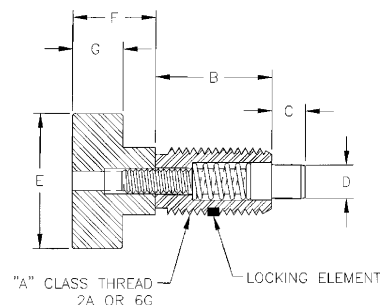


SPRING LOADED DEVICES



Knurled Knob Hand Retractable Spring Plungers Steel & Stainless Steel: Non-Locking

- Material:
 - Body: Steel or Stainless Steel
 - Plunger: Steel or Stainless Steel
- Unified ANSI and metric threads
- Hand retractable plunger can be easily engaged and withdrawn
- Chamfered plunger for easy alignment
- Built-in drive wrench for rapid installation and alignment



Steel* Black Part No.	Steel** Yellow Part No.	Stainless Steel Part No.	End Force (lbs)		Thread A	B	C	+0.001 -0.001 D	E	F	G	Weight (lbs/100pcs)
Initial	Final											
–	54654	54505	.50	3.0	10-32	.400	.094	.104***	0.38	.250	.190	2
54601	54650	54501	1.00	4.00	1/4-20	.500	.125	.123	0.50	.313	.190	2
54602	54651	54502	1.00	6.00	5/16-18	.625	.188	.154	0.63	.375	.250	4
54603	54652	54503	1.00	8.00	3/8-16	.750	.218	.185	0.75	.500	.310	6
54604	54653	54504	1.00	10.00	1/2-13	.875	.250	.248	1.00	.625	.380	8

*Black Oxide Finish **Zinc Plated Yellow Chromate Finish ***Radiused Nose

METRIC

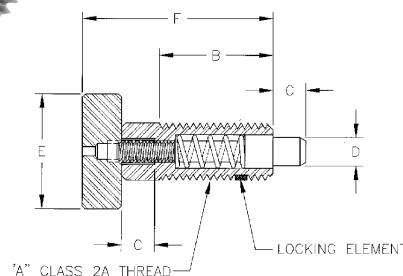
Steel** Part No.	Stainless Steel Part No.	End Force (lbs)		Thread A	B mm (in.)	C mm (in.)	D* mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)
Initial	Final									
64601	64501	0.5	3.0	M5 x 0.8	10 (.394)	2 (.078)	2.5 (.0984)	9(.355)	6 (.236)	4 (.157)
64602	64502	1.0	4.0	M6 x 1.0	13 (.512)	3 (.118)	3 (.118)	13 (.512)	8 (.315)	5 (.197)
64603	64503	1.0	8.0	M10 x 1.5	19 (.748)	6 (.236)	5 (.1968)	19 (.748)	13 (.512)	8 (.315)
64604	64504	1.0	10.0	M12 x 1.75	23 (.905)	6 (.236)	6 (.236)	25 (.984)	16 (.630)	10 (.315)

*Tolerance: +.000; -.0254 (+.000; -.001) **Zinc Plated Yellow Chromate Finish

**NYLON THREAD
LOCKING ELEMENT IS
STANDARD ON ALL SIZES**
*To order ball plungers
without a locking
element, simply add
an "X" to the end of
the part number (ex.
52821X). Pricing is the
same with or without
locking element.*

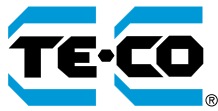
Knurled Knob Hand Retractable Spring Plungers Steel & Stainless Steel: Locking

- Material:
 - Body: Steel or Stainless Steel
 - Plunger: Steel or Stainless Steel
- Unified ANSI and metric threads
- Hand retractable plunger can be easily engaged and withdrawn
- Chamfered plunger for easy alignment
- Built-in drive wrench for rapid installation and alignment
- Plunger can be completely withdrawn into the body and locked into a retracted position



Steel Part No.*	Stainless Steel Part No.	End Force (lbs)		Thread A	B	C	+0.001 -0.001 D	E	F	Weight (lbs/100pcs)
Initial	Final									
54610	54510	.50	2.0	1/4-20	.400	.125	.123	.50	.805	2
54611	54511	.50	3.0	3/8-16	.750	.22	.185	.75	1.26	6
54612	54512	.50	4.0	1/2-13	.650	.25	.248	1.0	1.38	8

*Zinc Plated Yellow Chromate Finish



SPRING LOADED DEVICES

Installation Information for TE-CO Spring Loaded Devices

Most TE-CO Spring & Ball Plungers can be installed using a screwdriver, hex key wrench, or spring/ball plunger wrench (see page 100). Also, many Hand Retractable Spring Plungers can be installed without using any tools by simply using its knob to engage the threads. Because spring loaded devices have hollow bodies, the maximum installation torques they can withstand are significantly less than bolts or screws. The table below should be used as a guideline for installing spring loaded devices.

Unified Thread Size	Metric Thread Size	Max Installation Torque (inch pounds)
No. 4	M2.5 x 0.45	.60
No. 5	M3 x 0.5	1.25
No. 6	M3.5 x 0.6-6g	1.65
No. 8	M4 x 0.7-6g	2.15
No. 10	M5 x 0.8-6g	3.15
1/4	M6 x 1-6g	6.0
5/16	M8 x 1.25	11.0
3/8	M10 x 1.5	16.0
7/16	M11 x 1.5	22.0
1/2	M12 x 1.75	28.0
9/16	M14 x 2.0	36.0
5/8	M16 x 2.0	55.0
3/4	M20 x 2.5	70.0
7/8	M22 x 2.5	95.0
1	M24 x 3.0	130.0
1-1/8	M30 x 3.5	160.0
1-1/4	M33 x 3.5	190.0

Most TE-CO Spring Loaded Devices can be ordered with or without a nylon thread locking element (see each product group for details). The nylon-locking element forces the threads on the opposite side of a spring loaded device to compress against the mating threads of a tapped hole, providing the thread locking property. The nylon-locking element can cause installation problems when installing into softer metals or aluminum. This can be prevented by either using a larger tap drill when tapping, by ordering a spring plunger without a locking element, or by requesting a quote for a special plunger that will fit your needs.

When installing spring loaded devices with a nylon thread locking element pellet (thread sizes 5/16" and larger or M8 and larger), TE-CO recommends that the tapped installation hole be countersunk 90 degrees by 1/32 larger than major thread diameter to prevent damage to the locking element.

For more detailed information you may contact any of our knowledgeable TE-CO Customer Service Representatives at 800-543-4071.

Inch Tap Drill Sizes Table for Spring Plungers

Tap	Tap Drill	Decimal Equiv. of Tap Drill	Probable Hole Size	Percent Of Thread %
4-48	42	0.0935	0.0955	61
	3/32	0.0938	0.0958	60
	41	0.0960	0.0980	52
5-40	40	0.098	0.1003	76
	39	0.0995	0.1018	71
	38	0.1015	0.1038	65
	37	0.1040	0.1063	58
	37	0.1040	0.1063	78
6-32	36	0.1065	0.1091	71
	7/64	0.1094	0.1120	64
	35	0.1100	0.1126	63
	34	0.1110	0.1136	60
	33	0.1130	0.1156	55
6-40	34	0.1110	0.1136	75
	33	0.1130	0.1156	69
	32	0.1160	0.1186	60
8-32	29	0.1360	0.1389	62
	28	0.1405	0.1434	51
8-36	29	0.1360	0.1389	70
	28	0.1405	0.1434	57
	9/64	0.1406	0.1435	57
10-32	5/32	0.1563	0.1595	75
	22	0.1570	0.1602	73
	21	0.1590	0.1622	68
	20	0.1610	0.1642	64
	19	0.1660	0.1692	51
1/4-20	9	0.1960	0.1998	77
	8	0.1990	0.2028	73
	7	0.2010	0.2048	70
	13/64	0.2031	0.2069	66
	6	0.2040	0.2078	65
	5	0.2055	0.2093	63
	4	0.2090	0.2128	57
1/4-28	3	0.2130	0.2168	72
	7/32	0.2188	0.2226	59
	2	0.2210	0.2248	55
5/16-18	F	0.257	0.2608	72
	G	0.261	0.2651	66
	17/64	0.2656	0.2697	59
	H	0.2660	0.2701	59
3/8-16	5/16	0.3125	0.3169	72
	O	0.3160	0.3204	68
	P	0.3230	0.3274	59
1/2-13	27/64	0.4219	0.4266	73
	7/16	0.4375	0.4422	58
5/8-11	17/32	0.5313	0.5362	75
	36/64	0.5469	0.5518	62
3/4-10	41/64	0.6406	0.6456	80
	21/32	0.6563	0.6613	68
1-8	55/64	0.8594	0.8653	83
	7/8	0.8750	0.8809	73
	57/64	0.8906	0.8965	64
	29/32	0.9063	0.9122	54