

	RS	050	020	-	S1	A	-	N1	-	W0	-	F1	-	M02	-	C145	-	E00	-	B00	-	Lxxx.xxx
Rolled Screw																						
Screw Diameter																						
050 - 0.500 inch																						
Screw Lead																						
020 - 0.200 inch																						
050 - 0.500 inch																						
Support Configurations																						
S1 - Simple - Simple																						
S2 - Fixed (LT) - Simple																						
S3 - Fixed (HT) - Simple																						
S4 - Rigid - Simple																						
S5 - Rigid - Rigid																						
S9 - other																						
Support Material																						
- Steel																						
A - Aluminum																						
Nut Type																						
N1 - NPL ball nut (RFT)																						
N2 - NPL ball nut (LFT)																						
N3 - PL ball nut (RFT)																						
N4 - PL ball nut (LFT)																						
N5 - NPL Turcite nut (RFT)																						
N6 - NPL Turcite nut (LFT)																						
N7 - PL Turcite nut (RFT)																						
N8 - PL Turcite nut (LFT)																						
N9 - other																						
Nut Wipers																						
W0 - none																						
W1 - Wipers on Ball Nut																						
Nut Flange Type																						
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																						
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																						
C000 - none																						
C999 - other																						
C020 to C024 - C100																						
C040 to C047 - C125																						
C125 to C129 - H100																						
C145 to C154 - H131																						
C400 to C406 - G100																						
C425 to C434 - G126																						
Rotary Encoder																						
E00 - none																						
E99 - other																						
E20 - 500 lines/rev																						
E21 - 1000 lines/rev																						
E22 - 1270 lines/rev																						
Power-off Brake																						
B00 - none																						
B99 - other																						
B20 - 24 VDC																						
B21 - 90 VDC																						
Thread Length																						
Lxxx.xxx - screw thread length (inches)																						

(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 ⁽¹⁾ lbs (kgf)
RS050020 0.500 inch dia. 0.200 inch lead	<i>Non-preloaded</i> Ball (N1/N2)	0.500 (12,70)	0.200 (5,08)	0.405 (10,28)	0.125 (3,17)	2	9,400 (4263)	1,200 (544)
	<i>Preloaded</i> Ball (N3/N4)						9,280 (4209)	1,080 (489)
	<i>Non-preloaded</i> Turcite (N5/N6)				n/a	n/a	800 (362)	100 (45)
	<i>Preloaded</i> Turcite (N7/N8)						800 (362)	90 (41)
RS050050 0.500 inch dia. 0.500 inch lead	<i>Non-preloaded</i> Ball (N1/N2)	0.500 (12,70)	0.500 (12,70)	0.405 (10,28)	0.125 (3,17)	2	13,350 (6055)	2,200 (997)
	<i>Preloaded</i> Ball (N3/N4)						13,130 (5955)	1,980 (898)
	<i>Non-preloaded</i> Turcite (N5/N6)				n/a	n/a	800 (362)	100 (45)
	<i>Preloaded</i> Turcite (N7/N8)						800 (362)	90 (41)

Other Specifications

Maximum Acceleration Rate	Ball nut: 772 inches/sec ² (19.6 m/sec ²) Turcite nut: 193 inches/sec ² (4.9 m/sec ²)
Maximum Speed	Ball nut: 3000 rpm Turcite nut: 1500 rpm
Screw Material Screw Extensions	Right Hand Thread, Case Hardened Rc 58 Steel Rolled Ball Screw 303 Woodruff Keyways on Both Extensions from Support Housings
Screw Maximum Length ⁽²⁾ Screw Weight	72 inches (1828 mm) 0.66 lbs/ft (9,82 g/cm)
Support Housings	Aluminum with Black Anodized Finish or Steel with Black Oxide Finish 45° Chamfer x .02 inch (0,50) all Straight Edges Base or Face Mount with Integral Seals
Nut Flanges	Steel with Black Oxide Finish English or Metric Load Mounting Interface

Footnotes:

(1) Load based upon 1 million inches (25 Km) of travel life. See page 27 for further travel life ratings.

(2) Maximum stock length (not the maximum thread length with bearing housings). See page 26 for maximum thread lengths for each configuration.

Screw Specifications

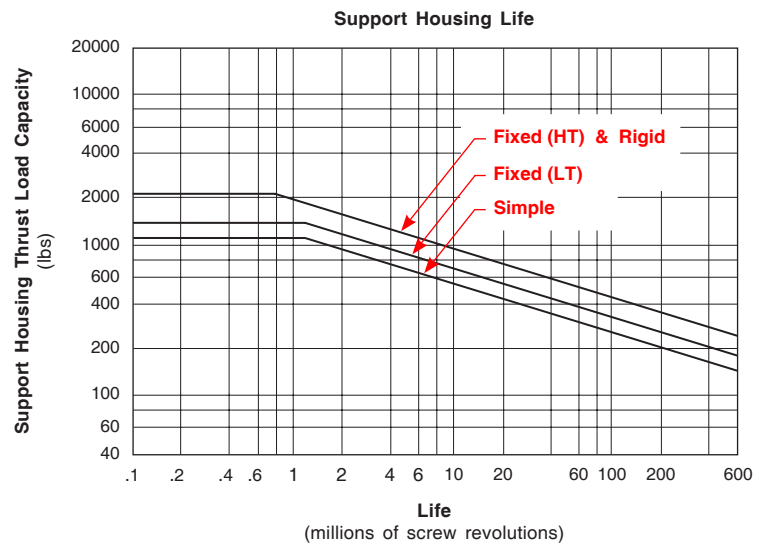
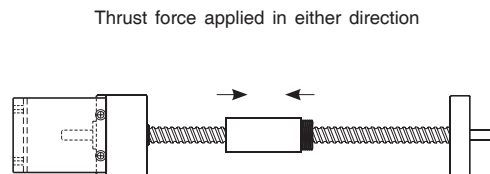
Model Number	Nut Type	Screw Efficiency %	Lead Error inch/ft (mm/300 mm)	Backlash inches (mm)	Unidirectional Repeatability inches (mm)	Bidirectional Repeatability inches (mm)
RS050020 0.500 inch dia. 0.200 inch lead & RS050050 0.500 inch dia. 0.500 inch lead	<i>Non-preloaded</i> Ball (N1/N2)	90	< 0.003 (0,075)	< 0.008 (0,203) 0	+/- 0.0002 (0,0050)	+ 0.0002 (0,0050) to - 0.0082 (0,2082)
	<i>Preloaded</i> Ball (N3/N4)					+ 0.0002 (0,0050) to - 0.0002 (0,0050)
	<i>Non-preloaded</i> Turcite (N5/N6)	60	< 0.003 (0,075)	< 0.008 (0,203) 0	+/- 0.0002 (0,0050)	+ 0.0002 (0,0050) to - 0.0082 (0,2082)
	<i>Preloaded</i> Turcite (N7/N8)					+ 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
RS050020 0.500 inch dia. 0.200 inch lead	<i>Non-preloaded</i> Ball (N1/N2)	< 8 (0,06)	< 10 (0,07)	< 20 (0,14)	< 20 (0,14)	< 30 (0,21)
	<i>Preloaded</i> Ball (N3/N4)	< 15 (0,11)	< 20 (0,14)	< 30 (0,21)	< 30 (0,21)	< 40 (0,28)
	<i>Non-preloaded</i> Turcite (N5/N6)	< 10 (0,07)	< 15 (0,11)	< 30 (0,21)	< 30 (0,21)	< 40 (0,28)
	<i>Preloaded</i> Turcite (N7/N8)	< 25 (0,18)	< 30 (0,21)	< 45 (0,32)	< 45 (0,32)	< 55 (0,39)
RS050050 0.500 inch dia. 0.500 inch lead	<i>Non-preloaded</i> Ball (N1/N2)	< 10 (0,07)	< 15 (0,11)	< 25 (0,18)	< 25 (0,18)	< 35 (0,25)
	<i>Preloaded</i> Ball (N3/N4)	< 25 (0,18)	< 30 (0,21)	< 40 (0,28)	< 40 (0,28)	< 45 (0,32)
	<i>Non-preloaded</i> Turcite (N5/N6)	< 20 (0,14)	< 25 (0,18)	< 35 (0,25)	< 35 (0,25)	< 45 (0,32)
	<i>Preloaded</i> Turcite (N7/N8)	< 35 (0,25)	< 40 (0,28)	< 50 (0,35)	< 50 (0,35)	< 60 (0,42)

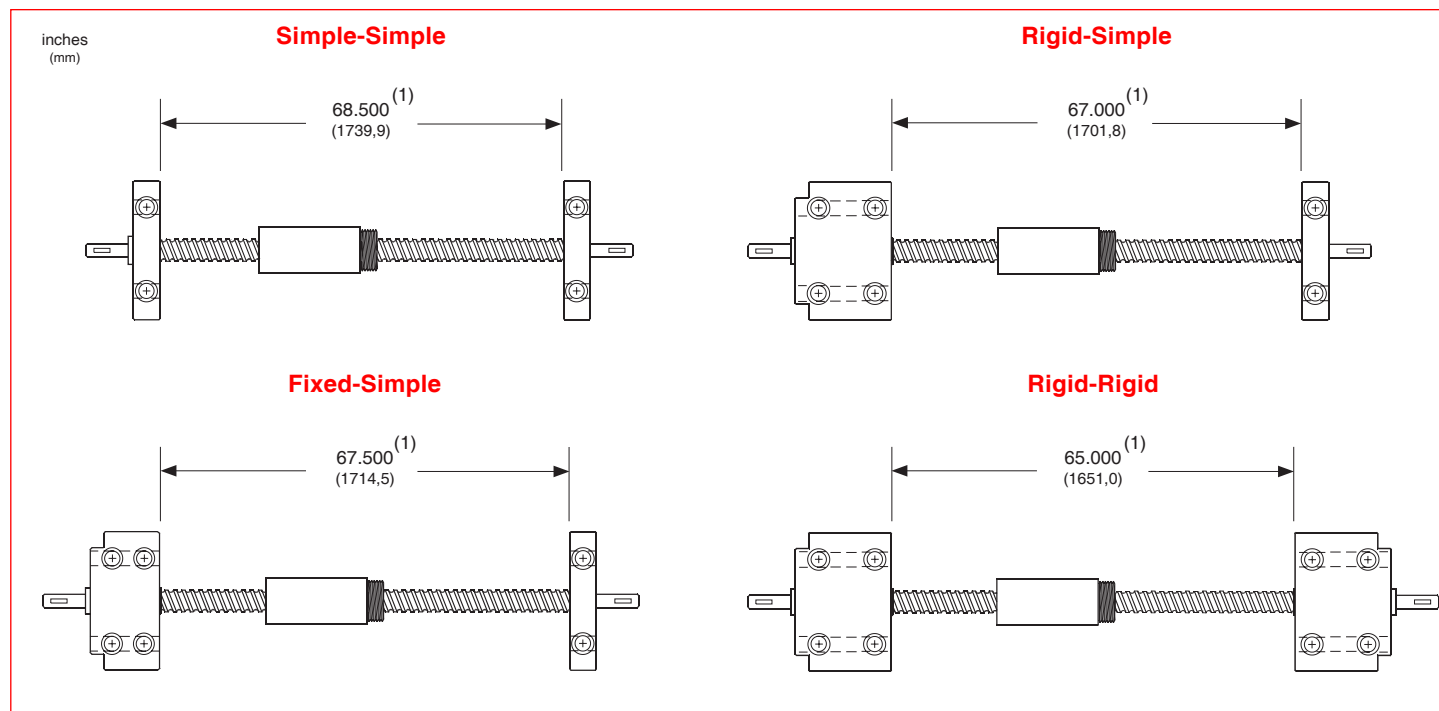
Support Housing Specifications

Support Housing Life millions of screw revolutions	Support Housing Thrust Load Capacity - (Axial)			
	Simple	Fixed (LT)	Fixed (HT)	Rigid
Static	1,076 (488)	1,355 (615)	2,160 (980)	2,160 (980)
1	1,076 (488)	1,355 (615)	1,955 (887)	1,955 (887)
2	910 (413)	1,145 (519)	1,550 (703)	1,550 (703)
10	530 (240)	665 (302)	905 (410)	905 (410)
50	310 (141)	395 (179)	530 (240)	530 (240)
100	245 (111)	305 (138)	420 (190)	420 (190)
500	145 (66)	180 (82)	245 (111)	245 (111)

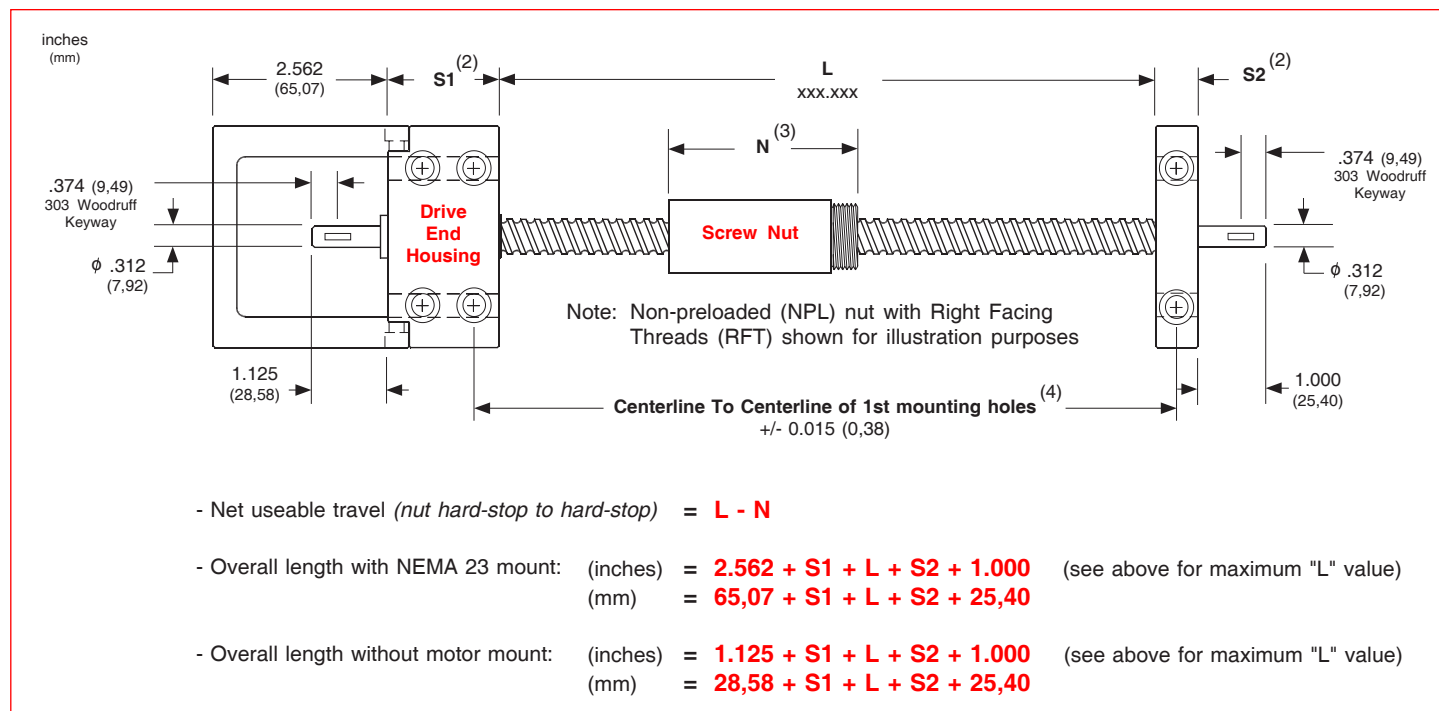


Note: Multiply screw revolutions by the screw lead in order to convert to inches (or mm) traveled by the nut.

Available Configurations



Overall Length Diagram

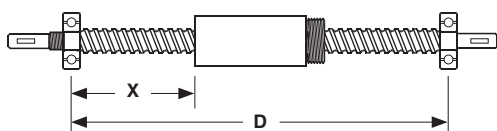


Footnotes:

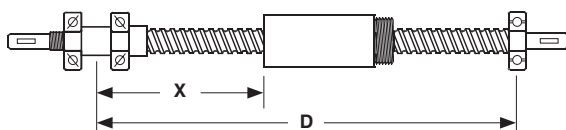
- (1) Maximum available standard screw thread length for the bearing support housing configuration shown.
- (2) Fixed-simple support configuration shown for reference. See page 29 for length values for simple, fixed, and rigid housings.
- (3) See page 28 for available nut styles. Refer to A1 & A2 values for the nut length. See page 96 for wiper kit lengths.
- (4) Tolerance shown is for base mounted support housings. Tolerance also applies to face mounted support housings.

Performance Charts

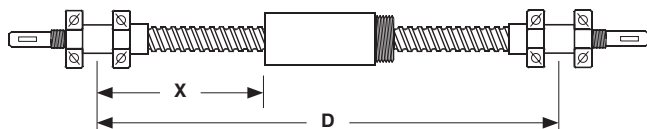
Simple-Simple



Rigid-Simple

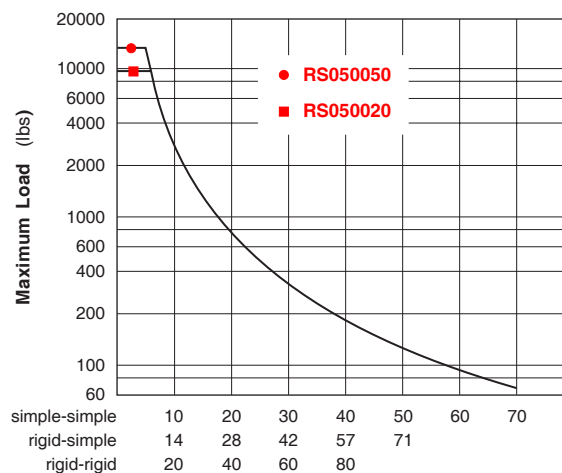


Rigid-Rigid



Maximum Compression Load ⁽¹⁾

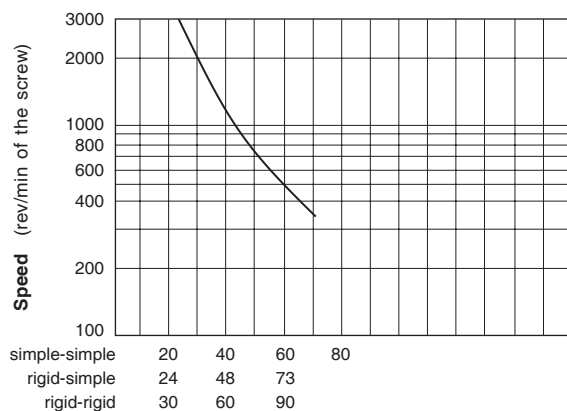
X inches (mm)	simple-simple		rigid-simple		rigid-rigid	
	lbs	(kgf)	lbs	(kgf)	lbs	(kgf)
20 (508)	756	(343)	1512	(686)	3024	(1372)
40 (1016)	189	(86)	378	(171)	756	(343)
60 (1524)	84	(38)	168	(76)	336	(152)



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

Maximum Speed ⁽¹⁾

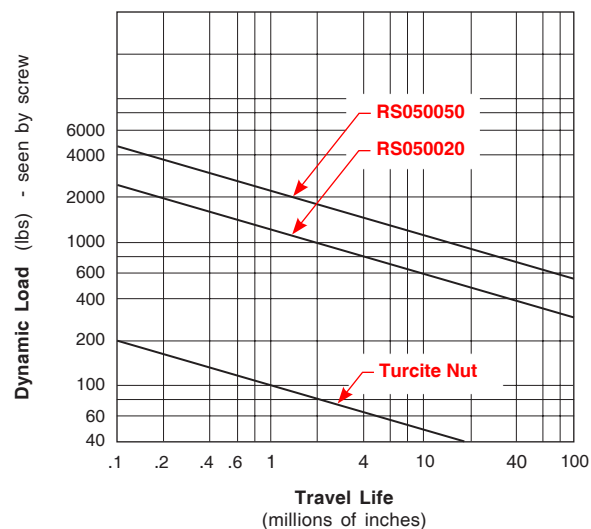
D inches (mm)	simple-simple		rigid-simple		rigid-rigid	
	rpm		rpm		rpm	
23 (584)	3000		3000		3000	
40 (1016)	1075		1580		2395	
60 (1524)	475		700		1060	
70 (1778)	340		510		775	



Maximum "D" distance between bearing supports (inches)

Screw Travel Life ⁽²⁾

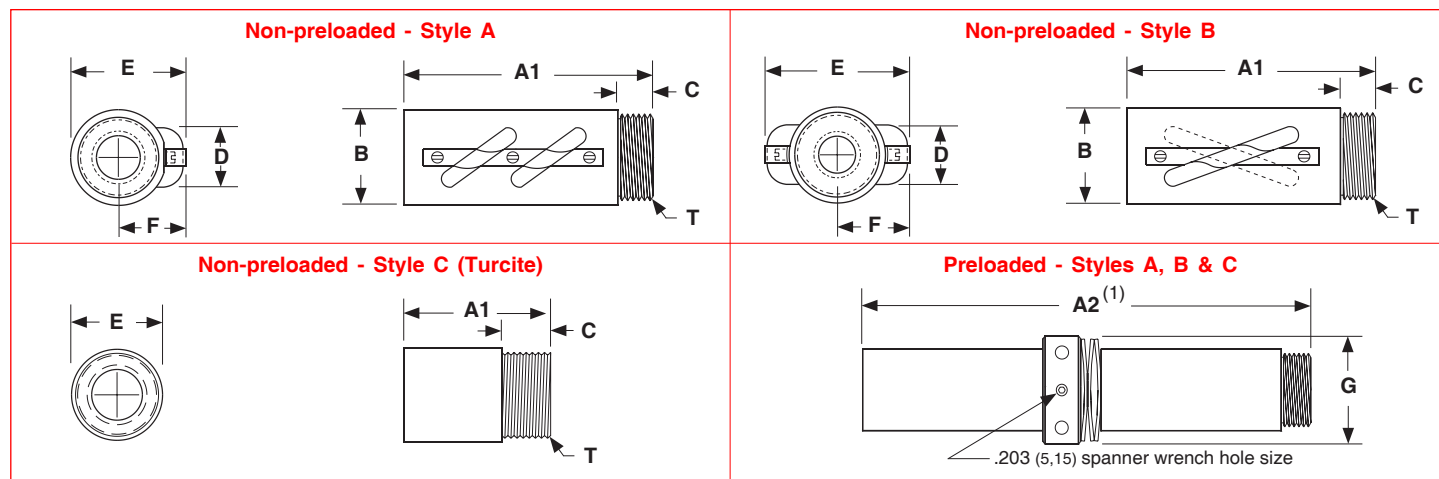
Life millions of inches (km)	050020		050050		Turcite Nut	
	lbs	(kgf)	lbs	(kgf)	lbs	(kgf)
1 (25)	1200	(544)	2200	(997)	100	(45)
2 (50)	970	(440)	1780	(807)	80	(36)
50 (1270)	350	(158)	640	(290)	29	(13)
100 (2540)	290	(131)	530	(240)	24	(11)



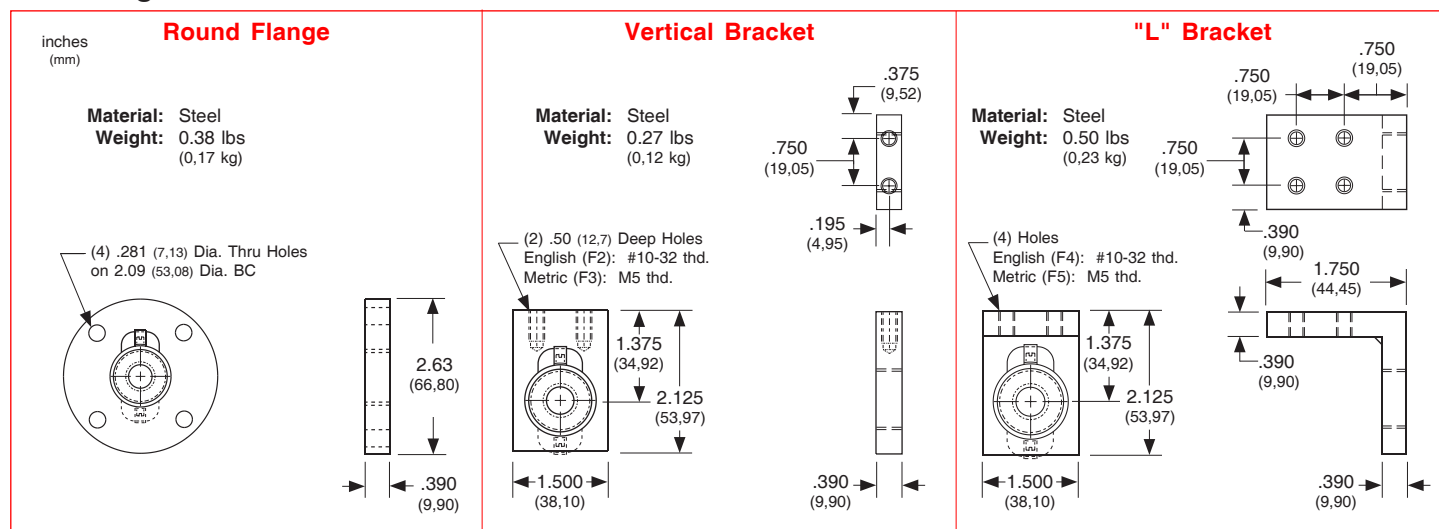
Footnotes:

- (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



Nut Flange Dimensions



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	
RS050020	A	2.760 (70,10)	6.050 (153,67)	1.067 (27,10)	0.390 (9,90)	0.665 (16,89)	1.339 (34,01)	0.850 (21,59)	15/16 - 16 UN-2A (23,81 - 16 UN-2A)	1.420 (36,07)	0.75 (0,34)
RS050050	B	2.760 (70,10)	6.050 (153,67)	1.070 (27,18)	0.390 (9,90)	0.667 (16,94)	1.630 (41,40)	0.860 (21,84)	15/16 - 16 UN-2A (23,81 - 16 UN-2A)	1.420 (36,07)	0.50 (0,22)
RS050020	C	1.020 (25,91)	2.550 (64,77)	n/a	0.390 (9,90)	n/a	1.000 (25,40)	n/a	15/16 - 16 UN-2A (23,81 - 16 UN-2A)	n/a	0.20 (0,09)
RS050050	C	1.020 (25,91)	2.550 (64,77)	n/a	0.390 (9,90)	n/a	1.000 (25,40)	n/a	15/16 - 16 UN-2A (23,81 - 16 UN-2A)	n/a	0.20 (0,09)

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

