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Devices**



**Leveling
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**Vlier Lock
Pins**



**Quick Release
Devices**



**Mechanical
Components**

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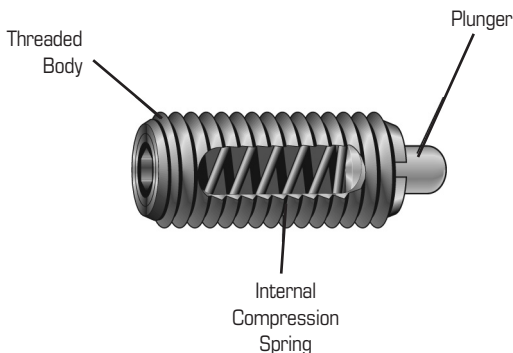
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WHAT IS A SPRING LOADED DEVICE?



A Spring Loaded Device or Enhanced Spring is a device that adds value to a spring by encapsulating it in a body and providing a plunger tip or ball on one end which allows for accurate and repeatable end forces. Not a bolt or a screw, a spring loaded device should not be subjected to the same installation or fastening forces common with bolts and screws. A spring loaded device does not have the head size of a screw or bolt and it has a hollow threaded body in order to encapsulate a spring. Vlier highly recommends that you read our Installation Tips before designing spring loaded devices into your product or fixture.

Vlier spring loaded devices fall into four main categories:

- ◆ Standard Spring Plungers
- ◆ Stubby Spring Plungers
- ◆ Ball Plungers
- ◆ Quick Release Devices

Why Use a Spring Loaded Device?

Manufacturers choose spring loaded devices over standard springs and self-manufactured parts for many reasons. The most common reasons are:

- ◆ Accurate, repeatable end forces
- ◆ Easier side loading (impossible for springs)
- ◆ Simpler to install than standard springs
- ◆ One subassembly replaces multiple components
- ◆ Repeatable projection time after time
- ◆ Minimal spring compression set

Some Basics:

End Force

Vlier spring loaded devices are designed to exert a precise end force in the right place at the right time. End forces range from 0.125 to 200 lbs. Standard spring loaded devices are available in heavy and light end force designs.

Call Vlier for information about specific end force tolerances.

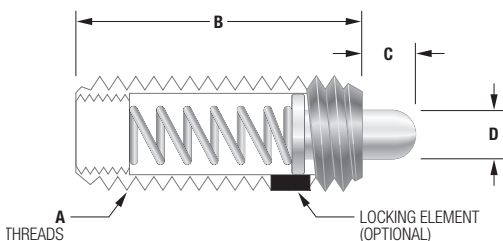
Travel

A major characteristic of the spring loaded device is its range of motion or travel. Through the range of travel, end force increases (due to spring compression) from initial to final as the plunger or ball is depressed. The product specification tables in this catalog provide initial and final end force values for all Vlier spring loaded devices. Call Vlier for information about specific travel tolerances.

Types

Many different types of spring loaded devices have been developed to suit unique uses and applications. See the Enhanced Springs and Quick Release sections of this catalog for complete coverage of standard products.

Basic Dimensions



Thread Sizes

Thread sizes for all spring loaded devices are shown in the product tables for individual product part numbers.

Class 2A Thread - Unified ANSI

Class 6g Thread - Metric

Locking Elements

Nylon locking elements are optional on most Vlier spring loaded devices. Refer to the section About Nylon Locking Elements.

GENERAL INFORMATION

VLIER MATERIALS SPECIFICATION

Material	Description	Usage
Stainless Steel	Good in corrosive environments, food processing and high temperature applications, 300 Series per ASTM A-484 or ASTM A-582 Spring- 17-7 ph, can withstand 600°F Ball- Grades: 440C**	Body Plunger Spring Ball
Carbon Steel	Less expensive material than stainless steel and better wear resistance of the plunger tip due to case hardening.*** Grades: 11L17 or 12L14A or Equiv.	Body Plunger
Music Wire Spring	Used on most carbon steel products.	Spring
Nylon or Delrin®	Will not mar soft material such as aluminum or brass.	Body Plunger Ball
Phenolic	Will not mar soft material such as aluminum or brass. More brittle than nylon or Delrin®.	Plunger
Neoprene	Non-Skid Elastomer Pad	Leveler

Delrin® is a registered Trademark of DuPont Corp.

**NOTE: All 440C stainless steel balls are hardened to Rc 58-62.

***NOTE: All steel plungers are typically case hardened to 0.015-0.010 inches in depth to a hardness of between Rc 55-62.

Finish Platings

- ◆ Zinc plate: yellow, clear or black chromate conversion coat
- ◆ Black oxide
- ◆ Passivate: SAE-AMS-QQ-P-35, ASTM-A-967*
- ◆ Electroless Nickel
- ◆ Other special platings

Alloy Material Specifications				
Material Grade	Tensile PSI	Yield PSI	Elong.**	Hardness***
440C	110,000	65,000	14	Br 230
302,304,304L	65,000	35,000	80	Br 150
303S	100,000	60,000	40	Br 228
316,316L	80,000	35,000	55	Br 149
321,347	85,000	35,000	55	Br 150
12L14	80,000	60,000	10	Rc B85
LEDLOY AX	80,000	60,000	10	Rc B85
11L17	80,000	60,000	10	Rc B85

* Stainless steel components are passivated prior to assembly unless otherwise specified

** Elongation: 2", % *** Br = Brinell, Rc = Rockwell

Spring Material Specifications

Material Grade	Max Temp °F	Max Temp °C	Hardness*	
Music Wire	250	121	Rc C41-60	
17-7PH	650	343	Rc C38-57	

Material Specifications

Material Description	Service Temp °F	Tensile ¹	Ln. Exp. ²	Hardness*
Delrin® **	190	9,000	5.0	Rc M80-90
Nylon	180	12,000	4.5	Rc R120
Phenolic	284	20,000	-	Rm 110

¹ Yield Strength, PSI

² Linear Thermal Expansion IN/IN F°10-5

* RC = Rockwell, Br = Brinell

** Acetal (Celcon, Delrin®)

SELECTING THE RIGHT Vlier SPRING LOADED DEVICE

- 1 Select the type of spring loaded device for your application by referring to the enhanced spring and quick release sections of this catalog
- 2 Select light or heavy end force
- 3 Select the material, steel, stainless steel, phenolic, nylon or Delrin®
- 4 Select the thread size (hole diameter) and select product from table
- 5 Identify the product part number. Add any applicable prefix from the table header to specify the product material or type you want
- 6 Do you need a thread locking element? See section **(About Nylon Locking Elements)**
- 7 If ordering a standard part...order by part number

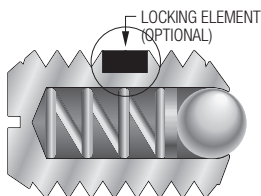
To Order

Call your Vlier stocking distributor and indicate the part numbers and quantities you wish to order.

Specials

When a standard Vlier spring loaded device will not fulfill your requirements, a special design can be engineered that will. Over the years, Vlier has solved many complex problems with a wide variety of specials. We will be happy to provide you with a prompt quote for any requirement you may have.

ABOUT NYLON LOCKING ELEMENTS



The nylon locking element eliminates the need for checknuts, locking helicoils, or the use of thread locking adhesives. Maximum temperature limit 250°F.

How To Order the Locking Element

See specific pages for accurate locking element call out availability.

Installation with Locking Elements

When using the locking element (thread sizes $\frac{5}{16}$ inch and larger) we strongly recommend that you countersink the mating thread 90 degrees by $\frac{1}{32}$ " larger than the major thread diameter.

How The Locking Element Works

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. This compression has sometimes caused installation problems when installing into soft metals. When the steel threads of a spring plunger are forced against aluminum threads of a tapped hole, the steel threads can damage the softer aluminum threads, impeding installation or removal.

If our standard locking element does not install easily in your application, you might try using a larger drill in the tapping operation, or ask a Vlier applications engineer for a quote on a special.

DETENTS & HOLE DIAMETER

Detents used with spring loaded devices ensure proper engagement and disengagement of mating parts at a predetermined position and force. Proper detent design is critical for successful use of spring loaded devices. Improperly designed detents can cause excessive wear on nylon or Delrin® plunger tips, potentially decreasing positioning accuracy and adversely affecting spring loaded device holding capacity. As a general rule, the smaller the contact angle (Ω) of the detent the easier the spring loaded device will kick-out of it and the longer a nylon or Delrin® plunger tip will last. See page 15 for calculating hole depth and hole diameter.

Detent Design Guidelines

Select the contact angle which provides the desired relationship between plunger side (disengagement) force and end force.

SOLVE THE EQUATION: $F_s = F_e (\tan \Omega)$

Example:

Given $F_e = 10$ pounds from catalog for S58 at midway travel.

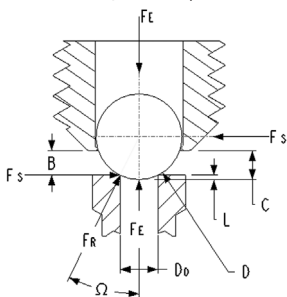
Angle $\Omega = 30^\circ$ from layout.

Solution: $\tan 30^\circ = .58$

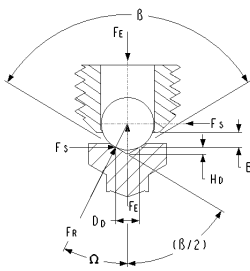
Substitute in above equation.

$F_s = F_e (\tan \Omega) = 10 (.58)$

$F_s = 5.80$ pounds



Standard groove & thru-hole configuration*



Countersink hole & V-groove configuration*

Variables

F_e = End force

F_s = Side force

Ω = Contact angle

B = Countersink angle

F_R = Resultant force

$L = D/2(1 - \cos \Omega)$

= Distance from load contact point to end of plunger/ball

D = Plunger/Ball diameter

D_0 = Detent hole diameter

C = Full travel (stroke)

H_0 = Countersink min. depth

$B = C - L$

= Distance from body to load contact point

* Equation and diagram omit frictional forces.

INSTALLATION TIPS

Maximum Installation Torques: Because spring loaded devices are not bolts or screws, 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 Vlier spring loaded devices. If you require more specific information, please call Vlier Engineering.

MAXIMUM INSTALLATION TORQUE FOR VLIER SPRING LOADED DEVICES (INCH-POUNDS)

Unified Thread Size	Metric Thread Size	Max Installation Torque (inch pounds)	Max Installation Torque (newton meters)
No. 4	M2.5x0.45	0.60	0.07
No. 5	M3x0.5	1.25	0.14
No. 6	M3.5x0.6-6g	1.65	0.19
No. 8	M4x0.7-6g	2.15	0.24
No. 10	M5x0.8-6g	3.15	0.36
¼	M6x1-6g	6.0	0.68
⅝	M8x1.25	11.0	1.24
¾	M10x1.5	16.0	1.81
7/16	M11x1.5	22.0	2.48
½	M12x1.75	28.0	3.16
9/16	M14x2.0	36.0	4.06
⅝	M16x2.0	55.0	6.21
¾	M20x2.5	70.0	7.90
7/8	M22x2.5	95.0	10.72
1	M24x3.0	130.0	14.67
1⅝	M30x3.5	160.0	18.06
1¾	M33x3.5	190.0	21.44

Installation into Different Materials

Installation problems can occur when a spring loaded device supplied with a nylon locking element is installed into soft metals and locking helicoils. Aluminum threads may be damaged by the steel threads of the spring loaded devices upon installation making it very difficult for deeper installation or removal. When installing only a few spring loaded devices into soft metals, Vlier recommends that you purchase spring loaded devices without the nylon locking element and use a thread locking adhesive or helicoil. When installing large quantities of spring loaded devices it may be cost-effective to ask Vlier to apply a lighter nylon locking element or apply the nylon locking element in a different location on the body.

Installing Into Helicoils

Locking helicoils can cause the same installation problems as the nylon locking element. You should never use the nylon locking element when also using a locking helicoil. Regular helicoils may be used in conjunction with the nylon locking element but Vlier recommends that you may still want to prototype the installation or discuss it with a Vlier application engineer.

When using locking helicoils, Vlier suggests that you experiment with different drill sizes during the tapping operation and determine which drill size or class of thread gives you the appropriate amount of thread locking and still allows minimum installation effort.

Using the Vlier Wrench

You can use the Vlier wrench when installing a spring loaded device from the front end of the body, but because of its design, the wrench can break if the recommended installation torques are exceeded.

Blind Hole Applications

The bottom few threads of a blind hole are often imperfect threads and can cause difficulty when installing spring loaded devices. Vlier recommends that blind holes be tapped using bottom taps or tapped deeper than necessary, if possible.

Using Power Screwdrivers

When set on the lowest torque level, power screwdrivers can provide more constant pressure on the slot than can be obtained by using a regular screwdriver. This may allow spring loaded devices to be installed in tight threads that may not have been possible using a manual screwdriver.

Guidelines for Hole Diameter

Use ball diameter (D) as a guideline for maximum hole size. See diagrams for detents and hole diameter on page 13. Select a detent hole size which ensures adequate clearance between body and mating surface.

For thru holes: $D_o = D \sin \Omega$

For countersunk holes: $D_o = D \cos (\beta/2) = D \sin \Omega$

Contact angle: $\Omega = 90 - (\beta/2)$

Hole Depth: $H_o = \frac{(D/2) \cos (\beta/2)}{\tan (\beta/2)}$

Guidelines for Hole Depth

Control hole depth (H_o) and detent hole diameter (D_o) to ensure adequate clearance (β) between body and mating surface.

About Checknuts

Vlier spring loaded devices are similar to hollow screws; they both have minimal wall thicknesses. Thus when using checknuts as a thread locking device, take care not to over-tighten the checknut or else the body of the spring plunger may shear in half.

PRODUCT SUPPORT

Engineering Support

Vlier's application engineering staff is trained and ready to provide comprehensive support for Vlier spring loaded devices, quick release devices, Vlier lock pins, leveling devices or mechanical components for all design, installation and application requirements.

Local Support

If you would like a personal visit to discuss or review your applications, Vlier has qualified distributors who will assist you in every way possible.

Customer Support

To assure that you are receiving top service, Vlier maintains a well-trained customer service department, ready to help in every way possible to assist its customers.

CAD Library

Available at vlier.com or call the Vlier office.

 Product Use MATRIX							
		Spring Loaded Devices	Quick Release Devices	Vlier Lock Pins	Leveling Devices	Mechanical Components	
Fixturing						●	
Jig Locking						●	
Bolting						●	
Positive Alignment						●	
Clamping						●	
Part Stops						●	
Tool Securing						●	
Height Control						●	
Instrument Leveling						●	
Equipment Support				●			
Shock Attenuation				●			
Fastening				●			
Quick Disconnect			●	●			
Positive Locking	●	●	●				
Position & Secure	●	●	●				
Indexing	●	●	●				
Adjustable Set Screw	●	●	●				
Electrical Insulator	●						
Electrical Contact	●						
Part Ejection	●						

SPRING LOADED DEVICES

Standard Spring Plungers



Steel/Stainless Steel

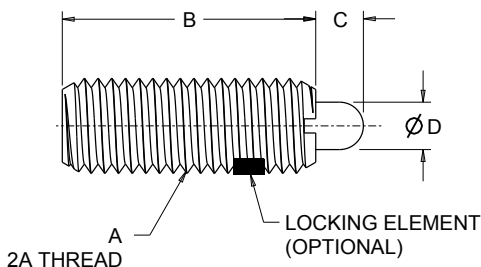
Standard spring plungers offer long travel, large bearing surfaces and numerous material and design options including an optional locking element. Available in steel and stainless steel.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|------------------------------|------------------------------|
| ◆ Easy installation | ◆ Self-lubricating materials |
| ◆ Accurate alignment | ◆ Non-marring materials |
| ◆ Corrosion resistance | ◆ Non-chipping materials |
| ◆ Wear resistance | ◆ Special environments |
| ◆ Heavy and light end forces | ◆ Insulating properties |



Standard Spring Plungers - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel	Initial	Final				
S48	SSS48	1.5	4.5	6-32	0.53	0.063	0.045
S48A	SSS48A	1.0	1.6	6-32	0.38	0.063	0.045
S50	SSS50	2.7	7.3	8-32	0.63	0.094	0.070
S52	SSS52	2.9	11.1	10-32	0.75	0.125	0.092
S54	SSS54	3.0	13.0	¼-20	1.00	0.188	0.118
S54A	SSS54A	3.0	13.0	¼-28	1.00	0.188	0.118
S54B	SSS54B	2.0	9.0	¼-20	0.75	0.125	0.118
S56	SSS56	3.0	15.0	⅝-18	1.00	0.188	0.135
S58	SSS58	5.5	14.5	⅝-16	1.13	0.188	0.187
S60	SSS60	6.6	17.4	½-13	1.25	0.250	0.248
S62	SSS62	10.5	25.5	⅝-11	1.50	0.313	0.310
S64	SSS64	6.7	37.3	¾-10	1.75	0.313	0.374
S66	SSS66	16.0	68.0	1-8	2.41	0.500	0.498

Light End Force - Standard Spring Plungers - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel	Initial	Final				
S49	SSS49	0.5	1.5	6-32	0.53	0.063	0.045
S51	SSS51	0.7	2.3	8-32	0.63	0.094	0.070
S53	SSS53	1.3	2.7	10-32	0.75	0.125	0.092
S55	SSS55	1.0	4.0	¼-20	1.00	0.188	0.118
S55A	SSS55A	1.0	4.0	¼-28	1.00	0.188	0.118
S57	SSS57	1.5	4.5	⅝-18	1.00	0.188	0.135
S59	SSS59	2.8	7.2	⅝-16	1.13	0.188	0.187
S61	SSS61	2.7	9.3	½-13	1.25	0.250	0.248
S63	SSS63	3.5	10.5	⅝-11	1.50	0.313	0.310
S67	SSS67	4.0	31.0	1-8	2.41	0.500	0.498

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Steel Body with Stainless Steel Nose

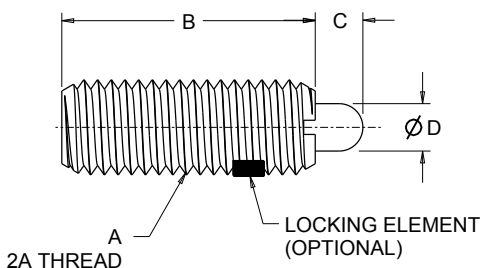
Standard spring plungers offer long travel, large bearing surfaces and numerous material and design options.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|------------------------------|------------------------------|
| ◆ Easy installation | ◆ Self-lubricating materials |
| ◆ Accurate alignment | ◆ Non-marring materials |
| ◆ Corrosion resistance | ◆ Non-chipping materials |
| ◆ Wear resistance | ◆ Special environments |
| ◆ Heavy and light end forces | ◆ Insulating properties |



Standard Spring Plungers - Steel w/Stainless Steel Nose

Part No.	End Force, (Lbs.)		A	B	C	D
	Initial	Final				
CS48	1.5	4.5	6-32	0.53	0.063	0.045
CS48A	1.0	1.6	6-32	0.38	0.063	0.045
CS50	2.7	7.3	8-32	0.63	0.094	0.070
CS52	2.9	11.1	10-32	0.75	0.125	0.092
CS54	3.0	13.0	¼-20	1.00	0.188	0.118
CS54A	3.0	13.0	¼-28	1.00	0.188	0.118
CS54B	2.0	9.0	¼-20	0.75	0.125	0.118
CS56	3.0	15.0	⅝-18	1.00	0.188	0.135
CS58	5.5	14.5	⅝-16	1.13	0.188	0.187
CS60	6.6	17.4	½-13	1.25	0.250	0.248
CS62	10.5	25.5	⅝-11	1.50	0.313	0.310
CS64	6.7	37.3	¾-10	1.75	0.313	0.374
CS66	16.0	68.0	1-8	1.41	0.500	0.498

Light End Force - Standard Spring Plungers - Steel w/Stainless Steel Nose

Part No.	End Force, (Lbs.)		A	B	C	D
	Initial	Final				
CS49	0.5	1.5	6-32	0.53	0.063	0.045
CS51	0.7	2.3	8-32	0.63	0.094	0.070
CS53	1.3	2.7	10-32	0.75	0.125	0.092
CS55	1.0	4.0	¼-20	1.00	0.188	0.118
CS55A	1.0	4.0	¼-28	1.00	0.188	0.118
CS57	1.5	4.5	⅝-18	1.00	0.188	0.135
CS59	2.8	7.2	⅝-16	1.13	0.188	0.187
CS61	2.7	9.3	½-13	1.25	0.250	0.248
CS63	3.5	10.5	⅝-11	1.50	0.313	0.310
CS67	4.0	31.0	1-8	2.41	0.500	0.498

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Steel/Stainless Steel (Metric)

Standard spring plungers are offered with metric thread sizes and large bearing surfaces that prevent binding and assure perfect alignment at any extension.

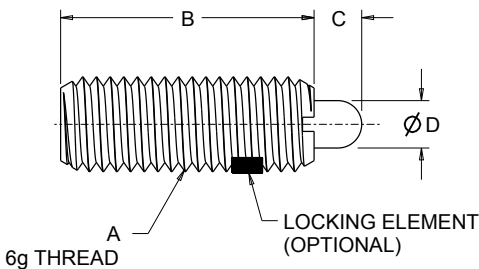
An all stainless steel design affords the added benefit of maximum protection against rust and corrosion.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|------------------------------|---|
| ◆ Metric threads | ◆ Stainless steel
resists corrosion |
| ◆ Accurate alignment | ◆ Stainless steel withstands
high temperatures |
| ◆ Long travel | ◆ Wear resistance |
| ◆ Heavy and light end forces | |



Standard Spring Plungers - Steel/Stainless Steel (Metric)

Part No.		End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Initial	Final				
SM4A	SSM4A	12.0 (2.7)	22.7 (5.13)	M4 x 0.7	16.0 (0.630)	1.5 (0.059)	1.8 (0.070)
SM5A	SSM5A	13.0 (2.9)	39.6 (8.9)	M5 x 0.8	19.0 (0.750)	2.3 (0.091)	2.3 (0.090)
SM6A	SSM6A	18.0 (4.05)	50.0 (11.24)	M6 x 1.0	20.0 (0.787)	2.5 (0.098)	2.7 (0.106)
SM8A	SSM8A	25.0 (5.62)	70.0 (15.74)	M8 x 1.25	22.0 (0.866)	3.0 (0.118)	3.5 (0.138)
SM10A	SSM10A	25.0 (5.62)	70.0 (15.74)	M10 x 1.5	22.0 (0.866)	3.0 (0.118)	4.0 (0.157)
SM12A	SSM12A	45.0 (10.12)	110.0 (24.73)	M12 x 1.75	28.0 (1.102)	4.0 (0.157)	6.0 (0.236)
SM16A	SSM16A	46.7 (10.5)	75.2 (16.9)	M16 x 2.0	38.1 (1.500)	5.0 (0.197)	7.8 (0.310)

Light End Force - Standard Spring Plungers - Steel/Stainless Steel (Metric)

Part No.		End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Initial	Final				
SML4A	SSML4A	3.0 (0.7)	7.6 (1.7)	M4 x 0.7	16.0 (0.630)	1.5 (0.059)	1.8 (0.07)
SML5A	SSML5A	5.8 (1.3)	10.4 (2.3)	M5 x 0.8	19.0 (0.750)	2.3 (0.091)	2.3 (0.09)
SML6A	SSML6A	7.0 (1.57)	20.0 (4.5)	M6 x 1.0	20.0 (0.787)	2.5 (0.098)	2.7 (0.106)
SML8A	SSML8A	9.0 (2.02)	35.0 (7.87)	M8 x 1.25	22.0 (0.866)	3.0 (0.118)	3.5 (0.138)
SML10A	SSML10A	9.0 (2.02)	35.0 (7.87)	M10 x 1.5	22.0 (0.866)	3.0 (0.118)	4.0 (0.157)
SML12A	SSML12A	10.0 (2.25)	55.0 (12.36)	M12 x 1.75	28.0 (1.102)	4.0 (0.157)	6.0 (0.236)
SML16A	SSML16A	15.6 (3.5)	35.2 (7.9)	M16 x 2.0	38.1 (1.500)	5.0 (0.197)	7.8 (0.31)

To order with thread locking element add "N" at the end of the part number for thread sizes M8 and larger. For sizes M6 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Phenolic and Delrin® Nose Plungers

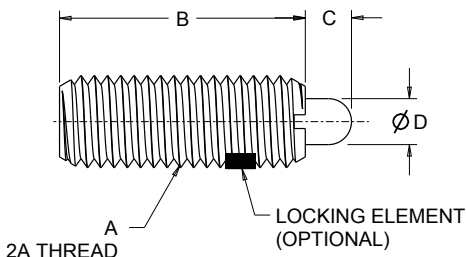
Phenolic nose and Delrin® Nose standard spring plungers are ideal for use with aluminum, brass or any soft, easily marred material.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|--|-------------------------------------|
| ◆ High tensile strength phenolic plungers | ◆ High dielectric strength |
| ◆ Insulating Delrin® Nose | ◆ Wear resistance |
| ◆ Reinforced for minimum deformation under force | ◆ Stainless steel resists corrosion |
| | ◆ Self-lubricating surface |



Delrin® is a registered trademark of DuPont Corp.

Standard Spring Plungers - Steel w/Phenolic Nose/Delrin® Nose

Part No.		End Force, (Lbs.)		A	B	C	D
Phenolic Plunger	Delrin® Plunger	Initial	Final				
NS50	NNS50	2.7	7.3	8-32	0.63	0.094	0.070
NS52	NNS52	2.9	11.1	10-32	0.75	0.125	0.920
NS54	NNS54	3.0	13.0	¼-20	1.00	0.188	0.118
NS54A	NNS54A	3.0	13.0	¼-28	1.00	0.188	0.118
NS56	NNS56	3.0	15.0	⅝-18	1.00	0.188	0.135
NS58	NNS58	5.5	14.5	⅜-16	1.13	0.188	0.187
NS60	NNS60	6.6	17.4	½-13	1.25	0.250	0.248
NS62	NNS62	10.5	25.5	⅝-11	1.50	0.313	0.310

Light End Force Standard Spring Plungers - Steel w/Phenolic Nose/Delrin® Nose

Part No.		End Force, (Lbs.)		A	B	C	D
Phenolic Plunger	Delrin® Plunger	Initial	Final				
NS51	NNS51	0.7	2.3	8-32	0.63	0.094	0.070
NS53	NNS53	1.3	2.7	10-32	0.75	0.125	0.092
NS55	NNS55	1.0	4.0	¼-20	1.00	0.188	0.118
NS55A	NNS55A	1.0	4.0	¼-28	1.00	0.188	0.118
NS57	NNS57	1.5	4.5	⅝-18	1.00	0.188	0.135
NS59	NNS59	2.8	7.2	⅜-16	1.13	0.188	0.187
NS61	NNS61	2.7	9.3	½-13	1.25	0.250	0.248
NS63	NNS63	3.5	10.5	⅝-11	1.50	0.313	0.310

Standard Spring Plungers - Stainless Steel w/Delrin® Nose

Part No.	End Force, (Lbs.)		A	B	C	D
	Initial	Final				
SSSD50	2.7	7.3	8-32	0.63	0.094	0.070
SSSD52	2.9	11.1	10-32	0.75	0.125	0.092
SSSD54	3.0	13.0	¼-20	1.00	0.188	0.118
SSSD54A	3.0	13.0	¼-28	1.00	0.188	0.118
SSSD54B	2.0	9.0	¼-20	0.75	0.125	0.118
SSSD56	3.0	15.0	⅝-18	1.00	0.188	0.135
SSSD58	5.5	14.5	⅜-16	1.13	0.188	0.187
SSSD60	6.6	17.4	½-13	1.25	0.250	0.248
SSSD62	10.5	25.5	⅝-11	1.50	0.313	0.310

Light End Force Standard Spring Plungers - Stainless Steel w/Delrin® Nose

Part No.	End Force, (Lbs.)		A	B	C	D
	Initial	Final				
SSSD51	0.7	2.3	8-32	0.63	0.094	0.070
SSSD53	1.3	2.7	10-32	0.75	0.125	0.092
SSSD55	1.0	4.0	¼-20	1.00	0.188	0.118
SSSD55A	1.0	4.0	¼-28	1.00	0.188	0.118
SSSD57	1.5	4.5	⅝-18	1.00	0.188	0.135
SSSD59	2.8	7.2	⅜-16	1.13	0.188	0.187
SSSD61	2.7	9.3	½-13	1.25	0.250	0.248
SSSD63	3.5	10.5	⅝-11	1.50	0.313	0.310

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Delrin® Nose Plungers (Metric)

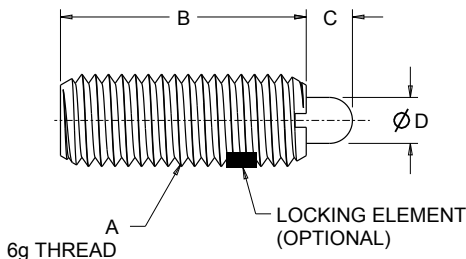
Delrin® Nose standard spring plungers are ideal for use with aluminum, brass or any soft, easily marred material.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|---|--|
| ◆ Metric threads | ◆ Wear resistance |
| ◆ Insulating Delrin® Nose | ◆ Stainless steel
resists corrosion |
| ◆ Reinforced for minimum
deformation under force | ◆ Self-lubricating surface |
| ◆ High dielectric strength | |



Standard Spring Plungers - Steel/Stainless Steel w/Delrin® Nose (Metric)

Part No.		End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Initial	Final				
NNSM4A	SSSDM4A	12.0 (2.7)	22.7 (5.13)	M4 x 0.7	16.0 (0.63)	1.5 (0.059)	1.8 (0.070)
NNSM5A	SSSDM5A	13.0 (2.9)	39.6 (8.9)	M5 x 0.8	19.0 (0.75)	2.3 (0.091)	2.3 (0.090)
NNSM6A	SSSDM6A	18.0 (4.05)	50.0 (11.24)	M6 x 1.0	20.0 (0.79)	2.5 (0.098)	2.7 (0.106)
NNSM8A	SSSDM8A	25.0 (5.62)	70.0 (15.74)	M8 x 1.25	22.0 (0.87)	3.0 (0.120)	3.5 (0.140)
NNSM10A	SSSDM10A	25.0 (5.62)	70.0 (15.74)	M10 x 1.5	22.0 (0.87)	3.0 (0.120)	4.0 (0.160)
NNSM12A	SSSDM12A	45.0 (10.12)	110.0 (24.73)	M12 x 1.75	28.0 (1.10)	4.0 (0.160)	6.0 (0.240)
NNSM16A	SSSDM16A	46.7 (10.5)	75.2 (16.9)	M16 x 2.0	38.1 (1.50)	5.0 (0.197)	7.8 (0.310)

Light End Force Standard Spring Plungers - Steel/Stainless Steel w/Delrin® Nose (Metric)

Part No.		End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Initial	Final				
NNSML4A	SSSDML4A	3.0 (0.7)	7.6 (1.7)	M4 x 0.7	16.0 (0.63)	1.5 (0.059)	1.8 (0.070)
NNSML5A	SSSDML5A	5.8 (1.3)	10.4 (2.3)	M5 x 0.8	19.0 (0.75)	2.3 (0.091)	2.3 (0.090)
NNSML6A	SSSDML6A	7.0 (1.6)	20.0 (4.5)	M6 x 1.0	20.0 (0.79)	2.5 (0.098)	2.7 (0.106)
NNSML8A	SSSDML8A	9.0 (2.0)	35.0 (7.9)	M8 x 1.25	22.0 (0.87)	3.0 (0.120)	3.5 (0.140)
NNSML10A	SSSDML10A	9.0 (2.0)	35.0 (7.9)	M10 x 1.5	22.0 (0.87)	3.0 (0.120)	4.0 (0.160)
NNSML12A	SSSDML12A	10.0 (2.3)	55.0 (12.4)	M12 x 1.75	28.0 (1.10)	4.0 (0.160)	6.0 (0.240)
NNSML16A	SSSDML16A	15.6 (3.5)	35.2 (7.9)	M16 x 2.0	38.1 (1.50)	5.0 (0.197)	7.8 (0.310)

To order with thread locking element add "N" at the end of the part number for thread sizes M8 and larger. For sizes M6 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Hex Nose Standard Spring Plungers

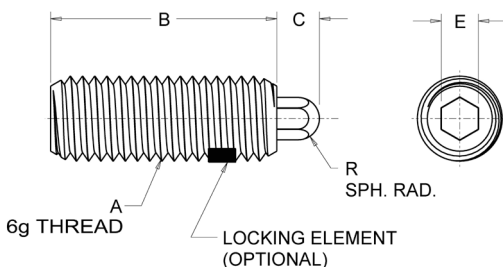
Hex nose standard spring plungers provide a hexagonal plunger nose for easy adjustment with a standard end or socket wrench plunger end to speed installation or removal. They are hardened for long life applications.

Typical Uses

- ◆ Positioning
- ◆ Locking
- ◆ Contacts
- ◆ Indexing
- ◆ Latching
- ◆ Lifters
- ◆ Ejecting
- ◆ Detents
- ◆ Insulators

Special Features

- ◆ Easy installation
- ◆ Case hardened plunger
- ◆ Hexagonal nose design
- ◆ Steel, black oxide finish



Hex Nose Standard Spring Plungers							
Part No.	End Force, (Lbs.)		A	B	C	E	R
	Initial	Final					
H54	3.0	13.0	¼-20	1.00	0.188	0.125	0.071
H56	3.0	15.0	⅝-18	1.00	0.188	0.125	0.071
H58	5.5	14.5	⅝-16	1.13	0.188	0.188	0.108
H60	6.6	17.4	½-13	1.25	0.250	0.250	0.144
H62	10.5	25.5	⅝-11	1.50	0.313	0.313	0.179
H64	6.7	37.3	¾-10	1.75	0.313	0.375	0.215
H66	16.0	68.0	1-8	2.41	0.500	0.500	0.290

To order with thread locking element add "N" at the end of the part number.

Light End Force Hex Nose Standard Spring Plungers							
Part No.	End Force, (Lbs.)		A	B	C	E	R
	Initial	Final					
H55	1.0	4.0	¼-20	1.00	0.188	0.125	0.071
H57	1.5	4.5	⅝-18	1.00	0.188	0.125	0.071
H59	2.8	7.2	⅝-16	1.13	0.188	0.188	0.108
H61	2.7	9.3	½-13	1.25	0.250	0.250	0.144
H63	3.5	10.5	⅝-11	1.50	0.313	0.313	0.179
H67	4.0	31.0	1-8	2.41	0.500	0.500	0.290

To order with thread locking element add "N" at the end of the part number.

Hex Nose Standard Spring Plungers (Metric)							
Part No.	End Forces, N (Lbs.)		A	B mm (in)	C mm (in)	E mm (in)	R mm (in)
	Initial	Final					
HM10	24.5 (5.5)	64.5 (14.5)	M10 x 1.5	28.6 (1.12)	4.8 (0.188)	4.8 (0.188)	2.8 (0.108)
HM12	24.5 (5.5)	64.5 (14.5)	M12 x 1.75	28.6 (1.12)	4.8 (0.188)	4.8 (0.188)	2.8 (0.108)
HM16	46.5 (10.5)	113.0 (25.4)	M16 x 2.0	38.1 (1.50)	8.0 (0.313)	8.0 (0.313)	4.6 (0.179)
HM20	30.0 (6.7)	166.0 (37.3)	M20 x 2.5	44.5 (1.75)	8.0 (0.313)	9.5 (0.375)	5.6 (0.215)

To order with locking element add "P" at the end of part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Posi-Hex™ Standard Spring Plungers - Steel/Stainless Steel

Posi-Hex™ standard spring plungers allow for easy installation and removal using a hex wrench. Posi-Hex™ plungers withstand high torque and are recommended for use with nylon locking elements.

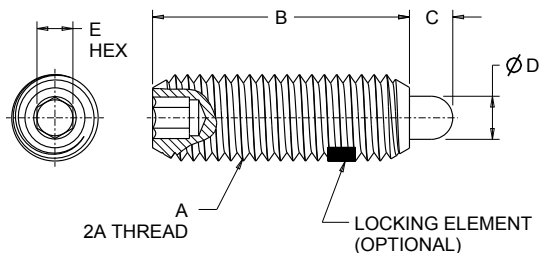
Also available in stainless steel alloy for maximum protection against rust and corrosion.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|---------------------------------------|----------------------------|
| ◆ Easy installation with a hex wrench | ◆ Heavy & light end forces |
| ◆ Will withstand high torque | ◆ Accurate alignment |
| ◆ Controlled end forces | ◆ Wear resistance |



Posi-Hex™ Plungers - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E
Steel	Stainless Steel	Initial	Final					
PH48	SSPH48	1.5	4.5	6-32	0.53	0.063	0.045	0.050
PH48B	SSPH48B	1.0	1.6	6-32	0.53	0.063	0.045	0.050
PH50	SSPH50	2.7	7.3	8-32	0.63	0.094	0.070	0.063
PH52	SSPH52	2.9	11.1	10-32	0.75	0.125	0.092	0.063
PH54	SSPH54	3.0	13.0	¼-20	1.00	0.188	0.118	0.079
PH54A	SSPH54A	3.0	13.0	¼-28	1.00	0.188	0.118	0.079
PH54B	SSPH54B	2.0	9.0	¼-20	0.75	0.125	0.118	0.079
PH56	SSPH56	3.0	15.0	⅝-18	1.00	0.188	0.135	0.093
PH58	SSPH58	5.5	14.5	⅝-16	1.13	0.188	0.187	0.156
PH60	SSPH60	6.6	17.4	½-13	1.25	0.250	0.248	0.156
PH62	SSPH62	10.5	25.5	⅝-11	1.50	0.313	0.310	0.219
PH64	SSPH64	6.7	37.3	¾-10	1.75	0.313	0.374	0.250
PH66	SSPH66	16.0	68.0	1-8	2.41	0.500	0.498	0.375

Light End Force Posi-Hex™ Plungers - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E
Steel	Stainless Steel	Initial	Final					
PH49	SSPH49	0.5	1.5	6-32	0.53	0.063	0.045	0.050
PH51	SSPH51	0.7	2.3	8-32	0.63	0.094	0.070	0.063
PH53	SSPH53	1.3	2.7	10-32	0.75	0.125	0.092	0.063
PH55	SSPH55	1.0	4.0	¼-20	1.00	0.188	0.118	0.079
PH55A	SSPH55A	1.0	4.0	¼-28	1.00	0.188	0.118	0.079
PH57	SSPH57	1.5	4.5	⅝-18	1.00	0.188	0.135	0.093
PH59	SSPH59	2.8	7.2	⅝-16	1.13	0.188	0.187	0.156
PH61	SSPH61	2.7	9.3	½-13	1.25	0.250	0.248	0.156
PH63	SSPH63	3.5	10.5	⅝-11	1.50	0.313	0.310	0.219
PH67	SSPH67	4.0	31.0	1-8	2.41	0.500	0.498	0.375

To order with locking element add "P" at the end of part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Posi-Hex™ Standard Spring Plungers -
Steel/Stainless Steel with Delrin® Nose

Posi-Hex™ standard spring plungers with Delrin® Nose provide resistance to impacts, moisture, solvents and heat up to 190° F with the stainless steel option. They are ideal for use with soft materials such as aluminum or brass.

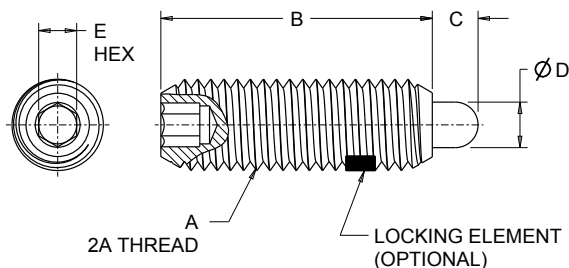
Also available in stainless steel construction for maximum protection against rust and corrosion.

Typical Uses

- ◆ Positioning
- ◆ Indexing
- ◆ Ejecting
- ◆ Locking
- ◆ Latching
- ◆ Detents
- ◆ Contacts
- ◆ Lifters
- ◆ Insulators

Special Features

- ◆ Easy installation with a hex wrench
- ◆ Will withstand high torque
- ◆ Controlled end forces
- ◆ Insulating Delrin® Nose
- ◆ Reinforced for minimum deformation under force
- ◆ Stainless steel resists corrosion
- ◆ Self-lubricating



Posi-Hex™ Plungers - Steel/Stainless Steel w/Delrin® Nose

Part No.		End Force, (Lbs.)		A	B	C	D	E
Steel	Stainless Steel	Initial	Final					
DPH48	DSSPH48	1.5	4.5	6-32	0.53	0.063	0.045	0.050
DPH48B	DPSSH48B	1.0	1.6	6-32	0.53	0.063	0.045	0.050
DPH50	DSSPH50	2.7	7.3	8-32	0.63	0.094	0.070	0.063
DPH52	DSSPH52	2.9	11.1	10-32	0.75	0.125	0.092	0.063
DPH54	DSSPH54	3.0	13.0	¼-20	1.00	0.188	0.118	0.079
DPH54A	DSSPH54A	3.0	13.0	¼-28	1.00	0.188	0.118	0.079
DPH54B	DSSPH54B	2.0	9.0	¼-20	0.75	0.125	0.118	0.079
DPH56	DSSPH56	3.0	15.0	⅝-18	1.00	0.188	0.135	0.093
DPH58	DSSPH58	5.5	14.5	⅝-16	1.13	0.188	0.187	0.156
DPH60	DSSPH60	6.6	17.4	½-13	1.25	0.250	0.248	0.156
DPH62	DSSPH62	10.5	25.5	⅝-11	1.50	0.313	0.310	0.219
DPH64	DSSPH64	6.7	37.3	⅝-10	1.75	0.313	0.374	0.250
DPH66	DSSPH66	16.0	68.0	1-8	2.41	0.500	0.498	0.375

Light End Force Posi-Hex™ Plungers - Steel/Stainless Steel w/Delrin® Nose

Part No.		End Force, (Lbs.)		A	B	C	D	E
Steel	Stainless Steel	Initial	Final					
DPH49	DSSPH49	0.5	1.5	6-32	0.53	0.063	0.045	0.050
DPH51	DSSPH51	0.7	2.3	8-32	0.63	0.094	0.070	0.063
DPH53	DSSPH53	1.3	2.7	10-32	0.75	0.125	0.092	0.063
DPH55	DSSPH55	1.0	4.0	¼-20	1.00	0.188	0.118	0.079
DPH55A	DSSPH55A	1.0	4.0	¼-28	1.00	0.188	0.118	0.079
DPH57	DSSPH57	1.5	4.5	⅝-18	1.00	0.188	0.135	0.093
DPH59	DSSPH59	2.8	7.2	⅝-16	1.13	0.188	0.187	0.156
DPH61	DSSPH61	2.7	9.3	½-13	1.25	0.250	0.248	0.156
DPH63	DSSPH63	3.5	10.5	⅝-11	1.50	0.313	0.310	0.219
DPH67	DSSPH67	4.0	31.0	1-8	2.41	0.500	0.498	0.375

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Posi-Hex™ Standard Spring Plungers - Steel with Delrin® Nose (Metric)

Posi-Hex™ standard spring plungers with Delrin® Nose provide resistance to impacts, moisture, solvents and heat up to 190° F with the stainless steel option. They are ideal for use with soft materials such as aluminum or brass.

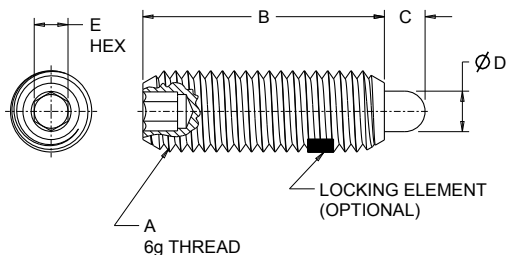
Also available in stainless steel construction for maximum protection against rust and corrosion.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|---------------------------------------|--|
| ◆ Easy installation with a hex wrench | ◆ Reinforced for minimum deformation under force |
| ◆ Will withstand high torque | ◆ Stainless steel resists corrosion |
| ◆ Controlled end forces | ◆ Self-lubricating |
| ◆ Insulating Delrin® Nose | |



Posi-Hex™ Plungers - Steel (Metric)

Part No.	End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	ØD mm (in.)	E mm
	Initial	Final					
Steel							
PHM4	12.0 (2.7)	32.5 (7.3)	M4 x 0.7	15.9 (0.63)	2.4 (0.094)	1.8 (0.070)	2.0
PHM5	12.9 (2.9)	49.4 (11.1)	M5 x 0.8	19.1 (0.75)	3.2 (0.125)	2.3 (0.092)	2.5
PHM6	13.3 (3.0)	57.8 (13.0)	M6 x 1.0	25.4 (1.00)	4.8 (0.188)	3.0 (0.118)	2.5
PHM8	13.3 (3.0)	66.7 (15)	M8 x 1.25	25.4 (1.00)	4.8 (0.188)	3.4 (0.135)	2.5
PHM10	24.5 (5.5)	64.5 (14.5)	M10 x 1.5	28.6 (1.13)	4.8 (0.188)	4.7 (0.187)	4.0
PHM12	29.4 (6.6)	77.4 (17.4)	M12 x 1.75	31.8 (1.25)	6.4 (0.250)	6.3 (0.248)	6.0
PHM16	46.7 (10.5)	113.4 (25.5)	M16 x 2.0	38.1 (1.50)	7.9 (0.313)	7.9 (0.310)	8.0

Posi-Hex™ Plungers - Steel w/Delrin® Nose (Metric)

Part No.	End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	ØD mm (in.)	E mm
	Initial	Final					
Steel Delrin® Nose							
DPHM4	12.0 (2.7)	32.5 (7.3)	M4 x 0.7	15.9 (0.63)	2.4 (0.094)	1.8 (0.070)	2.0
DPHM5	12.9 (2.9)	49.4 (11.1)	M5 x 0.8	19.1 (0.75)	3.2 (0.125)	2.3 (0.092)	2.5
DPHM6	13.3 (3.0)	57.8 (13.0)	M6 x 1.0	25.4 (1.00)	4.8 (0.188)	3.0 (0.118)	2.5
DPHM8	13.3 (3.0)	66.7 (15.0)	M8 x 1.25	25.4 (1.00)	4.8 (0.188)	3.4 (0.135)	2.5
DPHM10	24.5 (5.5)	64.5 (14.5)	M10 x 1.5	28.6 (1.13)	4.8 (0.188)	4.7 (0.187)	4.0
DPHM12	29.4 (6.6)	77.4 (17.4)	M12 x 1.75	31.8 (1.25)	6.4 (0.250)	6.3 (0.248)	6.0
DPHM16	46.7 (10.5)	113.4 (25.5)	M16 x 2.0	38.1 (1.50)	7.9 (0.313)	7.9 (0.310)	8.0

To order with thread locking element add "N" at the end of the part number for thread sizes M8 and larger. For sizes M6 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Posi-Hex™ Standard Spring Plungers - Stainless Steel with Delrin® Nose (Metric)

Posi-Hex™ standard spring plungers are available in stainless steel alloy for maximum protection against rust and corrosion. The Posi-Hex™ design allows for easy installation and removal using a hex wrench. They withstand high torque and are recommended for use with nylon locking elements.

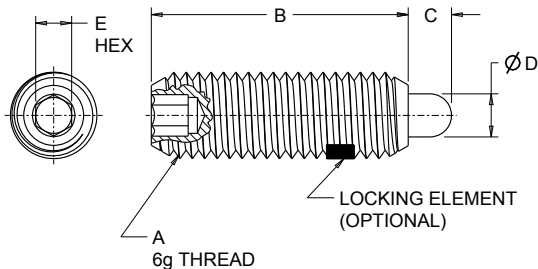
The Delrin® Nose provides resistance to impacts, moisture, solvents and heat up to 190° F. They are ideal for use with soft materials such as aluminum or brass.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|---------------------------------------|--|
| ◆ Easy installation with a hex wrench | ◆ Insulating Delrin® Nose |
| ◆ Will withstand high torque | ◆ Reinforced for minimum deformation under force |
| ◆ Controlled end forces | ◆ Self-lubricating |



Posi-Hex™ Plungers - Stainless Steel (Metric)

Part No.	End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	ØD mm (in.)	E mm
	Initial	Final					
Stainless Steel							
SSPHM4	12.0 (2.7)	32.5 (7.3)	M4 x 0.7	15.9 (0.63)	2.4 (0.094)	1.8 (0.070)	2.0
SSPHM5	12.9 (2.9)	49.4 (11.1)	M5 x 0.8	19.1 (0.75)	3.2 (0.125)	2.3 (0.092)	2.5
SSPHM6	13.3 (3.0)	57.8 (13.0)	M6 x 1.0	25.4 (1.00)	4.8 (0.188)	3.0 (0.118)	2.5
SSPHM8	13.3 (3.0)	66.7 (15.0)	M8 x 1.25	25.4 (1.00)	4.8 (0.188)	3.4 (0.135)	2.5
SSPHM10	24.5 (5.5)	64.5 (14.5)	M10 x 1.5	28.6 (1.13)	4.8 (0.188)	4.7 (0.187)	4.0
SSPHM12	29.4 (6.6)	77.4 (17.4)	M12 x 1.75	31.8 (1.25)	6.4 (0.250)	6.3 (0.248)	6.0
SSPHM16	46.7 (10.5)	113.4 (25.5)	M16 x 2.0	38.1 (1.50)	7.9 (0.313)	7.9 (0.310)	8.0

Posi-Hex™ Plungers - Stainless Steel w/Delrin® Nose (Metric)

Part No.	End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	ØD mm (in.)	E mm
	Initial	Final					
Stainless Steel Delrin® Nose							
DSSPHM4	12.0 (2.7)	32.5 (7.3)	M4 x 0.7	15.9 (0.63)	2.4 (0.094)	1.8 (0.070)	2.0
DSSPHM5	12.9 (2.9)	49.4 (11.1)	M5 x 0.8	19.1 (0.75)	3.2 (0.125)	2.3 (0.092)	2.5
DSSPHM6	13.3 (3.0)	57.8 (13.0)	M6 x 1.0	25.4 (1.00)	4.8 (0.188)	3.0 (0.118)	2.5
DSSPHM8	13.3 (3.0)	66.7 (15)	M8 x 1.25	25.4 (1.00)	4.8 (0.188)	3.4 (0.135)	2.5
DSSPHM10	24.5 (5.5)	64.5 (14.5)	M10 x 1.5	28.6 (1.13)	4.8 (0.188)	4.7 (0.187)	4.0
DSSPHM12	29.4 (6.6)	77.4 (17.4)	M12 x 1.75	31.8 (1.25)	6.4 (0.250)	6.3 (0.248)	6.0
DSSPHM16	46.7 (10.5)	113.4 (25.5)	M16 x 2.0	38.1 (1.50)	7.9 (0.313)	7.9 (0.310)	8.0

To order with thread locking element add "N" at the end of the part number for thread sizes M8 and larger. For sizes M6 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Posi-Hex™ Standard Spring Plungers - Steel (Metric)

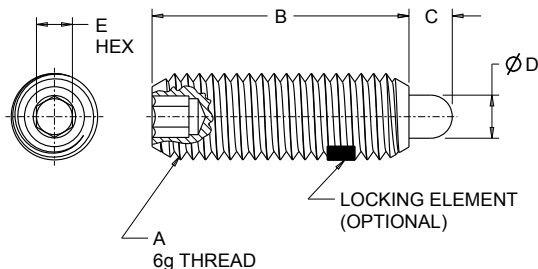
Posi-Hex™ standard spring plungers allow for easy installation and removal using a hex wrench. They withstand high torque and are recommended for use with nylon locking elements.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|---------------------------------------|--|
| ◆ Will withstand high torque | ◆ Insulating Delrin® Nose |
| ◆ Easy installation with a hex wrench | ◆ Reinforced for minimum deformation under force |
| ◆ Controlled end forces | ◆ Self-lubricating |



Light End Force Posi-Hex™ Plungers - Steel (Metric)

Part No.	End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	ØD mm (in.)	E mm
	Initial	Final					
Steel							
PHLM4	3.1 (0.67)	10.2 (2.3)	M4 x 0.7	15.9 (0.63)	2.4 (0.094)	1.8 (0.070)	2.0
PHLM5	5.8 (1.3)	12.0 (2.7)	M5 x 0.8	19.1 (0.75)	3.2 (0.125)	2.3 (0.092)	2.5
PHLM6	4.4 (1.0)	17.8 (4.0)	M6 x 1.0	25.4 (1.00)	4.8 (0.188)	3.0 (0.118)	2.5
PHLM8	6.7 (1.5)	20.0 (4.5)	M8 x 1.25	25.4 (1.00)	4.8 (0.188)	3.4 (0.135)	2.5
PHLM10	12.5 (2.8)	32.0 (7.2)	M10 x 1.5	28.6 (1.13)	4.8 (0.188)	4.7 (0.187)	4.0
PHLM12	12.0 (2.7)	41.4 (9.3)	M12 x 1.75	31.8 (1.25)	6.4 (0.250)	6.3 (0.248)	6.0
PHLM16	15.6 (3.5)	46.7 (10.5)	M16 x 2.0	38.1 (1.50)	7.9 (0.313)	7.9 (0.310)	8.0

Light End Force Posi-Hex™ Plungers w/Delrin® Nose (Metric)

Part No.	End Forces		A	B mm (in.)	C mm (in.)	ØD mm (in.)	E mm
	Initial	Final					
Steel Delrin® Nose							
DPHLM4	3.1 (0.67)	10.2 (2.3)	M4 x 0.7	15.9 (0.63)	2.4 (0.094)	1.8 (0.070)	2.0
DPHLM5	5.8 (1.3)	12.0 (2.7)	M5 x 0.8	19.1 (0.75)	3.2 (0.125)	2.3 (0.092)	2.5
DPHLM6	4.4 (1.0)	17.8 (4.0)	M6 x 1.0	25.4 (1.00)	4.8 (0.188)	3.0 (0.118)	2.5
DPHLM8	6.7 (1.5)	20.0 (4.5)	M8 x 1.25	25.4 (1.00)	4.8 (0.188)	3.4 (0.135)	2.5
DPHLM10	12.5 (2.8)	32.0 (7.2)	M10 x 1.5	28.6 (1.13)	4.8 (0.188)	4.7 (0.187)	4.0
DPHLM12	12.0 (2.7)	41.4 (9.3)	M12 x 1.75	31.8 (1.25)	6.4 (0.250)	6.3 (0.248)	6.0
DPHLM16	15.6 (3.5)	46.7 (10.5)	M16 x 2.0	38.1 (1.50)	7.9 (0.313)	7.9 (0.310)	8.0

To order with locking element add "P" at the end of part number.

SPRING LOADED DEVICES

Standard Spring Plungers



Posi-Hex™ Standard Spring Plungers - Stainless Steel (Metric)

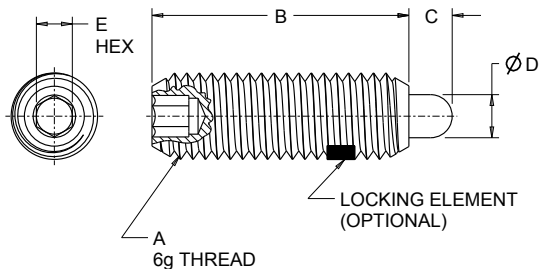
Posi-Hex™ standard spring plungers are available in stainless steel and provide maximum protection against rust and corrosion. The design allows for easy installation and removal using a hex wrench. They withstand high torque and are recommended for use with nylon locking elements.

Typical Uses

- | | | |
|---------------|------------|--------------|
| ◆ Positioning | ◆ Locking | ◆ Contacts |
| ◆ Indexing | ◆ Latching | ◆ Lifters |
| ◆ Ejecting | ◆ Detents | ◆ Insulators |

Special Features

- | | |
|---------------------------------------|--|
| ◆ Will withstand high torque | ◆ Insulating Delrin® Nose |
| ◆ Easy installation with a hex wrench | ◆ Reinforced for minimum deformation under force |
| ◆ Controlled end forces | ◆ Self-lubricating |



Light End Force Posi-Hex™ Plungers - Stainless Steel (Metric)

Part No.	End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	ØD mm (in.)	E mm
	Initial	Final					
Stainless Steel							
SSPHLM4	3.1 (0.67)	10.2 (2.3)	M4 x 0.7	15.9 (0.63)	2.4 (0.094)	1.8 (0.070)	2.0
SSPHLM5	5.8 (1.3)	12.0 (2.7)	M5 x 0.8	19.1 (0.75)	3.2 (0.125)	2.3 (0.092)	2.5
SSPHLM6	4.4 (1.0)	17.8 (4.0)	M6 x 1.0	25.4 (1.00)	4.8 (0.188)	3.0 (0.118)	2.5
SSPHLM8	6.7 (1.5)	20.0 (4.5)	M8 x 1.25	25.4 (1.00)	4.8 (0.188)	3.4 (0.135)	2.5
SSPHLM10	12.5 (2.8)	32.0 (7.2)	M10 x 1.5	28.6 (1.13)	4.8 (0.188)	4.7 (0.187)	4.0
SSPHLM12	12.0 (2.7)	41.4 (9.3)	M12 x 1.75	31.8 (1.25)	6.4 (0.250)	6.3 (0.248)	6.0
SSPHLM16	15.6 (3.5)	46.7 (10.5)	M16 x 2.0	38.1 (1.50)	7.9 (0.313)	7.9 (0.310)	8.0

Light End Force Posi-Hex™ Plungers w/Delrin® Nose (Metric)

Part No.	End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	ØD mm (in.)	E mm
	Initial	Final					
Stainless Steel Delrin® Nose							
DSSPHLM4	3.1 (0.67)	10.2 (2.3)	M4 x 0.7	15.9 (0.63)	2.4 (0.094)	1.8 (0.070)	2.0
DSSPHLM5	5.8 (1.3)	12.0 (2.7)	M5 x 0.8	19.1 (0.75)	3.2 (0.125)	2.3 (0.092)	2.5
DSSPHLM6	4.4 (1.0)	17.8 (4.0)	M6 x 1.0	25.4 (1.00)	4.8 (0.188)	3.0 (0.118)	2.5
DSSPHLM8	6.7 (1.5)	20.0 (4.5)	M8 x 1.25	25.4 (1.00)	4.8 (0.188)	3.4 (0.135)	2.5
DSSPHLM10	12.5 (2.8)	32.0 (7.2)	M10 x 1.5	28.6 (1.13)	4.8 (0.188)	4.7 (0.187)	4.0
DSSPHLM12	12.0 (2.7)	41.4 (9.3)	M12 x 1.75	31.8 (1.25)	6.4 (0.250)	6.3 (0.248)	6.0
DSSPHLM16	15.6 (3.5)	46.7 (10.5)	M16 x 2.0	38.1 (1.50)	7.9 (0.313)	7.9 (0.310)	8.0

To order with locking element add "P" at the end of part number.

SPRING LOADED DEVICES

Standard Plungers



Hi-Life™ Standard Spring Plungers

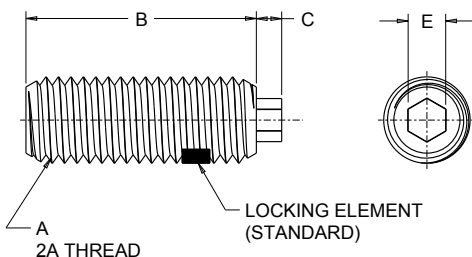
Hi-Life™ standard spring plungers are specially designed to take tough abuse during high-speed, long-life product applications.

Typical Uses

- ◆ Positioning
- ◆ Locking
- ◆ Contacts
- ◆ Indexing
- ◆ Latching
- ◆ Lifters
- ◆ Ejecting
- ◆ Detents
- ◆ Insulators

Special Features

- ◆ Flat hexagonal nose design
- ◆ Steel, black oxide finish
- ◆ Long spring life
- ◆ Easy access & adjustment



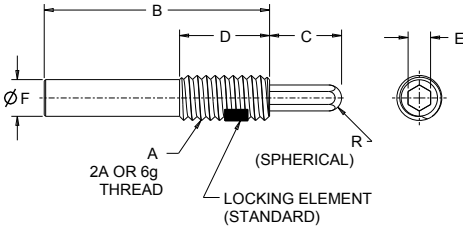
Hi-Life™ Standard Spring Plungers

Part No.	End Force, (Lbs.)		A	B	C	D
	Initial	Final				
HT54N	½	6 ½	¼-20	1.34	0.078	⅜
HT56N	½	8	⅜-18	1.41	0.088	⅜
HT58N	½	9 ½	⅜-16	1.53	0.097	⅜
HT60N	½	16	½-13	1.72	0.105	¼



Special Features

Vlier long travel hexagonal shaped steel plungers are ideal for high-speed, long-life applications. Easy insertion, adjustment or removal with a standard wrench from plunger end.



Long Travel Hex-Nose Plungers								
Part No.	End Force, (Lbs.)		A	B	C	D	E	F
	Initial	Final						
HH6251	4	20	⅝-11	3.12	1.00	1.25	0.31	0.510
HH7501	4	35	¾-10	3.75	1.00	1.50	0.38	0.612
HH1000	16	50 ¾	1-8	5.00	1.00	2.00	0.50	0.844
HH1015	16	68	1-8	5.00	1.50	2.00	0.50	0.844

Light End Force Long Travel Hex-Nose Plungers								
Part No.	End Force, (Lbs.)		A	B	C	D	E	F
	Initial	Final						
HL1000	4	22	1-8	5.00	1.00	2.00	0.50	0.844
HL1015	4	31	1-8	5.00	1.50	2.00	0.50	0.844

Long Travel Hex-Nose Plungers (Metric)								
Part No.	End Force, (Lbs.)		A	B	C	D	E	F
	Initial	Final						
HHM160	17.8 (4.0)	89.0 (20.0)	M16 x 2.0	79.3 (3.12)	25.4 (1.00)	31.8 (1.25)	7.9 (0.31)	13.0 (0.51)
HHM200	17.8 (4.0)	155.7 (35.0)	M20 x 2.5	95.3 (3.75)	25.4 (1.00)	38.1 (1.50)	9.7 (0.38)	15.8 (0.62)
HHM240	71.2 (16.0)	225.7 (50.8)	M24 x 3.0	127.0 (5.00)	25.4 (1.00)	50.8 (2.00)	12.7 (0.50)	21.4 (0.84)
HHM245	71.2 (16.0)	302.5 (68.0)	M24 x 3.0	127.0 (5.00)	38.1 (1.50)	50.8 (2.00)	12.7 (0.50)	21.4 (0.84)

Light End Force Long Travel Hex-Nose Plungers (Metric)								
Part No.	End Force, (Lbs.)		A	B	C	D	E	F
	Initial	Final						
HLM240	17.8 (4.0)	97.9 (22.0)	M24 x 3.0	127.0 (5.00)	25.4 (1.00)	50.8 (2.00)	12.7 (0.50)	21.4 (0.84)
HLM245	17.8 (4.0)	137.9 (31.0)	M24 x 3.0	127.0 (5.00)	38.1 (1.50)	50.8 (2.00)	12.7 (0.50)	21.4 (0.84)

SPRING LOADED DEVICES

Stubby Plungers



Steel/Stainless Steel with Steel Nose

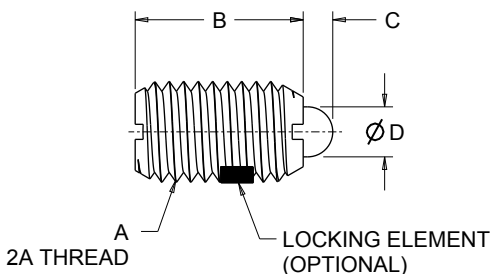
Stubby plungers offer greater travel than ball plungers and less travel than standard plungers. These compact spring plungers provide considerable plunger travel and high end forces which are ideal for restricted space applications.

Typical Uses

- ◆ Limited space
- ◆ Indexing
- ◆ Electrical contacts
- ◆ Part positioning
- ◆ Locking
- ◆ Detents

Special Features

- ◆ Case hardened plunger
- ◆ Wear and corrosion resistance
- ◆ Compact size
- ◆ Allows some side loading
- ◆ Intermediate travel
- ◆ Screwdriver installation



Stubby Plungers - Steel/Stainless Steel with Steel Nose

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel	Initial	Final				
M50A	SSM50A	1½	4¾	8-32	0.437	0.052	0.070
M50	SSM50	1½	4¾	8-36	0.437	0.052	0.070
M52	SSM52	1¾	6¼	10-32	0.468	0.065	0.093
M54	SSM54	3.0	10½	¼-20	0.531	0.078	0.119
M56	SSM56	3¾	15½	⅝-18	0.562	0.084	0.135
M58	SSM58	4½	18½	⅝-16	0.625	0.110	0.186
M60	SSM60	5.0	28.0	½-13	0.750	0.151	0.248
M62	SSM62	7.0	50.0	⅝-11	1.062	0.215	0.310

Light End Force Stubby Plungers - Steel/Stainless Steel with Steel Nose

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel	Initial	Final				
M51A	SSM51A	½	1½	8-32	0.437	0.052	0.070
M51	SSM51	½	1½	8-36	0.437	0.052	0.070
M53	SSM53	¾	2½	10-32	0.468	0.065	0.093
M55	SSM55	1.0	3½	¼-20	0.531	0.078	0.119
M57	SSM57	1¼	4.0	⅝-18	0.562	0.084	0.135
M59	SSM59	1½	5.0	⅝-16	0.625	0.110	0.186
M61	SSM61	1¾	5½	½-13	0.750	0.151	0.248
M63	SSM63	2.0	8½	⅝-11	1.062	0.215	0.310

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Stubby Plungers



**Stubby Plungers - Steel/Stainless Steel
with Steel Nose**

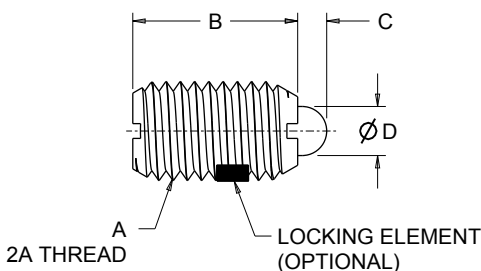
Stubby plungers offer intermediate travel. Compact and mighty, stubby plungers provide considerable plunger travel and high end forces, making them ideal for restricted space applications.

Typical Uses

- ◆ Limited space
- ◆ Indexing
- ◆ Electrical contacts
- ◆ Part positioning
- ◆ Locking
- ◆ Detents

Special Features

- ◆ Case hardened plunger
- ◆ Wear and corrosion resistance
- ◆ Compact size
- ◆ Allows some side loading



Stubby Plungers - Steel with Stainless Steel Nose

Part No.	End Force, (Lbs.)		A	B	C	D
	Initial	Final				
Steel						
CM50A	1½	4¾	8-32	0.437	0.052	0.070
CM50	1½	4¾	8-36	0.437	0.052	0.070
CM52	1¾	6¾	10-32	0.468	0.065	0.093
CM54	3.0	10½	¼-20	0.531	0.078	0.119
CM56	3¾	15½	⅝-18	0.562	0.084	0.135
CM58	4½	18½	¾-16	0.625	0.110	0.186
CM60	5.0	28.0	½-13	0.750	0.151	0.248
CM62	7.0	50.0	⅝-11	1.062	0.215	0.310

Light End Force Stubby Plungers - Steel with Stainless Steel Nose

Part No.	End Force, (Lbs.)		A	B	C	D
	Initial	Final				
Steel						
CM51A	½	1½	8-32	0.437	0.052	0.070
CM51	½	1½	8-36	0.437	0.052	0.070
CM53	¾	2½	10-32	0.468	0.065	0.093
CM55	1.0	3½	¼-20	0.531	0.078	0.119
CM57	1¾	4.0	⅝-18	0.562	0.084	0.135
CM59	1½	5.0	¾-16	0.625	0.110	0.186
CM61	1¾	5½	½-13	0.750	0.151	0.248
CM63	2.0	8½	⅝-11	1.062	0.215	0.310

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Stubby Plungers



Delrin® Nose Stubby Plungers -
Steel/Stainless Steel

Stubby Steel - Delrin® Nose

Vlier Stubby Steel - Delrin® Nose Plungers provide resistance to repeated impacts, moisture, solvents, heat up to 190°F with the electrical insulating properties of a Delrin® Plunger.

Stubby Stainless Steel - Delrin® Nose

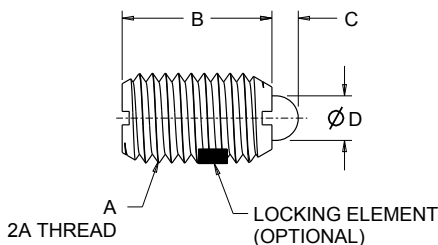
Vlier Stubby Stainless Steel - Delrin® Nose Plungers offer the added advantage of a stainless steel design for maximum protection against rust and corrosion.

Typical Uses

- ◆ Limited space
- ◆ Indexing
- ◆ Electrical contacts
- ◆ Part positioning
- ◆ Locking
- ◆ Detents

Special Features

- ◆ Impact resistance
- ◆ Moisture/solvent resistance
- ◆ Self-lubricating surface
- ◆ Stainless steel resists corrosion



Delrin® Nose Stubby Plungers - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel Body	Initial	Final				
NM50A	SSMD50A	1½	4¾	8-32	0.437	0.052	0.070
NM50	SSMD50	1½	4¾	8-36	0.437	0.052	0.070
NM52	SSMD52	1¾	6¼	10-32	0.468	0.065	0.093
NM54	SSMD54	3	10½	¼-20	0.531	0.078	0.119
NM56	SSMD56	3¾	15½	⅝-18	0.562	0.084	0.135
NM58	SSMD58	4½	18½	⅝-16	0.625	0.110	0.186
NM60	SSMD60	5	28	½-13	0.750	0.151	0.248
NM62	SSMD62	7	50	⅝-11	1.062	0.215	0.310

Light End Force Delrin® Nose Stubby Plungers - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel Body	Initial	Final				
NM51A	SSMD51A	½	1½	8-32	0.437	0.052	0.070
NM51	SSMD51	½	1½	8-36	0.437	0.052	0.070
NM53	SSMD53	¾	2½	10-32	0.468	0.065	0.093
NM55	SSMD55	1	3½	¼-20	0.531	0.078	0.119
NM57	SSMD57	1¼	4	⅝-18	0.562	0.084	0.135
NM59	SSMD59	1½	5	⅝-16	0.625	0.110	0.186
NM61	SSMD61	1¾	5½	½-13	0.750	0.151	0.248
NM63	SSMD63	2	8½	⅝-11	1.062	0.215	0.310

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Stubby Plungers



Stubby Plungers - Steel/Stainless Steel (Metric)

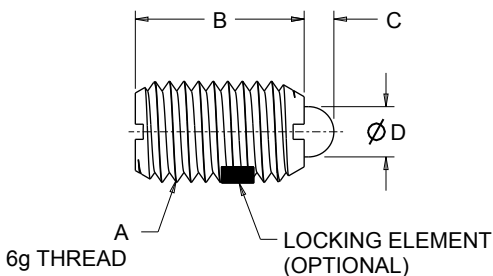
Stubby plungers offer considerable plunger travel, high-end forces and are ideal for restricted space applications. These compact spring plungers come in two spring force choices, and are offered in either steel or stainless steel.

Typical Uses

- ◆ Limited space
- ◆ Indexing
- ◆ Electrical contacts
- ◆ Part positioning
- ◆ Locking
- ◆ Detents

Special Features

- ◆ Allows some side loading
- ◆ Screwdriver installation
- ◆ Wear resistance
- ◆ Stainless steel or steel
- ◆ Intermediate travel



Stubby Plungers - Steel/Stainless Steel (Metric)							
Part No. Steel w/		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel Nose	Delrin® Nose	Initial	Final				
MHM4	NMHM4	7.0 (1.5)	21.0 (4.8)	M4 X 0.7	11.1 (0.437)	1.3 (0.052)	1.8 (0.070)
MM4	NMM4	2.0 (0.5)	7.0 (1.5)				
MHM5	NMHM5	8.0 (1.8)	28.0 (6.3)	M5 X 0.8	11.9 (0.468)	1.7 (0.065)	2.4 (0.093)
MM5	NMM5	3.0 (0.8)	11.0 (2.5)				
MHM6	NMHM6	13.0 (3.0)	47.0 (10.5)	M6 X 1.0	13.5 (0.531)	2.0 (0.078)	3.0 (0.119)
MM6	NMM6	4.0 (1.0)	16.0 (3.5)				
MHM8	NMHM8	17.0 (3.8)	69.0 (15.5)	M8 X 1.25	14.3 (0.562)	2.1 (0.084)	3.4 (0.135)
MM8	NMM8	6.0 (1.3)	18.0 (4.0)				
MHM10	NMHM10	20.0 (4.5)	82.0 (18.5)	M10 X 1.5	15.9 (0.625)	2.8 (0.110)	4.7 (0.186)
MM10	NMM10	7.0 (1.5)	22.0 (5.0)				
MHM12	NMHM12	22.0 (5.0)	125.0 (28.0)	M12 X 1.75	19.1 (0.750)	3.8 (0.151)	6.3 (0.248)
MM12	NMM12	8.0 (1.8)	24.0 (5.5)				
MHM16	NMHM16	31.0 (7.0)	222.0 (50.0)	M16 X 2.0	27.0 (1.062)	5.5 (0.215)	7.9 (0.310)
MM16	NMM16	9.0 (2.0)	38.0 (8.5)				

Stubby Plungers - Steel/Stainless Steel (Metric)							
Part No. Stainless Steel w/		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
SS Nose	Delrin® Nose	Initial	Final				
SSMHM4	SSMDHM4	7.0 (1.5)	21.0 (4.8)	M4 X 0.7	11.1 (0.437)	1.3 (0.052)	1.8 (0.070)
SSMM4	SSMDM4	2.0 (0.5)	7.0 (1.5)				
SSMHM5	SSMDHM5	8.0 (1.8)	28.0 (6.3)	M5 X 0.8	11.9 (0.468)	1.7 (0.065)	2.4 (0.093)
SSMM5	SSMDM5	3.0 (0.8)	11.0 (2.5)				
SSMHM6	SSMDHM6	13.0 (3.0)	47.0 (10.5)	M6 X 1.0	13.5 (0.531)	2.0 (0.078)	3.0 (0.119)
SSMM6	SSMDM6	4.0 (1.0)	16.0 (3.5)				
SSMHM8	SSMDHM8	17.0 (3.8)	69.0 (15.5)	M8 X 1.25	14.3 (0.562)	2.1 (0.084)	3.4 (0.135)
SSMM8	SSMDM8	6.0 (1.3)	18.0 (4.0)				
SSMHM10	SSMDHM10	20.0 (4.5)	82.0 (18.5)	M10 X 1.5	15.9 (0.625)	2.8 (0.110)	4.7 (0.186)
SSMM10	SSMDM10	7.0 (1.5)	22.0 (5.0)				
SSMHM12	SSMDHM12	22.0 (5.0)	125.0 (28.0)	M12 X 1.75	19.1 (0.750)	3.8 (0.151)	6.3 (0.248)
SSMM12	SSMDM12	8.0 (1.8)	24.0 (5.5)				
SSMHM16	SSMDHM16	31.0 (7.0)	222.0 (50.0)	M16 X 2.0	27.0 (1.062)	5.5 (0.215)	7.9 (0.310)
SSMM16	SSMDM16	9.0 (2.0)	38.0 (8.5)				

To order with thread locking element add "P" at the end of the part number.

SPRING LOADED DEVICES

Stubby Plunger



Extended Travel Stubby Plungers - Steel

Our extended travel stubby plungers offer maximum travel in the same package size as our standard stubby plungers.

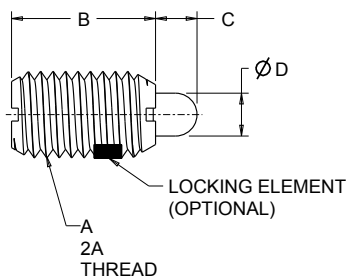
The Delrin® Nose plungers provide resistance to impacts, moisture, solvents and heat up to 190°F. They are ideal for use with soft material such as aluminum or brass.

Typical Uses

- ◆ Limited space
- ◆ Indexing
- ◆ Electrical contacts
- ◆ Part positioning
- ◆ Locking
- ◆ Detents

Special Features

- ◆ Case hardened plunger
- ◆ Wear and corrosion resistance
- ◆ Compact size
- ◆ Allows some side loading
- ◆ Extended travel
- ◆ Screwdriver installation



Extended Travel Steel Stubby Plunger - Standard End Force

Part No. Steel w/		End Force		A	B	C	D
Steel Nose	Delrin® Nose	Initial	Final				
ML50	NML50	1.00	3.25	8-32	0.437	0.094	0.070
ML52	NML52	1.25	4.25	10-32	0.468	0.125	0.093
ML54	NML54	2.00	7.00	¼-20	0.531	0.188	0.119
ML56	NML56	2.00	9.00	⅝-18	0.562	0.188	0.135
ML58	NML58	3.00	12.50	⅝-16	0.625	0.188	0.186
ML60	NML60	3.50	19.00	½-13	0.750	0.250	0.248
ML62	NML62	4.50	33.50	⅝-11	1.062	0.313	0.310

Extended Travel Steel Stubby Plunger - Light End Force

Part No. Steel w/		End Force		A	B	C	D
Steel Nose	Delrin® Nose	Initial	Final				
ML51	NML51	0.5	2.0	8-32	0.437	0.094	0.070
ML53	NML53	0.3	3.0	10-32	0.468	0.125	0.093
ML55	NML55	0.3	3.5	¼-20	0.531	0.188	0.119
ML57	NML57	0.5	4.5	⅝-18	0.562	0.188	0.135
ML59	NML59	1.5	7.5	⅝-16	0.625	0.188	0.186
ML61	NML61	1.7	8.5	½-13	0.750	0.250	0.248
ML63	NML63	2.0	10.5	⅝-11	1.062	0.313	0.310

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Stubby Plungers



Extended Travel Stubby Plungers - Steel (Metric)

Our extended travel stubby plungers offer maximum travel in the same package size as our standard stubby plungers. These compact spring plungers provide increased plunger travel and high end forces. Ideal for restricted space applications.

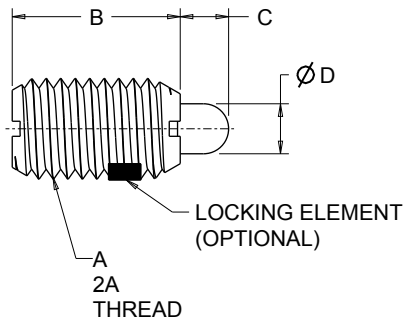
The Delrin® Nose plungers provide resistance to impacts, moisture, solvents and heat up to 190°F. They are ideal for use with soft material such as aluminum or brass.

Typical Uses

- ◆ Limited space
- ◆ Indexing
- ◆ Electrical contacts
- ◆ Part positioning
- ◆ Locking
- ◆ Detents

Special Features

- ◆ Case hardened plunger
- ◆ Wear and corrosion resistance
- ◆ Compact size
- ◆ Allows some side loading
- ◆ Intermediate travel
- ◆ Screwdriver installation



Extended Travel Stubby Plungers - Steel (Metric)

Part No. Steel w/		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel Nose	Delrin® Nose	Initial	Final				
MLHM4	NMLHM4	4.5 (1.0)	14.5 (3.3)	M4 X 0.7	11.1 (0.437)	2.4 (0.094)	1.8 (0.070)
MLHM5	NMLHM5	5.6 (1.3)	18.9 (4.25)	M5 X 0.8	11.9 (0.468)	3.2 (0.125)	2.4 (0.094)
MLHM6	NMLHM6	8.9 (1.5)	31.2 (5.7)	M6 X 1.0	13.5 (0.531)	4.8 (0.188)	3.0 (0.118)
MLHM8	NMLHM8	8.9 (2.0)	40.1 (9.0)	M8 X 1.25	14.3 (0.562)	4.8 (0.188)	3.4 (0.135)
MLHM10	NMLHM10	13.4 (3.0)	55.6 (12.5)	M10 X 1.5	15.9 (0.625)	4.8 (0.188)	4.7 (0.186)
MLHM12	NMLHM12	15.6 (3.5)	84.6 (19.0)	M12 X 1.75	19.1 (0.750)	6.4 (0.250)	6.3 (0.248)
MLHM16	NMLHM16	20.0 (4.5)	149.1 (33.5)	M16 X 2.0	27.0 (1.062)	7.9 (0.313)	7.9 (0.310)

Light End Force Extended Travel Stubby Plungers - Steel (Metric)

Part No. Steel w/		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel Nose	Delrin® Nose	Initial	Final				
MLM4	NMLM4	2.2 (0.5)	8.9 (2.0)	M4 X 0.7	11.1 (0.437)	2.4 (0.094)	1.8 (0.070)
MLM5	NMLM5	1.3 (0.3)	13.3 (3.0)	M5 X 0.8	11.9 (0.468)	3.2 (1.25)	2.4 (0.094)
MLM6	NMLM6	1.3 (0.3)	15.6 (3.5)	M6 X 1.0	13.5 (0.531)	4.8 (0.188)	3.0 (0.118)
MLM8	NMLM8	2.2 (0.5)	20.0 (4.5)	M8 X 1.25	14.3 (0.562)	4.8 (0.188)	3.4 (0.135)
MLM10	NMLM10	6.7 (1.5)	33.4 (7.5)	M10 X 1.5	15.9 (0.625)	4.8 (0.188)	4.7 (0.186)
MLM12	NMLM12	7.6 (1.7)	37.8 (8.5)	M12 X 1.75	19.1 (0.750)	6.4 (0.250)	6.3 (0.248)
MLM16	NMLM16	8.9 (2.0)	46.7 (10.5)	M16 x 2.0	27.0 (1.062)	7.9 (0.313)	7.9 (0.310)

To order with thread locking element add "P" at the end of the part number.

SPRING LOADED DEVICES

Stubby Plungers



Extended Travel Stubby Plungers - Stainless Steel

Our extended travel stubby plungers offer maximum travel in the same package size as our standard stubby plungers. These compact spring plungers provide increased plunger travel and high end forces. Ideal for restricted space applications. The stainless steel alloy design provides maximum protection against rust and corrosion.

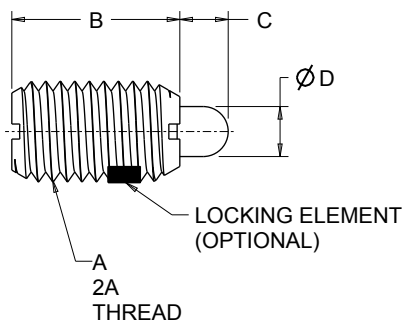
The Delrin® Nose plungers provide resistance to impacts, moisture, solvents and heat up to 190°F. They are ideal for use with soft material such as aluminum or brass.

Typical Uses

- ◆ Limited space
- ◆ Indexing
- ◆ Electrical contacts
- ◆ Part positioning
- ◆ Locking
- ◆ Detents

Special Features

- ◆ Case hardened plunger
- ◆ Wear and corrosion resistance
- ◆ Compact size
- ◆ Allows some side loading
- ◆ Intermediate travel
- ◆ Screwdriver installation



Extended Travel Stubby Plungers - Stainless Steel

Part No. Stainless Steel w/		End Force		A	B	C	D
SS Nose	Delrin® Nose	Initial	Final				
SML50	SMDL50	1.00	3.25	8-32	0.437	0.094	0.070
SML52	SMDL52	1.25	4.25	10-32	0.468	0.125	0.093
SML54	SMDL54	2.00	7.0	¼-20	0.531	0.188	0.118
SML56	SMDL56	2.00	9.0	⅝-18	0.562	0.188	0.135
SML58	SMDL58	3.00	12.5	¾-16	0.625	0.188	0.186
SML60	SMDL60	3.50	19.0	½-13	0.750	0.250	0.248
SML62	SMDL62	4.50	33.5	⅝-11	1.062	0.313	0.310

Light End Force Extended Travel Stubby Plungers - Stainless Steel

Part No. Stainless Steel w/		End Force		A	B	C	D
SS Nose	Delrin® Nose	Initial	Final				
SML51	SMDL51	0.5	2.0	8-32	0.437	0.094	0.070
SML53	SMDL53	0.3	3.0	10-32	0.468	0.125	0.093
SML55	SMDL55	0.3	3.5	¼-20	0.531	0.188	0.118
SML57	SMDL57	0.5	4.5	⅝-18	0.562	0.188	0.135
SML59	SMDL59	1.5	7.5	¾-16	0.625	0.188	0.186
SML61	SMDL61	1.7	8.5	½-13	0.750	0.250	0.248
SML63	SMDL63	2.0	10.5	⅝-11	1.062	0.313	0.310

To order with thread locking element add "N" at the end of the part number for thread sizes ¼ and larger. For sizes 10/32 and smaller add "P" at the end of the part number.

SPRING LOADED DEVICES

Stubby Plungers



Extended Travel Stubby Plungers - Stainless Steel (Metric)

Our extended travel stubby plungers offer maximum travel in the same package size as our standard stubby plungers. These compact spring plungers provide increase plunger travel and high end forces. Ideal for restricted space applications. The stainless steel alloy design provides maximum protection against rust and corrosion.

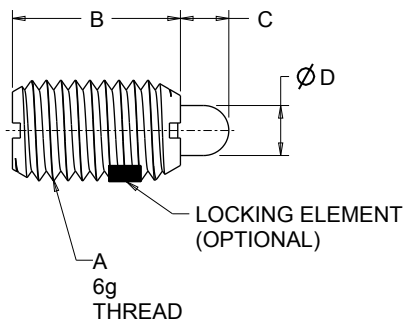
The Delrin® Nose plungers provide resistance to impacts, moisture, solvents and heat up to 190°F. They are ideal for use with soft material such as aluminum or brass.

Typical Uses

- ◆ Limited space
- ◆ Indexing
- ◆ Electrical contacts
- ◆ Part positioning
- ◆ Locking
- ◆ Detents

Special Features

- ◆ Case hardened plunger
- ◆ Wear and corrosion resistance
- ◆ Compact size
- ◆ Allows some side loading
- ◆ Extended travel
- ◆ Screwdriver installation



Extended Travel Stubby Plungers - Stainless Steel (Metric)

Part No. Stainless Steel w/		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
SS Nose	Delrin® Nose	Initial	Final				
SMLHM4	SMDLHM4	4.5 (1.0)	14.5 (3.3)	M4 x 0.7	11.1 (0.440)	2.4 (0.094)	1.8 (0.070)
SMLHM5	SMDLHM5	5.6 (1.3)	18.9 (4.25)	M5 x 0.8	11.9 (0.468)	3.2 (0.125)	2.4 (0.093)
SMLHM6	SMDLHM6	8.9 (1.5)	31.2 (5.7)	M6 x 1.0	13.5 (0.531)	4.8 (0.188)	3.0 (0.118)
SMLHM8	SMLHM8	8.9 (2.0)	40.1 (9.0)	M8 x 1.25	14.3 (0.562)	4.8 (0.188)	3.4 (0.135)
SMLHM10	SMDLHM10	13.4 (3.0)	55.6 (12.5)	M10 x 1.5	15.9 (0.625)	4.8 (0.188)	4.7 (0.186)
SMLHM12	SMDLHM12	15.6 (3.5)	84.6 (19.0)	M12 x 1.75	19.1 (0.750)	6.4 (0.250)	6.3 (0.248)
SMLHM16	SMDLHM16	20.0 (4.5)	149.1 (20.0)	M16 x 2.0	27.0 (1.062)	7.9 (0.313)	7.9 (0.310)

Light End Force Extended Travel Stubby Plungers - Stainless Steel (Metric)

Part No. Stainless Steel w/		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
SS Nose	Delrin® Nose	Initial	Final				
SMLM4	SMDLM4	2.2 (0.5)	8.9 (2.0)	M4 x 0.7	11.1 (0.440)	2.4 (0.094)	1.8 (0.070)
SMLM5	SMDLM5	1.3 (0.3)	13.3 (3.0)	M5 x 0.8	11.9 (0.468)	3.2 (0.125)	2.4 (0.093)
SMLM6	SMDLM6	1.3 (0.3)	15.6 (3.5)	M6 x 1.0	13.5 (0.531)	4.8 (0.188)	3.0 (0.118)
SMLM8	SMDLM8	2.2 (0.5)	20.0 (4.5)	M8 x 1.25	14.3 (0.562)	4.8 (0.188)	3.4 (0.135)
SMLM10	SMDLM10	6.7 (1.5)	33.4 (7.5)	M10 x 1.5	15.9 (0.625)	4.8 (0.188)	4.7 (0.186)
SMLM12	SMDLM12	7.6 (1.7)	37.8 (8.5)	M12 x 1.75	19.1 (0.750)	6.4 (0.250)	6.3 (0.248)
SMLM16	SMDLM16	8.9 (2.0)	46.7 (10.5)	M16 x 2.0	27.0 (1.062)	7.9 (0.313)	7.9 (0.310)

To order with thread locking element add "P" at the end of the part number.

SPRING LOADED DEVICES

Ball Plungers



Ball Plungers - Steel/Stainless Steel

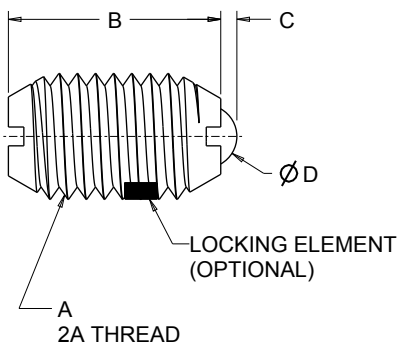
Steel and stainless steel ball plungers can take the highest degree of side load and provide repeatable force time and time again. The stainless steel ball design offers maximum protection against rust and corrosion, making them ideal for food, medical and special environments.

Typical Uses

- ◆ Positioning
- ◆ Locating
- ◆ Indexing
- ◆ Torque limiting
- ◆ Gear shifters
- ◆ Detents

Special Features

- ◆ Smallest and lightest spring loaded device
- ◆ Side-load tolerant
- ◆ Controlled end forces
- ◆ Screwdriver installation
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures
- ◆ Electrical contact



Ball Plungers - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel	Initial	Final				
B46	SSB46	¾	½	4-48	0.187	0.020	0.062
B47	SSB47	¾	¾	5-40	0.250	0.020	0.062
B48	SSB48	½	1.0	6-40	0.312	0.023	0.078
B50A	SSB50A	½	1¼	8-32	0.344	0.025	0.094
B50	SSB50	½	1¼	8-36	0.344	0.025	0.094
B52	SSB52	1½	3.0	10-32	0.513	0.025	0.094
BL52	SSBL52	½	1½				
BH52	SSBH52	2.0	5.0				
B54	SSB54	3.0	7.0				
BL54	SSBL54	2.0	4.0	¼-20	0.531	0.035	0.125
BH54	SSBH54	4.0	12.0				
B56	SSB56	4.0	9.0	⅝-18	0.578	0.040	0.156
BL56	SSBL56	2.0	4½				
BH56	SSBH56	6.0	17.0				
B58	SSB58	5.0	10.0	¾-16	0.625	0.048	0.188
BL58	SSBL58	2½	5.0				
BH58	SSBH58	6.0	21.0				
B60	SSB60	6.0	12.0	½-13	0.750	0.072	0.281
BL60	SSBL60	3.0	6.0				
BH60	SSBH60	6.0	30.0				
B62	SSB62	9.0	18.0	¾-11	0.984	0.096	0.375
BL62	SSBL62	4½	9.0				
BH62	SSBH62	7.0	50.0				

To order with locking element add "N" at the end of the part number for thread sizes ¼ and larger. Add "P" for 10/32 and smaller.

End Force Color Guide

Steel: Bodies are color coded to indicate end forces, silver- light end force

black - standard end force, gold- heavy end force.

Stainless Steel: Bodies are color coded on the rear of the assembly to indicate.

end force.: plain - light end force, black - standard end force, orange - heavy end force.

*Thread sizes 8-36 and smaller have no color code.

**4-48 5-40 Install with a screwdriver using the full slot at the flat end.

SPRING LOADED DEVICES

Ball Plungers



Ball Plungers - Steel/Stainless Steel (Metric)

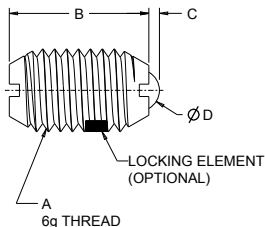
Steel and stainless steel ball plungers can take the highest degree of side load and provide repeatable force time and time again. The stainless steel ball design offers maximum protection against rust and corrosion, making them ideal for food, medical and special environments. The steel and stainless steel plungers are available in metric thread.

Typical Uses

- ◆ Positioning
- ◆ Locating
- ◆ Indexing
- ◆ Torque limiting
- ◆ Gear shifters
- ◆ Detents

Special Features

- ◆ Metric threads
- ◆ Side-load tolerant
- ◆ Controlled end forces
- ◆ Screwdriver installation
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures



Ball Plungers - Steel/Stainless Steel (Metric)							
Part No.		End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Initial	Final				
BM3A	SBM3	3.0 (0.67)	4.5 (1.01)	M3 x 0.5	7.0 (0.276)	0.4 (0.016)	1.5 (0.059)
BM4A	SBM4	4.0 (0.90)	10.0 (2.25)	M4 x 0.7	9.0 (0.354)	0.8 (0.032)	2.5 (0.098)
BM5A	SBM5	8.0 (1.80)	14.0 (3.15)	M5 x 0.8	12.0 (0.472)	0.9 (0.035)	3.0 (0.118)
BMH5A	SBMH5	15.0 (3.37)	22.0 (4.95)				
BM6A	SBM6	9.0 (2.02)	13.0 (2.92)	M6 x 1.0	14.0 (0.551)	1.0 (0.039)	3.50 (0.138)
BML6A	SBML6	2.0 (0.45)	6.0 (1.35)				
BMH6A	SBMH6	28.0 (6.30)	40.0 (9.0)				
BM8A	SBM8	15.0 (3.37)	30.0 (6.75)	M8 x 1.25	16.0 (0.630)	1.5 (0.059)	5.0 (0.196)
BML8A	SBML8	5.0 (1.12)	10.0 (2.25)				
BMH8A	SBMH8	40.0 (9)	60.0 (13.5)				
BM10A	SBM10	20.0 (4.5)	35.0 (7.87)	M10 x 1.5	19.0 (0.748)	2.0 (0.079)	6.0 (0.236)
BML10A	SBML10	8.0 (1.8)	15.0 (3.37)				
BMH10A	SBMH10	60.0 (13.5)	90.0 (20.23)				
BM12A	SBM12	30.0 (6.75)	55.0 (12.36)	M12 x 1.75	22.0 (0.866)	2.5 (0.098)	8.0 (0.315)
BML12A	SBML12	10.0 (2.25)	20.0 (4.5)				
BMH12A	SBMH12	75.0 (16.86)	115.0 (25.85)				
BM16A	SBM16	41.0 (9.22)	86.0 (19.33)	M16 x 2.0	24.0 (0.945)	3.5 (0.138)	10.0 (0.394)
BMH16A	SBMH16	68.0 (15.29)	142.0 (31.92)				

To order with locking element add "N" at the end of the part number for thread sizes ¼ and larger. Add "P" for 10/32 and smaller.

End Force Color Guide

Steel: Bodies are color coded to indicate end forces, silver- light end force

black - standard end force, gold- heavy end force.

Stainless Steel: Bodies are color coded on the rear of the assembly to indicate.

end force.: plain - light end force, black - standard end force, orange - heavy end force.

*Thread sizes 8-36 and smaller have no color code.

**4-48 5-40 Install with a screwdriver using the full slot at the flat end.

SPRING LOADED DEVICES

Ball Plungers



Nylon Ball Plungers - Steel/Stainless Steel

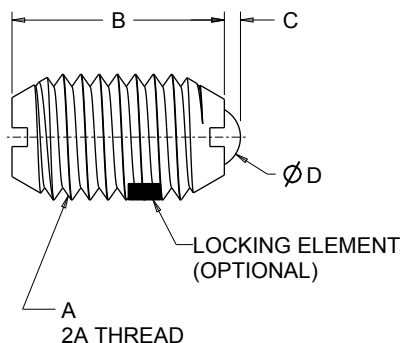
Vlier nylon ball plungers in steel provide resistance to repeated impacts, moisture, solvents and heat up to 190°F. The nylon ball nose provides electrical insulating properties. The stainless steel option provides added protection against rust and corrosion.

Typical Uses

- ◆ Indexing
- ◆ Gear shifters
- ◆ Locating
- ◆ Torque limiting
- ◆ Positioning
- ◆ Detents

Special Features

- ◆ Steel or stainless steel body with nylon ball
- ◆ Highly durable and non-marring
- ◆ Steel - zinc plate with black, gold or clear chromate
- ◆ Stainless steel spring standard
- ◆ Compact and lightweight
- ◆ Withstands side loading
- ◆ Controlled end forces



Nylon Ball Plungers - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D
Steel Body	Stainless Steel Body	Initial	Final				
DB46	DSSB46	¼	½	4-48	0.187	0.020	0.062
DB47	DSSB47	¼	¾	5-40	0.250	0.020	0.062
DB48	DSSB48	½	1	6-40	0.312	0.023	0.078
DB50A	DSSB50A	½	1¼	8-32	0.344	0.025	0.094
DB50	DSSB50	½	1¼	8-36	0.344	0.025	0.094
DB52	DSSB52	1½	3.0	10-32	0.513	0.025	0.094
DBL52	DSSBL52	½	1½				
DBH52	DSSBH52	2.0	5.0				
DB54	DSSB54	3.0	7.0				
DBL54	DSSBL54	2.0	4.0	¼-20	0.531	0.035	0.125
DBH54	DSSBH54	4.0	12.0				
DB56	DSSB56	4.0	9.0				
DBL56	DSSBL56	2.0	4½				
DBH56	DSSBH56	6.0	17.0	⅝-18	0.578	0.040	0.156
DB58	DSSB58	5.0	10.0				
DBL58	DSSBL58	2½	5.0				
DBH58	DSSBH58	6.0	21.0				
DB60	DSSB60	6.0	12.0	¾-16	0.625	0.048	0.188
DBL60	DSSBL60	3.0	6.0				
DBH60	DSSBH60	6.0	30.0				
DB62	DSSB62	9.0	18.0				
DBL62	DSSBL62	4½	9.0	⅞-11	0.750	0.072	0.281
DBH62	DSSBH62	7.0	50.0				
					0.984	0.096	0.375

To order with locking element add "N" at the end of the part number for thread sizes ¼ and larger. Add "P" for 10/32 and smaller.

End Force Color Guide

Steel: Bodies are color coded to indicate end forces, silver- light end force

black - standard end force, gold- heavy end force.

Stainless Steel: Bodies are color coded on the rear of the assembly to indicate.

end force.; plain - light end force, black - standard end force, orange - heavy end force.

*Thread sizes 8-36 and smaller have no color code.

**4-48 5-40 Install with a screwdriver using the full slot at the flat end.

SPRING LOADED DEVICES

Ball Plungers



Nylon Ball Plungers - Steel/Stainless Steel (Metric)

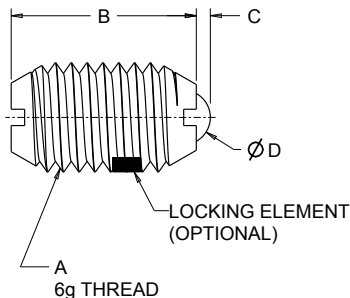
Nylon ball plungers in steel provide resistance to repeated impacts, moisture, solvents and heat up to 190°F. The nylon ball nose provides electrical insulating properties. The stainless steel option provides added protection against rust and corrosion.

Typical Uses

- ◆ Indexing
- ◆ Gear shifters
- ◆ Locating
- ◆ Torque limiting
- ◆ Positioning
- ◆ Detents

Special Features

- ◆ Steel or stainless steel body with nylon ball
- ◆ Highly durable and non-marring
- ◆ Steel - zinc plate with black, gold or clear chromate
- ◆ Stainless steel spring standard
- ◆ Compact and lightweight
- ◆ Withstands side loading
- ◆ Controlled end forces



Nylon Ball Plungers - Steel/Stainless Steel (Metric)							
Part No.		End Forces, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Initial	Final				
DBM3A	DSBM3	3.0 (0.67)	4.5 (1.01)	M3 x 0.5	70.0 (0.276)	00.4 (0.016)	10.5 (0.059)
DBM4A	DSBM4	4.0 (0.90)	10.0 (2.25)	M4 x 0.7	9.0 (0.354)	00.8 (0.032)	20.5 (0.098)
DBM5A	DSBM5	8.0 (1.80)	14.0 (3.15)	M5 x 0.8	12.0 (0.472)	00.9 (0.035)	30.0 (0.118)
DBMH5A	DSBMH5	15.0 (3.37)	22.0 (4.95)				
DBM6A	DSBM6	9.0 (2.02)	13.0 (2.92)	M6 x 1.0	14.0 (0.551)	1.0 (0.039)	3.5 (0.138)
DBML6A	DSBML6	2.0 (0.45)	6.0 (1.35)				
DBMH6A	DSBMH6	28.0 (6.30)	40.0 (9.0)				
DBM8A	DSBM8	15.0 (3.37)	30.0 (6.75)	M8 x 1.25	16.0 (0.630)	1.5 (0.059)	5.0 (0.196)
DBML8A	DSBML8	5.0 (1.12)	10.0 (2.25)				
DBMH8A	DSBMH8	40.0 (9)	60.0 (13.5)				
DBM10A	DSBM10	20.0 (4.5)	35.0 (7.87)	M10 x 1.5	19.0 (0.748)	2.0 (0.079)	6.0 (0.236)
DBML10A	DSBML10	8.0 (1.8)	15.0 (3.37)				
DBMH10A	DSBMH10	60.0 (13.5)	90.0 (20.23)				
DBM12A	DSBM12	30.0 (6.75)	55.0 (12.36)	M12 x 1.75	22.0 (0.866)	2.5 (0.098)	8.0 (0.315)
DBML12A	DSBML12	10.0 (2.25)	20.0 (4.5)				
DBMH12A	DSBMH12	75.0 (16.86)	115.0 (25.85)				
DBM16A	DSBM16	41.0 (9.22)	86.0 (19.33)	M16 x 2.0	24.0 (0.945)	30.5 (0.138)	10.0 (0.394)
DBMH16A	DSBMH16	68.0 (15.29)	142.0 (31.92)				

To order with locking element add "P" at the end of the part number.

End force color code:

Steel bodies are color-coded to indicate end forces; silver = light end force; black = standard end force; gold = heavy end force

Stainless steel bodies are color-coded on the rear of the assembly to indicate end forces; plain = light end force; black = standard end force; orange = heavy end force.

Thread sizes metric m4 or smaller are not color coded.

M3, install with a screw driver using the full slot at the flat end.

SPRING LOADED DEVICES

Ball Plungers



Delrin® Ball Plungers

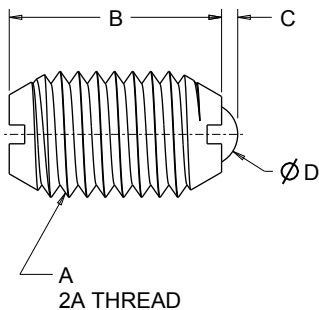
Delrin® ball plungers with stainless steel or nylon plastic ball are ideal for applications where products or components are made mostly or entirely of plastic.

Typical Uses

- ◆ Lightweight applications

Special Features

- ◆ Steel or stainless steel body with nylon ball
- ◆ Electrical isolation
- ◆ Highly durable and non-marring
- ◆ Steel - zinc plate with black, gold or clear chromate
- ◆ Stainless steel spring standard
- ◆ Compact and lightweight
- ◆ Withstands side loading
- ◆ Controlled end forces



Delrin® Ball Plungers - Stainless Steel Ball (Metric)

Part No.	Body Color Code	End Force, (Lbs.)		A	B	C	D
		Initial	Final				
Stainless Ball							
D54	White	2.0	5.0	¼-20	0.531	0.030	0.125
DL54	Blue	1.0	2.5				
D56	White	4.0	9.0	⅝-18	0.578	0.039	0.156
DL56	Blue	2.0	4.5				
D58	White	5.0	10.0	¾-16	0.625	0.053	0.187
DL58	Blue	2.5	5.0				

Delrin® Ball Plungers - Nylon Ball (Metric)

Part No.	Body Color Code	End Force, (Lbs.)		A	B	C	D
		Initial	Final				
Nylon Ball							
ND54	White	2.0	5.0	¼-20	0.531	0.030	0.125
NDL54	Blue	1.0	2.5				
ND56	White	4.0	9.0	⅝-18	0.578	0.039	0.156
NDL56	Blue	2.0	4.5				
ND58	White	5.0	10.0	¾-16	0.625	0.053	0.187
NDL58	Blue	2.5	5.0				

COLOR CODE - bodies are color-coded to indicate end forces; blue = light end force; white = heavy end force.

SPRING LOADED DEVICES

Ball Plungers



Posi-Hex™ Ball Plungers

The enhanced design of our Posi-Hex™ ball plungers allows for easy installation and removal using only a hex wrench. Designed to withstand maximum installation torque, Posi-Hex™ works great when using our thread locking element. These compact spring plungers offer quick change-outs that save downtime and money.

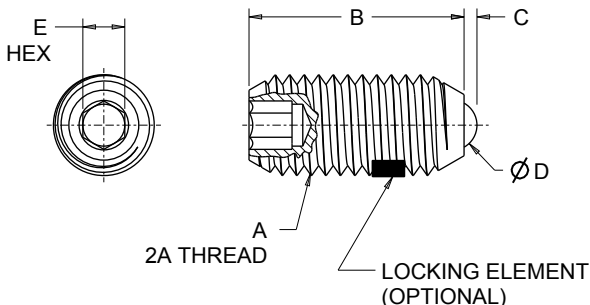
With eight different sizes in both steel and stainless steel, Vlier has the right part for the job.

Typical Uses

- ◆ Indexing
- ◆ Locating
- ◆ Detents
- ◆ Positioning
- ◆ Electrical contacts
- ◆ Adjustable set screw

Special Features

- ◆ Easy installation with a hex wrench
- ◆ Will withstand high torque
- ◆ Controlled end forces
- ◆ Stainless steel ideal for food, medical and special environments



Posi-Hex™ Ball Plungers - Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E
	Initial	Final					
PHB48A	0.5	1.00	6-40	0.350	0.023	0.078	0.050
PHB50	0.5	1.25	8-32	0.445	0.025	0.094	0.063
PHB52	1.5	3.00	10-32	0.570	0.025	0.094	0.079
PHB54	3.0	7.00	¼-20	0.675	0.035	0.125	0.079
PHB56	4.0	9.00	⅝-18	0.720	0.040	0.156	0.095
PHB58	5.0	10.00	¾-16	0.800	0.048	0.188	0.156
PHB60	6.0	12.00	½-13	1.050	0.072	0.281	0.219
PHB62	9.0	18.00	⅝-11	1.250	0.096	0.375	0.253

Posi-Hex™ Ball Plungers - Steel w/Nylon Ball

Part No.	End Force, (Lbs.)		A	B	C	D	E
	Initial	Final					
DPHB48A	0.5	1.00	6-40	0.350	0.023	0.078	0.050
DPHB50	0.5	1.25	8-32	0.445	0.025	0.094	0.063
DPHB52	1.5	3.00	10-32	0.570	0.025	0.094	0.079
DPHB54	3.0	7.00	¼-20	0.675	0.035	0.125	0.079
DPHB56	4.0	9.00	⅝-18	0.720	0.040	0.156	0.095
DPHB58	5.0	10.00	¾-16	0.800	0.048	0.188	0.156
DPHB60	6.0	12.00	½-13	1.050	0.072	0.281	0.219
DPHB62	9.0	18.00	⅝-11	1.250	0.096	0.375	0.253

Posi-Hex™ Ball Plungers - Stainless Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E
	Initial	Final					
SSPHB48A	0.5	1.00	6-40	0.350	0.023	0.078	0.050
SSPHB50	0.5	1.25	8-32	0.445	0.025	0.094	0.063
SSPHB52	1.5	3.00	10-32	0.570	0.025	0.094	0.079
SSPHB54	3.0	7.00	¼-20	0.675	0.035	0.125	0.079
SSPHB56	4.0	9.00	⅝-18	0.720	0.040	0.156	0.095
SSPHB58	5.0	10.00	¾-16	0.800	0.048	0.188	0.156
SSPHB60	6.0	12.00	½-13	1.050	0.072	0.281	0.219
SSPHB62	9.0	18.00	⅝-11	1.250	0.096	0.375	0.253

Posi-Hex™ Ball Plungers - Stainless Steel w/Nylon Ball

Part No.	End Force, (Lbs.)		A	B	C	D	E
	Initial	Final					
DSSPHB48A	0.5	1.00	6-40	0.350	0.023	0.078	0.050
DSSPHB50	0.5	1.25	8-32	0.445	0.025	0.094	0.063
DSSPHB52	1.5	3.00	10-32	0.570	0.025	0.094	0.079
DSSPHB54	3.0	7.00	¼-20	0.675	0.035	0.125	0.079
DSSPHB56	4.0	9.00	⅝-18	0.720	0.040	0.156	0.095
DSSPHB58	5.0	10.00	¾-16	0.800	0.048	0.188	0.156
DSSPHB60	6.0	12.00	½-13	1.050	0.072	0.281	0.219
DSSPHB62	9.0	18.00	⅝-11	1.250	0.096	0.375	0.253

To order with locking element add "P" at the end of the part number.

SPRING LOADED DEVICES

Ball Plungers



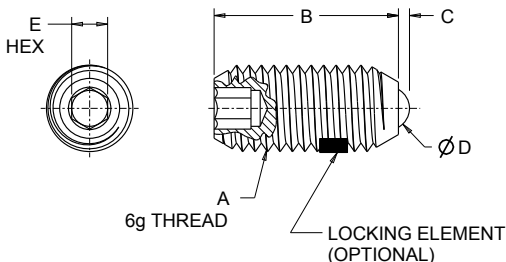
Posi-Hex™ Ball Plungers (Metric)

The enhanced design of our Posi-Hex™ ball plungers allows for easy installation and removal using only a hex wrench. Designed to withstand maximum installation torque, Posi-Hex™ works great when using our thread locking element. These compact spring plungers offer quick change-outs that will save you downtime and money.

The stainless steel option is ideal for food, medical and special environments.

Special Features

- ◆ Easy installation with a hex wrench
- ◆ Will withstand maximum installation torque
- ◆ Controlled end forces
- ◆ Stainless steel ideal for food, medical and special environments



Posi-Hex Ball Plunger - Steel

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E
	Initial	Final					
PHBM4	4.0 (0.90)	10.0 (2.25)	M4 x 0.7	11.2 (0.44)	0.8 (0.032)	2.5 (0.098)	2.0
PHBM5	8.0 (1.8)	14.0 (3.2)	M5 x 0.8	14.4 (0.57)	0.9 (0.035)	3.0 (0.118)	2.5
PHBM6	9.0 (2.0)	13.0 (2.9)	M6 x 1.0	17.0 (0.67)	1.0 (0.039)	3.5 (0.138)	2.5
PHBM8	15.0 (3.4)	30.0 (6.7)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
PHBM10	20.0 (4.5)	35.0 (7.9)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
PHBM12	30.0 (6.7)	55.0 (12.4)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
PHBM16	41.0 (9.2)	86.0 (19.3)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0
LIGHT END FORCE							
PHBLM8	5.0 (1.1)	10.0 (2.3)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
PHBLM10	8.0 (1.8)	15.0 (3.4)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
PHBLM12	10.0 (2.2)	20.0 (4.5)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
PHBLM16	20.0 (4.5)	40.0 (9.0)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0
HEAVY END FORCE							
PHBHM5	15.0 (3.4)	22.0 (4.9)	M5 x 0.8	14.4 (0.57)	0.9 (0.035)	3.0 (0.118)	2.5
PHBHM6	28.0 (6.3)	40.0 (9.0)	M6 x 1.0	17.0 (0.67)	1.0 (0.039)	3.5 (0.138)	2.5
PHBHM8	40.0 (9.0)	60.0 (13.5)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
PHBHM10	60.0 (13.5)	90.0 (20.2)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
PHBHM12	75.0 (16.9)	115.0 (25.8)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
PHBHM16	68.0 (15.3)	142.0 (31.9)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0

Posi-Hex Ball Plunger - Stainless Steel

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E
	Initial	Final					
SSPHBM4	4.0 (0.90)	10.0 (2.25)	M4 x 0.7	11.2 (0.44)	0.8 (0.032)	2.5 (0.098)	2.0
SSPHBM5	8.0 (1.8)	14.0 (3.2)	M5 x 0.8	14.4 (0.57)	0.9 (0.035)	3.0 (0.118)	2.5
SSPHBM6	9.0 (2.0)	13.0 (2.9)	M6 x 1.0	17 (0.67)	1.0 (0.039)	3.5 (0.138)	2.5
SSPHBM8	15.0 (3.4)	30.0 (6.7)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
SSPHBM10	20.0 (4.5)	35.0 (7.9)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
SSPHBM12	30.0 (6.7)	55.0 (12.4)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
SSPHBM16	41.0 (9.2)	86.0 (19.3)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0
LIGHT END FORCE							
SSPHBLM8	5.0 (1.1)	10.0 (2.3)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
SSPHBLM10	8.0 (1.8)	15.0 (3.4)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
SSPHBLM12	10.0 (2.2)	20.0 (4.5)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
SSPHBLM16	20.0 (4.5)	40.0 (9.0)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0
HEAVY END FORCE							
SSPHBHM5	15.0 (3.4)	22.0 (4.9)	M5 x 0.8	14.4 (0.57)	0.9 (0.035)	3.0 (0.118)	2.5
SSPHBHM6	28.0 (6.3)	40.0 (9.0)	M6 x 1.0	17 (0.67)	1.0 (0.039)	3.5 (0.138)	2.5
SSPHBHM8	40.0 (9.0)	60.0 (13.5)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
SSPHBHM10	60.0 (13.5)	90.0 (20.2)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
SSPHBHM12	75.0 (16.9)	115.0 (25.8)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
SSPHBHM16	68.0 (15.3)	142.0 (31.9)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0

To order with locking element add "P" at the end of the part number.

SPRING LOADED DEVICES

Ball Plungers



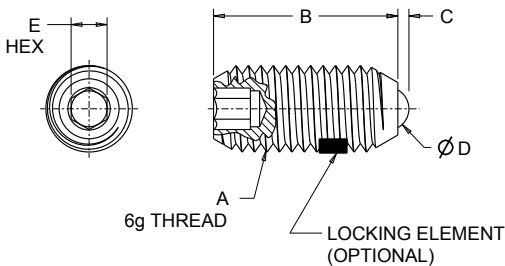
Posi-Hex™ Ball Plungers w/ Nylon Ball

The enhanced design of our Posi-Hex™ ball plungers allow for easy installation and removal using only a hex wrench. Designed to withstand maximum installation torque, Posi-Hex™ works great when using our thread locking element. These compact spring plungers offer quick change-outs that will save you downtime and money. The stainless steel option provides the added benefit of maximum protection against rust and corrosion.

The plungers with nylon ball provide resistance to repeated impacts, moisture, solvents and heat up to 190°F. The nylon plunger tip provides electrical insulating properties. The plungers with nylon ball that have the stainless steel body option provide the added benefit of maximum protection against rust and corrosion.

Special Features

- ◆ Steel or stainless steel body with nylon ball
- ◆ Easy installation with a hex wrench
- ◆ Highly durable and non-marring
- ◆ Steel - zinc plate with black, gold or clear chromate
- ◆ Stainless steel spring standard
- ◆ Compact and lightweight
- ◆ Withstands side loading
- ◆ Withstands maximum installation torque
- ◆ Controlled end forces



Posi-Hex Ball Plunger - Nylon Ball - Steel

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E
	Initial	Final					
DPHBM4	4.0 (0.9)	10.0 (2.25)	M4 x 0.7	11.2 (0.44)	0.8 (0.032)	2.5 (0.098)	2.0
DPHBM5	8.0 (1.8)	14.0 (3.2)	M5 x 0.8	14.4 (0.57)	0.9 (0.035)	3.0 (0.118)	2.5
DPHBM6	9.0 (2.0)	13.0 (2.9)	M6 x 1.0	17.0 (0.67)	1.0 (0.039)	3.5 (0.138)	2.5
DPHBM8	15.0 (3.4)	30.0 (6.7)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
DPHBM10	20.0 (4.5)	35.0 (7.9)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
DPHBM12	30.0 (6.7)	55.0 (12.4)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
DPHBM16	41.0 (9.2)	86.0 (19.3)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0
LIGHT END FORCE							
DPHBLM6	2.0 (0.45)	6.0 (1.4)	M6 X 1.0	17.0 (0.67)	1.0 (0.039)	3.0 (0.118)	2.5
DPHBLM8	5.0 (1.1)	10.0 (2.3)	M8 X 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
DPHBLM10	8.0 (1.8)	15.0 (3.4)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
DPHBLM12	10.0 (2.2)	20.0 (4.5)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
DPHBLM16	20.0 (4.5)	40.0 (9.0)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0
HEAVY END FORCE							
DPHBHM5	15.0 (3.4)	22.0 (4.9)	M5 x 0.8	14.4 (0.57)	0.9 (0.035)	3.0 (0.118)	2.5
DPHBHM6	28.0 (6.3)	40.0 (9.0)	M6 x 1.0	17.0 (0.67)	1.0 (0.039)	3.5 (0.138)	2.5
DPHBHM8	40.0 (9.0)	60.0 (13.5)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
DPHBHM10	60.0 (13.5)	90.0 (20.2)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
DPHBHM12	75.0 (16.9)	115.0 (25.8)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
DPHBHM16	68.0 (15.3)	142.0 (31.9)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0

Posi-Hex Ball Plunger - Nylon Ball - Stainless Steel

Part No.	End Force, N.O (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E
	Initial	Final					
DSSPHBM4	4.0 (0.9)	10.0 (2.25)	M4 x 0.7	11.2 (0.44)	0.8 (0.032)	2.5 (0.098)	2.0
DSSPHBM5	8.0 (1.8)	14.0 (3.2)	M5 x 0.8	14.4 (0.57)	0.9 (0.035)	3.0 (0.118)	2.5
DSSPHBM6	9.0 (2.0)	13.0 (2.9)	M6 x 1.0	17.0 (0.67)	1.0 (0.039)	3.5 (0.138)	2.5
DSSPHBM8	15.0 (3.4)	30.0 (6.7)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
DSSPHBM10	20.0 (4.5)	35.0 (7.9)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
DSSPHBM12	30.0 (6.7)	55.0 (12.4)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
DSSPHBM16	41.0 (9.2)	86.0 (19.3)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0
LIGHT END FORCE							
DSSPHBLM6	2.0 (0.45)	6.0 (1.4)	M6 X 1.0	17.0 (0.67)	1.0 (0.039)	3.0 (0.118)	2.5
DSSPHBLM8	5.0 (1.1)	10.0 (2.3)	M8 X 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
DSSPHBLM10	8.0 (1.8)	15.0 (3.4)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
DSSPHBLM12	10.0 (2.2)	20.0 (4.5)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
DSSPHBLM16	20.0 (4.5)	40.0 (9.0)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0
HEAVY END FORCE							
DSSPHBHM5	15.0 (3.4)	22.0 (4.9)	M5 x 0.8	14.4 (0.57)	0.9 (0.035)	3.0 (0.118)	2.5
DSSPHBHM6	28.0 (6.3)	40.0 (9.0)	M6 x 1.0	17.0 (0.67)	1.0 (0.039)	3.5 (0.138)	2.5
DSSPHBHM8	40.0 (9.0)	60.0 (13.5)	M8 x 1.25	18.2 (0.72)	1.5 (0.059)	5.0 (0.196)	2.5
DSSPHBHM10	60.0 (13.5)	90.0 (20.2)	M10 x 1.5	22.9 (0.90)	2.0 (0.079)	6.0 (0.236)	4.0
DSSPHBHM12	75.0 (16.9)	115.0 (25.8)	M12 x 1.75	26.6 (1.05)	2.5 (0.098)	8.0 (0.315)	6.0
DSSPHBHM16	68.0 (15.3)	142.0 (31.9)	M16 x 2.0	31.7 (1.25)	3.5 (0.138)	10.0 (0.394)	8.0

To order with locking element add "P" at the end of the part number.

SPRING LOADED DEVICES

Ball Plungers



Hex-Head Ball Plungers

Our hex-head ball plungers are compact units suitable for applications with side loading requirements and are available in either steel or stainless steel design.

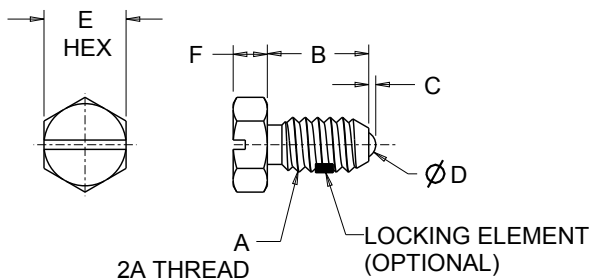
Available in four of our most popular sizes, all have a unique hex-head with a screwdriver slot that provides two installation options. In addition, the hex-head provides a defined and fixed installation position to maintain controlled end forces. The stainless steel option provides exceptional protection against rust and corrosion, making it ideal to use in food, medical and other special environments.

Typical Uses

- ◆ Indexing
- ◆ Locating

Special Features

- ◆ Special hex-head design for fixed installation
- ◆ Two installation options with socket or screwdriver
- ◆ Three standard spring forces
- ◆ Side-load tolerant
- ◆ Controlled end forces
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures



Hex-Head Ball Plungers - Stainless Steel								
Part No.	End Force, (Lbs.)		A	B	C	D	E	F
Stainless Steel	Initial	Final						
HSSB54	3	7	¼-20	0.72	0.035	0.125	¾	0.19
HSSBL54	2	4						
HSSBH54	4	12						
HSSB58	5	10	¾-16	0.88	0.048	0.188	½	0.25
HSSBL58	2½	5						
HSSBH58	6	21						
HSSB60	6	12	½-13	1.00	0.072	0.281	¾	0.28
HSSBL60	3	6						
HSSBH60	6	30						
HSSB62	9	18	¾-11	1.25	0.096	0.375	¾	0.31
HSSBL62	4½	9						
HSSBH62	7	50						

To order with locking element add "P" at the end of the part number.

SPRING LOADED DEVICES

Push-Fit



Push-Fit Ball Plungers

Our push-fit ball plungers are designed for easy installation into wood, soft plastic or aluminum. They are ideal where a threaded spring plunger is impractical or when threaded adjustments are not required.

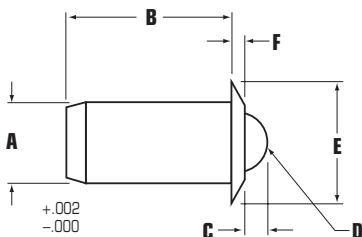
The stainless steel offers the added benefit of maximum protection against rust and corrosion.

Typical Uses

- ◆ Securing
- ◆ Indexing
- ◆ Locating
- ◆ Positioning
- ◆ Electrical insulator
- ◆ Electrical contact

Special Features

- ◆ Easy installation
- ◆ No thread adjustment
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures



Push-Fit Ball Plungers - Standard Force w/Stainless Steel Ball

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
PFB48	SPFB48	0.75	2.5	0.125	0.252	0.035	0.094	0.187	0.032
PFB52	SPFB52	2.00	5.0	0.188	0.394	0.058	0.156	0.250	0.040
PFB54	SPFB54	3.00	7.0	0.250	0.471	0.070	0.187	0.312	0.045
PFB56	SPFB56	4.00	10.0	0.312	0.643	0.090	0.250	0.375	0.045
PFB58	SPFB58	5.00	14.0	0.375	0.786	0.110	0.312	0.500	0.078
PFB60	SPFB60	8.00	18.0	0.500	1.100	0.161	0.437	0.688	0.110

Push-Fit Ball Plungers - Light End Force w/Stainless Steel Ball

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
PFB47	SPFB47	0.4	1.3	0.125	0.252	0.035	0.094	0.187	0.032
PFB51	SPFB51	1.0	2.5	0.188	0.394	0.058	0.156	0.250	0.040
PFB53	SPFB53	1.5	3.5	0.250	0.471	0.070	0.187	0.312	0.045
PFB55	SPFB55	2.0	5.0	0.312	0.643	0.090	0.250	0.375	0.045
PFB57	SPFB57	2.5	7.0	0.375	0.786	0.110	0.312	0.500	0.078
PFB59	SPFB59	4.0	9.0	0.500	1.100	0.161	0.437	0.688	0.110

Push-Fit Ball Plungers - Heavy End Force w/Stainless Steel Ball

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
PFBH48	SPFBH48	2.0	5.0	0.125	0.25	0.04	0.09	0.19	0.03
PFBH52	SPFBH52	4.0	10.0	0.188	0.39	0.06	0.16	0.25	0.04
PFBH54	SPFBH54	6.0	13.0	0.250	0.47	0.07	0.19	0.31	0.05
PFBH56	SPFBH56	8.0	16.0	0.312	0.64	0.09	0.25	0.38	0.05
PFBH58	SPFBH58	10.0	18.0	0.375	0.79	0.11	0.31	0.50	0.08
PFBH60	SPFBH60	12.0	23.0	0.500	1.10	0.16	0.44	0.69	0.11

Push-Fit Ball Plungers - Standard End Force w/Nylon Ball

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
DPFB48	DSPFB48	0.75	2.5	0.125	0.252	0.035	0.094	0.187	0.032
DPFB52	DSPFB52	2.00	5.0	0.188	0.394	0.058	0.156	0.250	0.040
DPFB54	DSPFB54	3.00	7.0	0.250	0.471	0.070	0.187	0.312	0.045
DPFB56	DSPFB56	4.00	10.0	0.312	0.643	0.090	0.250	0.375	0.045
DPFB58	DSPFB58	5.00	14.0	0.375	0.786	0.110	0.312	0.500	0.078
DPFB60	DSPFB60	8.00	18.0	0.500	1.100	0.161	0.437	0.688	0.110

Push-Fit Ball Plungers - Light End Force w/Nylon Ball

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
DPFB47	DSPFB47	0.4	1.3	0.125	0.252	0.035	0.094	0.187	0.032
DPFB51	DSPFB51	1.0	2.5	0.188	0.394	0.058	0.156	0.250	0.040
DPFB53	DSPFB53	1.5	3.5	0.250	0.471	0.070	0.187	0.312	0.045
DPFB55	DSPFB55	2.0	5.0	0.312	0.643	0.090	0.250	0.375	0.045
DPFB57	DSPFB57	2.5	7.0	0.375	0.786	0.110	0.312	0.500	0.078
DPFB59	DSPFB59	4.0	9.0	0.500	1.100	0.161	0.437	0.688	0.110

Push-Fit Ball Plungers - Heavy Force w/Nylon Ball

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
DPFBH48	DSPFBH48	2.0	5.0	0.125	0.25	0.04	0.09	0.19	0.03
DPFBH52	DSPFBH52	4.0	10.0	0.188	0.39	0.06	0.16	0.25	0.04
DPFBH54	DSPFBH54	6.0	13.0	0.250	0.47	0.07	0.19	0.31	0.05
DPFBH56	DSPFBH56	8.0	16.0	0.312	0.64	0.09	0.25	0.38	0.05
DPFBH58	DSPFBH58	10.0	18.0	0.375	0.79	0.11	0.31	0.50	0.08
DPFBH60	DSPFBH60	12.0	23.0	0.500	1.10	0.16	0.44	0.69	0.11

SPRING LOADED DEVICES

Push-Fit



Push-Fit Ball Plungers (Metric)

Our push-fit ball plungers are designed for easy installation into wood, soft plastic or aluminum. They are ideal where a threaded ball plunger is impractical or when threaded adjustments are not required.

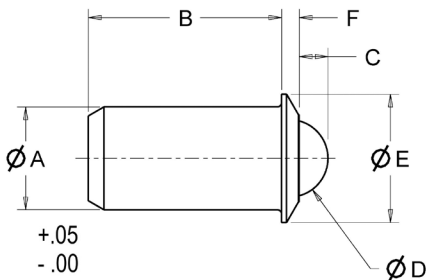
The stainless steel offers the added benefit of maximum protection against rust and corrosion.

Typical Uses

- ◆ Securing
- ◆ Indexing
- ◆ Locating
- ◆ Positioning
- ◆ Electrical insulator
- ◆ Electrical contact

Special Features

- ◆ Easy installation
- ◆ No thread adjustment
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures



Push-Fit Ball Plungers - Stainless Steel w/Stainless Steel Ball (Metric)

Part No.	End Force, N (Lbs.)		ØA	B	C	D	E	F
	Initial	Final						
SPFBM4	3.3 (0.75)	11.1 (2.5)	4.0 (0.158)	8.0 (0.315)	0.90 (0.035)	3.0 (0.118)	6.0 (0.24)	0.9 (0.035)
SPFBM6	8.9 (2.0)	22.2 (5.0)	6.0 (0.236)	10.5 (0.413)	1.35 (0.053)	4.0 (0.156)	8.0 (0.315)	1.1 (0.044)
SPFBM8	20.0 (4.5)	35.0 (7.9)	8.0 (0.315)	17.0 (0.70)	2.0 (0.079)	6.0 (0.236)	10.0 (0.394)	1.4 (0.055)
SPFBM10	30.0 (6.74)	53.0 (12.36)	10.0 (0.394)	19.0 (0.748)	2.5 (0.098)	8.0 (0.315)	12.0 (0.472)	2.0 (0.079)
SPFBM12	41.0 (9.2)	86.0 (19.3)	12.0 (0.472)	21.5 (0.846)	3.5 (0.138)	10.0 (0.394)	15.0 (0.59)	2.5 (0.10)

Push-Fit Plungers - Installation Suggestion

Part No.		BODY O.D.	Suggested installation hole, dia Min.
			in.
(S)(D)PFB47	(S)(D)PFB(H)48	0.125	0.128
(S)(D)PFB51	(S)(D)PFB(H)52	0.188	0.191
(S)PFP51	(S)PFP52		
(S)(D)PFB53	(S)(D)PFB(H)54	0.250	0.253
(S)PFP53	(S)PFP54		
(S)(D)PFB55	(S)(D)PFB(H)55	0.312	0.315
(S)PFP55	(S)PFP56		
(S)(D)PFB57	(S)(D)PFB(H)58	0.375	0.378
(S)PFP57	(S)PFP58		
(S)(D)PFB59	(S)(D)PFB(H)60	0.500	0.503
(S)PFP59	(S)PFP60		



Push-Fit Plungers

Our push-fit plungers are designed for easy installation into wood, soft plastic or aluminum. Ideal where a threaded spring plunger is impractical or when threaded adjustments are not required.

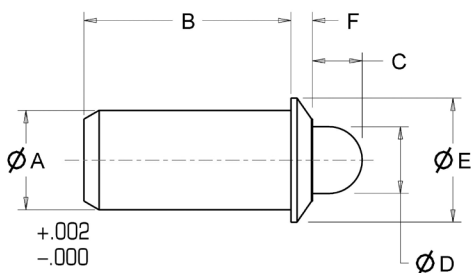
The stainless steel option offers the added benefit of maximum protection against rust and corrosion.

Typical Uses

- ◆ Securing
- ◆ Indexing
- ◆ Locating
- ◆ Positioning
- ◆ Electrical insulator
- ◆ Electrical contact

Special Features

- ◆ Easy installation
- ◆ No thread adjustment
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures



Push-Fit Plungers - Heavy End Force w/Steel Plunger

Part No.		End Force, (Lbs.)		O.D. A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
PFP48	SPFP48	1.0	2.0	0.125	0.252	0.062	0.070	0.190	0.030
PFP52	SPFP52	1.5	4.5	0.188	0.441	0.094	0.121	0.250	0.044
PFP54	SPFP54	2.5	6.0	0.250	0.521	0.125	0.168	0.312	0.055
PFP56	SPFP56	4.0	10.0	0.312	0.640	0.151	0.186	0.375	0.045
PFP58	SPFP58	5.0	14.0	0.375	0.786	0.187	0.234	0.500	0.096
PFP60	SPFP60	8.0	18.0	0.500	1.100	0.250	0.332	0.688	0.134

Push-Fit Plungers - Light End Force w/Steel Plunger

Part No.		End Force, (Lbs.)		O.D. A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
PFP51	SPFP51	0.75	2.0	0.188	0.441	0.094	0.121	0.250	0.044
PFP53	SPFP53	1.25	3.0	0.250	0.521	0.125	0.168	0.312	0.055
PFP57	SPFP57	2.50	7.0	0.375	0.786	0.187	0.234	0.500	0.096
PFP59	SPFP59	4.00	9.0	0.500	1.100	0.250	0.332	0.688	0.134

Push-Fit Plungers - Heavy End Force w/Delrin® Plunger

Part No.		End Force, (Lbs.)		O.D. A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
DPFP48	DSPFP48	1.0	2.0	0.125	0.250	0.062	0.070	0.190	0.030
DPFP52	DSPFP52	1.5	4.5	0.188	0.441	0.094	0.121	0.250	0.044
DPFP54	DSPFP54	2.5	6.0	0.250	0.521	0.125	0.168	0.312	0.055
DPFP56	DSPFP56	4.0	10.0	0.312	0.640	0.151	0.186	0.375	0.045
DPFP58	DSPFP58	5.0	14.0	0.375	0.786	0.187	0.234	0.500	0.096
DPFP60	DSPFP60	8.0	18.0	0.500	1.100	0.250	0.332	0.688	0.134

Push-Fit Plungers - Light End Force w/Delrin® Plunger

Part No.		End Force, (Lbs.)		O.D. A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
DPFP51	DSPFP51	0.75	2.0	0.188	0.441	0.094	0.121	0.250	0.044
DPFP53	DSPFP53	1.25	3.0	0.250	0.521	0.125	0.168	0.312	0.055
DPFP57	DSPFP57	2.50	7.0	0.375	0.786	0.187	0.234	0.500	0.096
DPFP59	DSPFP59	4.00	9.0	0.500	1.100	0.250	0.332	0.688	0.134



Push-Fit Plungers (Metric)

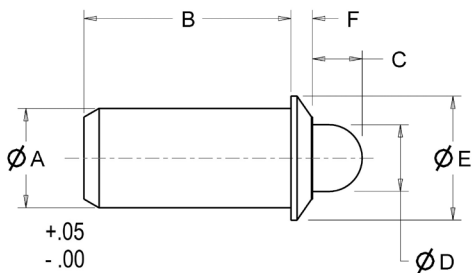
Push-fit plungers are designed for easy installation into wood, soft plastic or aluminum. Ideal where a threaded spring plunger is impractical or when threaded adjustments are not required. Push-fit ball plungers in stainless steel offer the added benefit of maximum protection against rust and corrosion.

Typical Uses

- ◆ Securing
- ◆ Indexing
- ◆ Locating
- ◆ Positioning
- ◆ Electrical insulator
- ◆ Electrical contact

Special Features

- ◆ Easy installation
- ◆ No thread adjustment
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures



Push-Fit Plungers - Stainless Steel w/Steel Plunger

Part No.	End Force, N (Lbs.)		ØA	B	C	D	E	F
	Initial	Final						
SPFPM4	4.4 (1.0)	8.9 (2.0)	4.0 (0.158)	6.4 (0.25)	1.60 (0.062)	1.78 (0.07)	4.75 (0.190)	0.81 (0.030)
SPFPM6	11.1 (2.5)	26.7 (6.0)	6.0 (0.236)	13.2 (0.52)	3.20 (0.125)	4.28 (0.168)	7.90 (0.312)	1.40 (0.060)
SPFPM8	17.8 (4.0)	44.5 (10.0)	8.0 (0.315)	16.3 (0.64)	3.80 (0.151)	4.70 (0.186)	9.50 (0.375)	1.10 (0.045)
SPFPM10	22.2 (5.0)	62.3 (14.0)	10.0 (0.394)	20.0 (0.79)	4.75 (0.187)	5.90 (0.234)	12.70 (0.500)	2.40 (0.096)
SPFPM12	35.6 (8.0)	80.1 (18.0)	12.0 (0.472)	27.9 (1.10)	6.35 (0.250)	8.40 (0.332)	17.50 (0.690)	3.40 (0.134)

SPRING LOADED DEVICES

Press-Fit Plungers



Knurled Press-Fit Ball Plungers

Knurled press-fit ball plungers are designed for easy installation into wood, soft plastic or aluminum. Nylon ball resists marring. These press-fit ball plungers are designed without a shoulder for insertion from either end, and are ideal where a threaded ball plunger is impractical or when threaded adjustments are not required.

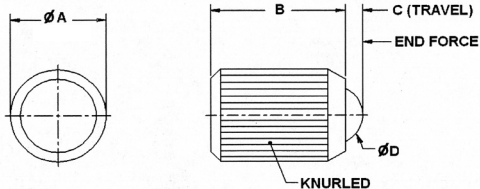
Knurled press-fit ball plungers in stainless steel resist rust and corrosion.

Typical Uses

- ◆ Securing
- ◆ Indexing
- ◆ Locating
- ◆ Positioning
- ◆ Electrical insulator
- ◆ Electrical contact

Special Features

- ◆ Easy installation
- ◆ No thread adjustment
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures
- ◆ Steel and stainless steel versions with nylon ball



Knurled Press-Fit Ball Plungers w/Steel Ball

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel	Initial	Final				
PFBK47	SPFBK47	0.40	1.3	0.148	0.290	0.035	0.094
PFBK48	SPFBK48	0.75	2.5				
PFBK51	SPFBK51	1.00	2.5				
PFBK52	SPFBK52	2.00	5.0	0.210	0.435	0.058	0.156
PFBK53	SPFBK53	1.50	3.5				
PFBK54	SPFBK54	3.00	7.0				
PFBK55	SPFBK55	2.00	5.0	0.254	0.520	0.070	0.188
PFBK56	SPFBK56	4.00	10.0				
PFBK57	SPFBK57	2.50	7.0				
PFBK58	SPFBK58	5.00	14.0	0.379	0.865	0.110	0.312
PFBK59	SPFBK59	4.00	9.0				
PFBK60	SPFBK60	8.00	18.0				
				0.504	1.210	0.161	0.437

Knurled Press-Fit Ball Plungers w/Nylon Ball

Part No.		End Force, (Lbs.)		A	B	C	D
Steel Nylon Ball	Stainless Steel Nylon Ball	Initial	Final				
DPFBK47	DSPFBK47	0.40	1.3	0.148	0.290	0.035	0.094
DPFBK48	DSPFBK48	0.75	2.5				
DPFBK51	DSPFBK51	1.00	2.5				
DPFBK52	DSPFBK52	2.00	5.0	0.210	0.435	0.058	0.156
DPFBK53	DSPFBK53	1.50	3.5				
DPFBK54	DSPFBK54	3.00	7.0				
DPFBK55	DSPFBK55	2.00	5.0	0.254	0.520	0.070	0.188
DPFBK56	DSPFBK56	4.00	10.0				
DPFBK57	DSPFBK57	2.50	7.0				
DPFBK58	DSPFBK58	5.00	14.0	0.379	0.865	0.110	0.312
DPFBK59	DSPFBK59	4.00	9.0				
DPFBK60	DSPFBK60	8.00	18.0				
				0.504	1.210	0.161	0.437

Knurled Press-Fit Ball Plungers Installation Suggestion

Part. No.				Suggested Installation Hole dia.	Installation Tool
Steel	Steel Nylon Ball	Stainless Steel	Stainless Steel Nylon Ball		
PFBK47	DPFBK47	SPFBK47	DSPFBK47	0.141 +0.001/ -0.000	KT47
PFBK48	DPFBK48	SPFBK48	DSPFBK48		
PFBK51	DPFBK51	SPFBK51	DSPFBK51	0.203 +0.001/ -0.000	KT51
PFBK52	DPFBK52	SPFBK52	DSPFBK52		
PFBK53	DPFBK53	SPFBK53	DSPFBK53	0.250 +0.002/ -0.000	KT53
PFBK54	DPFBK54	SPFBK54	DSPFBK54		
PFBK55	DPFBK55	SPFBK55	DSPFBK55	0.312 +0.002/ -0.000	KT55
PFBK56	DPFBK56	SPFBK56	DSPFBK56		
PFBK57	DPFBK57	SPFBK57	DSPFBK57	0.375 +0.002/ -0.000	KT57
PFBK58	DPFBK58	SPFBK58	DSPFBK58		
PFBK59	DPFBK59	SPFBK59	DSPFBK59	0.500 +0.002/ -.0000	KT59
PFBK60	DPFBK60	SPFBK60	DSPFBK60		

SPRING LOADED DEVICES

Press-Fit Plungers



Shoulderless Knurled Press-Fit Plungers

Knurled press-fit plungers are easily installed and designed without shoulder for insertion from either end. Ideal where a threaded plunger is impractical or when threaded adjustments are not required.

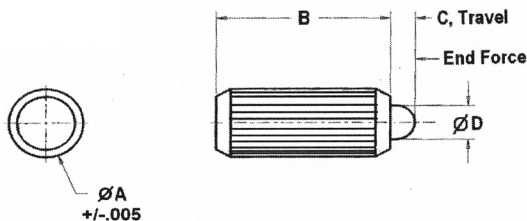
Knurled press-fit plungers in stainless steel resist rust and corrosion.

Typical Uses

- ◆ Securing
- ◆ Indexing
- ◆ Locating
- ◆ Positioning
- ◆ Electrical insulator
- ◆ Electrical contact

Special Features

- ◆ Easy installation
- ◆ No thread adjustment
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures
- ◆ Steel and stainless steel versions with Delrin® Nose



Knurled Press-Fit Plungers w/Standard Plunger Nose

Part No.		End Force, (Lbs.)		A	B	C	D
Steel	Stainless Steel	Initial	Final				
PFPK51	SPFPK51	0.75	2.0	0.210	0.50	0.094	0.121
PFPK52	SPFPK52	1.50	4.50				
PFPK53	SPFPK53	1.25	3.00				
PFPK54	SPFPK54	2.50	6.00	0.254	0.58	0.125	0.168
PFPK57	SPFPK57	2.50	7.00				
PFPK58	SPFPK58	5.00	14.00				
PFPK59	SPFPK59	4.00	9.00	0.379	0.90	0.187	0.234
PFPK60	SPFPK60	8.00	18.00				
				0.504	1.25	0.250	0.332

Knurled Press-Fit Plungers w/Delrin® Nose

Part No.		End Force, (Lbs.)		A	B	C	D
Steel Delrin® Nose	Stainless Steel Delrin® Nose	Initial	Final				
DPFPK51	DSPFPK51	0.75	2.00	0.210	0.50	0.094	0.121
DPFPK52	DSPFPK52	1.50	4.50				
DPFPK53	DSPFPK53	1.25	3.00				
DPFPK54	DSPFPK54	2.50	6.00	0.254	0.58	0.125	0.168
DPFPK57	DSPFPK57	2.50	7.00				
DPFPK58	DSPFPK58	5.00	14.00				
DPFPK59	DSPFPK59	4.00	9.00	0.379	0.90	0.187	0.234
DPFPK60	DSPFPK60	8.00	18.00				
				0.504	1.25	0.250	0.332

Knurled Press-Fit Plungers Installation Suggestion

Part No.				Suggested Installation hole dia.	Installation Tool
Steel	Steel Delrin® Nose	Stainless Steel	Stainless Steel Delrin® Nose		
PFPK51	DPFPK51	SPFPK51	DSPFPK51	0.203 +0.001 / -0.000	KT51
PFPK52	DPFPK52	SPFPK52	DSPFPK52		
PFPK53	DPFPK53	SPFPK53	DSPFPK53		
PFPK54	DPFPK54	SPFPK54	DSPFPK54	0.250 +0.002 / -0.000	KT53
PFPK57	DPFPK57	SPFPK57	DSPFPK57		
PFPK58	DPFPK58	SPFPK58	DSPFPK58		
PFPK59	DPFPK59	SPFPK59	DSPFPK59	0.375 +0.002 / -0.000	KT55
PFPK60	DPFPK60	SPFPK60	DSPFPK60		
				0.500 +0.002 / -0.000	KT60

SPRING LOADED DEVICES

Vlier Tools



Ball Buttons, Vlier Wrench
& Knurled Press Fit Tool

Ball Buttons

Ball buttons can be easily pushed into a reamed hole to provide the perfect ball plunger mating detent. They prevent part damage and provide a hardened striker plate to take the wear and tear of side loads.

Special Features

- ◆ Chamfered end for easy insertion
- ◆ 440C stainless steel, hardened and ground

Vlier Wrench

The Vlier wrench provides fast and easy installation of Vlier standard spring, ball and stubby plungers and prevents spring damage that can result when a screwdriver is used on the ball or plunger end.

Special Features

- ◆ Fast and easy installation
- ◆ Prevents spring damage

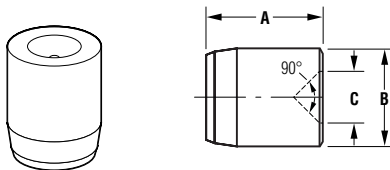
Knurled Press-Fit Tool

The knurled press-fit tool is designed for fast and easy installation of the knurled press-fit plungers on pages 83-85 to prevent spring and body damage.

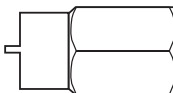
Special Features

- ◆ Fast and easy installation
- ◆ Prevents spring damage

BALL
BUTTON



VLIER
WRENCH



Ball Buttons

Part No.	For Ball Plunger	A	B	C
BB46	SSB46, SSB47, DSSB46 & 47 B46, B47	$\frac{1}{8}$	0.1075	0.056
BB48	SSB48, DSSB48, B48	$\frac{1}{8}$	0.1175	0.061
BB50	B52, BM4, BM6, BL52, BH52, BML6 BMH6, SSB50, SSB52, SSBL52, SSBH52 DSSB50, 50A	$\frac{3}{16}$	0.1614	0.069
BB54	SSB54, SSBL54, SSBH54, D54, DSSB Series	$\frac{1}{4}$	0.2034	0.111
BB56	B56, BM8, BMH8, BML8, BL56, BH56 SSB56, SSBH56, SSBH56, D56, DL56 ND56, NDL56, DSSB Series	$\frac{5}{16}$	0.2659	0.139
BB58	BM10, BML10, BMH10, B58, BL58, BH58 SSB58, SSBL58, SSBH58, D58, DL58 ND58, NDL58, DSSB Series	$\frac{3}{8}$	0.3284	0.164
BB60	B60, BL60, BH60, BM12, BMH12, BML12 SSB60, SSBL60, SSBH60, DSSB Series	$\frac{1}{2}$	0.4378	0.241
BB62	B62, BL62, BH62, SSBH62, SSBL62, SSB62	$\frac{5}{8}$	0.5472	0.330

Vlier Wrench

Wrench No.	For Thread Size	Wrench No.	For Thread Size
VW48	6-32	VW58	$\frac{3}{8}$ -16 & M10
VW50	8-32 & 8-36 (6-40 Ball Plunger)	VW60	$\frac{1}{2}$ -13 & M12
VW52	10-32, M4 & M6 (8-32 & 8-36 Ball Plunger)	VW62	$\frac{5}{8}$ -11
VW54	$\frac{1}{4}$ -20 & $\frac{1}{4}$ -28	VW64	$\frac{3}{4}$ -10
VW56	$\frac{5}{16}$ -18 & M8 ($\frac{3}{8}$ -16 Ball Plunger)	VW66	1-8

Knurled Press-Fit Tool

Installation Tool	Part Number	
KT47	(D)(S)PFBK47	(D)(S)PFBK48
KT51	(D)(S)PFBK51	(D)(S)PFBK52
KT53	(D)(S)PFBK53	(D)(S)PFBK54
KT55	(D)(S)PFBK55	(D)(S)PFBK56
KT57	(D)(S)PFBK57	(D)(S)PFBK58
KT59	(D)(S)PFBK59	(D)(S)PFBK60
KT51	(D)(S)PFPK51	(D)(S)PFPK52
KT53	(D)(S)PFPK53	(D)(S)PFPK54
KT55	(D)(S)PFPK57	(D)(S)PFPK58
KT60	(D)(S)PFPK59	(D)(S)PFPK60

SPRING LOADED DEVICES

Expanded Metric Plungers

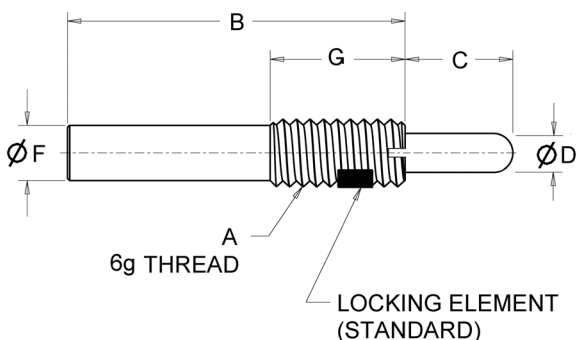


Expanded Long Travel Round Nose Plungers (Expanded Metric)

Expanded long travel round nose plungers are ideal for high-speed, long-life applications. They are easily inserted, adjusted or removed with a standard wrench from plunger end. The slotted plunger body allows for blind hole installation.

Special Features

- ◆ Impact resistance
- ◆ 10mm to 24mm
- ◆ Choice of spring forces



Expanded Long Travel Round Nose Plungers without Locking

Part No.	End Force, N (Lbs)		A Thread 6g-ISO	B mm (in.)	C mm (in.)	ØD mm (in.)	ØF mm (in.)	G mm (in.)
	Initial	Final						
Steel W/O Locking Element								
HTHL16A	17.0 (3.82)	74.0 (16.64)	M16	80.0 (3.15)	11.0 (.433)	7.3 (.287)	13.4 (.528)	35.0 (1.378)
HTHL16B	21.0 (4.72)	81.0 (18.21)	M16	120.0 (4.724)	21.0 (.827)	7.3 (.287)	13.4 (.528)	35.0 (1.378)
HTHL16C	21.0 (4.72)	89.0 (20.0)	M16	150.0 (5.91)	31.0 (1.22)	7.3 (.287)	13.4 (.528)	35.0 (1.378)
HTHL16D	16.0 (3.6)	80.0 (17.98)	M16	200.0 (7.874)	41.0 (1.614)	7.3 (.287)	13.4 (.528)	35.0 (1.378)
HTHL22A	80.0 (17.98)	214.0 (48.11)	M22	130.0 (5.118)	21.0 (.827)	9.0 (.354)	19.0 (.748)	50.0 (1.97)
HTHL22B	70.0 (15.74)	210.0 (47.21)	M22	168.0 (6.614)	31.0 (1.22)	9.0 (.354)	19.0 (.748)	50.0 (1.97)
HTHL22C	76.0 (17.09)	208.0 (46.76)	M22	226.0 (8.898)	41.0 (1.614)	9.0 (.354)	19.0 (.748)	50.0 (1.97)

Expanded Long Travel Round Nose Plungers w/Locking

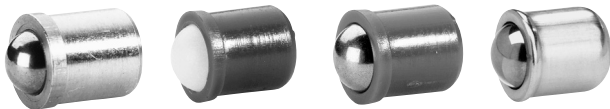
Part No.	End Force, N (Lbs)		A Thread 6g-ISO	B mm (in.)	C mm (in.)	ØD mm (in.)	ØF mm (in.)	G mm (in.)
	Initial	Final						
Steel Locking Element								
HHL10	6.0 (1.35)	16.0 (3.6)	M10	35.0 (1.38)	8.0 (.315)	4.00 (.157)	7.8 (.307)	25.0 (.984)
HHL12	4.0 (.90)	18.0 (4.05)	M12	43.0 (1.693)	10.0 (.394)	5.50 (.217)	9.5 (.374)	35.0 (1.378)
HHLH12	7.0 (1.57)	46.0 (10.34)	M12	43.0 (1.693)	10.0 (.394)	5.50 (.217)	9.5 (.374)	35.0 (1.378)
HHL16A	7.0 (1.57)	24.0 (5.4)	M16	48.0 (1.89)	10.0 (.394)	8.00 (.315)	13.4 (.528)	35.0 (1.378)
HHLH16A	10.0 (2.25)	43.0 (9.67)	M16	48.0 (1.89)	10.0 (.394)	8.00 (.315)	13.4 (.528)	35.0 (1.378)

Long Travel Plunger

Part No.	End Force, N (Lbs.)		A Thread 6g-ISO	B mm (in.)	C mm (in.)	ØD mm (in.)	ØF mm (in.)	G mm (in.)
	Initial	Final						
Steel Locking Element								
HHL16B	15.0 (3.37)	42.0 (9.44)	M16	58.0 (2.283)	10.0 (0.394)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHLH16B	14.0 (3.15)	84.0 (18.88)	M16	58.0 (2.283)	10.0 (0.394)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL16C	9.0 (2.02)	33.0 (7.42)	M16	58.0 (2.283)	15.0 (0.591)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHLH16C	10.0 (2.25)	57.0 (12.81)	M16	58.0 (2.283)	15.0 (0.591)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL16D	4.0 (.90)	23.0 (5.17)	M16	58.0 (2.283)	20.0 (0.787)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL16E	11.0 (2.47)	43.0 (9.67)	M16	83.0 (3.268)	20.0 (0.787)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHLH16E	18.0 (4.05)	72.0 (16.19)	M16	83.0 (3.268)	20.0 (0.787)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL16F	13.0 (2.92)	41.0 (9.22)	M16	98.0 (3.858)	25.0 (0.984)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHLH16F	20.0 (4.5)	70.0 (15.74)	M16	98.0 (3.858)	25.0 (0.984)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL16G	13.0 (2.92)	47.0 (10.57)	M16	98.0 (3.858)	30.0 (1.181)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHLH16G	20.0 (4.5)	80.0 (17.98)	M16	98.0 (3.858)	30.0 (1.181)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL16H	24.0 (5.4)	110.0 (24.73)	M16	118.0 (4.646)	30.0 (1.181)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL16K	13.0 (2.92)	63.0 (14.16)	M16	148.0 (5.827)	40.0 (1.575)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHLH16K	21.0 (4.72)	113.0 (25.4)	M16	148.0 (5.827)	40.0 (1.575)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL16L	7.0 (1.57)	43.0 (9.67)	M16	148.0 (5.827)	50.0 (1.969)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHLH16L	13.0 (2.92)	75.0 (16.86)	M16	148.0 (5.827)	50.0 (1.969)	8.0 (0.315)	13.4 (0.528)	35.0 (1.378)
HHL24	14.0 (3.15)	87.0 (19.56)	M24	60.0 (2.362)	15.0 (.591)	10.0 (0.394)	19.6 (0.772)	45.0 (1.772)
HHLH24	24.0 (5.4)	192.0 (43.16)	M24	60.0 (2.362)	15.0 (0.591)	10.0 (0.394)	19.6 (0.772)	45.0 (1.772)

SPRING LOADED DEVICES

Expanded Metric Plungers



Expanded Metric Series Plungers

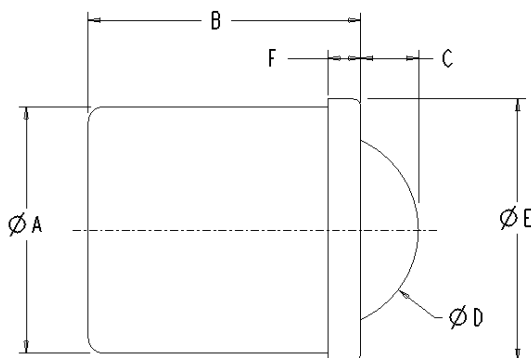
Expanded metric series plungers are designed for easy installation into wood, soft plastic or aluminum. They are ideal where a threaded plunger is impractical or when threaded adjustments are not required.

Typical Uses

- ◆ Indexing
- ◆ Electrical contacts
- ◆ Locating
- ◆ Torque limiting
- ◆ Positioning
- ◆ Detents

Special Features

- ◆ Easy installation
- ◆ No thread adjustments
- ◆ Brass, stainless steel, Delrin® material choices
- ◆ Minimize design time



Expanded Metric Series Plungers - Stainless Steel Body & Brass Body

Part No.		End Force, N (Lbs.)		ØA +0,1 (+.004)	B mm (in.)	C mm (in.)	ØD mm (in.)	ØE mm (in.)	F, REF mm (in.)
SS Body with SS Ball	Brass Body with SS Ball	Initial	Final						
HSPFB4	HBPFB4	2.5 (0.56)	6.0 (1.35)	4.0 (0.157)	5.0 (0.197)	0.8 (0.031)	3.0 (0.118)	4.6 (0.181)	0.9 (0.035)
HSPFB5	HBPFB5	3.0 (0.67)	6.5 (1.46)	5.0 (0.197)	6.0 (0.236)	1.0 (0.039)	4.0 (0.157)	5.6 (0.220)	0.9 (0.035)
HSPFB6	HBPFB6	5.5 (1.24)	11.5 (2.59)	6.0 (0.236)	7.0 (0.276)	1.6 (0.062)	5.0 (0.197)	6.5 (0.256)	1.0 (0.039)
HSPFB8	HBPFB8	7.0 (1.57)	12.5 (2.81)	8.0 (0.315)	9.0 (0.354)	1.9 (0.075)	6.5 (0.256)	8.5 (0.335)	1.1 (0.043)
HSPFB10	N/A	8.5 (1.91)	18.5 (4.16)	10.0 (0.394)	13.5 (0.531)	3.1 (0.122)	8.5 (0.335)	11.0 (0.433)	1.9 (0.075)
HSPFB12	N/A	12.0 (2.7)	26.5 (5.96)	12.0 (0.472)	16.0 (0.630)	3.8 (0.15)	10.0 (0.394)	13.0 (0.512)	2.5 (0.098)

Expanded Metric Series Plungers - Delrin® Body

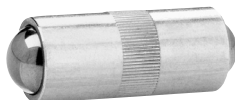
Part No.		End Force, N (Lbs.)		ØA +0,1 (+.004)	B mm (in.)	C mm (in.)	ØD mm (in.)	ØE mm (in.)	F, REF mm (in.)
Delrin® Body with SS Ball	Delrin® Body & Ball	Initial	Final						
HDPFB4	HDDPFB4	2.5 (0.56)	6.0 (1.35)	4.0 (0.157)	5.0 (0.197)	0.8 (0.031)	3.0 (0.118)	4.6 (0.181)	0.9 (0.035)
HDPFB5	HDDPFB5	4.5 (1.01)	9.0 (2.02)	5.0 (1.97)	6.0 (0.236)	1.0 (0.039)	4.0 (0.157)	5.6 (0.220)	0.9 (0.035)
HDPFB6	HDDPFB6	6.5 (1.46)	13.0 (2.92)	6.0 (0.236)	7.0 (0.276)	1.6 (0.062)	5.0 (0.197)	6.5 (0.256)	1.0 (0.039)
HDPFB8	HDDPFB8	8.0 (1.80)	18.0 (4.05)	8.0 (0.315)	9.0 (0.354)	1.9 (0.075)	6.5 (0.256)	8.5 (0.335)	1.1 (0.043)
HDPFB10	HDDPFB10	12.0 (2.70)	23.0 (5.17)	10.0 (0.394)	13.5 (0.531)	3.1 (0.122)	8.5 (0.335)	11.0 (0.433)	1.9 (0.075)
HDPFB12	HDDPFB12	13.0 (2.92)	25.0 (5.62)	12.0 (0.472)	16.0 (0.630)	3.8 (0.150)	10.0 (0.394)	13.0 (0.512)	2.5 (0.098)

SPRING LOADED DEVICES

Expanded Metric Plungers



No collar push



Double ended

Expanded Metric Series Plungers

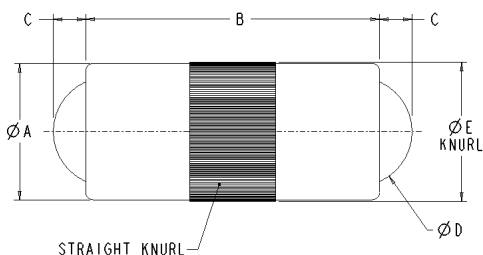
Expanded metric series plungers are designed for easy installation into wood, soft plastic or aluminum. They are ideal where a threaded plunger is impractical or when threaded adjustments are not required.

Typical Uses

- ◆ Indexing
- ◆ Electrical contacts
- ◆ Locating
- ◆ Torque limiting
- ◆ Positioning
- ◆ Detents

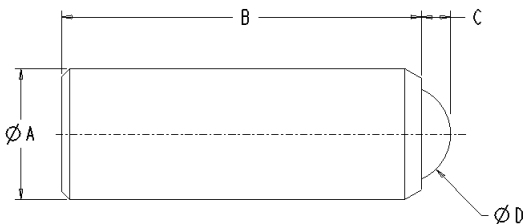
Special Features

- ◆ Easy installation
- ◆ No thread adjustments
- ◆ Brass, stainless steel, Delrin® material choices
- ◆ Minimize design time



Expanded Metric Series Plungers - Double Ended

Part No.	End Force, N (Lbs.)		ØA mm (in.)	B mm (in.)	C mm (in.)	ØD mm (in.)	ØE mm +0.05/-0.0 (in. +.022/-0.0)
	Initial	Final					
HBPF25	1.3 (0.29)	2.5 (0.56)	2.5 (0.098)	5.3 (0.209)	0.65 (0.026)	2.0 (0.079)	2.52 (0.099)
HBPF30	2.0 (0.45)	4.5 (1.01)	3.0 (0.118)	7.3 (0.287)	0.80 (0.031)	2.5 (0.098)	3.02 (0.119)
HBPF40	2.5 (0.562)	7.5 (0.3)	4.0 (0.157)	9.0 (0.354)	0.90 (0.035)	3.0 (0.118)	4.03 (0.169)
HBPF50	3.5 (0.79)	8.0 (1.8)	5.0 (0.197)	10.8 (0.425)	1.20 (0.047)	4.0 (0.157)	5.03 (0.198)
HBPF70	4.0 (0.9)	12.0 (2.7)	7.0 (0.276)	14.0 (0.551)	2.00 (0.079)	6.0 (0.236)	7.03 (0.277)
HBPF80	6.0 (1.35)	15.0 (3.37)	8.0 (0.315)	18.0 (0.709)	2.10 (0.083)	6.5 (0.256)	8.03 (0.316)



Expanded Metric Series Plungers - Single Ended

Part No.	End Force, N (Lbs.)		ØA mm ± 0.04 (in. ± .002)	B mm (in.)	C mm (in.)	ØD mm (in.)
	Initial	Final				
HSPFS30	4.5 (1.01)	7.5 (1.69)	3.0 (0.118)	7.0 (0.276)	0.65 (0.026)	2.0 (0.079)
HSPFS35	6.0 (1.35)	14.5 (3.26)	3.5 (0.138)	9.0 (0.354)	0.80 (0.031)	2.5 (0.098)
HSPFS40	8.0 (1.8)	14.0 (3.15)	4.0 (0.157)	11.0 (0.433)	0.90 (0.035)	3.0 (0.118)
HSPFS45	9.5 (2.14)	16.5 (3.71)	4.5 (0.177)	12.0 (0.472)	0.95 (0.037)	3.2 (0.125)
HSPFS50	11.0 (2.47)	18.0 (4.05)	5.0 (0.197)	13.0 (0.512)	1.00 (0.039)	3.5 (0.138)
HSPFS55	15.5 (3.48)	25.0 (5.62)	5.5 (0.217)	14.0 (0.551)	1.20 (0.047)	4.0 (0.157)
HSPFS60	18.0 (4.05)	31.0 (6.97)	6.0 (0.236)	15.0 (0.591)	1.50 (0.059)	4.5 (0.177)

QUICK RELEASE DEVICES

Derlin® Knob Plungers



Delrin® Knob Plungers - Non-Locking - Steel

Quick release devices, available in a number of retractable designs and material options, offer excellent versatility and wide application potential.

Typical Uses

- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Uses - Stainless Steel

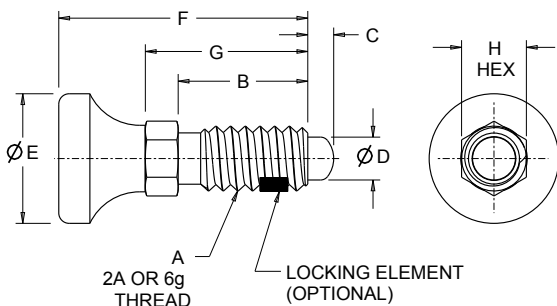
- ◆ Food and medical applications
- ◆ Special environments

Types

Delrin® Knob	Pull Ring
Knurled Knob	Stubby Pull Ring
Hex Drive	Lever Style
T-Handle	Locating/Indexing

Features

Unified ANSI and Metric	Locking & Non-Locking
Steel & Stainless Steel	Models
Options	



Delrin® Knob Plungers - Non-Locking - Steel

Delrin® knob plungers offer improved functionality, excellent versatility and wide application potential

Typical Uses

- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Features

- ◆ Contoured Delrin® knob
- ◆ Radiused, case-hardened steel plunger
- ◆ Tough steel body and spring
- ◆ Attractive, black finish
- ◆ Non-locking design
- ◆ Unified ANSI and metric threads

Delrin® Knob Plungers - Non-Locking - Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E	F	G	H Hex
	Initial	Final								
PRT250*	0.12	0.4	¼-20	0.50	0.13	0.16	0.50	0.97	0.63	¼
PRT375	0.25	2.0	⅜-16	0.75	0.18	0.25	0.75	1.40	0.94	⅜
PRT500	0.50	1.78	½-13	1.00	0.25	0.31	1.00	1.90	1.25	½

*No thread relief in ¼ - 20 thread size.

Delrin® Knob Plungers - Non-Locking - Steel (metric)

Part No.	End Force		A Thread	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)
	Initial	Final								
MPRT6*	0.5 (0.11)	1.5 (0.34)	M6 x 1.00	13.0 (0.5)	3.0 (0.118)	3.0 (0.118)	12.0 (0.48)	25.0 (0.98)	16.0 (0.63)	6.0 (0.24)
MPRT10	1.0 (0.22)	9.0 (2.02)	M10 x 1.50	20.0 (0.79)	5.0 (0.196)	6.0 (0.236)	19.0 (0.75)	38.0 (1.50)	25.0 (0.98)	10.0 (0.39)
MPRT12	2.5 (0.56)	8.0 (1.80)	M12 x 1.75	25.0 (0.98)	6.0 (0.236)	8.0 (0.314)	25.0 (0.98)	47.0 (1.85)	31.0 (1.20)	12.0 (0.47)

*No thread relief in M6 thread size.

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES**Delrin® Knob Plungers****Delrin® Knob Plungers - Locking - Steel**

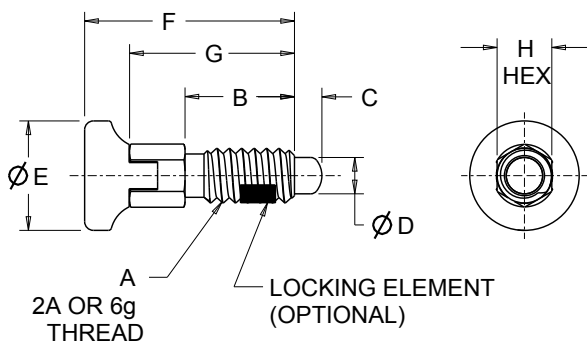
Delrin® knob plungers offer improved functionality, excellent versatility and wide application potential. The locking variant offers the added advantage of a plunger that locks in the retracted position.

Typical Uses

- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Features

- ◆ Compact, locking plunger
- ◆ Contoured Delrin® knob
- ◆ Radiused, case-hardened steel plunger
- ◆ Tough steel body and spring
- ◆ Attractive, black finish
- ◆ Optional locking elements
- ◆ Unified ANSI and metric threads



Delrin® Knob Plungers - Locking - Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E	F	G	H Hex
	Initial	Final								
PRTL250*	0.12	0.36	¼-20	0.50	0.13	0.16	0.50	0.97	0.63	¼
PRTL375	0.25	2.00	⅜-16	0.75	0.18	0.25	0.75	1.40	0.94	⅜
PRTL500	0.50	1.75	½-13	1.00	0.25	0.31	1.00	1.90	1.25	½

*No thread relief in ¼ - 20 thread size.

Delrin® Knob Plungers - Locking - Steel (Metric)

Part No.	End Force, N (Lbs.)		A Thread	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)
	Initial	Final								
MPRTL6*	0.5 (0.11)	1.5 (0.34)	M6 x 1.00	13.0 (0.5)	3.0 (0.118)	3.0 (0.118)	12.0 (0.48)	25.0 (0.98)	16.0 (0.63)	6.0 (0.24)
MPRTL10	1.0 (0.22)	9.0 (2.02)	M10 x 1.50	20.0 (0.79)	5.0 (0.196)	6.0 (0.236)	19.0 (0.75)	38.0 (1.50)	25.0 (0.98)	10.0 (0.39)
MPRTL12	2.5 (0.56)	8.0 (1.80)	M12 x 1.75	25.0 (0.98)	6.0 (0.236)	8.0 (0.314)	25.0 (0.98)	47.0 (1.85)	31.0 (1.20)	12.0 (0.47)

*No thread relief in M6 thread size.

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Delrin® Knob Plungers



Delrin® Knob Plungers - Non-locking - Stainless Steel

Delrin® knob plungers are cosmetically appealing and functional. Their stainless steel construction makes them ideal for food, medical and other environments requiring resistance to corrosion.

Typical Uses

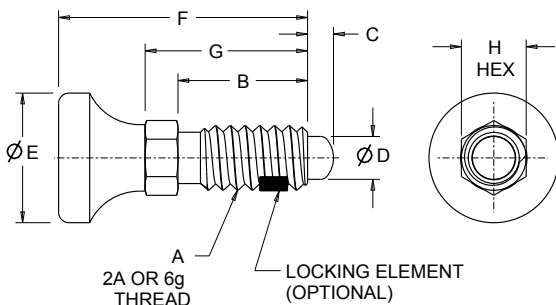
- ◆ Positioning
- ◆ Locking
- ◆ Fastening
- ◆ Latching
- ◆ Securing
- ◆ Quick disconnect

Special Uses - Stainless Steel

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ Contoured natural (white) Delrin® knob
- ◆ Radiused, stainless steel plunger
- ◆ Stainless steel body and spring
- ◆ Unified ANSI and metric threads
- ◆ Non-locking design



Delrin® Knob Plungers - Non-Locking - Stainless Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E	F	G	H Hex
	Initial	Final								
SPRT250*	0.12	0.36	¼-20	0.50	0.13	0.16	0.50	0.97	0.63	¾
SPRT375	0.25	2.00	⅜-16	0.75	0.18	0.25	0.75	1.40	0.94	⅞
SPRT500	0.50	1.75	½-13	1.00	0.25	0.31	1.00	1.90	1.25	1½

*No thread relief in ¼ - 20 thread size.

Delrin® Knob Plungers - Non-Locking - Stainless Steel (Metric)

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)
	Initial	Final								
SMPRT6*	0.5 (0.11)	1.5 (0.34)	M6 x 1.00	13.0 (0.5)	3.0 (0.118)	3.0 (0.118)	12.0 (0.48)	25.0 (0.98)	16.0 (0.63)	6.0 (0.24)
SMPRT10	1.0 (0.22)	9.0 (2.02)	M10 x 1.50	20.0 (0.79)	5.0 (0.196)	6.0 (0.236)	19.0 (0.75)	38.0 (1.50)	25.0 (0.98)	10.0 (0.39)
SMPRT12	2.5 (0.56)	8.0 (1.80)	M12 x 1.75	25.0 (0.98)	6.0 (0.236)	8.0 (0.314)	25.0 (0.98)	47.0 (1.85)	31.0 (1.20)	12.0 (0.47)

*No thread relief in M6 thread size.

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Delrin® Knob Plungers



Delrin® Knob Plungers - Locking - Stainless Steel

Delrin® knob plungers are cosmetically appealing and functional. Their stainless steel construction makes them ideal for food and medical industries and environments that require corrosion resistance. The locking variant offers the added advantage of a plunger that locks in the retracted position.

Typical Uses

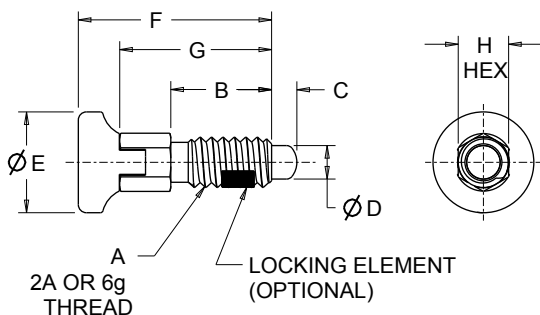
- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Uses

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ Contoured natural (white) Delrin® knob
- ◆ Radiused, stainless steel plunger
- ◆ Stainless steel body and spring
- ◆ Unified ANSI and metric threads
- ◆ Locking design



Delrin® Knob Plungers - Locking - Stainless Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E	F	G	H Hex
	Initial	Final								
SPRTL250*	0.12	0.36	¼-20	0.50	0.13	0.16	0.50	0.97	0.63	¼
SPRTL375	0.25	2.00	⅜-16	0.75	0.18	0.25	0.75	1.40	0.94	⅜
SPRTL500	0.50	1.75	½-13	1.00	0.25	0.31	1.00	1.90	1.25	½

*No thread relief in ¼ - 20 thread size.

Delrin® Knob Plungers - Locking - Stainless Steel (Metric)

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)
	Initial	Final								
SMPRTL6*	0.5 (0.11)	1.5 (0.34)	M6 x 1.00	13.0 (0.5)	3.0 (0.118)	3.0 (0.118)	12.0 (0.48)	25.0 (0.98)	16.0 (0.63)	6.0 (0.24)
SMPRTL10	1.0 (0.22)	9.0 (2.02)	M10 x 1.50	20.0 (0.79)	5.0 (0.196)	6.0 (0.236)	19.0 (0.75)	38.0 (1.50)	25.0 (0.98)	10.0 (0.39)
SMPRTL12	2.5 (0.56)	8.0 (1.80)	M12 x 1.75	25.0 (0.98)	6.0 (0.236)	8.0 (0.314)	25.0 (0.98)	47.0 (1.85)	31.0 (1.20)	12.0 (0.47)

*No thread relief in M6 thread size.

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Knurled Knob Plungers



Knurled Knob Plungers - Non-Locking - Steel/Stainless Steel

Knurled Knob Plungers - Non-Locking - Steel

Knurled knob non-locking plungers in steel have a retractable plunger that can be easily withdrawn and reengaged. Their large, hardened bearing surfaces permit greater side loading, while slight end tapers make for easy alignment.

They have a steel body and spring and are finished in zinc gold chromate.

Knurled Knob Plungers - Non-locking - Stainless Steel

Knurled knob non-locking plungers in stainless steel offer the added benefit of maximum protection against rust and corrosion.

Typical Uses

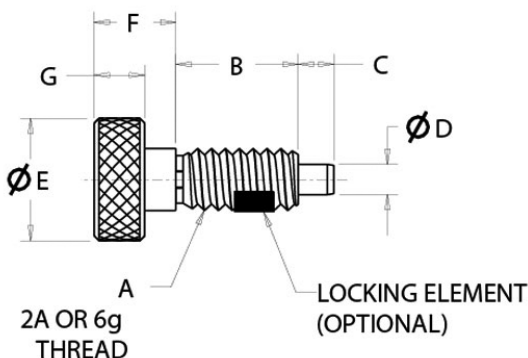
- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Uses

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ Knurled knob design
- ◆ Non-locking design
- ◆ Hand-retractable plunger
- ◆ Large hardened bearing surface
- ◆ Withstand side loading
- ◆ Unified ANSI and metric threads
- ◆ Tapered end for easy alignment
- ◆ Steel and stainless steel models



Knurled Knob Plungers - Non-Locking - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E	F	G
Steel	Stainless Steel	Initial	Final							
SL190	SSL190	0.50	3.0	10-32	0.400	0.094	0.104**	0.38	0.250	0.19
SL250	SSL250	1.00	4.0	¼-20	0.500	0.125	0.123	0.50	0.313	0.19
SL312	SSL312	1.00	6.0	⅝-18	0.625	0.188	0.154	0.63	0.375	0.25
SL375	SSL375	1.00	8.0	¾-16	0.750	0.218	0.185	0.75	0.500	0.31
SL500	SSL500	1.00	10.0	½-13	0.875	0.250	0.248	1.00	0.625	0.38

**190 Series has a radiused nose

Knurled Knob Plungers - Non-Locking - Steel/Stainless Steel (Metric)

Part No.		End Force N (Lbs.)		A	B mm	C mm	D mm	E mm	F mm	G mm
Steel	Stainless Steel	Initial	Final							
SLM5	SSLM5	2.22 (0.5)	13.34 (3.0)	M5 x 0.8	10.0 (0.39)	2.0 (0.079)	2.5 (0.098)	9.0 (0.35)	6.0 (0.24)	4.0 (0.16)
SLM6	SSLM6	4.45 (1.0)	17.80 (4.0)	M6 x 1.0	13.0 (0.5)	3.0 (0.118)	3.0 (0.118)	13.0 (0.5)	8.0 (0.31)	5.0 (0.2)
SLM10	SSLM10	4.45 (1.0)	35.60 (8.0)	M10 x 1.5	19.0 (0.75)	6.0 (0.236)	5.0 (0.196)	19.0 (0.75)	13.0 (0.5)	8.0 (0.31)
SLM12	SSLM12	4.45 (1.0)	44.50 (10.0)	M12 x 1.75	23.0 (0.91)	6.0 (0.236)	6.0 (0.236)	25.0 (0.98)	16.0 (0.63)	10.0 (0.39)

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Knurled Knob Plungers



Knurled Knob Plungers - Locking - Steel/Stainless Steel

Knurled Knob Plungers - Locking - Steel

Knurled knob locking plungers in steel can be easily withdrawn and reengaged. Their large hardened bearing surfaces permit greater side loading, while slight end tapers make for easy alignment.

They have a tough steel body and spring, and a zinc gold chromate finish.

Knurled Knob Plungers - Locking - Stainless Steel

Knurled knob locking plungers in stainless steel offer the added benefit of maximum protection against rust and corrosion.

Typical Uses

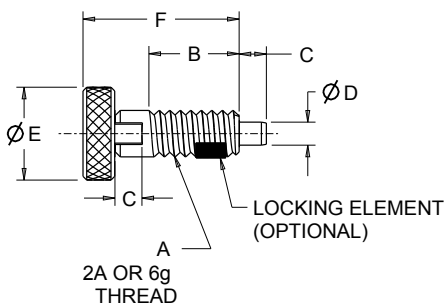
- ◆ Positioning
- ◆ Securing
- ◆ Latching
- ◆ Fastening
- ◆ Locking
- ◆ Quick disconnect

Special Uses

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ Knurled knob design
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment
- ◆ Hand-retractable locking plunger
- ◆ Unified ANSI and metric threads
- ◆ Steel and stainless steel models
- ◆ Large hardened bearing surface



Knurled Knob Plungers - Standard End Force - Non-Locking - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
SLF250	SSLF250	0.50	2.0	¼-20	0.400	0.125	0.123	0.50	0.81
SLF375	SSLF375	0.50	3.0	⅜-16	0.750	0.220	0.185	0.75	1.26
SLF500	SSLF500	0.50	4.0	½-13	0.650	0.250	0.248	1.00	1.38

Knurled Knob Plungers - Non-Locking - Heavy Duty Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
Steel	Stainless Steel	Initial	Final						
SLFH250	SSLFH250	1.0	4.0	¼-20	0.40	0.125	0.123	0.50	0.81
SLFH375	SSLFH375	1.0	8.0	⅜-16	0.75	0.220	0.185	0.75	1.26
SLFH500	SSLFH500	1.0	10.0	½-13	0.85	0.250	0.248	1.00	1.38

Knurled Knob Plungers - Standard End Force - Non-Locking - Steel/Stainless Steel (Metric)

Part No.		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F
Steel	Stainless Steel	Initial	Final						
SLFM6	SSLFM6	2.2 (0.50)	8.9 (2.0)	M6 x 1.00	10.0 (0.39)	3.2 (0.126)	3.0 (0.118)	13.0 (0.5)	20.7 (0.82)
SLFM10	SSLFM10	2.2 (0.50)	13.3 (3.0)	M10 x 1.50	19.0 (0.75)	5.6 (0.220)	4.7 (0.185)	19.0 (0.75)	32.0 (01.26)
SLFM12	SSLFM12	2.2 (0.50)	17.8 (4.0)	M12 x 1.75	17.0 (0.67)	6.4 (0.252)	6.3 (0.248)	25.0 (0.98)	35.0 (1.38)

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Hex Drive Plungers



Hex Drive Plungers - Locking -
Steel/Stainless Steel

Hex Drive Plungers - Locking - Steel and Stainless Steel

Locking Hex drive plungers in steel have a retractable plunger that locks in the retracted position and can be easily withdrawn and reengaged. A built-in hex drive wrench facilitates rapid installation and adjustment with a hex tool.

Available in steel or stainless steel.

Typical Uses

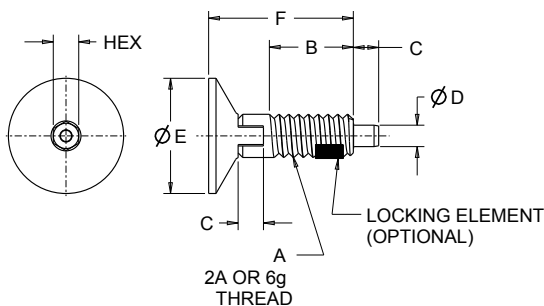
- ◆ Positioning
- ◆ Locking
- ◆ Fastening
- ◆ Latching
- ◆ Securing
- ◆ Quick disconnect

Special Uses - Stainless Steel

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ 'C' sink knob with hex
- ◆ Withstands side loading
- ◆ Hand-retractable locking plunger
- ◆ Tapered end for easy alignment
- ◆ Large hardened bearing surface



Hex Drive Plungers - Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E	F	HEX
	Initial	Final							
SLR250	1.0	4.0	¼-20	0.40	0.125	0.123	0.750	0.805	0.125
SLR312	1.0	6.0	⅝-18	0.53	0.187	0.154	0.875	1.070	0.125
SLR375	1.0	8.0	¾-16	0.75	0.220	0.185	1.000	1.260	0.218
SLR500	1.0	10.0	½-13	0.65	0.250	0.248	1.250	1.380	0.250

Hex Drive Plungers - Stainless Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E	F	HEX
	Initial	Final							
SSLR250	1.0	4.0	¼-20	0.40	0.125	0.123	0.750	0.805	0.125
SSLR312	1.0	6.0	⅝-18	0.53	0.187	0.154	0.875	1.070	0.125
SSLR375	1.0	8.0	¾-16	0.75	0.220	0.185	1.000	1.260	0.218
SSLR500	1.0	10.0	½-13	0.65	0.250	0.248	1.250	1.380	0.250

Hex Drive Plungers - Steel (Metric)

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	HEX mm
	Initial	Final							
SLRM6	4.45 (1.0)	18.0 (4.0)	M6 x 1.00	10.0 (0.39)	3.2 (0.126)	3.0 (0.118)	19.0 (0.75)	20.0 (0.79)	3.0
SLRM8	4.45 (1.0)	27.0 (6.0)	M8 x 1.25	13.5 (0.53)	4.8 (0.187)	4.0 (0.156)	22.0 (0.86)	27.0 (1.05)	3.0
SLRM10	4.45 (1.0)	36.0 (8.0)	M10 x 1.50	19.0 (0.75)	5.6 (0.220)	4.7 (0.185)	25.0 (0.98)	32.0 (1.26)	5.0
SLRM12	4.45 (1.0)	44.5 (10.0)	M12 x 1.75	16.5 (0.64)	6.5 (0.253)	6.3 (0.248)	32.0 (1.26)	35.0 (1.38)	6.0

Hex Drive Plungers - Stainless Steel (Metric)

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	HEX mm
	Initial	Final							
SSLRM6	4.45 (1.0)	18.0 (4.0)	M6 x 1.00	10.0 (0.39)	3.2 (0.126)	3.0 (0.118)	19.0 (0.75)	20.0 (0.79)	3.0
SSLRM8	4.45 (1.0)	27.0 (6.0)	M8 x 1.25	13.5 (0.53)	4.8 (0.187)	4.0 (0.156)	22.0 (0.86)	27.0 (1.05)	3.0
SSLRM10	4.45 (1.0)	36.0 (8.0)	M10 x 1.50	19.0 (0.75)	5.6 (0.220)	4.7 (0.185)	25.0 (0.98)	32.0 (1.26)	5.0
SSLRM12	4.45 (1.0)	44.5 (10.0)	M12 x 1.75	16.5 (0.64)	6.5 (0.253)	6.3 (0.248)	32.0 (1.26)	35.0 (1.38)	6.0

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

T-Handle Retractable Plungers



T-Handle Retractable Plungers - Locking - Steel/Stainless Steel

T-Handle Retractable Plungers - Locking - Steel

T-Handle retractable locking plungers in steel provide an easy to grasp T-handle for withdrawing and engaging the plunger.

T-Handle Retractable Plungers - Locking - Stainless Steel

T-Handle retractable locking plungers in stainless steel provide maximum protection against rust and corrosion.

Typical Uses

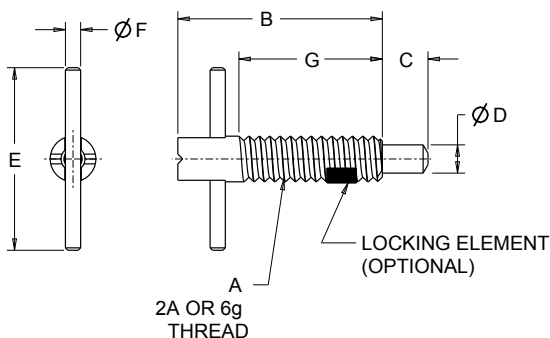
- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Uses - Stainless Steel

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ T-Handle design
- ◆ Hand-retractable locking plunger
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment
- ◆ Steel and stainless steel materials



T-Handle Retractable Plungers - Locking - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E	F	G
		Initial	Final							
Steel	Stainless Steel									
FRT250	FRT250	1.0	2.5	1/4-20	1.14	0.250	0.155	1.13	0.13	0.8
FRT375	FRT375	2.0	4.0	3/8-16	1.68	0.375	0.233	1.50	0.13	1.2
FRT500	FRT500	2.5	5.0	1/2-13	2.00	0.500	0.312	2.00	0.16	1.4
FRT625	FRT625	2.5	5.0	5/8-11	2.38	0.625	0.375	2.50	0.19	1.7

T-Handle Retractable Plungers - Locking - Steel/Stainless Steel (Metric)

Part No.		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)
		Initial	Final							
Steel	Stainless Steel									
FRTM6	SFRTM6	4.4 (1.0)	11.0 (2.5)	M6 x 1.00	29.0 (1.14)	6.4 (0.252)	4.0 (0.157)	29.0 (0.11)	3.3 (0.13)	20.3 (0.8)
FRTM10	SFRTM10	9.0 (2.0)	17.8 (4.0)	M10 x 1.50	43.0 (1.69)	9.5 (0.374)	6.0 (0.236)	38.0 (1.5)	3.3 (0.13)	30.5 (1.2)
FRTM12	SFRTM12	11.0 (2.5)	22.0 (5.0)	M12 x 1.75	51.0 (2.00)	12.7 (0.500)	8.0 (0.315)	51.0 (2.0)	4.0 (0.16)	35.5 (1.4)
FRTM16	SFRTM16	11.0 (2.5)	22.0 (5.0)	M16 x 2.00	60.0 (2.36)	16.0 (0.630)	10.0 (0.394)	64.0 (2.52)	4.8 (0.19)	43.0 (1.7)

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Pull Ring Plungers



Pull Ring Plungers - Locking & Non-Locking -
Steel/Stainless Steel

Pull Ring Plungers - Locking - Steel

Pull-ring retractable locking plungers in steel are designed for limited space applications, and provide an easy to grasp pull-ring handle for withdrawing and engaging the plunger.

Pull Ring Plungers - Locking - Stainless Steel

Pull ring retractable locking plungers in stainless steel provide the added advantage of maximum protection against rust and corrosion.

Typical Uses

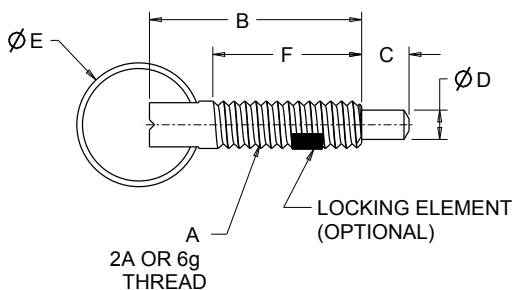
- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Uses - Stainless Steel

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ Pull-ring design
- ◆ Hand-retractable locking plunger
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment
- ◆ Steel and stainless steel materials



Pull Ring Plungers - Non-Locking - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E	F
		Initial	Final						
Steel	Stainless Steel								
PR250	SPR250	1.0	2.5	¼-20	1.14	0.250	0.155	0.62	0.8
PR375	SPR375	2.0	4.0	⅜-16	1.68	0.375	0.233	0.98	1.2
PR500	SPR500	2.5	5.0	½-13	2.00	0.500	0.312	1.26	1.4

Pull Ring Plungers - Non-Locking - Steel/Stainless Steel (Metric)

Part No.		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
		Initial	Final						
Steel	Stainless Steel								
PRM6	SPRM6	4.4 (1.0)	11.0 (2.5)	M6 x 1.00	29.0 (0.11)	6.4 (0.252)	4.0 (0.157)	16.0 (0.63)	20.3 (0.8)
PRM10	SPRM10	9.0 (2.0)	17.8 (4.0)	M10 x 1.50	43.0 (0.17)	9.5 (0.374)	6.0 (0.236)	25.0 (0.98)	30.5 (1.2)
PRM12	SPRM12	11.0 (2.5)	22.0 (5.0)	M12 x 1.75	51.0 (0.20)	12.7 (0.500)	8.0 (0.315)	32.0 (1.1)	35.5 (1.4)
PRM16	SPRM16	11.0 (2.5)	22.0 (5.0)	M16 x 2.00	60.0 (0.24)	16.0 (0.630)	10.0 (0.394)	32.0 (1.1)	43.0 (1.7)

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Stubby Pull Ring Plungers



Stubby Pull Ring Plungers - Non-Locking -
Steel/Stainless Steel

Stubby Pull Ring Plungers - Non-Locking - Steel

Stubby pull ring non-locking plungers in stainless steel have a shorter plunger body for limited space applications. They are easy to grasp by their pull-ring handle when withdrawing or engag-ing the plunger.

Stubby Pull Ring Plungers - Non-Locking - Stainless Steel

Choose a stubby non-locking version in stainless steel for instances where rust and corrosion could be an issue.

Typical Uses

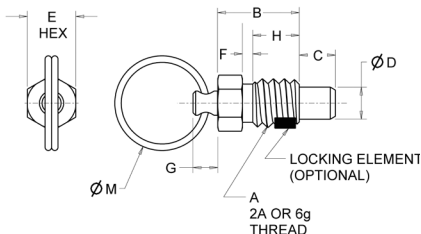
- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Uses - Stainless Steel

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ Pull-ring stubby design
- ◆ Hand-retractable non-locking plunger
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment
- ◆ Steel and stainless steel materials



Stubby Pull Ring Plungers - Non-Locking - Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E Hex	F	G	H	M
Steel	Stainless Steel	Initial	Final									
PRSN250	SPRSN250	0.50	2.0	1/4-20	0.44	0.19	0.16	0.25	*	0.18	0.31	0.62
PRSN250A	SPRSN250A	0.50	2.0	1/4-20	0.44	0.19	0.16	0.25	*	0.18	0.31	0.75
PRSN375	SPRSN375	0.75	3.0	3/8-16	0.63	0.28	0.25	0.38	0.13	0.19	0.44	0.75
PRSN500	SPRSN500	1.00	4.0	1/2-13	0.81	0.38	0.31	0.50	0.13	0.25	0.56	1.00
PRSN625	SPRSN625	1.25	5.0	3/4-11	1.00	0.44	0.38	0.62	0.13	0.31	0.69	1.00

*No thread relief for 250 series

Stubby Pull Ring Plungers - Non-Locking - Steel/Stainless Steel (Metric)

Part No.		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)	M mm (in.)
Steel	Stainless Steel	Initial	Final									
PRSNM6	SPRSNM6	2.2 (0.50)	8.9 (2.0)	M6 x 1.00	11.0 (0.43)	5.0 (0.197)	4.0 (0.157)	6.0 (0.24)	***	4.6 (0.18)	8.0 (0.32)	19.0 (0.75)
PRSNM10	SPRSNM10	3.3 (0.75)	13.3 (3.0)	M10 x 1.50	16.0 (0.63)	7.0 (0.276)	6.0 (0.236)	10.0 (0.39)	3.0 (0.12)	4.8 (0.19)	11.0 (0.43)	19.0 (0.75)
PRSNM12	SPRSNM12	4.4 (1.0)	17.8 (4.0)	M12 x 1.75	20.6 (0.81)	10.0 (0.38)	7.9 (0.312)	12.0 (0.47)	3.0 (0.12)	6.4 (0.25)	14.0 (0.55)	25.0 (0.98)
PRSNM16	SPRSNM16	5.6 (1.25)	22.2 (5.0)	M16 x 2.00	25.4 (1.00)	11.0 (0.44)	9.5 (0.375)	16.0 (0.63)	3.0 (0.12)	8.0 (0.32)	18.0 (0.71)	25.0 (0.98)

***No thread relief for M6 sizes

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Lever Style Plungers



Lever Style Plungers - Locking - Steel/Stainless Steel

Lever type steel locking plungers permit the plunger to be fully withdrawn into the body of the part, and then locked into position. The stainless steel variety resists rust and corrosion.

Typical Uses

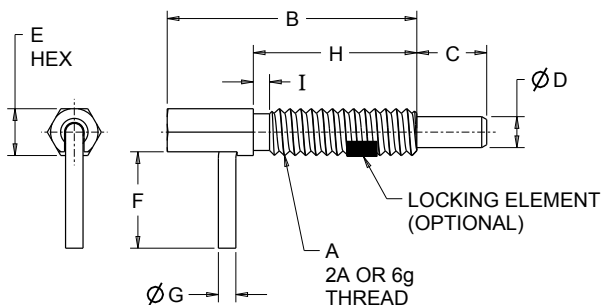
- ◆ Positioning
- ◆ Fastening
- ◆ Securing
- ◆ Locking
- ◆ Latching
- ◆ Quick disconnect

Special Uses - Stainless Steel

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ Lever handle design
- ◆ Hand-retractable locking plunger
- ◆ Tapered end for easy alignment
- ◆ Steel and stainless steel materials
- ◆ Unified ANSI and metric threads



Lever Style Plungers - Locking - Steel/Stainless Steel

Part No.		End Force, (Lbs.)		A	B	C	D	E Hex	F	G	H	I
		Initial	Final									
Steel	Stainless											
FR250	SSFR250	0.50	2.50	¼-20	1.25	0.38	0.16	0.25	0.50	0.09	0.80	*
FR375	SSFR375	0.75	3.75	⅜-16	2.00	0.56	0.25	0.38	0.75	0.14	1.31	0.13
FR500	SSFR500	1.00	5.00	½-13	2.11	0.75	0.31	0.50	1.00	0.19	1.25	0.15
FR625	SSFR625	1.00	5.00	¾-11	3.05	1.00	0.38	0.62	1.00	0.19	2.00	0.18

*No thread relief for ¼-20 series.

Lever Style Plungers - Locking - Steel/Stainless Steel (Metric)

Part No.		End Force, N (Lbs.)		A	B	C	D	E	F	G	H	I
		Initial	Final									
Non-Locking												
FRM6	SFRM6	2.2	11.1	M6 x 1.00	32.0	10.0	4.0	6.0	12.7	2.3	20.0	*
FRM10	SFRM10	3.3	16.7	M10 x 1.50	51.0	14.0	6.0	10.0	19.0	3.5	33.0	3.3
FRM12	SFRM12	4.5	22.3	M12 x 1.75	54.0	19.0	7.0	12.0	25.4	4.8	32.0	3.8
FRM16	SFRM16	4.5	22.0	M16 x 2.00	77.0	25.0	10.0	16.0	25.0	5.0	51.0	5.0

*No thread relief for M6 thread size.

To order with locking element add "P" at the end of the part number.

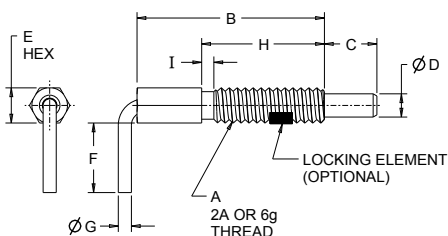
QUICK RELEASE DEVICES

Lever Style Plungers



Lever Style Plungers - Non-Locking - Steel/Stainless Steel

Lever type steel non-locking plungers feature a fully retractable plunger with tapered end for easy alignment. The lever handle provides easy withdrawal and reengagement, and the stainless steel construction offers the added advantage of resistance to rust and corrosion.



Lever Style Plungers - Non-Locking - Steel/Stainless Steel

Part No.		End Force, N (Lbs.)		A	B	C	D	E Hex	F	G	H	I
Steel	Stainless	Initial	Final									
FRN250	SSFRN250	0.50	2.50	¼-20	1.25	0.38	0.16	0.25	0.50	0.09	0.80	*
FRN375	SSFRN375	0.75	3.75	¾-16	2.00	0.56	0.25	0.38	0.75	0.14	1.31	0.13
FRN500	SSFRN500	1.00	5.00	½-13	2.11	0.75	0.31	0.50	1.0	0.19	1.25	0.15
FRN625	SSFRN625	1.00	5.00	¾-11	3.05	1.0	0.38	0.62	1.0	0.19	2.0	0.18

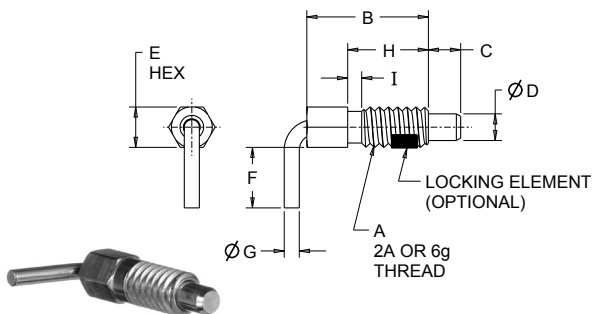
*No thread relief for ¼-20 series.

Lever Style Plungers - Non-Locking - Steel/Stainless Steel (Metric)

Part No.		End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)	I mm (in.)
Steel	Stainless	Initial	Final									
FRNM6	SSFRNM6	2.0 (0.50)	11.0 (2.50)	M6 x 1.00	32 (1.26)	10 (0.394)	4 (0.157)	6 (0.24)	13 (0.51)	2 (0.08)	20 (0.79)	***
FRNM10	SSFRNM10	3.0 (0.75)	17.0 (3.75)	M10 x 1.50	51 (2.0)	14 (0.551)	6 (0.236)	10 (0.39)	19 (0.75)	4 (0.16)	33 (1.3)	3 (0.13)
FRNM12	SSFRNM12	4.5 (1.00)	22.0 (5.00)	M12 x 1.75	54 (2.13)	19 (0.748)	8 (0.315)	12 (0.47)	25 (0.98)	5 (0.2)	32 (1.26)	4 (0.16)
FRNM16	SSFRNM16	4.5 (1.00)	22.0 (5.00)	M16 x 2.00	77 (3.03)	25 (0.984)	10 (0.394)	16 (0.63)	25 (0.98)	5 (0.2)	51 (2.0)	5 (0.2)

***No thread relief for M6 series.

To order with locking element add "P" at the end of the part number.



Stubby Lever Style Plungers - Non-Locking - Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E Hex	F	G	H	I
	Init.	Final									
FRSN250	0.12	0.50	¼-20	0.75	0.2	0.16	0.25	0.40	0.09	0.50	*
FRSN375	0.25	1.25	⅜-16	1.13	0.3	0.25	0.38	0.56	0.14	0.75	0.13
FRSN500	0.50	2.00	½-13	1.50	0.4	0.31	0.50	0.75	0.19	1.00	0.15
FRSN625	0.75	2.50	⅝-11	1.88	0.5	0.38	0.62	0.88	0.19	1.25	0.18

Stubby Lever Style Plungers - Non-Locking - Stainless Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E Hex	F	G	H	I
	Init.	Final									
SSFRSN250	0.12	0.50	¼-20	0.75	0.2	0.16	0.25	0.40	0.09	0.50	*
SSFRSN375	0.25	1.25	⅜-16	1.13	0.3	0.25	0.38	0.56	0.14	0.75	0.13
SSFRSN500	0.50	2.00	½-13	1.50	0.4	0.31	0.50	0.75	0.19	1.00	0.15
SSFRSN625	0.75	2.50	⅝-11	1.88	0.5	0.38	0.62	0.88	0.19	1.25	0.18

*No thread relief for ¼-20 series.

Stubby Lever Style Plungers - Non-Locking - Steel (Metric)

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)	I mm (in.)
	Initial	Final									
FRSNM6	0.5 (0.12)	2.2 (0.50)	M6 x 1.00	19.0 (0.75)	5.0 (0.197)	4.0 (0.157)	6.0 (0.24)	10.0 (0.39)	2.4 (0.09)	12.7 (0.5)	***
FRSNM10	1.1 (0.25)	5.6 (1.25)	M10 x 1.50	29.0 (1.14)	7.6 (0.299)	6.4 (0.252)	10.0 (0.39)	14.0 (0.55)	3.6 (0.14)	19.0 (0.75)	3.3 (0.13)
FRSNM12	2.2 (0.50)	8.9 (2.0)	M12 x 1.75	38.0 (1.5)	10.0 (0.394)	8.0 (0.315)	12.0 (0.47)	19.0 (0.75)	4.8 (0.2)	25.0 (0.98)	4.0 (0.16)
FRSNM16	3.3 (0.75)	11.1 (2.5)	M16 x 2.00	48.0 (1.89)	13.0 (0.512)	9.7 (0.382)	16.0 (0.63)	22.0 (0.87)	4.8 (0.2)	32.0 (1.26)	5.0 (0.2)

Stubby Lever Style Plungers - Non-Locking - Stainless Steel (Metric)

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)	I mm (in.)
	Initial	Final									
SSFRSNM6	0.5 (0.12)	2.2 (0.50)	M6 x 1.00	19.0 (0.75)	5.0 (0.197)	4.0 (0.157)	6.0 (0.24)	10.0 (0.39)	2.4 (0.09)	12.7 (0.5)	***
SSFRSNM10	1.1 (0.25)	5.6 (1.25)	M10 x 1.50	29.0 (1.14)	7.6 (0.299)	6.4 (0.252)	10.0 (0.39)	14.0 (0.55)	3.6 (0.14)	19.0 (0.75)	3.3 (0.13)
SSFRSNM12	2.2 (0.50)	8.9 (2.0)	M12 x 1.75	38.0 (1.5)	10.0 (0.394)	8.0 (0.315)	12.0 (0.47)	19.0 (0.75)	4.8 (0.2)	25.0 (0.98)	4.0 (0.16)
SSFRSNM16	3.3 (0.75)	11.1 (2.5)	M16 x 2.00	48.0 (1.89)	13.0 (0.512)	9.7 (0.382)	16.0 (0.63)	22.0 (0.87)	4.8 (0.2)	32.0 (1.26)	5.0 (0.2)

***No thread relief for M6 series

To order with locking element add "P" at the end of the part number.

QUICK RELEASE DEVICES

Stubby Lever Style Plungers



Stubby Lever Style Plungers - Locking - Steel/Stainless Steel

Stubby lever style locking plungers offer a compact retractable plunger, ideal for limited space applications.

Stubby lever style locking plungers in stainless steel resist rust and corrosion.

Typical Uses

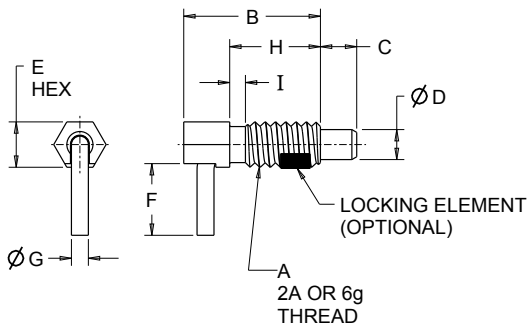
- ◆ Positioning
- ◆ Locking
- ◆ Fastening
- ◆ Latching
- ◆ Securing
- ◆ Quick disconnect

[H2] Special Uses - Stainless Steel

- ◆ Food and medical applications
- ◆ Special environments

Special Features

- ◆ Lever handle design
- ◆ Unified ANSI and metric threads
- ◆ Hand-retractable locking plunger
- ◆ Locks in retracted position
- ◆ Tapered end for easy alignment
- ◆ Steel and stainless steel materials



Stubby Lever Style Plungers - Locking - Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E Hex	F	G	H	I
	Initial	Final									
FRS250	0.12	0.50	¼-20	0.75	0.2	0.16	0.25	0.40	0.09	0.50	*
FRS375	0.25	1.25	⅜-16	1.13	0.3	0.25	0.38	0.56	0.14	0.75	0.13
FRS500	0.50	2.00	½-13	1.50	0.4	0.31	0.50	0.75	0.19	1.00	0.15
FRS625	0.75	2.50	⅝-11	1.88	0.5	0.38	0.62	0.88	0.19	1.25	0.18

Stubby Lever Style Plungers - Locking - Stainless Steel

Part No.	End Force, (Lbs.)		A	B	C	D	E Hex	F	G	H	I
	Initial	Final									
SSFRS250	0.12	0.50	¼-20	0.75	0.2	0.16	0.25	0.40	0.09	0.50	*
SSFRS375	0.25	1.25	⅜-16	1.13	0.3	0.25	0.38	0.56	0.14	0.75	0.13
SSFRS500	0.50	2.00	½-13	1.50	0.4	0.31	0.50	0.75	0.19	1.00	0.15
SSFRS625	0.75	2.50	⅝-11	1.88	0.5	0.38	0.62	0.88	0.19	1.25	0.18

*No thread relief for ¼-series.

Stubby Lever Style Plungers - Locking - Steel (Metric)

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)	I mm (in.)
	Initial	Final									
FRSM6	0.5 (0.12)	2.2 (0.50)	M6 x 1.00	19.0 (0.75)	5.0 (0.197)	4.0 (0.157)	6.0 (0.24)	10.0 (0.39)	2.3 (0.09)	12.7 (0.5)	***
FRSM10	1.1 (0.25)	5.6 (1.25)	M10 x 1.50	29.0 (1.14)	7.6 (0.299)	6.4 (0.252)	10.0 (0.39)	14.0 (0.55)	3.6 (0.14)	19.0 (0.75)	3.3 (0.13)
FRSM12	2.2 (0.50)	8.9 (2.0)	M12 x 1.75	38.0 (1.5)	10.0 (0.394)	8.0 (0.315)	12.0 (0.47)	19.0 (0.75)	4.8 (0.2)	25.0 (0.98)	3.8 (0.16)
FRSM16	3.3 (0.75)	11.1 (2.5)	M16 x 2.00	48.0 (1.89)	13.0 (0.512)	9.7 (0.382)	16.0 (0.63)	22.0 (0.87)	4.8 (0.2)	32.0 (1.26)	4.6 (0.2)

Stubby Lever Style Plungers - Locking - Stainless Steel (Metric)

Part No.	End Force, N (Lbs.)		A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)	I mm (in.)
	Initial	Final									
SSFRSM6	0.5 (0.12)	2.2 (0.50)	M6 x 1.00	19.0 (0.75)	5.0 (0.197)	4.0 (0.157)	6.0 (0.24)	10.0 (0.39)	2.3 (0.09)	12.7 (0.5)	***
SSFRSM10	1.1 (0.25)	5.6 (1.25)	M10 x 1.50	29.0 (1.14)	7.6 (0.299)	6.4 (0.252)	10.0 (0.39)	14.0 (0.55)	3.6 (0.14)	19.0 (0.75)	3.3 (0.13)
SSFRSM12	2.2 (0.50)	8.9 (2.0)	M12 x 1.75	38.0 (1.5)	10.0 (0.394)	8.0 (0.315)	12.0 (0.47)	19.0 (0.75)	4.8 (0.2)	25.0 (0.98)	3.8 (0.16)
SSFRSM16	3.3 (0.75)	11.1 (2.5)	M16 x 2.00	48.0 (1.89)	13.0 (0.512)	9.7 (0.382)	16.0 (0.63)	22.0 (0.87)	4.8 (0.2)	32.0 (1.26)	4.6 (0.2)

***No thread relief for M6 series.

To order with locking element add "P" at the end of the part number.

VLIER LOCK PINS

Ball Locking Pins



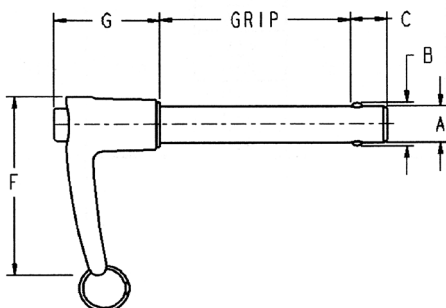
L-Handle Ball Locking Pins

Typical Uses

- ◆ Positive Locking
- ◆ Locating
- ◆ Alignment
- ◆ Fastening

Special Features

- ◆ L Handle design
- ◆ Handles are anodized aluminum per MIL-A-8625, Type II
- ◆ Brass Button
- ◆ Shank body is 300 stainless steel passivated per ASTM-A-967



L-Handle Ball Locking Pins

Part No.	Grip Length (+.020 / -.000)	Nom ø	A (+.000 / -.002)	B (+/- .005)	C (+.000 / -.030)	F Max	G Max
SVLP18CL05	0.50	0.18 (⅜)	0.189	0.220	0.260	1.80	1.27
SVLP18CL075	0.75						
SVLP18CL10	1.00						
SVLP18CL125	1.25						
SVLP18CL15	1.50						
SVLP18CL20	2.00						
SVLP18CL25	2.50						
SVLP18CL30	3.00						
SVLP25CL05	0.50	0.25 (¼)	0.249	0.289	0.290	1.80	1.27
SVLP25CL075	0.75						
SVLP25CL10	1.00						
SVLP25CL125	1.25						
SVLP25CL15	1.50						
SVLP25CL20	2.00						
SVLP25CL25	2.50						
SVLP25CL30	3.00						
SVLP25CL35	3.50						
SVLP25CL40	4.00						
SVLP31CL05	0.50	0.31 (⅝)	0.311	0.375	0.330	1.80	1.27
SVLP31CL075	0.75						
SVLP31CL10	1.00						
SVLP31CL125	1.25						
SVLP31CL15	1.50						
SVLP31CL20	2.00						
SVLP31CL25	2.50						
SVLP31CL30	3.00						
SVLP31CL35	3.50						
SVLP31CL40	4.00						
SVLP37CL05	0.50	0.37 (⅞)	0.374	0.44	0.365	2.03	1.45
SVLP37CL075	0.75						
SVLP37CL10	1.00						
SVLP37CL125	1.25						
SVLP37CL15	1.50						
SVLP37CL175	1.75						
SVLP37CL20	2.00						
SVLP37CL25	2.50						
SVLP37CL30	3.00						
SVLP37CL35	3.50						
SVLP37CL40	4.00						
SVLP43CL10	1.00	0.43 (⅞)	0.436	0.509	0.380	2.03	1.47
SVLP43CL15	1.50						
SVLP43CL20	2.00						
SVLP43CL25	2.50						
SVLP43CL30	3.00						
SVLP43CL35	3.50						
SVLP43CL40	4.00						
SVLP50CL05	0.50	0.50 (½)	0.499	0.594	0.460	2.36	1.60
SVLP50CL10	1.00						
SVLP50CL125	1.25						
SVLP50CL15	1.50						
SVLP50CL175	1.75						
SVLP50CL20	2.00						
SVLP50CL25	2.50						
SVLP50CL30	3.00						
SVLP50CL35	3.50						
SVLP50CL40	4.00						
SVLP50CL45	4.50						
SVLP50CL50	5.00						
SVLP50CL55	5.50						
SVLP50CL60	6.00						
SVLP62CL05	0.50	0.62 (⅝)	0.624	0.750	0.580	3.07	1.70
SVLP62CL10	1.00						
SVLP62CL15	1.50						
SVLP62CL20	2.00						
SVLP62CL25	2.50						
SVLP62CL30	3.00						
SVLP62CL35	3.50						
SVLP62CL40	4.00						
SVLP62CL45	4.50						
SVLP62CL50	5.00						
SVLP62CL55	5.50						
SVLP62CL60	6.00						

VLIER LOCK PINS

L-Handle Ball Locking Pins

VLIER LOCK PINS

Ball Locking Pins



Button Handle Ball Locking Pins

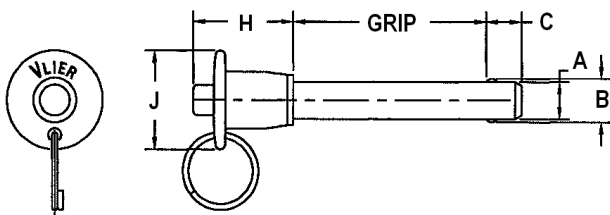
These commercial grade pins are readily available and are offered in the most popular sizes at an economical cost. These designs are perfect for manufacturing, medical, vehicle, marine, and many other applications.

Typical Uses

- ◆ Material handling equipment
- ◆ Food & medical applications
- ◆ Trailers and rigging equipment
- ◆ Scaffolding and stage equipment

Special Features

- ◆ Button Handle design
- ◆ Handles are black aluminum with brass push button
- ◆ Shank body is 300
- ◆ stainless steel
- ◆ Low cost and available



Button Handle Ball Locking Pins

Part No.	Grip Length (+.020/ -.000)	Nom ø	A (+.0000/ .0015)	B (+.005/ .000)	C (+.000/ .030)	H	J Max
SVLP18CB05	0.50	0.18 (3/16)	0.1885	0.22	0.260	0.830	0.800
SVLP18CB075	0.75						
SVLP18CB10	1.00						
SVLP18CB125	1.25						
SVLP18CB15	1.50						
SVLP18CB20	2.00						
SVLP18CB25	2.50						
SVLP18CB30	3.00						
SVLP25CB05	0.50	0.25 (1/4)	0.2485	0.289	0.290	0.890	0.800
SVLP25CB075	0.75						
SVLP25CB10	1.00						
SVLP25CB125	1.25						
SVLP25CB15	1.50						
SVLP25CB20	2.00						
SVLP25CB25	2.50						
SVLP25CB30	3.00						
SVLP25CB35	3.50						
SVLP25CB40	4.00						
SVLP31CB05	0.50	0.31 (5/16)	0.311	0.375	0.330	0.930	1.135
SVLP31CB075	0.75						
SVLP31CB10	1.00						
SVLP31CB125	1.25						
SVLP31CB15	1.50						
SVLP31CB20	2.00						
SVLP31CB25	2.50						
SVLP31CB30	3.00						
SVLP31CB35	3.50						
SVLP31CB40	4.00						
SVLP37CB05	0.50	0.37 (3/8)	0.3735	0.44	0.365	1.040	1.135
SVLP37CB075	0.75						
SVLP37CB10	1.00						
SVLP37CB125	1.25						
SVLP37CB15	1.50						
SVLP37CB175	1.75						
SVLP37CB20	2.00						
SVLP37CB25	2.50						
SVLP37CB30	3.00						
SVLP37CB35	3.50						
SVLP37CB40	4.00						
SVLP43CB10	1.00	0.43 (7/16)	0.436	0.509	0.380	1.160	1.400
SVLP43CB15	1.50						
SVLP43CB20	2.00						
SVLP43CB25	2.50						
SVLP43CB30	3.00						
SVLP43CB35	3.50						
SVLP43CB40	4.00						
SVLP50CB05	0.50	0.50 (1/2)	0.4985	0.594	0.460	1.190	1.400
SVLP50CB10	1.00						
SVLP50CB125	1.25						
SVLP50CB15	1.50						
SVLP50CB175	1.75						
SVLP50CB20	2.00						
SVLP50CB25	2.50						
SVLP50CB30	3.00						
SVLP50CB35	3.50						
SVLP50CB40	4.00						
SVLP50CB45	4.50						
SVLP50CB50	5.00						
SVLP50CB55	5.50						
SVLP50CB60	6.00						
SVLP62CB05	0.50	0.62 (5/8)	0.6235	0.750	0.580	1.500	1.700
SVLP62CB10	1.00						
SVLP62CB15	1.50						
SVLP62CB20	2.00						
SVLP62CB25	2.50						
SVLP62CB30	3.00						
SVLP62CB35	3.50						
SVLP62CB40	4.00						
SVLP62CB45	4.50						
SVLP62CB50	5.00						
SVLP62CB55	5.50						
SVLP62CB60	6.00						

VLIER LOCK PINS

Button Handle Ball Locking Pins

VLIER LOCK PINS

Ball Locking Pins



T-Handle Ball Locking Pins

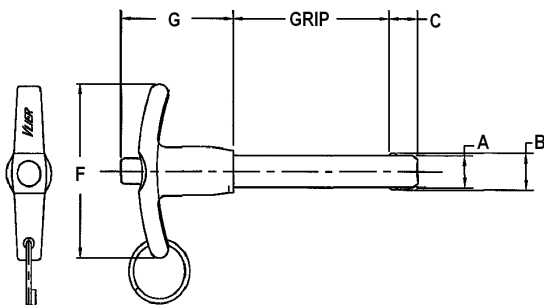
These commercial grade pins are readily available and are offered in the most popular sizes at an economical cost. Your choice of either "T" handle, or button handle, these designs are perfect for manufacturing, medical, vehicle, marine, and many other applications.

Typical Uses

- ◆ Positive Locking
- ◆ Alignment
- ◆ Locating
- ◆ Fastening

Special Features

- ◆ T-Handle design
- ◆ Handles are black aluminum with brass push button
- ◆ Shank body is 300 stainless steel
- ◆ Low cost and available



T-Handle Ball Locking Pins

Part No.	Grip Length (+.020 /	Nom ø	A (+.0000 / -.0015)	B (+.005 / -.000)	C (+.000 -.030)	F	G
SVLP18CT05	0.50	0.18 (⅜)	0.1885	0.22	0.26	1.815	1.27
SVLP18CT075	0.75						
SVLP18CT10	1.00						
SVLP18CT125	1.25						
SVLP18CT15	1.50						
SVLP18CT20	2.00						
SVLP18CT25	2.50						
SVLP18CT30	3.00						
SVLP25CT05	0.50	0.25 (¼)	0.2485	0.289	0.29	1.815	1.27
SVLP25CT075	0.75						
SVLP25CT10	1.00						
SVLP25CT125	1.25						
SVLP25CT15	1.50						
SVLP25CT20	2.00						
SVLP25CT25	2.50						
SVLP25CT30	3.00						
SVLP25CT35	3.50	0.31 (⅝)	0.311	0.375	0.33	1.815	1.27
SVLP25CT40	4.00						
SVLP31CT05	0.50						
SVLP31CT075	0.75						
SVLP31CT10	1.00						
SVLP31CT125	1.25						
SVLP31CT15	1.50						
SVLP31CT20	2.00						
SVLP31CT25	2.50	0.37 (⅞)	0.3735	0.44	0.365	2.065	1.45
SVLP31CT30	3.00						
SVLP31CT35	3.50						
SVLP31CT40	4.00						
SVLP37CT05	0.50						
SVLP37CT075	0.75						
SVLP37CT10	1.00						
SVLP37CT125	1.25						
SVLP37CT15	1.50	0.43 (⅞)	0.436	0.509	0.38	2.065	1.47
SVLP37CT175	1.75						
SVLP37CT20	2.00						
SVLP37CT25	2.50						
SVLP37CT30	3.00						
SVLP37CT35	3.50						
SVLP37CT40	4.00						
SVLP43CT10	1.00	0.50 (½)	0.4985	0.594	0.46	2.345	1.60
SVLP43CT15	1.50						
SVLP43CT20	2.00						
SVLP43CT25	2.50						
SVLP43CT30	3.00						
SVLP43CT35	3.50						
SVLP43CT40	4.00						
SVLP50CT05	0.50	0.62 (⅝)	0.6235	0.750	0.58	3.100	1.70
SVLP50CT10	1.00						
SVLP50CT125	1.25						
SVLP50CT15	1.50						
SVLP50CT175	1.75						
SVLP50CT20	2.00						
SVLP50CT25	2.50						
SVLP50CT30	3.00						
SVLP50CT35	3.50						
SVLP50CT40	4.00						
SVLP50CT45	4.5						
SVLP50CT50	5.0						
SVLP50CT55	5.5						
SVLP50CT60	6.0						
SVLP62CT05	0.50	0.62 (⅝)	0.6235	0.750	0.58	3.100	1.70
SVLP62CT10	1.00						
SVLP62CT15	1.50						
SVLP62CT20	2.00						
SVLP62CT25	2.50						
SVLP62CT30	3.00						
SVLP62CT35	3.50						
SVLP62CT40	4.00						
SVLP62CT45	4.50						
SVLP62CT50	5.00						
SVLP62CT55	5.50						
SVLP62CT60	6.00						

VLIER LOCK PINS

T-Handle Ball Locking Pins

VLIER LOCK PINS

Ball Locking Pins



T-Handle Ball Locking Pins (Metric)

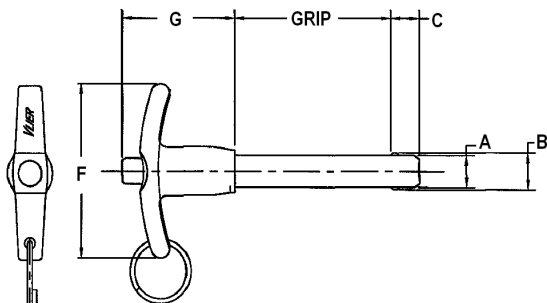
These commercial grade pins are readily available and are offered in the most popular sizes at an economical cost. Your choice of either "T" handle, or button handle, these designs are per-fect for manufacturing, medical, vehicle, marine, and many other applications.

Typical Uses

- ◆ Positive Locking
- ◆ Locating
- ◆ Alignment
- ◆ Fastening

Special Features

- ◆ T-Handle design
- ◆ Handles are black aluminum with brass push button
- ◆ Shank body is 300 stainless steel
- ◆ Low cost and available



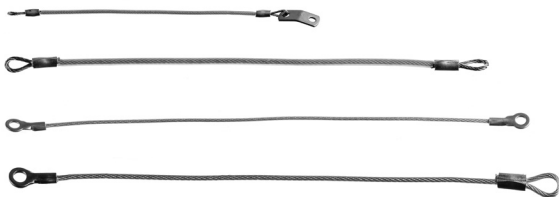
T-Handle Ball Locking Pins (Metric)							
Part No.	Grip Length (+.50 / -.000)	Nominal Dia.	A (+.0000 / -.04)	B (+.13 / -.00)	C (+.000 / -.76)	F Max	G Max
SVLPM5CT25	25	M5	4.96	5.54	6.0	46.0	30.0
SVLPM6CT15	15	M6	5.96	6.99	7.0	46.0	30.0
SVLPM6CT20	20						
SVLPM6CT25	25						
SVLPM6CT30	30						
SVLPM6CT40	40						
SVLPM6CT50	50						
SVLPM6CT65	65						
SVLPM6CT75	75						
SVLPM6CT100	100						
SVLPM8CT15	15	M8	7.96	9.42	8.0	46.0	30.0
SVLPM8CT25	25						
SVLPM8CT30	30						
SVLPM8CT40	40						
SVLPM8CT50	50						
SVLPM8CT75	75						
SVLPM8CT100	100						
SVLPM10CT15	15	M10	9.96	11.86	9.0	53.0	32.0
SVLPM10CT20	20						
SVLPM10CT25	25						
SVLPM10CT30	30						
SVLPM10CT40	40						
SVLPM10CT50	50						
SVLPM10CT65	65						
SVLPM10CT70	70						
SVLPM10CT100	100						
SVLPM12CT30	30	M12	11.96	14.45	10.0	53.0	32.0
SVLPM12CT40	40						
SVLPM12CT50	50						
SVLPM12CT75	75						
SVLPM12CT90	90						
SVLPM12CT100	100						
SVLPM16CT50	50	M16	15.96	19.0	14.0	79.0	39.0
SVLPM16CT100	100						
SVLPM20CT25	25	M20	19.96	24.08	17.0	79.0	39.0
SVLPM20CT50	50						
SVLPM20CT75	75						
SVLPM20CT100	100						

ALL DIMENSIONS ARE IN MILLIMETERS.

Ball Locking Pin Performance Specifications				
Shaft Diameter Inch	Calculated Ultimate Double Shear Strength lbf	Pull Out Strength lbf	Receiving Hole Diameter Inch	
			MIN	MAX
⅜	2,500	150	0.190	0.192
¼	4,500	180	0.250	0.252
⅝	7,250	400	0.312	0.314
¾	10,000	450	0.375	0.377
⅞	10,500	500	0.438	0.440
½	19,250	900	0.500	0.502
⅝	30,000	1,500	0.625	0.627

VLIER LOCK PINS

Ball Lock Lanyard



Style A, B, C & D

The Vlier ball lock lanyard is the perfect accessory for attaching and retaining the Vlier locking pins. The high-strength stranded wire cable features a nylon coating for protection of equipment and offers added corrosion resistance.

The ball lock lanyard is offered in four tab and sleeve designs and with a choice of six lengths, from 6 to 24 inches. (Note: not for lifting.)

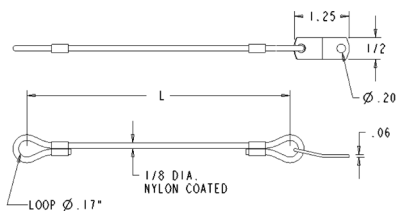
Typical Uses

- ◆ Accessory to Vlier locking pin

Special Features

- ◆ Four stainless steel tab and sleeve choices
- ◆ Galvanized steel and stainless steel wire
- ◆ Six cable length options
- ◆ Protective nylon wire coating

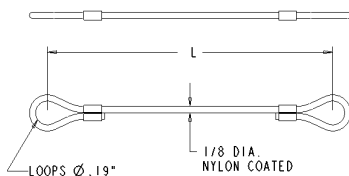
Style A



Ball Lock Lanyards - Style A

Part No.	Length (in)	Material		
		Wire	Coating for the Wire	Tab & Sleeve
VLA060	6.0	3/32 stainless wire, 1/16" diameter	clear nylon, to 1/8" diameter	stainless
VLA080	8.0			
VLA100	10.0			
VLA120	12.0			
VLA180	18.0			
VLA240	24.0			

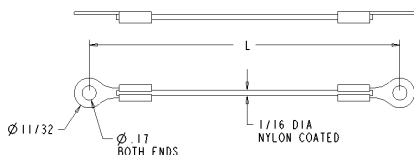
Style B



Ball Lock Lanyards - Style B

Part No.	Length (in)	Material		
		Wire	Coating for the Wire	Tab & Sleeve
VLB060	6.0	7/7 stainless wire, 1/16" diameter	clear nylon, to 1/8" diameter	stainless
VLB080	8.0			
VLB100	10.0			
VLB120	12.0			
VLB180	18.0			
VLB240	24.0			

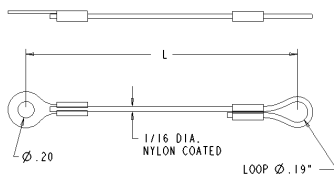
Style C



Ball Lock Lanyards - Style C

Part No.	Length (in)	Material		
		Wire	Coating for the Wire	Tab & Sleeve
VLC060	6.0	Galvanized steel stranded wire, 3/64" diameter	clear nylon, to 1/16" diameter	stainless
VLC080	8.0			
VLC100	10.0			
VLC120	12.0			
VLC180	18.0			
VLC240	24.0			

Style D



Ball Lock Lanyards - Style D

Part No.	Length (in)	Material		
		Wire	Coating for the Wire	Tab & Sleeve
VLD060	6.0	Galvanized steel stranded wire, 3/64" diameter	clear nylon, to 1/16" diameter	stainless
VLD080	8.0			
VLD100	10.0			
VLD120	12.0			
VLD180	18.0			
VLD240	24.0			

What is a Leveling Device?

Vlier leveling devices provide and ensure stable support for industrial machinery and equipment on uneven floors or surfaces by providing height control. This stability optimizes equipment performance and limits tipping, controls vibration, cuts noise and protects floors and other surfaces.

Original Series Leveling Devices



Level Star Series Leveling Devices



High Value Series Leveling Devices



LMS Anti-Vibration Levelers



Leveling Device Basics

Vlier leveling devices are offered in a wide range of customized collections, including Original Series, High Value Series, Level Star Series, LMS Anti-Vibration and VG Series industrial glides. Each offers unique features and designs with a stud style or socket style option in many models. Other models offer a swivel feature to adjust for uneven floors, and an elastomer pad for durability and floor protection.

Materials

Vlier leveling devices are offered in a variety of material options including steel, stainless steel, nylon, natural rubber and plastic.

Installation

Vlier leveling devices feature a thread-in installation and are available in both unified ANSI and metric sizes.

LEVELING DEVICES

Original Series



Original Series Stud Style - Steel/Stainless Steel

Vlier original series stud style leveling devices provide an integrally machined stud as part of the ball. The bases swivel 15° off the centerline to adjust to uneven surfaces and level equipment including machine tools, electronic racks, benches, data storage, power generation, machine centers and others.

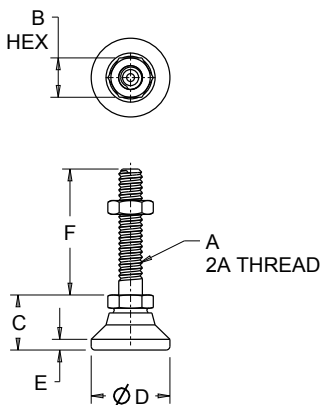
Zinc plate with gold chromate finish is standard in the steel design. The stainless steel option offers maximum protection against rust and corrosion.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined hex
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel option resists rust and corrosion
- ◆ Available fine thread option



Original Series Stud Style - Steel/Stainless Steel

Part No.		Max Load (Lbs.)	A	B	C	D	E	F
Steel	Stainless Steel							
P298S	SSP298S	700	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	1
P300S	SSP300S	1100	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	1 $\frac{1}{4}$
P304S	SSP304S	3,750	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	2
P306S	SSP306S	5,000	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	2
P308S	SSP308S	6,000	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	2
P310S	SSP310S	7,200	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	2
P312S	SSP312S	22,000	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	4 $\frac{1}{4}$

Original Series Stud Style Fine Thread - Steel Base/Steel Stud

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
FP304S	3,750	$\frac{3}{8}$ -24	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	2
FP306S	5,000	$\frac{1}{2}$ -20	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	2
FP308S	6,000	$\frac{5}{8}$ -18	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	2
FP310S	7,200	$\frac{3}{4}$ -16	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	2
FP312S	22,000	1-12	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	4 $\frac{1}{4}$

LEVELING DEVICES

Original Series



Original Series Stud Style with
Elastomer Pad - Steel/Stainless Steel

Vlier's original series stud style leveling devices with elastomer pad offer a .125" neoprene elastomer that's bonded to the bottom of the base to provide non-skid support.

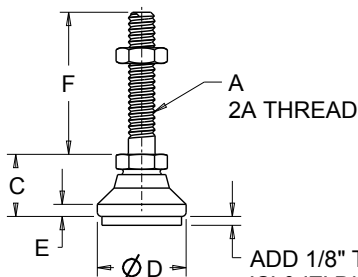
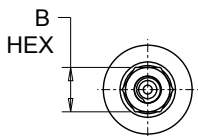
These devices are available in two design options. The steel option features zinc plate with gold chromate finish. The stainless steel option offers maximum protection against rust and corrosion.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined hex
- ◆ Large diameter base support
- ◆ Non-skid elastomer pad protects floor or surface finish
- ◆ 15° swivel off centerline
- ◆ Stainless steel option resists rust and corrosion



ADD 1/8" TO
'C' & 'E' DIM. FOR
EP & ESSP SERIES

Original Series Stud Style w/Elastomer Pad - Steel

Part No.	Max (Lbs.) Work Load	A	B	C	D	E	F
EP298S	525	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	1
EP300S	800	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	1 $\frac{1}{4}$
EP304S	2,800	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	2
EP306S	3,750	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	2
EP308S	4,500	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	2
EP310S	5,400	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	2
EP312S	16,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{19}{32}$	4 $\frac{1}{4}$

Original Series Stud Style w/Elastomer Pad - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
ESSP298S	525	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	1
ESSP300S	800	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	1 $\frac{1}{4}$
ESSP304S	2,800	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	2
ESSP306S	3,750	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	2
ESSP308S	4,500	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	2
ESSP310S	5,400	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	2
ESSP312S	16,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{19}{32}$	4 $\frac{1}{4}$

LEVELING DEVICES

Original Series



**Original Series Stud Style with
Delrin® Base - Steel/Stainless Steel**

Vlier's original series stud style leveling devices with Delrin® base come in both steel and stainless steel stud. The plastic Delrin® base resists repeated impacts, moisture and temperatures up to 190°, and protects floors and surface finishes.

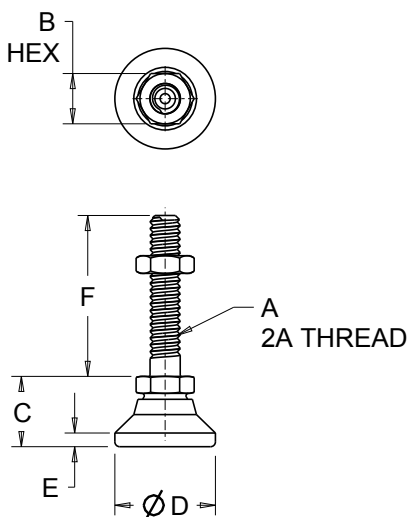
The stainless steel design offers additional protection from rust and corrosion.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined hex
- ◆ Long-life, high-impact Delrin® pad protects surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel option resists rust and corrosion



Original Series Stud Style w/Delrin® Base - Steel

Part No.	Max (Lbs.) Work Load	A	B	C	D	E	F
NP298S	150	10-32	3/8	17/32	3/4	7/64	1
NP300S	200	1/4-20	1/2	45/64	1	5/32	1 1/4
NP304S	300	3/8-16	5/8	7/8	1 1/4	3/16	2
NP306S	700	1/2-13	3/4	1 1/8	1 7/8	1/4	2
NP308S	1,200	5/8-11	7/8	1 1/4	2 1/2	5/16	2
NP310S	1,800	3/4-10	1 1/16	1 1/2	3	1/2	2
NP312S	2,400	1-8	1 3/8	1 7/8	4	13/32	4 1/4

Original Series Stud Style w/Delrin® Base - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
SSNP298S	150	10-32	3/8	17/32	3/4	7/64	1
SSNP300S	200	1/4-20	1/2	45/64	1	5/32	1 1/4
SSNP304S	300	3/8-16	5/8	7/8	1 1/4	3/16	2
SSNP306S	700	1/2-13	3/4	1 1/8	1 7/8	1/4	2
SSNP308S	1,200	5/8-11	7/8	1 1/4	2 1/2	5/16	2
SSNP310S	1,800	3/4-10	1 1/16	1 1/2	3	1/2	2
SSNP312S	2,400	1-8	1 3/8	1 7/8	4	13/32	4 1/4

LEVELING DEVICES

Original Series



Original Series Stud Style with Delrin® Base - Steel/Stainless Steel (Metric)

Vlier's original series stud style leveling devices come in both steel and stainless steel. They offer a plastic Delrin® base that resists repeated impacts, moisture and temperatures up to 190°, and protects floors and surface finishes.

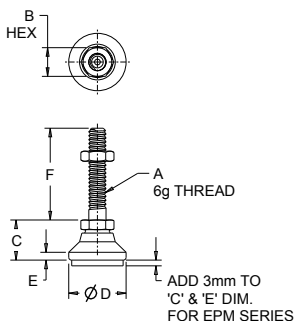
The stainless steel design option offers additional protection from rust and corrosion.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined hex
- ◆ Long-life, high-impact Delrin® pad protects surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel design resists rust and corrosion



Original Series Stud Style - Steel (Metric)

Part No.	Max Load (Lbs.)	A	B mm	C mm	D mm (in.)	E mm (in.)	F mm (in.)
PM10S	1,750 kg (3750 lbs)	M10 x 1.5	17.0	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	51.0 (2.00)
PM12S	2,273 kg (5000 lbs)	M12 x 1.75	19.0	29.0 (1.14)	48.0 (1.89)	6.0 (0.24)	51.0 (2.00)
PM16S	2,727 kg (6000 lbs)	M16 x 2.0	24.0	32.0 (1.26)	64.0 (2.52)	8.0 (0.31)	51.0 (2.00)
PM20S	3,273 kg (7200 lbs)	M20 x 2.5	30.0	38.0 (1.50)	76.0 (3.00)	13.0 (0.51)	51.0 (2.00)
PM24S	9,979 kg (22,000 lbs)	M24 x 3.0	35.0	48.0 (1.88)	102.0 (4.00)	10.0 (0.41)	108.0 (4.25)

Original Series Stud Style w/Elastomer Pad - Steel (Metric)

Part No.	Max Load (Lbs.)	A	B mm	C mm	D mm (in.)	E mm (in.)	F mm (in.)
EPM10S	1,273 kg (2800 lbs)	M10 x 1.5	17.0	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	51.0 (2.00)
EPM12S	1,705 kg (3750 lbs)	M12 x 1.75	19.0	29.0 (1.14)	48.0 (1.89)	6.0 (0.24)	51.0 (2.00)
EPM16S	2,046 kg (4500 lbs)	M16 x 2.0	24.0	32.0 (1.26)	64.0 (2.52)	8.0 (0.31)	51.0 (2.00)
EPM20S	2,455 kg (5400 lbs)	M20 x 2.5	30.0	38.0 (1.50)	76.0 (3.00)	13.0 (0.51)	51.0 (2.00)

Original Series Stud Style w/Delrin® Base - Steel (Metric)

Part No.	Max Load (Lbs.)	A	B mm	C mm	D mm (in.)	E mm (in.)	F mm (in.)
NPM10S	136 kg (300 lbs)	M10 x 1.5	17.0	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	51.0 (2.00)
NPM12S	318 kg (700 lbs)	M12 x 1.75	19.0	29.0 (1.14)	48.0 (1.89)	6.0 (0.24)	51.0 (2.00)
NPM16S	546 kg (1200 lbs)	M16 x 2.0	24.0	32.0 (1.26)	64.0 (2.52)	8.0 (0.31)	51.0 (2.00)
NPM20S	818 kg (1800 lbs)	M20 x 2.5	30.0	38.0 (1.50)	76.0 (3.00)	13.0 (0.51)	51.0 (2.00)

Original Series Stud Style - Stainless Steel (Metric)

Part No.	Max Load (Lbs.)	A	B mm	C mm	D mm (in.)	E mm (in.)	F mm (in.)
SSPM10S	1,750 kg (3750 lbs)	M10 x 1.5	17.0	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	51.0 (2.00)
SSPM12S	2,273 kg (5000 lbs)	M12 x 1.75	19.0	29.0 (1.13)	48.0 (1.88)	6.0 (0.25)	51.0 (2.00)
SSPM16S	2,727 kg (6000 lbs)	M16 x 2.0	24.0	32.0 (1.25)	64.0 (2.50)	8.0 (0.31)	51.0 (2.00)
SSPM20S	3,273 kg (7200 lbs)	M20 x 2.5	30.0	38.0 (1.15)	76.0 (3.0)	13.0 (0.50)	51.0 (2.00)
SSPM24S	9,979 kg (22,000 lbs)	M24 x 3.0	35.0	48.0 (1.88)	102.0 (4.00)	10.0 (0.41)	108.0 (4.25)

LEVELING DEVICES

Original Series



Original Series Stud Style
Extended Length - Steel

Vlier's original series stud style leveling devices in steel have an extended length option for applications that require additional clearance. They provide an integrally machined stud as part of the ball. The stud style bases swivel 15° off the centerline to adjust to uneven surfaces and level equipment such as machine tools, electronic racks and benches.

The natural (white) Delrin® plastic base option provides protection for floor or surface finishes. Delrin® offers high resistance to repeated impacts, moisture, solvents and heat up to 190°F.

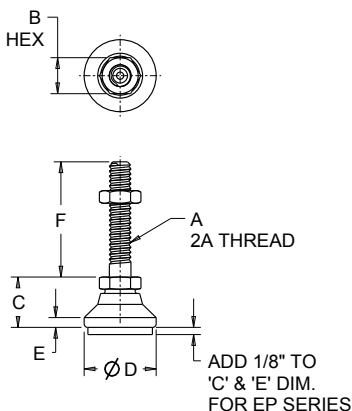
The elastomer pad option offers a .125" neoprene elastomer bonded to the bottom of the base to provide non-skid support. Zinc plate with gold chromate finish is standard.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Extended stud with integrally machined hex
- ◆ Long-life, high-impact Delrin® pad protects surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline



Original Series Stud Style Extended Length - Steel

Part No.	Max (Lbs.) Work Load	A	B	C	D	E	F
P299S	700	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	2.0
P301S	1,100	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	2.5
P305S	3,750	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	4.0
P307S	5,000	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	4.0
P309S	6,000	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	4.0
P311S	7,200	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	4.0
P313S	22,000	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	8.0

Original Series Stud Style w/Elastomer Pad - Extended Length - Steel

Part No.	Max (Lbs.) Work Load	A	B	C	D	E	F
EP299S	525	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	2.0
EP301S	800	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	2.5
EP305S	2,800	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	4.0
EP307S	3,750	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	4.0
EP309S	4,500	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	4.0
EP311S	5,400	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	4.0
EP313S	16,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	8.0

Original Series Stud Style w/Delrin® Base - Extended Length - Steel

Part No.	Max (Lbs.) Work Load	A	B	C	D	E	F
NP299S	150	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	2.0
NP301S	200	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	2.5
NP305S	300	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	4.0
NP307S	700	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	4.0
NP309S	1,200	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	4.0
NP311S	1,800	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	4.0
NP313S	2,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	8.0

LEVELING DEVICES

Original Series



Original Series Stud Style Extended
Length - Stainless Steel

Vlier's original series stud style leveling devices in stainless steel have an extended length option for applications where additional clearance is required. They provide an integrally machined stud as part of the ball. The stud style bases swivel 15° off the centerline to adjust to uneven surfaces and level equipment such as machine tools, electronic racks and benches.

The natural (white) Delrin® plastic base option protects floors and surface finishes. Delrin® provides high resistance to repeated impacts, solvents, moisture and temperatures up to 190°F.

The elastomer pad option offers a .125" neoprene elastomer bonded to the bottom of the base for superior non-skid support.

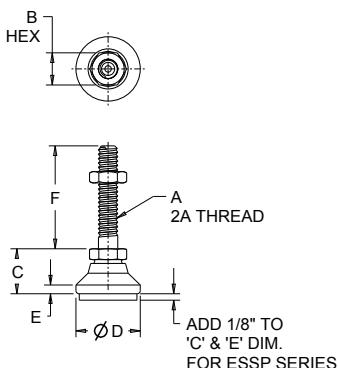
The stainless steel option provides maximum resistance to rust and corrosion.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Extended stud with integrally machined hex
- ◆ Long-life, high-impact Delrin® pad protects surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline



Original Series Stud Style Extended Length - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
SSP299S	700	10-32	3/8	17/32	3/4	7/64	2.0
SSP301S	1,100	1/4-20	1/2	45/64	1	5/32	2.5
SSP305S	3,750	3/8-16	5/8	7/8	1 1/4	3/16	4.0
SSP307S	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	4.0
SSP309S	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	4.0
SSP311S	7,200	3/4-10	1 1/16	1 1/2	3	1/2	4.0
SSP313S	22,000	1-8	1 3/8	1 7/8	4	13/32	8.0

Original Series Stud Style w/Elastomer Pad - Extended Length - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
ESSP299S	525	10-32	3/8	17/32	3/4	7/64	2.0
ESSP301S	800	1/4-20	1/2	45/64	1	5/32	2.5
ESSP305S	2,800	3/8-16	5/8	7/8	1 1/4	3/16	4.0
ESSP307S	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	4.0
ESSP309S	4,500	5/8-11	7/8	1 1/4	2 1/2	5/16	4.0
ESSP311S	5,400	3/4-10	1 1/16	1 1/2	3	1/2	4.0
ESSP313S	16,400	1-8	1 3/8	1 7/8	4	13/32	8.0

Original Series Stud Style w/Delrin® Base - Extended Length - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
SSNP299S	150	10-32	3/8	17/32	3/4	7/64	2.0
SSNP301S	200	1/4-20	1/2	45/64	1	5/32	2.5
SSNP305S	300	3/8-16	5/8	7/8	1 1/4	3/16	4.0
SSNP307S	700	1/2-13	3/4	1 1/8	1 7/8	1/4	4.0
SSNP309S	1,200	5/8-11	7/8	1 1/4	2 1/2	5/16	4.0
SSNP311S	1,800	3/4-10	1 1/16	1 1/2	3	1/2	4.0
SSNP313S	2,400	1-8	1 3/8	1 7/8	4	13/32	8.0

LEVELING DEVICES***Original Series*****Original Series Socket Style -
Steel/Stainless Steel**

Vlier's original series socket style leveling devices are available in steel and stainless steel design options. They swivel 15° off the centerline to adjust to uneven surfaces and level benches, machine tools, electronic racks and other equipment.

For applications with an existing stud installation, the standard steel design is zinc plate with gold chromate finish. The stainless steel design provides superior resistance to rust and corrosion.

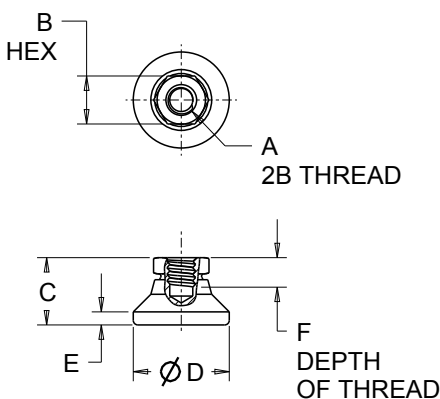
The fine thread option is ideal for applications that require a more sensitive leveling adjustment.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined hex
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel resists rust and corrosion
- ◆ Fine thread option



Original Series Socket Style - Steel/Stainless Steel

Part No.		Max Load (Lbs.)	A	B	C	D	E	F
Steel	Stainless Steel							
P298B	SSP298B	700	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	$\frac{15}{64}$
P300B	SSP300B	1,100	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	$\frac{3}{16}$
P304B	SSP304B	3,750	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	$\frac{3}{8}$
P306B	SSP306B	5,000	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{7}{16}$
P308B	SSP308B	6,000	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	$\frac{7}{16}$
P310B	SSP310B	7,200	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	$\frac{5}{8}$
P312B	SSP312B	22,000	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	$\frac{13}{16}$

Original Series Socket Style Fine Thread - Steel Base/Steel Stud

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
FP304B	3,750	$\frac{3}{8}$ -24	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	$\frac{3}{8}$
FP306B	5,000	$\frac{1}{2}$ -20	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{7}{16}$
FP308B	6,000	$\frac{5}{8}$ -18	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	$\frac{7}{16}$
FP310B	7,200	$\frac{3}{4}$ -16	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	$\frac{5}{8}$
FP312B	22,000	1-12	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	$\frac{13}{16}$

LEVELING DEVICES***Original Series***

Original Series Socket Style with
Elastomer Pad - Steel/Stainless Steel

Vlier's original series socket style leveling devices are available in steel and stainless steel design options. They feature an elastomer pad that provides a .125" neoprene elastomer bonded to the bottom of the base for non-skid support.

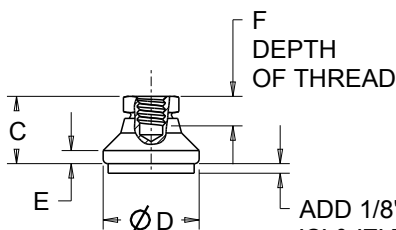
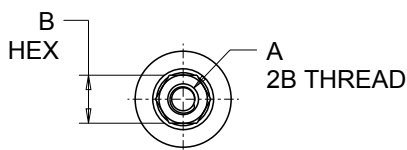
For applications with an existing stud installation, the standard design is zinc plate with gold chromate finish. The stainless steel design option provides maximum protection from rust and corrosion.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Integrally machined hex
- ◆ Non-skid elastomer pad protects floor/surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel resists rust and corrosion



ADD 1/8" TO
'C' & 'E' DIM. FOR
EP & ESSP SERIES

Original Series Socket Style w/Elastomer Pad - Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
EP298B	525	10-32	3/8	17/32	3/4	7/64	15/64
EP300B	800	1/4-20	1/2	45/64	1	5/32	5/16
EP304B	2,800	3/8-16	5/8	7/8	1 1/4	3/16	3/8
EP306B	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
EP308B	4,500	5/8-11	7/8	1 1/4	2 1/2	5/16	7/16
EP310B	5,400	3/4-10	1 1/16	1 1/2	3	1/2	5/8
EP312B	16,400	1-8	1 3/8	1 7/8	4	13/32	13/16

Original Series Socket Style w/Elastomer Pad - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
ESSP298B	525	10-32	3/8	17/32	3/4	7/64	15/64
ESSP300B	800	1/4-20	1/2	45/64	1	5/32	5/16
ESSP304B	2,800	3/8-16	5/8	7/8	1 1/4	3/16	3/8
ESSP306B	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
ESSP308B	4,500	5/8-11	7/8	1 1/4	2 1/2	5/16	7/16
ESSP310B	5,400	3/4-10	1 1/16	1 1/2	3	1/2	5/8
ESSP312B	16,400	1-8	1 3/8	1 7/8	4	13/32	13/16

LEVELING DEVICES***Original Series*****Original Series Socket Style
with Delrin® Base**

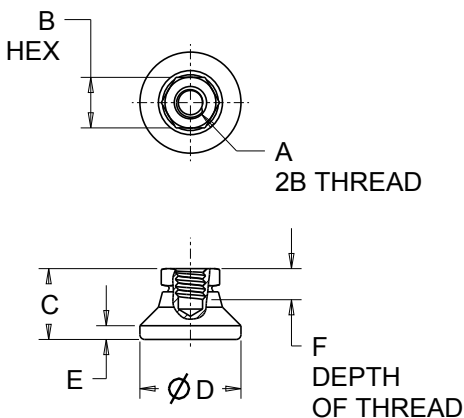
These original series socket style leveling devices in steel feature a tough Delrin® base that provides protection for floor and surface finishes, and offers high resistance to repeated impacts, moisture, solvents and heat up to 190°F. For applications with an existing stud installation, the standard design is zinc plate with gold chromate finish.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Integrally machined hex
- ◆ Protects floor/surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline



Original Series Socket Style w/Delrin® Base - Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
NP298B	150	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	$\frac{15}{64}$
NP300B	200	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	$\frac{5}{16}$
NP304B	300	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	$\frac{3}{8}$
NP306B	700	$\frac{1}{2}$ -13	$\frac{3}{4}$	$1\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{7}{16}$
NP308B	1,200	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	$\frac{7}{16}$
NP310B	1,800	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	$\frac{5}{8}$
NP312B	2,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$1\frac{13}{32}$	$1\frac{13}{16}$

Original Series Socket Style w/Delrin® Base - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
SSNP298B	150	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	$\frac{15}{64}$
SSNP300B	200	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	$\frac{5}{16}$
SSNP304B	300	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	$\frac{3}{8}$
SSNP306B	700	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{7}{16}$
SSNP308B	1,200	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	$\frac{7}{16}$
SSNP310B	1,800	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	$\frac{5}{8}$
SSNP312B	2,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$1\frac{13}{32}$	$1\frac{13}{16}$

LEVELING DEVICES

Original Socket Style



Original Series Socket Style - Steel/Stainless Steel (Metric)

These original series socket style leveling devices are available in steel and stainless steel options. They feature a tough Delrin® base that provides protection for floor and surface finishes. The base also offers high resistance to repeated impacts, moisture, solvents and heat up to 190°F.

For applications with an existing stud installation, the standard design is zinc plate with gold chromate finish.

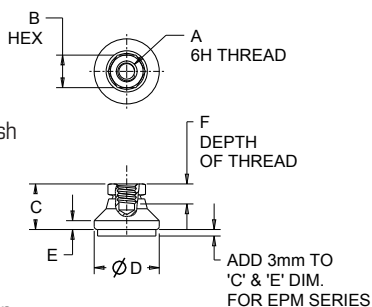
The stainless steel option offers further protection from rust and corrosion.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Integrally machined hex
- ◆ Protects floor/surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel option resists rust and corrosion



Original Series Socket Style - Steel (Metric)							
Part No.	Max Load (Lbs.)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
PM10B	1,705 kg (3750 lbs)	M10 x 1.5	17.0	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	9.6 (0.38)
PM12B	2,273 kg (5000 lbs)	M12 x 1.75	19.0	29.0 (1.14)	48.0 (1.89)	6.0 (0.24)	11.0 (0.44)
PM16B	2,727 kg (6000 lbs)	M16 x 2.0	24.0	32.0 (1.26)	64.0 (2.52)	8.0 (0.31)	11.0 (0.44)
PM20B	3,273 kg (7200 lbs)	M20 x 2.5	30.0	38.0 (1.50)	76.0 (3.00)	13.0 (0.51)	15.7 (0.62)
PM24B	9,979 kg (22,000 lbs)	M24 x 3.0	35.0	48.0 (1.88)	102.0 (4.00)	10.0 (0.41)	20.5 (0.81)

Original Series Socket Style w/Elastomer Pad - Steel (Metric)							
Part No.	Max Load (Lbs.)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
EPM10B	1,273 kg (2800 lbs)	M10 x 1.5	17.0	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	9.6 (0.38)
EPM12B	1,705 kg (3750 lbs)	M12 x 1.75	19.0	29.0 (1.14)	48.0 (1.89)	6.0 (0.24)	11.0 (0.44)
EPM16B	2,046 kg (4500 lbs)	M16 x 2.0	24.0	32.0 (1.26)	64.0 (2.52)	8.0 (0.31)	11.0 (0.44)
EPM20B	2,455 kg (5400 lbs)	M20 x 2.5	30.0	38.0 (1.50)	76.0 (3.00)	13.0 (0.51)	15.7 (0.62)

Original Series Socket Style w/Delrin® Base - Steel (Metric)							
Part No.	Max Load (Lbs.)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
NPM10B	136 kg (300 lbs)	M10 x 1.5	17.0	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	9.6 (0.38)
NPM12B	318 kg (700 lbs)	M12 x 1.75	19.0	29.0 (1.14)	48.0 (1.89)	6.0 (0.24)	11.0 (0.44)
NPM16B	546 kg (1200 lbs)	M16 x 2.0	24.0	32.0 (1.26)	64.0 (2.52)	8.0 (0.31)	11.0 (0.44)
NPM20B	818 kg (1800 lbs)	M20 x 2.5	30.0	38.0 (1.50)	76.0 (3.00)	13.0 (0.51)	15.7 (0.62)

Original Series Socket Style - Stainless Steel (Metric)							
Part No.	Max Load (Lbs.)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
SSPM12B	2,273 kg (5000 lbs)	M12 x 1.75	19.0	29.0 (1.13)	48.0 (1.88)	6.0 (0.25)	11.0 (0.44)
SSPM16B	2,727 kg (6000 lbs)	M16 x 2.0	24.0	32.0 (1.25)	64.0 (2.50)	8.0 (0.31)	11.0 (0.44)
SSPM20B	3,273 kg (7200 lbs)	M20 x 2.5	30.0	38.0 (1.50)	76.0 (3.00)	13.0 (0.50)	15.7 (0.62)
SSPM24B	9,979 kg (22,000 lbs)	M24 x 3.0	35.0	48.0 (1.88)	102.0 (4.00)	10.0 (0.41)	20.5 (0.81)

LEVELING DEVICES

High Value Series



High Value Series Stud Style

Vlier's high value series stud style leveling devices are of premium quality construction, with optimum plating, finishing and cosmetics. These levelers provide an integrally machined stud as part of the ball. The stud style bases swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, data storage, power generation, machine centers and others.

*Low
Cost!*

These leveling devices are available in three finish options:

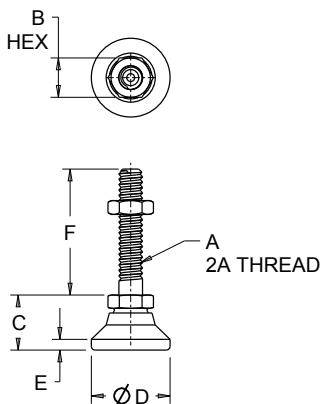
- ◆ Steel with gold chromate finish
- ◆ Steel with nickel finish
- ◆ Stainless steel

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel resists rust and corrosion



High Value Series Stud Style - Steel w/Gold Chromate Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVP298S	700	10-32	3/8	7/32	3/4	7/64	1
HVP300S	1,100	1/4-20	1/2	45/64	1	5/32	1 1/4
HVP304S	3,750	3/8-16	5/8	7/8	1 1/4	3/16	2
HVP306S	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	2
HVP308S	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	2
HVP310S	7,200	3/4-10	1 1/16	1 1/2	3	1/2	2
HVP312S	22,000	1-8	1 3/8	1 7/8	4	13/32	4 1/4

High Value Series Stud Style - Steel w/Nickel Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVP298S3	700	10-32	3/8	7/32	3/4	7/64	1
HVP300S3	1,100	1/4-20	1/2	45/64	1	5/32	1 1/4
HVP304S3	3,750	3/8-16	5/8	7/8	1 1/4	3/16	2
HVP306S3	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	2
HVP308S3	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	2
HVP310S3	7,200	3/4-10	1 1/16	1 1/2	3	1/2	2
HVP312S3	22,000	1-8	1 3/8	1 7/8	4	13/32	4 1/4

High Value Series Stud Style - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVSSP298S	700	10-32	3/8	7/32	3/4	7/64	1
HVSSP300S	1,100	1/4-20	1/2	45/64	1	5/32	1 1/4
HVSSP304S	3,750	3/8-16	5/8	7/8	1 1/4	3/16	2
HVSSP306S	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	2
HVSSP308S	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	2
HVSSP310S	7,200	3/4-10	1 1/16	1 1/2	3	1/2	2
HVSSP312S	22,000	1-8	1 3/8	1 7/8	4	13/32	4 1/4

LEVELING DEVICES

High Value Series



High Value Series Stud Style with Elastomer Pad

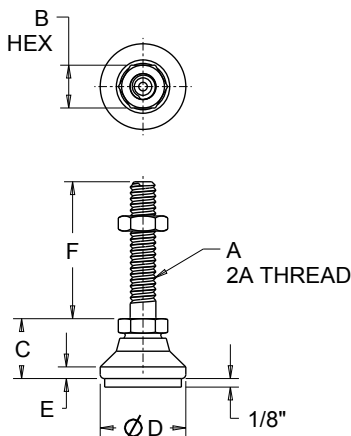
Vlier's high value series stud style leveling devices are of premium quality construction, with optimum plating, finishing and cosmetics. These levelers come in steel with gold chromate finish, steel with nickel finish and stainless steel. They feature an elastomer pad and provide an integrally machined stud as part of the ball. The stud style base swivels 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, data storage, power generation, machine centers and others.

*Low
Cost!*

These leveling devices also feature an elastomer pad that provides a .125" neoprene elastomer bonded to the bottom of the base for non-skid support.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines



High Value Series Stud Style w/Elastomer Pad - Steel w/Gold Chromate Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVEP298S	525	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	1
HVEP300S	800	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	1 $\frac{1}{4}$
HVEP304S	2,800	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	2
HVEP306S	3,750	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	2
HVEP308S	4,500	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	2
HVEP310S	5,400	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	2
HVEP312S	16,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	4 $\frac{1}{4}$

High Value Series Stud Style w/Elastomer Pad - Steel w/Nickel Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVEP298S3	525	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	1
HVEP300S3	800	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	1 $\frac{1}{4}$
HVEP304S3	2,800	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	2
HVEP306S3	3,750	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	2
HVEP308S3	4,500	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	2
HVEP310S3	5,400	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	2
HVEP312S3	16,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	4 $\frac{1}{4}$

High Value Series Stud Style w/Elastomer Pad - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVESSP298S	525	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	1
HVESSP300S	800	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	1 $\frac{1}{4}$
HVESSP304S	2,800	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	2
HVESSP306S	3,750	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	2
HVESSP308S	4,500	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	2
HVESSP310S	5,400	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	2
HVESSP312S	16,400	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	4 $\frac{1}{4}$

LEVELING DEVICES

High Value Series



High Value Series Stud Style Extended Length

Vlier's high value series stud style extended length leveling devices are of premium quality construction, with optimum plating, finishing and cosmetics. These steel levelers provide an integrally machined stud as part of the ball. The stud style bases swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, data storage, power generation, machine centers and others. The standard steel design is zinc plate with gold chromate finish. These leveling devices also feature an elastomer pad that provides a .125" neoprene elastomer bonded to the bottom of the base for non-skid support.

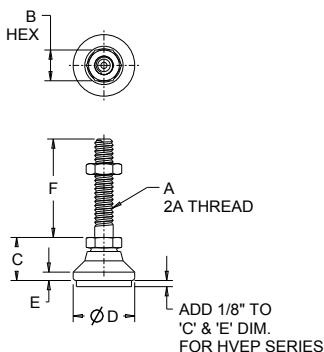
*Low
Cost!*

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined hex
- ◆ Non-skid elastomer pad protects floor/surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline



High Value Series Stud Style Extended Length - Steel w/Gold Chromate Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVP299S	700	10-32	3/8	7/32	3/4	7/64	2
HVP301S	1,100	1/4-20	1/2	45/64	1	5/32	2 1/2
HVP305S	3,750	3/8-16	5/8	7/8	1 1/4	3/16	4
HVP307S	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	4
HVP309S	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	4
HVP311S	7,200	3/4-10	1 1/16	1 1/2	3	1/2	4
HVP313S	22,000	1-8	1 3/8	1 7/8	4	13/32	8

High Value Series Stud Style Extended Length - Steel w/Nickel Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVP299S3	700	10-32	3/8	7/32	3/4	7/64	2
HVP301S3	1,100	1/4-20	1/2	45/64	1	5/32	2 1/2
HVP305S3	3,750	3/8-16	5/8	7/8	1 1/4	3/16	4
HVP307S3	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	4
HVP309S3	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	4
HVP311S3	7,200	3/4-10	1 1/16	1 1/2	3	1/2	4
HVP313S3	22,000	1-8	1 3/8	1 7/8	4	13/32	8

High Value Series Stud Style Extended Length w/Elastomer Pad - Steel w/Gold Chromate Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVEP299S	525	10-32	3/8	7/32	3/4	7/64	2
HVEP301S	800	1/4-20	1/2	45/64	1	5/32	2 1/2
HVEP305S	2,800	3/8-16	5/8	7/8	1 1/4	3/16	4
HVEP307S	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	4
HVEP309S	4,500	5/8-11	7/8	1 1/4	2 1/2	5/16	4
HVEP311S	5,400	3/4-10	1 1/16	1 1/2	3	1/2	4
HVEP313S	16,400	1-8	1 3/8	1 7/8	4	13/32	8

High Value Series Stud Style Extended Length w/Elastomer Pad - Steel w/Nickel Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVEP299S3	525	10-32	3/8	7/32	3/4	7/64	2
HVEP301S3	800	1/4-20	1/2	45/64	1	5/32	2 1/2
HVEP305S3	2,800	3/8-16	5/8	7/8	1 1/4	3/16	4
HVEP307S3	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	4
HVEP309S3	4,500	5/8-11	7/8	1 1/4	2 1/2	5/16	4
HVEP311S3	5,400	3/4-10	1 1/16	1 1/2	3	1/2	4
HVEP313S3	16,400	1-8	1 3/8	1 7/8	4	13/32	8

LEVELING DEVICES

High Value Series



High Value Series Stud Style with
Elastomer Pad - Stainless Steel

Vlier's high value series stud style leveling devices are of premium quality construction, with optimum plating, finishing and cosmetics. These levelers in stainless steel feature a .125" neoprene elastomer pad bonded to the bottom of the base for non-skid support. These devices provide an integrally machined stud as part of the ball. The stud style bases swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, data storage, power generation, machine centers and others.

*Low
Cost!*

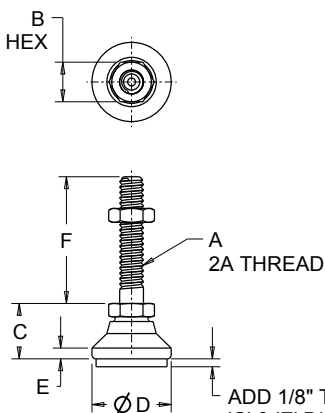
The stainless steel design provides maximum protection against rust and corrosion.

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined hex
- ◆ Non-skid elastomer pad protects floor/surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel resists rust and corrosion



ADD 1/8" TO
'C' & 'E' DIM.
FOR HVESP SERIES

High Value Series Stud Style Extended Length - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVSSP299S	700	10-32	3/8	17/32	3/4	7/64	2
HVSSP301S	1,100	1/4-20	1/2	45/64	1	5/32	2 1/2
HVSSP305S	3,750	3/8-16	5/8	7/8	1 1/4	3/16	4
HVSSP307S	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	4
HVSSP309S	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	4
HVSSP311S	7,200	3/4-10	1 1/16	1 1/2	3	1/2	4
HVSSP313S	22,000	1-8	1 3/8	1 7/8	4	13/32	8

High Value Series Stud Style Extended Length w/Elastomer Pad - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVESSP299S	525	10-32	3/8	17/32	3/4	7/64	2
HVESSP301S	800	1/4-20	1/2	45/64	1	5/32	2 1/2
HVESSP305S	2,800	3/8-16	5/8	7/8	1 1/4	3/16	4
HVESSP307S	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	4
HVESSP309S	4,500	5/8-11	7/8	1 1/4	2 1/2	5/16	4
HVESSP311S	5,400	3/4-10	1 1/16	1 1/2	3	1/2	4
HVESSP313S	16,400	1-8	1 3/8	1 7/8	4	13/32	8

LEVELING DEVICES

High Value Series



High Value Series Socket Style - Stainless Steel

Vlier's high value series socket style leveling devices are of premium quality construction, with optimum plating, finishing and cosmetics. These devices provide stable, secure leveling with a large diameter base support. The devices are available in three finish options:

*Low
Cost!*

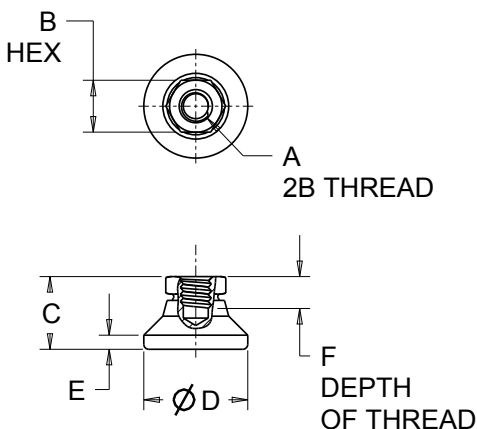
- ◆ Steel with gold chromate
- ◆ Steel with nickel finish
- ◆ Stainless steel

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Integrally machined hex
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel resists rust and corrosion



High Value Series Socket Style - Steel w/Gold Chromate Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVP298B	700	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	$\frac{15}{64}$
HVP300B	1,100	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	$\frac{5}{16}$
HVP304B	3,750	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	$\frac{3}{8}$
HVP306B	5,000	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{7}{16}$
HVP308B	6,000	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	$\frac{7}{16}$
HVP310B	7,200	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	$\frac{5}{8}$
HVP312B	22,000	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	$\frac{13}{16}$

High Value Series Socket Style - Steel w/Nickel Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVP298B3	700	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	$\frac{15}{64}$
HVP300B3	1,100	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	$\frac{5}{16}$
HVP304B3	3,750	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	$\frac{3}{8}$
HVP306B3	5,000	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{7}{16}$
HVP308B3	6,000	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	$\frac{7}{16}$
HVP310B3	7,200	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	$\frac{5}{8}$
HVP312B3	22,000	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	$\frac{13}{16}$

High Value Series Socket Style - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVSSP298B	700	10-32	$\frac{3}{8}$	$\frac{17}{32}$	$\frac{3}{4}$	$\frac{7}{64}$	$\frac{15}{64}$
HVSSP300B	1,100	$\frac{1}{4}$ -20	$\frac{1}{2}$	$\frac{45}{64}$	1	$\frac{5}{32}$	$\frac{5}{16}$
HVSSP304B	3,750	$\frac{3}{8}$ -16	$\frac{5}{8}$	$\frac{7}{8}$	1 $\frac{1}{4}$	$\frac{3}{16}$	$\frac{3}{8}$
HVSSP306B	5,000	$\frac{1}{2}$ -13	$\frac{3}{4}$	1 $\frac{1}{8}$	1 $\frac{7}{8}$	$\frac{1}{4}$	$\frac{7}{16}$
HVSSP308B	6,000	$\frac{5}{8}$ -11	$\frac{7}{8}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$	$\frac{5}{16}$	$\frac{7}{16}$
HVSSP310B	7,200	$\frac{3}{4}$ -10	1 $\frac{1}{16}$	1 $\frac{1}{2}$	3	$\frac{1}{2}$	$\frac{5}{8}$
HVSSP312B	22,000	1-8	1 $\frac{3}{8}$	1 $\frac{7}{8}$	4	$\frac{13}{32}$	$\frac{13}{16}$

LEVELING DEVICES

High Value Series



High Value Series Socket Style with Elastomer Pad

Vlier's high value series socket style leveling devices are of premium quality construction, with optimum plating, finishing and cosmetics. These devices provide a .125" neoprene elastomer pad bonded to the bottom of the base for stable, secure leveling and non-skid support. These leveling devices are available in three finish options:

*Low
Cost!*

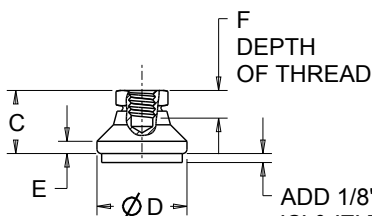
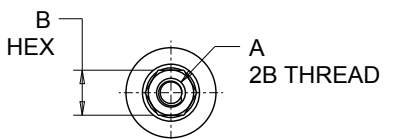
- ◆ Steel with gold chromate finish
- ◆ Steel with nickel finish
- ◆ Stainless steel

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Integrally machined hex
- ◆ Non-skid elastomer pad protects floor/surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel option resists rust and corrosion



ADD 1/8" TO
'C' & 'E' DIM. FOR
EP & ESSP SERIES

High Value Series Socket Style - w/Elastomer Pad - Steel w/Gold Chromate Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVEP298B	525	10-32	3/8	17/32	3/4	7/64	15/64
HVEP300B	800	1/4-20	1/2	45/64	1	5/32	5/16
HVEP304B	2,800	3/8-16	5/8	7/8	1 1/4	3/16	3/8
HVEP306B	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
HVEP308B	4,500	5/8-11	7/8	1 3/4	2 1/2	5/16	7/16
HVEP310B	5,400	3/4-10	1 1/16	1 1/2	3	1/2	5/8
HVEP312B	16,000	1-8	1 3/8	1 7/8	4	13/32	13/16

High Value Series Socket Style - w/Elastomer Pad - Steel w/Nickel Finish

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVEP298B3	525	10-32	3/8	17/32	3/4	7/64	15/64
HVEP300B3	800	1/4-20	1/2	45/64	1	5/32	5/16
HVEP304B3	2,800	3/8-16	5/8	7/8	1 1/4	3/16	3/8
HVEP306B3	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
HVEP308B3	4,500	5/8-11	7/8	1 3/4	2 1/2	5/16	7/16
HVEP310B3	5,400	3/4-10	1 1/16	1 1/2	3	1/2	5/8
HVEP312B3	16,000	1-8	1 3/8	1 7/8	4	13/32	13/16

High Value Series Socket Style - w/Elastomer Pad - Stainless Steel

Part No.	Max Load (Lbs.)	A	B	C	D	E	F
HVESSP298B	525	10-32	3/8	17/32	3/4	7/64	15/64
HVESSP300B	800	1/4-20	1/2	45/64	1	5/32	5/16
HVESSP304B	2,800	3/8-16	5/8	7/8	1 1/4	3/16	3/8
HVESSP306B	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
HVESSP308B	4,500	5/8-11	7/8	1 3/4	2 1/2	5/16	7/16
HVESSP310B	5,400	3/4-10	1 1/16	1 1/2	3	1/2	5/8
HVESSP312B	16,000	1-8	1 3/8	1 7/8	4	13/32	13/16

LEVELING DEVICES

High Value Series



High Value Series Stud Style with Elastomer Pad (Metric)

Vlier's high value series stud style leveling devices are of premium quality construction, with optimum plating, finishing and cosmetics. These levelers feature a .125" neoprene elastomer pad bonded to the bottom of the base for non-skid support. They provide an integrally machined stud as part of the ball. The stud style bases swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, data storage, power generation, machine centers and others.

These devices are available in two finish options:

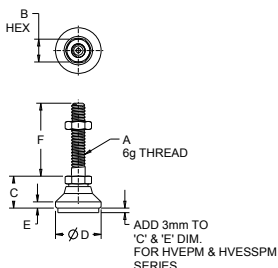
- ◆ Steel with gold chromate
- ◆ Stainless steel

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Stud with integrally machined hex
- ◆ Non-skid elastomer pad protects floor/surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel option resists rust and corrosion



High Value Series Stud Style - Steel w/Gold Chromate Finish (Metric)

Part No.	Max Load KG (Lbs.)	A	B mm (in)	C (+/- .02)	D mm (in)	E mm (in)	F mm (in)
HVPM6S	318 (700)	M6 x 1-6g	10 (0.394)	13.5 (0.53)	19.1 (0.75)	2.8 (0.11)	25.4 (1.00)
HVPM8S	500 (1100)	M8 x 1.25-6g	13 (0.512)	17.8 (0.70)	25.4 (1.00)	3.8 (0.15)	31.8 (1.25)
HVPM10S	1,705 (3750)	M10 x 1.5-6g	17 (0.669)	22.4 (0.87)	31.8 (1.26)	4.3 (0.20)	51.0 (2.00)
HVPM12S	2,273 (5000)	M12 x 1.75g	19 (0.748)	28.7 (1.14)	47.8 (1.89)	6.4 (0.24)	51.0 (2.00)
HVPM16S	2,727 (6000)	M16 x 2-6g	24 (0.945)	31.8 (1.26)	63.5 (2.52)	7.9 (0.31)	51.0 (2.00)
HVPM20S	3,273 (7200)	M20 x 2.5-6g	30 (1.181)	38.1 (1.50)	76.0 (3.00)	12.7 (0.51)	51.0 (2.00)
HVPM24S	9,979 (22000)	M24 x 3-6g	36 (1.417)	47.8 (1.88)	101.6 (4.00)	10.2 (0.40)	108.0 (4.25)

For nickel finish add a 3 to the end of the part number.

High Value Series Stud Style - Stainless Steel (Metric)

Part No.	Max Load KG (Lbs.)	A	B mm (in)	C (+/- .02)	D mm (in)	E mm (in)	F mm (in)
HVSSPM6S	318 (700)	M6 x 1-6g	10 (0.394)	13.5 (0.53)	19.1 (0.75)	2.8 (0.11)	25.4 (1.00)
HVSSPM8S	500 (1100)	M8 x 1.25-6g	13 (0.512)	17.8 (0.70)	25.4 (1.00)	3.8 (0.15)	31.8 (1.25)
HVSSPM10S	1,705 (3750)	M10 x 1.5-6g	17 (0.669)	22.4 (0.87)	31.8 (1.26)	4.3 (0.20)	51.0 (2.00)
HVSSPM12S	2,273 (5000)	M12 x 1.75g	19 (0.748)	28.7 (1.14)	47.8 (1.89)	6.4 (0.24)	51.0 (2.00)
HVSSPM16S	2,727 (6000)	M16 x 2-6g	24 (0.945)	31.8 (1.26)	63.5 (2.52)	7.9 (0.31)	51.0 (2.00)
HVSSPM20S	3,273 (7200)	M20 x 2.5-6g	30 (1.181)	38.1 (1.50)	76.0 (3.00)	12.7 (0.51)	51.0 (2.00)
HVSSPM24S	9,979 (22000)	M24 x 3-6g	36 (1.417)	47.8 (1.88)	101.6 (4.00)	10.2 (0.40)	108.0 (4.25)

High Value Series Stud Style w/ Elastomer Pad - Steel w/Gold Chromate Finish (Metric)

Part No.	Max Load KG (Lbs.)	A	B mm (in)	C (+/- .02)	D mm (in)	E mm (in)	F mm (in)
HVEPM6S	240 (525)	M6 x 1-6g	10 (0.394)	13.5 (0.53)	19.1 (0.75)	2.8 (0.11)	25.4 (1.00)
HVEPM8S	375 (825)	M8 x 1.25-6g	13 (0.512)	17.8 (0.70)	25.4 (1.00)	3.8 (0.15)	31.8 (1.25)
HVEPM10S	1,273 (2800)	M10 x 1.5-6g	17 (0.669)	22.4 (0.87)	31.8 (1.26)	4.3 (0.20)	51.0 (2.00)
HVEPM12S	1,705 (3750)	M12 x 1.75g	19 (0.748)	28.7 (1.14)	47.8 (1.89)	6.4 (0.24)	51.0 (2.00)
HVEPM16S	2,046 (4500)	M16 x 2-6g	24 (0.945)	31.8 (1.26)	63.5 (2.52)	7.9 (0.31)	51.0 (2.00)
HVEPM20S	2,455 (5400)	M20 x 2.5-6g	30 (1.181)	38.1 (1.50)	76.2 (3.00)	12.7 (0.51)	51.0 (2.00)
HVEPM24S	7,500 (16500)	M24 x 3-6g	36 (1.417)	47.8 (1.88)	101.6 (4.00)	10.2 (0.40)	108.0 (4.25)

For nickel finish add a 3 to the end of the part number.

High Value Series Stud Style w/ Elastomer Pad - Stainless Steel (Metric)

Part No.	Max Load KG (Lbs.)	A	B mm (in)	C (+/- .02)	D mm (in)	E mm (in)	F mm (in)
HVESSPM6S	240 (525)	M6 x 1-6g	10 (0.394)	13.5 (0.53)	19.1 (0.75)	2.8 (0.11)	25.4 (1.00)
HVESSPM8S	375 (825)	M8 x 1.25-6g	13 (0.512)	17.8 (0.70)	25.4 (1.00)	3.8 (0.15)	31.8 (1.25)
HVESSPM10S	1,273 (2800)	M10 x 1.5-6g	17 (0.669)	22.4 (0.87)	31.8 (1.26)	4.3 (0.20)	51.0 (2.00)
HVESSPM12S	1,705 (3750)	M12 x 1.75g	19 (0.748)	28.7 (1.14)	47.8 (1.89)	6.4 (0.24)	51.0 (2.00)
HVESSPM16S	2,046 (4500)	M16 x 2-6g	24 (0.945)	31.8 (1.26)	63.5 (2.52)	7.9 (0.31)	51.0 (2.00)
HVESSPM20S	2,455 (5400)	M20 x 2.5-6g	30 (1.181)	38.1 (1.50)	76.2 (3.00)	12.7 (0.51)	51.0 (2.00)
HVESSPM24S	7,500 (16500)	M24 x 3-6g	36 (1.417)	47.8 (1.88)	101.6 (4.00)	10.2 (0.40)	108.0 (4.25)

Add 1/8" to C and E dim for HVEPM and HVESSPM.

LEVELING DEVICES

High Value Series



High Value Series Socket Style with Elastomer Pad (Metric)

Vlier's high value series socket style leveling devices are of premium quality construction, with optimum plating, finishing and cosmetics. These levelers feature a .125" neoprene elastomer pad bonded to the bottom of the base for non-skid support. These devices provide stable, secure leveling with a large diameter base support and are available in two finish options:

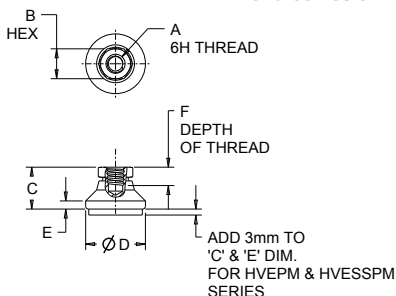
- ◆ Steel with gold chromate
- ◆ Stainless steel

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Hardened ball
- ◆ Integrally machined hex
- ◆ Non-skid elastomer pad protects floor/surface finish
- ◆ Large diameter base support
- ◆ 15° swivel off centerline
- ◆ Stainless steel resists rust and corrosion



High Value Series Socket Style - Steel w/Gold Chromate Finish (Metric)

Part No.	Max Load KG (Lbs.)	A	B mm (in)	C (+/- .02)	D mm (in)	E mm (in)	F mm (in)
HVPM6B	318 (700)	M6 x 1-6h	10 (0.394)	13.5 (0.53)	19.1 (0.75)	2.8 (0.11)	5.8 (0.23)
HVPM8B	500 (1100)	M8 x 1.25-6h	13 (0.512)	17.8 (0.70)	25.4 (1.00)	3.8 (0.15)	7.8 (0.31)
HVPM10B	1,705 (3750)	M10 x 1.5-6h	17 (0.669)	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	9.6 (0.38)
HVPM12B	2,273 (5000)	M12 x 1.75-6h	19 (0.748)	28.7 (1.14)	47.8 (1.89)	6.4 (0.24)	11.0 (0.44)
HVPM16B	2,727 (6000)	M16 x 2-6h	24 (0.945)	31.8 (1.26)	63.5 (2.52)	7.9 (0.31)	11.0 (0.44)
HVPM20B	3,273 (7200)	M20 x 2.5-6h	30 (1.181)	38.0 (1.50)	76.0 (3.00)	12.7 (0.51)	15.7 (0.62)
HVPM24B	9,979 (22000)	M24 x 3-6h	36 (1.417)	47.8 (1.89)	101.6 (4.00)	10.2 (0.40)	20.5 (0.81)

For nickel finish add a 3 to the end of the part number.

High Value Series Socket Style - Stainless Steel (Metric)

Part No.	Max Load KG (Lbs.)	A	B mm (in)	C (+/- .02)	D mm (in)	E mm (in)	F mm (in)
HVSSPM6B	318 (700)	M6 x 1-6h	10 (0.394)	13.5 (0.53)	19.1 (0.75)	2.8 (0.11)	5.8 (0.23)
HVSSPM8B	500 (1100)	M8 x 1.25-6h	13 (0.512)	17.8 (0.70)	25.4 (1.00)	3.8 (0.15)	7.8 (0.31)
HVSSPM10B	1,705 (3750)	M10 x 1.5-6h	17 (0.669)	22.0 (0.87)	32.0 (1.26)	5.0 (0.20)	9.6 (0.38)
HVSSPM12B	2,273 (5000)	M12 x 1.75-6h	19 (0.748)	28.7 (1.14)	47.8 (1.89)	6.4 (0.24)	11.0 (0.44)
HVSSPM16B	2,727 (6000)	M16 x 2-6h	24 (0.945)	31.8 (1.26)	63.5 (2.52)	7.9 (0.31)	11.0 (0.44)
HVSSPM20B	3,273 (7200)	M20 x 2.5-6h	30 (1.181)	38.0 (1.50)	76.0 (3.00)	12.7 (0.51)	15.7 (0.62)
HVSSPM24B	9,979 (22000)	M24 x 3-6h	36 (1.417)	47.8 (1.89)	101.6 (4.00)	10.2 (0.40)	20.5 (0.81)

High Value Series Socket Style w/ Elastomer Pad - Steel w/Gold Chromate Finish (Metric)

Part No.	Max Load KG (Lbs.)	A	B mm (in)	C (+/- .02)	D mm (in)	E mm (in)	F mm (in)
HVEPM6B	240 (525)	M6 x 1-6h	10 (0.394)	13.5 (0.53)	19.1 (0.75)	2.8 (0.11)	5.8 (0.23)
HVEPM8B	375 (825)	M8 x 1.25-6h	13 (0.512)	17.8 (0.70)	25.4 (1.00)	3.8 (0.15)	7.8 (0.31)
HVEPM10B	1,273 (2800)	M10 x 1.5-6h	17 (0.669)	22.4 (0.87)	31.8 (1.26)	4.3 (0.20)	9.6 (0.38)
HVEPM12B	1,705 (3750)	M12 x 1.75h	19 (0.748)	28.7 (1.14)	47.8 (1.89)	6.4 (0.24)	11.0 (0.44)
HVEPM16B	2,046 (4500)	M16 x 2-6h	24 (0.945)	31.8 (1.26)	63.5 (2.52)	7.9 (0.31)	11.0 (0.44)
HVEPM20B	2,455 (5400)	M20 x 2.5-6h	30 (1.181)	38.1 (1.50)	76.2 (3.00)	12.7 (0.51)	15.7 (0.62)
HVEPM24B	7,500 (16500)	M24 x 3-6h	36 (1.417)	47.8 (1.88)	101.6 (4.00)	10.2 (0.40)	20.5 (0.81)

For nickel finish add a 3 to the end of the part number.

High Value Series Socket Style w/Elastomer Pad - Stainless Steel (Metric)

Part No.	Max Load KG (Lbs.)	A	B mm (in)	C (+/- .02)	D mm (in)	E mm (in)	F mm (in)
HVESSPM6B	240 (525)	M6 x 1-6h	10 (0.394)	13.5 (0.53)	19.1 (0.75)	2.8 (0.11)	5.8 (0.23)
HVESSPM8B	375 (825)	M8 x 1.25-6h	13 (0.512)	17.8 (0.70)	25.4 (1.00)	3.8 (0.15)	7.8 (0.31)
HVESSPM10B	1,273 (2800)	M10 x 1.5-6h	17 (0.669)	22.4 (0.87)	31.8 (1.26)	4.3 (0.20)	9.6 (0.38)
HVESSPM12B	1,705 (3750)	M12 x 1.75h	19 (0.748)	28.7 (1.14)	47.8 (1.89)	6.4 (0.24)	11.0 (0.44)
HVESSPM16B	2,046 (4500)	M16 x 2-6h	24 (0.945)	31.8 (1.26)	63.5 (2.52)	7.9 (0.31)	11.0 (0.44)
HVESSPM20B	2,455 (5400)	M20 x 2.5-6h	30 (1.181)	38.1 (1.50)	76.2 (3.00)	12.7 (0.51)	15.7 (0.62)
HVESSPM24B	7,500 (16500)	M24 x 3-6h	36 (1.417)	47.8 (1.88)	101.6 (4.00)	10.2 (0.40)	20.5 (0.81)

Add 1/8" to C dim for HVEPM and HVESSPM.

LEVELING DEVICES



Level Star Series

The leveling devices in the level star series from Vlier feature a non-swivel rotating stud that is ideal for high-volume OEM applications. The zinc-plated, low carbon steel cover shell resists corrosion and provides increased durability. The integral hex nut aids adjustment under load. The level star series leveling devices are available with two design options:

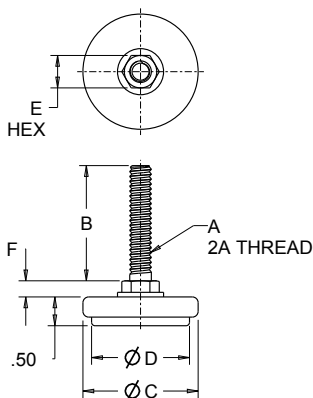
- ◆ Nylon pad permits easy sliding, resists water corrosion, and helps protect floor and surface finishes
- ◆ Rubber pad prevents skidding and resists creeping

Typical Uses

- ◆ Data storage equipment
- ◆ Large medical equipment
- ◆ Material handling equipment
- ◆ Industrial workstations
- ◆ Industrial machines

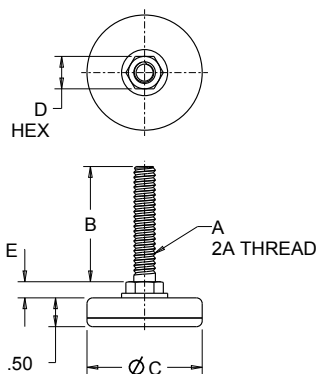
Special Features

- ◆ Non-swivel stud
- ◆ Zinc-plated stud and shell
- ◆ Integral hex nut
- ◆ Nylon or rubber pad
- ◆ Protects floors and surfaces



Level Star Series w/Rubber Pad

Part No.	Load Rating	A	B	C	D	E	F
FSE300S	300 LBS	¼-20	1.50"	1.50"	1.22	0.500	0.16
FSE302S	300 LBS	⅝-18	1.50"	1.50"	1.22	0.500	0.16
FSE304S	300 LBS	¾-16	2.00"	2.00"	1.71	0.563	0.20
FSE306S	300 LBS	1½-13	2.00"	2.00"	1.71	0.563	0.20



Level Star Series w/Nylon Pad

Part No.	Load Rating	A	B	C	D	E
FSN300S	300 LBS	¼-20	1.50"	1.38"	0.500	0.16
FSN302S	300 LBS	⅝-18	1.50"	1.38"	0.500	0.16
FSN304S	300 LBS	¾-16	2.00"	2.00"	0.563	0.20
FSN306S	300 LBS	1½-13	2.00"	2.00"	0.563	0.20

LEVELING DEVICES



LMS Anti-Vibration Levelers

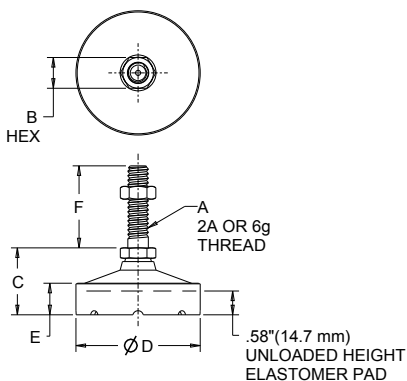
Vlier LMS anti-vibration levelers are swivel leveling devices designed to provide shock attenuation and low frequency vibration isolation. The steel base, molded to .5" black neoprene elastomer, provides maximum vibration, shock and noise control. The stud style base swivels 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, data storage, power generation, machine centers, high precision equipment, light machinery and other equipment. The 3.0" radial ring pad provides a sure grip and non-skid support. The devices feature black oxide-finished steel stud and nuts that resist corrosion. They also have an operating temperature range of -20°F to 180°F (-30°C to 82°C). Transmissibility at resonance 8:1.

Typical Uses

- ◆ Data storage equipment
- ◆ Large sensitive medical equipment
- ◆ Semi-conductor equipment
- ◆ High precision equipment
- ◆ Industrial workstations
- ◆ Industrial machines

Special Features

- ◆ Steel base and elastomer pad
- ◆ Radial ring pad
- ◆ 10-20 Hz natural frequency
- ◆ Corrosion-resistant steel
- ◆ Operating temperature -20°F to 180°F (-30°C to 82°C)
- ◆ Transmissibility at resonance 8:1



LMS Anti-Vibration Levelers

Part No.	Max Load (Lbs.)	Max Deflection	A	B	C	D	E	F
LMS-12042	100-400	0.10	½-13	0.75	1.63	3.0	0.77	2.0
LMS-12044	100-400	0.10	½-13	0.75	1.63	3.0	0.77	4.0
LMS-12082	200-800	0.10	½-13	0.75	1.63	3.0	0.77	2.0
LMS-12084	200-800	0.10	½-13	0.75	1.63	3.0	0.77	4.0
LMS-12122	400-1,200	0.10	½-13	0.75	1.63	3.0	0.77	2.0
LMS-12124	400-1,200	0.10	½-13	0.75	1.63	3.0	0.77	4.0

LMS Anti-Vibration Levelers (Metric)

Part No.	Max Load (KG/Lbs.)	Max Deflection	A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
LMS-M112042	45-180 (100-400)	2.5 mm (0.10)	M12 x 1.75	19.0 (0.75)	41.0 (1.63)	76.0 (3.0)	19.6 (0.77)	51.0 (2.0)
LMS-M112043	45-180 (100-400)	2.5 mm (0.10)	M12 x 1.75	19.0 (0.75)	41.0 (1.63)	76.0 (3.0)	19.6 (0.77)	84.0 (3.31)
LMS-M112082	360 (200-800)	2.5 mm (0.10)	M12 x 1.75	19.0 (0.75)	41.0 (1.63)	76.0 (3.0)	19.6 (0.77)	51.0 (2.0)
LMS-M112083	90-360 (200-800)	2.5 mm (0.10)	M12 x 1.75	19.0 (0.75)	41.0 (1.63)	76.0 (3.0)	19.6 (0.77)	84.0 (3.31)
LMS-M112122	180-550 (400-1,200)	2.5 mm (0.10)	M12 x 1.75	19.0 (0.75)	41.0 (1.63)	76.0 (3.0)	19.6 (0.77)	51.0 (2.0)
LMS-M112123	180-550 (400-1,200)	2.5 mm (0.10)	M12 x 1.75	19.0 (0.75)	41.0 (1.63)	76.0 (3.0)	19.6 (0.77)	84.0 (3.31)

Load Rating Color Code

Part No.	Max Load (Lbs.)	Color Code
LMS-12042 LMS-12044	100-400	White
LMS-12082 LMS-12084	200-800	Orange
LMS-12122 LMS-12144	400-1,200	Blue



Toggle Pads

Vlier toggle pads solidly clamp parts with uneven, off-angle or rough surfaces. The swivel pad is self-aligning and self-leveling, eliminates clamp slippage and provides a 15° angle of movement from center for pad seating against the workpiece surface with applied force.

Our toggle pads are offered in either steel or stainless steel finish. Both have the option of a Delrin® pad that prevents marring or damage to soft metal, polished surfaces or other finishes. The stainless steel model provides added protection against rust and corrosion.

In addition to finish and Delrin® pad options, Vlier toggle pads are available in seven sizes.

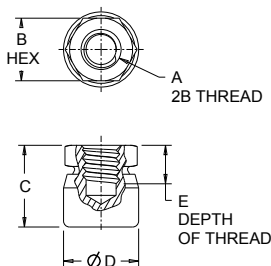
Typical Uses

Toggle pads clamp parts with uneven, round or angled surfaced areas. This provides evenly distributed clamping pressure that prevents damage to the surface area or to the part itself.

Special Features

- ◆ Unidirectional force distribution
- ◆ Self-leveling
- ◆ No binding or distortion
- ◆ Evenly distributed clamping pressure

Toggle Pads



Toggle Pads - Steel or Steel with Delrin® Pads

Part No.		A	B	C	D	E
Delrin® Pads	Steel Pads					
NP300	P300	¼-20	½ Hex	⅝	⅝	⅝
NP302	P302	⅝-18	⅝ Hex	¾	⅞	¾
NP304	P304	¾-16	¾ Hex	⅞	¾	¾
NP306	P306	½-13	¾ Hex	⅞	¾	¾
NP308	P308	⅝-11	¾ Hex	1	1	¾
NP310	P310	¾-10	1 ⅛ Hex	1 ⅞	1 ¼	¾
NP312	P312	1-8	1 ⅝ Hex	1 ⅝	1 ⅝	⅞

Toggle Pads - Steel or Steel with Delrin® Pad

Part No.		Max. Recommended Load (Lbs.)	
Delrin® Pads	Steel Pads	Delrin® Pads	Stainless Steel Pads
NP300	P300	360	3900
NP302	P302	360	5900
NP304	P304	570	6400
NP306	P306	570	7000
NP308	P308	1000	10000
NP310	P310	1300	13500
NP312	P312	1570	18750

Toggle Pads - Stainless Steel or Stainless Steel with Delrin® Pad

Part No.		A	B	C	D	E
Delrin® Pads	Stainless Steel Pads					
NSSP300	SSP300	¼-20	½ Hex	⅝	⅝	⅝
NSSP302	SSP302	⅝-18	⅝ Hex	¾	⅞	¾
NSSP304	SSP304	¾-16	¾ Hex	⅞	¾	¾
NSSP306	SSP306	½-13	¾ Hex	⅞	¾	¾
NSSP308	SSP308	⅝-11	¾ Hex	1	1	¾
NSSP310	SSP310	¾-10	1 ⅛ Hex	1 ⅞	1 ¼	¾
NSSP312	SSP312	1-8	1 ⅝ Hex	1 ⅝	1 ⅝	⅞

Toggle Pads - Stainless Steel or Stainless with Delrin® Pad

Part No.		Max. Recommended Load (Lbs.)	
Delrin® Pads	Stainless Steel Pads	Delrin® Pads	Stainless Steel Pads
NSSP300	SSP300	360	5000
NSSP302	SSP302	360	7600
NSSP304	SSP304	570	8250
NSSP306	SSP306	570	9000
NSSP308	SSP308	1000	12900
NSSP310	SSP310	1300	17400
NSSP312	SSP312	1570	24200



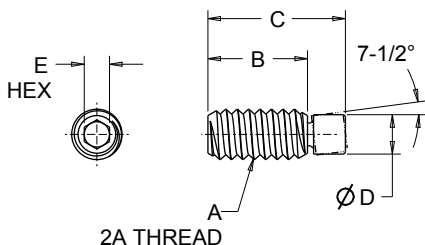
Socket Set Swivel Pad Clamps

Vlier's precisely engineered mechanical components include our socket set swivel pad clamps, which provide maximum support and rigidity. They're ideal for use in limited spaces and securely hold parts with off-angle surfaces without any surface marring or damage.

Our socket set swivel pad clamps are offered in either steel with black oxide finish or stainless steel. Both models offer an optional Delrin® pad, which eliminates surface damage when clamping together soft materials and helps reduce distortion.

Special Features

- ◆ Flat-tipped design
- ◆ Pad swivels 7.5" off centerline in all directions
- ◆ Large, flat pad face ensures tight clamping
- ◆ Pad designed to pass through tapped hole
- ◆ Conical seat distributes uniform pressure in clamping
- ◆ Heat-treated steel alloy for long life
- ◆ Steel model features black oxide finish
- ◆ Stainless steel offers maximum protection against rust and corrosion
- ◆ Delrin® or steel pad



Socket Set Swivel Pad Clamps - Steel or Steel with Delrin® Pads

Part No.		A	B	C	D	E Hex
Delrin® Pads	Steel Pads					
NSC324	SC324	10-32	$\frac{11}{32}$	$\frac{1}{2}$	0.146	$\frac{3}{32}$
NSC326	SC326	$\frac{1}{4}$ -20	$\frac{11}{32}$	$\frac{1}{2}$	0.185	$\frac{1}{8}$
NSC327	SC327	$\frac{1}{4}$ -20	$\frac{19}{32}$	$\frac{3}{4}$		
NSC328	SC328		$\frac{27}{32}$	1		
NSC329	SC329		1 $\frac{11}{32}$	1 $\frac{1}{2}$	0.250	$\frac{5}{32}$
NSC332	SC332	$\frac{5}{16}$ -18	$\frac{35}{64}$	$\frac{3}{4}$		
NSC333	SC333		$\frac{51}{64}$	1		
NSC334	SC334		1 $\frac{19}{64}$	1 $\frac{1}{2}$		
NSC335	SC335		1 $\frac{51}{64}$	2		
NSC338	SC338	$\frac{3}{8}$ -16	$\frac{1}{2}$	$\frac{3}{4}$	0.293	$\frac{3}{16}$
NSC339	SC339		$\frac{3}{4}$	1		
NSC340	SC340		1 $\frac{1}{4}$	1 $\frac{1}{2}$		
NSC341	SC341		1 $\frac{3}{4}$	2		
NSC344	SC344	$\frac{1}{2}$ -13	$\frac{7}{16}$	$\frac{3}{4}$	0.400	$\frac{1}{4}$
NSC345	SC345		$\frac{11}{16}$	1		
NSC346	SC346		1 $\frac{3}{16}$	1 $\frac{1}{2}$		
NSC347	SC347		1 $\frac{11}{16}$	2		
NSC349	SC349		2 $\frac{11}{16}$	3		
NSC350	SC350	$\frac{5}{8}$ -11	$\frac{3}{8}$	1	0.506	$\frac{5}{16}$
NSC351	SC351		1 $\frac{5}{8}$	2		
NSC353	SC353		2 $\frac{5}{8}$	3		
NSC354	SC354	$\frac{3}{4}$ -10	1	1 $\frac{1}{2}$	0.625	$\frac{3}{8}$
NSC356	SC356		2	2 $\frac{1}{2}$		
NSC364	SC364	1-8	$\frac{53}{64}$	1 $\frac{1}{2}$	0.813	$\frac{5}{16}$

Socket Set Swivel Pad Clamps - Stainless Steel or Stainless Steel with Delrin® Pads

Part No.		A	B	C	D	E Hex
Delrin® Pads	Stainless					
NSSC324	SSC324	10-32	$\frac{11}{32}$	$\frac{1}{2}$	0.146	$\frac{3}{32}$
NSSC327	SSC327	$\frac{1}{4}$ -20	$\frac{19}{32}$	$\frac{3}{4}$	0.185	$\frac{1}{8}$
NSSC328	SSC328		$\frac{27}{32}$	1		
NSSC329	SSC329		1 $\frac{11}{32}$	1 $\frac{1}{2}$		
NSSC332	SSC332	$\frac{5}{16}$ -18	$\frac{35}{64}$	$\frac{3}{4}$	0.240	$\frac{5}{32}$
NSSC333	SSC333		$\frac{51}{64}$	1		
NSSC334	SSC334		1 $\frac{19}{64}$	1 $\frac{1}{2}$		
NSSC335	SSC335		1 $\frac{51}{64}$	2		
NSSC339	SSC339	$\frac{3}{8}$ -16	$\frac{3}{4}$	1	0.293	$\frac{3}{16}$
NSSC340	SSC340		1 $\frac{1}{4}$	1 $\frac{1}{2}$		
NSSC341	SSC341		1 $\frac{3}{4}$	2		
NSSC345	SSC345	$\frac{1}{2}$ -13	$\frac{11}{16}$	1	0.400	$\frac{1}{4}$
NSSC347	SSC347	$\frac{1}{2}$ -13	1 $\frac{11}{16}$	2	0.400	$\frac{1}{4}$
NSSC356	SSC356	$\frac{3}{4}$ -10	2	2 $\frac{1}{2}$	0.625	$\frac{3}{8}$

THREAD TO ACCEPT CLASS 2B NUT.



Swivel Pad Clamps

Vlier's precisely engineered components include our swivel pad clamps, which offer finger-tight clamping with an easy-to-grip knurled head. These swivel pad clamps hold parts with off-angle surfaces securely without marring or damaging the surfaces. Their hardened bearing surfaces absorb screw torque as well.

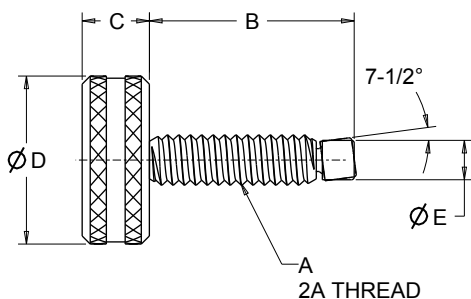
These Vlier clamps are offered with either a steel or Delrin® pad, which eliminates marring when clamping together soft materials and helps reduce distortion.

Typical Uses

Vlier swivel pads clamp parts with uneven, round or angled surfaced areas in applications like cutting, grinding or machining for manufacturing. This provides evenly distributed clamping pressure that prevents damage to the surface area or to the part itself.

Special Features

- ◆ Pad swivels 7.5" off centerline in all directions
- ◆ Large, flat pad face ensures tight clamping
- ◆ Pad designed to pass through tapped hole
- ◆ Conical seat distributes uniform pressure in clamping
- ◆ Heat-treated steel alloy for long life
- ◆ Black oxide finish
- ◆ Delrin® or steel pad



Swivel Pad Clamps - Steel and Delrin® Pads

Part No.		A	B	C	D	E
Delrin® Pads	Steel Pads					
NSCH329	SCH329	¼-20	1 ½	⅜	1	0.185
NSCH330	SCH330		2			
NSCH334	SCH334	⅝-18	1 ½	⅞	1 ⅝	0.240
NSCH335	SCH335		2			
NSCH336	SCH336		2 ½			
NSCH340	SCH340	¾-16	1 ½	½	1 ¼	0.293
NSCH341	SCH341		2			
NSCH342	SCH342		2 ½			
NSCH343	SCH343		3			
NSCH346	SCH346	½-13	1 ½	⅝	1 ¼	0.400
NSCH347	SCH347		2			
NSCH348	SCH348		2 ½			
NSCH349	SCH349		3			

THREAD TO ACCEPT CLASS 2B NUT.



Torque Thumb Screws

Vlier's line of precisely engineered mechanical components includes our torque thumb screw, which provides a range of holding styles such as regular, reverse, variable and off-angle support. The five available designs of these torque screws are engineered to meet the needs of applications across a wide range of industries. All five designs include a checknut to prevent back-off during operation.

Regular - Type A

Offers numerous holding applications in building jigs, fixtures and special tooling.

Typical Uses

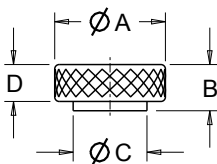
Building special tooling, jigs, fixtures and for workholding applications.

Swivel Pad Type

Combines torque-limiting screw with a surface-protecting ball bearing swivel pad available in steel or Delrin® to hold off-angle surfaces without marring or damage.

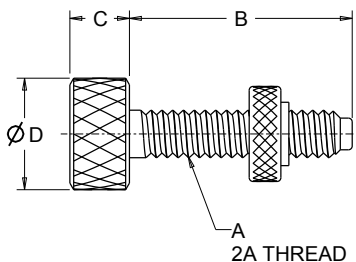
Special Features

- ◆ Controlled end pressure
- ◆ Checknuts prevent back-off
- ◆ Head ratchets at preset pressure

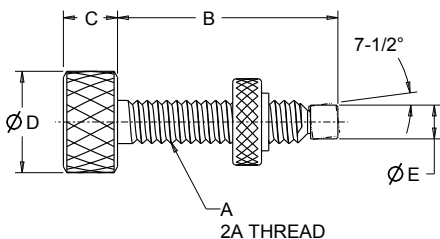


Checknuts

Part No.	Thread Size	A	B	C	D
T102CN	10-32	3/4	7/8	1/2	5/8
T103CN	1/4-20	3/4	7/8	1/2	5/8
T103ACN	5/16-18	3/4	3/8	1/2	1/4
T104CN	3/8-16	3/4	3/8	1/2	1/4
T106CN	1/2-13	1	3/8	3/4	1/4
T108CN	5/8-11	1	3/8	3/4	1/4

**Regular Type A**

Part No.	A	B	C	D	Estimated End Force Pounds
T102	10-32	1 ¼	0.47	¾	8-15
T103	¼-20	1 ¾			9-18
T1031	¼-20	2 ½			9-18
T103A	⅝-18	1 ¾	0.47	¾	10-20
T103A1		2 ¼			
T103B		3			
T104	⅝-16	1 ¾	0.47	¾	12-23
T1041		2 ¼			
T105		3			

**Swivel Pad Type**

Part No.		A	B	C	D	Estimated End Force Pounds	E
Steel Pad	Delrin® Pad						
TS103	NTS103	¼-20	2 ¼	0.47	¾	9-18	0.19
TS103A	NTS103A	⅝-18	2 ¼	0.47	¾	10-20	0.25
TS104	NTS104	⅝-16	2 ¼	0.47	¾	12-23	0.29

THREAD TO ACCEPT CLASS 2B NUT.

MECHANICAL COMPONENTS

Torque Thumb Screws

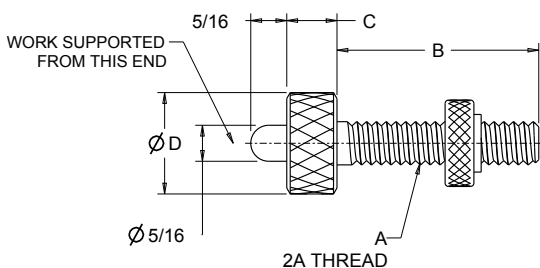


Inverted Type B

Vlier Inverted Torque Thumb Screws apply reverse holding support ideal in limited space applications.

Inverted Type B

Applies reverse holding support ideal in limited space applications.



Inverted Type B

Part No.	A	B	C	D	Estimated End Force Pounds
T125	¼-20	1 ¾	7/16	7/8	9-18
T126	¾-16	1 ¾	7/16	7/8	12-23
T127	½-13	1 ¾	½	1 ½	13-25
T128	¾-11	1 ¾	½	1 ½	15-28

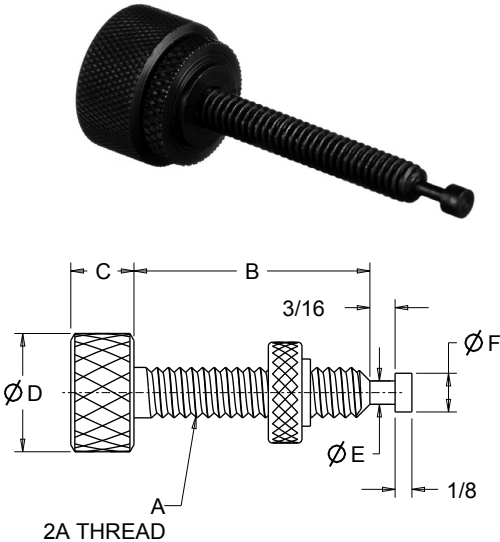
THREAD TO ACCEPT CLASS 2B NUT.

Tee Head Type C

Vlier Tee Head Torque Head Screws Type C are ideal where controlled end force and torque are required. Tee Heads fits part for forward or reverse motion.

Tee Head Type C

Ideal where controlled end pressure and torque are required. Tee head fits part for forward or reverse motion.



Tee Head Type C							
Part No.	A	B	C	D	E	F	Estimated End Force Pounds
T150	¼-20	1 ¾	7/16	7/8	8-15	0.184	13-25
T151	¾-16	1 ¾	7/16	7/8	9-18	0.290	17-33

THREAD TO ACCEPT CLASS 2B NUT.

MECHANICAL COMPONENTS

Torque Head Screws

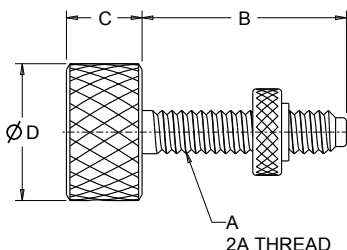


Adjustable Type D

Vlier adjustable Torque Thumb Screws Type D provide variable holding force with a simple hex wrench adjustment made to the head of the screw.

Adjustable Type D

Provides variable holding force with a simple hex wrench adjustment made to the head of the screw.



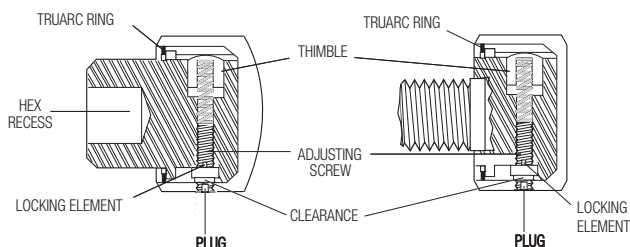
Adjustable Type D

Part No.	A	B	C	D	Adjustable Torque Inch-Pound	Estimated End Force Pounds
T198	3/8-16	1 3/4	2 1/2	1 3/16	3-6	10-125
T199	3/8-16	3	2 1/2	1 3/16	3-6	10-125
T200	1/2-13	1 3/4	2 1/2	1 3/16	3-6	10-125
T201	1/2-13	3	2 1/2	1 3/16	3-6	10-125

THREAD TO ACCEPT CLASS 2B NUT.

Adjustable Torque Thumb Screws & Handles

END PRESSURE ADJUSTMENT



Instructions for Setting End Pressures

It is not necessary to disassemble the Vlier adjustable torque thumb screw or torque handle to adjust the end pressure. Adjustment is made through the head as follows:

- 1. Turn the head clockwise until thimble slips into the detent. A distinct click will be heard or felt.**
- 2. Using a 3/32" hex key, remove the plug. This exposes the adjusting screw.**
- 3. Insert the 3/32" hex key into the adjusting screw. To increase end pressure, turn adjusting screw clockwise. To decrease end pressure, turn adjusting screw counter-clockwise.**
- 4. When desired end pressure is reached, withdraw hex key and replace plug.**

Adjustable torque ranges are given in inch-pounds in the tables on page 187.



Adjustable Torque Handles

Vlier's line of precisely engineered mechanical components includes our adjustable torque handles, which control forward force on assemblies, machinery and other equipment where ordinary torque thumb screws would require considerable machining or customizing. These components provide secure tightening that controls forward force and eliminates rattling.

Typical Uses

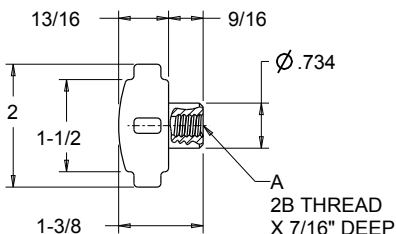
Manufacturing assemblies and workholding applications.

Options

- ◆ Available with 5/16", 3/8" and 1/2" tapped holes
- ◆ Models TH103A to TH106 include die-cast aluminum handles
- ◆ Models TH225 to TH227 are steel with black oxide finish and knurled knob

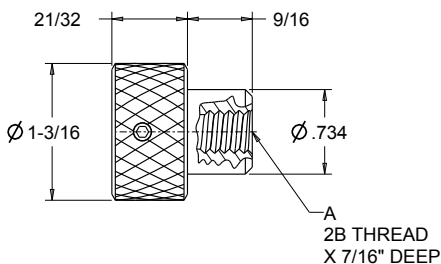
Special Features

- ◆ Adjustable torque
- ◆ Variable holding force with hex head adjustment
- ◆ Holds fragile and heavy materials
- ◆ Controlled end pressure
- ◆ Checknuts prevent back-off
- ◆ Head ratchets freely at preset pressure



Models TH103A to TH106

Part No.	Tapped Hole Size	Adjustable Torque Inch-Pounds
TH103A	$\frac{5}{16}$ -18	3-12
TH104	$\frac{3}{8}$ -16	3-12
TH106	$\frac{1}{2}$ -13	3-12



Knurled Knob Models TH225 to TH227

Part No.	Tapped Hole Size	Adjustable Torque Inch-Pounds
TH225	$\frac{5}{16}$ -18	3-6
TH226	$\frac{3}{8}$ -16	3-6
TH227	$\frac{1}{2}$ -13	3-6



Tooling Flanges

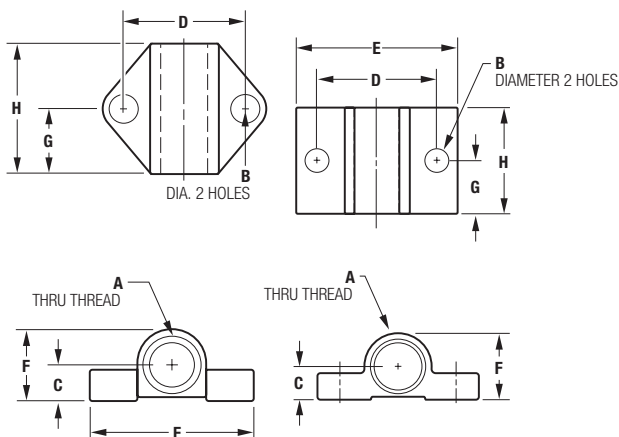
Vlier's tooling flanges are compatible with a wide variety of spring loaded devices and tooling fixture components, and are ideal for fixtures that require a horizontal application of a 1/4-20 and 1/2-13 threaded spring loaded device.

Typical Uses

Workholding and fixtures applications.

Special Features

- ◆ Eliminates need for custom tooling blocks
- ◆ Works with a wide range of devices and products

**TF25****1/4-20 Thd.**

S54 & S54B Series
 S55 Series
 H54
 H55
 HT54N
 M54 Series
 M55 Series
 B54 Series
 FR250
 FRN250
 FRS250
 FRSN250
 SSFR250
 SL250
 T103 & T1031
 T125
 T150
 SC326-329 Series
 PR250
 PR500

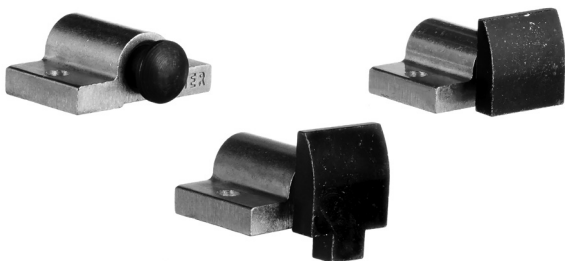
TF50**1/2-13 Thd.**

S60 Series
 S61 Series
 H60
 H61
 HT60N
 M60 Series
 M61 Series
 B60 Series
 FR500
 FRN500
 FRS500
 FRSN500
 SSFR500
 SL500

 T127
 T200
 P306S Series
 SC346-349

Tooling Flanges

Part No.	A	B	C	D	E	F	G	H
TF25	1/4-20	0.136	0.22	0.66	0.88	0.41	0.34	0.69
TF50	1/2-13	0.203	0.31	1.13	1.50	0.63	0.50	1.00



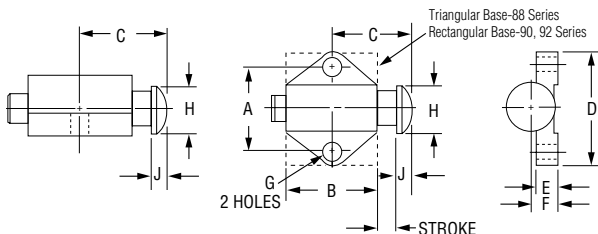
Spring Stops

Vlier's spring stops provide accurate, controlled end forces in a range of applications where fixture walls are not available. The spring loaded stops have an aluminum body design, and feature the option of a steel or Delrin® Nose, which has electrical insulating properties and prevents marring of soft metals such as brass and aluminum.

Typical Uses

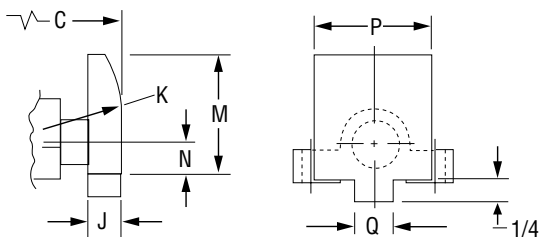
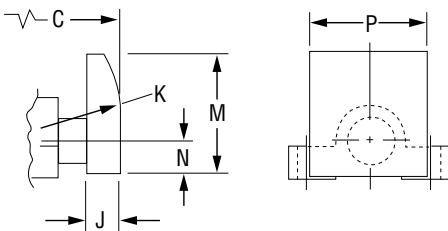
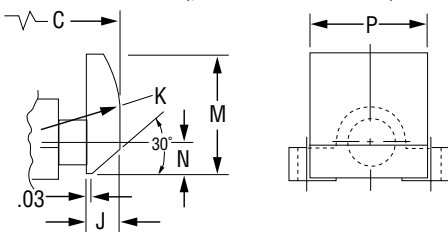
Workholding and fixtures applications.

STANDARD NOSE CONFIGURATION



Spring Stops

Part No.		End Force			Stroke	A	B	C	D
Steel Nose	Delrin® Nose	Initial	Mid	Final					
SS88	NSS88	5.1	10.0	14.9	1/8	0.656	0.688	0.593	0.875
SS88A	-	5.1	10.0	14.9	1/8	0.656	0.688	0.656	0.875
SS88B	-	5.1	10.0	14.9	1/8	0.656	0.688	0.656	0.875
SS88C	-	5.1	10.0	14.9	1/8	0.656	0.688	0.656	0.875
SS90	NSS90	2.3	14.0	25.8	3/16	1.125	1.00	0.875	1.50
SS90A	-	2.3	14.0	25.8	3/16	1.125	1.00	0.938	1.50
SS90B	-	2.3	14.0	25.8	3/16	1.125	1.00	0.938	1.50
SS90C	-	2.3	14.0	25.8	3/16	1.125	1.00	0.938	1.50
SS92	NSS92	16.5	32.0	47.5	1/4	1.50	1.375	1.218	2.00
SS92A	-	16.5	32.0	47.5	1/4	1.50	1.375	1.312	2.00
SS92B	-	16.5	32.0	47.5	1/4	1.50	1.375	1.312	2.00
SS92C	-	16.5	32.0	47.5	1/4	1.50	1.375	1.312	2.00

NOSE OPTION A (part #'s with "A" at end)**NOSE OPTION B** (part #'s with "B" at end)**NOSE OPTION C** (part #'s with "C" at end)**Spring Stops (continued)**

E	F	G	H	K	J	M	N	P	Q
0.187	0.218	0.136	0.375	-	0.125	-	-	-	-
0.187	0.218	0.136	-	0.562	0.187	0.625	0.200	0.625	0.250
0.187	0.218	0.136	-	0.562	0.187	0.625	0.200	0.625	-
0.187	0.218	0.136	-	0.562	0.187	0.625	0.200	0.625	-
0.250	0.312	0.203	0.562	-	0.187	-	-	-	-
0.250	0.312	0.203	-	1.000	0.250	0.875	0.297	0.875	0.375
0.250	0.312	0.203	-	1.000	0.250	0.875	0.297	0.875	-
0.250	0.312	0.203	-	1.000	0.250	0.875	0.297	0.875	-
0.250	0.437	0.266	0.812	-	0.281	-	-	-	-
0.250	0.437	0.266	-	1.250	0.375	1.250	0.422	1.250	0.500
0.250	0.437	0.266	-	1.250	0.375	1.250	0.422	1.250	-
0.250	0.437	0.266	-	1.250	0.375	1.250	0.422	1.250	-



Spring Locating Pins

Vlier spring locating pins are press-fit inserts designed for fixturing small parts in tight, compact spaces. Ideal for positioning and chucking flat or round parts for clamping.

These precisely engineered components feature an aluminum body with an alloy steel pressure pin. The high-performance spring provides the repeatable end force required in a range of industries and applications. These versatile components can also be used for profiles if needed.

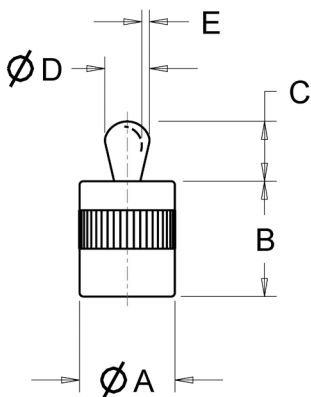
For reliable performance in applications where fluids are present, our spring locating pins feature the Vlier seal.

Typical Uses

Workholding and fixtures applications.

Special Features

- ◆ Space-saving
- ◆ Quick installation
- ◆ Controlled end forces
- ◆ Vlier seal



Spring Locating Pins

Part No.	Side Force Lbs.	Body DIA. A	Body Length B	Toggle Length C	Toggle DIA. D	Lateral Movement E, Maz
SLPL250	2.2	¼	0.30	0.16	0.11	0.034
SLP250	4.5					
SLPH250	9.0					
SLPL438	4.5	⅜	0.45	0.24	0.20	0.043
SLP438	11.2					
SLPH438	22.5					
SLPL438A	9.0	⅜	0.45	0.40	0.23	0.058
SLP438A	17.0					
SLPH438A	34.0					
SLPL500	11.2	½	0.53	0.51	0.31	0.070
SLP500	22.5					
SLPH500	45.0					
SLPH625	22.5	¾	0.69	0.63	0.39	0.086
SLP625	45.0					
SLPH625	67.5					

**Stock Crowder**

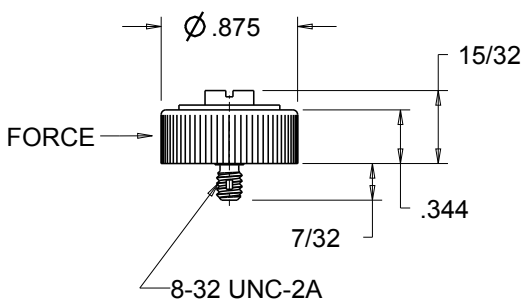
Vlier stock crowders provide positive alignment of stock in dies and fixtures. These precisely engineered mechanical components save pilots and are easy to remove for die sharpening. These devices handle stock as thin as .010" and width variations up to 1/16".

Typical Uses

Fixtures and dies applications.

Special Features

- ◆ Positive alignment
- ◆ Simple to mount
- ◆ Saves pilots



Stock Crowder

Part No.	Color Code (ring plate):	Force
PL4	Silver	2 lbs.
		4 lbs.
PM4	Black	3 lbs.
		6 lbs.
PH4	Gold	5 lbs.
		10 lbs.

TO ASSURE THAT THE PROPER FORCE WILL BE APPLIED AS SHOWN IN CHART, LOCATE TAPPED HOLE 0.407 FROM EDGE OF STOCK (FOR 2, 3, AND 5 LBS.), OR 0.376 FROM EDGE OF STOCK (FOR 4, 6, AND 10 LBS.).

Stock Crowder

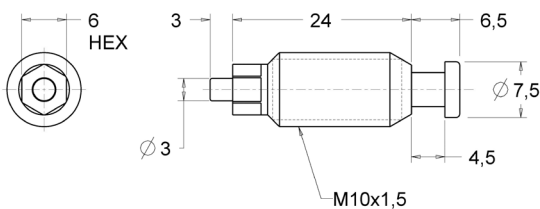
APPLICATIONS

Special Products

When a standard Vlier spring loaded device will not fulfill your requirements, a special design can be engineered that will. Over the years, Vlier has solved many complex problems with a wide variety of specials. We will be happy to provide you with a quote for any requirement you have.

Here are a few examples of special design applications:

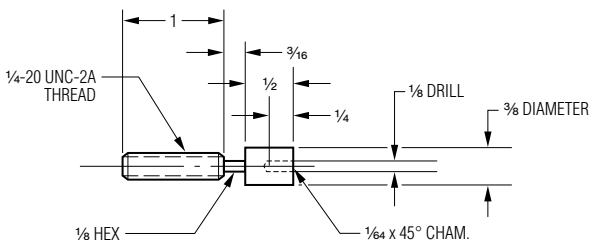
Application: Special plunger with a larger contact surface to better guide the work piece. The taile extended out with better visualization. Hex provide easy access for installation and removal. All stainless steel construction.



Final Force: 2.0 lbs.

Initial Force: 0.5 lbs.

Application: Used as a positioning device. Hex-shaped nose holds its position and will not rotate.



Final Force: 4.0 lbs.

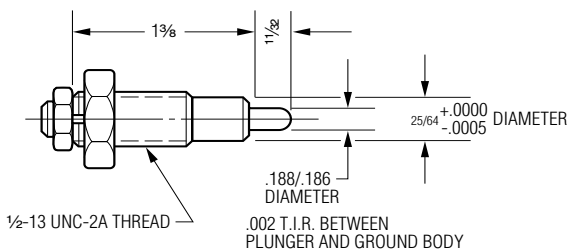
Initial Force: 1.0 lb.

Plunger: 303 stainless steel.

Body: 303 stainless steel.

Spring: 17-7 Ph stainless steel.

SPECIAL PRODUCTS



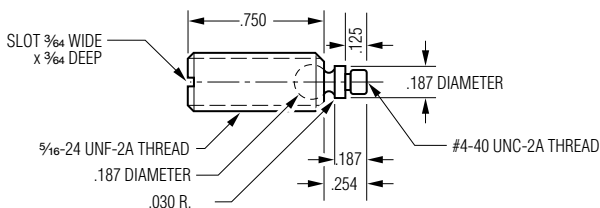
Application: A spring plunger that can be used as both a locator and an adjustable-force positioner.

Spring-Rate: 26.1 lbs. per inch.

Plunger: heat-treated steel.

Body: 416 stainless steel.

Spring: music wire.



Application: Special spring loaded ball plunger that maintains constant tension on a mirror in a large office copying machine. The plunger prevents the mirror from moving due to vibration, yet allows it to be moved by hand.

Initial Force: 6.0 lbs.

Plunger: 303 stainless steel.

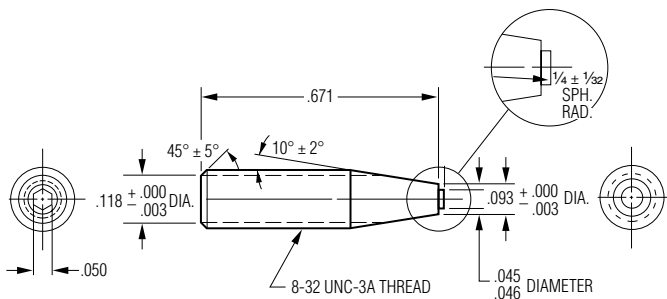
Body: 12L14 steel.

Spring: 17-7 Ph stainless steel.

APPLICATIONS

Special Products

SPECIAL PRODUCTS



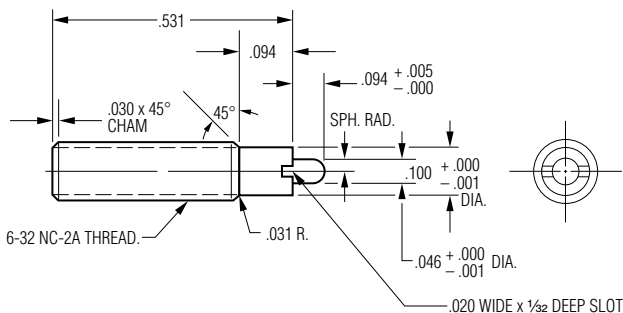
Application: Positioner in an air armament gyro.

Plunger: 303 stainless steel, .012" travel.

Spring-Rate: 39.2 ± 10 lbs. per inch.

Body: 303 stainless steel.

Spring: music wire.



Application: Used as a locator for a component.

Initial Force: 3.0 lbs. ± .2 lb.

Final Force: 1.0 lb. ± .4 lb.

Plunger: 304 stainless steel .094 travel.

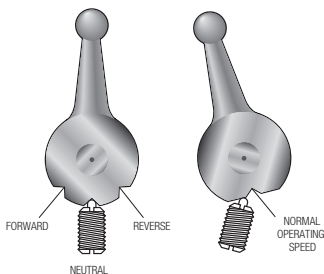
Body: 12L14 steel.

Spring: music wire.

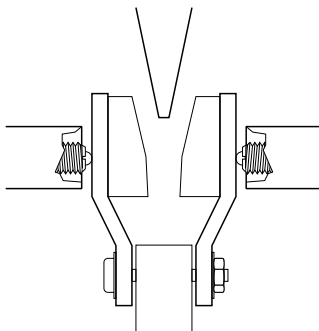
APPLICATIONS

Spring Loaded Devices & Leveling Devices

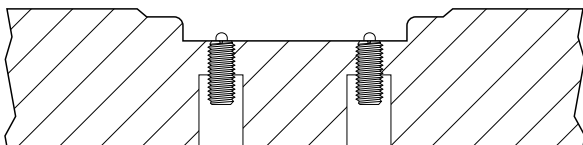
STANDARD SPRING PLUNGERS



In this transportation application two Vlier standard plungers serve double-duty as a gear shift positioner for forward, neutral and reverse and a throttle control and normal speed positioning device.

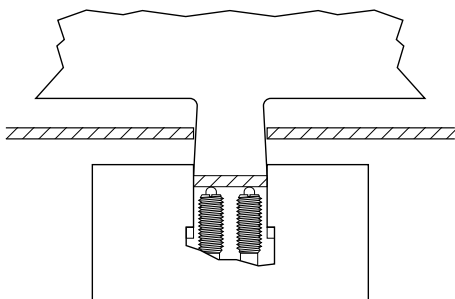


In a knife-type high voltage circuit breaker, Vlier spring loaded devices provide clamping force necessary to hold the conductive surfaces together, countering the heat expansion of the very high currents.

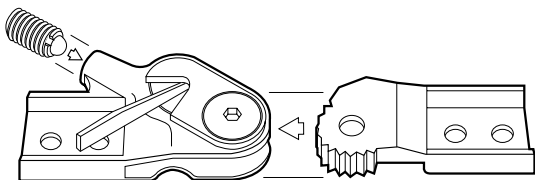


A metal fabrication shop uses Vlier spring loaded devices to break oil seals and eject parts and scrap from punch presses and forging dies.

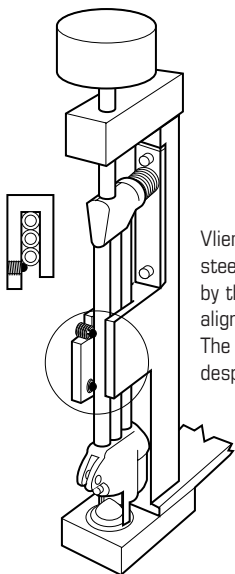
STANDARD SPRING PLUNGERS



In this example a manufacturer of telephone line connectors uses Vlier spring loaded devices as ejectors. The finished connectors are punched on a press and then kicked out by the plunger, more rapidly and consistently than by hand.



Here a Vlier standard spring plunger provides positive locking through a full 135° orthopedic knee joint movement.

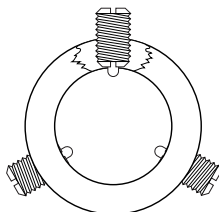
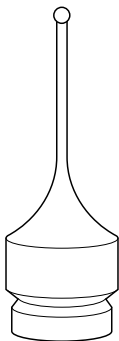


Vlier spring loaded devices hold stainless steel tubes in a welding jig. The pressure applied by the plunger keeps the tubes in perfect alignment to allow cutting, brazing and welding. The spring loaded device maintains alignment despite thermal expansion.

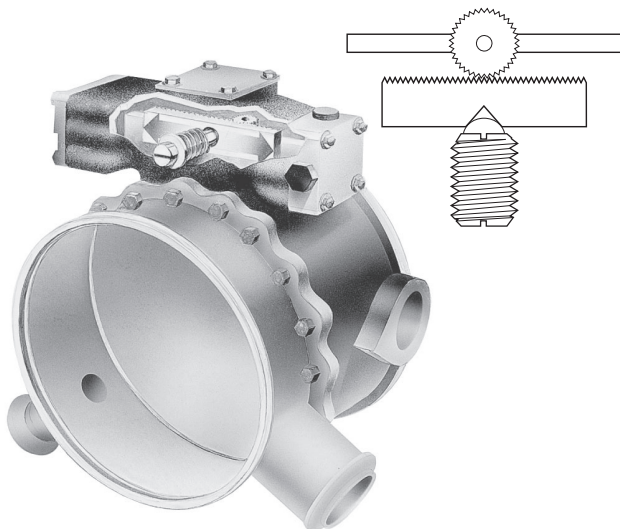
APPLICATIONS

Spring Loaded Devices & Leveling Devices

BALL & STUBBY PLUNGERS

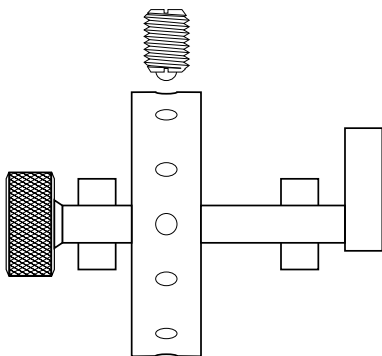


A measuring instrument employs Vlier stubby plungers to create a quick disconnect. Varying probe types and lengths can be quickly interchanged and secured when plunger tips snap into the mating groove.

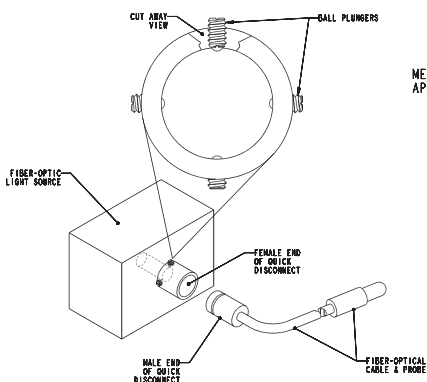


Here a Vlier ball plunger and detent assist a hermetic barrier valve which detents on a rack to control a pinion and operate a butterfly. Air pressure forces the rack out of detent, opening or closing the valve. The Ball Plunger acts as a positive stop until the air pressure is sufficient to force the shaft past the detent.

BALL & STUBBY PLUNGERS



A Vlier ball plunger assists this thermocouple selector switch by providing positive stopping action for each of 13 positions on the rotary switch. The plunger detents into indentations on the rim of a wheel inside the case.



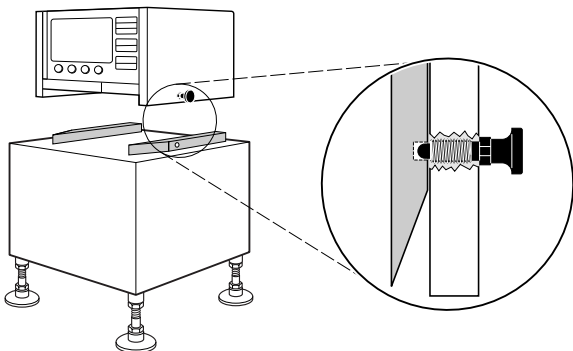
MEDICAL INDUSTRY
APPLICATION

Fiber optic probe quick disconnect. Features 4-48 threads, .187 body length, .020 travel, 1/8-1/2 lb. end force. Steel body, spring and ball, quick cable interchange. Compact and lightweight. High quality mating connection.

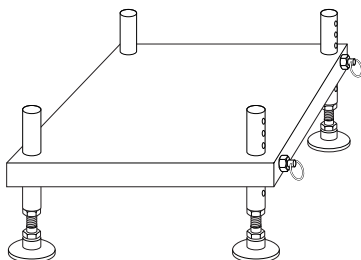
APPLICATIONS

Quick Release Devices & Leveling Devices

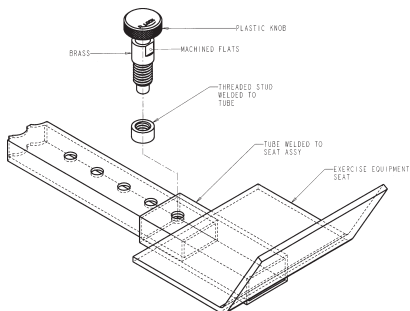
QUICK RELEASE DEVICES



Vlier Delrin® knob steel retractable plungers provide the perfect cosmetic fastener for this medical monitor. Vlier leveling devices support base unit.

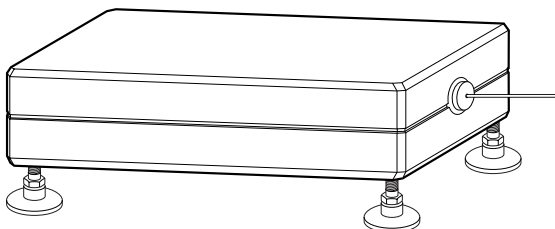


Vlier pull-ring quick release plungers replace locking pins for rapid height adjustment for all kinds of tables and platforms.

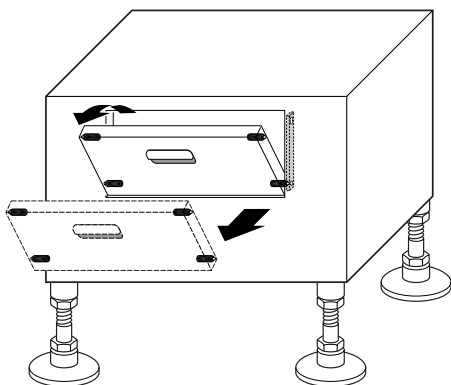


Hand activated seat position adjustment knob. Lockable knob. Features plunger locks for safety, simple operation, rapid position adjustment.

LEVELING DEVICES



Here Vlier leveling devices are employed to adjust the height of an industrial laser. Vlier leveling devices swivel 15° off the centerline to level equipment on uneven surfaces. The stud is machined from hex stock and the base is roll crimped onto the stud to provide solid leveling.



In this application Vlier stud type leveling devices provide solid support and leveling for this computer peripheral. Vlier spring plungers are also used to create both a door latch and removable hinge in this application.

The preceding examples represent only a small sample of the potential applications for Vlier spring loaded devices and levelers. For more information on standard product applications contact your Vlier stocking distributor or a Vlier application engineer.

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