other standard features of our premium Varidyne® inverter duty motors allow Emerson Power Transmission to extend an industry leading 3-year motor warranty, even when using these motors with PWM inverter power up to 575 VAC.

Mounting Versatility and Size Range

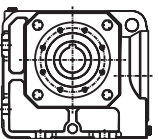
HWN Series



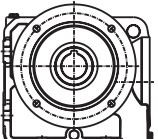
Foot Mount
Frames 30 - 35
Solid Shaft
Max. 26,730 lb-in



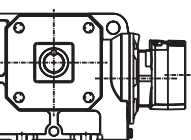
Shaft Mount
Torque Arm
Frames 30 - 35
Hollow Shaft
Tapered Bushed
Max. 26,730 lb-in



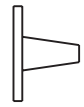
Face Mount
Frames 30 - 35
Hollow Shaft
Max. 26,730 lb-in




Flange Mount
Frames 30 - 35
Solid Shaft
Hollow Shaft
Max. 26,730 lb-in



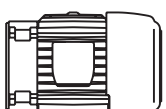
High Ratio Combined
Frames 32 - 35
All Styles
Max. 26,730 lb-in



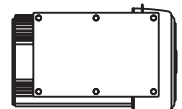
Modular
Tapered Connection



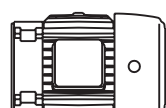
Three Phase TEFC
1/3 – 20 HP



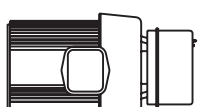
Corro-Duty®
1/3 – 20 HP



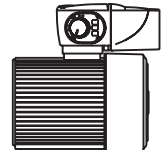
Single Phase TEFC
1/3 – 5 HP



Explosion Proof
1/3 – 10 HP



Brakemotor
1/3 – 10 HP



IntelliGear® Motor
with VFD
1/3 – 10 HP

Motor Options



TEFC – Three Phase

- Suitable for general purpose industrial applications
- High efficiency design standard
- Premium efficiency available 3 HP and Larger
- 1.25 service factor
- Premium class F Allguard® motor insulation standard
- 40°C ambient, NEMA B design, continuous duty
- Inverter duty option per NEMA MG1 part 31 stocked
- Washdown version available to 2 HP



Corro-Duty®

- Designed for wet, corrosive applications and industries including waste treatment, mining and lumber.
- All cast iron construction (56 and 140 frames are rolled steel)
- High efficiency standard 1/3 HP and above
- Premium efficiency available 3 HP and larger
- 1.15 service factor, class F Allguard insulation
- Condensation drains in motor and conduit box
- Inverter duty version per NEMA MG1 Part 31 stocked



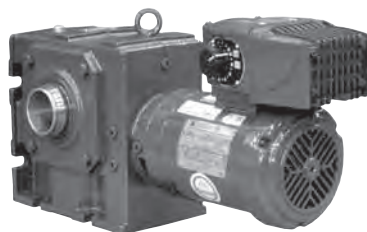
TEFC – Single Phase

- For agricultural, light material handling, textile, and light pumping applications
- 1.25 service factor
(1.0 service factor, 2 HP and 1.15 service factor, 3 - 5 HP)
- Capacitor start
(capacitor run above 1/2 HP, 56 – 180T frames)
- Class B insulation, continuous duty, reversible



Explosionproof

- Ideal for the petro-chemical, grain, mining, and chemical industries
- Class I, group D, class II, groups F and G
- All cast iron construction (plastic fan cover)
- 1.0 service factor, class B insulation
- 40°C ambient, NEMA B design, continuous duty
- UL approved Inverter duty per NEMA MG1 part 31 available



IntelliGear®

- Variable speed gearmotor with NEMA 4/12 enclosure
- "Onboard" pushbutton and remote speed changing options
- Pre-programmed 6:1 constant torque speed range
- Versions for 3/460V input power supplies from 1/3 to 10 HP
- 1/230V and 3/230V, 1/3 to 5 HP
- 1/115 V, 1/3 to 3/4 HP
- UL*, CUL and CE
- Optional 10:1 and 15:1 speed ranges

* UL is believed to be a trade name and/or trademark of Underwriters Laboratories, Inc., and is NOT owned or controlled by Emerson Power Transmission.

Selection Information

1. Input HP
 - Based on application data
 - Output HP or torque required
2. Speed / Ratio
 - Obtain either desired output speed (rpm) or gearbox ratio based on application requirements.
3. Mechanical Service Factors - Gears
 - There are three standard classifications for gearmotor applications:
 - Uniform loading
 - Moderate shock loading
 - Heavy shock loading
 - The tables on pages C-41 - C-43 are based on past operating experience within the industries listed and information gathered by the AGMA. If the user has data reflecting greater severity than normal industry usage, then the service factor should be increased.
 - For applications not covered in the AGMA application classification tables, the user may choose the service factor based on the following criteria:

Duration of Service (Hours Per Day)	Uniform Load	Moderate Shock Load	Heavy Shock Load
Occasional to 1/2 Hour	-	-	1.00
Less than 3 Hours	1.00	1.00	1.25
3 - 10 Hours	1.00	1.25	1.50
Over 10 Hours	1.25	1.50	1.75

Size Selection

- Step 1...** Locate gearmotor selection tables (pages C-44 - C-68 based on motor HP).
- Step 2...** Choose the appropriate output speed or nominal ratio required.
- Step 3...** Select the gear frame that provides the service factor appropriate for the application.
- Step 4...** Verify that overhung load ratings are sufficient if an overhung load will be applied.

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a gearmotor, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{RPM \times r}$$

Where:

- OHL = Overhung load (pounds)
- T = Torque (in. lbs.)
- r = Radius of driving member (in.)
- HP = Horsepower
- K = Drive type factor
- LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
V-Belts	1.50
Timing Belts	1.25

Load Location	Value of LLF
End of Shaft extension	1.20
Center of Shaft extension	1.00
Shaft extension shoulder	0.80

Selection Example

A right angle, foot mounted gearmotor is required to operate a uniformly loaded belt conveyor at 30 rpm, 24 hours per day. An 11" diameter sprocket is mounted at the end of the shaft and drives the conveyor with a chain drive. The customer has specified a 230/460 VAC, 3-phase, high efficiency TEFC gearmotor rated 5 HP. Shaft extension is to be on the right, viewing the motor fan cover. The unit will be in the normal floor mounted position with the motor horizontal and the mounting feet on the bottom.

1. Input HP is 5 HP
2. Output speed required is 30 rpm
3. AGMA service classification table on page C-41 indicates the following:

Application	Up to 3 Hrs./Day	3 - 10 Hrs./Day	Over 10 Hrs./Day
Conveyors - General Purpose			
Uniformly Loaded or Fed	-	1.00	1.25
Not Uniformly Fed	1.00	1.25	1.50
Reciprocating or Shaker	1.25	1.50	1.75

Since this application operates 24 hours per day, a 1.25 service factor is required.

Step 1... Locate a gearmotor for 5 HP on page C-65.

Step 2... Find a nominal speed closest to the 30 rpm output required.

Step 3... Select the row in the table that meets the 1.25 SF requirement.

Output rpm	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types
30	1.1	8740	2800	63	3472	184T	T,C,S,X,IG
30	2.6	8236	5000	56	3582	184T	T,C,S,X,IG

Note that there are two lines for 30 rpm and the second exceeds 1.25 service factor as required. The second line with the size 3582 gearmotor is the selection that matches the speed requirement most closely, while providing the required service factor. This means that the size 3582 gear frame with 56:1 nominal ratio and 30 rpm output is the best selection.

Step 4... Verify that the Overhung Load Rating is sufficient for the applied load.

$$r = \frac{\text{Sprocket Diameter}}{2} = \frac{11}{2} = 5.5"$$

$$K = 1.0 \text{ (chain drive)}$$

$$LLF = 1.2 \text{ (sprocket on end of shaft)}$$

$$HP = 5$$

$$\text{OHL} = \frac{63025 \times \text{HP} \times K \times LLF}{\text{rpm} \times r} = \frac{63025 \times 5 \times 1.0 \times 1.2}{30 \times 5.5} = 2292 \text{ lbs.}$$

The output OHL rating is 5000 lbs (see selection table), and since this is greater than the applied OHL of 2292 lbs., the selection is fine. If the OHL rating was too low, the sprocket diameter or gear frame could be increased.

Complete the Process by Building a Complete Part Number

Catalog designation (see "Catalog Nomenclature" page C-30):

HWN • 3582 • S2 • B33G • 56 • HT24 • 184T • 5

The codes indicate the following: Frame 3582 HWN Gearmotor, S2 = the standard housing with breather, B = floor mount, 33 = no faces or flanges, G = single shaft on right facing motor fan, 56:1 nominal ratio, HT24 = High Efficiency 230/460 TEFC motor, 184T motor frame, 5 HP. (Page C-32 shows mounting positions, page C-31 explains output shaft and face or flange positions and page C-33 shows motor types.)

Gearmotor Selection

Selection Information

1. Determine installation environment
 - Control enclosure is NEMA 4/12
2. Input HP
 - For constant torque loads this is at maximum speed of range. Therefore, the gear ratio should be selected to closely match the required maximum speed.
3. Speed range
 - Confirm maximum and minimum of needed range.
4. Determine control power supply
 - Phase and voltage

Power Supply	Input HP's
1 ph / 115 v	.33 to .75
1 ph / 230 v	.33 to 2
3 ph / 230 v	.33 to 5
3 ph / 460 v	.33 to 10
3 ph / special	R. O.

5. Mechanical service factoring of gear
 - Refer to page C-26 for this procedure.

Note: IntelliGear application for 1 phase power supply is limited to 10 starts per hour where the unit is started via AC power mains contactor.

6. Determine speed adjustment option
 - Select from:
 - PD = Digital keypad with forward/reverse/stop/speed up/speed down/speed display on IntelliGear enclosure
 - P1 = Run/stop/speed pot. mounted on IntelliGear enclosure
 - P2 = Forward/reverse/stop/pot. mounted on IntelliGear enclosure
 - P3 = Speed pot. (only) mounted on IntelliGear enclosure (start/stop by others)
 - P4 = Speed pot. (only) mounted inside IntelliGear enclosure (start/stop by others)
 - R = Remote signal following (0-10VDC or 4-20mA supplied by others)
 - RP = Remote from fieldbus - Profibus DP

Size Selection

- Step 1 - Determine the maximum motor rpm from the following table based on the whether the application requires a speed range of 6:1, 10:1 or 15:1.

$$\text{Speed Range} = \frac{\text{Maximum Output Speed Required}}{\text{Minimum Output Speed Required}}$$

HP	IntelliGear Motor Speed Range		
	6:1 Speed Range	10:1 Speed Range	15:1 Speed Range
1/3 - 3/4 HP	1760 - 293 rpm	1760 - 176 rpm	2625 - 175 rpm
1 - 1 1/2 HP	1750 - 291 rpm	1750 - 175 rpm	2620 - 175 rpm
2 HP	1750 - 291 rpm	2585 - 255 rpm	N. A.
3 HP	1750 - 291 rpm	2630 - 263 rpm	N. A.
5 HP	2150 - 358 rpm	2605 - 260 rpm	N. A.
7.5 HP	2150 - 358 rpm	2670 - 267 rpm	N. A.
10 HP	2100 - 350 rpm	2600 - 260 rpm	N. A.

- Step 2 - Determine the gear ratio required. Use the maximum motor rpm from the table above.
- $$\text{Gear Ratio} = \frac{\text{Maximum Motor Speed}}{\text{Maximum Output Speed Req'd}}$$

- Step 3 - Locate gearmotor selection tables based on the input HP required at the ratio calculated in Step 2. Select the nominal gear ratio closest to the one calculated.

- Step 4 - Select the correct gearmotor that meets or exceeds the AGMA class or service factor determined in the selection information.

- Step 5 - Verify overhung load rating where applicable per formulas on page C-26.

- Step 6 - Confirm input power supply is compatible with HP of selection and select the speed adjustment option desired for the application.

- Step 7 - Referring to page C-34, determine if an alternative controller location is required for the application. (Note that the default location is "FO" – the 12 o'clock position.)

Gearmotor Selection

Selection Example

A right angle, flange mounted gearmotor is required to operate an agitator for a variable density liquid solution. The mixer operates 16 hours per day and the speed range is 12-56 rpm. The mixer shaft will be directly coupled to the gearmotor output shaft on the right side viewed from the motor end. The customer has specified a 2 HP gearmotor with a TEFC motor with AC Drive and the power supply is 460 VAC, 3-phase. The flange is to be located on the right, viewing the motor fan cover and the OD required is 200 mm. The unit will be mounted on its side with the motor horizontal and the output shaft vertical down. Viewed from the top of the gearcase housing, the motor will be mounted to the left.

1. Input HP is 2 HP
2. Output speed required is 56-12 rpm
3. AGMA service classification table on page C-41 indicates the following:

Application	Up to 3 Hrs./Day	3 - 10 Hrs./Day	Over 10 Hrs./Day
Agitators (Mixers)			
Pure Liquids	-	1.00	1.25
Liquids and solids	1.00	1.25	1.50
Liquids, Variable Density	1.00	1.25	1.50

Since this is an agitator for a variable density liquid that operates 16 hrs./day, a 1.50 service factor is required.

Step 1... Calculate the speed range required: 56 rpm max./12 rpm min. = 4.7:1, so an IntelliGear with 6:1 range is required. This means the motor top speed will be 1750 rpm for a 2 HP IntelliGear.

Step 2... The ideal gear ratio is 1750 rpm / 56 rpm = 31.25:1.

Step 3... Locate gearmotor for 2 HP on page C-60, and find a nominal ratio close to 31.25:1.

Step 4... Select the row in the table for at least 1.50 service factor.

Output rpm	Service Factor	Output Torque in-lb	OHL lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types
64	1.2	1654	1900	28	3152	145T	T,C,S,X,IG
58	2.2	1841	2250	31.5	3262	145T	T,C,S,X,IG
54	1.0	1945	1900	31.5	3152	145T	T,C,S,X,IG

Note that 31.25:1 ratio is closest to 31.5:1 nominal ratio. There are two choices at this ratio, and frame 3262 meets the 1.50 service factor requirement.

Step 5... For a direct coupled application, it is not necessary to consider the Overhung Load Rating.

Step 6... The power supply is 460 VAC/3-phase, and there is an IntelliGear available for this voltage at 2 HP. (See the footnote at the bottom of page C-60.)

Complete the Process by Building a Complete Part Number

Catalog designation (see "Catalog Nomenclature" page C-30):

HWN • 3262 • S2 • T53G • 31.5 • IG4 • 145T • 2

The codes indicate the following: frame 3262 HWN gearmotor, S2 = the standard housing with breather, T = motor left and output shaft vertical down, 53 = flange on right side, G = single output shaft on the right side, 31.5:1 nominal ratio, IG4 = 460 VAC/3-phase IntelliGear, 145T motor frame, 2 HP. (Page C-32 shows mounting positions, page C-31 explains output shaft and face or flange positions, page C-30 shows flange OD is 200 mm as desired, and page C-33 shows motor types.)

HWN • 34 7 2 • S2 • B 33 G • 22.4 • HT24 • 145T • 1.5 • G11

See page C-31 and C-32

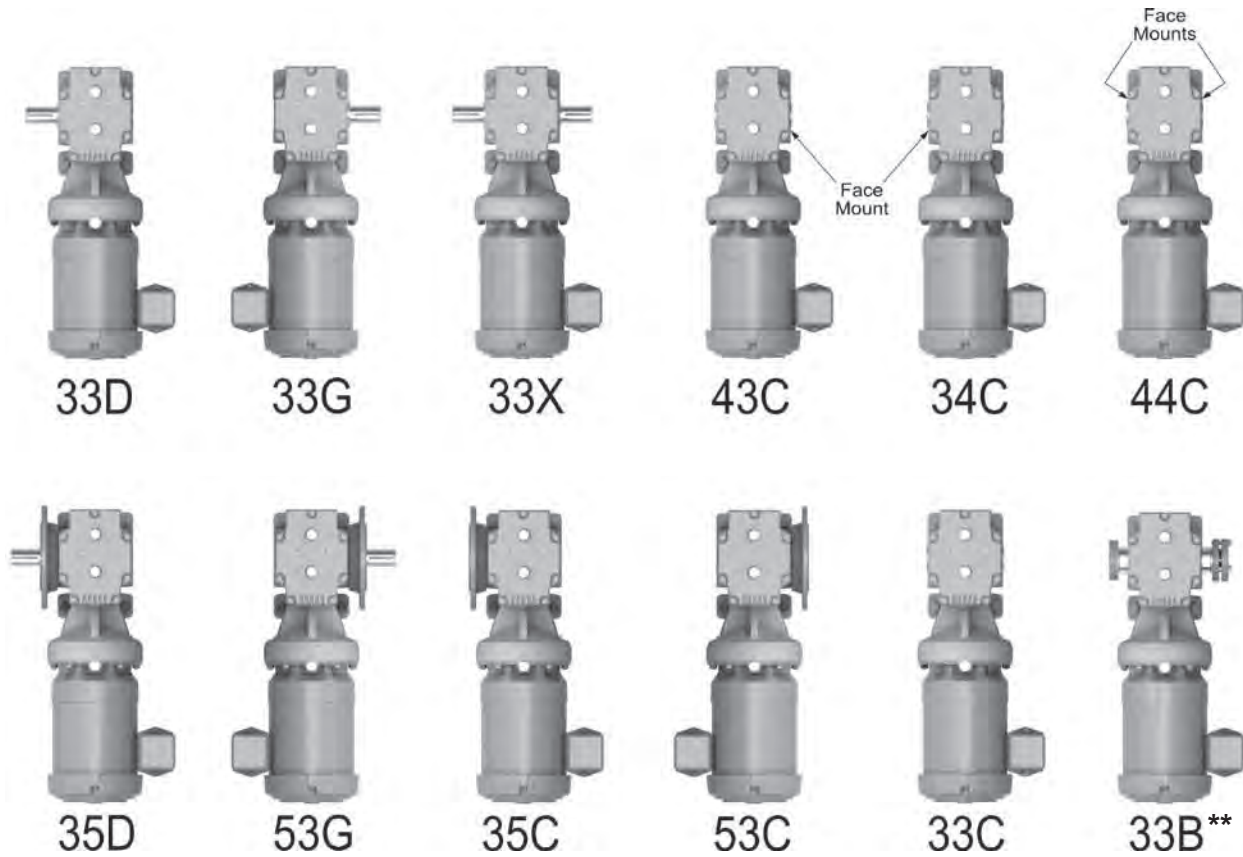
Browning Right-Angle Helical-Worm	Series	Gearmotor Size	Stages	Housing Type	Mounting Position	Output Face/Flange Right-Left Viewed From Input End	Output Shaft Configuration Viewed from Input End	Nominal Gear Ratio	Motor Type	Motor Frame	Motor HP	Modifications
Series 3000		30	4 = 2 stages	S2 = Housing with breather	B = Floor mount	3 = Standard round	G = Shaft right	22.4 = 22.4:1	Motor type selected from catalog designation column in standard motor input types table on page C-33	48 - 256T	1.5 = 1.5 HP	Select from available modifications listed on pages C-35 - C-37
		31	4 = 4 stages combined	S3 = Housing with expansion chamber	P = Ceiling mount	4 = Face mount	D = Shaft left	Use nominal ratio selected from gearmotor selection tables				
		32	5 = 5 stages combined		H = Wall mount, input left	5 = Flange mount	X = Dual shaft					
		33	0		T = Wall mount, input right	C = Finished bore						
		34	7		V = Input vertical up	B = Tapered bushed						
		35	8		W = Input vertical down							

*S3 housing type has an expansion chamber instead of a breather. A diaphragm allows for expansion to prevent pressure build-up inside the oil sump. This totally encloses the housing to prevent seepage from a breather, especially with high lubricant levels and in movable mounts.

HWN Series

Flange Dimensions Summary:

Flange Dimensions (mm)						
BD	140	160	200	250	350	
AK	95	110	130	180	250	
AJ	115	130	165	215	300	
Gear Frame	Output Flange Designation Code					
30	6	5	-	-	-	
31	-	-	5	-	-	
32	-	-	5	-	-	
33	-	-	-	5	-	
34	-	-	-	5	-	
35	-	-	-	-	5	



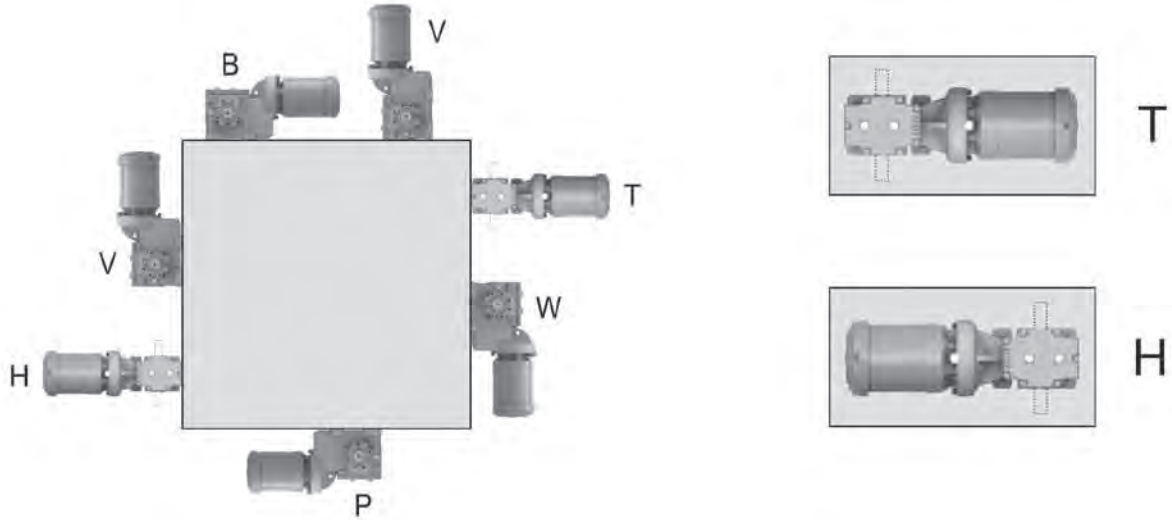
Examples Above are Top Views

HWN Series

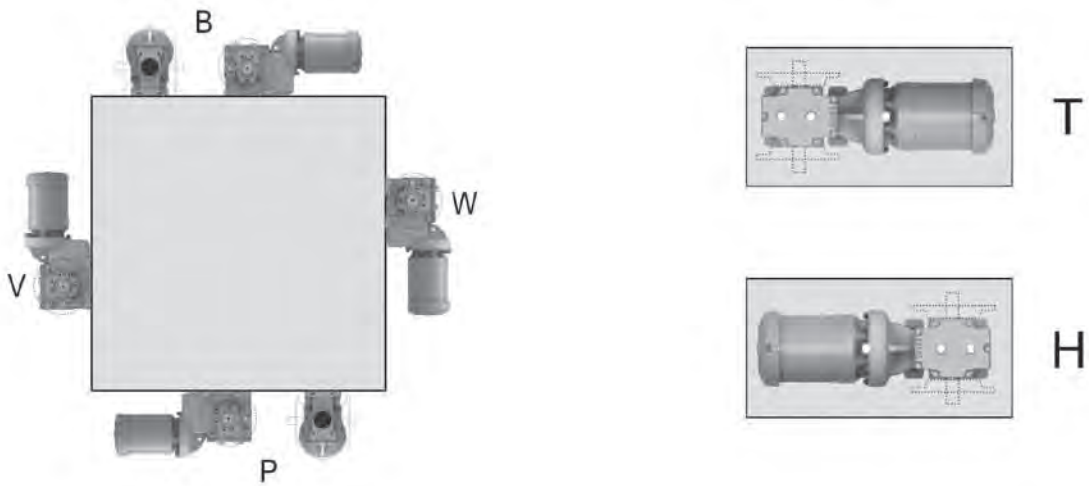
HWN Frame	Foot Mounted			Face Mounted			Flanged Mounted					Shaft Mounted		
	Solid Shaft			Hollow Shaft			Solid Shaft		Hollow Shaft			Hollow	Bushed	
	33G	33D	33X	33C*	34C	43C	44C*	53G	35D	53C	35C	55C*	33C	33B**
30	•	•	•	•	•	•	•	••	••	••	••	••	•	•
31	•	•	•	•	•	•	•	•	•	•	•	•	•	•
32	•	•	•	•	•	•	•	•	•	•	•	•	•	•
33	•	•	•	•	•	•	•	•	•	•	•	•	•	•
34	•	•	•	•	•	•	•	•	•	•	•	•	•	•
35	•	•	•	•	•	•	•	•	•	•	•	•	•	•

• This is available at normal lead-times
 •• This is available at normal lead-times and in alternative flange "6". See previous page
 * This design allows entry of driven shaft from either side of the reducer
 ** Bushing can be assembled on either side of the reducer during field assembly

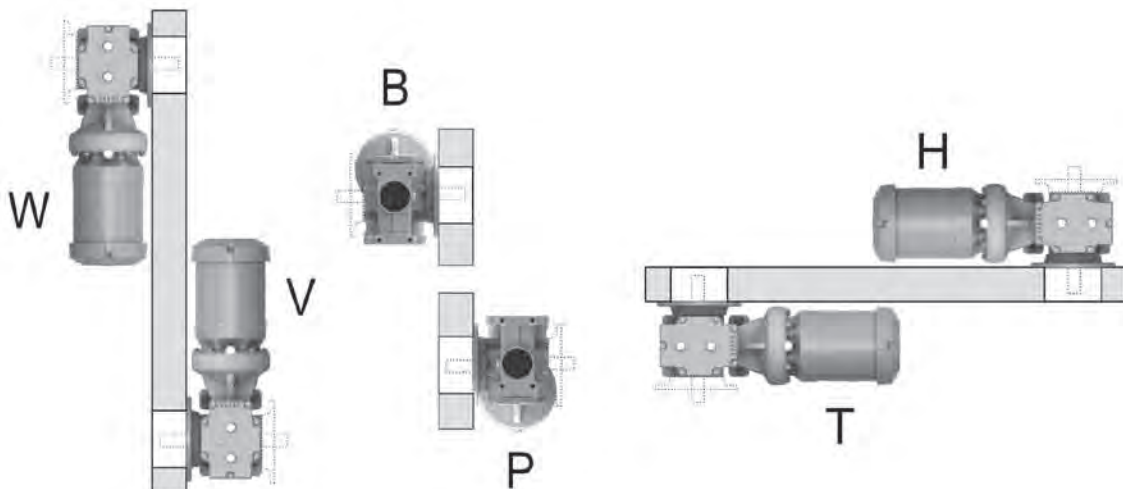
Foot Mount



Foot Mount with Face or Flange



Flange, Face or Shaft Mount

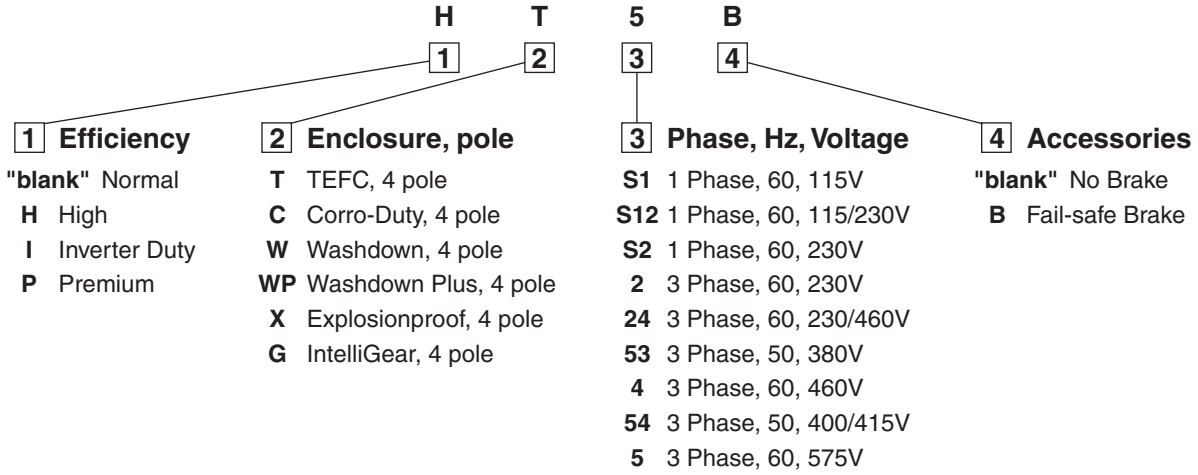




Standard Motor Input Types

HWN SERIES 3000

Example: High Efficiency, TEFC, 3 phase 60 Hz, 575V, with Fail-safe Brake



Base Design	Input Code	Motor HP															
		0.33	0.50	0.75	1	1.5	2	3	5	7.5	10	15	20	25	30	40	50
S Single Phase TEFC	TS12	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS12B	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS2	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
	TS2B	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
T 3 Phase TEFC	HT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	HT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24B	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T5	Y	Y	Y	Y ¹	-	-	-	-	-	-	-	-	-	-	-	-
	T5B	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T53	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	P	P	P	P	P	P	P
	T54	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	P	P	P	P	P	P
	IT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-
	IT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-
	PT24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PT5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	W24	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
	W5	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
	WP24	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
	WP5	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-
C 3 Phase Corro-Duty®	HC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PC24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PC5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
X 3 Phase Explosionproof	X24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	X5	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
	IX24	P	P	P	P	P	P	P	P	P	P	-	-	-	-	-	-
IG IntelliGear®	IGS1	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	-
	IGS2	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	IG2	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-
	IG4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-

P = production lead-time Y = available from stock Y¹ = motor frame is B56 - = not available

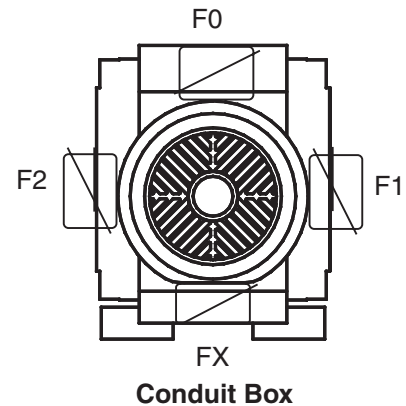


Electrical Connection Options

Conduit Box Location

When ordering a conventional HWN gearmotor, specify the desired conduit box location when viewing fan cover guard of motor. If no option is specified, the conduit box location per gearbox mounting will be supplied as shown in the table below.

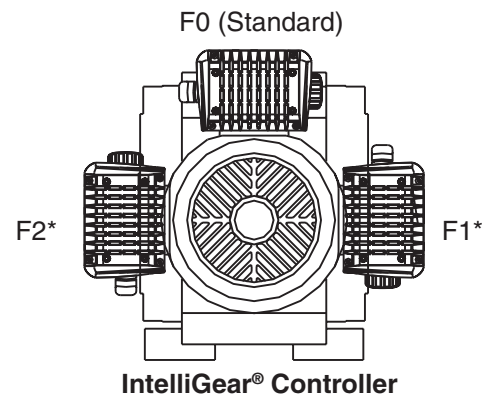
Output Arrangement	Standard Conduit Box Location
33G, 53G, 43C, 53C	F-2
33D, 35D, 33X, 55X, 33B, 33C, 34C, 44C, 35C, 55C,	F-1



Controller Location

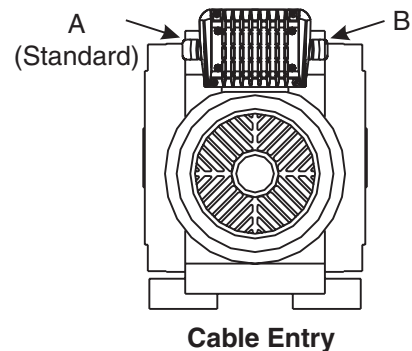
When ordering an IntelliGear® Series 3000 gearmotor, you can specify the controller location and conduit entry location when viewing the fan cover guard of motor. If no options are specified, the "F0" controller location will be supplied.

* Refer to Application Engineering for de-rating guidance in the F1 or F2 IntelliGear locations.



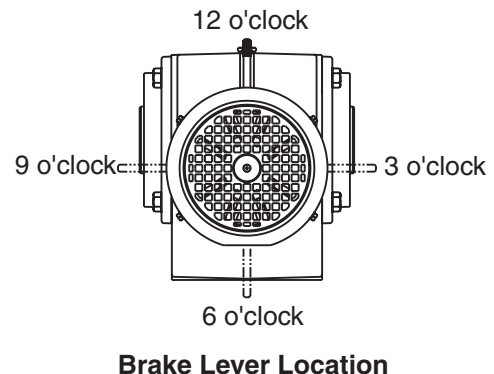
Cable Entry

IntelliGear Cable Entry can be from either side of enclosure. If no option is specified, "A" will be supplied.



FCR DC Brake Manual Release Lever Location

Unit Type	Default Location	Optional Location(s)
HWN less IntelliGear	12 o'clock	3, 6, or 9 o'clock
HWN with IntelliGear	9 o'clock	3, 6, or 12 o'clock (lever can not be in same position as IntelliGear)



Modifications, Options and Accessories

Inverter Duty Gearmotors

Improvements in the motors for HWN gearmotors include an upgrade in the wire and varnish treatment used in all Allguard® non-explosionproof three phase motors. This makes the three phase gearmotor suitable for use with PWM inverters in many applications. A one year warranty will be extended for standard efficiency motors on constant torque applications over 3:1 range from 60-20 Hz. The same warranty is extended for high efficiency design motors on constant torque applications over 5:1 range from 60-12 Hz providing the following conditions are met:

- Motor is non-hazardous 3 phase > 48 frame
- Cable length to controller < 100 feet
- Line voltage is < 480 VAC
- Thermal protectors are not required

For all other conditions of operation (including 575 VAC) that exceed these parameters and all hazardous motor applications, select the inverter duty motor design under the motor Type required by the application. These designs include winding thermostats and will be covered by a three (3) year limited warranty of the motor as covered in the Standard Terms and Conditions, and full compliance with NEMA MG1 Part 31.

Motor Modifications

M1 Brakes

Design

These motor mounted brakes have a direct acting, spring set, electromagnetically released disc design. When power to the brake is interrupted, the brake will immediately set and hold. When power is restored to the brake then the brake will be released automatically.

Brake Enclosures

IP23 – suitable for indoors with relatively dry, clean and non-hazardous applications

IP55 – suitable for outdoor or indoor where gearmotor can be exposed to splashing liquids, dusts, and chemicals that are non-hazardous. Not suitable for washdown applications

Non-Hazardous Motor Types	Motor Frame Size(s)	
	56-180T	210T
S	IP23	N/A
T	IP55	IP23
IG	IP55	N/A

Motor Modifications Continued

Operating Voltage

Brakemotors for fixed frequency operation will be arranged for operating with motor power as standard. If another lower voltage like 115 VAC is to be used for the brake on a 3 phase motor, state this voltage at order entry

Brakes for inverter duty brakemotors require a separate fixed frequency AC power source for the brake, but interlocked with starting of the motor. The standard brake design for inverter duty gearmotors will be arranged for single phase 115/230 VAC.

Mounting

Brakes for HWN gearmotors are suitable for the mounting ordered for the gearmotor. The standard brake will have a manual release included. Refer to the table on B-18 for the manual release mounting options available on the FCR type IP 55 brake design.

M2 Premium Efficiency Motors

High efficiency motor design is a standard option for three phase motors on 56 frames and larger motors in types “T” and “C” to meet the energy legislation in Canada and most end user specifications.

Premium efficiency motors are also optional starting at 3 HP.

M3 Washdown Duty Motors

See GM1 under Gearmotor Modifications

M4 Canopy Cap/Drip Cover

A canopy cap can be supplied for protection from dripping liquids entering the fan end of a gearmotor. It is recommended but not standard when gearmotor mounting is ordered to be “V”

M5 Frequency – 50 Hz

Motors for operation at 50 Hz are available. Refer all 3 phase requirements for 50 Hz to motor code T53 (380V) or T54 (400/415V). The published output speed in catalogs are based on 60 Hz. When operating or selecting a 50 Hz gearmotor, catalog output speed must be reduced by 5/6 for a given ratio. The service factor must also be reduced by 5/6 if the HP is maintained.

For all other 50 Hz voltages, refer to application engineering.

Modifications, Options and Accessories

Motor Modifications Continued

M6 Voltage (3 phase only)

Standard voltages are listed in the table below. 200 VAC will be handled by 208-230/460V motors up to 10 HP. Refer all other voltages to the Pricing Group to confirm availability.

Frequency	3 Phase Voltages Thru 30 HP
60 Hz	200, 230, 460, 575
50 Hz	380, 400/415

M7 Motor Insulation

Emerson's 3 phase motors are built with a premium Class F insulation system for "T", "C" and "IG" types. All "S" and "X" type motors use a Class B insulation.

Tropical insulation treatment is available as a modification on any motor designs noted above

Class H insulation systems require production lead-times and are not available on explosions proof "X" designs.

M8 Space Heaters

Space heaters are recommended for gearmotors installed in very damp locations to prevent condensation from forming on the motor windings when the motor is not operating. Leads will be brought out to the standard motor conduit box. Space heater voltages (115, 230, and 460V) must be specified when an order is entered. This is available on motors > ¾ hp.

M9 Thermal Protection – Thermostats

This protection uses a bi-metallic disc thermostat embedded each phase of the motor winding and then connected by others into the holding circuit of the motor starter or VFD drive. The sensor is normally closed, and opens the control circuit to shut the motor down if the motor achieves over-temperature conditions based on the motor insulation class or design code. Thermostats give protection for running overloads, abnormally high ambient, voltage imbalance, high or low voltage, and ventilation failure. Thermostats do not give protection for locked rotor, starting overloads or single phasing.

Thermostats are standard in inverter duty motor designs (including IG) as well as explosionproof dual label motors type "X".

Gear Modifications

G11 Corro-Duty®

Corro-Duty treatment can be applied to a gearmotor or reducer when corrosive chemicals or unit will be operated outside in adverse environmental conditions. For gearmotors, the unit should start with specification of the Corro-Duty type "C" motor design. Other special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
 - o Grey Option (default type)
 - 316 stainless steel paint (3 step)
 - Light grey semigloss finish
 - USDA and FDA approved
 - o White Option
 - Two step epoxy paint system
 - White gloss finish
 - USDA and FDA approved

For washdown application for gearmotors, refer to GM1 Washdown Duty Gearmotors and/or Washdown Duty Gearmotor PLUS.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the HWN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for worm gearing (refer to page C-147).

G15 Export Boxing

Export boxing can be provided for "under-deck" transport. When the quantity of HWN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Modifications, Options and Accessories

Gearmotor Modifications

GM1 Washdown Duty Gearmotors

This three phase gearmotor design combines special features of the gear and motor required for washdown duty. These include:

- Special treatment of motor interior and windings
- Drains at low point(s) of the motor frame
- Labyrinth seal at motor SE bracket/shaft extension
- Special “protected” breather for gearcase
- Corro-Duty exterior multi-application paint treatment (see Corro-Duty® Reducer for color options).

Motor types “W24” or “W5” are used to order this design based on motor voltage. This is also available from 1/3 to 2 HP.

GM2 Washdown Duty Gearmotor PLUS

This three phase gearmotor design includes all the special features noted under GM1 above and the oil sump of the reducer will be filled before shipment with a FDA approved H1 rated synthetic lubricant for worm gearing. Volume of the oil will be dictated by the mounting position specified on the order.

Motor types “WP24” or “WP5” are used to order this design based on motor voltage. This is also available from 1/3 to 2 HP.

Accessories

The following accessories can be ordered along with gearmotors and will be supplied loose for mounting by others

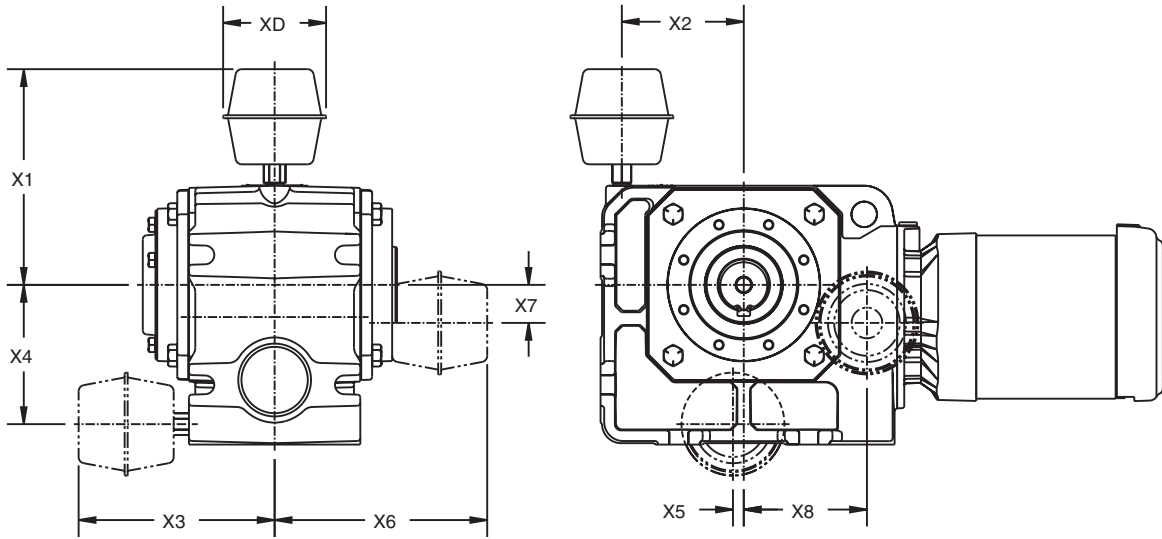
Description	Gear Frames	Part #
NPT Adapter (1/4" NPFT)	31 to 35	0436216
Bushing Guard Kit ¹ (includes 2 guards to protect both sides)	30	XS9125
	31	XS9125
	32	XS9126
	33	XS9127
	34	XS9128
	35	XS9129
Oil Level View Port	31 to 35	0435936

¹ These kits include all mounting hardware.



Expansion Chamber - S3 Housing Type

- Replaces the breather with an expansion cartridge.
- Screws into topmost oil plug location depending on mounting position.
- Totally encloses oil sump.
- Diaphragm expands to prevent pressure build-up as oil heats up.
- Helps eliminate oil leakage past seals during operation.
- Helps stop vacuum induced internal contamination upon cool down.
- Especially effective for mounting positions requiring high oil level.
- Also effective where mount rotates into multiple positions.

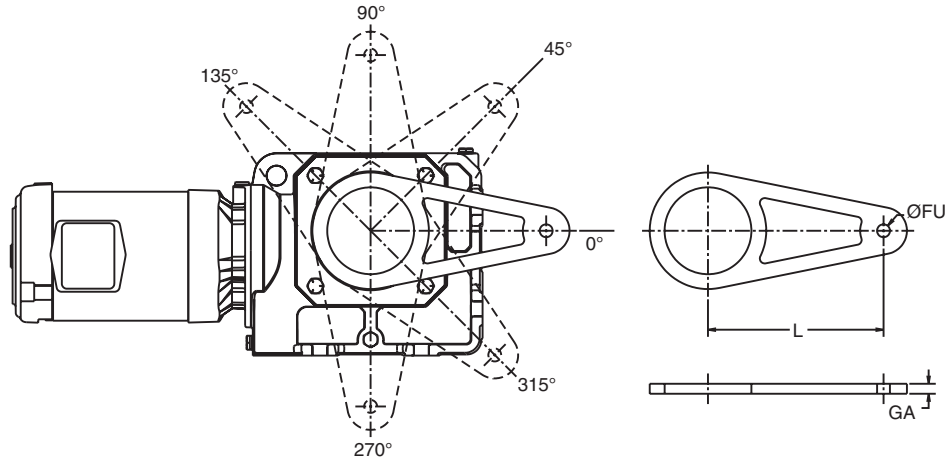


Choose from three alternate positions illustrated.

Gear Frame	XD	X1	X2	X3	X4	X5	X6	X7	X8
30	4.06	9.10	3.19	8.48	3.26	-.20	9.40	1.22	3.49
31	4.06	9.38	3.39	8.79	3.75	.20	9.48	1.19	3.70
32	4.06	10.19	4.45	9.26	4.81	.20	9.73	1.63	4.65
33	4.06	10.50	4.81	9.73	5.49	0	10.30	1.50	4.86
34	7.00	10.25	5.09	9.48	6.25	.30	10.23	2.00	5.68
35	7.00	12.18	7.09	9.98	8.00	.08	10.41	3.44	7.50

HWN Frame Size	Expansion Chamber Part #	Pipe Fittings		
		Adapter	Nipple	Reducer
30 - 33	FK2027	0436216	FK2022	FK3041
34 - 35	FK3040	0436216	FK2022	FK3041

Torque Reaction Arm

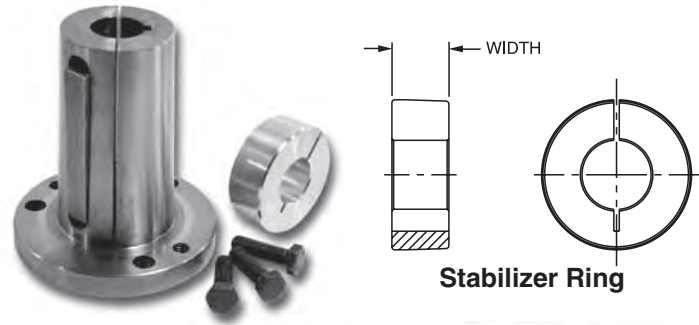


Torque Arm Kits

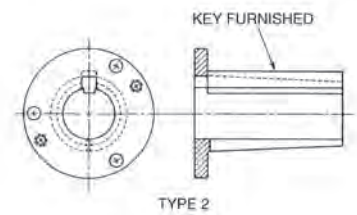
Gear Frame	Part ID Kit #	L	FU	GA	Fastener ¹ Size
30	NH9010	5.12	0.41	0.25	5/16
31	NI9010	6.3	0.41	0.25	5/16
32	NJ9010	7.87	0.41	0.38	5/16
33	NK9010	8.86	0.65	0.38	3/8
34	NL9010	9.84	0.65	0.5	3/8
35	NM9010	12.2	0.65	0.5	1/2

¹ Fastener for attachment to gearbox face included with Torque Arm Kit.

HWN3000 series units can be ordered with a “33B” bushed output version. When a bore size is defined at order entry, this configuration includes the appropriate bushing kit unassembled. The table below shows the available stocked bushing bores that may be specified for each HWN frame size. Each bushing kit is supplied with the bushing, mounting hardware, and a stabilizer ring. Where a bushing is needed for a spare or for a bore change, select it from the following table by gear frame size.



- **Unique, patented single bushing mounting system**
 - Mounts from either side
- **Tapered stabilizer ring minimizes wobble and resists fretting corrosion.**
- **End cap seals quill end from contamination.**



HWN Series

HWN Frame	Mea. Unit	Bushing No.	Bore	Shaft Keyseat Required	Stabilizer Ring Width
30 & 31	Inch	107TBP102	1 1/8	1/4 x 1/8 x 3 7/8	0.793
		107TBP103	1 3/16	1/4 x 1/8 x 3 7/8	
		107TBP104	1 1/4	1/4 x 1/8 x 3 7/8	
		107TBP105	1 5/16	5/16 x 5/32 x 3 7/8	
		107TBP106	1 3/8	5/16 x 5/32 x 3 7/8	
		107TBP107	1 7/16	3/8 x 3/16 x 3 7/8	
	Metric ¹	107TBP30MM	30 mm	8 x 4 x 94 (mm)	
107TBP35MM		35 mm	10 x 5 x 94 (mm)		
32	Inch	115TBP107	1 7/16	3/8 x 3/16 x 4 1/8	0.855
		115TBP108	1 1/2	3/8 x 3/16 x 4 1/8	
		115TBP110	1 5/8	3/8 x 3/16 x 4 1/8	
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	
		Metric ¹	115TBP40MM	40 mm	
	115TBP45MM		45 mm	14 x 5.5 x 100 (mm)	
	33	Inch	203TBP112	1 3/4	
203TBP114			1 7/8	1/2 x 1/4 x 4 5/8	
203TBP115			1 15/16	1/2 x 1/4 x 4 5/8	
203TBP200			2	1/2 x 1/4 x 4 5/8	
203TBP203			2 3/16	1/2 x 1/4 x 4 5/8	
Metric ¹		203TBP50MM	50 mm	14x5.5x118 (mm)	
34	Inch	207TBP114	1 7/8	1/2 X 1/4 X 5 1/8	1.04
		207TBP115	1 15/16	1/2 X 1/4 X 5 1/8	
		207TBP200	2	1/2 X 1/4 X 5 1/8	
		207TBP202	2 1/8	1/2 X 1/4 X 5 1/8	
		207TBP203	2 3/16	1/2 X 1/4 X 5 1/8	
		207TBP204	2 1/4	1/2 X 1/4 X 5 1/8	
		207TBP207	2 7/16	5/8 X 5/16 X 5 1/8	
		Metric ¹	207TBP50MM	50 mm	
	207TBP60MM		60 mm	18 x 7 x 125 (mm)	
	35	Inch	307TBP207	2 7/16	
307TBP208			2 1/2	5/8 X 5/16 X 6 3/4	
307TBP211			2 11/16	5/8 X 5/16 X 6 3/4	
307TBP214			2 7/8	3/4 x 3/8 x 6 3/4	
307TBP215			2 15/16	3/4 x 3/8 x 6 3/4	
307TBP300			3	3/4 x 3/8 x 6 3/4	
307TBP306			3 3/8	7/8 x 7/16 x 6 3/4	
307TBP307			3 7/16	7/8 x 7/16 x 6 3/4	
Metric ¹		307TBP60MM	60 mm	18 x 7 x 172 (mm)	
		307TBP70MM	70 mm	20 x 7.5 x 172 (mm)	

¹ Metric bushings have metric bores and require metric keyseats as shown in mm.

AGMA Application Classifications

Service Factors for Helical Worm Applications								
Application	Up to 3 Hrs. Day	3-10 Hrs. Day	Over 10 Hrs. Day	Application	Up to 3 Hrs. Day	3-10 Hrs. Day	Over 10 Hrs. Day	
Agitators (Mixers)				Cranes (Continued)				
Pure Liquids	—	1.00	1.25	Industrial Duty				
Liquids and Solids	1.00	1.25	1.50	Main	1.25	1.50	1.75	
Liquids - Variable Density	1.00	1.25	1.50	Auxiliary	Refer to Application Engineering			
Blowers				Bridge and Trolley Travel	Refer to Application Engineering			
Centrifugal	1.00	1.25	—	Crusher				
Lobe	1.00	1.25	1.50	Stone or Ore	1.50	1.75	2.00	
Vane	—	1.00	1.25	Dredges				
Brewing and Distilling				Cable Reels	1.00	1.25	1.50	
Bottling Machinery	—	1.00	1.25	Conveyors	1.00	1.25	1.50	
Brew Kettles, Continuous Duty	—	1.00	1.25	Cutter Head Drives	1.25	1.50	1.75	
Cookers - Continuous Duty	—	1.00	1.25	Pumps	1.00	1.25	1.50	
Mash Tubs - Continuous Duty	—	1.00	1.25	Screen Drives	1.25	1.50	1.75	
Scale Hoppers, Frequent Starts	1.00	1.25	1.50	Stackers	1.00	1.25	1.50	
Can Filling Machines				Winches	1.00	1.25	1.50	
Car Dumpers	1.25	1.50	1.75	Elevators				
Car Pullers	1.00	1.25	1.50	Bucket	1.00	1.25	1.50	
Clarifiers	—	1.00	1.25	Centrifugal Discharge	—	1.00	1.25	
Classifiers	1.00	1.25	1.50	Escalators	Refer to Application Engineering			
Clay Working Industry				Freight	Refer to Application Engineering			
Brick Press	1.25	1.50	1.75	Gravity Discharge	—	1.00	1.25	
Briquette Machine	1.25	1.50	1.75	Extruders				
Pug Mill	1.00	1.25	1.50	General	1.25	1.25	1.25	
Compactors				Plastics				
Compactors	1.50	1.75	2.00	(a) Variable Speed Drive	1.50	1.50	1.50	
Compressors				(b) Fixed Speed Drive	1.75	1.75	1.75	
Centrifugal	—	1.00	1.25	Rubber				
Lobe	1.00	1.25	1.50	(a) Continuous Screw Operation	1.50	1.50	1.50	
Reciprocating, Multi - Cylinder	1.00	1.25	1.50	(b) Intermittent Screw Operation	1.75	1.75	1.75	
Reciprocating, Single - Cylinder	1.25	1.50	1.75	Fans				
Conveyors - General Purpose				Centrifugal	—	1.00	1.25	
Uniformly Loaded or Fed	—	1.00	1.25	Cooling Towers	Refer to Application Engineering			
Not Uniformly Fed	1.00	1.25	1.50	Forced Draft	1.25	1.25	1.25	
Reciprocating or Shaker	1.25	1.50	1.75	Induced Draft	1.00	1.25	1.50	
Cranes				Industrial and Mine	1.00	1.25	1.50	
Dry Dock				Feeders				
Main Hoist	1.25	1.50	1.75	Apron	—	1.25	1.50	
Auxiliary	1.25	1.50	1.75	Belt	1.00	1.25	1.50	
Boom Hoist	1.25	1.50	1.75	Disc	—	1.00	1.25	
Slewing Drive	1.25	1.50	1.75	Reciprocating	1.25	1.50	1.75	
Traction Drive	1.50	1.50	1.50	Screw	1.00	1.25	1.50	
Container				Food Industry				
Main Hoist	Refer to Application Engineering			Cereal Cooker	—	1.00	1.25	
Boom Hoist	Refer to Application Engineering			Dough Mixers	1.00	1.25	1.50	
Trolley Drive	Refer to Application Engineering			Meat Grinders	1.00	1.25	1.50	
(Gantry Drive)				Slicers	1.00	1.25	1.50	
(Traction Drive)	Refer to Application Engineering			Generators and Exciters				
Mill Duty					—	1.00	1.25	
Main	Refer to Application Engineering			Hammer Mills	1.50	1.50	1.75	
Auxiliary	Refer to Application Engineering			Hoists				
Bridge & Trolley Travel	Refer to Application Engineering			Heavy Duty	1.25	1.50	1.75	
				Medium Duty	1.00	1.25	1.50	
				Skip Hoist	1.00	1.25	1.50	

HWN Series

AGMA Application Classifications

Service Factors for Helical Worm Applications

Application	Up to 3 Hrs. Day	3-10 Hrs. Day	Over 10 Hrs. Day	Application	Up to 3 Hrs. Day	3-10 Hrs. Day	Over 10 Hrs. Day
Laundry Tumblers	1.00	1.25	1.50	Metal Strip Processing Machinery			
Laundry Washers	1.00	1.25	1.50	Bridles	1.25	1.25	1.50
Lumber Industry				Coilers and Uncoilers	1.00	1.00	1.25
Barkers				Edge Trimmers	1.00	1.25	1.50
- Spindle Feed	1.25	1.25	1.25	Flatteners	1.00	1.25	1.50
- Main Drive	1.50	1.50	1.50	Loopers (Accumulators)	1.00	1.00	1.00
Conveyors				Pinch Rolls	1.00	1.25	1.50
- Burner	1.25	1.25	1.50	Scrap Choppers	1.00	1.25	1.50
- Main or Heavy Duty	1.50	1.50	1.50	Shears	1.50	1.50	1.75
- Main Log	1.50	1.50	1.50	Slitters	1.00	1.25	1.50
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50	Mills, Rotary Type			
- Slab	1.50	1.50	1.75	Ball and Rod			
- Transfer	1.25	1.25	1.50	Spur Ring Gear	1.50	1.50	1.75
Chains				Helical Ring Gear	1.50	1.50	1.50
- Floor	1.50	1.50	1.50	Direct Connected	1.50	1.50	1.75
- Green	1.50	1.50	1.50	Cement Kilns	1.50	1.50	1.50
Cut-Off Saws				Dryers and Coolers	1.50	1.50	1.50
- Chain	1.50	1.50	1.50	Mixers, Concrete	1.00	1.25	1.50
- Drag	1.50	1.50	1.50	Paper Mills			
Debarking Drums	1.50	1.50	1.75	Agitator (Mixer)	1.50	1.50	1.50
Feeds				Agitator for Pure Liquids	1.25	1.25	1.25
- Edger	1.25	1.25	1.50	Barkers - Mechanical	1.75	1.75	1.75
- Gang	1.50	1.50	1.50	Barking Drums	1.75	1.75	1.75
- Trimmer	1.25	1.25	1.50	Beater 1.50	1.50	1.50	1.50
Log Deck	1.50	1.50	1.50	Breaker Stack	1.25	1.25	1.25
Log Hauls - Incline-Well Type	1.50	1.50	1.50	◆Calender	1.25	1.25	1.25
Log Turning Devices	1.50	1.50	1.50	Chipper	1.75	1.75	1.75
Planner Feed	1.25	1.25	1.25	Chip Feeder	1.50	1.50	1.50
Planer Tilting Hoists	1.50	1.50	1.50	Coating Rolls	1.25	1.25	1.25
Rolls- Live-Off Bearing.-Roll Cases	1.50	1.50	1.50	Conveyors			
Sorting Table	1.25	1.25	1.50	Chip, Bark, Chemical	1.25	1.25	1.25
Tipple Hoist	1.25	1.25	1.50	Log (Including Slab)	1.75	1.75	1.75
Transfers				Couch Rolls	1.25	1.25	1.25
- Chain	1.50	1.50	1.50	Cutter 1.75	1.75	1.75	1.75
- Causeway	1.50	1.50	1.50	Cylinder Molds	1.25	1.25	1.25
Tray Drives	1.25	1.25	1.50	◆Dryers			
Veneer Lathe Drives	Refer To Application Engineering			Paper Machine	1.25	1.25	1.25
Metal Mills				Conveyor Type	1.25	1.25	1.25
Draw Bench Carriage & Main Drive	1.00	1.25	1.50	Embosser	1.25	1.25	1.25
Runout Table				Extruder	1.50	1.50	1.50
Non-reversing				Fourdrinier Rolls (Includes Lump Breaker, Dandy			
Group Drives	1.00	1.25	1.50	Roll, Wire Turning, and Return Rolls)	1.25	1.25	1.25
Individual Drives	1.50	1.50	1.75	Jordan	1.25	1.25	1.25
Reversing	1.50	1.50	1.75	Kiln Drive	1.50	1.50	1.50
Slab Pushers	1.25	1.25	1.50	Mt. Hope Roll	1.25	1.25	1.25
Shears	1.50	1.50	1.75	Paper Rolls	1.25	1.25	1.25
Wire Drawing	1.00	1.25	1.50	Platter	1.50	1.50	1.50
Wire Winding Machine	1.00	1.25	1.50				

◆ Anti-Friction Bearings Only.

AGMA Application Classifications

Service Factors for Helical Worm Applications							
Application	Up to 3 Hrs. Day	3-10 Hrs. Day	Over 10 Hrs. Day	Application	Up to 3 Hrs. Day	3-10 Hrs. Day	Over 10 Hrs. Day
Paper Mills (Continued)				- Vane	—	1.00	1.25
Presses - Felt and Suction	1.25	1.25	1.25	Rubber Industry			
Pulper	1.50	1.50	1.75	Intensive Internal Mixers			
Pumps - Vacuum	1.50	1.50	1.50	(a) Batch Mixers	1.50	1.75	1.75
Reel (Surface Type)	1.25	1.25	1.50	(b) Continuous Mixers	1.25	1.50	1.50
Screens				Mixing Mill - 2 Smooth Rolls - (If corrugated rolls are used, then use the same service factors that are used for a Cracker-Warmer)	1.50	1.50	1.50
Chip	1.50	1.50	1.50	Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50
Rotary	1.50	1.50	1.50	Cracker Warmer - 2 Roll:			
Vibrating	1.75	1.75	1.75	1 Corrugated Roll	1.75	1.75	1.75
Size Press	1.25	1.25	1.25	Cracker - 2 Corrugated Rolls	1.75	1.75	1.75
Super Calender (See Note)	1.25	1.25	1.25	Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25
Thickener				Refiner - 2 Rolls	1.50	1.50	1.50
(AC Motor)	1.50	1.50	1.50	Calenders	1.50	1.50	1.50
(DC Motor)	1.25	1.25	1.25	Sand Miller	1.00	1.25	1.50
Washer				Sewage Disposal			
(AC Motor)	1.50	1.50	1.50	Bar Screens	—	1.00	1.25
(DC Motor)	1.25	1.25	1.25	Chemical Feeders	—	1.00	1.25
Wind and Unwind Stand	1.00	1.00	1.00	Dewatering Screens	1.00	1.25	1.50
Winders (Surface Type)	1.25	1.25	1.25	Scum Breakers	1.00	1.25	1.50
◆ Yankee Dryers	1.25	1.25	1.25	Slow or Rapid Mixers	1.00	1.25	1.50
Plastics Industry - Primary Processing				Sludge Collectors	1.00	1.00	1.25
Intensive Internal Mixers				Thickeners	1.00	1.25	1.50
(a) Batch Mixers	1.75	1.75	1.75	Vacuum Filters	1.00	1.25	1.50
(b) Continuous Mixers	1.50	1.50	1.50	Screens			
Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25	Air Washing	—	1.00	1.25
Continuous Feed, Holding & Blend Mill	1.25	1.25	1.25	Rotary - Stone or Gravel	1.00	1.25	1.50
1.25				Traveling Water Intake	—	1.00	1.25
Compounding Mills	1.25	1.25	1.25	Sugar Industry			
Calenders	1.50	1.50	1.50	Beet Slicer	1.50	1.50	1.75
Plastics Industry - Secondary Processing				Cane Knives	1.50	1.50	1.50
Blow Molders	1.50	1.50	1.50	Crushers	1.50	1.50	1.50
Coating	1.25	1.25	1.25	Mills (Low Speed End)	1.50	1.50	1.50
Film	1.25	1.25	1.25	Textile Industry			
Pipe	1.25	1.25	1.25	Batchers	1.00	1.25	1.50
Pre-Plasticizers	1.50	1.50	1.50	Calenders	1.00	1.25	1.50
Rods	1.25	1.25	1.25	Cards	1.00	1.25	1.50
Sheet	1.25	1.25	1.25	Dry Cans	1.00	1.25	1.50
Tubing 1.25	1.25	1.50	1.50	Dryers	1.00	1.25	1.50
Pullers - Barge Haul	1.00	1.50	1.75	Dyeing Machinery	1.00	1.25	1.50
Pumps				Looms	1.00	1.25	1.50
Centrifugal	—	1.00	1.25	Mangles	1.00	1.25	1.50
Proportioning	1.00	1.25	1.50	Nappers	1.00	1.25	1.50
Reciprocating				Pads	1.00	1.25	1.50
Single Acting, 3 or more cylinders	1.00	1.25	1.50	Slashers	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50	Soapers	1.00	1.25	1.50
Rotary				Spinners	1.00	1.25	1.50
- Gear	—	1.00	1.50	Tenter Frames	1.00	1.25	1.50
- Lobe	—	1.00	1.25	Washers	1.00	1.25	1.50
				Winders	1.00	1.25	1.50

HWN Series

◆ Anti-Friction Bearings Only.

Note: A Service Factor of 1.0 may be applied at the base of a super calender, operating over a speed range where part of the range is constant horsepower and part of the range is constant torque, provided that the constant horsepower part is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating over the entire speed range at constant torque, or where the constant horsepower speed range is less than 1.5 to 1.

1/3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
282	3+	68	1200	6.3	3042	56	T,C,S,X°,IG
239	3+	80	1200	7.1	3042	56	T,C,S,X°,IG
228	3+	84	1200	8	3042	56	T,C,S,X°,IG
192	3+	99	1200	9	3042	56	T,C,S,X°,IG
179	3+	105	1200	10	3042	56	T,C,S,X°,IG
160	3+	118	1200	11.2	3042	56	T,C,S,X°,IG
137	3+	137	1200	12.5	3042	56	T,C,S,X°,IG
127	3+	147	1200	14	3042	56	T,C,S,X°,IG
108	3+	171	1200	16	3042	56	T,C,S,X°,IG
97	3+	192	1200	18	3042	56	T,C,S,X°,IG
86	3+	214	1200	20	3042	56	T,C,S,X°,IG
76	3+	240	1200	22.4	3042	56	T,C,S,X°,IG
64	3+	272	1200	25	3042	56	T,C,S,X°,IG
60	3+	289	1200	28	3042	56	T,C,S,X°,IG
53	3+	321	1200	31.5	3042	56	T,C,S,X°,IG
46	3+	371	1200	35.5	3042	56	T,C,S,X°,IG
42	3+	398	1200	40	3042	56	T,C,S,X°,IG
40	3+	432	1900	45	3152	56	T,C,S,X,IG
36	3+	462	1200	50	3042	56	T,C,S,X°,IG
32	3+	513	1200	56	3042	56	T,C,S,X°,IG
29	2.7	573	1200	63	3042	56	T,C,S,X°,IG
25	2.5	638	1200	71	3042	56	T,C,S,X°,IG
23	2.2	715	1200	80	3042	56	T,C,S,X°,IG
20	2.0	799	1200	90	3042	56	T,C,S,X°,IG
18	1.9	869	1200	100	3042	56	T,C,S,X°,IG
18	2.8	850	1900	100	3152	56	T,C,S,X,IG
16	1.7	988	1200	112	3042	56	T,C,S,X°,IG
16	2.5	863	1900	112	3152	56	T,C,S,X,IG
14	1.5	969	1200	125	3042	56	T,C,S,X°,IG
13	2.2	1011	1900	125	3152	56	T,C,S,X,IG
13	2.1	1063	1900	140	3152	56	T,C,S,X,IG
12	1.4	1067	1200	140	3042	56	T,C,S,X°,IG
11	1.3	1184	1200	160	3042	56	T,C,S,X°,IG
11	1.9	1204	1900	160	3152	56	T,C,S,X,IG
11	3+	1113	2250	160	3262	56	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
10	1.2	1321	1200	180	3042	56	T,C,S,X ^o ,IG
10	1.7	1325	1900	180	3152	56	T,C,S,X,IG
10	3+	1228	2250	180	3262	56	T,C,S,X,IG
8.9	1.6	1469	1900	200	3152	56	T,C,S,X,IG
8.9	3+	1352	2250	200	3262	56	T,C,S,X ^o ,IG
8.5	1.1	1447	1200	200	3042	56	T,C,S,X,IG
7.7	3+	1531	2250	224	3262	56	T,C,S,X,IG
7.0	2.8	1657	2250	250	3262	56	T,C,S,X,IG
6.1	2.5	1871	2250	280	3262	56	T,C,S,X,IG
5.5	2.3	2052	2250	315	3262	56	T,C,S,X,IG
5.1	3+	3243	2800	355	3474	56	T,C,S,X,IG
5.0	1.8	3231	2400	355	3304	56	T,C,S,X,IG
4.7	1.7	3420	2400	400	3304	56	T,C,S,X,IG
4.6	1.4	3353	2250	355	3264	56	T,C,S,X ^o ,IG
4.3	2.6	3853	2800	400	3474	56	T,C,S,X,IG
4.2	1.3	3706	2250	400	3264	56	T,C,S,X ^o ,IG
4.1	1.5	3905	2400	450	3304	56	T,C,S,X,IG
4.0	1.2	3897	2250	450	3264	56	T,C,S,X ^o ,IG
4.0	2.5	4071	2800	450	3474	56	T,C,S,X,IG
3.7	1.4	4350	2400	500	3304	56	T,C,S,X,IG
3.6	2.2	4584	2800	500	3474	56	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X^o Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
3.3	1.0	4624	2250	500	3264	56	T,C,S,X ^o ,IG
3.3	1.2	4898	2400	560	3304	56	T,C,S,X,IG
3.1	2.0	5204	2800	560	3474	56	T,C,S,X,IG
2.8	1.1	5668	2400	630	3304	56	T,C,S,X,IG
2.8	1.7	5955	2800	630	3474	56	T,C,S,X,IG
2.7	3+	5407	5000	630	3584	56	T,C,S,X,IG
2.4	1.0	5939	2400	710	3304	56	T,C,S,X,IG
2.4	1.5	6712	2800	710	3474	56	T,C,S,X,IG
2.4	3+	6094	5000	710	3584	56	T,C,S,X,IG
2.3	1.4	7121	2800	800	3474	56	T,C,S,X,IG
2.3	3+	6475	5000	800	3584	56	T,C,S,X,IG
1.9	1.2	8457	2800	900	3474	56	T,C,S,X,IG
1.9	3+	7596	5000	900	3584	56	T,C,S,X,IG
1.8	1.1	8949	2800	1000	3474	56	T,C,S,X,IG
1.7	3+	8576	5000	1000	3584	56	T,C,S,X,IG
1.6	1.4	7451	2800	1120	3474	56	T,C,S,X,IG
1.6	2.9	9101	5000	1120	3584	56	T,C,S,X,IG
1.4	1.2	8521	2800	1250	3474	56	T,C,S,X,IG
1.4	2.5	10800	5000	1250	3584	56	T,C,S,X,IG
1.3	2.3	11423	5000	1400	3584	56	T,C,S,X,IG
1.2	1.1	9610	2800	1400	3474	56	T,C,S,X,IG
1.1	1.0	10189	2800	1600	3474	56	T,C,S,X,IG
1.1	2.0	13065	5000	1600	3584	56	T,C,S,X,IG
1.0	1.8	14583	5000	1800	3584	56	T,C,S,X,IG
0.86	1.8	14535	5000	2000	3584	56	T,C,S,X,IG
0.81	1.7	15415	5000	2240	3584	56	T,C,S,X,IG
0.69	1.5	18296	5000	2500	3584	56	T,C,S,X,IG
0.65	1.4	19370	5000	2800	3584	56	T,C,S,X,IG
0.57	1.2	22109	5000	3150	3584	56	T,C,S,X,IG
0.51	1.1	24681	5000	3550	3584	56	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X^o Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
282	3+	102	1200	6.3	3042	56	T,C,S,X°,IG
239	3+	119	1200	7.1	3042	56	T,C,S,X°,IG
228	3+	125	1200	8	3042	56	T,C,S,X°,IG
192	3+	148	1200	9	3042	56	T,C,S,X°,IG
179	3+	158	1200	10	3042	56	T,C,S,X°,IG
160	3+	176	1200	11.2	3042	56	T,C,S,X°,IG
137	3+	205	1200	12.5	3042	56	T,C,S,X°,IG
127	3+	220	1200	14	3042	56	T,C,S,X°,IG
108	3+	257	1200	16	3042	56	T,C,S,X°,IG
97	3+	287	1200	18	3042	56	T,C,S,X°,IG
86	3+	322	1200	20	3042	56	T,C,S,X°,IG
76	3+	360	1200	22.4	3042	56	T,C,S,X°,IG
64	3+	407	1200	25	3042	56	T,C,S,X°,IG
60	3+	434	1200	28	3042	56	T,C,S,X°,IG
53	2.9	481	1200	31.5	3042	56	T,C,S,X°,IG
46	2.6	556	1200	35.5	3042	56	T,C,S,X°,IG
42	2.4	597	1200	40	3042	56	T,C,S,X°,IG
40	3+	648	1900	45	3152	56	T,C,S,X,IG
36	2.2	694	1200	50	3042	56	T,C,S,X°,IG
32	2.0	770	1200	56	3042	56	T,C,S,X°,IG
29	1.8	859	1200	63	3042	56	T,C,S,X°,IG
27	2.5	875	1900	63	3152	56	T,C,S,X,IG
25	1.6	957	1200	71	3042	56	T,C,S,X°,IG
25	2.4	918	1900	71	3152	56	T,C,S,X,IG
23	1.5	1073	1200	80	3042	56	T,C,S,X°,IG
22	2.2	1038	1900	80	3152	56	T,C,S,X,IG
20	1.3	1198	1200	90	3042	56	T,C,S,X°,IG
20	2.0	1147	1900	90	3152	56	T,C,S,X,IG
18	1.2	1304	1200	100	3042	56	T,C,S,X°,IG
18	1.8	1275	1900	100	3152	56	T,C,S,X,IG
17	3+	1194	2250	100	3262	56	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
16	1.1	1483	1200	112	3042	56	T,C,S,X ^o ,IG
16	1.7	1295	1900	112	3152	56	T,C,S,X,IG
16	3+	1251	2250	112	3262	56	T,C,S,X,IG
14	1.0	1454	1200	125	3042	56	T,C,S,X ^o ,IG
13	1.5	1516	1900	125	3152	56	T,C,S,X,IG
13	1.4	1595	1900	140	3152	56	T,C,S,X,IG
13	3+	1424	2250	125	3262	56	T,C,S,X,IG
13	2.9	1495	2250	140	3262	56	T,C,S,X,IG
11	1.3	1806	1900	160	3152	56	T,C,S,X,IG
11	2.7	1670	2250	160	3262	56	T,C,S,X,IG
10	1.2	1988	1900	180	3152	56	T,C,S,X,IG
10	2.4	1842	2250	180	3262	56	T,C,S,X,IG
8.9	1.1	2203	1900	200	3152	56	T,C,S,X,IG
8.9	2.2	2028	2250	200	3262	56	T,C,S,X,IG
7.7	2.0	2297	2250	224	3262	56	T,C,S,X,IG
7.0	1.9	2485	2250	250	3262	56	T,C,S,X,IG
6.9	2.1	2807	2400	250	3302	56	T,C,S,X,IG
6.3	2.0	3039	2400	280	3302	56	T,C,S,X,IG
6.1	1.7	2806	2250	280	3262	56	T,C,S,X,IG
5.5	1.5	3078	2250	315	3262	56	T,C,S,X,IG
5.4	1.7	3508	2400	315	3302	56	T,C,S,X,IG
5.4	2.2	4575	2800	315	3474	56	T,C,S,X,IG
5.1	2.1	4865	2800	355	3474	56	T,C,S,X,IG
5.0	1.2	4846	2400	355	3304	56	T,C,S,X,IG
4.7	1.2	5130	2400	400	3304	56	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

X^o Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
4.5	3+	4896	5000	400	3584	56	T,C,S,X,IG
4.3	1.8	5779	2800	400	3474	56	T,C,S,X,IG
4.1	1.0	5857	2400	450	3304	56	T,C,S,X,IG
4.0	1.7	6106	2800	450	3474	56	T,C,S,X,IG
4.0	3+	5525	5000	450	3584	56	T,C,S,X,IG
3.6	1.5	6875	2800	500	3474	56	T,C,S,X,IG
3.6	3+	6228	5000	500	3584	56	T,C,S,X,IG
3.1	1.3	7806	2800	560	3474	56	T,C,S,X,IG
3.1	3+	7083	5000	560	3584	56	T,C,S,X,IG
2.8	1.1	8933	2800	630	3474	56	T,C,S,X,IG
2.7	3+	8110	5000	630	3584	56	T,C,S,X,IG
2.4	1.0	10067	2800	710	3474	56	T,C,S,X,IG
2.4	2.9	9142	5000	710	3584	56	T,C,S,X,IG
2.3	1.0	10682	2800	800	3474	56	T,C,S,X,IG
2.3	2.8	9713	5000	800	3584	56	T,C,S,X,IG
1.9	2.3	11394	5000	900	3584	56	T,C,S,X,IG
1.7	2.1	12863	5000	1000	3584	56	T,C,S,X,IG
1.6	2.0	13652	5000	1120	3584	56	T,C,S,X,IG
1.4	1.7	16200	5000	1250	3584	56	T,C,S,X,IG
1.3	1.6	17135	5000	1400	3584	56	T,C,S,X,IG
1.1	1.4	19597	5000	1600	3584	56	T,C,S,X,IG
1.0	1.2	21874	5000	1800	3584	56	T,C,S,X,IG
0.86	1.2	21803	5000	2000	3584	56	T,C,S,X,IG
0.81	1.2	23123	5000	2240	3584	56	T,C,S,X,IG
0.69	1.0	27444	5000	2500	3584	56	T,C,S,X,IG

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3/4 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
282	3+	153	1200	6.3	3042	56	T,C,S,X°,IG
239	3+	179	1200	7.1	3042	56	T,C,S,X°,IG
228	3+	188	1200	8	3042	56	T,C,S,X°,IG
192	3+	222	1200	9	3042	56	T,C,S,X°,IG
179	3+	237	1200	10	3042	56	T,C,S,X°,IG
160	3+	265	1200	11.2	3042	56	T,C,S,X°,IG
137	3+	307	1200	12.5	3042	56	T,C,S,X°,IG
127	3+	330	1200	14	3042	56	T,C,S,X°,IG
108	3+	385	1200	16	3042	56	T,C,S,X°,IG
97	2.9	431	1200	18	3042	56	T,C,S,X°,IG
86	2.7	482	1200	20	3042	56	T,C,S,X°,IG
76	2.5	540	1200	22.4	3042	56	T,C,S,X°,IG
64	2.2	611	1200	25	3042	56	T,C,S,X°,IG
60	2.1	651	1200	28	3042	56	T,C,S,X°,IG
54	2.8	730	1900	31.5	3152	56	T,C,S,X,IG
53	1.9	722	1200	31.5	3042	56	T,C,S,X°,IG
51	2.7	770	1900	35.5	3152	56	T,C,S,X,IG
46	1.7	834	1200	35.5	3042	56	T,C,S,X°,IG
45	2.4	878	1900	40	3152	56	T,C,S,X,IG
42	1.6	895	1200	40	3042	56	T,C,S,X°,IG
40	2.2	973	1900	45	3152	56	T,C,S,X,IG
40	2.2	973	1900	45	3152	56	T,C,S,X,IG
36	1.4	1040	1200	50	3042	56	T,C,S,X°,IG
36	2.0	1085	1900	50	3152	56	T,C,S,X,IG
32	1.3	1155	1200	56	3042	56	T,C,S,X°,IG
32	1.9	1123	1900	56	3152	56	T,C,S,X,IG
30	3+	1289	2250	56	3262	56	T,C,S,X,IG
29	1.2	1289	1200	63	3042	56	T,C,S,X°,IG
27	1.7	1312	1900	63	3152	56	T,C,S,X,IG
27	3+	1359	2250	63	3262	56	T,C,S,X,IG
25	1.1	1435	1200	71	3042	56	T,C,S,X°,IG
25	1.6	1378	1900	71	3152	56	T,C,S,X,IG
24	3+	1513	2250	71	3262	56	T,C,S,X,IG
23	1.0	1609	1200	80	3042	56	T,C,S,X°,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
22	1.5	1557	1900	80	3152	56	T,C,S,X,IG
20	1.3	1720	1900	90	3152	56	T,C,S,X,IG
20	2.7	1735	2250	80	3262	56	T,C,S,X,IG
19	2.5	1900	2250	90	3262	56	T,C,S,X,IG
18	1.2	1913	1900	100	3152	56	T,C,S,X,IG
17	2.3	1791	2250	100	3262	56	T,C,S,X,IG
16	1.1	1942	1900	112	3152	56	T,C,S,X,IG
16	2.2	1876	2250	112	3262	56	T,C,S,X,IG
13	1.0	2275	1900	125	3152	56	T,C,S,X,IG
13	2.0	2136	2250	125	3262	56	T,C,S,X,IG
13	1.9	2242	2250	140	3262	56	T,C,S,X,IG
13	2.3	2462	2400	140	3302	56	T,C,S,X,IG
11	1.8	2504	2250	160	3262	56	T,C,S,X,IG
11	2.2	2703	2400	160	3302	56	T,C,S,X,IG
10	1.6	2763	2250	180	3262	56	T,C,S,X,IG
10	1.9	3019	2400	180	3302	56	T,C,S,X,IG
10	3+	3194	2800	180	3472	56	T,C,S,X,IG
9.0	1.8	3358	2400	200	3302	56	T,C,S,X,IG
9.0	2.8	3449	2800	200	3472	56	T,C,S,X,IG
8.9	1.5	3042	2250	200	3262	56	T,C,S,X,IG
7.9	2.2	4692	2800	224	3474	56	T,C,S,X,IG
7.7	1.3	3446	2250	224	3262	56	T,C,S,X,IG
7.7	1.6	3743	2400	224	3302	56	T,C,S,X,IG
7.0	1.2	3728	2250	250	3262	56	T,C,S,X,IG
6.9	1.4	4210	2400	250	3302	56	T,C,S,X,IG
6.9	1.9	5334	2800	250	3474	56	T,C,S,X,IG
6.9	3+	4311	5000	250	3582	56	T,C,S,X,IG
6.3	1.3	4559	2400	280	3302	56	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
6.2	3+	4756	5000	280	3582	56	T,C,S,X,IG
6.1	1.1	4209	2250	280	3262	56	T,C,S,X,IG
6.1	1.7	6094	2800	280	3474	56	T,C,S,X,IG
5.6	3+	5224	5000	315	3582	56	T,C,S,X,IG
5.5	1.0	4617	2250	315	3262	56	T,C,S,X,IG
5.4	1.1	5261	2400	315	3302	56	T,C,S,X,IG
5.4	1.5	6863	2800	315	3474	56	T,C,S,X,IG
5.1	1.4	7297	2800	355	3474	56	T,C,S,X,IG
5.1	3+	6488	5000	355	3584	56	T,C,S,X,IG
4.5	3+	7343	5000	400	3584	56	T,C,S,X,IG
4.3	1.2	8669	2800	400	3474	56	T,C,S,X,IG
4.0	1.1	9159	2800	450	3474	56	T,C,S,X,IG
4.0	3+	8288	5000	450	3584	56	T,C,S,X,IG
3.6	1.0	10313	2800	500	3474	56	T,C,S,X,IG
3.6	2.9	9342	5000	500	3584	56	T,C,S,X,IG
3.1	2.5	10624	5000	560	3584	56	T,C,S,X,IG
2.7	2.2	12165	5000	630	3584	56	T,C,S,X,IG
2.4	1.9	13712	5000	710	3584	56	T,C,S,X,IG
2.3	1.8	14569	5000	800	3584	56	T,C,S,X,IG
1.9	1.6	17091	5000	900	3584	56	T,C,S,X,IG
1.7	1.4	19295	5000	1000	3584	56	T,C,S,X,IG
1.6	1.3	20478	5000	1120	3584	56	T,C,S,X,IG
1.4	1.1	24300	5000	1250	3584	56	T,C,S,X,IG
1.3	1.0	25702	5000	1400	3584	56	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
282	3+	204	1200	6.3	3042	143T	T,C,S,X°,IG
239	3+	239	1200	7.1	3042	143T	T,C,S,X°,IG
228	3+	251	1200	8	3042	143T	T,C,S,X°,IG
192	3+	296	1200	9	3042	143T	T,C,S,X°,IG
179	3+	316	1200	10	3042	143T	T,C,S,X°,IG
160	3+	353	1200	11.2	3042	143T	T,C,S,X°,IG
137	2.8	410	1200	12.5	3042	143T	T,C,S,X°,IG
127	2.7	440	1200	14	3042	143T	T,C,S,X°,IG
108	2.4	514	1200	16	3042	143T	T,C,S,X°,IG
97	2.2	575	1200	18	3042	143T	T,C,S,X°,IG
86	2.0	643	1200	20	3042	143T	T,C,S,X°,IG
77	2.7	713	1900	22.4	3152	143T	T,C,S,X,IG
76	1.8	721	1200	22.4	3042	143T	T,C,S,X°,IG
68	2.5	771	1900	25	3152	143T	T,C,S,X,IG
64	1.6	815	1200	25	3042	143T	T,C,S,X°,IG
64	2.4	827	1900	28	3152	143T	T,C,S,X,IG
60	1.6	868	1200	28	3042	143T	T,C,S,X°,IG
54	2.1	973	1900	31.5	3152	143T	T,C,S,X,IG
53	1.4	963	1200	31.5	3042	143T	T,C,S,X°,IG
51	2.0	1026	1900	35.5	3152	143T	T,C,S,X,IG
46	1.3	1112	1200	35.5	3042	143T	T,C,S,X°,IG
45	1.8	1170	1900	40	3152	143T	T,C,S,X,IG
45	3+	1145	2250	40	3262	143T	T,C,S,X,IG
43	3+	1213	2250	45	3262	143T	T,C,S,X,IG
42	1.2	1193	1200	40	3042	143T	T,C,S,X°,IG
40	1.6	1297	1900	45	3152	143T	T,C,S,X,IG
40	1.6	1297	1900	45	3152	143T	T,C,S,X,IG
36	1.1	1387	1200	50	3042	143T	T,C,S,X°,IG
36	1.5	1447	1900	50	3152	143T	T,C,S,X,IG
34	3+	1509	2250	50	3262	143T	T,C,S,X,IG
32	1.0	1539	1200	56	3042	143T	T,C,S,X°,IG
32	1.4	1497	1900	56	3152	143T	T,C,S,X,IG
30	2.7	1719	2250	56	3262	143T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
27	1.3	1750	1900	63	3152	143T	T,C,S,X,IG
27	2.6	1812	2250	63	3262	143T	T,C,S,X,IG
25	1.2	1837	1900	71	3152	143T	T,C,S,X,IG
24	2.3	2017	2250	71	3262	143T	T,C,S,X,IG
22	1.1	2076	1900	80	3152	143T	T,C,S,X,IG
20	1.0	2293	1900	90	3152	143T	T,C,S,X,IG
20	2.1	2313	2250	80	3262	143T	T,C,S,X,IG
20	2.5	2389	2400	90	3302	143T	T,C,S,X,IG
19	1.9	2533	2250	90	3262	143T	T,C,S,X,IG
18	2.3	2554	2400	100	3302	143T	T,C,S,X,IG
17	1.7	2387	2250	100	3262	143T	T,C,S,X,IG
16	1.7	2502	2250	112	3262	143T	T,C,S,X,IG
15	2.0	2974	2400	112	3302	143T	T,C,S,X,IG
14	1.9	2991	2400	125	3302	143T	T,C,S,X,IG
14	3+	3107	2800	125	3472	143T	T,C,S,X,IG
13	1.5	2848	2250	125	3262	143T	T,C,S,X,IG
13	1.5	2990	2250	140	3262	143T	T,C,S,X,IG
13	1.8	3282	2400	140	3302	143T	T,C,S,X,IG
12	2.8	3424	2800	140	3472	143T	T,C,S,X,IG
11	1.3	3339	2250	160	3262	143T	T,C,S,X,IG
11	1.6	3604	2400	160	3302	143T	T,C,S,X,IG
11	2.5	3795	2800	160	3472	143T	T,C,S,X,IG
10	1.2	3684	2250	180	3262	143T	T,C,S,X,IG
10	1.5	4025	2400	180	3302	143T	T,C,S,X,IG
10	2.3	4259	2800	180	3472	143T	T,C,S,X,IG
9.0	1.3	4477	2400	200	3302	143T	T,C,S,X,IG
9.0	2.1	4598	2800	200	3472	143T	T,C,S,X,IG
8.9	1.1	4056	2250	200	3262	143T	T,C,S,X,IG
8.0	3+	5042	5000	224	3582	143T	T,C,S,X,IG
7.9	1.6	6256	2800	224	3474	143T	T,C,S,X,IG
7.7	1.0	4594	2250	224	3262	143T	T,C,S,X,IG
7.7	1.2	4991	2400	224	3302	143T	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
6.9	1.1	5613	2400	250	3302	143T	T,C,S,X,IG
6.9	1.4	7111	2800	250	3474	143T	T,C,S,X,IG
6.9	3+	5749	5000	250	3582	143T	T,C,S,X,IG
6.3	1.0	6079	2400	280	3302	143T	T,C,S,X,IG
6.2	3+	6341	5000	280	3582	143T	T,C,S,X,IG
6.1	1.2	8125	2800	280	3474	143T	T,C,S,X,IG
5.6	3+	6965	5000	315	3582	143T	T,C,S,X,IG
5.4	1.1	9151	2800	315	3474	143T	T,C,S,X,IG
5.1	1.0	9730	2800	355	3474	143T	T,C,S,X,IG
5.1	3+	8650	5000	355	3584	143T	T,C,S,X,IG
4.5	2.7	9791	5000	400	3584	143T	T,C,S,X,IG
4.0	2.4	11050	5000	450	3584	143T	T,C,S,X,IG
3.6	2.1	12456	5000	500	3584	143T	T,C,S,X,IG
3.1	1.9	14165	5000	560	3584	143T	T,C,S,X,IG
2.7	1.6	16220	5000	630	3584	143T	T,C,S,X,IG
2.4	1.5	18283	5000	710	3584	143T	T,C,S,X,IG
2.3	1.4	19426	5000	800	3584	143T	T,C,S,X,IG
1.9	1.2	22788	5000	900	3584	143T	T,C,S,X,IG
1.7	1.0	25727	5000	1000	3584	143T	T,C,S,X,IG
1.6	1.0	27303	5000	1120	3584	143T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page C-33 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 115/230 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
282	2.0	305	1200	6.3	3042	145T	T,C,S,X ^o ,IG
239	2.0	358	1200	7.1	3042	145T	T,C,S,X ^o ,IG
228	2.0	376	1200	8	3042	145T	T,C,S,X ^o ,IG
192	2.0	444	1200	9	3042	145T	T,C,S,X ^o ,IG
179	2.0	475	1200	10	3042	145T	T,C,S,X ^o ,IG
160	2.0	529	1200	11.2	3042	145T	T,C,S,X ^o ,IG
144	2.7	572	1900	12.5	3152	145T	T,C,S,X,IG
137	1.9	614	1200	12.5	3042	145T	T,C,S,X ^o ,IG
127	1.8	660	1200	14	3042	145T	T,C,S,X ^o ,IG
127	2.5	645	1900	14	3152	145T	T,C,S,X,IG
112	2.3	723	1900	16	3152	145T	T,C,S,X,IG
108	1.6	771	1200	16	3042	145T	T,C,S,X ^o ,IG
99	2.2	813	1900	18	3152	145T	T,C,S,X,IG
97	1.5	862	1200	18	3042	145T	T,C,S,X ^o ,IG
88	2.0	918	1900	20	3152	145T	T,C,S,X,IG
86	1.3	965	1200	20	3042	145T	T,C,S,X ^o ,IG
77	1.8	1070	1900	22.4	3152	145T	T,C,S,X,IG
77	3+	1070	2250	22.4	3262	145T	T,C,S,X,IG
76	1.2	1081	1200	22.4	3042	145T	T,C,S,X ^o ,IG
75	3+	1085	2250	25	3262	145T	T,C,S,X,IG
68	1.7	1157	1900	25	3152	145T	T,C,S,X,IG
66	3+	1222	2250	28	3262	145T	T,C,S,X,IG
64	1.1	1222	1200	25	3042	145T	T,C,S,X ^o ,IG
64	1.6	1240	1900	28	3152	145T	T,C,S,X,IG
60	1.0	1303	1200	28	3042	145T	T,C,S,X ^o ,IG
58	2.9	1381	2250	31.5	3262	145T	T,C,S,X,IG
54	1.4	1459	1900	31.5	3152	145T	T,C,S,X,IG
53	1.0	1444	1200	31.5	3042	145T	T,C,S,X ^o ,IG
51	1.3	1539	1900	35.5	3152	145T	T,C,S,X,IG
51	2.6	1566	2250	35.5	3262	145T	T,C,S,X,IG
45	1.2	1756	1900	40	3152	145T	T,C,S,X,IG
45	2.5	1718	2250	40	3262	145T	T,C,S,X,IG

HWN Series

- \diamond **Standard Motor Types** (see page C-33 for product codes)
 - T TEFC, three phase, 208-230/460 or 575 volts
 - S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase.)
 - C Corro-Duty[®], three phase, 230/460 or 575 volts
 - X^o Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
 - X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 - IG IntelliGear[®] variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12
- Δ Overhung load rating is at shaft midpoint.

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
43	2.4	1820	2250	45	3262	145T	T,C,S,X,IG
40	1.1	1945	1900	45	3152	145T	T,C,S,X,IG
36	1.0	2170	1900	50	3152	145T	T,C,S,X,IG
34	2.0	2264	2250	50	3262	145T	T,C,S,X,IG
32	1.0	2246	1900	56	3152	145T	T,C,S,X,IG
32	2.4	2324	2400	56	3302	145T	T,C,S,X,IG
30	1.8	2578	2250	56	3262	145T	T,C,S,X,IG
28	2.2	2608	2400	63	3302	145T	T,C,S,X,IG
27	1.7	2718	2250	63	3262	145T	T,C,S,X,IG
26	2.0	2874	2400	71	3302	145T	T,C,S,X,IG
24	1.6	3026	2250	71	3262	145T	T,C,S,X,IG
22	1.8	3239	2400	80	3302	145T	T,C,S,X,IG
21	2.7	3132	2800	80	3472	145T	T,C,S,X,IG
20	1.4	3470	2250	80	3262	145T	T,C,S,X,IG
20	1.6	3584	2400	90	3302	145T	T,C,S,X,IG
19	1.3	3799	2250	90	3262	145T	T,C,S,X,IG
19	2.6	3376	2800	90	3472	145T	T,C,S,X,IG
18	1.5	3831	2400	100	3302	145T	T,C,S,X,IG
17	1.2	3581	2250	100	3262	145T	T,C,S,X,IG
17	2.4	3819	2800	100	3472	145T	T,C,S,X,IG
16	1.1	3753	2250	112	3262	145T	T,C,S,X,IG
15	1.3	4461	2400	112	3302	145T	T,C,S,X,IG
15	2.2	4257	2800	112	3472	145T	T,C,S,X,IG
14	1.3	4487	2400	125	3302	145T	T,C,S,X,IG
14	2.0	4660	2800	125	3472	145T	T,C,S,X,IG
13	1.0	4272	2250	125	3262	145T	T,C,S,X,IG
13	1.0	4485	2250	140	3262	145T	T,C,S,X,IG
13	1.2	4924	2400	140	3302	145T	T,C,S,X,IG
12	1.9	5136	2800	140	3472	145T	T,C,S,X,IG
12	3+	5101	5000	140	3582	145T	T,C,S,X,IG

HWN Series

◇ **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase.)

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
11	1.1	5406	2400	160	3302	145T	T,C,S,X,IG
11	1.7	5693	2800	160	3472	145T	T,C,S,X,IG
11	3+	5640	5000	160	3582	145T	T,C,S,X,IG
10	1.0	6038	2400	180	3302	145T	T,C,S,X,IG
10	1.5	6389	2800	180	3472	145T	T,C,S,X,IG
10	3+	6316	5000	180	3582	145T	T,C,S,X,IG
9.0	1.4	6897	2800	200	3472	145T	T,C,S,X,IG
9.0	3+	6798	5000	200	3582	145T	T,C,S,X,IG
8.0	3+	7563	5000	224	3582	145T	T,C,S,X,IG
7.9	1.1	9385	2800	224	3474	145T	T,C,S,X,IG
6.9	1.0	10667	2800	250	3474	145T	T,C,S,X,IG
6.9	2.9	8623	5000	250	3582	145T	T,C,S,X,IG
6.2	2.6	9511	5000	280	3582	145T	T,C,S,X,IG
5.6	2.4	10447	5000	315	3582	145T	T,C,S,X,IG
5.1	2.1	12976	5000	355	3584	145T	T,C,S,X,IG
4.5	1.8	14687	5000	400	3584	145T	T,C,S,X,IG
4.0	1.6	16575	5000	450	3584	145T	T,C,S,X,IG
3.6	1.4	18684	5000	500	3584	145T	T,C,S,X,IG
3.1	1.3	21248	5000	560	3584	145T	T,C,S,X,IG
2.7	1.1	24329	5000	630	3584	145T	T,C,S,X,IG
2.4	1.0	27425	5000	710	3584	145T	T,C,S,X,IG

◇ **Standard Motor Types** (see page C-33 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 115/230 volts (Note that the frame is 145TY for single phase.)
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
287	2.5	413	1900	6.3	3152	145T	T,C,S,X,IG
282	1.5	407	1200	6.3	3042	145T	T,C,S,X,IG
254	2.5	443	1900	7.1	3152	145T	T,C,S,X,IG
239	1.5	477	1200	7.1	3042	145T	T,C,S,X,IG
228	1.5	501	1200	8	3042	145T	T,C,S,X,IG
214	2.3	519	1900	8	3152	145T	T,C,S,X,IG
199	2.2	565	1900	9	3152	145T	T,C,S,X,IG
192	1.5	592	1200	9	3042	145T	T,C,S,X,IG
179	1.5	633	1200	10	3042	145T	T,C,S,X,IG
170	2.2	649	1900	10	3152	145T	T,C,S,X,IG
160	1.5	706	1200	11.2	3042	145T	T,C,S,X,IG
153	2.1	717	1900	11.2	3152	145T	T,C,S,X,IG
144	2.0	763	1900	12.5	3152	145T	T,C,S,X,IG
137	1.4	819	1200	12.5	3042	145T	T,C,S,X,IG
127	1.4	880	1200	14	3042	145T	T,C,S,X,IG
127	1.9	859	1900	14	3152	145T	T,C,S,X,IG
127	3+	881	2250	14	3262	145T	T,C,S,X,IG
112	1.7	964	1900	16	3152	145T	T,C,S,X,IG
112	3+	987	2250	16	3262	145T	T,C,S,X,IG
108	1.2	1027	1200	16	3042	145T	T,C,S,X,IG
99	1.6	1083	1900	18	3152	145T	T,C,S,X,IG
99	3+	1110	2250	18	3262	145T	T,C,S,X,IG
97	1.1	1149	1200	18	3042	145T	T,C,S,X,IG
88	1.5	1224	1900	20	3152	145T	T,C,S,X,IG
88	2.9	1254	2250	20	3262	145T	T,C,S,X,IG
86	1.0	1286	1200	20	3042	145T	T,C,S,X,IG
77	1.3	1426	1900	22.4	3152	145T	T,C,S,X,IG
77	2.7	1426	2250	22.4	3262	145T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts and in 145TY frame

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
75	2.5	1447	2250	25	3262	145T	T,C,S,X,IG
68	1.3	1542	1900	25	3152	145T	T,C,S,X,IG
66	2.3	1630	2250	28	3262	145T	T,C,S,X,IG
64	1.2	1654	1900	28	3152	145T	T,C,S,X,IG
58	2.2	1841	2250	31.5	3262	145T	T,C,S,X,IG
54	1.0	1945	1900	31.5	3152	145T	T,C,S,X,IG
51	1.0	2052	1900	35.5	3152	145T	T,C,S,X,IG
51	2.0	2089	2250	35.5	3262	145T	T,C,S,X,IG
45	1.9	2291	2250	40	3262	145T	T,C,S,X,IG
45	2.4	2341	2400	40	3302	145T	T,C,S,X,IG
43	1.8	2427	2250	45	3262	145T	T,C,S,X,IG
40	2.2	2591	2400	45	3302	145T	T,C,S,X,IG
36	2.0	2904	2400	50	3302	145T	T,C,S,X,IG
34	1.5	3019	2250	50	3262	145T	T,C,S,X,IG
33	3+	3129	2800	56	3472	145T	T,C,S,X,IG
32	1.8	3098	2400	56	3302	145T	T,C,S,X,IG
30	1.3	3437	2250	56	3262	145T	T,C,S,X,IG
30	2.7	3496	2800	63	3472	145T	T,C,S,X,IG
28	1.7	3477	2400	63	3302	145T	T,C,S,X,IG
27	1.3	3624	2250	63	3262	145T	T,C,S,X,IG
26	1.5	3832	2400	71	3302	145T	T,C,S,X,IG
26	2.4	3941	2800	71	3472	145T	T,C,S,X,IG
24	1.2	4034	2250	71	3262	145T	T,C,S,X,IG
22	1.4	4318	2400	80	3302	145T	T,C,S,X,IG
21	2.0	4176	2800	80	3472	145T	T,C,S,X,IG
20	1.0	4626	2250	80	3262	145T	T,C,S,X,IG
20	1.2	4779	2400	90	3302	145T	T,C,S,X,IG
19	2.0	4502	2800	90	3472	145T	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts and frame is 145TY
- C Corro-Duty[®], three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear[®] variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
18	1.2	5107	2400	100	3302	145T	T,C,S,X,IG
18	3+	5318	5000	100	3582	145T	T,C,S,X,IG
17	1.8	5092	2800	100	3472	145T	T,C,S,X,IG
16	3+	5880	5000	112	3582	145T	T,C,S,X,IG
15	1.0	5948	2400	112	3302	145T	T,C,S,X,IG
15	1.6	5677	2800	112	3472	145T	T,C,S,X,IG
14	1.0	5982	2400	125	3302	145T	T,C,S,X,IG
14	1.5	6213	2800	125	3472	145T	T,C,S,X,IG
14	3+	6201	5000	125	3582	145T	T,C,S,X,IG
12	1.4	6848	2800	140	3472	145T	T,C,S,X,IG
12	3+	6801	5000	140	3582	145T	T,C,S,X,IG
11	1.3	7591	2800	160	3472	145T	T,C,S,X,IG
11	3+	7521	5000	160	3582	145T	T,C,S,X,IG
10	1.1	8518	2800	180	3472	145T	T,C,S,X,IG
10	2.8	8421	5000	180	3582	145T	T,C,S,X,IG
9.0	1.1	9196	2800	200	3472	145T	T,C,S,X,IG
9.0	2.7	9064	5000	200	3582	145T	T,C,S,X,IG
8.0	2.4	10084	5000	224	3582	145T	T,C,S,X,IG
6.9	2.2	11497	5000	250	3582	145T	T,C,S,X,IG
6.2	2.0	12682	5000	280	3582	145T	T,C,S,X,IG
5.6	1.8	13929	5000	315	3582	145T	T,C,S,X,IG
5.1	1.5	17301	5000	355	3584	145T	T,C,S,X,IG
4.5	1.4	19582	5000	400	3584	145T	T,C,S,X,IG
4.0	1.2	22100	5000	450	3584	145T	T,C,S,X,IG
3.6	1.1	24911	5000	500	3584	145T	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 115/230 volts and frame is 145TY
 C Corro-Duty[®], three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear[®] variable speed for 1-ph/230V, 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
287	1.7	620	1900	6.3	3152	182T	T,C,S,X,IG
254	1.7	665	1900	7.1	3152	182T	T,C,S,X,IG
214	1.6	778	1900	8	3152	182T	T,C,S,X,IG
199	1.5	848	1900	9	3152	182T	T,C,S,X,IG
170	1.4	973	1900	10	3152	182T	T,C,S,X,IG
153	1.4	1076	1900	11.2	3152	182T	T,C,S,X,IG
144	1.3	1144	1900	12.5	3152	182T	T,C,S,X,IG
127	1.2	1289	1900	14	3152	182T	T,C,S,X,IG
127	2.4	1321	2250	14	3262	182T	T,C,S,X,IG
112	1.2	1447	1900	16	3152	182T	T,C,S,X,IG
112	2.2	1480	2250	16	3262	182T	T,C,S,X,IG
99	1.1	1625	1900	18	3152	182T	T,C,S,X,IG
99	2.1	1666	2250	18	3262	182T	T,C,S,X,IG
90	2.6	1807	2400	20	3302	182T	T,C,S,X,IG
88	1.0	1836	1900	20	3152	182T	T,C,S,X,IG
88	1.9	1881	2250	20	3262	182T	T,C,S,X,IG
79	2.4	2047	2400	22.4	3302	182T	T,C,S,X,IG
77	1.8	2139	2250	22.4	3262	182T	T,C,S,X,IG
75	1.6	2170	2250	25	3262	182T	T,C,S,X,IG
69	2.2	2346	2400	25	3302	182T	T,C,S,X,IG
66	1.5	2445	2250	28	3262	182T	T,C,S,X,IG
64	2.1	2499	2400	28	3302	182T	T,C,S,X,IG
58	1.4	2762	2250	31.5	3262	182T	T,C,S,X,IG
57	1.9	2816	2400	31.5	3302	182T	T,C,S,X,IG
55	3+	2920	2800	31.5	3472	182T	T,C,S,X,IG
51	1.3	3133	2250	35.5	3262	182T	T,C,S,X,IG
51	1.8	3113	2400	35.5	3302	182T	T,C,S,X,IG
50	2.8	3241	2800	35.5	3472	182T	T,C,S,X,IG
45	1.2	3436	2250	40	3262	182T	T,C,S,X,IG
45	1.6	3511	2400	40	3302	182T	T,C,S,X,IG
44	2.5	3623	2800	40	3472	182T	T,C,S,X,IG
43	1.2	3640	2250	45	3262	182T	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 230 volts (Note that the single phase motor is 184T frame.)
 C Corro-Duty[®], three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear[®] variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12
 Δ Overhung load rating is at shaft midpoint.

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
40	1.4	3886	2400	45	3302	182T	T,C,S,X,IG
39	2.3	4084	2800	45	3472	182T	T,C,S,X,IG
36	1.3	4356	2400	50	3302	182T	T,C,S,X,IG
36	2.1	4428	2800	50	3472	182T	T,C,S,X,IG
34	1.0	4528	2250	50	3262	182T	T,C,S,X,IG
33	2.0	4694	2800	56	3472	182T	T,C,S,X,IG
32	1.2	4648	2400	56	3302	182T	T,C,S,X,IG
30	1.8	5244	2800	63	3472	182T	T,C,S,X,IG
28	1.1	5216	2400	63	3302	182T	T,C,S,X,IG
28	3+	5337	5000	63	3582	182T	T,C,S,X,IG
26	1.0	5749	2400	71	3302	182T	T,C,S,X,IG
26	1.6	5911	2800	71	3472	182T	T,C,S,X,IG
25	3+	5903	5000	71	3582	182T	T,C,S,X,IG
22	3+	6567	5000	80	3582	182T	T,C,S,X,IG
21	1.4	6264	2800	80	3472	182T	T,C,S,X,IG
20	3+	7373	5000	90	3582	182T	T,C,S,X,IG
19	1.3	6752	2800	90	3472	182T	T,C,S,X,IG
18	3+	7977	5000	100	3582	182T	T,C,S,X,IG
17	1.2	7639	2800	100	3472	182T	T,C,S,X,IG
16	2.8	8820	5000	112	3582	182T	T,C,S,X,IG
15	1.1	8515	2800	112	3472	182T	T,C,S,X,IG
14	1.0	9320	2800	125	3472	182T	T,C,S,X,IG
14	2.4	9302	5000	125	3582	182T	T,C,S,X,IG
12	2.2	10202	5000	140	3582	182T	T,C,S,X,IG
11	2.1	11281	5000	160	3582	182T	T,C,S,X,IG
10	1.9	12631	5000	180	3582	182T	T,C,S,X,IG
9.0	1.8	13595	5000	200	3582	182T	T,C,S,X,IG
8.0	1.6	15126	5000	224	3582	182T	T,C,S,X,IG
6.9	1.4	17246	5000	250	3582	182T	T,C,S,X,IG
6.2	1.3	19023	5000	280	3582	182T	T,C,S,X,IG
5.6	1.2	20894	5000	315	3582	182T	T,C,S,X,IG
5.1	1.0	25951	5000	355	3584	182T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page C-33 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 230 volts (Note that the single phase motor is 184T frame.)
 C Corro-Duty[®], three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear[®] variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

5 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
287	1.0	1033	1900	6.3	3152	184T	T,C,S,X,IG
287	2.0	989	2250	6.3	3262	184T	T,C,S,X,IG
254	1.0	1109	1900	7.1	3152	184T	T,C,S,X,IG
254	1.9	1120	2250	7.1	3262	184T	T,C,S,X,IG
215	2.2	1294	2400	8	3302	184T	T,C,S,X,IG
214	1.7	1298	2250	8	3262	184T	T,C,S,X,IG
199	1.7	1414	2250	9	3262	184T	T,C,S,X,IG
171	2.1	1630	2400	10	3302	184T	T,C,S,X,IG
170	1.6	1631	2250	10	3262	184T	T,C,S,X,IG
153	1.4	1835	2250	11.2	3262	184T	T,C,S,X,IG
144	1.5	1956	2250	12.5	3262	184T	T,C,S,X,IG
142	2.0	1942	2400	12.5	3302	184T	T,C,S,X,IG
127	1.4	2201	2250	14	3262	184T	T,C,S,X,IG
121	1.8	2284	2400	14	3302	184T	T,C,S,X,IG
120	2.7	2318	2800	14	3472	184T	T,C,S,X,IG
113	1.8	2431	2400	16	3302	184T	T,C,S,X,IG
112	1.3	2467	2250	16	3262	184T	T,C,S,X,IG
109	2.7	2543	2800	16	3472	184T	T,C,S,X,IG
100	1.7	2732	2400	18	3302	184T	T,C,S,X,IG
99	1.3	2776	2250	18	3262	184T	T,C,S,X,IG
99	2.6	2797	2800	18	3472	184T	T,C,S,X,IG
90	1.6	3011	2400	20	3302	184T	T,C,S,X,IG
88	1.2	3136	2250	20	3262	184T	T,C,S,X,IG
86	2.4	3190	2800	20	3472	184T	T,C,S,X,IG
79	1.5	3412	2400	22.4	3302	184T	T,C,S,X,IG
78	2.3	3471	2800	22.4	3472	184T	T,C,S,X,IG
77	1.1	3565	2250	22.4	3262	184T	T,C,S,X,IG
75	1.0	3617	2250	25	3262	184T	T,C,S,X,IG
69	1.3	3910	2400	25	3302	184T	T,C,S,X,IG
68	2.1	3962	2800	25	3472	184T	T,C,S,X,IG
64	1.3	4165	2400	28	3302	184T	T,C,S,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
60	1.9	4440	2800	28	3472	184T	T,C,S,X,IG
60	3+	4382	5000	28	3582	184T	T,C,S,X,IG
57	1.1	4693	2400	31.5	3302	184T	T,C,S,X,IG
55	1.8	4867	2800	31.5	3472	184T	T,C,S,X,IG
54	3+	4799	5000	31.5	3582	184T	T,C,S,X,IG
51	1.1	5188	2400	35.5	3302	184T	T,C,S,X,IG
50	1.7	5401	2800	35.5	3472	184T	T,C,S,X,IG
49	3+	5264	5000	35.5	3582	184T	T,C,S,X,IG
44	1.5	6039	2800	40	3472	184T	T,C,S,X,IG
43	3+	5982	5000	40	3582	184T	T,C,S,X,IG
39	1.4	6807	2800	45	3472	184T	T,C,S,X,IG
39	3+	6569	5000	45	3582	184T	T,C,S,X,IG
36	1.3	7379	2800	50	3472	184T	T,C,S,X,IG
34	2.8	7468	5000	50	3582	184T	T,C,S,X,IG
33	1.2	7823	2800	56	3472	184T	T,C,S,X,IG
30	1.1	8740	2800	63	3472	184T	T,C,S,X,IG
30	2.6	8236	5000	56	3582	184T	T,C,S,X,IG
28	2.5	8895	5000	63	3582	184T	T,C,S,X,IG
26	1.0	9852	2800	71	3472	184T	T,C,S,X,IG
25	2.3	9838	5000	71	3582	184T	T,C,S,X,IG
22	2.1	10946	5000	80	3582	184T	T,C,S,X,IG
20	1.9	12288	5000	90	3582	184T	T,C,S,X,IG
18	1.8	13295	5000	100	3582	184T	T,C,S,X,IG
16	1.7	14700	5000	112	3582	184T	T,C,S,X,IG
14	1.4	15503	5000	125	3582	184T	T,C,S,X,IG
12	1.3	17003	5000	140	3582	184T	T,C,S,X,IG
11	1.2	18802	5000	160	3582	184T	T,C,S,X,IG
10	1.1	21052	5000	180	3582	184T	T,C,S,X,IG
9.0	1.1	22659	5000	200	3582	184T	T,C,S,X,IG
8.0	1.0	25210	5000	224	3582	184T	T,C,S,X,IG

\diamond **Standard Motor Types** (see page C-33 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 230 volts
 C Corro-Duty[®], three phase, 230/460 or 575 volts
 X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear[®] variable speed for 3-ph/230V or 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

7 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
221	2.9	1956	2800	8	3472	213T	T,C,X,IG
215	1.5	1941	2400	8	3302	213T	T,C,X,IG
171	1.4	2444	2400	10	3302	213T	T,C,X,IG
171	2.1	2488	2800	10	3472	213T	T,C,X,IG
142	1.3	2913	2400	12.5	3302	213T	T,C,X,IG
139	1.9	3036	2800	12.5	3472	213T	T,C,X,IG
139	3+	3127	5000	12.5	3582	213T	T,C,X,IG
121	1.2	3425	2400	14	3302	213T	T,C,X,IG
120	1.8	3478	2800	14	3472	213T	T,C,X,IG
120	3+	3592	5000	14	3582	213T	T,C,X,IG
113	1.2	3646	2400	16	3302	213T	T,C,X,IG
109	1.8	3815	2800	16	3472	213T	T,C,X,IG
109	3+	3947	5000	16	3582	213T	T,C,X,IG
100	1.1	4098	2400	18	3302	213T	T,C,X,IG
99	1.7	4196	2800	18	3472	213T	T,C,X,IG
99	3+	4343	5000	18	3582	213T	T,C,X,IG
90	1.1	4517	2400	20	3302	213T	T,C,X,IG
86	1.6	4785	2800	20	3472	213T	T,C,X,IG
86	2.8	4857	5000	20	3582	213T	T,C,X,IG
79	1.0	5118	2400	22.4	3302	213T	T,C,X,IG
78	1.5	5207	2800	22.4	3472	213T	T,C,X,IG
78	2.5	5449	5000	22.4	3582	213T	T,C,X,IG
69	2.4	5748	5000	25	3582	213T	T,C,X,IG
68	1.4	5942	2800	25	3472	213T	T,C,X,IG
60	1.3	6661	2800	28	3472	213T	T,C,X,IG
60	2.3	6572	5000	28	3582	213T	T,C,X,IG
55	1.2	7300	2800	31.5	3472	213T	T,C,X,IG
54	2.3	7199	5000	31.5	3582	213T	T,C,X,IG
50	1.1	8102	2800	35.5	3472	213T	T,C,X,IG
49	2.2	7896	5000	35.5	3582	213T	T,C,X,IG
44	1.0	9058	2800	40	3472	213T	T,C,X,IG
43	2.1	8974	5000	40	3582	213T	T,C,X,IG
39	2.0	9853	5000	45	3582	213T	T,C,X,IG
34	1.9	11202	5000	50	3582	213T	T,C,X,IG
30	1.8	12354	5000	56	3582	213T	T,C,X,IG
28	1.7	13342	5000	63	3582	213T	T,C,X,IG
25	1.5	14756	5000	71	3582	213T	T,C,X,IG
22	1.4	16418	5000	80	3582	213T	T,C,X,IG
20	1.3	18432	5000	90	3582	213T	T,C,X,IG
18	1.2	19943	5000	100	3582	213T	T,C,X,IG
14	1.0	23255	5000	125	3582	213T	T,C,X,IG

\diamond **Standard Motor Types** (see page C-33 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty[®], three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear[®] variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

10 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
221	2.2	2608	2800	8	3472	215T	T,C,X,IG
215	1.1	2588	2400	8	3302	215T	T,C,X,IG
171	1.0	3259	2400	10	3302	215T	T,C,X,IG
171	1.6	3318	2800	10	3472	215T	T,C,X,IG
171	2.6	3393	5000	10	3582	215T	T,C,X,IG
142	1.0	3884	2400	12.5	3302	215T	T,C,X,IG
139	1.4	4048	2800	12.5	3472	215T	T,C,X,IG
139	2.5	4170	5000	12.5	3582	215T	T,C,X,IG
120	1.4	4637	2800	14	3472	215T	T,C,X,IG
120	2.4	4790	5000	14	3582	215T	T,C,X,IG
109	1.3	5087	2800	16	3472	215T	T,C,X,IG
109	2.3	5262	5000	16	3582	215T	T,C,X,IG
99	1.3	5595	2800	18	3472	215T	T,C,X,IG
99	2.2	5791	5000	18	3582	215T	T,C,X,IG
86	1.2	6380	2800	20	3472	215T	T,C,X,IG
86	2.1	6476	5000	20	3582	215T	T,C,X,IG
78	1.1	6942	2800	22.4	3472	215T	T,C,X,IG
78	1.9	7265	5000	22.4	3582	215T	T,C,X,IG
69	1.8	7664	5000	25	3582	215T	T,C,X,IG
68	1.1	7923	2800	25	3472	215T	T,C,X,IG
60	1.0	8881	2800	28	3472	215T	T,C,X,IG
60	1.7	8763	5000	28	3582	215T	T,C,X,IG
54	1.7	9599	5000	31.5	3582	215T	T,C,X,IG
49	1.6	10529	5000	35.5	3582	215T	T,C,X,IG
43	1.6	11965	5000	40	3582	215T	T,C,X,IG
39	1.5	13137	5000	45	3582	215T	T,C,X,IG
34	1.4	14936	5000	50	3582	215T	T,C,X,IG
30	1.3	16472	5000	56	3582	215T	T,C,X,IG
28	1.2	17789	5000	63	3582	215T	T,C,X,IG
25	1.2	19675	5000	71	3582	215T	T,C,X,IG
22	1.1	21891	5000	80	3582	215T	T,C,X,IG
20	1.0	24575	5000	90	3582	215T	T,C,X,IG

HWN Series

\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

Δ Overhung load rating is at shaft midpoint.

15 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
221	1.5	3912	2800	8	3472	254T	T, C
221	1.8	3951	5000	8	3582	254T	T, C
171	1.0	4976	2800	10	3472	254T	T, C
171	1.8	5089	5000	10	3582	254T	T, C
139	1.0	6072	2800	12.5	3472	254T	T, C
139	1.7	6254	5000	12.5	3582	254T	T, C
120	1.6	7185	5000	14	3582	254T	T, C
109	1.6	7894	5000	16	3582	254T	T, C
99	1.5	8686	5000	18	3582	254T	T, C
86	1.4	9715	5000	20	3582	254T	T, C
78	1.3	10898	5000	22.4	3582	254T	T, C
69	1.2	11496	5000	25	3582	254T	T, C
60	1.2	13145	5000	28	3582	254T	T, C
54	1.1	14398	5000	31.5	3582	254T	T, C
49	1.1	15793	5000	35.5	3582	254T	T, C
43	1.0	17947	5000	40	3582	254T	T, C
39	1.0	19706	5000	45	3582	254T	T, C

HWN Series

Gearmotors

20 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lb	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
221	1.1	5216	2800	8	3472	256T	T, C
221	1.3	5268	5000	8	3582	256T	T, C
171	1.3	6786	5000	10	3582	256T	T, C
139	1.3	8339	5000	12.5	3582	256T	T, C
120	1.2	9580	5000	14	3582	256T	T, C
109	1.2	10525	5000	16	3582	256T	T, C
99	1.1	11581	5000	18	3582	256T	T, C
86	1.1	12953	5000	20	3582	256T	T, C

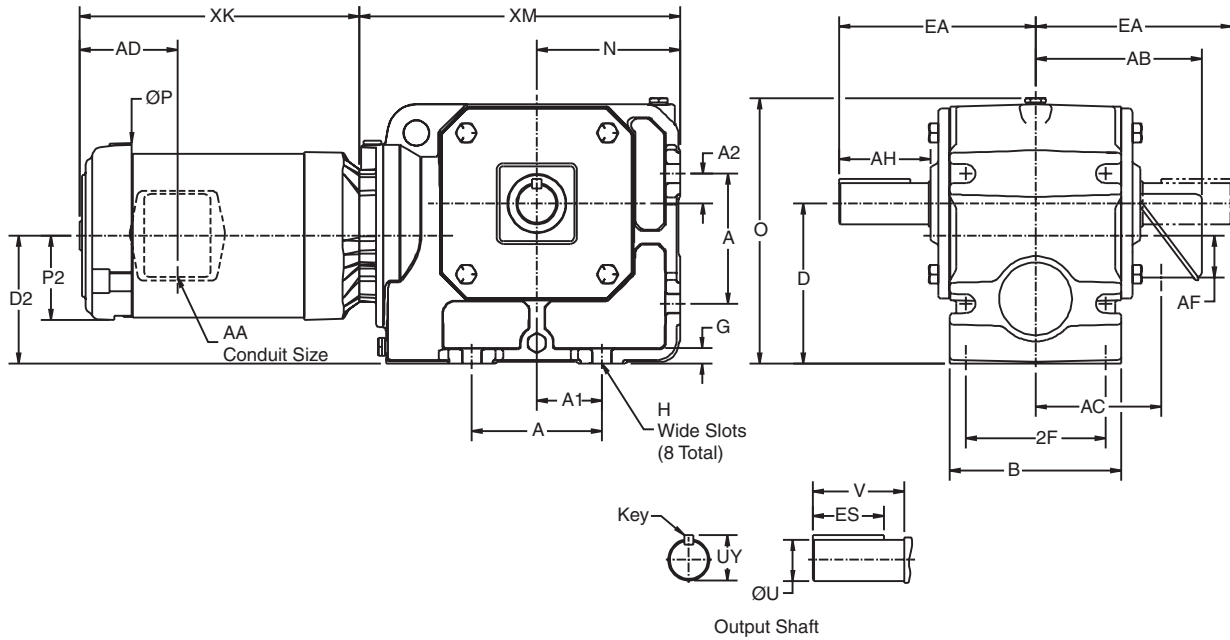
\diamond **Standard Motor Types** (see page C-33 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

Δ Overhung load rating is at shaft midpoint.

2-Stage Output Shafted Foot Mount HWN30-35



Gear Frame	A	A1	A2	B	D ¹	D2	2 F	G	H	N	O	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	8.68
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	12.54
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	0.74	6.15	11.73	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	0.88	8.14	15.43	17.33

Output Shaft

Gear Frame	U ³	V	AH	EA	ES	UY	Key
30	1.000	1.82	1.99	4.53	1.50	1.11	1/4 Sq.
31	1.250	2.15	2.34	5.28	1.75	1.36	1/4 Sq.
32	1.375	2.55	2.77	6.30	2.25	1.52	5/16 Sq.
33	1.625	3.61	3.61	7.74	2.75	1.79	3/8 Sq.
34	1.750	2.98	2.98	7.68	2.50	1.91	3/8 Sq.
35	2.375	4.68	4.68	10.04	3.75	2.65	5/8 Sq.

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
182T, 184T	T	31-35	9.56	4.34	3/4	7.52	6.27	5.13	2.13	14.04
213T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	16.15
215T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	17.65
254T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	20.58
256T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	22.33

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

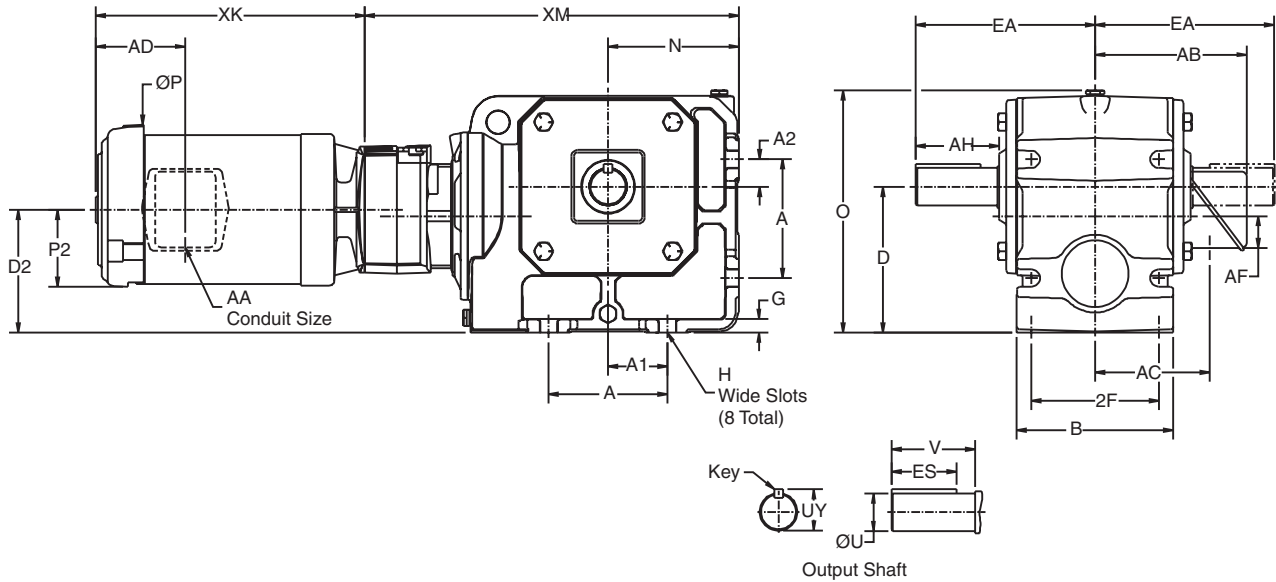
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.

Combined Output Shafted Foot Mount HWN32-35



Gear Frame	A	A1	A2	B	D ¹	D2	2 F	G	H	N	O	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	16.19
33,33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	19.636
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	24.82

Output Shaft

Gear Frame	U ³	V	AH	EA	ES	UY	Key
32	1.375	2.55	2.77	6.30	2.25	1.52	5/16 Sq.
33	1.625	3.61	3.61	7.74	2.75	1.79	3/8 Sq.
34	1.750	2.98	2.98	7.68	2.50	1.91	3/8 Sq.
35	2.375	4.68	4.68	10.04	3.75	2.65	5/8 Sq.

Motor Frame	Motor Type ⁴	P	P2	AA	AB	AC	AD	AF	XK
56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04

⁴ 33A = 16.73

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

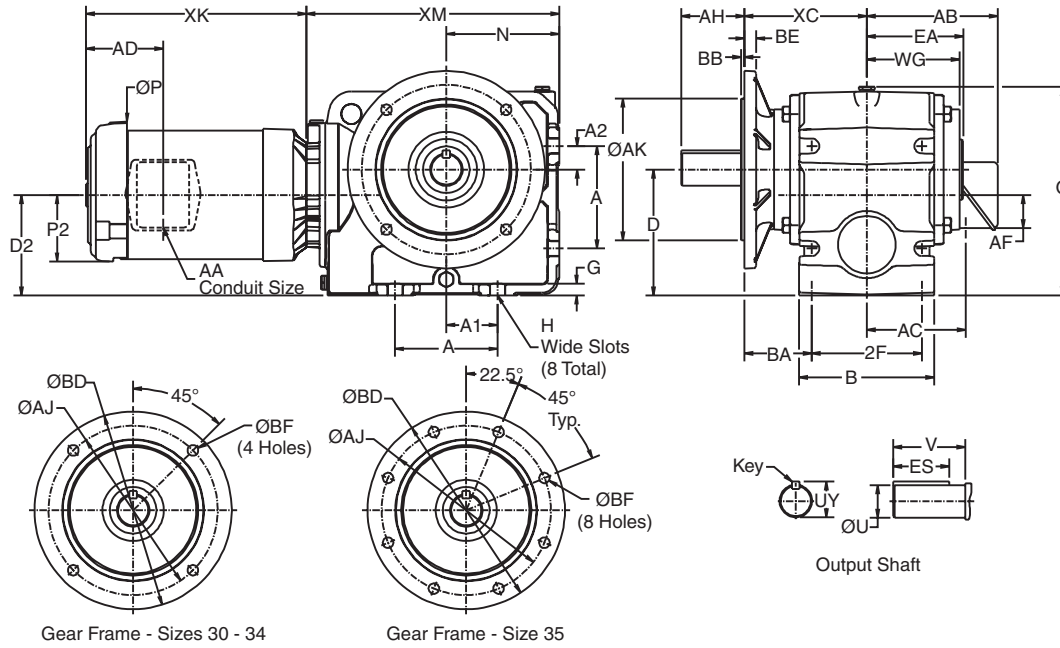
³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.

⁶ For gear frame 33A, XM = 16.73".

2-Stage Output Shafted Flange Mount HWN30-35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	EA	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	3.17	2.98	8.68
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.18	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.90	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.83	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.34	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.48	6.29	17.83

Gear Frame	Flange									Output Shaft					
	Flange Code	AJ	AK	BA	BB	BD	BE	BF	XC	U ³	V	AH	ES	UY	Key
30	5	5.120	4.331	2.07	.14	6.3	.39	.35	4.04	1.000	1.97	1.95	1.75	1.11	1/4 Sq.
	6	4.528	3.74	1.99	.12	5.51	.31	.35	3.96	1.000	1.97	2.03	1.75	1.11	1/4 Sq.
31	5	6.496	5.117	2.59	.14	7.89	.47	.44	4.76	1.250	2.36	2.36	1.88	1.36	1/4 Sq.
32	5	6.496	5.117	2.76	.14	7.89	.47	.44	5.48	1.375	2.76	2.76	2.25	1.52	5/16 Sq.
33	5	8.465	7.086	3.38	.16	9.84	.59	.53	6.13	1.625	3.42	3.15	3.00	1.79	3/8 Sq.
34	5	8.465	7.086	3.72	.16	9.84	.59	.53	6.67	1.750	3.77	3.54	3.50	1.91	3/8 Sq.
35	5	11.810	9.842	4.16	.20	13.78	.71	.69	8.10	2.375	4.72	4.72	4.00	2.65	5/8 Sq.

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
182T, 184T	T	31-35	9.56	4.34	3/4	7.52	6.27	5.13	2.13	14.04
213T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	16.15
215T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	17.65
254T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	20.58
256T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	22.33

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

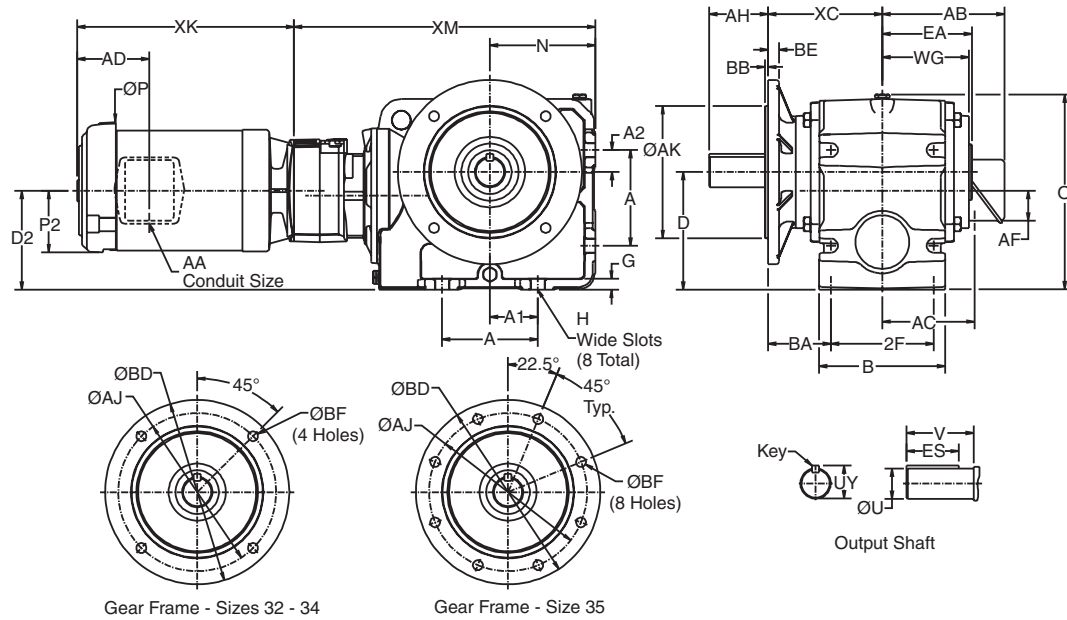
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.

Combined Output Shafted Flange Mount HWN32-35



Gear Frame - Sizes 32 - 34

Gear Frame - Size 35

Gear Frame	A	A1	A2	B	D ¹	D2	2 F	G	H	N	O	EA	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.90	3.72	16.19
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.83	4.64	19.636
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.34	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.48	6.29	24.82

Output Shaft

Gear Frame	U ³	V	AH	ES	UY	Key
32	1.375	2.76	2.76	2.25	1.52	5/16 Sq.
33	1.625	3.42	3.15	3.00	1.79	3/8 Sq.
34	1.750	3.77	3.54	3.50	1.91	3/8 Sq.
35	2.375	4.72	4.72	4.00	2.65	5/8 Sq.

Flange

AJ	AK	BA	BB	BD	BE	BF	XC
6.496	5.117	2.76	.14	7.89	.47	.44	5.48
8.465	7.086	3.38	.16	9.84	.59	.53	6.13
8.465	7.086	3.72	.16	9.84	.59	.53	6.67
11.810	9.842	4.16	.20	13.78	.71	.69	8.10

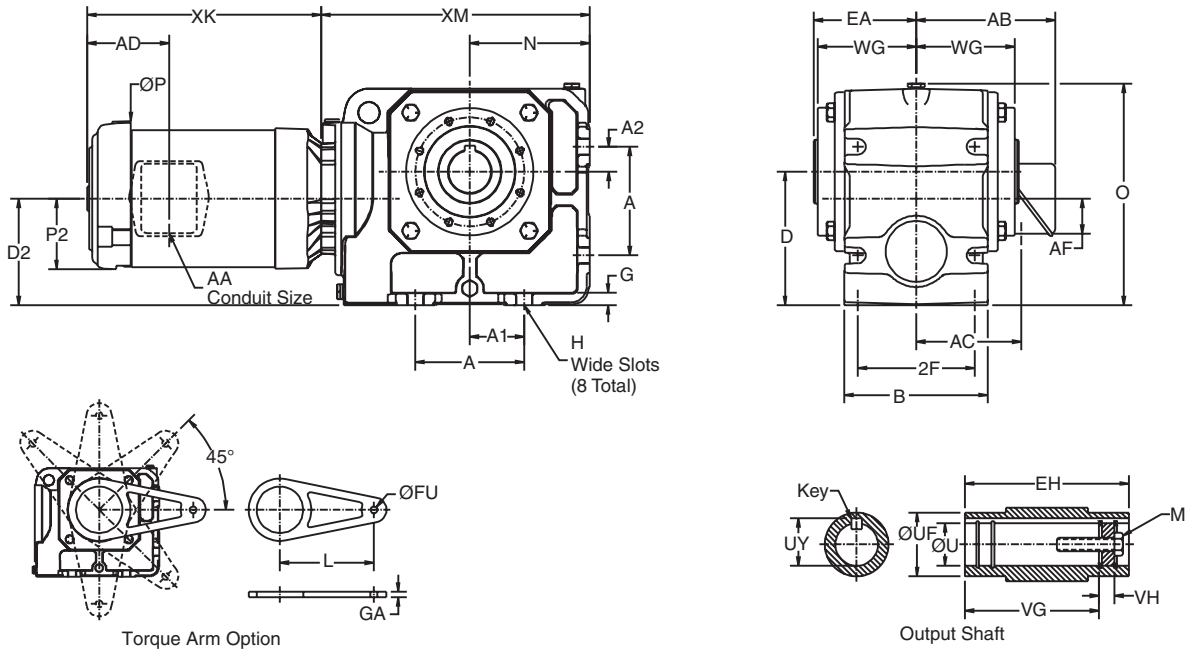
Motor Frame	Motor Type ⁴	P	P2	AA	AB	AC	AD	AF	XK
56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04

⁴33A = 16.73

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.
⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.
⁶ For gear frame 33A, XM = 16.73".

2-Stage Finished Bore Hollow Shaft HWN30-35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.68
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.83

Output Shaft

Gear Frame	M	U ^{3,7}	EA	EH	UF	UY	VG	VH	Key
30	7/16-14 x 1	1.250	3.17	6.34	2.125	1.37	5.58	.37	1/4 Sq.
31	1/2-13 x 1	1.375	3.18	6.36	2.500	1.52	5.62	.37	5/16 Sq.
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Torque Arm

L	FU	GA
5.12	.41	.25
6.30	.41	.25
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
182T, 184T	T	31-35	9.56	4.34	3/4	7.52	6.27	5.13	2.13	14.04
213T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	16.15
215T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	17.65
254T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	20.58
256T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	22.33

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.

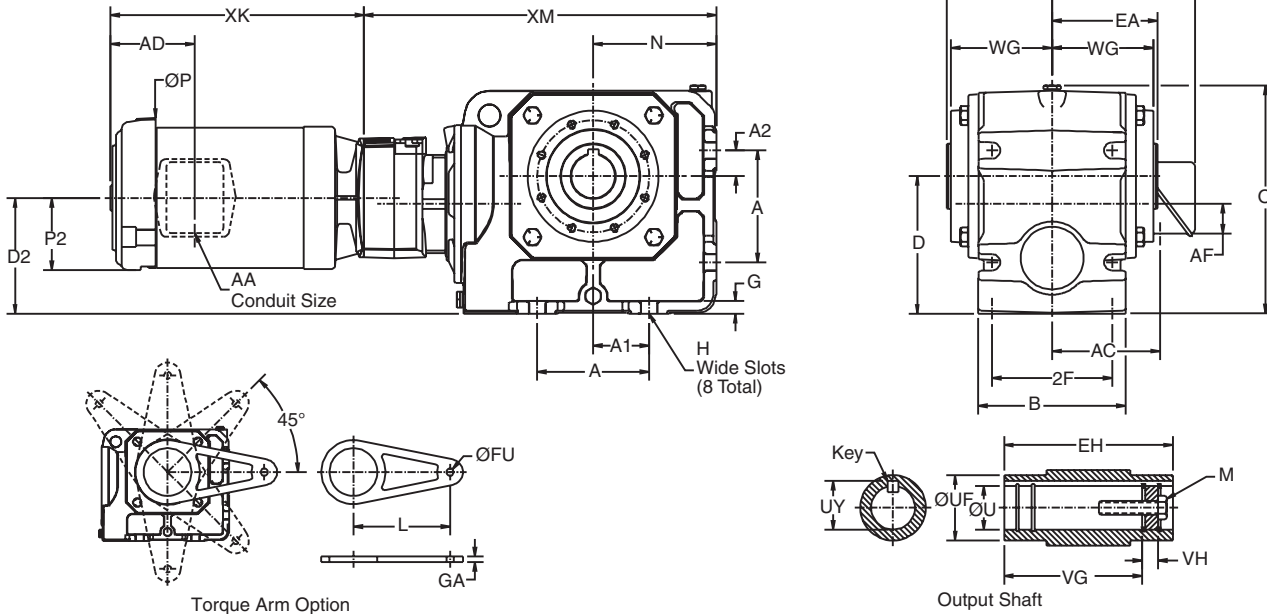
⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ For details of torque arm, refer to page C-39.

⁷ Refer to Tapered Bushed designs if driven shaft diameter differs from "U" dimensions offered above.

⁸ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.

Combined Finished Bore Hollow Shaft HWN32-35



Torque Arm Option

Output Shaft

HWN Series

Gear Frame	A	AI	A2	B	D ¹	D2	2 F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	16.19
33,33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	19.639
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	24.82

Output Shaft

Gear Frame	M	U ^{3,7}	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Torque Arm

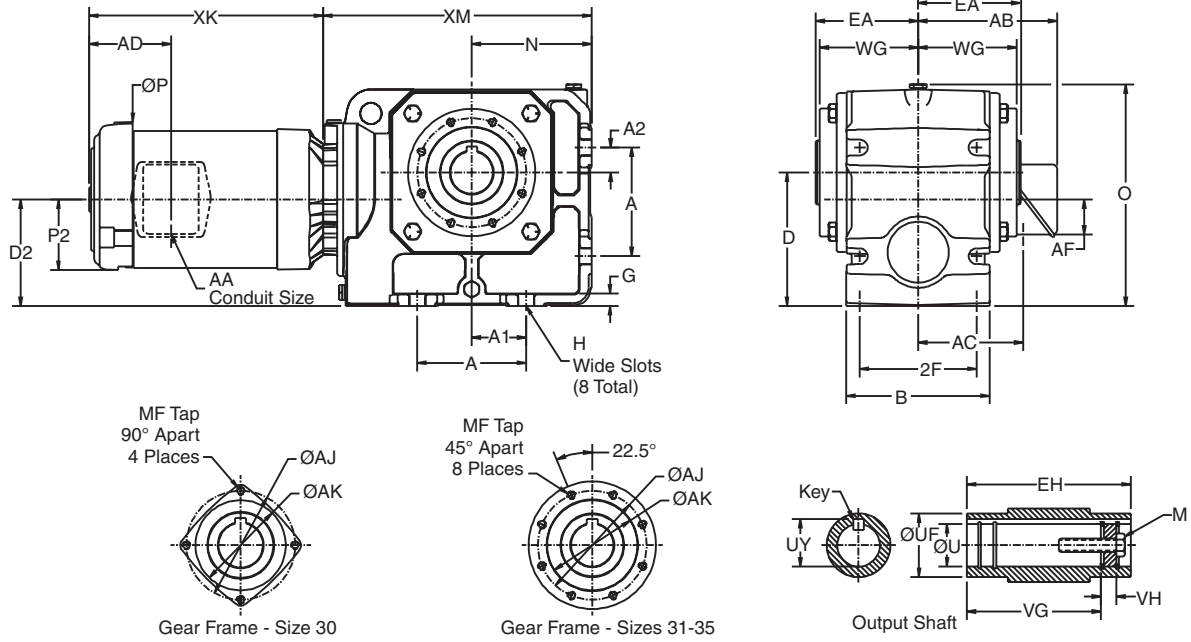
L	FU	GA
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Motor Frame	Motor Type ⁴	P	P2	AA	AB	AC	AD	AF	XK
56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.
⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁶ For details of torque arm, refer to page C-39.
⁷ Refer to Tapered Bushed designs if driven shaft diameter differs from "U" dimensions offered above.
⁸ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.
⁹ For gear frame 33A, XM = 16.73".

2-Stage Finished Bore Hollow Shaft Face Mount HWN30-35



Gear Frame	A	A1	A2	B	D ¹	D2	2 F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.68
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	12.64
34	5.31	2.95	0.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.83

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
30	7/16-14 x 1	1.250	3.17	6.34	2.125	1.37	5.58	.37	1/4 Sq.
31	1/2-13 x 1	1.375	3.18	6.36	2.500	1.52	5.62	.37	5/16 Sq.
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Face Mount

AJ	AK	MF
3.625	3.000	5/16-18 x .56
4.250	3.625	5/16-18 x .59
4.250	3.625	5/16-18 x .59
5.125	4.250	3/8-16 x .62
5.125	4.250	3/8-16 x .62
7.250	6.250	1/2-13 x .81

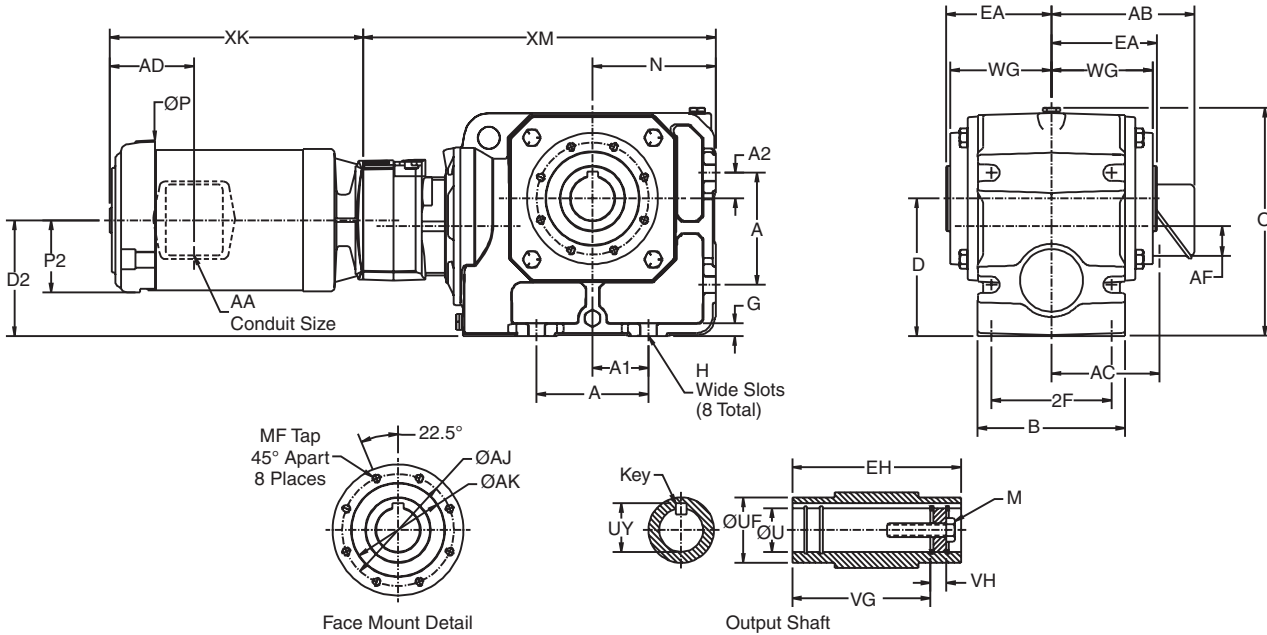
Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
182T, 184T	T	31-35	9.56	4.34	3/4	7.52	6.27	5.13	2.13	14.04
213T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	16.15
215T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	17.65
254T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	20.58
256T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	22.33

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.
⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.

HWN Series

Combined Finished Bore Hollow Shaft Face Mount HWN32-35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2 F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	16.19
33,33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	19.63 ⁹
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	24.82

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Face Mount

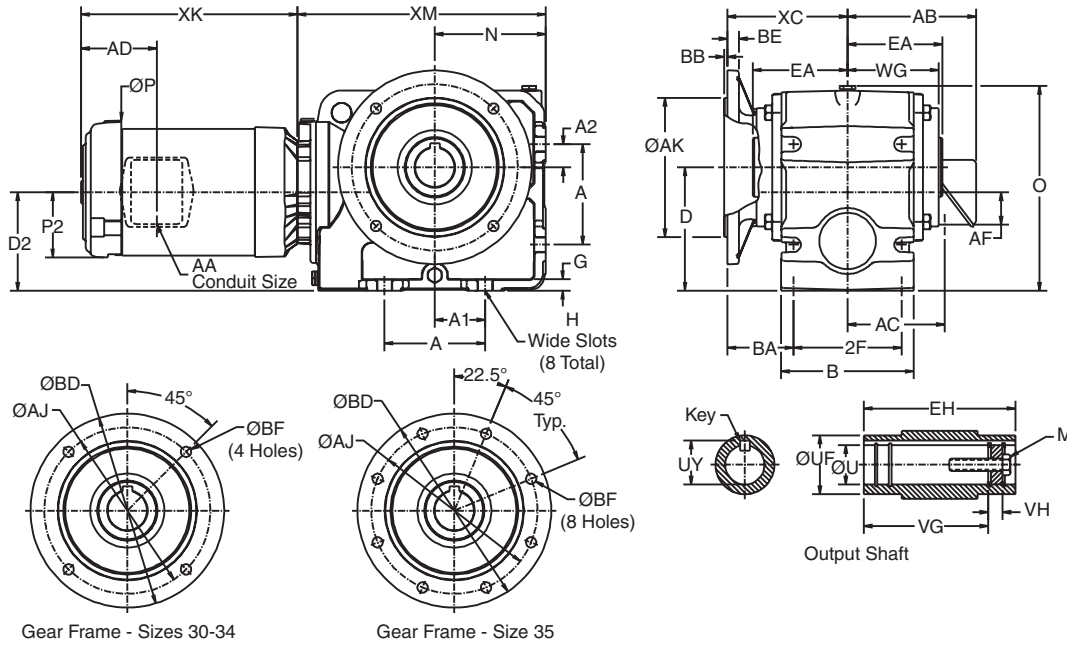
AJ	AK	MF
4.250	3.625	5/16-18 x .59
5.125	4.250	3/8-16x .62
5.125	4.250	3/8-16 x .62
7.250	6.250	1/2-13 x .81

Motor Frame	Motor Type ⁴	P	P2	AA	AB	AC	AD	AF	XK
56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.
⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.
⁷ For gear frame 33A, XM = 16.73".

2-Stage Finished Bore Hollow Shaft Flange Mount HWN30-35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.68
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.83

Gear Frame	Flange									Output Shaft							
	Flange Code	AJ	AK	BA	BB	BD	BE	BF	XC	M	U ³	EA	EH	UF	VG	UY	Key
30	5	5.120	4.331	2.07	.14	6.3	.39	.35	4.04	7/16-14 x 1	1.250	3.17	6.34	2.125	5.58	.37	1/4 Sq.
	6	4.528	3.74	1.99	.12	5.51	.31	.35	3.96	7/16-14 x 1	1.250	3.17	6.34	2.500	5.58	.37	1/4 Sq.
31	5	6.496	5.117	2.59	.14	7.89	.47	.44	4.76	1/2-13 x 1	1.375	3.18	6.36	2.875	5.62	.37	5/16 Sq.
32	5	6.496	5.117	2.76	.14	7.89	.47	.44	5.48	5/8-11 x 1 3/4	1.500	3.90	7.80	3.000	6.83	.49	3/8 Sq.
33	5	8.465	7.086	3.38	.16	9.84	.59	.53	6.13	5/8-11 x 1 3/4	2.000	4.83	9.66	3.375	8.43	.72	1/2 Sq.
34	5	8.465	7.086	3.72	.16	9.84	.59	.53	6.67	5/8-11 x 1 3/4	2.000	5.34	10.68	5.500	9.45	.72	1/2 Sq.
35	5	11.810	9.842	4.16	.20	13.78	.71	.69	8.10	3/4-102x 2	2.375	6.48	12.96	4.000	11.51	.85	5/8 Sq.

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
182T, 184T	T	31-35	9.56	4.34	3/4	7.52	6.27	5.13	2.13	14.04
213T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	16.15
215T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	17.65
254T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	20.58
256T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	22.33

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

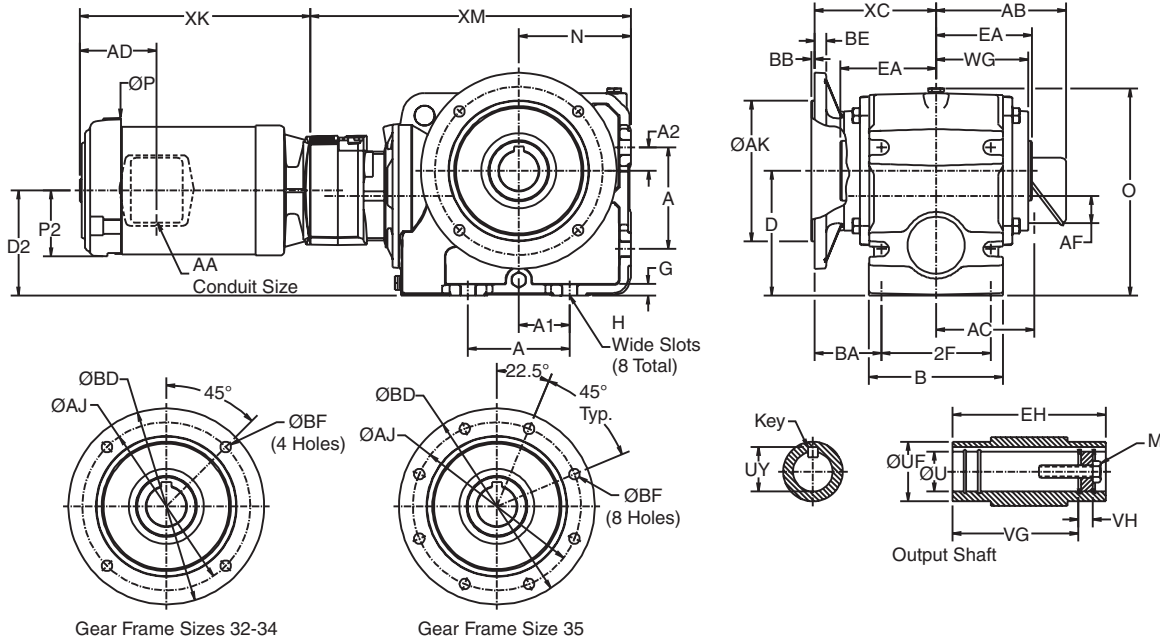
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.

Combined Finished Bore Hollow Shaft Flange Mount HWN32-35



Gear Frame	A	A1	A2	B	D ¹	D2	2 F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	16.19
33,33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	19.637
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	24.82

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Flange

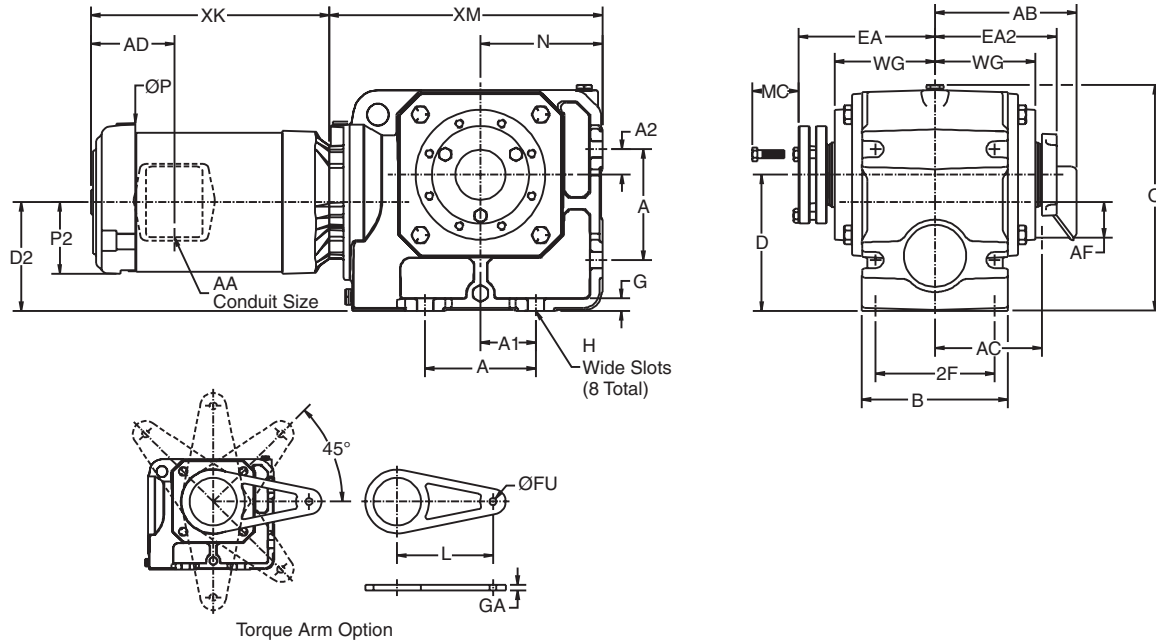
AJ	AK	BA	BB	BD	BE	BF	XC
6.496	5.117	2.76	.14	7.89	.47	.44	5.48
8.465	7.086	3.38	.16	9.84	.59	.53	6.13
8.465	7.086	3.72	.16	9.84	.59	.53	6.67
11.810	9.842	4.16	.20	13.78	.71	.69	8.10

Motor Frame	Motor Type ⁴	P	P2	AA	AB	AC	AD	AF	XK
56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.
⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.
⁷ For gear frame 33A, XM = 16.73".

2-Stage Taper Bushed Shaft Mount HWN30-35



Torque Arm Option

HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2 F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.68
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.83

Output Shaft

Gear Frame	EA	EA2	MC ⁶	Bushing Bores ³	
				Min.	Max.
30	4.92	4.34	1.75	1 1/8	1 7/16
31	4.60	4.02	1.75	1 1/8	1 7/16
32	5.80	5.21	1.88	1 7/16	1 15/16
33	6.73	6.18	1.88	1 3/4	2 3/16
34	7.36	6.82	1.88	1 7/8	2 7/16
35	8.70	8.10	2.25	2 7/16	3 7/16

Torque Arm

L	FU	GA
5.12	.41	.25
6.30	.41	.25
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Motor Frame	Motor Type ⁴	Gear Frame	P	P2	AA	AB	AC	AD	AF	XK
56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	Any	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
182T, 184T	T	31-35	9.56	4.34	3/4	7.52	6.27	5.13	2.13	14.04
213T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	16.15
215T	T	33-35	11.25	5.06	1	8.42	7.17	5.60	2.13	17.65
254T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	20.58
256T	T	34-35	13.38	6.00	1 1/4	9.79	7.68	8.29	1.81	22.33

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Refer to pages C-40 for a listing of all inch and metric bushing bore sizes available.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.

⁵ Driven shaft entry can be from either side of gear housing.

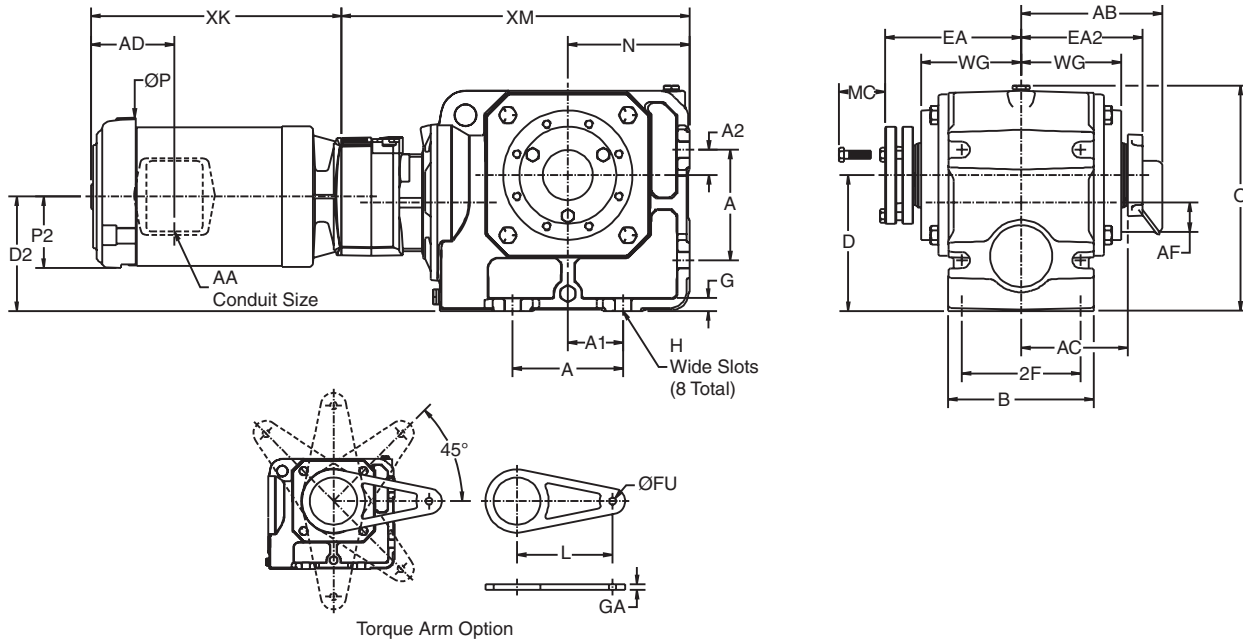
⁶ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁷ Bushing and dust cap can be installed opposite of how they are shown above.

⁸ For details of torque arm, refer to page C-39.

⁹ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.

Combined Taper Bushed Shaft Mount HWN32-35



HWN Series

Gear Frame	A	AI	A2	B	D ¹	D2	2 F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	16.19
33,33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	19.631
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	24.82

Output Shaft

Gear Frame	EA	EA2	MC ⁶	Bushing Bores ³	
				Min.	Max.
32	5.80	5.21	1.88	1 7/16	1 15/16
33	6.73	6.18	1.88	1 3/4	2 3/16
34	7.36	6.82	1.88	1 7/8	2 7/16
35	8.70	8.10	2.25	2 7/16	3 7/16

Torque Arm

L	FU	GA
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Motor Frame	Motor Type ⁷	P	P2	AA	AB	AC	AD	AF	XK
56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	9.79
B56	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04
143T, 145T	T	7.22	3.31	3/4	6.10	4.50	3.86	1.64	11.04

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Refer to pages C-40 for a listing of all inch and metric bushing bore sizes available.

⁴ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages C-81 or C-82.

⁵ Driven shaft entry can be from either side of gear housing.

⁶ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁷ Bushing and dust cap can be installed opposite of how they are shown above.

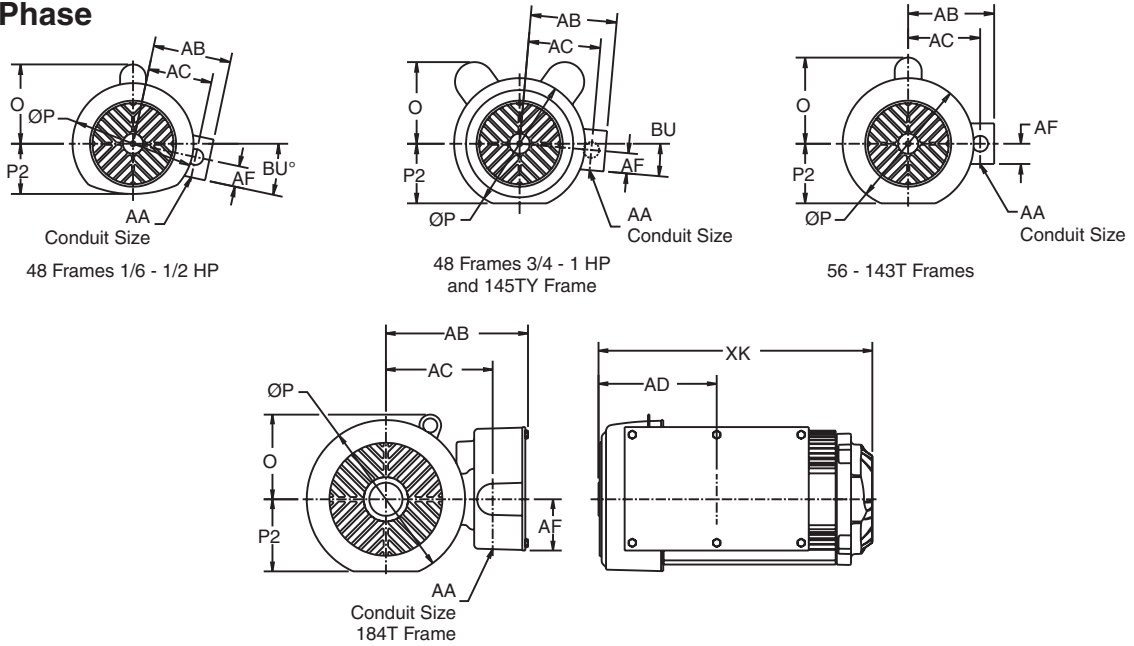
⁸ For details of torque arm, refer to page C-39.

⁹ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-38.

¹⁰ For gear frame 33A, XM = 16.73".

Alternate Motor Dimensions

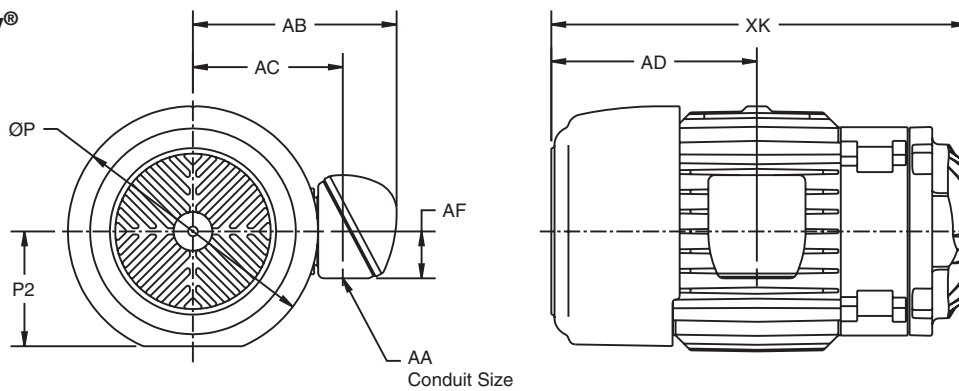
Single Phase



Motor Frame	HP	O	P	P2	AA	AB	AC	AD	AF	BU	XK
56	1/3, 1/2	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	9.52
	3/4	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02
143T	1	5.09	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02
145TY	1 1/2, 2	4.53	7.28	3.31	3/4	4.78	3.83	4.14	1.13	5°	12.52
184T	3, 5	5.11	9.56	4.39	3/4	8.58	6.45	7.14	3.09	N/A	16.54

HWN Series

Corro-Duty®

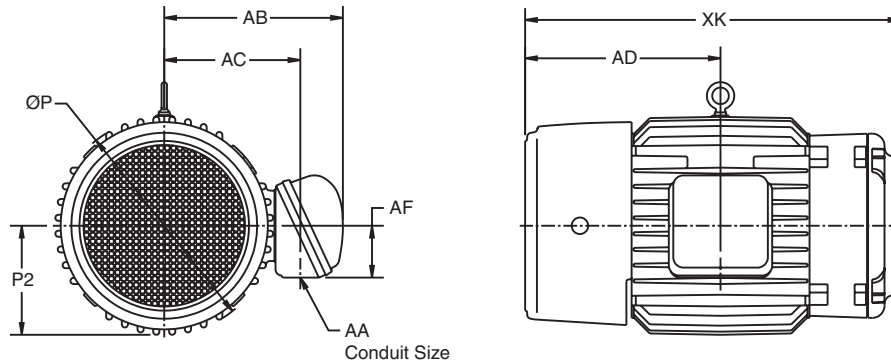


Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.41	3.44	3/4	6.50	4.59	3.72	1.25	10.21 ²
143T, 145T	7.41	3.44	3/4	6.50	4.59	3.72	1.25	11.21 ²
182T, 184T	9.57	4.33	3/4 ¹	7.80	6.00	7.79	2.32	14.23
213T, 215T	11	5.44	1	9.47	7.15	9.63	2.00	19.67
254T, 256T	13.31	6.58	1 1/2	11.33	8.51	12.44	2.63	23.29 ¹

¹ 182T, 184T frames have two conduit holes.
² XK will increase by .58" if used on 3042 or 32 combined.

Alternate Motor Dimensions

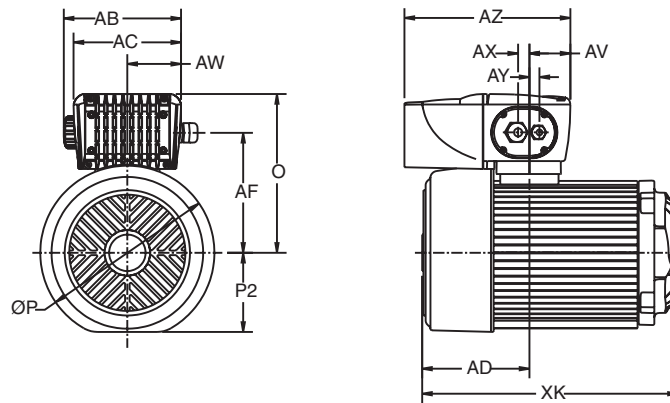
Explosion Proof



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.15
143T, 145T	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.90
182T, 184T	9.50	4.56	3/4	7.70	5.79	7.75	2.25	15.70
213T, 215T	11.12	5.44	1	9.06	6.81	8.68	2.63	18.72

HWN Series

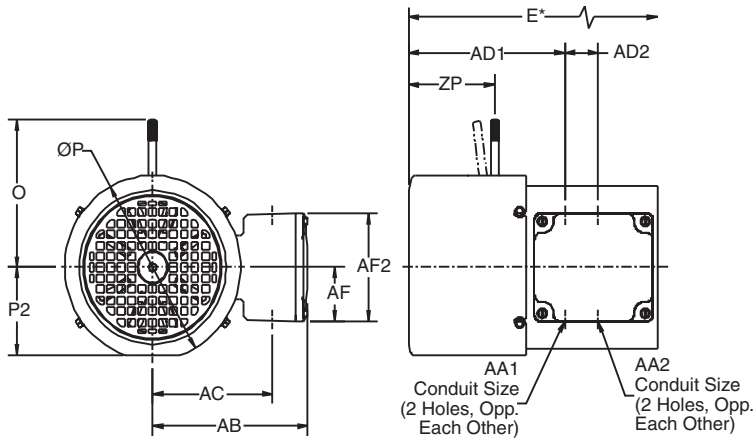
IntelliGear[®]



Motor Frame	Controller	0	P	P2	AB	AC	AD	AF	AV	AW	AX	AY	AZ	XK
56	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	9.79
143T, 145T	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	11.04
56	2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	9.79
145T	2, 2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	11.04
182T, 184T	2	8.72	9.56	4.78	6.45	5.91	5.89	6.58	2.25	2.95	.62	.55	9.12	14.05
	3	11.16	9.56	4.78	8.97	8.44	10.01	7.37	2.83	4.22	.62	.55	13.10	14.05
213T	3	11.99	11.25	4.98	8.97	8.44	11.73	8.11	2.83	4.22	.62	.55	13.10	16.15
215T	3	11.99	11.25	4.98	8.97	8.44	13.23	8.11	2.83	4.22	.62	.55	13.10	17.65

Input Power Phase Voltage	Motor HP @ Max. Hz					
	0.33 to 0.50	0.75	1	1.5 to 2	3 to 5	7.5 to 10
1/115	1M	2M				
1/230	1M	1M	1M	2M		
3/230	1	1	1	2	3	
3/460	1	1	1	1	2	3

Dimensional Supplement



DC FCR Brake with Type "T" Motor

Motor Frame	E*	O	P	AA1	
				Size	Qty
56-143/145T	2.63	5.80	7.24	3/4 NPT	2
182/184T	1.95	7.3	9.23	3/4 NPT	1

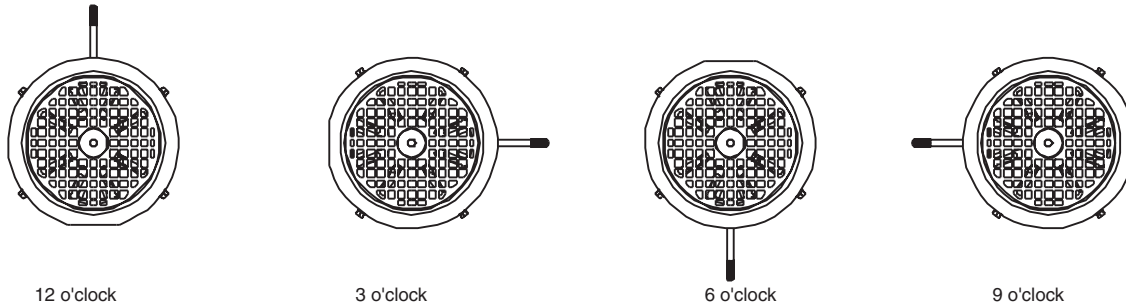
Motor Frame	AA2		AB	AC	AD1
	Size	Qty			
56-143/145T	1/2 NPT	2	6.38	4.94	6.43
182/184T	3/4 NPT	1	7.8	6.14	8.84

Motor Frame	AD2	AF	AF2	P2	ZP
56-143/145T	1.38	2.13	4.25	3.46	3.54
182/184T	1.81	2.32	4.65	N/A	4.41

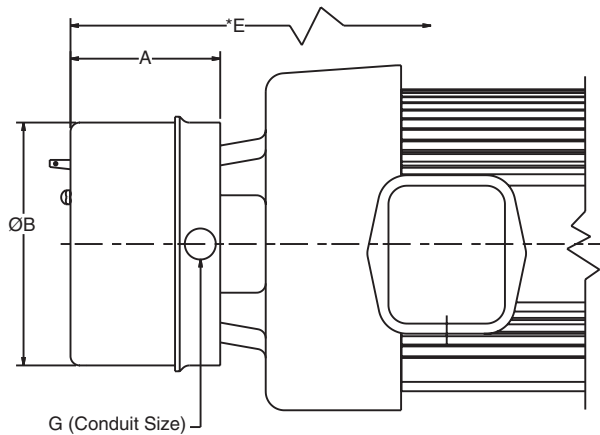
*Add "E" to XK of equivalent three phase frame motor.

HWN Series

Manual Release Lever Position



See page B-18 for specifying the o'clock position on orders.



AC Brake with Type "T" and "S" Motor

Motor Type	Motor Frame	Brake Torque (ft. lbs.)	A	B	E*	G
S	56	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
	143T/145T 145TY	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
		10	4.01	6.54	4.56	1/2
T	184T	15	4.01	6.54	4.56	1/2
	213T	25	7.38	9.38	8.75	1/2
	215T	35	7.38	9.38	8.75	1/2

* Dimension "E" represents the additional length of motor with brake mounted. Add "E" to XK of equivalent three phase frame motor.

TEFC Three Phase Gearmotors

Gear Frame	Reduction Stages	Motor Frame							
		56	143T	145T	182T	184T	213T	215T	254T
30	2	57	61	63					
31	2	77	84	86	100	106			
32	2	99	106	108	130	136			
	4	119							
33	2	110	118	120	144	150			
	4	147	157						
34	2	203	219	221	236	242	276	289	513
	4,5	269	284	287					
35	2	255	275	277	296	302	343	358	423
	4,5	311	330	333	352	358			

Motor Options Adders

Motor Type	Motor Frame							
	56	143T	145TY	182T	184T	213T	215T	254T
C Corro-Duty	8	9	11	52	50	73	70	190
X Explosionproof	19	21	-	33	30	50	50	-
S Single Phase	6	11	5	-	17	-	-	-
IG IntelliGear	7	15	20	31	30	60	60	-

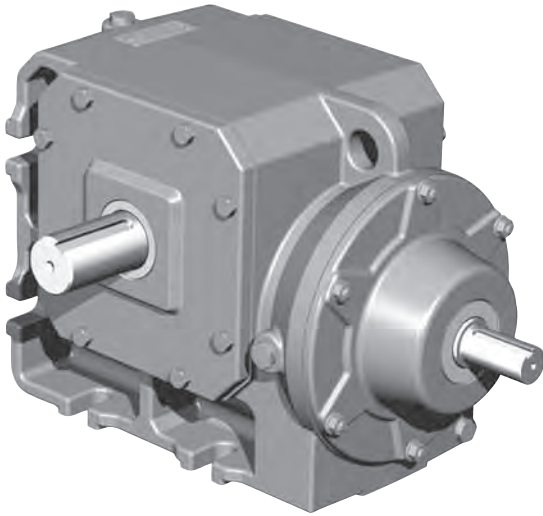
Gear Options Adders

Gear Frame	Flange Mount
30	4
31	5
32	7
33	8
34	10
35	12

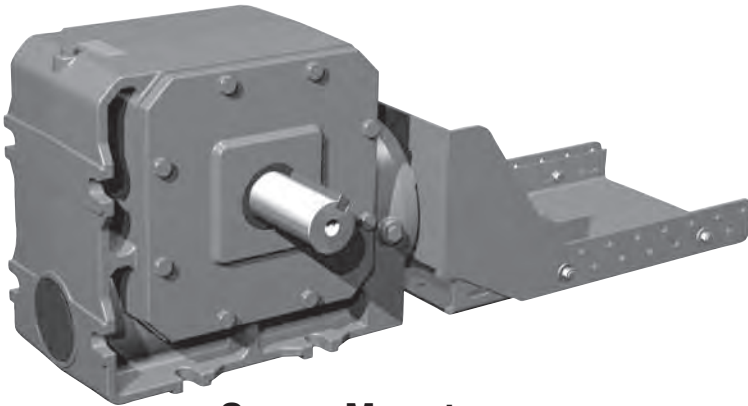
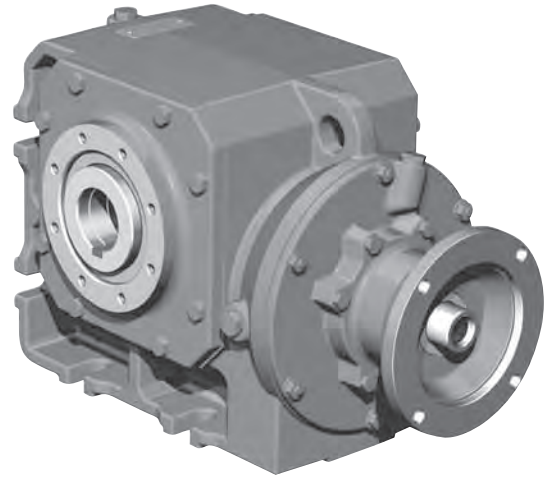


HWN Helical Worm Right Angle Speed Reducers

Input Shaft

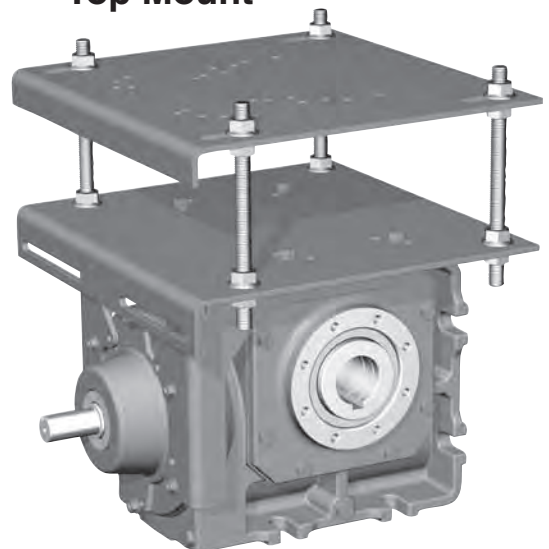


C-Face

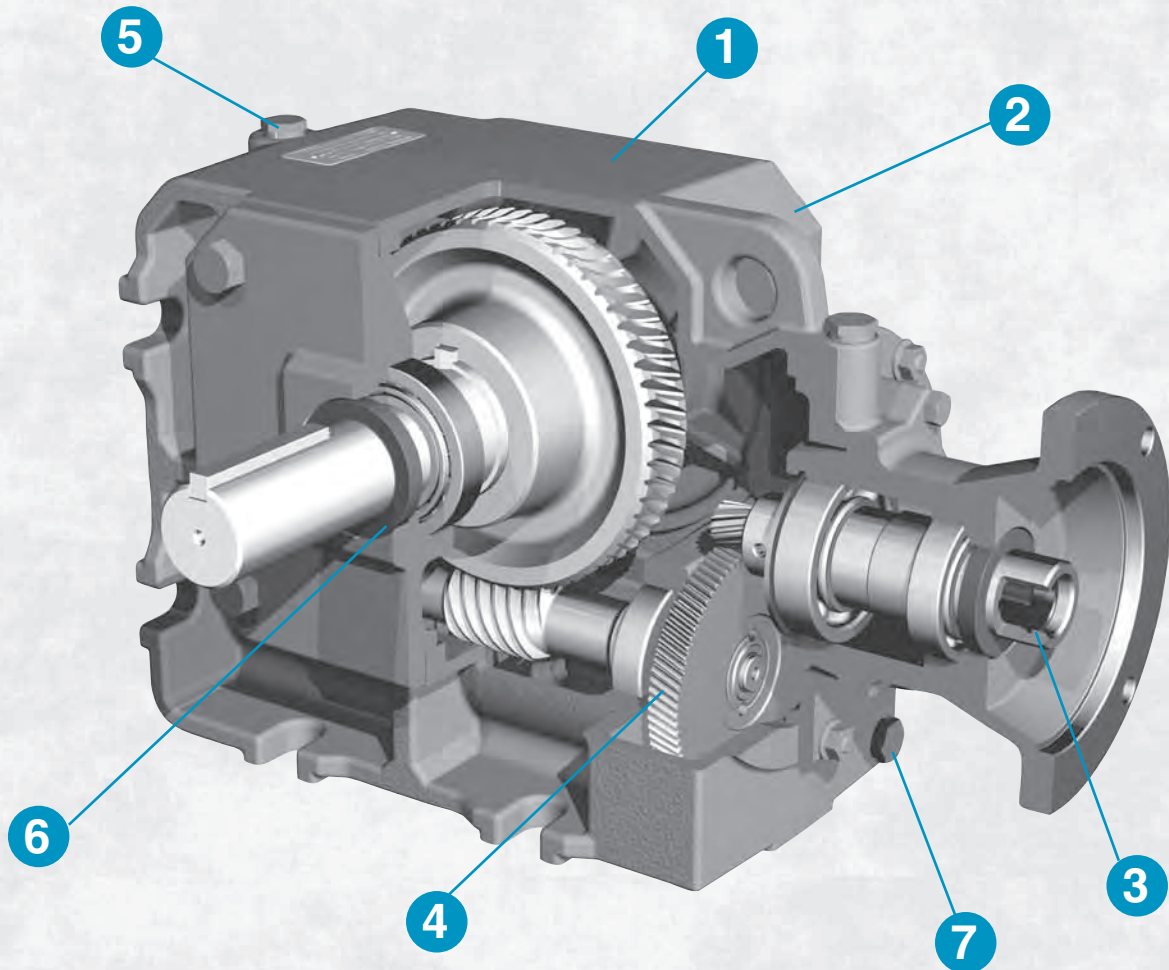


Scoop Mount

Top Mount



HWN Series Speed Reducer Features...



HWN Series

Design Features

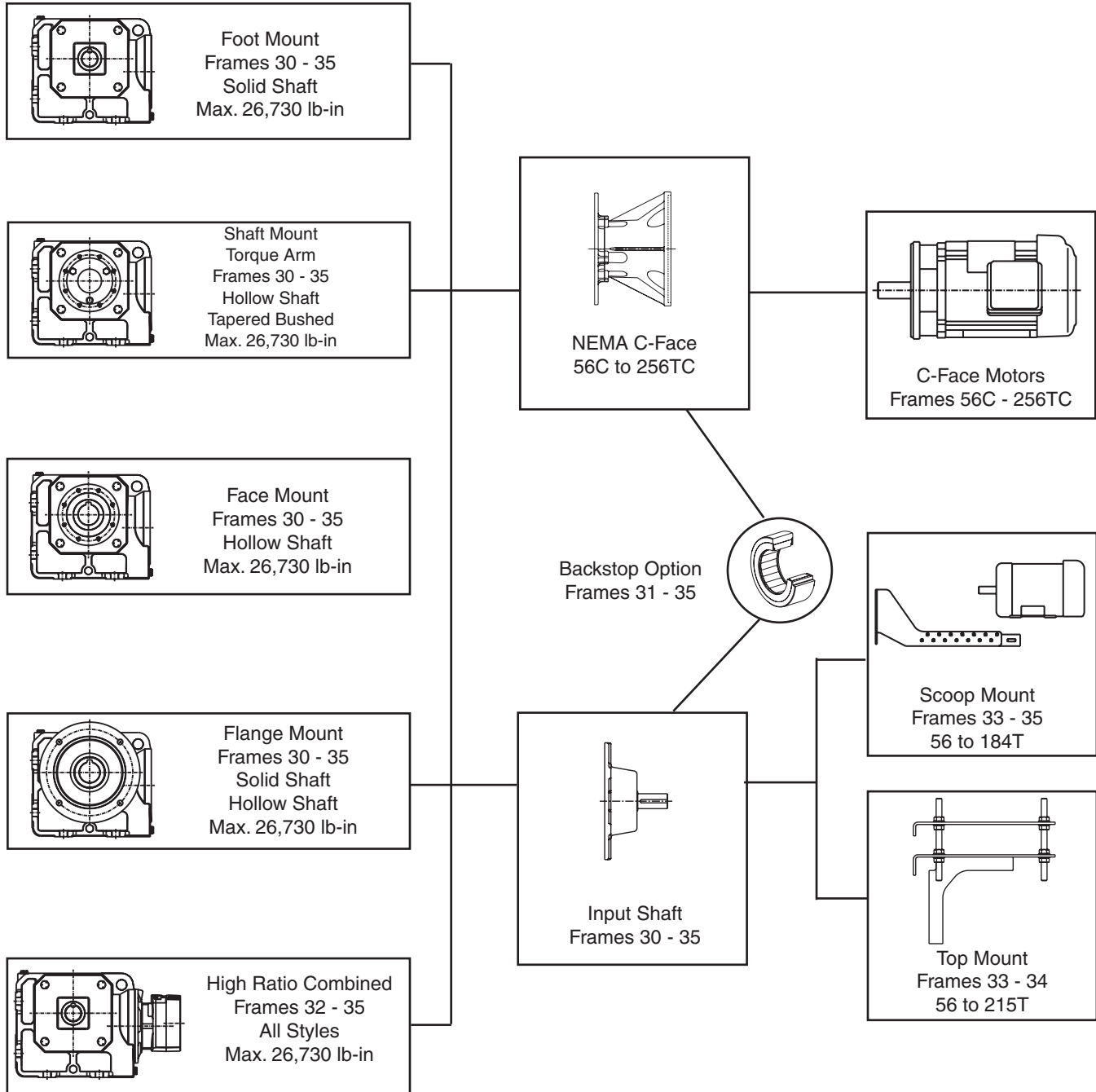
- 1. Gearbox Supplied Factory Filled with Synthetic Oil**
 - Wide temperature range and long life
- 2. Corrosion and Shock Resistant Cast Iron Housing**
 - Reinforced and ribbed for extra strength.
- 3. Series 3000 C-Face Reducers with Compact Quill Design**
 - Non-metallic liner to eliminate fretting.
 - Shorter design
 - Two bearings for support
- 4. Helical Gears and Shafts of Nickel Chromium Molybdenum Steel**
 - Worm gear sets offer superior shock load capability.
 - Helical stage improves gear efficiency of total reduction train.
- 5. Normally Closed Breather with Multiple Locations**
- 6. Double Lip Seals on Heat Treated, Plunge Ground Shafts**
- 7. Magnetic Drain Plug Standard**

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Mounting Versatility and Size Range

HWN Series



Selection Information

- 1. Input HP**
 - Based on application data.
- 2. Speed/Ratio**
 - Obtain either desired output speed (rpm) or gearbox ratio based on application.
- 3. Service Factor**
 - Determine the required service factor using either the AGMA application classification chart (pages C-99 - C-101) or the duration of operation, load type, and drive type with the table below:

Prime Mover	Hours of Operation	Uniform Load U	Moderate Shock Load M	Heavy Shock Load V
Electric Motor	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Internal Combustion Engine	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

Size Selection

- Step 1**
 - Locate speed reducer selection tables (pages C-102 - C-111) based on input speed to gearbox.
- Step 2**
 - Choose the nominal ratio appropriate for the speeds required.
- Step 3**
 - Select the gear unit size for the chosen ratio and the known input speed so that the mechanical power rating P (hp) satisfies the following:

$$P \geq P_m \cdot SF$$

P = mechanical power rating (hp) of gearbox
 P_m = motor power (hp)
 SF = required service factor

Note: Size selection based on absorbed power (Pa) or absorbed torque (Ta) at the low speed shaft instead of motor power (Pm) is allowed when the former is known with sufficient accuracy and if the number of start operations is limited. When Ta is applied in size selection, verify if:

$$T \geq T_a \cdot SF$$

T = torque rating (in. lbs.) at low speed shaft
 Ta = absorbed torque (in. lbs.) at low speed shaft
 SF = required service factor

Size Selection (cont.)

- Step 4**
 - Verify overhung load ratings where required (see page C-90).

Example

1. Application Data
 Bottling conveyor, 24-hrs/day operation. Requires right angle hollow shaft mounted speed reducer to be mounted directly to the conveyor drive shaft with a torque arm. The customer prefers a c-face mounted motor.

Motor rating: 5 HP, 1750 RPM, 184TC Footless Frame, 230/460 VAC, 3-Phase, 60 Hz, TEFC

Output speed: 44 rpm

- 2. Size Selection**

Nominal Ratio: Locate nominal rpm closest to 44 rpm. 40:1 nominal ratio is the proper selection.

Service Factor: Using AGMA application classification chart (page C-104) under the "Brewing and Distilling" heading, bottling machinery that operates over 10 hours/day should have a 1.25 service factor.

Rating Req'd: Minimum reducer rating required is
 $P = P_m \times SF$
 $P = 5 \text{ HP} \times 1.25 = 6.25 \text{ HP}$

Catalog Rating:

Exact ratio	Gear Frame	39.5	3472
Input H.P.	Output Torque	7.63	9215

Selection: HWN3472 is rated 7.63 HP input / 9215 lb-in output with 39.5:1 ratio. 1750 rpm / 39.5 = 44.3 rpm output speed. 7.63 / 5 = 1.53 SF.

- 3. Catalog Designation**

Reducer: HWN-3472-S2-B33C-40-U-184TC (See page C-91)

Torque Arm: NL9010 (See page C-97)

Overhung Load Capacities

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a reducer, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

Where:

- OHL = Overhung load (pounds)
- T = Torque (in. lbs.)
- r = Radius of driving member (in.)
- HP = Horsepower
- K = Drive type factor
- LLF = Load location factor

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times HP \times K \times LLF}{RPM \times r}$$

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Timing Belt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Overhung Load (lbs.)						
Output rpm	Frame					
	30	31	32	33	34	35
151-175	1200	1900	2250	2400	2800	5000
101-150	1200	1900	2250	2400	2800	5000
51-100	1200	1900	2250	2400	2800	5000
31-50	1200	1900	2250	2400	2800	5000
16-30	1200	1900	2250	2400	2800	5000
5-15	1200	1900	2250	2400	2800	5000
<5	1200	1900	2250	2400	2800	5000

OHL capacities above are calculated at gear capacity rounded to the closest motor HP at mid shaft. For capacity when HP is known, refer to gearmotor selection tables.

Catalog Nomenclature

HWN • 34 7 2 • S2 • B 33 G • 22.4 • U • 145TC • G11

See pages C-92 and C-93

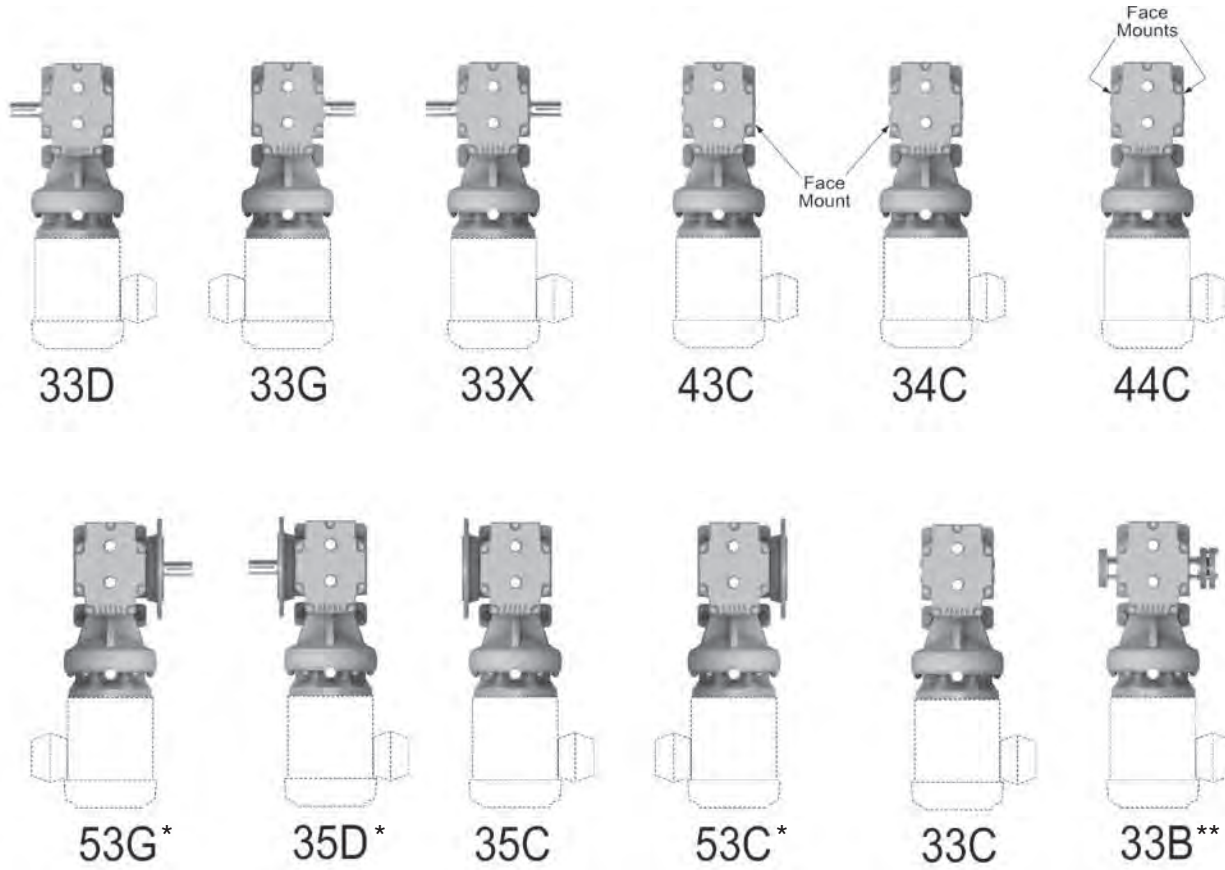
Browning Right-Angle Helical-Worm	Reducer Size	Stages	Housing Type ¹	Mounting Position	Output Face/Flange Viewed From Input End	Output Shaft Configuration Viewed from Input End	Nominal Gear Ratio	Input Type	Motor Frame (All Except Input Shaft Type)	Modifications
	30	2 = 2 stages	S2 = Housing with breather	B = Floor mount	3 = Standard round	G = Shaft right	22.4 = 22.4:1	AP = Input shaft	C-Face 56C-256TC	Select from modifications listed on page C-95
	31	4 = 4 stages combined	S3 = Housing with expansion chamber	P = Ceiling mount	4 = Face mount	D = Shaft left	Use nominal ratio selected from reducer selection tables	AD = Input shaft with backstop	Scoop mount 56-184T	
	32	5 = 5 stages combined		H = Wall mount, input left	5 = Flange mount	X = Dual shaft		SP = Scoop mount	Top mount 56-215T	
	33	0		T = Wall mount, input right		C = Finished bore	SD = Scoop mount with backstop			
	34	7		V = Input vertical up		B = Tapered bushed	U = C-Face	UD = C-Face with backstop		
	35	8		W = Input vertical down				TM = Top mount TD = Top mount with backstop		

HWN Series

¹ S3 housing type has an expansion chamber instead of a breather. A diaphragm allows for expansion to prevent pressure build-up inside the oil sump. This totally encloses the housing to prevent seepage from a breather, especially with high lubricant levels and in movable mounts.

Flange Dimensions Summary:

Flange Dimensions (mm)						
BD	140	160	200	250	350	
AK	95	110	130	180	250	
AJ	115	130	165	215	300	
Gear Frame	Output Flange Designation Code					
30	6	5	-	-	-	
31	-	-	5	-	-	
32	-	-	5	-	-	
33	-	-	-	5	-	
34	-	-	-	5	-	
35	-	-	-	-	5	

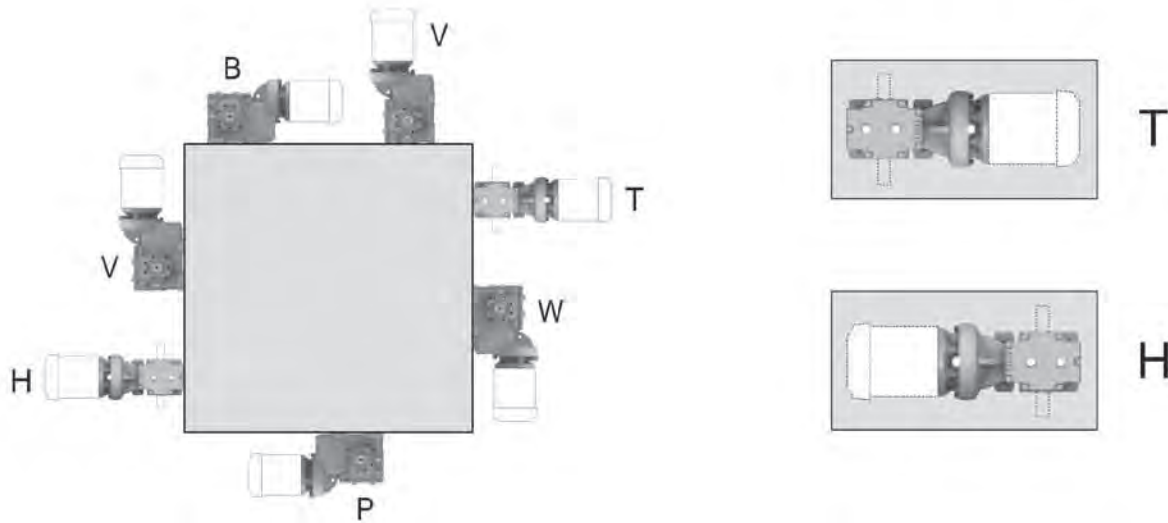


Examples Above are Top Views (with C-Face motor)

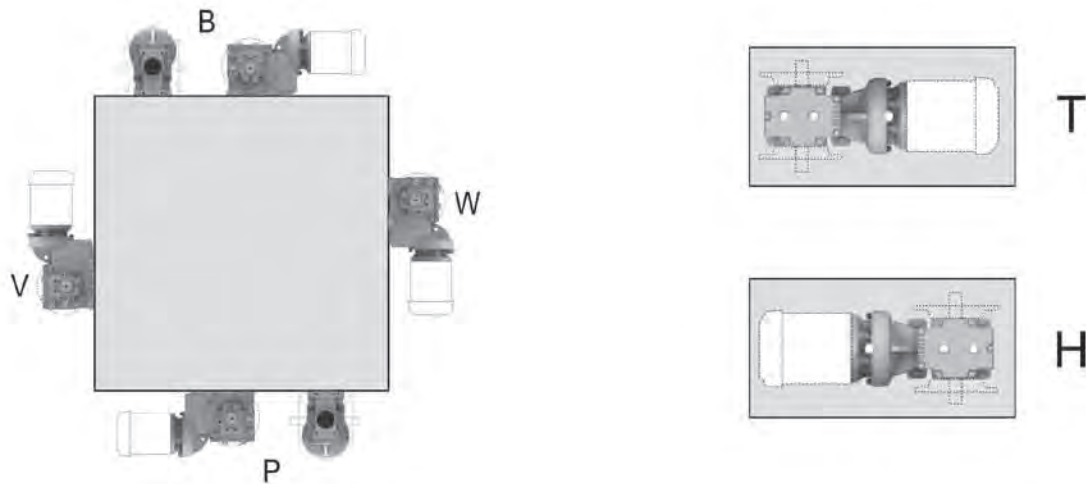
HWN Frame	Foot Mounted			Face Mounted				Flanged Mounted					Shaft Mounted	
	Solid Shaft			Hollow Shaft				Solid Shaft		Hollow Shaft			Hollow	Bushed
	33G	33D	33X	33C*	34C	43C	44C*	53G	35D	53C	35C	55C*	33C	33B**
30	•	•	•	•	•	•	•	••	••	••	••	••	•	•
31	•	•	•	•	•	•	•	•	•	•	•	•	•	•
32	•	•	•	•	•	•	•	•	•	•	•	•	•	•
33	•	•	•	•	•	•	•	•	•	•	•	•	•	•
34	•	•	•	•	•	•	•	•	•	•	•	•	•	•
35	•	•	•	•	•	•	•	•	•	•	•	•	•	•

• This is available at normal lead-times
 •• This is available at normal lead-times and in alternative flange "6". See previous page
 * This design allows entry of driven shaft from either side of the reducer
 ** Bushing can be assembled on either side of the reducer during field assembly

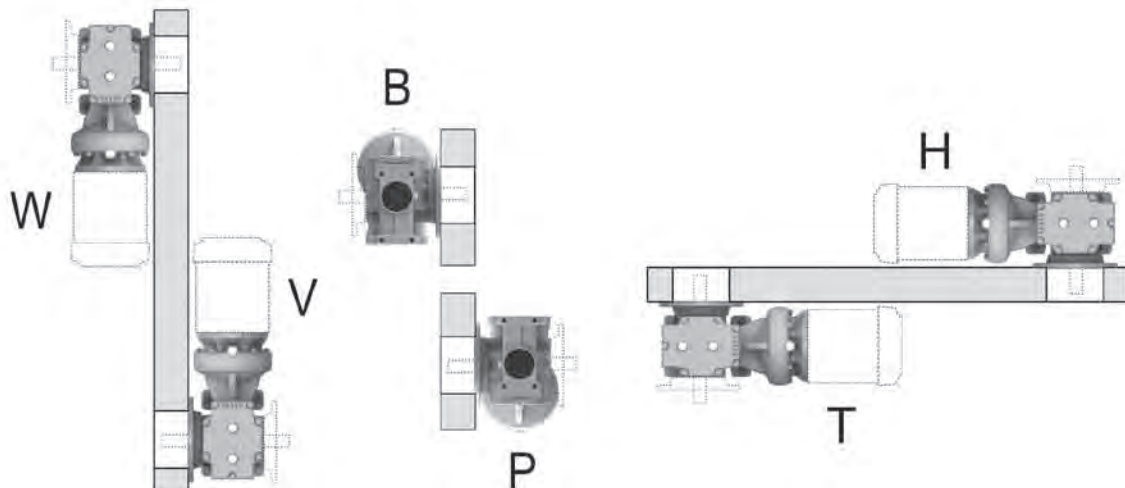
Foot Mount



Foot Mount with Face or Flange



Flange, Face or Shaft Mount



HWN Series

Ordering

C-Face Frames

Gear Frame	AC Motor Frame Sizes				
	56C	140TC	180TC	210TC	250TC
3042	X	X			
3152	X	X	X		
3262	X	X	X		
3264	X	X			
3302	X	X	X	X	
3304	X	X	X		
3304A	X	X			
3472	X	X	X	X	
3474	X	X	X		
3475	X	X			
3582	X	X	X	X	X
3584	X	X	X		
3585	X	X	X		

Scoop Mount Frames

Gear Frame ¹	AC Motor Frame Sizes		
	56	140T	180T
3302	X	X	
3304, 3304A	Not Available		
3472	X	X	X
3474, 3475	Not Available		
3582	X	X	X
3584, 3585	Not Available		

Top Mount Frames

Gear Frame ¹	AC Motor Frame Sizes			
	56	140T	180T	210T
3302	X	X	X	
3304, 3304A	Not Available			
3472	X	X	X	X
3474, 3475	Not Available			

¹ Frames not listed on the above tables are not offered in this configuration

X Available in this input design for frame of motor noted.

Modifications, Options and Accessories

Gear Modifications

G11 Corro-Duty® Reducer

Corro-Duty treatment can be applied to a reducer when the unit will be subjected to harsh chemicals or used outside. Special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
 - Grey Option (default type)
 - 316 stainless steel paint (3 step)
 - Light grey semigloss finish
 - USDA and FDA approved
 - White Option
 - Two step epoxy paint system
 - White gloss finish
 - USDA and FDA approved

For washdown application, refer to G12b Washdown FG Service Reducer modification.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the HWN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for worm gearing (refer to page C-147).

G12b Washdown FG Service Reducer

When this modification is specified, a reducer will be built with all the features detailed above under G11 and G12a. When ordering, state the paint finish that is to be provided.

G15 Export Boxing

Export boxing can be provided for “under-deck” transport. When the quantity of HWN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Accessories

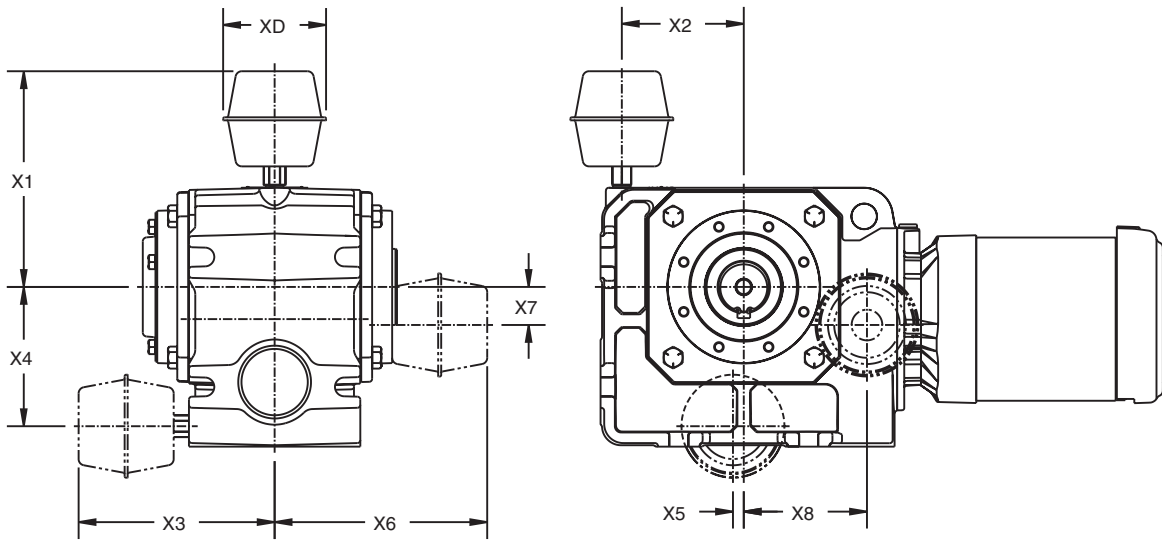
The following accessories can be ordered along with reducers and will be supplied loose for mounting by others:

Description	Gear Frames	Part #
NPT Adapter (1/4" NPFT)	31 to 35	0436216
Bushing Guard Kit ¹ (includes 2 guards to protect both sides)	30	XS9125
	31	XS9125
	32	XS9126
	33	XS9127
	34	XS9128
	35	XS9129
Oil Level View Port	31 to 35	0435936
Coupling Guard Kit (scoop mount reducers)	33 to 35	0965634

¹ These kits include all mounting hardware.

Expansion Chamber - S3 Housing Type

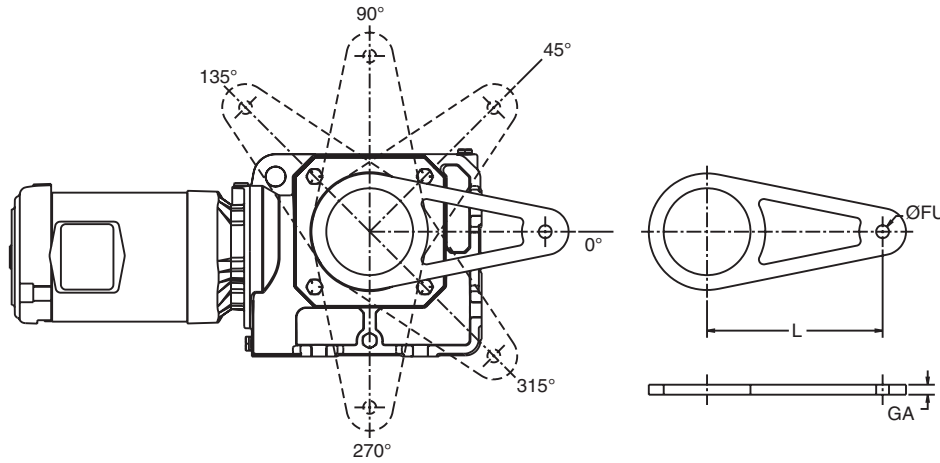
- Replaces the breather with an expansion cartridge.
- Screws into topmost oil plug location depending on mounting position.
- Totally encloses oil sump.
- Diaphragm expands to prevent pressure build-up as oil heats up.
- Help eliminate oil leakage past seals during operation.
- Help stop vacuum induced internal contamination upon cool down.
- Especially effective for mounting positions requiring high oil level.
- Also effective where mount rotates into multiple positions.



Choose from three alternate positions illustrated.

Gear Frame	XD	X1	X2	X3	X4	X5	X6	X7	X8
30	4.06	9.10	3.19	8.48	3.26	-.20	9.40	1.22	3.49
31	4.06	9.38	3.39	8.79	3.75	.20	9.48	1.19	3.70
32	4.06	10.19	4.45	9.26	4.81	.20	9.73	1.63	4.65
33	4.06	10.50	4.81	9.73	5.49	0	10.30	1.50	4.86
34	7.00	10.25	5.09	9.48	6.25	.30	10.23	2.00	5.68
35	7.00	12.18	7.09	9.98	8.00	.08	10.41	3.44	7.50

HWN Frame Size	Expansion Chamber Part #	Pipe Fittings		
		Adapter	Nipple	Reducer
30 - 33	FK2027	0436216	FK2022	FK3041
34 - 35	FK3040	0436216	FK2022	FK3041

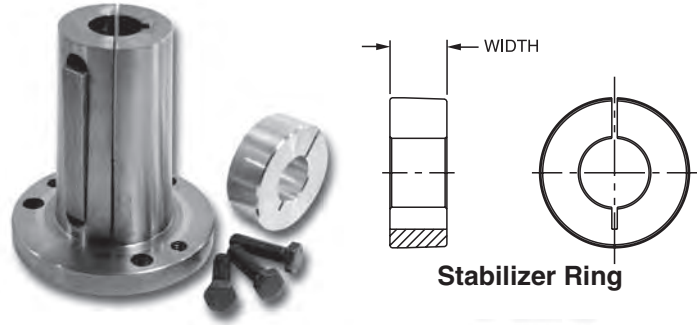


Torque Arm Kits

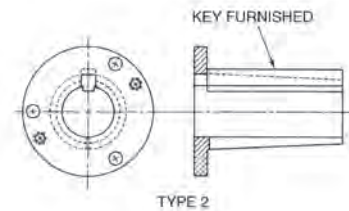
Gear Frame	Part ID Kit #	L	FU	GA	Fastener¹ Size
30	NH9010	5.12	.41	.25	5/16
31	NI9010	6.30	.41	.25	5/16
32	NJ9010	7.87	.41	.38	5/16
33	NK9010	8.86	.65	.38	3/8
34	NL9010	9.84	.65	.50	3/8
35	NM9010	12.20	.65	.50	1/2

¹ Fastener for attachment to gearbox face included with Torque Arm Kit.

HWN3000 series units can be ordered with a “33B” bushed output version. When a bore size is defined at order entry, this configuration includes the appropriate bushing kit unassembled. The table below shows the available stocked bushing bores that may be specified for each HWN frame size. Each bushing kit is supplied with the bushing, mounting hardware, and a stabilizer ring. Where a bushing is needed for a spare or for a bore change, select it from the following table by gear frame size.



- **Unique, patented single bushing mounting system**
 - Mounts from either side
- **Tapered stabilizer ring minimizes wobble and resists fretting corrosion.**
- **End cap seals quill end from contamination.**



HWN Series

HWN Frame	Mea. Unit	Bushing No.	Bore	Shaft Keyseat Required	Stabilizer Ring Width
30 & 31	Inch	107TBP102	1 1/8	1/4 x 1/8 x 3 7/8	0.793
		107TBP103	1 3/16	1/4 x 1/8 x 3 7/8	
		107TBP104	1 1/4	1/4 x 1/8 x 3 7/8	
		107TBP105	1 5/16	5/16 x 5/32 x 3 7/8	
		107TBP106	1 3/8	5/16 x 5/32 x 3 7/8	
		107TBP107	1 7/16	3/8 x 3/16 x 3 7/8	
	Metric ¹	107TBP30MM	30 mm	8 x 4 x 94 (mm)	
107TBP35MM		35 mm	10 x 5 x 94 (mm)		
32	Inch	115TBP107	1 7/16	3/8 x 3/16 x 4 1/8	0.855
		115TBP108	1 1/2	3/8 x 3/16 x 4 1/8	
		115TBP110	1 5/8	3/8 x 3/16 x 4 1/8	
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	
		Metric ¹	115TBP40MM	40 mm	
	115TBP45MM		45 mm	14 x 5.5 x 100 (mm)	
	33	Inch	203TBP112	1 3/4	
203TBP114			1 7/8	1/2 x 1/4 x 4 5/8	
203TBP115			1 15/16	1/2 x 1/4 x 4 5/8	
203TBP200			2	1/2 x 1/4 x 4 5/8	
203TBP203			2 3/16	1/2 x 1/4 x 4 5/8	
Metric ¹		203TBP50MM	50 mm	14x5.5x118 (mm)	
34	Inch	207TBP114	1 7/8	1/2 X 1/4 X 5 1/8	1.04
		207TBP115	1 15/16	1/2 X 1/4 X 5 1/8	
		207TBP200	2	1/2 X 1/4 X 5 1/8	
		207TBP202	2 1/8	1/2 X 1/4 X 5 1/8	
		207TBP203	2 3/16	1/2 X 1/4 X 5 1/8	
		207TBP204	2 1/4	1/2 X 1/4 X 5 1/8	
		207TBP207	2 7/16	5/8 X 5/16 X 5 1/8	
		Metric ¹	207TBP50MM	50 mm	
	207TBP60MM		60 mm	18 x 7 x 125 (mm)	
	35	Inch	307TBP207	2 7/16	
307TBP208			2 1/2	5/8 X 5/16 X 6 3/4	
307TBP211			2 11/16	5/8 X 5/16 X 6 3/4	
307TBP214			2 7/8	3/4 x 3/8 x 6 3/4	
307TBP215			2 15/16	3/4 x 3/8 x 6 3/4	
307TBP300			3	3/4 x 3/8 x 6 3/4	
307TBP306			3 3/8	7/8 x 7/16 x 6 3/4	
307TBP307			3 7/16	7/8 x 7/16 x 6 3/4	
Metric ¹		307TBP60MM	60 mm	18 x 7 x 172 (mm)	
		307TBP70MM	70 mm	20 x 7.5 x 172 (mm)	

¹ Metric bushings have metric bores and require metric keyseats as shown in mm.



Speed Reducers

HWN
SERIES **3000**

AGMA Application Classifications

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Agitators (Mixers)				Cranes (Continued)			
Pure Liquids	—	1.00	1.25	Boom Hoist	Refer to Application Engineering		
Liquids & Solids	1.00	1.25	1.50	Trolley Drive (Gantry Drive)	Refer to Application Engineering		
Liquids - Variable Density	1.00	1.25	1.50	(Traction Drive)	Refer to Application Engineering		
Blowers				Mill Duty			
Centrifugal	1.00	1.25	—	Main	Refer to Application Engineering		
Lobe	1.00	1.25	1.50	Auxiliary	Refer to Application Engineering		
Vane	—	1.00	1.25	Bridge & Trolley Trave	Refer to Application Engineering		
Brewing and Distilling				Industrial Duty			
Bottling Machinery	—	1.00	1.25	Main	1.25	1.50	1.75
Brew Kettles, Continuous Duty	—	1.00	1.25	Auxiliary	Refer to Application Engineering		
Cookers - Continuous Duty	—	1.00	1.25	Bridge & Trolley Travel	Refer to Application Engineering		
Mash Tubs - Continuous Duty	—	1.00	1.25	Crusher			
Scale Hoppers, Frequent Starts	1.00	1.25	1.50	Stone or Ore	1.50	1.75	2.00
Can Filling Machines	—	1.00	1.25	Dredges			
Car Dumpers	1.25	1.50	1.75	Cable Reels	1.00	1.25	1.50
Car Pullers	1.00	1.25	1.50	Conveyors	1.00	1.25	1.50
Clarifiers	—	1.00	1.25	Cutter Head Drives	1.25	1.50	1.75
Classifiers	1.00	1.25	1.50	Pumps	1.00	1.25	1.50
Clay Working Industry				Screen Drives	1.25	1.50	1.75
Brick Press	1.25	1.50	1.75	Stackers	1.00	1.25	1.50
Briquette Machine	1.25	1.50	1.75	Winches	1.00	1.25	1.50
Pug Mill	1.00	1.25	1.50	Elevators			
Compactors	1.50	1.75	2.00	Bucket	1.00	1.25	1.50
Compressors				Centrifugal Discharge	—	1.00	1.25
Centrifugal	—	1.00	1.25	Escalators	Refer to Application Engineering		
Lobe	1.00	1.25	1.50	Freight	Refer to Application Engineering		
Reciprocating, Multi - Cylinder	1.00	1.25	1.50	Gravity Discharge	—	1.00	1.25
Reciprocating, Single - Cylinder	1.25	1.50	1.75	Extruders			
Conveyors - General Purpose				General	1.25	1.25	1.25
Uniformly Loaded or Fed	—	1.00	1.25	Plastics			
Not Uniformly Fed	1.00	1.25	1.50	(a) Variable Speed Drive	1.50	1.50	1.50
Reciprocating or Shaker	1.25	1.50	1.75	(b) Fixed Speed Drive	1.75	1.75	1.75
Cranes				Rubber			
Dry Dock				(a) Continuous Screw Operation	1.50	1.50	1.50
Main Hoist	1.25	1.50	1.75	(b) Intermittent Screw Operation	1.75	1.75	1.75
Auxiliary	1.25	1.50	1.75	Fans			
Boom Hoist	1.25	1.50	1.75	Centrifugal	—	1.00	1.25
Slewing Drive	1.25	1.50	1.75	Cooling Towers	Refer to Application Engineering		
Traction Drive	1.50	1.50	1.50	Forced Draft	1.25	1.25	1.25
Container				Induced Draft	1.00	1.25	1.50
Main Hoist	Refer to Application Engineering			Industrial & Mine	1.00	1.25	1.50

HWN Series

AGMA Application Classifications

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Feeders				Metal Mills			
Apron	—	1.25	1.50	Draw Bench Carriage & Main Drive	1.00	1.25	1.50
Belt	1.00	1.25	1.50	Runout Table			
Disc	—	1.00	1.25	Non-reversing			
Reciprocating	1.25	1.50	1.75	Group Drives	1.00	1.25	1.50
Screw	1.00	1.25	1.50	Individual Drives	1.50	1.50	1.75
				Reversing	1.50	1.50	1.75
Food Industry				Slab Pushers	1.25	1.25	1.50
Cereal Cooker	—	1.00	1.25	Shears	1.50	1.50	1.75
Dough Mixers	1.00	1.25	1.50	Wire Drawing	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50	Wire Winding Machine	1.00	1.25	1.50
Slicers	1.00	1.25	1.50				
Generators and Exciters	—	1.00	1.25	Metal Strip Processing Machinery			
Hammer Mills	1.50	1.50	1.75	Bridles	1.25	1.25	1.50
Hoists				Coilers & Uncoilers	1.00	1.00	1.25
Heavy Duty	1.25	1.50	1.75	Edge Trimmers	1.00	1.25	1.50
Medium Duty	1.00	1.25	1.50	Flatteners	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50	Loopers (Accumulators)	1.00	1.00	1.00
Laundry Tumblers	1.00	1.25	1.50	Pinch Rolls	1.00	1.25	1.50
Laundry Washers	1.00	1.25	1.50	Scrap Choppers	1.00	1.25	1.50
Lumber Industry				Shears	1.50	1.50	1.75
Barkers				Slitters	1.00	1.25	1.50
- Spindle Feed	1.25	1.25	1.25				
- Main Drive	1.50	1.50	1.50	Mills, Rotary Type			
Conveyors				Ball & Rod			
- Burner	1.25	1.25	1.50	Spur Ring Gear	1.50	1.50	1.75
- Main or Heavy Duty	1.50	1.50	1.50	Helical Ring Gear	1.50	1.50	1.50
- Main Log	1.50	1.50	1.50	Direct Connected	1.50	1.50	1.75
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50	Cement Kilns	1.50	1.50	1.50
- Slab	1.50	1.50	1.75	Dryers & Coolers	1.50	1.50	1.50
- Transfer	1.25	1.25	1.50				
Chains				Mixers, Concrete	1.00	1.25	1.50
- Floor	1.50	1.50	1.50				
- Green	1.50	1.50	1.50	Paper Mills			
Cut-Off Saws				Agitator (Mixer)	1.50	1.50	1.50
- Chain	1.50	1.50	1.50	Agitator for Pure Liquids	1.25	1.25	1.25
- Drag	1.50	1.50	1.50	Barkers - Mechanical	1.75	1.75	1.75
Debarking Drums	1.50	1.50	1.75	Barking Drums	1.75	1.75	1.75
Feeds				Beater	1.50	1.50	1.50
- Edger	1.25	1.25	1.50	Breaker Stack	1.25	1.25	1.25
- Gang	1.50	1.50	1.50	❖ Calender	1.25	1.25	1.25
- Trimmer	1.25	1.25	1.50	Chipper	1.75	1.75	1.75
Log Deck	1.50	1.50	1.50	Chip Feeder	1.50	1.50	1.50
Log Hauls - Incline-Well Type	1.50	1.50	1.50	Coating Rolls	1.25	1.25	1.25
Log Turning Devices	1.50	1.50	1.50	Conveyors			
Planner Feed	1.25	1.25	1.25	Chip, Bark, Chemical	1.25	1.25	1.25
Planer Tilting Hoists	1.50	1.50	1.50	Log (Including Slab)	1.75	1.75	1.75
Rolls - Live-Off Bearing.-Roll Cases	1.50	1.50	1.50	Couch Rolls	1.25	1.25	1.25
Sorting Table	1.25	1.25	1.50	Cutter	1.75	1.75	1.75
Tipple Hoist	1.25	1.25	1.50	Cylinder Molds	1.25	1.25	1.25
Transfers				❖ Dryers			
- Chain	1.50	1.50	1.50	Paper Machine	1.25	1.25	1.25
- Causeway	1.50	1.50	1.50	Conveyor Type	1.25	1.25	1.25
Tray Drives	1.25	1.25	1.50	Embosser	1.25	1.25	1.25
Veneer Lathe Drives	Refer to Application Engineering			Extruder	1.50	1.50	1.50
				Fourdrinier Rolls (Includes Lump Breaker, Dandy			
				Roll, Wire Turning, and Return Rolls)	1.25	1.25	1.25
				Jordan	1.25	1.25	1.25
				Kiln Drive	1.50	1.50	1.50
				Mt. Hope Roll	1.25	1.25	1.25

AGMA Application Classifications

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Paper Mills (Continued)				Rubber Industry			
Paper Rolls	1.25	1.25	1.25	Intensive Internal Mixers			
Platter	1.50	1.50	1.50	(a) Batch Mixers	1.50	1.75	1.75
Presses - Felt & Suction	1.25	1.25	1.25	(b) Continuous Mixers	1.25	1.50	1.50
Pulper	1.50	1.50	1.75	Mixing Mill - 2 Smooth Rolls - (If corrugated rolls are used, then use the same service factors that are used for a Cracker-Warmer)	1.50	1.50	1.50
Pumps - Vacuum	1.50	1.50	1.50	Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50
Reel (Surface Type)	1.25	1.25	1.50	Cracker Warmer - 1 Corrugated Roll	1.75	1.75	1.75
Screens				Cracker - 2 Corrugated Rolls	1.75	1.75	1.75
Chip	1.50	1.50	1.50	Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25
Rotary	1.50	1.50	1.50	Refiner - 2 Rolls	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75	Calenders	1.50	1.50	1.50
Size Press	1.25	1.25	1.25				
Super Calender (See Note)	1.25	1.25	1.25	Sand Miller	1.00	1.25	1.50
Thickner							
(AC Motor)	1.50	1.50	1.50	Sewage Disposal			
(DC Motor)	1.25	1.25	1.25	Bar Screens	—	1.00	1.25
Washer				Chemical Feeders	—	1.00	1.25
(AC Motor)	1.50	1.50	1.50	Dewatering Screens	1.00	1.25	1.50
(DC Motor)	1.25	1.25	1.25	Scum Breakers	1.00	1.25	1.50
Wind and Unwind Stand	1.00	1.00	1.00	Slow or Rapid Mixers	1.00	1.25	1.50
Winders (Surface Type)	1.25	1.25	1.25	Sludge Collectors	1.00	1.00	1.25
❖ Yankee Dryers	1.25	1.25	1.25	Thickeners	1.00	1.25	1.50
				Vacuum Filters	1.00	1.25	1.50
Plastics Industry - Primary Processing				Screens			
Intensive Internal Mixers				Air Washing	—	1.00	1.25
(a) Batch Mixers	1.75	1.75	1.75	Rotary - Stone or Gravel	1.00	1.25	1.50
(b) Continuous Mixers	1.50	1.50	1.50	Traveling Water Intake	—	1.00	1.25
Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25				
Continuous Feed, Holding & Blend Mill	1.25	1.25	1.25	Sugar Industry			
Compounding Mills	1.25	1.25	1.25	Beet Slicer	1.50	1.50	1.75
Calenders	1.50	1.50	1.50	Cane Knives	1.50	1.50	1.50
				Crushers	1.50	1.50	1.50
Plastics Industry - Secondary Processing				Mills (Low Speed End)	1.50	1.50	1.50
Blow Molders	1.50	1.50	1.50				
Coating	1.25	1.25	1.25	Textile Industry			
Film	1.25	1.25	1.25	Batchers	1.00	1.25	1.50
Pipe	1.25	1.25	1.25	Calenders	1.00	1.25	1.50
Pre-Plasticizers	1.50	1.50	1.50	Cards	1.00	1.25	1.50
Rods	1.25	1.25	1.25	Dry Cans	1.00	1.25	1.50
Sheet	1.25	1.25	1.25	Dryers	1.00	1.25	1.50
Tubing	1.25	1.25	1.50	Dyeing Machinery	1.00	1.25	1.50
				Looms	1.00	1.25	1.50
Pullers - Barge Haul	1.00	1.50	1.75	Mangles	1.00	1.25	1.50
				Nappers	1.00	1.25	1.50
Pumps				Pads	1.00	1.25	1.50
Centrifugal	—	1.00	1.25	Slashers	1.00	1.25	1.50
Proportioning	1.00	1.25	1.50	Soapers	1.00	1.25	1.50
Reciprocating				Spinners	1.00	1.25	1.50
Single Acting, 3 or more cylinders	1.00	1.25	1.50	Tenter Frames	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50	Washers	1.00	1.25	1.50
Rotary				Winders	1.00	1.25	1.50
- Gear	—	1.00	1.50				
- Lobe	—	1.00	1.25				
- Vane	—	1.00	1.25				

HWN Series

❖ Anti-friction bearings only.

NOTE: A service factor of 1.0 may be applied at the base of a super calender, operating over a speed range where part of the range is constant horsepower and part of the range is constant torque, provided that the constant horsepower part is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating over the entire speed range at constant torque, or where the constant horsepower speed range is less than 1.5 to 1.

Motor rpm 1750

Exact Ratio rpm, HP and Torque

Nom. Rpm	Nom. Ratio	Size of HWN3000 Reducer											
		30		31		32		33		34		35	
278	6.3	6.21	3042	6.09	3152	6.09	3262						
		3.06	623	5.05	1043	9.88	1955						
246	7.1	7.31	3042	6.90	3152	6.90	3262						
		3.06	730	5.02	1113	9.31	2086						
219	8	7.69	3042	8.16	3152	8.16	3262	8.14	3302	7.92	3472	7.92	3582
		3.06	767	4.67	1211	8.40	2180	11.19	2896	21.88	5706	26.29	6925
194	9	9.13	3042	8.8	3152	8.80	3262						
		3.06	905	4.46	1260	8.28	2341						
175	10	9.78	3042	10.3	3152	10.3	3262	10.3	3302	10.2	3472	10.2	3582
		3.06	968	4.31	1398	7.96	2597	10.38	3383	15.68	5202	26.29	8920
156	11.2	11	3042	11.4	3152	11.4	3262						
		3.06	1080	4.29	1539	7.02	2577						
140	12.5	12.8	3042	12.2	3152	12.2	3262	12.3	3302	12.6	3472	12.6	3582
		2.84	1163	3.99	1522	7.40	2895	9.80	3806	14.32	5797	25.42	10599
125	14	13.8	3042	13.8	3152	13.8	3262	14.5	3302	14.6	3472	14.6	3582
		2.7	1188	3.74	1607	7.05	3104	9.17	4188	13.71	6357	24.03	11510
109	16	16.2	3042	15.6	3152	15.6	3262	15.5	3302	16.1	3472	16.1	3582
		2.41	1238	3.49	1683	6.68	3296	8.90	4327	13.27	6750	23.36	12293
97	18	18.1	3042	17.6	3152	17.6	3262	17.5	3302	17.7	3472	17.7	3582
		2.21	1270	3.24	1755	6.27	3481	8.37	4573	12.76	7139	22.27	12896
88	20	20.4	3042	20.0	3152	20	3262	19.4	3302	20.4	3472	20.4	3582
		2.02	1299	2.98	1824	5.83	3656	7.90	4758	11.97	7637	21.14	13691
78	22.4	22.9	3042	22.9	3152	22.9	3262	22.1	3302	22.5	3472	22.5	3582
		1.84	1326	2.65	1890	5.36	3822	7.28	4968	11.47	7963	18.84	13688
70	25	27.4	3042	25.8	3152	23.3	3262	25.5	3302	25.8	3472	25.3	3582
		1.62	1320	2.52	1943	4.93	3566	6.60	5161	10.55	8359	17.98	13780
63	28	29.3	3042	27.4	3152	26.4	3262	27.2	3302	29.1	3472	29.1	3582
		1.55	1346	2.38	1968	4.63	3773	6.29	5239	9.74	8650	17.36	15213
56	31.5	32.9	3042	32.5	3152	30	3262	30.9	3302	31.6	3472	32.1	3582
		1.44	1386	2.09	2033	4.31	3968	5.72	5369	9.07	8828	16.95	16270
49	35.5	38.3	3042	34.4	3152	34.3	3262	34.3	3302	35.2	3472	35.5	3582
		1.29	1434	2.00	2052	3.97	4146	5.26	5458	8.36	9031	16.48	17351
44	40	41.3	3042	39.3	3152	38.7	3262	38.9	3302	39.5	3472	40.7	3582
		1.22	1456	1.79	2095	3.74	4284	4.74	5548	7.63	9215	15.69	18773
39	45			43.8	3152	41.1	3262	43.3	3302	44.7	3472	45	3582
				1.64	2127	3.58	4344	4.33	5609	6.89	9380	15.03	19745

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque



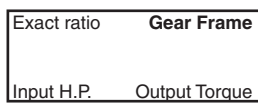
Speed Reducers

HWN SERIES 3000

Motor rpm 1750 (Continued)

Exact Ratio rpm, HP and Torque													
Nom. Rpm	Nom. Ratio	Size of HWN3000 Reducer											
		30		31		32		33		34		35	
35	50	48.5	3042	49.2	3152	51.6	3262	48.8	3302	48.7	3472	51.7	3582
		1.08	1498	1.49	2156	3.00	4528	3.90	5663	6.42	9475	13.97	20865
31	56	54.4	3042	54.7	3152	58.9	3262	54.4	3302	52.8	3472	58.2	3582
		0.99	1524	1.44	2156	2.68	4606	3.66	5670	6.01	9403	13.17	21694
28	63	61.2	3042	65.0	3152	65.8	3262	61.7	3302	59.3	3472	63.2	3582
		0.9	1547	1.27	2222	2.57	4657	3.31	5755	5.45	9527	12.48	22201
25	71	68.8	3042	68.8	3152	73.8	3262	68.6	3302	67.1	3472	70.4	3582
		0.82	1569	1.22	2241	2.33	4700	3.03	5806	4.89	9635	11.58	22784
22	80	77.5	3042	78.6	3152	85.4	3262	77.9	3302	81.4	3472	79	3582
		0.74	1588	1.1	2284	2.05	4742	2.71	5851	4.08	8519	10.65	23314
19	90	87.3	3042	87.7	3152	93.8	3262	86.7	3302	90.0	3472	89.5	3582
		0.67	1605	1.01	2316	1.88	4762	2.46	5878	3.92	8823	9.68	23789
18	100	96.0	3042	98.3	3152	103	3262	97.5	3302	103	3472	97.3	3582
		0.62	1617	0.92	2346	1.74	4154	2.31	5899	3.59	9141	9.05	24064
16	112	108	3042	109	3152	109	3262	114	3302	116	3472	110	3582
		0.55	1631	0.83	2149	1.68	4203	1.99	5918	3.29	9338	8.52	25049
14	125	129	3042	130	3152	130	3262	123	3302	126	3472	126	3582
		0.51	1483	0.73	2214	1.52	4329	1.91	5713	3.04	9444	7.16	22201
12.5	140	145	3042	138	3152	138	3262	137	3302	141	3472	141	3582
		0.47	1505	0.70	2233	1.46	4365	1.76	5777	2.79	9553	6.70	22784
10.9	160	163	3042	157	3152	157	3262	156	3302	158	3472	158	3582
		0.43	1527	0.63	2275	1.33	4441	1.62	5838	2.54	9640	6.20	23314
9.7	180	183	3042	175	3152	175	3262	173	3302	179	3472	179	3582
		0.39	1546	0.58	2306	1.22	4494	1.46	5877	2.28	9711	5.65	23789
8.8	200	207	3042	197	3152	197	3262	195	3302	195	3472	195	3582
		0.36	1563	0.53	2335	1.12	4543	1.32	5910	2.12	9748	5.31	24064
7.8	224	233	3042			228	3262	229	3302			220	3582
		0.32	1578			1.00	4594	1.19	5939			4.84	24403
7	250	256	3042			250	3262	252	3302			253	3582
		0.3	1589			0.93	4623	1.06	5950			4.30	24719
6.3	280	289	3042			287	3262	277	3302			283	3582
		0.27	1601			0.83	4658	0.98	5957			3.93	24920
5.6	315	325	3042			316	3262	323	3302			313	3582
		0.24	1612			0.76	4679	0.85	5963			3.62	25073

HWN Series



Exact Ratio rpm, HP and Torque

Nom. Rpm	Nom. Ratio	Size of HWN3000 Reducer											
		30		31		32		33		34		35	
230	6.3	6.21	3042	6.09	3152	6.09	3262						
		2.54	619	4.86	1147	8.94	2135						
204	7.1	7.31	3042	6.9	3152	6.9	3262						
		2.54	725	4.64	1226	8.27	2236						
181	8	7.69	3042	8.16	3152	8.16	3262	8.14	3302	7.92	3472	7.92	3582
		2.54	762	4.39	1364	7.87	2518	10.52	3283	16.54	5145	21.78	6908
161	9	9.13	3042	8.8	3152	8.8	3262						
		2.54	900	4.04	1364	6.86	2341						
145	10	9.78	3042	10.3	3152	10.3	3262	10.3	3302	10.2	3472	10.2	3582
		2.54	962	3.95	1536	7.35	2928	9.77	3825	14.42	5714	21.78	8883
129	11.2	11	3042	11.4	3152	11.4	3262						
		2.54	1073	3.82	1638	5.82	2577						
116	12.5	12.8	3042	12.2	3152	12.2	3262	12.3	3302	12.6	3472	12.6	3582
		2.49	1223	3.61	1648	6.86	3208	9.08	4234	13.59	6539	21.78	10897
104	14	13.8	3042	13.8	3152	13.8	3262	14.5	3302	14.6	3472	14.6	3582
		2.36	1246	3.35	1723	6.46	3399	8.36	4575	12.88	7105	21.78	12505
91	16	16.2	3042	15.6	3152	15.6	3262	15.5	3302	16.1	3472	16.1	3582
		2.09	1289	3.1	1791	6.05	3571	8.07	4695	12.33	7466	21.78	13727
81	18	18.1	3042	17.6	3152	17.6	3262	17.5	3302	17.7	3472	17.7	3582
		1.91	1315	2.86	1854	5.62	3733	7.49	4900	11.72	7806	21.66	15017
73	20	20.4	3042	20	3152	20	3262	19.4	3302	20.4	3472	20.4	3582
		1.74	1340	2.61	1914	5.17	3884	7.01	5050	10.82	8223	20.56	16246
65	22.4	22.9	3042	22.9	3152	22.9	3262	22.1	3302	22.5	3472	22.5	3582
		1.58	1363	2.37	1971	4.71	4024	6.39	5216	10.21	8487	18.32	15922
58	25	27.4	3042	25.8	3152	23.3	3262	25.5	3302	25.8	3472	25.3	3582
		1.47	1388	2.06	2018	4.47	3874	5.74	5364	9.26	8800	17.28	15701
52	28	29.3	3042	27.4	3152	26.4	3262	27.2	3302	29.1	3472	29.1	3582
		1.4	1411	2.06	2039	4.16	4052	5.45	5423	8.57	9026	16.62	17256
46	31.5	32.9	3042	32.5	3152	30	3262	30.9	3302	31.6	3472	32.1	3582
		1.3	1445	1.8	2095	3.82	4211	4.92	5519	7.9	9162	16.08	18279
41	35.5	38.3	3042	34.4	3152	34.3	3262	34.3	3302	35.2	3472	35.5	3582
		1.16	1486	1.71	2111	3.48	4352	4.5	5584	7.23	9316	15.74	19265
36	40	41.3	3042	39.3	3152	38.7	3262	38.9	3302	39.5	3472	40.7	3582
		1.09	1504	1.54	2147	3.25	4456	4.03	5647	6.56	9454	14.56	20504
32	45			43.8	3152	41.1	3262	43.3	3302	44.7	3472	45	3582
				1.4	2174	3.1	4500	3.67	5689	5.9	9576	13.74	21228

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque

Motor rpm 1450 (Continued)

Exact Ratio rpm, HP and Torque													
Nom. Rpm	Nom. Ratio	Size of HWN3000 Reducer											
		30		31		32		33		34		35	
29	50	48.5	3042	49.2	3152	51.6	3262	48.8	3302	48.7	3472	51.7	3582
		0.96	1539	1.27	2199	2.56	4633	3.30	5726	5.48	9647	12.6	22122
26	56	54.4	3042	54.7	3152	58.9	3262	54.4	3302	52.8	3472	58.2	3582
		0.87	1561	1.26	2228	2.28	4687	3.14	5787	5.11	9593	11.61	22769
23	63	61.2	3042	65.0	3152	65.8	3262	61.7	3302	59.3	3472	63.2	3582
		0.79	1580	1.10	2284	2.19	4722	2.82	5837	4.62	9682	10.94	23159
20	71	68.8	3042	68.8	3152	73.8	3262	68.6	3302	67.1	3472	70.4	3582
		0.72	1598	1.06	2300	1.97	4751	2.57	5867	4.13	9758	9.95	23603
18	80	77.5	3042	78.6	3152	85.4	3262	77.9	3302	81.4	3472	79.0	3582
		0.65	1614	0.95	2337	1.73	4779	2.29	5893	3.71	9038	9.08	24002
16	90	87.3	3042	87.7	3152	93.8	3262	86.7	3302	90.0	3472	89.5	3582
		0.58	1628	0.87	2363	1.59	4793	2.08	5908	3.46	9231	8.21	24356
15	100	96.0	3042	98.3	3152	103	3262	97.5	3302	103	3472	97.3	3582
		0.54	1638	0.78	2389	1.54	4300	1.94	5920	3.12	9428	7.65	24559
13	112	108	3042	109	3152	109	3262	114	3302	116	3472	110	3582
		0.48	1650	0.72	2220	1.48	4340	1.68	5931	2.84	9550	7.07	25454
12	125	129	3042	130	3152	130	3262	123	3302	126	3472	126	3582
		0.44	1519	0.63	2275	1.33	4440	1.65	5819	2.61	9616	6.31	23159
10.4	140	145	3042	138	3152	138	3262	137	3302	141	3472	141	3582
		0.40	1538	0.61	2291	1.28	4468	1.51	5862	2.38	9684	5.86	23603
9.1	160	163	3042	157	3152	157	3262	156	3302	158	3472	158	3582
		0.37	1556	0.55	2327	1.15	4528	1.38	5901	2.16	9740	5.39	24002
8.1	180	183	3042	175	3152	175	3262	173	3302	179	3472	179	3582
		0.34	1572	0.50	2353	1.06	4570	1.24	5924	1.94	9786	4.91	24356
7.3	200	207	3042	197	3152	197	3262	195	3302	195	3472	195	3582
		0.30	1586	0.46	2377	0.97	4607	1.12	5943	1.8	9811	4.60	24559
6.5	224	233	3042			228	3262	229	3302			220	3582
		0.28	1598			0.86	4648	1.01	5957			4.18	24808
5.8	250	256	3042			250	3262	252	3302			253	3582
		0.25	1608			0.80	4669	0.9	5961			3.72	25039
5.2	280	289	3042			287	3262	277	3302			283	3582
		0.23	1618			0.71	4696	0.83	5963			3.39	25185
4.6	315	325	3042			316	3262	323	3302			313	3582
		0.21	1627			0.65	4713	0.72	5962			3.11	25296

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque

Exact Ratio rpm, HP and Torque

Nom. Rpm	Nom. Ratio	Size of HWN3000 Reducer											
		30		31		32		33		34		35	
184	6.3	6.21	3042	6.09	3152	6.09	3262						
		2.03	615	4.31	1287	8.13	2401						
163	7.1	7.31	3042	6.9	3152	6.9	3262						
		2.03	720	4.01	1354	7.74	2587						
145	8	7.69	3042	8.16	3152	8.16	3262	8.14	3302	7.92	3472	7.92	3582
		2.03	757	3.97	1529	7.37	2912	9.80	3805	14.27	5598	17.43	6879
129	9	9.13	3042	8.80	3152	8.80	3262						
		2.03	894	3.45	1470	5.49	2341						
116	10	9.78	3042	10.3	3152	10.3	3262	10.3	3302	10.2	3472	10.2	3582
		2.03	955	3.50	1682	6.68	3293	8.91	4327	13.16	6591	17.43	8825
104	11.2	11.0	3042	11.4	3152	11.4	3262						
		2.03	1066	3.22	1744	4.65	2521						
93	12.5	12.8	3042	12.2	3152	12.2	3262	12.3	3302	12.6	3472	12.6	3582
		2.03	1234	3.15	1779	6.12	3542	8.11	4680	12.09	7405	17.43	10806
83	14	13.8	3042	13.8	3152	13.8	3262	14.5	3302	14.6	3472	14.6	3582
		1.99	1303	2.90	1844	5.69	3707	7.32	4956	11.24	7890	17.43	12387
73	16	16.2	3042	15.6	3152	15.6	3262	15.5	3302	16.1	3472	16.1	3582
		1.75	1339	2.66	1902	5.27	3852	7.01	5049	10.92	8183	17.43	13590
64	18	18.1	3042	17.6	3152	17.6	3262	17.5	3302	17.7	3472	17.7	3582
		1.59	1361	2.43	1956	4.84	3986	6.43	5205	10.25	8451	17.33	14857
58	20	20.4	3042	20.0	3152	20.0	3262	19.4	3302	20.4	3472	20.4	3582
		1.44	1381	2.21	2006	4.41	4107	5.96	5316	9.37	8769	16.45	16065
52	22.4	22.9	3042	22.9	3152	22.9	3262	22.1	3302	22.5	3472	22.5	3582
		1.31	1399	1.99	2053	4.13	4218	5.38	5435	8.75	8966	14.66	15741
46	25	27.4	3042	25.8	3152	23.3	3262	25.5	3302	25.8	3472	25.3	3582
		1.25	1456	1.81	2092	3.9	4178	4.79	5539	7.85	9195	16.08	18104
41	28	29.3	3042	27.4	3152	26.4	3262	27.2	3302	29.1	3472	29.1	3582
		1.19	1475	1.72	2110	3.58	4314	4.53	5579	7.08	9357	15.18	19513
37	31.5	32.9	3042	32.5	3152	30	3262	30.9	3302	31.6	3472	32.1	3582
		1.10	1503	1.49	2156	3.25	4431	4.06	5643	6.57	9453	14.58	20385
33	35.5	38.3	3042	34.4	3152	34.3	3262	34.3	3302	35.2	3472	35.5	3582
		0.98	1536	1.42	2169	2.92	4530	3.71	5685	5.98	9562	14.08	21198
29	40	41.3	3042	39.3	3152	38.7	3262	38.9	3302	39.5	3472	40.7	3582
		0.92	1551	1.27	2199	2.7	4601	3.30	5726	5.40	9658	12.81	22188
26	45			43.8	3152	41.1	3262	43.3	3302	44.7	3472	45.0	3582
				1.16	2221	2.57	4630	3.00	5751	4.84	9743	11.89	22596
23	50	48.5	3042	49.2	3152	51.6	3262	48.8	3302	48.7	3472	51.7	3582
		0.80	1579	1.05	2241	2.1	4716	2.69	5773	4.48	9791	10.76	23254
21	56	54.4	3042	54.7	3152	58.9	3262	54.4	3302	52.8	3472	58.2	3582
		0.72	1596	1.06	2299	1.86	4751	2.59	5865	4.19	9749	9.83	23721
18	63	61.2	3042	65.0	3152	65.8	3262	61.7	3302	59.3	3472	63.2	3582
		0.65	1612	0.92	2345	1.79	4773	2.31	5891	3.77	9807	9.21	24000

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque



Speed Reducers

HWN
SERIES **3000**

Motor rpm 1160 (Continued)

Exact Ratio rpm, HP and Torque													
Nom. Rpm	Nom. Ratio	Size of HWN3000 Reducer											
		30		31		32		33		34		35	
16	71	68.8	3042	68.8	3152	73.8	3262	68.6	3302	67.1	3472	70.4	3582
		0.59	1626	0.88	2359	1.61	4791	2.1	5907	3.37	9857	8.32	24314
15	80	77.5	3042	78.6	3152	85.4	3262	77.9	3302	81.4	3472	79	3582
		0.53	1639	0.79	2388	1.41	4808	1.87	5920	3.16	9410	7.55	24953
13	90	87.3	3042	87.7	3152	93.8	3262	86.7	3302	90	3472	89.5	3582
		0.48	1651	0.71	2410	1.29	4816	1.69	5928	2.92	9519	6.79	24838
12	100	96	3042	98.3	3152	103	3262	97.5	3302	103	3472	97.3	3582
		0.44	1659	0.64	2430	1.32	4436	1.58	5934	2.6	9631	6.31	24979
10	112	108	3042	109	3152	109	3262	114	3302	116	3472	110	3582
		0.39	1668	0.61	2290	1.26	4466	1.38	5939	2.35	9701	5.81	25795
9	125	129	3042	130	3152	130	3262	123	3302	126	3472	126	3582
		0.37	1555	0.53	2335	1.12	4541	1.37	5898	2.16	9740	5.39	24000
8.3	140	145	3042	138	3152	138	3262	137	3302	141	3472	141	3582
		0.34	1570	0.51	2348	1.08	4563	1.26	5922	1.97	9781	4.97	24314
7.3	160	163	3042	157	3152	157	3262	156	3302	158	3472	158	3582
		0.31	1584	0.46	2377	0.97	4607	1.14	5942	1.78	9815	4.55	24593
6.4	180	183	3042	175	3152	175	3262	173	3302	179	3472	179	3582
		0.28	1597	0.42	2398	0.89	4638	1.03	5953	1.59	9845	4.12	24838
5.8	200	207	3042	197	3152	197	3262	195	3302	195	3472	195	3582
		0.25	1608	0.38	2418	0.81	4666	0.93	5960	1.48	9861	3.85	24979
5.2	224	233	3042			228	3262	229	3302			220	3582
		0.23	1619			0.71	4695	0.83	5963			3.47	25149
4.6	250	256	3042			250	3262	252	3302			253	3582
		0.21	1626			0.66	4711	0.74	5962			3.08	25306
4.1	280	289	3042			287	3262	277	3302			283	3582
		0.19	1634			0.58	4731	0.68	5960			2.8	25405
3.7	315	325	3042			316	3262	323	3302			313	3582
		0.17	1641			0.54	4742	0.59	5954			2.56	25480

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque

Motor rpm 870

Exact Ratio rpm, HP and Torque

Nom. Rpm	Nom. Ratio	Size of HWN3000 Reducer											
		30		31		32		33		34		35	
138	6.3	6.21	3042	6.09	3152	6.09	3262						
		1.52	609	4.06	1598	6.32	2487						
123	7.1	7.31	3042	6.90	3152	6.9	3262						
		1.52	714	3.38	1491	6.32	2814						
109	8	7.69	3042	8.16	3152	8.16	3262	8.14	3302	7.92	3472	7.92	3582
		1.52	750	3.37	1709	6.65	3378	8.66	4442	12.41	6260	13.07	6820
97	9	9.13	3042	8.80	3152	8.8	3262						
		1.52	885	3.10	1722	4.12	2341						
87	10	9.78	3042	10.3	3152	10.3	3262	10.3	3302	10.2	3472	10.2	3582
		1.52	946	2.91	1842	5.84	3701	7.60	4864	11.90	7675	13.07	8724
78	11.2	11.0	3042	11.4	3152	11.4	3262						
		1.52	1055	2.70	1928	3.49	2492						
70	12.5	12.8	3042	12.2	3152	12.2	3262	12.3	3302	12.6	3472	12.6	3582
		1.52	1222	2.58	1921	5.12	3901	6.74	5124	10.54	8315	13.07	10663
62	14	13.8	3042	13.8	3152	13.8	3262	14.5	3302	14.6	3472	14.6	3582
		1.52	1314	2.35	1973	4.69	4029	5.97	5315	9.57	8667	13.07	12213
54	16	16.2	3042	15.6	3152	15.6	3262	15.5	3302	16.1	3472	16.1	3582
		1.38	1390	2.15	2019	4.29	4139	5.68	5377	8.92	8872	13.07	13394
48	18	18.1	3042	17.6	3152	17.6	3262	17.5	3302	17.7	3472	17.7	3582
		1.25	1406	1.95	2062	3.90	4238	5.15	5479	8.27	9054	13.00	14639
44	20	20.4	3042	20.0	3152	20.0	3262	19.4	3302	20.4	3472	20.4	3582
		1.13	1421	1.76	2102	3.52	4327	4.73	5548	7.46	9266	12.34	15828
39	22.4	22.9	3042	22.9	3152	22.9	3262	22.1	3302	22.5	3472	22.5	3582
		1.02	1435	1.58	2139	3.23	4406	4.24	5621	6.90	9394	10.99	15511
35	25	27.4	3042	25.8	3152	23.3	3262	25.5	3302	25.8	3472	25.3	3582
		0.98	1526	1.42	2169	3.19	4460	3.74	5682	6.13	9541	13.63	20783
31	28	29.3	3042	27.4	3152	26.4	3262	27.2	3302	29.1	3472	29.1	3582
		0.93	1541	1.35	2183	2.86	4547	3.52	5704	5.59	9644	12.56	21869
28	31.5	32.9	3042	32.5	3152	30.0	3262	30.9	3302	31.6	3472	32.1	3582
		0.87	1562	1.17	2219	2.57	4618	3.14	5740	5.10	9704	12.25	22515
25	35.5	38.3	3042	34.4	3152	34.3	3262	34.3	3302	35.2	3472	35.5	3582
		0.76	1587	1.11	2229	2.29	4676	2.85	5762	4.63	9771	11.75	23104
22	40	41.3	3042	39.3	3152	38.7	3262	38.9	3302	39.5	3472	40.7	3582
		0.72	1598	0.99	2252	2.10	4717	2.54	5782	4.17	9831	10.52	23807
19	45			43.8	3152	41.1	3262	43.3	3302	44.7	3472	45.0	3582
				0.90	2269	1.99	4733	2.29	5794	3.69	9882	9.59	23829

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque



Speed Reducers

HWN SERIES 3000

Motor rpm 870 (Continued)

Exact Ratio rpm, HP and Torque													
Nom. Rmp	Nom. Ratio	Size of HWN3000 Reducer											
		30		31		32		33		34		35	
17	50	48.5	3042	49.2	3152	51.6	3262	48.8	3302	48.7	3472	51.7	3582
		0.62	1619	0.81	2284	1.62	4780	2.05	5804	3.42	9912	8.58	24254
16	56	54.4	3042	54.7	3152	58.9	3262	54.4	3302	52.8	3472	58.2	3582
		0.56	1632	0.84	2372	1.43	4799	1.99	5913	3.22	9874	7.78	24551
14	63	61.2	3042	65.0	3152	65.8	3262	61.7	3302	59.3	3472	63.2	3582
		0.50	1644	0.72	2408	1.39	4811	1.78	5925	2.90	9907	7.25	24726
12	71	68.8	3042	68.8	3152	73.8	3262	68.6	3302	67.1	3472	70.4	3582
		0.45	1655	0.69	2418	1.25	4820	1.61	5931	2.58	9936	6.51	24921
11	80	77.5	3042	78.6	3152	85.4	3262	77.9	3302	81.4	3472	79.0	3582
		0.40	1665	0.61	2440	1.10	4829	1.43	5936	2.46	9662	5.88	25094
10	90	87.3	3042	87.7	3152	93.8	3262	86.7	3302	90.0	3472	89.5	3582
		0.36	1673	0.55	2457	1.01	4833	1.29	5940	2.29	9716	5.27	25244
9	100	96.0	3042	98.3	3152	103	3262	97.5	3302	103	3472	97.3	3582
		0.33	1679	0.50	2473	1.06	4563	1.21	5942	2.03	9773	4.88	25329
8	112	108	3042	109	3152	109	3262	114	3302	116	3472	110	3582
		0.29	1687	0.49	2361	1.01	4584	1.05	5944	1.83	9810	4.47	26079
7	125	129	3042	130	3152	130	3262	123	3302	126	3472	126	3582
		0.26	1693	0.42	2396	0.90	4635	1.05	5949	1.68	9831	4.32	24726
6.2	140	145	3042	138	3152	138	3262	137	3302	141	3472	141	3582
		0.29	1591	0.40	2406	0.85	4649	1.00	5957	1.53	9854	3.96	24921
5.4	160	163	3042	157	3152	157	3262	156	3302	158	3472	158	3582
		0.27	1602	0.36	2428	0.76	4679	0.89	5962	1.38	9874	3.60	25094
4.8	180	183	3042	175	3152	175	3262	173	3302	179	3472	179	3582
		0.24	1613	0.33	2444	0.70	4700	0.80	5963	1.24	9891	3.24	25244
4.4	200	207	3042	197	3152	197	3262	195	3302	195	3472	195	3582
		0.22	1622	0.30	2460	0.63	4718	0.72	5962	1.15	9901	3.02	25329
3.9	224	233	3042			228	3262	229	3302			220	3582
		0.18	1631			0.56	4738	0.65	5957			2.71	25433
3.5	250	256	3042			250	3262	252	3302			253	3582
		0.16	1644			0.51	4748	0.57	5952			2.39	25527
3.1	280	289	3042			287	3262	277	3302			283	3582
		0.15	1650			0.45	4761	0.53	5947			2.16	25586
2.8	315	325	3042			316	3262	323	3302			313	3582
		0.13	1656			0.41	4769	0.46	5939			1.97	25630

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque

Combined-Motor rpm 1750

Exact Ratio rpm, HP and Torque

Nom. Rpm	Mon. Ratio	Size of HWN3000 Reducer							
		32		33		34		35	
7.8	224					223	3474		
						1.620	10148		
7	250					253	3474		
						1.430	10148		
6.3	280					289	3474		
						1.250	10148		
5.6	315					326	3474		
						1.110	10148		
4.9	355	381	3264	354	3304	346	3474	341	3584
		0.456	4758	0.614	5951	1.040	10148	2.930	26730
4.4	400	421	3264	375	3304	411	3474	386	3584
		0.412	4758	0.581	5951	0.878	10148	2.600	26730
3.9	450	443	3264	427	3304	435	3474	435	3584
		0.392	4758	0.508	5951	0.831	10148	2.450	26730
3.5	500	526	3264	476	3304	489	3474	491	3584
		0.330	4758	0.455	5951	0.738	10148	2.060	26730
3.1	560	563	3264	536	3304	556	3474	558	3584
		0.308	4758	0.406	5951	0.650	10148	1.950	26730
2.8	630	631	3264	620	3304	635	3474	639	3584
		0.275	4758	0.351	5951	0.568	10148	1.710	26730
2.5	710	734	3264	734	3304	717	3474	720	3584
		0.239	4636	0.326	5951	0.504	10148	1.530	26730
2.2	800	792	3264	837	3304	761	3474	765	3584
		0.222	4636	0.288	5951	0.475	10148	1.360	26730
1.9	900	931	3264	933	3304	904	3474	898	3584
		0.188	4636	0.255	5951	0.400	10148	1.170	26730
1.8	1000	1044	3264	1013	3304A	956	3474	1013	3584
		0.168	4636	0.305	5951	0.378	10148	1.040	26730
1.6	1120	1174	3264	1119	3304A	1119	3474	1075	3584
		0.150	4636	0.276	5951	0.454	10148	0.979	26730
1.4	1250	1319	3264	1178	3304A	1278	3474	1276	3584
		0.133	4636	0.262	5951	0.397	10148	0.825	26730
1.3	1400	1469	3264	1398	3304A	1442	3474	1350	3584
		0.133	3782	0.221	5951	0.352	10148	0.780	26730
1.1	1600	1584	3264	1498	3304A	1531	3474	1543	3584
		0.124	3782	0.206	5951	0.332	10148	0.682	26730
0.97	1800	1864	3264	1677	3304A	1818	3474	1722	3584
		0.105	3782	0.184	5951	0.280	10148	0.611	26730
0.88	2000	2089	3264	1953	3304A	1923	3474	2026	3584
		0.094	3782	0.158	5951	0.264	10148	0.613	26730
0.78	2240	2349	3264	2106	3304A	2197	3474	2150	3584
		0.083	3782	0.146	5951	0.231	10148	0.578	26730

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque

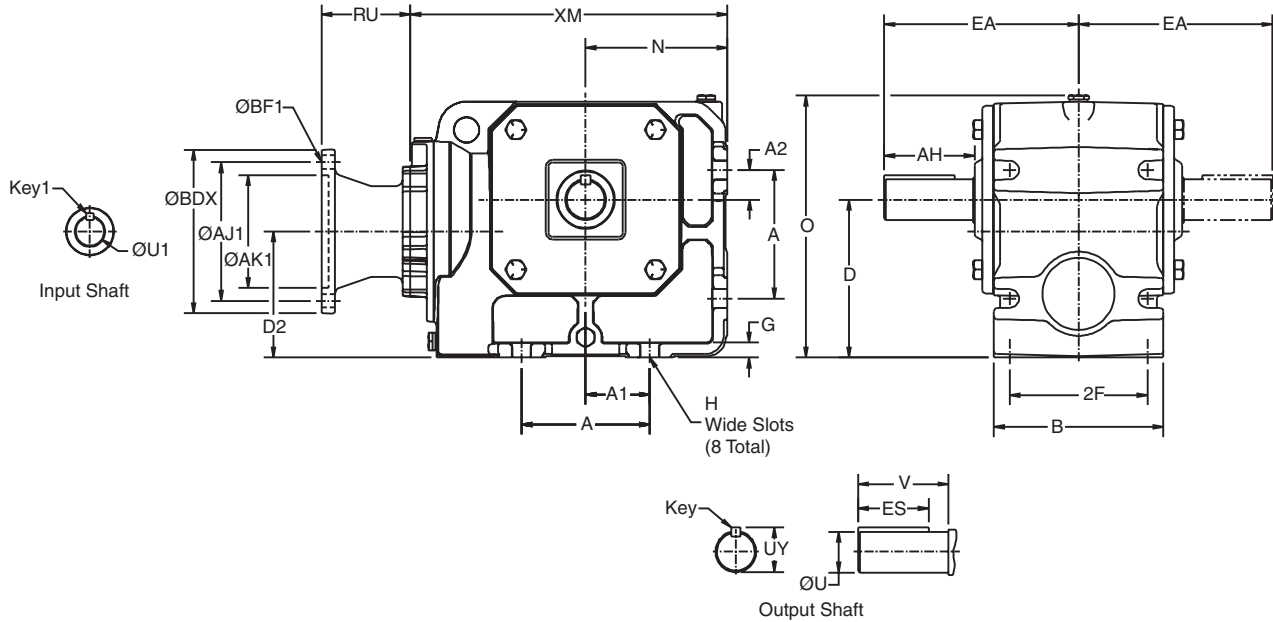
Combined-Motor rpm 1750 (Continued)

Exact Ratio rpm, HP and Torque									
Nom. Rpm	Nom. Ratio	Size of HWN3000 Reducer							
		32		33		34		35	
0.7	2500	2641	3264	2477	3304A	2452	3474	2553	3584
		0.074	3782	0.124	5951	0.207	10148	0.487	26730
0.63	2800	2693	3264	2776	3304A	2750	3474	2700	3584
		0.073	3782	0.111	5951	0.185	10148	0.460	26730
0.56	3150	3168	3264	3122	3304A	3184	3474	3086	3584
		0.062	3782	0.099	5951	0.160	10148	0.403	26730
0.49	3550	3550	3264	3510	3304A	3496	3474	3444	3584
		0.055	3782	0.088	5951	0.145	10148	0.361	26730
0.44	4000	3992	3264	3956	3304A	4008	3474	3862	3584
		0.049	3782	0.078	5951	0.127	10148	0.322	26730
0.39	4500	4488	3264	4455	3304A	4411	3475	4471	3584
		0.044	3782	0.069	5951	0.118	10148	0.278	26730
0.35	5000	5059	3264	4901	3304A	4975	3475	4909	3584
		0.039	3782	0.063	5951	0.104	10148	0.253	26730
0.31	5600	5697	3264	5530	3304A	5629	3475	5629	3584
		0.035	3782	0.056	5951	0.092	10148	0.221	26730
0.28	6300	6267	3264	6221	3304A	6396	3475	6396	3585
		0.030	3782	0.050	5951	0.081	10148	0.198	26730
0.25	7100	7072	3264	7089	3304A	7310	3475	7310	3585
		0.028	3782	0.044	5951	0.071	10148	0.174	26730
0.22	8000	7956	3264	7991	3304A	8248	3475	8248	3585
		0.024	3782	0.041	5951	0.063	10148	0.154	26730
0.19	9000			8998	3304A	8753	3475	8753	3585
				0.037	5951	0.059	10148	0.145	26730
0.18	10000			9898	3304A	10394	3475	10394	3585
				0.032	5951	0.050	10148	0.122	26730
0.16	11200					10993	3475	10993	3585
						0.047	10148	0.115	26730
0.14	12500					12564	3475	12564	3585
						0.041	10148	0.101	26730

HWN Series

Exact ratio	Gear Frame
Input H.P.	Output Torque

2-Stage Output Shafted Foot Mount HWN30 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	17.83

Output Shaft

Gear Frame	U ³	V	AH	EA	ES	UY	Key
30	1.000	1.82	1.99	4.53	1.50	1.11	1/4 Sq.
31	1.250	2.15	2.34	5.28	1.75	1.36	1/4 Sq.
32	1.375	2.55	2.77	6.30	2.25	1.52	5/16 Sq.
33	1.625	3.61	3.61	7.74	2.75	1.79	3/8 Sq.
34	1.750	2.98	2.98	7.68	2.50	1.91	3/8 Sq.
35	2.375	4.68	4.68	10.04	3.75	2.65	5/8 Sq.

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU					
							30	31	32	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26	5.26
213TC/215TC	7.25	8.50	.50	1.375	5/16 Sq.	9.00	N/A	N/A	N/A	5.26	5.26	5.26
254TC/256TC	7.25	8.50	.50	1.625	3/8 Sq.	9.00	N/A	N/A	N/A	N/A	N/A	5.88

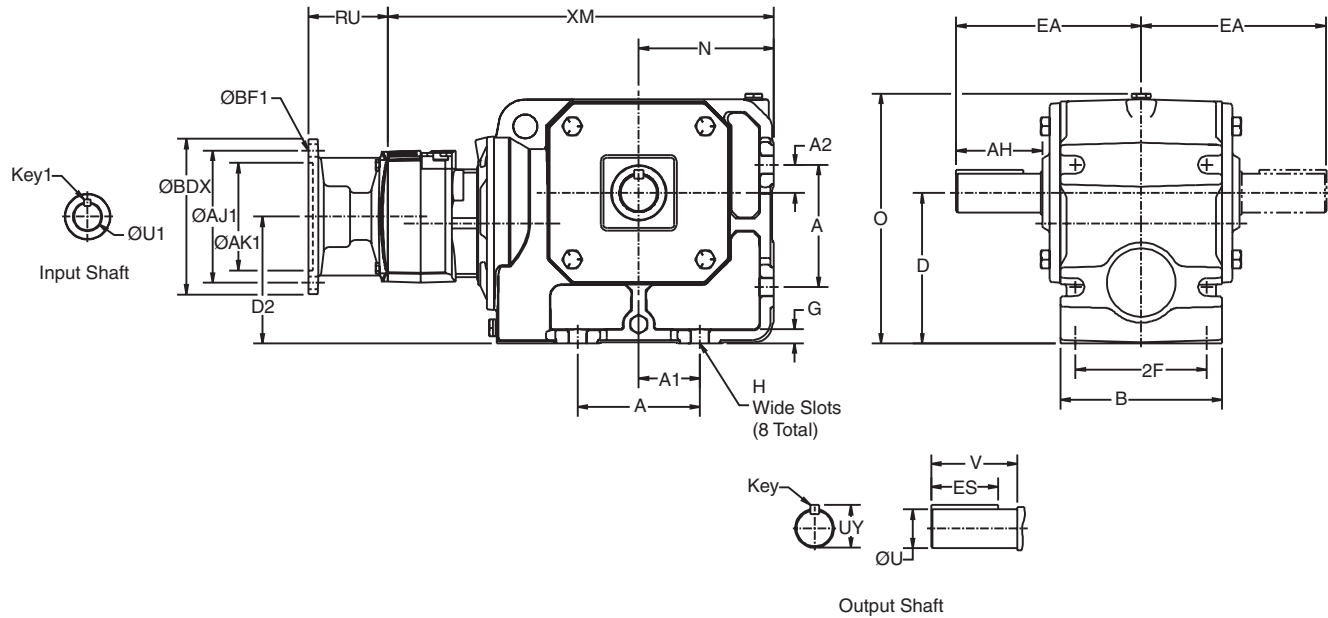
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Output Shafted Foot Mount HWN32 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	19.63 ⁴
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	24.82

Output Shaft

Gear Frame	U ³	V	AH	EA	ES	UY	Key
32	1.375	2.55	2.77	6.30	2.25	1.52	5/16 Sq.
33	1.625	3.61	3.61	7.74	2.75	1.79	3/8 Sq.
34	1.75	2.98	2.98	7.68	2.50	1.91	3/8 Sq.
35	2.375	4.68	4.68	10.04	3.75	2.65	5/8 Sq.

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU				
							32	33A	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

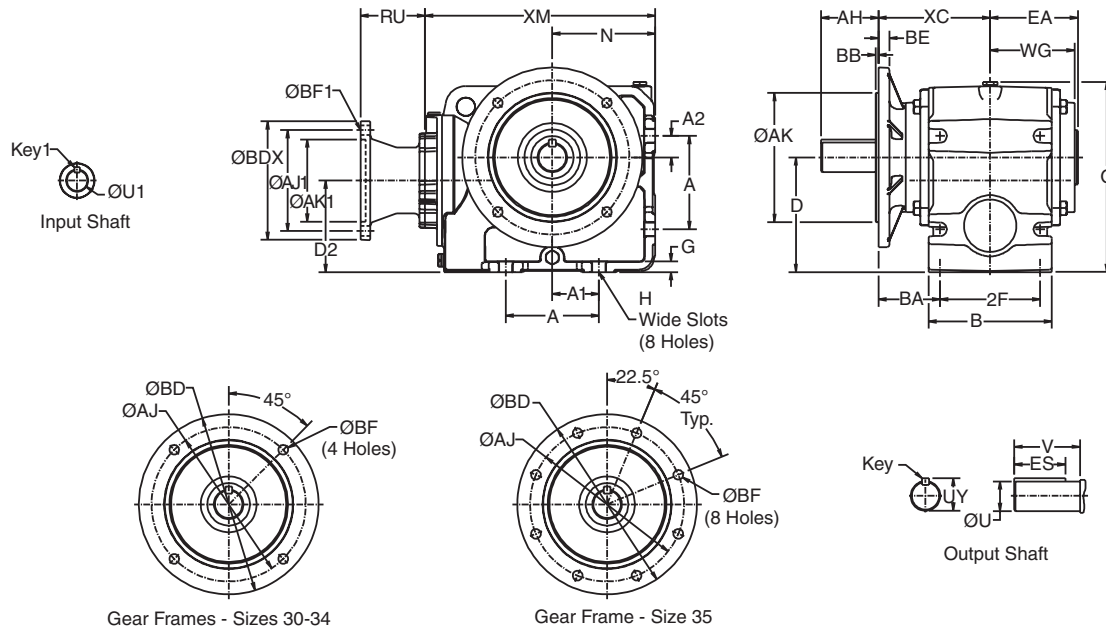
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ XM dimension is 16.15" for frame 33A.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

**2-Stage Output Shafted Flange Mount
HWN30 - 35**



Gear Frames - Sizes 30-34

Gear Frame - Size 35

HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	EA	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	3.17	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.18	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.90	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.83	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.34	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.48	6.29	17.83

Gear Frame	Flange									Output Shaft					
	Flange Code	AJ	AK	BA	BB	BD	BE	BF	XC	U ³	V	AH	ES	UY	Key
30	5	5.120	4.331	2.07	.14	6.3	.39	.35	4.04	1.000	1.97	1.95	1.75	1.11	1/4 Sq.
	6	4.528	3.74	1.99	.12	5.51	.31	.35	3.96	1.000	1.97	2.03	1.75	1.11	1/4 Sq.
31	5	6.496	5.117	2.59	.14	7.89	.47	.44	4.76	1.250	2.36	2.36	1.88	1.36	1/4 Sq.
32	5	6.496	5.117	2.76	.14	7.89	.47	.44	5.48	1.375	2.76	2.76	2.25	1.52	5/16 Sq.
33	5	8.465	7.086	3.38	.16	9.84	.59	.53	6.13	1.625	3.42	3.15	3.00	1.79	3/8 Sq.
34	5	8.465	7.086	3.72	.16	9.84	.59	.53	6.67	1.750	3.77	3.54	3.50	1.91	3/8 Sq.
35	5	11.810	9.842	4.16	.20	13.78	.71	.69	8.10	2.375	4.72	4.72	4.00	2.65	5/8 Sq.

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU							
							30	31	32	33	34	35		
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26	5.26	5.26	5.26
213TC/215TC	7.25	8.50	.50	1.375	5/16 Sq.	9.00	N/A	N/A	N/A	5.26	5.26	5.26	5.26	5.26
254TC/256TC	7.25	8.50	.50	1.625	3/8 Sq.	9.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.88

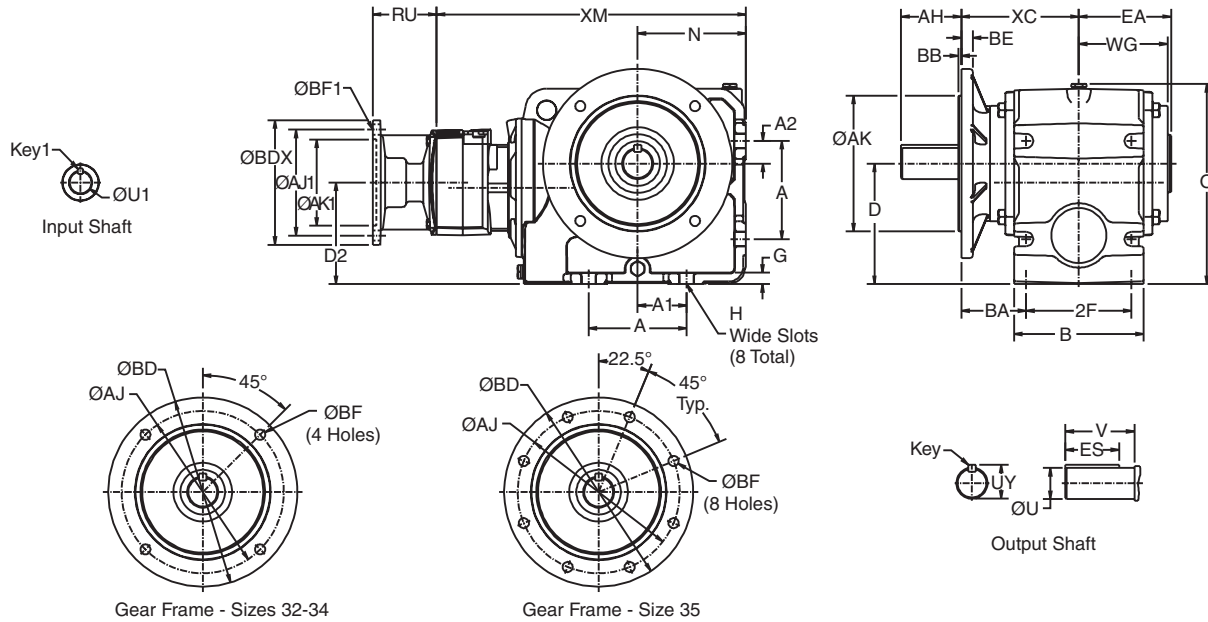
¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Output Shafted Flange Mount HWN32 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	EA	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.90	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.83	4.64	19.63 ⁴
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.34	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.48	6.29	24.82

Output Shaft

Gear Frame	U ³	V	AH	ES	UY	Key
32	1.375	2.76	2.76	2.25	1.52	5/16 Sq.
33	1.625	3.42	3.15	3.00	1.79	3/8 Sq.
34	1.750	3.77	3.54	3.50	1.91	3/8 Sq.
35	2.375	4.72	4.72	4.00	2.65	5/8 Sq.

Flange

AJ	AK	BA	BB	BD	BE	BF	XC
6.496	5.117	2.76	.14	7.89	.47	.44	5.48
8.465	7.086	3.38	.16	9.84	.59	.53	6.13
8.465	7.086	3.72	.16	9.84	.59	.53	6.67
11.810	9.842	4.16	.20	13.78	.71	.69	8.10

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU				
							32	33A	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

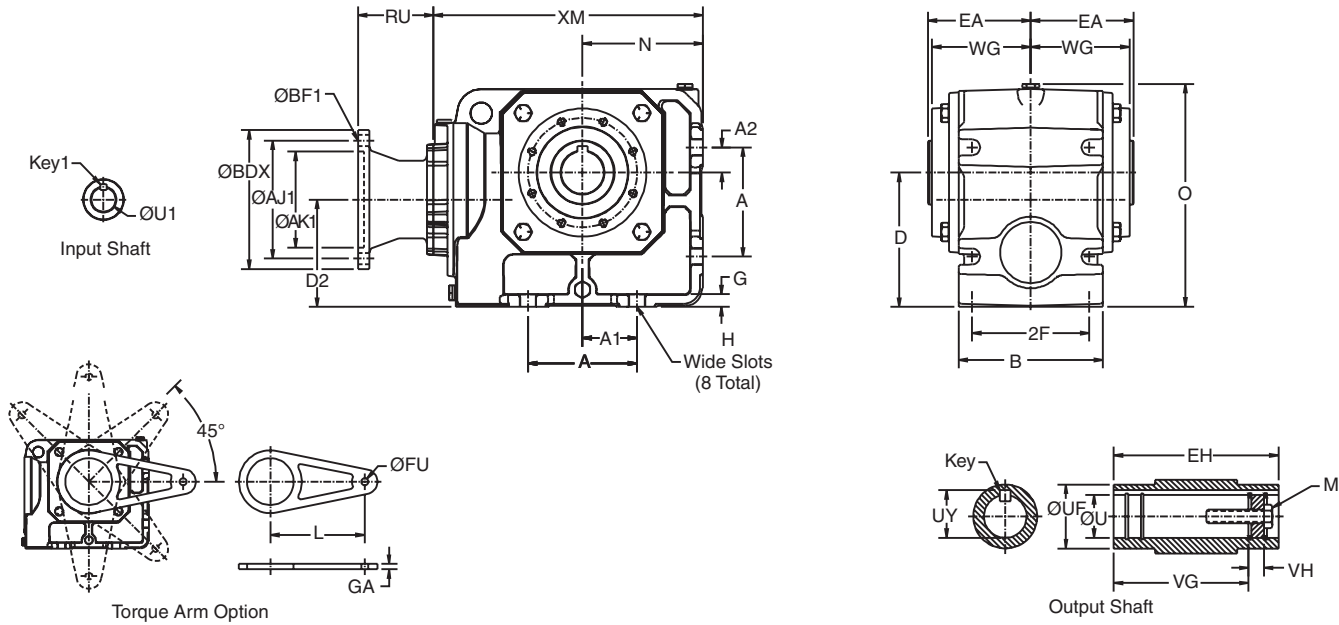
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ XM dimension is 16.15" for frame 33A.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Finished Bore Hollow Shaft HWN30 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.1
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.83

Output Shaft

Gear Frame	M	U ^{3,6}	EA	EH	UF	UY	VG	VH	Key
30	7/16-14 x 1	1.250	3.17	6.34	2.125	1.37	5.58	.37	1/4 Sq.
31	1/2-13 x 1	1.375	3.18	6.36	2.500	1.52	5.62	.37	5/16 Sq.
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Torque Arm⁵

L	FU	GA
5.12	.41	.25
6.30	.41	.25
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU					
							30	31	32	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26	5.26
213TC/215TC	7.25	8.50	.50	1.375	5/16 Sq.	9.00	N/A	N/A	N/A	5.26	5.26	5.26
254TC/256TC	7.25	8.50	.50	1.625	3/8 Sq.	9.00	N/A	N/A	N/A	N/A	N/A	5.88

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

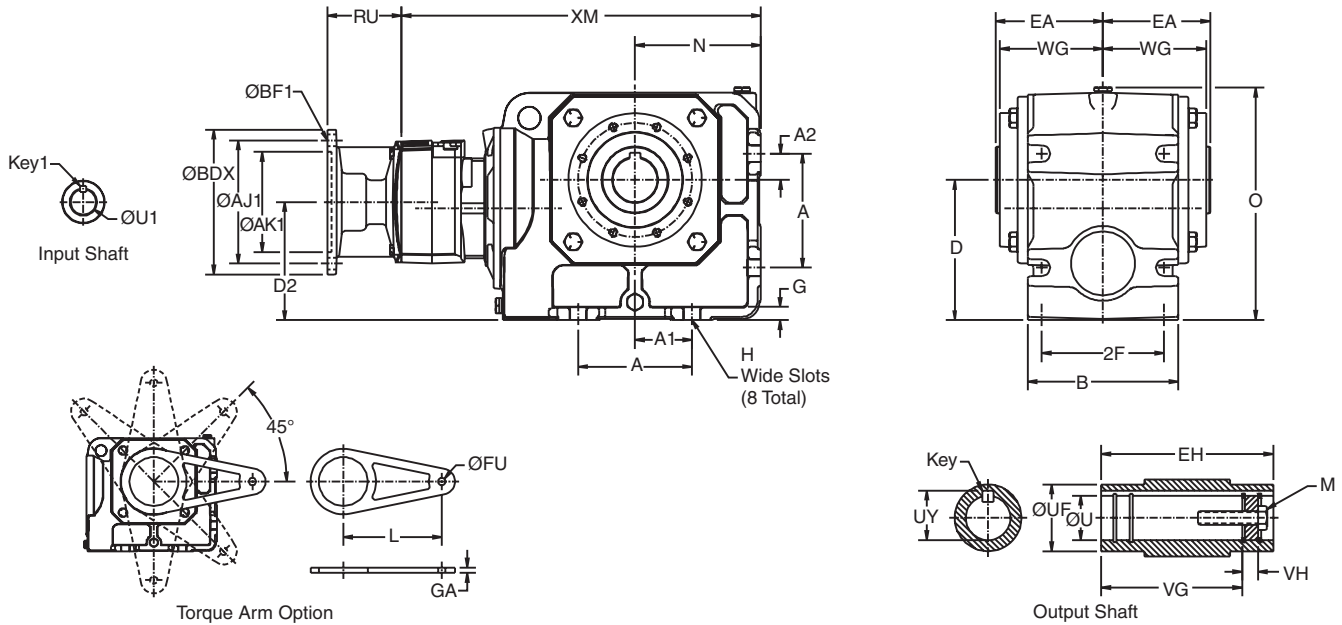
⁴ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁵ For details of torque arm, refer to page C-97.

⁶ Refer to Tapered Bushed designs if driven shaft diameter differs from "U" dimensions offered above.

⁷ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Finished Bore Hollow Shaft HWN32 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	19.63 ⁴
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	24.82

HWN Series

Output Shaft

Gear Frame	M	U ^{3,7}	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Torque Arm⁵

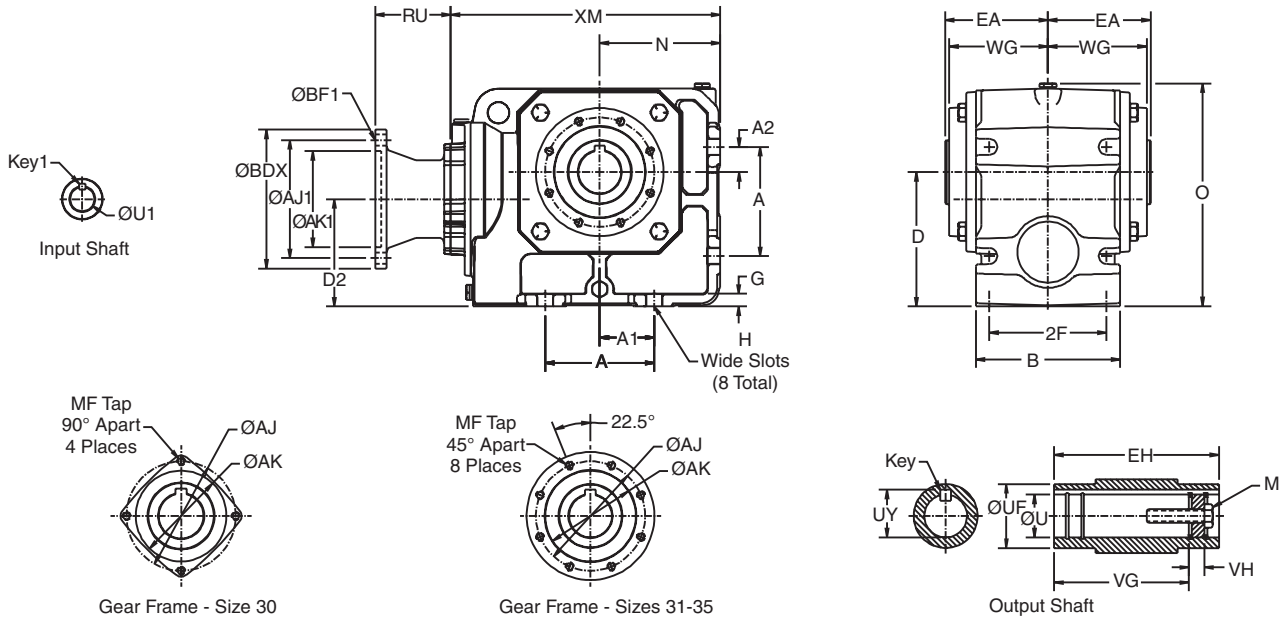
L	FU	GA
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU				
							32	33A	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.
⁴ XM dimension is 16.15" for frame 33A.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁶ For details of torque arm, refer to page C-97.
⁷ Refer to Tapered Bushed designs if driven shaft diameter differs from "U" dimensions offered above.
⁸ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Finished Bore Hollow Shaft Face Mount
HWN30 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.83

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
30	7/16-14 x 1	1.250	3.17	6.34	2.125	1.37	5.58	.37	1/4 Sq.
31	1/2-13 x 1	1.375	3.18	6.36	2.500	1.52	5.62	.37	5/16 Sq.
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Face

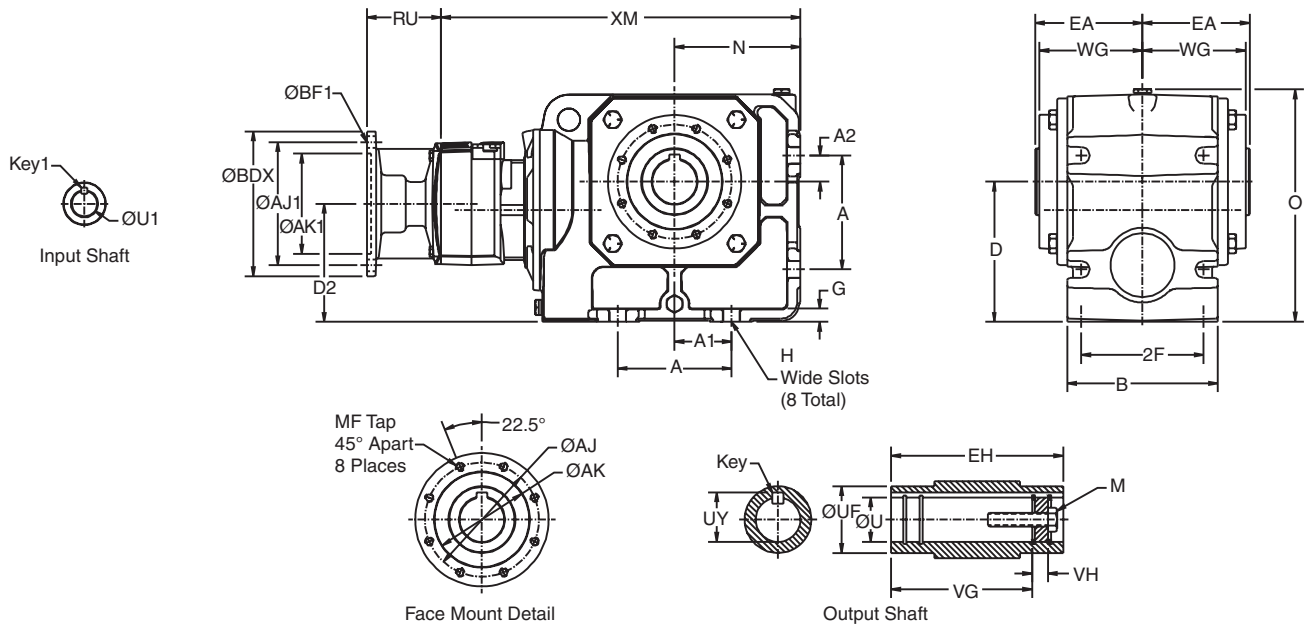
AJ	AK	MF
3.625	3.000	5/16-18 x .56
4.250	3.625	5/16-18 x .59
4.250	3.625	5/16-18 x .59
5.125	4.250	3/8-16 x .62
5.125	4.250	3/8-16 x .62
7.250	6.250	1/2-13 x .81

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU					
							30	31	32	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26	5.26
213TC/215TC	7.25	8.50	.50	1.375	5/16 Sq.	9.00	N/A	N/A	N/A	5.26	5.26	5.26
254TC/256TC	7.25	8.50	.50	1.625	3/8 Sq.	9.00	N/A	N/A	N/A	N/A	N/A	5.88

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.
⁴ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Finished Bore Hollow Shaft Face Mount HWN32 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	19.63 ⁴
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	24.82

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Face

AJ	AK	MF
4.25	3.625	5/16-18 x .59
5.125	4.250	3/8-16 x .62
5.125	4.250	3/8-16 x .62
7.250	6.250	1/2-13 x .81

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU				
							32	33A	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

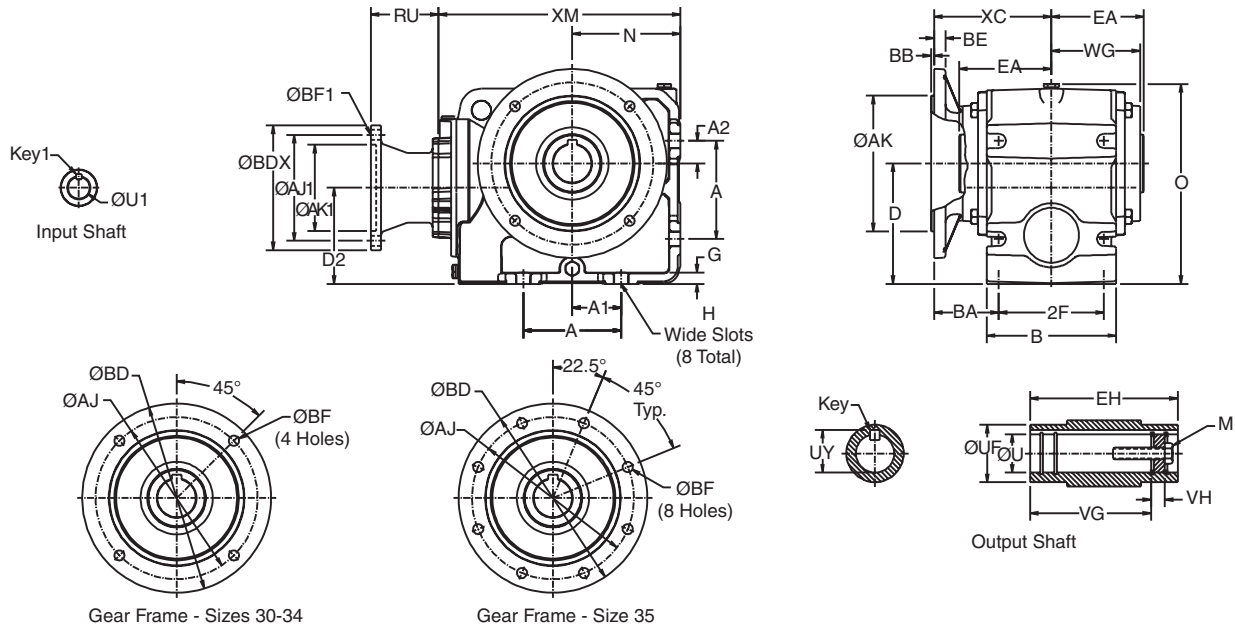
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ XM dimension is 16.15" for frame 33A.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

**2-Stage Finished Bore Hollow Shaft Flange Mount
HWN30 - 35**



Gear Frame - Sizes 30-34

Gear Frame - Size 35

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.83

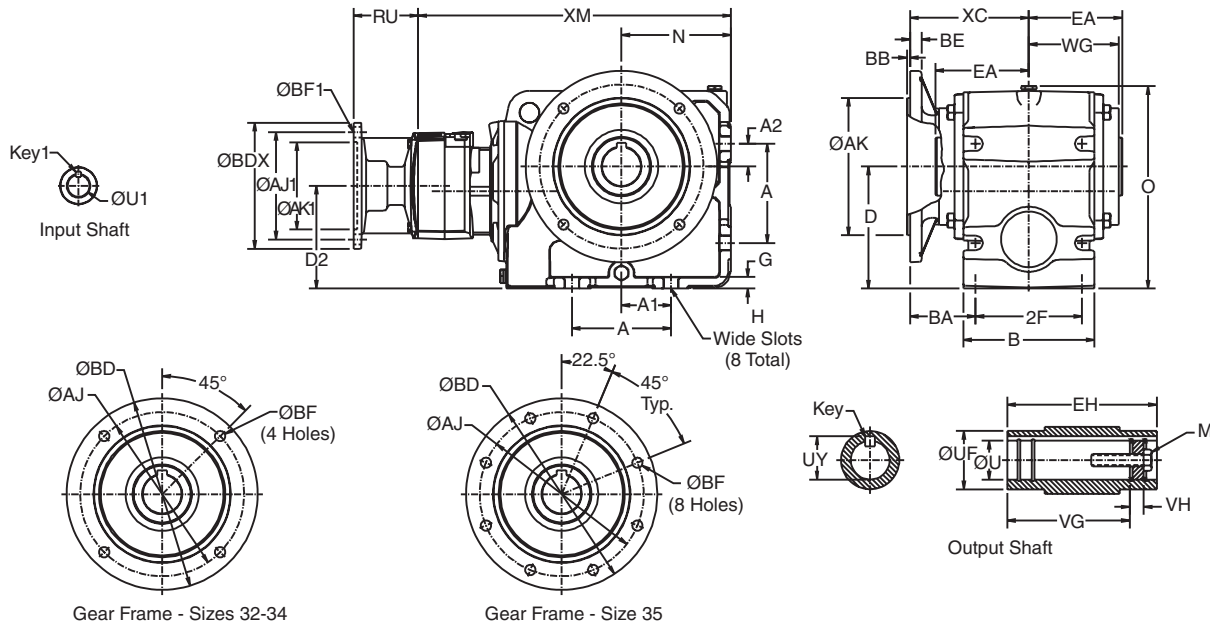
Gear Frame	Flange									Output Shaft							
	Flange Code	AJ	AK	BA	BB	BD	BE	BF	XC	M	U ³	EA	EH	UF	VG	UY	Key
30	5	5.120	4.331	2.07	.14	6.3	.39	.35	4.04	7/16-14 x 1	1.250	3.17	6.34	2.125	5.58	.37	1/4 Sq.
	6	4.528	3.74	1.99	.12	5.51	.31	.35	3.96	7/16-14 x 1	1.250	3.17	6.34	2.500	5.58	.37	1/4 Sq.
31	5	6.496	5.117	2.59	.14	7.89	.47	.44	4.76	1/2-13 x 1	1.375	3.18	6.36	2.875	5.62	.37	5/16 Sq.
32	5	6.496	5.117	2.76	.14	7.89	.47	.44	5.48	5/8-11 x 1 3/4	1.500	3.90	7.80	3.000	6.83	.49	3/8 Sq.
33	5	8.465	7.086	3.38	.16	9.84	.59	.53	6.13	5/8-11 x 1 3/4	2.000	4.83	9.66	3.375	8.43	.72	1/2 Sq.
34	5	8.465	7.086	3.72	.16	9.84	.59	.53	6.67	5/8-11 x 1 3/4	2.000	5.34	10.68	5.500	9.45	.72	1/2 Sq.
35	5	11.810	9.842	4.16	.20	13.78	.71	.69	8.10	3/4-102x 2	2.375	6.48	12.96	4.000	11.51	.85	5/8 Sq.

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU						
							30	31	32	33	34	35	
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26	5.26	5.26
213TC/215TC	7.25	8.50	.50	1.375	5/16 Sq.	9.00	N/A	N/A	N/A	5.26	5.26	5.26	5.26
254TC/256TC	7.25	8.50	.50	1.625	3/8 Sq.	9.00	N/A	N/A	N/A	N/A	N/A	N/A	5.88

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.
⁴ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Finished Bore Hollow Shaft Flange Mount HWN32 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	19.63 ⁴
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	24.82

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Flange

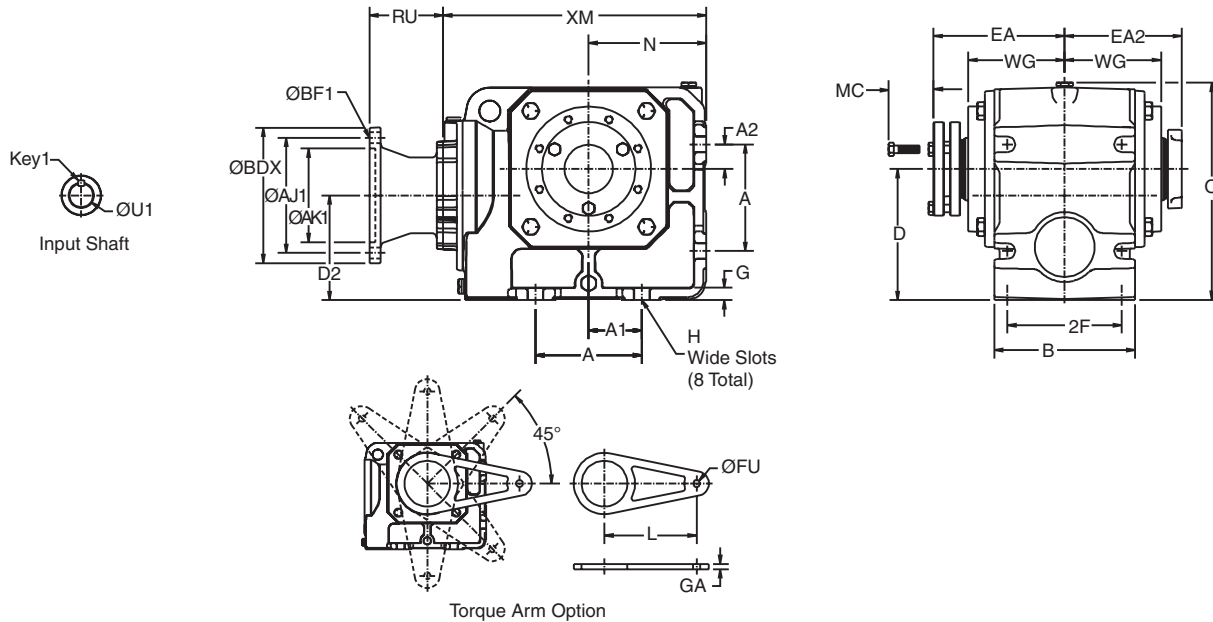
AJ	AK	BA	BB	BD	BE	BF	XC
6.496	5.117	2.76	.14	7.89	.47	.44	5.48
8.465	7.086	3.38	.16	9.84	.59	.53	6.13
8.465	7.086	3.72	.16	9.84	.59	.53	6.67
11.810	9.842	4.16	.20	13.78	.71	.69	8.10

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU				
							32	33A	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ XM dimension is 16.15" for frame 33A.
⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Taper Bushed Shaft Mount HWN30 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	10.22
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	12.10
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	12.64
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	13.71
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.83

Output Shaft

Gear Frame	EA	EA2	MC ⁵	Bushing Bores ³	
				Min.	Max.
30	4.92	4.34	1.75	1 1/8	1 7/16
31	4.60	4.02	1.75	1 1/8	1 7/16
32	5.80	5.21	1.88	1 7/16	1 15/16
33	6.73	6.18	1.88	1 3/4	2 3/16
34	7.36	6.82	1.88	1 7/8	2 7/16
35	8.70	8.10	2.25	2 7/16	3 7/16

Torque Arm⁷

L	FU	GA
5.12	.41	.25
6.30	.41	.25
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.2	.65	.50

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU						
							30	31	32	33	34	35	
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.54	3.54	3.54	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26	5.26	5.26
213TC/215TC	7.25	8.50	.50	1.375	5/16 Sq.	9.00	N/A	N/A	N/A	5.26	5.26	5.26	5.26
254TC/256TC	7.25	8.50	.50	1.625	3/8 Sq.	9.00	N/A	N/A	N/A	N/A	N/A	N/A	5.88

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Refer to pages C-102 and C-103 for a listing of all inch and metric bushing bore sizes available.

⁴ Driven shaft entry can be from either side of gear housing.

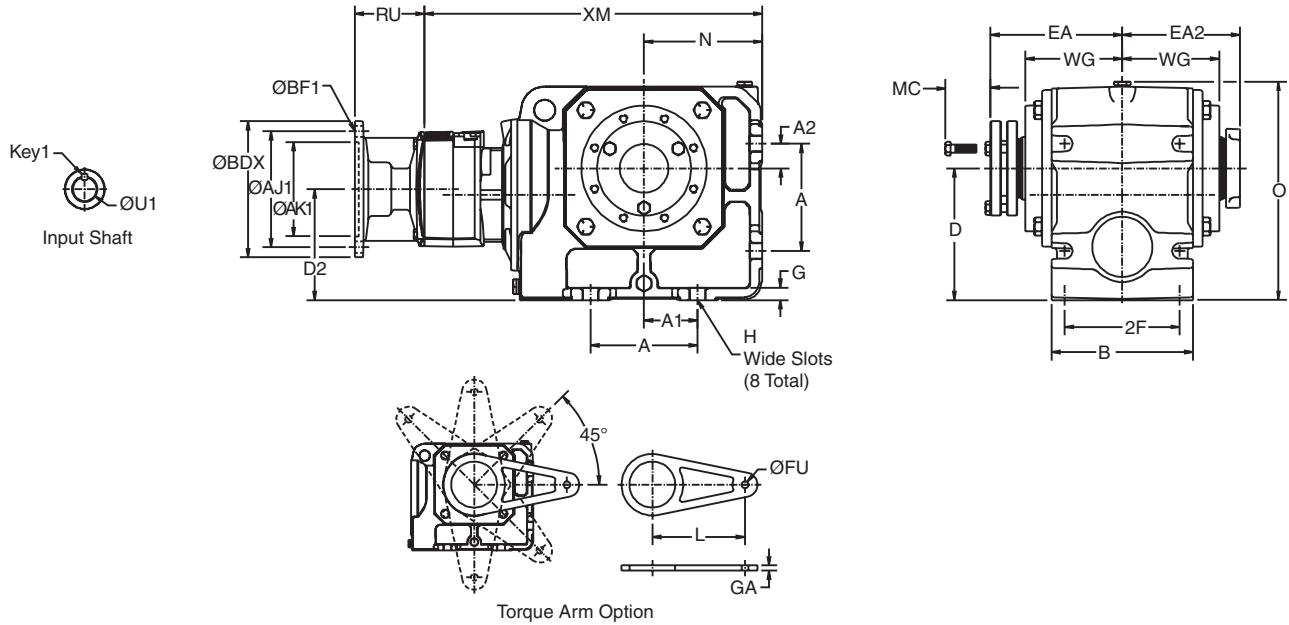
⁵ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁶ Bushing and dust cap can be installed opposite of how they are shown above.

⁷ For details of torque arm, refer to page C-97.

⁸ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96

Combined Taper Bushed Shaft Mount HWN32 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	19.63 ⁴
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	20.70
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	24.82

HWN Series

Output Shaft

Gear Frame	EA	EA2	MC ⁶	Bushing Bores ³	
				Min.	Max.
32	5.80	5.21	1.88	1 7/16	1 15/16
33	6.73	6.18	1.88	1 3/4	2 3/16
34	7.36	6.82	1.88	1 7/8	2 7/16
35	8.70	8.10	2.25	2 7/16	3 7/16

Torque Arm⁸

L	FU	GA
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Motor Frame	AJ1	AK1	BF1	U1	Key1	BDX	RU				
							32	33A	33	34	35
56C	5.88	4.50	.38	.625	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
143TC/145TC	5.88	4.50	.38	.875	3/16 Sq.	6.50	3.33	3.33	3.54	3.54	3.54
182TC/184TC	7.25	8.50	.50	1.125	1/4 Sq.	9.00	N/A	N/A	5.26	5.26	5.26

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Refer to pages C-102 and C-103 for a listing of all inch and metric bushing bore sizes available.

⁴ XM dimension is 16.15" for frame 33A.

⁵ Driven shaft entry can be from either side of gear housing.

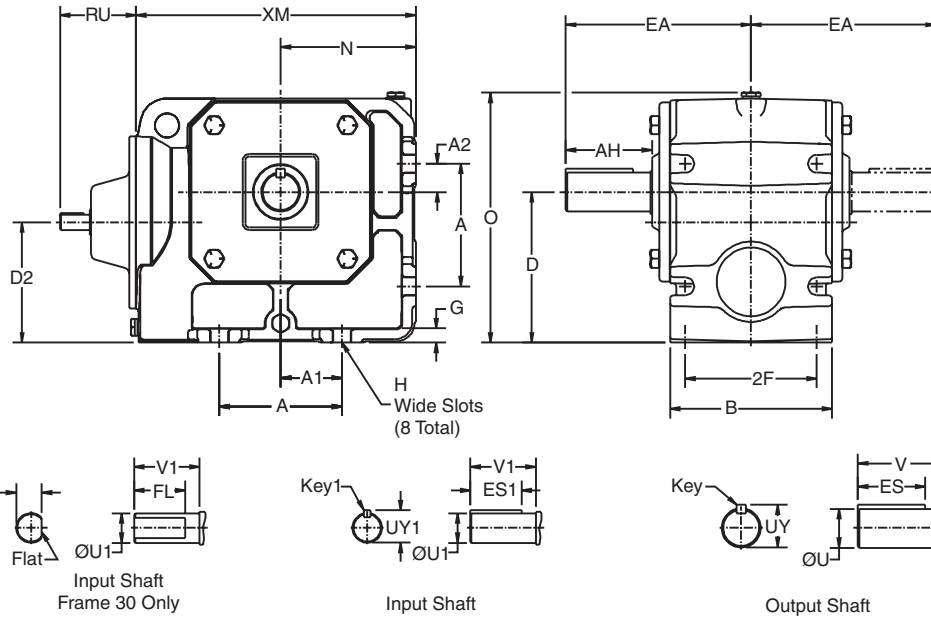
⁶ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁷ Bushing and dust cap can be installed opposite of how they are shown above.

⁸ For details of torque arm, refer to page C-97.

⁹ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Output Shafted Foot Mount HWN30 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	9.28
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	11.16
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	17.05

Output Shaft

Gear Frame	U ³	V	AH	EA	ES	UY	Key
30	1.00	1.82	1.99	4.53	1.5	1.11	1/4 Sq.
31	1.25	2.15	2.34	5.28	1.75	1.36	1/4 Sq.
32	1.375	2.55	2.77	6.30	2.25	1.52	5/16 Sq.
33	1.625	3.61	3.61	7.74	2.75	1.79	3/8 Sq.
34	1.750	2.98	2.98	7.68	2.50	1.91	3/8 Sq.
35	2.375	4.68	4.68	10.04	3.75	2.65	5/8 Sq.

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
30	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
31	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
32	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
33	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

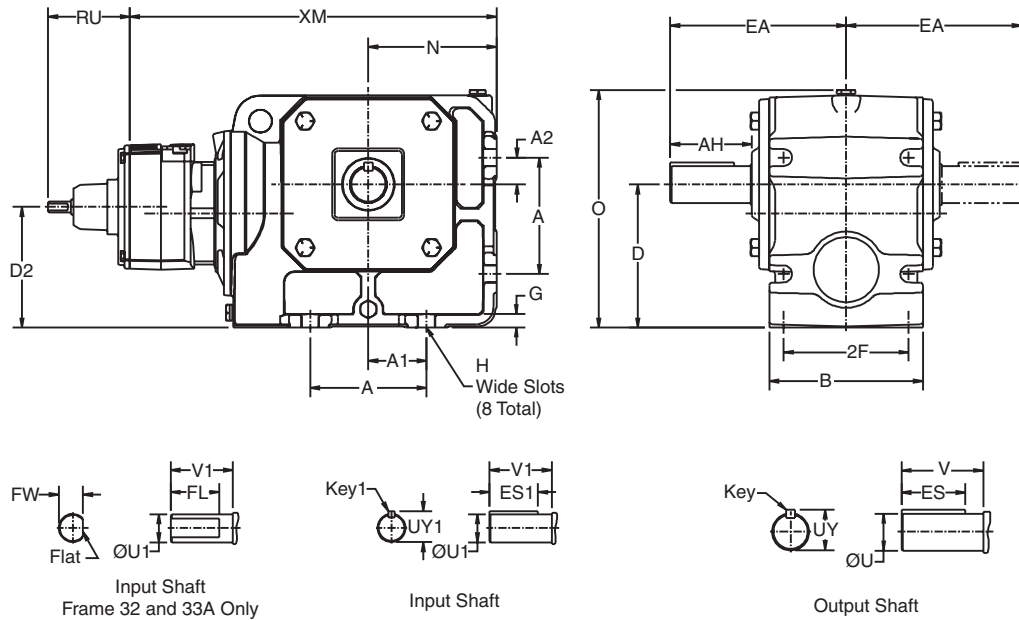
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Output Shafted Foot Mount HWN32 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	18.69 ⁶
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	19.76
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	23.88

HWN Series

Output Shaft

Gear Frame	U ³	V	AH	EA	ES	UY	Key
32	1.375	2.55	2.77	6.30	2.25	1.52	5/16 Sq.
33	1.625	3.61	3.61	7.74	2.75	1.79	3/8 Sq.
34	1.750	2.98	2.98	7.68	2.50	1.91	3/8 Sq.
35	2.375	4.68	4.68	10.04	3.75	2.65	5/8 Sq.

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
32, 33A	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
33, 34, 35	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

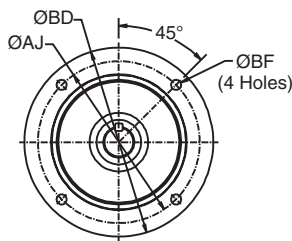
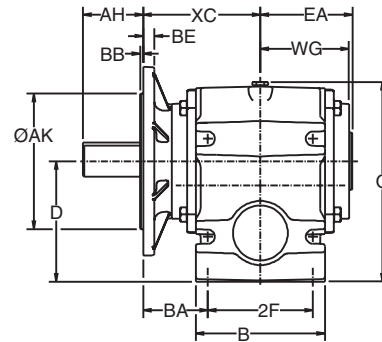
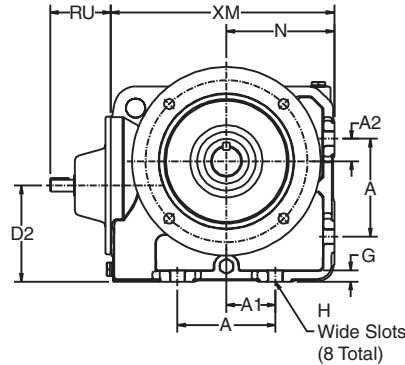
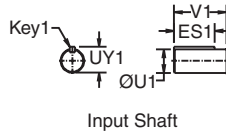
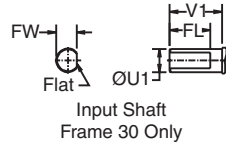
³ Output shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

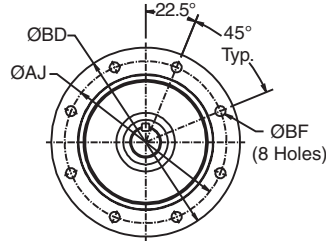
⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

⁶ XM dimension is 16.15" for frame 33A.

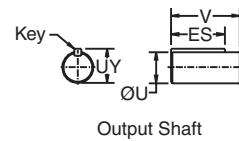
2-Stage Output Shafted Flange Mount HWN30 - 35



Gear Frame - Sizes 30-34



Gear Frame - Size 35



Output Shaft

HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	EA	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	3.17	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.18	3.00	9.28
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.90	3.72	11.16
33	5.12	2.56	1.18	6.76	6.29	5.03	5.5	.59	.74	5.65	10.44	4.83	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.34	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.48	6.29	17.05

Gear Frame	Flange									Output Shaft					
	Flange Code	AJ	AK	BA	BB	BD	BE	BF	XC	U ³	V	AH	ES	UY	Key
30	5	5.120	4.331	2.07	.14	6.3	.39	.35	4.04	1.000	1.97	1.95	1.75	1.11	1/4 Sq.
	6	4.528	3.74	1.99	.12	5.51	.31	.35	3.96	1.000	1.97	2.03	1.75	1.11	1/4 Sq.
31	5	6.496	5.117	2.59	.14	7.89	.47	.44	4.76	1.250	2.36	2.36	1.88	1.36	1/4 Sq.
32	5	6.496	5.117	2.76	.14	7.89	.47	.44	5.48	1.375	2.76	2.76	2.25	1.52	5/16 Sq.
33	5	8.465	7.086	3.38	.16	9.84	.59	.53	6.13	1.625	3.42	3.15	3.00	1.79	3/8 Sq.
34	5	8.465	7.086	3.72	.16	9.84	.59	.53	6.67	1.750	3.77	3.54	3.50	1.91	3/8 Sq.
35	5	11.810	9.842	4.16	.20	13.78	.71	.69	8.10	2.375	4.72	4.72	4.00	2.65	5/8 Sq.

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
30	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
31	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
32	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
33	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

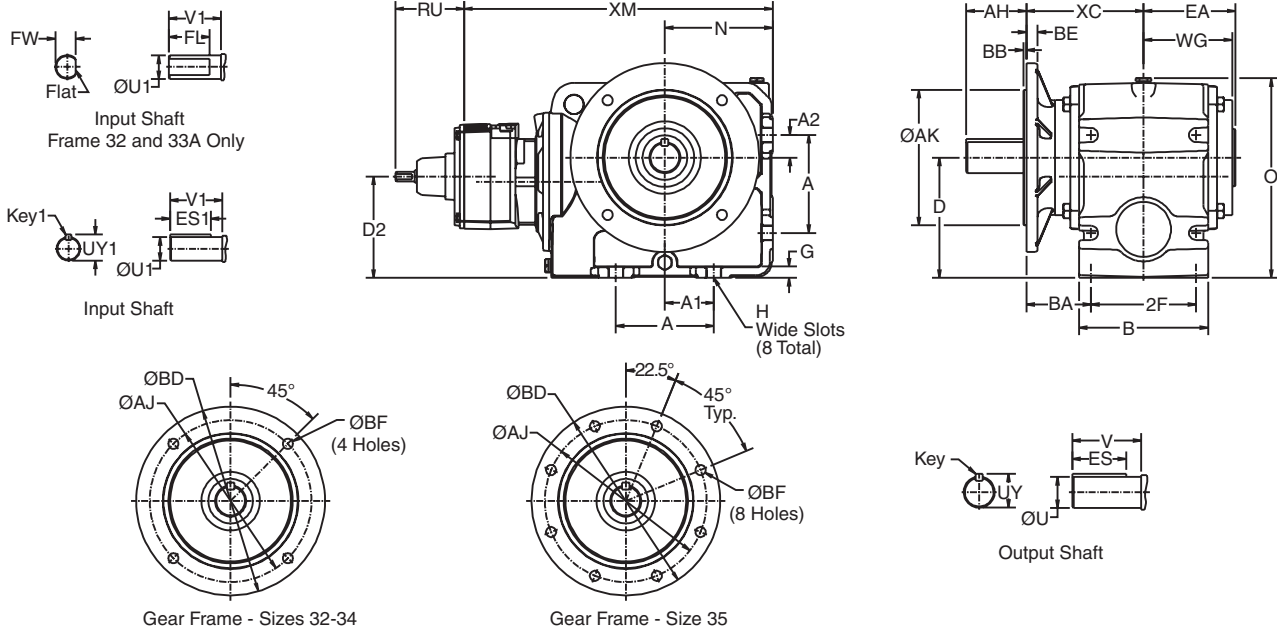
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Output Shafted Flange Mount HWN32 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	EA	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.90	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.83	4.64	18.69 ⁶
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.34	5.15	19.76
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.48	6.29	23.88

Output Shaft

Gear Frame	U ³	V	AH	ES	UY	Key
32	1.375	2.76	2.76	2.25	1.52	5/16 Sq.
33	1.625	3.42	3.15	3.00	1.79	3/8 Sq.
34	1.750	3.77	3.54	3.50	1.91	3/8 Sq.
35	2.375	4.72	4.72	4.00	2.65	5/8 Sq.

Flange

AJ	AK	BA	BB	BD	BE	BF	XC
6.496	5.117	2.76	.14	7.89	.47	.44	5.48
8.465	7.086	3.38	.16	9.84	.59	.53	6.13
8.465	7.086	3.72	.16	9.84	.59	.53	6.67
11.810	9.842	4.16	.20	13.78	.71	.69	8.10

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
32, 33A	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
33, 34, 35	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

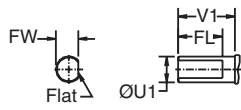
³ Output shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

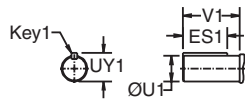
⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

⁶ XM dimension is 16.15" for frame 33A.

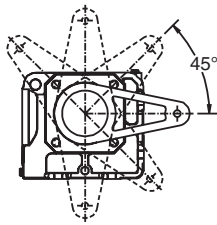
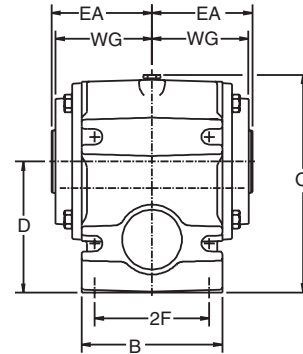
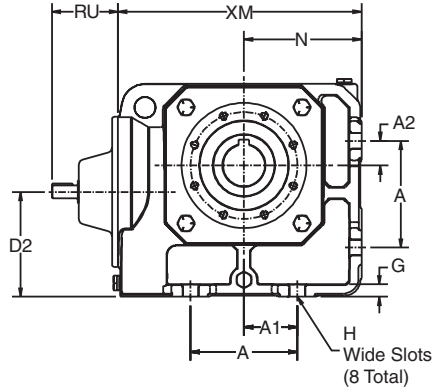
2-Stage Finished Bore Hollow Shaft HWN30 - 35



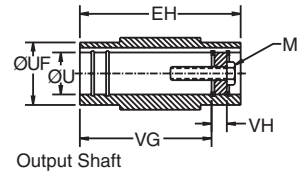
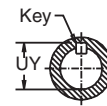
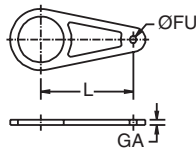
Input Shaft Frame 30 Only



Input Shaft



Torque Arm Option



Output Shaft

HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	9.28
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	11.16
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.05

Output Shaft

Gear Frame	M	U ^{3,7}	EA	EH	UF	UY	VG	VH	Key
30	7/16-14 x 1	1.250	3.17	6.34	2.125	1.37	5.58	.37	1/4 Sq.
31	1/2-13 x 1	1.375	3.18	6.36	2.500	1.52	5.62	.37	5/16 Sq.
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Torque Arm⁶

L	FU	GA
5.12	.41	.25
6.30	.41	.25
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
30	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
31	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
32	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
33	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

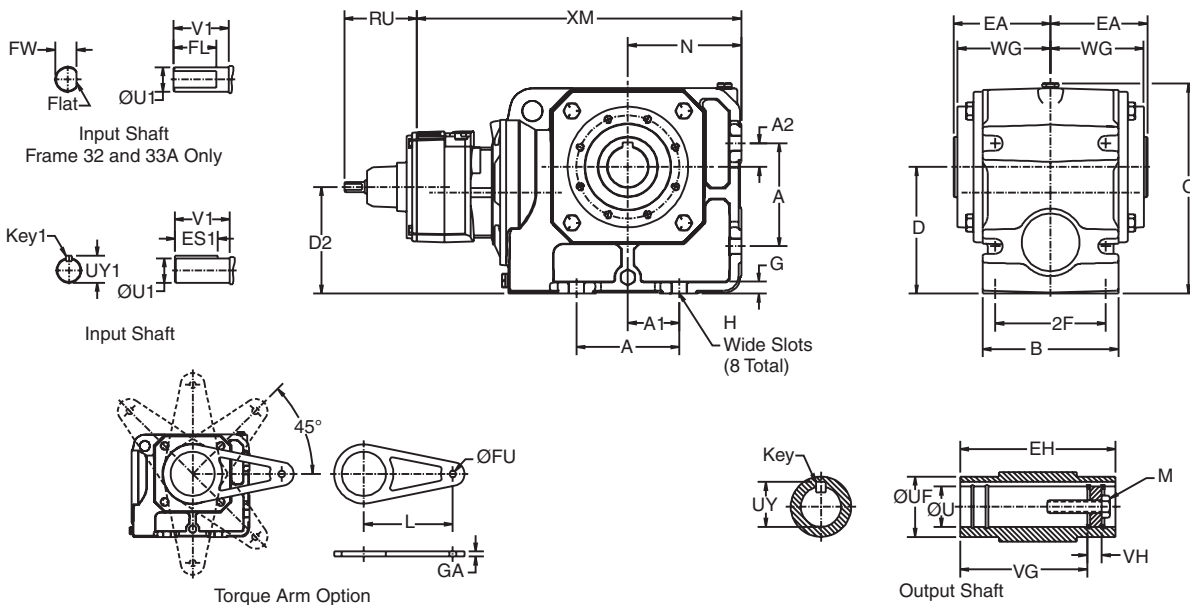
⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ For details of torque arm, refer to page C-97.

⁷ Refer to Tapered Bushed designs if driven shaft diameter differs from "U" dimensions offered above.

⁸ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Finished Bore Hollow Shaft HWN32 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	18.69 ⁹
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	19.76
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	23.88

Output Shaft

Gear Frame	M	U ^{3,7}	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Torque Arm⁶

L	FU	GA
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
32, 33A	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
33, 34, 35	.625	1.25	1.00	N/A	N/A	3.17	0.705	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

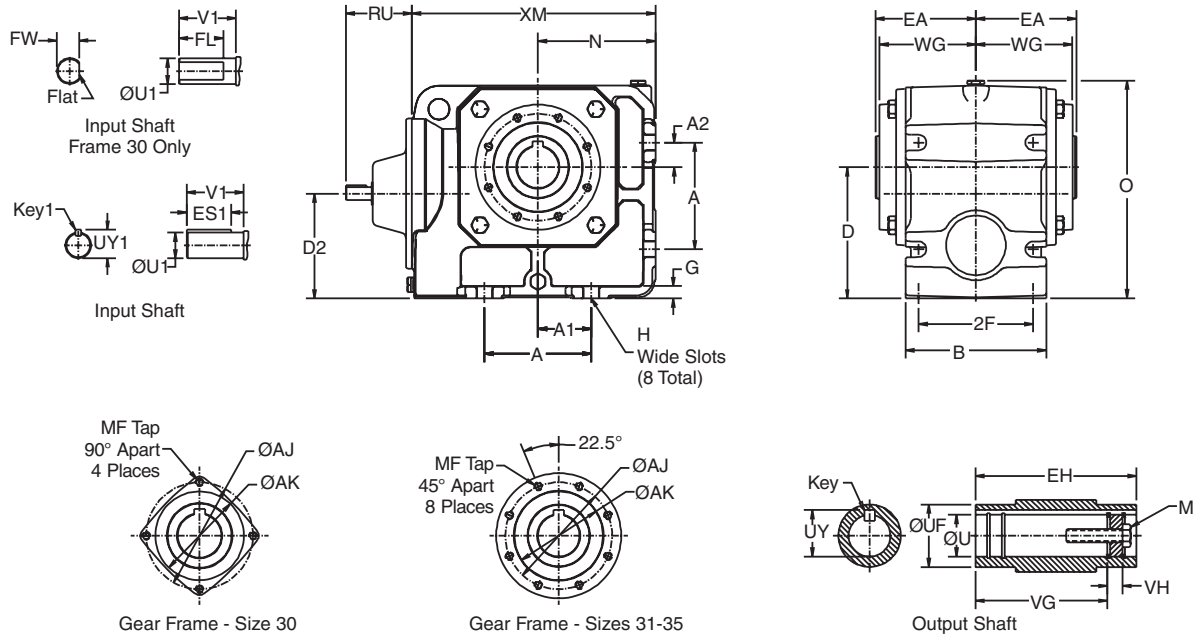
⁶ For details of torque arm, refer to page C-97.

⁷ Refer to Tapered Bushed designs if driven shaft diameter differs from "U" dimensions offered above.

⁸ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

⁹ XM dimension is 16.15" for frame 33A.

2-Stage Finished Bore Hollow Shaft Face Mount HWN30 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	9.28
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	11.16
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.05

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
30	7/16-14 x 1	1.25	3.17	6.34	2.125	1.37	5.58	.37	1/4 Sq.
31	1/2-13 x 1	1.375	3.18	6.36	2.500	1.52	5.62	.37	5/16 Sq.
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Face

AJ	AK	MF
3.625	3.000	5/16-18 x .56
4.25	3.625	5/16-18 x .59
4.25	3.625	5/16-18 x .59
5.125	4.250	3/8-16 x .62
5.125	4.250	3/8-16 x .62
7.25	6.250	1/2-13 x .81

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
30	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
31	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
32	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
33	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

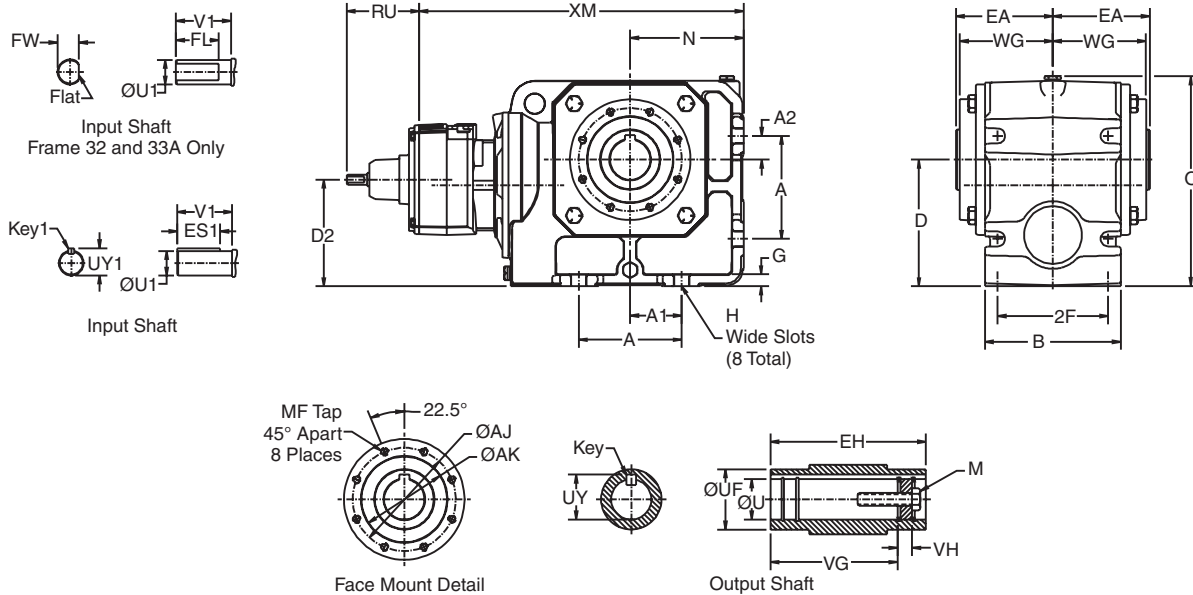
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Finished Bore Hollow Shaft Face Mount HWN32 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	18.69 ⁵
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	19.76
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	23.88

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Face

AJ	AK	MF
4.250	3.625	5/16-18 x .59
5.125	4.250	3/8-16 x .62
5.125	4.250	3/8-16 x .62
7.250	6.250	1/2-13 x .81

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
32, 33A	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
33, 34, 35	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

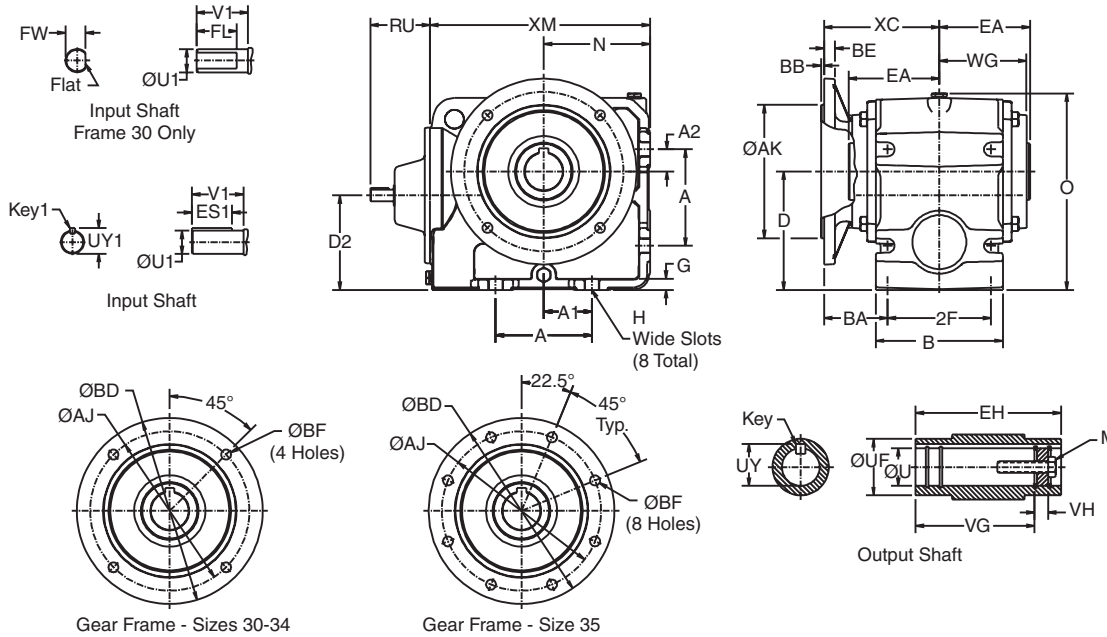
⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ XM dimension is 16.15" for frame 33A.

⁶ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁷ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

**2-Stage Finished Bore Hollow Shaft Flange Mount
HWN30 - 35**



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	9.28
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	11.16
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.05

Gear Frame	Flange									Output Shaft							
	Flange Code	AJ	AK	BA	BB	BD	BE	BF	XC	M	U ³	EA	EH	UF	VG	UY	Key
30	5	5.120	4.331	2.07	.14	6.3	.39	.35	4.04	7/16-14 x 1	1.250	3.17	6.34	2.125	5.58	.37	1/4 Sq.
	6	4.528	3.74	1.99	.12	5.51	.31	.35	3.96	7/16-14 x 1	1.250	3.17	6.34	2.500	5.58	.37	1/4 Sq.
31	5	6.496	5.117	2.59	.14	7.89	.47	.44	4.76	1/2-13 x 1	1.375	3.18	6.36	2.875	5.62	.37	5/16 Sq.
32	5	6.496	5.117	2.76	.14	7.89	.47	.44	5.48	5/8-11 x 1 3/4	1.500	3.90	7.80	3.000	6.83	.49	3/8 Sq.
33	5	8.465	7.086	3.38	.16	9.84	.59	.53	6.13	5/8-11 x 1 3/4	2.000	4.83	9.66	3.375	8.43	.72	1/2 Sq.
34	5	8.465	7.086	3.72	.16	9.84	.59	.53	6.67	5/8-11 x 1 3/4	2.000	5.34	10.68	5.500	9.45	.72	1/2 Sq.
35	5	11.810	9.842	4.16	.20	13.78	.71	.69	8.10	3/4-102x 2	2.375	6.48	12.96	4.000	11.51	.85	5/8 Sq.

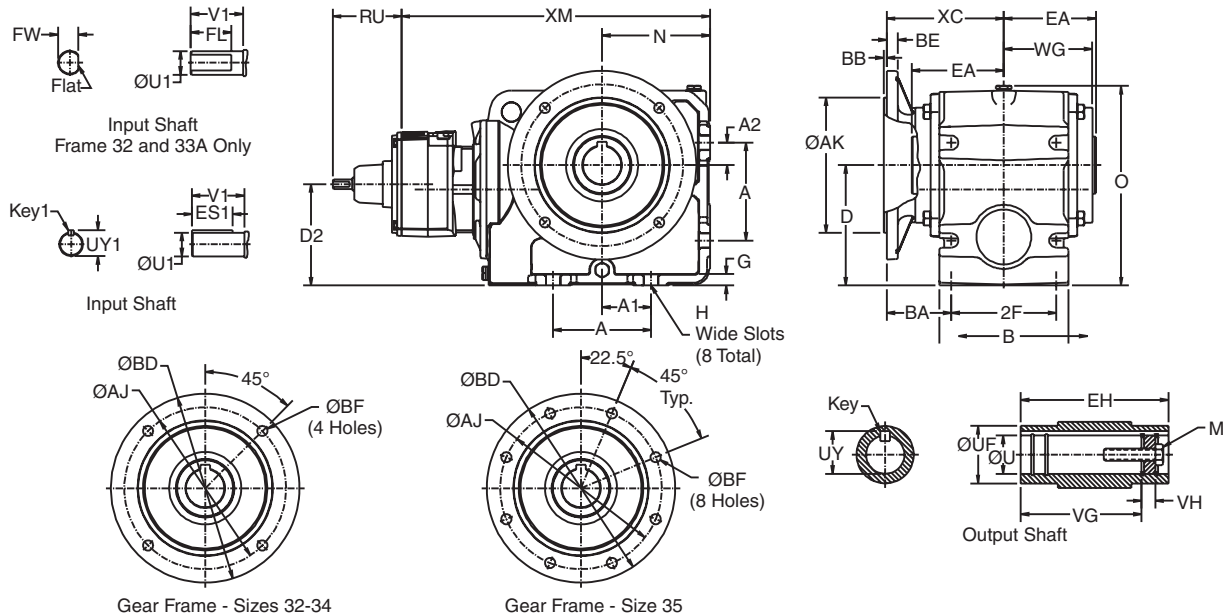
Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
30	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
31	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
32	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
33	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.
⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Finished Bore Hollow Shaft Flange Mount HWN32 - 35



HWN Series

Gear Frame	A	A ¹	A ₂	B	D ¹	D ₂	2F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	18.69 ⁵
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	19.76
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	23.88

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
32	5/8-11 x 1 3/4	1.500	3.90	7.80	2.875	1.67	6.83	.49	3/8 Sq.
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Flange

AJ	AK	BA	BB	BD	BE	BF	XC
6.496	5.117	2.76	.14	7.89	.47	.44	5.48
8.465	7.086	3.38	.16	9.84	.59	.53	6.13
8.465	7.086	3.72	.16	9.84	.59	.53	6.67
11.810	9.842	4.16	.20	13.78	.71	.69	8.10

Input Shaft

Gear Frame	U ¹	V ₁	ES ₁	FL	FW	RU	UY ₁	Key ₁
32, 33A	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
33, 34, 35	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

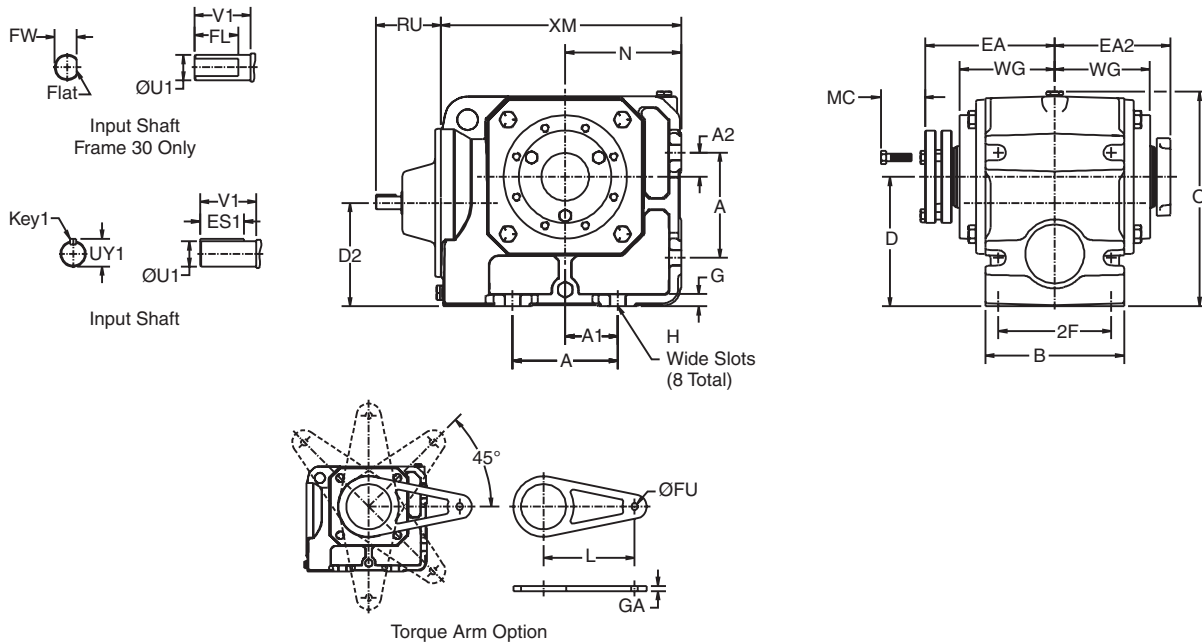
⁴ Input shaft extension tolerances (diameter "U¹"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ XM dimension is 16.15" for frame 33A.

⁶ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁷ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Taper Bushed Shaft Mount HWN30 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
30	3.15	1.38	.59	4.54	3.94	2.95	3.94	.38	.46	4.00	6.68	2.98	8.10
31	3.94	1.77	.91	5.00	4.41	3.61	4.33	.44	.46	4.03	7.53	3.00	9.28
32	5.12	2.36	1.18	6.00	5.51	4.09	5.12	.50	.60	5.09	9.34	3.72	11.16
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.05

Output Shaft

Gear Frame	EA	EA2	MC ⁶	Bushing Bores ³	
				Min.	Max.
30	4.92	4.34	1.75	1 1/8	1 7/16
31	4.60	4.02	1.75	1 1/8	1 7/16
32	5.80	5.21	1.88	1 3/4	1 15/16
33	6.73	6.18	1.88	1 3/6	2 3/16
34	7.36	6.82	1.88	1 7/8	2 7/16
35	8.70	8.10	2.25	2 7/16	3 7/16

Torque Arm⁸

L	FU	GA
5.12	.41	.25
6.30	.41	.25
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

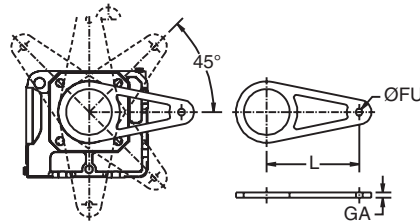
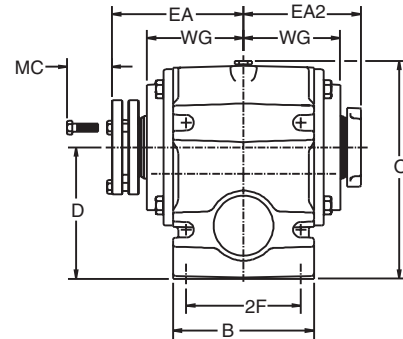
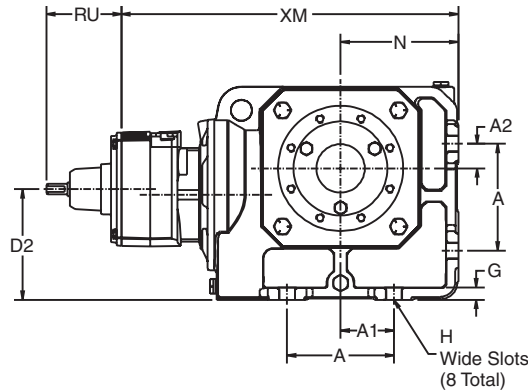
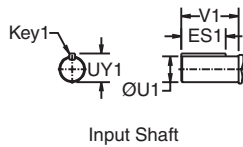
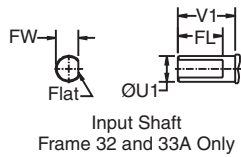
Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
30	.500	1.00	N/A	.86	.46	3.60	N/A	N/A
31	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
32	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
33	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	N/A	N/A	4.75	1.236	1/4 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Refer to pages C-98 for a listing of all inch and metric bushing bore sizes available.
⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing.
⁶ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.
⁷ Bushing and dust cap can be installed opposite of how they are shown above.
⁸ For details of torque arm, refer to page C-97.
⁹ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

Combined Taper Bushed Shaft Mount HWN32 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
32	5.12	2.36	1.18	6.00	5.51	4.37	5.12	.50	.60	5.09	9.34	3.72	15.61
33, 33A	5.12	2.56	1.18	6.76	6.29	4.70	5.50	.59	.74	5.65	10.44	4.64	18.69 ⁵
34	5.31	2.95	.98	7.76	7.09	5.01	5.91	.66	.74	6.15	11.73	5.15	19.76
35	7.09	3.62	1.46	9.18	8.86	5.31	7.87	.72	.88	8.14	15.43	6.29	23.88

Output Shaft

Gear Frame	EA	EA2	MC ⁷	Bushing Bores ³	
				Min.	Max.
32	5.80	5.21	1.88	1 7/16	1 15/16
33	6.73	6.18	1.88	1 3/4	2 3/16
34	7.36	6.82	1.88	1 7/8	2 7/16
35	8.70	8.10	2.25	2 7/16	3 7/16

Torque Arm⁹

L	FU	GA
7.87	.41	.38
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	FL	FW	RU	UY1	Key1
32, 33A	.50	1.00	N/A	.86	.46	3.60	N/A	N/A
33, 34, 35	.625	1.25	1.00	N/A	N/A	3.17	.705	3/16 Sq.

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Refer to pages C-98 for a listing of all inch and metric bushing bore sizes available.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ XM dimension is 16.15" for frame 33A.

⁶ Driven shaft entry can be from either side of gear housing.

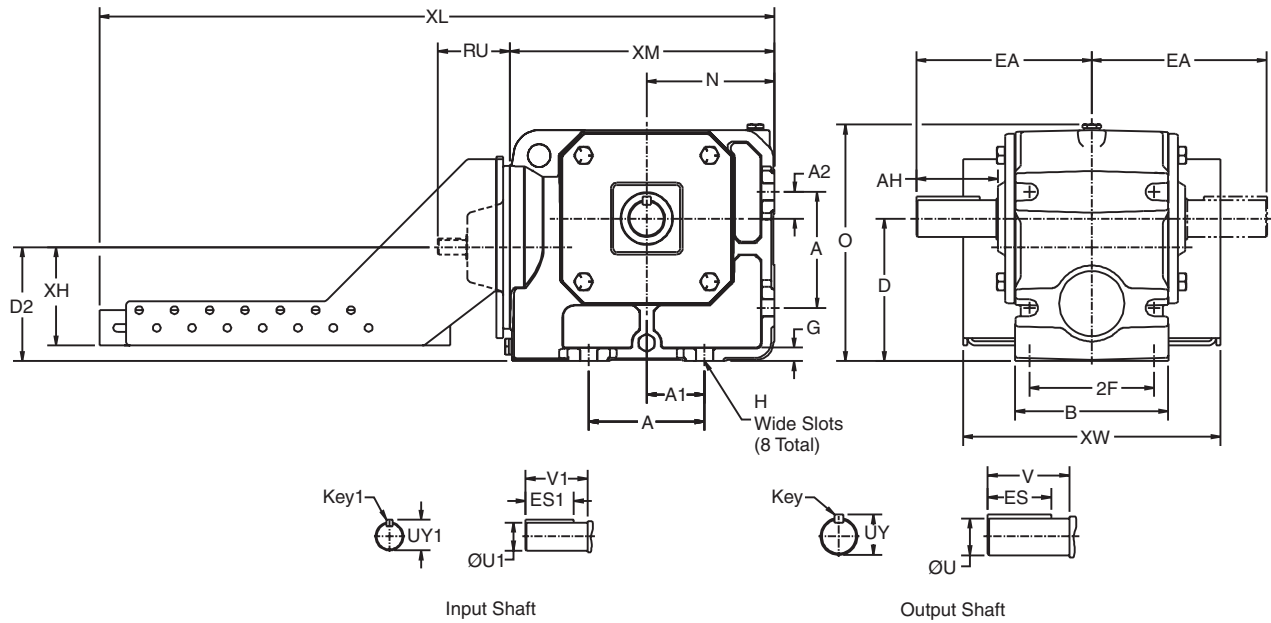
⁷ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁸ Bushing and dust cap can be installed opposite of how they are shown above.

⁹ For details of torque arm, refer to page C-97.

¹⁰ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Output Shafted Foot Mount HWN33 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	17.05

Output Shaft

Gear Frame	U ³	V	AH	EA	ES	UY	Key
33	1.625	3.61	3.61	7.74	2.75	1.79	3/8 Sq.
34	1.750	2.98	2.98	7.68	2.5	1.91	3/8 Sq.
35	2.375	4.68	4.68	10.04	3.75	2.65	5/8 Sq.

Input Shaft

Gear Frame	U ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

Scoop Mount

Gear Frame	Motor Frame					
	56, 143T-145T			182T-184T		
	XH	XL	XW	XH	XL	XW
33	3.75	29.98	11.38	-	-	-
34	4.74	39.28	12.38	4.74	39.84	12.38
35	4.74	43.40	12.38	4.74	43.96	12.38

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

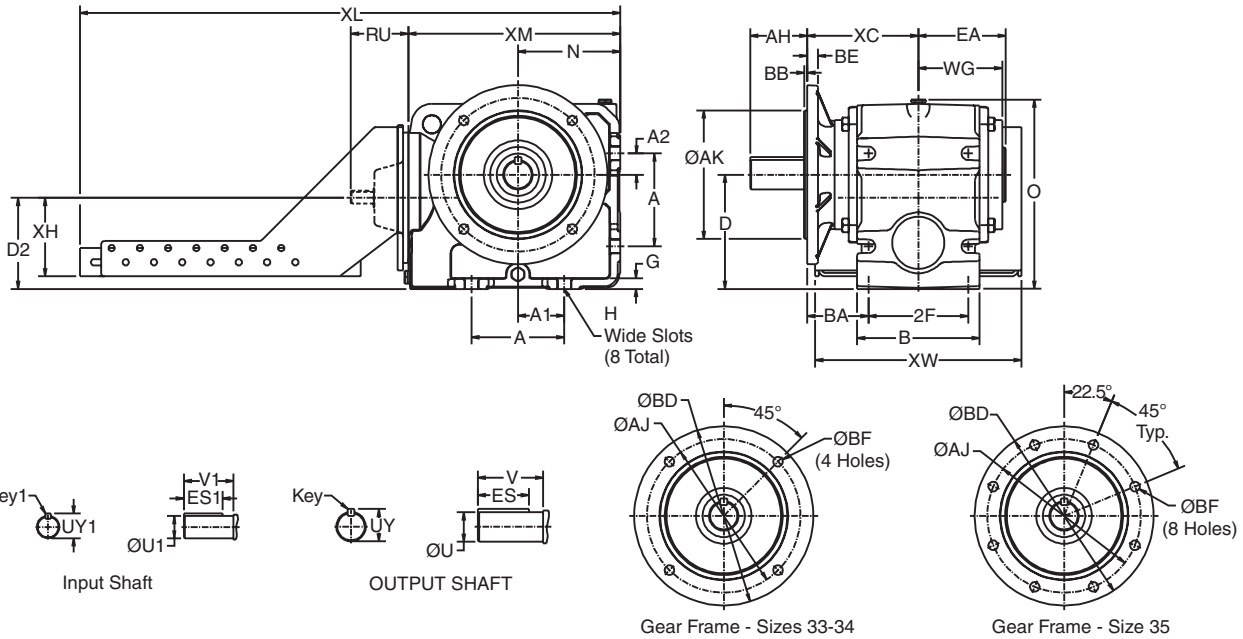
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Output Shafted Flange Mount HWN33 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	EA	WG	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.83	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.34	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.48	6.29	17.05

Output Shaft

Gear Frame	U ³	V	AH	ES	UY	Key
33	1.625	3.42	3.15	3.00	1.79	3/8 Sq.
34	1.750	3.77	3.54	3.50	1.91	3/8 Sq.
35	2.375	4.72	4.72	4.00	2.65	5/8 Sq.

Flange

AJ	AK	BA	BB	BD	BE	BF	XC
8.465	7.086	3.38	.16	9.84	.59	.53	6.13
8.465	7.086	3.72	.16	9.84	.59	.53	6.67
11.810	9.842	4.16	.20	13.78	.71	.69	8.10

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

Scoop Mount

Gear Frame	Motor Frame					
	56, 143T-145T			182T-184T		
	XH	XL	XW	XH	XL	XW
33	3.75	29.98	11.38	-	-	-
34	4.74	39.28	12.38	4.74	39.84	12.38
35	4.74	43.40	12.38	4.74	43.96	12.38

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

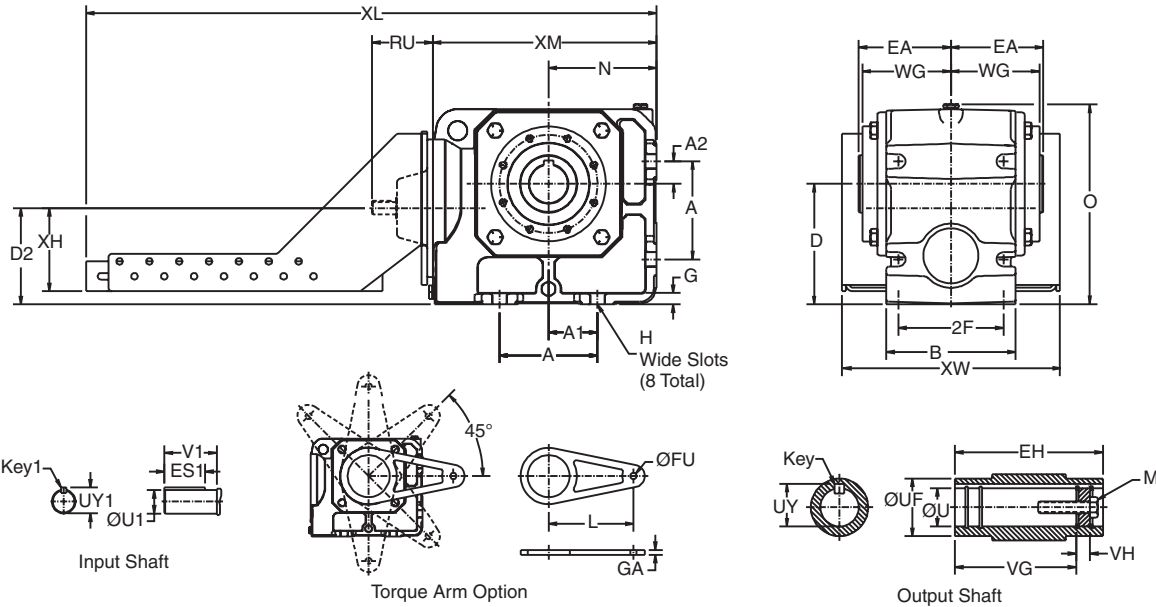
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Finished Bore Hollow Shaft HWN33 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.05

Output Shaft

Gear Frame	M	U ^{3,7}	EA	EH	UF	UY	VG	VH	Key
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Torque Arm⁶

L	FU	GA
8.86	.65	.38
9.84	.65	.50
12.2	.65	.50

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

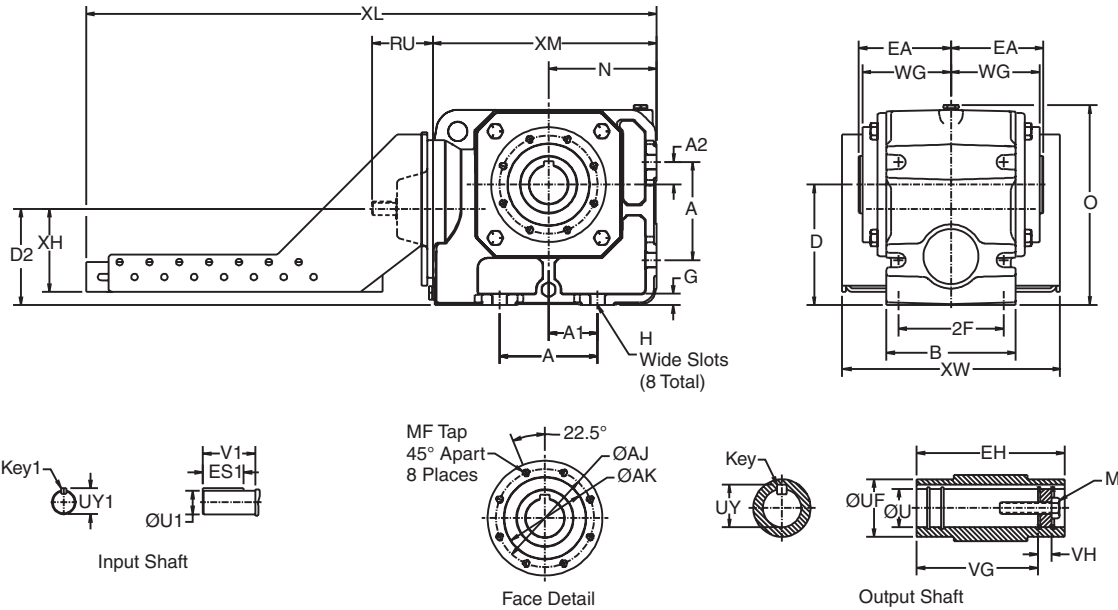
Scoop Mount

Gear Frame	Motor Frame					
	56, 143T-145T			182T-184T		
	XH	XL	XW	XH	XL	XW
33	3.75	29.98	11.38	-	-	-
33	4.74	39.28	12.38	4.74	39.84	12.38
33	4.74	43.40	12.38	4.74	43.96	12.38

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.
⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.
⁶ For details of torque arm, refer to page C-97.
⁷ Refer to Tapered Bushed designs if driven shaft diameter differs from "U" dimensions offered above.
⁸ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Finished Bore Hollow Shaft Face Mount HWN33 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.05

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.85	5/8 Sq.

Face

AJ	AK	MF
5.125	4.250	3/8-16 x .62
5.125	4.250	3/8-16 x .62
7.250	6.250	1/2-13 x .81

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

Scoop Mount

Gear Frame	Motor Frame					
	56, 143T-145T			182T-184T		
	XH	XL	XW	XH	XL	XW
33	3.75	29.98	11.38	-	-	-
34	4.74	39.28	12.38	4.74	39.84	12.38
35	4.74	43.40	12.38	4.74	43.96	12.38

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

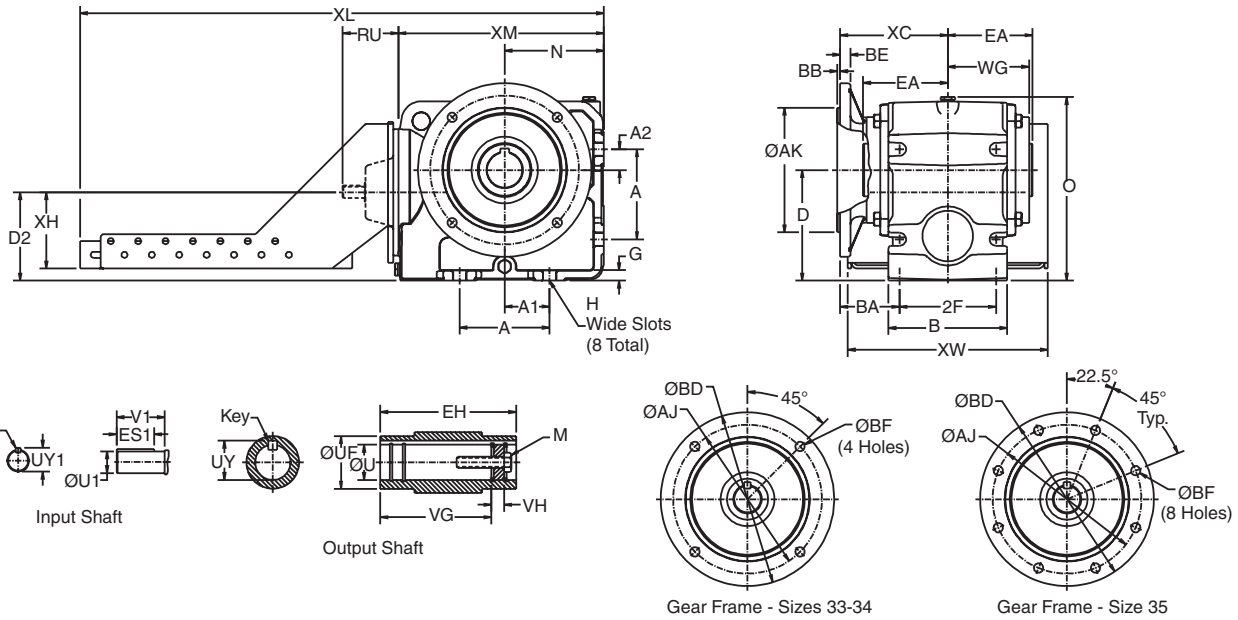
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Finished Bore Hollow Shaft Flange Mount HWN33 - 35



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.05

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.720	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.720	1/2 Sq.
35	3/4-10 x 2	2.375	6.48	12.96	5.500	2.66	11.51	.850	5/8 Sq.

Flange

AJ	AK	BA	BB	BD	BE	BF	XC
8.465	7.086	3.38	.160	9.84	.59	.53	6.13
8.465	7.086	3.72	.160	9.84	.59	.53	6.67
11.810	9.842	4.16	.200	13.78	.71	.69	8.10

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

Scoop Mount

Gear Frame	Motor Frame					
	56, 143T-145T			182T-184T		
	XH	XL	XW	XH	XL	XW
33	3.75	29.98	11.38	-	-	-
34	4.74	39.28	12.38	4.74	39.84	12.38
35	4.74	43.40	12.38	4.74	43.96	12.38

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

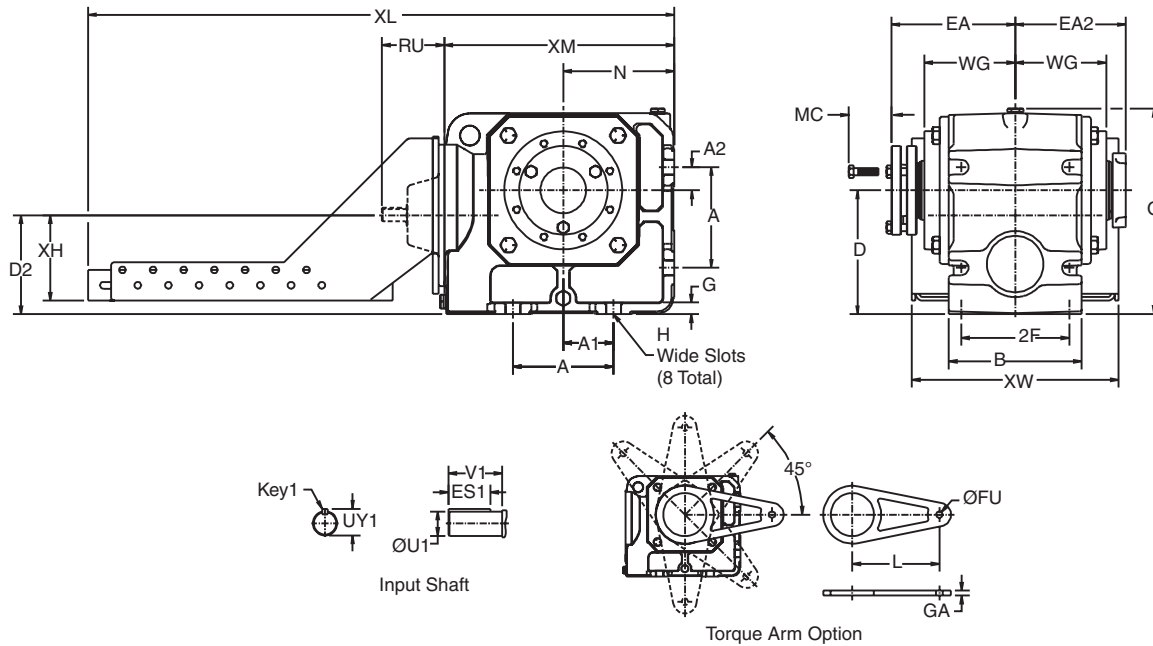
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Taper Bushed Shaft Mount HWN33 - 35



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93
35	7.09	3.62	1.46	9.18	8.86	5.61	7.87	.72	.88	8.14	15.43	6.29	17.05

Output Shaft

Gear Frame	EA	EA2	MC ⁵	Bushing Bores ³	
				Min.	Max.
33	6.73	6.18	1.88	1 3/4	2 3/16
34	7.36	6.82	1.88	1 7/8	2 7/16
35	8.70	8.10	2.25	2 7/16	3 7/16

Torque Arm⁸

L	FU	GA
8.86	.65	.38
9.84	.65	.50
12.20	.65	.50

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.
35	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

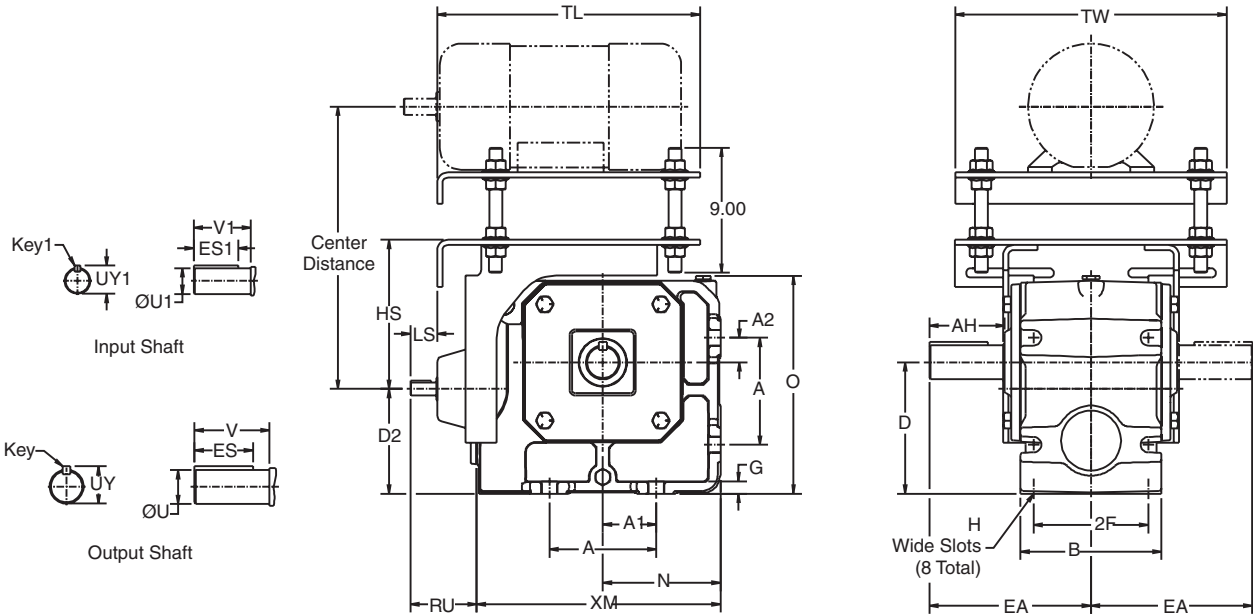
Scoop Mount

Gear Frame	Motor Frame					
	56, 143T-145T			182T-184T		
	XH	XL	XW	XH	XL	XW
33	3.75	29.98	11.38	-	-	-
34	4.74	39.28	12.38	4.74	39.84	12.38
35	4.74	43.40	12.38	4.74	43.96	12.38

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Refer to pages C-102 and C-103 for a listing of all inch and metric bushing bore sizes available.
⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing.
⁶ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.
⁷ Bushing and dust cap can be installed opposite of how they are shown above.
⁸ For details of torque arm, refer to page C-97.
⁹ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Output Shafted Foot Mount HWN33 - 34



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	12.93

Output Shaft

Gear Frame	U ³	V	AH	EA	ES	UY	Key
33	1.625	3.61	3.61	7.74	2.75	1.79	3/8 Sq.
34	1.750	2.98	2.98	7.68	2.50	1.91	3/8 Sq.

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

Top Mount

Gear Frame	LS	HS	TL	TW	Motor Frame							
					56		143T/145T		182T/184T		213T/215T	
					Center Distance		Center Distance		Center Distance		Center Distance	
				Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
33	1.29	7.14	15.50	16.50	12.28	18.25	12.28	18.25	13.28	19.25	-	-
34	2.31	7.17	15.50	16.50	12.31	18.28	12.31	18.28	13.31	19.28	14.06	20.03

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

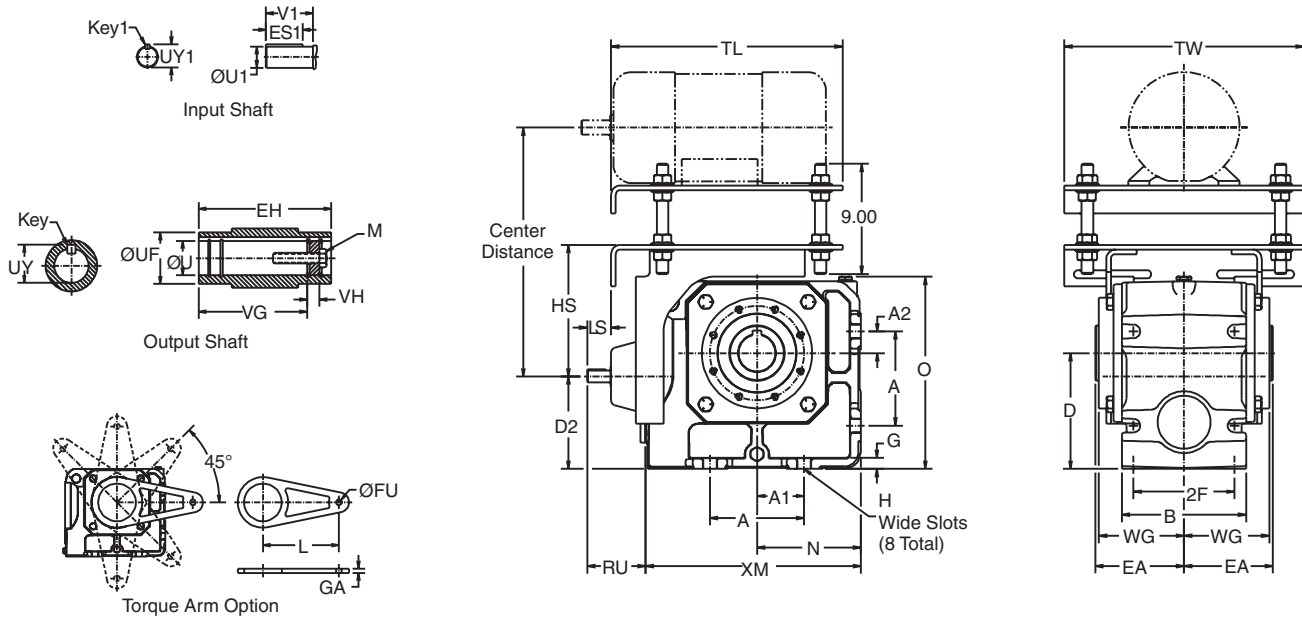
² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output shaft extension tolerances (diameter "U"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Finished Bore Hollow Shaft HWN33 - 34



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93

Output Shaft

Gear Frame	M	U ^{3,7}	EA	EH	UF	UY	VG	VH	Key
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.

Torque Arm

L	FU	GA
8.86	.65	.38
9.84	.65	.50

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

Top Mount

Gear Frame	LS	HS	TL	TW	Motor Frame							
					56		143T/145T		182T/184T		213T/215T	
					Center Distance	Center Distance	Center Distance	Center Distance	Center Distance	Center Distance	Center Distance	Center Distance
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
33	1.29	7.14	15.5	16.5	12.28	18.25	12.28	18.25	13.28	19.25	-	-
34	2.31	7.17	15.5	16.5	12.31	18.28	12.31	18.28	13.31	19.28	14.06	20.03

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

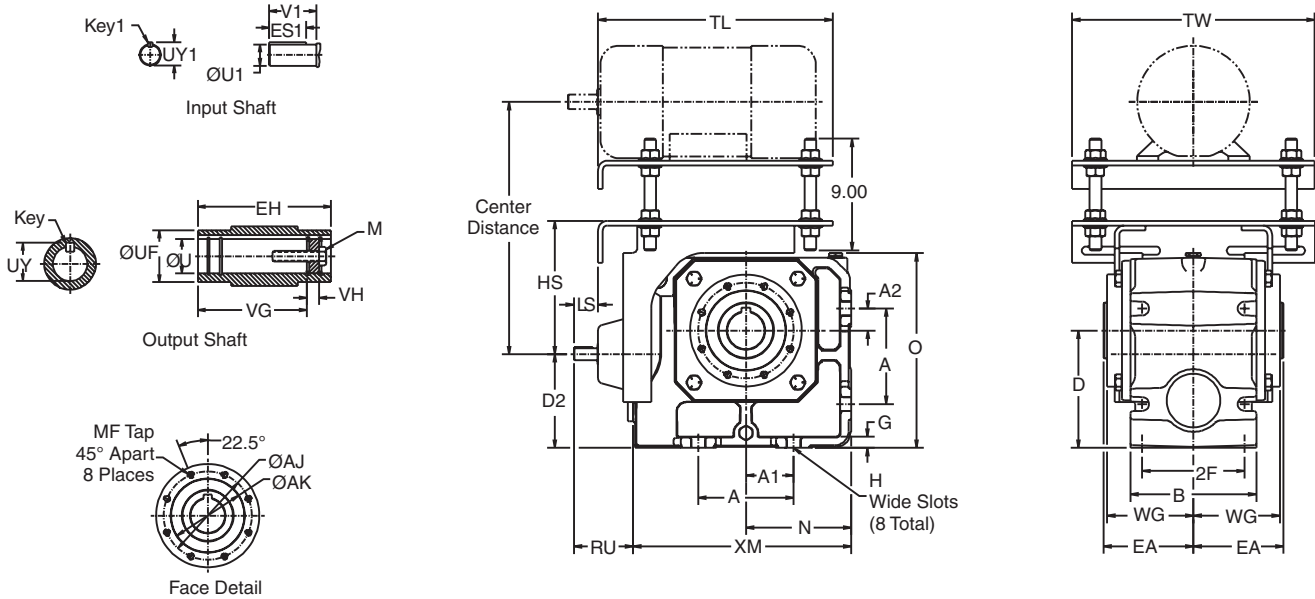
⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ For details of torque arm, refer to page C-97.

⁷ Refer to Tapered Bushed designs if driven shaft diameter differs from "U" dimensions offered above.

⁸ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Finished Bore Hollow Shaft Face Mount HWN33 - 34



Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93

Output Shaft

Gear Frame	M	U ³	EA	EH	UF	UY	VG	VH	Key
33	5/8-11 x 1 3/4	2.000	4.83	9.66	3.000	2.23	8.43	.72	1/2 Sq.
34	5/8-11 x 1 3/4	2.000	5.34	10.68	3.375	2.23	9.45	.72	1/2 Sq.

Face

AJ	AK	MF
5.125	4.250	3/8-16 x .62
5.125	4.250	3/8-16 x .62

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

Top Mount

Gear Frame	LS	HS	TL	TW	Motor Frame							
					56		143T/145T		182T/184T		213T/215T	
					Center Distance		Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.				
33	1.29	7.14	15.50	16.50	12.28	18.25	12.28	18.25	13.28	19.25	-	-
34	2.31	7.17	15.50	16.50	12.31	18.28	12.31	18.28	13.31	19.28	14.06	20.03

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.

² All rough casting dimensions may vary by up to 0.25" due to casting variations.

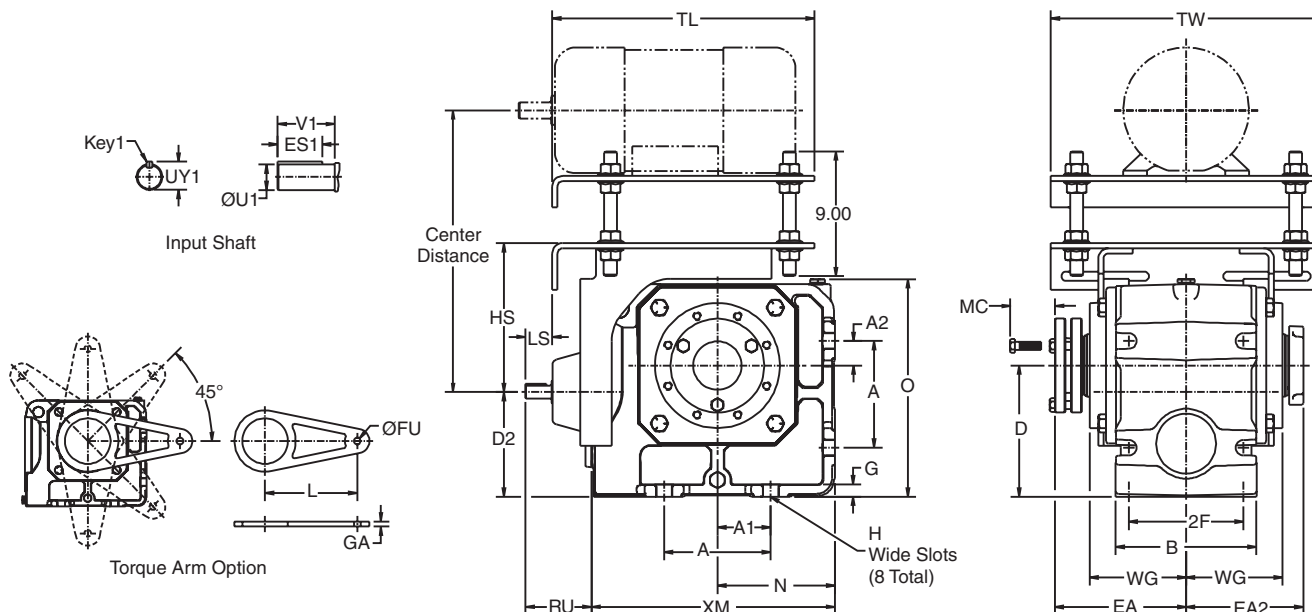
³ Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing. Snap rings and washer can be removed and installed in the opposite end of the bore from the way it is illustrated.

⁶ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

2-Stage Taper Bushed Shaft Mount HWN33 - 34



HWN Series

Gear Frame	A	A1	A2	B	D ¹	D2	2F	G	H	N	O	WG	XM
33	5.12	2.56	1.18	6.76	6.29	5.03	5.50	.59	.74	5.65	10.44	4.64	11.70
34	5.31	2.95	.98	7.76	7.09	5.34	5.91	.66	.74	6.15	11.73	5.15	12.93

Output Shaft

Gear Frame	EA	EA2	MC ⁵	Bushing Bores ³	
				Min.	Max.
33	6.73	6.18	1.88	1 3/4	2 3/16
34	7.36	6.82	1.88	1 7/8	2 7/16

Torque Arm⁸

L	FU	GA
8.86	.65	.38
9.84	.65	.50

Input Shaft

Gear Frame	U1 ⁴	V1	ES1	RU	UY1	Key1
33	.625	1.25	1.00	3.17	.705	3/16 Sq.
34	1.125	2.25	1.94	4.75	1.236	1/4 Sq.

Top Mount

Gear Frame	LS	HS	TL	TW	Motor Frame							
					56		143T/145T		182T/184T		213T/215T	
					Center Distance	Center Distance	Center Distance	Center Distance	Center Distance	Center Distance	Center Distance	Center Distance
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
33	1.29	7.14	15.50	16.50	12.28	18.25	12.28	18.25	13.28	19.25	-	-
34	2.31	7.17	15.50	16.50	12.31	18.28	12.31	18.28	13.31	19.28	14.06	20.03

¹ Dimension "D" will never be exceeded, but may vary from values shown. When exact dimensions are required, shims up to 0.03" may be necessary.
² All rough casting dimensions may vary by up to 0.25" due to casting variations.
³ Refer to pages C-98 for a listing of all inch and metric bushing bore sizes available.
⁴ Input shaft extension tolerances (diameter "U1"): +0.0000"/-0.0005" up to 1.5" diameter or +0.000"/-0.001" for larger diameters.

⁵ Driven shaft entry can be from either side of gear housing.
⁶ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.
⁷ Bushing and dust cap can be installed opposite of how they are shown above.
⁸ For details of torque arm, refer to page C-97.
⁹ Dimensions are for housing type S2 with breather. For S3 expansion chamber dimensions, see page C-96.

C-Face Reducers

Gear Frame	Reduction Stages	Input Size				
		56C	140TC	180TC	210TC	250TC
30	2	37	37	45	-	-
31	2	56	56	64	-	-
32	2	68	68	76	-	-
	4	88	88	-	-	-
33	2	80	80	88	-	-
	4	117	117	-	-	-
34	2	180	180	188	188	-
	4,5	246	246	-	-	-
35	2	228	228	236	236	250
	4,5	284	284	292	-	-

Input Shaft Reducers

Gear Frame	Reduction Stages	Style		
		AP/AD	Scoop	Top Mt.
30	2	33	-	-
31	2	52	-	-
32	2	74	-	-
	4	94	-	-
33	2	80	105	127
	4	117	-	-
34	2	190	190	104
	4,5	256	-	-
35	2	230	231	-
	4,5	285	-	-

Gear Options Additional Weight

Gear Frame	Flange Mount
30	4
31	5
32	7
33	8
34	10
35	12

Series 3000 HWN Gear Units are factory filled with a high quality synthetic lubricant. Each reducer is filled according to the mounting position specified when ordered. Refer to the unit nameplate and the illustration on page C-96 for the mounting position arrangement for your unit.

Non Foodgrade Units

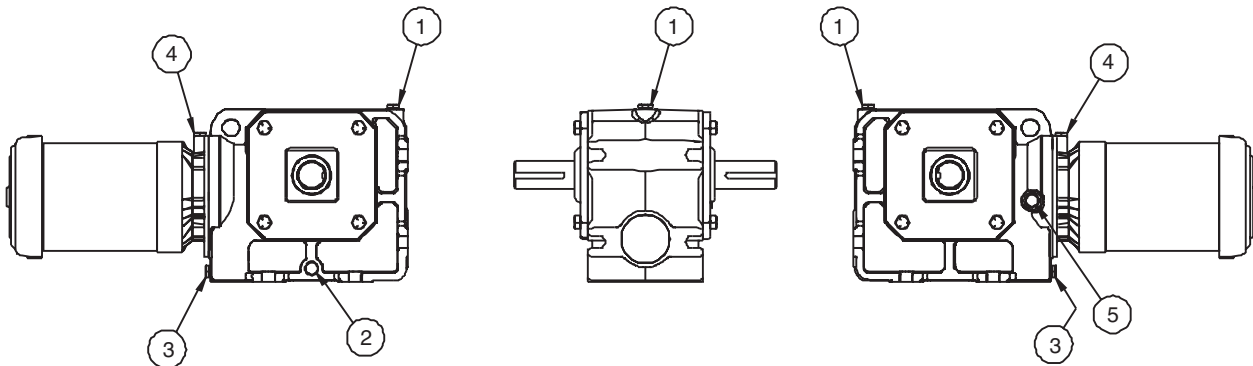
Ambient Range	-25° F to 125° F
ISO Grade/AGMA #	460 / 7
Oil Company	
Mobil*	Mobil* SHC 634
Shell*	Omala* RL460

Foodgrade Units

Ambient Range	5° F to 125° F
ISO Grade/AGMA #	460 / 140
Oil Company	
Mobil*	Glygoyle* 460

CAUTION

- Never mix synthetic oil and mineral oil.
- Never use lubricants with extreme pressure (EP) additives in an HWN Gearmotor or Reducer.



2-Stage

Gear Frame Size	Plug Type	Mounting Position											
		B		P		H		T		V		W	
		Plug #	Oil Volume Quarts	Plug #	Oil Volume Quarts	Plug #	Oil Volume Quarts	Plug #	Oil Volume Quarts	Plug #	Oil Volume Quarts	Plug #	Oil Volume Quarts
18, 30	Level	5	0.73	5	1.16	1	0.94	1	0.94	5	1.59	2	1.17
	Draining	2		1		2		5		1		5	
	Breather	1		2		5		2		5		1	
	Filling	1		2		5		2		5		1	
31	Level	5	1.16	5	1.63	1	1.40	1	1.40	5	2.17	2	1.84
	Draining	2		1		2		5		1		4	
	Breather	1		2		5		2		4		1	
	Filling	1		2		5		2		4		1	
32	Level	5	1.88	5	2.63	1	2.25	1	2.25	5	3.96	2	2.69
	Draining	3		1		3		5		1		4	
	Breather	1		2		5		2		4		1	
	Filling	1		3		5		2		3		1	
33	Level	5	3.02	5	3.79	1	3.34	1	3.34	5	5.92	2	4.02
	Draining	3		1		3		5		1		4	
	Breather	1		2		5		2		4		1	
	Filling	1		3		5		2		3		1	
34	Level	5	4.17	5	5.68	1	4.92	1	4.92	5	8.36	2	5.9
	Draining	3		1		3		5		1		4	
	Breather	1		2		5		2		4		1	
	Filling	1		3		5		2		3		1	
35	Level	5	7.08	5	13.96	1	10.50	1	10.50	5	19.44	2	11.54
	Draining	3		1		3		5		1		4	
	Breather	1		2		5		2		4		1	
	Filling	1		3		5		2		3		1	

* The following are believed to be the trademarks and/or trade names of their respective owners and are not owned or controlled by Emerson Power Transmission. Mobil and Glygoyle: Exxon Mobil Corporation; Shell and Omala: Shell Oil Company.

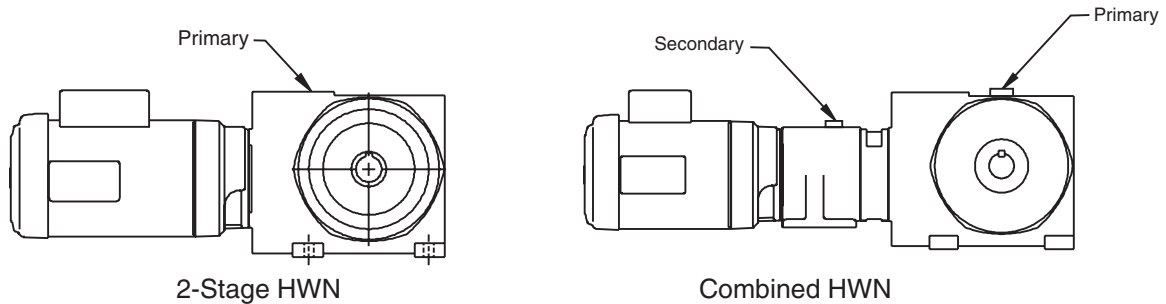
Combined HWN 3000 Gearing

Consists of an HWN primary gear housing and a CbN secondary gear housing. The table below provides the CbN oil volumes in quarts. Refer to the table on preceding page depending on the mounting configuration and HWN frame of the unit for HWN gear housing oil details.

Combined 4 or 5-Stage

HWN Frame Size	Sec. Gear Size	Mounting Position											
		B		P		H		T		V		W	
		Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.	Prim.	Sec.
3244	CbN 30	**	0.64	**	0.64	**	0.64	**	0.64	**	0.64	**	0.64
3304	CbN 31	**	0.63	**	1.16	**	0.9	**	1.00	**	1.22	**	1.48
3304A	CbN 30	**	0.46	**	0.46	**	0.46	**	0.46	**	0.46	**	0.46
3474, 3475	CbN 31	**	0.63	**	1.16	**	0.9	**	1.00	**	1.22	**	1.48
3584, 3585	CbN 31	**	0.63	**	1.16	**	0.9	**	1.00	**	1.22	**	1.48

** See Page C-147 for primary unit oil volume.





MbN Helical Gearmotors and Speed Reducers

Industries

- Food and Beverage
- Warehousing
- Parcel and Package Sortation
- Wastewater Treatment
- Recycling

Applications

- Screw Conveyors
- Bottling Conveyors
- Unit Handling Conveyors
- Material Handling Conveyors
- De-Watering Conveyors



MbN Series

Corrosion Resistant
Provided By
Emerson Power

Browning[®]

**MbN
Helical Shaft Mount
Gearmotors and
Speed Reducers**



Gearmotor

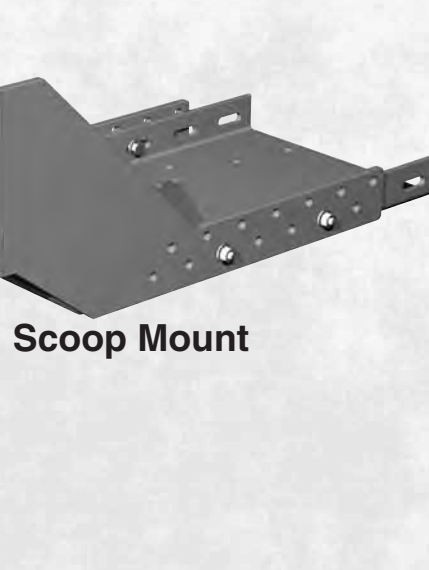


C-Face



Input Shaft

Top Mount



Scoop Mount

MbN Series



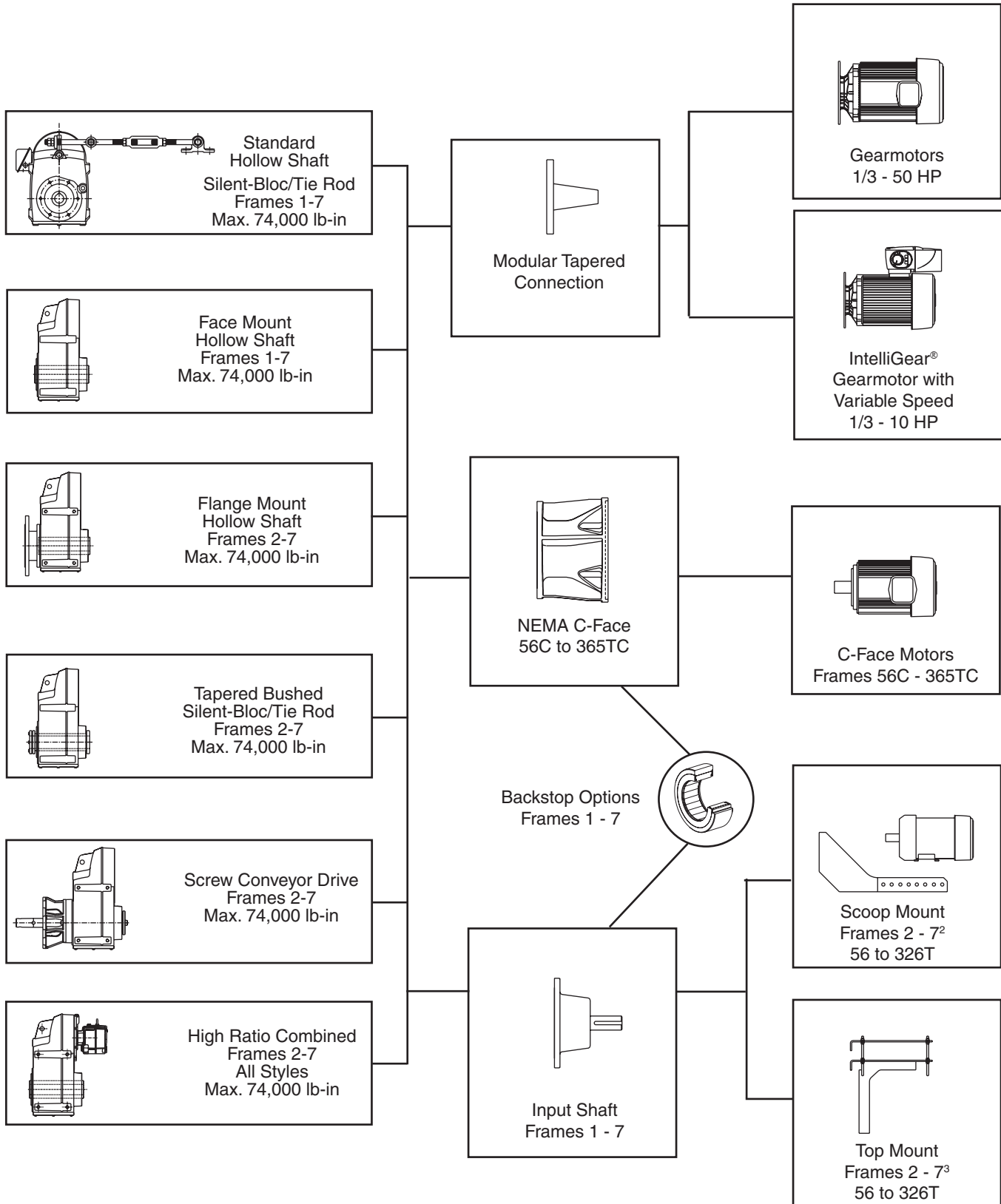
Gearmotor Section Pages D-6 - D-87



Reducer Section Pages D-88 - D-167

Electrical Technical Data F-1 - F-12

Mounting Versatility and Size Range



MbN Series

¹ Backstop not available for gearmotors or for frames 2-3 combined (i.e. more than 3 gear stages).

² Scoop mount is not available for combined (i.e. more than 3 gear stages) frames 2-5.

³ Top mount is not available for combined units (i.e. more than 3 gear stages) frames 2-5.

General Information

General

MbN 3000 helical shaft mount gearmotors and speed reducers incorporate the latest in design and manufacturing technologies to deliver an energy efficient, reliable, helical gear train. This gearing can be combined with either a constant or variable speed motor if a gearmotor is desired. The MbN gear frame size 1 units are available with two stages of gear reduction, whereas frame sizes 2-7 have two to five or, in some sizes, six gear stages with practical efficiencies in ratios of 4:1 to 10,000:1. The shaft mount configurations available provide an economical means of mounting the MbN, without the need for an output coupling or chain drive and the headaches of shimming and alignment required with a foot mount arrangement. In addition to a version that can be connected to the machine frame using a tie rod or silent-bloc mount, MbN is also available with a B14 face or B5 flange mount output.

Gearmotors

Three phase MbN gearmotors are available with HE type high efficiency motors in non-hazardous enclosures starting at 1/3 HP at standard lead-times. These motors comply with requirements in the US and Canada for energy efficiency to deliver superior operating cost savings, reduced motor temperature rise and 5:1 minimum constant torque output (60-11 Hz) from PWM power supplies for the End User. There are several motor enclosure options within the HE umbrella including Corro-Duty® cast iron exterior construction for most hostile environments. These features are complimented by the standard use of inverter duty winding materials that comply with NEMA MG1 Part 31. Emerson also offers gearmotors with 1 phase TEFC motors to 5 HP and Explosionproof 3 phase gearmotors to 10HP.

Housing

All housings are cast from high-strength cast iron. This gives MbN3000 excellent overhung load integrity and high performance in the most demanding applications. The mounting dimensions allow the MbN3000 to directly interchange with many popular competitive products, while retaining dimensions that also allow it to replace the MbN2000 that it replaces. This allows for simple aftermarket replacement of both MbN2000 and many of the more common products from other manufacturers. Additionally, the new, quill style c-face is often shorter than competitive unit designs, while allowing room for a fully rated backstop.

Interchangeability

The standard finished bore quill diameters and flange sizes available match those of many similar competitive units. In addition, the MbN sizes 31-36 were designed for simple replacement of the MbN sizes 21-26 that they replace. This allows for simple aftermarket replacement of both Emerson Power Transmission and many

common modular helical shaft mount products from other manufacturers.

Performance

MbN gearing designs deliver ratings that are amongst the highest in the industry for similar frame sizes. For replacements, this means that dimensional interchanges generally meet or exceed the original unit ratings for long life. In new applications, this can mean cost savings through downsizing versus the competition. Each MbN unit is also supplied factory-filled with high quality synthetic lubricant, an extra cost option for competitive units. This allows operation over a wide temperature range with minimal maintenance required.

Flexibility

The new MbN series 3000 offers a shaft-mounted version that incorporates the unique, patented tapered bushing system from the Browning® TorqTaper® Plus shaft mount reducer. This extends each frame size to be usable on a variety of shaft sizes. It also provides a proven bushing system with a centering ring that reduces wobbling on the shaft for reduced wear and tear. Where an output flange is used for mounting, frame sizes 2-4 have two flange sizes available per gear frame. This makes the MbN very adaptable compared to other brands. For applications requiring the gearmotors to be powered by an inverter (VFD), all Allguard® three phase motor designs now incorporate an upgraded wire and varnish treatment. Housings can be mounted in a variety of positions as well, with only a change in the breather and drain plug positions and a change in oil volume.

Screw Conveyor Drives

The MbN3000 units may be ordered in a CEMA screw conveyor drive version. The same variety of screw conveyor drive shafts, sealing cartridges, and trough ends are available as the Browning TorqTaper Plus shaft mount product line. Now there's a screw conveyor drive available with a full range of gear ratios and a gearmotor, c-face, input shaft, scoop mount or top mount input. Additionally, the exclusive explosion proof gearmotor offering makes for a lower cost, more compact alternative in applications such as grain handling.

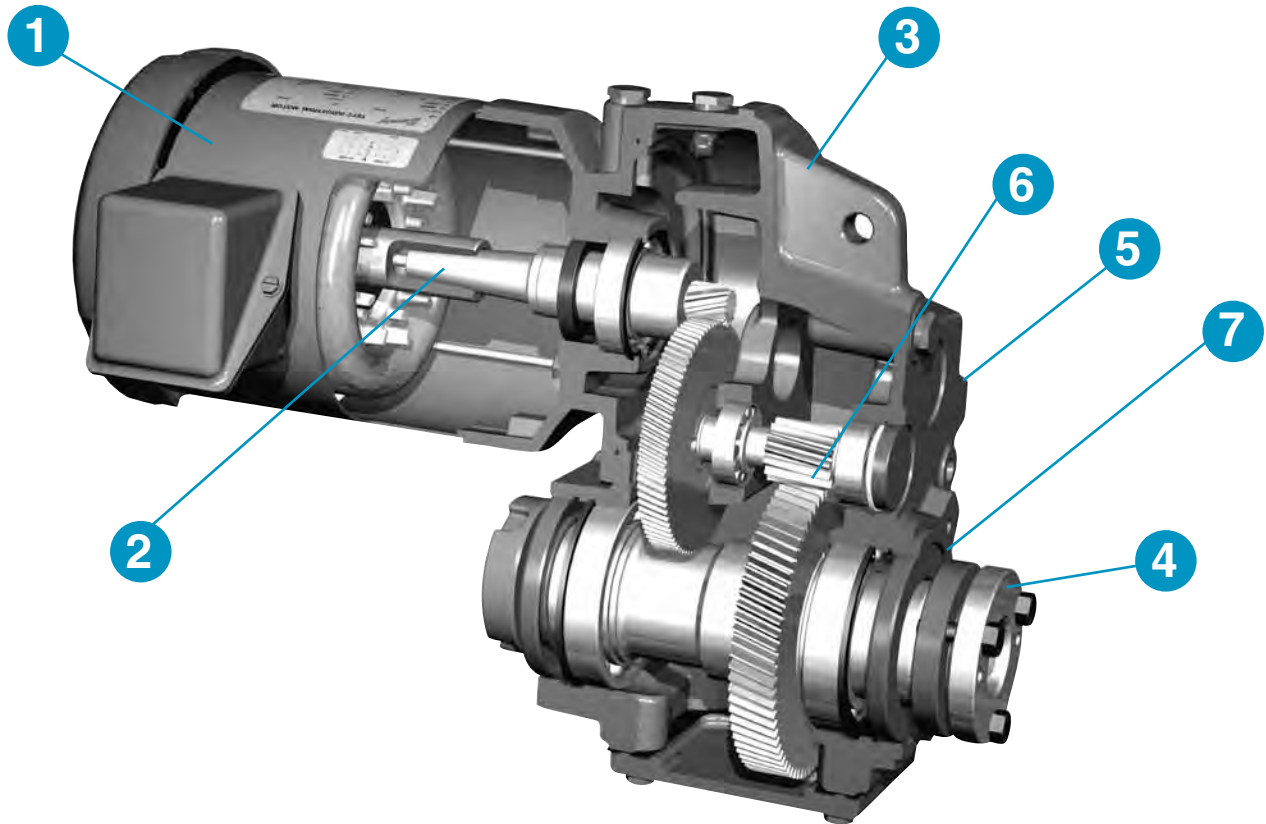
Reliability

Gear housings are fitted with normally closed breathers to help exclude contaminants, while preserving low internal operating pressure. All oil seals operate on plunge ground shaft surfaces to deliver extended life. Enhanced insulating materials and other standard features of our premium Varidyne® inverter duty motors allow Emerson Power Transmission to extend an industry leading 3-year motor warranty, even when using these motors with PWM inverter power up to 575 VAC.

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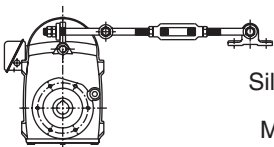
MbN Series Gearmotor Features...



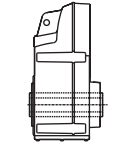
Design Features

- 1. High Efficiency Motor Design Option**
 - Any 3 phase non-XP gearmotors.
- 2. Innovative Self-Locking, Self-Aligning Taper Shaft Motor Connection**
 - Easy on-site motor replacement
 - Change motor without draining oil, breaking the gearcase seal, or changing primary pinion.
- 3. Gearcase Supplied Factory Filled with Synthetic Oil**
 - Wide temperature range and longer life.
- 4. Tapered Bushed Version Available on Gear Frame Sizes 2-7**
 - Each frame available with a variety of bushing bore diameters.
 - Frames 2-7 utilize a unique patented reversible single bushing system with a stabilizing ring to minimize wobble for reduced wear and tear. It includes an end cap to seal the quill end from contamination.
- 5. Corrosion and Shock Resistant Cast Iron Housing**
 - Reinforced and ribbed for extra strength.
- 6. Helical Gears and Shafts of Nickel Chromium Molybdenum Steel**
 - Helical gearing is case hardened and then skived, superfinished, or ground.
 - Helical gears heat shrunk on shafts or mounted on self-locking tapered shafts and keyed for high shock load capability.
- 7. Double Lip Seals on Heat Treated, Plunge Ground Shafts**

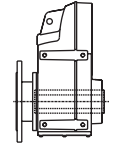
Mounting Versatility and Size Range



Standard
Hollow Shaft
Silent-Bloc/Tie Rod
Frames 1-7
Max. 74,000 lb-in



Face Mount
Hollow Shaft
Frames 1-7
Max. 74,000 lb-in



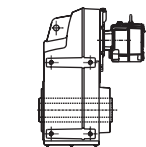
Flange Mount
Hollow Shaft
Frames 2-7
Max. 74,000 lb-in



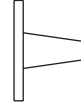
Tapered Bushed
Silent-Bloc/Tie Rod
Frames 2-7
Max. 74,000 lb-in




Screw Conveyor Drive
Frames 2-7
Max. 74,000 lb-in



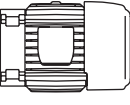
High Ratio Combined
Frames 2-7
All Styles
Max. 74,000 lb-in



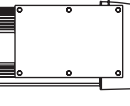
Modular
Tapered Connection



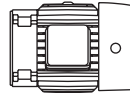
Three Phase TEFC
1/3 – 50 HP



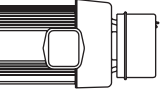
Corro-Duty®
1/3 – 50 HP



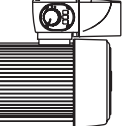
Single Phase TEFC
1/3 – 5 HP



Explosion Proof
1/3 – 10 HP



Brakemotor
1/3 – 10 HP



IntelliGear® Motor
with VFD
1/3 – 10 HP

MbN Series

Motor Options



TEFC – Three Phase

- Suitable for general purpose industrial applications
- High efficient design option from stock
- Premium efficiency available as option 3 HP and larger
- 1.25 service factor through 30 HP; 1.15 service factor above 30 HP
- Available for 50 Hz, 190/380 VAC through 30 HP
- Premium class F Allguard® motor insulation standard
- 40°C ambient, NEMA B design, continuous duty
- Inverter duty option per NEMA MG1 part 31 stocked
- Washdown gearmotors available to 2 HP



Corro-Duty®

- Designed for wet, corrosive applications and industries including waste treatment, mining and lumber.
- All cast iron construction (56 and 140 frames are rolled steel)
- High efficiency standard 1/3 HP and above
- Premium efficient option 3 HP and larger
- 1.15 service factor, class F Allguard insulation
- Condensation drains in motor and conduit box
- Inverter duty version per NEMA MG1 Part 31 stocked to 20 HP



TEFC – Single Phase

- For agricultural, light material handling, textile, and light pumping applications
- 1.25 service factor
(1.0 service factor, 2 HP and 1.15 service factor, 3 - 5 HP)
- Capacitor start
(capacitor run above 1/2 HP, 48 frame)
(capacitor run above 1/2 HP, 56 – 180T frames)
- Class B insulation, continuous duty, reversible



Explosionproof

- Ideal for the petro-chemical, grain, mining, and chemical industries
- Class I, group D, class II, groups F and G
- All cast iron construction (plastic fan cover)
- 1.0 service factor, class B insulation
- 40°C ambient, NEMA B design, continuous duty
- UL* approved Inverter duty per NEMA MG1 part 31 available



IntelliGear®

- Variable speed gearmotor with NEMA 4/12 enclosure
- "Onboard" pushbutton and remote speed changing options
- Pre-programmed 6:1 constant torque speed range
- Versions for 3/460V input power supplies from 1/3 to 10 HP
- 1/230V to 2 HP and 3/230V to 5 HP
- 1/115 V through 3/4 HP
- UL, CUL and CE
- Optional 10:1 and 15:1 speed ranges

*UL is believed to be a trade name and/or trademark of Underwriters Laboratories, Inc., and is NOT owned or controlled by Emerson Power Transmission.

Selection Information

1. Input HP
 - Based on application data
2. Speed / ratio
 - Obtain either desired output speed (rpm) or gearbox ratio based on application.
3. Mechanical service factors - gears
 - There are three standard classifications for gearmotor applications:

Class I - uniform loading, 3-10 hours per day, service factor 1.0 (minimum).

Class II - uniform loading over 10 hours per day or moderate shock loading up to 10 hours per day; service factor 1.4 (minimum).

Class III - moderate shock loading over 10 hours per day or heavy shock loading up to 10 hours per day; service factor 2.0 (minimum).

- The tables on pages D-25 through D-27 are based on past operating experience within the industries listed and information gathered by AGMA. If the user has data reflecting greater severity than normal industry usage, then the AGMA class should be increased.
- Choose the AGMA class for your given application based on this criteria. If your application cannot be found, use the following table to determine the service factor.

Duty Cycle	Hours Operation	Uniform Load	Moderate Shock Load	Heavy Shock Load
		U	M	V
Continuous	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Frequent Starts/ Stops*	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

*Greater than 10 per hour

Size Selection

- Step 1 - Locate gearmotor selection tables (pages D-28 - D-63) based on motor HP.
- Step 2 - Choose the appropriate nominal speed or ratio required.
- Step 3 - Select the correct gearmotor based on AGMA class or service factor determined from selection information.
- Step 4 - If the tapered bushed design is selected, choose the appropriate bushing from pages D-18.

Torque and HP Calculations

The output torque available from an MbN gearmotor can be calculated from the following formula:

$$\text{Output Torque } T \text{ (lb-in)} = \frac{\text{Motor HP} \times 63025 \times \text{Gear Efficiency}}{\text{Output rpm}}$$

If the output torque required by the load is known, the input HP required to produce that amount of torque can be calculated as follows:

$$\text{Input HP} = \frac{\text{Output Torque Required (lb.-in.)} \times \text{Output rpm}}{63025 \times \text{Gear Efficiency}}$$

Selection Example

A shaft mounted gearmotor is required to operate a uniformly loaded belt conveyor at 56 rpm, 24 hours per day. The customer has specified a 230/460 VAC, 3-phase, High efficiency TEFC gearmotor rated 5 HP. The unit will be mounted on a 2-1/8" diameter shaft using a tapered bushed output, with a tie rod type torque arm bolted to the machine to prevent rotation. The unit will be in the normal position with the motor and output shaft horizontal and the input directly above the output.

1. Input HP is 5 HP
2. Output Speed required is 56 rpm

AGMA service classification table on page D-25 indicates the following:

Application	Load	Class	
		Up to 10 Hrs/Day	Over 10 Hrs/Day
Conveyors – Uniformly Loaded or Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	U	I	II

Since this application operates 24 hours per day, a Class II service factor is required.

Step 1... Locate a gearmotor for 5 HP on page D-48.

Step 2... Find a nominal speed closest to the 56 rpm output required.

Step 3... Select the row in the table for Class II service factor.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types
					Gear	Motor	
56	I	1.3	5361	31.5	3362	184T	T,S,C,X,IG
56	II, III	2.4	5396	31.5	3472	184T	T,S,C,X,IG

Note that there are two lines for 56 rpm, however only the second line meets the minimum Class II service factor requirement. The 56 rpm line with the size 3472 gearmotor is the proper selection. This means that the Size 3472 gear frame with 31.5:1 nominal ratio and 56 rpm output is the best selection.

Step 4... Select the appropriate bushing from pages D-18 for the customer's 2-1/8" diameter shaft. For gear frame 3472 and 2-1/8" diameter, the bushing part number is 207TBP202.

Complete the Process by Building a Complete Part Number

Catalog designation (see "Catalog Nomenclature" page D-14):

MbN • 3472 • 00B • P3 • 31.5 • HT24 • 184T • 5
Tie Rod Kit: MUB999TA002
Bushing: 207TBP202

The codes indicate the following: Frame 3472 MbN gearmotor, 00 = the standard housing with no faces or flanges, B = tapered bushed output shaft, P3 = the normal mounting position with output shaft horizontal and motor directly above output shaft, 31.5:1 nominal ratio, HT24 = high efficiency 230/460 V TEFC motor, 184T motor frame, 5 HP. (Page D-15 explains output shaft, face or flange and mounting positions. Page D-16 shows motor types. The tie rod kits are shown on page D-21.)

Gearmotor Selection

Selection Information

- Determine installation environment
 - Control enclosure is NEMA 4/12
- Input HP
 - For constant torque loads this is at maximum speed of range. Therefore, the gear ratio should be selected to closely match the required maximum speed.
- Speed range
 - Confirm maximum and minimum of needed range.
- Determine control power supply
 - Phase and voltage

Power Supply	Input HP's
1 ph / 115 v	.33 to .75
1 ph / 230 v	.33 to 2
3 ph / 230 v	.33 to 5
3 ph / 460 v	.33 to 10
3 ph / special	R. O.

- Mechanical service factoring of gear
 - Refer to page D-10 for this procedure.

Note: IntelliGear application for 1 phase power supply is limited to 10 starts per hour where the unit is started via AC power mains contactor.

- Determine speed adjustment option (see pages F-8 and F-9)
 - Select from:

- PD = Digital keypad with forward/reverse/stop/speed up/speed down/speed display on IntelliGear enclosure
- P1 = Run/stop/speed pot. mounted on IntelliGear enclosure
- P2 = Forward/reverse/stop/pot. mounted on IntelliGear enclosure
- P3 = Speed pot. (only) mounted on IntelliGear enclosure (start/stop by others)
- P4 = Speed pot. (only) mounted inside IntelliGear enclosure (start/stop by others)
- R = Remote signal following (0-10VDC or 4-20mA supplied by others)
- RP = Remote from fieldbus - Profibus DP

Size Selection

- Step 1 - Determine the maximum motor rpm from the following table based on the whether the application requires a speed range of 6:1, 10:1 or 15:1.

$$\text{Speed Range} = \frac{\text{Maximum Output Speed Required}}{\text{Minimum Output Speed Required}}$$

HP	IntelliGear Motor Speed Range		
	6:1 Speed Range	10:1 Speed Range	15:1 Speed Range
1/3 - 3/4 HP	1760 - 293 rpm	1760 - 176 rpm	2625 - 175 rpm
1 - 1 1/2 HP	1750 - 291 rpm	1750 - 175 rpm	2620 - 175 rpm
2 HP	1750 - 291 rpm	2585 - 255 rpm	N. A.
3 HP	1750 - 291 rpm	2630 - 263 rpm	N. A.
5 HP	2150 - 358 rpm	2605 - 260 rpm	N. A.
7.5 HP	2150 - 358 rpm	2670 - 267 rpm	N. A.
10 HP	2100 - 350 rpm	2600 - 260 rpm	N. A.

- Step 2 - Determine the gear ratio required. Use the maximum motor rpm from the table above.
- $$\text{Gear Ratio} = \frac{\text{Maximum Motor Speed}}{\text{Maximum Output Speed Req'd.}}$$

- Step 3 - Locate gearmotor selection tables based on the input HP required at the ratio calculated in Step 2. Select the nominal gear ratio closest to the one calculated.

- Step 4 - Select the correct gearmotor that meets or exceeds the AGMA class or service factor determined in the selection information.

- Step 5 - If the tapered bushed design is selected, choose the appropriate bushing from pages D-18.

- Step 6 - Confirm input power supply is compatible with HP of selection and select the speed adjustment option desired for the application.

- Step 7 - Referring to page D-17, determine if an alternative controller location is required for the application. (Note that the default location is "FO" – the 12 o'clock position.)

Gearmotor Selection

Selection Example

A shaft mounted gearmotor is required to directly operate a uniformly loaded assembly line conveyor. The equipment operates 16 hours per day, and the required speed range is 4 to 37 rpm. The customer prefers a bushed connection to prevent fretting, and the shaft is 1 7/8" in diameter. The customer has specified a 2 HP gearmotor with a TEFC motor and with VFD, and the power supply is 460 VAC, 3-phase. A silent bloc mount will be used to attach the gearmotor to the machine frame and prevent rotation. The unit will be mounted on its side with the motor and output shaft horizontal. Viewed from opposite the motor fan, the motor will be mounted to the left of the output shaft.

1. Input HP is 2 HP
2. Output speed range required is 4-37 rpm
3. AGMA service classification table on page D-25 indicates the following:

Application	Load	Class	
		Up to 10 Hrs/Day	Over 10 Hrs/Day
Assembly Conveyors Uniformly Loaded or Fed Heavy Duty	U	I	II
	M	II	II

Since this conveyor is uniformly loaded and operates 16 hours per day, a Class II service factor is required.

Step 1... Calculate the speed range required: $37 \text{ rpm Max} / 4 \text{ rpm Min} = 9.25:1$, so an IntelliGear with 10:1 range is required. This means the motor top speed will be 2585 rpm for a 2 HP IntelliGear.

Step 2... The ideal gear ratio is $2585 \text{ RPM} / 37 \text{ RPM} = 69.9:1$.

Step 3... Locate the gearmotor selection table for 2 HP on page D-43, and find a nominal ratio close to 69.9:1.

Step 4... Select the row in the table for Class II service factor.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types
					Gear	Motor	
26	III	3+	4576	71	3473	145T	T,S,C,X,IG
25	I, II	1.4	4671	71	3363	145T	T,S,C,X,IG

Note that 71:1 ratio is closest nominal ratio to 69.9:1. There are two choices at this ratio, and the best is Gear Frame 3363, which is the smallest frame size that meets the Class II service factor requirement.

Step 5... Select the appropriate bushing from pages D-18 for the customer's 1 7/8" diameter shaft. For gear frame 3363 and 1 7/8" diameter, the bushing part number is 115TBP114.

Step 6... The power supply is 460 VAC/3-phase, and there is an IntelliGear available for this voltage at 2 HP. (See the footnote at the bottom of page D-43.)

Complete the Process by Building a Complete Part Number

Catalog designation (see "Catalog Nomenclature" page D-14):

MbN • 3363 • 00B • P7 • 71 • IG4 • 145T • 2

Silent Bloc: MUB230AM001

Bushing: 115TBP114

The codes indicate the following: Frame 3363 MbN gearmotor, 00 = the standard housing with no faces or flanges, B = tapered bushed output shaft, P7 = mounting position turned on the side with output shaft horizontal and the motor to the left of the output shaft (viewed opposite motor fan end), 71:1 nominal ratio, IG4 = 460 VAC IntelliGear motor with VFD, 145T motor frame, 2 HP. (Page D-15 explains output shaft, face or flange and mounting positions, and page D-16 shows motor types. The silent bloc bushings are shown on page D-21.)

MbN • 31 3 2 • 40C • P3 • 22.4 • HT24 • 145T • 1.5 • G11

See page D-15

Reducer Size		Stages	Output Configuration Shaft and Housing	Mounting Position	Nominal Gear Ratio	Input Type	Motor Frame	Motor HP	Modification(s)
31	3	2 = 2 stages	40C = Hollow Shaft Face Mount	P3	22.4 = 22.4:1	Motor Type Selected from Catalog Designations Column in Standard Motor Input from Table on page D-16	56-364T	1.5=1.5 HP	Select from Modifications Listed on Pages D-22 to D-24 and D-17
32	4	3 = 3 stages	50C ¹ = Hollow Shaft Std Flange Mount	P6	Use Nominal Ratio Selected from Gearmotor Selection Tables				
33	6	4 = 4 stages	60C ¹ = Hollow Shaft Alt. Flange Mount	P7					
34	7	5 = 5 stages	33B ¹ = Taper Bushed Mount	P8					
35	8	6 = 6 stages	00S ¹ = Screw Conveyor Type	PV5					
36	9		40P = Solid Shaft Face Mount	PV6					
37	0		50P ¹ = Solid Shaft Flange Mount						

¹ Not available on Frame 31

FLANGE DIMENSIONS (mm)						
BD	200	250	300	350	450	
AK	130	180	230	250	350	
AJ	165	215	265	300	400	
Gear Frame	Output Flange and Shaft Designation					
31	Flange Not Available					
32	60C	50C				
33		60C	50C			
34		60C	50C			
35				50C		
36						50C
37						50C

Mounting Positions

Mounting Configuration



Availability

MbN Frame	Face Mounted		Flange Mounted			Taper Bush Shaft Mount 33B**	Screw Conveyor Drive 00S
	Hollow Shaft	Solid Shaft	Hollow Shaft		Solid Shaft		
	40C	40P	50C	60C	50P		
31	●	●	-	-	-	-	-
32	●	●	●	●	●	●	●
33	●	●	●	●	●	●	●
34	●	●	●	●	●	●	●
35	●	●	●	-	●	●	●
36	●	●	●	-	●	●	●
37	●	●	●	-	●	●	●

- Not Available in This Frame Size

● Available at Standard Lead-Times

** Bushing can be moved to "motor" side of output shaft.

Mounting Positions



P3



P6



P7



P8



PV5



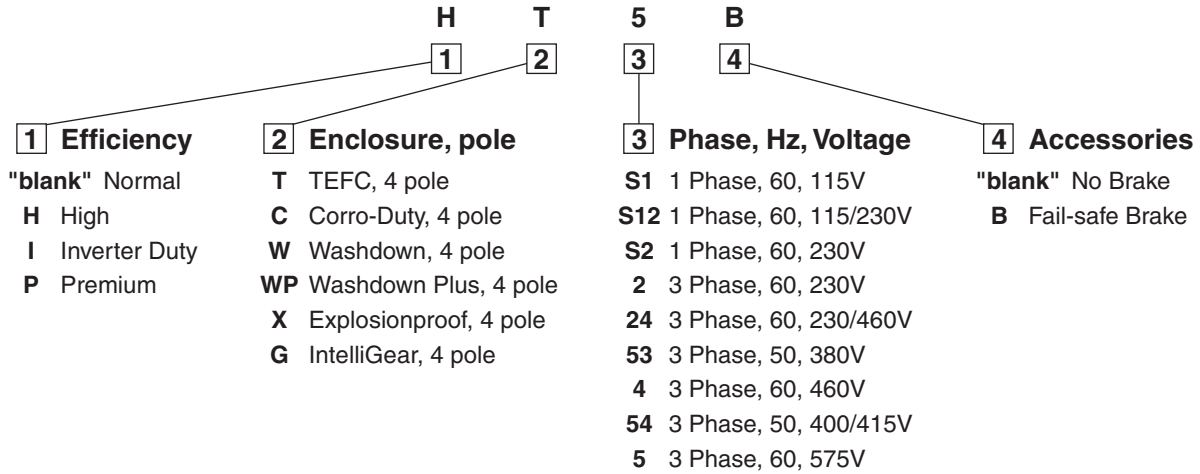
PV6



Standard Motor Input Types

MbN
SERIES 3000

Example: High Efficiency, TEFC, 3 phase 60 Hz, 575V, with Fail-safe Brake



Base Design	Input Code	Motor HP															
		0.33	0.50	0.75	1	1.5	2	3	5	7.5	10	15	20	25	30	40	50
S Single Phase TEFC	TS12	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS12B	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	-
	TS2	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
	TS2B	-	-	-	-	-	-	Y	Y	-	-	-	-	-	-	-	-
T 3 Phase TEFC	HT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	HT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	HT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T24B	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T5	Y	Y	Y	Y ¹	-	-	-	-	-	-	-	-	-	-	-	-
	T5B	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
	T53	Y	Y	Y	Y ¹	Y	Y	Y	Y	Y	P	P	P	P	P	P	P
	T54	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	P	P	P	P	P	P
	IT24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT24B	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-
	IT5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	IT5B	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-
	PT24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PT5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
W24	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-	
W5	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-	
WP24	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-	
WP5	Y	Y	Y	Y ¹	Y	Y	-	-	-	-	-	-	-	-	-	-	
C 3 Phase Corro-Duty®	HC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	HC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	IC24	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	IC5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	PC24	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	PC5	-	-	-	-	-	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	
X 3 Phase Explosionproof	X24	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	
	X5	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	
	IX24	P	P	P	P	P	P	P	P	P	P	-	-	-	-	-	
IG IntelliGear®	IGS1	Y	Y	Y	-	-	-	-	-	-	-	-	-	-	-	-	
	IGS2	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	-	-	
	IG2	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-	-	
	IG4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	

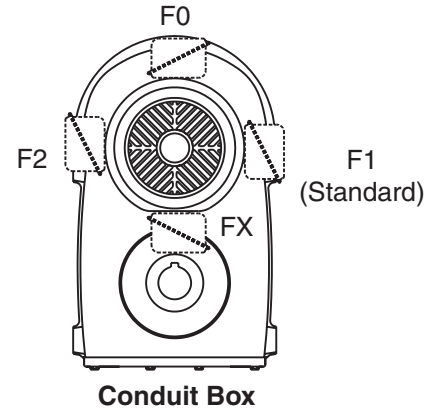
P = Production lead-time Y = Available from stock Y¹ = Motor frame is B56 - = not available

MbN Series

Electrical Connection Options

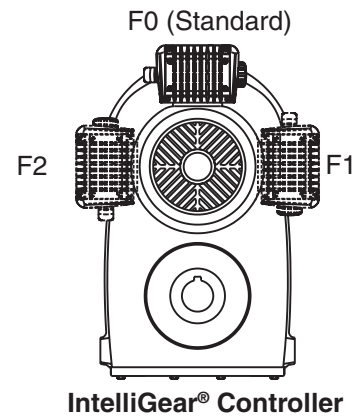
Conduit Box Location

When ordering a conventional MbN gearmotor, specify the desired conduit box location viewing the motor fan end in the P3 mounting position. If no option is specified, the “F1” position will be supplied.



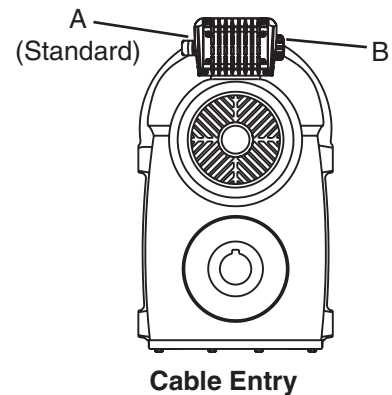
Controller Location

When ordering an IntelliGear® gearmotor, the controller location may be specified viewing the motor fan end in the P3 mounting position. If no options are specified, the “F0” position will be supplied.



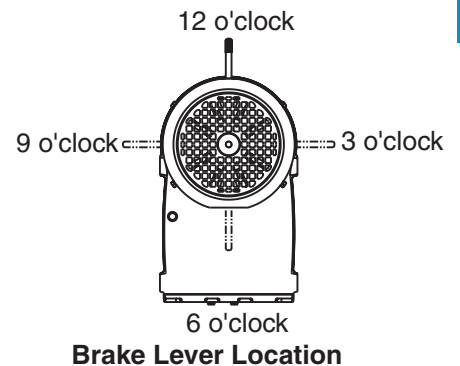
Cable Entry

IntelliGear cable entry can be from either side of the IntelliGear enclosure as viewed from the motor fan end. Position “B” may be specified upon order entry, but position “A” is supplied if neither position is specified.



FCR DC Brake Manual Release Lever Location

Unit Type	Default Location	Optional Locations
MbN less IntelliGear	12 o'clock	3, 6, or 9 o'clock
MbN with IntelliGear	9 o'clock	3, 6, or 12 o'clock (lever cannot be in same position as IntelliGear)



MbN32-37 units can be ordered with a “00B” bushed output version. When a bore size is defined at order entry, this configuration includes the appropriate bushing kit unassembled. The table below shows the available stocked bushing bores that may be specified for each MbN frame size. Each bushing kit is supplied with the bushing, mounting hardware, and a stabilizer ring. Where a bushing is needed for a spare or for a bore size change, select it from the following table by gear frame size.



- **MbN unique, patented single bushing mounting system**
 - Mounts from either side
 - Tapered stabilizer ring minimizes wobble
 - End cap seals quill end from contamination
 - Resists fretting corrosion

MbN Frame	Meas. Unit	Bushing Number	Bore ¹	Shaft Keyseat Required	Type	
32	Inch	107TBP105	1 5/16"	5/16 x 5/32 x 3 7/8	2	
		107TBP106	1 3/8"	5/16 x 5/32 x 3 7/8	2	
		107TBP107	1 7/16"	3/8 x 3/16 x 3 7/8	2	
	Metric *	107TBP30MM	30 mm	8 x 3.5 x 100 (mm)	2	
		107TBP35MM	35 mm	10 x 4 x 100 (mm)	2	
33	Inch	115TBP107	1 7/16	3/8 x 3/16 x 4 1/8	2	
		115TBP108	1 1/2	3/8 x 3/16 x 4 1/8	2	
		115TBP110	1 5/8	3/8 x 3/16 x 4 1/8	2	
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2	
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2	
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2	
	Metric *	115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2	
		115TBP40MM	40 mm	12 x 4 x 105 (mm)	2	
		115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2	
34	Inch	207TBP200	2	1/2 x 1/4 x 5 1/8	2	
		207TBP202	2 1/8	1/2 x 1/4 x 5 1/8	2	
		207TBP203	2 3/16	1/2 x 1/4 x 5 1/8	2	
		207TBP204	2 1/4	1/2 x 1/4 x 5 1/8	2	
		207TBP207	2 7/16	5/8 x 5/16 x 5 1/8	2	
	Metric *	207TBP50MM	50 mm	14 x 4.5 x 130 (mm)	2	
		207TBP60MM	60 mm	18 x 5.5 x 130 (mm)	2	
35	Inch	215TBP203	2 3/16	1/2 X 1/4 X 5 5/8	2	
		215TBP204	2 1/4	1/2 X 1/4 X 5 5/8	2	
		215TBP207	2 7/16	5/8 X 5/16 X 5 5/8	2	
		215TBP208	2 1/2	5/8 X 5/16 X 5 5/8	2	
		215TBP211	2 11/16	5/8 X 5/16 X 5 5/8	2	
		215TBP215	2 15/16	3/4 X 3/8 X 5 5/8	2	
	Metric *	215TBP60MM	60 mm	18 x 5.5 x 140 (mm)	2	
		215TBP70MM	70 mm	20 x 6 x 140 (mm)	2	
	36	Inch	215TBP207	2 7/16	5/8 X 5/16 X 5 5/8	2
			215TBP208	2 1/2	5/8 X 5/16 X 5 5/8	2
			215TBP211	2 11/16	5/8 X 5/16 X 5 5/8	2
			215TBP215	2 15/16	3/4 X 3/8 X 5 5/8	2
		Metric *	215TBP60MM	60 mm	18 x 5.5 x 140 (mm)	2
			215TBP70MM	70 mm	20 x 6 x 140 (mm)	2
37	Inch	307TBP214	2 7/8	3/4 x 3/8 x 6 3/4	2	
		307TBP215	2 15/16	3/4 x 3/8 x 6 3/4	2	
		307TBP300	3	3/4 x 3/8 x 6 3/4	2	
		307TBP306	3 3/8	7/8 x 7/16 x 6 3/4	2	
		307TBP307	3 7/16	7/8 x 7/16 x 6 3/4	2	
	Metric *	307TBP75MM	75 mm	20 x 6 x 170 (mm)	2	
		307TBP80MM	80 mm	22 x 7 x 170 (mm)	2	
		307TBP85MM	85 mm	22 x 7 x 170 (mm)	2	

¹ Bushing bore shown must be selected by customer based on complete application details

* Metric bushings have metric bores and require metric keyseats as shown in mm.

Screw Conveyor Drive Shafts²

Gear Frame	1 1/2" Dia. Shaft for 6" - 10" Dia. Screw	2" Dia. Shaft for 9" - 12" Dia. Screw	2 7/16" Dia. Shaft for 12" - 14" Dia. Screw	3" Dia. Shaft for 12" - 20" Dia. Screw	3 7/16" Dia. Shaft for 18" - 24" Dia. Screw
32	107DSP108__	107DSP200__	107DSP207__	107DSP300__	N/A
33	115DSP108__	115DSP200__	115DSP207__	115DSP300__	N/A
34	N/A	207DSP200__	207DSP207__	207DSP300__	207DSP307__
35 & 36	N/A	215DSP200__	215DSP207__	215DSP300__	215DSP307__
37	N/A	N/A	N/A	307DSP300__	307DSP307__

² Complete the shaft part number by adding shaft type as follows:

- Standard — 2 hole steel shaft = leave blank (example 107DSP108)
- Optional — 3 hole steel shaft = add -3 (example 107DSP108-3)
- Optional — 2 hole stainless steel shaft = add SS (example 107DSP108SS)
- Optional — 3 hole stainless steel shaft = add -3SS (example 107DSP108-3SS)

Screw Conveyor Accessories

Gear Frame	Optional Seal Cartridges		Felt Seal ¹
	Waste Pack Kit	Packing Gland Kit	
32	107WWP	107PGP	FR200
34	115-203WWP	115-203PGP	FR210
35	207-407WWP	207-407PGP	FR308
36	207-407WWP	207-407PGP	FR308
37	207-407WWP	207-407PGP	FR308

¹ Felt seal can only be added to the waste pack seal cartridge kit.

MbN Screw Conveyor Drives May Be Assembled in the Field

Required Components Include: MbN 00S gearmotor with screw conveyor adapter
Screw conveyor drive shaft

Optional Components Include: Waste pack
Packing gland
Felt seal

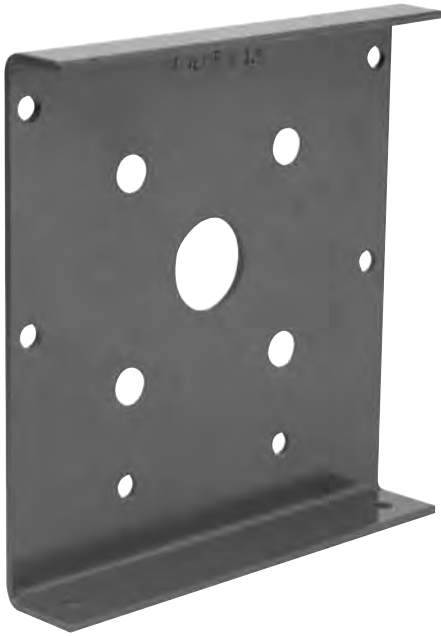


Screw Conveyor Drive Shaft Kit

Screw Conveyor Thrust Ratings

Gear Frame	Maximum Thrust Rating (Lbs.)
32	2000
33	3000
34	4500
35	5750
36	6300
37	7800

Output tapered roller bearing standard - all sizes.



**Formed Hot Roll
Plate Steel**

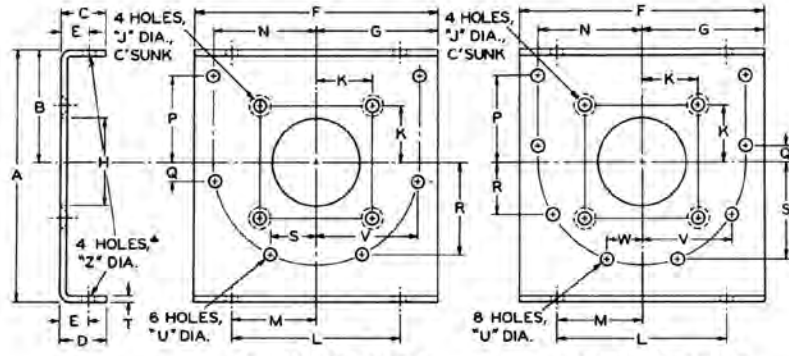


FIG 1 - 6 HOLE TYPE

FIG 2 - 8 HOLE TYPE

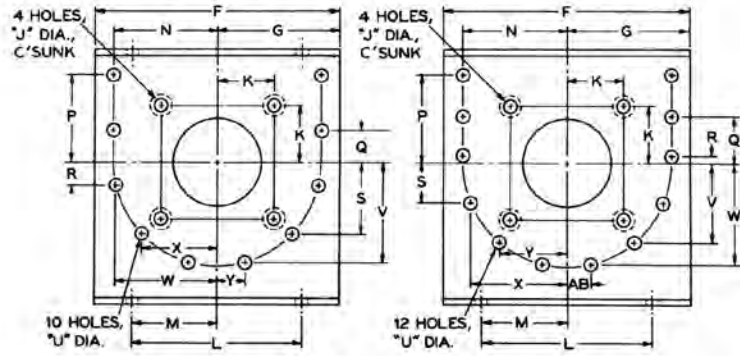


FIG 3 - 10 HOLE TYPE

FIG 4 - 12 HOLE TYPE

Table No. 33

Specifications

Part No.	Conveyor Screw Dia.	Drive Shaft Dia.	Fig.	Type	Dimensions												
					A	B	C	D	E	F	G	H	J	K	L		
SCTE06 x 1 1/2"	6"	1 1/2"	1	6-Hole	10 1/8"	4 1/2"	1 1/2"	1 3/4"	1"	9 3/4"	4 7/8"	1 3/4"	9/16"	2"	8 1/8"		
SCTE09 x 1 1/2"	9	1 1/2"	2	8-Hole	14	6 1/8"	1 5/8"	2 5/8"	1 1/2"	13 3/4"	6 7/8"	1 3/4"	9/16"	2	9 3/8"		
SCTE09 x 2	9	2	2	8-Hole	14	6 1/8"	1 5/8"	2 5/8"	1 1/2"	13 3/4"	6 7/8"	1 3/4"	11/16"	2 9/16"	9 3/8"		
SCTE10 x 1 1/2"	10	1 1/2"	2	8-Hole	15 1/4"	6 3/8"	2 3/8"	2 7/8"	1 3/4"	14 3/4"	7 3/8"	2 1/4"	9/16"	2	9 1/2"		
SCTE10 x 2	10	2	2	8-Hole	15 1/4"	6 3/8"	2 7/8"	2 7/8"	1 3/4"	14 3/4"	7 3/8"	2 1/4"	11/16"	2 9/16"	9 1/2"		
SCTE12 x 2	12	2	2	8-Hole	17 3/8"	7 3/4"	2	2 3/4"	1 5/8"	17 1/4"	8 5/8"	2 1/4"	11/16"	2 9/16"	12 1/4"		
SCTE12 x 2 7/16	12	2 7/16	2	8-Hole	17 3/8"	7 3/4"	2	2 3/4"	1 5/8"	17 1/4"	8 5/8"	2 11/16"	11/16"	2 13/16"	12 1/4"		
SCTE12 x 3	12	3	2	8-Hole	17 3/8"	7 3/4"	2	2 3/4"	1 5/8"	17 1/4"	8 5/8"	3 1/4"	13/16"	3	12 1/4"		
SCTE14 x 2 7/16	14	2 7/16	2	8-Hole	20 1/8"	9 1/4"	2	2 7/8"	1 5/8"	19 1/4"	9 5/8"	2 11/16"	11/16"	2 3/16"	13 1/2"		
SCTE14 x 3	14	3	2	8-Hole	20 1/8"	9 1/4"	2	2 7/8"	1 5/8"	19 1/4"	9 5/8"	3 1/4"	13/16"	3	13 1/2"		
SCTE16 x 3	16	3	2	8-Hole	22 5/8"	10 5/8"	2 1/2"	3 1/4"	2	21 1/4"	10 5/8"	3 1/4"	13/16"	3	14 7/8"		
SCTE18 x 3	18	3	3	10-Hole	25 1/2"	12 1/8"	2 1/2"	3 1/4"	2	24 1/4"	12 1/8"	3 1/4"	13/16"	3	16		
SCTE18 x 3 7/16	18	3 7/16	3	10-Hole	25 1/2"	12 1/8"	2 1/2"	3 1/4"	2	24 1/4"	12 1/8"	3 11/16"	13/16"	3 3/8"	16		
SCTE20 x 3	20	3	3	10-Hole	28 1/2"	13 1/2"	2 1/2"	3 3/4"	2 1/4"	26 1/4"	13 1/8"	3 1/4"	13/16"	3	19 1/4"		
SCTE20 x 3 7/16	20	3 7/16	3	10-Hole	28 1/2"	13 1/2"	2 1/2"	3 3/4"	2 1/4"	26 1/4"	13 1/8"	3 11/16"	13/16"	3 3/8"	19 1/4"		
SCTE24 x 3 7/16	24	3 7/16	4	12-Hole	34 5/8"	16 1/2"	2 1/2"	4 1/8"	2 1/2"	30 1/4"	15 1/8"	3 11/16"	13/16"	3 3/8"	20		

Part No.	Dimensions														Wt. Lbs.
	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	AB	
SCTE06 x 1 1/2"	4 1/16"	4 7/16"	3 15/32"	5/8"	3 15/16"	2 1/32"	3/16"	7/16"	4 25/64"	-	-	-	7/16"	-	6.7
SCTE09 x 1 1/2"	4 11/16"	6 1/4"	4 15/16"	13/16"	3 13/64"	5 45/64"	1/4"	7/16"	5 23/64"	2 9/16"	-	-	9/16"	-	17.8
SCTE09 x 2	4 11/16"	6 1/4"	4 15/16"	13/16"	3 13/64"	5 45/64"	1/4"	7/16"	5 23/64"	2 9/16"	-	-	9/16"	-	17.7
SCTE10 x 1 1/2"	4 3/4"	6 5/8"	4 1/8"	5/8"	3 3/8"	6 1/8"	1/4"	7/16"	5 45/64"	2 17/32"	-	-	9/16"	-	20.6
SCTE10 x 2	4 3/4"	6 5/8"	4 1/8"	5/8"	3 3/8"	6 1/8"	1/4"	7/16"	5 45/64"	2 17/32"	-	-	9/16"	-	20.5
SCTE12 x 2	6 1/8"	7 15/16"	6 1/4"	15/16"	4 7/64"	6 59/64"	5/16"	9/16"	6 51/64"	3 7/8"	-	-	11/16"	-	33.8
SCTE12 x 2 7/16	6 1/8"	7 15/16"	6 1/4"	15/16"	4 7/64"	6 59/64"	5/16"	9/16"	6 51/64"	3 7/8"	-	-	11/16"	-	33.5
SCTE12 x 3	6 1/8"	7 15/16"	6 1/4"	15/16"	4 7/64"	6 59/64"	5/16"	9/16"	6 51/64"	3 7/8"	-	-	11/16"	-	33.3
SCTE14 x 2 7/16	6 3/4"	8 15/16"	6 23/32"	1 3/32"	4 11/16"	8 27/64"	5/16"	9/16"	7 39/64"	3	-	-	11/16"	-	42.4
SCTE14 x 3	6 3/4"	8 15/16"	6 23/32"	1 3/32"	4 11/16"	8 27/64"	5/16"	9/16"	7 39/64"	3	-	-	11/16"	-	42.2
SCTE16 x 3	7 7/16"	10	8	1 5/8"	4 57/64"	9 17/64"	5/16"	11/16"	8 23/32"	3 3/4"	-	-	11/16"	-	51.1
SCTE18 x 3	8	11	9 1/2"	3 9/16"	2 25/64"	7 37/64"	5/16"	11/16"	10 19/32"	10 47/64"	7 63/64"	2 15/16"	11/16"	-	67.9
SCTE18 x 3 7/16	8	11	9 1/2"	3 9/16"	2 25/64"	7 37/64"	5/16"	11/16"	10 19/32"	10 47/64"	7 63/64"	2 15/16"	11/16"	-	67.7
SCTE20 x 3	9 5/8"	12 3/16"	10 23/32"	4 15/32"	2 13/64"	8 3/16"	3/8"	11/16"	11 23/32"	11 63/64"	9 1/32"	3 11/32"	13/16"	-	96.9
SCTE20 x 3 7/16	9 5/8"	12 3/16"	10 23/32"	4 15/32"	2 13/64"	8 3/16"	3/8"	11/16"	11 23/32"	11 63/64"	9 1/32"	3 11/32"	13/16"	-	96.7
SCTE24 x 3 7/16	10	14 1/4"	13 23/32"	7 19/32"	31/32"	5 33/64"	3/8"	11/16"	10 7/8"	13 55/64"	13 1/8"	9 7/32"	▲ 13/16"	3 5/16"	133.0

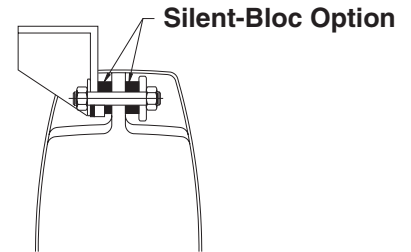
Notes: Browning Trough Ends are drilled to fit CEMA standard troughs. The center holes are drilled to fit Browning Screw Conveyor Drives.

▲ Figure 4 has 2 "Z" holes in bottom flange only; no holes in top flange.

Mounting Accessories

Standard Mounting By Reaction Point

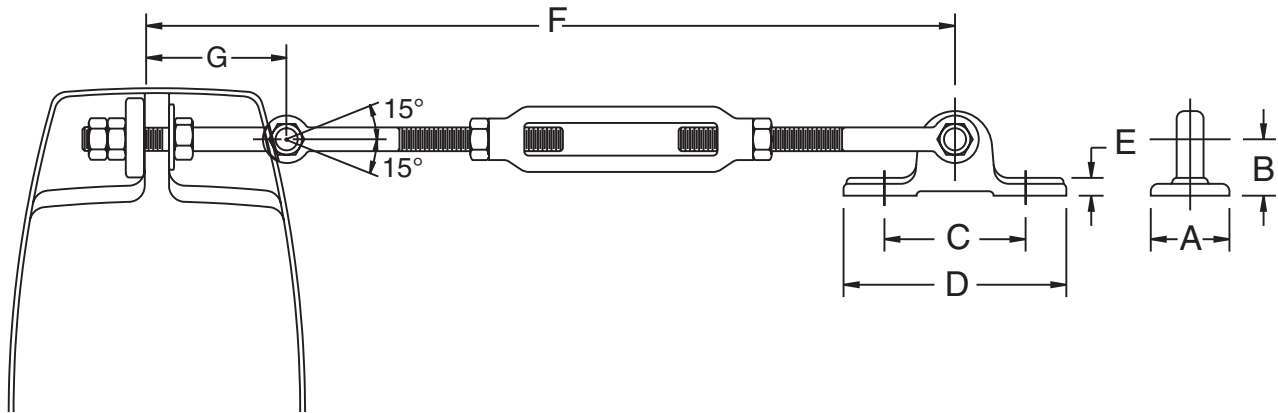
The use of "Silent-Bloc" is recommended for standard mounting of OOC and OOB style units, or 40C units not utilizing "face" for mounting. These resilient rubber bushings help to minimize vibration. Order by part number below.



Gear Frame	Silent-Bloc Kit #	ID x OD x Thickness
31 - 33	MUB230AM001	0.55" x 1.57" x 0.59"
34 - 35	MUB450AM001	0.87" x 2.36" x 1.18"
36 - 37	MUB600AM001	1.30" x 3.15" x 1.20"

Optional Mounting with Tie Rod

A conventional tie rod kit is available as shown in the diagram below. It is used to secure the MbN 00C or 00B style housing to a solid machine surface and prevent rotation of the gear unit. Tie rod can be used with 40C units not utilizing "face" for mounting. Order by the part number in the table below:



Note: Tie rod may be mounted on the opposite side if desired.

Dimensions (Inches)

Gear Frames	Tie Rod Kit #	A	B	C	D	E	F		G
							Min.	Max.	
31 - 33	MUB999TA001	2.09	1.50	3.74	5.91	0.47	18.58	23.11	3.20
34 - 35	MUB999TA002	1.97	1.77	4.13	5.71	0.59	22.36	26.50	5.90
36	XS9651	3.62	2.22	4.75	6.5	0.72	33.92	39.92	4.55
37		3.62	2.22	4.75	6.5	0.72	34.05	40.05	4.55

Note: Tie rod assemblies should always be mounted in tension.

Modifications, Options and Accessories

Inverter Duty Gearmotors

Improvements in the motors for MbN gearmotors include an upgrade in the wire and varnish treatment used in all Allguard® non-explosionproof three phase motors. This makes the three phase gearmotor suitable for use with PWM inverters in many applications. A one year warranty will be extended for standard efficiency motors on constant torque applications over 3:1 range from 60-20 Hz. The same warranty is extended for high efficiency design motors on constant torque applications over 5:1 range from 60-15 Hz providing the following conditions are met:

- Motor is non-hazardous 3 phase > 48 frame
- Cable length to controller < 100 feet
- Line voltage is < 480 VAC
- Thermal protectors are not required

For all other conditions of operation (including 575 VAC) that exceed these parameters and all hazardous motor applications, select the inverter duty motor design under the motor Type required by the application. These designs include winding thermostats and will be covered by a three (3) year limited warranty of the motor as covered in the Standard Terms and Conditions, and full compliance with NEMA MG1 Part 31.

Motor Modifications

M1 Brakes

Design

These motor mounted brakes have a direct acting, spring set, electromagnetically released disc design. When power to the brake is interrupted, the brake will immediately set and hold. When power is restored to the brake then the brake will be released automatically.

Brake Enclosures

IP23 – suitable for indoors with relatively dry, clean and non-hazardous applications

IP55 – suitable for outdoor or indoor where gearmotor can be exposed to splashing liquids, dusts, and chemicals that are non-hazardous. Not suitable for washdown applications

Motor Modifications Continued

Operating Voltage

Brakemotors for fixed frequency operation will be arranged for operating with motor power as standard. If another lower voltage like 115 VAC is to be used for the brake on a 3 phase motor, state this voltage at order entry

Brakes for inverter duty brakemotors require a separate fixed frequency AC power source for the brake, but interlocked with starting of the motor. The standard brake design for inverter duty gearmotors will be arranged for single phase 115/230 VAC.

Mounting

Brakes for MbN gearmotors are suitable for the mounting ordered for the gearmotor. The standard brake will have a manual release included. Refer to the table on D-17 for the manual release mounting options available on the FCR type IP 55 brake design.

M2 Premium Efficiency Motors

High efficiency motor designs are a standard option for 3 phase motors on 56 frame and larger MbN gearmotors type "T" and "C" to meet energy legislation in Canada and most End User specifications, by using input codes such as HT24, HT5, HC24, and HC5 based on voltage required.

Premium efficiency motors are options in motors starting at 3 HP for "T" or "C" motor types.

M3 Washdown Duty Motors

See GM1 under Gearmotor Modifications

M4 Canopy Cap/Drip Cover

A canopy cap can be supplied for protection from dripping liquids entering the fan end of a gearmotor. It is recommended but not standard when gearmotor mounting is ordered to be "V"

M5 Frequency – 50 Hz

Motors for operation at 50 Hz are available. Refer all 3 phase requirements for 380V 50 Hz to motor codes T53. The published output speed in catalogs are based on 60 Hz. When operating or selecting a 50 Hz gearmotor, catalog output speed must be reduced by 5/6 for a given ratio. The service factor must also be reduced by 5/6 if the HP is maintained.

For all other 50 Hz voltages, refer to application engineering.

MbN Series

Non-Hazardous Motor Types	Motor Frame Size(s)	
	56-180T	210T
S	IP23	N/A
T	IP55	IP23
IG	IP55	N/A

Modifications, Options and Accessories

Motor Modifications Continued

M6 Special Voltage (3 phase only)

Standard voltages are listed in the table below. 200 VAC will be handled by 208-230/460V motors up to 10 HP. Refer all other voltages to the Pricing Group to confirm availability.

Frequency	3 Phase Voltages Thru 30 HP
60 Hz	200, 230, 460, 575
50 Hz	380, 400

M7 Motor Insulation

Emerson's 3 phase motors are built with a premium Class F insulation system for "T", "C" and "IG" types. All "S" and "X" type motors use a Class B insulation.

Tropical insulation treatment is available as a modification on any motor designs noted above

Class H insulation systems require production lead-times and are not available on explosions proof "X" designs.

M8 Space Heaters

Space heaters are recommended for gearmotors installed in very damp locations to prevent condensation from forming on the motor windings when the motor is not operating. Leads will be brought out to the standard motor conduit box. Space heater voltages (115, 230, and 460V) must be specified when an order is entered. This is available on motors > ¾ hp.

M9 Thermal Protection – Thermostats

This protection uses a bi-metallic disc thermostat embedded each phase of the motor winding and then connected by others into the holding circuit of the motor starter or VFD drive. The sensor is normally closed, and opens the control circuit to shut the motor down if the motor achieves over-temperature conditions based on the motor insulation class or design code. Thermostats give protection for running overloads, abnormally high ambient, voltage imbalance, high or low voltage, and ventilation failure. Thermostats do not give protection for locked rotor, starting overloads or single phasing.

Thermostats are standard in inverter duty motor designs (including IG) as well as explosionproof dual label motors type "X".

Gear Modifications

G11 Corro-Duty®

Corro-Duty treatment can be applied to a gearmotor or reducer when corrosive chemicals or unit will be operated outside in adverse environmental conditions. For gearmotors, the unit should start with specification of the Corro-Duty type "C" motor design. Other special features of this treatment include:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
 - o Grey Option (default type)
 - 316 stainless steel paint (3 step)
 - Light grey semigloss finish
 - USDA and FDA approved
 - o White Option
 - Two step epoxy paint system
 - White gloss finish
 - USDA and FDA approved

For washdown application for gearmotors, refer to GM1 Washdown Duty Gearmotors and/or Washdown Duty Gearmotor PLUS.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the MbN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (150).

G15 Export Boxing

Export boxing can be provided for "under-deck" transport. When the quantity of MbN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Modifications, Options and Accessories

Gearmotor Modifications

GM1 Washdown Duty Gearmotor

This gearmotor design combines special features of gear and motor required for washdown duty. These include: special treatment coating of winding and internal surfaces of motor frame, drains in motor frame, labyrinth seal at motor SE bracket/shaft extension, special "protected" gearcase breather design, exterior surfaces of gearmotor receive Corro-Duty Stainless Steel paint (option for epoxy white at no added cost). Specify input configuration "W24" or "W5" based voltage needed on motor.



For inclusion of a food grade USDA H-1 approved lubricant, add "P" to input code for a washdown motor (i.e. change "W24" to "WP24"). Refer to page D-166 for more complete details of this lubricant.

Accessories

The following accessories can be ordered along with gearmotors and will be supplied loose for mounting by others

Description	Gear Frames	Part #
NPT Adapter (1/4" NPFT)	31 to 35	0436216
NPT Adapter (3/4" NPFT)	36, 37	0436218
Bushing Guard Kit ¹ (includes 2 guards to protect both sides)	32	XS9142
	33	XS9143
	34	XS9144
	35	XS9145
	36	XS9160
	37	XS9161
Oil Level View Port	31 to 35	0435936
	36, 37	0435938

¹ These kits include all mounting hardware.

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class		Application	Load	Class		Application	Load	Class	
		Up to 10 hrs/day	Over 10 hrs/day			Up to 10 hrs/day	Over 10 hrs/day			Up to 10 hrs/day	Over 10 hrs/day
Agitators				Bucket				Conveyors - Uniformly Loaded or Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	U	I	II
Paper Mills	M	II	II	Conveyors, Uniform	U	I	II	Conveyors - Heavy Duty			
Pure Liquids	U	I	II	Conveyors, Heavy Duty	M	II	II	Not Uniformly Fed: Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	M	II	II
Liquids & Solids	M	II	II	Elevators Cont.	U	I	II	Live Roll (Package)	U	I	II
Liquids - Variable Density	M	II	II	Elevators Uniform	U	I	II	Reciprocating, shaker	V	III	III
				Elevators, Heavy Duty	M	II	II				
Apron Conveyors				Calenders				Cookers (Brewing and Distilling) (Food)	U	I	II
Uniformly Loaded or Fed	U	I	II	Paper	U	-	II	Cooling Tower Fans			
Heavy Duty	M	II	II	Super (Paper)	U	-	II	Induced Draft	M	II	II
				Rubber	M	II	II	Forced Draft	Refer to Application Engineering		
Apron Feeders	M	II	II	Textile	M	II	II	Couch (Paper)	M	-	II
								Cranes and Hoists			
Assembly Conveyors				Cane Knives	M	II	II	Main Hoists			
Uniformly Loaded or Fed	U	I	II					Heavy Duty	V	III	III
Heavy Duty	M	II	II	Can Filling Machines	U	I	II	Medium Duty	M	II	II
								Reversing	V	II	II
Ball Mills	V	III	III	Card Machines (Textile)	M	II	II	Skip Hoists	M	II	II
								Trolley Drive	M	II	II
Barking				Car Dumpers	V	III	-	Bridge Drive	M	II	II
Drums	V	-	III					Crushers			
Hydraulic Auxiliaries	V	-	III	Car Pullers	M	II	-	Ore or Stone	V	III	III
Mechanical	V	-	III					Cutters (Paper)	V	-	III
Barscreens (Sewage)	U	I	II	Cement Kilns	Refer to Application Engineering			Cylinders (Paper)	M	-	II
				Centrifugal				Dewatering Screens (Sewage)	M	II	II
Batchers (Textile)	M	II	II	Blowers, Compressors, Discharge Elevators or Pumps	U	I	II	Disc Feeders	U	I	II
				Chain Conveyors				Distilling (See Brewing)			
Beaters and Pulpers (Paper)	U	-	II	Uniformly Loaded or Fed	U	I	II	Double Acting Pumps			
				Heavy Duty	M	II	II	2 or more Cylinders	M	II	II
Belt Conveyors				Chemical Feeders (Sewage)	U	I	II	Single Cylinder	Refer to Application Engineering		
Uniformly Loaded or Fed	U	I	II					Dough Mixer (Food)	M	II	II
Heavy Duty	M	II	II	Clarifiers	U	I	II	Draw Bench (Metal Mills)			
								Carriage & Main Drive	V	III	III
Belt Feeders	M	II	II	Classifiers	M	II	II	Dredges			
								Cable Reels	M	II	-
Bending Rolls (Machine)	M	II	II	Clay Working Industry				Conveyors	M	II	II
				Brick Press	V	III	III	Cutter Head Drives	V	III	III
Bleachers (Paper)	M	-	II	Briquette Machine	V	III	III	Jig Drives	V	III	III
				Clay Working Machinery	M	II	II	Maneuvering Winches	M	II	-
Blowers				Pug Mill	M	II	II	Pumps	M	II	II
Centrifugal	U	I	II	Collectors (Sewage)	U	I	II	Screen Drives	V	III	III
Lobe	M	II	II					Stackers	M	II	II
Vane	U	I	II	Compressors				Utility Winches	M	II	-
Bottling Machinery	U	I	II	Centrifugal	U	I	II				
				Lobe	M	II	II				
Brewing and Distilling				Reciprocating,							
Bottling Machinery	U	I	II	Multi - Cylinder	M	II	II				
Brew Kettles, Cont. Duty	U	-	II	Single - Cylinder	V	III	III				
Can Filling Machines	U	I	II	Concrete Mixers							
Cookers - Cont. Duty	U	-	II	Continuous	M	II	II				
Mash Tubs - Cont. Duty	U	-	II	Intermittent	U	I	-				
Scale Hoppers - Frequent Starts	M	II	II	Converting Machines (Paper)	M	-	II				
Brick Press (Clay Working)	V	III	III								
Briquettes Machines (Clay Working)	V	III	III								

MbN Series

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class	Application	Load	Class	Application	Load	Class	
		Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day
Dryers (Paper)	U	-	II	Hammer Mills	V	III	III	Machine Tools	
Dryers and Coolers (Mills, Rotary)	M	II	II	Induced Draft Fans	M	II	II	Auxiliary Drives	U I II
Dyeing Machinery (Textile)	M	II	II	Jordans (Paper)	U	-	II	Bending Rolls	M II II
Elevators				Kilns (Mills, Rotary) Cement	M	II	II	Main Drives	M II II
Bucket - Uniform Load	U	I	II	Refer to Application Engineering				Notching Press (Belted)	Refer to Application Engr.
Bucket - Heavy Duty	M	II	II	Laundry Washers and Tumblers	M	II	II	Plate Planers	V III III
Bucket - Continuous	U	I	II	Line Shafts				Punch Press (Geared)	V III III
Centrifugal Discharge	U	I	II	Heavy Shock Load	V	III	III	Tapping Machines	V III III
Escalators	U	I	II	Moderate Shock Load	M	II	II	Mangle (Textile)	M II II
Freight	M	II	II	Uniform Load	U	I	II	Mash Tubs (Brewing and Distilling)	U - II
Gravity Discharge	U	I	II	Live Roll Conveyors				Meat Grinder (Food)	M II II
Man Lifts, Passenger	Refer to Application Engineering			Package	U	I	II	Metal Mills	
Escalators	U	I	II	Lobe Blower or Compressors	M	II	II	Draw Bench Carriages & Main Drives	V III III
Fans				Log Hauls (Paper and Lumber)	V	III	III	Forming Machines	V III III
Centrifugal	M	II	II	Looms (Textile)	M	II	II	Pinch, Dryer & Scrubber	
Cooling Towers				Lumber Industry				Rolls Reversing	Refer to Application Engineering
Induced Draft	M	II	II	Barkers - Spindle Feed	V	II	III	Slitters	M II II
Forced Draft	Refer to Application Engineering			Barkers - Main Drive	V	III	III	Table Conveyors, Non-Reversing	M II III
Induced Draft	M	II	II	Carriage Drive				Reversing	V - III
Large (Mine, etc.)	M	II	II	Refer to Application Engineering				Wire Drawing & Flattening Machines	M II III
Large Industrial	M	II	II	Conveyors				Wire Winding Machines	M II II
Light (Small Diameter)	U	I	II	Burner	V	II	III	Mills, Rotary Type	
Feeders				Main or Heavy Duty	V	II	III	Ball, Pebble, Rod	V III III
Apron, belt	M	II	II	Main Log	V	III	III	Cement Kilns	Refer to Application Engineering
Disc	U	I	II	Re-Saw Merry-Go-Round	V	II	III	Coolers, Dryers, Kilns	V II II
Reciprocating	V	III	III	Slab	V	III	III	Tumbling Barrels	V III III
Screw	M	II	II	Transfer	V	II	III	Mixers (Also see Agitators)	
Felt				Chains - Floor	V	II	III	Concrete - Continuous	M II II
Stretchers (Paper)	U	-	II	Chains - Green	V	II	III	Concrete - Intermittent	M I -
Whippers (Paper)	U	-	II	Cut-Off Saws-Chain	V	II	III	Constant Density	U I II
Flight				Cut-Off Saws-Drag	V	II	III	Variable Density	M II II
Conveyors, Uniform	U	I	II	Debarking Drums	V	III	III	Nappers (Textile)	M II II
Conveyors, Heavy	M	II	II	Feeds - Edger	V	II	III	Oil Industry	
Food Industry				Feeds - Gang	V	III	III	Chillers	M II II
Beet Slicers	M	II	II	Feeds - Trimmer	V	II	III	Oil Well Pumping	Refer to Application Engineering
Bottling, Can Filling Mach.	U	I	II	Log Deck	V	III	III	Paraffin Filter Press	M II II
Cereal Cookers	U	I	II	Log Hauls - Incline, Well Type	V	III	III	Rotary Kilns	M II II
Dough Mixers	M	II	II	Log Turning Devices	V	III	III	Ore Crushers	V III III
Meat Grinders	M	II	II	Planner Feed	V	II	III	Oven Conveyors	
Forming Machines (Metal Mills)	V	III	III	Planer Tilting Hoists	V	II	III	Uniform	U I II
Generators (Not welding)	U	I	II	Rolls - Live-Off Bearing				Heavy Duty	M II II
Gravity Discharge Elevators	U	I	II	Roll Cases	V	III	III		
Grit Collectors (Sewage)	U	I	II	Sorting Table	V	II	III		
				Tipple Hoist	V	II	III		
				Transfers - Chain	V	II	III		
				Transfers - Craneway	V	II	III		
				Tray Drives	V	II	III		

MbN Series

AGMA Application Classifications

U: Uniform load M: Moderate shock load V: Heavy shock load

Application	Load	Class	Application	Load	Class	Application	Load	Class
	Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day		Up to 10 hrs/day	Over 10 hrs/day
Paper Mills			Rod Mills	V	III	Soapers (Textile)	M	II
Agitator (Mixers)	M	II						II
Barker - Auxiliaries - Hyd.	V	-	Rotary			Spinners (Textile)	M	II
Barker, Mechanical	V	-	Pumps, Gear, Lobe, Vane	U	I			II
Barking Drum	V	-	Screens (Sand or Gravel)	V	II	Steering Gears	M	II
Beater & Pulper	M	-						II
Bleacher	M	-	Rubber Industry			Stock Chests(Paper)	U	-
Calenders	M	-	Mixer	V	III			II
Calenders - Super	M	-	Rubber Calender	M	II	Stokers	U	I
Converting Mach.-			Rubber Mill (2 or more)	M	II			II
Except Cutters - Platers	M	-	Sheeter	M	II	Stone Crushers	V	III
Conveyors	M	-	Tire Building Machines	Refer to Application Engr.				III
Couch	M	-	Tire, Tube Press Openers	Refer to Application Engr.		Suction Rolls(Paper)	U	-
Cutters, Platers	V	-	Tubers & Strainers	M	II			II
Cylinders	U	-				Table Conveyors (Metal Mills)		
Dryers	U	-	Sand Mullers	Refer to Application Engr.		Non-Reversing	V	II
Felt Stretchers	U	-				Reversing	V	-
Felt Whippers	V	-	Screens					III
Jordans	M	-	Air Washing	U	I	Tenter Frames (Textile)	M	II
Log Haul	V	-	Rotary - Sand or Gravel	M	II			II
Presses	M	-	Traveling Water Intake	U	I	Textile Industry		
Pulp Machine Reels	M	-				Batchers	M	II
Stock Chests	M	-	Screw Conveyors			Calenders	M	II
Suction Rolls	M	-	Uniform	U	I	Card Machines	M	II
Washers & Thickeners	M	-	Heavy Duty or Feeder	M	II	Cloth Finishing Mach. (Cal-		
Winders	M	-				enders, Dryers, Pads,		
			Scum Breakers (Sewage)	M	II	Tenters, Washers)	M	II
Passenger Elevators	Refer to Application Engineering					Dry Cans	M	II
			Sewage Disposal			Dyeing Machinery	M	II
Pebble Mills	V	III	Aerators	Refer to Application Engineering		Knitting Machinery	Refer to Application Engr.	
			Bar Screens	U	I	Looms, Mangles, Nappers	M	II
Plate Planers	V	III	Chemical Feeders	U	I	Range Drives	Refer to Application Engr.	
			Collectors	U	I	Soapers, Spinners	M	II
Presses (Paper)	V	-	Dewatering Screens	M	II	Tenter Frames	M	II
			Grit Collectors	U	I	Winders	M	II
Proportioning Pumps	M	II	Scum Breakers	M	II	Yarn Preparatory Mach.		
			Slow or Rapid Mixers	M	II	(Cards, Spinners, Slashers)	M	II
Pub Mills (Clay)	M	II	Sludge Collectors	U	I			
			Thickeners	M	II	Thickeners (Sewage)	M	II
Pullers (Barge Haul)	V	III	Vacuum Filters	M	II			II
						Tumbling Barrels	V	III
Pulp Machine Reels	U	-	Shaker Conveyors	V	III			III
						Vacuum Filters (sewage)	M	II
Pumps			Sheeters (Rubber)	M	II			II
Centrifugal	U	I				Vane Blowers	U	I
Proportioning	M	II	Single Acting Pump					II
Reciprocating			1 or 2 Cylinders	Refer to Application Engineering		Winches (Dredges)	M	II
Single Act., 3 or more cyl.	M	II	3 or more Cylinders	M	II			-
Double Act., 2 or more cyl.	M	II				Winders (Paper)	U	-
Single Act., 1 or 2 cyl.	Refer to Application Engr.		Skip Hoist	M	II	(Textile)	M	II
Rotary: Gear, Lobe, Vane	U	I				Windlass	M	II
			Slab Pushers	M	II			II
Punch Press (Gear Driven)	V	III				Wire		
			Slitters (Metal)	M	II	Drawing Machines	M	II
Reciprocating						Winding Machines	M	II
Conveyors, Feeders	V	III	Sludge Collectors (Sewage)	U	I			II
Reciprocating Compressors								
Multi-Cylinder	M	II						
Single cylinder	V	III						

Applications not listed in this table, or where the user has data indicating the severity of this usage to be greater than average, should be referred to Application Engineering.

MbN Series

1/3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
446	I, II, III	3+	45	4	3242	56	T, S, C, X, IG
354	I, II, III	3+	56	5	3242	56	T, S, C, X, IG
296	I, II, III	3+	67	5.6	3242	56	T, S, C, X, IG
250	I, II, III	3+	80	6.3	3242	56	T, S, C, X, IG
240	I, II, III	3+	83	7.1	3132	56	T, S, C, X, IG
208	I, II, III	3+	96	8	3242	56	T, S, C, X, IG
190	I, II, III	3+	105	9	3132	56	T, S, C, X, IG
170	I, II, III	3+	117	10	3132	56	T, S, C, X, IG
161	I, II, III	3+	124	11.2	3132	56	T, S, C, X, IG
142	I, II, III	3+	140	12.5	3132	56	T, S, C, X, IG
126	I, II, III	3+	159	14	3132	56	T, S, C, X, IG
111	I, II, III	3+	179	16	3132	56	T, S, C, X, IG
98	I, II, III	3+	203	18	3132	56	T, S, C, X, IG
86	I, II, III	3+	233	20	3132	56	T, S, C, X, IG
76	I, II, III	3+	262	22.4	3132	56	T, S, C, X, IG
60	I, II, III	3+	331	28	3132	56	T, S, C, X, IG
57	I, II, III	3+	350	31.5	3132	56	T, S, C, X, IG
50	I, II, III	3+	400	35.5	3132	56	T, S, C, X, IG
45	I, II, III	3+	446	40	3132	56	T, S, C, X, IG
40	I, II, III	3+	501	45	3132	56	T, S, C, X, IG
34	I, II, III	3+	580	50	3132	56	T, S, C, X, IG
31	I, II, III	3+	637	56	3132	56	T, S, C, X, IG
27	I, II, III	2.9	729	63	3132	56	T, S, C, X, IG
25	I, II, III	2.6	805	71	3132	56	T, S, C, X, IG
22	I, II, III	3+	882	80	3243	56	T, S, C, X, IG
19	I, II, III	3+	1048	90	3243	56	T, S, C, X, IG
18	I, II, III	3+	1109	100	3243	56	T, S, C, X, IG
15	I, II, III	2.9	1262	112	3243	56	T, S, C, X, IG
14	I, II, III	2.3	1419	125	3243	56	T, S, C, X, IG
12	I, II, III	2.3	1586	140	3243	56	T, S, C, X, IG
10.7	I, II, III	2.2	1832	160	3243	56	T, S, C, X, IG
9.7	I, II, III	2.0	2011	180	3243	56	T, S, C, X, IG
9.1	III	3+	2145	200	3363	56	T, S, C, X, IG
8.5	I, II	1.8	2312	200	3243	56	T, S, C, X, IG
7.8	III	3.0	2513	224	3363	56	T, S, C, X, IG
7.7	I, II	1.6	2547	224	3243	56	T, S, C, X, IG
7.1	I, II	1.6	2748	250	3244	56	T, S, C, X°, IG
7.1	III	2.5	2770	250	3363	56	T, S, C, X, IG
6.4	I, II	1.4	2974	280	3244	56	T, S, C, X°, IG
6.4	III	2.3	3038	280	3363	56	T, S, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL 1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1/3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
6.1	I, II	1.4	3127	315	3244	56	T, S, C, X°, IG
5.5	III	2.0	3476	315	3363	56	T, S, C, X, IG
5.2	I	1.2	3707	355	3244	56	T, S, C, X°, IG
4.9	II, III	2.0	3914	355	3364	56	T, S, C, X°, IG
4.8	I	1.1	3980	400	3244	56	T, S, C, X°, IG
4.6	II	1.9	4122	400	3364	56	T, S, C, X°, IG
4.3		0.97	4450	450	3244	56	T, S, C, X°, IG
4.2	III	3+	4603	400	3474	56	T, S, C, X, IG
3.9	I, II	1.6	4898	450	3364	56	T, S, C, X°, IG
3.6	I, II	1.5	5248	500	3364	56	T, S, C, X°, IG
3.6	III	2.9	5259	450	3474	56	T, S, C, X, IG
3.3	I	1.3	5872	560	3364	56	T, S, C, X°, IG
3.2	III	2.6	5937	500	3474	56	T, S, C, X, IG
3.0	II, III	2.5	6298	560	3474	56	T, S, C, X, IG
2.8	I	1.1	6834	630	3364	56	T, S, C, X°, IG
2.6	I	1.1	7369	710	3364	56	T, S, C, X°, IG
2.6	II, III	2.1	7490	630	3474	56	T, S, C, X, IG
2.4	II, III	2.0	7916	710	3474	56	T, S, C, X, IG
2.1	I, II	1.7	9042	800	3474	56	T, S, C, X, IG
2.0	III	2.8	9414	800	3584	56	T, S, C, X, IG
1.9	III	2.7	9983	900	3584	56	T, S, C, X, IG
1.9	I, II	1.5	10092	900	3474	56	T, S, C, X, IG
1.7	I, II	1.4	11371	1000	3474	56	T, S, C, X, IG
1.6	III	2.3	11809	1000	3584	56	T, S, C, X, IG
1.5	II, III	2.1	12574	1120	3584	56	T, S, C, X, IG
1.5	I	1.2	13121	1120	3474	56	T, S, C, X, IG
1.4	III	3+	12721	1250	3695	56	T, S, C, X, IG
1.3	II	1.9	14323	1250	3584	56	T, S, C, X, IG
1.3	I	1.1	14433	1250	3474	56	T, S, C, X, IG
1.3	III	2.9	14437	1400	3695	56	T, S, C, X, IG
1.2	I, II	1.7	15964	1400	3584	56	T, S, C, X, IG
1.2		0.94	16510	1400	3474	56	T, S, C, X, IG
1.1	III	2.6	16035	1600	3695	56	T, S, C, X, IG
1.1	I, II	1.5	17932	1600	3584	56	T, S, C, X, IG
1.0	II, III	2.3	18215	1800	3695	56	T, S, C, X, IG
0.9	I	1.3	20774	1800	3584	56	T, S, C, X, IG
0.9	II, III	2.0	20266	2000	3695	56	T, S, C, X, IG
0.8	I	1.2	22852	2000	3584	56	T, S, C, X, IG
0.80	II	1.8	22799	2240	3695	56	T, S, C, X, IG
0.79	III	3+	23176	2240	3705	56	T, S, C, X, IG

MbN Series

◊ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1/3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
0.7	I	1.0	26132	2240	3584	56	T, S, C, X, IG
0.71	III	2.8	25801	2500	3705	56	T, S, C, X, IG
0.68	I, II	1.6	26724	2500	3695	56	T, S, C, X, IG
0.7		0.93	28866	2500	3584	56	T, S, C, X, IG
0.63	III	2.5	29012	2800	3705	56	T, S, C, X, IG
0.62	I, II	1.4	29500	2800	3695	56	T, S, C, X, IG
0.57	I	1.3	32348	3150	3695	56	T, S, C, X, IG
0.54	II, III	2.1	34022	3150	3705	56	T, S, C, X, IG
0.49	II	1.9	37546	3550	3705	56	T, S, C, X, IG
0.48	I	1.1	37774	3550	3695	56	T, S, C, X, IG

◊ **Standard Motor Types** (see page D-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 115/230 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
446	I, II, III	3+	68	4	3242	56	T, S, C, X, IG
354	I, II, III	3+	85	5	3242	56	T, S, C, X, IG
296	I, II, III	3+	102	5.6	3242	56	T, S, C, X, IG
250	I, II, III	3+	121	6.3	3242	56	T, S, C, X, IG
240	I, II, III	3+	126	7.1	3132	56	T, S, C, X, IG
208	I, II, III	3+	146	8	3242	56	T, S, C, X, IG
190	I, II, III	3+	159	9	3132	56	T, S, C, X, IG
170	I, II, III	3+	178	10	3132	56	T, S, C, X, IG
161	I, II, III	3+	188	11.2	3132	56	T, S, C, X, IG
142	I, II, III	3+	213	12.5	3132	56	T, S, C, X, IG
126	I, II, III	3+	240	14	3132	56	T, S, C, X, IG
111	I, II, III	3+	271	16	3132	56	T, S, C, X, IG
98	I, II, III	3+	308	18	3132	56	T, S, C, X, IG
86	I, II, III	3+	353	20	3132	56	T, S, C, X, IG
76	I, II, III	3+	398	22.4	3132	56	T, S, C, X, IG
60	I, II, III	3+	501	28	3132	56	T, S, C, X, IG
57	I, II, III	3+	531	31.5	3132	56	T, S, C, X, IG
50	I, II, III	3+	607	35.5	3132	56	T, S, C, X, IG
45	I, II, III	3+	676	40	3132	56	T, S, C, X, IG
40	I, II, III	2.8	759	45	3132	56	T, S, C, X, IG
34	I, II, III	2.4	878	50	3132	56	T, S, C, X, IG
31	I, II, III	2.2	964	56	3132	56	T, S, C, X, IG
27	I, II	1.9	1104	63	3132	56	T, S, C, X, IG
27	III	2.8	1117	63	3243	56	T, S, C, X, IG
25	I, II	1.7	1220	71	3132	56	T, S, C, X, IG
23	III	2.6	1261	71	3243	56	T, S, C, X, IG
22	I, II, III	2.5	1337	80	3243	56	T, S, C, X, IG
19	I, II, III	2.2	1587	90	3243	56	T, S, C, X, IG
18	I, II, III	2.1	1681	100	3243	56	T, S, C, X, IG
16	III	3+	1845	112	3363	56	T, S, C, X, IG
15	I, II	1.9	1912	112	3243	56	T, S, C, X, IG
14	III	3+	2065	125	3363	56	T, S, C, X, IG
14	I, II	1.5	2149	125	3243	56	T, S, C, X, IG
13	III	3+	2285	140	3363	56	T, S, C, X, IG
12	I, II	1.5	2403	140	3243	56	T, S, C, X, IG
11.4	III	2.9	2589	160	3363	56	T, S, C, X, IG
10.7	I, II	1.4	2776	160	3243	56	T, S, C, X, IG
10.2	II, III	2.7	2894	180	3363	56	T, S, C, X, IG
9.7	I	1.3	3046	180	3243	56	T, S, C, X, IG
9.1	II, III	2.4	3249	200	3363	56	T, S, C, X, IG

◊ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
8.5	I	1.2	3503	200	3243	56	T, S, C, X, IG
7.8	II, III	2.0	3808	224	3363	56	T, S, C, X, IG
7.7	I	1.1	3859	224	3243	56	T, S, C, X, IG
7.4	III	3+	3977	250	3473	56	T, S, C, X, IG
7.1	I	1.0	4163	250	3244	56	T, S, C, X°, IG
7.1	II	1.7	4197	250	3363	56	T, S, C, X, IG
6.4		0.93	4603	280	3244	56	T, S, C, X°, IG
6.4	I, II	1.5	4603	280	3363	56	T, S, C, X, IG
6.0	III	3+	4732	280	3474	56	T, S, C, X, IG
5.5	I	1.3	5267	315	3363	56	T, S, C, X, IG
5.3	II, III	2.9	5380	315	3474	56	T, S, C, X, IG
5.0	II, III	2.7	5688	355	3474	56	T, S, C, X, IG
4.9	I	1.3	5801	355	3364	56	T, S, C, X°, IG
4.6	I	1.3	6109	400	3364	56	T, S, C, X°, IG
4.2	II, III	2.3	6822	400	3474	56	T, S, C, X, IG
3.9	I	1.1	7259	450	3364	56	T, S, C, X°, IG
3.7	III	3+	7664	500	3584	56	T, S, C, X, IG
3.6	I	1.0	7778	500	3364	56	T, S, C, X°, IG
3.6	II, III	2.0	7794	450	3474	56	T, S, C, X, IG
3.2	II	1.8	8799	500	3474	56	T, S, C, X, IG
3.0	I, II	1.7	9333	560	3474	56	T, S, C, X, IG
3.0	III	2.8	9512	560	3584	56	T, S, C, X, IG
2.6	III	2.5	10808	630	3584	56	T, S, C, X, IG
2.6	I, II	1.4	11100	630	3474	56	T, S, C, X, IG
2.4	I	1.3	11732	710	3474	56	T, S, C, X, IG
2.3	III	3+	12350	800	3694	56	T, S, C, X, IG
2.3	II, III	2.2	12364	710	3584	56	T, S, C, X, IG
2.1	I	1.2	13401	800	3474	56	T, S, C, X, IG
2.0	II	1.9	13952	800	3584	56	T, S, C, X, IG
2.0	III	3+	14421	900	3694	56	T, S, C, X, IG
1.9	II	1.8	14794	900	3584	56	T, S, C, X, IG
1.9	I	1.0	14956	900	3474	56	T, S, C, X, IG
1.8	III	2.6	16004	1000	3695	56	T, S, C, X, IG
1.6	I, II	1.5	17500	1000	3584	56	T, S, C, X, IG
1.5	III	2.3	18037	1120	3695	56	T, S, C, X, IG
1.5	I, II	1.4	18634	1120	3584	56	T, S, C, X, IG
1.4	II, III	2.2	19274	1250	3695	56	T, S, C, X, IG
1.3	I	1.3	21227	1250	3584	56	T, S, C, X, IG
1.3	II	1.9	21874	1400	3695	56	T, S, C, X, IG
1.2	I	1.1	23658	1400	3584	56	T, S, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
S TEFC, single phase, 115/230 volts
C Corro-Duty®, three phase, 230/460 or 575 volts
X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts
X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
1.2	III	3.2	22961	1400	3705	56	T, S, C, X, IG
1.1	I	1.0	26574	1600	3584	56	T, S, C, X, IG
1.1	II	1.7	24295	1600	3695	56	T, S, C, X, IG
1.1	III	3+	24530	1600	3705	56	T, S, C, X, IG
1.0	I, II	1.5	27598	1800	3695	56	T, S, C, X, IG
1.0	III	2.6	27842	1800	3705	56	T, S, C, X, IG
0.9	I, II	1.4	30706	2000	3695	56	T, S, C, X, IG
0.9	III	2.4	30916	2000	3705	56	T, S, C, X, IG
0.80	I	1.2	34544	2240	3695	56	T, S, C, X, IG
0.79	II, III	2.1	35115	2240	3705	56	T, S, C, X, IG
0.71	II	1.9	39093	2500	3705	56	T, S, C, X, IG
0.68	I	1.0	40492	2500	3695	56	T, S, C, X, IG
0.63	I, II	1.7	43958	2800	3705	56	T, S, C, X, IG
0.62		0.93	44696	2800	3695	56	T, S, C, X, IG
0.54	I, II	1.4	51548	3150	3705	56	T, S, C, X, IG
0.49	I	1.3	56888	3550	3705	56	T, S, C, X, IG

◊ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X° Explosionproof, CL1 group D, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

3/4 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
446	I, II, III	3+	102	4	3242	56	T, S, C, X, IG
354	I, II, III	3+	128	5	3242	56	T, S, C, X, IG
296	I, II, III	3+	153	5.6	3242	56	T, S, C, X, IG
250	I, II, III	3+	181	6.3	3242	56	T, S, C, X, IG
240	I, II, III	3+	189	7.1	3132	56	T, S, C, X, IG
208	I, II, III	3+	218	8	3242	56	T, S, C, X, IG
190	I, II, III	3+	238	9	3132	56	T, S, C, X, IG
170	I, II, III	3+	267	10	3132	56	T, S, C, X, IG
161	I, II, III	3+	283	11.2	3132	56	T, S, C, X, IG
142	I, II, III	3+	319	12.5	3132	56	T, S, C, X, IG
126	I, II, III	3+	360	14	3132	56	T, S, C, X, IG
111	I, II, III	3+	407	16	3132	56	T, S, C, X, IG
98	I, II, III	3+	461	18	3132	56	T, S, C, X, IG
86	I, II, III	3+	529	20	3132	56	T, S, C, X, IG
76	I, II, III	3+	596	22.4	3132	56	T, S, C, X, IG
60	I, II, III	2.7	752	28	3132	56	T, S, C, X, IG
57	I, II, III	2.6	796	31.5	3132	56	T, S, C, X, IG
50	I, II, III	2.3	910	35.5	3132	56	T, S, C, X, IG
45	I, II, III	2.1	1014	40	3132	56	T, S, C, X, IG
40	I, II	1.8	1138	45	3132	56	T, S, C, X, IG
39	II	2.3	1140	45	3243	56	T, S, C, X, IG
34	I, II	1.6	1317	50	3132	56	T, S, C, X, IG
34	III	2.2	1290	50	3243	56	T, S, C, X, IG
31	I, II	1.5	1447	56	3132	56	T, S, C, X, IG
30	III	2.0	1467	56	3243	56	T, S, C, X, IG
29	III	3+	1549	63	3363	56	T, S, C, X, IG
27	I	1.3	1657	63	3132	56	T, S, C, X, IG
27	I, II	1.9	1675	63	3243	56	T, S, C, X, IG
25	III	3+	1749	71	3363	56	T, S, C, X, IG
25	I	1.2	1830	71	3132	56	T, S, C, X, IG
23	II	1.7	1891	71	3243	56	T, S, C, X, IG
23	III	3+	1937	80	3363	56	T, S, C, X, IG
22	I, II	1.7	2005	80	3243	56	T, S, C, X, IG
20	III	3+	2209	90	3363	56	T, S, C, X, IG
19	I, II	1.5	2381	90	3243	56	T, S, C, X, IG
18	I, II	1.4	2521	100	3243	56	T, S, C, X, IG
18	III	2.7	2539	100	3363	56	T, S, C, X, IG
16	II, III	2.5	2767	112	3363	56	T, S, C, X, IG
15	I	1.3	2869	112	3243	56	T, S, C, X, IG
14	II, III	2.3	3097	125	3363	56	T, S, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
14	I	1.0	3224	125	3243	56	T, S, C, X, IG
13	II, III	2.1	3427	140	3363	56	T, S, C, X, IG
12	I	1.0	3605	140	3243	56	T, S, C, X, IG
11.4	I, II, III	2.0	3884	160	3363	56	T, S, C, X, IG
10.6	III	3+	4189	180	3473	56	T, S, C, X, IG
10.2	I, II	1.8	4341	180	3363	56	T, S, C, X, IG
9.2	III	3+	4823	200	3473	56	T, S, C, X, IG
9.1	I, II	1.6	4874	200	3363	56	T, S, C, X, IG
8.3	II, III	2.9	5382	224	3473	56	T, S, C, X, IG
7.8	I	1.3	5712	224	3363	56	T, S, C, X, IG
7.4	II, III	2.6	5966	250	3473	56	T, S, C, X, IG
7.1	I	1.1	6296	250	3363	56	T, S, C, X, IG
6.4	I	1.0	6905	280	3363	56	T, S, C, X, IG
6.0	II, III	2.1	7255	280	3474	56	T, S, C, X, IG
5.5	III	3+	7876	315	3584	56	T, S, C, X, IG
5.3	I, II	1.9	8249	315	3474	56	T, S, C, X, IG
5.1	III	3.0	8572	355	3584	56	T, S, C, X, IG
5.0	I, II	1.8	8721	355	3474	56	T, S, C, X, IG
4.4	III	2.7	9601	400	3584	56	T, S, C, X, IG
4.2	I, II	1.5	10460	400	3474	56	T, S, C, X, IG
3.9	II, III	2.4	10816	450	3584	56	T, S, C, X, IG
3.7	II, III	2.3	11497	500	3584	56	T, S, C, X, IG
3.6	I	1.3	11951	450	3474	56	T, S, C, X, IG
3.3	II, III	3+	13057	560	3694	56	T, S, C, X, IG
3.2	I	1.2	13198	500	3474	56	T, S, C, X, IG
3.0	I	1.1	14000	560	3474	56	T, S, C, X, IG
3.0	II	1.9	14267	560	3584	56	T, S, C, X, IG
2.8	III	2.9	15304	630	3694	56	T, S, C, X, IG
2.6	I, II	1.7	16212	630	3584	56	T, S, C, X, IG
2.5	III	2.6	16894	710	3694	56	T, S, C, X, IG
2.3	II, III	2.4	18525	800	3694	56	T, S, C, X, IG
2.3	I, II	1.4	18545	710	3584	56	T, S, C, X, IG
2.0	I	1.3	20927	800	3584	56	T, S, C, X, IG
2.0	II, III	1.9	21632	900	3694	56	T, S, C, X, IG
1.9	I	1.2	22191	900	3584	56	T, S, C, X, IG
1.8	III	3.1	23580	1000	3704	56	T, S, C, X, IG
1.8	II	1.8	23472	1000	3695	56	T, S, C, X, IG
1.6	I	1.0	26250	1000	3584	56	T, S, C, X, IG
1.5	III	2.6	27543	1120	3704	56	T, S, C, X, IG
1.5	I, II	1.5	27056	1120	3695	56	T, S, C, X, IG

MbN Series

◊ **Standard Motor Types** (see page D-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

3/4 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
1.5		0.96	27952	1120	3584	56	T, S, C, X, IG
1.4	I, II	1.4	28911	1250	3695	56	T, S, C, X, IG
1.4	III	2.4	30557	1250	3705	56	T, S, C, X, IG
1.3	I	1.3	32811	1400	3695	56	T, S, C, X, IG
1.2	II, III	2.1	34418	1400	3705	56	T, S, C, X, IG
1.1	I	1.1	36442	1600	3695	56	T, S, C, X, IG
1.1	II, III	2.0	36795	1600	3705	56	T, S, C, X, IG
1.0	I	1.0	41397	1800	3695	56	T, S, C, X, IG
1.0	II	1.7	41763	1800	3705	56	T, S, C, X, IG
0.9	I	0.90	46059	2000	3695	56	T, S, C, X, IG
0.9	I, II	1.6	46374	2000	3705	56	T, S, C, X, IG
0.79	I, II	1.4	52673	2240	3705	56	T, S, C, X, IG
0.71	I	1.2	58639	2500	3705	56	T, S, C, X, IG
0.63	I	1.1	65936	2800	3705	56	T, S, C, X, IG
0.54		0.94	77322	3150	3705	56	T, S, C, X, IG

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/115V, 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
446	I, II, III	3+	136	4	3242	143T	T, S, C, X, IG
354	I, II, III	3+	171	5	3242	143T	T, S, C, X, IG
296	I, II, III	3+	204	5.6	3242	143T	T, S, C, X, IG
250	I, II, III	3+	242	6.3	3242	143T	T, S, C, X, IG
240	I, II, III	3+	252	7.1	3132	143T	T, S, C, X, IG
208	I, II, III	3+	291	8	3242	143T	T, S, C, X, IG
190	I, II, III	3+	318	9	3132	143T	T, S, C, X, IG
170	I, II, III	3+	356	10	3132	143T	T, S, C, X, IG
161	I, II, III	3+	377	11.2	3132	143T	T, S, C, X, IG
142	I, II, III	3+	425	12.5	3132	143T	T, S, C, X, IG
126	I, II, III	3+	480	14	3132	143T	T, S, C, X, IG
111	I, II, III	3+	543	16	3132	143T	T, S, C, X, IG
98	I, II, III	3+	615	18	3132	143T	T, S, C, X, IG
86	I, II, III	2.9	705	20	3132	143T	T, S, C, X, IG
76	I, II, III	2.6	795	22.4	3132	143T	T, S, C, X, IG
60	I, II, III	2.1	1002	28	3132	143T	T, S, C, X, IG
57	I, II, III	2.0	1061	31.5	3132	143T	T, S, C, X, IG
50	I, II	1.7	1213	35.5	3132	143T	T, S, C, X, IG
50	III	3.0	1217	35.5	3242	143T	T, S, C, X, IG
46	III	3+	1317	40	3362	143T	T, S, C, X, IG
45	I, II	1.5	1352	40	3132	143T	T, S, C, X, IG
44	II	1.9	1347	40	3243	143T	T, S, C, X, IG
40	I, II	1.4	1518	45	3132	143T	T, S, C, X, IG
40	III	3+	1518	45	3362	143T	T, S, C, X, IG
39	II	1.8	1520	45	3243	143T	T, S, C, X, IG
36	III	3+	1697	50	3362	143T	T, S, C, X, IG
34	I	1.2	1756	50	3132	143T	T, S, C, X, IG
34	II	1.6	1719	50	3243	143T	T, S, C, X, IG
32	III	3+	1838	56	3363	143T	T, S, C, X, IG
31	I	1.1	1929	56	3132	143T	T, S, C, X, IG
30	II	1.5	1956	56	3243	143T	T, S, C, X, IG
29	III	3+	2065	63	3363	143T	T, S, C, X, IG
27	I, II	1.4	2234	63	3243	143T	T, S, C, X, IG
25	II, III	2.9	2332	71	3363	143T	T, S, C, X, IG
23	I	1.3	2522	71	3243	143T	T, S, C, X, IG
23	II, III	2.6	2583	80	3363	143T	T, S, C, X, IG
22	I	1.3	2674	80	3243	143T	T, S, C, X, IG
20	II, III	2.3	2945	90	3363	143T	T, S, C, X, IG
19	I	1.1	3175	90	3243	143T	T, S, C, X, IG
18	I	1.1	3361	100	3243	143T	T, S, C, X, IG

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
18	II, III	2.1	3385	100	3363	143T	T, S, C, X, IG
17	III	3+	3588	112	3473	143T	T, S, C, X, IG
16	I, II	1.9	3689	112	3363	143T	T, S, C, X, IG
15		0.95	3825	112	3243	143T	T, S, C, X, IG
15	III	3+	4028	125	3473	143T	T, S, C, X, IG
14	I, II	1.7	4129	125	3363	143T	T, S, C, X, IG
13	III	3+	4536	140	3473	143T	T, S, C, X, IG
13	I, II	1.6	4569	140	3363	143T	T, S, C, X, IG
12	III	3+	4942	160	3473	143T	T, S, C, X, IG
11.4	I, II	1.5	5179	160	3363	143T	T, S, C, X, IG
10.6	II, III	2.8	5585	180	3473	143T	T, S, C, X, IG
10.2	I	1.3	5788	180	3363	143T	T, S, C, X, IG
9.2	II, III	2.4	6431	200	3473	143T	T, S, C, X, IG
9.1	I	1.2	6499	200	3363	143T	T, S, C, X, IG
8.3	I, II, III	2.2	7176	224	3473	143T	T, S, C, X, IG
7.8		0.98	7616	224	3363	143T	T, S, C, X, IG
7.4	I, II, III	2.0	7954	250	3473	143T	T, S, C, X, IG
6.3	III	2.8	9243	280	3584	143T	T, S, C, X, IG
6.0	I, II	1.6	9673	280	3474	143T	T, S, C, X, IG
5.5	III	2.5	10502	315	3584	143T	T, S, C, X, IG
5.3	I, II	1.4	10998	315	3474	143T	T, S, C, X, IG
5.1	II, III	2.3	11429	355	3584	143T	T, S, C, X, IG
5.0	I	1.3	11628	355	3474	143T	T, S, C, X, IG
4.4	II, III	2.0	13086	400	3584	143T	T, S, C, X, IG
4.2	I	1.1	13947	400	3474	143T	T, S, C, X, IG
4.1	III	3+	13908	450	3694	143T	T, S, C, X, IG
3.9	I, II	1.8	14742	450	3584	143T	T, S, C, X, IG
3.7	I, II	1.7	15669	500	3584	143T	T, S, C, X, IG
3.7	III	2.7	15474	500	3694	143T	T, S, C, X, IG
3.6		0.97	15935	450	3474	143T	T, S, C, X, IG
3.3	III	2.4	17409	560	3694	143T	T, S, C, X, IG
3.0	I, II	1.4	19446	560	3584	143T	T, S, C, X, IG
2.8	II, III	2.0	20406	630	3694	143T	T, S, C, X, IG
2.6	I	1.2	22096	630	3584	143T	T, S, C, X, IG
2.6	II, III	3.3	22170	710	3704	143T	T, S, C, X, IG
2.5	II	1.8	22525	710	3694	143T	T, S, C, X, IG
2.3	I	1.1	25277	710	3584	143T	T, S, C, X, IG
2.3	II	1.7	24700	800	3694	143T	T, S, C, X, IG
2.2	II, III	2.8	25963	800	3704	143T	T, S, C, X, IG
2.0		0.94	28523	800	3584	143T	T, S, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
2.0	III	2.5	28685	900	3704	143T	T, S, C, X, IG
2.0	I, II	1.4	28843	900	3694	143T	T, S, C, X, IG
1.8	II, III	2.3	31440	1000	3704	143T	T, S, C, X, IG
1.8	I	1.3	31297	1000	3695	143T	T, S, C, X, IG
1.5	II, III	2.0	36724	1120	3704	143T	T, S, C, X, IG
1.5	I	1.2	36074	1120	3695	143T	T, S, C, X, IG
1.4	I	1.1	38548	1250	3695	143T	T, S, C, X, IG
1.4	II	1.8	40743	1250	3705	143T	T, S, C, X, IG
1.3		0.95	43749	1400	3695	143T	T, S, C, X, IG
1.2	I, II	1.6	45891	1400	3705	143T	T, S, C, X, IG
1.1	I, II	1.5	49060	1600	3705	143T	T, S, C, X, IG
1.0	I	1.3	55684	1800	3705	143T	T, S, C, X, IG
0.90	I	1.2	61832	2000	3705	143T	T, S, C, X, IG
0.79	I	1.0	70231	2240	3705	143T	T, S, C, X, IG
0.71		0.93	78186	2500	3705	143T	T, S, C, X, IG

◊ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
446	I, II, 111	3+	203	4	3242	145T	T, S, C, X, IG
354	I, II, 111	3+	256	5	3242	145T	T, S, C, X, IG
296	I, II, 111	3+	306	5.6	3242	145T	T, S, C, X, IG
250	I, II, 111	3+	363	6.3	3242	145T	T, S, C, X, IG
240	I, II, 111	3+	378	7.1	3132	145T	T, S, C, X, IG
235	I, II, 111	3+	386	8	3242	145T	T, S, C, X, IG
190	I, II, 111	3+	477	9	3132	145T	T, S, C, X, IG
170	I, II, 111	3.0	534	10	3132	145T	T, S, C, X, IG
161	I, II, 111	2.9	565	11.2	3132	145T	T, S, C, X, IG
142	I, II, 111	2.9	638	12.5	3132	145T	T, S, C, X, IG
126	I, II, 111	2.8	721	14	3132	145T	T, S, C, X, IG
111	I, II, 111	2.5	814	16	3132	145T	T, S, C, X, IG
98	I, II, 111	2.2	923	18	3132	145T	T, S, C, X, IG
94	I, II, 111	3+	970	18	3242	145T	T, S, C, X, IG
86	I, II	1.9	1058	20	3132	145T	T, S, C, X, IG
84	III	3+	1084	20	3242	145T	T, S, C, X, IG
76	I, II	1.7	1193	22.4	3132	145T	T, S, C, X, IG
74	III	3+	1219	22.4	3242	145T	T, S, C, X, IG
72	I, II	1.6	1265	25	3132	145T	T, S, C, X, IG
64	III	2.8	1426	25	3242	145T	T, S, C, X, IG
60	I, II	1.4	1504	28	3132	145T	T, S, C, X, IG
59	III	2.6	1540	28	3242	145T	T, S, C, X, IG
57	I	1.3	1592	31.5	3132	145T	T, S, C, X, IG
53	II, III	2.4	1727	31.5	3242	145T	T, S, C, X, IG
50	I	1.1	1820	35.5	3132	145T	T, S, C, X, IG
50	II, III	2.0	1825	35.5	3242	145T	T, S, C, X, IG
46	II, III	3+	1976	40	3362	145T	T, S, C, X, IG
45	I	1.0	2028	40	3132	145T	T, S, C, X, IG
44	I	1.3	2021	40	3243	145T	T, S, C, X, IG
40		0.92	2277	45	3132	145T	T, S, C, X, IG
40	II, III	3+	2277	45	3362	145T	T, S, C, X, IG
39	I	1.2	2280	45	3243	145T	T, S, C, X, IG
36	II, III	2.7	2546	50	3362	145T	T, S, C, X, IG
34	I	1.1	2580	50	3243	145T	T, S, C, X, IG
32	II, III	2.5	2757	56	3363	145T	T, S, C, X, IG
30	I	1.0	2935	56	3243	145T	T, S, C, X, IG
29	I, II, III	2.2	3097	63	3363	145T	T, S, C, X, IG
27		0.93	3351	63	3243	145T	T, S, C, X, IG
26	III	3+	3427	71	3473	145T	T, S, C, X, IG
25	I, II	1.9	3498	71	3363	145T	T, S, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
23	I, II	1.7	3874	80	3363	145T	T, S, C, X, IG
23	III	3+	3935	80	3473	145T	T, S, C, X, IG
20	I, II	1.5	4417	90	3363	145T	T, S, C, X, IG
20	III	3+	4432	90	3473	145T	T, S, C, X, IG
18	III	3+	4813	100	3473	145T	T, S, C, X, IG
18	I, II	1.4	5077	100	3363	145T	T, S, C, X, IG
17	II, III	2.9	5382	112	3473	145T	T, S, C, X, IG
16	I	1.3	5534	112	3363	145T	T, S, C, X, IG
15	II, III	2.6	6042	125	3473	145T	T, S, C, X, IG
14	I	1.2	6194	125	3363	145T	T, S, C, X, IG
13	II, III	2.3	6803	140	3473	145T	T, S, C, X, IG
13	I	1.1	6854	140	3363	145T	T, S, C, X, IG
12	I, II, III	2.1	7413	160	3473	145T	T, S, C, X, IG
11.4		0.98	7768	160	3363	145T	T, S, C, X, IG
10.6	I, II	1.8	8377	180	3473	145T	T, S, C, X, IG
10.4	III	2.7	8580	180	3583	145T	T, S, C, X, IG
9.5	III	2.5	9342	200	3583	145T	T, S, C, X, IG
9.2	I, II	1.6	9647	200	3473	145T	T, S, C, X, IG
8.3	I, II	1.4	10764	224	3473	145T	T, S, C, X, IG
8.1	III	2.1	10916	224	3583	145T	T, S, C, X, IG
7.4	I	1.3	11931	250	3473	145T	T, S, C, X, IG
7.1	II, III	2.1	12324	250	3584	145T	T, S, C, X, IG
6.3	II	1.9	13864	280	3584	145T	T, S, C, X, IG
6.2	III	3+	13936	280	3694	145T	T, S, C, X, IG
6.0	I	1.1	14510	280	3474	145T	T, S, C, X, IG
5.8	III	2.8	14891	315	3694	145T	T, S, C, X, IG
5.5	I, II	1.7	15752	315	3584	145T	T, S, C, X, IG
5.3		0.94	16498	315	3474	145T	T, S, C, X, IG
5.1	III	2.5	16900	355	3694	145T	T, S, C, X, IG
5.1	I, II	1.5	17144	355	3584	145T	T, S, C, X, IG
4.6	II, III	2.2	18770	400	3694	145T	T, S, C, X, IG
4.4	I	1.3	19628	400	3584	145T	T, S, C, X, IG
4.1	II, III	1.9	21323	450	3694	145T	T, S, C, X, IG
3.9	I	1.2	22113	450	3584	145T	T, S, C, X, IG
3.7	I	1.1	23504	500	3584	145T	T, S, C, X, IG
3.7	II	1.7	23724	500	3694	145T	T, S, C, X, IG
3.6	III	3+	23902	500	3704	145T	T, S, C, X, IG
3.3	I, II	1.6	26689	560	3694	145T	T, S, C, X, IG
3.2	III	2.7	27132	560	3704	145T	T, S, C, X, IG
3.0		0.92	29169	560	3584	145T	T, S, C, X, IG

MbN Series

◇ Standard Motor Types (see page D-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

1 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
2.9	III	2.4	30163	630	3704	145T	T, S, C, X, IG
2.8	I, II	1.3	31284	630	3694	145T	T, S, C, X, IG
2.6	II, III	2.1	33940	710	3704	145T	T, S, C, X, IG
2.5	I	1.2	34533	710	3694	145T	T, S, C, X, IG
2.3	I	1.1	37867	800	3694	145T	T, S, C, X, IG
2.2	II	1.8	39803	800	3704	145T	T, S, C, X, IG
2.0	II	1.7	43977	900	3704	145T	T, S, C, X, IG
2.0	I	0.94	44219	900	3694	145T	T, S, C, X, IG
1.8	I, II	1.5	48201	1000	3704	145T	T, S, C, X, IG
1.5	I	1.3	56301	1120	3704	145T	T, S, C, X, IG
1.4	I	1.2	61105	1250	3705	145T	T, S, C, X, IG
1.2	I	1.0	70390	1400	3705	145T	T, S, C, X, IG
1.1		0.97	75251	1600	3705	145T	T, S, C, X, IG

◊ **Standard Motor Types** (see page D-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
446	I, II, III	3+	271	4	3242	145T	T, S, C, X, IG
354	I, II, III	3+	342	5	3242	145T	T, S, C, X, IG
296	I, II, III	3+	409	5.6	3242	145T	T, S, C, X, IG
250	I, II, III	3+	483	6.3	3242	145T	T, S, C, X, IG
240	I, II, III	2.6	503	7.1	3132	145T	T, S, C, X, IG
208	I, II, III	3+	582	8	3242	145T	T, S, C, X, IG
190	I, II, III	2.5	635	9	3132	145T	T, S, C, X, IG
170	I, II, III	2.3	712	10	3132	145T	T, S, C, X, IG
161	I, II, III	2.2	754	11.2	3132	145T	T, S, C, X, IG
142	I, II, III	2.2	850	12.5	3132	145T	T, S, C, X, IG
126	I, II, III	2.1	961	14	3132	145T	T, S, C, X, IG
111	I, II	1.9	1085	16	3132	145T	T, S, C, X, IG
106	III	3+	1141	16	3242	145T	T, S, C, X, IG
98	I, II	1.7	1231	18	3132	145T	T, S, C, X, IG
94	III	3.0	1293	18	3242	145T	T, S, C, X, IG
86	I, II	1.4	1410	20	3132	145T	T, S, C, X, IG
84	III	2.7	1445	20	3242	145T	T, S, C, X, IG
76	I	1.3	1590	22.4	3132	145T	T, S, C, X, IG
74	II, III	2.4	1625	22.4	3242	145T	T, S, C, X, IG
72	I	1.2	1687	25	3132	145T	T, S, C, X, IG
64	II, III	2.1	1901	25	3242	145T	T, S, C, X, IG
64	III	3+	1894	28	3362	145T	T, S, C, X, IG
60	I	1.0	2005	28	3132	145T	T, S, C, X, IG
59	II	1.9	2053	28	3242	145T	T, S, C, X, IG
57		0.98	2122	31.5	3132	145T	T, S, C, X, IG
56	III	3+	2143	31.5	3362	145T	T, S, C, X, IG
53	I, II	1.8	2302	31.5	3242	145T	T, S, C, X, IG
52	III	3.0	2330	35.5	3362	145T	T, S, C, X, IG
50	I, II	1.5	2434	35.5	3242	145T	T, S, C, X, IG
46	I, II, III	2.7	2634	40	3362	145T	T, S, C, X, IG
44		0.95	2694	40	3243	145T	T, S, C, X, IG
40	I, II, III	2.4	3035	45	3362	145T	T, S, C, X, IG
36	I, II, III	2.1	3395	50	3362	145T	T, S, C, X, IG
33	III	3+	3601	56	3473	145T	T, S, C, X, IG
32	I, II	1.9	3676	56	3363	145T	T, S, C, X, IG
29	I, II	1.6	4129	63	3363	145T	T, S, C, X, IG
29	III	3+	4136	63	3473	145T	T, S, C, X, IG
26	III	3+	4569	71	3473	145T	T, S, C, X, IG
25	I, II	1.4	4664	71	3363	145T	T, S, C, X, IG
23	I	1.3	5165	80	3363	145T	T, S, C, X, IG

◊ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts, 145TY frame

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
23	II, III	2.9	5246	80	3473	145T	T, S, C, X, IG
20	I	1.1	5890	90	3363	145T	T, S, C, X, IG
20	II, III	2.6	5910	90	3473	145T	T, S, C, X, IG
18	II, III	2.4	6418	100	3473	145T	T, S, C, X, IG
18	I	1.0	6770	100	3363	145T	T, S, C, X, IG
17	I, II, III	2.2	7176	112	3473	145T	T, S, C, X, IG
16		0.94	7379	112	3363	145T	T, S, C, X, IG
15	III	2.9	7920	125	3583	145T	T, S, C, X, IG
15	I, II	1.9	8056	125	3473	145T	T, S, C, X, IG
13	III	2.6	8800	140	3583	145T	T, S, C, X, IG
13	I, II	1.7	9071	140	3473	145T	T, S, C, X, IG
12	I, II	1.6	9884	160	3473	145T	T, S, C, X, IG
12	III	2.3	10019	160	3583	145T	T, S, C, X, IG
10.6	I, II	1.4	11170	180	3473	145T	T, S, C, X, IG
10.4	III	2.0	11441	180	3583	145T	T, S, C, X, IG
9.5	II	1.9	12456	200	3583	145T	T, S, C, X, IG
9.2	I	1.2	12862	200	3473	145T	T, S, C, X, IG
8.8	III	3+	13472	200	3693	145T	T, S, C, X, IG
8.3	I	1.1	14352	224	3473	145T	T, S, C, X, IG
8.1	II	1.6	14555	224	3583	145T	T, S, C, X, IG
8.1	III	3.0	14622	224	3693	145T	T, S, C, X, IG
7.4		0.98	15909	250	3473	145T	T, S, C, X, IG
7.1	I, II	1.6	16431	250	3584	145T	T, S, C, X, IG
6.9	III	2.6	17059	250	3693	145T	T, S, C, X, IG
6.3	I, II	1.4	18485	280	3584	145T	T, S, C, X, IG
6.2	III	2.2	18581	280	3694	145T	T, S, C, X, IG
5.8	II, III	2.1	19855	315	3694	145T	T, S, C, X, IG
5.5	I	1.2	21003	315	3584	145T	T, S, C, X, IG
5.1	II	1.8	22534	355	3694	145T	T, S, C, X, IG
5.1	I	1.1	22858	355	3584	145T	T, S, C, X, IG
4.9	III	3+	23653	355	3704	145T	T, S, C, X, IG
4.6	I, II	1.7	25027	400	3694	145T	T, S, C, X, IG
4.6	III	2.9	25243	400	3704	145T	T, S, C, X, IG
4.4	I	1.0	26071	400	3584	145T	T, S, C, X, IG
4.1	I, II	1.5	28430	450	3694	145T	T, S, C, X, IG
4.1	III	2.5	28622	450	3704	145T	T, S, C, X, IG
3.7	I	1.3	31632	500	3694	145T	T, S, C, X, IG
3.6	II, III	2.3	31869	500	3704	145T	T, S, C, X, IG
3.3	I	1.2	35586	560	3694	145T	T, S, C, X, IG
3.2	II, III	2.0	36176	560	3704	145T	T, S, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 115/230 volts, 145TY frame

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
2.9	II	1.8	40217	630	3704	145T	T, S, C, X, IG
2.8	I	1.0	41712	630	3694	145T	T, S, C, X, IG
2.6	I, II	1.6	45253	710	3704	145T	T, S, C, X, IG
2.5		0.90	46044	710	3694	145T	T, S, C, X, IG
2.2	I, II	1.4	53071	800	3704	145T	T, S, C, X, IG
2.0	I	1.2	58636	900	3704	145T	T, S, C, X, IG
1.8	I	1.1	64268	1000	3704	145T	T, S, C, X, IG
1.5	I	1.0	75068	1120	3704	145T	T, S, C, X, IG

◊ **Standard Motor Types** (see page D-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY frame
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 1-ph/230V, 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
446	I, II, III	3+	407	4	3242	182T	T, S, C, X, IG
354	I, II, III	3+	512	5	3242	182T	T, S, C, X, IG
296	I, II, III	3+	613	5.6	3242	182T	T, S, C, X, IG
250	I, II, III	3+	725	6.3	3242	182T	T, S, C, X, IG
240	I, II	1.8	755	7.1	3132	182T	T, S, C, X, IG
235	III	3+	773	7.1	3242	182T	T, S, C, X, IG
208	I, II, III	3+	873	8	3242	182T	T, S, C, X, IG
190	I, II	1.6	953	9	3132	182T	T, S, C, X, IG
188	III	3+	967	9	3242	182T	T, S, C, X, IG
170	I, II	1.5	1068	10	3132	182T	T, S, C, X, IG
165	III	2.8	1099	10	3242	182T	T, S, C, X, IG
161	I, II	1.5	1130	11.2	3132	182T	T, S, C, X, IG
142	I, II	1.4	1276	12.5	3132	182T	T, S, C, X, IG
142	III	2.6	1276	11.2	3242	182T	T, S, C, X, IG
134	III	2.5	1359	12.5	3242	182T	T, S, C, X, IG
126	I, II	1.4	1441	14	3132	182T	T, S, C, X, IG
117	III	2.3	1545	14	3242	182T	T, S, C, X, IG
111	I	1.2	1628	16	3132	182T	T, S, C, X, IG
106	II, III	2.2	1711	16	3242	182T	T, S, C, X, IG
98	I	1.1	1846	18	3132	182T	T, S, C, X, IG
94	II, III	2.0	1939	18	3242	182T	T, S, C, X, IG
86	I	1.0	2116	20	3132	182T	T, S, C, X, IG
84	II, III	1.8	2167	20	3242	182T	T, S, C, X, IG
80	III	3+	2271	22.4	3362	182T	T, S, C, X, IG
74	I, II	1.6	2437	22.4	3242	182T	T, S, C, X, IG
72	III	2.7	2530	25	3362	182T	T, S, C, X, IG
64	II, III	2.5	2842	28	3362	182T	T, S, C, X, IG
64	I, II	1.4	2852	25	3242	182T	T, S, C, X, IG
59	I	1.3	3080	28	3242	182T	T, S, C, X, IG
56	II, III	2.1	3215	31.5	3362	182T	T, S, C, X, IG
53	I	1.2	3453	31.5	3242	182T	T, S, C, X, IG
52	II, III	2.0	3495	35.5	3362	182T	T, S, C, X, IG
50	I	1.0	3650	35.5	3242	182T	T, S, C, X, IG
47	III	3+	3858	40	3472	182T	T, S, C, X, IG
46	I, II	1.8	3951	40	3362	182T	T, S, C, X, IG
42	III	3+	4314	45	3472	182T	T, S, C, X, IG
40	I, II	1.6	4553	45	3362	182T	T, S, C, X, IG
36	I, II	1.4	5092	50	3362	182T	T, S, C, X, IG
35	III	2.9	5113	50	3472	182T	T, S, C, X, IG
33	II, III	2.6	5402	56	3473	182T	T, S, C, X, IG
32	I	1.3	5514	56	3362	182T	T, S, C, X, IG
29	I	1.1	6194	63	3363	182T	T, S, C, X, IG
29	II, III	2.3	6204	63	3473	182T	T, S, C, X, IG
26	I, II, III	2.2	6854	71	3473	182T	T, S, C, X, IG

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts, 184T frame

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

3 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
25		0.96	6996	71	3363	182T	T, S, C, X, IG
23	III	3.0	7565	80	3583	182T	T, S, C, X, IG
23	I, II	1.9	7870	80	3473	182T	T, S, C, X, IG
21	III	2.7	8367	90	3583	182T	T, S, C, X, IG
20	I, II	1.7	8865	90	3473	182T	T, S, C, X, IG
18	I, II	1.6	9626	100	3473	182T	T, S, C, X, IG
18	III	2.4	9677	100	3583	182T	T, S, C, X, IG
17	III	2.2	10561	112	3583	182T	T, S, C, X, IG
17	I, II	1.4	10764	112	3473	182T	T, S, C, X, IG
15	II	1.9	11881	125	3583	182T	T, S, C, X, IG
15	I	1.3	12084	125	3473	182T	T, S, C, X, IG
14	III	3+	12388	125	3693	182T	T, S, C, X, IG
13	II	1.7	13201	140	3583	182T	T, S, C, X, IG
13	I	1.1	13607	140	3473	182T	T, S, C, X, IG
13	III	3+	13912	140	3693	182T	T, S, C, X, IG
12	I	1.0	14825	160	3473	182T	T, S, C, X, IG
12	II	1.5	15029	160	3583	182T	T, S, C, X, IG
11.4	III	2.8	15536	160	3693	182T	T, S, C, X, IG
10.4	I, II	1.4	17161	180	3583	182T	T, S, C, X, IG
10.1	III	2.6	17567	180	3693	182T	T, S, C, X, IG
9.5	I	1.2	18684	200	3583	182T	T, S, C, X, IG
8.8	II, III	2.2	20207	200	3693	182T	T, S, C, X, IG
8.1	I	1.1	21832	223	3583	182T	T, S, C, X, IG
8.1	II, III	2.0	21934	224	3693	182T	T, S, C, X, IG
7.2	III	3.0	24777	250	3703	182T	T, S, C, X, IG
7.1	I	1.1	24647	250	3584	182T	T, S, C, X, IG
6.9	II	1.7	25589	250	3693	182T	T, S, C, X, IG
6.4	III	2.7	27003	280	3704	182T	T, S, C, X, IG
6.3		0.94	27728	280	3584	182T	T, S, C, X, IG
6.2	I, II	1.5	27871	280	3694	182T	T, S, C, X, IG
5.8	I, II	1.4	29782	315	3694	182T	T, S, C, X, IG
5.7	III	2.4	30779	315	3704	182T	T, S, C, X, IG
5.1	I	1.2	33800	355	3694	182T	T, S, C, X, IG
4.9	II, III	2.1	35480	355	3704	182T	T, S, C, X, IG
4.6	I	1.1	37541	400	3694	182T	T, S, C, X, IG
4.6	II	1.9	37865	400	3704	182T	T, S, C, X, IG
4.1	I	1.0	42645	450	3694	182T	T, S, C, X, IG
4.1	II	1.7	42934	450	3704	182T	T, S, C, X, IG
3.6	I, II	1.5	47804	500	3704	182T	T, S, C, X, IG
3.2	I	1.3	54263	560	3704	182T	T, S, C, X, IG
2.9	I	1.2	60326	630	3704	182T	T, S, C, X, IG
2.6	I	1.1	67879	710	3704	182T	T, S, C, X, IG

◊ **Standard Motor Types** (see page D-15 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- S TEFC, single phase, 230 volts, 184T frame
- C Corro-Duty®, three phase, 230/460 or 575 volts
- X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
- IG IntelliGear® variable speed for 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

5 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
446	I, II, III	2.9	678	4	3242	184T	T, S, C, X, IG
354	I, II, III	2.6	854	5	3242	184T	T, S, C, X, IG
319	I, II, III	3+	949	5.6	3362	184T	T, S, C, X, IG
296	I, II, III	2.4	1021	5.6	3242	184T	T, S, C, X, IG
281	I, II, III	3+	1075	6.3	3472	184T	T, S, C, X, IG
250	I, II, III	2.2	1208	6.3	3242	184T	T, S, C, X, IG
240	I	1.1	1258	7.1	3132	184T	T, S, C, X, IG
235	II, III	2.2	1288	7.1	3242	184T	T, S, C, X, IG
208	I, II, III	2.0	1455	8	3242	184T	T, S, C, X, IG
200	III	3+	1514	9	3362	184T	T, S, C, X, IG
190	I	1.0	1588	9	3132	184T	T, S, C, X, IG
188	II	1.9	1611	9	3242	184T	T, S, C, X, IG
173	III	3+	1746	10	3362	184T	T, S, C, X, IG
165	I, II	1.7	1832	10	3242	184T	T, S, C, X, IG
158	III	3+	1919	11.2	3362	184T	T, S, C, X, IG
142	I, II	1.6	2126	11.2	3242	184T	T, S, C, X, IG
142	III	3+	2126	12.5	3362	184T	T, S, C, X, IG
134	I, II	1.5	2264	12.5	3242	184T	T, S, C, X, IG
124	III	2.9	2437	14	3362	184T	T, S, C, X, IG
117	I, II	1.4	2575	14	3242	184T	T, S, C, X, IG
112	II, III	2.6	2696	16	3362	184T	T, S, C, X, IG
106	I	1.3	2852	16	3242	184T	T, S, C, X, IG
98	II, III	2.3	3094	18	3362	184T	T, S, C, X, IG
94	I	1.2	3232	18	3242	184T	T, S, C, X, IG
87	II, III	2.1	3491	20	3362	184T	T, S, C, X, IG
84	I	1.1	3612	20	3242	184T	T, S, C, X, IG
80	II	1.9	3785	22.4	3362	184T	T, S, C, X, IG
80	III	3+	3785	22.4	3472	184T	T, S, C, X, IG
74	I	1.0	4062	22.4	3242	184T	T, S, C, X, IG
72	I, II	1.6	4217	25	3362	184T	T, S, C, X, IG
70	III	2.8	4321	25	3472	184T	T, S, C, X, IG
65	III	2.7	4632	28	3472	184T	T, S, C, X, IG
64	I, II	1.5	4736	28	3362	184T	T, S, C, X, IG
56	I	1.3	5358	31.5	3362	184T	T, S, C, X, IG
56	II, III	2.4	5393	31.5	3472	184T	T, S, C, X, IG
52	I	1.2	5825	35.5	3362	184T	T, S, C, X, IG
52	II, III	2.3	5859	35.5	3472	184T	T, S, C, X, IG
47	II, III	2.2	6430	40	3472	184T	T, S, C, X, IG
46	I	1.1	6585	50	3362	184T	T, S, C, X, IG
46	I	1.1	6448	40	3362	184T	T, S, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 S TEFC, single phase, 230 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

5 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
42	II, III	2.0	7190	45	3472	184T	T, S, C, X, IG
40	I	1.0	7588	45	3362	184T	T, S, C, X, IG
35	II	1.7	8521	50	3472	184T	T, S, C, X, IG
33	I, II	1.5	9004	56	3473	184T	T, S, C, X, IG
29	III	2.2	10222	63	3583	184T	T, S, C, X, IG
29	I, II	1.4	10341	63	3473	184T	T, S, C, X, IG
27	II, III	2.1	11085	71	3583	184T	T, S, C, X, IG
26	I	1.3	11424	71	3473	184T	T, S, C, X, IG
23	II	1.8	12608	80	3583	184T	T, S, C, X, IG
23	III	3+	13015	80	3693	184T	T, S, C, X, IG
23	I	1.1	13116	80	3473	184T	T, S, C, X, IG
21	II	1.6	13945	90	3583	184T	T, S, C, X, IG
20	I	1.0	14775	90	3473	184T	T, S, C, X, IG
20	III	2.9	14775	90	3693	184T	T, S, C, X, IG
18		0.96	16044	100	3473	184T	T, S, C, X, IG
18	I, II	1.4	16129	100	3583	184T	T, S, C, X, IG
18	III	2.6	16349	100	3693	184T	T, S, C, X, IG
17	I	1.3	17601	112	3583	184T	T, S, C, X, IG
16	II, III	2.4	18955	112	3693	184T	T, S, C, X, IG
15	I	1.2	19801	125	3583	184T	T, S, C, X, IG
14	II, III	2.1	20647	125	3693	184T	T, S, C, X, IG
13	I	1.0	22001	140	3583	184T	T, S, C, X, IG
13	II	1.9	23186	140	3693	184T	T, S, C, X, IG
12	III	3+	23863	140	3703	184T	T, S, C, X, IG
12		0.93	25048	160	3583	184T	T, S, C, X, IG
11.4	I, II	1.7	25894	160	3693	184T	T, S, C, X, IG
11.1	III	2.8	26740	160	3703	184T	T, S, C, X, IG
10.1	I, II	1.5	29279	180	3693	184T	T, S, C, X, IG
10.0	III	2.5	29617	180	3703	184T	T, S, C, X, IG
8.8	II, III	2.2	33510	200	3703	184T	T, S, C, X, IG
8.8	I	1.3	33679	200	3693	184T	T, S, C, X, IG
8.1	I	1.2	36556	224	3693	184T	T, S, C, X, IG
8.1	II, III	2.0	36725	224	3703	184T	T, S, C, X, IG
7.2	II	1.8	41295	250	3703	184T	T, S, C, X, IG
6.9	I	1.0	42649	250	3693	184T	T, S, C, X, IG
6.4	I, II	1.6	45004	280	3704	184T	T, S, C, X, IG
5.7	I, II	1.4	51299	315	3704	184T	T, S, C, X, IG
4.9	I	1.2	59133	355	3704	184T	T, S, C, X, IG
4.6	I	1.2	63109	400	3704	184T	T, S, C, X, IG
4.1	I	1.0	71556	450	3704	184T	T, S, C, X, IG

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

S TEFC, single phase, 230 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear® variable speed for 3-ph/230V, or 3-ph/460V power supplies, NEMA 4/12

7 1/2 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
446	I, II	1.9	1016	4	3242	213T	T, C, X, IG
365	III	3+	1245	5	3472	213T	T, C, X, IG
354	I, II	1.7	1281	5	3242	213T	T, C, X, IG
319	I, II, III	3+	1424	5.6	3362	213T	T, C, X, IG
296	I, II	1.6	1532	5.6	3242	213T	T, C, X, IG
281	III	3+	1613	6.3	3472	213T	T, C, X, IG
250	I, II	1.5	1813	6.3	3242	213T	T, C, X, IG
247	III	3+	1838	7.1	3362	213T	T, C, X, IG
235	I, II	1.4	1932	7.1	3242	213T	T, C, X, IG
232	II, III	3+	1953	8	3472	213T	T, C, X, IG
208	I	1.3	2183	8	3242	213T	T, C, X, IG
200	II, III	2.7	2271	9	3362	213T	T, C, X, IG
188	I	1.2	2417	9	3242	213T	T, C, X, IG
173	II, III	2.5	2619	10	3362	213T	T, C, X, IG
165	I	1.1	2749	10	3242	213T	T, C, X, IG
158	II, III	2.3	2878	11.2	3362	213T	T, C, X, IG
142	I	1.1	3189	11.2	3242	213T	T, C, X, IG
142	II, III	2.1	3189	12.5	3362	213T	T, C, X, IG
134	I	1.0	3397	12.5	3242	213T	T, C, X, IG
133	II, III	2.8	3423	14	3472	213T	T, C, X, IG
124	I, II	1.9	3656	14	3362	213T	T, C, X, IG
117		0.93	3864	14	3242	213T	T, C, X, IG
114	III	2.6	3993	16	3472	213T	T, C, X, IG
112	I, II	1.7	4045	16	3362	213T	T, C, X, IG
102	III	2.4	4460	18	3472	213T	T, C, X, IG
98	I, II	1.6	4642	18	3362	213T	T, C, X, IG
90	III	2.2	5030	20	3472	213T	T, C, X, IG
87	I, II	1.4	5238	20	3362	213T	T, C, X, IG
80	I	1.3	5679	22.4	3362	213T	T, C, X, IG
80	II, III	2.0	5679	22.4	3472	213T	T, C, X, IG
72	I	1.1	6327	25	3362	213T	T, C, X, IG
70	II	1.9	6483	25	3472	213T	T, C, X, IG
68	III	3.3	6638	25	3582	213T	T, C, X, IG
65	II	1.8	6949	28	3472	213T	T, C, X, IG
64	I	1.0	7105	28	3362	213T	T, C, X, IG
63	III	2.9	7209	28	3582	213T	T, C, X, IG
56	I, II	1.6	8090	31.5	3472	213T	T, C, X, IG
54	III	2.4	8401	31.5	3582	213T	T, C, X, IG
52	I, II	1.5	8790	35.5	3472	213T	T, C, X, IG
51	III	2.4	8682	35.5	3583	213T	T, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts
 X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
 IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

7 1/2 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types \diamond
					Gear	Motor	
47	I, II	1.4	9645	40	3472	213T	T, C, X, IG
45	III	2.2	9951	40	3583	213T	T, C, X, IG
42	I	1.3	10785	45	3472	213T	T, C, X, IG
41	II, III	2.0	10916	45	3583	213T	T, C, X, IG
37	II	1.9	12160	50	3583	213T	T, C, X, IG
35	I	1.2	12782	50	3472	213T	T, C, X, IG
35	III	3+	12795	50	3693	213T	T, C, X, IG
33	I	1.0	13505	56	3473	213T	T, C, X, IG
33	II	1.7	13632	56	3583	213T	T, C, X, IG
31	III	3.0	14267	56	3693	213T	T, C, X, IG
29	I, II	1.5	15333	63	3583	213T	T, C, X, IG
29		0.93	15511	63	3473	213T	T, C, X, IG
28	III	2.7	15993	63	3693	213T	T, C, X, IG
27	I, II	1.4	16628	71	3583	213T	T, C, X, IG
25	III	2.5	17973	71	3693	213T	T, C, X, IG
23	I	1.2	18913	80	3583	213T	T, C, X, IG
23	II, III	2.2	19522	80	3693	213T	T, C, X, IG
21	I	1.1	20918	90	3583	213T	T, C, X, IG
20	II	1.9	22162	90	3693	213T	T, C, X, IG
19	III	3+	22822	90	3703	213T	T, C, X, IG
18		0.95	24193	100	3583	213T	T, C, X, IG
18	I, II	1.7	24523	100	3693	213T	T, C, X, IG
17	III	2.8	25894	100	3703	213T	T, C, X, IG
16	III	2.6	28179	112	3703	213T	T, C, X, IG
16	I, II	1.6	28432	112	3693	213T	T, C, X, IG
14	I, II	1.4	30971	125	3693	213T	T, C, X, IG
14	III	2.3	32748	125	3703	213T	T, C, X, IG
13	I	1.3	34779	140	3693	213T	T, C, X, IG
12	II, III	2.1	35794	140	3703	213T	T, C, X, IG
11.4	I	1.1	38841	160	3693	213T	T, C, X, IG
11.1	II	1.8	40110	160	3703	213T	T, C, X, IG
10.1	I	1.0	43918	180	3693	213T	T, C, X, IG
10.0	II	1.7	44426	180	3703	213T	T, C, X, IG
8.8	I, II	1.5	50264	200	3703	213T	T, C, X, IG
8.1	I, II	1.4	55088	224	3703	213T	T, C, X, IG
7.2	I	1.2	61942	250	3703	213T	T, C, X, IG
6.4	I	1.1	67506	280	3704	213T	T, C, X, IG
5.7		0.95	76948	315	3704	213T	T, C, X, IG

MbN Series

\diamond **Standard Motor Types** (see page D-15 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
C Corro-Duty[®], three phase, 230/460 or 575 volts
X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
IG IntelliGear[®] variable speed for 3-ph/460V power supplies, NEMA 4/12

10 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
446	I, II	1.4	1355	4	3242	215T	T, C, X, IG
365	II, III	3+	1659	5	3472	215T	T, C, X, IG
354	I	1.3	1708	5	3242	215T	T, C, X, IG
319	III	2.6	1898	5.6	3362	215T	T, C, X, IG
296	I, II	1.6	2043	5.6	3242	215T	T, C, X, IG
281	II, III	3+	2150	6.3	3472	215T	T, C, X, IG
250	I	1.1	2416	6.3	3242	215T	T, C, X, IG
247	II, III	2.4	2451	7.1	3362	215T	T, C, X, IG
235	I	1.1	2575	7.1	3242	215T	T, C, X, IG
232	I, II, III	3.0	2603	8	3472	215T	T, C, X, IG
208	I	1.0	2911	8	3242	215T	T, C, X, IG
200	I, II, III	2.1	3028	9	3362	215T	T, C, X, IG
185	III	2.6	3270	10	3472	215T	T, C, X, IG
173	I, II	1.9	3491	10	3362	215T	T, C, X, IG
165	III	2.5	3664	11.2	3472	215T	T, C, X, IG
158	I, II	1.7	3837	11.2	3362	215T	T, C, X, IG
146	III	2.3	4148	12.5	3472	215T	T, C, X, IG
142	I, II	1.6	4252	12.5	3362	215T	T, C, X, IG
133	III	2.1	4563	14	3472	215T	T, C, X, IG
124	I, II	1.5	4874	14	3362	215T	T, C, X, IG
114	II	1.9	5324	16	3472	215T	T, C, X, IG
112	I	1.3	5393	16	3362	215T	T, C, X, IG
111	III	3+	5427	16	3582	215T	T, C, X, IG
102	II	1.8	5946	18	3472	215T	T, C, X, IG
99	III	3+	6084	18	3582	215T	T, C, X, IG
98	I	1.2	6188	18	3362	215T	T, C, X, IG
90	II	1.7	6706	20	3472	215T	T, C, X, IG
89	III	3+	6810	20	3582	215T	T, C, X, IG
87	I	1.1	6983	20	3362	215T	T, C, X, IG
80		0.94	7570	22.4	3362	215T	T, C, X, IG
80	I, II	1.5	7570	22.4	3472	215T	T, C, X, IG
78	III	2.9	7709	22.4	3582	215T	T, C, X, IG
70	I, II	1.4	8642	25	3472	215T	T, C, X, IG
68	III	2.4	8849	25	3582	215T	T, C, X, IG
65	I	1.3	9264	28	3472	215T	T, C, X, IG
63	II, III	2.2	9610	28	3582	215T	T, C, X, IG
56	I	1.2	10785	31.5	3472	215T	T, C, X, IG
56	III	3+	10527	31.5	3692	215T	T, C, X, IG
54	II	1.8	11200	31.5	3582	215T	T, C, X, IG
52	I	1.2	11719	35.5	3472	215T	T, C, X, IG

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)
T TEFC, three phase, 208-230/460 or 575 volts
C Corro-Duty®, three phase, 230/460 or 575 volts
X Explosionproof, CI 1 group D, CI 2 groups F&G, three phase, 230/460 or 575 volts
IG IntelliGear® variable speed for 3-ph/460V power supplies, NEMA 4/12

10 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types \diamond
					Gear	Motor	
51	II	1.8	11576	35.5	3583	215T	T, C, X, IG
51	III	3+	11678	35.5	3692	215T	T, C, X, IG
47	I	1.1	12859	40	3472	215T	T, C, X, IG
45	II	1.6	13268	40	3583	215T	T, C, X, IG
44	III	3+	13573	40	3693	215T	T, C, X, IG
42	I	1.0	14380	45	3472	215T	T, C, X, IG
41	II	1.5	14555	45	3583	215T	T, C, X, IG
38	III	2.9	15570	45	3693	215T	T, C, X, IG
37	I, II	1.4	16213	50	3583	215T	T, C, X, IG
35	III	2.6	17059	50	3693	215T	T, C, X, IG
33	I	1.2	18176	56	3583	215T	T, C, X, IG
31	II, III	2.2	19023	56	3693	215T	T, C, X, IG
29	I	1.1	20444	63	3583	215T	T, C, X, IG
28	II, III	2.1	21324	63	3693	215T	T, C, X, IG
27	I	1.0	22170	71	3583	215T	T, C, X, IG
26	III	3+	23118	71	3703	215T	T, C, X, IG
25	II	1.9	23964	71	3693	215T	T, C, X, IG
23		0.91	25217	80	3583	215T	T, C, X, IG
23	III	2.8	25995	80	3703	215T	T, C, X, IG
23	I, II	1.6	26029	80	3693	215T	T, C, X, IG
20	I, II	1.4	29549	90	3693	215T	T, C, X, IG
19	III	2.4	30429	90	3703	215T	T, C, X, IG
18	I	1.3	32697	100	3693	215T	T, C, X, IG
17	II, III	2.1	34525	100	3703	215T	T, C, X, IG
16	II, III	2.0	37571	112	3703	215T	T, C, X, IG
16	I	1.2	37910	112	3693	215T	T, C, X, IG
14	I	1.1	41295	125	3693	215T	T, C, X, IG
14	II	1.7	43664	125	3703	215T	T, C, X, IG
13	I	1.0	46372	140	3693	215T	T, C, X, IG
12	II	1.5	47726	140	3703	215T	T, C, X, IG
11.1	I, II	1.4	53480	160	3703	215T	T, C, X, IG
10.0	I	1.3	59234	180	3703	215T	T, C, X, IG
8.8	I	1.1	67019	200	3703	215T	T, C, X, IG
8.1	I	1.0	73450	224	3703	215T	T, C, X, IG
7.2		0.90	82589	250	3703	215T	T, C, X, IG

\diamond **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

X Explosionproof, Cl 1 group D, Cl 2 groups F&G, three phase, 230/460 or 575 volts

IG IntelliGear[®] variable speed for 3-ph/460V power supplies, NEMA 4/12

15 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types [◇]
					Gear	Motor	
365	I, II, III	2.6	2489	5	3472	254T	T, C
319	I, II	1.8	2847	5.6	3362	254T	T, C
296	III	3+	3064	5.6	3582	254T	T, C
281	I, II, III	2.2	3225	6.3	3472	254T	T, C
247	I, II	1.6	3676	7.1	3362	254T	T, C
242	III	3+	3754	7.1	3582	254T	T, C
232	I, II, III	2.0	3904	8	3472	254T	T, C
200	I, II	1.4	4542	9	3362	254T	T, C
208	II	1.9	4366	9	3472	254T	T, C
192	III	3+	4729	9	3582	254T	T, C
173	I	1.3	5237	10	3362	254T	T, C
185	II	1.7	4905	10	3472	254T	T, C
177	III	3+	5128	10	3582	254T	T, C
158	I	1.1	5756	11.2	3362	254T	T, C
165	II	1.6	5496	11.2	3472	254T	T, C
156	III	3+	5807	11.2	3582	254T	T, C
142	I	1.0	6378	12.5	3362	254T	T, C
146	II	1.5	6222	12.5	3472	254T	T, C
141	III	3+	6430	12.5	3582	254T	T, C
124	I	1.0	7311	14	3362	254T	T, C
133	II	1.4	6845	14	3472	254T	T, C
122	III	3+	7467	14	3582	254T	T, C
114	I	1.3	7985	16	3472	254T	T, C
111	II, III	2.5	8141	16	3582	254T	T, C
102	I	1.2	8919	18	3472	254T	T, C
99	II, III	2.5	9126	18	3582	254T	T, C
91	I	1.1	10008	20	3472	254T	T, C
89	II, III	2.1	10215	20	3582	254T	T, C
80	I	1.0	11356	22.4	3472	254T	T, C
78	II	1.9	11563	22.4	3582	254T	T, C
80	III	3+	11356	22.4	3692	254T	T, C
70		0.94	12963	25	3472	254T	T, C

MbN Series

[◇] **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

15 HP (Continued)

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
68	I, II	1.6	13274	25	3582	254T	T, C
69	III	3+	13222	25	3692	254T	T, C
63	I, II	1.4	14415	28	3582	254T	T, C
63	III	2.7	14363	28	3692	254T	T, C
54	I	1.2	16800	31.5	3582	254T	T, C
56	II, III	2.6	15790	31.5	3692	254T	T, C
51	I	1.2	17364	35.5	3583	254T	T, C
51	II, III	2.3	17516	35.5	3692	254T	T, C
45	I	1.1	19903	40	3583	254T	T, C
44	II, III	2.1	20360	40	3693	254T	T, C
41	I	1.0	21832	45	3583	254T	T, C
38	II	1.9	23355	45	3693	254T	T, C
41	III	3.0	21934	45	3703	254T	T, C
35	I, II	1.7	25589	50	3693	254T	T, C
36	III	2.8	24777	50	3703	254T	T, C
31	I, II	1.5	28534	56	3693	254T	T, C
32	III	2.5	28128	56	3703	254T	T, C
28	I, II	1.4	31986	63	3693	254T	T, C
29	III	2.3	31073	63	3703	254T	T, C
25	I	1.2	35947	71	3693	254T	T, C
26	II, III	2.1	34677	71	3703	254T	T, C
23	I	1.1	39044	80	3693	254T	T, C
23	II	1.9	38993	80	3703	254T	T, C
20	I	1.0	44324	90	3693	254T	T, C
19	II	1.6	45644	90	3703	254T	T, C
17	I, II	1.4	51788	100	3703	254T	T, C
16	I	1.3	56357	112	3703	254T	T, C
14	I	1.1	65496	125	3703	254T	T, C
12	I	1.0	71589	140	3703	254T	T, C
11.1		0.92	80220	160	3703	254T	T, C

◊ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

20 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
365	I, II	1.9	3319	5	3472	256T	T, C
338	III	3+	3575	5	3582	256T	T, C
319	I	1.3	3796	5.6	3362	256T	T, C
296	II, III	3+	4087	5.6	3582	256T	T, C
281	I, II	1.6	4301	6.3	3472	256T	T, C
270	III	3+	4481	6.3	3582	256T	T, C
247	I	1.2	4903	7.1	3362	256T	T, C
242	II, III	3+	5006	7.1	3582	256T	T, C
232	I, II	1.5	5207	8	3472	256T	T, C
216	III	3+	5608	8	3582	256T	T, C
208	II	1.4	5822	9	3472	256T	T, C
200	I	1.0	6057	9	3362	256T	T, C
192	III	3+	6306	9	3582	256T	T, C
185	I	1.3	6541	10	3472	256T	T, C
177	II, III	3+	6839	10	3582	256T	T, C
173		0.94	6984	10	3362	256T	T, C
165	I	1.2	7330	11.2	3472	256T	T, C
156	II, III	2.9	7745	11.2	3582	256T	T, C
146	I	1.1	8298	12.5	3472	256T	T, C
141	II, III	2.6	8574	12.5	3582	256T	T, C
133	I	1.1	9127	14	3472	256T	T, C
122	II, III	2.3	9957	14	3582	256T	T, C
116	III	3+	10441	16	3692	256T	T, C
114	I	1.0	10649	16	3472	256T	T, C
111	II	1.9	10856	16	3582	256T	T, C
99	I, II	1.9	12170	18	3582	256T	T, C
99	III	3.0	12239	18	3692	256T	T, C
89	I, II	1.6	13622	20	3582	256T	T, C
88	III	2.7	13829	20	3692	256T	T, C
80	III	2.5	15143	22.4	3692	256T	T, C
78	I, II	1.5	15420	22.4	3582	256T	T, C
69	II, III	2.3	17633	25	3692	256T	T, C
68	I	1.2	17702	25	3582	256T	T, C
63	II, III	2.0	19154	28	3692	256T	T, C
63	I	1.1	19223	28	3582	256T	T, C
56	I, II, III	1.9	21505	31.5	3692	256T	T, C

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

20 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types \diamond
					Gear	Motor	
51	I, II	1.7	23856	35.5	3692	256T	T, C
48	III	2.5	24574	35.5	3703	256T	T, C
45	III	2.4	26198	40	3703	256T	T, C
44	I, II	1.6	27146	40	3693	256T	T, C
41	III	2.2	29245	45	3703	256T	T, C
38	I, II	1.5	31140	45	3693	256T	T, C
36	II, III	2.1	33036	50	3703	256T	T, C
35	I	1.3	34119	50	3693	256T	T, C
32	II	1.9	37504	56	3703	256T	T, C
31	I	1.1	38045	56	3693	256T	T, C
29	II	1.7	41430	63	3703	256T	T, C
28	I	1.0	42649	63	3693	256T	T, C
26	I, II	1.6	46236	71	3703	256T	T, C
25		0.93	47929	71	3693	256T	T, C
23	I, II	1.4	51991	80	3703	256T	T, C
19	I	1.2	60859	90	3703	256T	T, C
17	I	1.1	69050	100	3703	256T	T, C
16	I	1.0	75143	112	3703	256T	T, C

\diamond **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

25 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types [◇]
					Gear	Motor	
365	I, II	1.5	4148	5	3472	284T	T, C
338	III	2.7	4468	5	3582	284T	T, C
296	I, II, III	2.7	5107	5.6	3582	284T	T, C
281	I	1.3	5375	6.3	3472	284T	T, C
270	II, III	2.7	5600	6.3	3582	284T	T, C
242	I, II, III	2.7	6257	7.1	3582	284T	T, C
232	I	1.2	6507	8	3472	284T	T, C
216	II, III	2.7	7009	8	3582	284T	T, C
208	I	1.2	7277	9	3472	284T	T, C
192	II, III	2.5	7882	9	3582	284T	T, C
185	I	1.0	8175	10	3472	284T	T, C
177	II, III	2.5	8547	10	3582	284T	T, C
165	I	1.0	9161	11.2	3472	284T	T, C
156	II, III	2.3	9679	11.2	3582	284T	T, C
146		0.91	10370	12.5	3472	284T	T, C
141	I, II, III	2.1	10716	12.5	3582	284T	T, C
130	III	2.7	11667	14	3692	284T	T, C
122	I, II	1.8	12445	14	3582	284T	T, C
116	III	2.5	13050	16	3692	284T	T, C
111	I, II	1.5	13568	16	3582	284T	T, C
99	I, II	1.5	15210	18	3582	284T	T, C
99	III	2.4	15296	18	3692	284T	T, C
89	I	1.3	17025	20	3582	284T	T, C
88	II, III	2.2	17284	20	3692	284T	T, C
80	II, III	2.0	18926	22.4	3692	284T	T, C
78	I	1.2	19272	22.4	3582	284T	T, C
69	III	2.7	21778	25	3702	284T	T, C
69	II	1.9	22037	25	3692	284T	T, C
68	I	1.0	22124	25	3582	284T	T, C
63	I, II	1.6	23938	28	3692	284T	T, C
62	III	2.6	24543	28	3702	284T	T, C
56	I, II	1.6	26317	31.5	3692	284T	T, C
55	III	2.1	27078	31.5	3703	284T	T, C
51	I, II	1.4	29194	35.5	3692	284T	T, C
48	III	2.0	30717	35.5	3703	284T	T, C
45	II	1.9	32748	40	3703	284T	T, C

MbN Series

[◇] **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

25 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types [◇]
					Gear	Motor	
44	I	1.3	33933	40	3693	284T	T, C
41	II	1.8	36556	45	3703	284T	T, C
38	I	1.2	38925	45	3693	284T	T, C
36	II	1.7	41295	50	3703	284T	T, C
35	I	1.0	42649	50	3693	284T	T, C
32	I, II	1.5	46880	56	3703	284T	T, C
31		0.90	47557	56	3693	284T	T, C
29	I, II	1.4	51788	63	3703	284T	T, C
26	I	1.3	57796	71	3703	284T	T, C
23	I	1.1	64988	80	3703	284T	T, C
19	I	1.0	76074	90	3703	284T	T, C

◇ **Standard Motor Types** (see page D-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts

30 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
365	I	1.3	4978	5	3472	286T	T, C
338	II, III	2.2	5362	5	3582	286T	T, C
296	I, II, III	2.2	6129	5.6	3582	286T	T, C
281	I	1.1	6450	6.3	3472	286T	T, C
270	II, III	2.2	6720	6.3	3582	286T	T, C
242	I, II, III	2.2	7508	7.1	3582	286T	T, C
232	I, II	1.0	7809	8	3472	286T	T, C
216	III	2.2	8410	8	3582	286T	T, C
208	I	1.0	8732	9	3472	286T	T, C
192	II, III	2.1	9458	9	3582	286T	T, C
177	I, II, III	2.1	10256	10	3582	286T	T, C
161	III	2.8	11304	11.2	3692	286T	T, C
156	I, II	1.9	11615	11.2	3582	286T	T, C
145	III	2.6	12548	12.5	3692	286T	T, C
141	I, II	1.7	12859	12.5	3582	286T	T, C
130	III	2.3	14000	14	3692	286T	T, C
122	I, II	1.5	14933	14	3582	286T	T, C
116	II, III	2.1	15659	16	3692	286T	T, C
111	I	1.3	16282	16	3582	286T	T, C
99	I	1.2	18252	18	3582	286T	T, C
99	II, III	2.0	18356	18	3692	286T	T, C
89	I	1.0	20430	20	3582	286T	T, C
88	II	1.8	20741	20	3692	286T	T, C
87	III	3.1	20845	20	3702	286T	T, C
80	II	1.7	22711	22.4	3692	286T	T, C
78	I	1.0	23126	22.4	3582	286T	T, C
77	III	2.9	23437	22.4	3702	286T	T, C
69	III	2.2	26134	25	3702	286T	T, C
69	I, II	1.6	26445	25	3692	286T	T, C
63	I, II	1.4	28726	28	3692	286T	T, C
62	III	2.2	29452	28	3702	286T	T, C
56	I	1.3	31580	31.5	3692	286T	T, C

MbN Series

◇ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

30 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types [◇]
					Gear	Motor	
55	II	1.8	32494	31.5	3703	286T	T, C
51	I	1.1	35033	35.5	3692	286T	T, C
48	II	1.7	36861	35.5	3703	286T	T, C
45	II	1.6	39298	40	3703	286T	T, C
44	I	1.1	40719	40	3693	286T	T, C
41	II	1.5	43867	45	3703	286T	T, C
38	I	1.0	46710	45	3693	286T	T, C
36	I, II	1.4	49554	50	3703	286T	T, C
32	I	1.3	56255	56	3703	286T	T, C
29	I	1.2	62145	63	3703	286T	T, C
26	I	1.0	69355	71	3703	286T	T, C
23		0.93	77986	80	3703	286T	T, C

◇ **Standard Motor Types** (see page D-15 for product codes)
 T TEFC, three phase, 208-230/460 or 575 volts
 C Corro-Duty®, three phase, 230/460 or 575 volts

40 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◇
					Gear	Motor	
338	I, II	1.7	7149	5	3582	324T	T, C
296	I, II	1.7	8172	5.6	3582	324T	T, C
277	III	2.5	8725	6.3	3692	324T	T, C
270	I, II	1.7	8960	6.3	3582	324T	T, C
245	III	2.4	9887	7.1	3692	324T	T, C
242	I, II	1.7	10011	7.1	3582	324T	T, C
230	III	2.3	10536	8	3692	324T	T, C
216	I, II	1.7	11214	8	3582	324T	T, C
205	III	2.3	11795	9	3692	324T	T, C
192	I, II	1.6	12610	9	3582	324T	T, C
182	III	2.2	13316	10	3692	324T	T, C
177	I, II	1.5	13675	10	3582	324T	T, C
161	III	2.1	15072	11.2	3692	324T	T, C
156	I, II	1.4	15487	11.2	3582	324T	T, C
145	II, III	2.0	16731	12.5	3692	324T	T, C
141	I	1.3	17146	12.5	3582	324T	T, C
130	II	1.7	18667	14	3692	324T	T, C
127	III	2.9	19082	14	3702	324T	T, C
122	I	1.1	19911	14	3582	324T	T, C
116	I, II	1.6	20879	16	3692	324T	T, C
111	III	2.7	21709	16	3702	324T	T, C
99	I, II	1.5	24474	18	3692	324T	T, C
98	III	2.5	24613	18	3702	324T	T, C
88	I, II	1.4	27655	20	3692	324T	T, C
87	III	2.3	27793	20	3702	324T	T, C
80	I	1.3	30282	22.4	3692	324T	T, C
77	II, III	2.2	31250	22.4	3702	324T	T, C
69	II	1.7	34845	25	3702	324T	T, C
69	I	1.2	35260	25	3692	324T	T, C
63	I	1.0	38302	28	3692	324T	T, C
62	II	1.6	39270	28	3702	324T	T, C
56	I	1.0	42107	31.5	3692	324T	T, C
55	I	1.3	43326	31.5	3703	324T	T, C
48	I	1.2	49147	35.5	3703	324T	T, C
45	I	1.2	52397	40	3703	324T	T, C
41	I	1.1	58489	45	3703	324T	T, C
36	I	1.0	66071	50	3703	324T	T, C
32		0.94	75007	56	3703	324T	T, C

MbN Series

◇ Standard Motor Types (see page D-15 for product codes)

T TEFC, three phase, 230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

50 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output RPM	AGMA Class	Service Factor	Output Torque in-lb	Nominal Ratio	Frame Size		Std. Motor Types ◊
					Gear	Motor	
338	I	1.3	8936	5	3582	326T	T, C
296	I	1.3	10215	5.6	3582	326T	T, C
277	II, III	2.0	10906	6.3	3692	326T	T, C
270	I	1.3	11200	6.3	3582	326T	T, C
254	III	3.3	11926	7.1	3702	326T	T, C
245	II	1.9	12358	7.1	3692	326T	T, C
242	I	1.3	12514	7.1	3582	326T	T, C
230	II	1.9	13170	8	3692	326T	T, C
228	III	3.2	13274	8	3702	326T	T, C
216	I	1.3	14017	8	3582	326T	T, C
205	II	1.8	14743	9	3692	326T	T, C
203	III	3.0	14899	9	3702	326T	T, C
192	I	1.3	15763	9	3582	326T	T, C
182	II	1.8	16645	10	3692	326T	T, C
182	III	2.8	16662	10	3702	326T	T, C
177	I	1.2	17094	10	3582	326T	T, C
161	II	1.7	18840	11.2	3692	326T	T, C
159	III	2.6	19013	11.2	3702	326T	T, C
156	I	1.2	19358	11.2	3582	326T	T, C
145	II	1.6	20914	12.5	3692	326T	T, C
143	III	2.5	21087	12.5	3702	326T	T, C
141	I	1.0	21432	12.5	3582	326T	T, C
130	I, II	1.4	23334	14	3692	326T	T, C
127	III	2.3	23852	14	3702	326T	T, C
116	I	1.3	26099	16	3692	326T	T, C
111	II, III	2.2	27136	16	3702	326T	T, C
99	I	1.2	30593	18	3692	326T	T, C
98	II, III	2.0	30766	18	3702	326T	T, C
88	I	1.1	34568	20	3692	326T	T, C
87	II	1.9	34741	20	3702	326T	T, C
80	I	1.0	37852	22.4	3692	326T	T, C
77	II	1.7	39062	22.4	3702	326T	T, C
69	I	1.3	43556	25	3702	326T	T, C
69		0.93	44074	25	3692	326T	T, C
62	I	1.3	49087	28	3702	326T	T, C
55	I	1.1	54157	31.5	3703	326T	T, C
48	I	1.0	61434	35.5	3703	326T	T, C
45	I	1.0	65496	40	3703	326T	T, C
41		0.90	73112	45	3703	326T	T, C

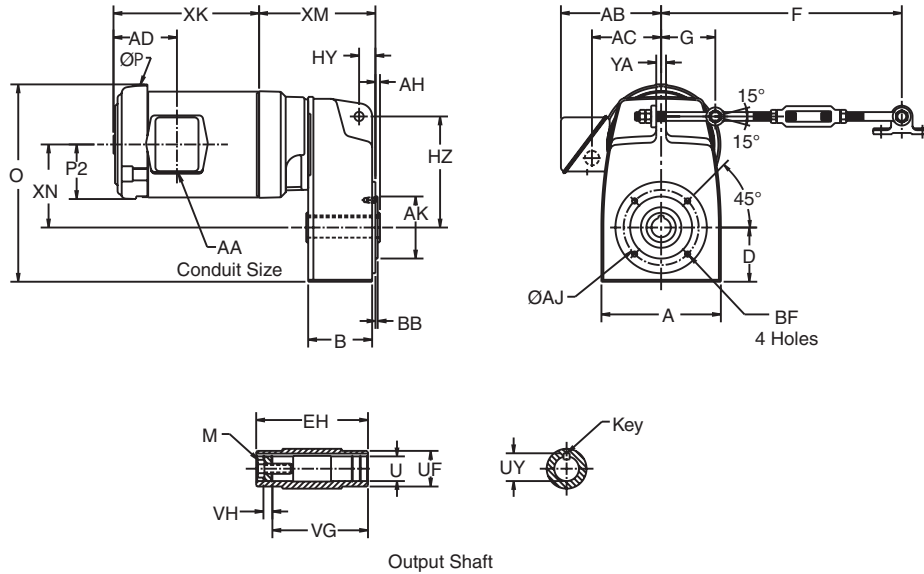
MbN Series

◊ **Standard Motor Types** (see page D-15 for product codes)

T TEFC, three phase, 230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

MbN31 Double Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	HY	HZ	XM	XN	YA
31	7.52	4.39	3.74	0.98	6.69	5.57	5.14	0.59

40C Face

Gear Frame	AH	AJ	AK	BB	BF
31	0.24	4.53	3.74	0.14	M8X12

Tie Rod⁵

Gear Frame	F		G
	Min.	Max.	
31	18.58	23.11	3.20

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ⁴	M
31	5.71	1.250	1.77	1.367	3.62	0.38	1/4 Sq.	7/16-14

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
48	T	31	6.72	2.79	12.24	0.50	4.34	3.55	4.43	12.43
56	T	31	7.22	3.31	12.49	.75	5.01	4.06	3.59	9.79
B56	T	31	7.22	3.31	12.49	.75	5.01	4.06	3.59	11.04
143T, 145T	T	31	7.22	3.31	12.49	.75	5.01	4.06	3.59	11.04
182T/184T	T	31	9.56	4.34	13.66	.75	7.51	6.31	5.40	14.04

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

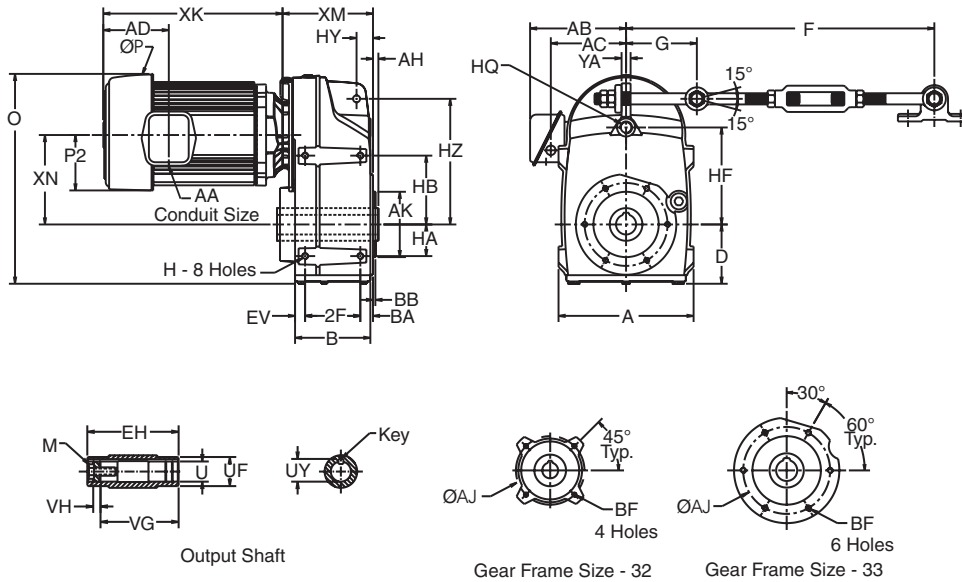
² Output finished bore tolerances (diameter "U"): +0.0010"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

⁵ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN32-33 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
32	7.83	5.39	3.80	2.76	M8X12	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	6.85	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	.98	2.48	5.39	7.60	M24X30	1.24	9.84	7.04	7.01	.71

40C Face

Gear Frame	AH	AJ	AK	BA	BB	BF
32	.31	5.12	4.331	.79	.23	M8X12
33	.32	6.50	5.118	.95	.24	M10X18

Tie Rod⁵

Gear Frame	F		G
	Min.	Max.	
32	18.58	23.11	3.20
33	18.58	23.11	3.20

Output Shaft

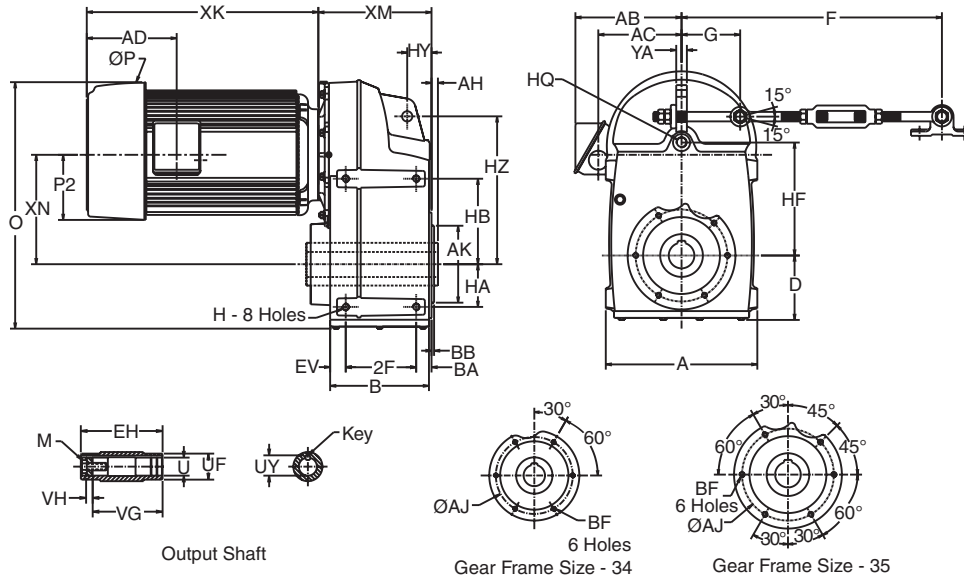
Gear Frame	EH	U ²	UF	UY	VG	VH	Key ⁴	M
3202/3203	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
3242/3243	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.674	6.76	.55	3/8 Sq.	5/8-11

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
56	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	9.79
		33	7.22	3.31	16.34	.75	5.01	4.06	3.59	9.79
B56	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	11.04
		33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.04
143T, 145T	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	11.04
		33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.04
182T/184T	T	32	9.56	4.34	14.81	.75	7.51	6.31	5.40	14.04
		33	9.56	4.34	16.88	.75	7.51	6.31	5.40	14.04
213T	T	32	11.25	5.06	15.78	1.00	8.25	6.39	6.94	16.15
		33	11.25	5.06	17.85	1.00	8.25	6.39	6.94	16.15
215T	T	32	11.25	5.06	15.78	1.00	8.25	6.39	6.94	17.65
		33	11.25	5.06	17.85	1.00	8.25	6.39	6.94	17.65
254T	T	33	13.38	6.00	19.04	1.25	9.96	7.72	8.59	20.58
256T	T	33	13.38	6.00	19.04	1.25	9.96	7.72	8.59	22.33

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.
³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.
⁵ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN34-35 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	EV	HA	HB	HF	HQ	HY	HZ	XM			XN	YA
													182T-215T	254T-286T	324T-326T		
34	11.10	8.13	5.04	3.94	M16X24	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	9.21	9.55	-	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.90	10.26	10.30	10.03	.98

40C Face

Gear Frame	AH	AJ	AK	BA	BB	BF
34	.30	7.09	6.289	1.42	.22	M12X22
35	.34	8.47	7.087	1.24	.26	M12X20

Tie Rod⁵

Gear Frame	F		G
	Min.	Max.	
34	22.36	26.50	5.90
35	22.36	26.50	5.90

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ⁴	M
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
182T/184T	T	34	9.56	4.34	18.78	.75	7.51	6.31	5.40	14.04
	T	35	9.56	4.34	22.91	.75	7.51	6.31	5.40	14.04
213T	T	34	11.25	5.06	18.78	1.00	8.25	6.39	6.94	16.15
	T	35	11.25	5.06	22.91	1.00	8.25	6.39	6.94	16.15
215T	T	34	11.25	5.06	18.78	1.00	8.25	6.39	6.94	17.65
	T	35	11.25	5.06	22.91	1.00	8.25	6.39	6.94	17.65
254T	T	34	13.38	6.00	18.92	1.25	9.96	7.72	8.59	19.61
	T	35	13.38	6.00	23.36	1.25	9.96	7.72	8.59	19.61
256T	T	34	13.38	6.00	18.92	1.25	9.96	7.72	8.59	21.35
	T	35	13.38	6.00	23.36	1.25	9.96	7.72	8.59	21.35
284T/286T	T	34	14.62	7.29	-	1.50	11.98	9.16	13.19	24.71
	T	35	14.62	7.29	-	1.50	11.98	9.16	13.19	24.71
324T/326T	T	35	17.20	8.17	25.01	2.00	14.99	11.34	14.16	27.36

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

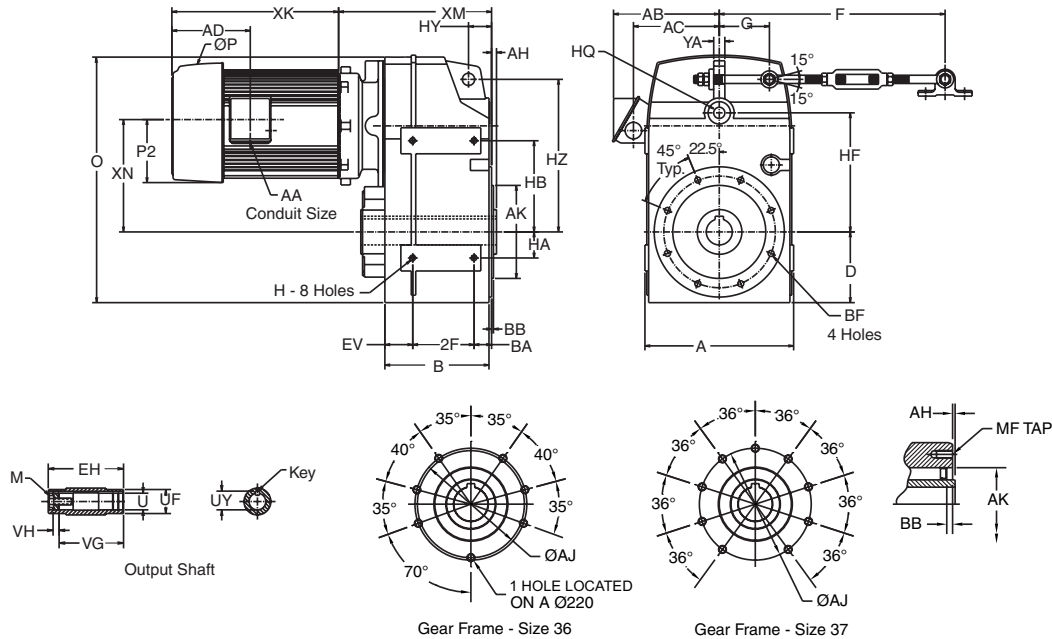
² Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

⁵ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN36-37 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	EV	HA	HB	HF	HQ	HY	HZ	O	XM			XN	YA
														143T-145T	182T-215T	254T-326T		
36	15.75	10.98	7.01	6.50	M16X25	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	25.56	11.49	11.49	11.84	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	29.04	-	13.03	13.38	12.28	1.55

40C Face

Gear Frame	AH	AJ	AK	BA	BB	BF
36	.23	9.06	5.91	1.77	.26	M16X27
37	.13	9.06	7.09	2.64	.26	M20X35

Tie Rod⁵

Gear Frame	F		G
	Min.	Max.	
36	33.92	39.92	4.55
37	34.05	40.05	4.55

Output Shaft

Gear Frame	EH	U	UF	UY	VG	VH	Key	M
36	13.14	2.750	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Motor Frame	Motor Type	Gear Frame	P	P2	AA	AB	AC	AD	XK
B56	T	36	7.22	3.31	.75	5.01	4.06	3.59	9.79
143T, 145T	T	36	7.22	3.31	.75	5.01	4.06	3.59	9.79
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	21.36
284T/286T	T	All	14.62	7.29	1.50	11.98	9.16	13.19	24.71
324T/326T	T	All	17.20	7.78	2.00	14.99	11.34	14.16	27.36

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

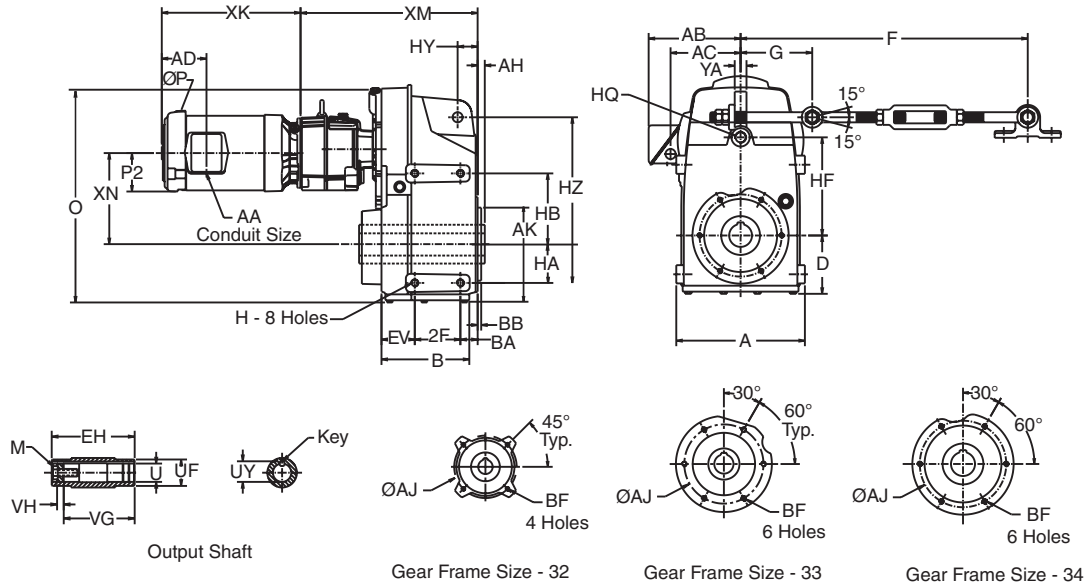
² Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

⁵ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN32-34 Combined (4-6 Reduction Stages) 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
													4 Red.	5-6 Red.		
32	7.83	5.39	3.80	2.76	M8X12	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.14	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.33	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	16.23	16.23	7.86	.98

40C Face

Gear Frame	AH	AJ	AK	BA	BB	BF
32	.31	5.12	4.331	.79	.23	M8X12
33	.32	6.50	5.118	.95	.24	M10X18
34	.30	7.09	6.299	1.42	.22	M12X22

Tie Rod⁵

Gear Frame	F		G
	Min.	Max.	
32	18.58	23.11	3.20
33	18.58	23.11	3.20
34	22.36	26.50	5.90

Output Shaft

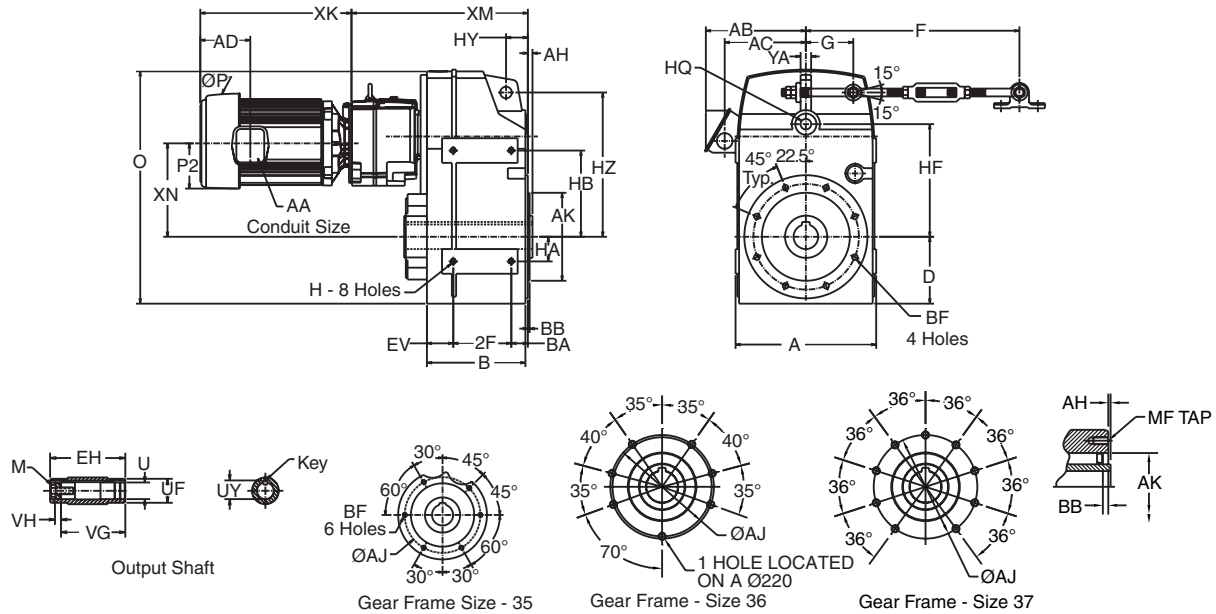
Gear Frame	EH	U ²	UF	UY	VG	VH	Key ⁴	M
3202/3203	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
3242/3243	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.674	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
56	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	10.37
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	10.37
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	9.79
B56	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	11.62
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.62
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	11.04
143T, 145T	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	12.62
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	12.62
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	11.04

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.
³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.
⁵ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN35-37 Combined (4-6 Reduction Stages) 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	EV	HA	HB	HF	HQ	HY	HZ	O	XM	XN	YA
35	13.98	9.11	5.95	6.50	M16X24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	22.91	17.04	9.70	.98
36	15.75	10.98	7.01	6.50	M16X25	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	25.56	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	29.04	20.68	6.99	1.55

40C Face

Gear Frame	AH	AJ	AK	BA	BB	BF
35	.60	8.47	7.087	1.24	.26	M12X22
36	.23	9.06	5.91	1.77	.26	M16X27
37	.13	9.06	7.09	2.64	.26	M20X35

Tie Rod⁵

Gear Frame	F		G
	Min.	Max.	
35	22.36	26.50	5.90
36	33.92	39.92	4.55
37	34.05	40.05	4.55

Output Shaft

Gear Frame	EH	U	UF	UY	VG	VH	Key	M
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq	3/4-10 x 2.0
36	13.14	2.750	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Motor Frame	Motor Type	Gear Frame	P	P2	AA	AB	AC	AD	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	14.04
213T	T	36, 37	11.25	5.06	1.00	8.42	7.17	5.60	16.15
215	T	36, 37	11.25	5.06	1.00	8.42	7.17	5.60	17.65

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

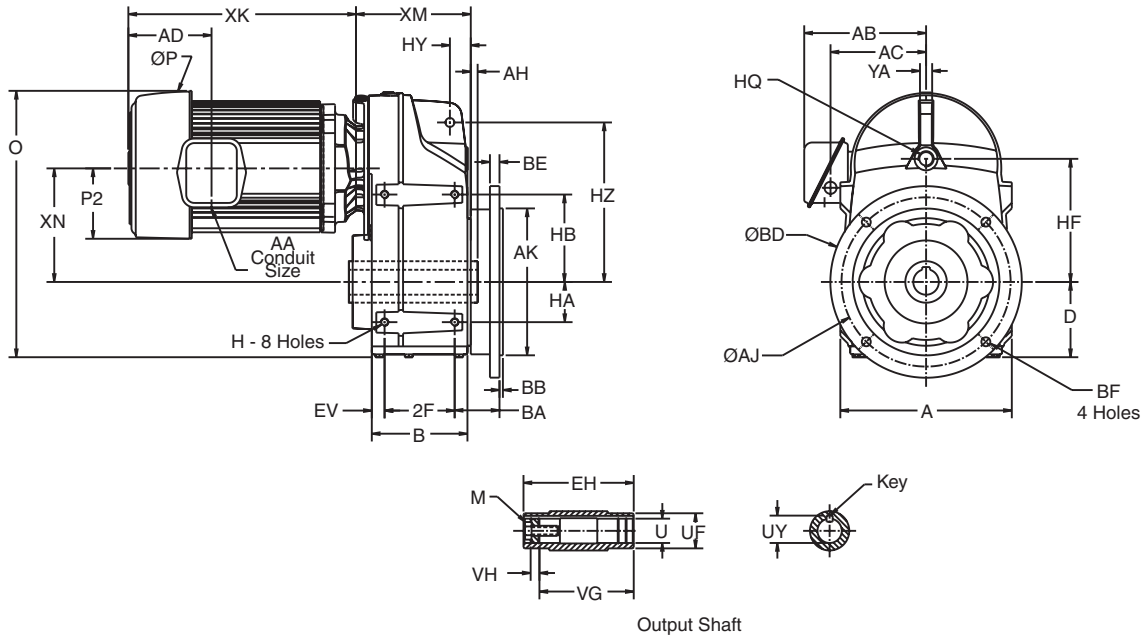
² Output finished bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

⁵ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN32-33 Double/Triple Reduction 50C/60C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
32	7.83	5.39	3.80	2.76	M8X12	.31	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	6.85	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	.32	.98	2.48	5.39	7.60	M24X30	1.24	9.84	7.04	7.01	.71

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ⁴	M
3202/3203	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
3242/3234	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	7/16-14
33	7.75	1.500	2.56	1.674	6.76	.55	3/8 Sq.	5/8-11

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
32	60C	6.50	5.118	3.07	.16	7.87	.39	.47
	50C	8.47	7.087	2.16	.16	9.84	.47	.55
33	60C	8.47	7.087	3.54	.16	9.84	.55	.55
	50C	10.43	9.055	2.72	.16	11.81	.59	.55

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
56	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	9.79
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	9.79
B56	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	11.04
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.04
143T, 145T	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	11.04
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.04
182T/184T	T	32	9.56	4.34	14.81	.75	7.51	6.31	5.40	14.04
	T	33	9.56	4.34	16.88	.75	7.51	6.31	5.40	14.04
213T	T	32	11.25	5.06	15.78	1.00	8.25	6.39	6.94	16.15
	T	33	11.25	5.06	17.85	1.00	8.25	6.39	6.94	16.15
215T	T	32	11.25	5.06	15.78	1.00	8.25	6.39	6.94	17.65
	T	33	11.25	5.06	17.85	1.00	8.25	6.39	6.94	17.65
254T	T	33	13.38	6.00	19.04	1.25	9.96	7.72	8.59	20.58
256T	T	33	13.38	6.00	19.04	1.25	9.96	7.72	8.59	22.33

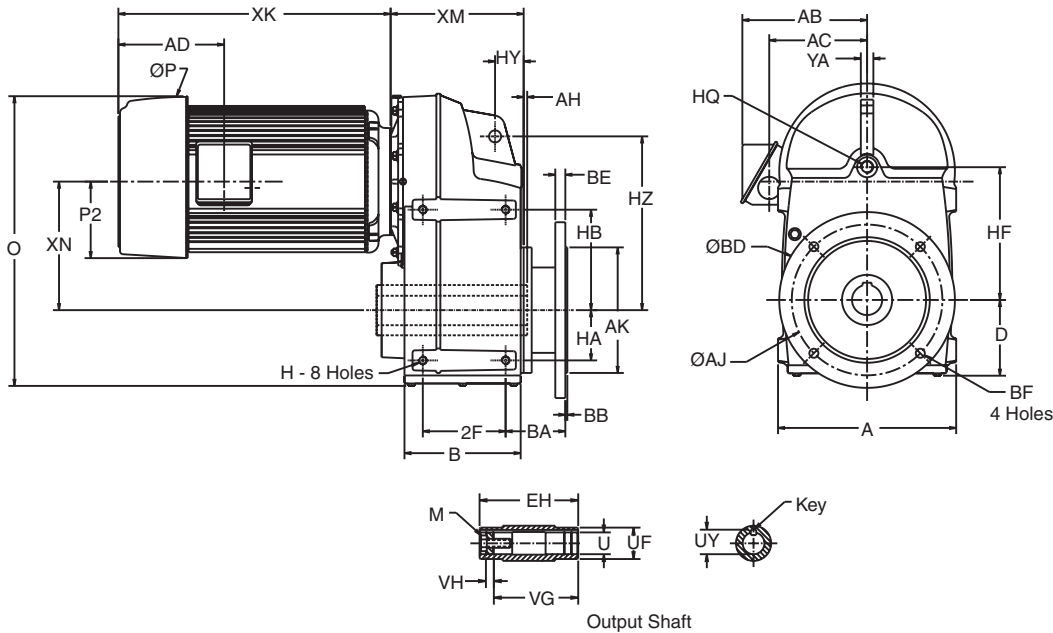
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

MbN34-35 Double/Triple Reduction 50C/60C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	AH	EV	HA	HB	HF	HQ	HY	HZ	XM			XN	YA
														182T-215T	254T-286T	324T-326T		
34	11.10	8.13	5.04	3.94	M16X24	.30	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	9.21	9.55	-	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	.34	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.90	10.26	10.30	10.03	.98

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ⁴	M
34	10.41	2.000	3.34	2.228	8.74	.79	.50 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	.625 Sq.	3/4-10

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
34	60C	8.47	7.087	4.98	.16	9.84	.55	.55
	50C	10.43	9.055	3.33	.16	11.81	.59	.55
35	50C	11.81	9.843	6.61	.16	13.78	.79	.71

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
182T/184T	T	34	9.56	4.34	18.78	.75	7.51	6.31	5.40	14.04
	T	35	9.56	4.34	22.91	.75	7.51	6.31	5.40	14.04
213T	T	34	11.25	5.06	18.78	1.00	8.25	6.39	6.94	16.15
	T	35	11.25	5.06	22.91	1.00	8.25	6.39	6.94	16.15
215T	T	34	11.25	5.06	18.78	1.00	8.25	6.39	6.94	17.65
	T	35	11.25	5.06	22.91	1.00	8.25	6.39	6.94	17.65
254T	T	34	13.38	6.00	18.92	1.25	9.96	7.72	8.59	19.61
	T	35	13.38	6.00	23.36	1.25	9.96	7.72	8.59	19.61
256T	T	34	13.38	6.00	18.92	1.25	9.96	7.72	8.59	21.35
	T	35	13.38	6.00	23.36	1.25	9.96	7.72	8.59	21.35
284T/286T	T	34	14.62	7.29	-	1.50	11.98	9.16	13.19	24.71
	T	35	14.62	7.29	-	1.50	11.98	9.16	13.19	24.71
324T/326T	T	35	17.20	8.17	25.01	2.00	14.99	11.34	14.16	27.36

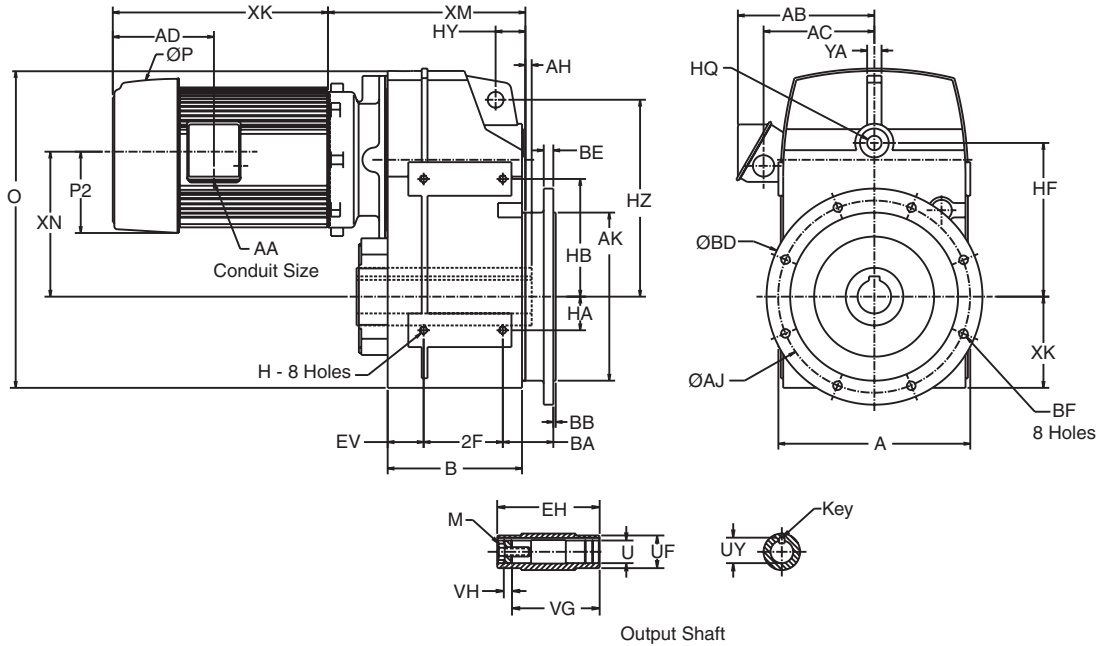
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

MbN36-37 Double/Triple Reduction 50C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	AH	EV	HA	HB	HF	HQ	HY	HZ	O	XM			XN	YA
															143T-145T	182T-215T	254T-326T		
36	15.75	10.98	7.01	6.50	M16X25	.23	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	25.56	11.49	11.49	11.84	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	.13	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	29.04	-	13.03	13.38	12.28	1.55

Output Shaft

Gear Frame	EH	U ²	U ^F	UY	VG	VH	Key	M
36	13.14	2.750	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
36	50C	15.75	13.780	4.92	.236	17.70	.79	.71
37	50C	15.75	13.780	5.79	.236	17.70	.79	.63

Motor Frame	Motor Type	Gear Frame	P	P2	AA	AB	AC	AD	XK
B56	T	36	7.22	3.31	.75	5.01	4.06	3.59	9.79
143T, 145T	T	36	7.22	3.31	.75	5.01	4.06	3.59	9.79
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	21.36
284T/286T	T	All	14.62	7.29	1.50	11.98	9.16	13.19	24.71
324T/326T	T	All	17.20	7.78	2.00	14.99	11.34	14.16	27.36

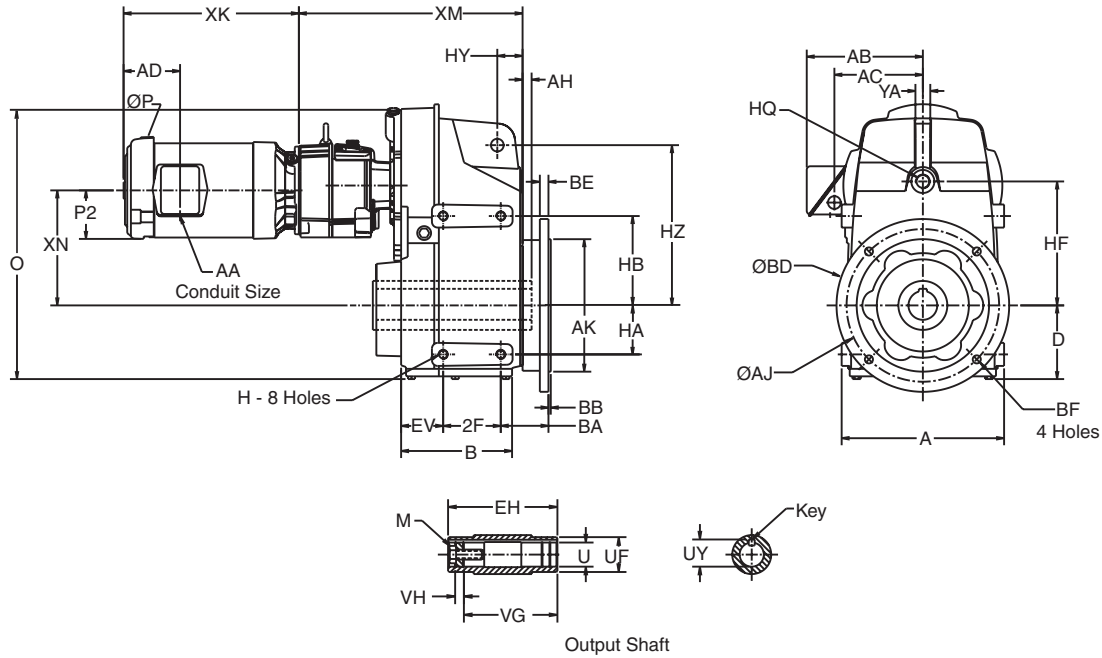
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

MbN32-34 Combined (4 - 6 Reduction Stages) 50C/60C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	AH	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
														4 Red.	5 Red.		
32	7.83	5.39	3.80	2.76	M8X12	.31	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.14	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	.32	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.33	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	.30	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	16.23	16.23	7.86	.98

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ⁴	M
3202/3203	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
3242/3243	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	7/16-14
33	7.75	1.500	2.56	1.674	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.00	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
32	60C	6.50	5.118	3.07	.16	7.87	.39	.47
	50C	8.47	7.087	2.16	.16	9.84	.47	.55
33	60C	8.47	7.087	3.54	.16	9.84	.55	.55
	50C	10.43	9.055	2.72	.16	11.81	.59	.55
34	60C	8.47	7.087	4.98	.16	9.84	.55	.55
	50C	10.43	9.055	3.33	.16	11.81	.59	.55

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
56	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	10.37
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	10.37
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	9.79
B56	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	11.62
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.62
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	11.04
143T, 145T	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	12.62
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	12.62
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	12.04

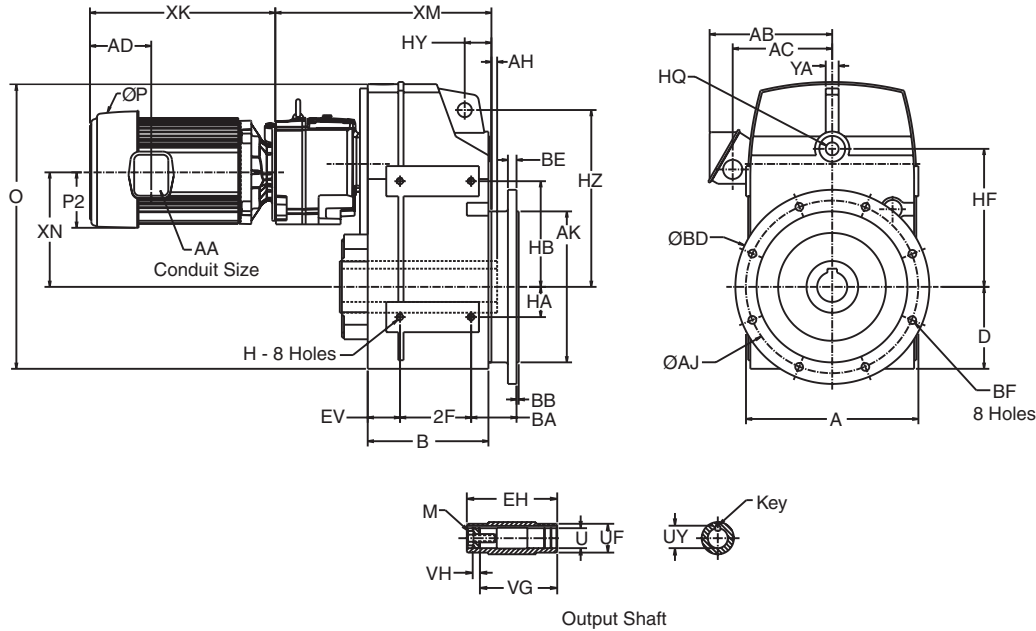
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

MbN35-37 Combined (4-6 Reduction Stages) 50C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	EV	HA	HB	HF	HQ	HY	HZ	O	XM	XN	YA
35	13.98	9.11	5.95	6.50	M16X24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	22.91	17.04	9.70	.98
36	15.75	10.98	7.01	6.50	M16X25	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	25.56	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	29.04	20.68	6.99	1.55

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ⁴	M
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq	3/4-10 x 2.0
36	13.14	2.750	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
35	50C	11.81	9.84	6.61	.160	13.78	.79	.71
36	50C	15.75	13.780	4.92	.236	17.70	.79	.71
37	50C	15.75	13.780	5.79	.236	17.70	.79	.63

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	14.04
213T	T	36, 37	11.25	5.06	1.00	8.42	7.17	5.60	16.15
215T	T	36, 37	11.25	5.06	1.00	8.42	7.17	5.60	17.65

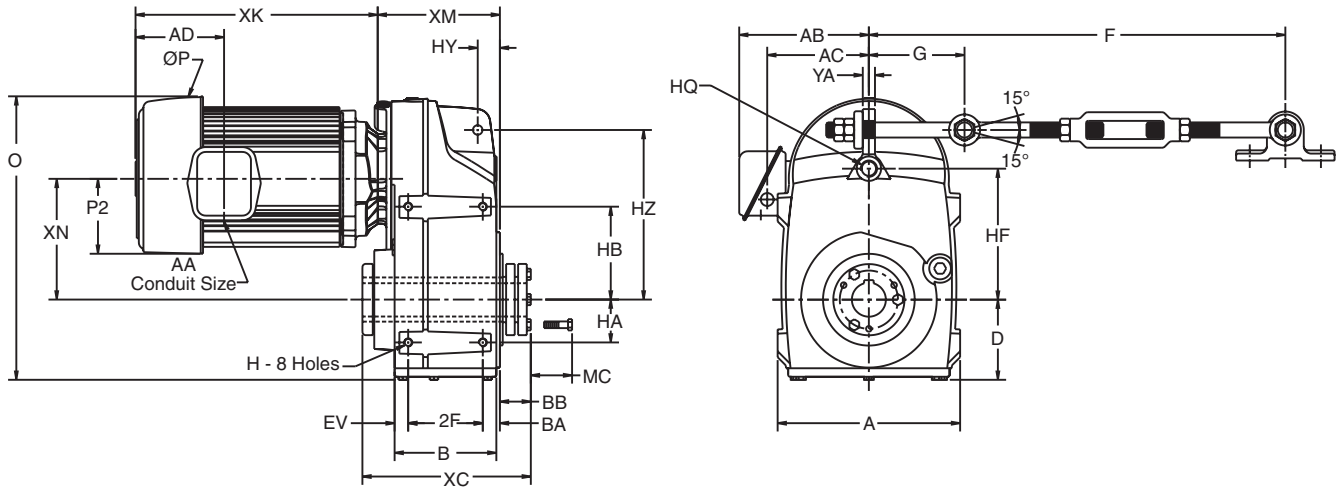
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerances (diameter "U"): +0.0020"/-0.0000" for all diameters.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Key to be supplied by others.

MbN32-33 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
32	7.83	5.39	3.80	2.76	M8X12	.79	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	6.85	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	.95	.98	2.48	5.39	7.60	M24X30	1.24	9.84	7.04	7.01	.71

Output Shaft

Gear Frame	BB	MC ⁴	XC	Bushing Bores ²	
				Min.	Max.
32	1.39	1.75	9.78	1 5/16	1 7/16
33	1.39	1.88	9.88	1 7/16	1 15/16

Tie Rod⁷

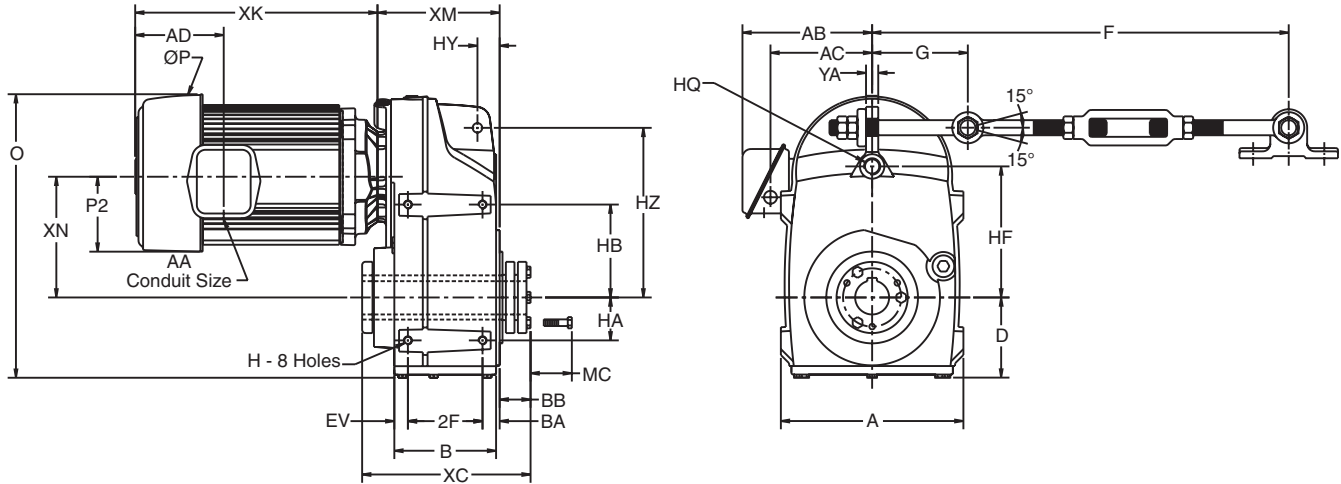
Gear Frame	F		G
	Min.	Max.	
32	18.58	23.11	3.20
33	18.58	23.11	3.20

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
56	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	9.79
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	9.79
B56	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	11.04
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.04
143T, 145T	T	32	7.22	3.31	13.50	.75	5.01	4.06	3.59	11.04
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.04
182T/184T	T	32	9.56	4.34	14.81	.75	7.51	6.31	5.40	14.04
	T	33	9.56	4.34	16.88	.75	7.51	6.31	5.40	14.04
213T	T	32	11.25	5.06	15.78	1.00	8.25	6.39	6.94	16.15
	T	33	11.25	5.06	17.85	1.00	8.25	6.39	6.94	16.15
215T	T	32	11.25	5.06	15.78	1.00	8.25	6.39	6.94	17.65
	T	33	11.25	5.06	17.85	1.00	8.25	6.39	6.94	17.65
254T	T	33	13.38	6.00	19.04	1.25	9.96	7.72	8.59	20.58
256T	T	33	13.38	6.00	19.04	1.25	9.96	7.72	8.59	22.33

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to pages D-18 for a listing of all bushing bore sizes available in each gear frame.
³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.
⁴ The "MC" dimension shows spacing required to install or remove

the bushing from the gear unit.
⁵ Bushing and dust cap can be installed opposite of how they are shown above.
⁶ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.
⁷ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN34-35 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	BA	EV	HA	HB	HF	HQ	HY	HZ	XM			XN	YA
														182T-215T	254T-286T	324T-326T		
34	11.10	8.13	5.04	3.94	M16X24	1.42	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	9.21	9.55	-	8.19	.98
35	13.98	9.11	5.95	6.5	M16X24	1.24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.90	10.26	10.30	10.03	.98

Output Shaft

Gear Frame	BB	MC ⁴	XC	Bushing Bores ²	
				Min.	Max.
34	1.63	1.88	12.54	2	2 7/16
35	1.63	1.88	13.83	2 7/16	2 15/16

Tie Rod⁷

Gear Frame	F		G
	Min.	Max.	
34	22.36	26.50	5.90
35	22.36	26.50	5.90

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
182T/184T	T	34	9.56	4.34	18.78	.75	7.51	6.31	5.40	14.04
	T	35	9.56	4.34	22.91	.75	7.51	6.31	5.40	14.04
213T	T	34	11.25	5.06	18.78	1.00	8.25	6.39	6.94	16.15
	T	35	11.25	5.06	22.91	1.00	8.25	6.39	6.94	16.15
215T	T	34	11.25	5.06	18.78	1.00	8.25	6.39	6.94	17.65
	T	35	11.25	5.06	22.91	1.00	8.25	6.39	6.94	17.65
254T	T	34	13.38	6.00	18.92	1.25	9.96	7.72	8.59	19.61
	T	35	13.38	6.00	23.36	1.25	9.96	7.72	8.59	19.61
256T	T	34	13.38	6.00	18.92	1.25	9.96	7.72	8.59	21.35
	T	35	13.38	6.00	23.36	1.25	9.96	7.72	8.59	21.35
284T/286T	T	34	14.62	7.29	-	1.50	11.98	9.16	13.19	24.71
	T	35	14.62	7.29	-	1.50	11.98	9.16	13.19	24.71
324T/326T	T	35	17.20	8.17	25.01	2.00	14.99	11.34	14.16	27.36

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-18 for a listing of all bushing bore sizes available in each gear frame.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ The "MC" dimension shows spacing required to install or remove

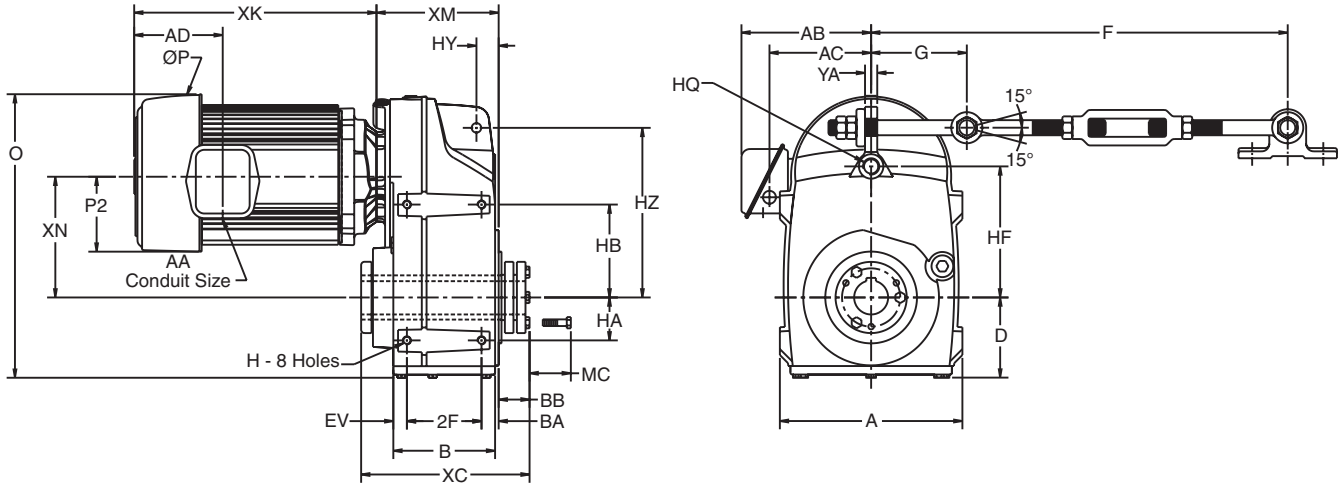
the bushing from the gear unit.

⁵ Bushing and dust cap can be installed opposite of how they are shown above.

⁶ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.

⁷ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN36-37 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	BA	EV	HA	HB	HF	HQ	HY	HZ	O	XM			XN	YA
															143T-145T	182T-215T	254T-326T		
36	15.75	10.98	7.01	6.50	M16X25	1.77	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	25.56	11.49	11.49	11.84	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	2.64	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	29.04	-	13.03	13.38	12.28	1.55

Output Shaft

Gear Frame	BB	MC ⁴	XC	Bushing Bores	
				Min.	Max.
36	1.88	1.88	15.57	2 7/16	2 15/16
37	2.70	2.25	19.01	2 7/8	3 7/16

Tie Rod⁷

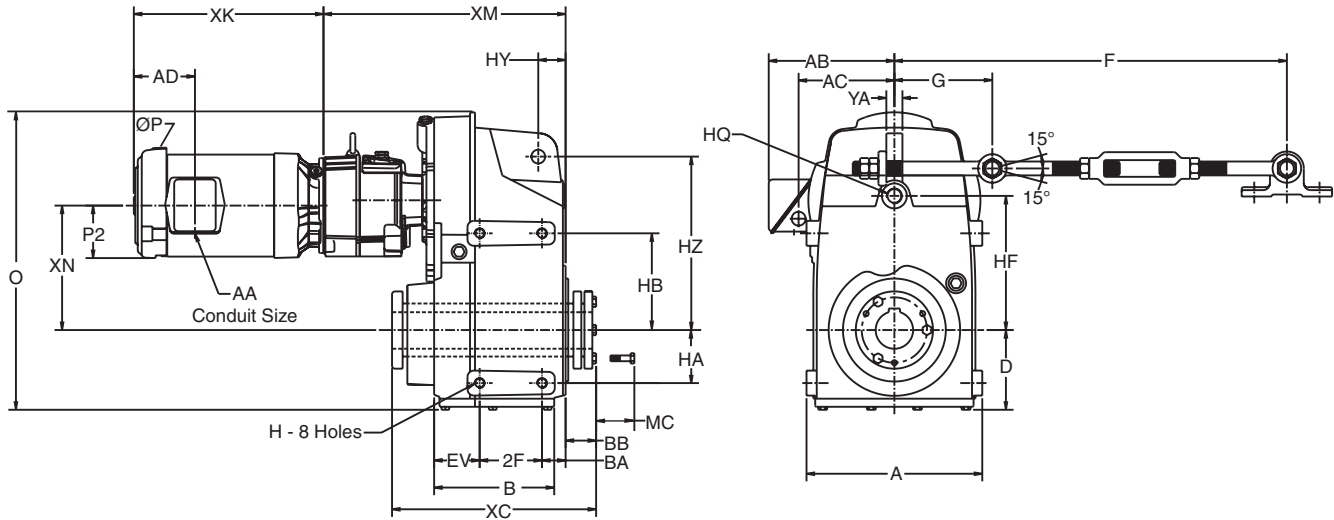
Gear Frame	F		G
	Min.	Max.	
36	33.92	39.92	4.55
37	34.05	40.05	4.55

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	XK
B56	T	36	7.22	3.31	.75	5.01	4.06	3.59	9.79
143T, 145T	T	36	7.22	3.31	.75	5.01	4.06	3.59	9.79
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	21.36
284T/286T	T	All	14.62	7.29	1.50	11.98	9.16	13.19	24.71
324T/326T	T	All	17.20	7.78	2.00	14.99	11.34	14.16	27.36

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to pages D-18 for a listing of all bushing bore sizes available in each gear frame.
³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.
⁵ Bushing and dust cap can be installed opposite of how they are shown above.
⁶ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.
⁷ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN32-34 Combined (4-6 Reduction Stages) 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	BA	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
														4 Red.	5-6 Red.		
32	7.83	5.39	3.80	2.76	M8X12	.79	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.14	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	.95	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.33	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	1.42	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	16.23	16.23	7.86	.98

Output Shaft

Gear Frame	BB	MC ⁴	XC	Bushing Bores ²	
				Min.	Max.
32	1.39	1.75	9.78	1 5/16	1 7/16
33	1.39	1.88	9.88	1 7/16	1 15/16
34	1.63	1.88	12.54	2	2 7/16

Tie Rod⁷

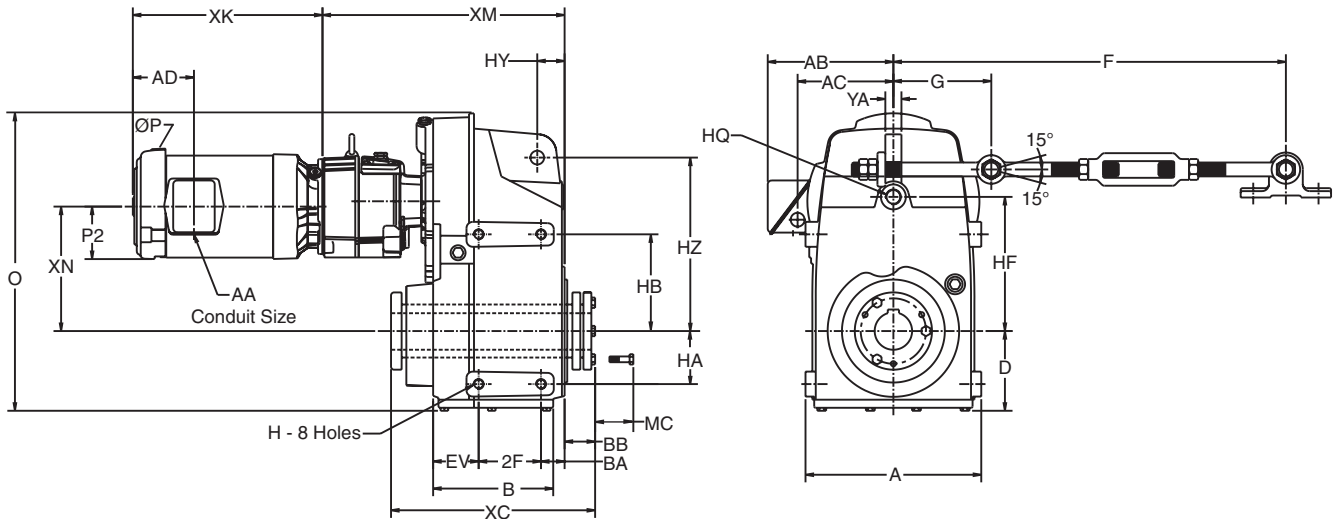
Gear Frame	F		G
	Min.	Max.	
32	18.58	23.11	3.20
33	18.58	23.11	3.20
34	22.36	26.50	5.90

Motor Frame	Motor Type ³	Gear Frame	P	P2	O	AA	AB	AC	AD	XK
56	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	10.37
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	10.37
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	9.79
B56	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	11.62
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	11.62
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	11.04
143T, 145T	T	32	7.22	3.31	13.78	.75	5.01	4.06	3.59	12.62
	T	33	7.22	3.31	16.34	.75	5.01	4.06	3.59	12.62
	T	34	7.22	3.31	18.78	.75	5.01	4.06	3.59	11.04

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to Tapered Bushings on page D-18 for a listing of all bushing bore sizes available in each gear frame size.
³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.
⁵ Bushing and dust cap can be installed opposite of how they are shown above.
⁶ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.
⁷ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN35-37 Combined (4-6 Reduction Stages) 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	EV	HA	HB	HF	HQ	HY	HZ	O	XM	XN	YA
35	13.98	9.11	5.95	6.50	M16X24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	22.91	17.04	9.70	.98
36	15.75	10.98	7.01	6.50	M16X25	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	25.56	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	29.04	20.68	6.99	1.55

Output Shaft

Gear Frame	BB	MC ⁴	XC	Bushing Bores ²	
				Min.	Max.
35	1.63	1.88	13.83	2 7/16	2 15/16
36	1.88	1.88	15.57	2 7/16	2 15/16
37	2.70	2.25	19.01	2 7/8	3 7/16

Tie Rod⁷

Gear Frame	F		G
	Min.	Max.	
35	22.36	26.50	5.90
36	33.92	39.92	4.55
37	34.05	40.05	4.55

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	XK
56	T	All	7.31	3.31	.75	6.10	4.50	3.86	9.79
B56	T	All	7.31	3.31	.75	6.10	4.50	3.86	11.04
143T, 145T	T	All	7.31	3.31	.75	6.10	4.50	3.86	11.04
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	14.04
213T	T	36, 37	11.25	5.06	1.00	8.42	7.17	5.60	16.15
215T	T	36, 37	11.25	5.06	1.00	8.42	7.17	5.60	17.65

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on page D-18 for a listing of all bushing bore sizes available in each gear frame size.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

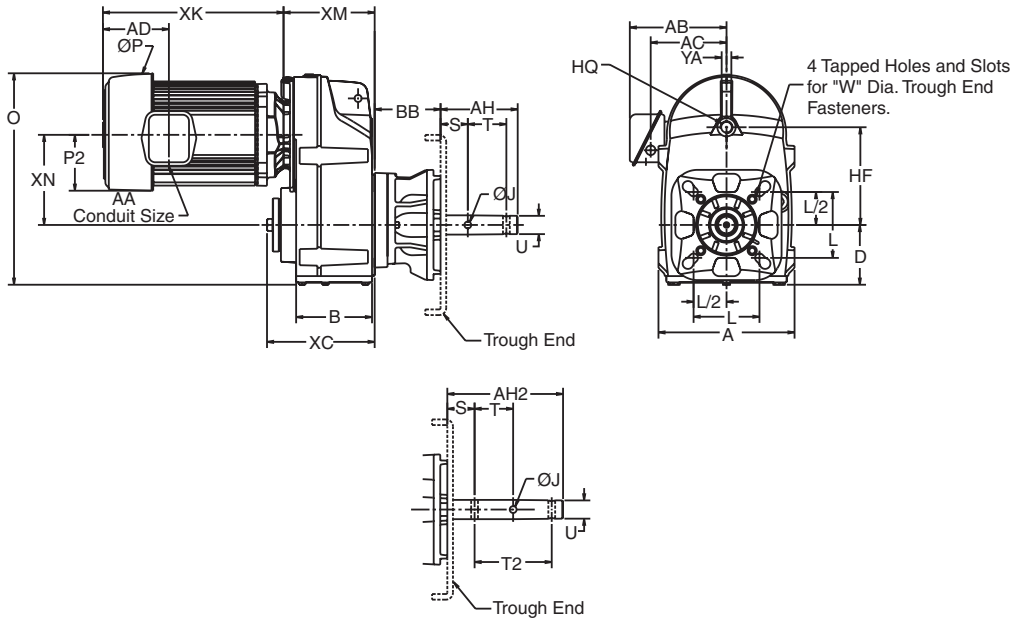
⁴ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁵ Bushing and dust cap can be installed opposite of how they are shown above.

⁶ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.

⁷ Refer to Mounting Accessories on page D-21 for details of Silent-Bloc and Tie Rod kits.

MbN32-35 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	HF	HQ	XC	XM					XN	YA	BB
							56-145TY	182T-215T	254T-256T	284T-286T	324T-326T			
32	7.83	5.39	3.80	5.79	M16X34	8.29	6.85	6.85	-	-	-	5.79	0.63	5.13
33	10.59	5.90	4.65	7.60	M24X30	8.37	7.04	7.04	7.04	-	-	7.01	0.71	5.13
34	11.10	8.13	5.04	8.47	M24X45	11.12	-	9.21	9.55	9.55	-	8.19	0.98	6.21
35	13.98	9.11	5.95	10.43	M24X45	12.39	-	9.90	10.26	10.26	10.30	10.03	0.98	6.53

Screw Conveyor

Gear Frame	Screw Dia	U	W	J	L	S	T	T2	AH	AH2
32 - 33	6 - 10	1.50	0.50	0.53	4.00	2.13	3.00	6.00	6.00	9.00
32 - 35	9 - 12	2.00	0.63	0.66	5.13	2.13	3.00	6.00	6.00	9.00
32 - 35	12 - 14	2.44	0.63	0.66	5.63	2.75	3.00	6.00	6.69	9.69
32 - 35	12 - 20	3.00	0.75	0.78	6.00	2.88	3.00	6.00	6.88	9.88
34 - 35	18 - 24	3.44	0.75	0.91	6.75	3.88	4.00	-	9.13	-

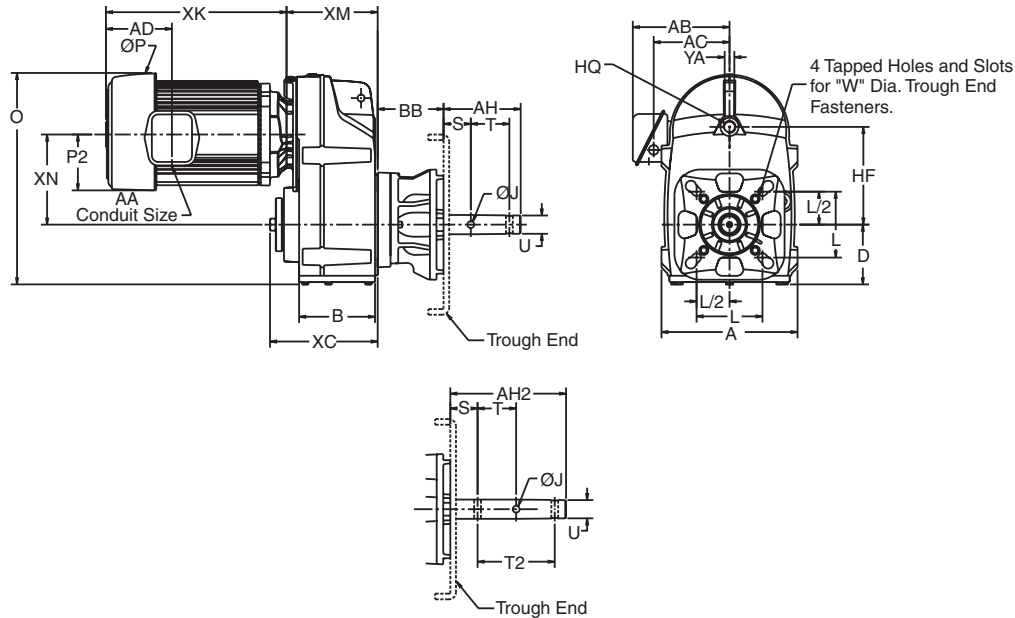
Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD
56, B56, 143T, 145T	T	32 - 33	7.22	3.31	0.75	5.01	4.06	3.59
182T/184T	T	32 - 35	9.56	4.34	0.75	7.51	6.31	5.40
213T/215T	T	32 - 35	11.25	5.06	1.00	8.25	6.39	6.94
254T/256T	T	33 - 35	13.38	6.00	1.25	9.96	7.72	8.59
284T/286T	T	34 - 35	14.62	7.29	1.50	11.98	9.16	13.19
324T/326T	T	35	17.20	8.17	2.00	14.99	11.34	14.16

Motor Frame	Motor Type ³	O				XK			
		32	33	34	35	32	33	34	35
56	T	13.50	16.34	-	-	9.79	9.79	-	-
B56	T	13.50	16.34	-	-	11.04	11.04	-	-
143T, 145T	T	13.50	16.34	-	-	11.04	11.04	-	-
182T/184T	T	14.81	16.88	18.78	22.91	14.04	14.04	14.04	14.04
213T	T	15.78	17.85	18.78	22.91	16.15	16.15	16.15	16.15
215T	T	15.78	17.85	18.78	22.91	17.65	17.65	17.65	17.65
254T	T	-	19.04	18.92	23.36	-	20.58	19.61	19.61
256T	T	-	19.04	18.92	23.36	-	22.33	21.35	21.35
284T	T	-	-	18.92	23.36	-	-	21.86	21.86
286T	T	-	-	18.92	23.36	-	-	23.36	23.36
324T/326T	T	-	-	-	25.01	-	-	-	24.92

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to pages D-19 and D-20 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.
⁴ Thrust ratings for each gear frame size are listed on page D-19.

MbN36-37 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	HF	HQ	O	XC	XM			XN	YA	BB
								143T-145T	182T-215T	254T-326T			
36	15.75	10.98	7.01	11.02	M30X45	25.56	13.75	11.49	11.49	11.84	11.02	1.36	6.67
37	17.72	12.36	8.01	12.99	M30X45	29.04	16.16	-	13.03	13.38	12.28	1.55	7.94

Screw Conveyor

Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
36	9-12	2.00	.63	.66	5.13	2.13	3.00	6.00	6.00	9.00
	12, 14	2.44	.63	.66	5.63	2.75	3.00	6.00	6.69	9.69
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13
37	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	XK
B56	T	36	7.22	3.31	.75	5.01	4.06	3.59	9.79
143T, 145T	T	36	7.22	3.31	.75	5.01	4.06	3.59	9.79
182T/184T	T	All	9.56	4.34	.75	6.10	4.50	5.13	14.04
213T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	16.15
215T	T	All	11.25	5.06	1.00	8.42	7.17	5.60	17.65
254T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	19.61
256T	T	All	13.38	6.00	1.25	9.79	7.68	8.29	21.36
284T/286T	T	All	14.62	7.29	1.50	11.98	9.16	13.19	24.71
324T/326T	T	All	17.20	7.78	2.00	14.99	11.34	14.16	27.36

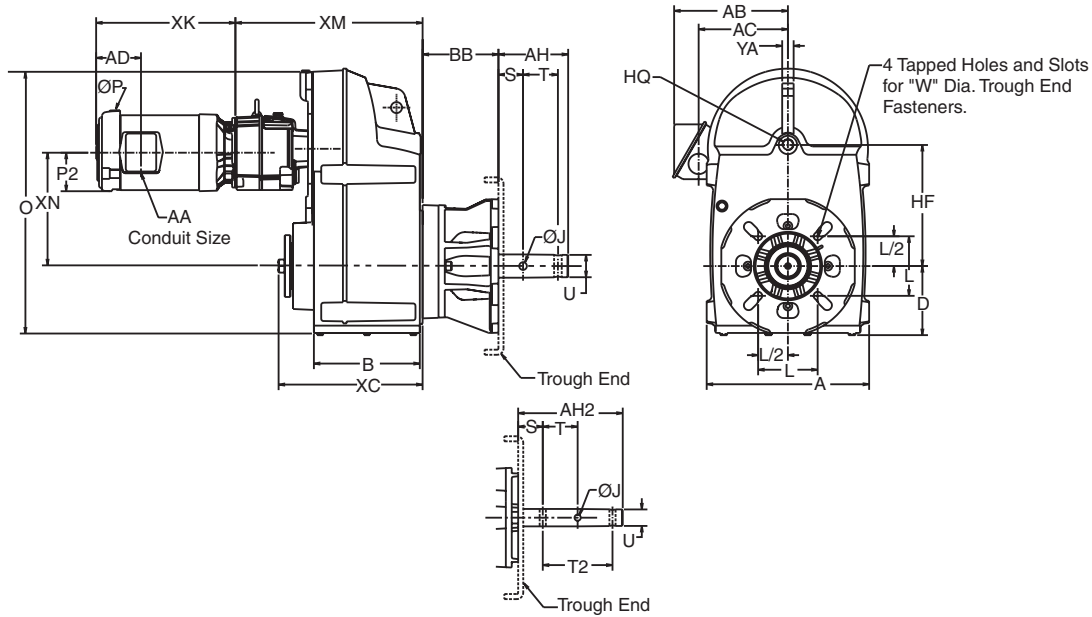
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-19 and D-20 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Thrust ratings for each gear frame size are listed on page D-19.

MbN32-35 Combined (4-6 Reduction Stages) 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	HF	HQ	XC	XM		XN	YA	BB
							4 Red.	5 Red.			
32	7.83	5.39	3.80	5.79	M16X34	8.29	10.36	11.14	6.07	0.63	5.13
33	10.59	5.90	4.65	7.60	M24X30	8.37	10.55	11.33	7.29	0.71	5.13
34	11.10	8.13	5.04	8.47	M24X45	11.12	16.23	16.23	7.86	0.98	6.21
35	13.98	9.11	5.95	10.43	M24X45	12.39	17.04	17.04	9.70	0.98	6.53

Screw Conveyor

Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
32 - 33	6 - 10	1.50	0.50	0.53	4.00	2.13	3.00	6.00	6.00	9.00
32 - 35	9 - 12	2.00	0.63	0.66	5.13	2.13	3.00	6.00	6.00	9.00
32 - 35	12 - 14	2.44	0.63	0.66	5.63	2.75	3.00	6.00	6.69	9.69
32 - 35	12 - 20	3.00	0.75	0.78	6.00	2.88	3.00	6.00	6.88	9.88
34 - 35	18 - 24	3.44	0.75	0.91	6.75	3.88	4.00	-	9.13	-

Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD
56, B56, 143T, 145T	T	32 - 35	7.22	3.31	0.75	5.01	4.06	3.59
182T/184T	T	35	9.56	4.34	0.75	7.51	6.31	5.40

Motor Frame	Motor Type ³	O				XK			
		32	33	34	35	32	33	34	35
56	T	13.50	16.34	18.78	22.91	10.37	10.37	9.79	9.79
B56	T	13.50	16.34	18.78	22.91	11.62	11.62	11.04	11.04
143T, 145T	T	13.50	16.34	18.78	22.91	12.62	12.62	11.04	11.04
182T/184T	T	-	-	-	22.91	-	-	-	14.04

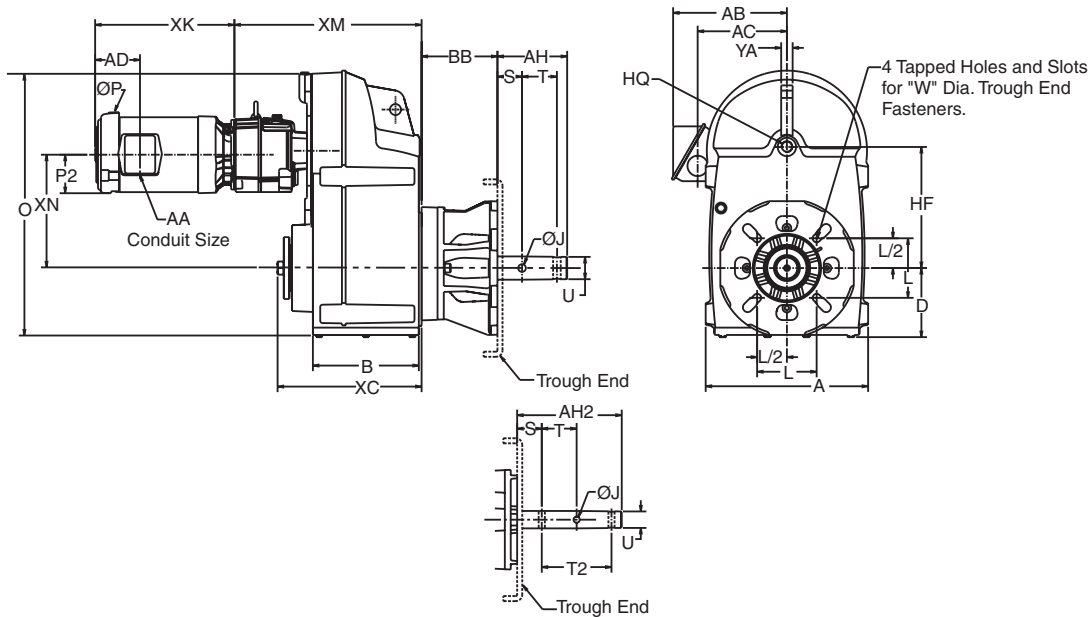
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-19 and D-20 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.

⁴ Thrust ratings for each gear frame size are listed on page D-19.

MbN36-37 Combined (4-6 Reduction Stages) 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	HF	HQ	O	XC	XM	XN	YA	BB
36	15.75	10.98	7.01	11.02	M30X45	25.56	13.75	19.15	6.25	1.36	6.67
37	17.72	12.36	8.01	12.99	M30X45	29.04	16.16	20.68	6.99	1.55	7.94

Screw Conveyor

Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
36	9-12	2.00	.63	.66	5.13	2.13	3.00	6.00	6.00	9.00
	12, 14	2.44	.63	.66	5.63	2.75	3.00	6.00	6.69	9.69
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13
37	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13

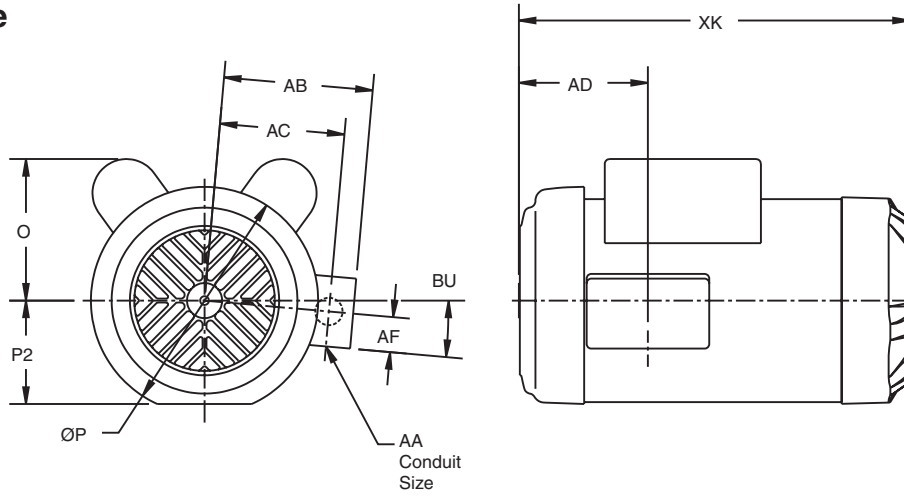
Motor Frame	Motor Type ³	Gear Frame	P	P2	AA	AB	AC	AD	XK
56	T	36, 37	7.31	3.31	.75	6.10	4.50	3.86	9.79
B56	T	36, 37	7.31	3.31	.75	6.10	4.50	3.86	11.04
143T, 145T	T	36, 37	7.31	3.31	.75	6.10	4.50	3.86	11.04
182T/184T	T	36, 37	9.56	4.34	.75	6.10	4.50	5.13	14.04
213T	T	36, 37	11.25	5.06	1.00	8.42	7.17	5.60	16.15
215	T	36, 37	11.25	5.06	1.00	8.42	7.17	5.60	17.65

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to pages D-20 and D-21 for the screw conveyor drive shafts, trough ends and other accessories available for each gear frame size.

³ Motor dimensions shown are for "Type T" three phase TEFC motors. For dimensions of other motor types, see pages D-84 or D-85.
⁴ Thrust ratings for each gear frame size are listed on page D-19.

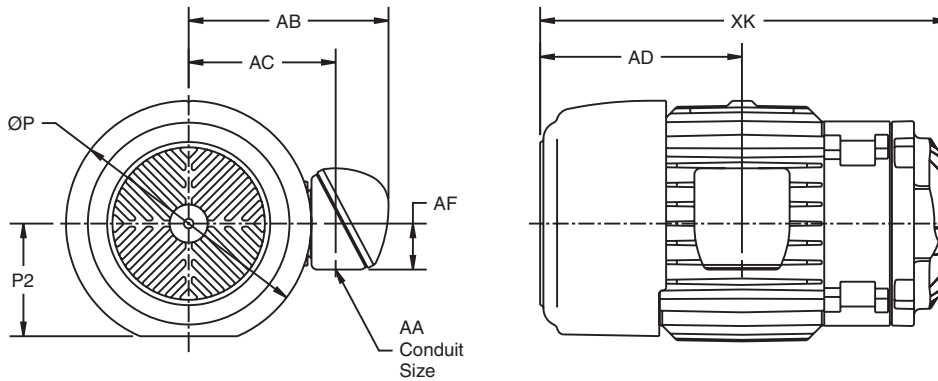
Alternate Motor Dimensions

Single Phase



Motor Frame	HP	O	P	P2	AA	AB	AC	AD	AF	BU	XK
48	1/6, 1/4	4.40	6.72	2.79	1/2	4.34	3.55	5.29	1.16	12°	11.88
	1/3, 1/2	4.40	6.72	2.79	1/2	4.72	3.79	5.29	1.13	N/A	11.88
	3/4, 1	3.87	6.72	2.79	1/2	4.34	3.55	5.29	1.16	10°	12.88
56	1/3, 1/2	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	9.52 ²
	3/4	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02 ²
143T	1	5.09	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	11.02 ²
145TY	1 1/2, 2	4.53	7.28	3.31	3/4	4.78	3.83	4.14	1.13	5°	12.52
184T	3, 5	5.11	9.56	4.39	3/4	8.58	6.45	7.14	3.09	N/A	16.54

Corro-Duty®



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.41	3.44	3/4	6.50	4.59	3.72	1.25	10.21 ²
143T, 145T	7.41	3.44	3/4	6.50	4.59	3.72	1.25	11.21 ²
145TY	7.41	3.44	3/4	6.50	4.59	3.72	1.25	12.71
182T, 184T	9.50	4.56	3/4	7.74	5.69	7.81	1.78	15.77
213T, 215T	11.00	5.44	1	9.47	7.15	9.63	2.00	19.67
254T, 256T	13.31	6.58	1 1/2	11.33	8.51	12.44	2.63	24.26 ¹
284T, 286T	14.62	7.29	1 1/2	11.98	9.16	13.19	2.63	24.71

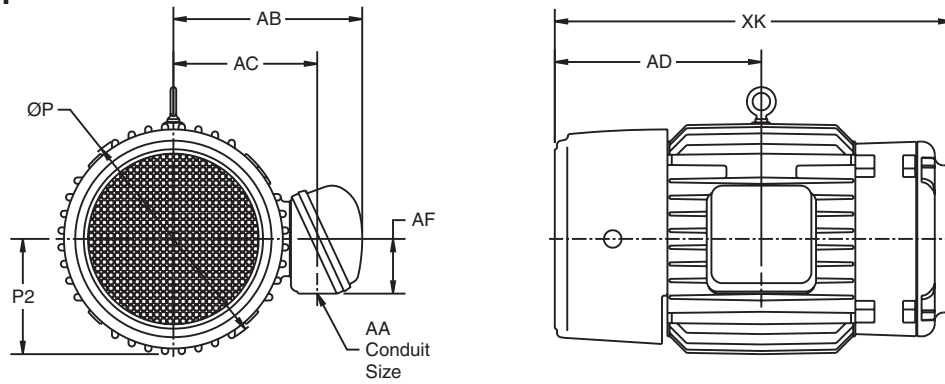
¹ XK = 23.29 on MbN 33 three stage and MbN26A combined.

² XK will increase by .58" if used on MbN32 and MbN33 combined.

MbN Series

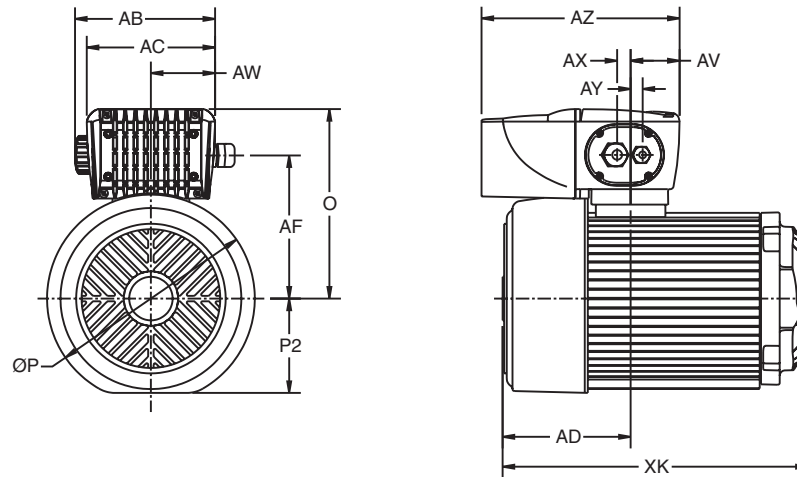
Alternate Motor Dimensions

Explosion Proof



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.15 ²
143T, 145T	7.88	3.38	3/4	6.79	5.31	4.37	1.78	13.90 ²
182T, 184T	9.50	4.56	3/4	7.70	5.79	7.75	2.25	15.70
213T, 215T	11.12	5.44	1	9.06	6.81	8.68	2.63	18.72

IntelliGear®



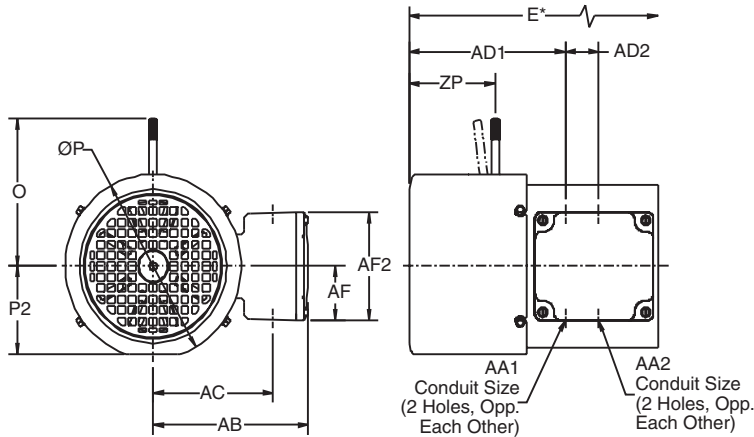
Motor Frame	Controller	O	P	P2	AB	AC	AD	AF	AV	AW	AX	AY	AZ	XK
56	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	9.79 ²
143T, 145T	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	8.53	11.04 ²
56	2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	9.79
143T, 145T	2, 2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	.62	.55	9.12	11.04
182T, 184T	2	8.72	9.56	4.78	6.45	5.91	5.89	6.58	2.25	2.95	.62	.55	9.12	14.05
	3	11.18	9.56	4.78	8.97	8.44	10.01	7.37	2.83	4.22	.62	.55	13.10	14.05
213T	3	11.99	11.25	4.98	8.97	8.44	11.73	8.11	2.83	4.22	.62	.55	13.10	16.15
215T	3	11.99	11.25	4.98	8.97	8.44	13.23	8.11	2.83	4.22	.62	.55	13.10	17.65

Input Power Phase/Voltage	Motor HP @ Max. Hz					
	0.33 to 0.50	0.75	1	1.5 to 2	3 to 5	7.5 to 10
1/115	1M	2M	-	-	-	-
1/230	1M	1M	1M	2M	-	-
3/230	1	1	1	2	3	-
3/460	1	1	1	1	2	3

¹ XK = 22.68 on MbN33 three stage.

² XK will increase by .58" if used on MbN32 and MbN33 combined.

Dimensional Supplement



DC FCR Brake with Type "T" Motor

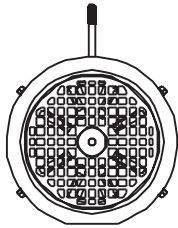
Motor Frame	E*	O	P	AA1	
				Size	Qty
56-143/145T	2.63	5.80	7.24	3/4 NPT	2
182/184T	1.95	7.3	9.23	3/4 NPT	1

Motor Frame	AA2		AB	AC	AD1
	Size	Qty			
56-143/145T	1/2 NPT	2	6.38	4.94	6.43
182/184T	3/4 NPT	1	7.8	6.14	8.84

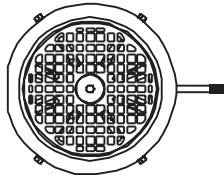
Motor Frame	AD2	AF	AF2	P2	ZP
56-143/145T	1.38	2.13	4.25	3.46	3.54
182/184T	1.81	2.32	4.65	N/A	4.41

*Add "E" to XK or C of equivalent three phase frame motor.

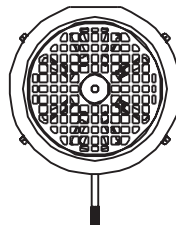
Manual Release Lever Position



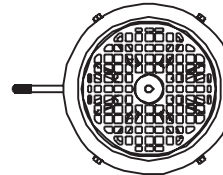
12 o'clock



3 o'clock

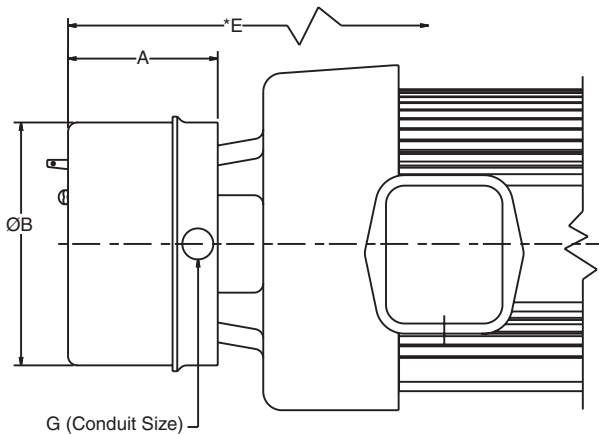


6 o'clock



9 o'clock

See page B-18 for specifying the o'clock position on orders.



AC Brake with Type "T" and "S" Motor

Motor Frame	Motor Type	Brake Torque (ft. lbs.)	A	B	E*	G
56	S	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
3		4.01	6.54	4.56	1/2	
6		4.01	6.54	4.56	1/2	
10	4.01	6.54	4.56	1/2		
182T/184T		15	4.01	6.54	4.56	1/2
213T	T	25	7.38	9.38	8.75	1/2
215T		35	7.38	9.38	8.75	1/2

* Dimension "E" represents the additional length of motor with brake mounted. Add "E" to XK or C of equivalent three phase frame motor.

Approximate Shipping Weights - 40C Face Mounted Design with TEFC 3 Phase Motors

MbN Frame	Reduction Stages	56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
31	2	58	67	69	-	-	-	-	-	-	-	-	-	-
	2	82	91	93	116	122	-	-	-	-	-	-	-	-
32	3	95	94	96	-	-	-	-	-	-	-	-	-	-
	4	100	109	111	166	172	194	200	-	-	-	-	-	-
33	2	126	135	137	173	-	-	-	-	-	-	-	-	-
	3	133	142	144	-	-	-	-	-	-	-	-	-	-
	4	148	157	-	-	-	-	-	-	-	-	-	-	-
34	2	169	178	180	213	219	247	255	305	355	-	-	-	-
	3	179	188	190	233	239	-	-	-	-	-	-	-	-
	4	208	219	220	263	-	-	-	-	-	-	-	-	-
	5	218	-	-	-	-	-	-	-	-	-	-	-	-
35	2	-	-	-	-	294	322	330	380	430	620	670	940	1005
	3	-	290	292	317	323	351	359	409	459	-	-	-	-
	4	310	319	321	346	353	-	-	-	-	-	-	-	-
	5	339	348	350	375	-	-	-	-	-	-	-	-	-
	6	339	-	-	-	-	-	-	-	-	-	-	-	-
36	2	-	-	-	488	498	537	550	602	652	842	892	1003	1068
	3	-	466	473	488	498	537	550	602	652	842	892	1003	1068
	4, 5, 6	507	509	516	531	541	573	-	-	-	-	-	-	-
37	2	-	-	-	-	-	724	737	789	839	1029	1079	1190	1255
	3	-	-	-	675	685	724	737	789	839	1029	1079	1190	1255
	4, 5, 6	694	696	703	718	728	760	768	-	-	-	-	-	-

Motor Options - Weight Adders

Motor Types	56	143T	145T	182T	184T	213T	215T	254T	256T	284T	286T	324T	326T
C Corro-Duty	8	9	11	52	50	73	70	190	165	0	0	0	0
X Explosionproof	19	21	25	33	30	50	50	-	-	-	-	-	-
S Single Phase	6	11	5 ¹	-	17	-	-	-	-	-	-	-	-
IG IntelliGear	7	15	18	31	30	35	35	-	-	-	-	-	-

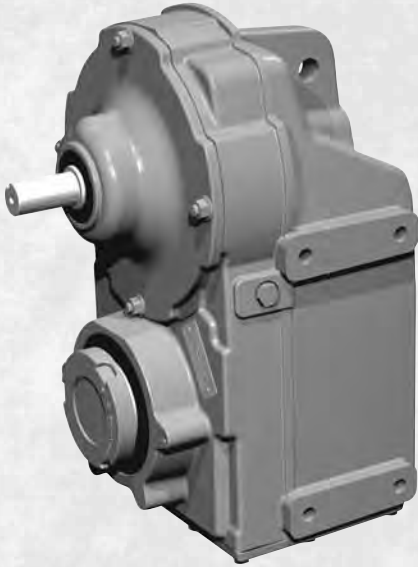
1 Single phase 1.5 and 2 hp motors are in 145TY frame size

Gear Options - Weight Adders

MbN Frame	OOB Bushed	OOS SCD	40P	50C	50P
31	N/A	N/A	4	-	-
32	2	35	5	5	10
33	4.5	42	7	10	17
34	6.5	75	10	15	25
35	10	101	12	20	32
36	16	109	15	66	81
37	20	130	22	73	95

Browning[®]

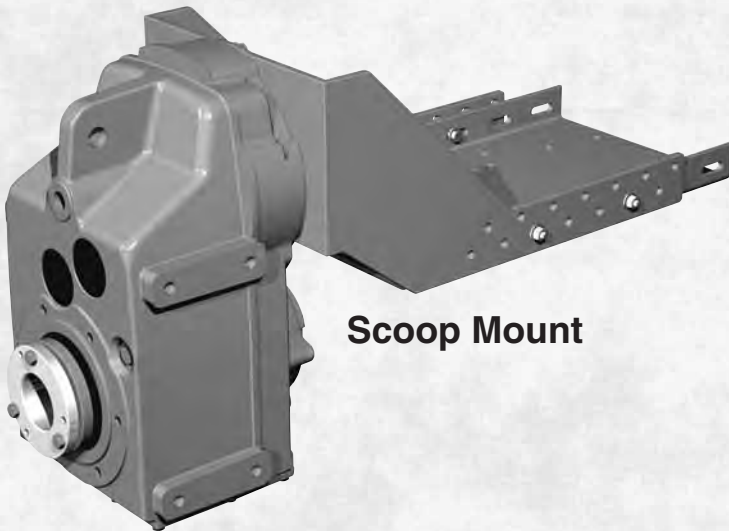
MbN Helical Shaft Mount Speed Reducers



Input Shaft



C-Face



Scoop Mount



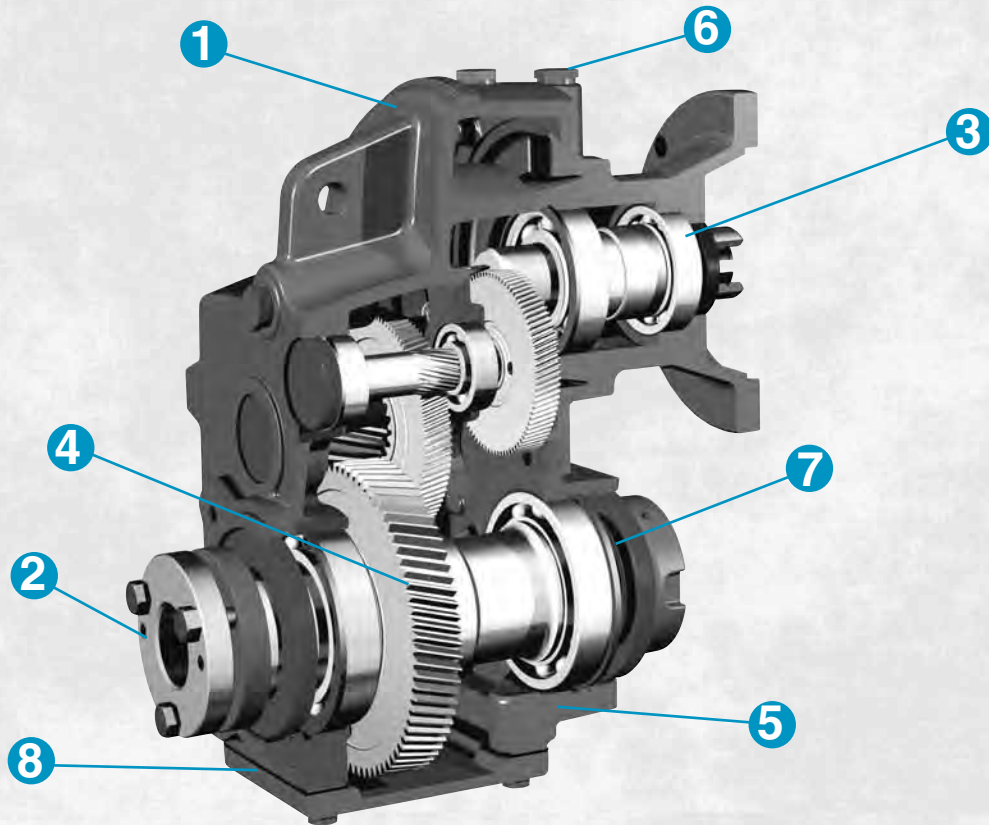
Top Mount

MbN Series

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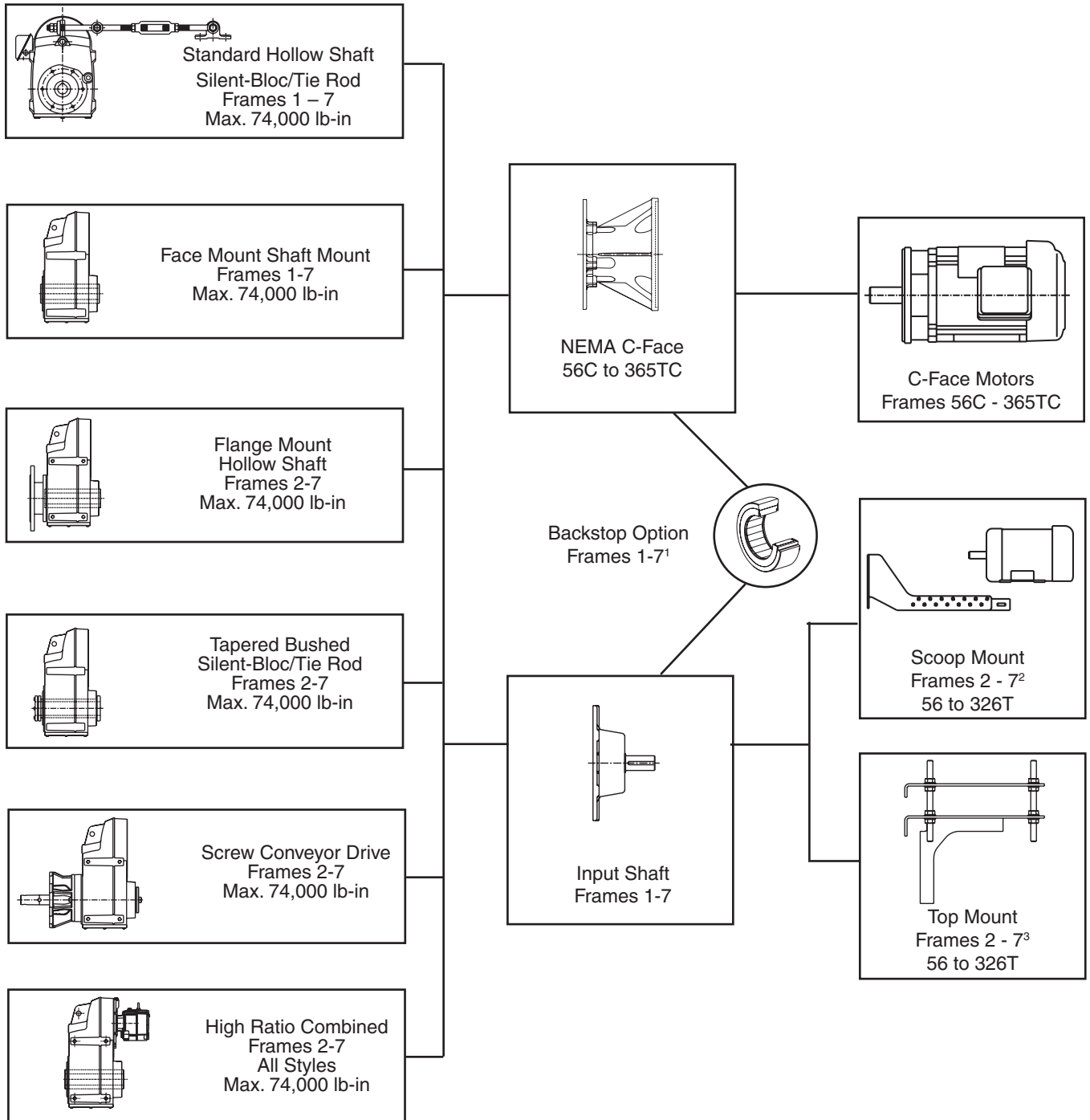
MbN Series



Design Features

- 1. Gearcase Supplied Factory Filled with Synthetic Oil**
 - Wide temperature range and longer life.
- 2. Tapered Bushed Version Available on Gear Frame Sizes 2-7**
 - Each frame available with a variety of bushing bore diameters.
 - Design utilizes a unique patented reversible single bushing system with a stabilizing ring to minimize wobble for reduced wear and tear. It includes an end cap to seal the quill end from contamination.
- 3. Series 3000 C-Face Reducers with Compact Quill Design to 286TC Size.**
 - Non-metallic liner to eliminate fretting.
 - Shorter design
 - Two bearings for support.
- 4. Gears and Shafts of Nickel Chromium Molybdenum Steel**
 - Helical gearing is case hardened and then skived, superfinished, or ground.
 - All gears heat shrunk on shafts or mounted on self-locking tapered shafts and keyed for high shock load capability.
- 5. Corrosion and Shock Resistant Cast Iron Housing**
 - One piece, reinforced and ribbed for extra strength.
- 6. Normally Closed Breather with Multiple Locations**
- 7. Double Lip Seals on Heat Treated, Plunge Ground Shafts**
- 8. Magnetic Drain Plug Standard**

Mounting Versatility and Size Range



MbN Series

1 Backstop not available for frames 2-3 combined (i.e. more than 3 gear stages).
 2 Scoop mount is not available for combined (i.e. more than 3 gear stages) frames 2-5.
 3 Top mount is not available for combined units (i.e. more than 3 gear stages) frames 2-5.

Selection Information

1. Input HP

- Based on application data.

2. Speed/Ratio

- Obtain either desired output speed (rpm) or gearbox ratio based on application.

3. Service Factor

- Determine the required service factor using either the AGMA application classification chart (pages D-102 - D-104), or the duration of operation, load type, and drive type with the table below:

Prime Mover	Hours of Operation	Uniform Load U	Moderate Shock Load M	Heavy Shock Load V
Electric Motor	0 - 3	0.80	1.00	1.50
	3 - 10	1.00	1.25	1.75
	10 - 24	1.25	1.50	2.00
Internal Combustion Engine	0 - 3	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	10 - 24	1.50	1.75	2.25

Size Selection

Step 1

- Locate speed reducer selection tables (pages D-106 - D-115) based on input speed to gearbox.

Step 2

- Choose the nominal ratio appropriate for the speeds required.

Size Selection (cont.)

Step 3

- Select the gear unit size for the chosen ratio and the known input speed so that the mechanical power rating P (hp) satisfies the following:

$$P \geq P_m \cdot SF$$

P = mechanical power rating (hp) of gearbox

P_m = motor power (hp)

SF = required service factor

Note: Size selection based on absorbed power (P_a) or absorbed torque (T_a) at the low speed shaft instead of motor power (P_m) is allowed when the former is known with sufficient accuracy and if the number of start operations is limited. When T_a is applied in size selection, verify if:

$$T \geq T_a \cdot SF$$

T = torque rating (in. lbs.) at low speed shaft

T_a = absorbed torque (in. lbs.) at low speed shaft

SF = required service factor

Step 4

- Verify that unit selected is not thermally limited (indicated by shading in ratings table).

Example

1. Application Data

Belt conveyor with uniform load, 12-hrs/day operation. Customer prefers tapered bushed shaft mount style reducer with a tie rod. The unit will be mounted to a 2-1/8" diameter horizontal shaft with the motor above. A c-face mounted motor will be used.

Motor rating: 5 HP, 1750 RPM, 184TC Footless Frame, 230/460 VAC, 3-Phase, 60 Hz, TEFC

Output speed: 44 rpm

2. Size Selection

Nominal Ratio: Locate Nominal RPM closest to 44 RPM. 40:1 Nominal Ratio is the proper selection.

Service Factor: Using AGMA application classification chart (Page D-102) under the "Conveyors - General Purpose" heading, Uniformly Loaded or Fed conveyors that operate over 10 hours/day should have a 1.25 service factor.

Rating Req'd: Minimum reducer rating required is $P = P_m \times SF = 5 \text{ HP} \times 1.25 = 6.25 \text{ HP}^m$

Catalog Rating: Using 1750 rpm selection table (page D-107.)

Exact ratio	Gear Frame	37.4	3472
Input H.P.	Output Torque	10.78	13939

Selection: MbN3472 is rated 10.78 HP input / 13,939 lb-in output with 37.4:1 ratio
 $1750 \text{ RPM} / 37.4 = 46.8 \text{ rpm output speed}$
 $10.78 / 5 = 2.16 \text{ Service Factor}$

3. Catalog Designation

Reducer: MbN-3472-00B-P3-40-U-184TC
 (See page D-94.)

Bushing: 207TPB202
 (See page D-97.)

Tie Rod: MUB999TA002
 (See Page D-100.)

MbN • 31 3 2 • 40C • P3 • 22.4 • U • 145TC • 1.5 • G11

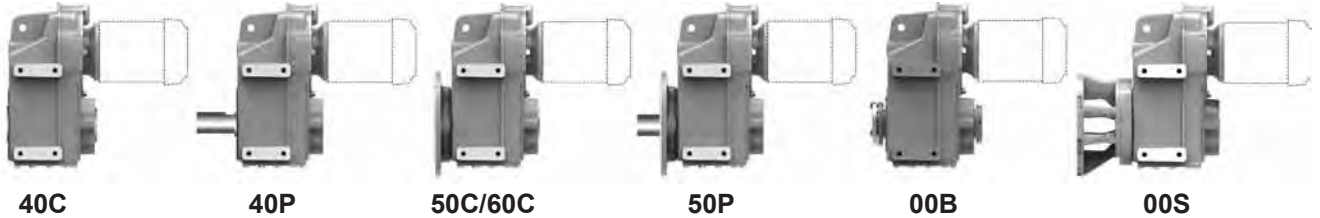
See page D-95

Reducer Size		Stages	Output Configuration Shaft and Housing	Mounting Position	Nominal Gear Ratio	Input Type	Motor Frame	Motor HP	Modifications (s)
31	3	2 = 2 stages	40C = Hollow Shaft Face Mount	P3	22.4 = 22.4:1	U = C-Face	C-Face 56C - 365TC	1.5= 1.5 HP	Select Options from D-101 required
32	4	3 = 3 stages		P6		UD = C-Face with Backstop	1/3 to 50 HP		
33	6	4 = 4 stages	50C ¹ = Hollow Shaft Std Flange Mount	P7	Use Nominal Ratio Selected from Reducer Selection Tables	AP = Input Shaft	Scoop or Top Mount 56-326T		
34	7	5 = 5 stages	60C ¹ = Hollow Shaft Alt. Flange Mount	P8		AD = Input Shaft with Backstop	See page D-96		
35	8	6 = 6 stages		PV5		SP = Scoop Mount			
36	9		33B ¹ = Taper Bushed Mount	PV6		SD = Scoop Mount With Backstop			
37	0		00S ¹ = Screw Conveyor Type 40P = Solid Shaft Face Mount 50P ¹ = Solid Shaft Flange Mount			TM = Top Mount TD = Top Mount with Backstop			

¹ Not available on frame 31.

FLANGE DIMENSIONS (mm)						
BD	200	250	300	350	450	
AK	130	180	230	250	350	
AJ	165	215	265	300	400	
Gear Frame	Output Flange and Shaft Designation					
31	Flange Not Available					
32	60C	50C				
33		60C	50C			
34		60C	50C			
35				50C		
36						50C
37						50C

Mounting Configuration



Availability

MbN Frame	Face Mounted		Flange Mounted			Taper Bush Shaft Mount 33B**	Screw Conveyor Drive 00S
	Hollow Shaft	Solid Shaft	Hollow Shaft		Solid Shaft		
	40C	40P	50C	60C	50P		
31	●	●	-	-	-	-	-
32	●	●	●	●	●	●	●
33	●	●	●	●	●	●	●
34	●	●	●	●	●	●	●
35	●	●	●	-	●	●	●
36	●	●	●	-	●	●	●
37	●	●	●	-	●	●	●

- Not Available in This Frame Size

● Available at Standard Lead-Times

** Bushing can be moved to "motor" side of gearcase.

Mounting Positions



P3



P6



P7



P8



PV5



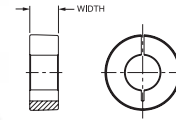
PV6

C-Face Reducer Combinations									
MbN Frame	Reduction Stages	56C	143TC 145TC	182TC 184TC	213TC 215TC	254TC 256TC	284TC 286TC	324TC 326TC	364TC 365TC
31	2	X	X	-	-	-	-	-	
320_	2, 3	X	X	-	-	-	-	-	
324_	2, 3	X	X	X	-	-	-	-	
	4, 5, 6	X	X	-	-	-	-	-	
33	2, 3	X	X	X	X	-	-	-	
	4, 5, 6	X	X	-	-	-	-	-	
34	2, 3	X	X	X	X	X	X	-	
	4, 5, 6	X	X	X	-	-	-	-	
35	2, 3	X	X	X	X	X	X	-	
	4, 5, 6	X	X	X	-	-	-	-	
36	2	-	-	X	X	X	X	X	
	3	-	X	X	X	X	X	X	
	4, 5, 6	X	X	X	X	-	-	-	
37	2	-	-	-	X	X	X	X	X
	3	-	-	X	X	X	X	X	X
	4, 5, 6	X	X	X	X	-	-	-	

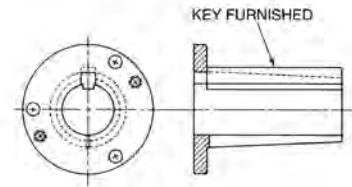
Scoop Mount Reducer Combinations								
MbN Frame	Reduction Stages	56	143T 145T	182T 184T	213T 215T	254T 256T	284T 286T	324T 326T
31	2							Not Available
320_	2, 3	X	X					
324_	2, 3	X	X					
	4, 5, 6							Not Available
33	2, 3	X	X	X				
	4, 5, 6							Not Available
34	2, 3		X	X	X			
	4, 5, 6							Not Available
35	2, 3		X	X	X	X	X	
	4, 5, 6							Not Available
36	2			X	X	X	X	X
	3			X	X	X	X	X
	4, 5, 6	X	X					
37	2			X	X	X	X	X
	3			X	X	X	X	X
	4, 5, 6	X	X					

Top Mount Reducer Combinations								
MbN Frame	Reduction Stages	56	143T 145T	182T 184T	213T 215T	254T 256T	284T 286T	324T 326T
31	2							Not Available
320_	2, 3	X	X					
324_	2, 3	X	X	X				
	4, 5, 6							Not Available
33	2, 3	X	X	X	X			
	4, 5, 6							Not Available
34	2, 3		X	X	X	X		
	4, 5, 6							Not Available
35	2, 3		X	X	X	X	X	
	4, 5, 6							Not Available
36	2			X	X	X	X	X
	3			X	X	X	X	X
	4, 5, 6	X	X	X				
37	2			X	X	X	X	X
	3			X	X	X	X	X
	4, 5, 6	X	X	X				

MbN32-37 units can be ordered with a “00B” bushed output version. When a bore size is defined at order entry, this configuration includes the appropriate bushing kit unassembled. The table below shows the available stocked bushing bores that may be specified for each MbN frame size. Each bushing kit is supplied with the bushing, mounting hardware, and a stabilizer ring. Where a bushing is needed for a spare or for a bore size change, select it from the following table by gear frame size.



Stabilizer Ring



TYPE 2

- **MbN unique, patented single bushing mounting system**
 - Mounts from either side
 - Tapered stabilizer ring minimizes wobble
 - End cap seals quill end from contamination
 - Resists fretting corrosion

MbN Frame	Meas. Unit	Bushing Number	Bore ¹	Shaft Keyseat Required	Type	
32	Inch	107TBP105	1 5/16"	5/16 x 5/32 x 3 7/8	2	
		107TBP106	1 3/8"	5/16 x 5/32 x 3 7/8	2	
		107TBP107	1 7/16"	3/8 x 3/16 x 3 7/8	2	
	Metric *	107TBP30MM	30 mm	8 x 3.5 x 100 (mm)	2	
		107TBP35MM	35 mm	10 x 4 x 100 (mm)	2	
33	Inch	115TBP107	1 7/16	3/8 x 3/16 x 4 1/8	2	
		115TBP108	1 1/2	3/8 x 3/16 x 4 1/8	2	
		115TBP110	1 5/8	3/8 x 3/16 x 4 1/8	2	
		115TBP111	1 11/16	3/8 x 3/16 x 4 1/8	2	
		115TBP112	1 3/4	3/8 x 3/16 x 4 1/8	2	
		115TBP114	1 7/8	1/2 x 1/4 x 4 1/8	2	
		115TBP115	1 15/16	1/2 x 1/4 x 4 1/8	2	
	Metric *	115TBP40MM	40 mm	12 x 4 x 105 (mm)	2	
		115TBP45MM	45 mm	14 x 4.5 x 105 (mm)	2	
	34	Inch	207TBP200	2	1/2 x 1/4 x 5 1/8	2
			207TBP202	2 1/8	1/2 x 1/4 x 5 1/8	2
207TBP203			2 3/16	1/2 x 1/4 x 5 1/8	2	
207TBP204			2 1/4	1/2 x 1/4 x 5 1/8	2	
207TBP207			2 7/16	5/8 x 5/16 x 5 1/8	2	
Metric *		207TBP50MM	50 mm	14 x 4.5 x 130 (mm)	2	
		207TBP60MM	60 mm	18 x 5.5 x 130 (mm)	2	
35	Inch	215TBP203	2 3/16	1/2 X 1/4 X 5 5/8	2	
		215TBP204	2 1/4	1/2 X 1/4 X 5 5/8	2	
		215TBP207	2 7/16	5/8 X 5/16 X 5 5/8	2	
		215TBP208	2 1/2	5/8 X 5/16 X 5 5/8	2	
		215TBP211	2 11/16	5/8 X 5/16 X 5 5/8	2	
		215TBP215	2 15/16	3/4 X 3/8 X 5 5/8	2	
	Metric *	215TBP60MM	60 mm	18 x 5.5 x 140 (mm)	2	
		215TBP70MM	70 mm	20 x 6 x 140 (mm)	2	
	36	Inch	215TBP207	2 7/16	5/8 X 5/16 X 5 5/8	2
			215TBP208	2 1/2	5/8 X 5/16 X 5 5/8	2
			215TBP211	2 11/16	5/8 X 5/16 X 5 5/8	2
			215TBP215	2 15/16	3/4 X 3/8 X 5 5/8	2
	Metric *	215TBP60MM	60 mm	18 x 5.5 x 140 (mm)	2	
		215TBP70MM	70 mm	20 x 6 x 140 (mm)	2	
	37	Inch	307TBP214	2 7/8	3/4 x 3/8 x 6 3/4	2
			307TBP215	2 15/16	3/4 x 3/8 x 6 3/4	2
			307TBP300	3	3/4 x 3/8 x 6 3/4	2
307TBP306			3 3/8	7/8 x 7/16 x 6 3/4	2	
307TBP307			3 7/16	7/8 x 7/16 x 6 3/4	2	
Metric *		307TBP75MM	75 mm	20 x 6 x 170 (mm)	2	
		307TBP80MM	80 mm	22 x 7 x 170 (mm)	2	
		307TBP85MM	85 mm	22 x 7 x 170 (mm)	2	

MbN Series

¹ Bushing bore shown must be selected by customer based on complete application details
 * Metric bushings have metric bores and require metric keyseats as shown in mm.

Screw Conveyor Drive Shafts²

Gear Frame	1 1/2" Dia. Shaft for 6" - 10" Dia. Screw	2" Dia. Shaft for 9" - 12" Dia. Screw	2 7/16" Dia. Shaft for 12" - 14" Dia. Screw	3" Dia. Shaft for 12" - 20" Dia. Screw	3 7/16" Dia. Shaft for 18" - 24" Dia. Screw
32	107DSP108__	107DSP200__	107DSP207__	107DSP300__	N/A
33	115DSP108__	115DSP200__	115DSP207__	115DSP300__	N/A
34	N/A	207DSP200__	207DSP207__	207DSP300__	207DSP307__
35 & 36	N/A	215DSP200__	215DSP207__	215DSP300__	215DSP307__
37	N/A	N/A	N/A	307DSP300__	307DSP307__

² Complete the shaft part number by adding shaft type as follows:

- Standard — 2 hole steel shaft = leave blank (example 107DSP108)
- 3 hole steel shaft = add -3 (example 107DSP108-3)
- Optional — 2 hole stainless steel shaft = add SS (example 107DSP108SS)
- 3 hole stainless steel shaft = add -3SS (example 107DSP108-3SS)

Screw Conveyor Accessories

Gear Frame	Optional Seal Cartridges		Felt Seal ¹
	Waste Pack Kit	Packing Gland Kit	
32	107WWP	107PGP	FR200
34	115-203WWP	115-203PGP	FR210
35	207-407WWP	207-407PGP	FR308
36	207-407WWP	207-407PGP	FR308
37	207-407WWP	207-407PGP	FR308

¹ Felt seal can only be added to the waste pack seal cartridge kit.

MbN Screw Conveyor Drives May Be Assembled in the Field

Required Components Include: MbN 00S reducer with screw conveyor adapter
Screw conveyor drive shaft

Optional Components Include: Waste pack
Packing gland
Felt seal



Screw Conveyor Adapter
(Included with type 00S gear unit)



Waste Pack Kit



Packing Gland Kit

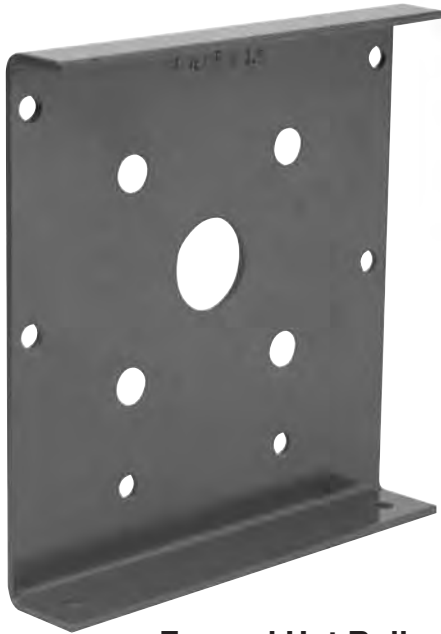


Screw Conveyor Drive Shaft Kit

Screw Conveyor Thrust Ratings

Gear Frame	Maximum Thrust Rating (Lbs.)
32	2000
33	3000
34	4500
35	5750
36	6300
37	7800

Output tapered roller bearing standard - all sizes.



**Formed Hot Roll
Plate Steel**

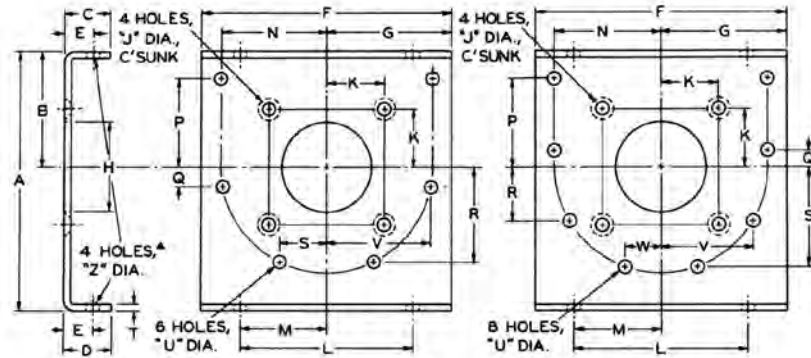


FIG 1 - 6 HOLE TYPE

FIG 2 - 8 HOLE TYPE

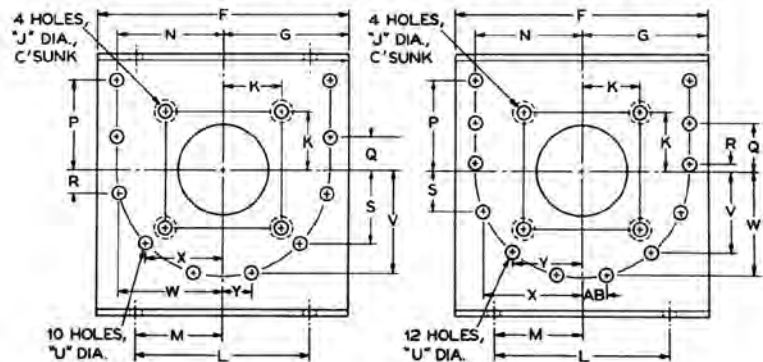


FIG 3 - 10 HOLE TYPE

FIG 4 - 12 HOLE TYPE

Table No. 33

Specifications

Part No.	Conveyor Screw Dia.	Drive Shaft Dia.	Fig.	Type	Dimensions												
					A	B	C	D	E	F	G	H	J	K	L		
SCTE06 x 1 1/2"	6"	1 1/2"	1	6-Hole	10 1/8"	4 1/2"	1 1/2"	1 3/4"	1"	9 3/4"	4 7/8"	1 3/4"	9/16"	2"	8 1/8"		
SCTE09 x 1 1/2"	9	1 1/2	2	8-Hole	14	6 1/8	1 5/8	2 5/8	1 1/2	13 3/4	6 7/8	1 3/4	9/16	2	9 3/8		
SCTE09 x 2	9	2	2	8-Hole	14	6 1/8	1 5/8	2 5/8	1 1/2	13 3/4	6 7/8	2 1/4	11/16	2 9/16	9 3/8		
SCTE10 x 1 1/2"	10	1 1/2	2	8-Hole	15 1/4	6 3/8	2 3/8	2 7/8	1 3/4	14 3/4	7 3/8	1 3/4	9/16	2	9 1/2		
SCTE10 x 2	10	2	2	8-Hole	15 1/4	6 3/8	2 7/8	2 7/8	1 3/4	14 3/4	7 3/8	2 1/4	11/16	2 9/16	9 1/2		
SCTE12 x 2	12	2	2	8-Hole	17 3/8	7 3/4	2	2 3/4	1 5/8	17 1/4	8 5/8	2 1/4	11/16	2 9/16	12 1/4		
SCTE12 x 2 7/16	12	2 7/16	2	8-Hole	17 3/8	7 3/4	2	2 3/4	1 5/8	17 1/4	8 5/8	2 11/16	11/16	2 13/16	12 1/4		
SCTE12 x 3	12	3	2	8-Hole	17 3/8	7 3/4	2	2 3/4	1 5/8	17 1/4	8 5/8	3 1/4	13/16	3	12 1/4		
SCTE14 x 2 7/16	14	2 7/16	2	8-Hole	20 1/8	9 1/4	2	2 7/8	1 5/8	19 1/4	9 5/8	2 11/16	11/16	2 3/16	13 1/2		
SCTE14 x 3	14	3	2	8-Hole	20 1/8	9 1/4	2	2 7/8	1 5/8	19 1/4	9 5/8	3 1/4	13/16	3	13 1/2		
SCTE16 x 3	16	3	2	8-Hole	22 5/8	10 5/8	2 1/2	3 1/4	2	21 1/4	10 5/8	3 1/4	13/16	3	14 7/8		
SCTE18 x 3	18	3	3	10-Hole	25 1/2	12 1/8	2 1/2	3 1/4	2	24 1/4	12 1/8	3 1/4	13/16	3	16		
SCTE18 x 3 7/16	18	3 7/16	3	10-Hole	25 1/2	12 1/8	2 1/2	3 1/4	2	24 1/4	12 1/8	3 11/16	13/16	3 3/8	16		
SCTE20 x 3	20	3	3	10-Hole	28 1/2	13 1/2	2 1/2	3 3/4	2 1/4	26 1/4	13 1/8	3 1/4	13/16	3	19 1/4		
SCTE20 x 3 7/16	20	3 7/16	3	10-Hole	28 1/2	13 1/2	2 1/2	3 3/4	2 1/4	26 1/4	13 1/8	3 11/16	13/16	3 3/8	19 1/4		
SCTE24 x 3 7/16	24	3 7/16	4	12-Hole	34 5/8	16 1/2	2 1/2	4 1/8	2 1/2	30 1/4	15 1/8	3 11/16	13/16	3 3/8	20		

Part No.	Dimensions															Wt. Lbs.
	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	AB		
SCTE06 x 1 1/2"	4 1/16"	4 7/16"	3 15/32"	5/8"	3 15/16"	2 1/32"	3/16"	7/16"	4 25/64"	-	-	-	7/16"	-	6.7	
SCTE09 x 1 1/2"	4 11/16	6 1/4	4 15/16	13/16	3 13/64	5 45/64	1/4	7/16	5 23/64	2 9/16"	-	-	9/16	-	17.8	
SCTE09 x 2	4 11/16	6 1/4	4 15/16	13/16	3 13/64	5 45/64	1/4	7/16	5 23/64	2 9/16"	-	-	9/16	-	17.7	
SCTE10 x 1 1/2"	4 3/4	6 5/8	4 1/8	5/8	3 3/8	6 1/8	1/4	7/16	5 45/64	2 17/32	-	-	9/16	-	20.6	
SCTE10 x 2	4 3/4	6 5/8	4 1/8	5/8	3 3/8	6 1/8	1/4	7/16	5 45/64	2 17/32	-	-	9/16	-	20.5	
SCTE12 x 2	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	11/16	-	33.8	
SCTE12 x 2 7/16	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	11/16	-	33.5	
SCTE12 x 3	6 1/8	7 15/16	6 1/4	15/16	4 7/64	6 59/64	5/16	9/16	6 51/64	3 7/8	-	-	11/16	-	33.3	
SCTE14 x 2 7/16	6 3/4	8 15/16	6 23/32	1 3/32	4 11/16	8 27/64	5/16	9/16	7 39/64	3	-	-	11/16	-	42.4	
SCTE14 x 3	6 3/4	8 15/16	6 23/32	1 3/32	4 11/16	8 27/64	5/16	9/16	7 39/64	3	-	-	11/16	-	42.2	
SCTE16 x 3	7 7/16	10	8	1 5/8	4 57/64	9 17/64	5/16	11/16	8 23/32	3 3/4	-	-	11/16	-	51.1	
SCTE18 x 3	8	11	9 1/2	3 9/16	2 25/64	7 37/64	5/16	11/16	10 19/32	10 47/64	7 63/64"	2 15/16"	11/16	-	67.9	
SCTE18 x 3 7/16	8	11	9 1/2	3 9/16	2 25/64	7 37/64	5/16	11/16	10 19/32	10 47/64	7 63/64	2 15/16	11/16	-	67.7	
SCTE20 x 3	9 5/8	12 3/16	10 23/32	4 15/32	2 13/64	8 3/16	3/8	11/16	11 23/32	11 63/64	9 1/32	3 11/32	13/16	-	96.9	
SCTE20 x 3 7/16	9 5/8	12 3/16	10 23/32	4 15/32	2 13/64	8 3/16	3/8	11/16	11 23/32	11 63/64	9 1/32	3 11/32	13/16	-	96.7	
SCTE24 x 3 7/16	10	14 1/4	13 23/32	7 19/32	31/32	5 33/64	3/8	11/16	10 7/8	13 55/64	13 1/8	9 7/32	▲ 13/16	3 5/16"	133.0	

Notes: Browning Trough Ends are drilled to fit CEMA standard troughs. The center holes are drilled to fit Browning Screw Conveyor Drives.
▲ Figure 4 has 2 "Z" holes in bottom flange only; no holes in top flange.

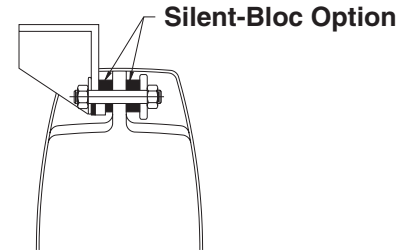
MbN Series

Mounting Accessories

Standard Mounting By Reaction Point

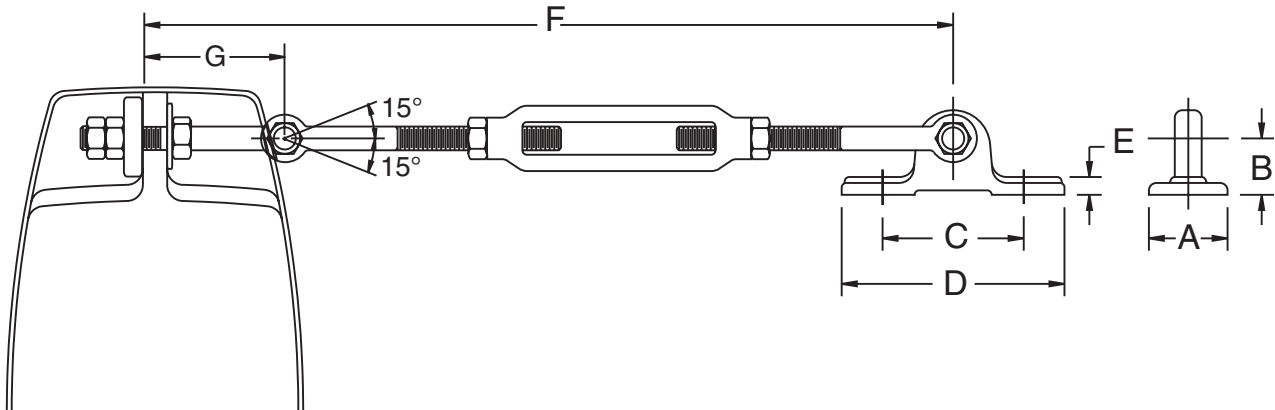
The use of "Silent-Bloc" is recommended for standard mounting of OOC and OOB style units, or 40C units not utilizing face for mounting. These resilient rubber bushings help to minimize vibration. Order by part number below.

Size	Silent-Bloc Kit #	ID x OD x Thickness
31 - 33	MUB230AM001	0.55 x 1.57 x 0.59
34 - 35	MUB450AM001	0.87 x 2.36 x 1.18
36 - 37	MUB600AM001	1.30 x 3.15 x 1.20



Optional Mounting with Tie Rod

A conventional tie rod kit is available as shown in the diagram below. It is used to secure the MbN 00C or 00B style housing to a solid machine surface and prevent rotation of the gear unit. Tie Rod can be used with 40C units not utilizing face for mounting. Order by the part number in the table below:



Note: Tie rod may be mounted on the opposite side if desired.

Dimensions (Inches)

Gear Frames	Tie Rod Kit #	A	B	C	D	E	F		G
							Min.	Max.	
31 - 33	MUB999TA001	2.09	1.50	3.74	5.91	0.47	18.58	23.11	3.20
34 - 35	MUB999TA002	1.97	1.77	4.13	5.71	0.59	22.36	26.50	5.90
36	XS9651	3.62	2.22	4.75	6.5	0.72	33.92	39.92	4.55
37		3.62	2.22	4.75	6.5	0.72	34.05	40.05	4.55

Note: Tie rod assemblies should always be mounted in tension.

Modifications, Options and Accessories

Speed Reducer Modifications

G11 Corro-Duty®

Corro-Duty treatment can be applied to a reducer when corrosive chemicals or unit will be operated outside in adverse environmental conditions. Special features of this treatment:

- Normally closed breather design
- Corro-Duty exterior paint treatment (entire unit)
 - o Grey Option (default type)
 - 316 stainless steel paint (3 step)
 - Light grey semigloss finish
 - USDA and FDA approved
 - o White Option
 - Two step epoxy paint system
 - White gloss finish
 - USDA and FDA approved

For washdown application for reducers, refer to G12b Washdown Duty FG Reducer.

G12a Foodgrade Synthetic Lubricant

When this modification is specified, the MbN oil sump is filled with the required volume of an FDA approved H1 rated synthetic lubricant for helical gearing (150). Refer to page D-166 for specifics on lubricant used.

G12b Washdown FG Service Reducer

When the reducer will be in a washdown environment, specify this treatment. The reducer will receive the Corro-Duty exterior treatment, the sump(s) will be filled with an FDA foodgrade H1 rated synthetic lubricant, and the breather supplied will be a labyrinth style,, normally closed design.

G15 Export Boxing

Export boxing can be provided for “under-deck” transport. When the quantity of MbN gearmotors or reducers exceeds five (5) units, refer to international sales for most economical accommodations.

G16 Extra or Special Nameplate

Units can be provided with limited additional special information on the standard product nameplate. When required, an extra nameplate may be provided, stamped with custom markings.

Accessories

The following accessories can be ordered along with reducer and will be supplied loose for mounting by others

Description	Gear Frames	Part #
NPT Adapter (1/4" NPFT)	31 to 35	0436216
NPT Adapter (3/4" NPFT)	36, 37	0436218
Bushing Guard Kit ¹ (includes 2 guards to protect both sides)	32	XS9142
	33	XS9143
	34	XS9144
	35	XS9145
	36	XS9160
Oil Level View Port	37	XS9161
	31 to 35	0435936
	36, 37	0435938

¹ These kits include all mounting hardware.

AGMA Application Classifications

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Agitators (Mixers)				Cranes (Continued)			
Pure Liquids	—	1.00	1.25	Boom Hoist	Refer to Application Engineering		
Liquids & Solids	1.00	1.25	1.50	Trolley Drive (Gantry Drive)	Refer to Application Engineering		
Liquids - Variable Density	1.00	1.25	1.50	(Traction Drive)	Refer to Application Engineering		
Blowers				Mill Duty			
Centrifugal	1.00	1.25	—	Main	Refer to Application Engineering		
Lobe	1.00	1.25	1.50	Auxiliary	Refer to Application Engineering		
Vane	—	1.00	1.25	Bridge & Trolley Travel	Refer to Application Engineering		
Brewing and Distilling				Industrial Duty			
Bottling Machinery	—	1.00	1.25	Main	1.25	1.50	1.75
Brew Kettles, Continuous Duty	—	1.00	1.25	Auxiliary	Refer to Application Engineering		
Cookers - Continuous Duty	—	1.00	1.25	Bridge & Trolley Travel	Refer to Application Engineering		
Mash Tubs - Continuous Duty	—	1.00	1.25	Crusher			
Scale Hoppers, Frequent Starts	1.00	1.25	1.50	Stone or Ore	1.50	1.75	2.00
Can Filling Machines	—	1.00	1.25	Dredges			
Car Dumpers	1.25	1.50	1.75	Cable Reels	1.00	1.25	1.50
Car Pullers	1.00	1.25	1.50	Conveyors	1.00	1.25	1.50
Clarifiers	—	1.00	1.25	Cutter Head Drives	1.25	1.50	1.75
Classifiers	1.00	1.25	1.50	Pumps	1.00	1.25	1.50
Clay Working Industry				Screen Drives	1.25	1.50	1.75
Brick Press	1.25	1.50	1.75	Stackers	1.00	1.25	1.50
Briquette Machine	1.25	1.50	1.75	Winches	1.00	1.25	1.50
Pug Mill	1.00	1.25	1.50	Elevators			
Compactors	1.50	1.75	2.00	Bucket	1.00	1.25	1.50
Compressors				Centrifugal Discharge	—	1.00	1.25
Centrifugal	—	1.00	1.25	Escalators	Refer to Application Engineering		
Lobe	1.00	1.25	1.50	Freight	Refer to Application Engineering		
Reciprocating, Multi - Cylinder	1.00	1.25	1.50	Gravity Discharge	—	1.00	1.25
Reciprocating, Single - Cylinder	1.25	1.50	1.75	Extruders			
Conveyors - General Purpose				General	1.25	1.25	1.25
Uniformly Loaded or Fed	—	1.00	1.25	Plastics			
Not Uniformly Fed	1.00	1.25	1.50	(a) Variable Speed Drive	1.50	1.50	1.50
Reciprocating or Shaker	1.25	1.50	1.75	(b) Fixed Speed Drive	1.75	1.75	1.75
Cranes				Rubber			
Dry Dock				(a) Continuous Screw Operation	1.50	1.50	1.50
Main Hoist	1.25	1.50	1.75	(b) Intermittent Screw Operation	1.75	1.75	1.75
Auxiliary	1.25	1.50	1.75	Fans			
Boom Hoist	1.25	1.50	1.75	Centrifugal	—	1.00	1.25
Slewing Drive	1.25	1.50	1.75	Cooling Towers	Refer to Application Engineering		
Traction Drive	1.50	1.50	1.50	Forced Draft	1.25	1.25	1.25
Container				Induced Draft	1.00	1.25	1.50
Main Hoist	Refer to Application Engineering			Industrial & Mine	1.00	1.25	1.50

MbN Series



Speed Reducers

MbN
SERIES 3000

AGMA Application Classifications

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Feeders				Metal Mills			
Apron	—	1.25	1.50	Draw Bench Carriage & Main Drive	1.00	1.25	1.50
Belt	1.00	1.25	1.50	Runout Table			
Disc	—	1.00	1.25	Non-reversing			
Reciprocating	1.25	1.50	1.75	Group Drives	1.00	1.25	1.50
Screw	1.00	1.25	1.50	Individual Drives	1.50	1.50	1.75
				Reversing	1.50	1.50	1.75
Food Industry				Slab Pushers	1.25	1.25	1.50
Cereal Cooker	—	1.00	1.25	Shears	1.50	1.50	1.75
Dough Mixers	1.00	1.25	1.50	Wire Drawing	1.00	1.25	1.50
Meat Grinders	1.00	1.25	1.50	Wire Winding Machine	1.00	1.25	1.50
Slicers	1.00	1.25	1.50				
				Metal Strip Processing Machinery			
Generators and Exciters	—	1.00	1.25	Bridles	1.25	1.25	1.50
				Coilers & Uncoilers	1.00	1.00	1.25
Hammer Mills	1.50	1.50	1.75	Edge Trimmers	1.00	1.25	1.50
				Flatteners	1.00	1.25	1.50
Hoists				Loopers (Accumulators)	1.00	1.00	1.00
Heavy Duty	1.25	1.50	1.75	Pinch Rolls	1.00	1.25	1.50
Medium Duty	1.00	1.25	1.50	Scrap Choppers	1.00	1.25	1.50
Skip Hoist	1.00	1.25	1.50	Shears	1.50	1.50	1.75
				Slitters	1.00	1.25	1.50
Laundry Tumblers	1.00	1.25	1.50				
				Mills, Rotary Type			
Laundry Washers	1.00	1.25	1.50	Ball & Rod			
				Spur Ring Gear	1.50	1.50	1.75
Lumber Industry				Helical Ring Gear	1.50	1.50	1.50
Barkers				Direct Connected	1.50	1.50	1.75
- Spindle Feed	1.25	1.25	1.25	Cement Kilns	1.50	1.50	1.50
- Main Drive	1.50	1.50	1.50	Dryers & Coolers	1.50	1.50	1.50
Conveyors							
- Burner	1.25	1.25	1.50	Mixers, Concrete	1.00	1.25	1.50
- Main or Heavy Duty	1.50	1.50	1.50				
- Main Log	1.50	1.50	1.50	Paper Mills			
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50	Agitator (Mixer)	1.50	1.50	1.50
- Slab	1.50	1.50	1.75	Agitator for Pure Liquids	1.25	1.25	1.25
- Transfer	1.25	1.25	1.50	Barkers - Mechanical	1.75	1.75	1.75
Chains				Barking Drums	1.75	1.75	1.75
- Floor	1.50	1.50	1.50	Beater	1.50	1.50	1.50
- Green	1.50	1.50	1.50	Breaker Stack	1.25	1.25	1.25
Cut-Off Saws				❖ Calender	1.25	1.25	1.25
- Chain	1.50	1.50	1.50	Chipper	1.75	1.75	1.75
- Drag	1.50	1.50	1.50	Chip Feeder	1.50	1.50	1.50
Debarking Drums	1.50	1.50	1.75	Coating Rolls	1.25	1.25	1.25
Feeds				Conveyors			
- Edger	1.25	1.25	1.50	Chip, Bark, Chemical	1.25	1.25	1.25
- Gang	1.50	1.50	1.50	Log (Including Slab)	1.75	1.75	1.75
- Trimmer	1.25	1.25	1.50	Couch Rolls	1.25	1.25	1.25
Log Deck	1.50	1.50	1.50	Cutter	1.75	1.75	1.75
Log Hauls - Incline-Well Type	1.50	1.50	1.50	Cylinder Molds	1.25	1.25	1.25
Log Turning Devices	1.50	1.50	1.50	❖ Dryers			
Planner Feed	1.25	1.25	1.25	Paper Machine	1.25	1.25	1.25
Planer Tilting Hoists	1.50	1.50	1.50	Conveyor Type	1.25	1.25	1.25
Rolls - Live-Off Bearing.-Roll Cases	1.50	1.50	1.50	Embosses	1.25	1.25	1.25
Sorting Table	1.25	1.25	1.50	Extruder	1.50	1.50	1.50
Tipple Hoist	1.25	1.25	1.50	Fourdrinier Rolls (Includes Lump Breaker, Dandy Roll, Wire Turning, and Return Rolls)	1.25	1.25	1.25
Transfers				Jordan	1.25	1.25	1.25
- Chain	1.50	1.50	1.50	Kiln Drive	1.50	1.50	1.50
- Causeway	1.50	1.50	1.50	Mt. Hope Roll	1.25	1.25	1.25
Tray Drives	1.25	1.25	1.50				
Veneer Lathe Drives	Refer to Application Engineering						

MbN Series

AGMA Application Classifications

Application	Service Factor			Application	Service Factor		
	Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	Up to 10 hrs/day	Over 10 hrs/day
Paper Mills (Continued)				Rubber Industry			
Paper Rolls	1.25	1.25	1.25	Intensive Internal Mixers			
Platter	1.50	1.50	1.50	(a) Batch Mixers	1.50	1.75	1.75
Presses - Felt & Suction	1.25	1.25	1.25	(b) Continuous Mixers	1.25	1.50	1.50
Pulper	1.50	1.50	1.75	Mixing Mill - 2 Smooth Rolls - (If corrugated rolls are used, then use the same service factors that are used for a Cracker-Warmer)	1.50	1.50	1.50
Pumps - Vacuum	1.50	1.50	1.50	Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50
Reel (Surface Type)	1.25	1.25	1.50	Cracker Warmer - 1 Corrugated Roll	1.75	1.75	1.75
Screens				Cracker - 2 Corrugated Rolls	1.75	1.75	1.75
Chip	1.50	1.50	1.50	Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25
Rotary	1.50	1.50	1.50	Refiner - 2 Rolls	1.50	1.50	1.50
Vibrating	1.75	1.75	1.75	Calenders	1.50	1.50	1.50
Size Press	1.25	1.25	1.25				
Super Calender (See Note)	1.25	1.25	1.25	Sand Miller	1.00	1.25	1.50
Thickener							
(AC Motor)	1.50	1.50	1.50	Sewage Disposal			
(DC Motor)	1.25	1.25	1.25	Bar Screens	—	1.00	1.25
Washer				Chemical Feeders	—	1.00	1.25
(AC Motor)	1.50	1.50	1.50	Dewatering Screens	1.00	1.25	1.50
(DC Motor)	1.25	1.25	1.25	Scum Breakers	1.00	1.25	1.50
Wind and Unwind Stand	1.00	1.00	1.00	Slow or Rapid Mixers	1.00	1.25	1.50
Winders (Surface Type)	1.25	1.25	1.25	Sludge Collectors	1.00	1.00	1.25
❖ Yankee Dryers	1.25	1.25	1.25	Thickeners	1.00	1.25	1.50
				Vacuum Filters	1.00	1.25	1.50
Plastics Industry - Primary Processing				Screens			
Intensive Internal Mixers				Air Washing	—	1.00	1.25
(a) Batch Mixers	1.75	1.75	1.75	Rotary - Stone or Gravel	1.00	1.25	1.50
(b) Continuous Mixers	1.50	1.50	1.50	Traveling Water Intake	—	1.00	1.25
Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25				
Continuous Feed, Holding & Blend Mill	1.25	1.25	1.25	Sugar Industry			
Compounding Mills	1.25	1.25	1.25	Beet Slicer	1.50	1.50	1.75
Calenders	1.50	1.50	1.50	Cane Knives	1.50	1.50	1.50
				Crushers	1.50	1.50	1.50
Plastics Industry - Secondary Processing				Mills (Low Speed End)	1.50	1.50	1.50
Blow Molders	1.50	1.50	1.50				
Coating	1.25	1.25	1.25	Textile Industry			
Film	1.25	1.25	1.25	Batchers	1.00	1.25	1.50
Pipe	1.25	1.25	1.25	Calenders	1.00	1.25	1.50
Pre-Plasticizers	1.50	1.50	1.50	Cards	1.00	1.25	1.50
Rods	1.25	1.25	1.25	Dry Cans	1.00	1.25	1.50
Sheet	1.25	1.25	1.25	Dryers	1.00	1.25	1.50
Tubing	1.25	1.25	1.50	Dyeing Machinery	1.00	1.25	1.50
				Looms	1.00	1.25	1.50
Pullers - Barge Haul	1.00	1.50	1.75	Mangles	1.00	1.25	1.50
				Nappers	1.00	1.25	1.50
Pumps				Pads	1.00	1.25	1.50
Centrifugal	—	1.00	1.25	Slashers	1.00	1.25	1.50
Proportioning	1.00	1.25	1.50	Soapers	1.00	1.25	1.50
Reciprocating				Spinners	1.00	1.25	1.50
Single Acting, 3 or more cylinders	1.00	1.25	1.50	Tenter Frames	1.00	1.25	1.50
Double Acting, 2 or more cylinders	1.00	1.25	1.50	Washers	1.00	1.25	1.50
Rotary				Winders	1.00	1.25	1.50
- Gear	—	1.00	1.50				
- Lobe	—	1.00	1.25				
- Vane	—	1.00	1.25				

❖ Anti-friction bearings only.

NOTE: A service factor of 1.0 may be applied at the base of a super calender, operating over a speed range where part of the range is constant horsepower and part of the range is constant torque, provided that the constant horsepower part is greater than 1.5 to 1. A service factor of 1.25 is applicable to super calenders operating over the entire speed range at constant torque, or where the constant horsepower speed range is less than 1.5 to 1.



MbN Helical Shaft Mount Speed Reducers

Industries

- Food and Beverage
- Warehousing
- Parcel and Package Sortation
- Wastewater Treatment
- Recycling

Applications

- Screw Conveyors
- Bottling Conveyors
- Unit Handling Conveyors
- Material Handling Conveyors
- De-Watering Conveyors



MbN Series

Corrosion Resistant
Provided By
Emerson Power

Exact Ratio, HP and Torque

Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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438	4			3.92	3242							R.O.	R.O.							14.40	1952											389	4.5											R.O.	R.O.			350	5			4.94	3242			4.8	3472	5.17	3582	R.O.	R.O.							12.99	2219			38.53	6394.20	66.63	11910					313	5.6			5.91	3242	5.49	3362			5.91	3582	R.O.	R.O.							12.06	2464	26.29	4990			66.63	13615					278	6.3			6.99	3242			6.22	3472	6.48	3582	6.31	3692	6.05	3702					11.12	2687			32.92	7079.39	66.63	14928	101.25	22089	120.00	25101	246	7.1	7.28	3132	7.45	3242	7.09	3362			7.24	3582	7.15	3692	6.90	3702			5.27	1326	10.84	2792	24.16	5922			66.63	16678	96.04	23741	120.00	28627	219	8			8.42	3242			7.53	3472	8.11	3582	7.62	3692	7.68	3702					10.01	2914			30.23	7870.08	66.63	18683	92.86	24464	120.00	31863	194	9	9.19	3132	9.32	3242	8.76	3362	8.42	3472	9.12	3582	8.53	3692	8.62	3702			4.95	1573	9.36	3016	20.51	6212	28.82	8389.80	63.17	19918	91.77	27064	120.00	35763	175	10	10.3	3132	10.60	3242	10.1	3362	9.46	3472	9.89	3582	9.63	3692	9.64	3702			4.54	1617	8.53	3126	18.82	6572	25.93	8480.85	61.99	21196	89.28	29725	120.00	39995	156	11.2	10.9	3132	12.3	3242	11.1	3362	10.6	3472	11.2	3582	10.90	3692	11.00	3702			4.38	1651	7.93	3372	17.16	6585	24.52	8986.12	57.96	22444	83.58	31497	120.00	45637	140	12.5	12.3	3132	13.1	3242	12.3	3362	12	3472	12.4	3582	12.10	3692	12.20	3702			4.32	1837	7.61	3447	15.61	6638	22.71	9422.02	51.88	22242	78.76	32949	120.00	50616	125	14	13.9	3132	14.90	3242	14.1	3362	13.2	3472	14.4	3582	13.50	3692	13.80	3702			4.19	2014	6.98	3596	14.5	7069	21.14	9647.72	45.9	22852	68.07	31771	116.60	55632	109	16	15.7	3132	16.50	3242	15.6	3362	15.4	3472	15.7	3582	15.10	3692	15.70	3702			3.73	2025	6.47	3691	13.11	7071	19.41	10335	38.01	20632	63.03	32906	108.32	58797	97	18	17.8	3132	18.7	3242	17.9	3362	17.2	3472	17.6	3582	17.70	3692	17.80	3702			3.30	2031	6.03	3899	11.71	7247	17.83	10602.92	37.43	22776	59.83	36613	100.92	62107	88	20	20.4	3132	20.9	3242	20.2	3362	19.4	3472	19.7	3582	20.00	3692	20.10	3702			2.90	2045	5.35	3866	10.5	7333	16.58	11121	31.44	21414	54.39	37609	93.77	65164	78	22.4	23.0	3132	23.5	3242	21.9	3362	21.9	3472	22.3	3582	21.90	3692	22.60	3702			2.58	2052	4.84	3932	9.39	7110	15.31	11592.18	29.01	22367	50.25	38048	86.45	67549	70	25	24.4	3132	27.5	3242	24.4	3362	25	3472	25.6	3582	25.50	3692	25.20	3702			2.44	2058	4.22	4012	8.1	6833	14.1	12187	24.46	21649	46.59	41075	66.63	58052	63	28	29.0	3132	29.7	3242	27.4	3362	26.8	3472	27.8	3582	27.70	3692	28.40	3702			2.06	2065	3.85	3953	7.38	6991	13.4	12416	21.51	20674	40.66	38940	64.82	63646
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		5.27	1326	10.84	2792	24.16	5922			66.63	16678	96.04	23741	120.00	28627																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
219	8			8.42	3242			7.53	3472	8.11	3582	7.62	3692	7.68	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
				10.01	2914			30.23	7870.08	66.63	18683	92.86	24464	120.00	31863																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
194	9	9.19	3132	9.32	3242	8.76	3362	8.42	3472	9.12	3582	8.53	3692	8.62	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		4.95	1573	9.36	3016	20.51	6212	28.82	8389.80	63.17	19918	91.77	27064	120.00	35763																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
175	10	10.3	3132	10.60	3242	10.1	3362	9.46	3472	9.89	3582	9.63	3692	9.64	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		4.54	1617	8.53	3126	18.82	6572	25.93	8480.85	61.99	21196	89.28	29725	120.00	39995																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
156	11.2	10.9	3132	12.3	3242	11.1	3362	10.6	3472	11.2	3582	10.90	3692	11.00	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		4.38	1651	7.93	3372	17.16	6585	24.52	8986.12	57.96	22444	83.58	31497	120.00	45637																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
140	12.5	12.3	3132	13.1	3242	12.3	3362	12	3472	12.4	3582	12.10	3692	12.20	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		4.32	1837	7.61	3447	15.61	6638	22.71	9422.02	51.88	22242	78.76	32949	120.00	50616																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
125	14	13.9	3132	14.90	3242	14.1	3362	13.2	3472	14.4	3582	13.50	3692	13.80	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		4.19	2014	6.98	3596	14.5	7069	21.14	9647.72	45.9	22852	68.07	31771	116.60	55632																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
109	16	15.7	3132	16.50	3242	15.6	3362	15.4	3472	15.7	3582	15.10	3692	15.70	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		3.73	2025	6.47	3691	13.11	7071	19.41	10335	38.01	20632	63.03	32906	108.32	58797																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
97	18	17.8	3132	18.7	3242	17.9	3362	17.2	3472	17.6	3582	17.70	3692	17.80	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		3.30	2031	6.03	3899	11.71	7247	17.83	10602.92	37.43	22776	59.83	36613	100.92	62107																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
88	20	20.4	3132	20.9	3242	20.2	3362	19.4	3472	19.7	3582	20.00	3692	20.10	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		2.90	2045	5.35	3866	10.5	7333	16.58	11121	31.44	21414	54.39	37609	93.77	65164																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
78	22.4	23.0	3132	23.5	3242	21.9	3362	21.9	3472	22.3	3582	21.90	3692	22.60	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		2.58	2052	4.84	3932	9.39	7110	15.31	11592.18	29.01	22367	50.25	38048	86.45	67549																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
70	25	24.4	3132	27.5	3242	24.4	3362	25	3472	25.6	3582	25.50	3692	25.20	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		2.44	2058	4.22	4012	8.1	6833	14.1	12187	24.46	21649	46.59	41075	66.63	58052																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
63	28	29.0	3132	29.7	3242	27.4	3362	26.8	3472	27.8	3582	27.70	3692	28.40	3702																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		2.06	2065	3.85	3953	7.38	6991	13.4	12416	21.51	20674	40.66	38940	64.82	63646																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

These units are thermally limited:
 Frame 36 = 75 HP
 Frame 37 = 85 HP

Exact ratio	Gear frame
Input H.P.	Output torque

MbN Series



Speed Reducers

MbN SERIES 3000

Motor rpm 1750 (Continued)

Exact Ratio, HP and Torque															
Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37	
56	31.5	30.7	3132	33.3	3242	31	3362	31.2	3472	32.4	3582	31.10	3692	32.00	3703
		1.95	2070	3.62	4168	6.43	6892	12.14	13095	18.13	20309	38.50	41397	53.19	57621
49	35.5	35.1	3132	35.2	3242	33.7	3362	33.9	3472	34.2	3583	34.50	3692	36.30	3703
		1.71	2075	3.01	3663	6.04	7037	11.51	13490	17.99	20829	33.48	39935	49.55	60891
44	40	39.1	3132	39.8	3243	38.1	3362	37.4	3472	39.2	3583	40.10	3693	38.70	3703
		1.54	2082	1.9	2560	5.36	7061	10.78	13939	16.4	21764	31.50	42762	47.77	62585
39	45	43.9	3132	44.9	3243	43.9	3362	41.6	3472	43	3583	46.00	3693	43.20	3703
		1.38	2095	1.76	2675	4.83	7331	10.04	14440	15.29	22258	29.16	45410	44.85	65592
35	50	50.8	3132	50.8	3243	49.1	3362	49.3	3472	47.9	3583	50.40	3693	48.80	3703
		1.19	2090	1.63	2803	4.12	6994	8.71	14846	13.91	22556	25.58	43645	41.66	68824
31	56	55.8	3132	57.8	3243	54.3	3362	53.2	3473	53.7	3583	56.20	3693	55.40	3703
		1.09	2103	1.51	2955	3.73	7003	7.72	13904	12.46	22651	22.48	42770	37.65	70612
28	63	63.9	3132	66	3243	61	3363	61.1	3473	60.4	3583	63.00	3693	61.20	3703
		0.95	2099	1.39	3106	3.24	6691	7.01	14500	11.11	22717	20.57	43871	34.78	72058
25	71	70.6	3132	74.5	3243	68.9	3363	67.5	3473	65.5	3583	70.80	3693	68.30	3703
		0.87	2124	1.29	3253	2.87	6694	6.45	14739	10.26	22751	18.66	44725	31.38	72556
22	80			79	3243	76.3	3363	77.5	3473	74.5	3583	76.90	3693	76.80	3703
				1.25	3343	2.6	6716	5.74	15060	9.06	22850	16.32	42486	28.00	72798
19	90			93.8	3243	87	3363	87.3	3473	82.4	3583	87.30	3693	89.90	3703
				1.11	3525	2.29	6745	5.18	15309	8.21	22902	14.42	42617	24.02	73103
18	100			99.3	3243	100	3363	94.8	3473	95.3	3583	96.60	3693	102.00	3703
				1.06	3563	2.05	6940	4.78	15340	7.12	22971	13.07	42742	21.23	73308
16	112			113	3243	107	3363	106	3473	104	3583	112.00	3693	111.00	3703
				0.95	3634	1.92	6955	4.3	15430	6.53	22991	11.88	45044	19.55	73464
14	125			127	3243	122	3363	119	3473	117	3583	122.00	3693	129.00	3703
				0.87	3740	1.74	7186	3.84	15470	5.83	23092	10.55	43573	16.88	73717
13	140			142	3243	135	3363	134	3473	130	3583	137.00	3693	141.00	3703
				0.77	3702	1.61	7358	3.4	15424	5.24	23061	9.59	44478	15.47	73843
11	160			164	3243	153	3363	146	3473	148	3583	153.00	3693	158.00	3703
				0.71	3942	1.47	7614	3.13	15470	4.63	23198	8.42	43612	13.84	74028
9.7	180			180	3243	171	3363	165	3473	169	3583	173.00	3693	175.00	3703
				0.66	4022	1.34	7757	2.77	15473	4.05	23171	7.66	44862	12.52	74173
8.8	200			207	3243	192	3363	190	3473	184	3583	199.00	3693	198.00	3703
				0.58	4064	1.21	7865	2.41	15501	3.73	23234	6.63	44665	11.09	74336
7.8	224			228	3243	225	3363	212	3473	215	3583	216.00	3693	217.00	3703
				0.53	4091	0.98	7465	2.16	15502	3.21	23364	5.93	43362	10.13	74417
7.0	250					248	3363	235	3473			252.00	3693	244.00	3703
						0.84	7052	1.96	15593			5.10	43508	9.03	74590
6.3	280					272	3363								
						0.77	7090								
5.6	315					318	3363								
						0.66	7105								

MbN Series

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

Motor rpm 1450

MbN
SERIES **3000**

Exact Ratio, HP and Torque

Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37	
460	3.15											R.O.	R.O.		
408	3.55											R.O.	R.O.		
363	4			3.92	3242							R.O.	R.O.		
				12.69	2076										
322	4.5											R.O.	R.O.		
290	5			4.94	3242			4.8	3472	5.17	3582	R.O.	R.O.		
				11.44	2358			33.94	6798	55.21	11910				
259	5.6			5.91	3242	5.49	3362			5.91	3582	R.O.	R.O.		
				10.62	2619	21.78	4989			55.21	13615				
230	6.3			6.99	3242			6.22	3472	6.48	3582	6.31	3692	6.05	3702
				9.80	2858			29.01	7529	55.21	14928	94.63	24916	100.00	25245
204	7.1	7.28	3132	7.45	3242	7.09	3362			7.24	3582	7.15	3692	6.90	3702
		4.42	1343	9.55	2969	21	6213			55.21	16679	85.88	25622	100.00	28792
181	8			8.42	3242			7.53	3472	8.11	3582	7.62	3692	7.68	3702
				8.82	3099			25.91	8141	55.21	18683	83.36	26505	100.00	32046
161	9	9.19	3132	9.32	3242	8.76	3362	8.42	3472	9.12	3582	8.53	3692	8.62	3702
		4.10	1572	8.25	3208	17.19	6283	25.2	8854	54.14	20603	81.92	29158	100.00	35969
145	10	10.3	3132	10.60	3242	10.1	3362	9.46	3472	9.89	3582	9.63	3692	9.64	3702
		4.07	1749	7.51	3322	15.76	6642	22.72	8968	52.4	21624	78.65	31604	100.00	40225
129	11.2	10.9	3132	12.3	3242	11.1	3362	10.6	3472	11.2	3582	10.90	3692	11.00	3702
		4.04	1837	6.83	3505	14.37	6656	21.4	9465	48.9	22853	73.64	33493	100.00	45900
116	12.5	12.3	3132	13.1	3242	12.3	3362	12	3472	12.4	3582	12.10	3692	12.20	3702
		3.93	2017	6.70	3662	13.19	6770	19.71	9869	42.61	22047	69.38	35030	100.00	50907
104	14	13.9	3132	14.90	3242	14.1	3362	13.2	3472	14.4	3582	13.50	3692	13.80	3702
		3.50	2030	6.16	3830	12.2	7178	18.62	10256	38.03	22851	57.39	32329	100.00	57583
91	16	15.7	3132	16.50	3242	15.6	3362	15.4	3472	15.7	3582	15.10	3692	15.70	3702
		3.11	2037	5.68	3911	10.9	7095	17	10924	31.94	20924	53.29	33577	95.42	62511
81	18	17.8	3132	18.7	3242	17.9	3362	17.2	3472	17.6	3582	17.70	3692	17.80	3702
		2.76	2050	5.29	4128	9.79	7312	15.7	11268	31.02	22781	50.38	37209	88.74	65911
73	20	20.4	3132	20.9	3242	20.2	3362	19.4	3472	19.7	3582	20.00	3692	20.10	3702
		2.41	2051	4.64	4047	8.85	7460	14.61	11827	26.4	21701	45.79	38213	81.98	68757
65	22.4	23.0	3132	23.5	3242	21.9	3362	21.9	3472	22.3	3582	21.90	3692	22.60	3702
		2.15	2063	4.13	4050	7.78	7110	13.47	12309	21.78	20267	42.28	38636	74.72	70463
58	25	24.4	3132	27.5	3242	24.4	3362	25	3472	25.6	3582	25.50	3692	25.20	3702
		2.03	2067	3.52	4039	6.78	6903	12.37	12904	20.52	21920	39.75	42295	55.21	58054
52	28	29.0	3132	29.7	3242	27.4	3362	26.8	3472	27.8	3582	27.70	3692	28.40	3702
		1.72	2081	3.19	3953	6.17	7054	11.8	13196	18.04	20927	34.56	39946	54.52	64609
46	31.5	30.7	3132	33.3	3242	31	3362	31.2	3472	32.4	3582	31.10	3692	32.00	3703
		1.62	2075	3.1	4307	5.36	6933	10.69	13917	15.8	21361	32.21	41799	46.86	61267

These units are thermally limited:
 Frame 36 = 75 HP
 Frame 37 = 85 HP

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

MbN
SERIES 3000

Motor rpm 1450 (Continued)

Exact Ratio, HP and Torque															
Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37	
41	35.5	35.1	3132	35.2	3242	33.7	3362	33.9	3472	34.2	3583	34.50	3692	36.30	3703
		1.42	2080	2.49	3657	4.96	6975	10.1	14287	15.8	22078	28.81	41474	43.65	64739
36	40	39.1	3132	39.8	3243	38.1	3362	37.4	3472	39.2	3583	40.10	3693	38.70	3703
		1.28	2088	1.7	2764	4.56	7249	9.43	14716	14.11	22599	26.32	43122	42.08	66536
32	45	43.9	3132	44.9	3243	43.9	3362	41.6	3472	43	3583	46.00	3693	43.20	3703
		1.15	2107	1.58	2899	4.02	7364	8.73	15154	13	22839	24.30	45671	39.30	69366
29	50	50.8	3132	50.8	3243	49.1	3362	49.3	3472	47.9	3583	50.40	3693	48.80	3703
		1.00	2120	1.46	3030	3.43	7027	7.4	15223	11.6	22702	21.40	44067	36.26	72297
26	56	55.8	3132	57.8	3243	54.3	3362	53.2	3473	53.7	3583	56.20	3693	55.40	3703
		0.91	2119	1.35	3188	3.11	7047	6.76	14694	10.38	22774	18.77	43100	32.06	72568
23	63	63.9	3132	66	3243	61	3363	61.1	3473	60.4	3583	63.00	3693	61.20	3703
		0.79	2106	1.25	3371	2.69	6704	6.11	15253	9.26	22852	17.13	44093	29.10	72764
20	71	70.6	3132	74.5	3243	68.9	3363	67.5	3473	65.5	3583	70.80	3693	68.30	3703
		0.72	2121	1.15	3500	2.39	6728	5.54	15279	8.55	22881	15.57	45040	26.15	72973
18	80			79	3243	76.3	3363	77.5	3473	74.5	3583	76.90	3693	76.80	3703
				1.11	3583	2.16	6734	4.84	15326	7.54	22951	13.59	42699	23.32	73175
16	90			93.8	3243	87	3363	87.3	3473	82.4	3583	87.30	3693	89.90	3703
				0.97	3717	1.9	6754	4.31	15373	6.83	22994	12.01	42838	20.00	73462
15	100			99.3	3243	100	3363	94.8	3473	95.3	3583	96.60	3693	102.00	3703
				0.91	3692	1.75	7150	3.97	15377	5.92	23051	10.87	42902	17.67	73639
13	112			113	3243	107	3363	106	3473	104	3583	112.00	3693	111.00	3703
				0.8	3694	1.7	7432	3.57	15461	5.44	23116	9.88	45211	16.27	73788
12	125			127	3243	122	3363	119	3473	117	3583	122.00	3693	129.00	3703
				0.72	3736	1.56	7776	3.19	15510	4.85	23185	8.77	43715	14.04	74000
10	140			142	3243	135	3363	134	3473	130	3583	137.00	3693	141.00	3703
				0.65	3771	1.42	7832	2.82	15439	4.36	23158	7.99	44724	12.87	74143
9	160			164	3243	153	3363	146	3473	148	3583	153.00	3693	158.00	3703
				0.6	4020	1.28	8002	2.6	15510	3.85	23281	7.07	44196	11.51	74303
8.1	180			180	3243	171	3363	165	3473	169	3583	173.00	3693	175.00	3703
				0.54	3971	1.23	8594	2.3	15505	3.36	23201	6.39	45167	10.41	74432
7.3	200			207	3243	192	3363	190	3473	184	3583	199.00	3693	198.00	3703
				0.47	3975	1.09	8551	2	15526	3.1	23305	5.56	45206	9.22	74588
6.5	224			228	3243	225	3363	212	3473	215	3583	216.00	3693	217.00	3703
				0.4	3726	0.89	8182	1.8	15591	2.66	23366	4.93	43508	8.42	74653
5.8	250					248	3363	235	3473			252.00	3693	244.00	3703
						0.7	7093	1.62	15554			4.24	43656	7.50	74769
5.2	280					272	3363								
						0.64	7112								
4.6	315					318	3363								
						0.55	7146								

MbN Series

Exact ratio	Gear frame
Input H.P.	Output torque

Exact Ratio, HP and Torque

Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37	
368	3.15											R.O.	R.O.		
327	3.55											R.O.	R.O.		
290	4			3.92 10.86	3242 2220							R.O.	R.O.		
258	4.5											R.O.	R.O.		
232	5			4.94 9.79	3242 2523			4.8 29.05	3472 7273	5.17 44.17	3582 11911	R.O.	R.O.		
207	5.6			5.91 9.09	3242 2802	5.49 17.42	3362 4988			5.91 44.17	3582 13616	R.O.	R.O.		
184	6.3			6.99 8.39	3242 3059			6.22 24.82	3472 8052	6.48 44.17	3582 14929	6.31 77.24	3692 25421	6.05 80.00	3702 25245
163	7.1	7.28 3.80	3132 1443	7.45 8.18	3242 3179	7.09 17	3362 6287			7.24 44.17	3582 16680	7.15 73.44	3692 27388	6.90 80.00	3702 28792
145	8			8.42 7.55	3242 3316			7.53 22.12	3472 8688	8.11 44.17	3582 18684	7.62 72.25	3692 28716	7.68 80.00	3702 32046
129	9	9.19 3.61	3132 1730	9.32 7.06	3242 3432	8.76 13.91	3362 6356	8.42 20.78	3472 9126	9.12 41.87	3582 19917	8.53 71.68	3692 31891	8.62 80.00	3702 35969
116	10	10.3 3.45	3132 1853	10.60 6.43	3242 3555	10.1 12.74	3362 6711	9.46 19.45	3472 9597	9.89 41.87	3582 21599	9.63 67.32	3692 33814	9.64 80.00	3702 40225
104	11.2	10.9 3.34	3132 1899	12.3 5.84	3242 3747	11.1 11.61	3362 6722	10.6 19.2	3472 10615	11.2 39.5	3582 23075	10.90 63.02	3692 35829	11.00 80.00	3702 45900
93	12.5	12.3 3.18	3132 2040	13.1 5.57	3242 3806	12.3 10.55	3362 6768	12 16.9	3472 10578	12.4 34.5	3582 22313	12.10 59.38	3692 37476	12.20 80.00	3702 50907
83	14	13.9 2.82	3132 2045	14.90 5.20	3242 4041	14.1 9.79	3362 7200	13.2 15.94	3472 10975	14.4 30.42	3582 22848	13.50 47.21	3692 33243	13.80 80.00	3702 57583
73	16	15.7 2.51	3132 2055	16.50 4.81	3242 4140	15.6 8.71	3362 7087	15.4 14.5	3472 11647	15.7 25.92	3582 21226	15.10 44.11	3692 34741	15.70 80.00	3702 65511
64	18	17.8 2.22	3132 2061	18.7 4.48	3242 4370	17.9 7.91	3362 7385	17.2 13.44	3472 12057	17.6 24.81	3582 22775	17.70 40.96	3692 37815	17.80 75.16	3702 69780
58	20	20.4 1.95	3132 2075	20.9 3.72	3242 4055	20.2 7.1	3362 7481	19.4 12.5	3472 12648	19.7 21.4	3582 21989	20.00 37.20	3692 38806	20.10 67.29	3702 70546
52	22.4	23.0 1.73	3132 2075	23.5 3.3	3242 4045	21.9 6.3	3362 7196	21.9 11.53	3472 13170	22.3 17.42	3582 20262	21.90 34.34	3692 39226	22.60 60.32	3702 71104
46	25	24.4 1.64	3132 2087	27.5 2.82	3242 4045	24.4 5.45	3362 6936	25 10.59	3472 13809	25.6 16.61	3582 22179	25.50 33.98	3692 45195	25.20 44.17	3702 58057
41	28	29.0 1.38	3132 2087	29.7 2.55	3242 3950	27.4 4.96	3362 7089	26.8 10.1	3472 14118	27.8 14.6	3582 21170	27.70 28.83	3692 41653	28.40 44.17	3702 65429
37	31.5	30.7 1.31	3132 2098	33.3 2.4	3242 4169	31 4.32	3362 6985	31.2 9.15	3472 14890	32.4 13.7	3582 23152	31.10 26.45	3692 42905	32.00 40.10	3703 65536

These units are thermally limited:
Frame 36 = 75 HP

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

MbN
SERIES 3000

Motor rpm 1160 (Continued)

Exact Ratio, HP and Torque															
Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37	
33	35.5	35.1	3132	35.2	3242	33.7	3362	33.9	3472	34.2	3583	34.50	3692	36.30	3703
		1.15	2105	1.99	3654	4.02	7066	8.5	15030	12.91	22549	23.14	41640	37.36	69262
29	40	39.1	3132	39.8	3243	38.1	3362	37.4	3472	39.2	3583	40.10	3693	38.70	3703
		1.03	2101	1.48	3008	3.62	7194	7.75	15118	11.4	22823	21.23	43479	36.02	71193
26	45	43.9	3132	44.9	3243	43.9	3362	41.6	3472	43	3583	46.00	3693	43.20	3703
		0.92	2107	1.38	3165	3.22	7373	7.03	15254	10.5	23059	19.59	46023	32.66	72058
23	50	50.8	3132	50.8	3243	49.1	3362	49.3	3472	47.9	3583	50.40	3693	48.80	3703
		0.80	2120	1.28	3321	2.76	7068	5.95	15300	9.33	22824	17.27	44453	29.19	72751
21	56	55.8	3132	57.8	3243	54.3	3362	53.2	3473	53.7	3583	56.20	3693	55.40	3703
		0.75	2183	1.18	3483	2.5	7081	5.59	15188	8.35	22900	15.16	43513	25.80	72998
18	63	63.9	3132	66	3243	61	3363	61.1	3473	60.4	3583	63.00	3693	61.20	3703
		0.64	2133	1.08	3640	2.01	6262	4.91	15322	7.44	22951	13.80	44402	23.41	73170
16	71	70.6	3132	74.5	3243	68.9	3363	67.5	3473	65.5	3583	70.80	3693	68.30	3703
		0.58	2136	0.97	3691	1.92	6756	4.45	15341	6.87	22982	12.53	45307	21.04	73392
15	80			79	3243	76.3	3363	77.5	3473	74.5	3583	76.90	3693	76.80	3703
				0.91	3672	1.74	6780	3.89	15397	6.06	23057	10.93	42927	18.76	73583
13	90			93.8	3243	87	3363	87.3	3473	82.4	3583	87.30	3693	89.90	3703
				0.78	3737	1.61	7154	3.46	15427	5.49	23104	9.65	43025	16.08	73829
12	100			99.3	3243	100	3363	94.8	3473	95.3	3583	96.60	3693	102.00	3703
				0.74	3753	1.47	7508	3.19	15445	4.76	23168	8.74	43119	14.20	73973
10	112			113	3243	107	3363	106	3473	104	3583	112.00	3693	111.00	3703
				0.66	3809	1.34	7323	2.87	15537	4.37	23211	7.97	45589	13.08	74150
9	125			127	3243	122	3363	119	3473	117	3583	122.00	3693	129.00	3703
				0.6	3892	1.21	7539	2.56	15559	3.9	23304	7.06	43989	11.28	74316
8	140			142	3243	135	3363	134	3473	130	3583	137.00	3693	141.00	3703
				0.52	3771	1.07	7377	2.27	15535	3.5	23238	6.42	44920	10.34	74460
7	160			164	3243	153	3363	146	3473	148	3583	153.00	3693	158.00	3703
				0.48	4020	0.94	7345	2.09	15584	3.09	23356	5.64	44071	9.24	74561
6.4	180			180	3243	171	3363	165	3473	169	3583	173.00	3693	175.00	3703
				0.43	3953	0.81	7074	1.85	15590	2.7	23304	5.13	45326	8.36	74718
5.8	200			207	3243	192	3363	190	3473	184	3583	199.00	3693	198.00	3703
				0.38	4017	0.72	7060	1.61	15623	2.48	23305	4.44	45125	7.40	74831
5.2	224			228	3243	225	3363	212	3473	215	3583	216.00	3693	217.00	3703
				0.33	3843	0.66	7584	1.44	15591	2.14	23498	3.96	43685	6.76	74919
4.6	250					248	3363	235	3473			252.00	3693	244.00	3703
						0.56	7093	1.3	15602			3.40	43758	6.02	75019
4.1	280					272	3363								
						0.51	7085								
3.7	315					318	3363								
						0.44	7146								

MbN Series

Exact ratio	Gear frame
Input H.P.	Output torque

Exact Ratio, HP and Torque

Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37	
276	3.15											R.O.	R.O.		
245	3.55											R.O.	R.O.		
218	4			3.92	3242							R.O.	R.O.		
				8.89	2424										
193	4.5											R.O.	R.O.		
174	5			4.94	3242			4.8	3472	5.17	3582	R.O.	R.O.		
				8.02	2755			23.78	7938	33.12	11908				
155	5.6			5.91	3242	5.49	3362			5.91	3582	R.O.	R.O.		
				7.44	3058	13.07	4990			33.12	13613				
138	6.3			6.99	3242			6.22	3472	6.48	3582	6.31	3692	6.05	3702
				6.86	3335			20.32	8790	33.12	14926	59.33	26036	60.00	25245
123	7.1	7.28	3132	7.45	3242	7.09	3362			7.24	3582	7.15	3692	6.90	3702
		3.11	1575	6.69	3466	12.93	6375			33.12	16676	59.17	29422	60.00	28792
109	8			8.42	3242			7.53	3472	8.11	3582	7.62	3692	7.68	3702
				6.18	3619			18.11	9484	33.12	18680	58.85	31186	60.00	32046
97	9	9.19	3132	9.32	3242	8.76	3362	8.42	3472	9.12	3582	8.53	3692	8.62	3702
		2.71	1732	5.78	3746	10.56	6433	17.01	9961	31.97	20277	58.67	34804	60.00	35969
87	10	10.3	3132	10.60	3242	10.1	3362	9.46	3472	9.89	3582	9.63	3692	9.64	3702
		2.53	1812	5.26	3878	9.67	6792	15.91	10467	31.4	21597	55.10	36901	60.00	40225
78	11.2	10.9	3132	12.3	3242	11.1	3362	10.6	3472	11.2	3582	10.90	3692	11.00	3702
		2.46	1865	4.67	3995	8.81	6801	14.91	10991	29.6	23056	51.59	39107	60.00	45900
70	12.5	12.3	3132	13.1	3242	12.3	3362	12	3472	12.4	3582	12.10	3692	12.20	3702
		2.41	2062	4.39	3999	8	6843	13.81	11525	25.9	22335	47.05	39592	60.00	50907
62	14	13.9	3132	14.90	3242	14.1	3362	13.2	3472	14.4	3582	13.50	3692	13.80	3702
		2.14	2069	3.93	4072	7.37	7227	13.04	11971	22.82	22853	35.76	33573	60.00	57583
54	16	15.7	3132	16.50	3242	15.6	3362	15.4	3472	15.7	3582	15.10	3692	15.70	3702
		1.90	2075	3.7	4246	6.7	7269	11.8	12638	19.76	21575	33.23	34896	60.00	65511
48	18	17.8	3132	18.7	3242	17.9	3362	17.2	3472	17.6	3582	17.70	3692	17.80	3702
		1.68	2080	3.32	4318	6.03	7506	11	13158	18.61	22778	31.31	38541	57.56	71253
44	20	20.4	3132	20.9	3242	20.2	3362	19.4	3472	19.7	3582	20.00	3692	20.10	3702
		1.47	2086	2.79	4055	5.13	7207	10.23	13802	16.3	22332	28.42	39529	51.19	71556
39	22.4	23.0	3132	23.5	3242	21.9	3362	21.9	3472	22.3	3582	21.90	3692	22.60	3702
		1.31	2095	2.48	4053	4.83	7356	9.44	14377	13.07	20270	26.22	39934	45.71	71843
35	25	24.4	3132	27.5	3242	24.4	3362	25	3472	25.6	3582	25.50	3692	25.20	3702
		1.24	2104	2.11	4035	4.12	6991	8.57	14900	12.63	22486	24.96	44264	33.12	58044
31	28	29.0	3132	29.7	3242	27.4	3362	26.8	3472	27.8	3582	27.70	3692	28.40	3702
		1.04	2097	1.91	3945	3.75	7146	8.04	14985	11.8	22813	21.65	41706	33.12	65414
28	31.5	30.7	3132	33.3	3242	31	3362	31.2	3472	32.4	3582	31.10	3692	32.00	3703
		1.00	2135	1.8	4169	3.26	7028	7.01	15210	10.56	23794	19.59	42370	32.67	71190

MbN Series

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

MbN SERIES 3000

Motor rpm 870 (Continued)

Exact Ratio, HP and Torque															
Nom. RPM	Nom. Ratio	31		32		33		34		35		36		37	
25	35.5	35.1	3132	35.2	3242	33.7	3362	33.9	3472	34.2	3583	34.50	3692	36.30	3703
		0.87	2124	1.49	3647	3.08	7218	6.48	15277	9.79	22800	17.73	42540	29.24	72278
22	40	39.1	3132	39.8	3243	38.1	3362	37.4	3472	39.2	3583	40.10	3693	38.70	3703
		0.78	2121	1.25	3388	2.68	7101	5.88	15294	8.58	22903	15.91	43445	27.63	72814
19	45	43.9	3132	44.9	3243	43.9	3362	41.6	3472	43	3583	46.00	3693	43.20	3703
		0.69	2107	1.16	3547	2.41	7358	5.3	15333	7.84	22957	14.70	46046	24.84	73073
17	50	50.8	3132	50.8	3243	49.1	3362	49.3	3472	47.9	3583	50.40	3693	48.80	3703
		0.60	2120	1.05	3632	2.08	7102	4.49	15394	7.04	22963	12.98	44548	22.06	73307
16	56	55.8	3132	57.8	3243	54.3	3362	53.2	3473	53.7	3583	56.20	3693	55.40	3703
		0.55	2134	0.93	3660	1.89	7137	4.24	15360	6.3	23038	11.39	43589	19.49	73526
14	63	63.9	3132	66	3243	61	3363	61.1	3473	60.4	3583	63.00	3693	61.20	3703
		0.48	2133	0.83	3730	1.74	7228	3.71	15436	5.62	23115	10.33	44316	17.68	73681
12	71	70.6	3132	74.5	3243	68.9	3363	67.5	3473	65.5	3583	70.80	3693	68.30	3703
		0.44	2160	0.74	3754	1.47	6897	3.36	15444	5.18	23104	9.43	45464	15.88	73857
11	80			79	3243	76.3	3363	77.5	3473	74.5	3583	76.90	3693	76.80	3703
				0.71	3820	1.34	6962	2.93	15463	4.57	23184	8.24	43149	14.15	74001
10	90			93.8	3243	87	3363	87.3	3473	82.4	3583	87.30	3693	89.90	3703
				0.64	4088	1.21	7168	2.61	15516	4.14	23230	7.28	43278	12.13	74258
9	100			99.3	3243	100	3363	94.8	3473	95.3	3583	96.60	3693	102.00	3703
				0.56	3787	1.07	7286	2.4	15493	3.59	23297	6.59	43349	10.71	74389
8	112			113	3243	107	3363	106	3473	104	3583	112.00	3693	111.00	3703
				0.49	3770	0.97	7068	2.16	15591	3.29	23300	5.97	45532	9.86	74528
7	125			127	3243	122	3363	119	3473	117	3583	122.00	3693	129.00	3703
				0.46	3978	0.85	7062	1.93	15640	2.93	23344	5.31	44114	8.50	74667
6	140			142	3243	135	3363	134	3473	130	3583	137.00	3693	141.00	3703
				0.39	3771	0.8	7354	1.71	15604	2.64	23371	4.82	44966	7.79	74796
5	160			164	3243	153	3363	146	3473	148	3583	153.00	3693	158.00	3703
				0.35	3909	0.68	7085	1.57	15609	2.33	23482	4.22	43967	6.96	74884
4.8	180			180	3243	171	3363	165	3473	169	3583	173.00	3693	175.00	3703
				0.32	3922	0.62	7220	1.39	15618	2.03	23362	3.86	45473	6.29	74957
4.4	200			207	3243	192	3363	190	3473	184	3583	199.00	3693	198.00	3703
				0.29	4088	0.54	7060	1.21	15655	1.87	23430	3.36	45532	5.57	75100
3.9	224			228	3243	225	3363	212	3473	215	3583	216.00	3693	217.00	3703
				0.24	3726	0.47	7201	1.08	15591	1.61	23571	2.98	43832	5.09	75214
3.5	250					248	3363	235	3473			252.00	3693	244.00	3703
						0.42	7093	0.98	15683			2.56	43930	4.53	75268
3.1	280					272	3363								
						0.38	7038								
2.8	315					318	3363								
						0.33	7146								

MbN Series

Exact ratio	Gear frame
Input H.P.	Output torque

Combined Motor rpm 1750

Exact Ratio, HP and Torque

Nom. RPM	Nom. Ratio	32		33		34		35		36		37	
7.8	224												
7.0	250	246 0.53	3244 4300					248 3.16	3584 26000				
6.3	280	272 0.48	3244 4300			292 1.60	3474 15500	279 2.81	3584 26000	280 4.47	3694 41500	272 8.08	3704 72800
5.6	315	286 0.45	3244 4300			332 1.41	3474 15500	317 2.48	3584 26000	300 4.18	3694 41500	310 7.09	3704 72800
4.9	355	339 0.38	3244 4300	358 0.66	3364 7800	371 1.26	3474 15500	345 2.27	3584 26000	340 3.68	3694 41500	357 6.15	3704 72800
4.4	400	364 0.36	3244 4300	377 0.62	3364 7800	421 1.11	3474 15500	395 1.99	3584 26000	378 3.31	3694 41500	381 5.77	3704 72800
3.9	450	407 0.32	3244 4300	448 0.53	3364 7800	481 0.97	3474 15500	445 1.76	3584 26000	429 2.92	3694 41500	433 5.07	3704 72800
3.5	500	474 0.27	3244 4300	480 0.49	3364 7800	543 0.86	3474 15500	473 1.66	3584 26000	477 2.63	3694 41500	481 4.57	3704 72800
3.1	560	511 0.25	3244 4300	537 0.44	3364 7800	576 0.81	3474 15500	587 1.41	3585 26779	537 2.33	3694 41500	546 4.02	3704 72800
2.8	630	601 0.22	3244 4300	625 0.38	3364 7800	685 0.68	3474 15500	667 1.24	3585 26779	630 2.00	3694 41500	608 3.61	3704 72800
2.5	710	674 0.19	3244 4300	674 0.35	3364 7800	724 0.65	3474 15500	763 1.08	3585 26779	695 1.80	3694 41500	684 3.21	3704 72800
2.2	800	758 0.17	3244 4300	793 0.30	3364 7800	827 0.57	3474 15500	861 0.96	3585 26779	762 1.64	3694 41500	801 2.74	3704 72800
1.9	900	852 0.15	3244 4300	889 0.26	3364 7800	923 0.51	3474 15500	913 0.90	3585 26779	890 1.41	3694 41500	885 2.48	3704 72800
1.8	1000	960 0.14	3244 4300	1000 0.24	3364 7800	1040 0.45	3474 15500	1080 0.76	3585 26779	988 1.30	3695 41500	970 2.27	3704 72800
1.6	1120	1080 0.12	3244 4300	1120 0.21	3364 7800	1200 0.39	3474 15500	1150 0.72	3585 26779	1138 1.13	3695 41500	1133 1.94	3704 72800
1.4	1250	1190 0.11	3244 4300	1270 0.19	3364 7800	1320 0.35	3474 15500	1310 0.63	3585 26779	1216 1.05	3695 41500	1257 1.79	3705 72800
1.3	1400	1340 0.097	3244 4300	1430 0.16	3364 7800	1510 0.31	3474 15500	1460 0.57	3585 26779	1380 0.93	3695 41500	1449 1.55	3705 72800
1.1	1600	1551 0.086	3245 4300	1570 0.15	3364 7800	1670 0.28	3474 15500	1640 0.50	3585 26779	1533 0.84	3695 41500	1548 1.45	3705 72800
0.97	1800	1737 0.076	3245 4300	1770 0.13	3364 7800	1820 0.27	3475 15730	1900 0.43	3585 26779	1742 0.73	3695 41500	1757 1.28	3705 72800
0.88	2000	2022 0.066	3245 4300	1990 0.12	3364 7800	2070 0.23	3475 15730	2090 0.40	3585 26779	1938 0.66	3695 41500	1952 1.15	3705 72800

MbN Series

Exact ratio	Gear frame
Input H.P.	Output torque



Speed Reducers

MbN
SERIES 3000

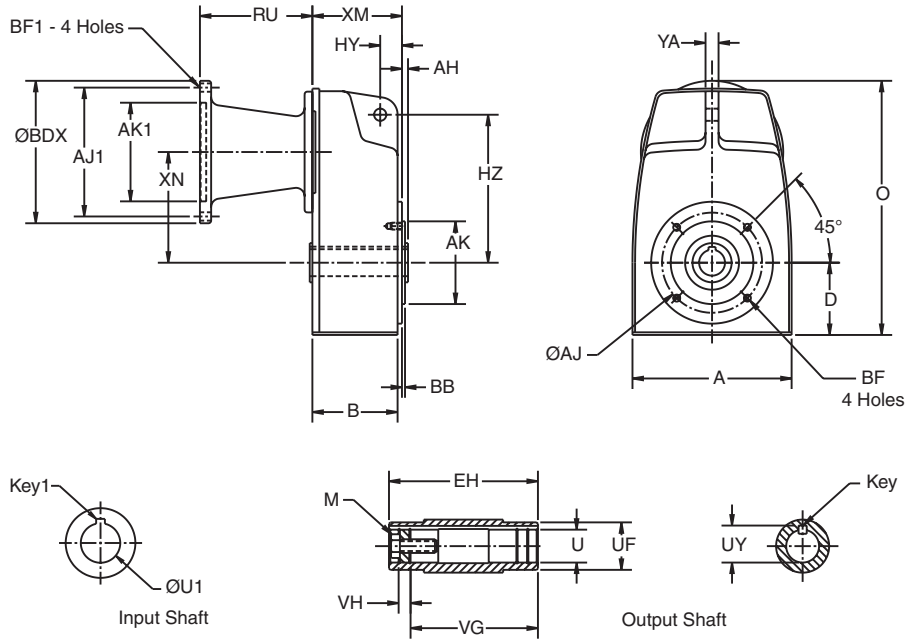
Combined Motor rpm 1750 (Continued)

Exact Ratio, HP and Torque													
Nom. RPM	Nom. Ratio	32		33		34		35		36		37	
0.78	2240	2180	3245	2204	3365	2340	3475	2390	3585	2180	3695	2217	3705
		0.061	4300	0.11	7800	0.21	15730	0.35	26779	0.59	41500	1.01	72800
0.70	2500	2565	3245	2469	3365	2480	3475	2640	3585	2555	3695	2467	3705
		0.052	4300	0.097	7800	0.20	15730	0.31	26779	0.50	41500	0.91	72800
0.63	2800	2874	3245	2777	3365	2950	3475	2920	3585	2821	3695	2775	3705
		0.046	4300	0.087	7800	0.16	15730	0.28	26779	0.45	41500	0.81	72800
0.56	3150	3232	3245	3122	3365	3120	3475	3060	3586	3093	3695	3253	3705
		0.041	4300	0.077	7800	0.16	15730	0.28	26823	0.41	41500	0.69	72800
0.49	3550	3634	3245	3519	3365	3570	3475	3490	3586	3612	3695	3590	3705
		0.037	4300	0.068	7800	0.14	15730	0.24	26823	0.35	41500	0.63	72800
0.44	4000	4096	3245	3963	3365	3980	3475	3940	3586	3944	3696	3937	3705
		0.032	4300	0.061	7800	0.12	15730	0.21	26823	0.35	44000	0.57	72800
0.39	4500	4613	3245	4359	3365	4460	3475	4180	3586	4388	3696	4598	3705
		0.029	4300	0.055	7800	0.11	15730	0.20	26823	0.32	44000	0.49	72800
0.35	5000	5074	3245	4920	3365	5170	3475	4970	3586	4936	3696	5008	3706
		0.026	4300	0.049	7800	0.094	15730	0.17	26823	0.28	44000	0.47	75000
0.31	5600	5726	3245	5534	3365	5670	3475	5250	3586	5786	3696	5773	3706
		0.023	4300	0.043	7800	0.086	15730	0.16	26823	0.24	44000	0.41	75000
0.28	6300	6447	3245	6491	3365	6500	3475	6010	3586	6226	3696	6168	3706
		0.021	4300	0.037	7800	0.075	15730	0.14	26823	0.22	44000	0.38	75000
0.25	7100	7195	3246	7309	3365	7180	3475	6700	3586	7176	3696	7001	3706
		0.019	4300	0.033	7800	0.068	15730	0.13	26823	0.19	44000	0.34	75000
0.22	8000	8092	3246	8040	3365	8690	3476	7520	3586	7668	3696	7826	3706
		0.017	4300	0.030	7800	0.057	15730	0.11	26823	0.18	44000	0.30	75400
0.19	9000	9097	3246	9073	3365	9190	3476	8700	3586	8703	3696	9021	3706
		0.015	4300	0.027	7800	0.054	15730	0.097	26823	0.16	44000	0.26	75400
0.18	10000	10255	3246	10215	3365	10500	3476	9550	3586	9666	3696	9639	3706
		0.013	4300	0.024	7800	0.047	15730	0.089	26823	0.14	44000	0.25	75400

MbN Series

Exact ratio	Gear frame
Input H.P.	Output torque

MbN31 Double Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	O	HY	HZ	XN	YA	XM
31	7.52	4.39	3.74	12.22	0.98	6.69	5.14	0.59	5.57

Output Shaft

Gear Frame	EH	U ^{2,5}	UF	UY	VG	VH	Key ³	M
31	5.71	1.250	1.77	1.367	3.62	0.38	1/4 Sq.	7/16-14

Face Mount

Gear Frame	AH	AJ	AK	BB	BF
31	0.24	4.53	3.74	0.14	M8X12

C-Face Input

Motor Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	5.88	4.50	0.44	.625	3.54	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	0.44	.875	3.54	6.50	3/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

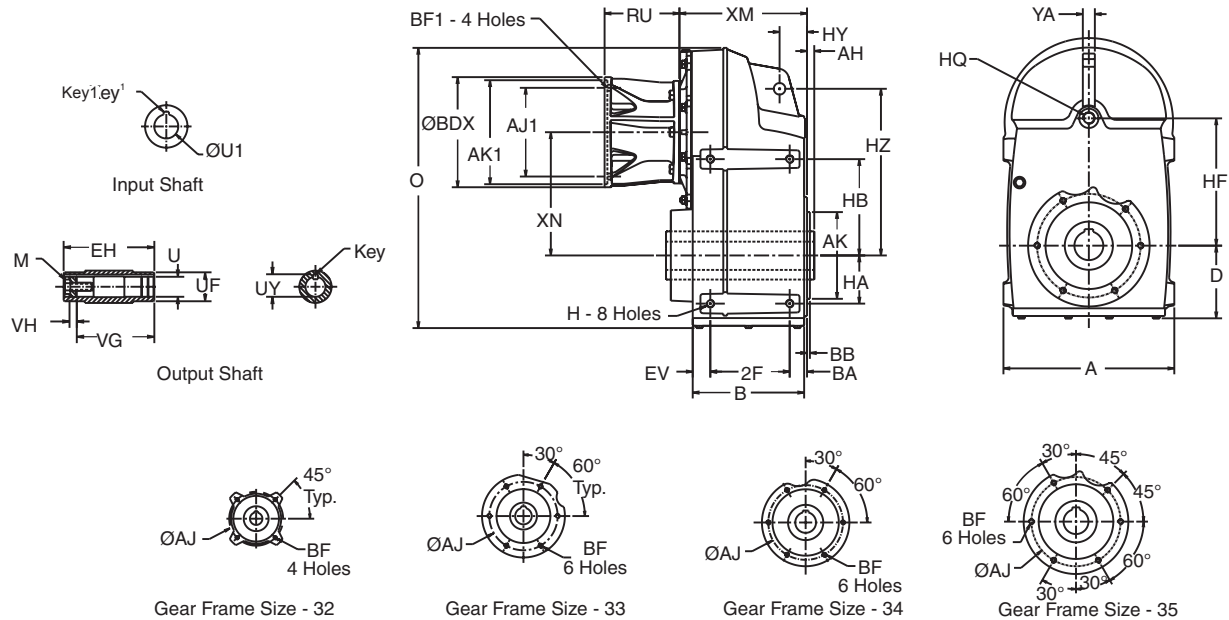
² Output bore tolerance (diameter "U"): +0.0010", -0.0000" for all diameters.

³ Key to be supplied by others.

⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

MbN32-35 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM			XN	YA
														56C - 180TC	210TC	254TC - 286TC		
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	6.85	-	-	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	7.08	7.08	-	7.01	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	9.28	9.28	9.63	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	10.07	10.07	10.42	10.03	.98

Output Shaft

Gear Frame	EH	U ^{2,5,6}	UF	UY	VG	VH	Key ³	M
32 ⁷	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Face Mount

Gear Frame	AH	AJ	AK	BA	BB	BF
32	.31	5.12	4.331	.79	.23	M8X12
33	.32	6.50	5.118	.95	.24	M10X18
34	.30	7.09	6.289	1.42	.22	M12X22
35	.34	8.47	7.087	1.24	.26	M12X20

C-Face Input

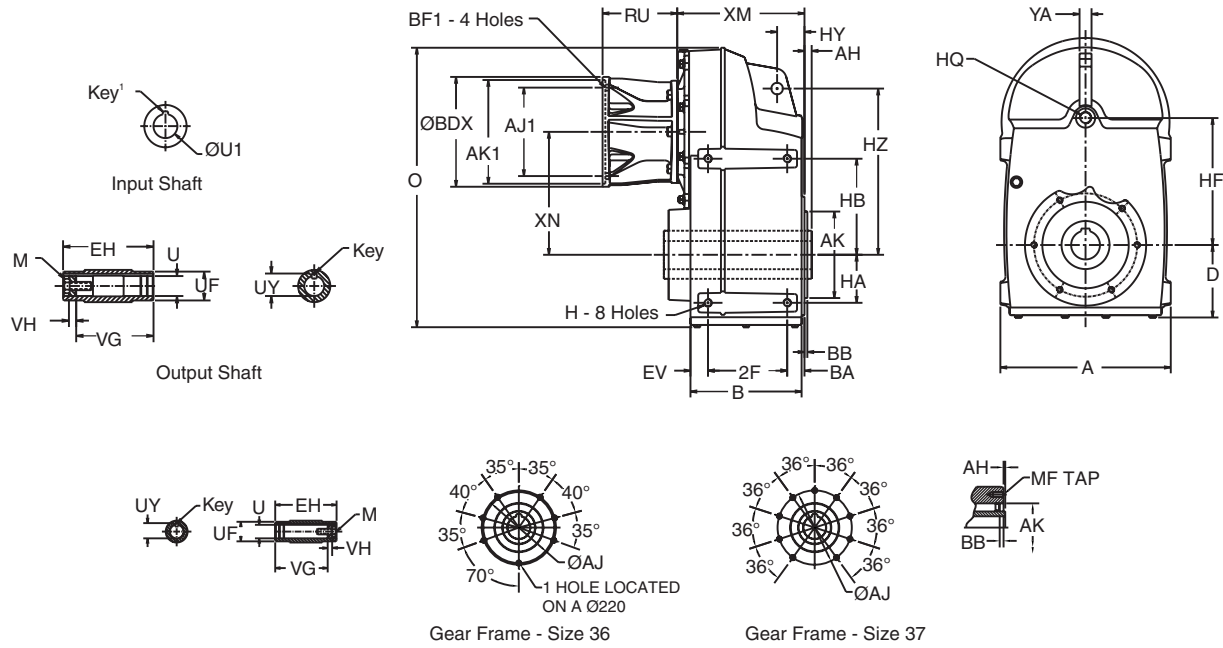
Motor Frame	AJ1	AK1	BF1	U1	RU	BDX	Key 1
56C	5.88	4.50	.50	.625	3.54	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	.50	.875	3.54	6.50	3/16 Sq.
182TC/184TC	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.
³ Key to be supplied by others.
⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.
⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.
⁷ Use 3242/3243 for "U" = 1.375".
 Use 3202/3203 for "U" = 1.25".

MbN Series

MbN36-37 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
														143T-215TC	254T-326TC		
36	15.75	10.98	7.01	6.50	M16X25	25.56	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.49	11.84	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	13.03	13.38	12.28	1.55

Output Shaft

Gear Frame	EH	U ^{2, 5, 6}	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

40C Face

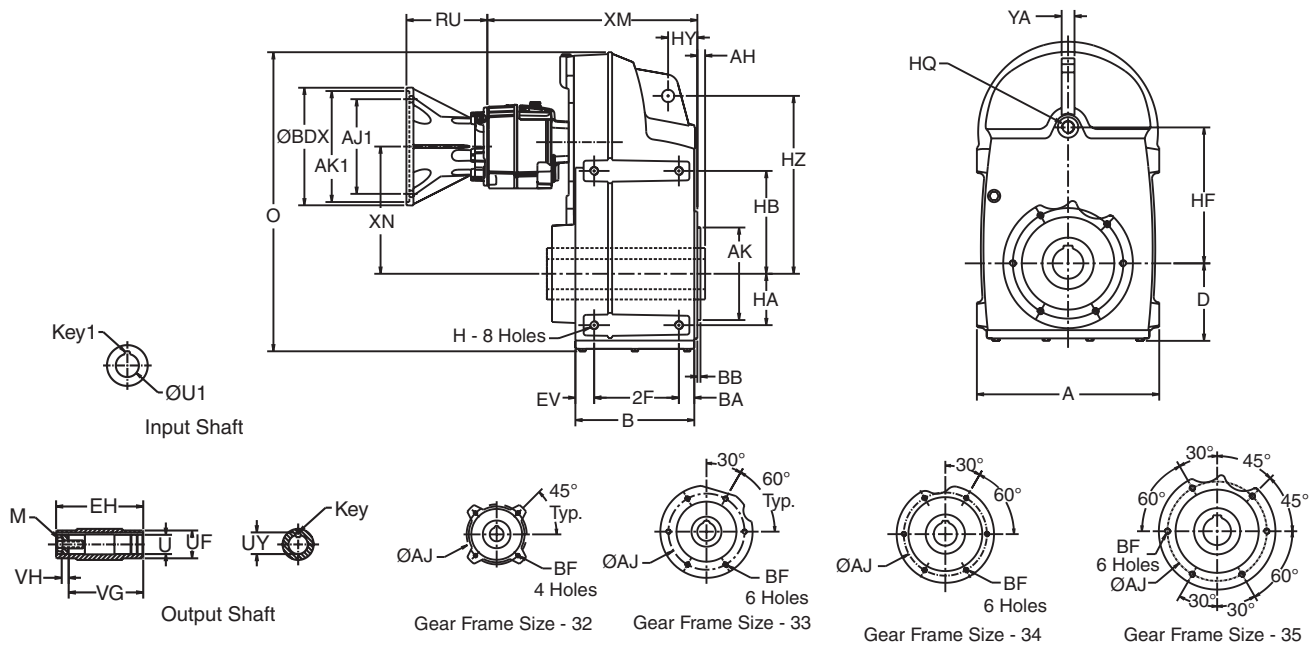
Gear Frame	AH	AJ	AK	BA	BB	BF
36	.23	9.06	5.91	1.77	.26	M16X27
37	.13	9.06	7.09	2.64	.26	M20X35

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
143TC/145TC	36	5.88	4.50	.50	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁷	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375 ⁷	8.45	13.38	5/8 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.
³ Key to be supplied by others.
⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.
⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.
⁷ Design will use coupling to motor with this bore.

MbN32-35 Combined (4 - 6 Reduction Stages) 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
														4 Red.	5-6 Red.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.15	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.35	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	15.24	15.24	7.86	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	15.74	15.74	9.70	.98

Output Shaft

Gear Frame	EH	U ^{2,5,6}	UF	UY	VG	VH	Key ³	M
32 ⁷	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Face Mount

Gear Frame	AH	AJ	AK	BA	BB	BF
32	.31	5.12	4.331	.79	.23	M8X12
33	.32	6.50	5.118	.95	.24	M10X18
34	.30	7.09	6.289	1.42	.22	M12X22
35	.34	8.47	7.087	1.24	.26	M12X20

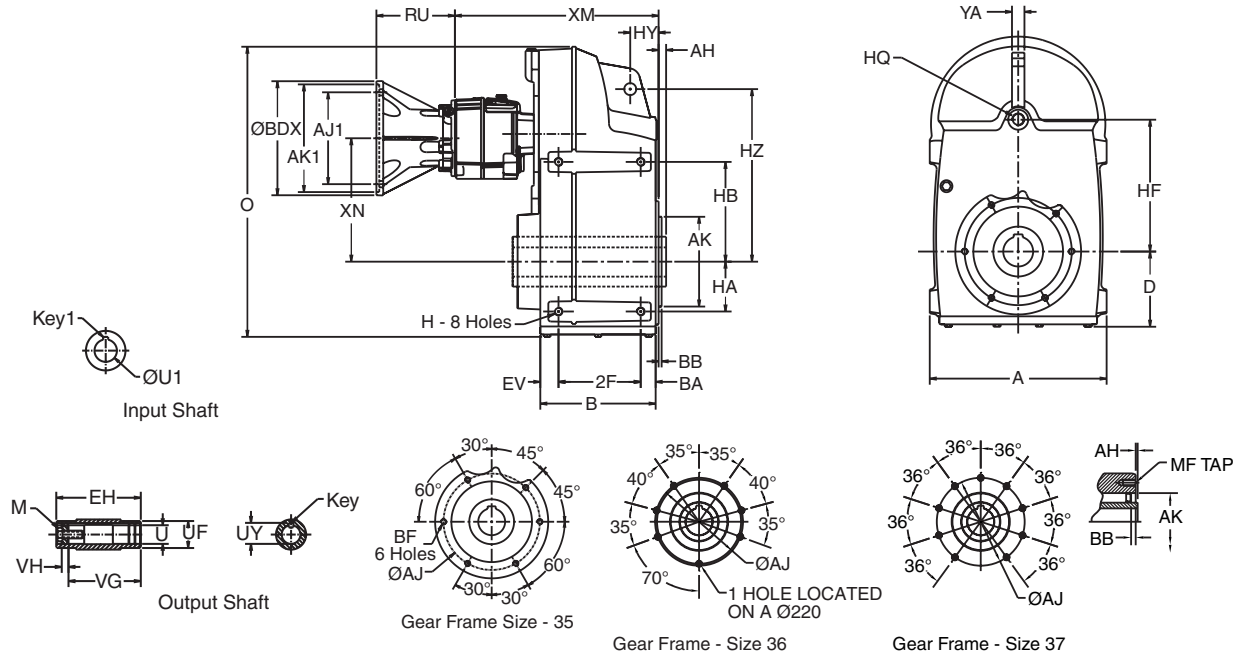
C-Face Input

Motor Frame	AJ1	AK1	BF1	U1	RU				BDX	Key 1
					Frame 32	Frame 33	Frame 34	Frame 35		
56C	5.88	4.50	.50	.625	3.33	3.33	4.48	4.48	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	.50	.875	3.33	3.33	4.48	4.48	6.50	3/16 Sq.
182TC/184TC	7.25	8.50	.50	1.125	-	-	-	6.20	9.00	1/4 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.
³ Key to be supplied by others.
⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.
⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.
⁷ Use 3242/3243 for "U" = 1.375".
 Use 3202/3203 for "U" = 1.25".

MbN35-37 Combined (4 - 6 Reduction Stages) 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	20.68	6.99	1.55

Output Shaft

Gear Frame	EH	U ^{2, 5, 6}	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

40C Face

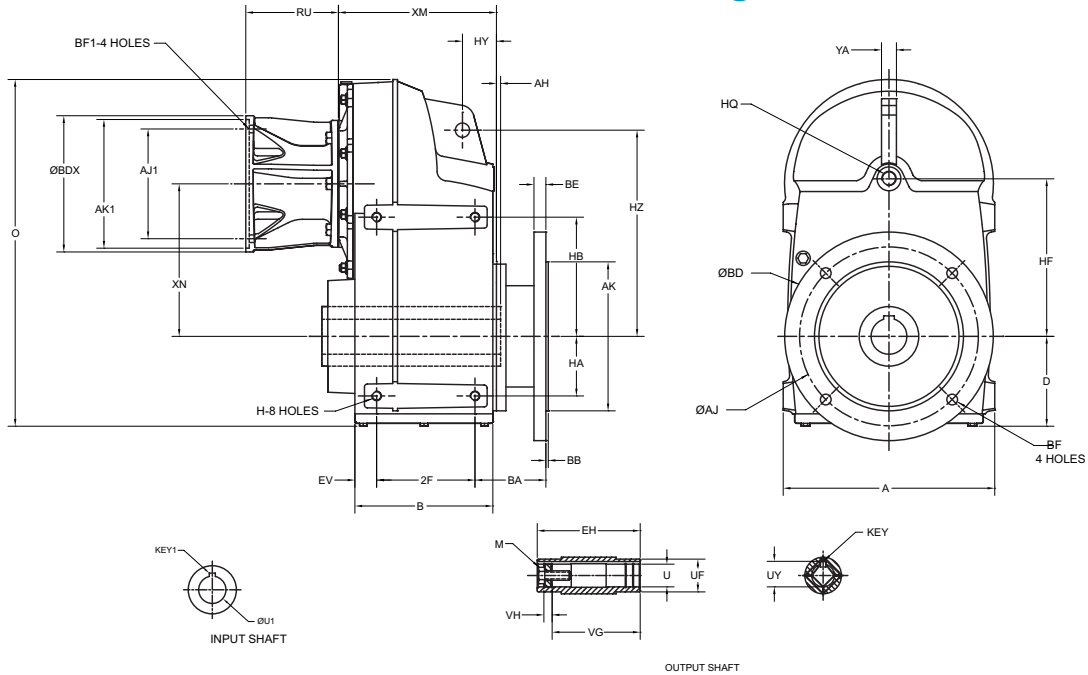
Gear Frame	AH	AJ	AK	BA	BB	BF
36	.23	9.06	5.91	1.77	.26	M16X27
37	.13	9.06	7.09	2.64	.26	M20X35

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.
³ Key to be supplied by others.

⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.
⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.
⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.

MbN32-35 Double/Triple Reduction 50C/60C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM			XN	YA
														56C-180TC	210TC	254TC-286TC		
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	6.85	-	-	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	7.08	7.08	-	7.01	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	9.28	9.28	9.63	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	10.07	10.07	10.42	10.03	.98

Output Shaft

Gear Frame	EH	U ^{2,4}	UF	UY	VG	VH	Key ³	M
32 ⁷	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Flange Mount

Gear Frame	Flange Code	AK	AJ	BA	BB	BD	BE	BF
32	60C	5.118	6.50	3.07	.16	7.87	.39	.47
	50C	7.087	8.47	2.16	.16	9.84	.47	.55
33	60C	7.087	8.47	3.54	.16	9.84	.55	.55
	50C	9.055	10.43	2.72	.16	11.81	.59	.55
34	60C	7.087	8.47	4.98	.16	9.84	.55	.55
	50C	9.055	10.43	3.33	.16	11.81	.59	.55
35	50C	9.843	11.81	6.61	.16	13.78	0.79	.71

C-Face Input

Motor Frame	AJ1	AK1	BF1	U1	RU	BDX	Key 1
56C	5.88	4.50	.50	.625	3.54	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	.50	.875	3.54	6.50	3/16 Sq.
182TC/184TC	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

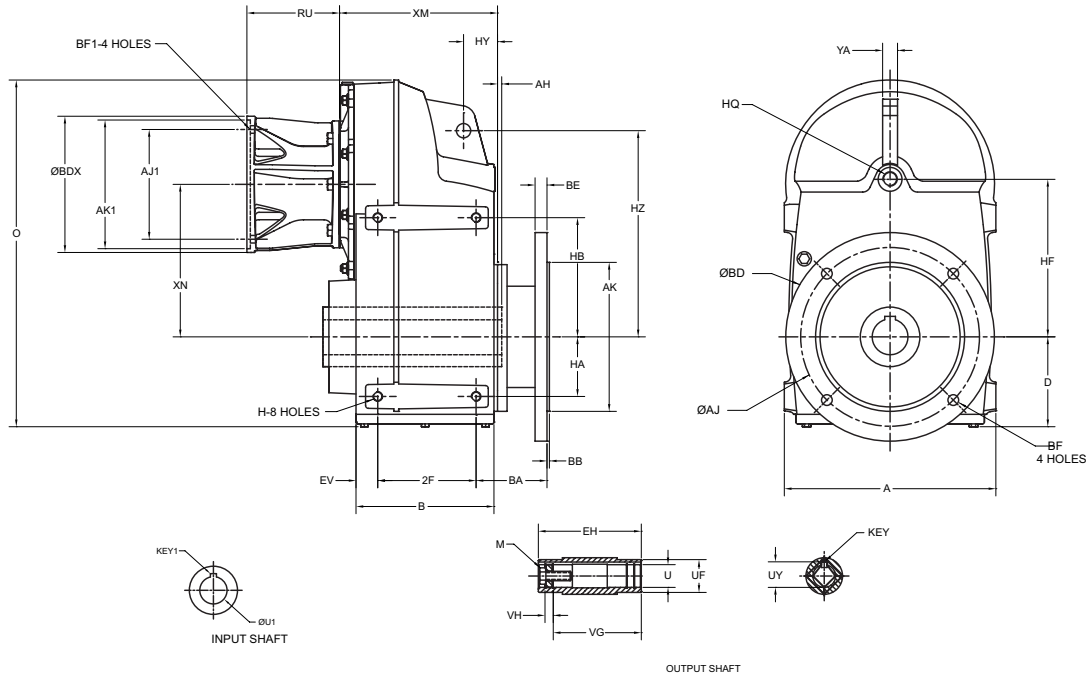
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.

⁴ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁷ Use 3242/3243 for "U" = 1.375".
Use 3202/3203 for "U" = 1.25".

MbN36-37 Double/Triple Reduction 50C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
															143T-215TC	254T-326TC		
36	15.75	10.98	7.01	6.50	M16X25	25.56	.23	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.49	11.84	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	.13	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	13.03	13.38	12.28	1.55

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Output Flange

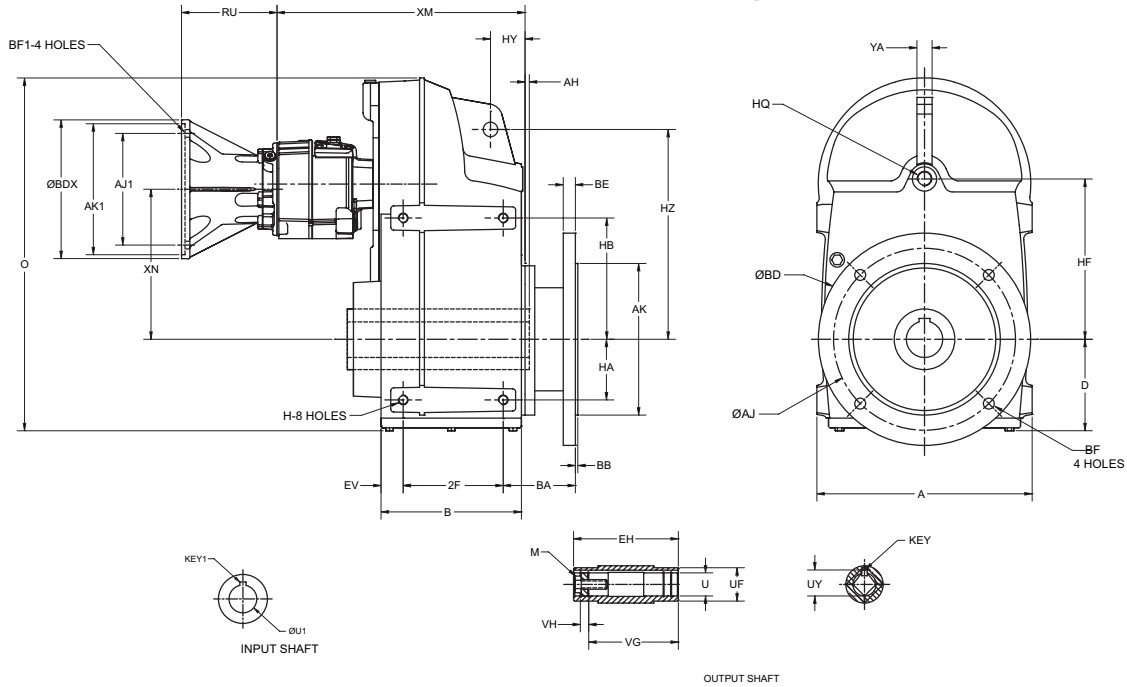
Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
36	50C	15.75	13.780	4.92	.236	17.70	.79	.71
37	50C	15.75	13.780	5.79	.236	17.70	.79	.63

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
143TC/145TC	36	5.88	4.50	.50	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁵	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375 ⁵	8.45	13.38	5/8 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.
⁴ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.
⁵ Design will use coupling to motor with this bore.

MbN32-35 Combined (4 - 6 Reduction Stages) 50C/60C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
														4 Red.	5-6 Red.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.15	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.35	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	15.24	15.24	7.86	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	15.74	15.74	9.70	.98

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ³	M
32 ⁵	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Flange Mount

Gear Frame	Flange Code	AK	AJ	BA	BB	BD	BE	BF
32	60C	5.118	6.50	3.07	.16	7.87	.39	.47
	50C	7.087	8.47	2.16	.16	9.84	.47	.55
33	60C	7.087	8.47	3.54	.16	9.84	.55	.55
	50C	9.055	10.43	2.72	.16	11.81	.59	.55
34	60C	7.087	8.47	4.98	.16	9.84	.55	.55
	50C	9.055	10.43	3.33	.16	11.81	.59	.55
35	50C	9.843	11.81	6.61	.16	13.78	.79	.71

C-Face Input

Motor Frame	AJ1	AK1	BF1	U1	RU	BDX				Key 1
						Frame 32	Frame 33	Frame 34	Frame 35	
56C	5.88	4.50	.50	.625	3.33	3.33	4.48	4.48	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	.50	.875	3.33	3.33	4.48	4.48	6.50	3/16 Sq.
182TC/184TC	7.25	8.50	.50	1.125	-	-	-	6.20	9.00	1/4 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

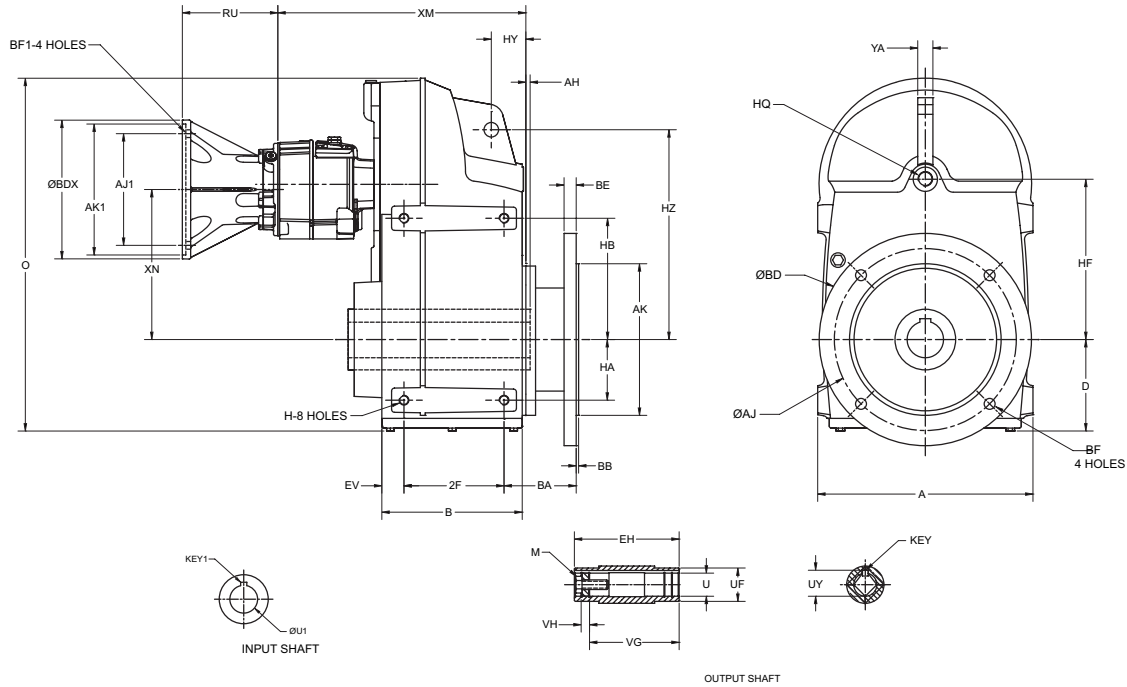
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.

⁴ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁵ Use 3244 for "U" = 1.375". Use 3204 for "U" = 1.25".

MbN35-37 Combined (4 - 6 Reduction Stages) 50C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	.23	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	.13	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	20.68	6.99	1.55

Output Shaft

Gear Frame	EH	U ^{2,4}	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Output Flange

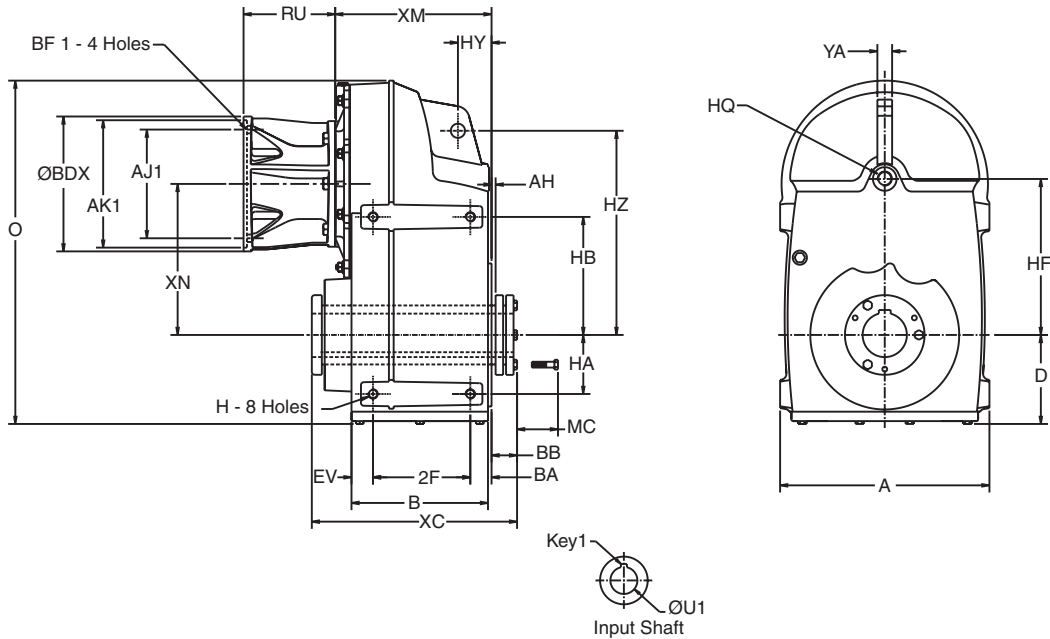
Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
36	50C	15.75	13.780	4.92	.236	17.70	.79	.71
37	50C	15.75	13.780	5.79	.236	17.70	.79	.63

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.
⁴ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

MbN32-35 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM			XN	YA
														56C-180TC	210TC	254TC-286TC		
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	6.85	-	-	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	7.08	7.08	-	7.01	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	9.28	9.28	9.63	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	10.07	10.07	10.42	10.03	.98

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bores ²	
				Min.	Max.
32	1.39	1.75	9.78	1 5/16	1 7/16
33	1.39	1.88	9.88	1 7/16	1 15/16
34	1.63	1.88	12.54	2	2 7/16
35	1.63	1.88	13.83	2 7/16	2 15/16

Tie Rod⁶

Gear Frame	F		G
	Min.	Max.	
32	18.58	23.11	3.20
33	18.58	23.11	3.20
34	22.36	26.50	5.90
35	22.36	26.50	5.90

C-Face Input

Motor Frame	AJ1	AK1	BF1	U1	RU	BDX	Key 1
56C	5.88	4.50	.50	.625	3.54	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	.50	.875	3.54	6.50	3/16 Sq.
182TC/184TC	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on page D-97 for a listing of all bushing bore sizes available including metric sizes.

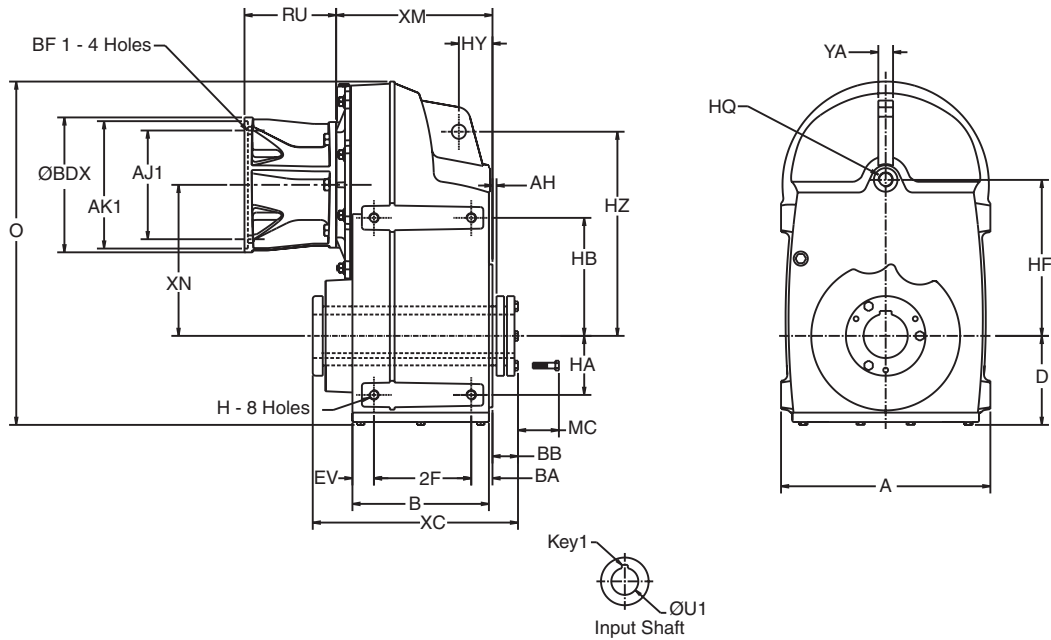
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.

⁵ Driven shaft entry can be from either side of gear unit housing. Refer in installation manual for requirements.

⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN36-37 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
															143T-215TC	254T-326TC		
36	15.75	10.98	7.01	6.50	M16X25	25.56	1.77	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.49	11.84	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	2.64	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	13.03	13.38	12.28	1.55

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bores	
				Min.	Max.
36	1.88	1.88	15.57	2 7/16	2 15/16
37	2.70	2.25	19.01	2 15/16	3 7/16

Tie Rod⁶

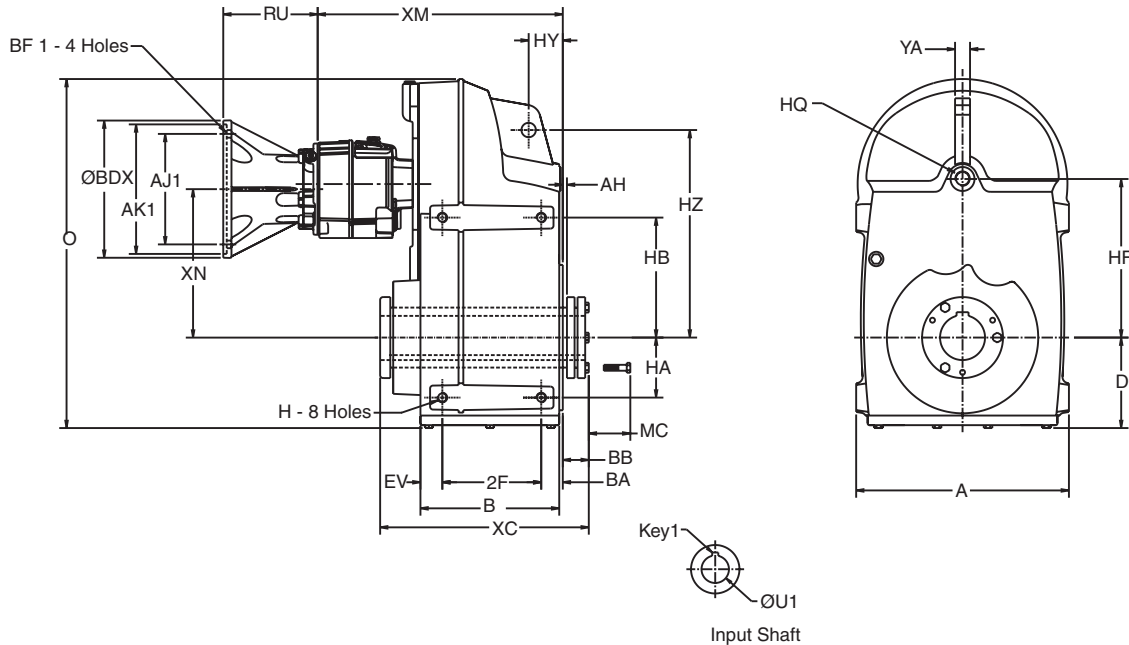
Gear Frame	F		G
	Min.	Max.	
36	33.92	39.92	4.55
37	34.05	40.05	4.55

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
143TC/145TC	36	5.88	4.50	.50	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁷	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375 ⁷	8.45	13.38	5/8 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to Tapered Bushings on page D-97 for a listing of all bushing bore sizes available including metric sizes.
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.
⁵ Driven shaft entry can be from either side of gear unit housing. Refer in installation manual for requirements.
⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.
⁷ Design will use coupling to motor with this bore.

MbN32-35 Combined (4 - 6 Reduction Stages) 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
														4 Red.	5-6 Red.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.15	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.35	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	15.24	15.24	7.86	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	15.74	15.74	9.70	.98

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bore ²	
				Min.	Max.
32	1.39	1.75	9.78	1 5/16	1 7/16
33	1.39	1.88	9.88	1 7/16	1 15/16
34	1.63	1.88	12.54	2	2 7/16
35	1.63	1.88	13.83	2 7/16	2 15/16

Tie Rod⁶

Gear Frame	F		G
	Min.	Max.	
32	18.58	23.11	3.20
33	18.58	23.11	3.20
34	22.36	26.50	5.90
35	22.36	26.50	5.90

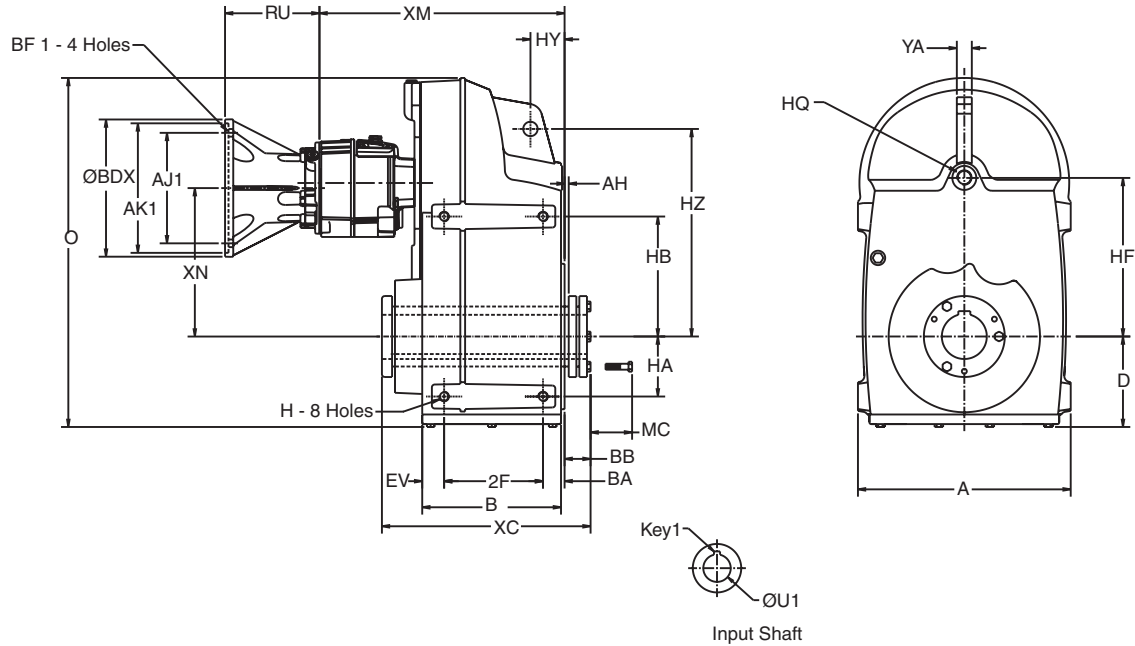
C-Face Input

Motor Frame	AJ1	AK1	BF1	U1	RU				BDX	Key 1
					Frame 32	Frame 33	Frame 34	Frame 35		
56C	5.88	4.50	.50	.625	3.33	3.33	4.48	4.48	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	.50	.875	3.33	3.33	4.48	4.48	6.50	3/16 Sq.
182TC/184TC	7.25	8.50	.50	1.125	-	-	-	6.20	9.00	1/4 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available including metric sizes.
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.
⁵ Driven shaft entry can be from either side of gear unit housing. Refer in installation manual for requirements.
⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN35-37 Combined (4 - 6 Reduction Stages) 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	1.77	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	2.64	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	20.68	6.99	1.55

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bores	
				Min.	Max.
36	1.88	1.88	15.57	2 7/16	2 15/16
37	2.70	2.25	19.01	2 15/16	3 7/16

Tie Rod⁶

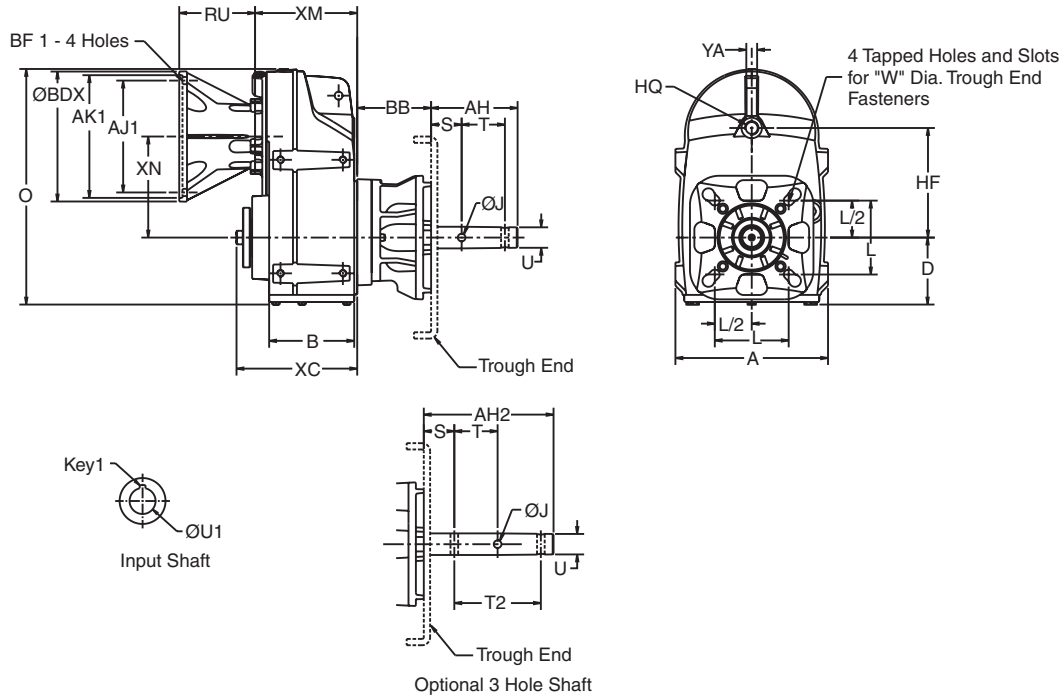
Gear Frame	F		G
	Min.	Max.	
36	33.92	39.92	4.55
37	34.05	40.05	4.55

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available including metric sizes.
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.
⁵ Driven shaft entry can be from either side of gear unit housing. Refer in installation manual for requirements.
⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN32-35 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	XC	XM			XN	YA	BB
								56C - 145TC	182TC - 215TC	254TC - 286TC			
32	7.83	5.39	3.80	13.41	5.79	M16X34	8.29	6.85	6.85	-	5.79	0.63	5.13
33	10.59	5.90	4.65	16.34	7.60	M24X30	8.37	7.04	7.04	-	7.01	0.71	5.13
34	11.10	8.13	5.04	18.78	8.47	M24X45	11.12	-	9.28	9.63	8.19	0.98	6.21
35	13.98	9.11	5.95	22.91	10.43	M24X45	12.39	-	10.07	10.42	10.03	0.98	6.53

Screw Conveyor

Gear Frame	U	Screw Dia.	W	J	L	S	T	T2	AH	AH2
32 - 33	1.50	6 - 10	0.50	0.53	4.00	2.13	3.00	6.00	6.00	9.00
32 - 35	2.00	9 - 12	0.63	0.66	5.13	2.13	3.00	6.00	6.00	9.00
32 - 35	2.44	12 - 14	0.63	0.66	5.63	2.75	3.00	6.00	6.69	9.69
32 - 35	3.00	12 - 20	0.75	0.78	6.00	2.88	3.00	6.00	6.88	9.88
34 - 35	3.44	18 - 24	0.75	0.91	6.75	3.88	4.00	-	9.13	-

C-Face Input

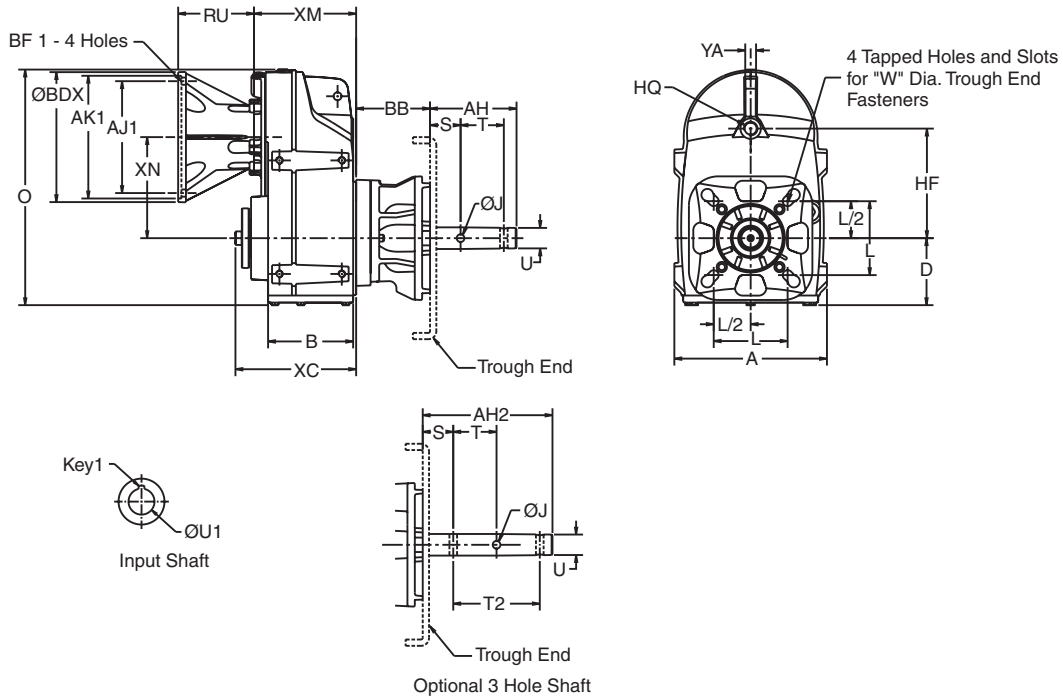
Motor Frame	AJ1	AK1	BF1	U1	RU	BDX	Key 1
56C	5.88	4.50	0.50	0.625	3.54	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	0.50	0.875	3.54	6.50	3/16 Sq.
182TC/184TC	7.25	8.50	0.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	7.25	8.50	0.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	7.25	8.50	0.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	9.00	10.00	0.50	1.875	7.09	11.25	1/2 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-98 and D-99 for a the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size is listed on page D-98.

MbN36-37 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	XC	XM		XN	YA	BB
								143T-215TC	254T-326TC			
36	15.75	10.98	7.01	25.56	11.02	M30X45	13.75	11.49	11.84	11.02	1.36	6.67
37	17.72	12.36	8.01	29.04	12.99	M30X45	16.16	13.03	13.38	12.28	1.55	7.94

Screw Conveyor

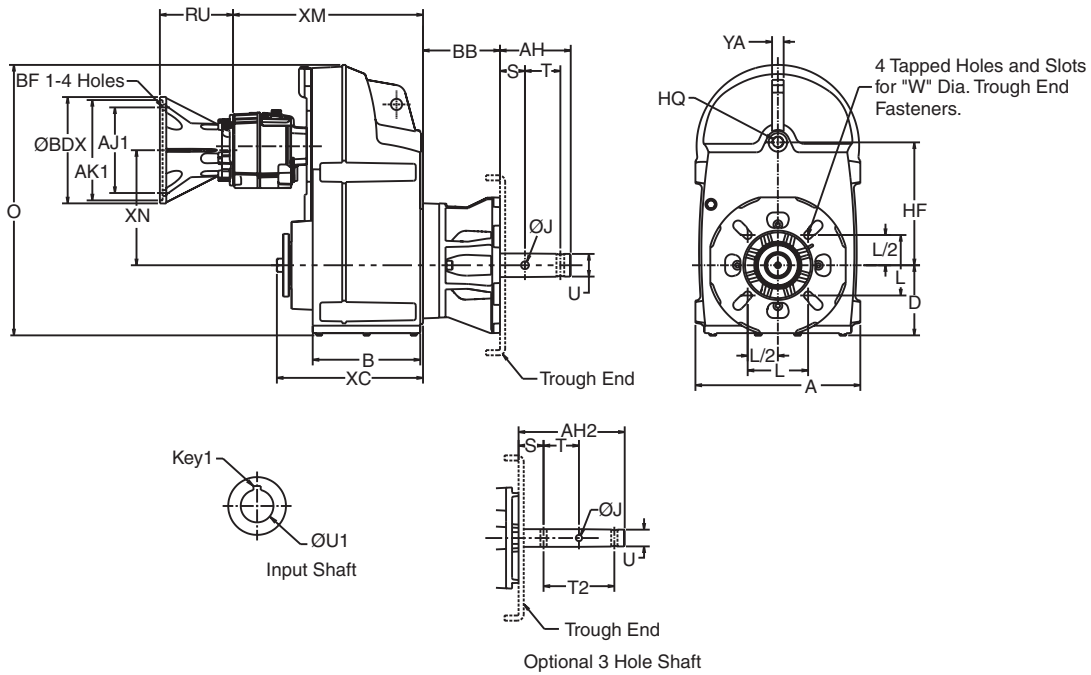
Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
36	9-12	2.00	.63	.66	5.13	2.13	3.00	6.00	6.00	9.00
	12, 14	2.44	.63	.66	5.63	2.75	3.00	6.00	6.69	9.69
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
37	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88

Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
143TC/145TC	36	5.88	4.50	.50	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.
254TC/256TC	All	7.25	8.50	.50	1.625	6.12	9.00	3/8 Sq.
284TC/286TC	All	9.00	10.50	.50	1.875	7.09	11.25	1/2 Sq.
324TC/326TC	All	11.00	12.50	.625	2.125 ⁴	8.45	13.38	1/2 Sq.
364TC/365TC	37	11.00	12.50	.625	2.375 ⁴	8.45	13.38	5/8 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size is listed on page D-98.
⁴ Design will use coupling to motor with this bore.

MbN32-35 Combined (4 - 6 Reduction Stages) 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	XC	XM		XN	YA	BB
								4 Red.	5 - 6 Red.			
32	7.83	5.39	3.80	13.41	5.79	M16X34	8.29	10.36	11.15	6.07	0.63	5.13
33	10.59	5.90	4.65	16.34	7.60	M24X30	8.37	10.55	11.35	7.29	0.71	5.13
34	11.10	8.13	5.04	18.78	8.47	M24X45	11.12	15.24	15.24	7.86	0.98	6.21
35	13.98	9.11	5.95	22.91	10.43	M24X45	12.39	15.74	15.74	9.70	0.98	6.53

Screw Conveyor

Gear Frame	U	Screw Dia.	W	J	L	S	T	T2	AH	AH2
32 - 33	1.50	6 - 10	0.50	0.53	4.00	2.13	3.00	6.00	6.00	9.00
32 - 35	2.00	9 - 12	0.63	0.66	5.13	2.13	3.00	6.00	6.00	9.00
32 - 35	2.44	12 - 14	0.63	0.66	5.63	2.75	3.00	6.00	6.69	9.69
32 - 35	3.00	12 - 20	0.75	0.78	6.00	2.88	3.00	6.00	6.88	9.88
34 - 35	3.44	18 - 24	0.75	0.91	6.75	3.88	4.00	-	9.13	-

C-Face Input

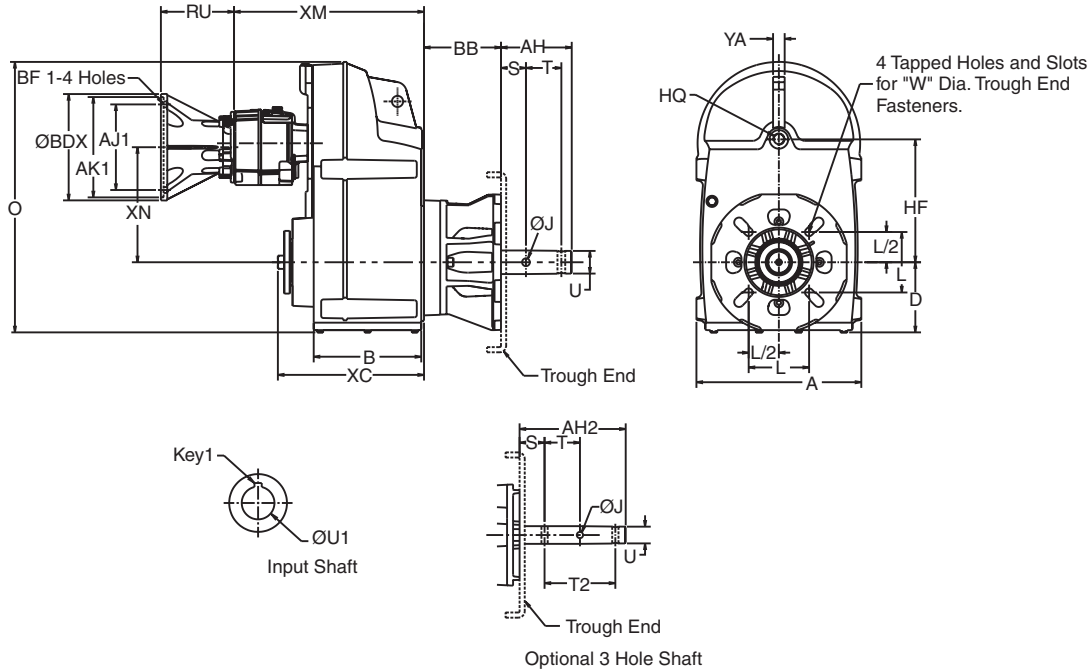
Motor Frame	AJ1	AK1	BF1	U1	RU				BDX	Key 1
					Frame 32	Frame 33	Frame 34	Frame 35		
56C	5.88	4.50	0.50	0.625	3.33	3.33	4.48	4.48	6.50	3/16 Sq.
143TC/145TC	5.88	4.50	0.50	0.875	3.33	3.33	4.48	4.48	6.50	3/16 Sq.
182TC/184TC	7.25	8.50	0.50	1.125	-	-	-	6.20	9.00	1/4 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size is listed on page D-98.

MbN36-37 Combined (4 - 6 Reduction Stages) 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	XC	XM	XN	YA	BB
36	15.75	10.98	7.01	25.56	11.02	M30X45	13.75	19.15	6.25	1.36	6.67
37	17.72	12.36	8.01	29.04	12.99	M30X45	16.16	20.68	6.99	1.55	7.94

Screw Conveyor

Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
36	9-12	2.00	.63	.66	5.13	2.13	3.00	6.00	6.00	9.00
	12, 14	2.44	.63	.66	5.63	2.75	3.00	6.00	6.69	9.69
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13
37	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13

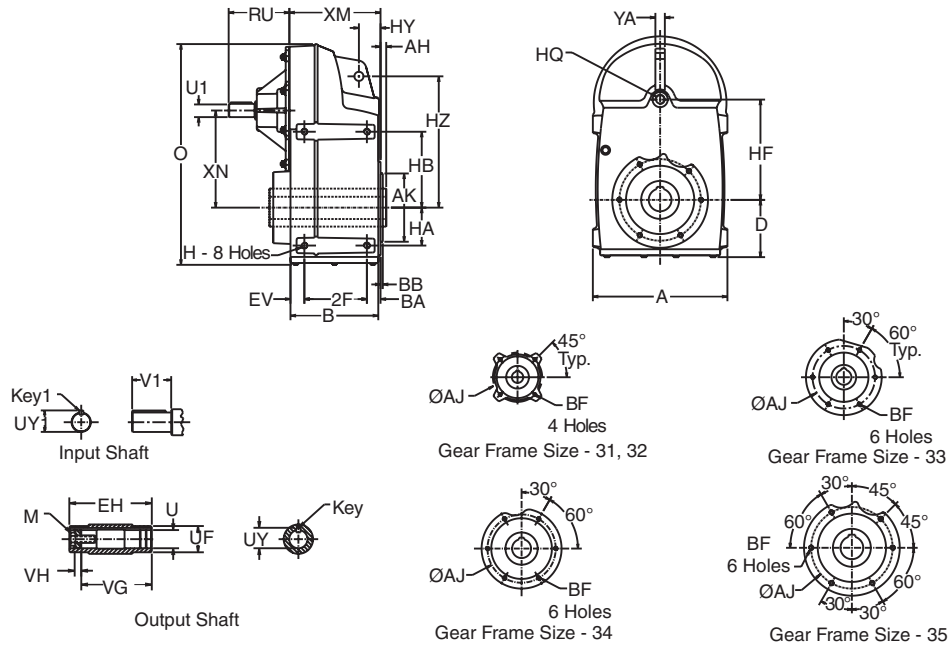
Motor Frame	Gear Frame	AJ1	AK1	BF1	U1	RU	BDX	Key1
56C	All	5.88	4.50	.38	.625	3.54	6.50	3/16 Sq.
143TC/145TC	All	5.88	4.50	.38	.875	3.54	6.50	3/16 Sq.
182TC/184TC	All	7.25	8.50	.50	1.125	5.26	9.00	1/4 Sq.
213TC/215TC	All	7.25	8.50	.50	1.375	5.26	9.00	5/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size is listed on page D-98.

MbN31-35 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
31	7.52	4.39	3.74	N/A	N/A	12.22	N/A	N/A	N/A	5.14	M16X27	0.98	6.69	4.63	5.14	0.59
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	0.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	0.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	0.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	0.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	0.98

Output Shaft

Gear Frame	EH	U ^{2 5 6}	UF	UY	VG	VH	KEY ³	M
31	5.71	1.250	1.77	1.367	3.62	0.38	1/4 Sq.	7/16-14
32 ⁷	7.68	1.375	2.36	1.523	6.93	0.43	5/16 Sq.	1/2-13
	7.68	1.250	2.36	1.372	6.93	0.43	1/4 Sq.	7/16-14
33	7.75	1.500	2.56	1.670	6.76	0.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	0.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	0.94	5/8 Sq.	3/4-10

Face Mount

Gear Frame	AH	AJ	AK	BA	BB	BF
31	0.24	4.53	3.740	N/A	0.14	M8X12
32	0.31	5.12	4.331	0.79	0.23	M8X12
33	0.32	6.50	5.116	0.95	0.24	M10X18
34	0.30	7.09	6.289	1.42	0.22	M12X22
35	0.34	8.47	7.087	1.24	0.26	M12X20

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
31	3.17	0.625	0.714	1.25	3/16 Sq.
32	3.17	0.625	0.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0010", -0.0000" for 31, +0.0020/-0.0000" for 32-35.

³ Key to be supplied by others.

⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

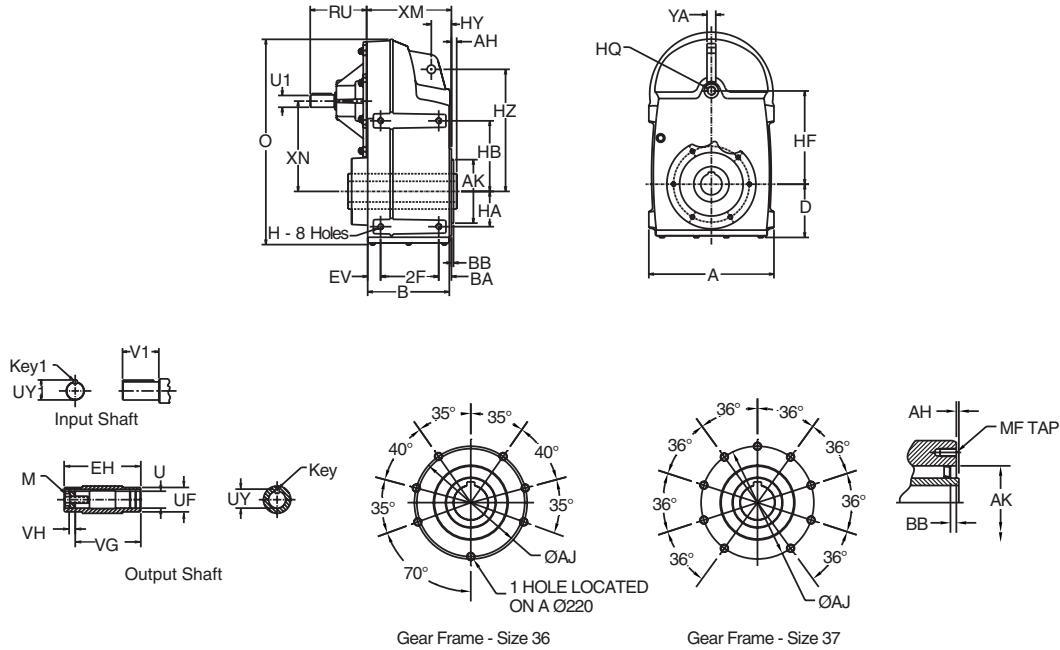
⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size. (except frame 31).

⁷ Use 3242/3243 for "U" = 1.375".

Use 3202/3203 for "U" = 1.25".

MbN36-37 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.22	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	12.76	12.28	1.55

Output Shaft

Gear Frame	EH	U ^{2,5,6}	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

40 Face

Gear Frame	AH	AJ	AK	BA	BB	BF
36	.23	9.06	5.91	1.77	.26	M16X27
37	.13	9.06	7.09	2.64	.26	M20X35

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

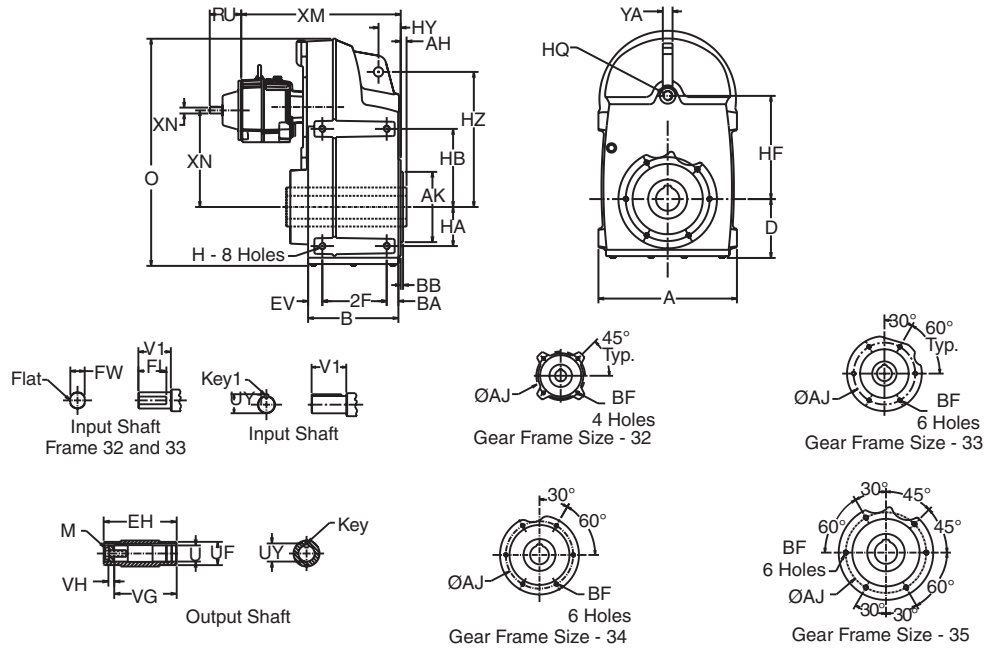
³ Key to be supplied by others.

⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁶ Refer to tapered bush (00B) design where driven shaft size differs from standard finished bore quill size.

MbN32-35 Combined (4 - 6 Reduction Stages) 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
														4 Red.	5-6 Red.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.15	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.35	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	15.24	15.24	7.86	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	15.74	15.74	9.70	.98

Output Shaft

Gear Frame	EH	U ^{2, 5, 6}	UF	UY	VG	VH	Key ³	M
32	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Face Mount

Gear Frame	AH	AJ	AK	BA	BB	BF
32	.31	5.12	4.331	.79	.23	M8X12
33	.32	6.50	5.118	.95	.24	M10X18
34	.30	7.09	6.289	1.42	.22	M12X22
35	.34	8.47	7.087	1.24	.26	M12X20

Input Shaft

Gear Frame	RU	U1	FL	FW	UY1	V1	Key 1
32	3.60	.500	.86	.46	-	1.00	-
33	3.60	.500	.86	.46	-	1.00	-
34	3.17	.625	-	-	.714	1.25	3/16 Sq.
35	3.17	.625	-	-	.714	1.25	3/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

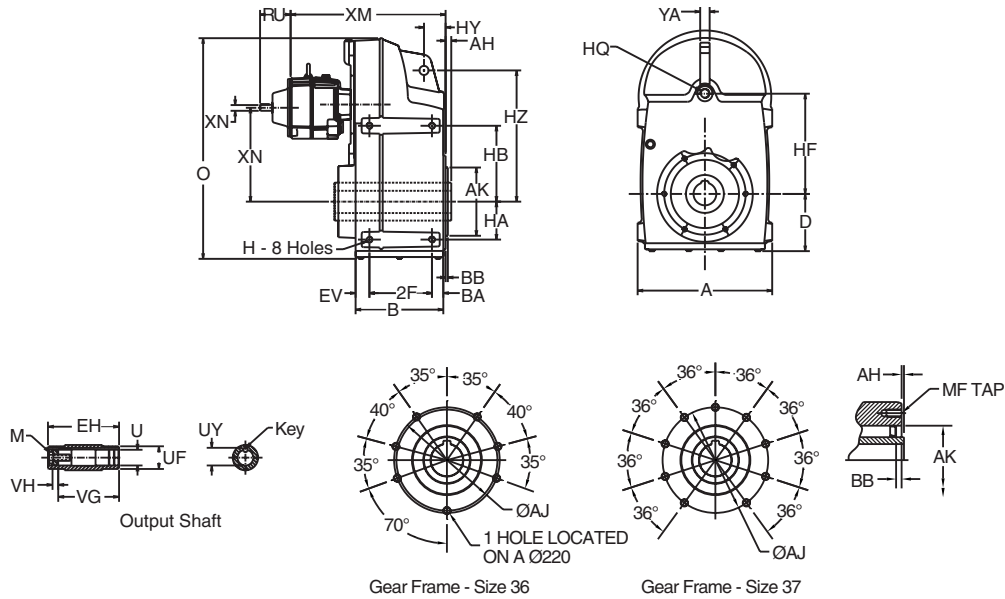
³ Key to be supplied by others.

⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.

MbN36-37 Combined (4-6 Reduction Stages) 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	20.68	6.99	1.55

Output Shaft

Gear Frame	EH	U ^{2, 5, 6}	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

40C Face

Gear Frame	AH	AJ	AK	BA	BB	BF
36	.23	9.06	5.91	1.77	.26	M16X27
37	.13	9.06	7.09	2.64	.26	M20X35

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	3.17	.625	.714	1.25	3/16 Sq.
37	3.17	.625	.714	1.25	3/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

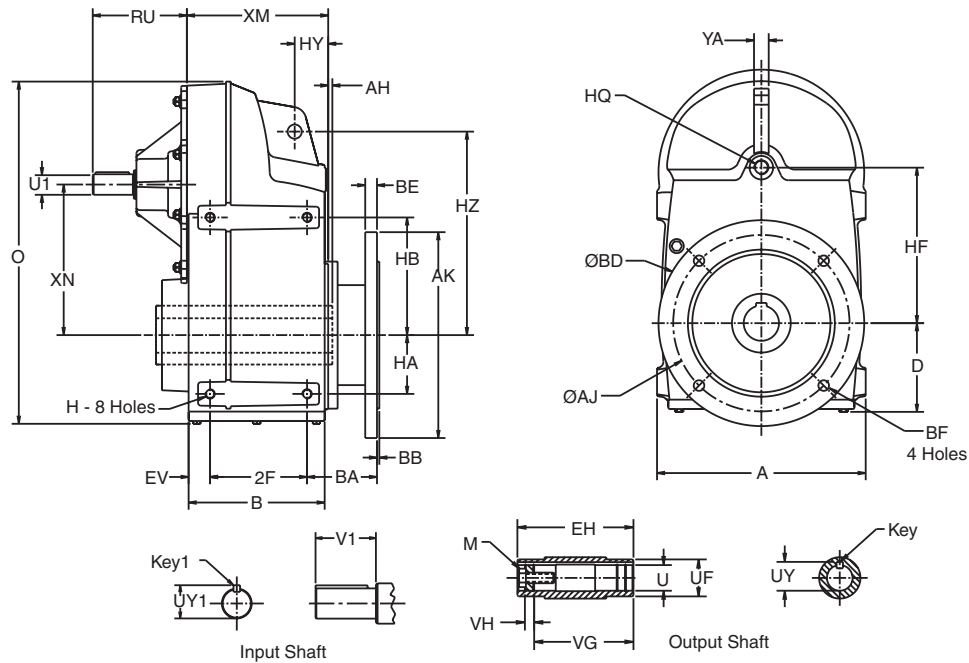
³ Key to be supplied by others.

⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.

MbN32-35 Double/Triple Reduction 50C/60C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
32	7.83	5.39	3.80	2.76	M8X12	13.41	.31	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.32	.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	.30	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	.34	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	.98

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ³	M
32 ⁴	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Output Flange

Gear Frame	Flange Code	AK	AJ	BA	BB	BD	BE	BF
32	60C	5.118	6.50	3.07	.16	7.87	.39	.47
	50C	7.087	8.47	2.16	.16	9.84	.47	.55
33	60C	7.087	8.47	3.54	.16	9.84	.55	.55
	50C	9.055	10.43	2.72	.16	11.81	.59	.55
34	60C	7.087	8.47	4.98	.16	9.84	.55	.55
	50C	9.055	10.43	3.33	.16	11.81	.59	.55
35	50C	9.843	11.81	6.61	.16	13.78	.79	.71

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

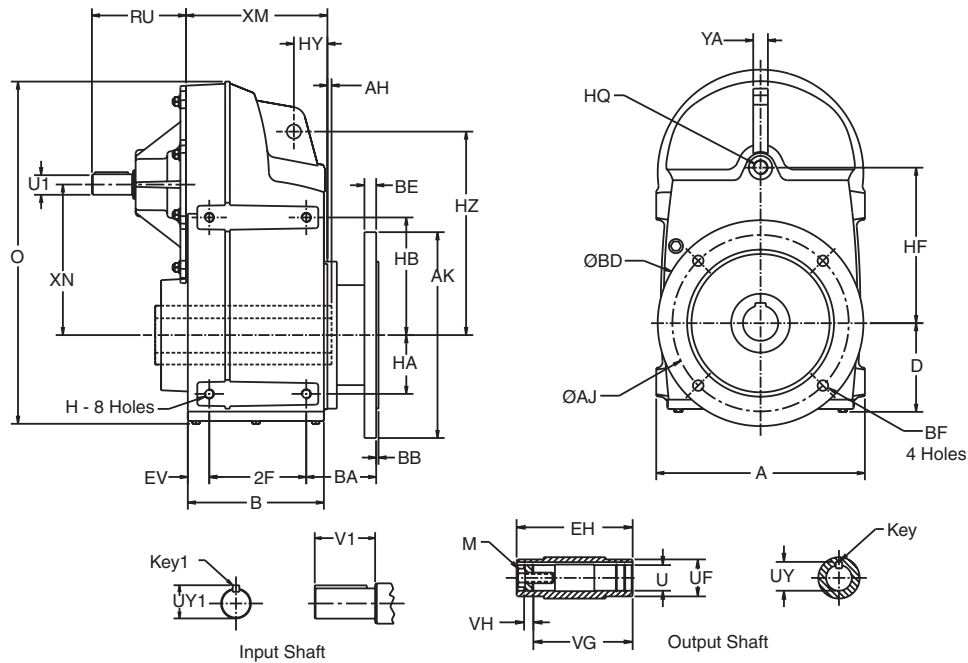
³ Key to be supplied by others.

⁴ Use 3242/3243 for "U" = 1.375".

Use 3202/3203 for "U" = 1.25".

⁵ Driven shaft entry can be from either side of gear housing.

MbN36-37 Double/Triple Reduction 50C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	.23	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.22	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	.13	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	12.76	12.28	1.55

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
36	50C	15.75	13.780	4.92	.236	17.70	.79	.71
37	50C	15.75	13.780	5.79	.236	17.70	.79	.63

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

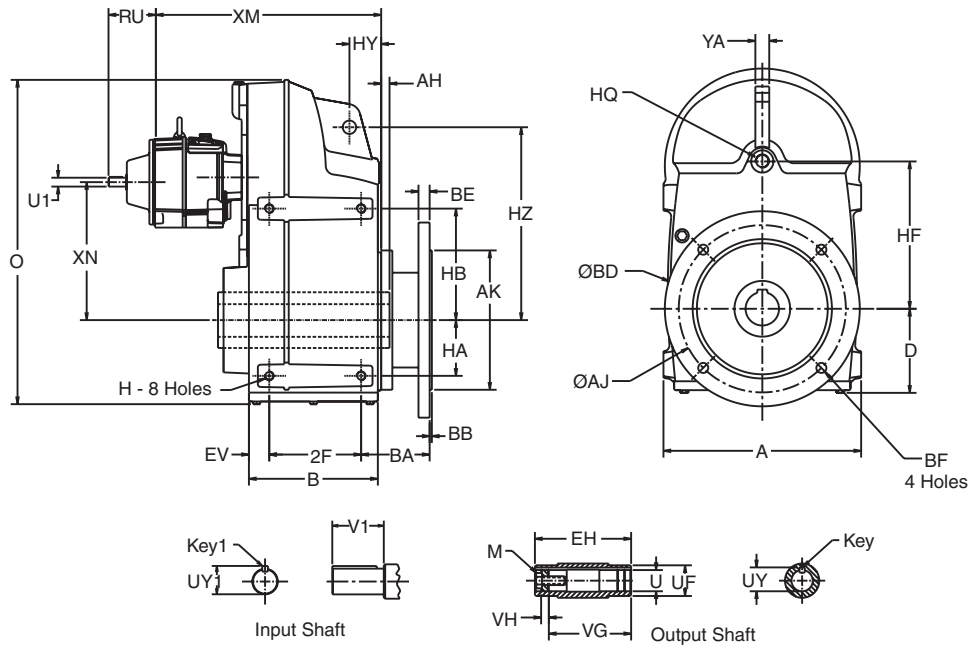
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.

⁴ Driven shaft entry can be from either side of gear housing.

MbN32-35 Combined (4-6 Reduction Stages) 50C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
															4 Red.	5-6 Red.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	.31	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.15	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.32	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.35	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	.30	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	15.24	15.24	7.86	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	.34	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	15.74	15.74	9.70	.98

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ³	M
32 ⁴	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Output Flange

Gear Frame	Flange Code	AK	AJ	BA	BB	BD	BE	BF
32	60C	5.118	6.50	3.07	.16	7.87	.39	.47
	50C	7.087	8.47	2.16	.16	9.84	.47	.55
33	60C	7.087	8.47	3.54	.16	9.84	.55	.55
	50C	9.055	10.43	2.72	.16	11.81	.59	.55
34	60C	7.087	8.47	4.98	.16	9.84	.55	.55
	50C	9.055	10.43	3.33	.16	11.81	.59	.55
35	50C	9.843	11.81	6.61	.16	13.78	.79	.71

Input Shaft

Gear Frame	RU	U1	FL	FW	UY1	V1	Key 1
32	3.60	.500	.86	.46	-	1.00	-
33	3.60	.500	.86	.46	-	1.00	-
34	3.17	.625	-	-	.714	1.25	3/16 Sq.
35	3.17	.625	-	-	.714	1.25	3/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

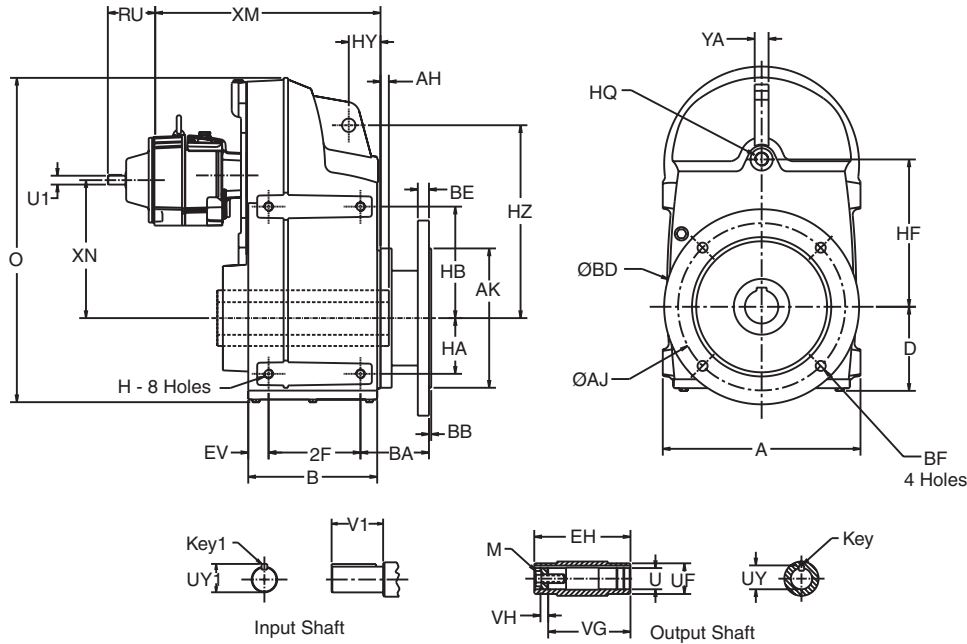
³ Key to be supplied by others.

⁴ Use 3244 for "U" = 1.375".

Use 3204 for "U" = 1.25".

⁵ Driven shaft entry can be from either side of gear housing.

MbN36-37 Combined (4-6 Reduction Stages) 50C Finished Bore Flanged Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	.23	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	.13	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	20.68	6.99	1.55

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
36	50C	15.75	13.780	4.92	.236	17.70	.79	.71
37	50C	15.75	13.780	5.79	.236	17.70	.79	.63

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	3.17	.625	.714	1.25	3/16 Sq.
37	3.17	.625	.714	1.25	3/16 Sq.

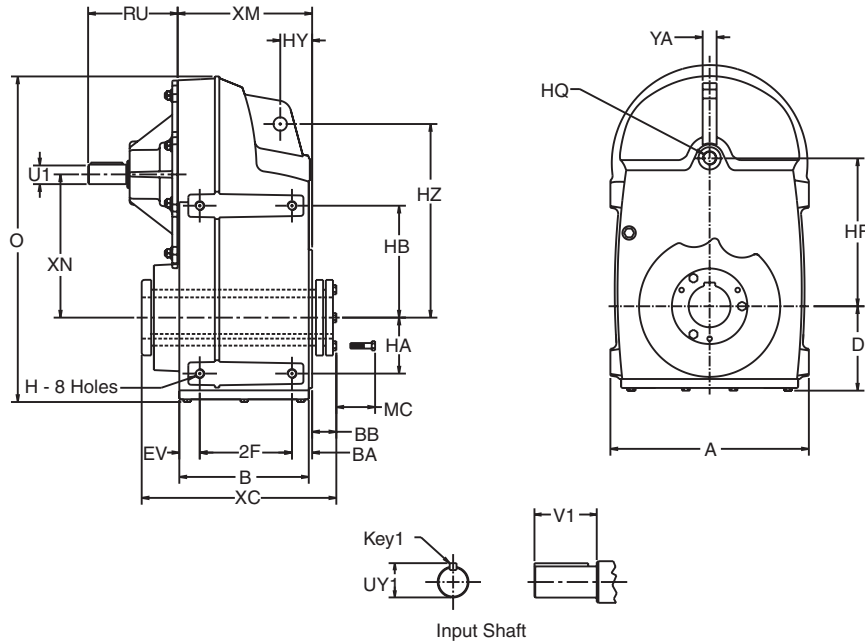
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.

⁴ Driven shaft entry can be from either side of gear housing.

MbN32-35 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
32	7.83	5.39	3.80	2.76	M8X12	13.41	.79	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.95	.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	1.42	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	.98

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bore ²	
				Min.	Max.
32	1.39	1.75	9.78	1 5/16	1 7/16
33	1.39	1.88	9.88	1 7/16	1 15/16
34	1.63	1.88	12.54	2	2 7/16
35	1.63	1.88	13.83	2 7/16	2 15/16

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available.

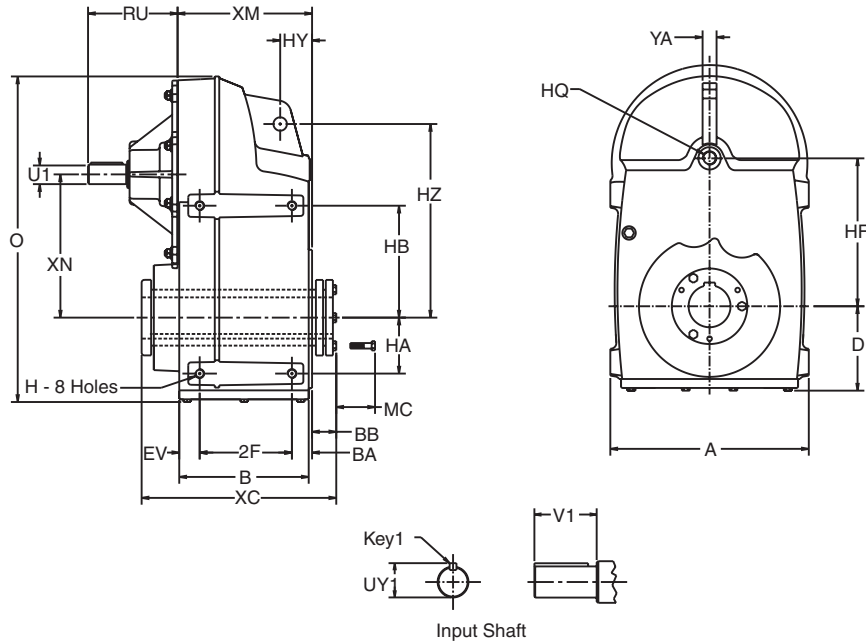
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.

⁵ Driven shaft entry can be from either side of gear unit housing. Refer to installation manual for requirements.

⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN36-37 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	1.77	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.22	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	2.64	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	12.76	12.28	1.55

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bores ²	
				Min.	Max.
36	1.88	1.88	15.57	2 7/16	2 15/16
37	2.70	2.25	19.01	2 15/16	3 7/16

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available.

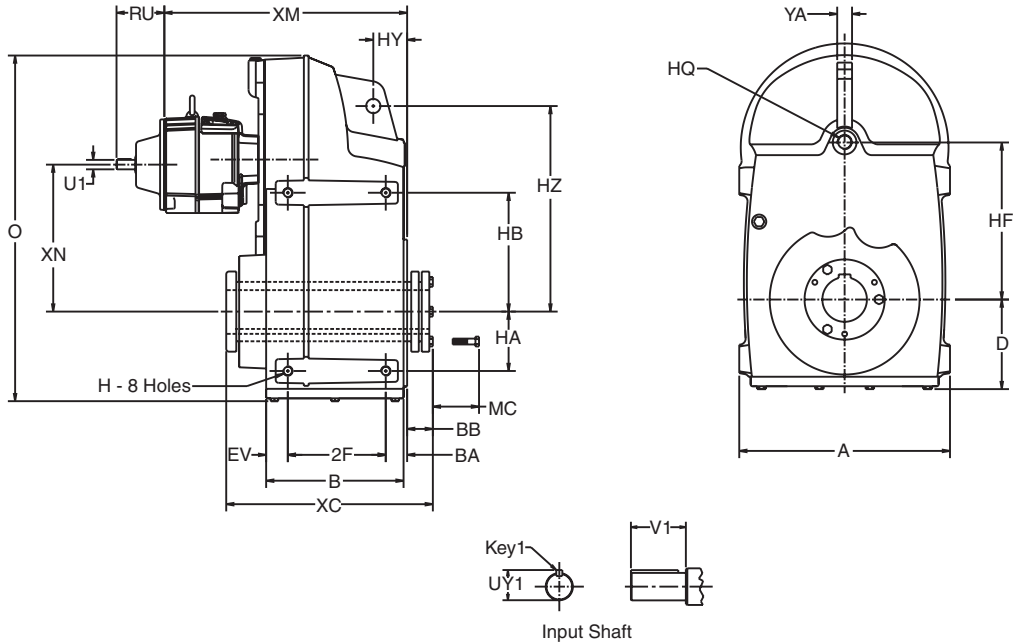
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.

⁵ Driven shaft entry can be from either side of gear unit housing. Refer to installation manual for requirements.

⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN32-35 Combined (4-6 Reduction Stages) 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM		XN	YA
															4 Red.	5-6 Red.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	.79	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	10.36	11.15	6.07	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.95	.98	2.48	5.39	7.60	M24X30	1.24	9.84	10.55	11.35	7.29	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	1.42	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	15.24	15.24	7.86	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	15.74	15.74	9.70	.98

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bore ²	
				Min.	Max.
32	1.39	1.75	9.78	3/4	1 7/16
33	1.39	1.88	9.88	15/16	1 15/16
34	1.63	1.88	12.54	1 3/8	2 7/16
35	1.63	1.88	13.83	1 7/16	2 15/16

Input Shaft

Gear Frame	RU	U1	FL	FW	UY1	V1	Key 1
32	3.60	.500	.86	.46	-	1.00	-
33	3.60	.500	.86	.46	-	1.00	-
34	3.17	.625	-	-	.714	1.25	3/16 Sq.
35	3.17	.625	-	-	.714	1.25	3/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available including metric sizes.

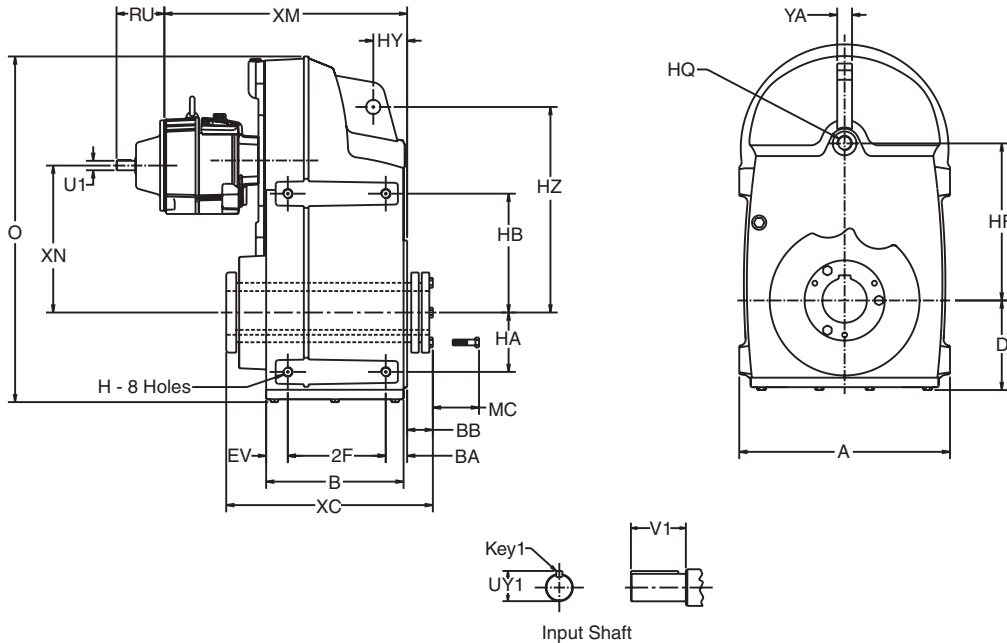
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.

⁵ Driven shaft entry can be from either side of gear unit housing. Refer to installation manual for requirements.

⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN36-37 Combined (4-6 Reduction Stages) 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	1.77	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	19.15	6.25	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	2.64	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	20.68	6.99	1.55

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bores ²	
				Min.	Max.
36	1.88	1.88	15.57	2 7/16	2 15/16
37	2.70	2.25	19.01	2 15/16	3 7/16

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	3.17	.625	.714	1.25	3/16 Sq.
37	3.17	.625	.714	1.25	3/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available including metric sizes.

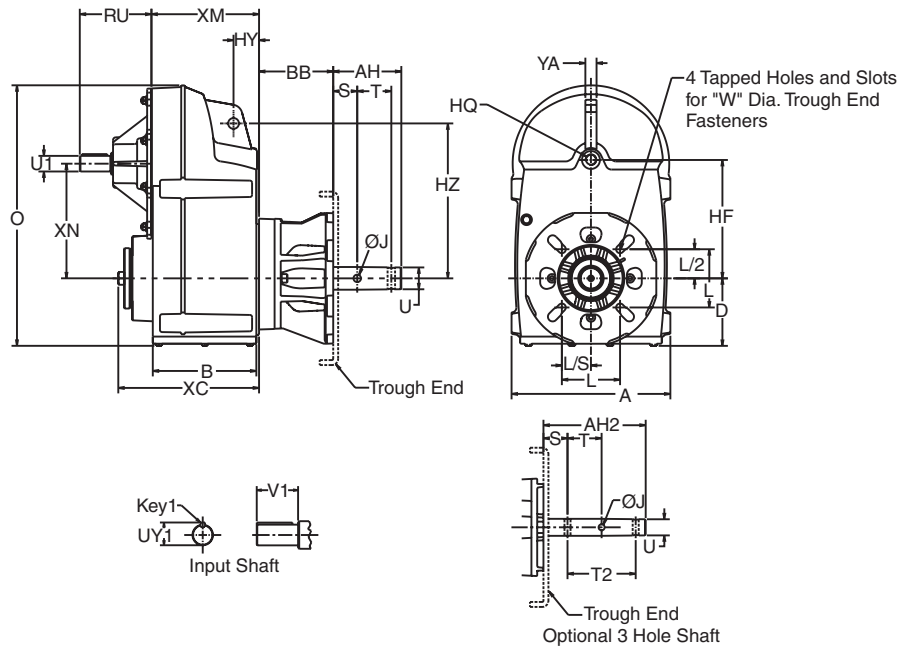
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.

⁵ Driven shaft entry can be from either side of gear unit housing. Refer to installation manual for requirements.

⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN32-35 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	HY	HZ	XC	XM	XN	YA	BB
32	7.83	5.39	3.80	13.41	5.79	M16X34	1.61	7.60	8.29	5.91	5.79	.63	5.13
33	10.59	5.90	4.65	16.34	7.60	M24X30	1.24	9.84	8.37	6.26	7.01	.71	5.13
34	11.10	8.13	5.04	18.78	8.47	M24X45	1.65	10.95	11.12	8.25	8.19	.98	6.21
35	13.98	9.11	5.95	22.91	10.43	M24X45	2.09	13.62	12.39	9.29	10.03	.98	6.53

Screw Conveyor

Gear Frame	Screw Dia.	W	J	L	U	S	T	T2	AH	AH2
32, 33	6 - 10	.50	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00
	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
34	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
	18 - 24	.75	.91	6.75	3.44	3.88	4.00	-	9.13	-
35	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
	18 - 24	.75	.91	6.75	3.44	3.88	4.00	-	9.13	-

Input Shaft

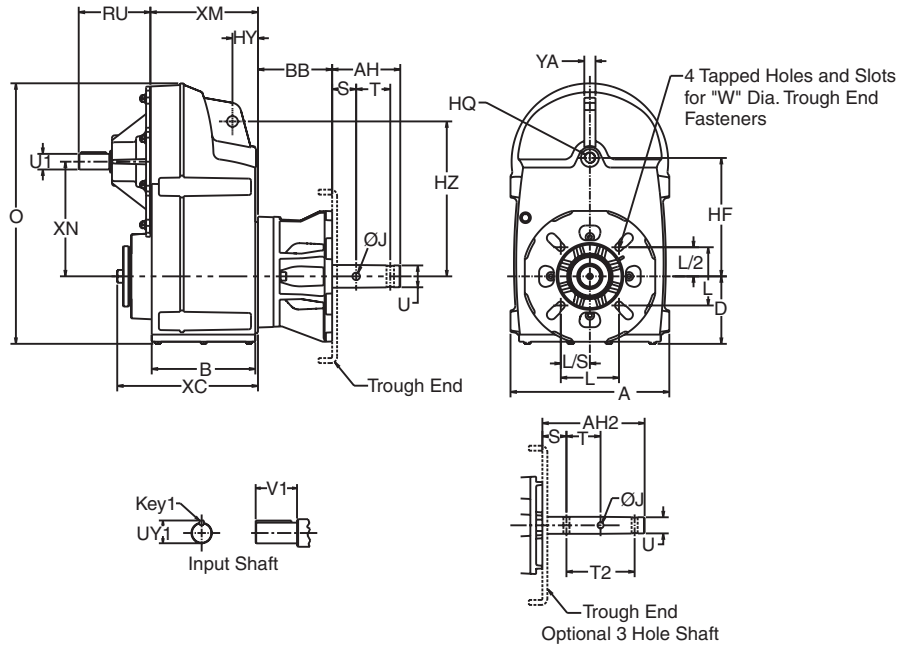
Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size are listed on page D-98.

MbN36-37 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	XC	XM	XN	YA	BB
36	15.75	10.98	7.01	25.56	11.02	M30X45	13.75	11.22	11.02	1.36	6.67
37	17.72	12.36	8.01	29.04	12.99	M30X45	16.16	12.76	12.28	1.55	7.94

Screw Conveyor

Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
36	9-12	2.00	.63	.66	5.13	2.13	3.00	6.00	6.00	9.00
	12, 14	2.44	.63	.66	5.63	2.75	3.00	6.00	6.69	9.69
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13
37	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13

Input Shaft

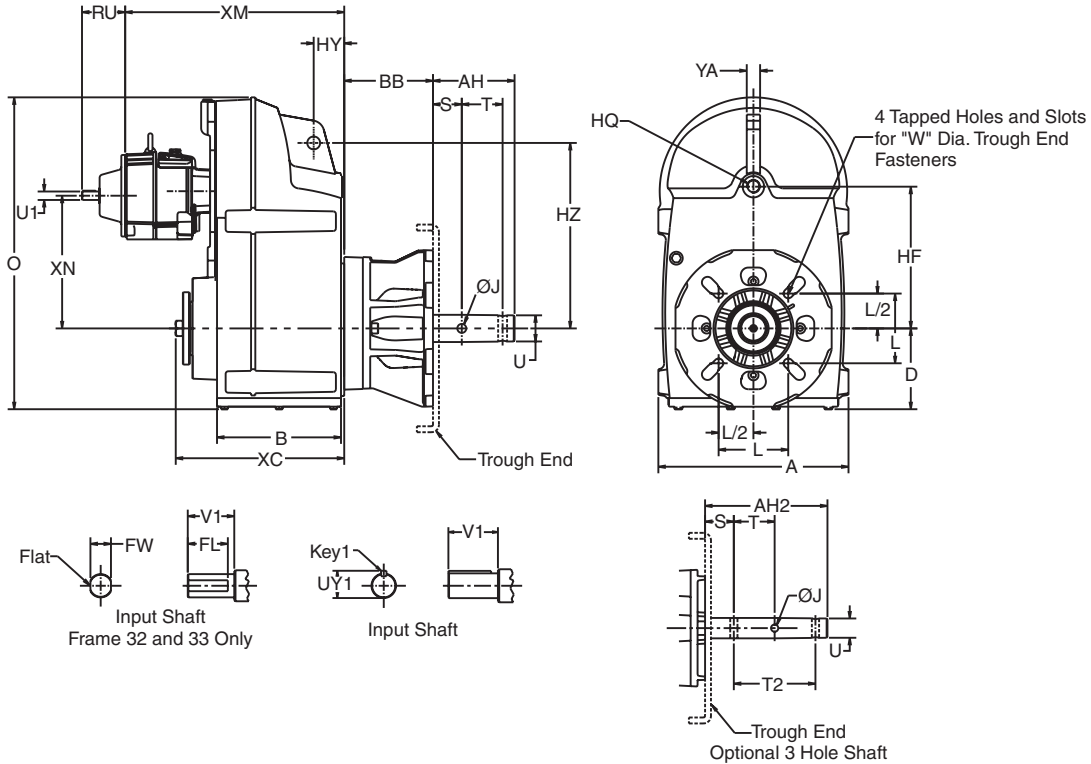
Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size are listed on page D-98.

MbN32-35 Combined (4-6 Reduction Stages) 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	HY	HZ	XC	XM		XN	YA
										4 Red.	5-6 Red.		
32	7.83	5.39	3.80	13.41	5.79	M16X34	1.61	7.60	8.29	10.36	11.15	6.07	.63
33	10.59	5.90	4.65	16.34	7.60	M24X30	1.24	9.84	8.37	10.55	11.35	7.29	.71
34	11.10	8.13	5.04	18.78	8.47	M24X45	1.65	10.95	11.12	15.24	15.24	7.86	.98
35	13.98	9.11	5.95	22.91	10.43	M24X45	2.09	13.62	12.39	15.74	15.74	9.70	.98

Screw Conveyor

Gear Frame	Screw Dia.	J	L	U	S	T	T2	AH	AH2	BB
32, 33	6 - 10	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00	5.13
	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	5.13
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	5.13
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	5.13
34	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.21
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.21
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.21
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.21
35	9 - 12	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00	6.53
	12 - 14	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69	6.53
	12 - 20	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88	6.53
	18 - 24	.91	6.75	3.44	3.88	4.00	-	9.13	-	6.53

Input Shaft

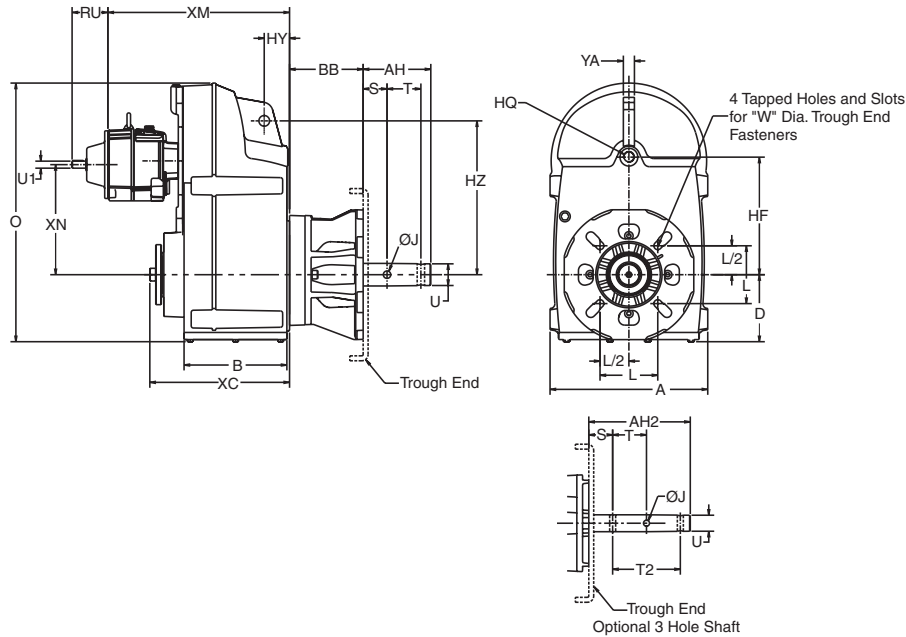
Gear Frame	RU	U1	FL	FW	UY1	V1	Key 1
32	3.60	.500	.86	.46	-	1.00	-
33	3.60	.500	.86	.46	-	1.00	-
34	3.17	.625	-	-	.714	1.25	3/16 Sq.
35	3.17	.625	-	-	.714	1.25	3/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size are listed on page D-98.

MbN36-37 Combined (4-6 Reduction Stages) 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	XC	XM	XN	YA	BB
36	15.75	10.98	7.01	25.56	11.02	M30X45	13.75	19.15	6.25	1.36	6.67
37	17.72	12.36	8.01	29.04	12.99	M30X45	16.16	20.68	6.99	1.55	7.94

Screw Conveyor

Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
36	9-12	2.00	.63	.66	5.13	2.13	3.00	6.00	6.00	9.00
	12, 14	2.44	.63	.66	5.63	2.75	3.00	6.00	6.69	9.69
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13
37	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13

Input Shaft

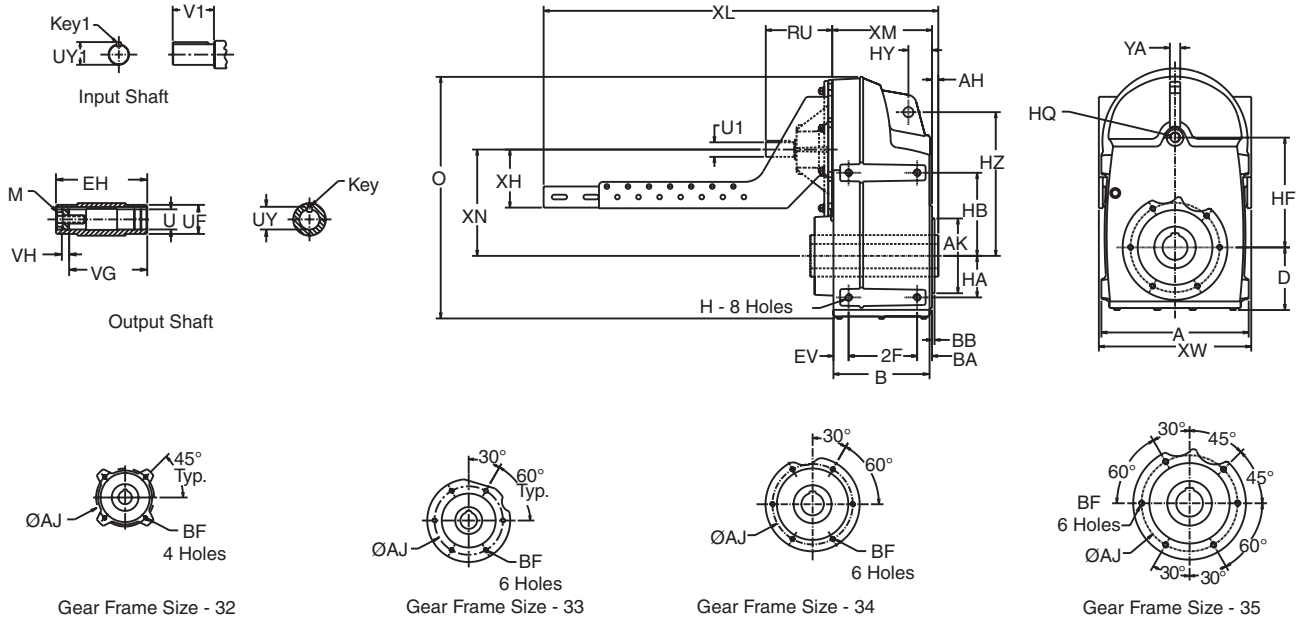
Gear Frame	RU	U1	UY1	V1	Key1
36	3.17	.625	.714	1.25	3/16 Sq.
37	3.17	.625	.714	1.25	3/16 Sq.

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size are listed on page D-98.

MbN32-35 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	.98

Output Shaft

Gear Frame	EH	U ^{2,5,6}	UF	UY	VG	VH	Key ³	M
32 ⁷	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Face Mount

Gear Frame	AH	AJ	AK	BA	BB	BF
32	.31	5.12	4.331	.79	.23	M8X12
33	.32	6.50	5.118	.95	.24	M10X18
34	.30	7.09	6.289	1.42	.22	M12X22
35	.34	8.47	7.087	1.24	.26	M12X20

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

Motor Frame

Gear Frame	143-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
32	3.75	24.40	11.38	-	-	-	-	-	-
33	4.74	31.95	12.38	4.74	31.95	12.38	-	-	-
34	5.56	36.44	12.75	5.56	36.44	12.75	5.56	36.44	12.75
35	5.56	36.91	12.75	5.56	36.91	12.75	5.56	36.91	12.75

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.

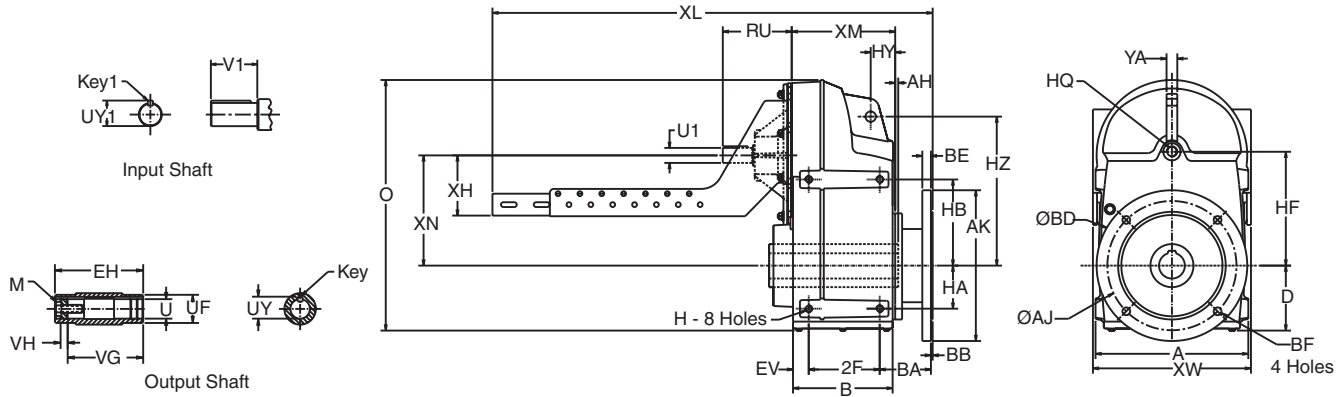
⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.

⁷ 3242/3243

MbN32-35 Double/Triple Reduction 50C/60C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
32	7.83	5.39	3.80	2.76	M8X12	13.41	.31	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.32	.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	.30	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	.34	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	.98

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ³	M
32 ⁵	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Output Flange

Gear Frame	Flange Code	AK	AJ	BA	BB	BD	BE	BF
32	60C	5.118	6.50	3.07	.16	7.87	.39	.47
	50C	7.087	8.47	2.16	.16	9.84	.47	.55
33	60C	7.087	8.47	3.54	.16	9.84	.55	.55
	50C	9.055	10.43	2.72	.16	11.81	.59	.55
34	60C	7.087	8.47	4.98	.16	9.84	.55	.55
	50C	9.055	10.43	3.33	.16	11.81	.59	.55
35	50C	9.843	11.81	6.61	.16	13.78	.79	.71

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

Motor Frame

Gear Frame	Flange Code	143-145T			182T-184T			213T-215T		
		XH	XL	XW	XH	XL	XW	XH	XL	XW
32	60C	3.75	26.63	11.38	-	-	-	-	-	-
	50C	3.75	25.72	11.38	-	-	-	-	-	-
33	60C	4.74	34.49	12.38	4.74	34.49	12.38	-	-	-
	50C	4.74	33.66	12.38	4.74	33.66	12.38	-	-	-
34	60C	5.56	39.01	12.75	5.56	39.01	12.75	5.56	39.01	12.75
	50C	5.56	38.19	12.75	5.56	38.19	12.75	5.56	38.19	12.75
35	50C	5.56	40.25	12.75	5.56	40.25	12.75	5.56	40.25	12.75

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

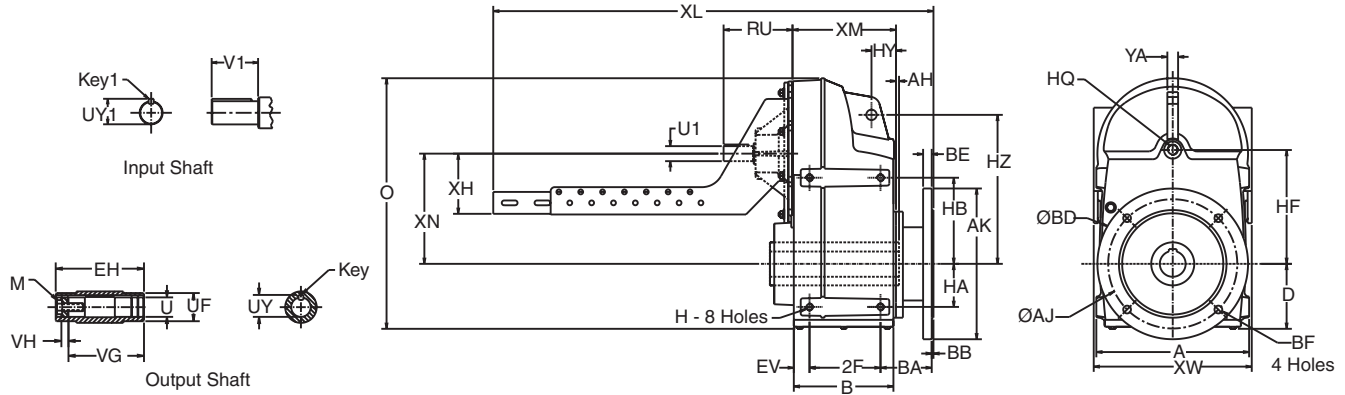
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.

⁴ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁵ 3242/3243

MbN36-37 Double/Triple Reduction 50C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	.23	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.22	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	.13	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	12.76	12.28	1.55

Output Shaft

Gear Frame	EH	U ^{2,4}	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
36	50C	15.75	13.780	4.92	.236	17.70	.79	.71
37	50C	15.75	13.780	5.79	.236	17.70	.79	.63

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	46.55	15.00	6.63	46.55	15.00	6.63	46.55	15.00	8.50	50.55	19.06	8.50	50.55	19.06
37	6.63	48.23	15.00	6.63	48.23	15.00	6.63	48.23	15.00	8.50	52.23	19.06	8.50	52.23	19.06

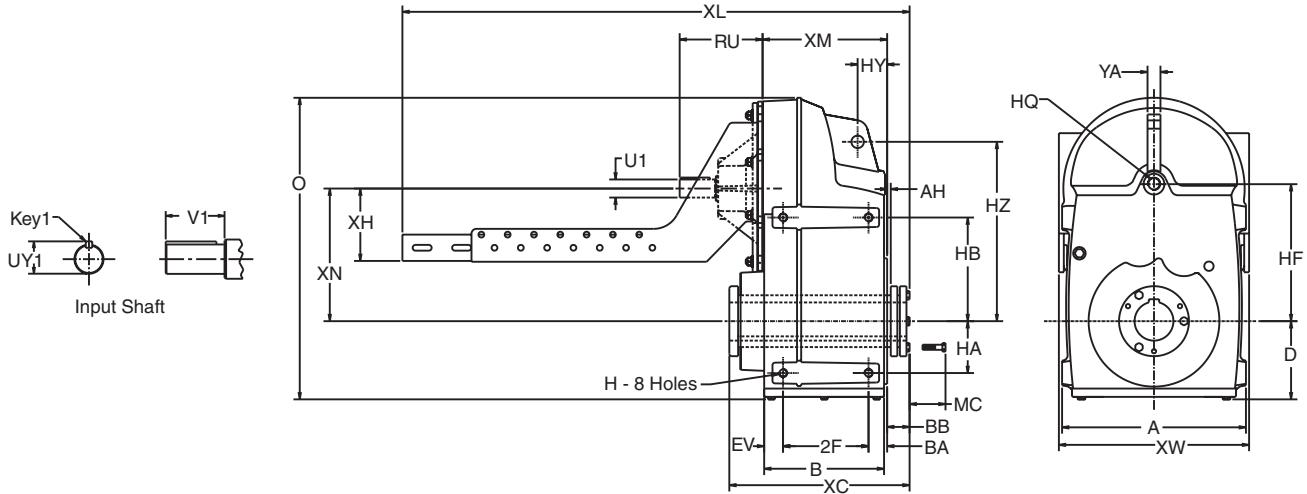
¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020', -0.0000" for all diameters.

³ Key to be supplied by others.

⁴ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

MbN32-35 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
32	7.83	5.39	3.80	2.76	M8X12	13.41	.79	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	.63
33	10.59	5.90	4.65	4.33	M10X18	16.34	.95	.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	.71
34	11.10	8.13	5.04	3.94	M16X24	18.78	1.42	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	.98
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	.98

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bore ²	
				Min.	Max.
32	1.39	1.75	9.78	1 15/16	1 7/16
33	1.39	1.88	9.88	1 7/16	1 15/16
34	1.63	1.88	12.54	2	2 7/16
35	1.63	1.88	13.83	2 7/16	2 15/16

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

Motor Frame

Gear Frame	143-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
32	3.75	25.58	11.38	-	-	-	-	-	-
33	4.74	26.86	12.38	4.74	26.86	12.38	-	-	-
34	5.56	37.89	12.75	5.56	37.89	12.75	5.56	37.89	12.75
35	5.56	38.30	12.75	5.56	38.30	12.75	5.56	38.30	12.75

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available including metric sizes.

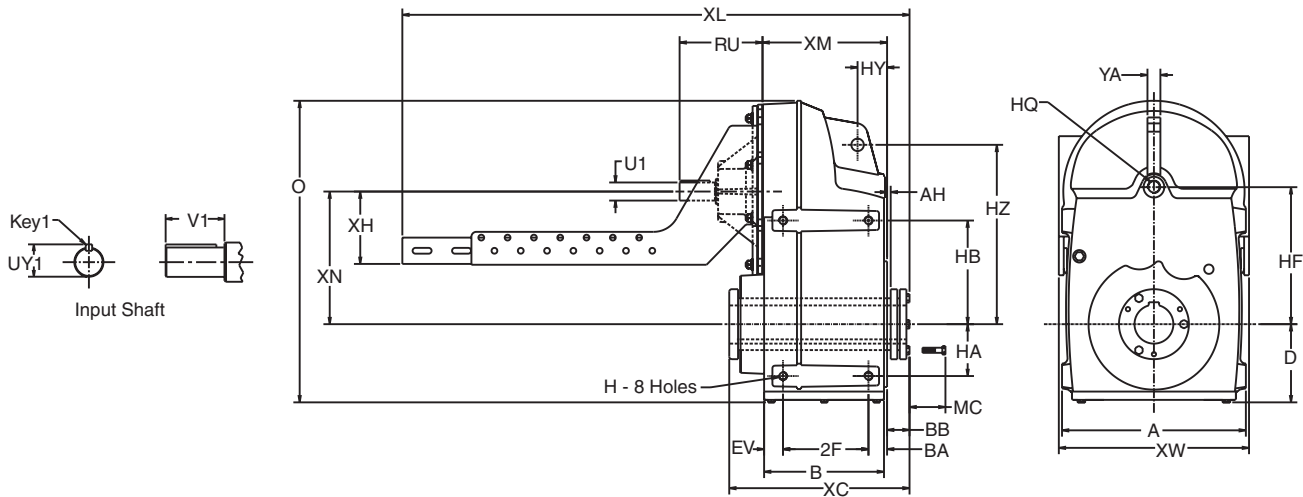
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.

⁵ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.

⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN36-37 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	1.77	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.22	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	2.64	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	12.76	12.28	1.55

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bores ²	
				Min.	Max.
36	1.88	1.88	15.57	2 7/16	2 15/16
37	2.70	2.25	19.01	2 15/16	3 7/16

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	45.28	15.00	6.63	45.28	15.00	6.63	45.28	15.00	8.50	49.28	19.06	8.50	49.28	19.06
37	6.63	47.54	15.00	6.63	47.54	15.00	6.63	47.54	15.00	8.50	51.54	19.06	8.50	51.54	19.06

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available including metric sizes.

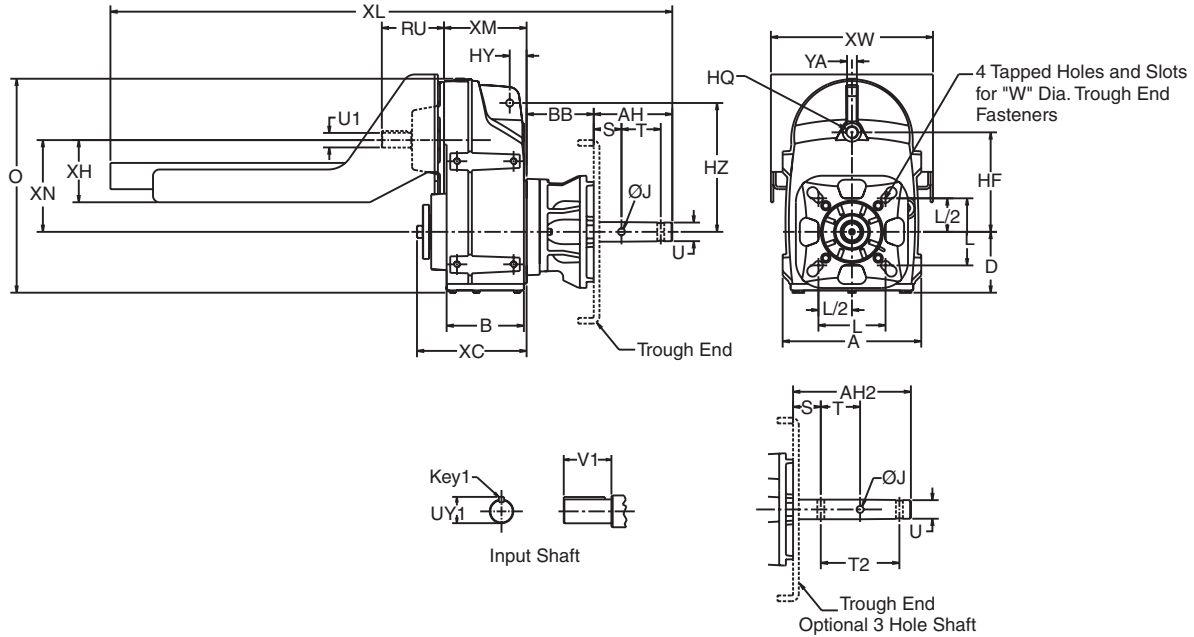
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.

⁵ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.

⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN32-35 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	HY	HZ	XC	XM	XN	YA	BB
32	7.83	5.39	3.80	13.41	5.79	M16X34	1.61	7.60	8.29	5.91	5.79	.63	5.13
33	10.59	5.90	4.65	16.34	7.60	M24X30	1.24	9.84	8.37	6.26	7.01	.71	5.13
34	11.10	8.13	5.04	18.78	8.47	M24X45	1.65	10.95	11.12	8.25	8.19	.98	6.21
35	13.98	9.11	5.95	22.91	10.43	M24X45	2.09	13.62	12.39	9.29	10.03	.98	6.53

Screw Conveyor

Gear Frame	Screw Dia.	W	J	L	U	S	T	T2	AH	AH2
32, 33	6 - 10	.50	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00
	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
34	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
35	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
	18 - 24	.75	.91	6.75	3.44	3.88	4.00	-	9.13	-
	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
	18 - 24	.75	.91	6.75	3.44	3.88	4.00	-	9.13	-

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

Motor Frame

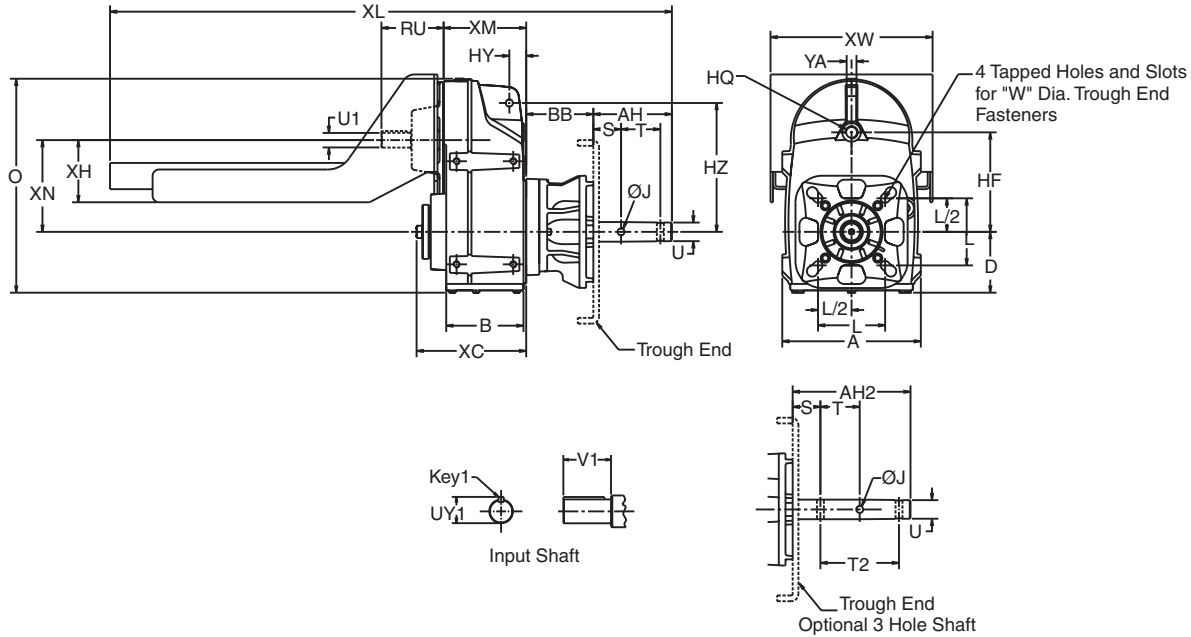
Gear Frame	143-145T			182T-184T			213T-215T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW
32	3.75	25.58	11.38	-	-	-	-	-	-
33	4.74	28.86	12.38	4.74	26.86	12.38	-	-	-
34	5.56	37.89	12.75	5.56	37.89	12.75	5.56	37.89	12.75
35	5.56	38.30	12.75	5.56	38.30	12.75	5.56	38.30	12.75

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size are listed on page D-98.

MbN36-37 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	XC	XM	XN	YA	BB
36	15.75	10.98	7.01	25.56	11.02	M30X45	13.75	11.22	11.02	1.36	6.67
37	17.72	12.36	8.01	29.04	12.99	M30X45	16.16	12.76	12.28	1.55	7.94

Screw Conveyor

Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
36	9-12	2.00	.63	.66	5.13	2.13	3.00	6.00	6.00	9.00
	12, 14	2.44	.63	.66	5.63	2.75	3.00	6.00	6.69	9.69
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13
37	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Motor Frame

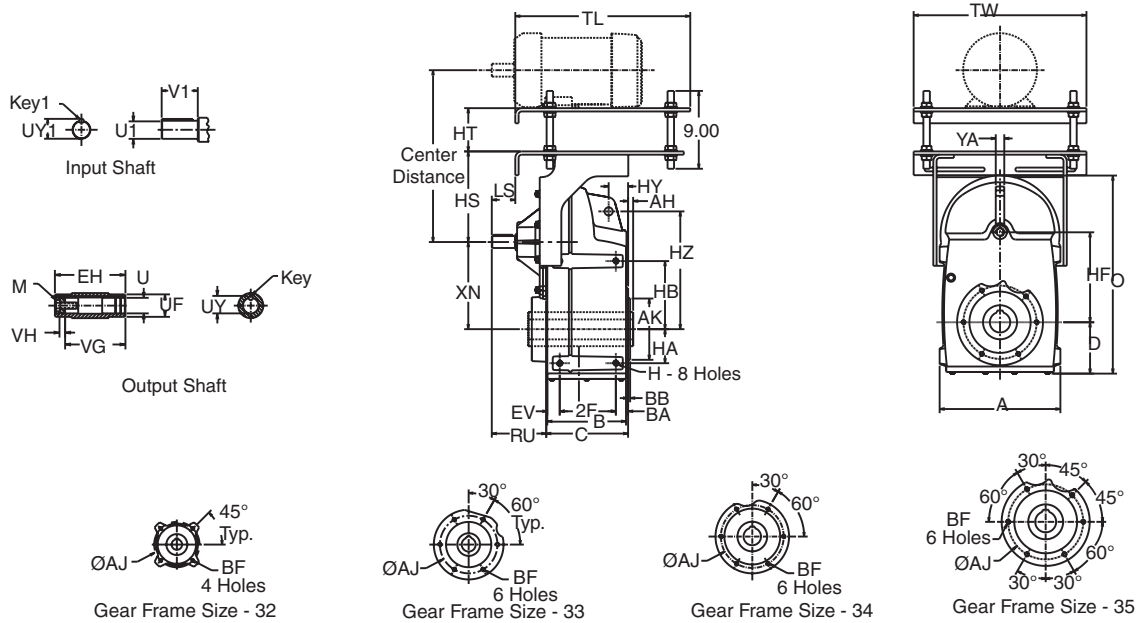
Gear Frame	182T-184T			213T-215T			254T-256T			284T-286T			324T-326T		
	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW	XH	XL	XW
36	6.63	50.07	15.00	6.63	50.07	15.00	6.63	50.07	15.00	8.50	54.07	19.06	8.50	54.07	19.06
37	6.63	52.78	15.00	6.63	52.78	15.00	6.63	52.78	15.00	8.50	56.78	19.06	8.50	56.78	19.06

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size are listed on page D-98.

MbN32-35 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA	LS	HS	HT		TL	TW
																			Min.	Max.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	.63	1.29	7.14	1.64	7.61	15.50	16.50
33	10.59	5.90	4.65	4.33	M10X18	16.34	.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	.71	2.31	7.17	1.64	7.61	15.50	16.50
34	11.10	8.13	5.04	3.94	M16X24	18.78	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	.98	2.35	8.48	1.89	7.36	15.50	16.50
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	.98	2.72	10.48	1.89	7.36	20.25	20.00

Output Shaft

Gear Frame	EH	U ^{2,5,6}	UF	UY	VG	VH	Key ³	M
32 ⁷	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Output Face

Gear Frame	AH	AJ	AK	BA	BB	BF
32	.31	5.12	4.331	.79	.23	M8X12
33	.32	6.50	5.118	.95	.24	M10X18
34	.30	7.09	6.289	1.42	.22	M12X22
35	.34	8.47	7.087	1.24	.26	M12X20

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

Motor Frame	32		33		34		35	
	Center Distance		Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34	15.87	21.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34	16.87	22.34
213T/215T	-	-	14.06	20.03	15.62	21.09	17.62	23.09
254T/256T	-	-	-	-	16.62	22.09	18.62	24.09
284T/286T	-	-	-	-	-	-	19.37	24.84

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.

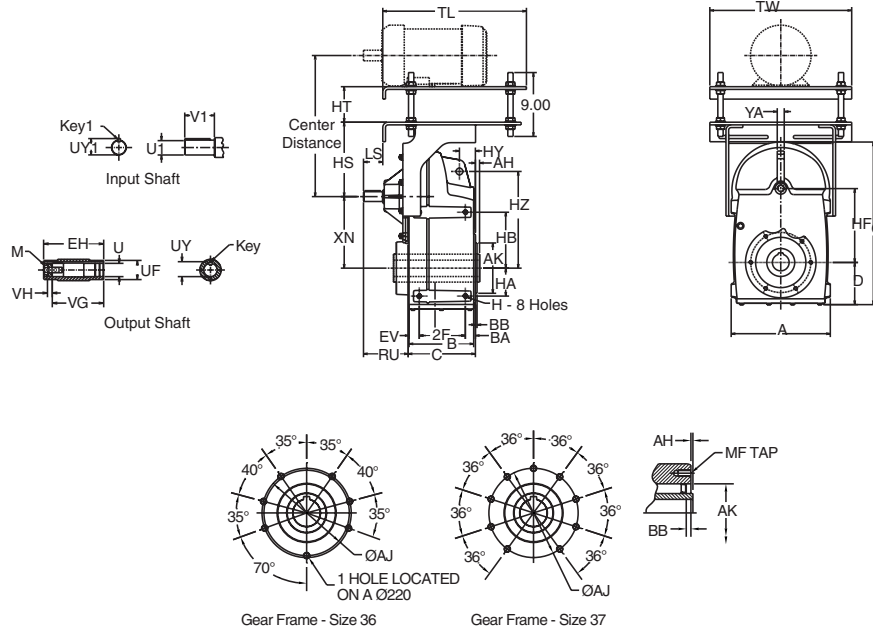
⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.

⁷ 3242/3243

MbN36-37 Double/Triple Reduction 40C Finished Bore Face Mount



Gear Frame	A	B	D	2F	H	O	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.22	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	12.76	12.28	1.55

Output Shaft

Gear Frame	EH	U ^{2, 5, 6}	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

40C Face

Gear Frame	AH	AJ	AK	BA	BB	BF
36	.23	9.06	5.91	1.77	.26	M16X27
37	.13	9.06	7.09	2.64	.26	M20X35

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Top Mount

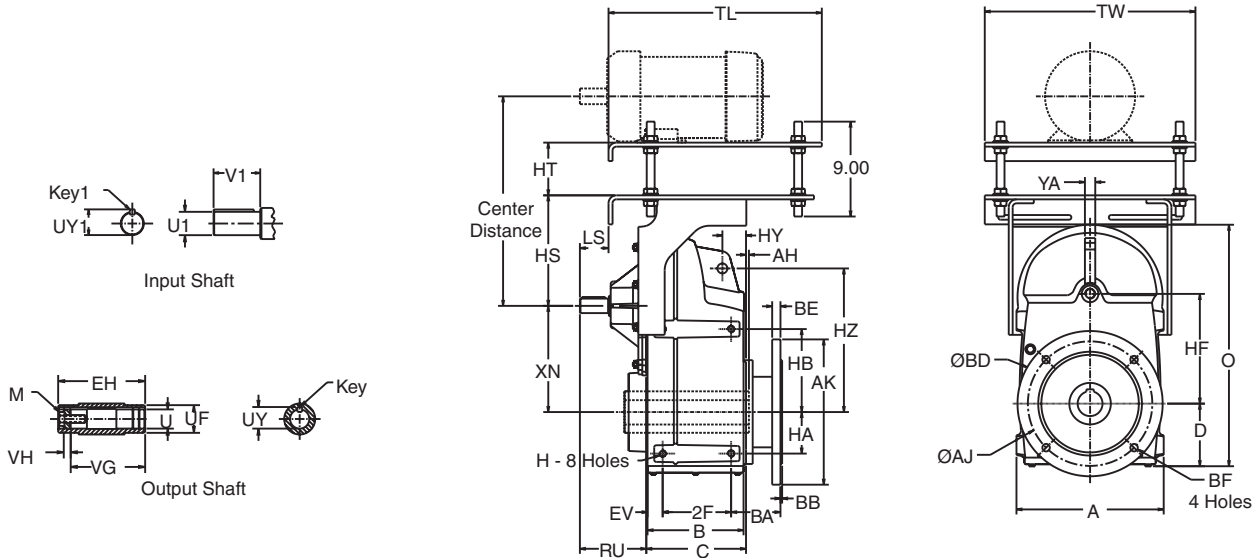
Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00

Motor Frame	36		37	
	Center Distance			
	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73
213T/215T	17.48	23.48	17.48	23.48
254T/256T	18.48	24.48	18.48	24.48
284T/286T	19.23	25.23	19.23	25.23
324T/326T	20.23	26.23	20.23	26.23

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020', -0.0000" for all diameters.
³ Key to be supplied by others.

⁴ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.
⁵ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.
⁶ Refer to tapered bushed (00B) design where driven shaft size differs from standard finished bore quill size.

MbN32-35 Double/Triple Reduction 50C/60C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA	LS	HS	HT		TL	TW
																				Min.	Max.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	.31	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	.63	1.29	7.14	1.64	7.61	15.50	16.50
33	10.59	5.90	4.65	4.33	M10X18	16.34	.32	.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	.71	2.31	7.17	1.64	7.61	15.50	16.50
34	11.10	8.13	5.04	3.94	M16X24	18.78	.30	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	.98	2.35	8.48	1.89	7.36	15.50	16.50
35	13.98	9.11	5.95	6.50	M16X24	22.91	.34	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	.98	2.72	10.48	1.89	7.36	20.25	20.00

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ³	M
32 ⁵	7.68	1.250	2.36	1.372	6.93	.43	1/4 Sq.	7/16-14
	7.68	1.375	2.36	1.523	6.93	.43	5/16 Sq.	1/2-13
33	7.75	1.500	2.56	1.67	6.76	.55	3/8 Sq.	5/8-11
34	10.41	2.000	3.34	2.228	8.74	.79	1/2 Sq.	5/8-11
35	11.71	2.375	3.93	2.656	10.27	.94	5/8 Sq.	3/4-10

Output Flange

Gear Frame	Flange Code	AK	AJ	BA	BB	BD	BE	BF
32 ⁵	60C	5.118	6.50	3.07	.16	7.87	.39	.47
	50C	7.087	8.47	2.16	.16	9.84	.47	.55
33	60C	7.087	8.47	3.54	.16	9.84	.55	.55
	50C	9.055	10.43	2.72	.16	11.81	.59	.55
34	60C	7.087	8.47	4.98	.16	9.84	.55	.55
	50C	9.055	10.43	3.33	.16	11.81	.59	.55
35	50C	9.843	11.81	6.61	.16	13.78	.79	.71

Input Shaft

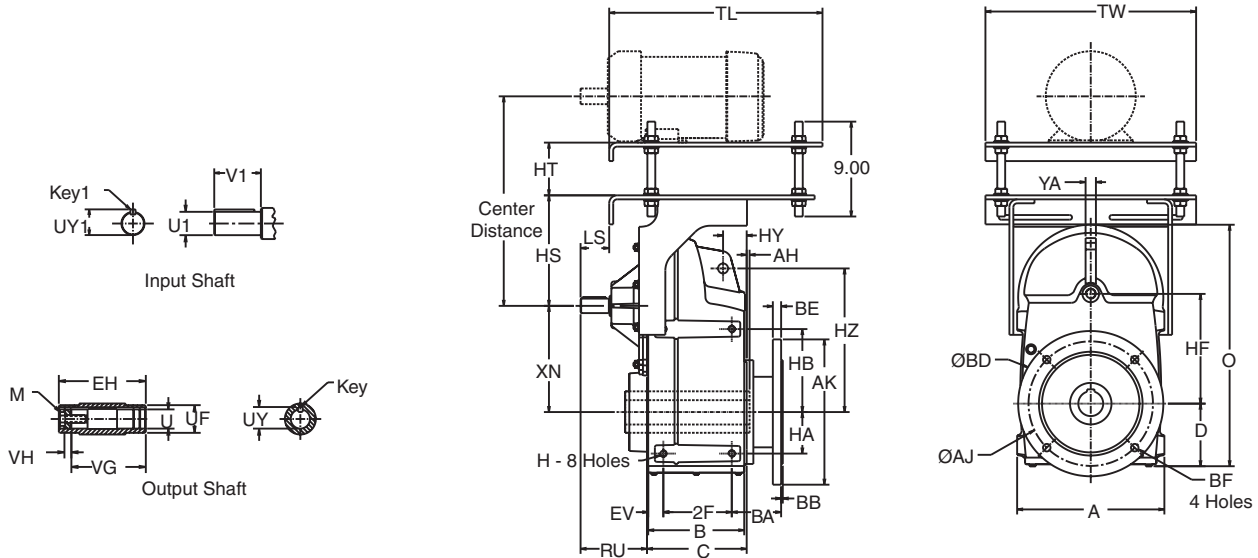
Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

Motor Frame	32		33		34		35	
	Center Distance		Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34	15.87	21.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34	16.87	22.34
213T/215T	-	-	14.06	20.03	15.62	21.09	17.62	23.09
254T/256T	-	-	-	-	16.62	22.09	18.62	24.09
284T/286T	-	-	-	-	-	-	19.37	24.84

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.
³ Key to be supplied by others.

⁴ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.
⁵ Use 3242/3243 for "U" = 1.375".
 Use 3202/3203 for "U" = 1.25".

MbN36-37 Double/Triple Reduction 50C Finished Bore Flange Mount



Gear Frame	A	B	D	2F	H	O	AH	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	.23	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.22	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	.13	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	12.76	12.28	1.55

Output Shaft

Gear Frame	EH	U ²	UF	UY	VG	VH	Key ³	M
36	13.14	2.75	3.93	3.037	11.59	.77	5/8 Sq	3/4-10 x 2.0
37	14.88	3.625	4.72	4.019	13.19	.77	7/8 Sq	3/4-10 x 2.0

Output Flange

Gear Frame	Flange Code	AJ	AK	BA	BB	BD	BE	BF
36	50C	15.75	13.780	4.92	.236	17.70	.79	.71
37	50C	15.75	13.780	5.79	.236	17.70	.79	.63

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Top Mount

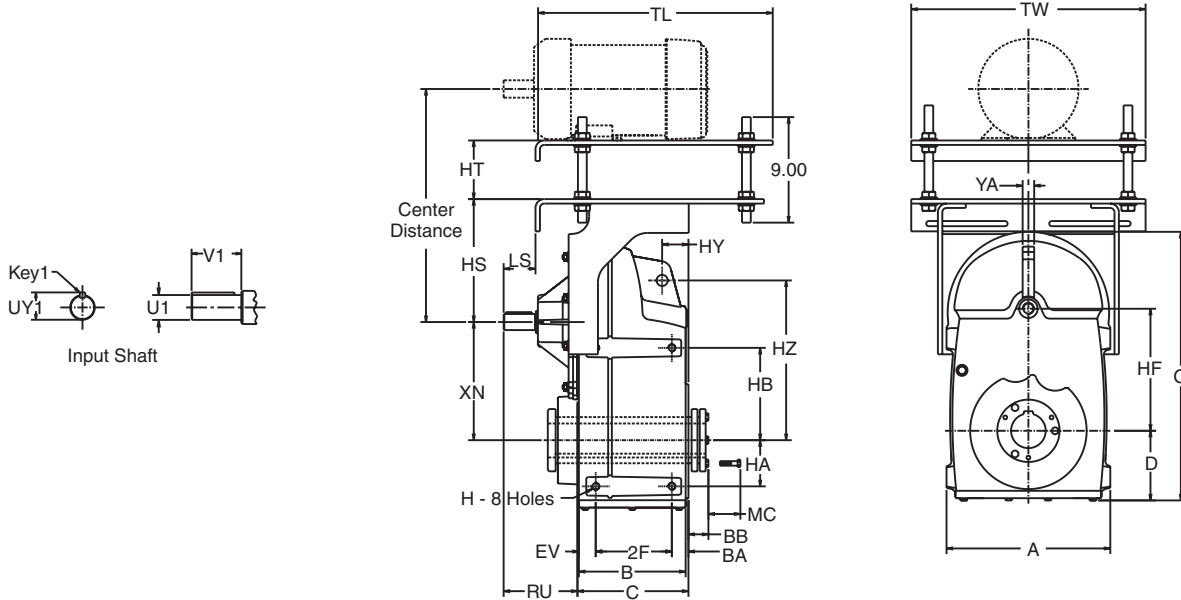
Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00

Motor Frame	36		37	
	Center Distance		Center Distance	
	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73
213T/215T	17.48	23.48	17.48	23.48
254T/256T	18.48	24.48	18.48	24.48
284T/286T	19.23	25.23	19.23	25.23
324T/326T	20.23	26.23	20.23	26.23

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Output bore tolerance (diameter "U"): +0.0020", -0.0000" for all diameters.

³ Key to be supplied by others.
⁴ Driven shaft entry can be from either side of gear housing by reversing positioning of the snap rings and washer illustrated.

MbN32-35 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA	LS	HS	HT		TL	TW
																				Min.	Max.		
32	7.83	5.39	3.80	2.76	M8X12	13.41	.79	2.36	2.13	3.78	5.79	M16X34	1.61	7.60	5.91	5.79	.63	1.29	7.14	1.64	7.61	15.50	16.50
33	10.59	5.90	4.65	4.33	M10X18	16.34	.95	.98	2.48	5.39	7.60	M24X30	1.24	9.84	6.26	7.01	.71	2.31	7.17	1.64	7.61	15.50	16.50
34	11.10	8.13	5.04	3.94	M16X24	18.78	1.42	2.89	3.35	6.10	8.47	M24X45	1.65	10.95	8.25	8.19	.98	2.35	8.48	1.89	7.36	15.50	16.50
35	13.98	9.11	5.95	6.50	M16X24	22.91	1.24	1.55	3.94	7.87	10.43	M24X45	2.09	13.62	9.29	10.03	.98	2.72	10.48	1.89	7.36	20.25	20.00

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bore ²	
				Min.	Max.
32	1.39	1.75	9.78	1 5/16	1 7/16
33	1.39	1.88	9.88	1 7/16	1 15/16
34	1.63	1.88	12.54	2	2 7/16
35	1.63	1.88	13.83	2 7/16	2 15/16

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

Motor Frame

Motor Frame	32		33		34		35	
	Center Distance		Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34	15.87	21.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34	16.87	22.34
213T/215T	-	-	14.06	20.03	15.62	21.09	17.62	23.09
254T/256T	-	-	-	-	16.62	22.09	18.62	24.09
284T/286T	-	-	-	-	-	-	19.37	24.84

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available in each gear frame size.

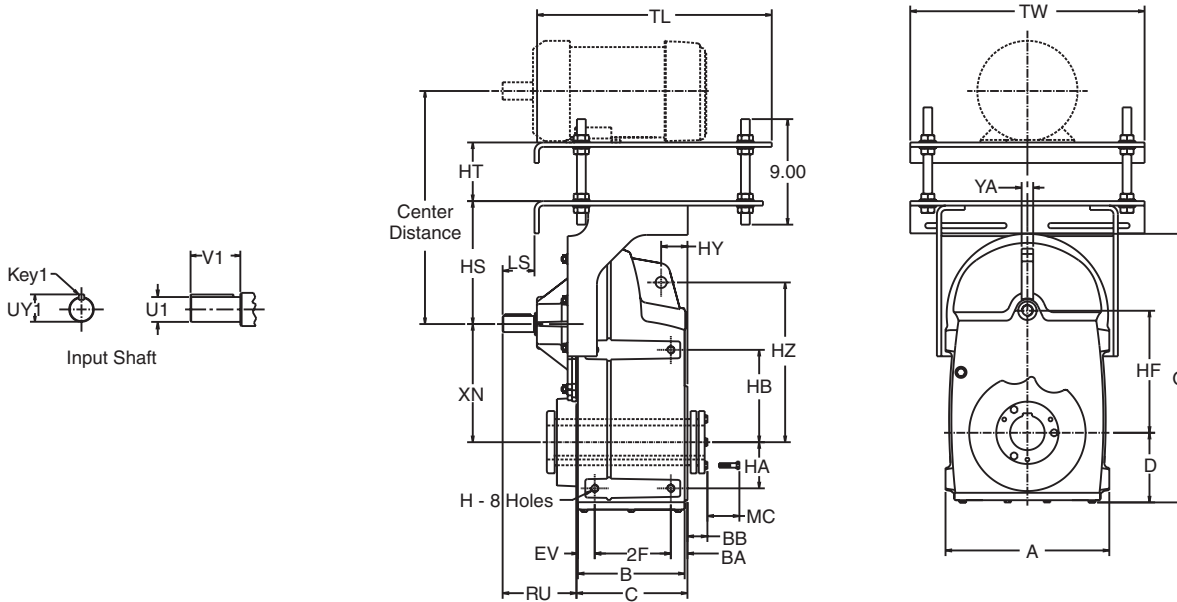
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.

⁵ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.

⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN36-37 Double/Triple Reduction 00B Tapered Bushed Shaft Mount



Gear Frame	A	B	D	2F	H	O	BA	EV	HA	HB	HF	HQ	HY	HZ	XM	XN	YA
36	15.75	10.98	7.01	6.50	M16X25	25.56	1.77	2.87	2.95	9.45	11.02	M30X45	2.87	16.14	11.22	11.02	1.36
37	17.72	12.36	8.01	8.66	M24X40	29.04	2.64	1.26	4.92	11.81	12.99	M30X45	3.37	19.09	12.76	12.28	1.55

Output Shaft

Gear Frame	BB	MC ³	XC	Bushing Bores ²	
				Min.	Max.
36	1.88	1.88	15.57	2 7/16	2 15/16
37	2.70	2.25	19.01	2 15/16	3 7/16

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Top Mount

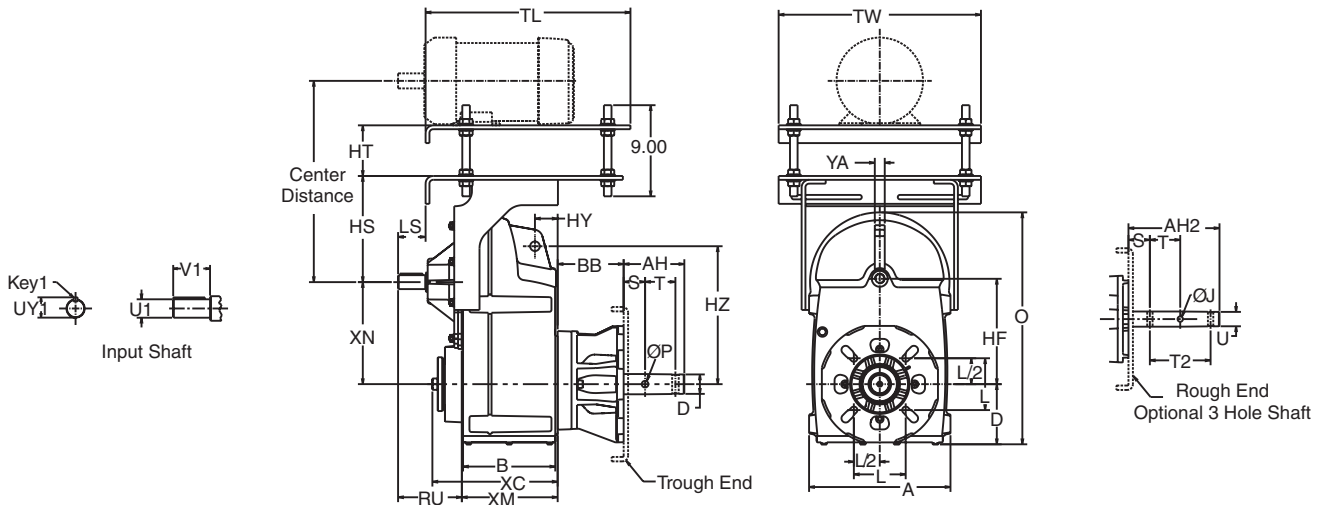
Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00

Motor Frame	36		37	
	Center Distance		Center Distance	
	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73
213T/215T	17.48	23.48	17.48	23.48
254T/256T	18.48	24.48	18.48	24.48
284T/286T	19.23	25.23	19.23	25.23
324T/326T	20.23	26.23	20.23	26.23

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to Tapered Bushings on pages D-97 for a listing of all bushing bore sizes available in each gear frame size.
³ The "MC" dimension shows spacing required to install or remove the bushing from the gear unit.

⁴ Bushing and dust cap can be installed opposite of how they are shown above.
⁵ Driven shaft entry can be from either side of gear housing. Refer to installation manual for requirements.
⁶ Refer to Mounting Accessories on page D-100 for details of Silent-Bloc and Tie Rod kits.

MbN32-35 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	HY	HZ	XC	XM	XN	YA	BB	LS	HS	HT		TL	TW
																Min.	Max.		
32	7.83	5.39	3.80	13.41	5.79	M16X34	1.61	7.60	8.29	5.91	5.79	.63	5.13	1.29	7.14	1.64	7.61	15.50	16.50
33	10.59	5.90	4.65	16.34	7.60	M24X30	1.24	9.84	8.37	6.26	7.01	.71	5.13	2.31	7.17	1.64	7.61	15.50	16.50
34	11.10	8.13	5.04	18.78	8.47	M24X45	1.65	10.95	11.12	8.25	8.19	.98	6.21	2.35	8.48	1.89	7.36	15.50	16.50
35	13.98	9.11	5.95	22.91	10.43	M24X45	2.09	13.62	12.39	9.29	10.03	.98	6.53	2.72	10.48	1.89	7.36	20.25	20.00

Screw Conveyor

Gear Frame	Screw Dia.	W	J	L	U	S	T	T2	AH	AH2
32, 33	6 - 10	.50	.53	4.00	1.50	2.13	3.00	6.00	6.00	9.00
	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
34	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
	18 - 24	.75	.91	6.75	3.44	3.88	4.00	-	9.13	-
35	9 - 12	.63	.66	5.13	2.00	2.13	3.00	6.00	6.00	9.00
	12 - 14	.63	.66	5.63	2.44	2.75	3.00	6.00	6.69	9.69
	12 - 20	.75	.78	6.00	3.00	2.88	3.00	6.00	6.88	9.88
	18 - 24	.75	.91	6.75	3.44	3.88	4.00	-	9.13	-

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key 1
32	3.17	.625	.714	1.25	3/16 Sq.
33	4.75	1.125	1.246	2.25	1/4 Sq.
34	5.03	1.125	1.246	2.25	1/4 Sq.
35	6.03	1.375	1.523	2.75	5/16 Sq.

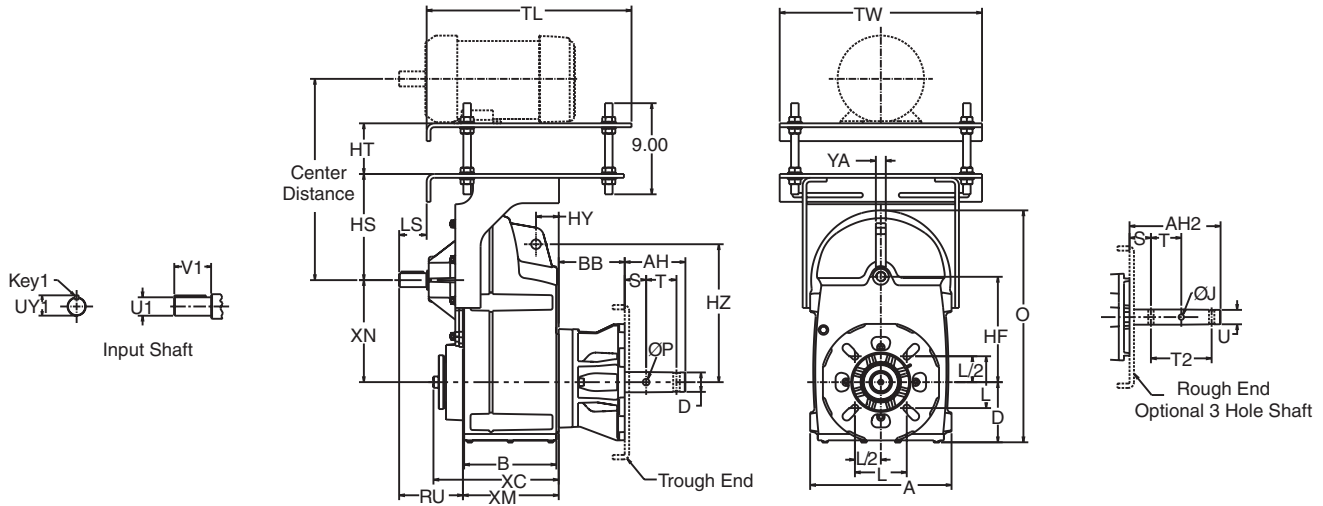
Motor Frame	32		33		34		35	
	Center Distance		Center Distance		Center Distance		Center Distance	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
56	12.28	18.25	12.31	18.28	-	-	-	-
143T/145T	12.28	18.25	12.31	18.28	13.87	19.34	15.87	21.34
182T/184T	13.28	19.25	13.31	19.28	14.87	20.34	16.87	22.34
213T/215T	-	-	14.06	20.03	15.62	21.09	17.62	23.09
254T/256T	-	-	-	-	16.62	22.09	18.62	24.09
284T/286T	-	-	-	-	-	-	19.37	24.84

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.

² Refer to pages D-98 and D-99 for the screw conveyor drive shafts, trough ends and other accessories available for each frame size.

³ Thrust ratings for each gear frame size are listed on page D-98.

MbN36-37 Double/Triple Reduction 00S CEMA Screw Conveyor Drive



Gear Frame	A	B	D	O	HF	HQ	XC	XM	XN	YA	BB
36	15.75	10.98	7.01	25.56	11.02	M30X45	13.75	11.22	11.02	1.36	6.67
37	17.72	12.36	8.01	29.04	12.99	M30X45	16.16	12.76	12.28	1.55	7.94

Screw Conveyor

Gear Frame	Screw Dia.	U	W	J	L	S	T	T2	AH	AH2
36	9-12	2.00	.63	.66	5.13	2.13	3.00	6.00	6.00	9.00
	12, 14	2.44	.63	.66	5.63	2.75	3.00	6.00	6.69	9.69
	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13
37	12-20	3.00	.75	.78	6.00	2.88	3.00	6.00	6.88	9.88
	18-24	3.44	.75	.91	6.75	3.88	4.00	8.00	9.13	13.13

Input Shaft

Gear Frame	RU	U1	UY1	V1	Key1
36	7.56	1.875	2.101	3.75	1/2 Sq.
37	7.56	1.875	2.101	3.75	1/2 Sq.

Top Mount

Gear Frame	LS	HS	HT		TL	TW
			Min.	Max.		
36	3.76	10.48	1.89	7.36	20.25	24.00
37	3.76	10.48	1.89	7.36	20.25	24.00

Motor Frame	36		37	
	Center Distance		Center Distance	
	Min.	Max.	Min.	Max.
182T/184T	16.73	22.73	16.73	22.73
213T/215T	17.48	23.48	17.48	23.48
254T/256T	18.48	24.48	18.48	24.48
284T/286T	19.23	25.23	19.23	25.23
324T/326T	20.23	26.23	20.23	26.23

¹ All rough casting dimensions may vary by up to 0.25" due to casting variations.
² Refer to pages D-98 and D-99 for the screw conveyor drive

shafts, trough ends and other accessories available for each frame size.
³ Thrust ratings for each gear frame size are listed on page D-98.



Speed Reducer Weights

MbN
SERIES **3000**

Approximate Shipping Weights - 40C Face Mounted Design C-Face Reducers

MbN Frame	Reduction Stages	56C	143TC 145TC	182TC 184TC	213TC 215TC	254TC 256TC	284TC 286TC	324TC 326TC	364TC 365TC
31	2	42	42	-	-	-	-	-	-
320_	2	68	68	-	-	-	-	-	-
	3	75	75	-	-	-	-	-	-
324_	2	68	68	72	-	-	-	-	-
	3	75	75	-	-	-	-	-	-
	4, 5, 6	81	81	-	-	-	-	-	-
33	2	120	120	129	129	-	-	-	-
	3	127	127	136	-	-	-	-	-
	4, 5, 6	149	149	-	-	-	-	-	-
34	2	170	170	179	179	184	-	-	-
	3	180	180	189	-	-	-	-	-
	4, 5, 6	209	209	218	-	-	-	-	-
35	2	-	-	245	245	250	206	-	-
	3	-	265	274	274	279	-	-	-
	4, 5, 6	294	294	304	-	-	-	-	-
36	2	-	-	451	451	465	484	508	-
	3	-	442	451	451	465	484	508	-
	4, 5, 6	486	486	495	495	-	-	-	-
37	2	-	-	-	638	652	671	695	695
	3	-	-	638	638	652	671	695	695
	4, 5, 6	673	673	682	682	-	-	-	-

Input Shaft 40C Reducers

MbN Frame	Reduction Stages	AP/AD	Scoop	Top Mount
31	2	37	N/A	N/A
320_	2	63	N/A	N/A
	3	70	N/A	N/A
324_	2	63	N/A	N/A
	3	70	N/A	N/A
	4, 5, 6	80	N/A	N/A
33	2	110	135	157
	3	117	142	164
	4, 5, 6	139	N/A	N/A
34	2	163	196	218
	3	173	206	228
	4, 5, 6	202	N/A	N/A
35	2	237	289	311
	3	266	317	339
	4, 5, 6	295	N/A	N/A
36	2	490	652	641
	3	490	652	641
	4, 5, 6	479	504	526
37	2	677	839	828
	3	677	839	828
	4, 5, 6	667	691	713

Gear Options - Weight Adders to Above

MbN Frame	OOB Bushed	OOS SCD	40P	50C	50P
31	N/A	N/A	4	-	-
32	2	35	5	5	10
33	4.5	42	7	10	17
34	6.5	75	10	15	25
35	10	101	12	20	22
36	16	109	15	66	81
37	20	130	22	73	95

MbN Series

Lubrication

Series 3000 MbN gearing is shipped with one of the following synthetic lubricants per the table below and fitted with a magnetic drain. Each reducer is filled according to the mounting position specified when ordered. Refer to unit nameplate and the chart on page D-16 or D-96 for mounting position arrangement for your unit.

In the case of synthetic oil, the lubricant does not require changing but it is recommended that proper oil level be checked periodically.

Standard Synthetic Gear Oil (Non-Food Grade)

No Backstop

Manufacturer	-25°F to 125°F (-30°C to 50°C)
Fuchs*	Sintogear* 125
Mobil*	Mobilgear* SHC 150
Shell*	Omala* S4 Gx 150

With Backstop

Manufacturer	-25°F to 125°F (-30°C to 50°C)
Shell*	Morlina* S4 B 100
Mobil*	Mobil* SHC 629

Synthetic Gear Oil (Food Grade)

No Backstop

Manufacturer	22°F to 125°F (-20°C to 50°C)
Mobil*	SHC Cibus 150

▲ CAUTION

- Never mix synthetic oil and mineral oil.
- Never use extreme pressure (EP) oil in a reducer with a backstop.
- Refer to installation and maintenance manual for mineral oil selection.

MbN Oil Quantity

Mounting Position**	Oil Quantity (US Quarts*)						
	MbN Frame Size						
	31	32	33	34	35	36	37
P3	1.8	2.8	5.3	7.6	15.3	20.8	32.3
P6	1.48	2.1	4.3	7.1	15.8	22	33.9
P7	1.48	2.1	4.4	7.6	13.4	18.6	30.4
P8	1.48	2.1	5	7	14.6	22.2	33.8
PV5	1.74	3	6.2	9.1	20.1	26.3	40.4
PV6	2.43	3.5	7	10.3	21	23.9	40

*Liters = US Quarts x .946

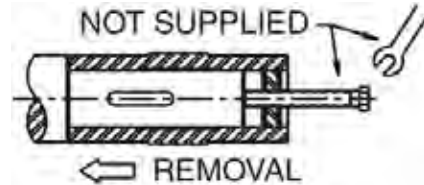
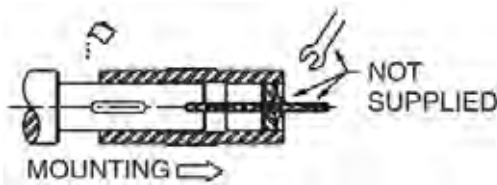
**Refer to Unit nameplate and diagrams found on D-95 for selection of proper oil required

*The following are believed to be the trademarks and/or trade names of their respective owners and are not owned or controlled by Emerson Power Transmission. Fuchs and Sintogear: Fuchs Petrolube AG; Mobil and Mobilgear: Exxon Mobil Corporation; Shell, Omala and Morlina: Shell Oil Company.

Hollow Shaft Details

MbN finished bore, hollow shaft gearmotors and speed reducers are supplied with provision for installing and securing the unit on the shaft of the driven equipment. This includes a threaded keeper washer that fits inside the quill between two snap rings that hold the washer axially near the quill end. A pair of snap ring grooves is provided near each end in the quill. This allows the shaft to be installed from either end and secured using the keeper washer in the opposite end. To use this keeper provision, the end of the customer provided driven shaft must be threaded to match the keeper bolt that is supplied with the unit. The bolt thread and length dimensions are shown as dimension "M" in the table below.

The keeper washer may also be used to aid in mounting the gear unit on the driven shaft or for removal of it from the shaft. This is illustrated in the drawings below. A general description of the procedure is also provided. For the complete mounting and dismounting procedure, refer to the product installation manual.

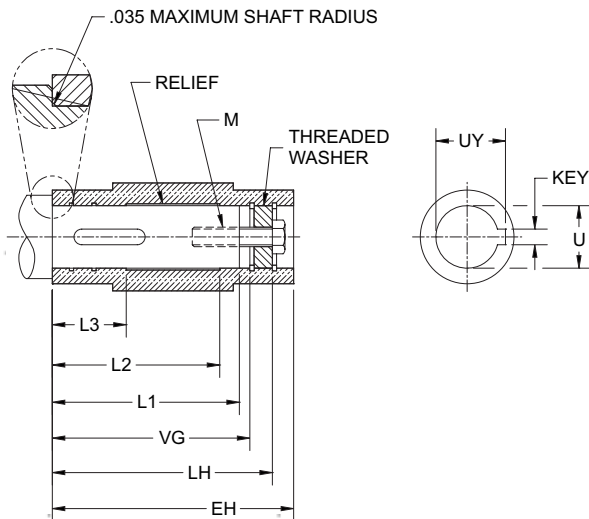


Mounting

- A customer supplied threaded rod and nut (thread size "M" from the table below), may be inserted through the quill and threaded into the end of the driven shaft.
- As the nut is tightened, the driven shaft will be pulled into the quill.
- Refer to the illustration above.
- After the shaft is pulled up against the driven shaft shoulder, the threaded rod can be replaced with a keeper bolt to secure the gear unit.

Removal

- A customer supplied bolt with threads to match the threaded hole in the keeper washer (see table below) may be threaded into the keeper washer until it contacts the driven shaft end.
- Tightening the removal bolt will push the gear unit off of the driven shaft.
- Refer to the illustration above.



Driven Shaft Recommendations:

- It is best to use the keeper bolt to pull the driven shaft into the quill up against a shoulder on the driven shaft.
- The length of engagement on the driven shaft should be no greater than "L1 Max" as shown in the table below.
- The length of engagement should be greater than "L2" (see table below) to clear the relief in the quill.
- Note that these dimensions are shown as though the shaft enters the quill opposite the gear input.

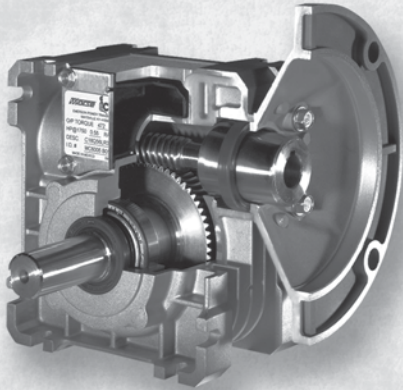
Gear Frame	Reducer Shaft Details							Driven Shaft		Keeper Washer Thread UNC	
	EH	LH	L2	L3	M	U ¹	UY	VG	Key		L1 Max
31	5.71	3.99	3.27	1.18	7/16-14 x 1	1.250	1.367	3.61	1/4 Sq.	3.49	5/8
3242, 43	7.68	7.30	4.93	1.81	1/2-13 x 1	1.375	1.518	6.93	5/16 Sq	6.68	5/8
32-2, 03	7.68	7.30	5.18	1.81	7/16-14 x 1	1.250	1.367	6.93	1/4 Sq.	6.68	5/8
33	7.75	7.25	4.75	1.78	5/8-11 x 3/4	1.500	1.669	6.77	3/8 Sq	6.52	3/4
34	10.41	9.46	6.41	2.22	5/8-11 x 3/4	2.000	2.223	8.74	1/2 Sq	8.49	3/4
35	11.71	11.12	6.96	2.65	3/4-10 x 2	2.375	2.651	10.27	5/8 Sq	10.02	7/8
36	13.14	12.36	7.64	3.21	3/4-10 x 2.0	2.750	3.037	11.55	5/8 Sq	11.34	1
37	14.88	13.96	7.63	3.15	3/4-10 x 2.0	3.625	4.019	13.04	7/8 Sq	12.94	1

¹ Output shaft bore tolerances (diameter "U"); +0.0010"/-0.000" for MbN 31 and +0.0020"/-0.000" for MbN 32 - 37. Keeper bolt is not supplied with the MbN unit.

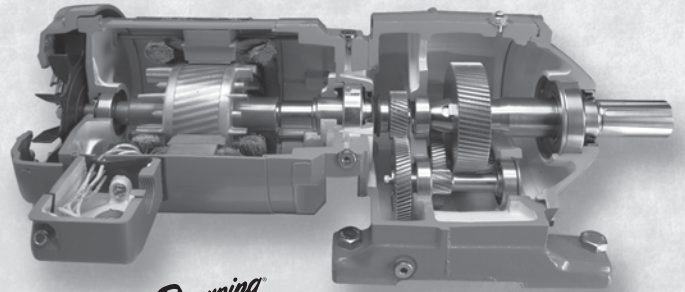
Complete Gearing Solutions...

Standard Solutions

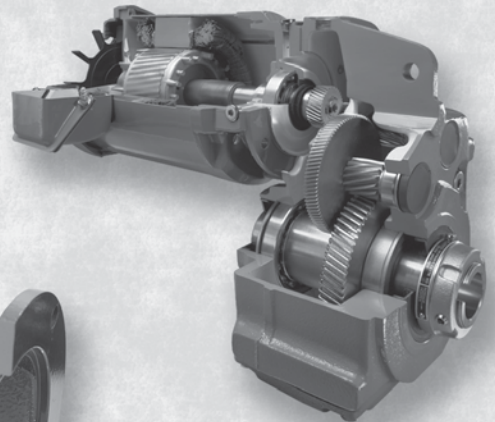
Emerson has the Industry's Broadest Line of Standard Gearmotors and Speed Reducers



Morse
COBRA
Worm Gear Reducer



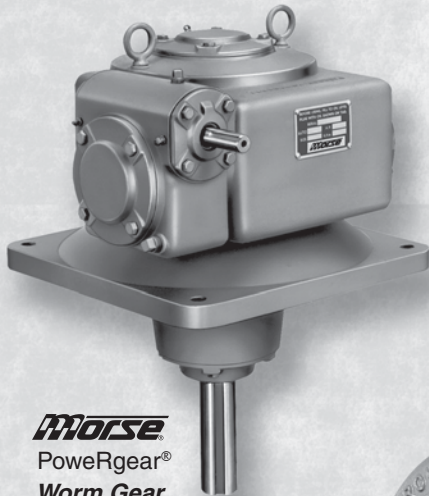
Browning
CbN Inline
Concentric Gearmotor



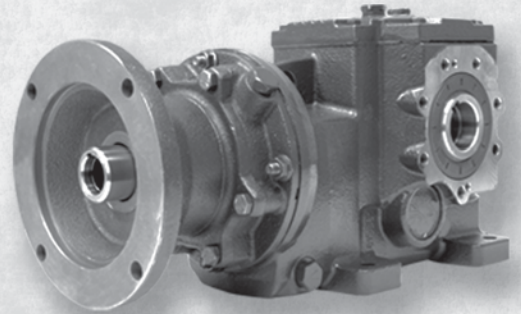
Browning
MbN Helical
Shaft Mount
Gearmotor



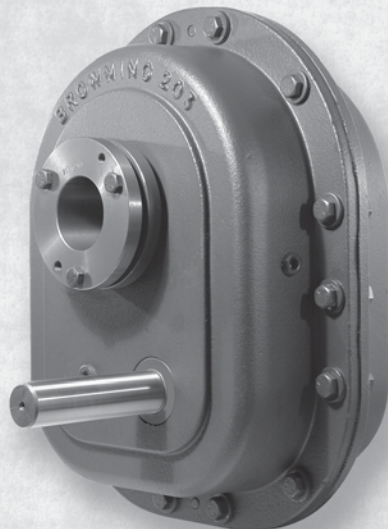
Morse
Raider® Plus
Worm Gear Reducer



Morse
Powergear®
Worm Gear
Reducer



Browning
OtN Helical Bevel
Reducers



Browning
TORQTAPER® Plus
Shaft Mount
Speed Reducer

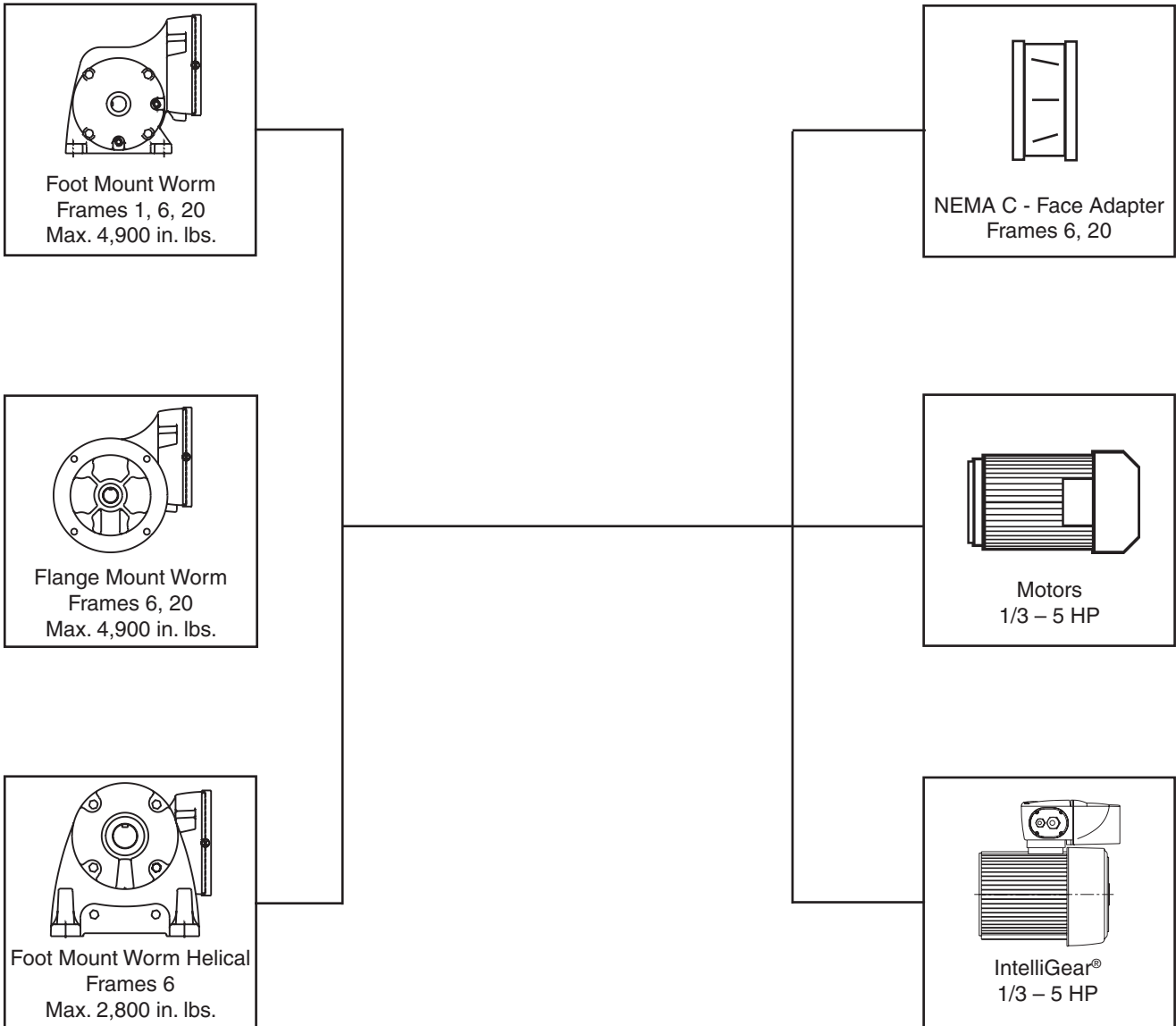
Browning®

IRA Gearmotors

- Innovative self-locking taper shaft connection (motor to gear) allows on-site replacement without removing oil, primary pinion, or disconnecting the load. This helps ensure precision alignment and eliminates fretting to expedite motor removal.
- Forged "LMS" bronze worm wheel provides extra strength and life.
- Roller bearings on output shaft provide ample rating for high overhung load.
- Factory filled with oil.
- Two double lipped oil seals at input and output shafts.



- 1/3 to 5 hp
- Worm and worm/helical ratios of 7:1 to 354:1
- Compact rugged physical envelope
- Three and single phase motors



Type IRA

General

IRA worm and helical-worm speed reducers and gearmotors adapt the speed of an electric motor to the driven machine. Selection depends on motor power (P) expressed in hp and on the required speed (n) in rpm. Output torque of the driven system can be calculated using the following formulas, based on reducer efficiency:

$$T \text{ (in.lbs.)} = \frac{P \times 63025 \times \text{eff.}}{n}$$

The overall ratio (i) of the drive system =

$$\frac{\text{motor speed (n)}}{\text{reducer output speed (n)}}$$

Design

Housing manufactured of high strength die-cast aluminum. Roller bearings on output shaft provide greater overhung load. Forged "LMS" bronze worm wheel provides extra strength. Excellent reversibility.

Performances

This unique "worm-first" helical worm reducer (available only in frame size 6) provides for a higher efficiency than competitive units.

A range of three frame sizes: 1, 6, 20.

Output torque up to 4,300 in. lbs.

Numerous reduction ratios from 7:1 to 350:1.

High efficiency.

Low noise level.

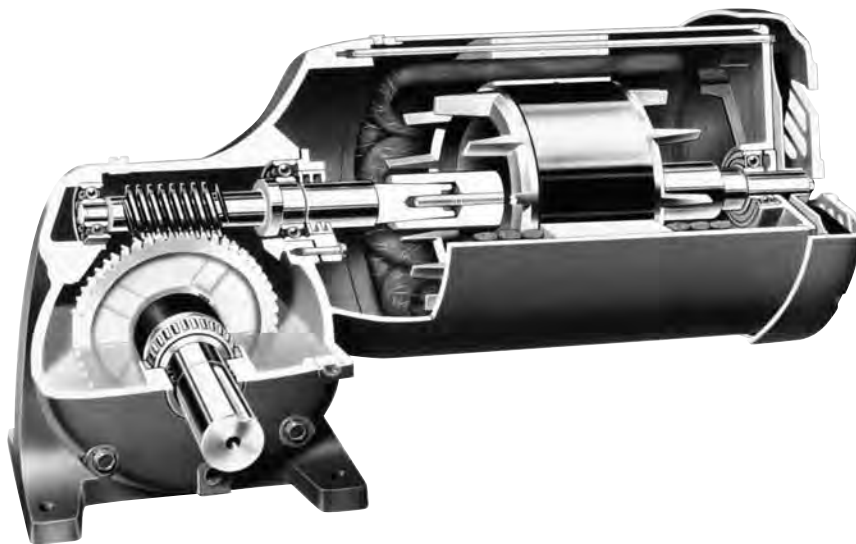
Exceptional flexibility

Speed Reducers

- C-face input
- Output flange
- Multiple mounting positions available.

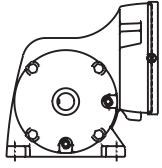
Gearmotors

- TEFC - three phase
- TEFC - single phase
- Corro-Duty®
- Explosionproof
- Brakemotor
- Inverter duty
- Washdown

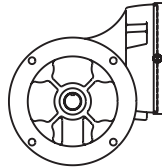


IRA Worm Drive

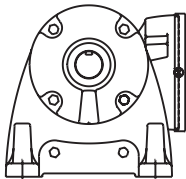
IRA Gearmotors



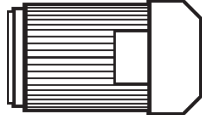
Foot Mount Worm
Frames 1, 6, 20
Max. 3,500 in. lbs.



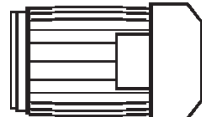
Flange Mount Worm
Frames 6, 20
Max. 3,500 in. lbs.




Foot Mount Worm Helical
Frames 6
Max. 2,700 in. lbs.



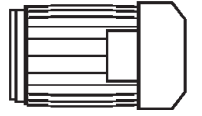
Three Phase TEFC
1/3 – 5 HP



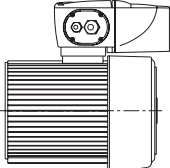
Corro-Duty®
1/3 – 5 HP



Single Phase TEFC
1/3 – 5 HP



Explosionproof
1/3 – 5 HP



IntelliGear®
1/3 – 5 HP



TEFC - Three Phase

- Suitable for general purpose industrial applications
- Premium class F insulation standard
- 40°C ambient, NEMA B design, continuous duty
- High efficiency design standard
- Washdown duty treatment available for food processors, meat packing, baking, drug, and cosmetic industries; includes N/C breather and USDA approved white paint
- Premium efficient motors option at 3 and 5 HP
- Inverter duty option per NEMA MG1 Part 31



Corro-Duty®

- Designed for applications in waste treatment, mining, and lumber industries
- All cast iron construction (56 and 140 frames are rolled steel)
- High efficiency standard on all HP's
- Premium efficient motors option at 3 and 5 HP
- 1.15 service factor, class F insulation
- Condensation drains in motor and conduit box
- 40°C ambient, NEMA design B, continuous duty



TEFC - Single Phase

- For agricultural, light material handling, textile, and light pumping applications
- 1.25 service factor (1.0 service factor, 2 thru 5 HP)
- Capacitor start (capacitor run above 1/2 HP, 48 frame) (capacitor run above 1 HP)
- Class B insulation, continuous duty, reversible



Explosionproof

- Ideal for the petro-chemical, grain, mining, and chemical industries
- Class I, group D, class II, groups F and G
- All cast iron construction (plastic fan cover)
- 1.0 service factor, class B insulation
- 40°C ambient, NEMA B design, continuous duty



IntelliGear® Plus

- Variable speed gearmotor with NEMA 4/12 enclosure
- "Onboard" pushbutton and remote speed changing options
- Pre-programmed 6:1 and wider C/T speed ranges
- Versions for 3/460V input power supplies from 1/3 to 5 HP
- 1/230V and 3/230V through 2 HP
- 1/115V through 3/4 HP
- UL*, CUL and CE

Selection Information

1. Input hp
 - Based on application data.
2. Speed / Ratio
 - Obtain either desired output speed (rpm) or gearbox ratio based on application.
3. Service Factor
 - The tables on pages E14 to E16 are based on past operating experience within the industries listed and information gathered by AGMA. If the user has data reflecting greater severity than normal industry usage, then service factor should be increased.
 - Choose the AGMA class for your given application based on this criteria. If your application cannot be found, use the following table to determine service factor.

Prime Mover	Duration Of Service	Nature of Load From Driven Machine		
		Uniform	Mod. Shock	Heavy Shock
Electric Motor	Occasional 1/2 hour per day	0.80	0.90	1.00
	Intermittent 2 hours per day	0.90	1.00	1.25
	10 hours per day	1.00	1.25	1.50
	24 hours per day	1.25	1.50	1.75

The following service factors apply to applications involving frequent starts and stops.

Electric Motor	Occasional 1/2 hour per day	0.90	1.00	1.25
	Intermittent 2 hours per day	1.00	1.25	1.50
	10 hours per day	1.25	1.50	1.75
	24 hours per day	1.50	1.75	2.00

Size Selection

- Step 1 - Locate appropriate gearmotor selection table (pages E18 to E24) based on input hp.
- Step 2 - Choose the appropriate nominal speed required.
- Step 3 - Select the correct gearmotor based on service factor determined in selection information.
- Step 4 - Verify overhung load ratings where required (see below).

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a gearmotor, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times hp \times K \times LLF}{rpm \times r}$$

Where:

- OHL = Overhung load (pounds)
- T = Torque (in. lbs.)
- r = Radius of driving member (in.)
- hp = Horsepower
- K = Drive type factor
- LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Gearbelt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Example

A right angle, foot mounted gearmotor is required to operate a uniformly loaded conveyor at 68 rpm, 24 hours per day. An 8" diameter sprocket is mounted at the end of the shaft and drives the conveyor with a chain. The load is .75 hp and customer requests a high efficiency 3/60 230/460 volt TEFC motor end. Shaft extension is to be on the right, viewed opposite the input. The gearmotor will be mounted on the floor.

Step 1 – AGMA service classification tables on page E-14 indicate that this is a 1.25 service factor application.

Step 2 – Page E-21 IRA gearmotor table indicates that a frame 143T-6 with 1 HP motor will do the job.

Output RPM	Service Factor	Output Torque in-lb	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Std. Motor Types \diamond
68	1.5	796	0.86	980	25	6 143T	T,C,S,X,IG

Step 3 – To check overhung load for the example:

$$r = \frac{\text{Sprocket Diameter}}{2} = \frac{8}{2} = 4$$

$$K = 1.0 \text{ (chain drive)}$$

$$LLF = 1.2 \text{ (sprocket on end of shaft)}$$

$$HP = 1$$

Torque formula:

$$OHL = \frac{63025 \times HP \times K \times LLF}{RPM \times r}$$

$$OHL = \frac{63025 \times 1 \times 1.0 \times 1.2}{68 \times 4} = 278 \text{ lbs.}$$

Overhung load capacity of 980 lbs. listed is greater than the calculated value of 278 lbs.

Step 4 – Catalog designation (see "Ordering" page E-10):

IRA - 6 - GW - F1 - 25 - HT24 - 143T - 1

Selection and Ordering Information

Selection Information

1. Determine Installation Environment
 - Control enclosure is NEMA 4/12
2. Input hp
 - For constant torque loads this is at maximum speed of range
3. Speed Range
 - Confirm maximum and minimum of 6:1 range.
4. Determine Control Power Supply
 - Phase and voltage.

Power Supply	Input HP's
1 ph / 115 v	.33 to .75
1 ph / 230 v	.33 to 2
3 ph / 230 v	.33 to 2
3 ph / 460 v	.33 to 5

5. Mechanical Service Factoring of Gear
 - Refer to Page E-6 for this procedure.

Note: IntelliGear application for 1 phase power supply is limited to 10 starts per hour.
6. Determine Speed Adjustment Option
 - Select from:
 - PD = Digital keypad with forward/reverse/stop/speed up/speed down/speed display on IntelliGear enclosure
 - P1 = Run/Stop/Speed Pot. mounted on IntelliGear enclosure
 - P2 = Forward/Reverse/Stop/Pot. mounted on IntelliGear enclosure
 - P3 = Speed Pot. (only) mounted on IntelliGear enclosure (start/stop by others)
 - P4 = Speed Pot. (only) mounted inside IntelliGear enclosure (start/stop by others)
 - R = Remote Signal Following (0-10VDC or 4-20mA supplied by others)
 - RP = Remote From Fieldbus - Profibus DP

Size Selection

- Step 1 - Locate gearmotor selection tables based on the input HP required at maximum speed of the range.
- Step 2 - Select the "output rpm" closest to the maximum speed of the range desired. If the motor hp is 5, make the rpm selection using the following formula:

$$\text{"Output rpm" Selection} * = \frac{\text{Max. Speed of Range}}{1.2}$$
- Step 3 - Note the gear ratio after step 2.
- Step 4 - Select correct gearmotor that meets or exceeds the AGMA service factor determined in the selection information.
- Step 5 - Verify overhung load rating where applicable per formulas on Page E-6.
- Step 6 - Confirm input power supply is compatible with hp of selection and record speed adjustment option desired for the applicaiton.
- Step 7 - Referring to Page E-13, determine if an alternate controller location is required for the application. Default location is "FO" (at 12 o'clock).

* Maximum motor rpm will be 2150 @ 74 Hz for 5hp IntelliGear.

Selection and Ordering Information

Selection Example

A foot mounted IRA worm gearmotor is required to operate a non-uniformly fed assembly conveyor from 38 to 6 rpm, 8-10 hours per day. The output shaft will be chain/sprocket connected to the conveyor shaft in a 3:1 ratio and a 3.5" radius sprocket mounted mid-shaft. The conveyor will require at least 0.51 hp at the maximum rpm of the range. The jobsite power supply is 3/230 VAC and speed control with start/stop push-buttons and speed knob on the controller enclosure. The enclosure requirement for the site is NEMA 12. Referencing the motor fan cover guard, the reducer output shaft should be at the left, the controller should be at the right, and the speed knob should be at the upper side on the control enclosure. Final mounting will be ceiling mount.

Step 1...

The closest gearmotor hp is a 0.75 HP unit and this unit @ 37 rpm 60 Hz has an output of 0.55 hp. (944 inch lbs torque @37 RPM)

Step 2...

The ratio that will more closely provide the desired speed range is 45:1.

Step 3...

AGMA service factor requirements for this application is a minimum of 1.25 S.F. and the selection from page E-20 will be gear frame 6 GW.

Output RPM	Service Factor	Output Torque in-lb	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types ◇
37	1.3	944	.55	980	45	6	56	T,S,C,X,IG

Step 4...

$$\begin{aligned}
 \text{OHL with HP known} &= \frac{63025 \times \text{HP} \times K \times \text{LLF}}{\text{RPM} \times R} \\
 &= \frac{63025 \times .51 \times 1.00 \times 1.00}{37 \times 3.5"} \\
 &= 248 \text{ Lbs.} \quad (\text{Less than } 980 \text{ Lb OHL capacity})
 \end{aligned}$$

Step 5...

The power supply of 3/230 VAC is ok for .75 HP IRA gearmotor with "IG2" motor input, plus include F1 controller location plus "B" cable entry.

Step 6...

Catalog designation will be:

IRA • 6 • GW • C1 • 45 • IG2 • 56 • 3/4 w/F1 controller and "B" cable entry. Supply "P1" speed control option.

Catalog Designation

IRA • 6 • GW • F1 • 25 • HT24 • 143T • 1 •

Based on Selection

Choose one

Based on Application

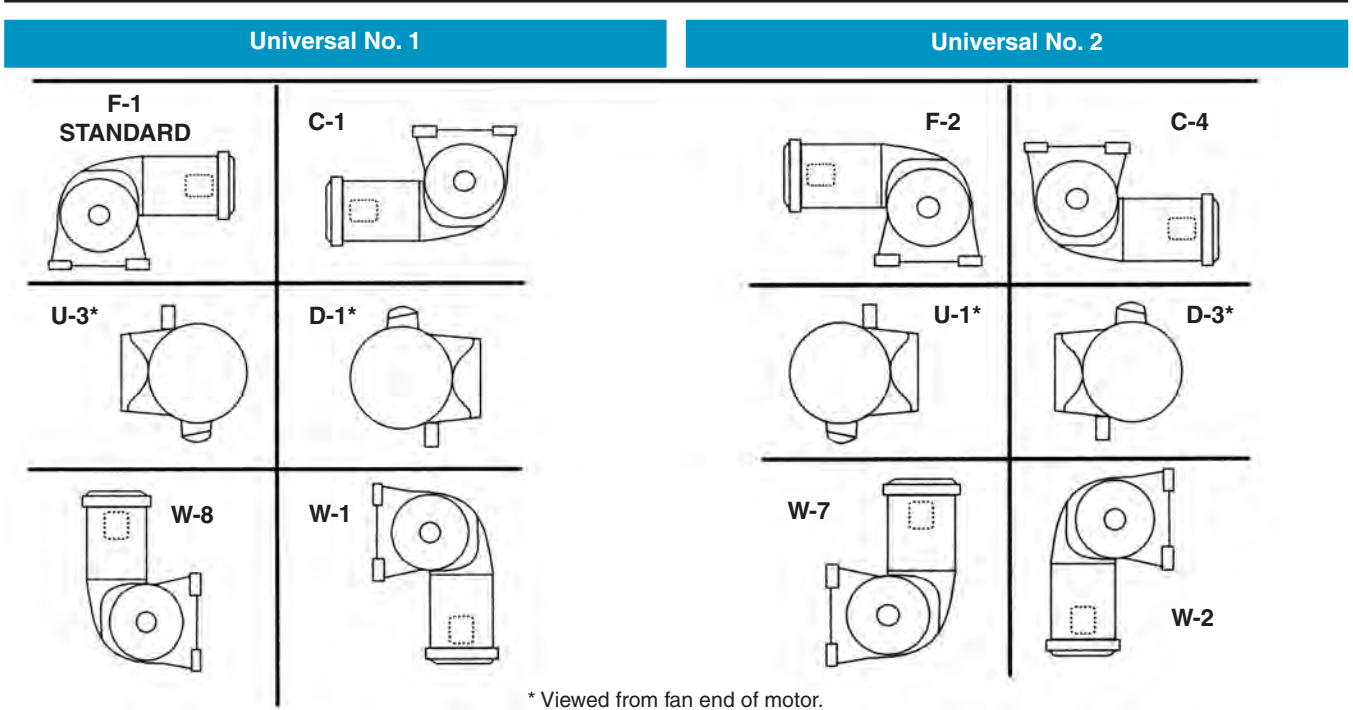
Type	Gear Frame	Mounting Configuration	Mounting Positions	Ratio	Input	Motor Frame	Horsepower	Modification Code(s)
IRA	1 6 20	GW = Footed Worm GWV = Flanged Worm GWB = Footed Worm-Helical (Frame 6 only)	See page E-11	Use Nominal Ratio Selected	See legend on page E-12	48 56 B56 143T 145T 182T 184T	1/3 1/2 3/4 1 1.5 2 3 5	Number of Modification(s) from pages E-25 and E-26

Availability

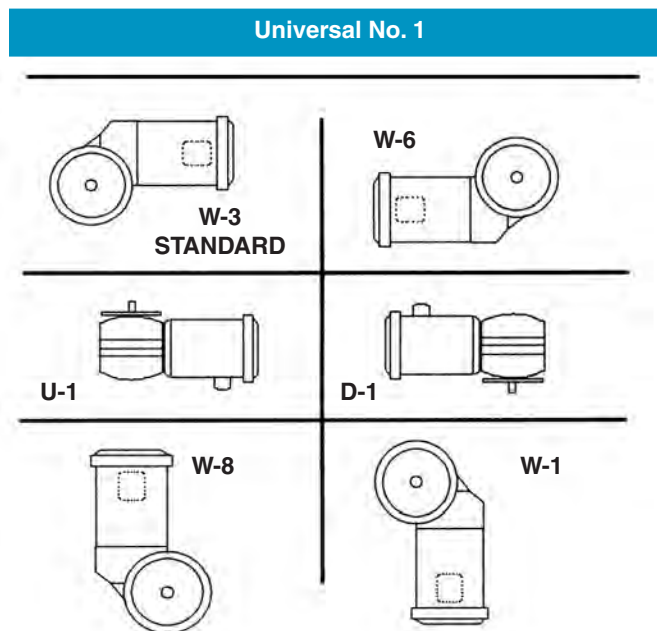
Gear Frame	Footed		Flanged
	Universal #1	Universal #2	Universal #1
1 GW (worm)	●	◇	-
6 GW (worm)	●	◇	●
6 GWB (worm helical)	●	●	*
20 GW (worm)	●	◇	●

- Normally Stocked
- ◇ Available thru conversion of stock unit
- X Available thru production only
- * Refer application to Type HWN Product

Foot Mount Worm and Worm Helical

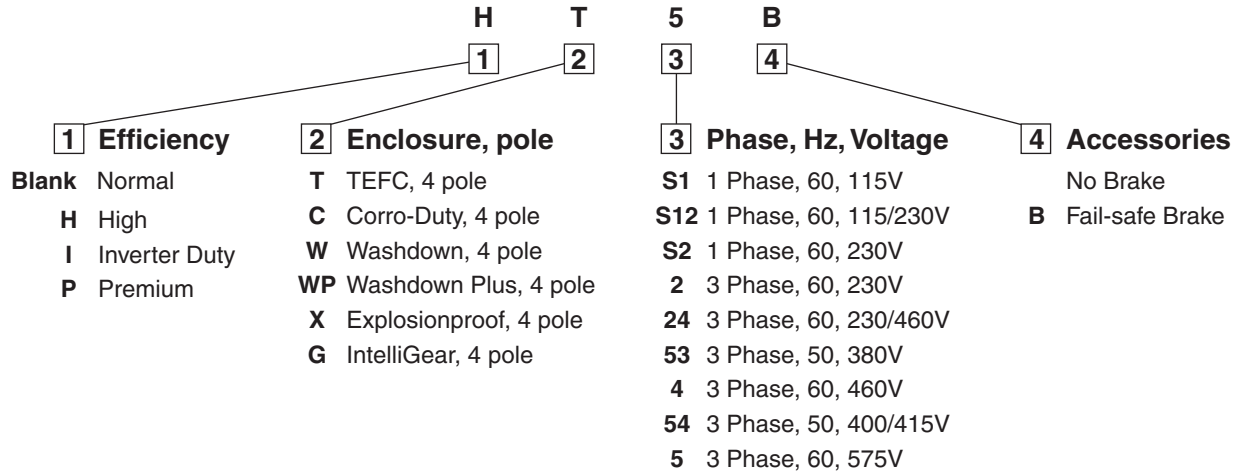


Flange Mount Worm



IRA Gearmotor Inputs

Example: High Efficiency, TEFC, 3 phase 60 Hz, 575V, with Fail-safe Brake



Base Design	Input Code	Motor HP							
		0.33	0.50	0.75	1	1.5	2	3	5
S Single Phase TEFC	TS12	Y	Y	Y	Y	Y	Y	-	-
	TS12B	Y	Y	Y	Y	Y	Y	-	-
	TS2	-	-	-	-	-	-	Y	Y
	TS2B	-	-	-	-	-	-	Y	Y
T 3 Phase TEFC	HT24	Y	Y	Y	Y	Y	Y	Y	Y
	HT24B	Y	Y	Y	Y	Y	Y	Y	Y
	HT5	Y	Y	Y	Y	Y	Y	Y	Y
	HT5B	Y	Y	Y	Y	Y	Y	Y	Y
	T24	Y	Y	Y	Y ¹	Y	Y	Y	Y
	T24B	Y	Y	Y	Y ¹	Y	Y	Y	Y
	T5	Y	Y	Y	Y ¹	-	-	-	-
	T5B	Y	Y	Y	Y ¹	Y	Y	Y	Y
	T53	Y	Y	Y	Y ¹	Y	Y	Y	Y
	T54	Y	Y	Y	Y	Y	Y	Y	Y
	IT24	Y	Y	Y	Y	Y	Y	Y	Y
	IT24B	Y	Y	Y	Y	Y	Y	Y	Y
	IT5	Y	Y	Y	Y	Y	Y	Y	Y
	IT5B	Y	Y	Y	Y	Y	Y	Y	Y
	PT24	-	-	-	-	-	-	Y	Y
	PT24B	-	-	-	-	-	-	Y	Y
	PT5	-	-	-	-	-	-	Y	Y
	PT5B	-	-	-	-	-	-	Y	Y
	W24	Y	Y	Y	Y ¹	Y	Y	Y	Y
	W5	Y	Y	Y	Y ¹	Y	Y	-	-
WP24	Y	Y	Y	Y ¹	Y	Y	-	-	
WP5	Y	Y	Y	Y ¹	Y	Y	-	-	
C 3 Phase Corro-Duty®	HC24	Y	Y	Y	Y	Y	Y	-	-
	HC5	Y	Y	Y	Y	Y	Y	Y	Y
	IC24	Y	Y	Y	Y	Y	Y	Y	Y
	IC5	Y	Y	Y	Y	Y	Y	Y	Y
	PC24	-	-	-	-	-	-	Y	Y
PC5	-	-	-	-	-	-	Y	Y	
X 3 Phase Explosionproof	X24	Y	Y	Y	Y	Y	Y	Y	Y
	X5	Y	Y	Y	-	-	-	-	-
	IX24	P	P	P	P	P	P	P	P
IG IntelliGear®	IGS1	Y	Y	Y	-	-	-	-	-
	IGS2	Y	Y	Y	Y	Y	Y	-	-
	IG2	Y	Y	Y	Y	Y	Y	Y	Y
	IG4	Y	Y	Y	Y	Y	Y	Y	Y

P Production lead-time

Y Available from stock

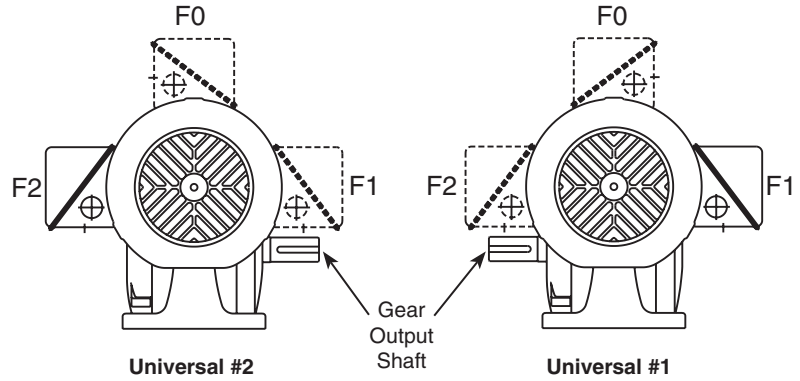
Y Available except IGW Gear units with 48 frame motors

- Not available

Y¹ Motor frame is B56

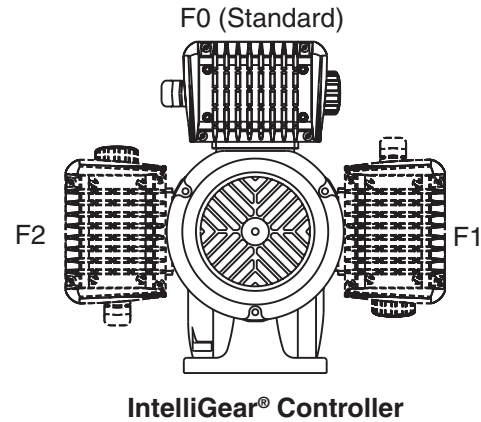
Electrical Connections Conduit Box Locations:

Shaft Orientation	Conduit Box Location	
	Std.	Optional
Universal #2	F2	F1 or F0
Universal #1	F1	F2 OR F0



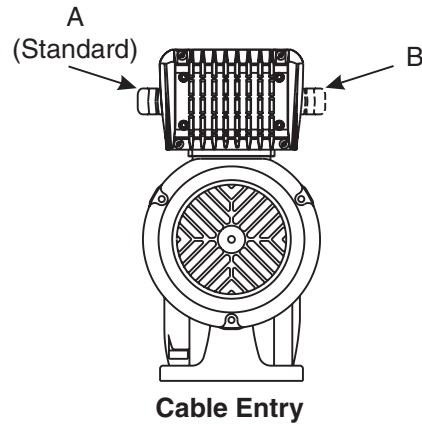
IntelliGear Controller Location

When ordering an IntelliGear® IRA gearmotor, you can specify the controller location and conduit entry location when viewing the unit fan cover guard. If no options are specified, the "F0" controller location will be supplied.



IntelliGear Cable Entry

IntelliGear Cable Entry can be from either side of enclosure. If no option is specified, "A" will be supplied.



Application	Recommended Service Factors			Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
AGITATORS (Mixers)				CRANES (cont.)			
Pure Liquids	---	1.00	1.25	Industrial Duty			
Liquids & Solids	1.00	1.25	1.50	Main	1.00	1.25	1.50
Liquids - Variable Density	1.00	1.25	1.50	Auxiliary	◆	◆	◆
				Bridge and Trolley Travel	◆	◆	◆
BLOWERS				CRUSHER			
Centrifugal	1.00	1.25	---	Stone or Ore	1.50	1.75	2.00
Lobe	1.00	1.25	1.50				
Vane	---	1.00	1.25	DREDGES			
BREWING & DISTILLING				Cable Reels	1.00	1.25	1.50
Bottling Machinery	---	1.00	1.25	Conveyors	1.00	1.25	1.50
Brew Kettles (Continuous Duty)	---	1.00	1.25	Cutter Head Drives	1.25	1.50	1.75
Cookers (Continuous Duty)	---	1.00	1.25	Pumps	1.00	1.25	1.50
Mush Tubs (Continuous Duty)	---	1.00	1.25	Screen Drives	1.25	1.50	1.75
Scale Hopper (Frequent Starts)	1.00	1.25	1.50	Stackers	1.00	1.25	1.50
				Winches	1.00	1.25	1.50
CAN FILLING MACHINES	---	1.00	1.25	ELEVATORS			
CAR DUMPERS	1.25	1.50	1.75	Bucket	1.00	1.25	1.50
CAR PULLERS	1.00	1.25	1.50	Centrifugal Discharge	---	1.00	1.25
CLARIFIERS	---	1.00	1.25	Escalators	◆	◆	◆
CLASSIFIERS	1.00	1.25	1.50	Freight	◆	◆	◆
CLAY WORKING MACHINERY				Gravity Discharge	---	1.00	1.25
Brick Press	1.25	1.50	1.75	EXTRUDERS			
Briquette Machine	1.25	1.50	1.75	General	1.25	1.25	1.25
Pug Mill	1.00	1.25	1.50	Plastics			
				(a) Variable Speed Drive	1.50	1.50	1.50
COMPACTORS	1.50	1.75	2.00	(b) Fixed Speed Drive	1.75	1.75	1.75
COMPRESSORS				Rubber			
Centrifugal	---	1.00	1.25	(a) Continuous Screw Operation	1.50	1.50	1.50
Lobe	1.00	1.25	1.50	(b) Intermittent Screw Operation	1.75	1.75	1.75
Reciprocating, Multi - Cylinder	1.00	1.25	1.50	FANS			
Reciprocating, Single - Cylinder	1.25	1.50	1.75	Centrifugal	---	1.00	1.25
CONVEYORS - GENERAL PURPOSE				Cooling Towers	◆	◆	◆
Uniformly loaded or fed	---	1.00	1.25	Forced Draft	1.25	1.25	1.25
Not uniformly fed	1.00	1.25	1.50	Induced Draft	1.00	1.25	1.50
Reciprocating or Shaker	1.25	1.50	1.75	Industrial & Mine	1.00	1.25	1.50
CRANES				FEEDERS			
Dry Dock				Apron	---	1.25	1.50
Main Hoist	1.25	1.50	1.75	Belt	1.00	1.25	1.50
Auxiliary Hoist	1.25	1.50	1.75	Disc	---	1.00	1.25
Boom Hoist	1.25	1.50	1.75	Reciprocating	1.25	1.50	1.75
Slewing Drive	1.25	1.50	1.75	Screw	1.00	1.25	1.50
Traction Drive	1.50	1.50	1.50	FOOD INDUSTRY			
Container				Cereal Cooker	---	1.00	1.25
Main Hoist	◆	◆	◆	Dough Mixer	1.00	1.25	1.50
Boom Hoist	◆	◆	◆	Meat Grinders	1.00	1.25	1.50
Trolley Travel	◆	◆	◆	Slicers	1.00	1.25	1.50
Gantry Drive	◆	◆	◆	GENERATORS & EXCITERS	---	1.00	1.25
Traction Drive	◆	◆	◆	HAMMER MILLS	1.50	1.50	1.75
Mill Duty				HOISTS			
Main Hoist	◆	◆	◆	Heavy Duty	1.25	1.50	1.75
Auxiliary	◆	◆	◆	Medium Duty	1.00	1.25	1.50
Bridge and Trolley Travel	◆	◆	◆	Skip Hoist	1.00	1.25	1.50

◆ Refer to Application Engineering (1 800 626 2093)

Application	Recommended Service Factors			Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
LAUNDRY TUMBLERS	1.00	1.25	1.50	PAPER MILLS			
LAUNDRY WASHERS	1.25	1.25	1.50	Agitator (Mixer)	1.50	1.50	1.50
LUMBER INDUSTRY				Agitator for Pure Liquids	1.25	1.25	1.25
Barkers - Spindle Feed	1.25	1.25	1.50	Barker Drums	1.75	1.75	1.75
- Main Drive	1.50	1.50	1.50	Barker - Mechanical	1.75	1.75	1.75
Conveyors - Burner	1.25	1.25	1.50	Beater	1.50	1.50	1.50
- Main or Heavy Duty	1.50	1.50	1.50	Breaker Stack	1.25	1.25	1.25
- Main Log	1.50	1.50	1.75	Calender			
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50	(Anti-Friction Bearings Only)	1.25	1.25	1.25
- Slab	1.50	1.50	1.75	Chipper	1.75	1.75	1.75
- Transfer	1.25	1.25	1.50	Chip Feeder	1.50	1.50	1.50
Chains - Floor	1.50	1.50	1.50	Coating Rolls	1.25	1.25	1.25
- Green	1.50	1.50	1.50	Conveyors			
Cut-Off Saws - Chain	1.50	1.50	1.50	Chip, Bark, Chemical	1.25	1.25	1.25
- Drag	1.50	1.50	1.50	Log (Including Slab)	1.75	1.75	1.75
Debarking Drums	1.50	1.50	1.75	Couch Rolls	1.25	1.25	1.25
Feeds - Edger	1.25	1.25	1.50	Cutter	1.75	1.75	1.75
- Gang	1.50	1.50	1.50	Cylinders Molds	1.25	1.25	1.25
- Trimmer	1.25	1.25	1.50	Dryers (Anti-Friction Bearings Only)			
Log Deck	1.50	1.50	1.50	Paper Machine	1.25	1.25	1.25
Log Hauls - Incline - Well Type	1.50	1.50	1.50	Conveyor Type	1.25	1.25	1.25
Log Turning Devices	1.50	1.50	1.50	Embossor	1.25	1.25	1.25
Planer Feed	1.25	1.25	1.50	Extruder	1.50	1.50	1.50
Planer Tilting Hoist	1.50	1.50	1.50	Fourdrinier Rolls (Includes			
Rolls - Live, Off Brg., Roll Cases	1.50	1.50	1.50	Lump Breaker, Dandy Roll,			
Sorting Table	1.25	1.25	1.50	Wire Turning & Return Rolls)	1.25	1.25	1.25
Tipple Hoist	1.25	1.25	1.50	Jordan	1.25	1.25	1.25
Transfers - Chain	1.50	1.50	1.50	Kiln Drive	1.50	1.50	1.50
- Craneway	1.50	1.50	1.50	Mt. Hope Rolls	1.25	1.25	1.25
Tray Drives	1.25	1.25	1.50	Paper Rolls	1.25	1.25	1.25
Veneer Lathe Drives	◆	◆	◆	Platter	1.50	1.50	1.50
METAL MILLS				Pressers - Felt & Suction	1.25	1.25	1.25
Draw Bench Carriage & Main Drive	1.00	1.25	1.50	Pulper	1.50	1.50	1.75
Run Out Tables				Pumps - Vacuum	1.50	1.50	1.50
Non-Reversing				Reel (Surface Type)	1.25	1.25	1.50
Group Drives	1.00	1.25	1.50	Screens			
Individual Drives	1.50	1.50	1.75	Chip	1.50	1.50	1.50
Reversing	1.50	1.50	1.75	Rotary	1.50	1.50	1.50
Slab Pushers	1.25	1.25	1.50	Vibrating	1.75	1.75	1.75
Shears	1.50	1.50	1.75	Size Press	1.25	1.25	1.25
Wire Drawing	1.00	1.25	1.50	Super Calender	1.25	1.25	1.25
Wire Winding Machine	1.00	1.25	1.50	Thickener (AC Motor)	1.50	1.50	1.50
METAL STRIP PROCESSING				(DC Motor)	1.25	1.25	1.25
MACHINERY				Washer (AC Motor)	1.50	1.50	1.50
Bridles	1.25	1.25	1.50	(DC Motor)	1.25	1.25	1.25
Coilers & Uncoilers	1.00	1.00	1.25	Wind & Unwind Stand	1.00	1.00	1.00
Edge Trimmers	1.00	1.25	1.50	Winders (Surface Type)	1.25	1.25	1.25
Flatteners	1.00	1.25	1.50	Yankee Dryers (Anti-Friction			
Loopers (Accumulators)	1.00	1.00	1.00	Bearings Only)	1.25	1.25	1.25
Pinch Rolls	1.00	1.25	1.50	PLASTICS INDUSTRY-			
Scrap Choppers	1.00	1.25	1.50	PRIMARY PROCESSING			
Shears	1.50	1.50	1.75	Intensive Internal Mixers			
Slitters	1.00	1.25	1.50	(a) Batch Mixers	1.75	1.75	1.75
MILLS, ROTARY TYPE				(b) continuous Mixers	1.50	1.50	1.50
Bell & Rod				Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25
Spur Ring Gear	1.50	1.50	1.75	Continuous Feed, Holding &			
Helical Ring Gear	1.50	1.50	1.50	Blend Mill	1.25	1.25	1.25
Direct Connected	1.50	1.50	1.75	Compounding Mills	1.25	1.25	1.25
Cement Kilns	1.50	1.50	1.50	Calenders	1.50	1.50	1.50
Dryers & Coolers	1.50	1.50	1.50	PLASTICS INDUSTRY -			
MIXERS, CONCRETE				SECONDARY PROCESSING			
	1.00	1.25	1.50	Blow Molders	1.50	1.50	1.50
				Coating	1.25	1.25	1.25
				Film	1.25	1.25	1.25
				Pipe	1.25	1.25	1.25

◆ Refer to Application Engineering (1 800 626 2093).

Application	Recommended Service Factors			Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
PLASTICS INDUSTRY - SECONDARY PROCESSING (Cont.)				SEWAGE DISPOSAL EQUIPMENT			
Pre-Plasticizers	1.50	1.50	1.50	Bar Screens	---	1.00	1.25
Rods	1.25	1.25	1.25	Chemical Feeders	---	1.00	1.25
Sheets	1.25	1.25	1.25	Dewatering Screens	1.00	1.25	1.50
Tubing	1.25	1.25	1.50	Scum Breakers	1.00	1.25	1.50
PULLERS - BARGE HAUL	1.00	1.50	1.75	Slow or Rapid Mixers	1.00	1.25	1.50
PUMPS				Sludge Collectors	1.00	1.00	1.25
Centrifugal	---	1.00	1.25	Thickeners	1.00	1.25	1.50
Proportioning	1.00	1.25	1.50	Vacuum Filters	1.00	1.25	1.50
Reciprocating				SCREENS			
Single Acting, 3 or more cylinders	1.00	1.25	1.50	Air Washing	---	1.00	1.25
Double Acting, 2 or more cylinders	1.00	1.25	1.50	Rotary - Stone or Gravel	1.00	1.25	1.50
Rotary - Gear Type	---	1.00	1.50	Traveling Water Intake	---	1.00	1.25
- Lobe Type	---	1.00	1.25	SUGAR INDUSTRY			
- Vane	---	1.00	1.25	Beet Slicer	1.50	1.50	1.75
RUBBER INDUSTRY				Cane Knives	1.50	1.50	1.50
Intensive Internal Mixers				Crushers	1.50	1.50	1.50
(a) Batch Mixers	1.50	1.75	1.75	Mills (Low Speed End)	1.50	1.50	1.50
(b) Continuous Mixers	1.25	1.50	1.50	TEXTILE INDUSTRY			
Mixing Mill -				Batchers	1.00	1.25	1.50
2 Smooth Rolls (if corrugated rolls are used, than the same service factors that are used for a Cracker Warmer)	1.50	1.50	1.50	Calenders	1.00	1.25	1.50
Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50	Cards	1.00	1.25	1.50
Cracker Warmer - 2 Rolls;				Dry Cans	1.00	1.25	1.50
1 corrugated roll	1.75	1.75	1.75	Dryers	1.00	1.25	1.50
Cracker - 2 corrugated rolls	1.75	1.75	1.75	Dyeing Machinery	1.00	1.25	1.50
Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25	Looms	1.00	1.25	1.50
Refiner - 2 Rolls	1.50	1.50	1.50	Mangles	1.00	1.25	1.50
Calenders	1.50	1.50	1.50	Nappers	1.00	1.25	1.50
SAND MILLER	1.00	1.25	1.50	Pads	1.00	1.25	1.50
				Slashers	1.00	1.25	1.50
				Soapers	1.00	1.25	1.50
				Spinners	1.00	1.25	1.50
				Tenter Frames	1.00	1.25	1.50
				Washers	1.00	1.25	1.50
				Winders	1.00	1.25	1.50

Applications not listed in this table or where the user has data indicating the severity of his usage to be greater than average should be referred to Application Engineering (1 800 626 2093).

Type IRA

The IRA gearbox is filled at the factory with oil according to the mounting position specified when ordered. The oil used depends on the order description at entry. Non-washdown units are filled with an AGMA 8 mineral oil. Washdown units will be filled with a synthetic 460 series lubricant classified as a Polyglycol (PAG) oil.

In the event that a gearbox needs to be refilled, see the appropriate maintenance manual for the proper procedure and correct quantity of oil. If synthetic oil is used, the gearbox must be refilled with the same lubricant or must be completely drained and flushed.

Mineral Oils

Ambient Temperature	15 to 60 F	50 to 125 F
ISO Grade	460	680
AGMA	7	8

Synthetic Oils

Ambient Temperature	-30 to 200 F	-30 to 200 F
ISO Grade	460	680
AGMA	7	8

1/3 HP

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
230	3.0+	76	0.28	670	7.1	1	48	T,S
230	3.0+	83	0.30	696	7.1	6	56	T,C,S,X,IG
190	3.0+	91	0.27	670	9	1	48	T,S
190	3.0+	100	0.30	738	9	6	56	T,C,S,X,IG
155	3.0+	111	0.27	670	11.2	1	48	T,S
155	3.0+	121	0.30	804	11.2	6	56	T,C,S,X,IG
125	3.0+	134	0.27	670	14	1	48	T,S
125	3.0+	144	0.29	832	14	6	56	T,C,S,X,IG
100	3.0+	163	0.26	670	18	1	48	T,S
100	3.0+	179	0.28	942	18	6	56	T,C,S,X,IG
84	2.8	189	0.25	670	20	1	48	T,S
84	3.0+	210	0.28	980	20	6	56	T,C,S,X,IG
68	2.5	222	0.24	670	25	1	48	T,S
68	3.0+	250	0.27	980	25	6	56	T,C,S,X,IG
56	2.1	254	0.23	670	31.5	1	48	T,S
56	3.0+	292	0.26	980	31.5	6	56	T,C,S,X,IG
45	1.9	299	0.21	670	40	1	48	T,S
45	3.0+	350	0.25	980	40	6	56	T,C,S,X,IG
37	1.5	337	0.20	670	45	1	48	T,S
37	2.8	405	0.24	980	45	6	56	T,C,S,X,IG
30	1.3	381	0.18	670	56	1	48	T,S
30	2.3	475	0.23	980	56	6	56	T,C,S,X,IG
25	1.1	427	0.17	670	71	1	48	T,S
25	1.9	401	0.16	980	71	6	56	T,C,S,X,IG
20	1.5	461	0.15	980	90	6	56	T,C,S,X,IG
17	2.5	763	0.21	1234	100	6*	56	T,C,S,X,IG
13	2.2	881	0.18	1231	125	6*	56	T,C,S,X,IG
11	2.0	1058	0.18	1140	160	6*	56	T,C,S,X,IG
9	1.7	1213	0.17	1216	200	6*	56	T,C,S,X,IG
7.5	1.5	1416	0.17	1220	224	6*	56	T,C,S,X,IG
6	1.5	1599	0.15	1064	280	6*	56	T,C,S,X,IG
5	1.2	1837	0.15	1229	355	6*	56	T,C,S,X,IG

Refer to HWN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

\diamond **Standard Motor Types** (see page 409 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

S TEFC, single phase, 115/230 volts

X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1/115, 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

1/2 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
230	3.0+	119	0.43	670	7.1	1	48	T,S
230	3.0+	125	0.46	696	7.1	6	56	T,C,S,X,IG
190	3.0+	141	0.43	670	9	1	48	T,S
190	3.0+	147	0.44	738	9	6	56	T,C,S,X,IG
155	3.0+	173	0.43	670	11.2	1	48	T,S
155	3.0+	180	0.44	804	11.2	6	56	T,C,S,X,IG
125	2.6	210	0.42	670	14	1	48	T,S
125	3.0+	219	0.43	832	14	6	56	T,C,S,X,IG
100	2.2	254	0.40	670	18	1	48	T,S
100	3.0+	265	0.42	942	18	6	56	T,C,S,X,IG
84	1.7	292	0.39	670	20	1	48	T,S
84	3.0+	308	0.41	980	20	6	56	T,C,S,X,IG
68	1.6	344	0.37	670	25	1	48	T,S
68	3.0+	367	0.40	980	25	6	56	T,C,S,X,IG
56	1.4	390	0.35	670	31.5	1	48	T,S
56	2.6	428	0.38	980	31.5	6	56	T,C,S,X,IG
45	1.2	456	0.33	670	40	1	48	T,S
45	2.2	507	0.36	980	40	6	56	T,C,S,X,IG
37	1.9	405	0.24	980	45	6	56	T,C,S,X,IG
37	3.0+	601	0.35	913	45	6*	56	T,C,S,X,IG
30	1.6	680	0.32	980	56	6	56	T,C,S,X,IG
30	2.8	738	0.35	883	56	6*	56	T,C,S,X,IG
25	1.2	668	0.26	980	71	6	56	T,C,S,X,IG
25	2.3	911	0.36	1228	71	6*	56	T,C,S,X,IG
20	1.0	726	0.23	980	90	6	56	T,C,S,X,IG
20	2.0	1062	0.34	1228	90	6*	56	T,C,S,X,IG
16.5	1.7	1276	0.33	1234	112	6*	56	T,C,S,X,IG
13.5	1.6	1472	0.32	1231	125	6*	56	T,C,S,X,IG
11.0	1.3	1768	0.31	1140	160	6*	56	T,C,S,X,IG
9.0	1.1	2029	0.29	1216	200	6*	56	T,C,S,X,IG
7.5	1.0	2357	0.28	1220	250	6*	56	T,C,S,X,IG
6.0	1.0	2666	0.25	1064	280	6*	56	T,C,S,X,IG

Refer to HWN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

\diamond **Standard Motor Types** (see page 409 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

S TEFC, single phase, 115/230 volts

X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts

IG IntelliGear® variable speed for 1/115, 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

3/4 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
230	2.6	177	0.65	670	7.1	1	48	T,S
230	3.0+	186	0.68	696	7.1	6	56	T,C,S,X,IG
190	2.3	210	0.63	670	9	1	48	T,S
190	3.0+	223	0.67	738	9	6	56	T,C,S,X,IG
155	2.1	253	0.62	670	11.2	1	48	T,S
155	3.0+	269	0.66	804	11.2	6	56	T,C,S,X,IG
125	1.7	315	0.62	670	14	1	48	T,S
125	3.0+	324	0.64	832	14	6	56	T,C,S,X,IG
100	1.5	394	0.63	670	18	1	48	T,S
100	2.7	394	0.63	942	18	6	56	T,C,S,X,IG
84	1.2	444	0.59	670	20	1	48	T,S
84	2.4	456	0.61	980	20	6	56	T,C,S,X,IG
68	2.0	537	0.58	980	25	6	56	T,C,S,X,IG
56	1.7	633	0.56	980	31.5	6	56	T,C,S,X,IG
56	3.0+	666	0.59	816	31.5	6*	56	T,C,S,X,IG
45	1.5	743	0.53	980	40	6	56	T,C,S,X,IG
45	2.6	784	0.56	894	40	6*	56	T,C,S,X,IG
37	1.3	944	0.55	980	45	6	56	T,C,S,X,IG
37	2.2	968	0.57	913	45	6*	56	T,C,S,X,IG
30	1.0	1120	0.56	980	56	6	56	T,C,S,X,IG
30	1.8	1187	0.57	883	56	6*	56	T,C,S,X,IG
25	1.5	1464	0.58	1097	71	6*	56	T,C,S,X,IG
20	1.3	1705	0.54	1228	90	6*	56	T,C,S,X,IG
16.5	1.1	2046	0.54	1234	112	6*	56	T,C,S,X,IG
13.5	1.0	2357	0.50	1231	125	6*	56	T,C,S,X,IG
11	1.0	2828	0.49	1140	160	6*	56	T,C,S,X,IG

Refer to HWN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

\diamond **Standard Motor Types** (see page 409 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

S TEFC, single phase, 115/230 volts

X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts

IG IntelliGear® variable speed for 1/115, 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

1 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
230	3.0+	248	0.91	696	7.1	6	143T	T,C,S,X,IG
190	3.0+	297	0.90	738	9	6	143T	T,C,S,X,IG
155	2.8	357	0.88	804	11.2	6	143T	T,C,S,X,IG
125	2.4	430	0.85	832	14	6	143T	T,C,S,X,IG
100	2.0	522	0.83	942	18	6	143T	T,C,S,X,IG
84	1.8	605	0.81	980	20	6	143T	T,C,S,X,IG
84	3.0+	600	0.80	753	20	6*	143T	T,C,S,X,IG
68	1.5	796	0.86	980	25	6	143T	T,C,S,X,IG
68	2.8	740	0.80	827	25	6*	143T	T,C,S,X,IG
56	1.3	835	0.74	980	31.5	6	143T	T,C,S,X,IG
56	2.4	921	0.82	816	31.5	6*	143T	T,C,S,X,IG
45	1.1	966	0.69	980	40	6	143T	T,C,S,X,IG
45	2.0	1082	0.77	894	40	6*	143T	T,C,S,X,IG
37	1.7	1455	0.85	913	45	6*	143T	T,C,S,X,IG
30	1.4	1670	0.83	883	56	6*	143T	T,C,S,X,IG
25	1.1	2015	0.80	1097	71	6*	143T	T,C,S,X,IG
20	1.0	2345	0.74	1228	90	6*	143T	T,C,S,X,IG

Refer to HWN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

\diamond **Standard Motor Types** (see page 409 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty®, three phase, 230/460 or 575 volts

S TEFC, single phase, 115/230 volts

X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts

IG IntelliGear® variable speed for 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

1 1/2 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
230	2.4	372	1.36	696	7.1	6	145T	T,C,S,X,IG
190	2.3	444	1.34	738	9	6	145T	T,C,S,X,IG
155	1.9	534	1.31	804	11.2	6	145T	T,C,S,X,IG
125	1.6	644	1.28	832	14	6	145T	T,C,S,X,IG
100	1.3	779	1.24	942	18	6	145T	T,C,S,X,IG
100	2.4	785	1.25	720	18	6*	145T	T,C,S,X,IG
84	1.2	900	1.20	980	20	6	145T	T,C,S,X,IG
84	2.3	931	1.24	753	20	6*	145T	T,C,S,X,IG
68	1.0	1021	1.10	980	25	6	145T	T,C,S,X,IG
68	1.9	1148	1.24	827	25	6*	145T	T,C,S,X,IG
56	1.6	1480	1.32	816	31.5	6*	145T	T,C,S,X,IG
56	2.6	1194	1.06	2850	31.5	20	145T	T,C,S,X,IG
45	1.3	1820	1.30	894	40	6*	145T	T,C,S,X,IG
45	2.0	1523	1.09	2850	40	20	145T	T,C,S,X,IG
37	1.1	2160	1.27	913	45	6*	145T	T,C,S,X,IG
37	1.7	1815	1.07	2850	45	20	145T	T,C,S,X,IG

Refer to HWN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

\diamond **Standard Motor Types** (see page 409 for product codes)

T TEFC, three phase, 208-230/460 or 575 volts

C Corro-Duty[®], three phase, 230/460 or 575 volts

S TEFC, single phase, 115/230 volts, 145TY

X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts

IG IntelliGear[®] variable speed for 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

2 hp

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
230	1.8	495	1.81	696	7.1	6	145T	T,C,S,X,IG
190	1.7	591	1.78	738	9	6	145T	T,C,S,X,IG
155	1.4	711	1.75	804	11.2	6	145T	T,C,S,X,IG
125	1.2	852	1.69	832	14	6	145T	T,C,S,X,IG
100	1.8	1100	1.75	720	18	6*	145T	T,C,S,X,IG
84	1.7	1300	1.73	753	20	6*	145T	T,C,S,X,IG
68	1.4	1570	1.69	827	25	6*	145T	T,C,S,X,IG
68	2.3	1439	1.55	2850	25	20	145T	T,C,S,X,IG
56	1.2	1965	1.75	815	31.5	6*	145T	T,C,S,X,IG
56	2.0	1670	1.48	2850	31.5	20	145T	T,C,S,X,IG
45	1.0	2410	1.72	894	40	6*	145T	T,C,S,X,IG
37	1.2	2547	1.50	2850	45	20	145T	T,C,S,X,IG

Refer to HWN Product for higher ratios and/or capacities.

* Worm-helical reducer (GWB)

\diamond **Standard Motor Types** (see page 409 for product codes)

- T TEFC, three phase, 208-230/460 or 575 volts
- C Corro-Duty[®], three phase, 230/460 or 575 volts
- S TEFC, single phase, 115/230 volts, 145TY
- X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts
- IG IntelliGear[®] variable speed for 1/230, 3/230, or 3/460V power supplies

Δ Overhung loads are at shaft midpoint

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

3 hp

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
175	3.0+	938	2.60	2743	9	20	182T	T,C,X,S,IG
117	2.3	1374	2.55	2850	14	20	182T	T,C,X,S,IG
100	2.0	1663	2.64	2850	18	20	182T	T,C,X,S,IG
88	1.9	1784	2.49	2850	20	20	182T	T,C,X,S,IG
68	1.5	2122	2.29	2850	25	20	182T	T,C,X,S,IG
58	1.3	2550	2.35	2850	31.5	20	182T	T,C,X,S,IG

General Specifications: Totally enclosed, 60 hertz, 40°C ambient, continuous duty.

5 hp

Output rpm	Service Factor	Output Torque in-lbs	Output Horsepower	OHL Δ lb	Nominal Ratio	Frame Size Gear	Motor	Std. Motor Types \diamond
175	1.9	1613	4.48	2743	9	20	184T	T,C,X,S,IG
117	1.4	2358	4.38	2850	14	20	184T	T,C,X,S,IG
100	1.2	2819	4.47	2850	18	20	184T	T,C,X,S,IG
88	1.2	2950	4.12	2850	20	20	184T	T,C,X,S,IG

Refer to HWN Product for higher ratios and/or capacities.

- \diamond **Standard Motor Types** (see page 409 for product codes)
 - T TEFC, three phase, 208-230/460 or 575 volts
 - C Corro-Duty[®], three phase, 230/460 or 575 volts
 - S TEFC, single phase, 230 volts, 184T frame
 - X Explosionproof, Cls I Grp D, Cls II Grps F&G, three phase 230/460 or 575 volts
 - IG IntelliGear[®] variable speed for 3/460V power supplies

Δ Overhung loads are at shaft midpoint

Inverter Duty Gearmotors

IRA three phase gearmotors in frame sizes 56 through 184T frame now incorporate upgraded wire and insulating materials for inverter service. A one year limited warranty as covered in the Standard Terms & Conditions will be extended for 3:1 (60 – 20 Hz) constant torque for standard efficiency motor designs and 5:1 (60 – 12 Hz) constant torque for high efficiency motor design providing the following conditions are met:

- Motor is non-hazardous 3 phase > 48 frame
- Cable length to controller < 100 ft.
- Line voltage is < 480VAC
- Thermal protection is not required

For all other conditions of operation/construction, including up to 575V, hazardous environment services, and/or thermostats in winding, select an inverter duty motor design. These designs include N/C thermostats in winding, a three (3) limited warranty as covered in the Standard Terms & Conditions on the motor and full compliance with NEMA MG1 Part 31.

Motor Modifications

M1 Brakes

Design

These mounted brakes have a direct acting, spring set, electromagnetically released disc design. When power to the brake is interrupted, the brake will immediately set and hold. When power is restored, the brake will automatically release.

Enclosures For Brakes

IP23 - suitable for indoor, relatively dry, clean and non-hazardous applications.

IP55 - suitable for outdoors or indoors applications where the gearmotor can be exposed to splashing liquids, dusts and some chemicals. Not suitable for washdown.

Standard Enclosures For Brake

Non-Hazardous Motor Type	Motor Frame Size	
	48	56 and Larger
S	IP23	Open
T	IP23	IP55
IG	N/A	IP55

Motor Modifications (Continued)

Operating Voltage

Brakemotors for fixed frequency operation will be arranged for powering brake from the motor. If another voltage is to be supplied to brake, state that voltage on the order.

Brakes for inverter duty brakemotors require a separate fixed frequency AC power source for the brake, but interlocked with the starting of the motor. The standard brake voltage for inverter duty gearmotors will be arranged for 115/230 volts single phase.

Mounting

Brakes for IRA gearmotors are suitable for the mounting positions specified for the gear.

M2 Premium Efficiency Motor

High efficiency three phase motors are standard options to meet the energy legislations in the USA and Canada on 140T and larger motors in "T" and "C" types. Premium efficiency motors are also optional at standard lead-time for 3 and 5 HP.

M3 Washdown Motor

See GM1 under Gearmotor Modifications

M4 Canopy Cap

A canopy cap can be supplied for protection from dripping liquids entering fan end of gearmotors. It is recommended but not standard when mounting is required to be in the W8 or W7 positions.

M5 Frequency - 50 Hz

Motors for operation at 3 phase 50 Hz are available. Refer all 3 phase requirements for 50 Hz to motor code T53 (380V) or T54 (400/415V). The published output speed and gear service factor based on 1750 rpm input will be reduced by a factor of (1.2) at the same gear ratio. Example: 100 rpm output, 60 Hz, 1750 rpm input is 83 rpm output, 50 Hz, 1450 rpm input.

M6 Voltage (3 Phase Only)

Standard voltages available are listed in the table below. Other voltages are available and must be specified at order entry and require special voltage adder.

Frequency	3 Phase Voltages Thru 30 hp
60 Hz	200, 230, 230/460, 460, 575
50 Hz	200, 220, 230, 220/380, 220/440, 380, 415, 460, 500, 575

3/50/380V is available from stock on "T" and "C" motor types.

Motor Modifications (Continued)

M7 Insulation

Standard 3 phase TEFC and Corro-Duty® motor ends have premium class F insulation standard. Single phase TEFC and explosionproof motor ends have class B insulation as standard. Class H insulation and tropical protection are available from production on 3 phase motors only (Class H not available on explosionproof).

M8 Space Heaters

Space heaters are recommended for gearmotors installed in damp locations to prevent condensation on the motor windings when the motor is not operating. Leads are brought to the standard motor conduit box. Space heater voltage (115, 230, 460 volts) must be specified when order is entered. Available in gearmotors > 3/4 hp.

M9 Thermal Protection - Thermostats

This protection uses a bi-metal disc thermostat, embedded in the motor winding, connected into the holding circuit of the motor starter. The sensor opens the control circuit, shutting down the motor on over temperature. Thermostats give protection for running overload, abnormally high ambient, voltage unbalance, high or low voltage, and ventilation failure. Thermostats will not give protection for locked rotor, starting overload, and single phasing.

Gear Modifications

G1 Food Grade Lubricant

When this modification is specified, the IRA gear sump will be filled with the required volume of a synthetic lubricant classified as a Polyglycol (PAG), 460 series that is approved for USDA H-1 food grade use.

G2 Normally Closed Breather

For applications involving very dusty environments specify this breather design. The breather has a protected spring loaded valve construction opening only to relieve any pressure built up greater than 3 PSI and then closing.

G3 Double Extended Output Shafts

Double end output shafts are available on single reduction type GW worm-only units.

G4 Special Output Shafts

Special output shafts are available on all units. Refer applications to Gear Estimating office for pricing.

Gear Modifications (Continued)

G5 Special Nameplates

Units can be provided with limited additional special information on the standard product nameplate. When requested, a special nameplate may be provided, stamped with custom markings.

G6 Low Ambient Temperature

Gearmotors can be supplied for low ambient down to -20F. Refer complete details of the applications to the Applications Department for review

Gearmotor Modifications

GM1 Washdown Duty Gearmotor

This gearmotor design combines special features of gear and motor required for washdown duty. These include: special treatment coating of winding and internal surfaces of motor frame, drains in motor frame, labyrinth seal at motor SE bracket/shaft extension, special "protected" gearcase breather design, (2) double lipped oil seals at each gear shaft extension, exterior surfaces of gearmotor receive Corroduty Stainless Steel paint (option for epoxy white at no added cost). Specify input configuration "W24" or "W5" based on voltage needed on motor.



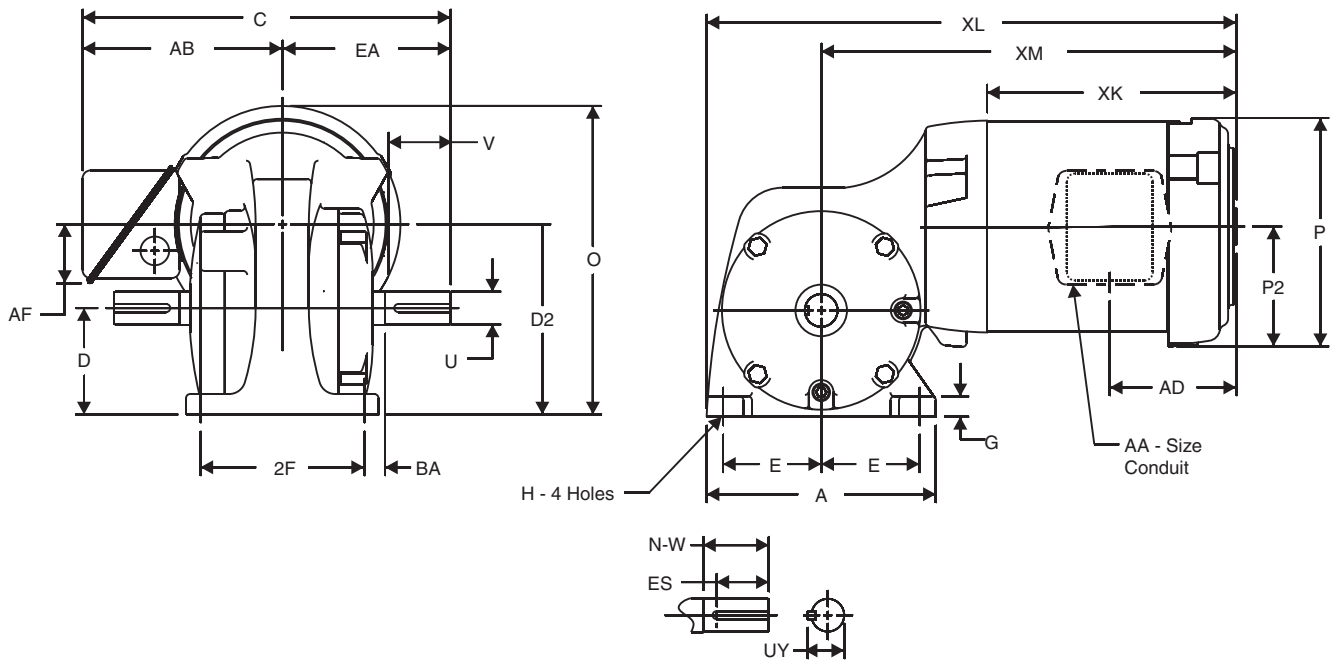
For inclusion of a food grade USDA H-1 approved lubricant, add a "P" for input code with a washdown motor (i.e. change "W24" to "WP24", and refer to G1 Food Grade Lubricant for specifics on this lubricant

GM2 Export Boxing

Export boxing can be provided for "underdeck" transport. When the quantity of IRA gearmotors exceeds five(5) units, refer to the International Sales department for most economical accommodations.

Overall dimensions

Worm (GW)



Basic Frame	A	D	D2	E	2F	G	H	N-W	U	V Min.	BA	ES	UY	AH	Sq. Key
1	5 5/8	2 1/2	4 1/2	2 3/8	4 3/4	1/2	11/32	1 5/8	3/4	1 13/32	5/16	1.25	0.837	1.88	3/16
6	7	3 1/4	5 13/16	3	5	5/8	13/32	2	1	1 15/16	7/16	1.25	1.114	2.176	1/4
20	10 1/4	4 1/2	8 1/4	4 3/8	8	1	11/16	3 1/4	1 5/8	2 15/16	29/32	2.38	1.796	3.38	3/8

Motor Frame	Motor Type ¹	hp	C	XL	XM	XK	P	P2	AB	EA	AA	O	AD	AF
48-1	T	1/3, 1/2	8.66	15.79	12.98	9.03	6.72	2.79	4.34	4.32	0.50	8.00	4.43	1.16
48-1	T	3/4	8.66	16.79	13.98	10.03	6.72	2.79	4.34	4.32	0.50	8.00	4.43	1.16
48-1	T	1	8.66	17.29	14.48	10.53	6.72	2.79	4.34	4.32	0.50	8.00	4.43	1.16
56-6	T	Any	11.04	16.30	12.80	7.72	7.22	3.31	6.10	4.94	0.75	9.47	3.30	0.94
B56-6	T	Any	11.04	17.55	14.05	8.97	7.22	3.31	6.10	4.94	0.75	9.47	3.30	0.94
143T, 145T	T	Any	11.04	17.55	14.05	8.97	7.22	3.31	6.10	4.94	0.75	9.47	3.30	0.94
143T, 145T-20	T	Any	14.23	20.28	15.15	8.97	7.22	3.31	6.10	8.13	0.75	11.91	3.30	0.94
182T, 184T-20	T	Any	15.65	21.57	18.07	11.89	9.56	4.39	7.52	8.13	0.75	13.03	5.13	2.13

Dimension "D" will never be exceeded, but may be less than values shown. When exact dimensions are required, shims up to 1/16" may be necessary.

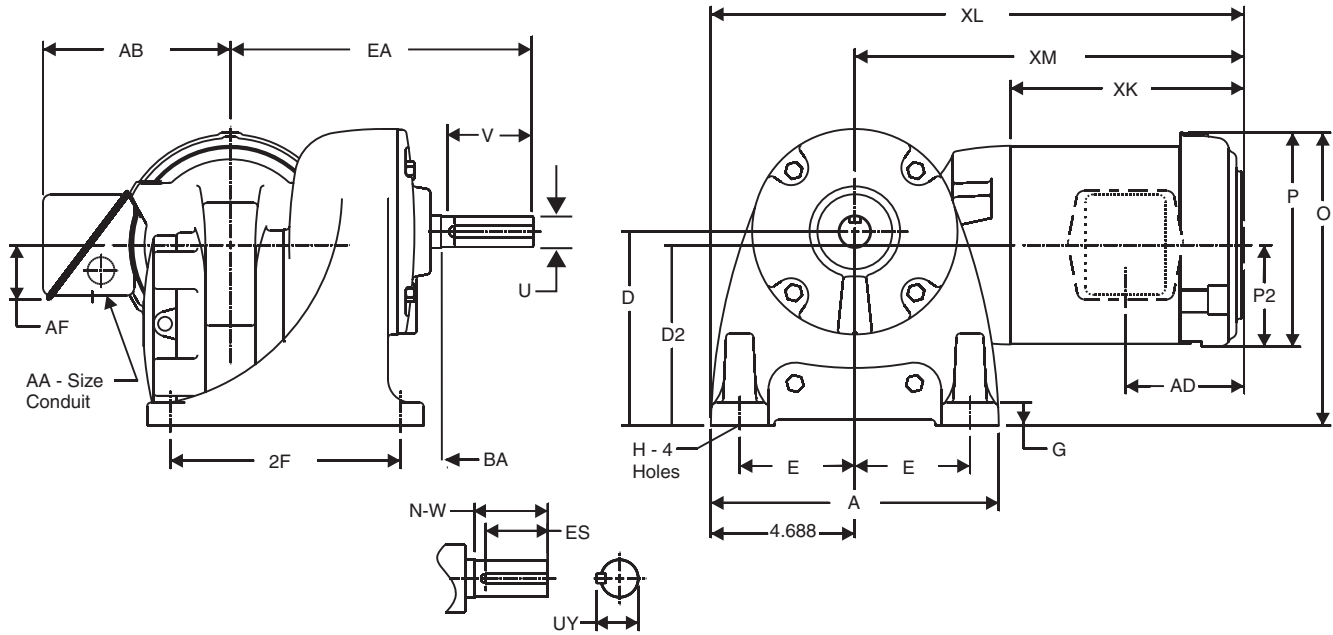
All rough casting dimensions may vary by 1/4" due to casting variations.

Shaft diameter tolerances: +.0000"; -.0005" up to 1 1/2" diameter inclusive. Larger diameters: +.000"; -.001".

¹ See page E30-E32 for alternate motor enclosures and brakes.

Overall dimensions

Worm-Helical (GWB)



Basic Frame	A	D	D2	E	2F	G	H	N-W	U	V Min.	BA	ES	UY	Sq. Key
6	9 3/8	6 5/16	5	7/8	3 3/4	3/4	9/16	3	1 1/2	2 29/32	1 5/16	2 1/2	1 21/32	3/8

Frame	Motor Type ¹	hp	C	XL	XM	XK	P	P2	AB	EA	AA	O	AD	AF
56-6	T	Any	15.96	17.20	12.51	7.72	7.22	3.31	6.10	10.03	0.75	9.79	3.30	0.94
B56-6	T	Any	15.96	18.45	13.76	8.97	7.22	3.31	6.10	10.03	0.75	9.79	3.30	0.94
143T, 145T	T	Any	15.96	18.45	13.76	8.97	7.22	3.31	6.10	10.03	0.75	9.79	3.30	0.94

Dimension "D" is the maximum value, but may be less than values shown. When exact dimensions are required, shims up to 1/16" may be necessary.

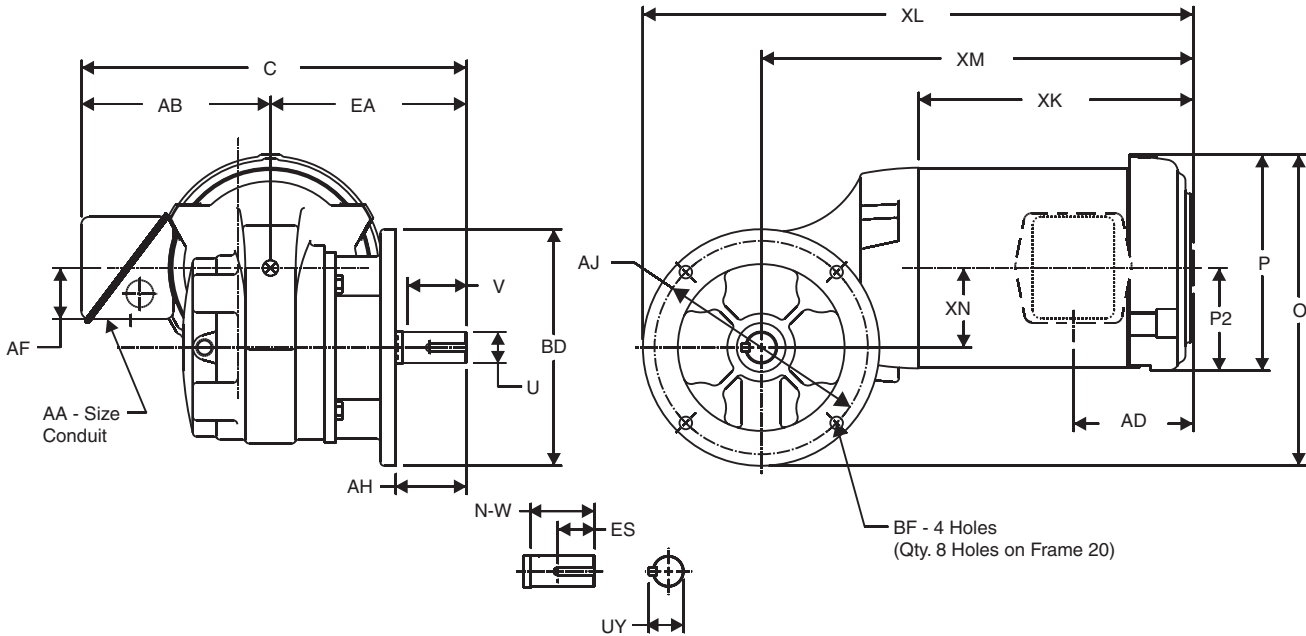
Shaft diameter tolerances: +.0000"; -.0005" up to 1-1/2" diameter inclusive. Larger diameters: +.000"; -.001".

All rough casting dimensions may vary by 1/4" due to casting variations.

¹ See page E30 to E32 for alternate motor enclosures and brakes.

Overall dimensions

Worm (GW)



Basic Frame	AJ	BD	AH	XN	BF	N-W	U	V Min.	ES	UY	Sq. Key
6	6.88	7.63	2.00	2.56	0.406	2.08	1.00	2.00	1.19	1.114	0.25
20	8.50	10.00	3.06	3.75	0.560	3.25	1.63	2.94	2.34	1.796	0.38

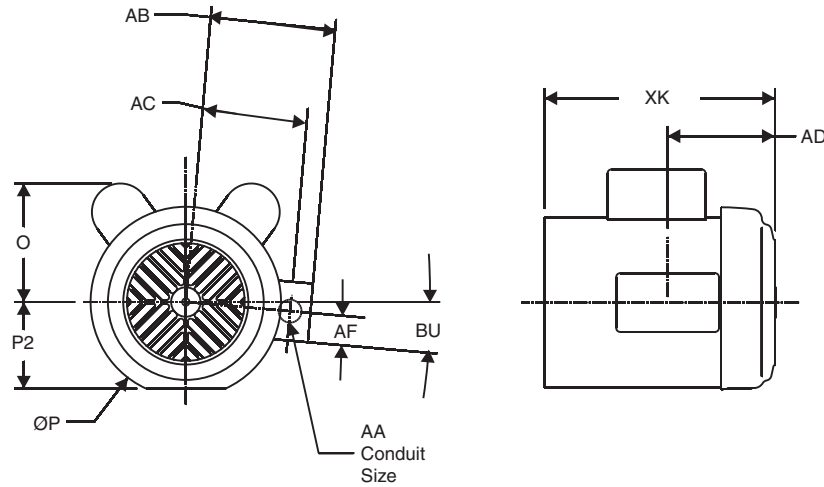
Frame	Motor Type ¹	hp	C	XL	XM	XK	P	P2	AB	EA	AA	O	AD	AF
56-6	T	Any	12.11	15.83	12.80	7.72	7.22	3.31	6.10	6.01	0.75	9.98	3.30	0.94
143T, 145T-6	T	Any	12.11	17.08	14.05	8.97	7.22	3.31	6.10	6.01	0.75	9.98	3.30	0.94
145TY-6	T	Any	12.11	17.97	14.94	9.86	7.22	3.31	6.10	6.01	0.75	9.98	3.30	0.94
143T, 145T-20	T	Any	15.59	20.15	15.15	8.97	7.22	3.31	6.10	9.49	0.75	12.36	3.30	0.94
145TY-20	T	Any	15.59	21.04	16.04	9.86	7.22	3.31	6.10	9.49	0.75	12.36	3.30	0.94
182T, 184T-20	T	Any	17.01	23.07	18.07	11.89	11.89	4.39	7.52	9.49	0.75	13.53	5.13	2.13

All rough casting dimensions may vary by 1/4" due to casting variations.
 Shaft diameter tolerances: +.0000"; -.0005" up to 1 1/2" diameter inclusive. Larger diameters: +.000"; -.001".

¹ See page E30 to E32 for alternate motor enclosures and brakes.

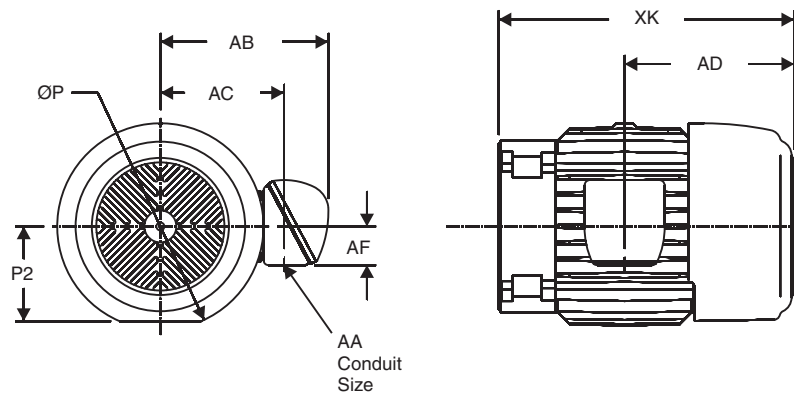
Alternate Motor Dimensions

Single Phase



Motor Frame	HP	O	P	P2	AA	AB	AC	AD	AF	BU	XK
48	1/3, 1/2	4.40	6.72	2.79	1/2	4.72	3.79	5.29	1.13	N/A	8.03
	3/4, 1	3.87	6.72	2.79	1/2	4.34	3.55	5.29	1.16	10°	9.03
56	1/3, 1/2	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	7.34
	3/4	4.78	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	8.84
143T	1	5.09	7.28	3.31	3/4	4.78	4.00	4.14	1.13	N/A	8.84
145TY	1 1/2, 2	4.53	7.28	3.31	3/4	4.78	3.83	4.14	1.13	5°	10.34
184T	3, 5	5.11	9.56	4.39	3/4	8.58	6.45	7.14	3.09	N/A	14.33

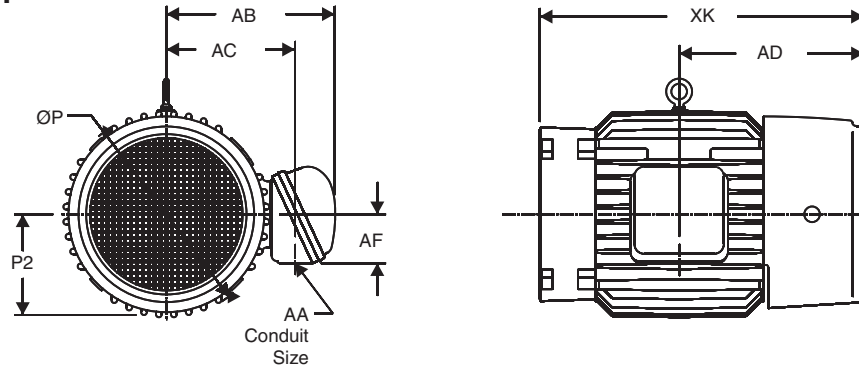
CorroDuty®



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.41	3.44	3/4	6.50	4.59	3.72	1.25	8.03
143T, 145T	7.41	3.44	3/4	6.50	4.59	3.72	1.25	9.03
182T, 184T	9.50	4.56	3/4	7.74	5.69	7.81	1.78	13.76

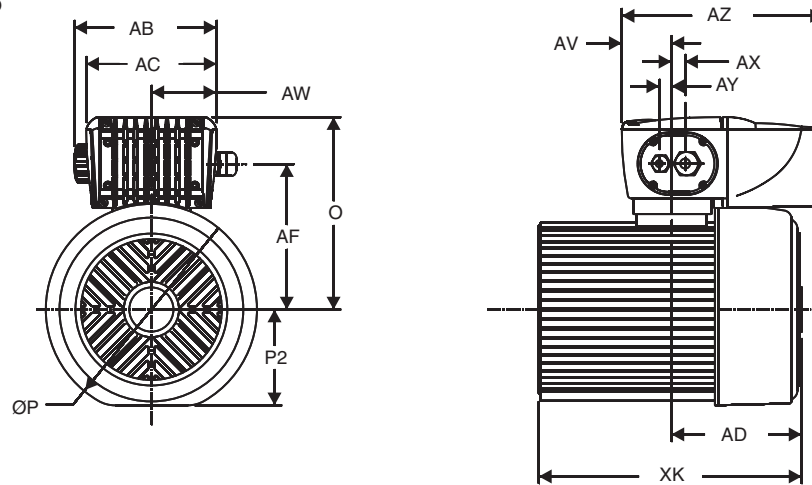
Alternate Motor Dimensions

Explosion Proof



Motor Frame	P	P2	AA	AB	AC	AD	AF	XK
56	7.88	3.38	3/4	6.79	5.31	4.37	1.78	10.97
143T, 145T	7.88	3.38	3/4	6.79	5.31	4.37	1.78	11.72
182T, 184T	9.50	4.56	3/4	7.70	5.79	7.75	2.25	13.69

IntelliGear Plus®

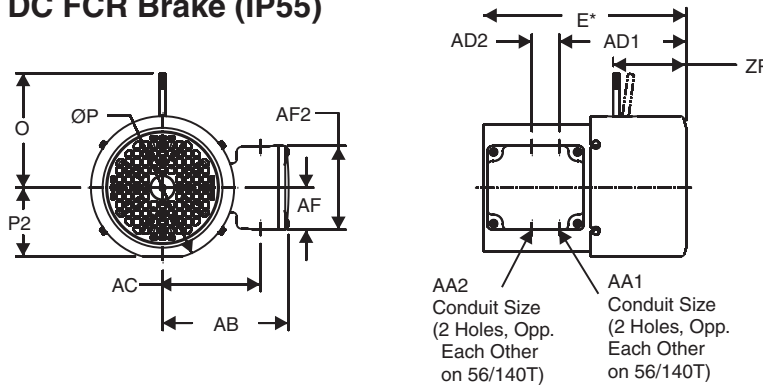


Motor Frame	Controller	O	P	P2	AB	AC	AD	AF	AV	AW	AX	AY	AZ	XK
56	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	0.62	0.55	8.53	7.72
143T, 145T	1, 1M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	0.62	0.55	8.53	8.97
56	2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	0.62	0.55	9.12	7.72
145T	2, 2M	7.74	7.33	3.67	6.45	5.91	4.35	5.61	2.25	2.95	0.62	0.55	9.12	8.97
182T, 184T	2	8.72	9.56	4.78	6.45	5.91	5.89	6.58	2.25	2.95	0.62	0.55	9.12	11.89
	3	11.16	9.56	4.78	8.97	8.44	10.01	7.37	2.83	4.22	0.62	0.55	13.10	11.89

Input Power Phase/Voltage	Motor HP @ Max. Hz				
	0.33 to 0.50	0.75	1	1.5 to 2	3 to 5
1/115	1M	2M	-	-	-
1/230	1M	1M	1M	2M	-
3/230	1	1	1	2	3
3/460	1	1	1	1	2

Dimensional Supplement

DC FCR Brake (IP55)



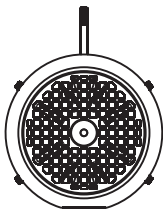
Motor Frame	E*	O	P	AA1	
				Size	Qty
56-143/145T	2.63	5.80	7.24	3/4 NPT	2
182/184T	1.95	7.30	9.23	3/4 NPT	1

Motor Frame	AA2		AB	AC	AD1
	Size	Qty			
56-143/145T	1/2 NPT	2	6.38	4.94	6.43
182/184T	3/4 NPT	1	7.80	6.14	8.84

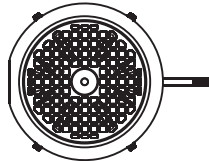
Motor Frame	AD2	AF	AF2	P2	ZP
56-143/145T	1.38	2.13	4.25	3.46	3.54
182/184T	1.81	2.32	4.65	N/A	4.41

* Add "E" to XK, XM or XL of equivalent three phase frame motor.

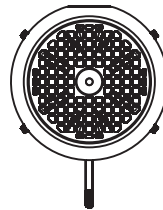
Manual Release Lever Position



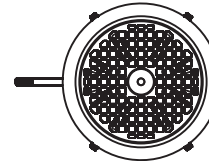
12 o'clock
(standard)



3 o'clock

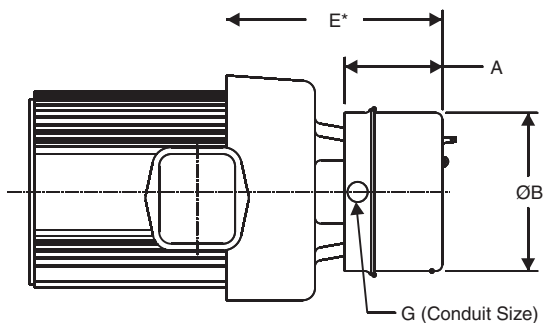


6 o'clock



9 o'clock

AC Brake (Open)



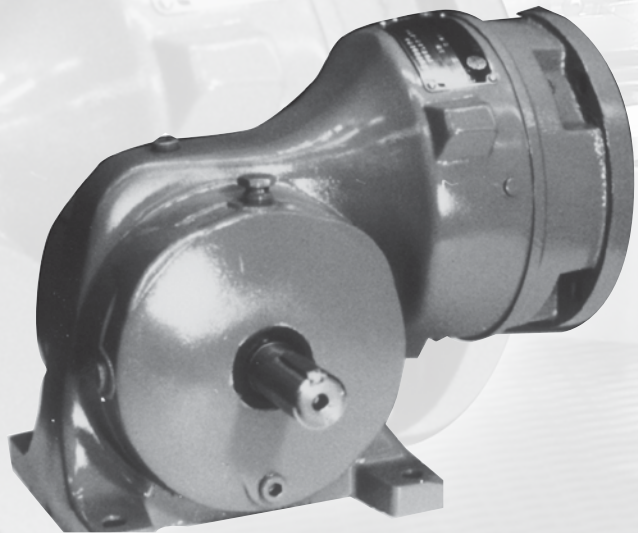
Motor Type	Motor Frame	Brake Torque (ft. lbs.)	A	B	E*	G
S	56	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
	143T/145T 145TY	3	4.01	6.54	4.56	1/2
		6	4.01	6.54	4.56	1/2
	184T	10	4.01	6.54	4.56	1/2
		15	4.01	6.54	4.56	1/2

* Dimension "E" represents the additional length of motor with brake mounted. Add this amount to the gearmotor XK, XM or XL of equivalent three phase frame motor.

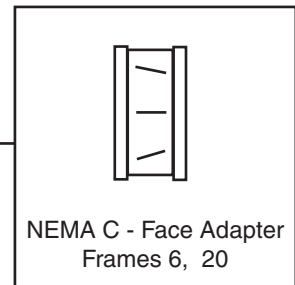
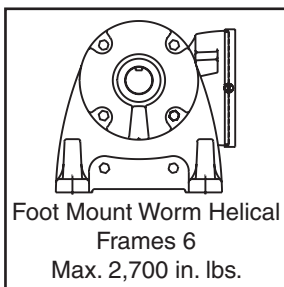
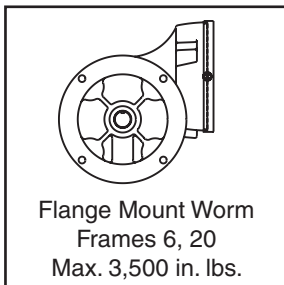
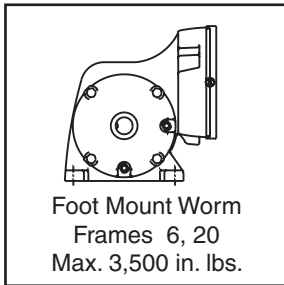
Browning[®]

IRA Worm and Helical Reducers

These right-angle gear reducers offer a standard NEMA C-Face alternative to the IRA gearmotor products. Where an application requires a DC or another type motor not available as an IRA gearmotor, this C-Face reducer may be used with the same mounting. The flexible IRA gear reducers are available in a foot mount configuration with worm or worm-helical gearing or as a flange mount worm gear.



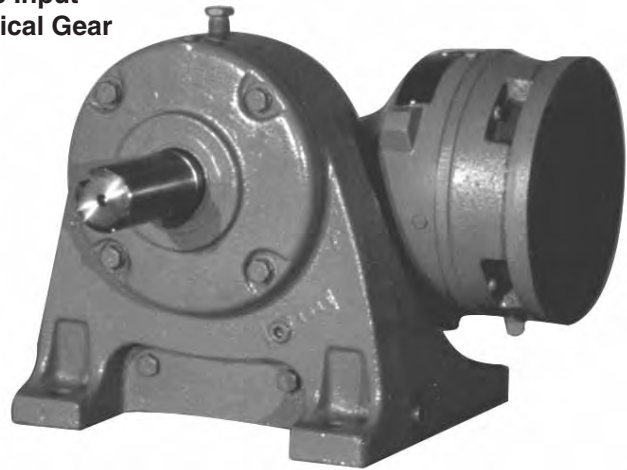
- Forged "LMS" bronze worm wheel provides extra strength and life.
- Roller bearings on output shaft provide ample rating for high overhung load.
- Factory filled with oil.
- Two double lipped oil seals at input and output shafts.



"C" Face Input Worm Gear



"C" Face Input
Worm - Helical Gear



Selection Information

- 1. Required Output Torque**
 - Based on application data.
- 2. Speed / Ratio**
 - Obtain either desired output speed (rpm) or gearbox ratio based on application.
- 3. Service Factor**
 - Determine the required service factor using either the AGMA Application Classification chart (pages E40 to E42), or the duration of operation, load type, and motor type with the table below.

Prime Mover	Duration Of Service	Nature of Load From Driven Machine		
		Uniform	Mod. Shock	Heavy Shock
Electric Motor	Occasional 1/2 hour per day	0.80	0.90	1.00
	Intermittent 2 hours per day	0.90	1.00	1.25
	10 hours per day	1.00	1.25	1.50
	24 hours per day	1.25	1.50	1.75

The following service factors apply to applications involving frequent starts and stops.

Electric Motor	Occasional 1/2 hour per day	0.90	1.00	1.25
	Intermittent 2 hours per day	1.00	1.25	1.50
	10 hours per day	1.25	1.50	1.75
	24 hours per day	1.50	1.75	2.00

Size Selection

- Step 1**
 - Locate speed reducer selection tables (pages E44 to E47) based on input speed to gearbox.
- Step 2**
 - Choose the nominal ratio appropriate for the speeds required.
- Step 3 Calculate Equivalent Load**
 - Determine the service factored horsepower or output torque needed to drive the load. (equivalent brake horsepower)

$$\text{Brake Horsepower} \times \text{service factor} = \text{Equivalent BHP (Horsepower at load)}$$

$$\text{Output torque} \times \text{service factor} = \text{Equivalent output torque}$$

Step 4 Size Reducer from Rating Tables

- Size reducer or gearmotor from rating tables using the equivalent BHP or output torque and output speed.

Step 5 Selecting the Motor

- To select the proper motor horsepower, the reducer efficiency needs to be calculated for the reducer at the rating selected.

$$\text{HP motor} = \frac{\text{Torque output} \times \text{rpm output}}{63025 \times \text{efficiency}} \quad \text{or} \quad \text{hp motor} = \frac{\text{hp output}}{\text{efficiency}}$$

$$\text{Efficiency} = \frac{\text{Max. Output Torque} \times \text{Output rpm}}{\text{Max. Input hp} \times 63025} \times 100\%$$

Step 6

- Verify thermal limitations.

Step 7

- Verify overhung load ratings where required (E-37).

Example

1. Application Data:

Uniformly loaded conveyor, 24 hrs./day operation. Right angle hollow base speed reducer directly coupled to head pulley. Customer prefers C-Face motors.

Motor Rating: TEFC, 230/460V 1 hp, 1750 rpm, 143TC frame footless

Output Speed: 56 rpm

2. Size Selection

56 RPM REQUIRED OUTPUT

EQUALS 31.5:1 RATIO

$$\text{PM} \bullet \text{SF} = \text{P}$$

$$1 \text{ HP} \bullet 1.25 = 1.25 \text{ HP}$$

$$6 \text{ GW (1.3 HP)} > 1.25$$

SELECT IRA 6 GW (1.3 HP) > 1.25

31.0	6 GW(V)
EXAMPLE	
1.3	1244

3. Catalog Designation (see "Ordering" page E-38)

IRA • 6 • GW • F1 • 25 • U • 143TC

Overhung Load

When a sprocket, sheave, pulley, or pinion is mounted on the take-off shaft of a reducer, it is necessary to calculate the overhung load. This calculated load must be compared with the gearbox capacity listed to make sure the gearbox will not be overloaded. To calculate the overhung load you need to know the torque or horsepower at the take-off shaft and the location along the shaft at which the load is applied.

A. If torque is known:

$$OHL = \frac{T \times K \times LLF}{r}$$

B. If horsepower is known:

$$OHL = \frac{63025 \times hp \times K \times LLF}{rpm \times r}$$

Where:

- OHL = Overhung load (pounds)
- T = Torque (in. lbs.)
- r = Radius of driving member (in.)
- hp = Horsepower
- K = Drive type factor
- LLF = Load location factor

Driving Member	Value of K
Chain Drive	1.00
Pinion	1.25
Gearbelt	1.25
V-Belt	1.50
Flat Belt	2.50

Load Location	Value of LLF
End of shaft extension	1.20
Center of shaft extension	1.00
Shaft extension shoulder	0.80

Output Speed rpm	Overhung Load (In Pounds) by Frame and Type		
	6 GW, GWV	6 GWB	20 GW, GWV
230	696	-	-
190	738	-	2743
155	804	-	2800
125	832	-	2850
100	942	745	2850
84	980	753	2850
68	980	827	2850
56	980	816	2850
45	980	894	2850
37	980	913	2850
30	980	883	2850
25	980	1097	2850
20	980	1228	2850
16.5	980	1234	2850
11	980	1234	2850
9	980	1234	2850
7.5	980	1234	2850

Catalog Designation

IRA • 6 • GW • F1 • 25 • U • 143TC •

Based on Selection

Choose one of each

Based on Application

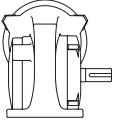
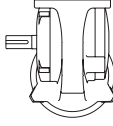
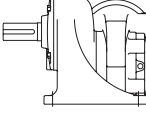
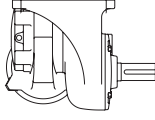
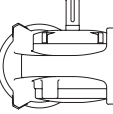
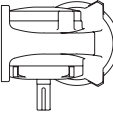
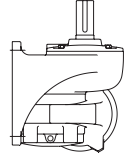
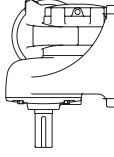
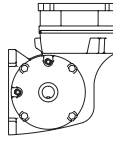
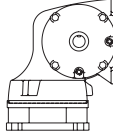
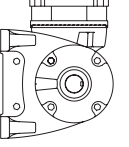
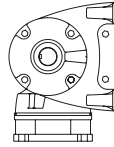
Type	Gear Frame	Mounting Configuration	Mounting Positions	Ratio	Input	Motor Frame	Modification Code(s)
IRA	6 20	GW = Foot Mounted GWV = Flanged Worm GWB = Footed Worm-Helical (Frame 6 Only)	See page E-39	Use Nominal Ratio Selected	U* = C-Face *Must specify NEMA Frame Size	Req'd on U	Number of Modification(s) From Page E-49

Availability

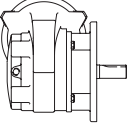
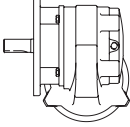
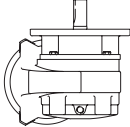
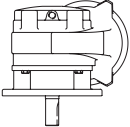
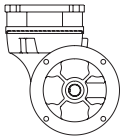
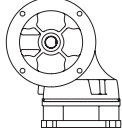
Gear Frame	Footed		Flanged
	Universal #1	Universal #2	Universal #1
6 GW (worm)	●	◇	●
6 GWB (worm helical)	●	●	*
20 GW (worm)	●	◇	●

- Normally Stocked
- ◇ Available thru conversion of stock unit
- * Refer application to Type HWN product

Foot Mount Worm and Worm - Helical

Universal No. 1		Universal No. 2	
F1 	C1 	F2 	C4 
U3 	D1 	U1 	D3 
W8 	W1 	W7 	W2 

Flange Mount Worm

Universal No. 1	
W3 	W6 
U1 	D1 
W8 	W1 

Application	Recommended Service Factors			Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
AGITATORS (Mixers)				CRANES (cont.)			
Pure Liquids	---	1.00	1.25	Industrial Duty			
Liquids & Solids	1.00	1.25	1.50	Main	1.00	1.25	1.50
Liquids - Variable Density	1.00	1.25	1.50	Auxiliary	◆	◆	◆
				Bridge and Trolley Travel	◆	◆	◆
BLOWERS				CRUSHER			
Centrifugal	1.00	1.25	---	Stone or Ore	1.50	1.75	2.00
Lobe	1.00	1.25	1.50				
Vane	---	1.00	1.25	DREDGES			
BREWING & DISTILLING				Cable Reels	1.00	1.25	1.50
Bottling Machinery	---	1.00	1.25	Conveyors	1.00	1.25	1.50
Brew Kettles (Continuous Duty)	---	1.00	1.25	Cutter Head Drives	1.25	1.50	1.75
Cookers (Continuous Duty)	---	1.00	1.25	Pumps	1.00	1.25	1.50
Mush Tubs (Continuous Duty)	---	1.00	1.25	Screen Drives	1.25	1.50	1.75
Scale Hopper (Frequent Starts)	1.00	1.25	1.50	Stackers	1.00	1.25	1.50
				Winches	1.00	1.25	1.50
CAN FILLING MACHINES	---	1.00	1.25	ELEVATORS			
CAR DUMPERS	1.25	1.50	1.75	Bucket	1.00	1.25	1.50
CAR PULLERS	1.00	1.25	1.50	Centrifugal Discharge	---	1.00	1.25
CLARIFIERS	---	1.00	1.25	Escalators	◆	◆	◆
CLASSIFIERS	1.00	1.25	1.50	Freight	◆	◆	◆
CLAY WORKING MACHINERY				Gravity Discharge	---	1.00	1.25
Brick Press	1.25	1.50	1.75	EXTRUDERS			
Briquette Machine	1.25	1.50	1.75	General	1.25	1.25	1.25
Pug Mill	1.00	1.25	1.50	Plastics			
				(a) Variable Speed Drive	1.50	1.50	1.50
COMPACTORS	1.50	1.75	2.00	(b) Fixed Speed Drive	1.75	1.75	1.75
COMPRESSORS				Rubber			
Centrifugal	---	1.00	1.25	(a) Continuous Screw Operation	1.50	1.50	1.50
Lobe	1.00	1.25	1.50	(b) Intermittent Screw Operation	1.75	1.75	1.75
Reciprocating, Multi - Cylinder	1.00	1.25	1.50	FANS			
Reciprocating, Single - Cylinder	1.25	1.50	1.75	Centrifugal	---	1.00	1.25
CONVEYORS - GENERAL PURPOSE				Cooling Towers	◆	◆	◆
Uniformly loaded or fed	---	1.00	1.25	Forced Draft	1.25	1.25	1.25
Not uniformly fed	1.00	1.25	1.50	Induced Draft	1.00	1.25	1.50
Reciprocating or Shaker	1.25	1.50	1.75	Industrial & Mine	1.00	1.25	1.50
CRANES				FEEDERS			
Dry Dock				Apron	---	1.25	1.50
Main Hoist	1.25	1.50	1.75	Belt	1.00	1.25	1.50
Auxiliary Hoist	1.25	1.50	1.75	Disc	---	1.00	1.25
Boom Hoist	1.25	1.50	1.75	Reciprocating	1.25	1.50	1.75
Slewing Drive	1.25	1.50	1.75	Screw	1.00	1.25	1.50
Traction Drive	1.50	1.50	1.50	FOOD INDUSTRY			
Container				Cereal Cooker	---	1.00	1.25
Main Hoist	◆	◆	◆	Dough Mixer	1.00	1.25	1.50
Boom Hoist	◆	◆	◆	Meat Grinders	1.00	1.25	1.50
Trolley Travel				Slicers	1.00	1.25	1.50
Gantry Drive	◆	◆	◆	GENERATORS & EXCITERS	---	1.00	1.25
Traction Drive	◆	◆	◆	HAMMER MILLS	1.50	1.50	1.75
Mill Duty				HOISTS			
Main Hoist	◆	◆	◆	Heavy Duty	1.25	1.50	1.75
Auxiliary	◆	◆	◆	Medium Duty	1.00	1.25	1.50
Bridge and Trolley Travel	◆	◆	◆	Skip Hoist	1.00	1.25	1.50

◆ Refer to Application Engineering (1 800 626 2093).

Application	Recommended Service Factors			Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
LAUNDRY TUMBLERS	1.00	1.25	1.50	PAPER MILLS			
LAUNDRY WASHERS	1.25	1.25	1.50	Agitator (Mixer)	1.50	1.50	1.50
LUMBER INDUSTRY				Agitator for Pure Liquids	1.25	1.25	1.25
Barkers - Spindle Feed	1.25	1.25	1.50	Barker Drums	1.75	1.75	1.75
- Main Drive	1.50	1.50	1.50	Barker - Mechanical	1.75	1.75	1.75
Conveyors - Burner	1.25	1.25	1.50	Beater	1.50	1.50	1.50
- Main or Heavy Duty	1.50	1.50	1.50	Breaker Stack	1.25	1.25	1.25
- Main Log	1.50	1.50	1.75	Calender (Anti-Friction Bearings Only)	1.25	1.25	1.25
- Re-Saw, Merry-Go-Round	1.25	1.25	1.50	Chipper	1.75	1.75	1.75
- Slab	1.50	1.50	1.75	Chip Feeder	1.50	1.50	1.50
- Transfer	1.25	1.25	1.50	Coating Rolls	1.25	1.25	1.25
Chains - Floor	1.50	1.50	1.50	Conveyors			
- Green	1.50	1.50	1.50	Chip, Bark, Chemical	1.25	1.25	1.25
Cut-Off Saws - Chain	1.50	1.50	1.50	Log (Including Slab)	1.75	1.75	1.75
- Drag	1.50	1.50	1.50	Couch Rolls	1.25	1.25	1.25
Debarking Drums	1.50	1.50	1.75	Cutter	1.75	1.75	1.75
Feeds - Edger	1.25	1.25	1.50	Cylinders Molds	1.25	1.25	1.25
- Gang	1.50	1.50	1.50	Dryers (Anti-Friction Bearings Only)			
- Trimmer	1.25	1.25	1.50	Paper Machine	1.25	1.25	1.25
Log Deck	1.50	1.50	1.50	Conveyor Type	1.25	1.25	1.25
Log Hauls - Incline - Well Type	1.50	1.50	1.50	Embosser	1.25	1.25	1.25
Log Turning Devices	1.50	1.50	1.50	Extruder	1.50	1.50	1.50
Planer Feed	1.25	1.25	1.50	Fourdrinier Rolls (Includes			
Planer Tilting Hoist	1.50	1.50	1.50	Lump Breaker, Dandy Roll,			
Rolls - Live, Off Brg., Roll Cases	1.50	1.50	1.50	Wire Turning & Return Rolls)	1.25	1.25	1.25
Sorting Table	1.25	1.25	1.50	Jordan	1.25	1.25	1.25
Tipple Hoist	1.25	1.25	1.50	Kiln Drive	1.50	1.50	1.50
Transfers - Chain	1.50	1.50	1.50	Mt. Hope Rolls	1.25	1.25	1.25
- Craneway	1.50	1.50	1.50	Paper Rolls	1.25	1.25	1.25
Tray Drives	1.25	1.25	1.50	Platter	1.50	1.50	1.50
Veneer Lathe Drives	◆	◆	◆	Pressers - Felt & Suction	1.25	1.25	1.25
				Pulper	1.50	1.50	1.75
METAL MILLS				Pumps - Vacuum	1.50	1.50	1.50
Draw Bench Carriage & Main Drive	1.00	1.25	1.50	Reel (Surface Type)	1.25	1.25	1.50
Run Out Tables				Screens			
Non-Reversing				Chip	1.50	1.50	1.50
Group Drives	1.00	1.25	1.50	Rotary	1.50	1.50	1.50
Individual Drives	1.50	1.50	1.75	Vibrating	1.75	1.75	1.75
Reversing	1.50	1.50	1.75	Size Press	1.25	1.25	1.25
Slab Pushers	1.25	1.25	1.50	Super Calender	1.25	1.25	1.25
Shears	1.50	1.50	1.75	Thickener (AC Motor)	1.50	1.50	1.50
Wire Drawing	1.00	1.25	1.50	(DC Motor)	1.25	1.25	1.25
Wire Winding Machine	1.00	1.25	1.50	Washer (AC Motor)	1.50	1.50	1.50
				(DC Motor)	1.25	1.25	1.25
METAL STRIP PROCESSING				Wind & Unwind Stand	1.00	1.00	1.00
MACHINERY				Winders (Surface Type)	1.25	1.25	1.25
Bridles	1.25	1.25	1.50	Yankee Dryers (Anti-Friction			
Coilers & Uncoilers	1.00	1.00	1.25	Bearings Only)	1.25	1.25	1.25
Edge Trimmers	1.00	1.25	1.50				
Flatteners	1.00	1.25	1.50	PLASTICS INDUSTRY-			
Loopers (Accumulators)	1.00	1.00	1.00	PRIMARY PROCESSING			
Pinch Rolls	1.00	1.25	1.50	Intensive Internal Mixers			
Scrap Choppers	1.00	1.25	1.50	(a) Batch Mixers	1.75	1.75	1.75
Shears	1.50	1.50	1.75	(b) continuous Mixers	1.50	1.50	1.50
Slitters	1.00	1.25	1.50	Batch Drop Mill - 2 Smooth Rolls	1.25	1.25	1.25
				Continuous Feed, Holding &			
MILLS, ROTARY TYPE				Blend Mill	1.25	1.25	1.25
Bell & Rod				Compounding Mills	1.25	1.25	1.25
Spur Ring Gear	1.50	1.50	1.75	Calenders	1.50	1.50	1.50
Helical Ring Gear	1.50	1.50	1.50				
Direct Connected	1.50	1.50	1.75	PLASTICS INDUSTRY -			
Cement Kilns	1.50	1.50	1.50	SECONDARY PROCESSING			
Dryers & Coolers	1.50	1.50	1.50	Blow Molders	1.50	1.50	1.50
				Coating	1.25	1.25	1.25
MIXERS, CONCRETE	1.00	1.25	1.50	Film	1.25	1.25	1.25
				Pipe	1.25	1.25	1.25

◆ Refer to Application Engineering (1 800 626 2093).

Application	Recommended Service Factors			Application	Recommended Service Factors		
	Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day		Up to 3 hrs/day	3-10 hrs/day	Over 10 hrs/day
PLASTICS INDUSTRY - SECONDARY PROCESSING (Cont.)				SEWAGE DISPOSAL EQUIPMENT			
Pre-Plasticizers	1.50	1.50	1.50	Bar Screens	---	1.00	1.25
Rods	1.25	1.25	1.25	Chemical Feeders	---	1.00	1.25
Sheets	1.25	1.25	1.25	Dewatering Screens	1.00	1.25	1.50
Tubing	1.25	1.25	1.50	Scum Breakers	1.00	1.25	1.50
PULLERS - BARGE HAUL	1.00	1.50	1.75	Slow or Rapid Mixers	1.00	1.25	1.50
PUMPS				Sludge Collectors	1.00	1.00	1.25
Centrifugal	---	1.00	1.25	Thickeners	1.00	1.25	1.50
Proportioning	1.00	1.25	1.50	Vacuum Filters	1.00	1.25	1.50
Reciprocating				SCREENS			
Single Acting, 3 or more cylinders	1.00	1.25	1.50	Air Washing	---	1.00	1.25
Double Acting, 2 or more cylinders	1.00	1.25	1.50	Rotary - Stone or Gravel	1.00	1.25	1.50
Rotary - Gear Type	---	1.00	1.50	Traveling Water Intake	---	1.00	1.25
- Lobe Type	---	1.00	1.25	SUGAR INDUSTRY			
- Vane	---	1.00	1.25	Beet Slicer	1.50	1.50	1.75
RUBBER INDUSTRY				Cane Knives	1.50	1.50	1.50
Intensive Internal Mixers				Crushers	1.50	1.50	1.50
(a) Batch Mixers	1.50	1.75	1.75	Mills (Low Speed End)	1.50	1.50	1.50
(b) Continuous Mixers	1.25	1.50	1.50	TEXTILE INDUSTRY			
Mixing Mill -				Batchers	1.00	1.25	1.50
2 Smooth Rolls (if corrugated				Calenders	1.00	1.25	1.50
rolls are used, than the same				Cards	1.00	1.25	1.50
service factors that are used for				Dry Cans	1.00	1.25	1.50
a Cracker Warmer)	1.50	1.50	1.50	Dryers	1.00	1.25	1.50
Batch Drop Mill - 2 Smooth Rolls	1.50	1.50	1.50	Dyeing Machinery	1.00	1.25	1.50
Cracker Warmer - 2 Rolls;				Looms	1.00	1.25	1.50
1 corrugated roll	1.75	1.75	1.75	Mangles	1.00	1.25	1.50
Cracker - 2 corrugated rolls	1.75	1.75	1.75	Nappers	1.00	1.25	1.50
Holding, Feed & Blend Mill - 2 Rolls	1.25	1.25	1.25	Pads	1.00	1.25	1.50
Refiner - 2 Rolls	1.50	1.50	1.50	Slashers	1.00	1.25	1.50
Calenders	1.50	1.50	1.50	Soapers	1.00	1.25	1.50
SAND MILLER	1.00	1.25	1.50	Spinners	1.00	1.25	1.50
				Tenter Frames	1.00	1.25	1.50
				Washers	1.00	1.25	1.50
				Winders	1.00	1.25	1.50

Applications not listed in this table or where the user has data indicating the severity of his usage to be greater than average should be referred to Application Engineering (1 800 626 2093).

The IRA gearbox is filled at the factory with oil according to the mounting position specified when ordered. The oil used depends on the order description at entry. Non-washdown units are filled with an AGMA 8 mineral oil. Washdown units will be filled with a synthetic 460 series lubricant classified as a Polyglycol (PAG) oil.

In the event that a gearbox needs to be refilled, see the appropriate maintenance manual for the proper procedure and correct quantity of oil. If synthetic oil is used, the gearbox must be refilled with the same lubricant or must be completely drained and flushed.

Mineral Oils

Ambient Temperature	15 to 60 F	50 to 125 F
ISO Grade	460	680
AGMA	7	8

Synthetic Oils

Ambient Temperature	-30 to 200 F	-30 to 200 F
ISO Grade	460	680
AGMA	7	8

Type IRA

**Motor
rpm
1750**

Exact ratio rpm, hp and Torque: IRA reducers

Output speed (rpm)	Reduction ratio	6 GW(V)	6 GWB	20 GW(V)
230	7.1	7.5 6 GW(V)		
		3.63 888		
190	9	9.0 6 GW(V)		10.0 20 GW(V)
		3.42 996		9.4 3082
155	11.2	11.25 6 GW(V)		
		2.79 994		
125	14	14.0 6 GW(V)		15.0 20 GW(V)
		2.37 1026		7.0 3316
100	18	17.6 6 GW(V)	17.0 6 GWB	18.0 20 GW(V)
		1.99 1056	3.63 1969	6.0 3418
84	20	21.0 6 GW(V)	20.3 6 GWB	20.0 20 GW(V)
		1.77 1083	3.42 2212	5.6 3459
68	25	26.0 6 GW(V)	25.4 6GWB	25.0 20 GW(V)
		1.50 1076	2.79 2199	4.6 3411
56	31.5	31.0 6 GW(V)	31.0 6GWB	30.0 20 GW(V)
		1.30 1244	2.36 2317	4.0 3469
45	40	39.0 6 GW(V)	36.6 6GWB	40.0 20 GW(V)
		1.09 1067	2.01 2332	3.1 3368
37	45	47.0 6 GW(V)	45.8 6GWB	50.0 20 GW(V)
		0.94 1041	1.65 2297	2.5 3232
30	56	58.0 6 GW(V)	57.0 6GWB	60.0 20 GW(V)
		0.78 981	1.38 2307	2.1 3112
25	71	70.0 6 GW(V)	71.9 6GWB	
		0.64 889	1.14 2316	
20	90	87.0 6 GW(V)	85.5 6GWB	
		0.50 726	1.00 2365	
16.5	112		106.0 6GWB	
			0.84 2360	
13.5	125		126.0 6GWB	
			0.74 2358	
11.0	160		159.0 6GWB	
			0.64 2342	
9.0	200		191.0 6GWB	
			0.57 2407	
7.5	250		236.0 6GWB	
			0.50 2378	
6.0	280		285.0 6GWB	
			0.50 2684	
5.0	355		354.0 6GWB	
			0.41 2416	
4.0	450			
3.25	560			

If shaded, mechanical hp may exceed thermal hp limit.
Refer to page E-48.

Exact Ratio	Size/Type
Max Input (hp)	Max. Output (in.lbs.)

Type IRA

**Motor
rpm
1450**

Exact ratio rpm, hp and Torque: IRA reducers

Output speed (rpm)	Reduction ratio	6 GW(V)		6GWB		20 GW(V)	
193	7.1	7.5	6 GW(V)				
		3.33	979				
161	9	9.0	6 GW(V)			10.0	20 GW(V)
		3.14	1098			8.68	3414
132	11.2	11.25	6 GW(V)				
		2.56	1093				
104	14	14.0	6 GW(V)			15.0	20 GW(V)
		2.17	1128			6.44	3674
81	18	17.6	6 GW(V)	17.0	6GWB	18.0	20 GW(V)
		1.83	1156	3.33	2168	5.63	3781
69	20	21.0	6 GW(V)	20.3	6GWB	20.0	20 GW(V)
		1.63	1190	3.14	2431	5.22	3832
56	25	26.0	6 GW(V)	25.4	6GWB	25.0	20 GW(V)
		1.36	1182	2.56	2422	4.25	3773
47	31.5	31.0	6 GW(V)	31.0	6GWB	30.0	20 GW(V)
		1.20	1184	2.00	2327	3.72	3838
37	40	39.0	6 GW(V)	36.6	6GWB	40.0	20 GW(V)
		1.00	1173	1.74	2338	2.88	3723
31	45	47.0	6 GW(V)	45.8	6GWB	50.0	20 GW(V)
		0.87	1144	1.39	2305	2.43	3710
25	56	58.0	6 GW(V)	57.0	6GWB	60.0	20 GW(V)
		0.72	1079	1.16	2314	1.98	3439
21	71	70.0	6 GW(V)	71.9	6GWB		
		0.59	993	0.96	2323		
17	90	87.0	6 GW(V)	85.5	6GWB		
		0.44	798	0.85	2365		
14	112			106.0	6GWB		
				0.73	2386		
12	125			126.0	6GWB		
				0.66	2378		
9	160			159.0	6GWB		
				0.54	2347		
8	200			191.0	6GWB		
				0.49	2396		
6	250			236.0	6GWB		
				0.43	2405		
5	280			285.0	6GWB		
				0.38	2359		
4	355			354.0	6GWB		
				0.37	2457		
3	450						
1	560						

If shaded, mechanical hp may exceed thermal hp limit.
Refer to page E-48.

Exact Ratio	Size/Type
Max Input (hp)	Max. Output (in.lbs.)

Type IRA

**Motor
rpm
1160**

Exact ratio rpm, hp and Torque: IRA reducers

Output speed (rpm)	Reduction ratio	6 GW(V)		6GWB	20 GW(V)		
155	7.1	7.5	6 GW(V)				
		2.98	1090				
129	9	9.0	6 GW(V)		10.0	20 GW(V)	
		2.81	1220		7.9	3845	
105	11.2	11.25	6 GW(V)				
		2.29	1212				
83	14	14.0	6 GW(V)		15.0	20 GW(V)	
		1.94	1249		5.8	4128	
64	18	17.6	6 GW(V)	17.0	6GWB	18.0	20 GW(V)
		1.64	1283	2.98	2420	5.0	4244
55	20	21.0	6 GW(V)	20.3	6GWB	20.0	20 GW(V)
		1.46	1315	2.81	2698	4.7	4302
45	25	26.0	6 GW(V)	25.4	6GWB	25.0	20 GW(V)
		1.22	1306	2.29	2681	3.9	4228
37	31.5	31.0	6 GW(V)	31.0	6GWB	30.0	20 GW(V)
		1.07	1308	1.60	2336	3.4	4301
30	40	39.0	6 GW(V)	36.6	6GWB	40.0	20 GW(V)
		0.90	1294	1.36	2344	2.6	4165
25	45	47.0	6 GW(V)	45.8	6GWB	50.0	20 GW(V)
		0.78	1263	1.13	2315	2.2	4006
20	56	58.0	6 GW(V)	57.0	6GWB	60.0	20 GW(V)
		0.65	1190	0.94	2323	1.8	3848
17	71	70.0	6 GW(V)	71.9	6GWB		
		0.53	1078	0.78	2330		
13	90	87.0	6 GW(V)	85.5	6GWB		
		0.40	880	0.68	2364		
11	112			106.0	6GWB		
				0.59	2411		
9	125			126.0	6GWB		
				0.51	2397		
7	160			159.0	6GWB		
				0.44	2352		
6	200			191.0	6GWB		
				0.40	2385		
5	250			236.0	6GWB		
				0.35	2431		
4	280			285.0	6GWB		
				0.32	2363		
3.2	355			354.0	6GWB		
				0.30	2497		
2.6	450						
2	560						

If shaded, mechanical hp may exceed thermal hp limit. Refer to page E-48.

Exact Ratio	Size/Type
Max Input (hp)	Max. Output (in.lbs.)

Type IRA

**Motor
rpm
870**

Exact ratio rpm, hp and Torque: IRA reducers

Output speed (rpm)	Reduction ratio	6 GW(V)	6GWB	20 GW(V)
117	7.1	7.5 6 GW(V)		
		2.52 1212		
97	9	9.0 6 GW(V)		10.0 20 GW(V)
		2.37 1352		6.9 4413
80	11.2	11.25 6 GW(V)		
		1.92 1337		
62	14	14.0 6 GW(V)		15.0 20 GW(V)
		1.63 1374		5.1 4725
49	18	17.6 6 GW(V)	17.0 6GWB	18.0 20 GW(V)
		.38 1409	2.52 2693	4.4 4842
42	20	21.0 6 GW(V)	20.3 6GWB	20.0 20 GW(V)
		1.23 1433	2.17 2793	4.2 4919
34	25	26.0 6 GW(V)	25.4 6GWB	25.0 20 GW(V)
		1.03 1432	1.79 2805	3.4 4808
28	31.5	31.0 6 GW(V)	31.0 6GWB	30.0 20 GW(V)
		0.91 1433	1.23 2351	3.0 4893
22	40	39.0 6 GW(V)	36.6 6GWB	40.0 20 GW(V)
		0.77 1418	1.05 2370	2.3 4714
19	45	47.0 6 GW(V)	45.8 6GWB	50.0 20 GW(V)
		0.67 1382	0.87 2325	1.9 4554
15	56	58.0 6 GW(V)	57.0 6GWB	60.0 20 GW(V)
		0.56 1303	0.72 2332	1.6 4352
12	71	70.0 6 GW(V)	71.9 6GWB	
		0.46 1180	0.60 2339	
10	90	87.0 6 GW(V)	85.5 6GWB	
		0.34 964	0.53 2394	
8	112		106.0 6GWB	
			0.44 2364	
7	125		126.0 6GWB	
			0.39 2359	
6	160		159.0 6GWB	
			0.34 2358	
5	200		191.0 6GWB	
			0.32 2478	
4	250		236.0 6GWB	
			0.27 2374	
3	280		285.0 6GWB	
			0.25 2367	
2.4	355		354.0 6GWB	
			0.22 2295	
1.9	450			
1.6	560			

If shaded, mechanical hp may exceed thermal hp limit. Refer to page E-48.

Exact Ratio	Size/Type
Max Input (hp)	Max. Output (in.lbs.)

Thermal Power Ratings (hp)

Motor
rpm
1750

Output (RPM)	Reduction Ratio	6 GW(V)	6 GWB	20 GW(V)
230	7.1	2.67	-	-
190	9	2.46	-	9.0
155	11.2	2.08	-	-
125	14	2.00	-	6.7
100	18	1.51	2.67	5.0
84	20	1.50	2.46	5.0
68	25	1.50	2.08	3.1
56	31.5	1.00	-	-
45	40	1.00	-	2.1
37	45	0.76	-	-
30	56	0.68	-	-
25	71	0.61	-	-
20	90	-	-	-

Motor
rpm
1450

Output (RPM)	Reduction Ratio	6 GW(V)	6 GWB	20 GW(V)
193	7.1	2.66	-	-
161	9	2.45	-	8.68
132	11.2	2.07	-	-
104	14	1.78	-	-
81	18	1.50	2.66	-
69	20	1.32	2.45	-
56	25	1.13	2.07	-
47	31.5	1.00	-	-
37	40	0.85	-	-
31	45	0.76	-	-
25	56	0.67	-	-

Motor
rpm
1160

Output (RPM)	Reduction Ratio	6 GW(V)	6 GWB	20 GW(V)
155	7.1	2.61	-	-
129	9	2.39	-	-
105	11.2	2.02	-	-
83	14	1.90	-	-
64	18	1.46	2.61	-
55	20	1.40	2.39	-
45	25	-	2.02	-
37	31.5	0.97	-	-
30	40	-	-	-
25	45	0.74	-	-

Motor
rpm
870

Output (RPM)	Reduction Ratio	6 GW(V)	6 GWB	20 GW(V)
117	7.1	2.49	-	-
97	9	2.28	-	-
80	11.2	1.93	-	-
49	18	-	2.49	-

Gear Modifications

G1 Food Grade Lubricant

When this modification is specified, the IRA gear sump will be filled with the required volume of a synthetic lubricant classified as a Polyglycol (PAG), 460 series that is approved for USDA H-1 food grade use.

G2 Normally Closed Breather

For applications involving very dusty environments specify this breather design. The breather has a protected spring loaded valve construction opening only to relieve any pressure built up greater than 3 PSI and then closing.

G3 Double Extended Output Shafts

Double end output shafts are available on single reduction type GW worm-only units.

G4 Special Output Shafts

Special output shafts are available on all units. Refer applications to Gear Estimating office for pricing.

G5 Special Nameplates

Units can be provided with limited additional special information on the standard product nameplate. When requested, a special nameplate may be provided, stamped with custom markings.

G6 Low Ambient Temperature

Gearmotors can be supplied for low ambient down to -20F. Refer complete details of the applications to the Applications Department for review.

G7 Washdown Duty Reducer

This reducer design combines special features required for washdown duty. These include: special "protected" gearcase breather design, tandem double lipped oil seals at any shaft extension, exterior surfaces of the reducer receive Corroduty Stainless Steel paint (option for epoxy white at no added cost).



If it is required that food grade lubricant be supplied, specify G1

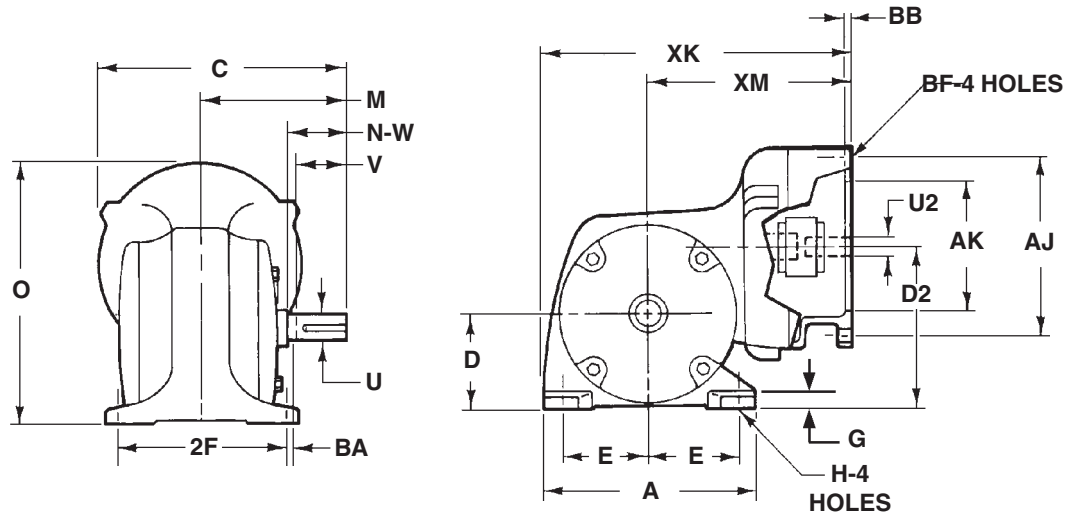
G8 Export Boxing

Export boxing can be provided for "underdeck" transport. When the quantity of IRA gearmotors exceeds five(5) units, refer to the International Sales department for most economical accommodations

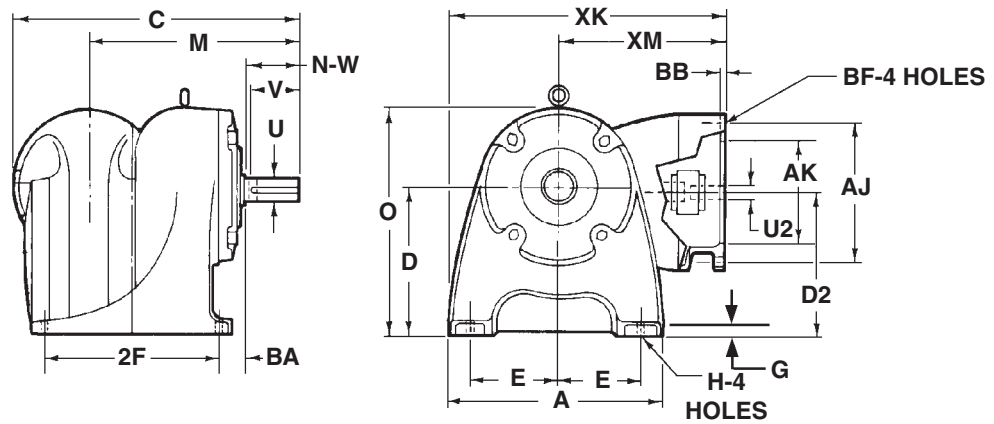
Overall dimensions

Standard F-1 Assembly

Worm (GW)



Worm-Helical (GWB)



GEAR FRAME	A	C	D	D2	E	2F	G	H	M	N-W	O	U	V MIN	BA	SQ. KEY
6 GW	7	8-7/32	3-1/4	5-13/32	3	5	5/8	13/32	5	2	9-3/32	1	1-15/16	7/16	1/4
6 GWB	9-3/8	13-11/32	6-5/16	5-7/8	3-3/4	7-1/2	3/4	9/16	10-1/32	3	9-11/16	1-1/2	2-7/8	1-3/8	3/8
20 GW	10-1/2	12-7/8	4-1/2	8-1/4	4-3/8	8	1	11/16	8-1/8	3-1/4	12-3/4	1-5/8	2-15/16	7/8	3/8

GEAR FRAME	MOTOR FRAME	XK	XM
6 GW	56C	12-13/16	9-5/16
6 GW	143TC-145TC	12-13/16	9-5/16
6 GWB	56C	14	9-5/16
6 GWB	143TC-145TC	14	9-5/16
20 GW	182TC-184TC	17-15/32	12-7/32

MOTOR FRAME	U2 +.001	AJ	AK	BB	BF	SQ KEY 2
56C	5/8	5-7/8	4-1/2	7/32	7/16	3/16
143TC-145TC	7/8	5 7/8	4 1/2	7/32	7/16	3/16
182TC-184TC	1 1/8	7 1/4	8 1/2	7/32	7/16	1/4

Dimension "D" is the maximum value, but may be less than values shown. When exact dimensions are required, shims up to 1/16" may be necessary.

All rough casting dimensions may vary by 1/4" due to casting variations.

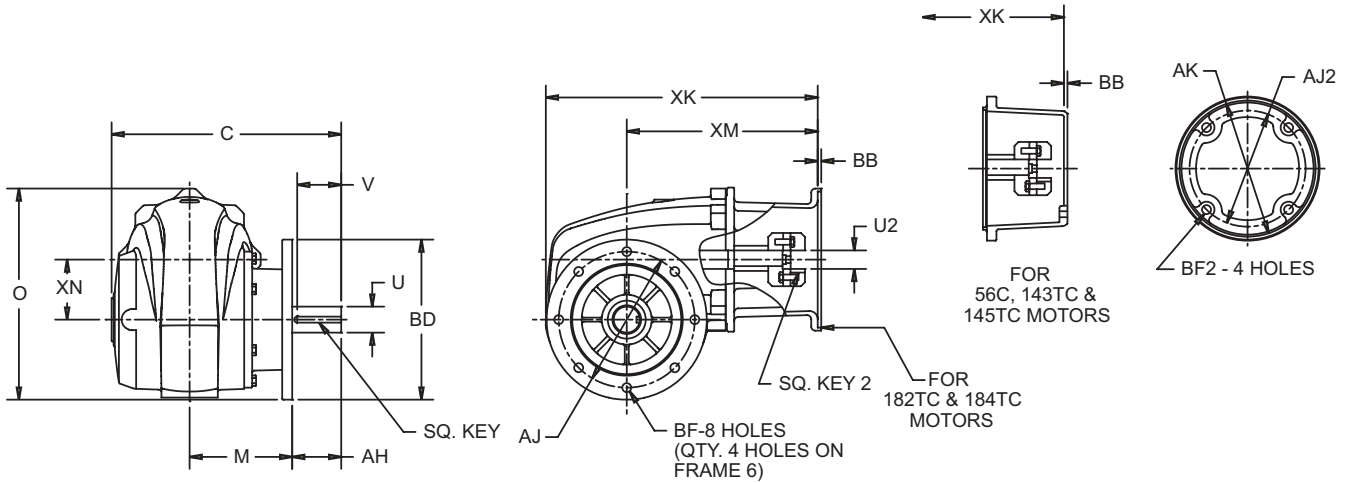
Shaft diameter tolerances: .0000"; -.0005" up to 1-1/2" diameter inclusive. Larger diameters: +.000"; -.001.

Type IRA

Overall dimensions

Standard W-3 Assembly

Worm (GW)



FRAME	C	M	U	V MIN	AH	AJ	BB	BD ■	BF	SQ KEY
6 GWV	9-9/32	4	1	2	2	6-7/8	7/32	7-5/8	13/32	1/4
20 GWV	14-3/8	6-7/16	1-5/8	2-15/16	3-1/16	8-1/2	7/32	10	9/16	3/8

MOTOR					
FRAME	FRAME	O	XK	XM	XN
6 GWV	56C	9-11/16	13-1/8	9-5/16	2-9/16
6 GWV	143TC-145TC	9-11/16	13-1/8	9-5/16	2-9/16
20 GWV	182TC-184TC	13-9/32	17-1/32	12-1/32	3-3/4

MOTOR	U2	AJ2	AK	BF2	SQ
FRAME	+.001				KEY 2
56C	5/8	5-7/8	4-1/2	7/16	3/16
143TC-145TC	7/8	5-7/8	4-1/2	7/16	3/16
182TC-184TC	1-1/8	7-1/4	8-1/2	7/16	1/4

■ "BD" diameter is not machined.

Shaft diameter tolerances: +.0000"; -.0005" up to 1-1/2" diameter inclusive.
Larger diameters: +.000"; -.001".

All rough casting dimensions may vary by 1/4" due to casting variations.



Gearmotor

**SERIES 2000
3000**

Typical Motor Performance Data

Motor Input Code HT24, IT24, IGS2, IG2, IG4
TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps ⁵ @ 460V	NEMA Nom. Efficiency 4/4 Load	Guar. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
							Full Load (Ft. Lbs.)	% Full Load				
							Locked	Breakdown				
0.33	56	1746	0.64	75.5	74.0	64.7	1	339	462	M	B	
0.5	56	1745	0.88	80.0	78.5	66.7	1.5	344	437	L	B	
0.75	56	1735	1.21	80.0	78.5	72.3	2.25	326	444	K	B	
1	143T	1747	1.52	84.0	81.5	73.4	3	438	509	M	C	1
1.5	145T	1733	2.14	84.0	81.5	76.3	4.5	380	450	L	C	
2	145T	1740	2.91	85.5	82.5	74.8	6	482	491	L	C	1
3	182T	1757	3.83	89.5	87.5	81.4	9	276	425	K	B	2
5	184T	1756	6.2	89.5	87.5	83.9	15	229	353	J	B	2
7.5	213T	1765	9.2	91.0	89.5	84.3	22.5	220	290	J	B	1,4
10	215T	1760	12	91.0	89.5	86.1	30	210	270	G	B	1,4
15	254T	1775	18.4	92.4	91.0	82.7	44.4	231	247	G	B	2,4
20	256T	1770	24	93.0	91.7	84.9	60	229	232	G	B	2,4
25	284T	1775	29.3	93.6	92.4	85.9	75	180	250	G	B	1,3,4
30	286T	1775	35	94.1	93.0	86.9	90	190	250	G	B	1,3,4
40	324T	1775	46	93.6	92.4	87.3	120	170	228	F	B	1,3,4
50	326T	1775	56	94.1	93.0	88.3	150	189	239	F	B	1,3,4

Motor Input Code HT5, IT5
TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency 4/4 Load	Guar. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
							Full Load (Ft. Lbs.)	% Full Load				
							Locked	Breakdown				
0.33	56	1740	0.53	75.5	74.0	64.7	1	334	470	M	B	
0.50	56	1735	0.73	80.0	78.5	66.7	1.5	315	424	L	B	
0.75	56	1736	0.95	80.0	78.5	72.3	2.25	313	379	J	B	
1	143T	1747	1.2	84.0	81.5	74.5	3	424	489	M	C	1
1.5	145T	1745	1.69	84.0	81.5	76.9	4.5	385	415	L	C	
2	145T	1751	2.29	85.5	82.5	76.4	6	406	422	M	C	1
3	182T	1772	2.93	89.5	87.5	84.2	9	270	355	K	B	2
5	184T	1758	4.92	89.5	87.5	84.8	15	244	300	J	B	2
7.5	213T	1760	7.3	91.0	89.5	84.6	22.5	230	300	H	B	1,4
10	215T	1760	9.6	91.0	89.5	85.9	30	220	280	H	B	1,4
15	254T	1775	14.6	92.4	91.0	83.4	44.4	226	241	G	B	2,4
20	256T	1770	19	93.0	91.7	84.9	59.3	229	231	G	B	2,4
25	284T	1775	23.4	93.0	91.7	85.9	75	180	250	G	B	1,3,4
30	286T	1775	27.6	93.6	92.4	86.9	90	190	250	G	B	1,3,4
40	324T	1775	37	93.6	92.4	87.2	120	180	237	F	B	1,3,4
50	326T	1775	45	94.1	93.0	88.3	150	180	280	G	A	1,3,4

Motor Input Code PT24
TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps ⁵ @ 460V	NEMA Nom. Efficiency 4/4 Load	Guar. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
							Full Load (Ft. Lbs.)	% Full Load				
							Locked	Breakdown				
3	182T	1757	3.83	89.5	87.5	81.4	9	276	425	K	B	
5	184T	1756	6.2	89.5	87.5	83.9	15	229	353	J	B	
7.5	213T	1765	9.3	91.7	90.2	82.8	22.5	247	324	H	B	3,4
10	215T	1760	12	91.7	90.2	85.3	30	235	301	H	B	3,4
15	254T	1775	18.4	92.4	91.0	82.7	45	231	247	G	B	4
20	256T	1770	23.7	93.0	91.7	84.9	60	229	232	G	B	4
25	284T	1775	28.9	93.6	92.4	86.6	75	203	270	G	B	3,4
30	286T	1775	35.5	93.6	92.4	86.9	90	195	257	G	B	3,4
40	324T	1780	45	94.1	93.0	88.0	120	193	251	G	B	3,4
50	326T	1780	56	94.5	93.6	88.3	150	209	264	G	B	3,4

Note(s)

- 1 — This design exceed standards for a "High Efficiency" motor
- 2 — This design meets standards for a "Premium Efficiency" motor
- 3 — This motor is an all cast-iron Corro-Duty motor
- 4 — Motor has three N/C winding thermostats with leads terminating in the main outlet box
- 5 — For FL amps at 230V, multiply value shown x2



Gearmotor

**SERIES 2000
3000**

Typical Motor Performance Data

Motor Input Code PT5 TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency 4/4 Load	Guar. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
							Full Load (Ft. Lbs.)	% Full Load				
								Locked	Breakdown			
3	182T	1772	2.93	89.5	87.5	84.2	9	270	355	K	B	
5	184T	1758	4.92	89.5	87.5	84.8	15	244	300	J	B	
7.5	213T	1765	7.5	91.7	90.2	82.4	22.5	251	330	H	B	3,4
10	215T	1760	9.6	91.7	90.2	85.4	30	234	299	H	B	3,4
15	254T	1775	14.6	92.4	91.0	83.4	45	231	247	G	B	4
20	256T	1770	19	93.0	91.7	84.9	60	229	231	G	B	4
25	284T	1775	23	93.6	92.4	86.9	75	194	259	G	B	3,4
30	286T	1775	27.6	93.6	92.4	87.0	90	194	256	G	B	3,4
40	324T	1780	36	94.1	93.0	88.0	120	189	245	G	B	3,4
50	326T	1780	45	94.5	93.6	88.3	150	210	264	G	A	3,4

Motor Input Code HC24, IC24 Corro-Duty® Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps ⁵ @ 460V	NEMA Nom. Efficiency 4/4 Load	Guar. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
							Full Load (Ft. Lbs.)	% Full Load				
								Locked	Breakdown			
0.33	56	1746	0.64	77.0	74.0	64.7	1	339	462	M	B	
0.5	56	1745	0.88	81.5	78.5	66.7	1.5	344	437	L	B	
0.75	56	1735	1.21	81.5	78.5	72.3	2.25	326	444	K	B	
1	143T	1747	1.52	84.0	81.5	73.4	3	438	509	M	C	1
1.5	145T	1733	2.14	84.0	81.5	76.3	4.5	380	450	L	C	
2	145T	1740	2.91	85.5	82.5	74.8	6	482	491	L	C	1
3	182T	1757	3.83	89.5	87.5	81.4	9	276	425	K	B	2
5	184T	1756	6.2	89.5	87.5	83.9	15	229	353	J	B	2
7.5	213T	1765	9.2	91.0	89.5	84.3	22.3	240	310	H	B	4
10	215T	1760	11.9	91.7	90.2	85.7	30	220	280	H	B	4
15	254T	1775	18.4	92.4	91.0	82.8	45	230	134	G	B	4
20	256T	1770	23.7	93.0	91.7	84.9	60	227	230	F ¹	B	4
25	284T	1775	29.3	93.6	92.4	85.9	75	180	250	G	B	4
30	286T	1775	35	94.1	93.0	86.9	90	190	250	G	B	4
40	324T	1775	46	93.6	92.4	87.3	120	170	228	F	B	4
50	326T	1775	56	94.1	93.0	88.3	150	189	239	F	B	4

Motor Input Code HC5, IC5 Corro-Duty® Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency 4/4 Load	Guar. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
							Full Load (Ft. Lbs.)	% Full Load				
								Locked	Breakdown			
0.33	56	1740	0.53	77.0	74.0	64.7	1	334	470	M	B	
0.50	56	1735	0.73	81.5	78.5	66.7	1.5	315	424	L	B	
0.75	56	1736	0.95	81.5	78.5	72.3	2.25	313	379	J	B	
1	143T	1747	1.2	84.0	81.5	74.5	3	424	489	M	C	1
1.5	145T	1745	1.69	84.0	81.5	76.9	4.5	385	415	L	C	
2	145T	1751	2.29	85.5	82.5	76.4	6	406	422	M	C	1
3	182T	1772	2.93	89.5	87.5	84.2	9	270	355	K	B	2
5	184T	1758	4.92	89.5	87.5	84.8	15	244	300	J	B	2
7.5	213T	1760	7.3	91.0	89.5	84.6	22.3	220	280	H	B	4
10	215T	1760	9.6	91.0	89.5	85.9	30	210	270	H	B	4
15	254T	1775	14.6	92.4	91.0	83.2	45	224	239	G	B	4
20	256T	1770	19.0	93.0	91.7	85.0	60	226	230	F	B	4
25	284T	1775	23.4	93.0	91.7	85.9	75	180	250	G	B	4
30	286T	1775	27.6	93.6	92.4	86.9	90	190	250	G	B	4
40	324T	1775	37	93.6	92.4	87.2	120	180	237	F	B	4
50	326T	1775	45	94.1	93.0	88.3	150	180	280	F	B	4

Note(s)

- 1 — This design exceed standards for a "High Efficiency" motor
- 2 — This design meets standards for a "Premium Efficiency" motor
- 3 — This motor is an all cast-iron Corro-Duty motor
- 4 — Motor has three N/C winding thermostats with leads terminating in the main outlet box
- 5 — For FL amps at 230V, multiply value shown x2

Typical Motor Performance Data

Motor Input Code PC24 Corro-Duty® Premium Efficiency Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps* @ 460V	NEMA Nom. Efficiency 4/4 Load	Guar. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
							Full Load	% Full Load				
							(Ft. Lbs.)	Locked	Breakdown			
3	182T	1757	3.83	89.5	87.5	81.4	9	276	425	K	B	
5	184T	1756	6.2	89.5	87.5	83.9	15	229	353	J	B	
7.5	213T	1765	9.3	91.7	90.2	82.8	22.5	247	324	H	B	3
10	215T	1760	12	91.7	90.2	85.3	30	235	301	H	B	3
15	254T	1775	18.4	92.4	91.0	82.8	45	230	134	G	B	3
20	256T	1770	23.7	93.0	91.7	84.9	60	227	230	F'	B	3
25	284T	1775	28.9	93.6	92.4	86.6	75	203	270	G	B	3
30	286T	1775	35.5	93.6	92.4	86.9	90	195	257	G	B	3
40	324T	1780	45	94.1	93.0	88.0	120	193	251	G	B	3
50	326T	1780	56	94.5	93.6	88.3	150	209	264	G	B	3

Motor Input Code PC5 Corro-Duty® Premium Efficiency Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency 4/4 Load	Guar. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
							Full Load	% Full Load				
							(Ft. Lbs.)	Locked	Breakdown			
3	182T	1772	2.93	89.5	87.5	84.2	9	270	355	K	B	
5	184T	1758	4.92	89.5	87.5	84.8	15	244	300	J	B	
7.5	213T	1765	7.5	91.7	90.2	82.4	22.5	251	330	H	B	3
10	215T	1760	9.6	91.7	90.2	85.4	30	234	299	H	B	3
15	254T	1775	14.6	92.4	91.0	83.2	45	224	239	G	B	3
20	256T	1770	19.0	93.0	91.7	85.0	60	226	230	F	B	3
25	284T	1775	23	93.6	92.4	86.9	75	194	259	G	B	3
30	286T	1775	27.6	93.6	92.4	87.0	90	194	256	G	B	3
40	324T	1780	36	94.1	93.0	88.0	120	189	245	G	B	3
50	326T	1780	45	94.5	93.6	88.3	150	210	264	G	A	3

Motor Input Code T24 TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps* @ 460V	NEMA Nom. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
						Full Load	% Full Load				
						(Ft. Lbs.)	Locked	Breakdown			
0.33	56	1746	0.64	75.5	64.7	1	339	462	M	B	1
0.50	56	1745	0.88	80.0	66.7	1.5	344	437	L	B	1
0.75	56	1735	1.21	80.0	72.3	2.25	326	444	K	B	1
1	B56	1730	1.56	81.5	74.0	3	352	434	L	C	1
1.5	145T	1733	2.18	82.5	76.7	4.5	380	450	L	C	2
2	145T	1728	2.89	82.5	77.0	6	430	459	L	C	2
3	182T	1745	4.2	84.0	80.0	9	246	344	J	B	3
5	184T	1745	6.8	84.0	81.7	15	220	323	J	B	2
7.5	213T	1750	10.1	86.5	80.4	22.5	230	290	H	B	2
10	215T	1755	13.2	88.5	80.1	30	230	280	H	B	2

Motor Input Code T5 TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Note(s)
						Full Load	% Full Load				
						(Ft. Lbs.)	Locked	Breakdown			
0.33	56	1740	0.53	75.5	64.7	1	334	470	M	B	1
0.50	56	1735	0.73	80.0	66.7	1.5	315	424	L	B	1
0.75	56	1736	0.95	80.0	72.3	2.25	313	379	J	B	1
1	B56	1730	1.21	81.5	76.4	3	337	372	L	C	1

Note(s)

- 1 – Motor frame exempt from NRCAN 2011 definition requiring High Efficiency
- 2 – Refer to HT24 and/or HT5 for designs meeting or exceeding NRCAN 2011
- 3 – Motor has three N/C winding thermostats with leads terminating in the main outlet box
- 4 – For FL amps at 230V, multiply value shown x2



Gearmotor

**SERIES 2000
3000**

Typical Motor Performance Data

Motor Input Code W24, WP24 Washdown Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps ⁴ @ 460V	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
						4/4 Load	% Full Load				
							(Ft. Lbs.)	Locked			
0.33	56	1746	0.64	75.5	64.7	1	339	462	M	B	1
0.50	56	1745	0.88	80.0	66.7	1.5	344	437	L	B	1
0.75	56	1735	1.21	80.0	72.3	2.25	326	444	K	B	1
1	B56	1730	1.56	81.5	74.0	3	352	434	L	C	1
1.5	145T	1733	2.14	85.5	76.8	4.5	380	450	L	C	2
2	145T	1740	2.91	85.5	81.4	6	482	491	L	C	2

Motor Input Code W5, WP5 Washdown Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency	Power Factor	Torque			KVA Code	NEMA Design	Note(s)
						4/4 Load	% Full Load				
							(Ft. Lbs.)	Locked			
0.33	56	1740	0.53	75.5	64.7	1	334	470	M	B	1
0.50	56	1735	0.73	80.0	66.7	1.5	315	424	L	B	1
0.75	56	1736	0.95	80.0	72.3	2.25	313	379	J	B	1
1	B56	1730	1.21	81.5	76.4	3	337	372	L	C	1
1.5	145T	1745	2.29	84.0	76.9	4.5	385	415	L	C	2
2	145T	1751	2.93	85.5	76.4	6	406	422	M	C	2

Motor Input Code TS12 & TS12B TEFC Single Phase 115/230V

HP	Frame	Full Load RPM	FL Amps ⁴ @ 230V	Efficiency	Torque			Design	Brake Option			
					4/4 Load	% Full Load			Start/Run	Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release
						(FT. Lbs.)	Locked					
0.33	56	1730	3.2	58.7	1	366	262	Cap Start/Ind. Run	AC/IP21	1.5	Yes	
	48	1744	2.5	61.4	1	279	229	Cap Start/Ind. Run	AC/IP21	1.5	Yes	
0.5	56	1751	3.8	67.5	1.5	300	240	Cap Start/Ind. Run	AC/IP21	1.5	Yes	
	48	1740	3.6	69.0	1.5	302	245	Cap Start/Ind. Run	AC/IP21	1.5	Yes	
0.75	56	1744	4.9	71.7	2.3	325	255	Cap. Start/Cap. Run	AC/IP21	3	Yes	
	48	1750	3.7	79.8	2.3	338	298	Cap. Start/Cap. Run	AC/IP21	3	Yes	
1	143T	1739	6.7	72.9	3	315	250	Cap. Start/Cap. Run	AC/IP21	3	Yes	
1.5	145TY	1750	6.5	81.7	4.5	288	290	Cap. Start/Cap. Run	AC/IP21	6	Yes	
2	145TY	1755	8.1	89.7	6	247	320	Cap. Start/Cap. Run	AC/IP21	6	Yes	

Motor Input Code TS2 and TS2B TEFC Single Phase 230V

HP	Frame	Full Load RPM	FL Amps @ 230V	Efficiency	Torque			Design	Brake Option			
					4/4 Load	% Full Load			Start/Run	Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release
						(FT. Lbs.)	Locked					
3	184T	1760	17	78.1	9	453	330	Cap. Start/Cap. Run	AC/IP21	10	Yes	
5	184T	1740	24	79.4	15	404	275	Cap. Start/Cap. Run	AC/IP21	15	Yes	

Note(s)

- 1 — Motor frame exempt from NRCAN 2011 definition requiring High Efficiency
- 2 — This motor meets NRCAN 2011 for High Efficiency
- 3 — For FL amps at 115V, multiply value shown x2
- 4 — For FL amps at 230V, multiply value shown x2

Typical Motor Performance Data

Brakemotor Input Code T24B TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps ⁶ @ 460V	NEMA Nom. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Brake			Note(s)
						Full Load (FT. Lbs.)	Locked	% Full Load Breakdown			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release	
0.33	56	1746	0.64	75.5	64.7	1	339	462	M	B	DC/IP 55	2.2	Std	1,2
0.50	56	1745	0.88	80.0	66.7	1.5	344	437	L	B	DC/IP 55	2.5	Std	1,2
0.75	56	1735	1.21	80.0	72.3	2.25	326	444	K	B	DC/IP 55	4.4	Std	1,2
1	B56	1730	1.56	81.5	74.0	3	352	434	L	C	DC/IP 55	5.9	Std	1,2
1.5	145T	1733	2.18	82.5	76.7	4.5	380	450	L	C	DC/IP 55	7.4	Std	1,2
2	145T	1728	2.89	82.5	77.0	6	430	459	L	C	DC/IP 55	8.85	Std	1,2
3	182T	1757	3.83	89.5	81.4	9	276	425	K	B	DC/IP 55	15	Std	1,2,4
5	184T	1756	6.2	89.5	83.9	15	229	353	K	B	DC/IP 55	23	Std	1,2,4
7.5	213T	1750	10.1	86.5	80.4	22.5	230	290	H	B	AC/IP21	25	Std	
10	215T	1755	13.2	88.5	80.1	30	230	280	H	B	AC/IP21	35	Std	

Brakemotor Input Code T5B TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Brake			Note(s)
						Full Load (Ft. Lbs.)	Locked	% Full Load Breakdown			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release	
0.33	56	1740	0.53	75.5	64.7	1	334	470	M	B	DC/IP 55	2.2	Std	1,2
0.50	56	1735	0.73	80.0	66.7	1.5	315	424	L	B	DC/IP 55	2.5	Std	1,2
0.75	56	1736	0.95	80.0	72.3	2.25	313	379	J	B	DC/IP 55	4.4	Std	1,2
1	B56	1730	1.21	81.5	76.4	3	337	372	L	C	DC/IP 55	5.9	Std	1,2
1.5	145T	1730	1.71	82.5	78.6	4.5	316	403	L	C	DC/IP 55	7.4	Std	1,2
2	145T	1730	2.33	82.5	78.9	6	362	420	L	C	DC/IP 55	8.85	Std	1,2
3	182T	1772	2.93	88.5	84.2	9	270	355	K	B	DC/IP 55	15	Std	1,2,3
5	184T	1758	4.92	88.5	84.8	15	244	300	K	B	DC/IP 55	23	Std	1,2,3

Brakemotor Input Code HT24B, IT24B⁵ High Efficiency, TEFC Three Phase 230/460V

HP	Frame Size	Full Load RPM	FL Amps ⁶ @ 460V	NEMA Nom. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Brake			Note(s)
						Full Load (FT. Lbs.)	Locked	% Full Load Breakdown			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release	
0.33	56	1746	0.64	75.5	64.7	1	339	462	M	B	DC/IP 55	2.2	Std	1,2
0.50	56	1745	0.88	80.0	66.7	1.5	344	437	L	B	DC/IP 55	2.5	Std	1,2
0.75	56	1735	1.21	80.0	72.3	2.25	326	444	K	B	DC/IP 55	4.4	Std	1,2
1	B56	1747	1.52	84.0	73.4	3	438	509	M	C	DC/IP 55	5.9	Std	1,2,5
1.5	145T	1733	2.14	84.0	77.0	4.5	380	450	L	C	DC/IP 55	7.4	Std	1,2
2	145T	1740	2.91	85.5	74.8	6	482	491	L	C	DC/IP 55	8.85	Std	1,2,5
3	182T	1757	3.83	89.5	81.4	9	276	425	K	B	DC/IP 55	15	Std	1,2,4
5	184T	1756	6.2	89.5	83.9	15	229	353	J	B	DC/IP 55	23	Std	1,2,4
7.5	213T	1760	12	91.0	86.1	30	210	270	G	B	AC/IP21	25	Std	3
10	215T	1775	18.4	92.4	82.7	45	231	247	G	B	AC/IP21	35	Std	3

Brakemotor Input Code HT5B, IT5B⁵ High Efficiency, TEFC Three Phase 575V

HP	Frame Size	Full Load RPM	FL Amps	NEMA Nom. Efficiency 4/4 Load	Power Factor 4/4 Load	Torque			KVA Code	NEMA Design	Brake			Note(s)
						Full Load (FT. Lbs.)	Locked	% Full Load Breakdown			Type/Encl	Std. Rating (Ft. Lbs.)	Manual Release	
0.33	56	1740	0.53	77.0	64.7	1	334	470	M	B	DC/IP 55	2.2	Std	1,2
0.50	56	1735	0.73	81.5	66.7	1.5	315	424	L	B	DC/IP 55	2.5	Std	1,2
0.75	56	1736	0.95	81.5	72.3	2.25	313	379	J	B	DC/IP 55	4.4	Std	1,2
1	B56	1730	1.21	81.5	76.4	3	337	372	L	C	DC/IP 55	5.9	Std	1,2
1.5	145T	1730	1.71	85.5	78.6	4.5	316	403	L	C	DC/IP 55	7.4	Std	1,2
2	145T	1730	2.33	85.5	78.9	6	362	420	L	C	DC/IP 55	8.85	Std	1,2
3	182T	1772	2.93	88.5	84.2	9	270	355	K	B	DC/IP 55	15	Std	1,2,4
5	184T	1758	4.92	88.5	84.8	15	244	300	K	B	DC/IP 55	23	Std	1,2,4
7.5	213T	1760	7.3	92.1	84.6	22.5	230	300	H	B	AC/IP21	25	Std	3
10	215T	1760	9.6	92.6	85.9	30	220	280	H	B	AC/IP21	35	Std	3

Note(s)

- 1 — Brake actuated by motor or separate 1/230V power is standard. For inverter applications, specify 1/115V separate supply
- 2 — Manual release lever removable in field
- 3 — Motor efficiency exceeds "High Efficiency" requirements
- 4 — Motor efficiency meets NEMA Premium
- 5 — IT24B and IT5B designs are arranged for 1/115V or 1/230V separate actuation
- 6 — For FL amps at 230V, multiply value shown x2



Gearmotor

Typical Motor Performance Data

SERIES 2000
3000

Motor Input Code T53
TEFC Three Phase 380V 50 HZ

HP	Frame Size	FL RPM	FL Amps @ 380V	S.F.	Insul. Class	4/4 Load Effic	4/4 Load P.F.	FL Torque (Ft. Lbs.)	KVA Code	Note(s)
0.33	56	1433	0.69	1.0	F	75.5	71.9	1.2	M	1,2
0.50	56	1430	0.96	1.0	F	80.0	74.1	1.8	L	1,2
0.75	56	1415	1.37	1.0	F	78.5	79.1	2.7	K	1,2
1	B56	1413	1.76	1.0	F	80.0	80.1	3.6	K	1,2
1.5	145T	1410	2.54	1.0	F	81.5	82.4	5.4	L	1,2
2	145T	1407	3.35	1.0	F	81.5	82.7	7.2	L	1,2
3	182T	1450	4.5	1.0	F	87.5	86.2	10.8	H	1,2
5	184T	1440	6.28	1.0	F	88.5	86.8	18	J	1,2
7.5	213T	1450	11.1	1.0	F	88.7	86.2	27	F	1,2,3
10	215T	1435	14.9	1.0	F	87.2	87.1	36.6	E	1,2,3

Motor Input Code T54
TEFC Three Phase 415V 50 HZ

HP	Frame Size	FL RPM	FL Amps @ 415V	S.F.	Insul. Class	4/4 Load Effic	4/4 Load P.F.	FL Torque (Ft. Lbs.)	KVA Code	Note(s)
0.33	56	1435	0.68	1.0	F	72.0	69.7	1.2	K	1,2
0.50	56	1433	0.94	1.0	F	80.0	74.1	1.8	J	1,2
0.75	56	1440	1.3	1.0	F	78.5	74.6	2.7	J	1,2
1	143T	1428	1.62	1.0	F	81.5	77.9	3.6	K	1,2
1.5	145T	1433	2.27	1.0	F	82.5	80.8	5.4	J	1,2
2	145T	1435	3.13	1.0	F	84.0	78.8	7.2	K	1,2
3	182T	1458	4.05	1.0	F	87.5	85.4	10.8	H	1,2
5	184T	1445	6.75	1.0	F	86.5	87.2	18	G	1,2
7.5	213T	1460	10.4	1.0	F	89.9	83.4	27	G	1,2,3
10	215T	1450	13.5	1.0	F	89.4	86.1	36.2	F	1,2,3

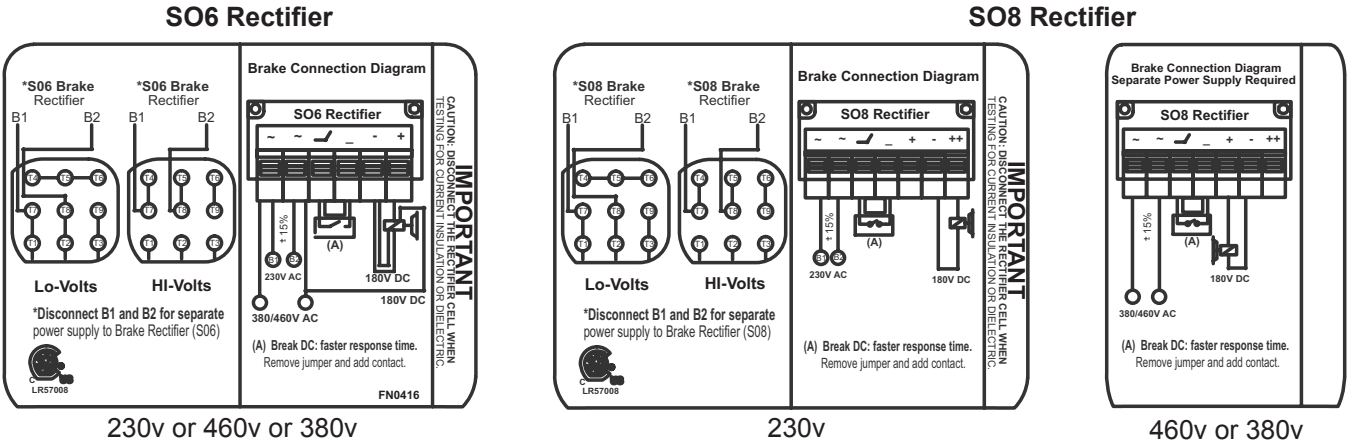
Note(s)

- 1 — Design is for X-line starting
- 2 — Motor is self certified for CE
- 3 — Motor has three N/C winding thermostats with leads terminating in the main outlet box

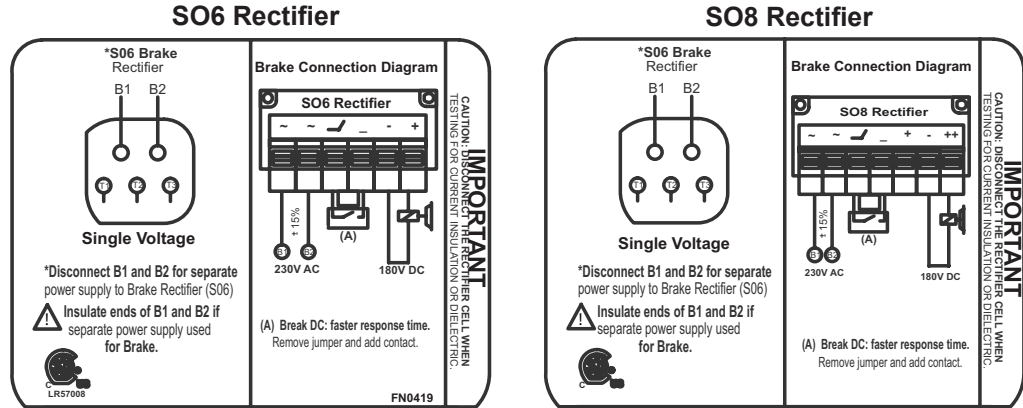
1.) Fixed Frequency

Three phase brake motors operated from a fixed frequency power supply are supplied with onboard rectifiers in the conduit box to allow powering the brake rectifier directly from the motor. Two versions of rectifiers (SO6 and SO8) can be used interchangeably. Note the rectifier in the motor being wired.

A) Three phase 230/460, 190/380V



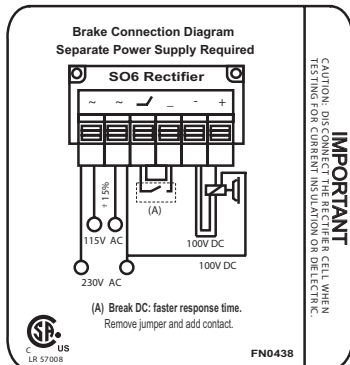
B) Three phase 575V



2) Variable Frequency

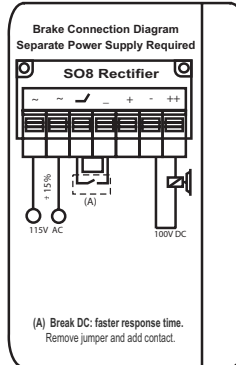
Three phase brake motors operated from a variable frequency power supply are designed with onboard rectifiers in the conduit box to allow powering the brake rectifier from a 115V or 230V fixed frequency single phase power separate from the motor/VFD but interlocked with that power source such that both motor and brake get powered simultaneously.

A1) SO6 Rectifier

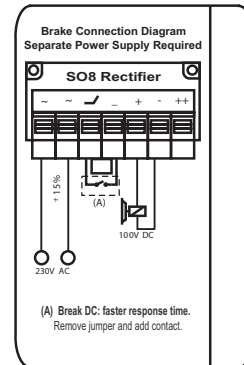


115V or 230V

A2) SO8 Rectifier



115V



230V



IntelliGear® Plus

Variable Speed Gearmotors

**SERIES 2000
3000**

General Information

1 - General Information

1.1 - General operating principle

The IntelliGear Plus variable speed gearmotor is a combination of a 3-phase induction motor and an integrated open loop vector variable speed drive. The motor can be combined with many gear types from Emerson Power Transmission's range.

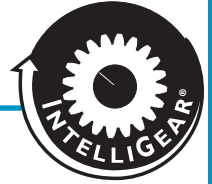
In the standard product version, the integrated drive does not require any connection other than the power supply. The options may be used to broaden the application range of the IntelliGear Plus motor. Based on the advanced technology of the IGBT power module, very high efficiency and reduced noise levels are achieved.

1.2 - Product name

IntelliGear Plus Range							
115V Single Phase Power Supply		230V Single Phase Power Supply		230V Three Phase Power Supply		460V Three Phase Power Supply	
Catalog Number	Motor HP	Catalog Number	Motor HP	Catalog Number	Motor HP	Catalog Number	Motor HP
310 M 033	0.33	31 M 033	0.33	31 TL 033	0.33	31 T 033	0.33
310 M 050	0.50	31 M 050	0.50	31 TL 050	0.50	31 T 050	0.50
32 M 075	0.75	31 M 075	0.75	31 TL 075	0.75	31 T 075	0.75
		31 M 100	1	31 TL 100	1	31 T 100	1
		32 M 150	1.5	32 TL 150	1.5	31 T 150	1.5
		32 M 200	2	32 TL 200	2	31 T 200	2
				33 TL 300	3	32 T 300	3
				33 TL 500	5	32 T 500	5
						33 T 750	7.5
						33 T 1000	10

IntelliGear Plus Speed Controlling Options	
Designation	Description
PD	Digital keypad on enclosure For./Rev./stop/speed-up/speed-down/speed display
P1	Run/Stop/Control knob mounted on enclosure
P2	For./Rev./Stop/Control knob mounted on enclosure
P3	Control knob (only) mounted on enclosure
P4	Control knob (only) mounted inside enclosure w/trim potentiometers
R	Remote signal following (either 0-10 vDC or 4-20 mA)
RP	Fieldbus controlled by customer's PROFIBUS DP

IntelliGear Plus Options	
Part ID	Description
KEYPAD LCD	Parameter setting console w/cable to locally to customize parameters
PX KEY	Drive parameter set-up key storage Fob
AEM904KA006	DC Braking resistors 100W
AEM904KA007	DC Braking resistors 200W
VMA30SOFT	CD w/cable and USB to locally to customize parameters



1.3 - Characteristics

1.3.1 - Electrical Data

Single Phase Design

Power supply	115 V ± 10%, 50 - 60 Hz	230 V ± 10%, 50 - 60 Hz
Output voltage	From input voltage down to (input voltage/speed range)	
Power range	0.33, 0.50, 0.75 HP	0.33, 0.50, 0.75, 1.0, 1.5, 2.0 HP
Maximum numbers of power-ups per hour	10	

Three Phase Design

Power supply	230 V ± 10%, 50 - 60 Hz	460 V ± 10%, 50 - 60 Hz
Output voltage	From input voltage down to (input voltage/speed range)	
Power range	0.33, 0.50, 0.75, 1.0, 1.5, 2.0, 3, 5 HP	0.33, 0.50, 0.75, 1.0, 1.5, 2.0, 3.0, 5.0, 7.5, 10 HP
Maximum numbers of power-ups per hour	150	

1.3.2 - Characteristics and Functions

Characteristic	IntelliGear Plus	
Overload	150 % of full load setting for 60 seconds, 10 times per hour	
Motor Frequency Variation Ranges	Standard	60 to 10 Hz 6:1 constant torque up through 3 HP
		74 to 12 Hz 6:1 constant torque for 5 through 10 HP
	Optional	60 to 6 Hz 10:1 constant torque up through 1.5 HP
		90 to 9 Hz 10:1 constant torque for 2 through 10 HP
Special	120 to 2 Hz depending on thermal and mechanical limits	
Efficiency	97.5 % x motor efficiency x gear efficiency (if applicable)	

Drive Control	IntelliGear Plus	
Speed Reference	• Analog reference	(0V or 4mA = minimum speed) (10V or 20mA = maximum speed)
		- 0 to 10V with integral potentiometer on enclosure (P1,P2 and P3)
		- 0 to 10V with integral potentiometer in enclosure (P4)
		- 4 to mA with external reference
		- Digital references
		- Fieldbus using Profibus DP
Speed regulation	- Speed regulation with encoder feedback option (only size 33)	
	- Regulation of a reference with integrated PI loop	



Variable Speed Gearmotors

1.3.2 - Characteristics and Functions (cont'd.)

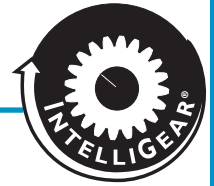
Drive Control	IntelliGear Plus
Run/Stop	<ul style="list-style-type: none"> - With power supply - With remote volt-free contact - With fieldbus - With local run/stop control
Forward/Reverse	<ul style="list-style-type: none"> - With internal connection on the terminal block - With remote volt-free contact - With fieldbus - With local For./Rev. controls
Stop Mode	<ul style="list-style-type: none"> - On ramps (using volt-free contact of integrated control) - Freewheel - With electromechanical brake
Ramps	- Ramps are adjustable from 3 to 600 seconds
Fieldbus	- PROFIBUS DP

Protection	IntelliGear Plus
Power	<ul style="list-style-type: none"> - Undervoltage - Overvoltage - Overloads <ul style="list-style-type: none"> • thermal of motor or drive • protection from locked rotor • motor windings - Short-circuit - Overspeed
Control	- Short circuit on 0 - 10V/24V inputs or outputs
Drive reset	- By switching off the IntelliGear Plus or by opening/closing the connection between the 24V and ENA (size 31 and 32) terminals, or SD1 and SDI 2 (size 33)

1.4 - Environmental Characteristics

Characteristics	Level - IntelliGear Plus	
	TEFC Version	TEFC motor and NEMA 4/12 Controller
Degree of protection	Washdown Version	Washdown Motor and NEMA 4/12/Controller
Storage temperature	-40 °C to +70 °C	
Transport temperature	-40 °C to +70 °C	
Ambient operating temperature	-20 °C to +40 °C (above 40 °C requires derating 1% per °C)	
Altitude	Up to 3000 feet above sea level without derating	
Ambient humidity	95% non-condensing	
Humidity during storage	93%, 40 °C, 4 days	
Vibration	<ul style="list-style-type: none"> - Exposed product: 0.01 g² /Hz 1 hr. in accordance with IEC 60068-2-34 - Sinusoidal vibration: 2-9 Hz 3.5 ms⁻² - 9-200 Hz 10 ms⁻² in accordance with IEC 60068-2-6 	
Shocks	Packaged product: 15 g, 6 ms, 500 times/direction in all 6 directions in accordance with Standard IEC 600068-2-29	
Immunity	Conforming to EN61000-6-2	
Radiated and conducted emissions	Conforming to EN500081-2 with internal filters	
UL and cUL Standards	Conforming to UL 508 C (E211799)	

* C-Face motors



2 - Faults - Diagnostics

Information relating to the status of the IntelliGear Plus variable speed gearmotor is provided by two indicator lamps located on the control options P1, P2 or P3 or by the internal LED in 31/32.

Color and state of indicator lamp	IntelliGear Plus	Checks to be performed
Steady green	No trip Mains present	
Flashing green	Current limiting	<ul style="list-style-type: none"> • Check that the motor is not overloaded or stalled.
Flashing red	IGBT temperature alarm Motor overload Braking resistor option overload	<ul style="list-style-type: none"> • Check that air is able to circulate around the motor fins and IntelliGear Plus casing. • The motor is overloaded: check the motor current using a clamp ammeter. • Check that the deceleration ramp is long enough for applications with high inertia.
Steady red	<ul style="list-style-type: none"> • Short-circuit of a motor winding • Locked motor rotor • Faulty insulation of a winding • (I2T) overheating • Internal fault • Undervoltage • Overvoltage 	<ul style="list-style-type: none"> • Check that no incident has occurred. • Switch off and then on again to clear the fault. • Check the main voltage. • Check that the deceleration ramp is long enough for applications with high inertia. • If the fault remains, consult Emerson Power Transmission Application Engineering.

The fault is cleared by switching off the IntelliGear Plus or by opening/closing the connection between terminals 12: ENA and 11: +24V (31/32) or SDI1 and SDI2 (33).

3 - Operating Extensions

3.1 - Digital Keypad on enclosure with For./Rev./Stop/Speedup and down/Speed display/Fault Display (PD)



Ref.	Function
A	Display comprising 4 x 7 segment digits for indicating: - the drive operating status - certain operating data - the adjustment parameters (01 to 80) and their value
B	LED providing a sign for the data (the lit LED corresponds to the " " sign)
C	Keys which can be used to scroll up and down through the parameters or their value. These keys can also be used to vary the speed.
D	Keys which can be used to switch from standard mode to parameter-setting mode. In parameter-setting mode, the parameter number and value are displayed alternately on the display.
E F G	In keypad mode, these buttons are used for the following commands: - Reverse (standerly disabled) - Stop, clear fault - Forward

3.2 - Control knob with integrated run/stop control option (P1)

In addition to speed control, a run button and a stop button make it possible to control the IntelliGear Plus locally, once it has been switched on, as required. For a run command to be taken into account, the button must be held down for one second.

- It is connected on the P2 connector.
- Has two indicator lights.



3.3 - Control knob with forward/reverse/stop control option (P2)

In addition to speed control, a forward button, a reverse button and a stop button make it possible to control the IntelliGear Plus locally, once it has been switched on, as required. For a run command to be taken into account, the button must be held down for one second.

- Connected on the P2 connector
- Has two indicator lights



Variable Speed Gearmotors

3.4 - Speed control knob option (P3)

The speed is set using a knob with graduations from 15 to 100 percent. Has two indicator lamps. It is connected on the P2 connector.



3.5 - Internal speed control option (P4)

The speeds are set on potentiometers, which are accessible once the cover has been removed.

- a max. spd potentiometer: calibration of the maximum speed
- a min. spd potentiometer: calibration of the minimum speed
- an int. spd potentiometer: speed control, which replaces control via the control knob.

There are also two indicator lights.



3.6 - Braking resistor option (RF100 - RF200)

For operation in four quadrants and energy dissipation, resistors are mounted directly onto the IntelliGear Plus motor.



	RF100	RF200 (2x100)		Minimum ohmic value
	P peak kW	P peak kW	Resistor connection	
I31	5.6	2.8	series	100Ω
I31M	1.3	2.6	parallel	50Ω
I32	5.6	11.2	parallel	50Ω

RF100 = thermal power 100W

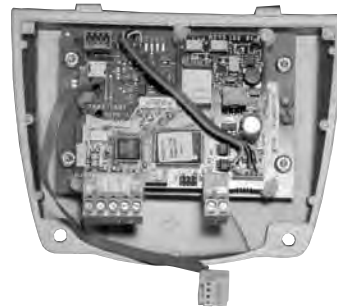
RF200 = thermal power 200W

External resistors with greater thermal power can be used, provided that the minimum ohmic value is maintained.

3.7 - Fieldbus options

The interface card is fixed inside the casing cover.

Protocol: Profibus DP.



3.8 - Parameter-setting console option (Keypad LCD)

The console option provides access to the drive Internet settings (terminal block configuration, ramp, speed and P1 settings, etc.).

See IntelliGear Plus parameter-setting manual included.

Description of the option:

- 1 Keypad LCD console
- 1 cable (3m long)



3.9 - Programming CD (VMA30SOFT)

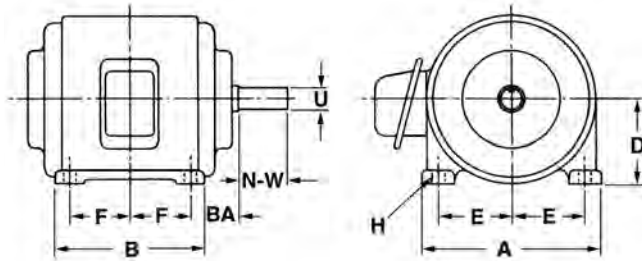
This CD with manual provides access to the drive internal settings (terminal block configuration, range, speed and PI settings, etc.).

Descriptions of the option:

- 1 CD in case
- 1 cable (3m long)

3.10 - XPress Key (PX Key)

The XPress Key option is used to save a copy of all the IntelliGear Plus parameters so that they can be duplicated very simply in another drive.



Motor ratings and dimensions shown in Table No. 1, below, are for general purpose motors as indicated. Frames for the 1952 - 1953 and the 1964 rerates are shown. All dimensions are subject to change without notice. Those shown are intended as a guide only. Certified dimension drawings from the motor manufacturer should be used.

Table No. 1 Specifications

Frame No.	Dimensions									Keyseat		Key Length	HP for Various Motor RPM			
	A Max.	B Max.	D	E	F	H	BA	N-W	U	Width	Depth		3600	1800	1200	900
Fractional Horsepower Motors																
48	5 3/8"	3 1/2"	3"	2 1/8"	1 3/8"	11/32" s ▲	2 1/2"	1 1/2"	1/2"	Flat	3/64"	-	1/8-1/2	1/8-1/3	1/6	-
56	6 1/2"	4 1/2"	3 1/2"	2 7/16"	1 1/2"	11/32" ▲	2 3/4"	1 7/8"	5/8"	3/16"	3/32"	1 3/8"	3/4-1	1/3-1	1/8-1/2"	-
1952-53 Rerate -- Designs A, B and C -- Open Type -- Squirrel Cage -- Integral H.P. Motors																
182	9	6 1/2"	4 1/2"	3 3/4"	2 1/4"	13/32"	2 3/4"	2 1/4"	7/8"	3/16"	3/32"	1 3/8"	1 1/2"	1	3/4"	1/2"
184	9	7 1/2"	4 1/2"	3 3/4"	2 3/4"	13/32"	2 3/4"	2 1/4"	7/8"	3/16"	3/32"	1 3/8"	3,2	2,1 1/2"	1 1/2,1	3/4"
213	10 1/2"	7 1/2"	5 1/4"	4 1/4"	2 3/4"	13/32"	3 1/2"	3	1 1/8"	1/4"	1/8"	2	5	3	2	1 1/2,1
215	10 1/2"	9	5 1/4"	4 1/4"	3 1/2"	13/32"	3 1/2"	3	1 1/8"	1/4"	1/8"	2	7 1/2"	5	3	2
254U	12 1/2"	10 3/4"	6 1/4"	5	4 1/8"	17/32"	4 1/4"	3 3/4"	1 3/8"	5/16"	5/32"	2 3/4"	10	7 1/2"	5	3
256U	12 1/2"	12 1/2"	6 1/4"	5	5	17/32"	4 1/4"	3 3/4"	1 3/8"	5/16"	5/32"	2 3/4"	15	10	7 1/2"	5
284U	14	12 1/2"	7	5 1/2"	4 3/4"	17/32"	4 3/4"	4 7/8"	1 5/8"	3/8"	3/16"	3 3/4"	20	15	10	7 1/2"
286U	14	14	7	5 1/2"	5 1/2"	17/32"	4 3/4"	4 7/8"	1 5/8"	3/8"	3/16"	3 3/4"	25	20	-	10
324U	16	14	8	6 1/4"	5 1/4"	21/32"	5 1/4"	5 5/8"	1 7/8"	1/2"	1/4"	4 1/4"	-	25	15	-
324S*	16	14	8	6 1/4"	5 1/4"	21/32"	5 1/4"	3 1/4"	1 5/8"	3/8"	3/16"	1 7/8"	30	-	-	-
326U	16	15 1/2"	8	6 1/4"	6	21/32"	5 1/4"	5 5/8"	1 7/8"	1/2"	1/4"	4 1/4"	-	30	20	15
326S*	16	15 1/2"	8	6 1/4"	6	21/32"	5 1/4"	3 1/4"	1 5/8"	3/8"	3/16"	1 7/8"	40	-	-	-
364U	18	15 1/4"	9	7	5 5/8"	21/32"	5 7/8"	6 3/8"	2 1/8"	1/2"	1/4"	5	-	40	25	20
364US*	18	15 1/4"	9	7	5 5/8"	21/32"	5 7/8"	3 3/4"	1 7/8"	1/2"	1/4"	2	50	-	-	-
365U	18	16 1/4"	9	7	6 1/8"	21/32"	5 7/8"	6 3/8"	2 1/8"	1/2"	1/4"	5	-	-	30	25
365US*	18	16 1/4"	9	7	6 1/8"	21/32"	5 7/8"	3 3/4"	1 7/8"	1/2"	1/4"	2	60	50	-	-
404U	20	16 1/4"	10	8	6 1/8"	13/16"	6 5/8"	7 1/8"	2 3/8"	5/8"	5/16"	5 1/2"	-	-	40	30
404US*	20	16 1/4"	10	8	6 1/8"	13/16"	6 5/8"	4 1/4"	2 1/8"	1/2"	1/4"	2 3/4"	75	60	-	-
405U	20	17 3/4"	10	8	6 7/8"	13/16"	6 5/8"	7 1/8"	2 3/8"	5/8"	5/16"	5 1/2"	-	-	50	40
405US*	20	17 3/4"	10	8	6 7/8"	13/16"	6 5/8"	4 1/4"	2 1/8"	1/2"	1/4"	2 3/4"	100	75	-	-
444U	22	1	11	9	7 1/4"	13/16"	7 1/2"	8 5/8"	2 3/8"	3/4"	3/8"	7	-	-	60	50
444US*	22	18 1/2"	11	9	7 1/4"	13/16"	7 1/2"	4 1/4"	2 1/8"	1/2"	1/4"	2 3/4"	125	100	-	-
445U	22	20 1/2"	11	9	8 1/4"	13/16"	7 1/2"	8 5/8"	2 3/8"	3/4"	3/8"	7	-	-	75	60
445US*	22	20 1/2"	11	9	8 1/4"	13/16"	7 1/2"	4 1/4"	2 1/8"	1/2"	1/4"	2 3/4"	150	125	-	-
1964 Rerate -- Designs A, B and C -- Open Type -- Squirrel Cage -- Integral H.P. Motors																
H143T	7	6	3 1/2"	2 3/4"	2	11/32"	2 1/4"	2 1/4"	7/8"	3/16"	3/32"	1 3/8"	1 1/2"	1	3/4"	1/2"
H145T	7	6	3 1/2"	2 3/4"	2 1/4"	11/32"	2 1/4"	2 1/4"	7/8"	3/16"	3/32"	1 3/8"	-	1 1/2"	1	3/4"
K145T	7	6	3 1/2"	2 3/4"	2 1/2"	11/32"	2 1/4"	2 1/4"	7/8"	3/16"	3/32"	1 3/8"	3,2	2	-	-
182T	9	6 1/2"	4 1/2"	3 3/4"	2 1/4"	13/32"	2 3/4"	2 3/4"	1 1/8"	1/4"	1/8"	1 3/4"	5	3	1 1/2"	1
184T	9	7 1/2"	4 1/2"	3 3/4"	2 3/4"	13/32"	2 3/4"	2 3/4"	1 1/8"	1/4"	1/8"	1 3/4"	7 1/2"	5	2	1 1/2"
213T	10 1/2"	7 1/2"	5 1/4"	4 1/4"	2 3/4"	13/32"	3 1/2"	3 3/8"	1 3/8"	5/16"	5/32"	2 3/8"	10	7 1/2"	3	2
215T	10 1/2"	9	5 1/4"	4 1/4"	3 1/2"	13/32"	3 1/2"	3 3/8"	1 3/8"	5/16"	5/32"	2 3/8"	15	10	5	3
254T	12 1/2"	10 3/4"	6 1/4"	5	4 1/8"	17/32"	4 1/4"	4	1 5/8"	3/8"	3/16"	2 7/8"	20	15	7 1/2"	5
256T	12 1/2"	12 1/2"	6 1/4"	5	5	17/32"	4 1/4"	4	1 5/8"	3/8"	3/16"	2 7/8"	25	20	10	7 1/2"
284T	14	12 1/2"	7	5 1/2"	4 3/4"	17/32"	4 3/4"	4 5/8"	1 7/8"	1/2"	1/4"	3 1/4"	-	25	15	10
284TS*	14	12 1/2"	7	5 1/2"	4 3/4"	17/32"	4 3/4"	3 1/4"	1 5/8"	3/8"	3/16"	1 7/8"	30	-	-	-
286T	14	14	7	5 1/2"	5 1/2"	17/32"	4 3/4"	4 5/8"	1 7/8"	1/2"	1/4"	3 1/4"	-	30	20	15
286TS*	14	14	7	5 1/2"	5 1/2"	17/32"	4 3/4"	3 1/4"	1 5/8"	3/8"	3/16"	1 7/8"	40	-	-	-
324T	16	14	8	6 1/4"	5 1/4"	21/32"	5 1/4"	5 1/4"	2 1/8"	1/2"	1/4"	3 7/8"	-	40	25	20
324TS*	16	14	8	6 1/4"	5 1/4"	21/32"	5 1/4"	3 3/4"	1 7/8"	1/2"	1/4"	2	50	-	-	-
326T	16	15 1/2"	8	6 1/4"	6	21/32"	5 1/4"	5 1/4"	2 1/8"	1/2"	1/4"	3 7/8"	-	50	30	25
326TS*	16	15 1/2"	8	6 1/4"	6	21/32"	5 1/4"	3 3/4"	1 7/8"	1/2"	1/4"	2	60	-	-	-
364T	18	15 1/4"	9	7	5 5/8"	21/32"	5 7/8"	5 7/8"	2 3/8"	5/8"	5/16"	4 1/4"	-	60	40	30
364TS*	18	15 1/4"	9	7	5 5/8"	21/32"	5 7/8"	3 3/4"	1 7/8"	1/2"	1/4"	2	75	-	-	-
365T	18	16 1/4"	9	7	6 1/8"	21/32"	5 7/8"	5 7/8"	2 3/8"	5/8"	5/16"	4 1/4"	-	75	50	40
365TS*	18	16 1/4"	9	7	6 1/8"	21/32"	5 7/8"	3 3/4"	1 7/8"	1/2"	1/4"	2	100	-	-	-
404T	20	16 1/4"	10	8	6 1/8"	13/16"	6 5/8"	7 1/4"	2 7/8"	3/4"	3/8"	5 5/8"	-	100	60	50
404TS*	20	16 1/4"	10	8	6 1/8"	13/16"	6 5/8"	4 1/4"	2 1/8"	1/2"	1/4"	2 3/4"	125	-	-	-
405T	20	17 3/4"	10	8	6 7/8"	13/16"	6 5/8"	7 1/4"	2 7/8"	3/4"	3/8"	5 5/8"	-	125	75	60
405TS*	20	17 3/4"	10	8	6 7/8"	13/16"	6 5/8"	4 1/4"	2 1/8"	1/2"	1/4"	2 3/4"	150	-	-	-
444T	22	18 1/2"	11	9	7 1/4"	13/16"	7 1/2"	8 1/2"	3 3/8"	7/8"	7/16"	6 7/8"	-	-	100	75
444TS*	22	18 1/2"	11	9	7 1/4"	13/16"	7 1/2"	4 3/4"	2 3/8"	5/8"	5/16"	3	200	150	-	-
445T	22	20 1/2"	11	9	8 1/4"	13/16"	7 1/2"	8 1/2"	3 3/8"	7/8"	7/16"	6 7/8"	-	-	125	100
445TS*	22	20 1/2"	11	9	8 1/4"	13/16"	7 1/2"	4 3/4"	2 3/8"	5/8"	5/16"	3	250	200	-	-

* These motors are for direct coupled service only.
▲ Slots.



Decimal - Millimeter Equivalents

Fractional	Decimal	M.M.	Fractional	Decimal	M. M.
1/64	.015625	.397	33/64	.515625	13.097
1/32	.03125	.794	17/32	.53125	13.494
3/64	.046875	1.191	35/64	.546875	13.891
1/16	.0625	1.588	9/16	.5625	14.288
5/64	.078125	1.985	37/64	.578125	14.684
3/32	.09375	2.381	19/32	.59375	15.081
7/64	.109375	2.778	39/64	.609375	15.478
1/8	.125	3.175	5/8	.625	15.875
9/64	.140625	3.572	41/64	.640625	16.272
5/32	.15625	3.969	21/32	.65625	16.669
11/64	.171875	4.366	43/64	.671875	17.066
3/16	.1875	4.763	11/16	.6875	17.463
13/64	.203125	5.159	45/64	.703125	17.859
7/32	.21875	5.556	23/32	.71875	18.256
15/64	.234375	5.953	47/64	.734375	18.653
1/4	.250	6.350	3/4	.750	19.050
17/64	.265625	6.747	49/64	.765625	19.447
9/32	.28125	7.144	25/32	.78125	19.844
19/64	.296875	7.541	51/64	.796875	20.241
5/16	.3125	7.938	13/16	.8125	20.638
21/64	.328125	8.334	53/64	.828125	21.034
11/32	.34375	8.731	27/32	.84375	21.431
23/64	.359375	9.128	55/64	.859375	21.828
3/8	.375	9.525	7/8	.875	22.225
25/64	.390625	9.922	57/64	.890625	22.622
13/32	.40625	10.319	29/32	.90625	23.019
27/64	.421875	10.716	59/64	.921875	23.416
7/16	.4375	11.113	15/16	.9375	23.813
29/64	.453125	11.509	61/64	.953125	24.209
15/32	.46875	11.906	31/32	.96875	24.606
31/64	.484375	12.303	63/64	.984375	25.003
1/2	.500	12.700	1	1.000	25.400

HP and Torque

HP is the common unit of mechanical power.

$$HP = \frac{\text{Force} \times \text{Feet per Minute}}{33000}$$

$$HP = \frac{\text{Torque in In.-Lbs.} \times \text{rpm}}{63025}$$

One HP = .746 kilowatt

One kilowatt = 1.34 HP

Torque is a twisting moment or turning effort.

Torque in inch-pounds = Force x Lever Arm (Inches)

$$\text{Torque in inch-pounds} = \frac{63025 \times HP}{\text{rpm}}$$

The following table gives the torque in Inch-Pounds for one HP at various speeds.

Torque at One HP

R.P.M.	In.-Lbs.	R.P.M.	In.-Lbs.	R.P.M.	In.-Lbs.	R.P.M.	In.-Lbs.
3500	18	580	109	90	700	14	4502
3000	21	500	126	80	788	12	5252
2400	26	400	158	70	900	10	6300
2000	32	300	210	60	1050	8	7878
1750	36	200	315	50	1260	6	10504
1600	39	180	350	40	1576	5	12605
1200	53	160	394	30	2101	4	15756
1160	54	140	450	20	3151	3	21008
1000	63	120	525	18	3501	2	31513
870	72	100	630	16	3939	1	63025

* Poly-V is believed to be the trademark and/or trade name of Veyance Technologies, Inc., and is not owned or controlled by Emerson Power Transmission.

Minimum Sheave Sizes NEMA Standards

The National Electrical Manufacturers Association recommends certain limitations on sheave diameter and width for satisfactory motor operation. The selected sheave diameter should not be smaller nor the width greater than the dimensions below. These dimensions are from NEMA Standard MG1-14.42.

Frame	Horsepower at				V-Belt Sheave (Inches)			
	Sync. Speed, RPM				Conventional		358	
					A, B, C, D, and E Sections		3V, 5V and 8V Sections	
3600	1800	1200	900	Min. Pitch Dia.	Max. Width	Min. Outside Dia.	Max Width	
143T	1 1/2	1	3/4	1/2	2.2	4 1/4	2.2	2 1/4
145T	2-3	1 1/2-2	1	3/4	2.4	4 1/4	2.4	2 1/4
182T	3	3	1 1/2	1	2.4	5 1/4	2.4	2 3/4
182T	5	-	-	-	2.6	5 1/4	2.4	2 3/4
184T	-	-	2	1 1/2	2.4	5 1/4	2.4	2 3/4
184T	5	-	-	-	2.6	5 1/4	2.4	2 3/4
184T	7 1/2	5	-	-	3.0	5 1/4	3.0	2 3/4
213T	7 1/2-10	7 1/2	3	2	3.0	6 1/2	3.0	3 3/8
215T	10	-	5	3	3.0	6 1/2	3.0	3 3/8
215T	15	10	-	-	3.8	6 1/2	3.8	3 3/8
254T	15	-	7 1/2	5	3.8	6 1/2	3.8	4
254T	20	15	-	-	4.4	6 1/2	4.4	4
256T	20-25	-	10	7 1/2	4.4	6 1/2	4.4	4
256T	-	20	-	-	4.6	6 1/2	4.4	4
284T	-	-	15	10	4.6	9	4.4	4 5/8
284T	-	25	-	-	5.0	9	4.4	4 5/8
286T	-	30	20	15	5.4	9	5.2	4 5/8
324T	-	40	25	20	6.0	10 1/4	6.0	5 1/4
326T	-	50	30	25	6.8	10 1/4	6.8	5 1/4
364T	-	-	40	30	6.8	11 1/2	6.8	5 7/8
364T	-	60	-	-	7.4	11 1/2	7.4	5 7/8
365T	-	-	50	40	8.2	11 1/2	8.2	5 7/8
365T	-	75	-	-	9.0	11 1/2	8.6	5 7/8
404T	-	-	60	-	9.0	14 1/4	8.0	7 1/4
404T	-	-	-	50	9.0	14 1/4	8.4	7 1/4
404T	-	100	-	-	10.0	14 1/4	8.6	7 1/4
405T	-	-	75	60	10.0	14 1/4	10.0	7 1/4
405T	-	100	-	-	10.0	14 1/4	8.6	7 1/4
405T	-	125	-	-	11.5	14 1/4	10.5	7 1/4
444T	-	-	100	-	11.0	16 3/4	10.0	8 1/2
444T	-	-	-	75	10.5	16 3/4	9.5	8 1/2
444T	-	125	-	-	11.0	16 3/4	9.5	8 1/2
444T	-	150	-	-	-	-	10.5	8 1/2
445T	-	-	125	-	12.5	16 3/4	12.0	8 1/2
445T	-	-	-	100	10.5	16 3/4	12.0	8 1/2
445T	-	150	-	-	-	-	10.5	8 1/2
445T	-	200	-	-	-	-	13.2	8 1/2

To obtain the minimum pitch diameters for flat belt, gearbelt, Poly-V*, chain or gear drives, multiply the 358 sheave pitch diameters in the table above by the following factors:

Drive	Factor
Chain	0.7
Flat Belt (Single Ply)	1.33
Gearbelt	0.9
Helical Gear	0.85
Poly-V	1.00
Spur Gear	0.75

All sales are made on our STANDARD TERMS AND CONDITIONS OF SALE in effect at the time a customer's order is accepted. The current Terms and Conditions are set forth below:

STANDARD TERMS AND CONDITIONS OF SALE (September 2, 2009)

These Terms and Conditions, the attendant quotation or acknowledgment and all documents incorporated by specific reference therein, will be the complete and exclusive statement of the terms of the agreement governing the sale of goods ("Goods") by Emerson Power Transmission Corporation and its divisions and subsidiaries ("Seller") to Customer ("Buyer"). Buyer's acceptance of the Goods will manifest Buyer's assent to these Terms and Conditions. If these Terms and Conditions differ in any way from the terms and conditions of Buyer's order, or other documentation, this document will be construed as a counteroffer and will not be deemed an acceptance of Buyer's terms and conditions which conflict herewith.

1. **PRICES:** Unless otherwise specified in writing by Seller, Seller's price for the goods shall remain in effect for thirty (30) days after the date of Seller's quotation or acknowledgment of Buyer's order for the Goods, whichever occurs first, provided an unconditional, complete authorization for the immediate shipment of the Goods is received and accepted by Seller within such time period. If such authorization is not received by Seller within such thirty (30) day period, Seller shall have the right to change the price for the Good to Seller's price for the Goods at the time of shipment.

2. **TAXES:** Any tax or governmental charge or increase in same hereafter becoming effective increasing the cost to Seller of producing, selling or delivering the Goods or of procuring material used therein, and any tax now in effect or increase in same payable by the Seller because of the manufacture, sale or delivery of the Goods, may at Seller's option, be added to the price.

3. **TERMS OF PAYMENT:** Subject to the approval of Seller's Credit Department, terms are net thirty (30) days from date of Seller's invoice in U.S. currency. If any payment owed to Seller is not paid when due, it shall bear interest, at a rate to be determined by Seller, which shall not exceed the maximum rate permitted by law, from the date on which it is due until it is paid. Seller shall have the right, among other remedies, either to terminate the Agreement or to suspend further performance under this and/or other agreements with Buyer in the event Buyer fails to make any payment when due. Buyer shall be liable for all expenses, including attorneys' fees, relating to the collection of past due amounts.

4. **SHIPMENT AND DELIVERY:** Shipments are made F.O.B. Seller's shipping point. Any claims for shortages or damages suffered in transit shall be submitted by the Buyer directly to the carrier. While Seller will use all reasonable commercial efforts to maintain the delivery date acknowledged or quoted by Seller, all shipping dates are approximate. Seller reserves the right to make partial shipments and to segregate "specials" and made-to-order Goods from normal stock Goods. Seller shall not be bound to tender delivery of any Goods for which Buyer has not provided shipping instructions.

5. **QUANTITY:** Buyer agrees to accept overruns of up to ten percent (10%) of the order on "made-to-order" Goods, including parts. Any such additional items shall be priced at the price per item charged for the specific quantity ordered.

6. **LIMITED WARRANTY:** Subject to the limitations of Section 7, Seller warrants that the Goods will be free from defects in material and workmanship under normal use, service and maintenance for a period of one year (unless otherwise specified by Seller in writing) from the date of shipment of the Goods by Seller. **THIS IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY SELLER WITH RESPECT TO THE GOODS AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHETHER OR NOT THE PURPOSE OR USE HAS BEEN DISCLOSED TO SELLER IN SPECIFICATIONS, DRAWINGS OR OTHERWISE, AND WHETHER OR NOT SELLER'S PRODUCTS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED BY SELLER FOR BUYER'S USE OR PURPOSE.**

This warranty does not extend to any losses or damages due to misuse, accident, abuse, neglect, normal wear and tear, unauthorized modification or alteration, use beyond rated capacity, or improper installation, maintenance or application. To the extent that Buyer or its agents has supplied specifications, information, representation of operating conditions or other data to Seller in the selection or design of the Goods and the preparation of Seller's quotation, and in the event that actual operating conditions or other conditions differ from those represented by Buyer, any warranties or other provisions contained herein which are affected by such conditions shall be null and void. If within thirty (30) days after Buyer's discovery of any warranty defects within the warranty period, Buyer notifies Seller thereof in writing, Seller shall, at its option, repair or replace F.O.B. point of manufacture, or refund the purchase price for, that portion of the goods found by Seller to be defective. Failure by Buyer to give such written notice within the applicable time period shall be deemed an absolute and unconditional waiver of Buyer's claim for such defects. Goods repaired or replaced during the warranty period shall be covered by the foregoing warranty for the remainder of the original warranty period or ninety (90) days, whichever is longer. Buyer assumes all other responsibility for any loss, damage, or injury to persons or property arising out of, connected with, or resulting from the use of Goods, either alone or in combination with other products/components.

SECTIONS 6 AND 7 APPLY TO ANY ENTITY OR PERSON WHO MAY BUY, ACQUIRE OR USE SELLER'S GOODS, INCLUDING ANY ENTITY OR PERSON WHO BUYS THE GOODS FROM SELLER'S DISTRIBUTOR AND SUCH ENTITY OR PERSON SHALL BE BOUND BY THE LIMITATIONS THEREIN.

7. **LIMITATION OF REMEDY AND LIABILITY: THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY WARRANTY HEREUNDER (OTHER THAN THE WARRANTY PROVIDED UNDER SECTION 13) SHALL BE LIMITED TO REPAIR, REPLACEMENT OR REFUND OF THE PURCHASE PRICE UNDER SECTION 6. SELLER SHALL NOT BE LIABLE FOR DAMAGES CAUSED BY DELAY IN PERFORMANCE AND IN NO EVENT, REGARDLESS OF THE FORM OF THE CLAIM OR CAUSE OF ACTION (WHETHER BASED IN CONTRACT, INFRINGEMENT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE), SHALL SELLER'S LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXCEED THE PRICE TO BUYER OF THE SPECIFIC GOODS PROVIDED BY SELLER GIVING RISE TO THE CLAIM OR CAUSE OF ACTION. BUYER AGREES THAT IN NO EVENT SHALL SELLER'S LIABILITY TO BUYER AND/OR ITS CUSTOMERS EXTEND TO INCLUDE INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES. THE TERM "CONSEQUENTIAL DAMAGES" SHALL INCLUDE, BUT NOT BE LIMITED TO, LOSS OF ANTICIPATED PROFITS, LOSS OF USE, LOSS OF REVENUE, COST OF CAPITAL AND DAMAGE OR LOSS OF OTHER PROPERTY OR EQUIPMENT.**

It is expressly understood that any technical advice furnished by Seller with respect to

the use of the Goods is given without charge, and Seller assumes no obligation or liability for the advice given, or results obtained, all such advice being given and accepted at Buyer's risk.

GOODS AND/OR SERVICES SOLD HEREUNDER ARE NOT FOR USE IN ANY CLEAR AND RELATED APPLICATIONS. Buyer accepts goods and/or services with the foregoing understanding, agrees to communicate the same in writing to any subsequent purchaser or users and to defend, indemnify and hold harmless Seller from any claims, losses, suits, judgments and damages, including incidental and consequential damages, arising from such use, whether the cause of action be based in tort, contract or otherwise, including allegations that the Seller's liability is based on negligence or strict liability.

8. **EXCUSE OF PERFORMANCE:** Seller shall not be liable for delays in performance or for non-performance due to acts of God, acts of Buyer, war, riot, fire, flood, other severe weather, sabotage, or epidemics; strikes or labor disturbances; governmental requests, restrictions, laws, regulations, orders or actions; unavailability of or delays in transportation; default of suppliers; or unforeseen circumstances or any events or causes beyond Seller's reasonable control. Deliveries may be suspended for an appropriate period of time as a result of the foregoing. If Seller determines that its ability to supply the total demand for the Goods, or to obtain material used directly or indirectly in the manufacture of the Goods, is hindered, limited or made impracticable due to causes addressed in this Section 8, Seller may allocate its available supply of the Goods or such material (without obligation to acquire other supplies of any such Goods or material) among itself and its purchasers on such basis as Seller determines to be equitable without liability for any failure of performance which may result therefrom. Deliveries suspended or not made by reason of this section may be canceled by Seller upon notice to Buyer without liability, but the balance of the agreement shall otherwise remain unaffected.

9. **CANCELLATIONS AND DELAYS:** The Buyer may cancel orders only upon written notice and upon payment to Seller of cancellation charges which include, among other things, all costs and expenses incurred and commitments made by the Seller and a reasonable profit thereon. Any request by Buyer to extend the delivery schedule must be agreed to in writing by the Seller. If agreement cannot be reached, Seller may deliver product to the last known ship to address and invoice the Buyer upon completion of the product or prior delivery date, whichever is later.

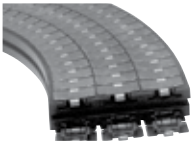
10. **CHANGES:** Buyer may request changes or additions to the Goods consistent with Seller's specifications and criteria. In the event such changes or additions are accepted by Seller, Seller may revise the price and delivery schedule. Seller reserves the right to change designs and specifications for the Goods without prior notice to Buyer, except with respect to Goods being made-to-order for Buyer.

11. **TOOLING:** Tool, die, and pattern charges, if any, are in addition to the price of the Goods and are due and payable upon completion of the tooling. All such tools, dies and patterns shall be and remain the property of Seller. Charges for tools, dies, and patterns do not convey to Buyer, title, ownership interests in, or rights to possession or removal, nor prevent their use by Seller for other purchasers, except as otherwise expressly provided by Seller and Buyer in writing with reference to this provision.

12. **ASSIGNMENT:** Buyer shall not assign its rights or delegate its duties hereunder or any interest therein or any rights hereunder without the prior written consent of the Seller, and any such assignment, without such consent, shall be void.

13. **PATENTS AND COPYRIGHTS:** Subject to Section 7, Seller warrants that the Goods sold, except as are made specifically for Buyer according to Buyer's specifications, do not infringe any valid U.S. patent or copyright in existence as of the date of delivery. This warranty is given upon the condition that Buyer promptly notify Seller of any claim or suit involving Buyer in which such infringement is alleged, and, that Buyer cooperate fully with Seller and permit Seller to control completely the defense or compromise of any such allegation of infringement. Seller's warranty as to use only applies to infringements arising solely out of the inherent operation (i) of such Goods, or (ii) of any combination of Goods in a system designed by Seller. In the event such Goods, singularly or in combination, are held to infringe a U.S. patent or copyright in such suit, and the use of such Goods is enjoined, or in the case of a compromise by Seller, Seller shall have the right, at its option and expense, to procure for Buyer the right to continue using such Goods, or replace them with non-infringing Goods; or modify same to become non-infringing; or grant Buyer a credit for the depreciated value of such Goods and accept return of them.

14. **MISCELLANEOUS:** These terms and conditions set forth the entire understanding and agreement between Seller and Buyer, and supersede all other communications, negotiations and prior oral or written statements regarding the subject matter of these terms and conditions. No change, modification, rescission, discharge, abandonment, or waiver of these terms and conditions of Sale shall be binding upon the Seller unless made in writing and signed on its behalf by an officer of the Seller. No conditions, usage or trade, course of dealing or performance, understanding or agreement purporting to modify, vary, explain, or supplement these Terms and Conditions shall be binding unless hereafter made in writing and signed by the party to be bound, and no modification shall be affected by the acceptance of purchase orders or shipping instruction forms containing terms at variance with or in addition to those set forth herein. Any such modifications or additional terms are specifically rejected by Seller. No waiver by Seller with respect to any breach or default or any right or remedy and no course of dealing, shall be deemed to constitute a continuing waiver of any other breach or default or of any other right or remedy, unless such waiver be expressed in writing and signed by the party to be bound. Seller is not responsible for typographical or clerical errors made in any quotation, orders or publications. All such errors are subject to correction. The validity, performance, and all other matters relating to the interpretation and effect of this contract shall be governed by the law of the state of New York. The United Nations Convention on the International Sale of Goods shall not apply to any transaction hereunder.



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