

Note: See page 14 for a complete description of the above part number system.

Sold & Serviced By:  
  
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(E) - English Interface	(M) - Metric Interface
(LFT) - Left Facing Thread	(NPL) - Non Preloaded
(LH) - Left Hand	(PL) - Preloaded
(LT) - Low Thrust	(RFT) - Right Facing Thread
(HT) - High Thrust	(RH) - Right Hand

## Screw & Nut Specifications

Model Number	Nut Type	Diameter inches (mm)	Lead inches (mm)	Root Diameter inches (mm)	Ball Diameter inches (mm)	Number of Circuits	Static Load lbs (kgf)	Dynamic Load <sup>(1)</sup> lbs (kgf)
<b>GS075020</b> 0.750 inch dia. 0.200 inch lead	<b>Preloaded Ball (N3/N4)</b>	0.750 (19,05)	0.200 (5,08)	0.635 (16,13)	0.125 (3,17)	1	3,990 (1809)	1,070 (485)
<b>GS20M05M</b> 20 mm dia. 5 mm lead	<b>Preloaded Ball (N3/N4)</b>	0.787 (20,00)	0.196 (5,00)	0.665 (16,89)	0.125 (3,17)	1	3,990 (1809)	1,070 (485)
<b>GS20M20M</b> 20 mm dia. 20 mm lead	<b>Preloaded Ball (N3/N4)</b>	0.787 (20,00)	0.787 (20,00)	0.672 (17,07)	0.125 (3,17)	1	3,505 (1589)	1,293 (586)

## Other Specifications

<b>Maximum Acceleration Rate</b>	Ball nut: 772 inches/sec <sup>2</sup> (19,6 m/sec <sup>2</sup> )
<b>Maximum Speed</b>	Ball nut: 3000 rpm
<b>Screw Material</b>	Right Hand Thread, Case Hardened Rc 58 Steel Ground Ball Screw
<b>Screw Extensions</b>	Woodruff Keyways from Support Housings - 304 Drive End; 303 Opposite End
<b>Screw Maximum Length</b> <sup>(2)</sup>	64.95 inches (1650 mm)
<b>Screw Weight</b>	1.35 lbs/ft (20,1 g/cm)
<b>Support Housings</b>	Steel with Black Oxide Finish, 45° Chamfer x .02 inch (0,50) all Straight Edges
<b>Support Housing Features</b>	Base or Face Mount with Integral Seals
<b>Nut Flanges</b>	Steel with Black Oxide Finish
<b>Nut Flange Features</b>	English or Metric Load Mounting Interface

### Footnotes:

- (1) Load based upon 1 million inches (25 Km) of travel life. See page 91 for further travel life ratings.  
 (2) Maximum stock length (not the maximum thread length with bearing housings). See page 90 for maximum thread lengths for each configuration.

## Screw Specifications

Model Number	Nut Type	Screw Efficiency %	Lead Error inch/ft (mm/300 mm)	Backlash inches (mm)	Unidirectional Repeatability inches (mm)	Bidirectional Repeatability inches (mm)
<b>GS075020</b> 0.750 inch dia. 0.200 inch lead & <b>GS20M05M</b> 20 mm dia. 5 mm lead & <b>GS20M20M</b> 20 mm dia. 20 mm lead	<i>Preloaded Ball (N3/N4)</i>	90	< 0.0005 (0,012)	0	+/- 0.0001 (0,0025)	+ 0.0001 to - 0.0001 (0,0025) (0,0025)

## Assembly Specifications

Model Number	Nut Type	Breakaway Torque oz-in (N-m)				
		Simple-Simple	Fixed(LT)-Simple	Fixed(HT)-Simple	Rigid-Simple	Rigid-Rigid
<b>GS075020</b> 0.750 inch dia. 0.200 inch lead	<i>Preloaded Ball (N3/N4)</i>	< 20 (0,14)	< 25 (0,18)	< 35 (0,25)	< 35 (0,25)	< 45 (0,32)
<b>GS20M05M</b> 20 mm dia. 5 mm lead	<i>Preloaded Ball (N3/N4)</i>	< 20 (0,14)	< 25 (0,18)	< 35 (0,25)	< 35 (0,25)	< 45 (0,32)
<b>GS20M20M</b> 20 mm dia. 20 mm lead	<i>Preloaded Ball (N3/N4)</i>	< 30 (0,21)	< 35 (0,24)	< 50 (0,35)	< 50 (0,35)	< 60 (0,42)

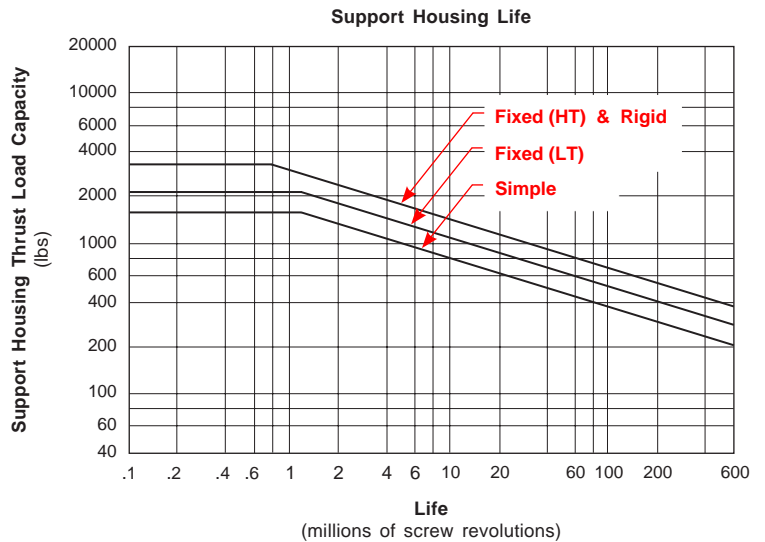
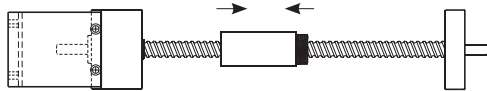
## Internal Order Code

Model Number	Internal Order Code & Support Configuration	Maximum Thread Length "L" inches (mm)	Model Number	Internal Order Code & Support Configuration	Maximum Thread Length "L" inches (mm)
<b>GS075020</b> 0.750 inch dia. 0.200 inch lead & <b>GS20M05M</b> 20 mm dia. 5 mm lead & <b>GS20M20M</b> 20 mm dia. 20 mm lead	-1-S1	29.500 (749,3)	<b>GS075020</b> 0.750 inch dia. 0.200 inch lead & <b>GS20M05M</b> 20 mm dia. 5 mm lead & <b>GS20M20M</b> 20 mm dia. 20 mm lead	-2-S1	43.700 (1110,0)
	-1-S2	29.500 (749,3)		-2-S2	42.700 (1084,6)
	-1-S3	29.500 (749,3)		-2-S3	42.700 (1084,6)
	-1-S4	29.500 (749,3)		-2-S4	41.700 (1059,2)
	-1-S5	27.750 (704,8)		-2-S5	39.375 (1000,1)

## Support Housing Specifications

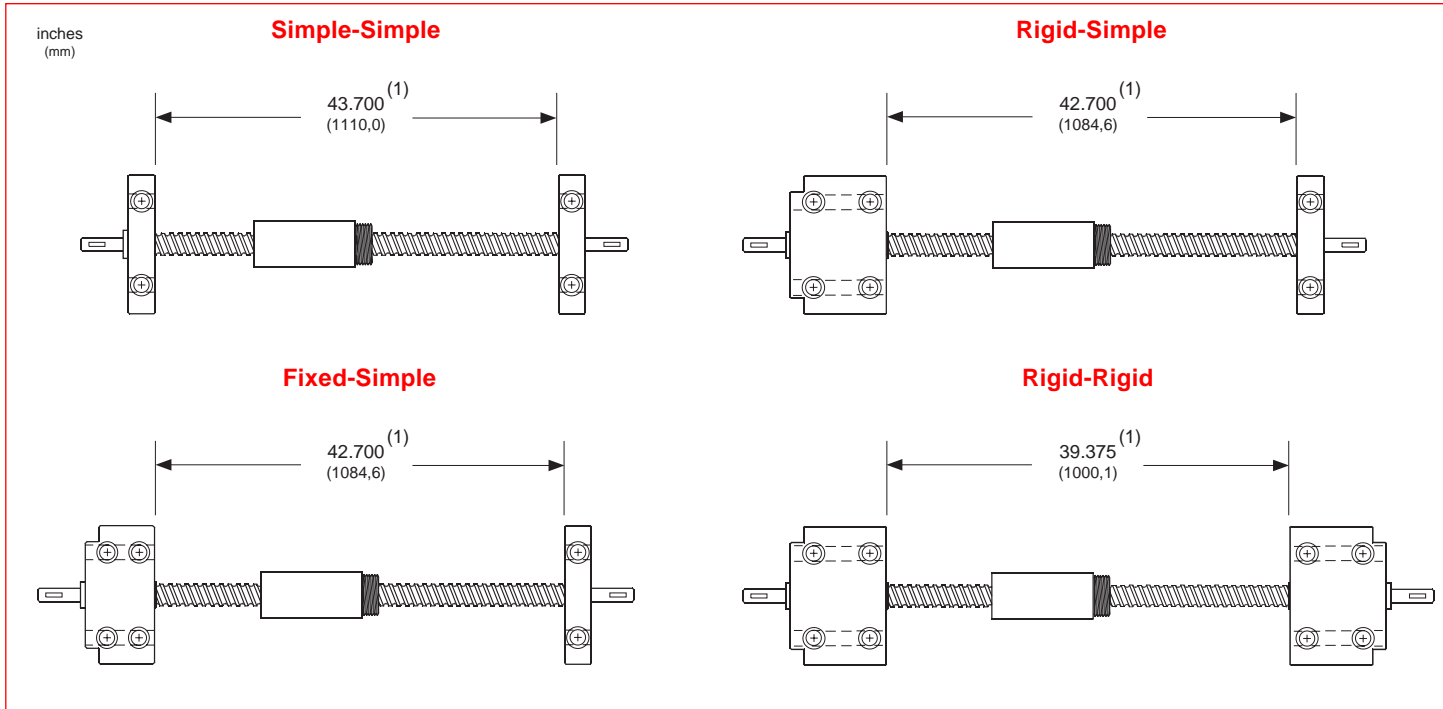
Support Housing Life millions of screw revolutions	Support Housing Thrust Load Capacity - (Axial)			
	Simple	Fixed (LT)	Fixed (HT)	Rigid
<b>Static</b>	1,675 (760)	2,110 (957)	3,350 (1520)	3,350 (1520)
<b>1</b>	1,675 (760)	2,110 (957)	3,035 (1377)	3,035 (1377)
<b>2</b>	1,365 (619)	1,720 (780)	2,275 (1032)	2,275 (1032)
<b>10</b>	795 (361)	1,050 (476)	1,375 (624)	1,375 (624)
<b>50</b>	465 (211)	585 (265)	820 (372)	820 (372)
<b>100</b>	370 (168)	465 (211)	650 (295)	650 (295)
<b>500</b>	215 (98)	270 (122)	390 (177)	390 (177)

Thrust force applied in either direction

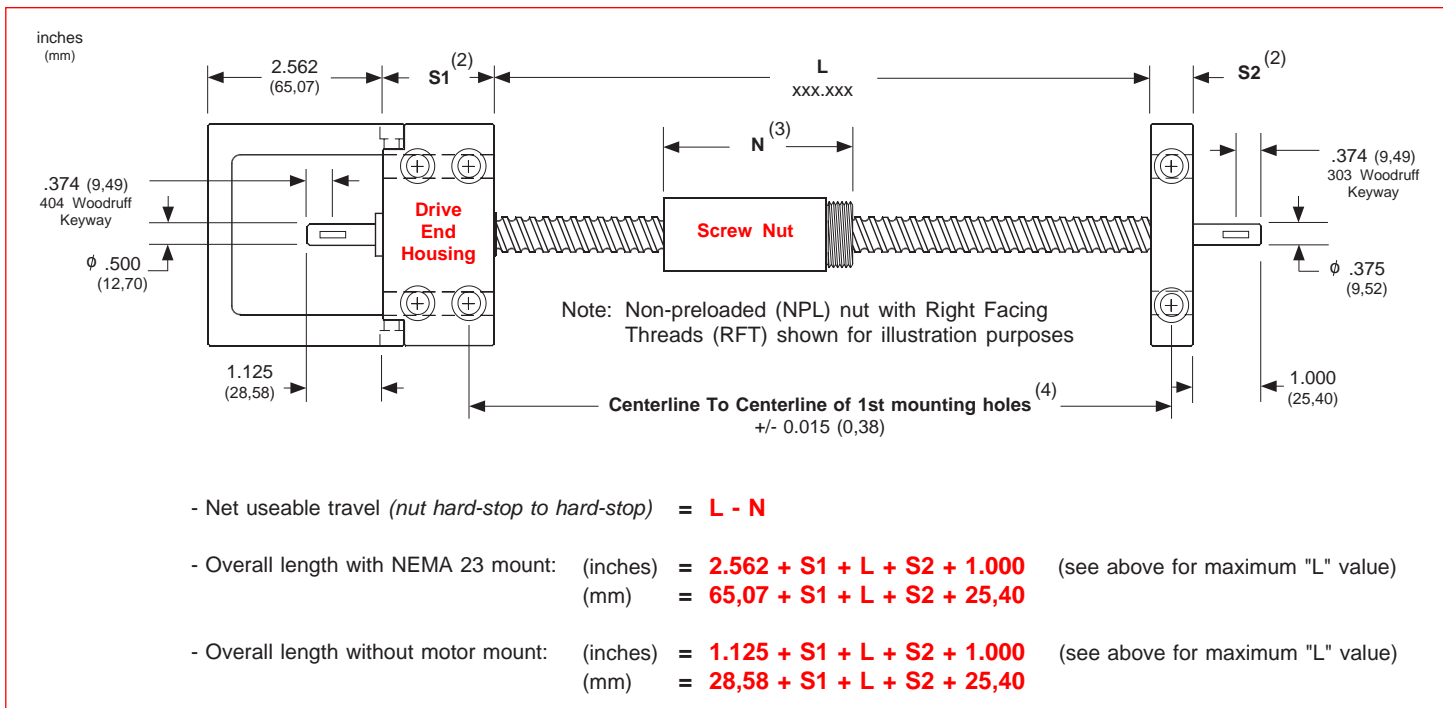


Note: Multiply screw revolutions by the screw lead in order to convert to inches (or mm) traveled by the nut.

## Available Configurations



## Overall Length Diagram

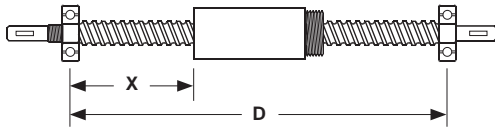


### Footnotes:

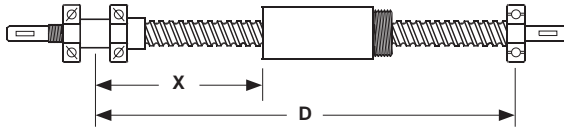
- (1) Maximum available standard screw thread length for the bearing support housing configuration shown.
- (2) Fixed-simple support configuration shown for reference. See page 93 for length values for simple, fixed, and rigid housings.
- (3) See page 92 for available nut styles. Refer to A1 & A2 values for the nut length.
- (4) Tolerance shown is for base mounted support housings. Tolerance also applies to face mounted support housings.

## Performance Charts

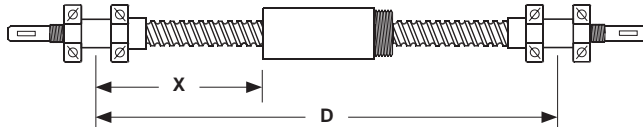
### Simple-Simple



### Rigid-Simple

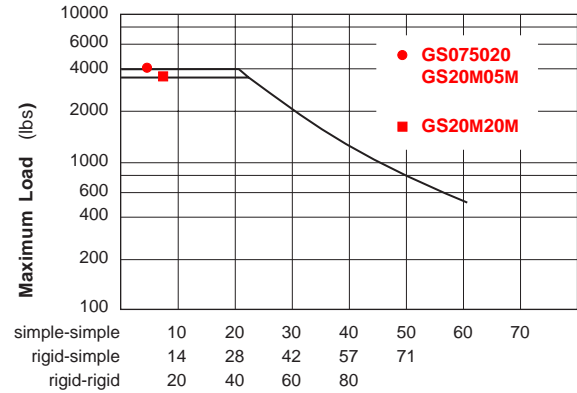


### Rigid-Rigid



### Maximum Compression Load <sup>(1)</sup>

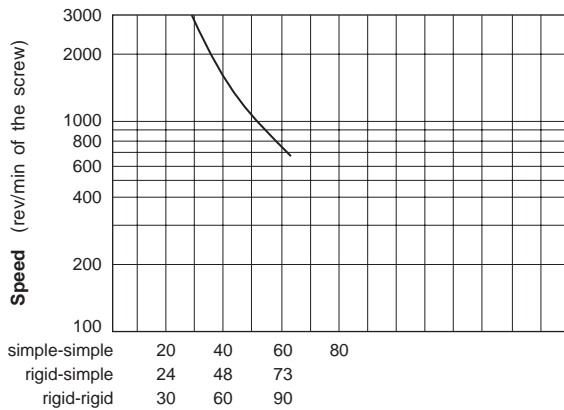
X inches	(mm)	simple-simple		rigid-simple		rigid-rigid	
		lbs	(kgf)	lbs	(kgf)	lbs	(kgf)
20	(508)	3505	(1590)	3505	(1590)	3505	(1590)
40	(1016)	1140	(517)	2020	(916)	3505	(1590)
60	(1524)	505	(229)	1010	(458)	2020	(916)



Maximum "X" distance between bearing support and Load (inches)

### Maximum Speed <sup>(1)</sup>

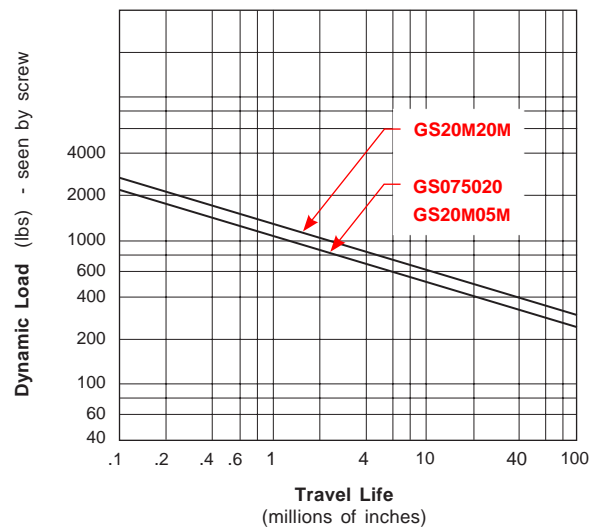
D inches	(mm)	simple-simple	rigid-simple	rigid-rigid
		rpm	rpm	rpm
29	(737)	3000	3000	3000
40	(1016)	1645	2415	3000
50	(1270)	1050	1540	2340
60	(1524)	730	1070	1625



Maximum "D" distance between bearing supports (inches)

### Screw Travel Life

Life millions of inches	(km)	075020/20M05M		20M20M	
		lbs	(kgf)	lbs	(kgf)
1	(25)	1070	(485)	1293	(586)
2	(50)	850	(385)	1029	(466)
50	(1270)	294	(133)	355	(161)
100	(2540)	234	(106)	283	(128)



### Footnotes:

(1) Refer to the simple-simple support lengths for fixed-simple configurations. A fixed housing performs like a simple housing for critical speed and compression load specifications.

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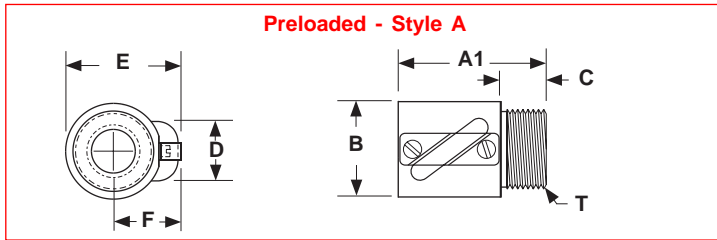
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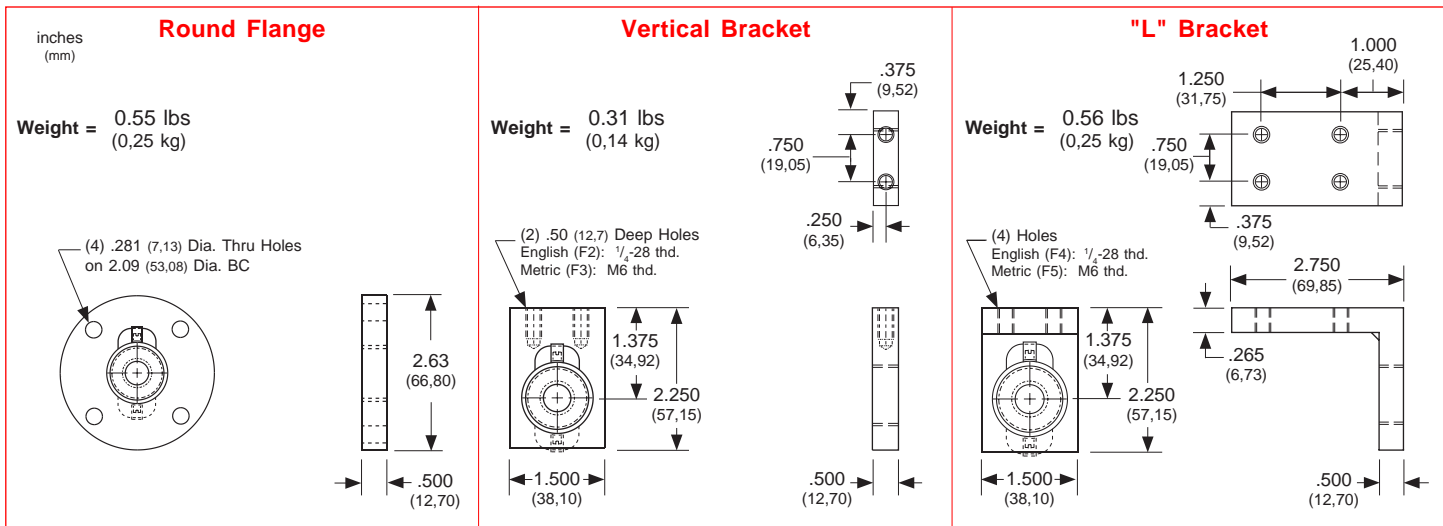
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Specifications subject to change without notice

## Nut Dimensions



## Nut Flange Dimensions



Model Number	Nut Style	Nut Dimensions inches (mm)							Nut Weight lbs (kg)
		A1 <sup>(1)</sup>	B	C	D	E	F	T - "V" Threads <sup>(2)</sup>	
GS075020	A	1.780 (45,21)	1.378 (35,00)	0.500 (12,70)	1.063 (27,00)	1.674 (42,52)	0.985 (25,00)	1.173 - 18 UNS-2A (29,79 - 18 UNS-2A)	0.68 (0,31)
GS20M05M	A	1.780 (45,21)	1.378 (35,00)	0.500 (12,70)	1.063 (27,00)	1.674 (42,52)	0.985 (25,00)	1.173 - 18 UNS-2A (29,79 - 18 UNS-2A)	0.68 (0,31)
GS20M20M	A	2.370 (60,20)	1.418 (36,02)	0.500 (12,70)	1.103 (28,02)	1.772 (45,01)	1.063 (27,00)	1 1/4 - 16 UN-2A (31,75 - 16 UN-2A)	0.85 (0,39)

### Footnotes:

- (1) The preload is achieved internal to the nut. Thus, the GS series preloaded nut is matched to the screw thread.
- (2) All flange threads are internal (Type 2B) to match the external nut threads.

## Support Housing Dimensions

<p>inches (mm)</p> <p>.625 (15,87)</p> <p>2.000 (50,80)</p> <p>(4) .343 (8,71) Dia.Thru Holes</p> <p>(4) 8-32 x .37 (9,39) Deep on 1.750 (44,45) BC</p> <p>2.500 (63,50)</p> <p>1.750 (44,45)</p> <p>1.250 (31,75)</p> <p>.375 (9,52)</p> <p>1.625 (41,27)</p> <p>3.250 (82,55)</p>	<p><b>Simple</b></p> <p>Weight = 1.1 lbs (0,50 kg)</p>	<p>.313 (7,95)</p> <p>(2) .343 (8,71) Dia. Thru Holes, .504 (12,8) Dia. C' Bored x .57 (14,47) Deep</p> <p>.313 (7,95)</p> <p>.625 (15,87)</p> <p>Drive End</p> <p>non-Drive End</p>
<p>.625 (15,87)</p> <p>2.000 (50,80)</p> <p>(4) .343 (8,71) Dia.Thru Holes</p> <p>(4) 8-32 x .37 (9,39) Deep on 1.750 (44,45) BC</p> <p>2.500 (63,50)</p> <p>1.750 (44,45)</p> <p>1.250 (31,75)</p> <p>.375 (9,52)</p> <p>1.625 (41,27)</p> <p>3.250 (82,55)</p>	<p><b>Fixed</b></p> <p>Weight = 2.7 lbs (1,22 kg)</p>	<p>.750 (19,05)</p> <p>.500 (12,70)</p> <p>(4) .343 (8,71) Dia. Thru Holes, .504 (12,8) Dia. C' Bored x .57 (14,47) Deep</p> <p>1.125 (28,57)</p> <p>.688 (17,47)</p> <p>.125 (3,17)</p> <p>(2) 10-32 x .43 (10,92) Deep, both sides</p> <p>1.750 (44,45)</p>
<p>.625 (15,87)</p> <p>2.000 (50,80)</p> <p>(4) .343 (8,71) Dia.Thru Holes</p> <p>(4) 8-32 x .37 (9,39) Deep on 1.750 (44,45) BC</p> <p>2.500 (63,50)</p> <p>1.750 (44,45)</p> <p>1.250 (31,75)</p> <p>.375 (9,52)</p> <p>1.625 (41,27)</p> <p>3.250 (82,55)</p>	<p><b>Rigid</b></p> <p>Weight = 4.0 lbs (1,81 kg)</p>	<p>.750 (19,05)</p> <p>.500 (12,70)</p> <p>(4) .343 (8,71) Dia. Thru Holes, .504 (12,8) Dia. C' Bored x .57 (14,47) Deep</p> <p>1.125 (28,57)</p> <p>.688 (17,47)</p> <p>.125 (3,17)</p> <p>(2) 10-32 x .43 (10,92) Deep, both sides</p> <p>2.750 (69,85)</p>
<p><b>NEMA 23 Motor Mount</b></p> <p>Weight = 0.9 lbs (0,41 kg)</p> <p>(4) Holes on 2.625 (66,67) BC Dia. English (M02): #10-24 thd. Metric (M03): M5 thd.</p> <p>1.502 (38,15) Pilot Dia. TYP</p> <p>2.340 (59,44)</p> <p>2.562 (65,07)</p> <p>.313 (7,95)</p> <p>1.437 (36,50)</p> <p>2.250 (57,15)</p> <p>1.125 (28,57)</p> <p>(2) .221 (5,61) Dia.Thru Holes, .344 (8,73) Dia. C' Bored x .125 (3,17) Deep, both sides</p>	<p><b>NEMA 34 Motor Mount</b></p> <p>Weight = 1.4 lbs (0,64 kg)</p> <p>(4) Holes on 3.875 (98,42) BC Dia. English (M04): #10-24 thd. Metric (M05): M5 thd.</p> <p>2.877 (73,07) Pilot Dia. TYP</p> <p>.063 (1,60)</p> <p>2.340 (59,44)</p> <p>.500 (12,70)</p> <p>2.562 (65,07)</p> <p>.313 (7,95)</p> <p>1.937 (49,20)</p> <p>3.375 (85,72)</p> <p>1.688 (42,88)</p> <p>.438 (11,13)</p> <p>(2) .221 (5,61) Dia.Thru Holes, .344 (8,73) Dia. C' Bored x .125 (3,17) Deep, both sides</p>	