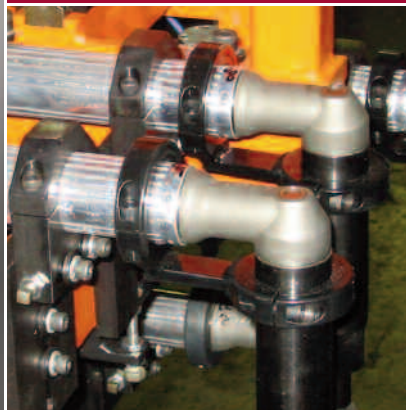


FIXTURED NUTRUNNERS AND COMPONENTS FOR ASSEMBLY

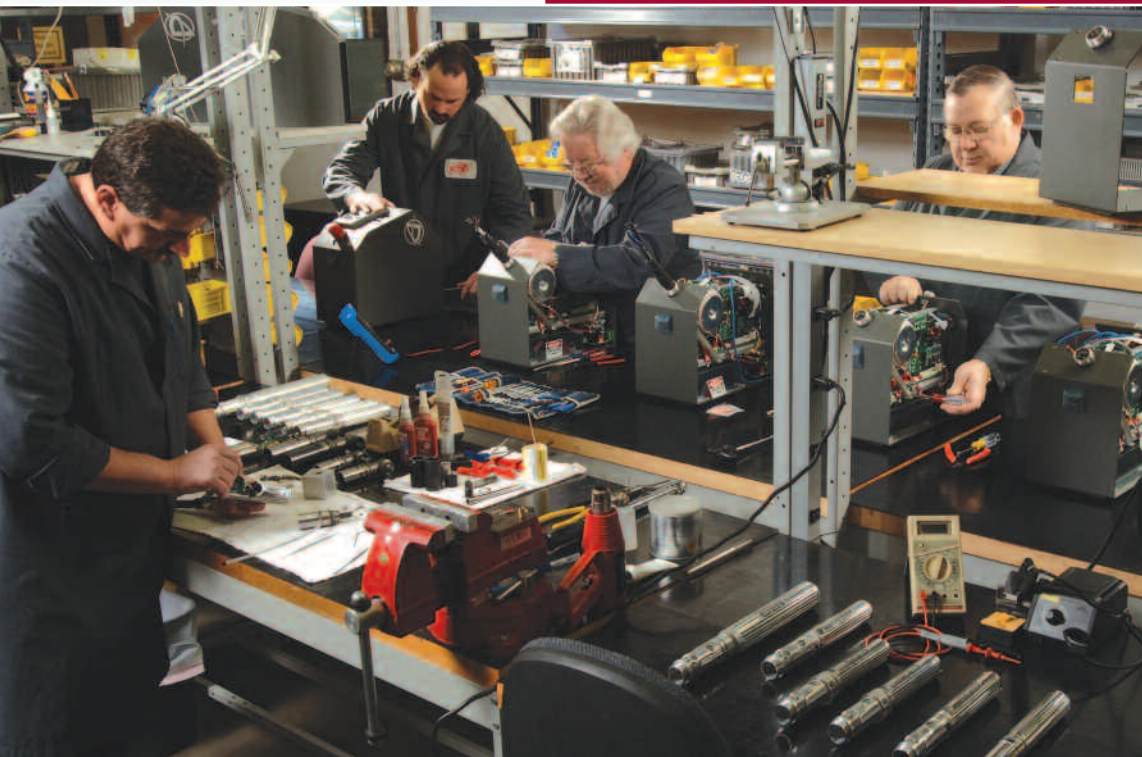


Global
Assembly
Solutions™



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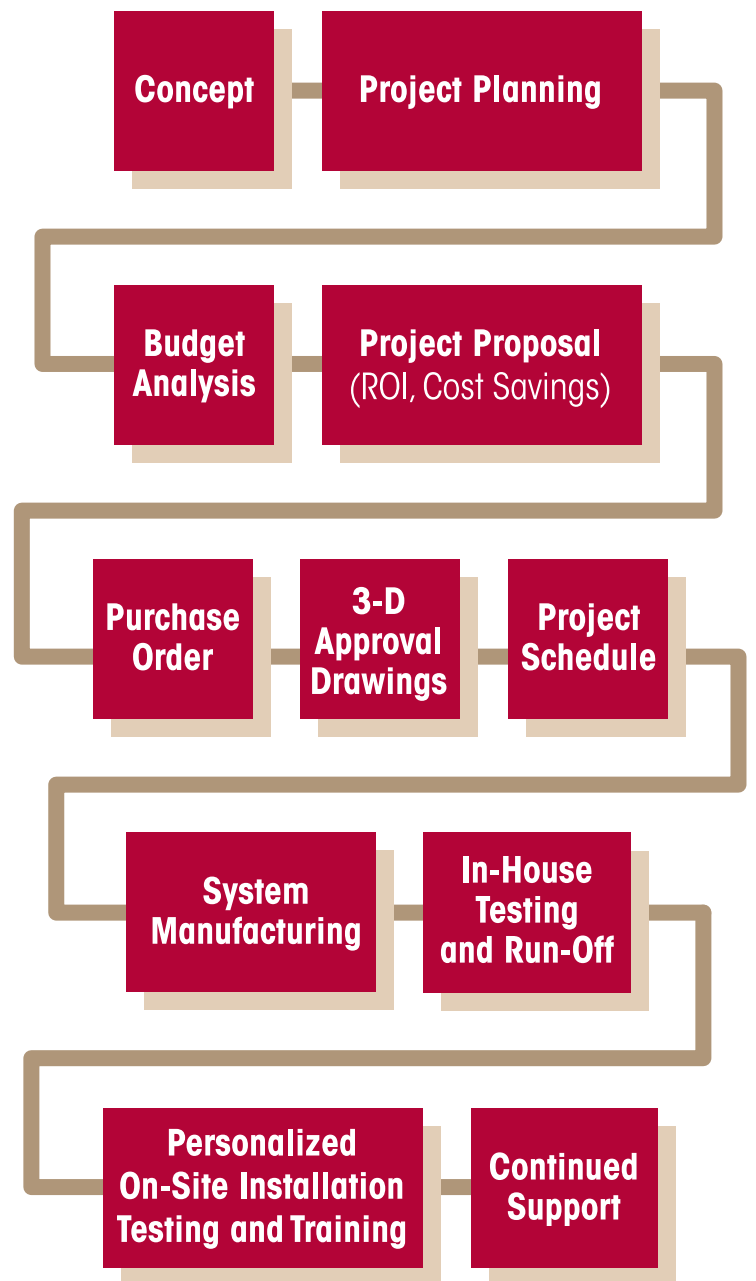
Founded in 1970, AIMCO is an experienced leader in producing turnkey assembly solutions. AIMCO specializes in fixtured tools as well as other critical fastening technologies used in manufacturing. By combining the strengths of AcraDyne and URYU Seisaku, Ltd., AIMCO has the unique ability to offer the most complete line of fixtured nutrunners in the industry.

Whether integrating our nutrunners into your own system or allowing us to design and assemble a complete system for you, AIMCO is there to support your requirements from conception to implementation. From hand guided simple two spindle powerheads to fully integrated logic controlled robotic assembly stations, AIMCO has the skill and talent required to provide you with a system that will exceed your expectations.

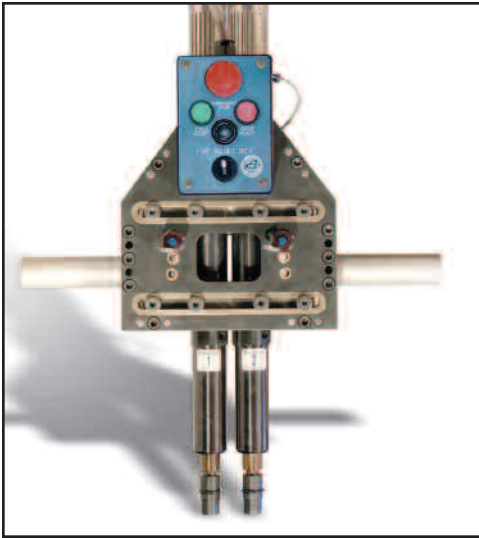
AIMCO's expert attention provides you with manufacturing efficiency, high productivity, cost-savings and value! We are committed to being your source for the highest quality products, unsurpassed service and exemplary industry expertise.

Let us be a part of your solution, today!
Call today for a free consultation.

AIMCO customizes and monitors your project from concept all the way through final assembly, installation and production start-up.



Let us put our state-of-the-art products to work for you!



MULTIPLE NUTRUNNING SYSTEMS

AIMCO is able to integrate the AcraDyne tool into a customized Multiple Nutrunning System. From simple systems vertically suspended above the part to assembly stations that integrate with your line, AIMCO can handle your project.

Tell us your requirements and we'll propose a solution tailored to your needs.



7-Spindle Auto Down Assembly System

FEATURES

Nutrunner sequencing — This allows nutrunners to be sequenced at each phase of the tightening process allowing even distribution of torque and load to each fastener.

Even torque distribution — Where there is uneven torque distribution, part damage or distortion could occur with possible fastener failure or loss of residual torque.

Snug, threshold, final torque in one pass — No need for multiple torque stage sequencing as with a single nutrunner tool. Fixtured nutrunners save time and effort from start to finish.

No missed fasteners — With multiple nutrunners there is a spindle dedicated to each location, ensuring quality on every rundown on every bolt.

Better residual torques — Synchronized controlled fastening allows residual torque levels to be more consistent with the dynamic torque specification.

Saving in cycle time — Compared with using a single nutrunner tool with many rundowns, running all fasteners simultaneously reduces in-station cycle time.

Cost saving benefits — Saving installation cycle time frees up operators to handle additional tasks and potentially reduce labor requirements, at the same time eliminating bottle necks.

Collect data — Most common methods of collecting data for quality control and statistical analysis can be implemented from serial data string using RS232 to formatted data from a network database.

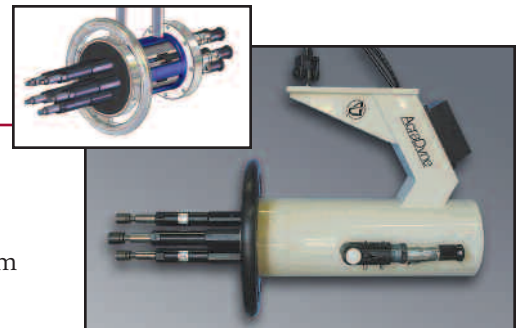
ENGINE MANUFACTURER

Gasoline generator assembly
Six (6) spindle 30 Nm
Replaced hand assembly with rotation pattern to simultaneous rundown
Custom display panel showing application
Cpk range of 3.2 - 6.9 far exceeded quality requirements



AUTOMOTIVE MANUFACTURER

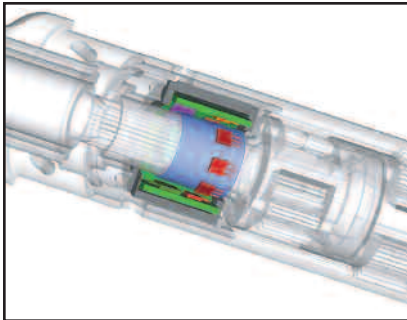
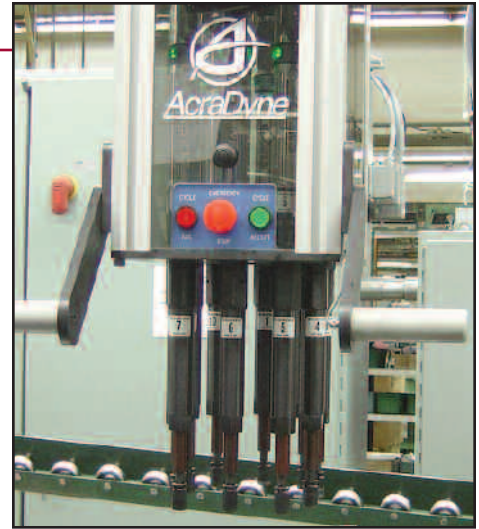
Wheel lug nut assembly
Four (4) spindle 105 Nm
Rotating spindle trunnion
Replaced competitive system
Built-in PC for data storage



ACRADYNE INLINE NUTRUNNERS

When you require functionality, durability and flexibility, AIMCO's complete line of fixtured nutrunners provide the solution for automated, semi-automated or manually operated fixtured installations. AcraDyne can design from 2 to 20 spindle systems.

AcraDyne Ti-Series nutrunners are engineered for performance and long life. Our factory uses an innovative transducer technology unmatched in the industry.



NON-CONTACT TRANSDUCER

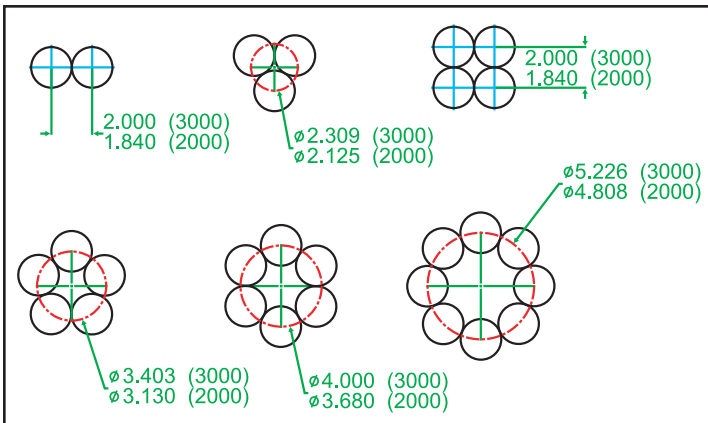
Our innovative transducer utilizes a permanent magnet bonded to the gear carrier. Changes in the magnetic field under load determine the torque.

SMALL DIAMETER BODIES

Smaller diameter tools mean tighter bolt center-to-center dimension can be achieved without off set heads.

Minimum Pitch Circle

Refer to the chart for minimum side to center without offset heads.



AEM-2010
AEM-2020
AEM-2025



AEM-2038
AEM-2068



AEM-3040
AEM-3060



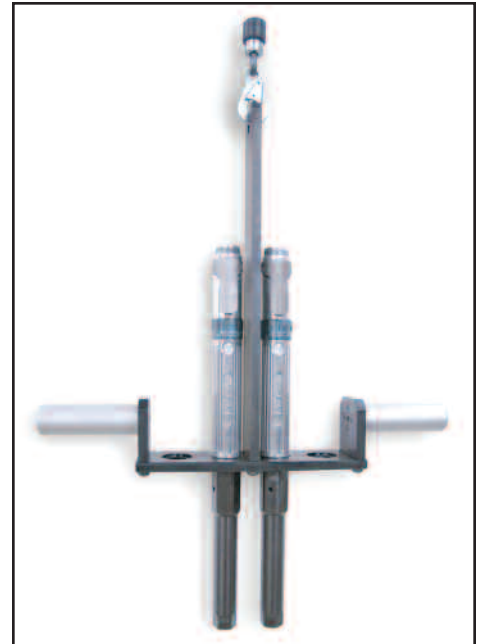
AEM-3100
AEM-3150
AEM-3230

MODEL	TORQUE RANGE (approx)		FREE SPEED (approx) rpm	OVERALL LENGTH		SIDE TO CENTER		WEIGHT LESS SOCKET		OUTPUT DRIVE in
	Nm	ft-lb		in	mm	in	mm	lb	kg	
AEM-2010	4 - 10	3 - 7	2,600	11.5	292	.92	23.4	2.2	1.0	3/8 sq. dr.
AEM-2020	8 - 20	5 - 14	1,500	11.5	292	.92	23.4	2.2	1.0	3/8 sq. dr.
AEM-2025	10 - 25	7 - 18	1,025	11.5	292	.92	23.4	2.2	1.0	3/8 sq. dr.
AEM-2038	15 - 38	11 - 28	700	14.4	365	.92	23.4	3.2	1.4	3/8 sq. dr.
AEM-2068	27 - 68	19 - 50	400	14.4	365	.92	23.4	3.2	1.4	3/8 sq. dr.
AEM-3040	16 - 40	12 - 30	1650	15.9	404	1.0	25.4	4.7	2.1	1/2 sq. dr.
AEM-3060	24 - 60	17 - 44	1125	15.9	404	1.0	25.4	4.7	2.1	1/2 sq. dr.
AEM-3100	40 - 100	30 - 73	620	20.3	515	1.0	25.4	7.6	3.4	1/2 sq. dr.
AEM-3150	60 - 150	44 - 110	415	20.3	515	1.0	25.4	7.6	3.4	1/2 sq. dr.
AEM-3230	92 - 230	68 - 170	280	20.3	515	1.0	25.4	7.6	3.4	1/2 sq. dr.



SLIDING SPINDLES

Sliding spindles use a fast-lead or standard socket with a soft-start spring benefit built into the spindle.



DESIGN YOUR OWN DUAL DRIVE

As easy as 1-2-3!

1. Supply the distance from center point to center point of two fasteners
2. Select optional spring loaded socket or sliding spindle
3. Supply application torque range
4. We can machine a custom plate that fits into our off-the-shelf system



SPRING LOADED SOCKETS

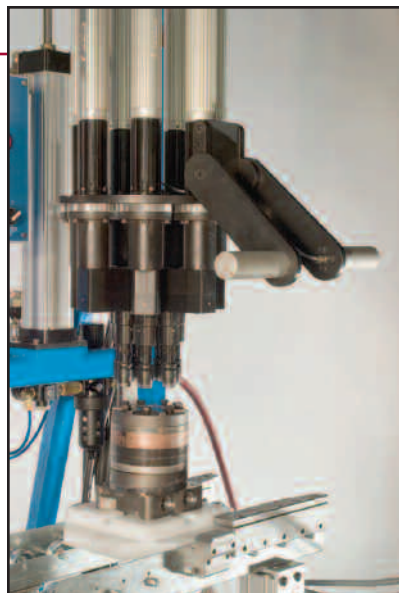
Spring-loaded sockets allow for self-alignment during a soft-start, limiting the number of bad torques because of sockets not properly engaging. Spring-loaded sockets work well where a sliding spindle may be too long.

SYNCHRONIZATION VS. NON-SYNCHRONIZATION

Systems can be designed to fasten until snug and then tighten to final torque thus synchronizing the clamp load or the system can be designed to tighten each fastener at its own rate. All AcraDyne systems by default are synchronized for optimal quality.

OFFSET HEADS/OPTIONS

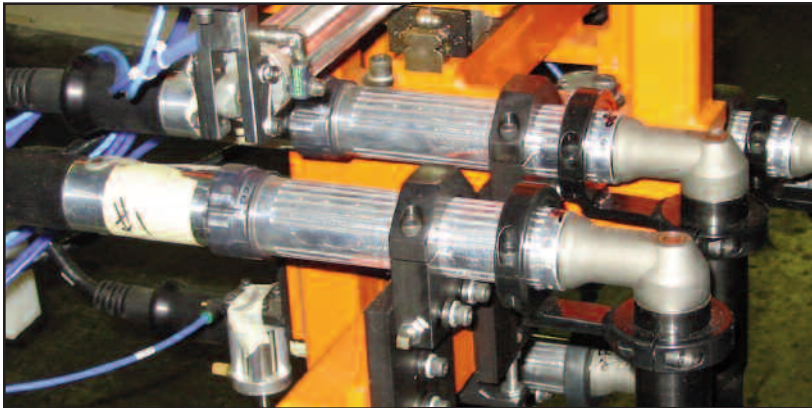
For systems where the center radius is closer than our tool's center radius, we can incorporate offset heads — geared fixtures that move the center drive into a narrower center radius.



REMOTE START

Using logic inputs on our controllers we can integrate any standard remote switch from single contact to optical. Whatever switch suits the purpose can be integrated into the system.

Let us help design your system!



DC RIGHT ANGLE NUTRUNNERS

Right angle nutrunners are commonly thought of as hand operated tools. Where vertical space or access issues exist, AcraDyne right angle nutrunners can be fixtured for custom solutions. Lightweight angle heads smoothly transfer torque to your application. We provide tools from 6 to 450 Nm with many programmable strategies to make for a perfect solution to meet your assembly requirements.

FEATURES

- Simple yet sophisticated
- Fast cycle times
- Broad torque range of tools
- Less than 50 parts per tool
- Non-contacting transducers
- Easy service and repair



AEN-2015
AEN-2025



AEN-2030
AEN-2040



AEN-2055



AEN-3055*
AEN-3060
AEN-3090



AEN-3120*
AEN-3200*
AEN-3300
AEN-3450
* NOT SHOWN

MODEL	TORQUE RANGE (approx)		FREE SPEED (approx) rpm	OVERALL LENGTH		ANGLE HEAD HEIGHT		CENTER TO OUTSIDE		WEIGHT LESS SOCKET		OUTPUT DRIVE in
	Nm	ft-lb		in	mm	in	mm	in	mm	lb	kg	
AEN-2015	6 - 15	4 - 11	1,725	12.3	311	1.3	33	0.5	13	2.2	1.0	3/8 sq. dr.
AEN-2025	10 - 25	7 - 18	975	12.3	311	1.3	33	0.5	13	2.2	1.0	3/8 sq. dr.
AEN-2030	12 - 30	8 - 22	950	12.2	308	1.6	41	0.7	18	2.6	1.1	3/8 sq. dr.
AEN-2040	16 - 40	11 - 30	675	12.2	308	1.6	41	0.7	18	2.6	1.1	3/8 sq. dr.
AEN-2055	22 - 55	16 - 40	450	15.4	391	1.6	39	0.7	18	3.5	1.5	3/8 sq. dr.
AEN-3055	22 - 55	16 - 41	1,075	16.6	421	1.6	39	0.7	18.0	4.9	2.2	3/8 sq. dr.
AEN-3060	24 - 60	18 - 44	1,075	17.1	434	1.8	46	0.8	20.0	5.2	2.3	1/2 sq. dr.
AEN-3090	36 - 90	27 - 66	725	17.1	434	1.8	46	0.8	20.0	5.2	2.3	1/2 sq. dr.
AEN-3120	50 - 120	37 - 88	530	18.7	475	2.2	55	1.1	27.0	6.5	3.0	1/2 sq. dr.
AEN-3200	80 - 200	59 - 147	310	20.9	530	2.2	55	1.1	27.0	6.5	3.0	3/4 sq. dr.
AEN-3300	120 - 300	63 - 221	190	21.3	541	2.6	67	1.3	32.0	9.6	4.3	3/4 sq. dr.
AEN-3450	180 - 450	132 - 330	125	21.3	541	2.6	67	1.3	32.0	9.6	4.3	3/4 sq. dr.



FEATURES

Only one controller is required to run all the range of the AcraDyne DC electric tools — no need to match tools to controllers, especially during line changes

Three models of controller from simple to sophisticated

Menu driven keypad makes on-board changes easy

Quick Start for one step programming

For Plug-n-Play, AcraDyne accessories are installed via an RJ45 connection

Panel mounted, remote mounted or handheld, the KDM program module is convenient

Standard ISA PC architecture is expandable for future needs

Logic I/O is available, providing fully programmable functions

Three ISA expansion slots available

Common external controls, such as remote start/stop, annunciation, and parameter select can be pre-programmed

Power to operate lights, line control devices or annunciators is built-in for up to 4 amps

Password protection available

Eight parameter sets with 17 programmable features each — accessible through 3-position lighting, socket tray, or keypad

Optional internal PC with hard drive for virtually unlimited data storage and communications (EV-III models)

Displays statistics of Cp, Cpk, 6 sigma range, mean and range of last 100 readings

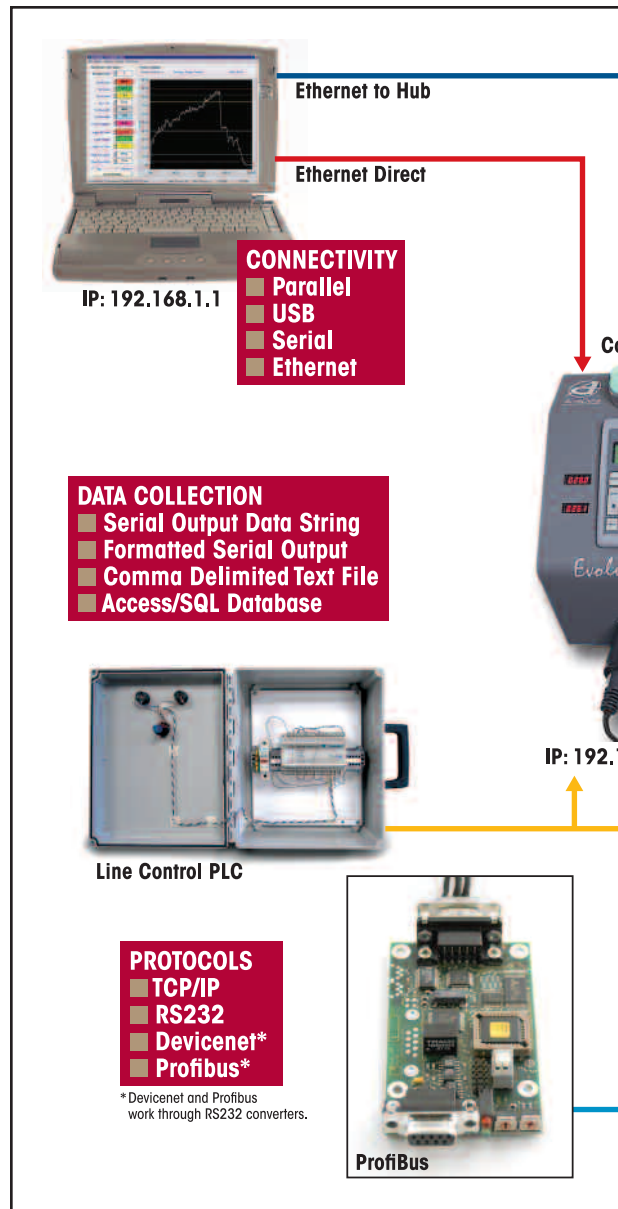
Easy to use with ToolWare software for programming, fastening curve analysis, and troubleshooting

Controller automatically reads tool's ID board for torque capacity, calibration values, serial number, and correct operation

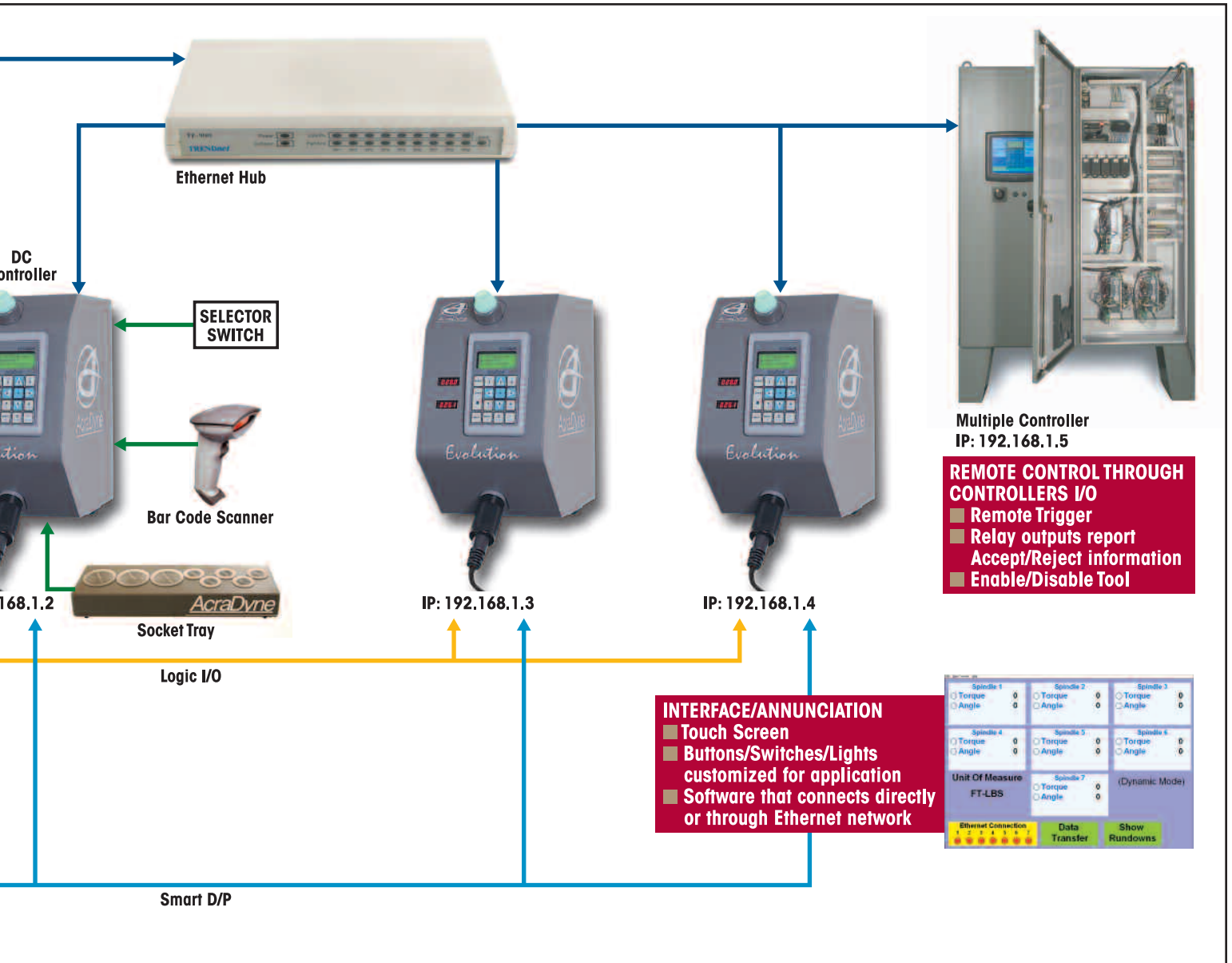
Patented safety features of tubenut wrenches are pre-programmed and embedded

GFCI (ground fault circuit interrupter) is provided on all 110V units as standard equipment

Available for 110V-230V, 50/60 Hz



Adaptable for bottom or top cable connections



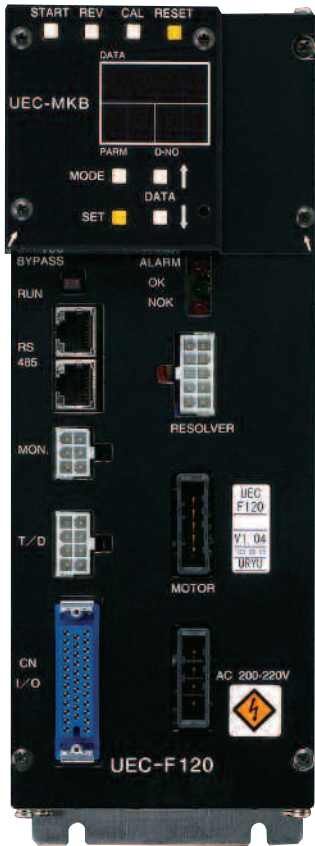
AcraDyne Evolution Controller

DESCRIPTION	MODEL	KDM*	INPUT	HARD DRIVE	H X W X D	I/O	
EV-I	• Digital readouts of torque, angle or fastener count	AEC-1110K	OPT	110V	EV-III only	14 x 8 x 12	EV-II, EV-III only
	• Operator interface via KDM (Keypad Display Module) for programming or laptop PC with ToolWare™	AEC-1220K	OPT	220V	EV-III only	14 x 8 x 12	EV-II, EV-III only
EV-II	• Plug-N-Play CAN architecture	AEC-2110K	OPT	110V	EV-III only	14 x 8 x 12	YES
	All features of the EV-I plus:	AEC-2220K	OPT	220V	EV-III only	14 x 8 x 12	YES
EV-III	• 24 I/O programmable interface. 24 VDC contact closure	AEC-3110K	OPT	110V	YES	14 x 8 x 12	YES
	• Screw terminals and built in power supply rated to deliver 4 amps	AEC-3220KXP	OPT	220V	YES	14 x 8 x 12	YES

*To order controller without KDM, remove "K" from model number

URYU F-SERIES

Integrated type SPINDLE UNIT (spindle controller and driver unit) model UEC-F120 with optional display unit UEC-MKB2



FEATURES

Reduced Cable Numbers — Integral type tube containing torque sensor cable and resolver cable.

Enhanced Memory Capacity — We have increased memory capacity to get better efficiency of assembly line and tightening data control.

Open Network Communication — We have prepared all types of communication boards for your various specifications (M-NET, Device net, Inter-bas, CC-link).

Automatic Setting (Automatic recommended value input) — Advance value preparation per application will help you simplify your parameter setting.

Space Saving — One piece structure contained spindle controller and driver unit has reduced volume space occupancy by 40% to 60% of ordinary elements.

NO. OF SPINDLES	VOLUME & WIDTH BEFORE		VOLUME & WIDTH WITH F-SERIES			
	cm	mm	UEC-F024 cm	mm	UEC-F120 cm	mm
1-Spindle	16,800	200	6,360	150	8,268	195
2-Spindle	24,360	290	8,904	210	12,084	285
5-Spindle	47,040	560	16,536	390	24,804	585
10-Spindle	84,840	1,010	29,256	690	48,336	1,140



PRODUCTIVITY | ERGONOMICS | RELIABILITY | QUALITY
WORLD CLASS MANUFACTURING SOLUTIONS FROM AIMCO

PRODUCTIVITY

The speed and efficiency of assembly.

ERGONOMICS

The physical relationship between personnel and mechanisms they use in the assembly process.

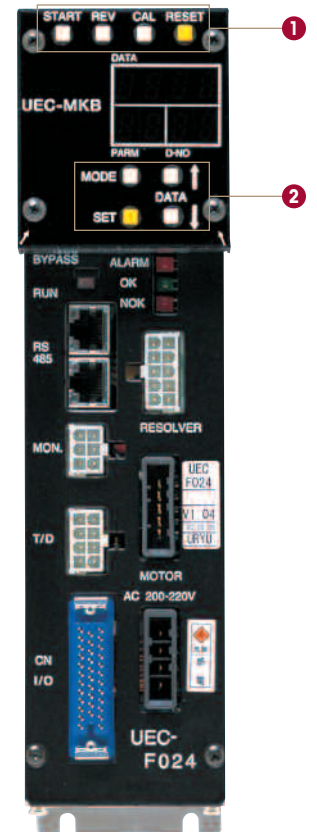
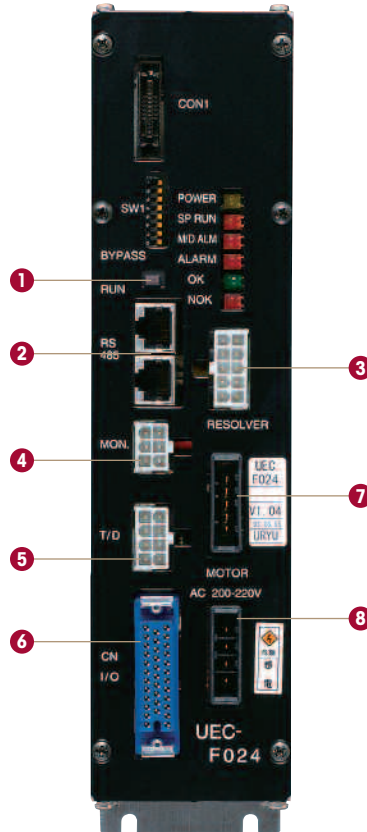
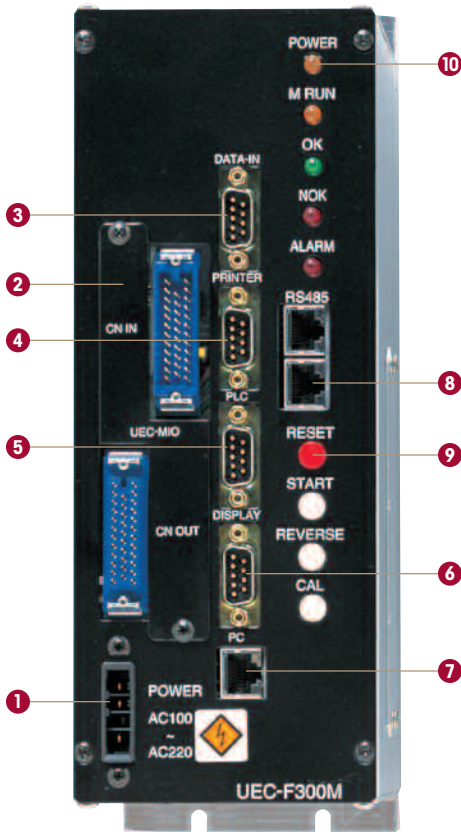
RELIABILITY

Expected service life for its intended job.

QUALITY

The adherence to engineering specifications during the assembly process.





- 1 Power Socket**
AC100~220V single phase
- 2 External Input/Output Connector**
PLC1: input signal connector for control signal input (fixed allocation)
PLC2: output signal connector for judgement result and status output (free allocation)
- 3 Serial Port (Data Input Connector)**
RS232C DATA-IN accepts serial numbers, etc. provided by external equipment such as a barcode reader then outputs tightening data together with serial numbers.
- 4 Serial Port (Data Output Connector)**
RSC232C PRINTER outputs tightening result data to your printer (free format)
- 5 Serial Port (Data Output Connector)**
RSC232C PLC outputs tightening result data to PLC (free format)
- 6 Serial Port (Data Output Connector)**
RS485 outputs tightening result data to an external exclusive display unit
- 7 PC Connector**
RSC232C for communication with a PC
- 8 Spindle-to-Spindle Communication Connector**
RS485 for internal spindle unit to spindle unit communications
- 9 Manual Switches**
RESET, START, REVERSE and CAL
- 10 LED Display**
POWER, M RUN, ACCEPT, REJECT and ALARM

- 1 Status Change Switch**
RUN/BYPASS change switch
RUN: Operation possible status
BYPASS: Non-operation status
- 2 External Communication Device**
RS485 connector
- 3 Resolver Connector**
Tool and resolver connection
- 4 MON Connector (Monitor Output)**
Analog torque electric pressure and angle pulse output
- 5 T/D Connector**
Tools torque sensor connection
- 6 I/O Connector**
External input and output control connection
- 7 MOTOR Connector**
Connection with tools magnet motor
- 8 AC IN Connector**
AC200V~220V 3-phase power socket

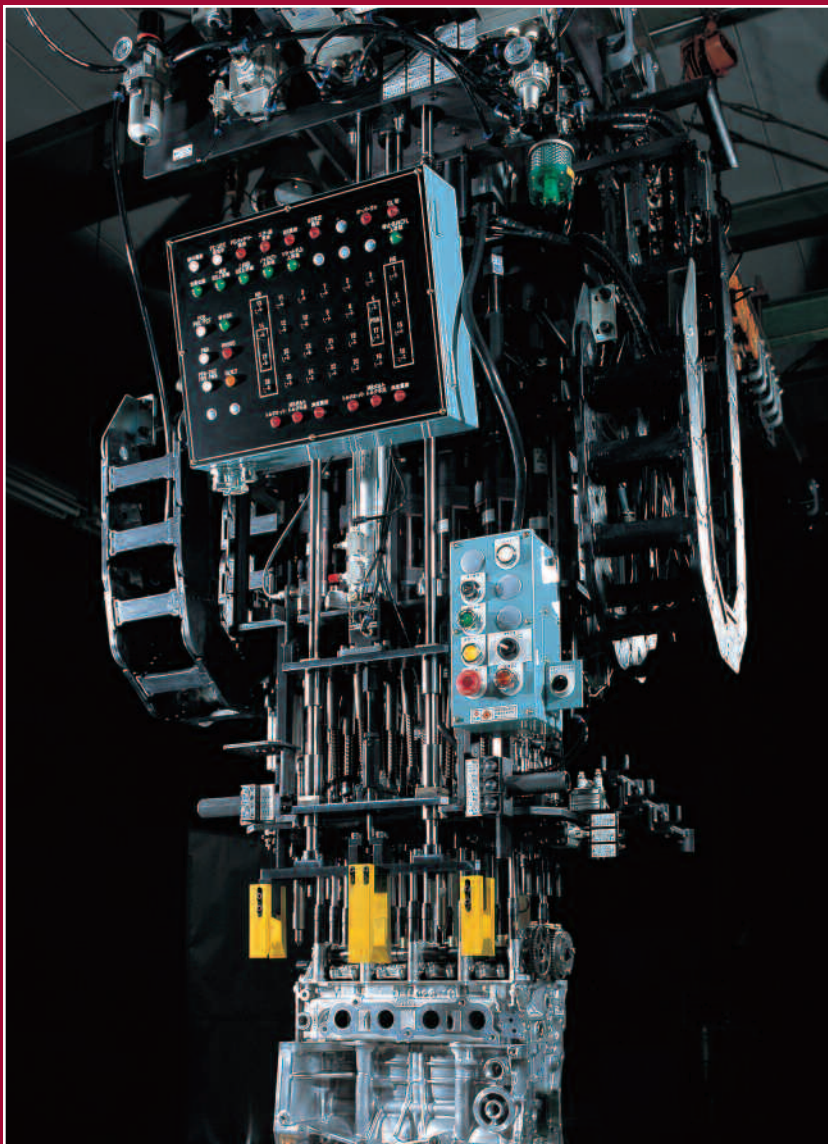
- 1 Manual Operation Switches**
START: manual start switch
REVERSE: Manual reverse switch
CAL: Manual calibration switch
RESET: Manual reset switch
 - 2 Data Display Operation Switch**
MODE switch
SET switch
DATA UP switch
DATA DOWN switch
- NOTE: Display unit (UEC-MKB) is an option.

The "F" Series Nutrunner System will satisfy multiple tightening patterns.

Torque Tightening
Torque
Angle Tightening
Angle
Plastic Range Monitor

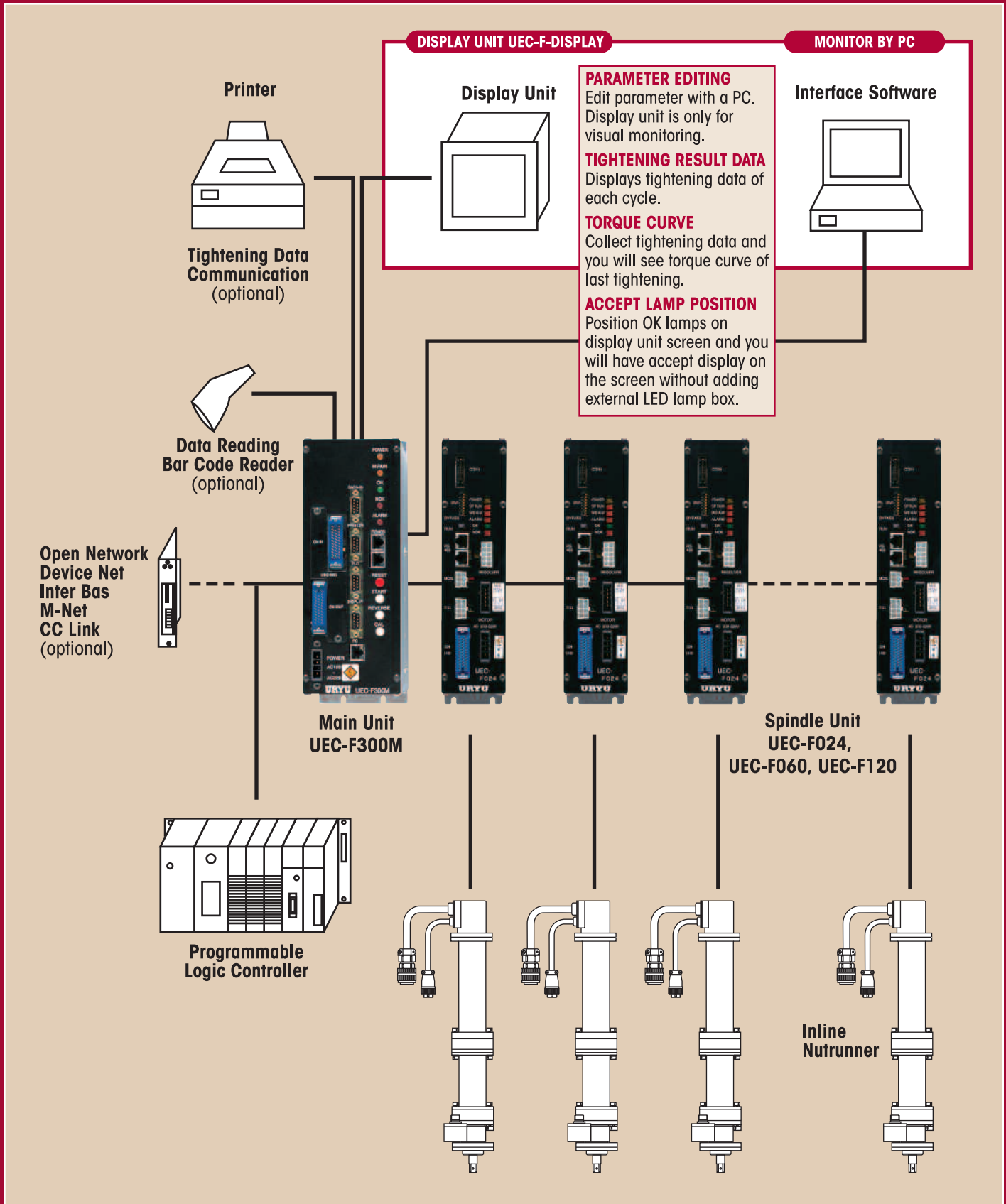
Spline Press Ft Tightening
Pin Hole Alignment Tightening
Pre-Load Detection
Idle Operation Check

URYU F-SERIES

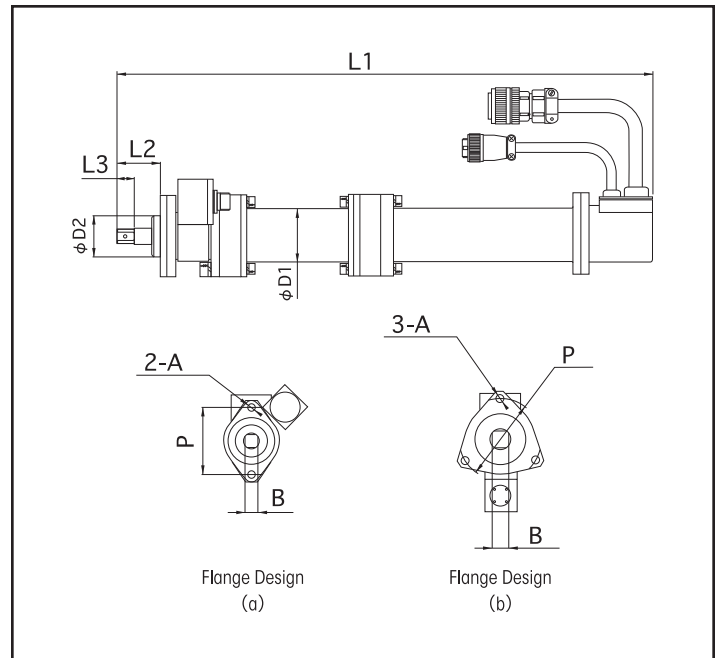


URYU

URYU F-SERIES NETWORK CONNECTIVITY



INLINE NUTRUNNERS



TYPE	EXTERNAL DIMENSIONS (mm)							TORQUE SENSOR	MOTOR TYPE	FLANGE DESIGN	
	L1	L2	L3	D1	D2	P	A				B
UNR-F015-45NT	371	41	12	40.5	38	51	M6	9.5	TM-035	F015	(a)
UNR-F015-65NT	371	41	12	40.5	38	51	M6	9.5	TM-035	F015	(a)
UNR-F015-200NT	400	41	12	40.5	38	51	M6	9.5	TM-035	F015	(a)
UNR-F015-280NT	400	41	12	40.5	38	51	M6	9.5	TM-035	F015	(a)
UNR-F015-350NT	400	41	12	40.5	38	51	M6	9.5	TM-035	F015	(a)
UNR-F050-270NT	453.5	41	12	50	38	51	M6	9.5	TM-035	F050	(a)
UNR-F050-630NT	500.5	41	16.5	50	38	62	M8	12.7	TM-085	F050	(a)
UNR-F050-730NT	500.5	41	16.5	50	38	62	M8	12.7	TM-085	F050	(a)
UNR-F050-880NT	512.5	45	20	50	48	62	M8	15.88	TM-150	F050	(a)
UNR-F050-1400NT	512.5	45	20	50	48	62	M8	15.88	TM-150	F050	(a)
UNR-F100-1300NT	519.5	45	20	62	48	62	M8	15.88	TM-150	F100	(a)
UNR-F100-1900NT	515.5	45	20	62	48	76	M8	15.88	TM-250	F100	(b)
UNR-F100-2500NT	515.5	45	20	62	48	76	M8	15.88	TM-250	F100	(b)
UNR-F100-3700NT	589	57	30	62	58	76	M10	19	TM-400	F100	(b)
UNR-F100-5400NT	704.5	80	40	62	70	90	M10	25.4	TM-700	F100	(b)

Torque Sensor Specifications

TYPE	CAPACITY (Nm)
TM-035	34.3
TM-085	83.3
TM-150	147
TM-250	245
TM-400	392
TM-700	686
TM-1000	980

Rated Strain	2000X10-6
Output Voltage	1.0mV/V
Non-Linearity	±0.5% R.O.
Influence on Zero Point Due to Temperature	±0.1% R.O./°C
Temperature Rating	-10~+65°C
Input Output Resistance	480Ω
Maximum Input Voltage	16V
Insulation Resistance	Greater than 3000Ω
Overload Capacity	150%

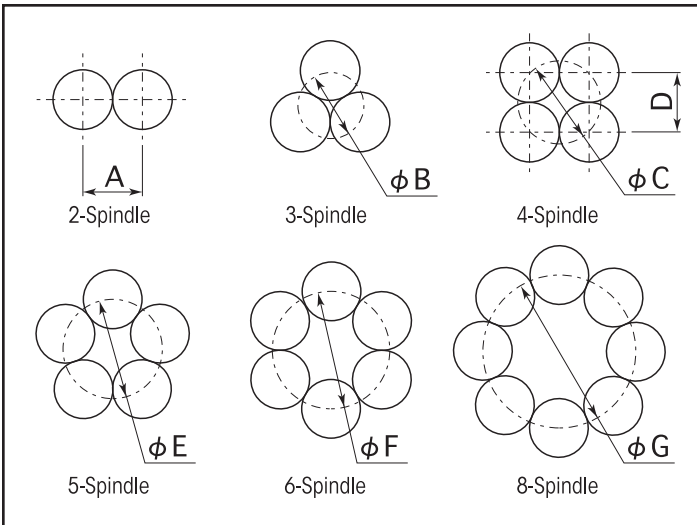
Inline Motor Specifications

TYPE	TIGHTENING TORQUE (Nm)	FREE SPEED (rpm)	WEIGHT (kg)	SPINDLE UNIT
UNR-F015-45NT	4.5	3,200	2.48	UEC-F024
UNR-F015-65NT	6.5	2,200	2.48	UEC-F024
UNR-F015-200NT	20	730	2.73	UEC-F024
UNR-F015-280NT	28	500	2.73	UEC-F024
UNR-F015-350NT	35	410	2.73	UEC-F024
UNR-F050-270NT	27	1,750	4.86	UEC-F060
UNR-F050-630NT	63	750	5.08	UEC-F060
UNR-F050-730NT	73	650	5.08	UEC-F060

TYPE	TIGHTENING TORQUE (Nm)	FREE SPEED (rpm)	WEIGHT (kg)	SPINDLE UNIT
UNR-F050-880NT	88	540	5.47	UEC-F060
UNR-F050-1400NT	140	340	5.47	UEC-F060
UNR-F100-1300NT	130	730	7.42	UEC-F120
UNR-F100-1900NT	190	500	7.94	UEC-F120
UNR-F100-2500NT	250	370	7.94	UEC-F120
UNR-F100-3700NT	370	260	9.55	UEC-F120
UNR-F100-5400NT	540	175	17.0	UEC-F120

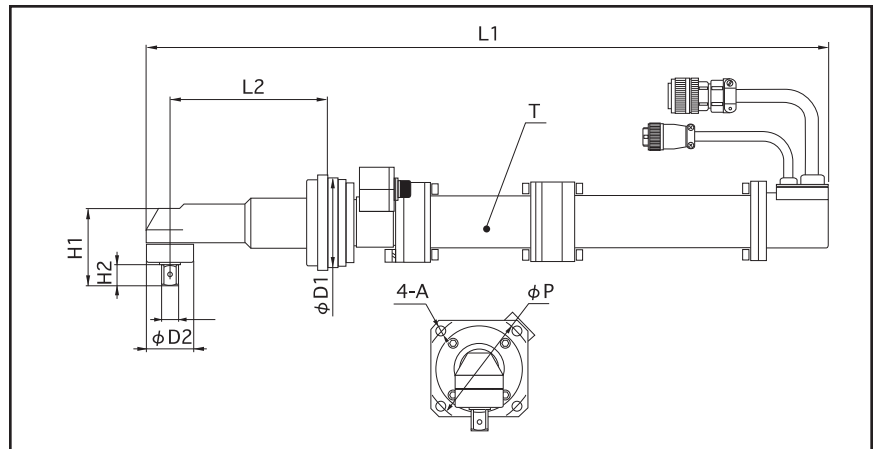
"F" Nutrunner Motors' Minimum Pitch Circle

Refer to minimum pitch circles for designing your machine.



TYPE	DIMENSIONS (mm)						
	A	B	C	D	E	F	G
UNR-F015-45NT	43	52	64	46	74	92	122
UNR-F015-65NT	43	52	64	46	74	92	122
UNR-F015-200NT	43	52	64	46	74	92	122
UNR-F015-280NT	43	52	64	46	74	92	122
UNR-F015-350NT	43	52	64	46	74	92	122
UNR-F050-270NT	59	72	90	64	108	122	160
UNR-F050-630NT	59	72	90	64	108	122	160
UNR-F050-730NT	59	72	90	64	108	122	160
UNR-F050-880NT	59	72	90	64	108	122	160
UNR-F050-1400NT	59	72	90	64	108	122	160
UNR-F100-1300NT	66	75	92	65	116	130	170
UNR-F100-1900NT	70	100	110	78	115	132	174
UNR-F100-2500NT	70	100	110	78	115	132	174
UNR-F100-3700NT	76	100	110	78	120	140	184
UNR-F100-5400NT	94	125	143	102	166	188	257
UNR-F100-7000NT	94	125	143	102	166	188	257
UNR-F100-10000NT	94	125	143	102	166	188	257

RIGHT ANGLE NUTRUNNERS



TYPE	EXTERNAL DIMENSIONS (mm)								STRAIGHT MOTORS			
	L1	L2	H1	H2	D1	D2	P	A	B	TYPE	SENSOR	MOTOR
UNR-F015-25NTC	507	120	49	10.6	70	28	85	M6	9.5	UNR-F015-200NT	TM-035	F015
UNR-F015-55NTC	521	130	58	18	70	36	85	M6	12.7	UNR-F015-350NT	TM-035	F015
UNR-F050-95NTC	643	150	73.5	20	85	45	102	M6	15.88	UNR-F050-630NT	TM-085	F050
UNR-F050-130NTC	649	150	73.5	20	85	45	102	M6	15.88	UNR-F050-880NT	TM-150	F050
UNR-F100-200NTC	681.5	170	85.5	20	85	56	102	M6	15.88	UNR-F100-1300NT	TM-150	F100
UNR-F100-250NTC	677.5	170	85.5	20	100	56	120	M8	15.88	UNR-F100-1900NT	TM-250	F100
UNR-F100-380NTC	716.5	200	109.5	25	110	74	134	M10	19	UNR-F100-2500NT	TM-250	F100
UNR-F100-550NTC	784	200	114.5	29	110	74	134	M10	25.4	UNR-F100-3700NT	TM-400	F100

Right Angle Motor Specifications

TYPE	TIGHTENING TORQUE (Nm)	FREE SPEED (rpm)	WEIGHT (kg)	SPINDLE UNIT
UNR-F015-25NTC	25	460	4.18	UEC-F024
UNR-F015-55NTC	55	260	4.37	UEC-F024
UNR-F050-95NTC	95	480	8.08	UEC-F060
UNR-F050-130NTC	130	340	8.3	UEC-F060

TYPE	TIGHTENING TORQUE (Nm)	FREE SPEED (rpm)	WEIGHT (kg)	SPINDLE UNIT
UNR-F100-200NTC	200	460	11.92	UEC-F120
UNR-F100-250NTC	250	340	12.3	UEC-F120
UNR-F100-380NTC	380	235	15.92	UEC-F120
UNR-F100-550NTC	550	165	17.43	UEC-F120



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