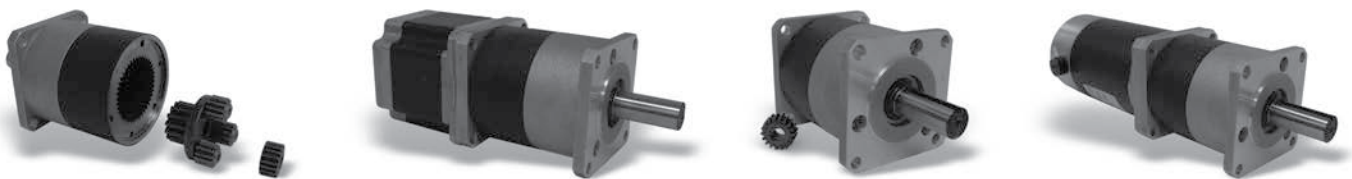




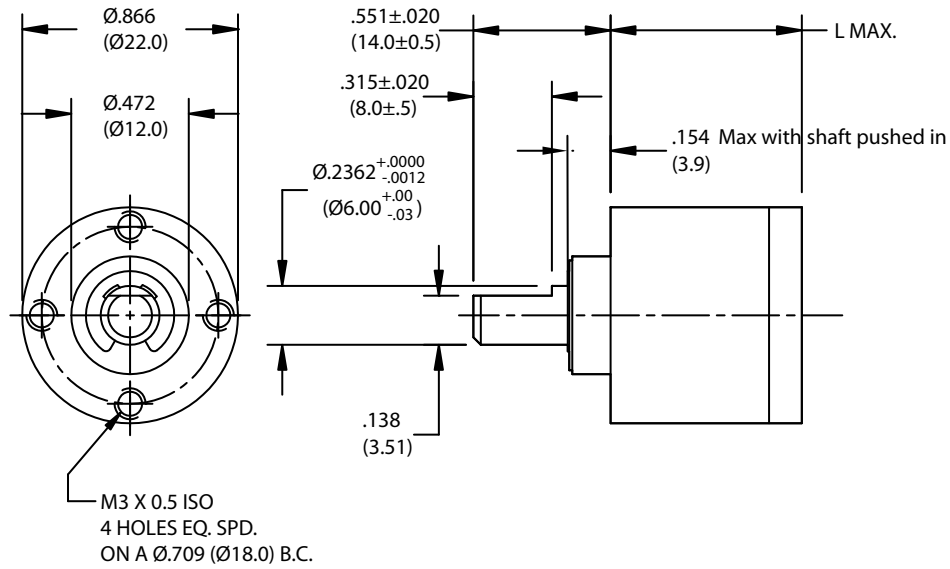
## Gearboxes

AMETEK offers a cost effective series of spur gearboxes featuring sintered steel gears to best complement our motors. These gearboxes when added to AMETEK motors offer greater flexibility to the designer. Spur gearboxes are offered with sleeve or ball bearings, optional lubricants for extreme temperatures, Delrin gears for reduced noise, shortened housings are available for select ratios and offset output shaft.

AMETEK also offers a series of planetary gears with different ratios and stages. The planetary series are offered with plastic or metal gears, sleeve or ball bearing output, center output shaft for servo applications and also an option for power transmission applications.



# PITTMAN<sup>®</sup>



| Specification  | Units  | Reduction Ratio Designation |           |           |           |            |            |            |
|----------------|--------|-----------------------------|-----------|-----------|-----------|------------|------------|------------|
|                |        | G22A 4:1                    | G22A 16:1 | G22A 23:1 | G22A 64:1 | G22A 107:1 | G22A 256:1 | G22A 429:1 |
| Maximum Load   | oz-in  | 7                           | 14        | 14        | 28        | 28         | 42         | 42         |
|                | Nm     | 0.0494                      | 0.0988    | 0.0988    | 0.1977    | 0.1977     | 0.2965     | 0.2965     |
| Weight (Mass)  | oz     | 2.9                         | 3.1       | 3.1       | 3.4       | 3.4        | 3.7        | 3.7        |
|                | g      | 82.2                        | 87.9      | 87.9      | 96.4      | 96.4       | 104.9      | 104.9      |
| Length (L)     | Inches | 0.768                       | 0.965     | 0.985     | 1.161     | 1.161      | 1.358      | 1.358      |
|                | mm     | 19.5                        | 24.5      | 25        | 29.5      | 29.5       | 34.5       | 34.5       |
| Exact Ratio    | -      |                             |           |           |           |            |            |            |
| Efficiency     | -      | 0.80                        | 0.75      | 0.75      | 0.70      | 0.70       | 0.65       | 0.65       |
| Shaft Rotation | -      | CW                          | CW        | CW        | CW        | CW         | CW         | CW         |

- Standard Construction**
- Metal gearing for high torque capacity
  - Sintered metal output bearing

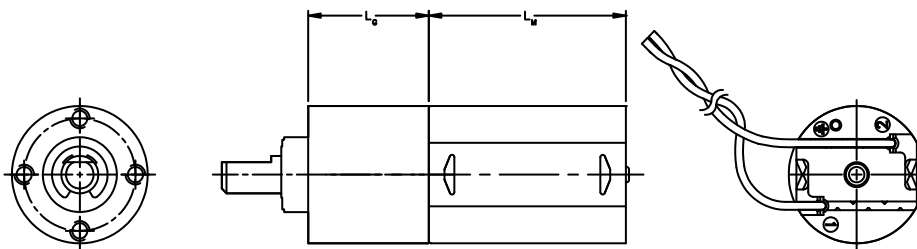
- Options**
- Alternate mounting and shaft configurations
  - Output ball bearing for high radial loads
  - Additional ratios available

Notes:

<sup>1</sup> Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection and operating conditions.

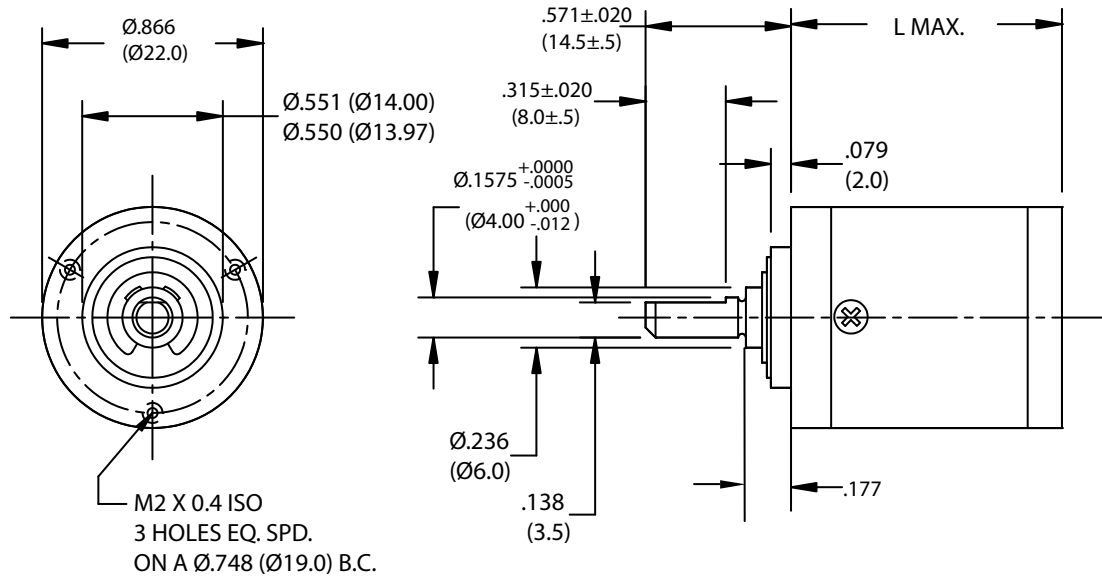
<sup>2</sup> Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

**6210 Series Motor with G22A (PG6600)**



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 6212  | 1.256 (31.90)                     |
| 6213  | 1.556 (39.52)                     |
| 6214  | 1.901 (48.29)                     |

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| Specification  | Units  | Reduction Ratio Designation |           |           |           |             |           |             |            |            |            |            |
|----------------|--------|-----------------------------|-----------|-----------|-----------|-------------|-----------|-------------|------------|------------|------------|------------|
|                |        | G22B 3.7:1                  | G22B 14:1 | G22B 19:1 | G22B 25:1 | G22B 51:1   | G22B 68:1 | G22B 100:1  | G22B 130:1 | G22B 169:1 | G22B 236:1 | G22B 308:1 |
| Maximum Load   | oz-in  | 28                          | 57        | 57        | 57        | 85          | 85        | 85          | 85         | 85         | 99         | 99         |
|                | Nm     | 0.1977                      | 0.4024    | 0.4024    | 0.4024    | 0.6001      | 0.6001    | 0.6001      | 0.6001     | 0.6001     | 0.6989     | 0.6989     |
| Weight (Mass)  | oz     | 1.4                         | 1.8       | 1.8       | 1.8       | 2.2         | 2.2       | 2.2         | 2.2        | 2.2        | 2.6        | 2.6        |
|                | g      | 39.7                        | 51        | 51        | 51        | 62.4        | 62.4      | 62.4        | 62.4       | 62.4       | 73.7       | 73.7       |
| Length (L)     | Inches | 1.063                       | 1.378     | 1.378     | 1.378     | 1.693       | 1.693     | 1.693       | 1.693      | 1.693      | 2.020      | 2.02       |
|                | mm     | 27                          | 35        | 35        | 35        | 43          | 43        | 43          | 43         | 43         | 51.3       | 51.3       |
| Exact Ratio    | -      | 63/17                       | 3969/289  | 3591/187  | 1701/68   | 250047/2913 |           | 204687/2057 | 96957/748  | 45927/272  |            |            |
| Efficiency     | -      | 0.80                        | 0.75      | 0.75      | 0.75      | 0.70        | 0.70      | 0.70        | 0.70       | 0.70       | 0.65       | 0.65       |
| Shaft Rotation | -      | CW                          | CW        | CW        | CW        | CW          | CW        | CW          | CW         | CW         | CW         | CW         |

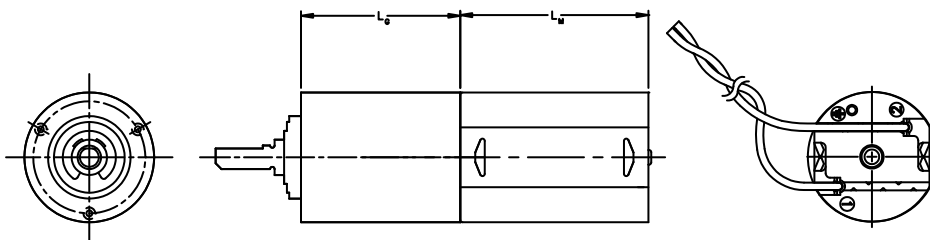
- Standard Construction**
- Economical plastic gearing for reduced audible noise
  - Sintered metal output bearing

- Options**
- Alternate mounting and shaft configurations
  - Output ball bearing for high radial loads
  - Additional ratios available

Notes:

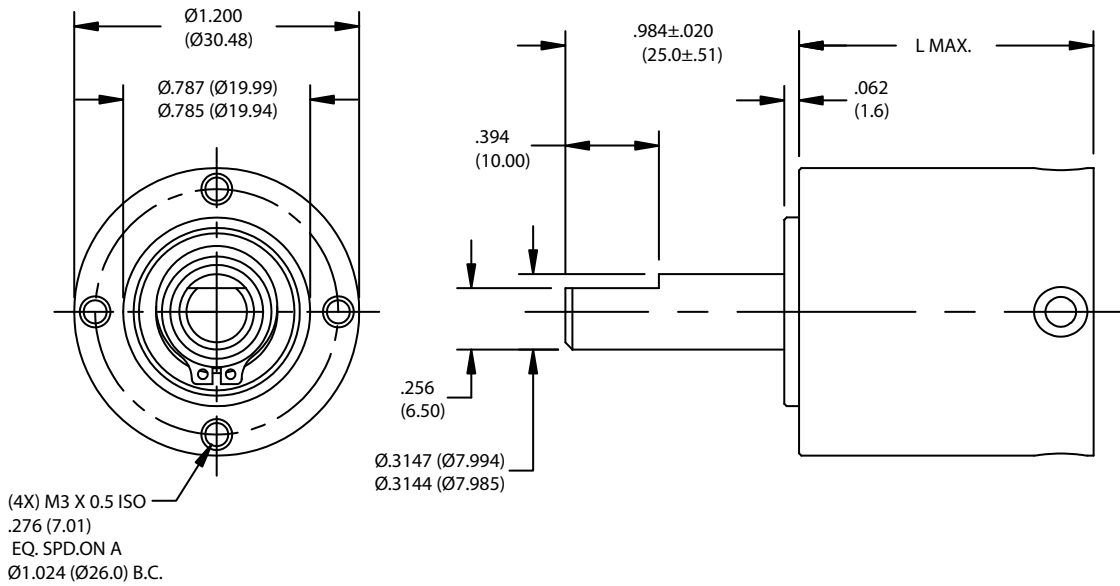
- Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selectio, and operating conditions.
- Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

**6210 Series Motor with G22B (PG6400)**



| Motor | Length L <sub>m</sub> max in (mm) |
|-------|-----------------------------------|
| 6212  | 1.256 (31.90)                     |
| 6213  | 1.556 (39.52)                     |
| 6214  | 1.901 (48.29)                     |

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Reduction Ratio Designation

| Specification  | Units  | G30A 4:1 | G30A 5:1 | G30A 6:1 | G30A 16:1 | G30A 24:1 | G30A 36:1 | G30A 64:1 | G30A 96:1 | G30A 144:1 | G30A 216:1 | G30A 256:1 | G30A 384:1 | G30A 576:1 | G30A 1296:1 |
|----------------|--------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|-------------|
| Maximum Load   | oz-in  | 350      | 350      | 350      | 500       | 500       | 500       | 920       | 920       | 920        | 920        | 1250       | 1250       | 1250       | 1250        |
|                | Nm     | 2.47     | 2.47     | 2.47     | 3.53      | 3.53      | 3.53      | 6.5       | 6.5       | 6.5        | 6.5        | 8.83       | 8.83       | 8.83       | 8.83        |
| Weight (Mass)  | oz     | 3.9      | 3.9      | 3.9      | 4.5       | 4.4       | 4.4       | 4.9       | 4.9       | 4.9        | 4.9        | 5.5        | 5.5        | 5.5        | 5.5         |
|                | g      | 110.6    | 110.6    | 110.6    | 127.6     | 124.7     | 124.7     | 138.9     | 138.9     | 138.9      | 138.9      | 155.9      | 155.9      | 155.9      | 155.9       |
| Length (L)     | Inches | 1.325    | 1.325    | 1.325    | 1.555     | 1.555     | 1.555     | 1.785     | 1.785     | 1.785      | 1.785      | 2.015      | 2.015      | 2.015      | 2.015       |
|                | mm     | 33.7     | 33.7     | 33.7     | 39.5      | 39.5      | 39.5      | 45.3      | 45.3      | 45.3       | 45.3       | 51.2       | 51.2       | 51.2       | 51.2        |
| Exact Ratio    | -      | 4/1      | 5/1      | 6/1      | 16/1      | 24/1      | 36/1      | 64/1      | 96/1      | 144/1      | 216/1      | 256/1      | 384/1      | 576/1      | 1296/1      |
| Efficiency     | -      | 0.90     | 0.90     | 0.90     | 0.81      | 0.81      | 0.81      | 0.73      | 0.73      | 0.73       | 0.73       | 0.66       | 0.66       | 0.66       | 66          |
| Shaft Rotation | -      | CW       | CW       | CW       | CW        | CW        | CW        | CW        | CW        | CW         | CW         | CW         | CW         | CW         | CW          |

Standard Construction

- Sintered steel gears for high torque capacity and low audible noise
- Sintered metal output bearing

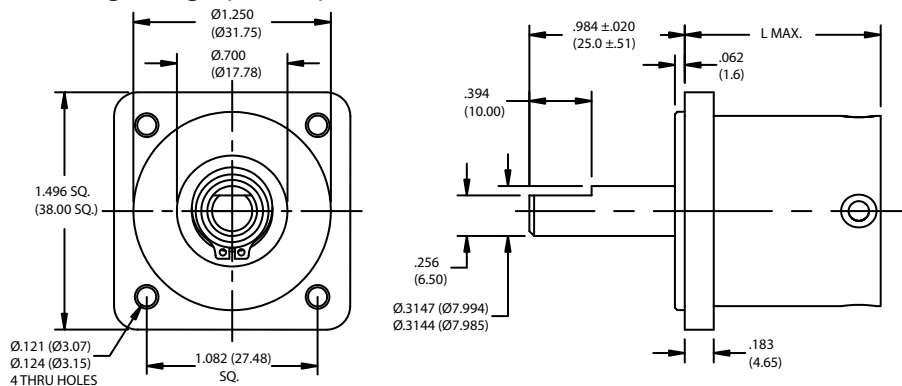
Options

- Alternate mounting and shaft configurations
- Additional ratios available
- Output ball bearings for high radial loads

Notes:

- <sup>1</sup> Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.
- <sup>2</sup> Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.
- <sup>3</sup> Flange option adds 31 grams to gearbox weight.

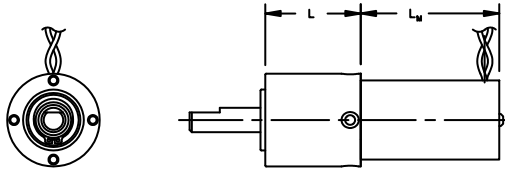
With Optional Square Mounting Flange (G30AF)



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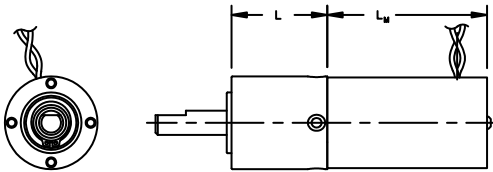
### For use with the following motor series:

#### 8690 Series Motor with G30A (GM8190)



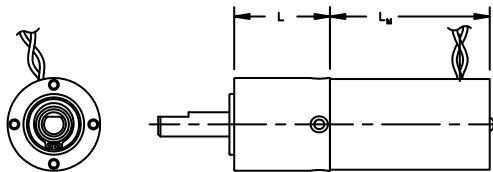
| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 8691  | 1.798 (45.67)                        |
| 8692  | 1.923 (48.84)                        |
| 8693  | 2.173 (55.19)                        |

#### 8220 Series Motor with G30A (GM8120)



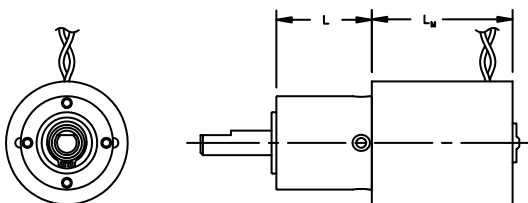
| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 8222  | 2.070 (52.58)                        |
| 8223  | 2.195 (55.75)                        |
| 8224  | 2.445 (62.10)                        |

#### 8540 Series Motor with G30A (GM8540)



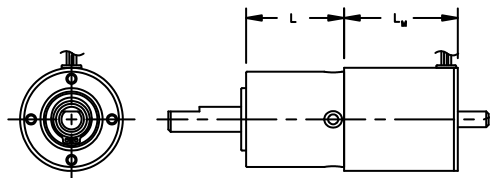
| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 8541  | 2.114 (53.69)                        |
| 8542  | 2.585 (65.66)                        |
| 8543  | 3.057 (77.65)                        |

#### 9230 Series Motor with G30A (GM9630)



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 9232  | 1.828 (46.43)                        |
| 9233  | 2.203 (55.96)                        |
| 9234  | 2.403 (61.04)                        |
| 9235  | 2.703 (68.66)                        |
| 9236  | 3.053 (77.55)                        |
| 9237  | 3.353 (85.17)                        |

#### 1300 Series Motor with G30A (GM1300)

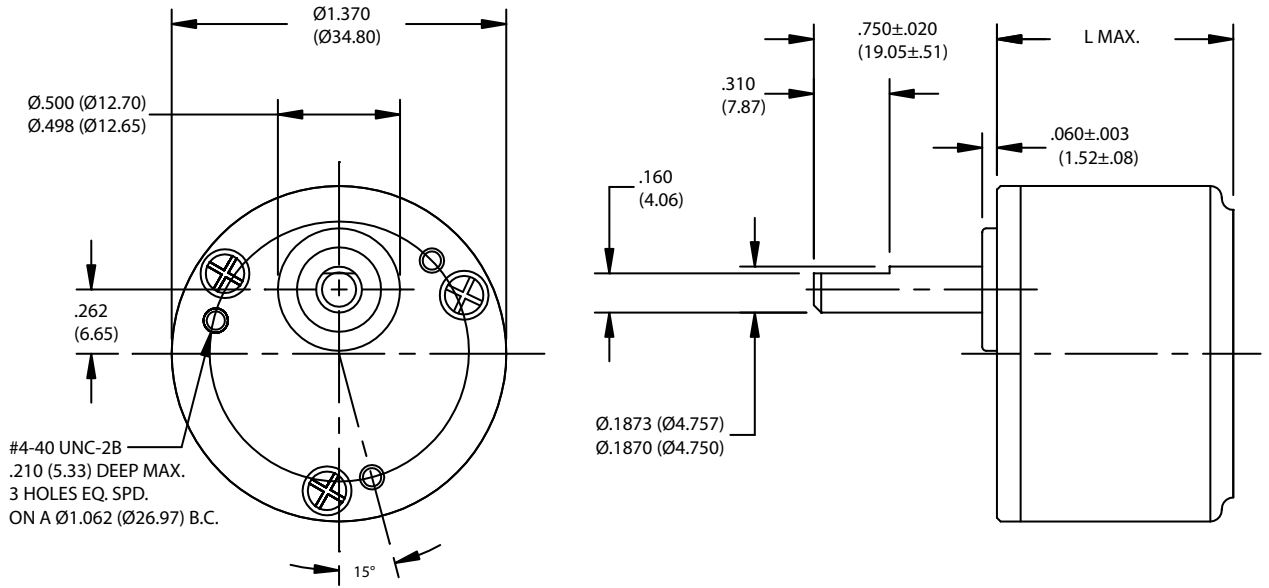


| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 1301  | 1.500 (38.10)                        |
| 1302  | 2.000 (50.80)                        |
| 1303  | 2.500 (63.50)                        |

Note: All combinations shown are valid for both the G30A and G30AF configurations. Overall length is the same for both the G30A and G30AF as measured from their respective output mounting surfaces.

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Standard Gears



#4-40 UNC-2B  
.210 (5.33) DEEP MAX.  
3 HOLES EQ. SPD.  
ON A Ø1.062 (Ø26.97) B.C.

Reduction Ratio Designation

| Specification  | Units        | G35A<br>6.3:1 | G35A<br>9.9:1  | G35A<br>19.5:1 | G35A<br>30.9:1   | G35A<br>60.5:1 | G35A<br>95.9:1      | G35A<br>187.7:1   | G35A<br>297.5:1       | G35A<br>581.8:1     | G35A<br>922.3:1        | G35A<br>1803.6:1       |
|----------------|--------------|---------------|----------------|----------------|------------------|----------------|---------------------|-------------------|-----------------------|---------------------|------------------------|------------------------|
| Maximum Load   | oz-in<br>Nm  | 100<br>0.706  | 100<br>0.706   | 100<br>0.706   | 100<br>0.706     | 100<br>0.706   | 100<br>0.706        | 100<br>0.706      | 100<br>0.706          | 100<br>0.706        | 100<br>0.706           | 100<br>0.706           |
| Weight (Mass)  | oz<br>g      | 2.35<br>66.6  | 2.49<br>70.6   | 2.49<br>70.6   | 2.62<br>74.3     | 2.62<br>74.3   | 2.76<br>78.2        | 2.76<br>78.2      | 3.11<br>88.2          | 3.11<br>88.2        | 3.25<br>92.1           | 3.25<br>92.1           |
| Length (L)     | Inches<br>mm | 0.968<br>24.6 | 0.968<br>24.6  | 0.968<br>24.6  | 0.968<br>24.6    | 0.968<br>24.6  | 0.968<br>24.6       | 0.968<br>24.6     | 1.164<br>29.6         | 1.164<br>29.6       | 1.164<br>29.6          | 1.164<br>29.6          |
| Exact Ratio    | -            | 63/<br>10     | 17577/<br>1760 | 1953/<br>100   | 544887/<br>17600 | 60543/<br>1000 | 16891497/<br>176000 | 1876833/<br>10000 | 523636407/<br>1760000 | 58181823/<br>100000 | 1475702602/<br>1600000 | 1803636513/<br>1000000 |
| Efficiency     | -            | 0.81          | 0.73           | 0.73           | 0.66             | 0.66           | 0.57                | 0.59              | 0.53                  | 0.53                | 0.48                   | 0.48                   |
| Shaft Rotation | -            | CW            | CCW            | CCW            | CW               | CW             | CCW                 | CCW               | CW                    | CW                  | CCW                    | CCW                    |

Standard Construction

- Standard gearboxes feature sintered steel spur gears
- Sintered bronze output bearing

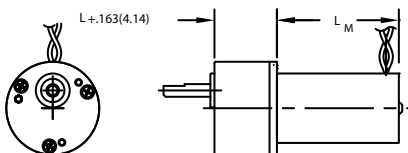
Options

- Alternate mounting and shaft configurations
- Output ball bearing for high radial loads
- Special greases for extreme operating temperatures
- Delrin gear clusters for reduced noise (select ratios)
- Shortened overall lengths (select ratios)

Notes:

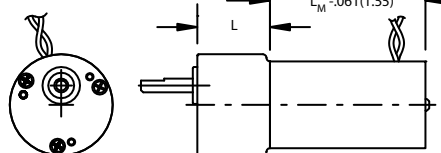
- Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.
- Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

For use with the following motor series:  
8690 Series Motor with G35A (GM8290)



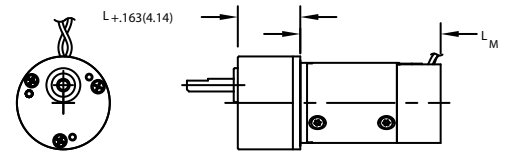
| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 8691  | 1.798 (45.67)                     |
| 8692  | 1.923 (48.84)                     |
| 8693  | 2.173 (55.19)                     |

8220 Series Motor with G35A (GM8220)



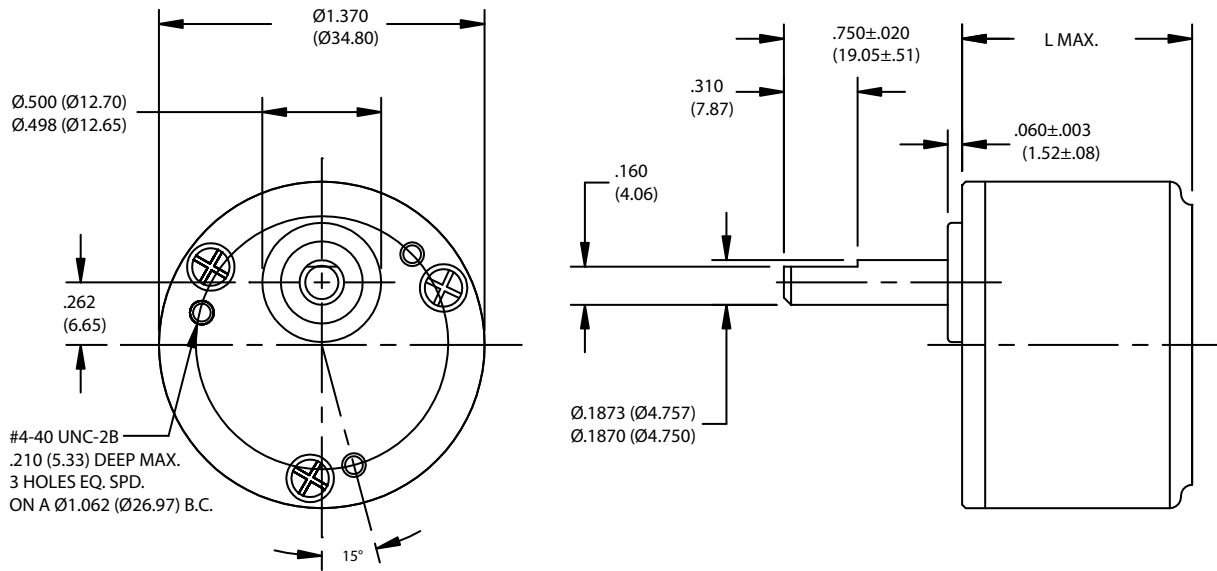
| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 8222  | 2.070 (52.58)                     |
| 8223  | 2.195 (55.75)                     |
| 8224  | 2.445 (62.10)                     |

8540 Series Motor with G35A (GM8840)



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 8541  | 2.114 (53.69)                     |
| 8542  | 2.585 (65.66)                     |
| 8543  | 3.057 (77.650)                    |

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| Specification  | Units  | Reduction Ratio Designation |                   |                   |                   |                     |                    |                       |                    |                        |                        |
|----------------|--------|-----------------------------|-------------------|-------------------|-------------------|---------------------|--------------------|-----------------------|--------------------|------------------------|------------------------|
|                |        | G35A-HT<br>9.9:1            | G35A-HT<br>19.5:1 | G35A-HT<br>30.9:1 | G35A-HT<br>60.5:1 | G35A-HT<br>95.9:1   | G35A-HT<br>187.7:1 | G35A-HT<br>297.5:1    | G35A-HT<br>581.8:1 | G35A-HT<br>922.3:1     | G35A-HT<br>1803.6:1    |
| Maximum Load   | oz-in  | 160                         | 160               | 160               | 160               | 160                 | 160                | 160                   | 160                | 160                    | 160                    |
|                | Nm     | 1.1296                      | 1.1296            | 1.1296            | 1.1296            | 1.1296              | 1.1296             | 1.1296                | 1.1296             | 1.1296                 | 1.1296                 |
| Weight (Mass)  | oz     | 2.49                        | 2.49              | 2.62              | 2.62              | 2.76                | 2.76               | 3.11                  | 3.11               | 3.25                   | 3.25                   |
|                | g      | 70.6                        | 70.6              | 74.3              | 74.3              | 78.2                | 78.2               | 88.2                  | 88.2               | 92.1                   | 92.1                   |
| Length (L)     | Inches | 0.968                       | 0.968             | 0.968             | 0.968             | 0.968               | 0.968              | 1.164                 | 1.164              | 1.164                  | 1.164                  |
|                | mm     | 24.6                        | 24.6              | 24.6              | 24.6              | 24.6                | 24.6               | 29.6                  | 29.6               | 29.6                   | 29.6                   |
| Exact Ratio    | -      | 17577/<br>1760              | 1953/<br>100      | 544887/<br>17600  | 60543/<br>1000    | 16891497/<br>176000 | 1876833/<br>10000  | 523636407/<br>1760000 | 581818/<br>100000  | 1475702602/<br>1600000 | 1803636513/<br>1000000 |
| Efficiency     | -      | 0.73                        | 0.73              | 0.66              | 0.66              | 0.59                | 0.59               | 0.53                  | 0.53               | 0.48                   | 0.48                   |
| Shaft Rotation | -      | CCW                         | CCW               | CW                | CW                | CCW                 | CCW                | CW                    | CW                 | CCW                    | CCW                    |

- Standard Construction**
- Sintered bronze output bearing
  - High torque gearboxes feature cut steel spur gears

- Option**
- Alternate mounting and shaft configuration
  - Output ball bearing for high radial loads
  - Special greases for extreme operating temperatures
  - Delrin gear clusters for reduced noise (select ratios)
  - Shortened overall length (select ratios)

Notes:

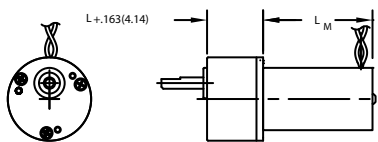
<sup>1</sup> Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.  
<sup>2</sup> Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

For use with the following motor series:

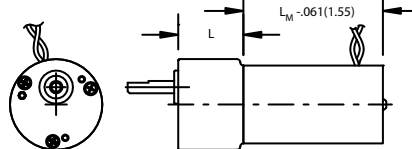
**8690 Series Motor with G35A (GM8290)**

**8220 Series Motor with G35A (GM8220)**

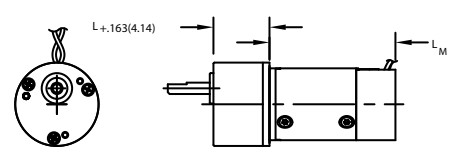
**8540 Series Motor with G35A (GM8840)**



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 8691  | 1.798 (45.67)                     |
| 8692  | 1.923 (48.84)                     |
| 8693  | 2.173 (55.19)                     |



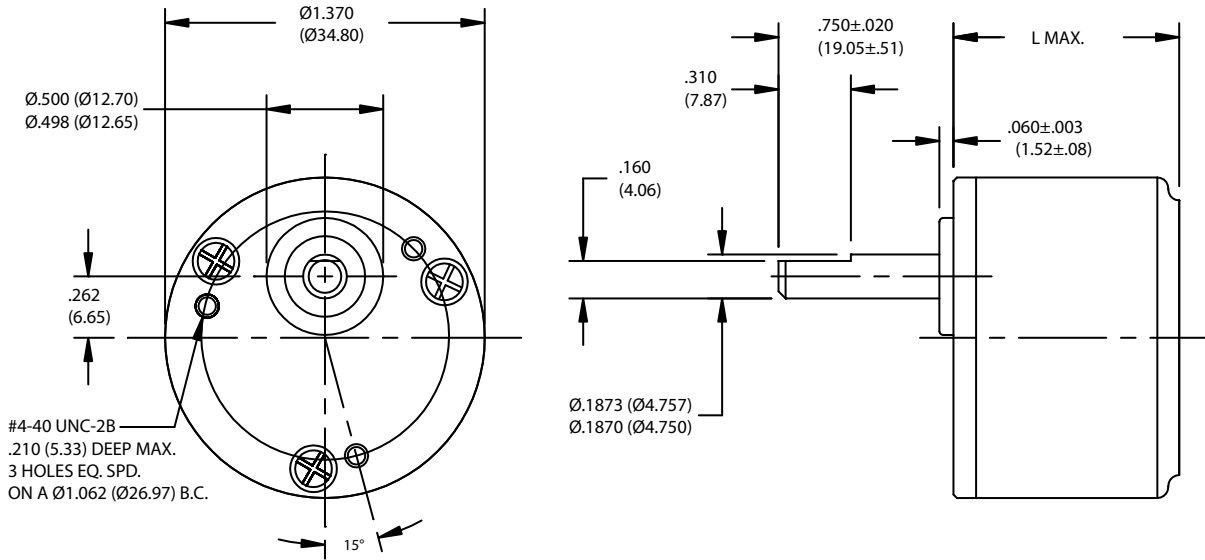
| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 8222  | 2.070 (52.58)                     |
| 8223  | 2.195 (55.75)                     |
| 8224  | 2.445 (62.10)                     |



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 8541  | 2.114 (53.69)                     |
| 8542  | 2.585 (65.66)                     |
| 8543  | 3.057 (77.65)                     |

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Wide Face Gears



| Specification  | Units  | Reduction Ratio Designation |                |                |                |                 |                 |                   |                 |                    |                    |
|----------------|--------|-----------------------------|----------------|----------------|----------------|-----------------|-----------------|-------------------|-----------------|--------------------|--------------------|
|                |        | G35A-WF 9.9:1               | G35A-WF 19.5:1 | G35A-WF 30.9:1 | G35A-WF 60.5:1 | G35A-WF 95.9:1  | G35A-WF 187.7:1 | G35A-WF 297.5:1   | G35A-WF 581.8:1 | G35A-WF 922.3:1    | G35A-WF 1803.6:1   |
| Maximum Load   | oz-in  | 175                         | 175            | 175            | 175            | 175             | 175             | 175               | 175             | 175                | 175                |
|                | Nm     | 1.2355                      | 1.2355         | 1.2355         | 1.2355         | 1.2355          | 1.2355          | 1.2355            | 1.2355          | 1.2355             | 1.2355             |
| Weight (Mass)  | oz     | 2.49                        | 2.49           | 2.62           | 2.62           | 2.76            | 2.76            | 3.11              | 3.11            | 3.25               | 3.25               |
|                | g      | 70.6                        | 70.6           | 74.3           | 74.3           | 78.2            | 78.2            | 88.2              | 88.2            | 92.1               | 92.1               |
| Length (L)     | Inches | 0.968                       | 0.968          | 0.968          | 0.968          | 0.968           | 0.968           | 1.164             | 1.164           | 1.164              | 1.164              |
|                | mm     | 24.6                        | 24.6           | 24.6           | 24.6           | 24.6            | 24.6            | 29.6              | 29.6            | 29.6               | 29.6               |
| Exact Ratio    | -      | 17577/1760                  | 1953/100       | 544887/17600   | 60543/1000     | 16891497/176000 | 1876833/10000   | 523636407/1760000 | 58181823/100000 | 1475702602/1600000 | 1803636513/1000000 |
| Efficiency     | -      | 0.73                        | 0.73           |                | 0.66           | 0.59            | 0.59            | 0.53              | 0.53            | 0.48               | 0.48               |
| Shaft Rotation | -      | CCW                         | CCW            | CW             | CW             | CCW             | CCW             | CW                | CW              | CCW                | CCW                |

- Standard Construction**
- Sintered bronze output bearing
  - Wide face gearboxes feature cut steel spur gears

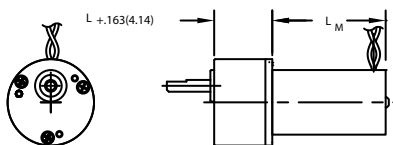
- Options**
- Alternate mounting and shaft configurations
  - Output ball bearing for high radial loads
  - Special greases for extreme operating temperatures
  - Delrin gear clusters for reduced noise (select ratios)
  - Shortened overall lengths (select ratios)

Notes:

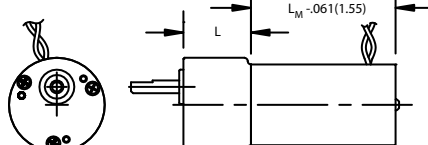
- Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.
- Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

For use with the following motor series:

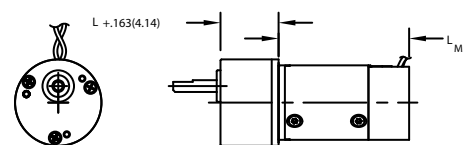
**8690 Series Motor with G35A (GM8290) 8220 Series Motor with G35A (GM8220) 8540 Series Motor with G35A (GM8840)**



| Motor | Length $L_M$ max in (mm) |
|-------|--------------------------|
| 8691  | 1.798 (45.67)            |
| 8692  | 1.923 (48.84)            |
| 8693  | 2.173 (55.19)            |



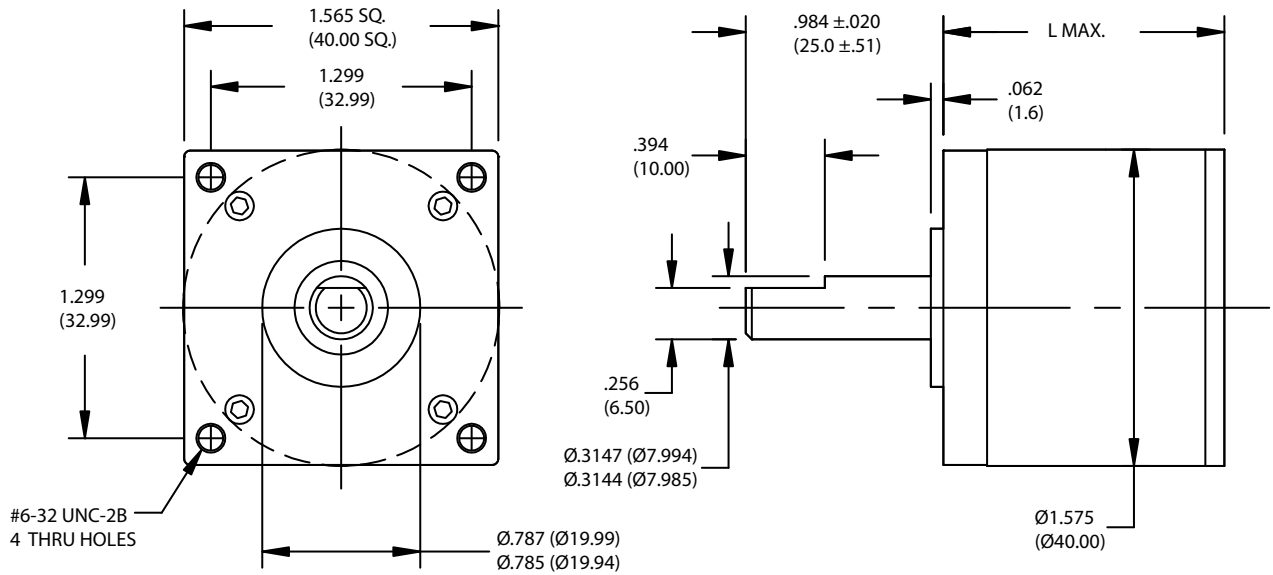
| Motor | Length $L_M$ max in (mm) |
|-------|--------------------------|
| 8222  | 2.070 (52.58)            |
| 8223  | 2.195 (55.75)            |
| 8224  | 2.445 (62.10)            |



| Motor | Length $L_M$ max in (mm) |
|-------|--------------------------|
| 8541  | 2.114 (53.69)            |
| 8542  | 2.585 (65.66)            |
| 8543  | 3.057 (77.65)            |

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Reduction Ratio Designation

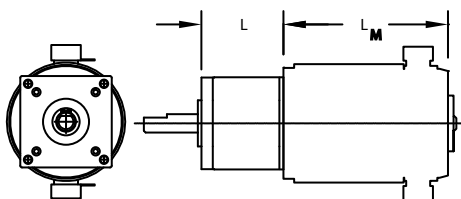
| Specification  | Units  | G40A 4:1 | G40A 17.3:1 | G40A 24:1 | G40A 75.1:1 | G40A 144:1 | G40A 325.5:1 | G40A 864:1 |
|----------------|--------|----------|-------------|-----------|-------------|------------|--------------|------------|
| Maximum Load   | oz-in  | 2000     | 2000        | 2000      | 2000        | 2000       | 2000         | 2000       |
|                | Nm     | 14.12    | 14.12       | 14.12     | 14.12       | 14.12      | 14.12        | 14.12      |
| Weight (Mass)  | oz     | 9        | 11          | 11        | 13          | 13         | 15           | 15         |
|                | g      | 255.1    | 311.8       | 311.8     | 368.5       | 368.5      | 425.2        | 425.2      |
| Length (L)     | Inches | 1.400    | 1.700       | 1.700     | 2.000       | 2.000      | 2.300        | 2.300      |
|                | mm     | 35.6     | 43.2        | 43.2      | 50.8        | 50.8       | 58.4         | 58.4       |
| Exact Ratio    | -      | 4/1      | 52/3        | 24/1      | 676/9       | 144/1      | 8788/27      | 864/1      |
| Efficiency     | -      | 0.90     | 0.81        | 0.81      | 0.73        | 0.73       | 0.65         | 0.65       |
| Shaft Rotation | -      | CW       | CW          | CW        | CW          | CW         | CW           | CW         |

- Standard Construction**
- Precision-hobbed steel gears for high torque capacity
  - Sintered bronze output bearing

- Options**
- Alternate mounting and shaft configurations
  - Output ball bearing for high radial loads
  - Additional ratios available

Notes:  
<sup>1</sup> Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.  
<sup>2</sup> Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

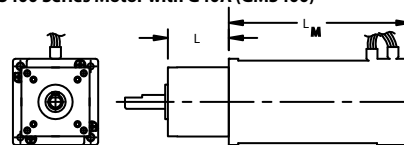
14200 Series Motor with G40A (GM14600)



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 14201 | 2.953 (75.01)                     |
| 14202 | 3.203 (81.36)                     |
| 14203 | 3.703 (94.06)                     |
| 14204 | 4.078 (103.6)                     |
| 14205 | 4.453 (113.1)                     |
| 14206 | 4.953 (125.8)                     |
| 14207 | 5.703 (144.9)                     |

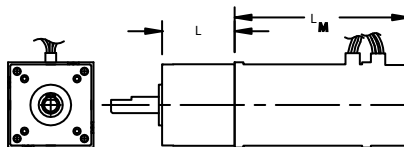
For use with the following motor series:

3400 Series Motor with G40A (GM3400)



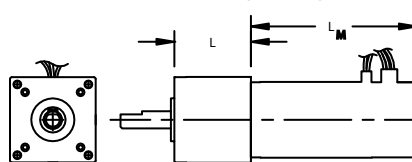
| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 3411  | 2.322 (58.98)                     |
| 3412  | 2.722 (69.14)                     |

4400 Series Motor with G40A (GM4400)



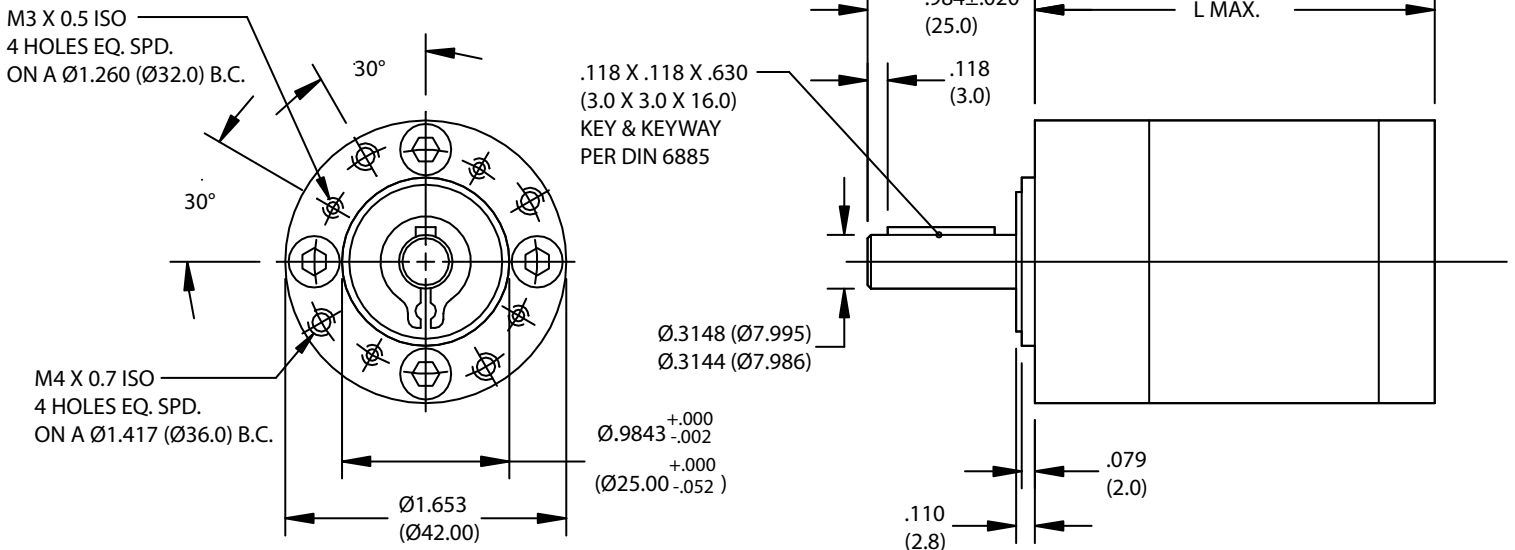
| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 4411  | 2.655 (67.44)                     |
| 4412  | 2.955 (75.06)                     |
| 4413  | 3.255 (82.68)                     |

5400 Series Motor with G40A (GM5400)



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 5411  | 3.165 (80.39)                     |
| 5412  | 3.665 (93.09)                     |
| 5413  | 4.165 (105.79)                    |

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Reduction Ratio Designation

| Specification  | Units  | G42A 3.7:1 | G42A 5:1 | G42A 7:1 | G42A 14:1 | G42A 19:1 | G42A 25:1 | G42A 35:1 | G42A 51:1   | G42A 71:1   | G42A 100:1  | G42A 130:1 | G42A 169:1 | G42A 236:1 | G42A 308:1 |
|----------------|--------|------------|----------|----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|------------|------------|------------|------------|
| Maximum Load   | oz-in  | 425        | 425      | 425      | 1062      | 1062      | 1062      | 1062      | 2124        | 2124        | 2124        | 2124       | 2124       | 2124       | 2124       |
|                | Nm     | 3.0005     | 3.0005   | 3.0005   | 7.4977    | 7.4977    | 7.4977    | 7.4977    | 14.9954     | 14.9954     | 14.9954     | 14.9954    | 14.9954    | 14.9954    | 14.9954    |
| Weight (Mass)  | oz     | 14         | 14       | 14       | 18        | 18        | 18        | 18        | 21          | 21          | 21          | 21         | 21         | 21         | 21         |
|                | g      | 396.9      | 396.9    | 396.9    | 510.3     | 510.3     | 510.3     | 510.3     | 595.3       | 595.3       | 595.3       | 595.3      | 595.3      | 595.3      | 595.3      |
| Length (L)     | Inches | 1.929      | 1.929    | 1.929    | 2.441     | 2.441     | 2.441     | 2.441     | 2.953       | 2.953       | 2.953       | 2.953      | 2.953      | 2.953      | 2.953      |
|                | mm     | 49         | 49       | 49       | 62        | 62        | 62        | 62        | 75          | 75          | 75          | 75         | 75         | 75         | 75         |
| Exact Ratio    | -      | 63/17      | 57/11    | 27/4     | 3969/289  | 3591/187  | 1701/68   | 1539/44   | 250047/4913 | 226233/3179 | 204687/2057 | 96957/748  | 45927/272  | 41553/176  | 19683/64   |
| Efficiency     | -      | 0.80       | 0.80     | 0.80     | 0.75      | 0.75      | 0.75      | 0.75      | 0.70        | 0.70        | 0.70        | 0.70       | 0.70       | 0.70       | 0.70       |
| Shaft Rotation | -      | CW         | CW       | CW       | CW        | CW        | CW        | CW        | CW          | CW          | CW          | CW         | CW         | CW         | CW         |

**Standard Construction**

- Metal gearing for high torque capacity
- Output ball bearing for high radial loads

**Options**

- Alternate mounting and shaft configurations
- Additional ratios available

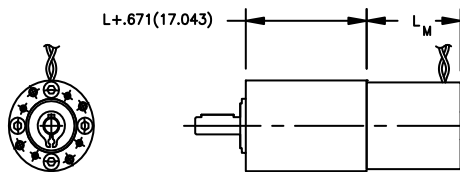
Notes:

<sup>1</sup> Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.

<sup>2</sup> Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

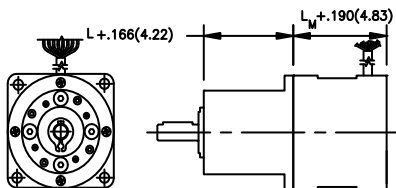
**For use with the following motor series:**

**9230 Series Motor with G42A (PG9630)**



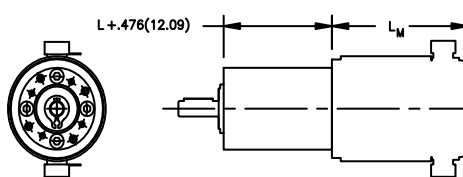
| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 9232  | 1.828 (46.43)                     |
| 9233  | 2.203 (55.96)                     |
| 9234  | 2.403 (61.04)                     |
| 9235  | 2.703 (68.66)                     |
| 9236  | 3.053 (77.55)                     |
| 9237  | 3.353 (85.17)                     |

**N2300 Series Motor with G42A (PG2310)**



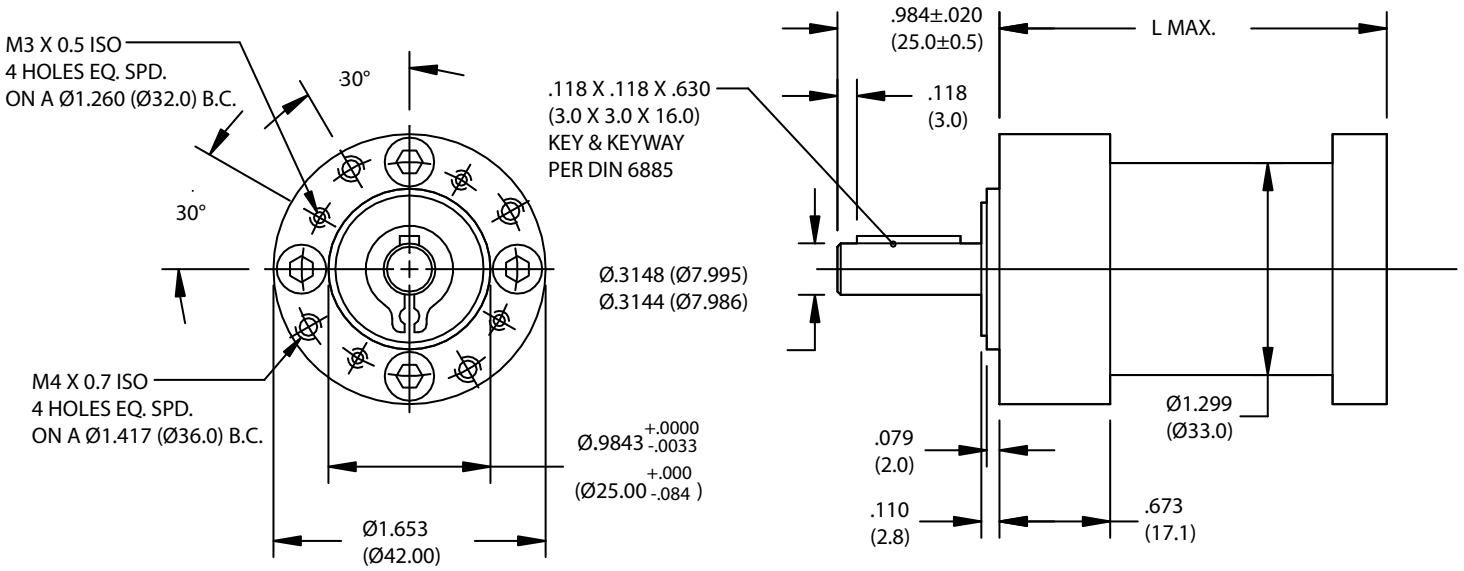
| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| N2311 | 1.532 (38.91)                     |
| N2312 | 1.982 (50.34)                     |
| N2313 | 2.482 (63.04)                     |
| N2314 | 2.982 (75.74)                     |

**14200 Series Motor with G42A (PG14700)**



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 14201 | 2.953 (75.01)                     |
| 14202 | 3.203 (81.36)                     |
| 14203 | 3.703 (94.06)                     |
| 14204 | 4.078 (103.6)                     |
| 14705 | 4.453 (113.1)                     |
| 14706 | 4.953 (125.8)                     |
| 14707 | 5.703 (144.9)                     |

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Reduction Ratio Designation

| Specification  | Units  | G42B<br>3.7:1 | G42B<br>5:1 | G42B<br>7:1 | G42B<br>14:1 | G42B<br>19:1 | G42B<br>25:1 | G42B<br>35:1 | G42B<br>51:1    | G42B<br>71:1    | G42B<br>100:1   | G42B<br>130:1 | G42B<br>169:1 | G42B<br>236:1 | G42B<br>308:1 |
|----------------|--------|---------------|-------------|-------------|--------------|--------------|--------------|--------------|-----------------|-----------------|-----------------|---------------|---------------|---------------|---------------|
| Maximum Load   | oz-in  | 113           | 113         | 113         | 283          | 283          | 283          | 283          | 566             | 566             | 566             | 566           | 566           | 566           | 566           |
|                | Nm     | 0.7978        | 0.7978      | 0.7978      | 1.998        | 1.998        | 1.998        | 1.998        | 3.996           | 3.996           | 3.996           | 3.996         | 3.996         | 3.996         | 3.996         |
| Weight (Mass)  | oz     | 14            | 14          | 14          | 18           | 18           | 18           | 18           | 21              | 21              | 21              | 21            | 21            | 21            | 21            |
|                | g      | 396.9         | 396.9       | 396.9       | 510.3        | 510.3        | 510.3        | 510.3        | 595.3           | 595.3           | 595.3           | 595.3         | 595.3         | 595.3         | 595.3         |
| Length (L)     | Inches | 1.929         | 1.929       | 1.929       | 2.441        | 2.441        | 2.441        | 2.441        | 2.953           | 2.953           | 2.953           | 2.953         | 2.953         | 2.953         | 2.953         |
|                | mm     | 49            | 49          | 49          | 62           | 62           | 62           | 62           | 75              | 75              | 75              | 75            | 75            | 75            | 75            |
| Exact Ratio    | -      | 63/<br>17     | 57/<br>11   | 27/<br>4    | 3969/<br>289 | 3591/<br>187 | 1701/<br>68  | 1539/<br>44  | 250047/<br>4913 | 226233/<br>3179 | 204687/<br>2057 | 96957/<br>748 | 45927/<br>272 | 41553/<br>176 | 19683/<br>64  |
| Efficiency     | -      | 0.80          | 0.80        | 0.80        | 0.75         | 0.75         | 0.75         | 0.75         | 0.70            | 0.70            | 0.70            | 0.70          | 0.70          | 0.70          | 0.70          |
| Shaft Rotation | -      | CW            | CW          | CW          | CW           | CW           | CW           | CW           | CW              | CW              | CW              | CW            | CW            | CW            | CW            |

Standard Construction

- Economical plastic gearing
- Sintered metal output bearing for reduced audible noise

Options

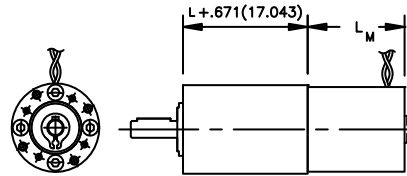
- Alternate mounting and shaft configurations
- Output ball bearing for high radial loads
- Additional ratios available

Notes:

- Maximum load represents gearbox capability only. Continuous torque capability will vary with gear ratio, motor selection, and operating conditions.
- Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

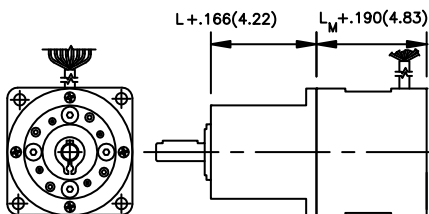
For use with the following motor series:

9230 Series Motor with G42B (PG9630)



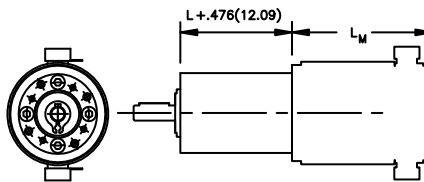
| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 9232  | 1.828 (46.43)                        |
| 9233  | 2.203 (55.96)                        |
| 9234  | 2.403 (61.04)                        |
| 9235  | 2.703 (68.66)                        |
| 9236  | 3.053 (77.55)                        |
| 9237  | 3.353 (85.17)                        |

N2300 Series Motor with G42B (PG2310)



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| N2311 | 1.532 (38.91)                        |
| N2312 | 1.982 (50.34)                        |
| N2313 | 2.482 (63.04)                        |
| N2314 | 2.982 (75.74)                        |

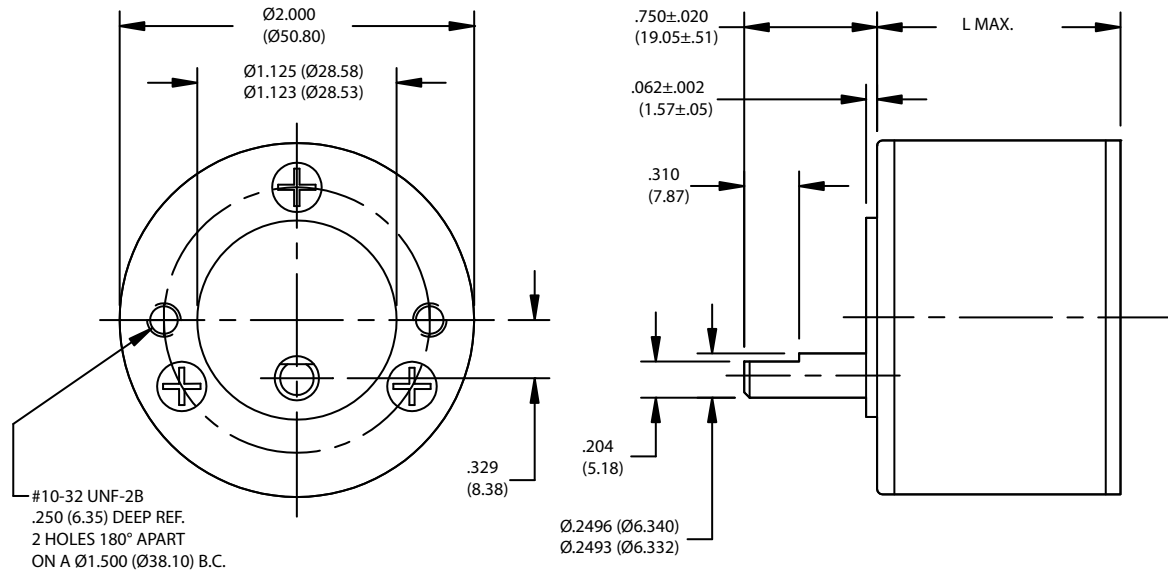
14200 Series Motor with G42B (PG14700)



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 14201 | 2.953 (75.01)                        |
| 14202 | 3.203 (81.36)                        |
| 14203 | 3.703 (94.06)                        |
| 14204 | 4.078 (103.6)                        |
| 14205 | 4.453 (113.1)                        |
| 14706 | 4.953 (125.8)                        |
| 14707 | 5.703 (144.9)                        |

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Standard Gears



#10-32 UNF-2B  
 .250 (6.35) DEEP REF.  
 2 HOLES 180° APART  
 ON A Ø1.500 (Ø38.10) B.C.

Reduction Ratio Designation

| Specification  | Units  | G51A<br>5.9:1 | G51A<br>11.5:1 | G51A<br>19.7:1 | G51A<br>38.3:1 | G51A<br>65.5:1 | G51A<br>127.8:1 | G51A<br>218.4:1 | G51A<br>425.9:1 | G51A<br>728.1:1  | G51A<br>1419.8:1 | G51A<br>2426.9:1  | G51A<br>4732.5:1 |
|----------------|--------|---------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|------------------|------------------|-------------------|------------------|
| Maximum Load   | oz-in  | 175           | 175            | 175            | 175            | 175            | 175             | 175             | 175             | 175              | 175              | 175               | 175              |
|                | Nm     | 1.2355        | 1.2355         | 1.2355         | 1.2355         | 1.2355         | 1.2355          | 1.2355          | 1.2355          | 1.2355           | 1.2355           | 1.2355            | 1.2355           |
| Weight (Mass)  | oz     | 5.9           | 5.90           | 6.26           | 6.26           | 6.62           | 6.62            | 6.98            | 6.98            | 7.34             | 7.34             | 8.18              | 8.18             |
|                | g      | 167.3         | 167.3          | 177.5          | 177.5          | 187.7          | 187.7           | 197.9           | 197.9           | 208.1            | 208.1            | 231.9             | 231.9            |
| Length (L)     | Inches | 1.373         | 1.373          | 1.373          | 1.373          | 1.373          | 1.373           | 1.373           | 1.373           | 1.373            | 1.373            | 1.528             | 1.528            |
|                | mm     | 34.9          | 34.9           | 34.9           | 34.9           | 34.9           | 34.9            | 34.9            | 34.9            | 34.9             | 34.9             | 38.8              | 38.8             |
| Exact Ratio    | -      | 230/<br>39    | 23/<br>2       | 2300/<br>117   | 115/<br>3      | 23000/<br>351  | 1150/<br>9      | 230000/<br>1053 | 11500/<br>27    | 2300000/<br>3159 | 115000/<br>81    | 23000000/<br>9477 | 1150000/<br>243  |
| Efficiency     | -      | 81            | 81             | 73             | 73             | 66             | 66              | 59              | 59              | 53               | 53               | 48                | 48               |
| Shaft Rotation | -      | CW            | CW             | CCW            | CCW            | CW             | CW              | CCW             | CCW             | CW               | CW               | CCW               | CCW              |

Standard Construction

- Standard gearboxes feature sintered steel spur gears
- Sintered bronze output bearing

Options

- Alternate mounting and shaft configurations
- Delrin or helical gear clusters for reduced noise (select ratios)
- Output ball bearing for high radial loads
- Shortened overall lengths (select ratios)
- Special greases for extreme operating temperatures

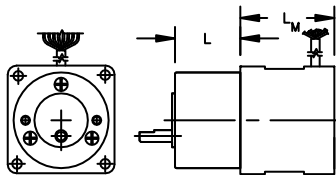
Notes:

<sup>1</sup> Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.

<sup>2</sup> Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

N2300 Series Motor with G51A (GN2310)

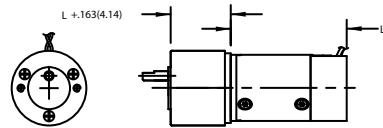
(Available with ratios: 5.9, 19.7, 65.5, 218.4)



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| N2311 | 1.532 (38.91)                        |
| N2312 | 1.982 (50.34)                        |
| N2313 | 2.482 (63.04)                        |
| N2314 | 2.982 (75.74)                        |

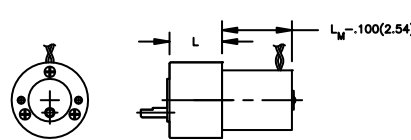
For use with the following motor series:

8540 Series Motor with G51A (GM8840)



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 8541  | 2.114 (53.69)                        |
| 8542  | 2.585 (65.66)                        |
| 8543  | 3.057 (77.65)                        |

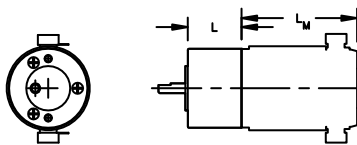
9230 Series Motor with G51A (GM9230)



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 9232  | 1.828 (46.43)                        |
| 9233  | 2.203 (55.96)                        |
| 9234  | 2.403 (61.04)                        |
| 9235  | 2.703 (68.66)                        |
| 9236  | 3.053 (77.55)                        |
| 9237  | 3.353 (85.17)                        |

14200 Series Motor with G51A (GM14900)

(Available with ratios: 5.9, 19.7, 65.5, 218.4)



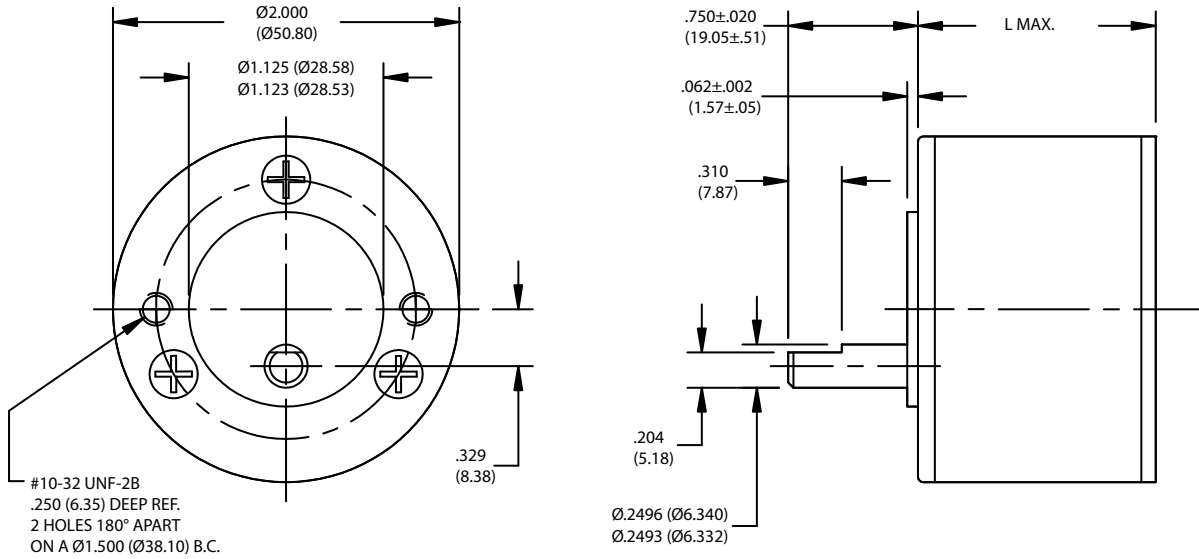
| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 14201 | 2.953 (75.01)                        |
| 14202 | 3.203 (81.36)                        |
| 14203 | 3.703 (94.06)                        |
| 14204 | 4.078 (103.6)                        |
| 14205 | 4.453 (113.1)                        |
| 14206 | 4.953 (125.8)                        |
| 14207 | 5.703 (144.9)                        |

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PITTMAN PRODUCTS

343 Godshall Drive, Harleysville, PA 19438  
 USA: +1 267 933 2105 - Europe: +33 240928751 - Asia: +86 21 5763 1258  
[www.pittman-motors.com](http://www.pittman-motors.com)

High Torque Gears



| Specification  | Units  | Reduction Ratio Designation |                   |                   |                   |                   |                    |                    |                    |                    |                     |                     |                     |
|----------------|--------|-----------------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
|                |        | G51A-HT<br>5.9:1            | G51A-HT<br>11.5:1 | G51A-HT<br>19.7:1 | G51A-HT<br>38.3:1 | G51A-HT<br>65.5:1 | G51A-HT<br>127.8:1 | G51A-HT<br>218.4:1 | G51A-HT<br>425.9:1 | G51A-HT<br>728.1:1 | G51A-HT<br>1419.8:1 | G51A-HT<br>2426.9:1 | G51A-HT<br>4732.5:1 |
| Maximum Load   | oz-in  | 300                         | 300               | 300               | 300               | 300               | 300                | 300                | 300                | 300                | 300                 | 300                 | 300                 |
|                | Nm     | 2.118                       | 2.118             | 2.118             | 2.118             | 2.118             | 2.118              | 2.118              | 2.118              | 2.118              | 2.118               | 2.118               | 2.118               |
| Weight (Mass)  | oz     | 5.90                        | 5.90              | 6.26              | 6.26              | 6.62              | 6.62               | 6.98               | 6.98               | 7.34               | 7.34                | 8.18                | 8.18                |
|                | g      | 167.3                       | 167.3             | 177.5             | 177.5             | 187.7             | 187.7              | 197.9              | 197.9              | 208.1              | 208.1               | 231.9               | 231.9               |
| Length (L)     | Inches | 1.373                       | 1.373             | 1.373             | 1.373             | 1.373             | 1.373              | 1.373              | 1.373              | 1.373              | 1.373               | 1.528               | 1.528               |
|                | mm     | 34.9                        | 34.9              | 34.9              | 34.9              | 34.9              | 34.9               | 34.9               | 34.9               | 34.9               | 34.9                | 38.8                | 38.8                |
| Exact Ratio    | -      | 230/39                      | 23/2              | 2300/117          | 115/3             | 23000/351         | 1150/9             | 230000/1053        | 11500/27           | 2300000/3159       | 115000/81           | 23000000/9477       | 1150000/243         |
| Efficiency     | -      | 81                          | 81                | 73                | 73                | 66                | 66                 | 59                 | 59                 | 53                 | 53                  | 48                  | 48                  |
| Shaft Rotation | -      | CW                          | CW                | CCW               | CCW               | CW                | CW                 | CCW                | CCW                | CW                 | CW                  | CCW                 | CCW                 |

**Standard Construction**

- Sintered bronze output bearing
- High torque gearbox features hardened sintered steel spur gears

**Options**

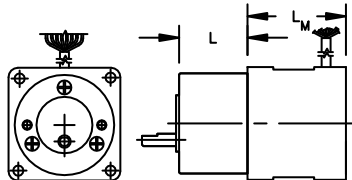
- Alternate mounting and shaft configuration
- Output ball bearing for high radial loads
- Special greases for extreme operating temperatures
- Delrin or helical gear clusters for reduced noise (select ratios)
- Shortened overall lengths (select ratios)

Notes:

<sup>1</sup> Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.

<sup>2</sup> Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

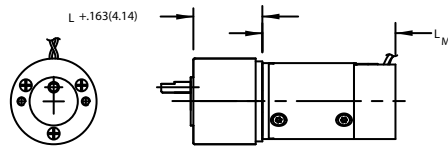
**N2300 Series Motor with G51A (GN2310)**  
(Available with ratios: 5.9, 19.7, 65.5, 218.4)



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| N2311 | 1.532 (38.91)                        |
| N2312 | 1.982 (50.34)                        |
| N2313 | 2.482 (63.04)                        |
| N2314 | 2.982 (75.74)                        |

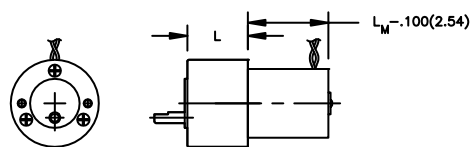
**For use with the following motor series:**

**8540 Series Motor with G51A (GM8840)**



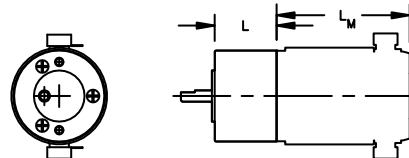
| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 8541  | 2.114 (53.69)                        |
| 8542  | 2.585 (65.66)                        |
| 9234  | 2.403 (77.650)                       |

**9230 Series Motor with G51A (GM9230)**



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 9232  | 1.828 (46.43)                        |
| 9233  | 2.203 (55.96)                        |
| 9234  | 2.403 (61.04)                        |
| 9235  | 2.703 (68.66)                        |
| 9236  | 3.053 (77.55)                        |
| 9237  | 3.353 (85.17)                        |

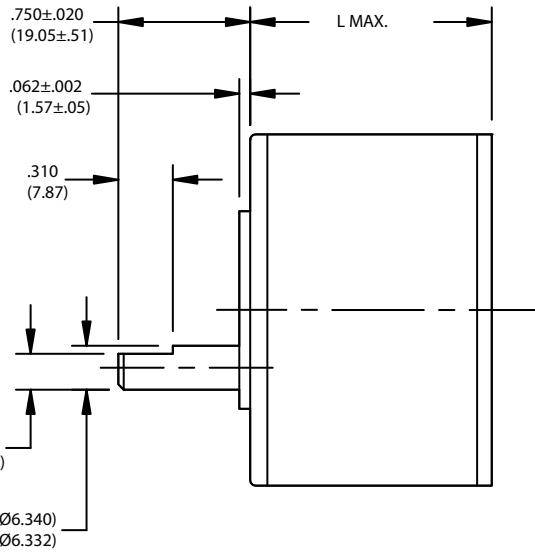
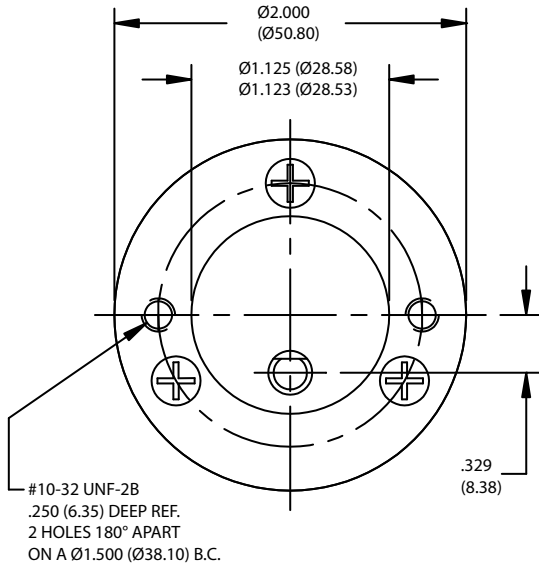
**14200 Series Motor with G51A (GM14900)**  
(Available with ratios: 5.9, 19.7, 65.5, 218.4)



| Motor | Length L <sub>M</sub> max<br>in (mm) |
|-------|--------------------------------------|
| 14201 | 2.953 (75.01)                        |
| 14202 | 3.203 (81.36)                        |
| 14203 | 3.703 (94.06)                        |
| 14204 | 4.078 (103.6)                        |
| 14205 | 4.453 (113.1)                        |
| 14206 | 4.953 (125.8)                        |
| 14207 | 5.703 (144.9)                        |

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Wide Face Gears



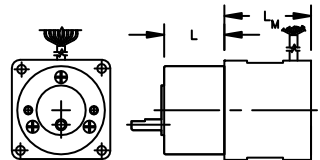
| Specification  | Units  | Reduction Ratio Designation |                   |                   |                    |                    |                    |                    |                     |
|----------------|--------|-----------------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
|                |        | G51A-WF<br>19.7:1           | G51A-WF<br>38.3:1 | G51A-WF<br>65.5:1 | G51A-WF<br>127.8:1 | G51A-WF<br>218.4:1 | G51A-WF<br>425.9:1 | G51A-WF<br>728.1:1 | G51A-WF<br>1419.8:1 |
| Maximum Load   | oz-in  | 500                         | 500               | 500               | 500                | 500                | 500                | 50                 | 500                 |
|                | Nm     | 3.53                        | 3.53              | 3.53              | 3.53               | 3.53               | 3.53               | 0.353              | 3.53                |
| Weight (Mass)  | oz     | 6.52                        | 6.52              | 6.88              | 6.88               | 7.24               | 7.24               | 8.08               | 8.08                |
|                | g      | 184.8                       | 184.8             | 195               | 195                | 205.3              | 205.3              | 229.1              | 229.1               |
| Length (L)     | Inches | 1.373                       | 1.373             | 1.373             | 1.373              | 1.373              | 1.373              | 1.528              | 1.528               |
|                | mm     | 34.9                        | 34.9              | 34.9              | 34.9               | 34.9               | 34.9               | 38.8               | 38.8                |
| Exact Ratio    | -      | 2300/<br>117                | 115/<br>3         | 23000/<br>351     | 1150/<br>9         | 230000/<br>1053    | 11500/<br>27       | 2300000/<br>3159   | 115000/<br>81       |
| Efficiency     | -      | 73                          | 73                | 66                | 66                 | 59                 | 59                 | 53                 | 53                  |
| Shaft Rotation | -      | CCW                         | CCW               | CW                | CW                 | CCW                | CCW                | CW                 | CW                  |

- Standard Construction**
- wide face gearboxes feature sintered steel spur gears
  - Sintered bronze output bearing

- Options**
- Alternate mounting and shaft configurations
  - Output ball bearing for high radial loads
  - Special greases for extreme operating temperatures
  - Delrin or helical gear clusters for reduced noise (select ratios)
  - Shortened overall lengths (select ratios)

Notes:  
<sup>1</sup> Maximum load represents gearbox capability only. Continuous load torque capability will vary with gear ratio, motor selection, and operating conditions.  
<sup>2</sup> Shaft rotation is designated while looking at output shaft with motor operating in a clockwise direction. Gearboxes have bi-directional capability.

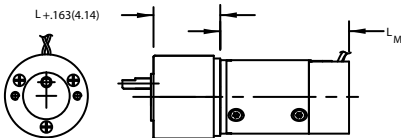
**N2300 Series Motor with G51A (GN2310)**  
 (Available with ratios: 5.9, 19.7, 65.5, 218.4)



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| N2311 | 1.532 (38.91)                     |
| N2312 | 1.982 (50.34)                     |
| N2313 | 2.482 (63.04)                     |
| N2314 | 2.982 (75.74)                     |

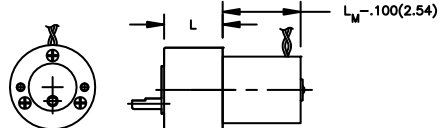
**For use with the following motor series:**

**8540 Series Motor with G51A (GM8840)**



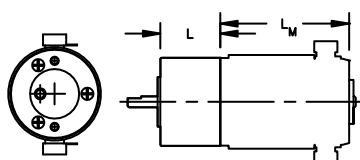
| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 8541  | 2.114 (53.69)                     |
| 8542  | 2.585 (65.66)                     |
| 9234  | 2.403 (77.650)                    |

**9230 Series Motor with G51A (GM9230)**



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 9232  | 1.828 (46.43)                     |
| 9233  | 2.203 (55.96)                     |
| 9234  | 2.403 (61.04)                     |
| 9235  | 2.703 (68.66)                     |
| 9236  | 3.053 (77.55)                     |
| 9237  | 3.353 (85.17)                     |

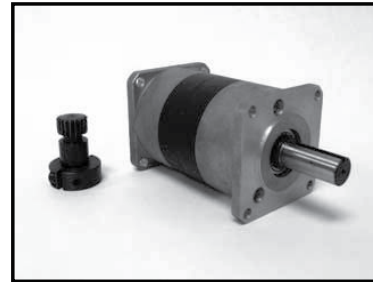
**14200 Series Motor with G51A (GM14900)**  
 (Available with ratios: 5.9, 19.7, 65.5, 218.4)



| Motor | Length L <sub>M</sub> max in (mm) |
|-------|-----------------------------------|
| 14201 | 2.953 (75.01)                     |
| 14202 | 3.203 (81.36)                     |
| 14203 | 3.703 (94.06)                     |
| 14204 | 4.078 (103.6)                     |
| 14205 | 4.453 (113.1)                     |
| 14206 | 4.953 (125.8)                     |
| 14207 | 5.703 (144.9)                     |

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- 2.25 inch (57.15 mm) square NEMA 23
- Continuous Torques up to 60 lb-in (6.78 Nm)
- Peak Torques up to 90 lb-in (10.17 Nm)
- Ratios 5, 10, 15, 25, 50 & 100 Standard
- "Clamp On" Pinion
- Low Cost Powder Metal Gearing Assembly
- 75 lbs. (34 kg) Radial and Axial Load Capacity
- "Bolt On" to NEMA 23 Motors

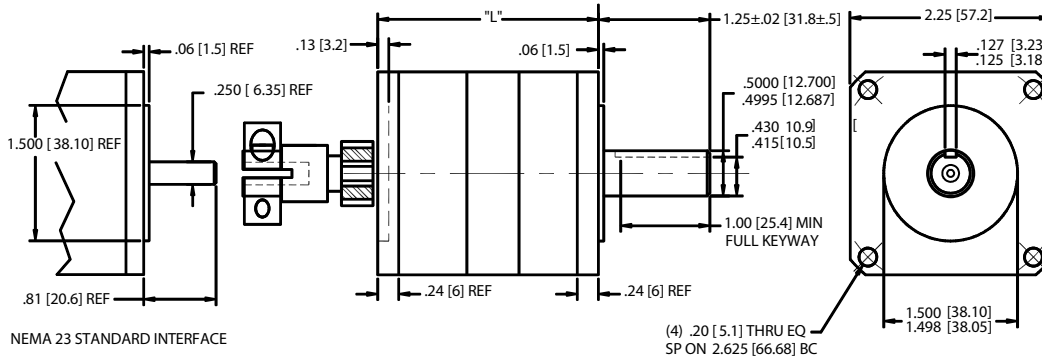


| Specification     | Units  | Part/ Model Number |        |        |        |        |        |
|-------------------|--------|--------------------|--------|--------|--------|--------|--------|
|                   |        | G3005              | G3010  | G3015  | G3025  | G3050  | G3100  |
| Exact Ratio       | -      | 5                  | 10     | 15     | 25     | 50     | 100    |
| Continuous Torque | lb-in  | 60                 | 60     | 60     | 60     | 60     | 60     |
|                   | Nm     | 6.779              | 6.779  | 6.779  | 6.779  | 6.779  | 6.779  |
| Peak Torque       | lb-in  | 90                 | 90     | 90     | 90     | 90     | 90     |
|                   | Nm     | 10.169             | 10.169 | 10.169 | 10.169 | 10.169 | 10.169 |
| Speed Max Output  | RPM    | 800                | 400    | 267    | 160    | 80     | 40     |
| Speed Max Input   | RPM    | 4000               | 4000   | 4000   | 4000   | 4000   | 4000   |
| Stages            | -      | 1                  | 2      | 2      | 2      | 3      | 4      |
| Efficiency        | -      | 90%                | 80%    | 80%    | 80%    | 70%    | 60%    |
| Max Length        | Inches | 2.97               | 3.55   | 3.87   | 3.87   | 4.45   | 5.05   |
|                   | mm     | 75.4               | 90.2   | 98.3   | 98.3   | 113    | 128.3  |
| Weight            | Lbs    | .9                 | 1.3    | 1.8    | 1.8    | 2.2    | 2.6    |
|                   | Kg     | 0.4                | 0.6    | 0.8    | 0.8    | 1      | 1.2    |

1) Backlash accuracy will be typically less than 3 Deg., 2) Add gear length to motor length

| Typical Combinations             |            | Voltage VDC | Motor Length mm / in | Perform | Units      | Gear Ratios |           |           |          |          |          |
|----------------------------------|------------|-------------|----------------------|---------|------------|-------------|-----------|-----------|----------|----------|----------|
| Gear #                           | Motor #    |             |                      |         |            | 5           | 10        | 15        | 25       | 50       | 100      |
| Brushless Gearmotor Combinations |            |             |                      |         |            |             |           |           |          |          |          |
| G3xxx -                          | I2352048NC | 20          | 90.4 / 3.56          | Speed   | rpm        | 800         | 400       | 267       | 160.0    | 80.0     | 40.0     |
|                                  |            |             |                      | Tc      | Nm / lb-in | 0.89 / 7.9  | 1.58 / 14 | 2.37 / 21 | 4 / 35   | 6.8 / 60 | 6.8 / 60 |
|                                  |            |             |                      | lc      | amps dc    | 5.1         | 5.1       | 5.1       | 5.1      | 5.0      | 2.90     |
| G3xxx -                          | I2381088NC | 36          | 80 / 3.15            | Speed   | rpm        | 800         | 400       | 267       | 160.0    | 80.0     | 40.0     |
|                                  |            |             |                      | Tc      | Nm / lb-in | 0.64 / 5.6  | 1.13 / 10 | 1.69 / 15 | 2.8 / 25 | 4.9 / 44 | 6.8 / 60 |
|                                  |            |             |                      | lc      | amps dc    | 2.0         | 2.0       | 2.0       | 2.0      | 2.0      | 1.58     |
| G3xxx -                          | I2383092NC | 40          | 119.9 / 4.72         | Speed   | rpm        | 800         | 400       | 267       | 160.0    | 80.0     | 40.0     |
|                                  |            |             |                      | Tc      | Nm / lb-in | 1.85 / 16.3 | 3.28 / 29 | 4.92 / 44 | 6.8 / 60 | 6.8 / 60 | 6.8 / 60 |
|                                  |            |             |                      | lc      | amps dc    | 5.5         | 5.5       | 5.5       | 4.5      | 2.6      | 1.51     |
| G3xxx -                          | I2383214NC | 80          | 119.9 / 4.72         | Speed   | rpm        | 748         | 374       | 249       | 149.5    | 74.8     | 37.4     |
|                                  |            |             |                      | Tc      | Nm / lb-in | 1.85 / 16.3 | 3.28 / 29 | 4.92 / 44 | 6.8 / 60 | 6.8 / 60 | 6.8 / 60 |
|                                  |            |             |                      | lc      | amps dc    | 2.4         | 2.4       | 2.4       | 2.0      | 1.1      | 0.65     |
| G3xxx -                          | I2384124NC | 50          | 140 / 5.51           | Speed   | rpm        | 800         | 400       | 267       | 160.0    | 80.0     | 40.0     |
|                                  |            |             |                      | Tc      | Nm / lb-in | 2.64 / 23.4 | 4.69 / 42 | 6.78 / 60 | 6.8 / 60 | 6.8 / 60 | 6.8 / 60 |
|                                  |            |             |                      | lc      | amps dc    | 5.8         | 5.8       | 5.6       | 3.4      | 1.9      | 1.12     |

Notes 1) Many other gearmotor combinations exist - consult factory, 2) Add Gear & Motor length 3) Add ratio value to G3 Model number as in chart above



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