

	GS	075	020	-	1	-	S1	A	-	N1	-	F1	-	M02	-	C165	-	E00	-	B00	-	Lxxx.xxx
Ground Screw																						
Screw Diameter																						
075 - 0.750 inch																						
20M - 20 mm																						
Screw Lead																						
020 - 0.200 inch																						
5M - 5 mm																						
20M - 20 mm																						
Internal Order Code																						
1 - Short Thread Length																						
2 - Long Thread Length																						
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																						
N3 - PL ball nut (RFT)																						
N4 - PL ball nut (LFT)																						
N9 - other																						
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																						
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																						
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)
GS075020 0.750 inch dia. 0.200 inch lead	Preloaded Ball (N3/N4)	0.750 (19,05)	0.200 (5,08)	0.635 (16,13)	0.125 (3,17)	1	3,990 (1809)	1,070 (485)
GS20M05M 20 mm dia. 5 mm lead	Preloaded Ball (N3/N4)	0.787 (20,00)	0.196 (5,00)	0.665 (16,89)	0.125 (3,17)	1	3,990 (1809)	1,070 (485)
GS20M20M 20 mm dia. 20 mm lead	Preloaded Ball (N3/N4)	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

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 Ground Ball Screw
Screw Extensions	Woodruff Keyways on Support Housings - 404 Drive End; 303 Opposite End
Screw Maximum Length ⁽²⁾	64.95 inches (1650 mm)
Screw Weight	1.35 lbs/ft (20,1 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 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)
GS075020 0.750 inch dia. 0.200 inch lead & GS20M05M 20 mm dia. 5 mm lead & GS20M20M 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
GS075020 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)
GS20M05M 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)
GS20M20M 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)

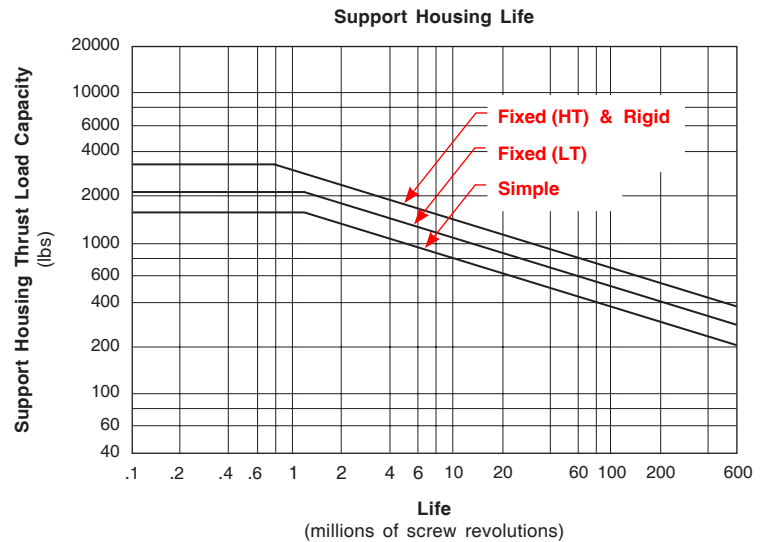
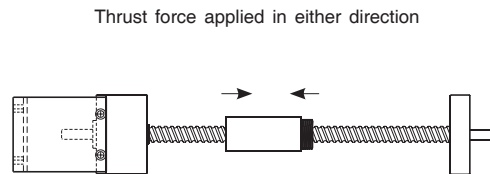
Internal Order Code

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)
GS075020 0.750 inch dia. 0.200 inch lead & GS20M05M 20 mm dia. 5 mm lead & GS20M20M 20 mm dia. 20 mm lead	-1-S1	29.500 (749,3)	GS075020 0.750 inch dia. 0.200 inch lead & GS20M05M 20 mm dia. 5 mm lead & GS20M20M 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)

Specifications subject to change without notice

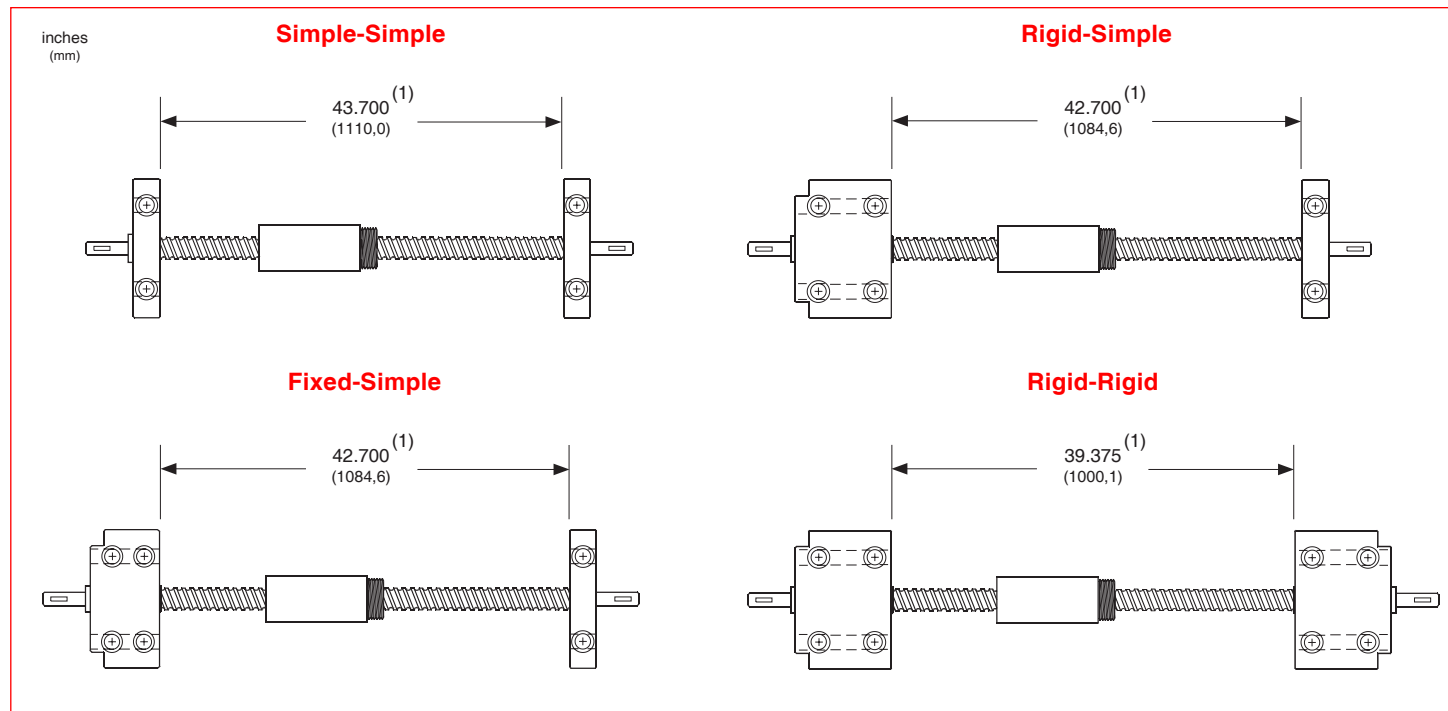
Support Housing Specifications

Support Housing Life millions of screw revolutions	Support Housing Thrust Load Capacity - (Axial)			
	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)

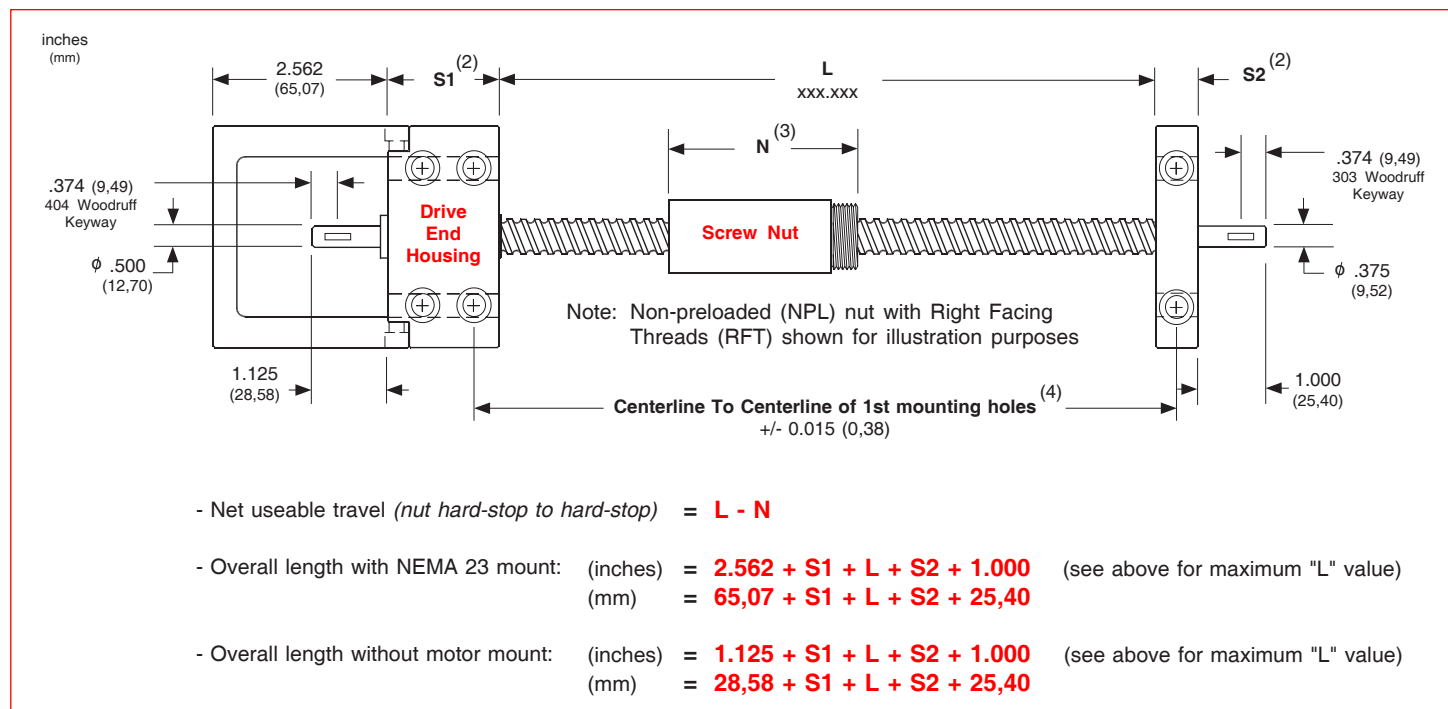


Note: Multiply screw revolutions by the screw lead in order to convert to inches (or mm) traveled by the nut.

Available Configurations



Overall Length Diagram

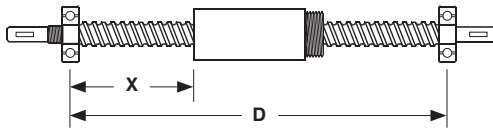


Footnotes:

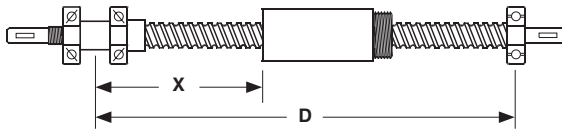
- (1) Maximum available standard screw thread length for the bearing support housing configuration shown.
- (2) Fixed-simple support configuration shown for reference. See page 93 for length values for simple, fixed, and rigid housings.
- (3) See page 92 for available nut styles. Refer to A1 & A2 values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

Performance Charts

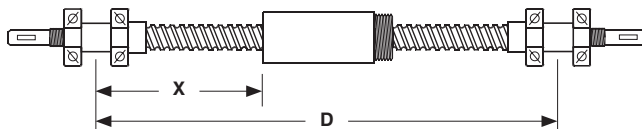
Simple-Simple



Rigid-Simple

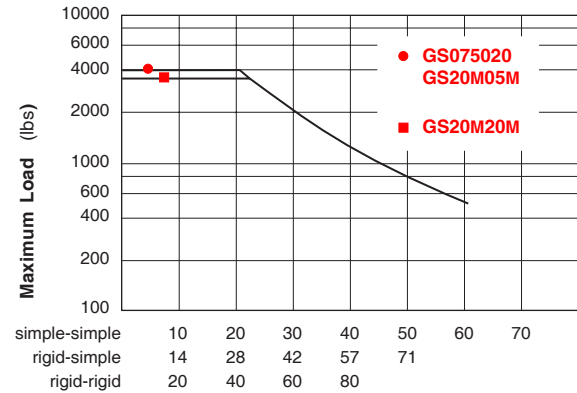


Rigid-Rigid



Maximum Compression Load ⁽¹⁾

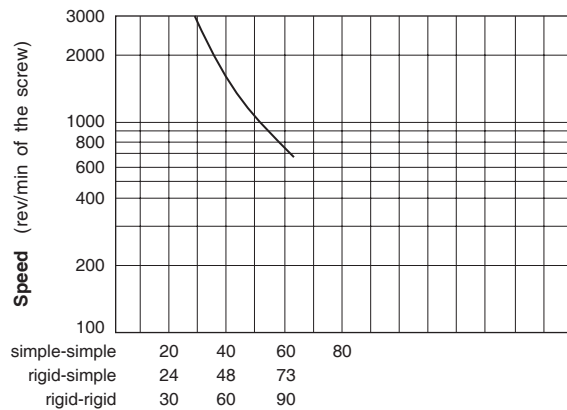
X inches (mm)	simple-simple		rigid-simple		rigid-rigid	
	lbs	(kgf)	lbs	(kgf)	lbs	(kgf)
20 (508)	3505	(1590)	3505	(1590)	3505	(1590)
40 (1016)	1140	(517)	2020	(916)	3505	(1590)
60 (1524)	505	(229)	1010	(458)	2020	(916)



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

Maximum Speed ⁽¹⁾

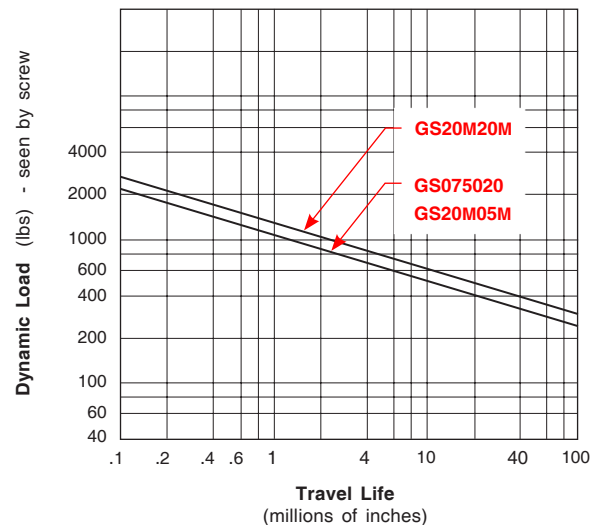
D inches (mm)	simple-simple		rigid-simple		rigid-rigid	
	rpm		rpm		rpm	
29 (737)	3000		3000		3000	
40 (1016)	1645		2415		3000	
50 (1270)	1050		1540		2340	
60 (1524)	730		1070		1625	



Maximum "D" distance between bearing supports (inches)

Screw Travel Life

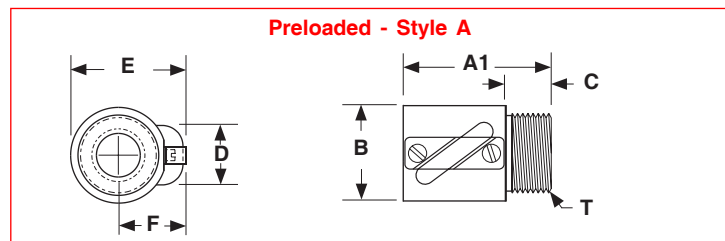
Life millions of inches (km)	075020/20M05M		20M20M	
	lbs	(kgf)	lbs	(kgf)
1 (25)	1070	(485)	1293	(586)
2 (50)	850	(385)	1029	(466)
50 (1270)	294	(133)	355	(161)
100 (2540)	234	(106)	283	(128)



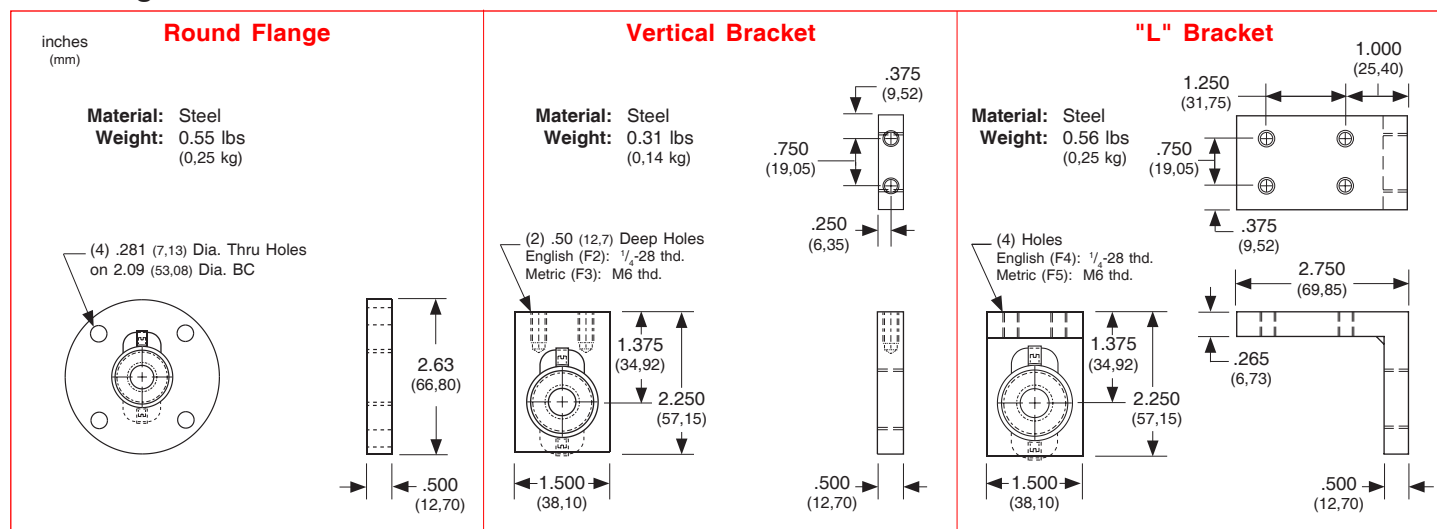
Footnotes:

(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.

Nut Dimensions



Nut Flange Dimensions



Model Number	Nut Style	Nut Dimensions inches (mm)							Nut Weight lbs (kg)
		A1 ⁽¹⁾	B	C	D	E	F	T - "V" Threads ⁽²⁾	
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

