Ordering Guide

- 0.750 inch & 20 mm screw diameters -

PS Series

PS 075 020 - S1 - N1 - F1 - M02 - C165 - E00 - B00 - Lxxx.xxx

Precision Screw

Screw Diameter

075 - 0.750 inch
20M - 20 mm

Screw Lead

020 - 0.200 inch
05M - 5 mm
20M - 20 mm

Support Configurations (see pages 73-74)

S1 - Simple - Simple
S2 - Fixed (LT) - Simple
S3 - Fixed (HT) - Simple
S4 - Rigid - Simple
S5 - Rigid - Rigid
S9 - other

Nut Type (see pages 74-76)

N1 - NPL ball nut (RFT)
N2 - NPL ball nut (LFT)
N3 - PL ball nut (RFT)
N4 - PL ball nut (LFT)
N9 - other

Nut Flange Type (see page 76)

F0 - none
F1 - Round flange
F2 - Vertical bracket (E)
F3 - Vertical bracket (M)
F4 - L bracket (E)
F5 - L bracket (M)
F9 - other

Motor Mount (see pages 77, 96-97)

M00 - none
M01 - Hand crank
M02 - NEMA 23 mount (E)
M03 - NEMA 23 mount (M)
M04 - NEMA 34 mount (E)
M05 - NEMA 34 mount (M)
M06 - NEMA 23 (RH) wrap
M07 - NEMA 23 (LH) wrap
M08 - NEMA 34 (RH) wrap
M09 - NEMA 34 (LH) wrap
M99 - other

Coupling Type (see pages 94-95)

C000 - none
C999 - other
C056 *to* **C063** - C125
C084 *to* **C090** - C150
C165 *to* **C174** - H131
C201 *to* **C211** - H163
C445 *to* **C454** - G126
C481 *to* **C491** - G158

Rotary Encoder (see page 98)

E00 - none
E99 - other
E20 - 500 lines/rev
E21 - 1000 lines/rev
E22 - 1270 lines/rev

Power-off Brake (see page 99)

B00 - none
B99 - other
B20 - 24 VDC
B21 - 90 VDC

Thread Length (see page 74)

Lxxx.xxx - screw thread length (inches)

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

(E) - English Interface
(LFT) - Left Facing Thread
(LH) - Left Hand
(LT) - Low Thrust
(HT) - High Thrust
(M) - Metric Interface
(NPL) - Non Preloaded
(PL) - Preloaded
(RFT) - Right Facing Thread
(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 (1) lbs (kgf)
PS075020 0.750 inch dia. 0.200 inch lead	***Non-preloaded*** **Ball (N1/N2)** ***Preloaded*** **Ball (N3/N4)**	0.750 (19,05)	0.200 (5,08)	0.635 (16,13)	0.125 (3,17)	1	3,360 (1524) 3,025 (1372)	964 (437) 867 (393)
PS20M05M 20 mm dia. 5 mm lead	***Non-preloaded*** **Ball (N1/N2)** ***Preloaded*** **Ball (N3/N4)**	0.787 (20,00)	0.196 (5,00)	0.665 (16,89)	0.125 (3,17)	1	3,990 (1809) 3,590 (1628)	1,070 (485) 960 (435)
PS20M20M 20 mm dia. 20 mm lead	***Non-preloaded*** **Ball (N1/N2)** ***Preloaded*** **Ball (N3/N4)**	0.787 (20,00)	0.787 (20,00)	0.672 (17,07)	0.125 (3,17)	2	3,505 (1589) 3,150 (1428)	1,293 (586) 1,160 (526)

Other Specifications

Maximum Acceleration Rate	Ball nut: 772 inches/sec^2 (19,6 m/sec^2)
Maximum Speed	Ball nut: 3000 rpm
Screw Material	Right Hand Thread, Case Hardened Rc 58 Steel Precision Rolled Ball Screw
Screw Extensions	Woodruff Keyways on Support Housings - 404 Drive End; 303 Opposite End
Screw Maximum Length (2)	118.11 inches (3000 mm)
Screw Weight	1.35 lbs/ft (20,1 g/cm)
Support Housings	Steel with Black Oxide Finish, 45° Chamfer x .02 inch (0,50) all Straight Edges
Support Housing Features	Base or Face Mount with Integral Seals
Nut Flanges	Steel with Black Oxide Finish
Nut Flange Features	English or Metric Load Mounting Interface

Footnotes:

(1) Load based upon 1 million inches (25 Km) of travel life. See page 75 for further travel life ratings.

(2) Maximum stock length (not the maximum thread length with bearing housings). See page 74 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)
PS075020 0.750 inch dia. 0.200 inch lead & **PS20M05M** 20 mm dia. 5 mm lead & **PS20M20M** 20 mm dia. 20 mm lead	***Non-preloaded*** **Ball (N1/N2)**	90	< 0.002 (0,050)	< 0.003 (0,076)	+/- 0.0002 (0,0050)	+ 0.0002 (0,0050) *to* - 0.0032 (0,0813)
	Preloaded **Ball (N3/N4)**	90	< 0.002 (0,050)	0	+/- 0.0002 (0,0050)	+ 0.0002 (0,0050) *to* - 0.0002 (0,0050)

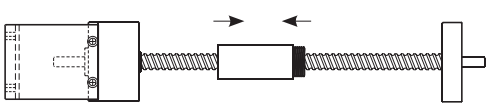
Assembly Specifications

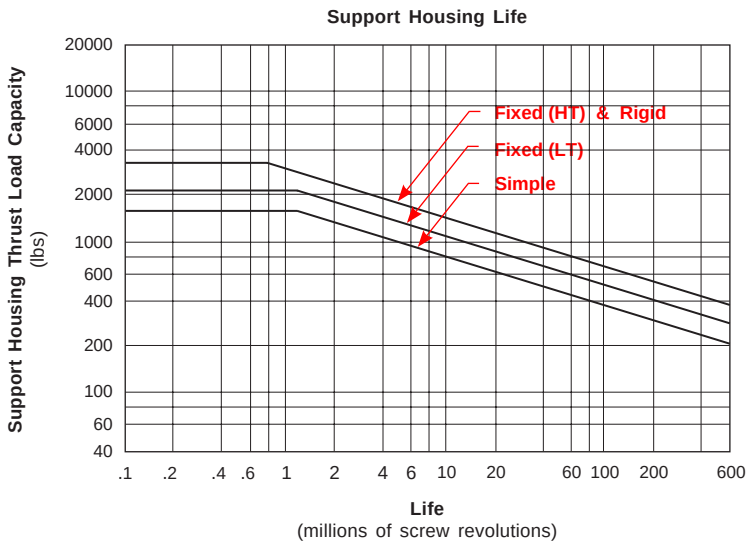
Model Number	Nut Type	Breakaway Torque oz-in (N-m)				
		Simple-Simple	Fixed(LT)-Simple	Fixed(HT)-Simple	Rigid-Simple	Rigid-Rigid
PS075020 0.750 inch dia. 0.200 inch lead	***Non-preloaded*** **Ball (N1/N2)**	< 10 (0,07)	< 15 (0,11)	< 25 (0,18)	< 25 (0,18)	< 45 (0,32)
	Preloaded **Ball (N3/N4)**	< 20 (0,14)	< 25 (0,18)	< 35 (0,25)	< 35 (0,25)	< 55 (0,39)
PS20M05M 20 mm dia. 5 mm lead	***Non-preloaded*** **Ball (N1/N2)**	< 10 (0,07)	< 15 (0,11)	< 25 (0,18)	< 25 (0,18)	< 45 (0,32)
	Preloaded **Ball (N3/N4)**	< 20 (0,14)	< 25 (0,18)	< 35 (0,25)	< 35 (0,25)	< 55 (0,39)
PS20M20M 20 mm dia. 20 mm lead	***Non-preloaded*** **Ball (N1/N2)**	< 20 (0,14)	< 25 (0,18)	< 40 (0,28)	< 40 (0,28)	< 55 (0,39)
	Preloaded **Ball (N3/N4)**	< 35 (0,25)	< 40 (0,28)	< 55 (0,39)	< 55 (0,39)	< 70 (0,49)

Support Housing Specifications

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

Thrust force applied in either direction



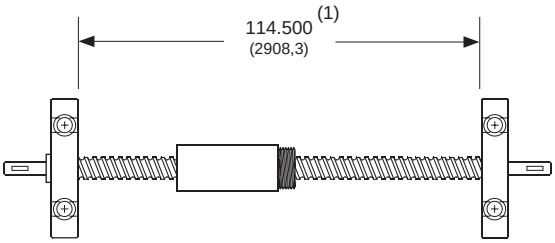


Note: Multiply screw revolutions by the screw lead in order to convert to inches (or mm) traveled by the nut.

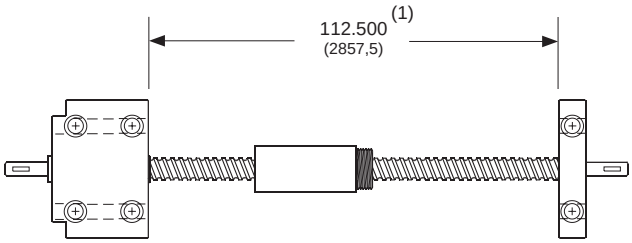
Available Configurations

inches (mm)

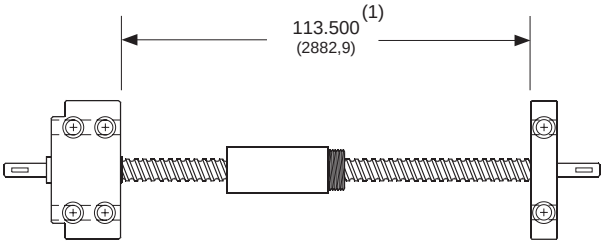
Simple-Simple



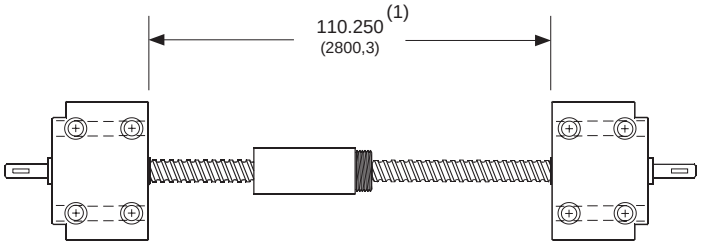
Rigid-Simple



Fixed-Simple

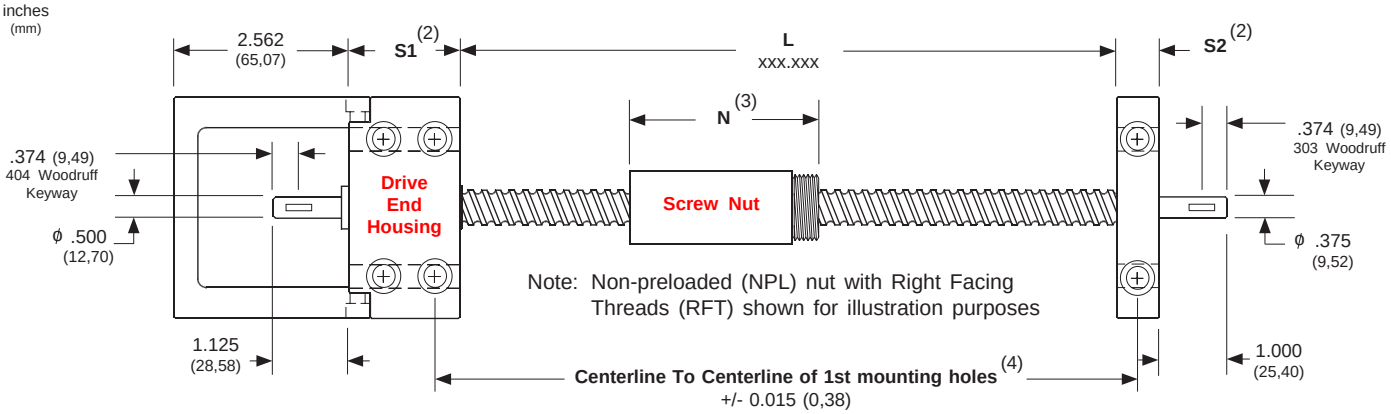


Rigid-Rigid



Overall Length Diagram

inches (mm)



- Net useable travel *(nut hard-stop to hard-stop)* = **L - N**

- Overall length with NEMA 23 mount: (inches) = **2.562 + S1 + L + S2 + 1.000** (see above for maximum "L" value)
  (mm) = **65,07 + S1 + L + S2 + 25,40**

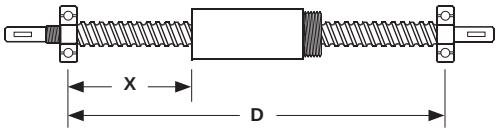
- Overall length without motor mount: (inches) = **1.125 + S1 + L + S2 + 1.000** (see above for maximum "L" value)
  (mm) = **28,58 + S1 + L + S2 + 25,40**

Footnotes:

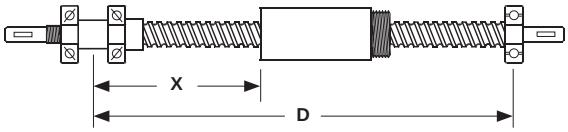
(1) Maximum available standard screw thread length for the bearing support housing configuration shown.
(2) Fixed-simple support configuration shown for reference. See page 77 for length values for simple, fixed, and rigid housings.
(3) See page 76 for available nut styles. Refer to A1 & A2 values for the nut length.
(4) Tolerance shown is for base mounted support housings. Tolerance also applies to face mounted support housings.

Performance Charts

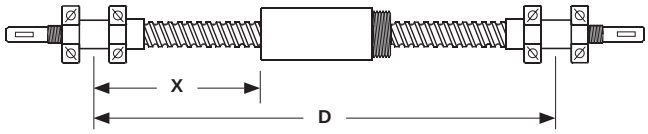
Simple-Simple



Rigid-Simple

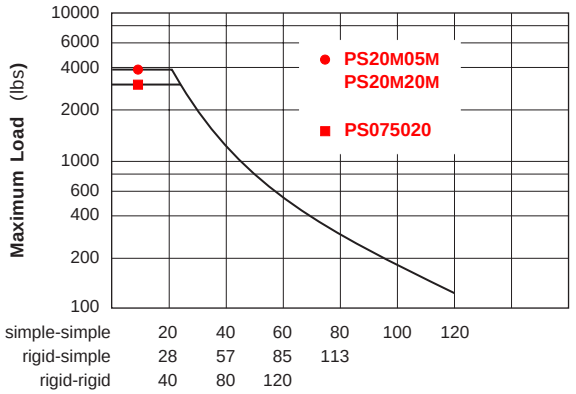


Rigid-Rigid



Maximum Compression Load (1)

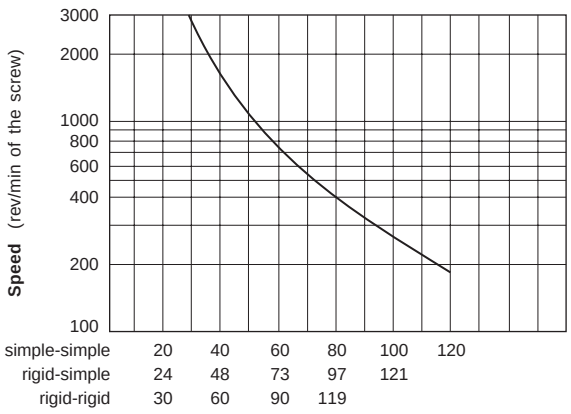
X inches	X (mm)	simple-simple lbs	simple-simple (kgf)	rigid-simple lbs	rigid-simple (kgf)	rigid-rigid lbs	rigid-rigid (kgf)
20	(508)	3360	(1524)	3360	(1524)	3360	(1524)
60	(1524)	505	(229)	1010	(458)	2020	(916)
90	(2286)	225	(102)	450	(204)	900	(408)



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

Maximum Speed (1)

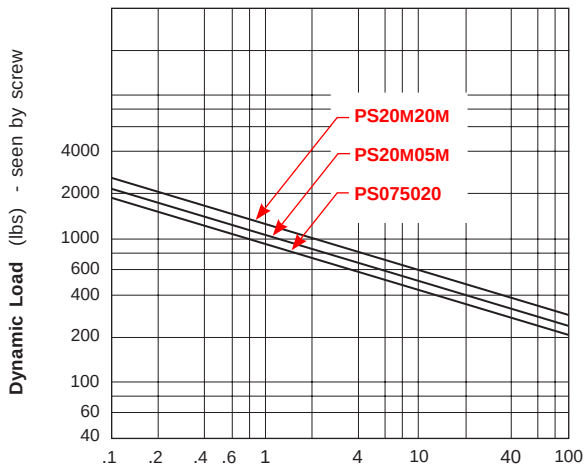
D inches	D (mm)	simple-simple rpm	rigid-simple rpm	rigid-rigid rpm
29	(737)	3000	3000	3000
60	(1524)	730	1070	1625
90	(2286)	325	475	720
120	(3048)	180	260	400



Maximum "D" distance between bearing supports
(inches)

Screw Travel Life (2)

Life millions of inches	Life (km)	075020 lbs	075020 (kgf)	20M05M lbs	20M05M (kgf)	20M20M lbs	20M20M (kgf)
1	(25)	964	(437)	1070	(485)	1293	(386)
2	(50)	767	(347)	850	(385)	1029	(466)
50	(1270)	265	(120)	294	(133)	355	(161)
100	(2540)	210	(95)	234	(106)	283	(128)



Travel Life
(millions of inches)

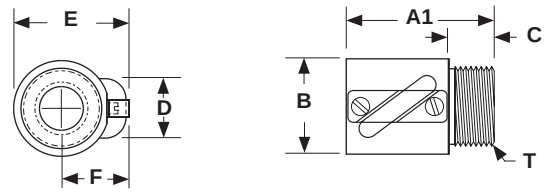
Footnotes:

(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. Maximum speeds may not be reached using a Turcite nut due to system friction.

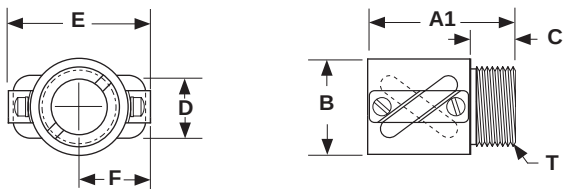
(2) Multiply life value from chart (or graph) by 0.90 to obtain the life for a preloaded ball nut.

Nut Dimensions

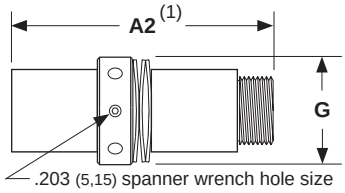
Non-preloaded - Style A



Non-preloaded - Style B



Preloaded - Style A

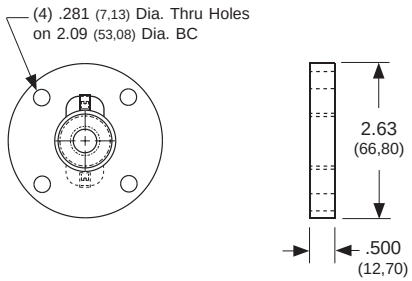


Nut Flange Dimensions

Round Flange

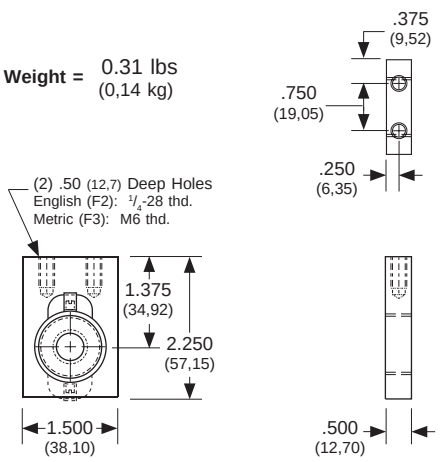
inches
(mm)

Weight = 0.55 lbs
(0,25 kg)



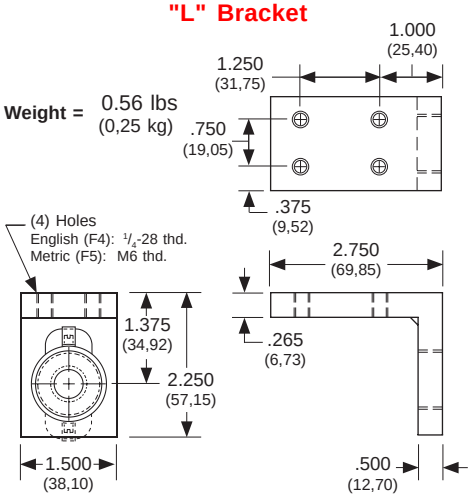
Vertical Bracket

Weight = 0.31 lbs
(0,14 kg)



"L" Bracket

Weight = 0.56 lbs
(0,25 kg)



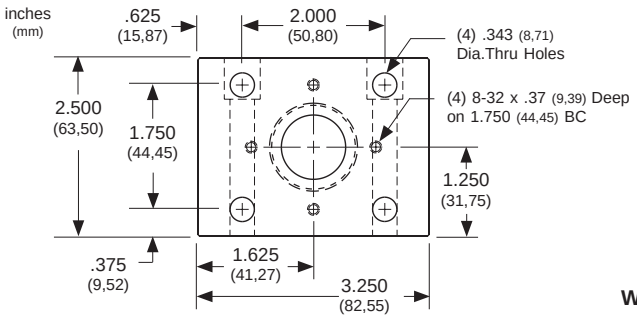
Model Number	Nut Style	Nut Dimensions inches (mm)									Nut (3) Weight lbs (kg)
		A1	A2 (1)	B	C	D	E	F	T - "V" Threads (2)	G	
PS075020	A	1.780 (45,21)	3.850 (97,79)	1.378 (35,00)	0.500 (12,70)	1.063 (27,00)	1.674 (42,52)	0.985 (25,02)	1.173 - 18 UNS-2A (29,79 - 18 UNS-2A)	1.670 (42,42)	0.68 (0,31)
PS20M05M	A	1.780 (45,21)	3.850 (97,79)	1.378 (35,00)	0.500 (12,70)	1.063 (27,00)	1.674 (42,52)	0.985 (25,02)	1.173 - 18 UNS-2A (29,79 - 18 UNS-2A)	1.670 (42,42)	0.68 (0,31)
PS20M20M	B	2.370 (60,20)	5.050 (128,27)	1.418 (36,02)	0.500 (12,70)	1.103 (28,02)	2.126 (54,00)	1.063 (27,00)	1 1/4 - 16 UN-2A (31,75 - 16 UN-2A)	1.670 (42,42)	0.90 (0,41)

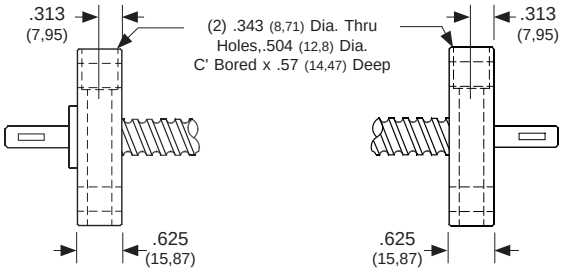
Footnotes:

(1) This is the length for a preloaded nut. Preloaded nut consists of two (2) non-preloaded nuts with a locking spanner nut, and belville springs.
(2) All flange threads are internal (Type 2B) to match the external nut threads.
(3) Weight of the non-preloaded nut. Multiply value by 2.1 to obtain the weight for the preloaded nut assembly.

Support Housing Dimensions

Simple

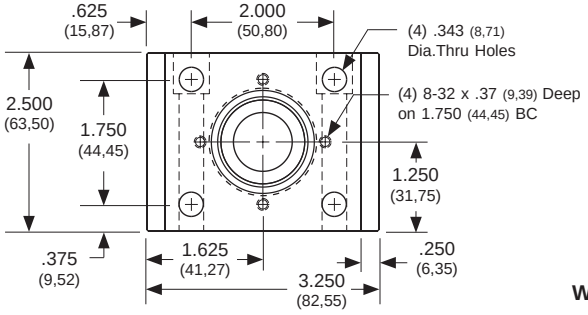


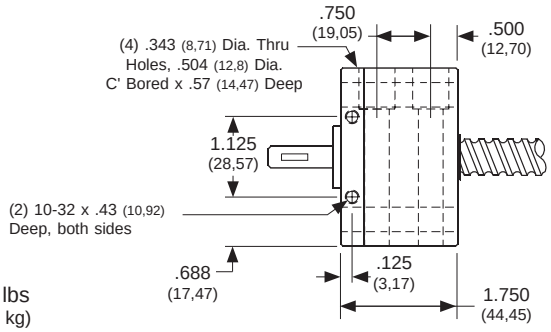


Weight = 1.1 lbs (0,50 kg)

Drive End **non-Drive End**

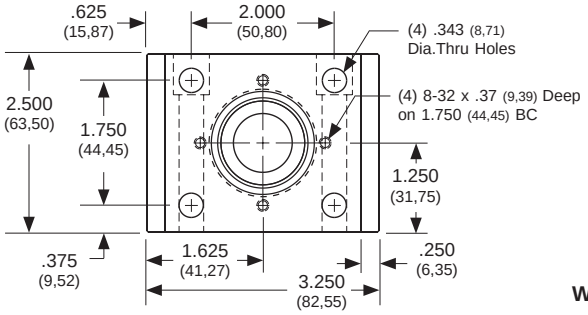
Fixed

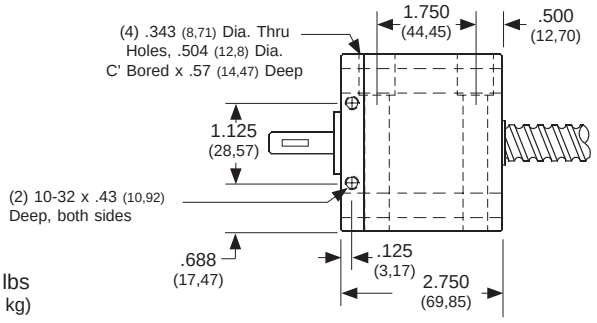




Weight = 2.7 lbs (1,22 kg)

Rigid

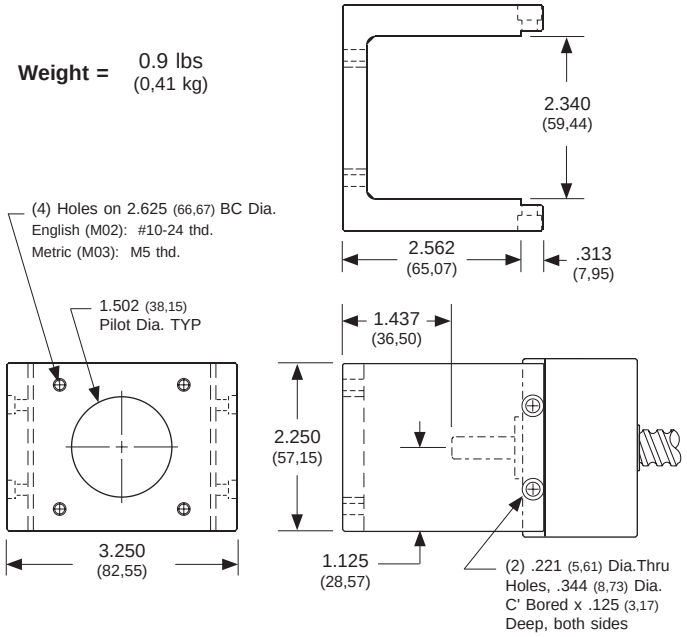




Weight = 4.0 lbs (1,81 kg)

NEMA 23 Motor Mount

Weight = 0.9 lbs (0,41 kg)



NEMA 34 Motor Mount

Weight = 1.4 lbs (0,64 kg)