



2006/2007 POCKET CATALOG

- ENHANCED SPRINGS
- QUICK RELEASE PLUNGERS
- LEVELING DEVICES
- MECHANICAL COMPONENTS

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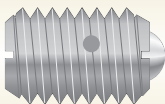


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NYLON BALL METRIC PLUNGER

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LOW COST VLIER LOCK PINS

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NOW WITH NICKEL FINISH**

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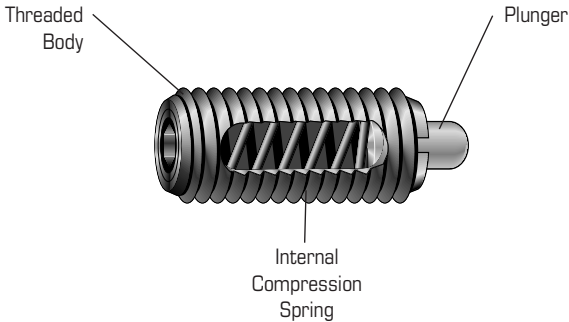
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WHAT IS A SPRING-LOADED DEVICE?



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 Plungers

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 .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.

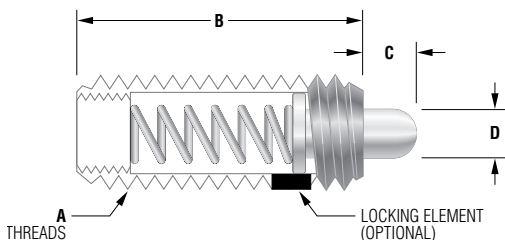
Travel

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

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VLIET MATERIALS SPECIFICATION

Material	Description
Stainless Steel	Good in corrosive environments, food processing and high temperature applications (spring can withstand 600 °F). Grades: 440C***, 300 Series per ASTM A-484 or ASTM A-582, 17-7PH
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 Ledloy AX
Music Wire	Used on most carbon steel products.
Nylon or Delrin®	Will not mar soft material such as aluminum or brass.
Phenolic	Will not mar soft material such as aluminum or brass. More brittle than nylon and delrin.

Delrin® is a registered Trademark of DuPont Corp.

** NOTE: All steel plungers are typically case hardened to .015-.010 inches in depth to a hardness of between Rc 55 - 62.

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

Finish Platings

- ◆ Zinc plate: yellow, clear or black chromate conversion coat
- ◆ Black oxide
- ◆ Other special platings

Body 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

* 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

Plastic 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? If so, add the indicated suffix "N" or "P" to the part number depending on the thread size of the product. (See section About Nylon Locking Elements)
- 7 Do you require a special? Fill out the Special Application Quotation Request Form on pages 156 and 157 and FAX it to your Vlier Stocking Distributor.
- 8 If ordering a standard part ... order by part number.

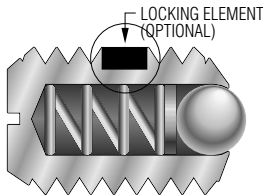
To Order

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 comes in two forms as shown in the table below:

Locking Element	Thread Sizes	Part Number Suffix
Nylon Pellet	$\frac{5}{16}$ " and larger	N
Nylon Patch	$\frac{1}{4}$ " and smaller	P

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

When ordering the locking element, add "N" or "P" to the end of the part number for enhanced springs. "N" for $\frac{5}{16}$ inch threads and larger, "P" for threads $\frac{1}{4}$ inch and smaller. For quick release plungers, add "P" to the end of the part number.

Installation with Locking Elements

When using the pellet-type 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. This prevents dislodging the nylon pellet, which is press-fit into the body.

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.

Vlier applies a much lighter locking element today than in years past, and our spring-loaded devices work in soft metal applications the majority of the time. 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.

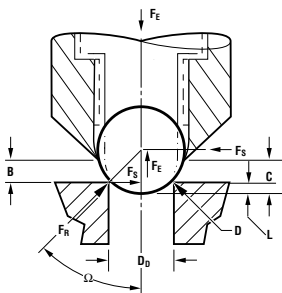
Angle $\Omega = 30^\circ$ from layout.

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

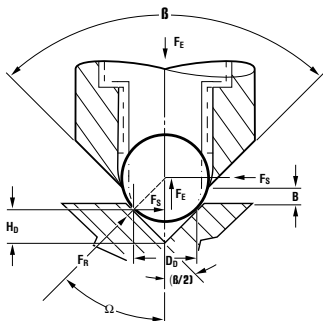
Substitute in above equation.

$$F_S = F_E (\tan \Omega) = 10 (.58)$$

$$F_S = 5.80 \text{ pounds}$$



Standard groove & thru-hole configuration*



Countersink hole & V-groove configuration*

Variables

F_E = End Force

F_S = Side Force

Ω = Contact angle

β = 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_D = Detent hole diameter

C = Full travel (stroke)

H_D = 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)
No. 4	M2.5x0.45	.60
No. 5	M3x0.5	1.25
No. 6	M3.5x0.6-6g	1.65
No. 8	M4x0.7-6g	2.15
No. 10	M5x0.8-6g	3.15
1/4	M6x1-6g	6.0
5/16	M8x1.25	11.0
3/8	M10x1.5	16.0
7/16	M11x1.5	22.0
1/2	M12x1.75	28.0
9/16	M14x2.0	36.0
5/8	M16x2.0	55.0
3/4	M20x2.5	70.0
7/8	M22x2.5	95.0
1	M24x3.0	130.0
1 1/8	M30x3.5	160.0
1 1/4	M33x3.5	190.0

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_0) 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: $D_0 = D \sin \Omega$

For countersunk holes: $D_0 = D \cos (\beta/2) = D \sin \Omega$

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

Hole Depth: $H_0 = \frac{(D/2) \cos (\beta/2)}{\tan (\beta/2)}$

Guidelines for Hole Depth

Control hole depth (H_0) and detent hole diameter (D_0) to ensure adequate clearance (B) 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.



GENERAL INFORMATION

Pocket Catalog

PRODUCT SUPPORT

Engineering Support

Vlier's Application Engineering staff is trained and ready to provide comprehensive support for Vlier Spring-Loaded Devices, 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 www.vlier.com or call Vlier office.

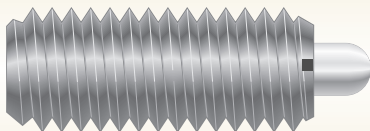
VLIER[®]

Product Use MATRIX

	Part Ejection	Electrical Contact	Electrical Insulator	Adjustable Set Screw	Indexing	Position & Secure	Positive Locking	Quick Disconnect	Fastening	Shock Attenuation	Equipment Support	Instrument Leveling	Height Control	Tool Securing	Part Stops	Clamping	Positive Alignment	Bolting	Jig Locking	Fixturing
Enhanced Springs	●	●	●	●	●	●	●	●												
Quick Release				●	●	●	●	●												
Leveling Devices									●	●	●	●								
Mechanical Components													●	●	●	●	●	●	●	●

ENHANCED SPRINGS

Spring-Loaded Devices



Standard Plungers

Description

Vlier standard plungers offer long travel, large bearing surfaces and numerous material and design options.

Typical Uses

- ◆ Positioning
- ◆ Detents
- ◆ Indexes
- ◆ Ejecting
- ◆ Contacts
- ◆ Lifters
- ◆ Locking
- ◆ Insulators
- ◆ Latches

STANDARD PLUNGER FAMILY

Materials

Steel

Types

Unified ANSI & Metric
Phenolic Nose, Delrin Nose
Hexnose[®] Highlife[®] LongTravel
Posi Hex

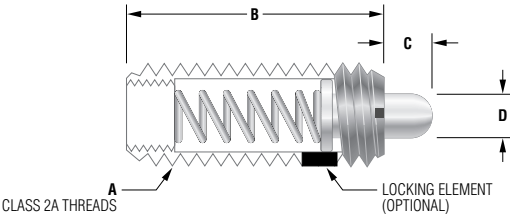
Stainless Steel

Unified ANSI & Metric
Delrin Nose, Posi Hex

Special Features

- ◆ Easy Installation
- ◆ Corrosion resistance
- ◆ Heavy & light end forces
- ◆ Non-marring materials
- ◆ Accurate alignment
- ◆ Non-chipping materials
- ◆ Wear resistance
- ◆ Insulating properties
- ◆ Special environments

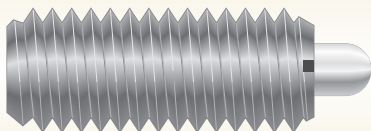
Standard Plungers



Steel/ Stainless Steel					Heavy End Force			
Part No.		End Force, Lbs.			A	B	C	D
Steel	Stainless Steel	Init.	Mid.	Final				
S48	SSS48	1.5	3.0	4.5	6-32	17/32	1/16	.044-.045
S48A	SSS48A	1.0	1.3	1.6	6-32	3/8	1/16	.044-.045
S50	SSS50	2.7	5.0	7.3	8-32	5/8	3/32	.069-.070
S52	SSS52	2.9	7.0	11.1	10-32	3/4	1/8	.091-.092
S54	SSS54	3.0	8.0	13.0	1/4-20	1	3/16	.117-.118
S54A	SSS54A	3.0	8.0	13.0	1/4-28	1	3/16	.117-.118
S54B	SSS54B	2.0	5.5	9.0	1/4-20	3/4	1/8	.117-.118
S56	SSS56	3.0	9.0	15.0	5/16-18	1	3/16	.133-.135
S58	SSS58	5.5	10.0	14.5	3/8-16	1 1/8	3/16	.186-.187
S60	SSS60	6.6	12.0	17.4	1/2-13	1 1/4	1/4	.247-.248
S62	SSS62	10.5	18.0	25.5	5/8-11	1 1/2	5/16	.308-.310
S64	SSS64	6.7	22.0	37.3	3/4-10	1 3/4	5/16	.373-.374
S66	SSS66	16.0	42.0	68.0	1-8	2 13/32	1/2	.496-.498

Steel/ Stainless Steel					Light End Force			
Part No.		End Force, Lbs.			A	B	C	D
Steel	Stainless Steel	Init.	Mid.	Final				
S49	SSS49	0.5	1.0	1.5	6-32	17/32	1/16	.044-.045
S51	SSS51	0.7	1.5	2.3	8-32	5/8	3/32	.069-.070
S53	SSS53	1.3	2.0	2.7	10-32	3/4	1/8	.091-.092
S55	SSS55	1.0	2.5	4.0	1/4-20	1	3/16	.117-.118
S55A	SSS55A	1.0	2.5	4.0	1/4-28	1	3/16	.117-.118
S57	SSS57	1.5	3.0	4.5	5/16-18	1	3/16	.133-.135
S59	SSS59	2.8	5.0	7.2	3/8-16	1 1/8	3/16	.186-.187
S61	SSS61	2.7	6.0	9.3	1/2-13	1 1/4	1/4	.247-.248
S63	SSS63	3.5	7.0	10.5	5/8-11	1 1/2	5/16	.308-.310
S67	SSS67	4.0	17.5	31.0	1-8	2 13/32	1/2	.496-.498

To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES 5/16–18 AND LARGER; 1/4-20 AND UNDER, ADD “P” AT END OF PART NO. ...

**Standard Plungers**

Metric Steel

Vlier Standard Metric Steel plungers offer metric thread sizes and large bearing surfaces that prevent binding and assure perfect alignment at any extension.

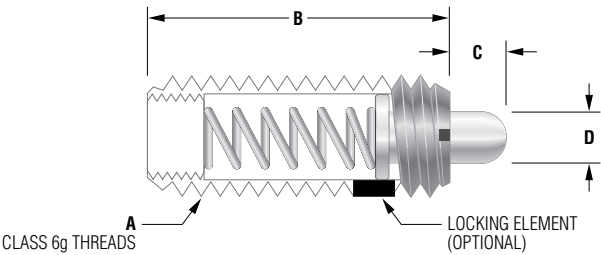
Metric Stainless Steel

Vlier Standard Metric Stainless Steel plungers offer metric thread sizes in an all stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Metric threads
- ◆ Long travel
- ◆ Heavy & light end forces
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures

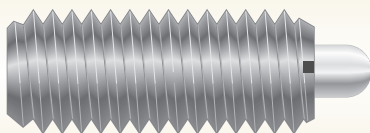
Standard Plungers - Metric



Steel/Stainless Steel-Metric				Heavy End Force			
Part No.		End Forces N (Lbs)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Init.	Final				
SM6A	SSM6A	18 (4.05)	50 (11.24)	M6 x 1.0	20 (.787)	2,5 (.098)	2,7 (.106)
SM8A	SSM8A	25 (5.62)	70 (15.74)	M8 x 1.25	22 (.866)	3 (.118)	3,5 (.138)
SM10A	SSM10A	25 (5.62)	70 (15.74)	M10 x 1.5	22 (.866)	3 (.118)	4 (.157)
SM12A	SSM12A	45 (10.12)	110 (24.73)	M12 x 1.75	28 (1.102)	4 (.157)	6 (.236)

Steel/Stainless Steel-Metric				Light End Force			
Part No.		End Forces N (Lbs)		A	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Init.	Final				
SML6A	SSML6A	7 (1.57)	20 (4.5)	M6 x 1.0	20 (.787)	2,5 (.098)	2,7 (.106)
SML8A	SSML8A	9 (2.02)	35 (7.87)	M8 x 1.25	22 (.866)	3 (.118)	3,5 (.138)
SML10A	SSML10A	9 (2.02)	35 (7.87)	M10 x 1.5	22 (.866)	3 (.118)	4 (.157)
SML12A	SSML12A	10 (2.25)	55 (12.36)	M12 x 1.75	28 (1.102)	4 (.157)	6 (.236)

To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES M8 X 1.25 AND LARGER; M6 X 1.0 AND UNDER, ADD “P” AT END OF PART NUMBER.



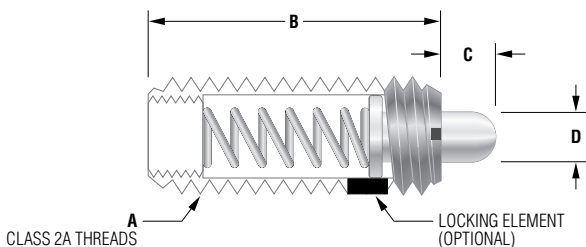
Standard Plungers

Phenolic & Delrin® Nose Plungers

Vlier Steel body Phenolic nose and Delrin nose plungers and Stainless Steel body Delrin nose plungers are ideal for use with aluminum, brass or any soft, easily marred material.

Special Features

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



To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES ¼-20 AND LARGER; 10-32 AND SMALLER, ADD “P” AT END OF PART NO.

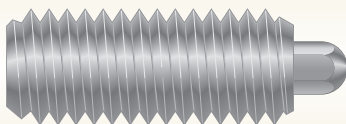
Steel - Phenolic Nose/Delrin® Nose					Heavy End Force			
Part No.		End Force, Lbs.			A	B	C	D
Phenolic Plunger	Delrin Plunger	Init.	Mid.	Final				
NS50	NNS50	2.7	5.0	7.3	8-32	5/8	3/32	.068-.070
NS52	NNS52	2.9	7.0	11.1	10-32	3/4	1/8	.090-.092
NS54	NNS54	3.0	8.0	13.0	1/4-20	1	3/16	.116-.118
NS54A	NNS54A	3.0	8.0	13.0	1/4-28	1	3/16	.116-.118
NS56	NNS56	3.0	9.0	15.0	5/16-18	1	3/16	.133-.135
NS58	NNS58	5.5	10.0	14.5	3/8-16	1 1/8	3/16	.185-.187
NS60	NNS60	6.6	12.0	17.4	1/2-13	1 1/4	1/4	.246-.248
NS62	NNS62	10.5	18.0	25.5	5/8-11	1 1/2	5/16	.308-.310

Steel - Phenolic Nose/Delrin Nose					Light End Force			
Part No.		End Force, Lbs.			A	B	C	D
Phenolic Plunger	Delrin Plunger	Init.	Mid.	Final				
NS51	NNS51	0.7	1.5	2.3	8-32	5/8	3/32	.068-.070
NS53	NNS53	1.3	2.0	2.7	10-32	3/4	1/8	.090-.092
NS55	NNS55	1.0	2.5	4.0	1/4-20	1	3/16	.116-.118
NS55A	NNS55A	1.0	2.5	4.0	1/4-28	1	3/16	.116-.118
NS57	NNS57	1.5	3.0	4.5	5/16-18	1	3/16	.133-.135
NS59	NNS59	2.8	5.0	7.2	3/8-16	1 1/8	3/16	.185-.187
NS61	NNS61	2.7	6.0	9.3	1/2-13	1 1/4	1/4	.246-.248
NS63	NNS63	3.5	7.0	10.5	5/8-11	1 1/2	5/16	.308-.310

Stainless Steel - Delrin Nose				Heavy End Force			
Part No.	End Force, Lbs.			A	B	C	D
	Init.	Mid.	Final				
SSSD50	2.7	5.0	7.3	8-32	5/8	3/32	.068-.070
SSSD52	2.9	7.0	11.1	10-32	3/4	1/8	.090-.092
SSSD54	3.0	8.0	13.0	1/4-20	1	3/16	.116-.118
SSSD54A	3.0	8.0	13.0	1/4-28	1	3/16	.116-.118
SSSD54B	2.0	5.5	9.0	1/4-20	3/4	1/8	.116-.118
SSSD56	3.0	9.0	15.0	5/16-18	1	3/16	.133-.135
SSSD58	5.5	10.0	14.5	3/8-16	1 1/8	3/16	.186-.187
SSSD60	6.6	12.0	17.4	1/2-13	1 1/4	1/4	.247-.248
SSSD62	10.5	18.0	25.5	5/8-11	1 1/2	5/16	.308-.310

Stainless Steel - Delrin Nose					Light End Force		
Part No.	End Force, Lbs.			A	B	C	D
	Init.	Mid.	Final				
SSSD51	0.7	1.5	2.3	8-32	5/8	3/32	.069-.070
SSSD53	1.3	2.0	2.7	10-32	3/4	1/8	.091-.092
SSSD55	1.0	2.5	4.0	1/4-20	1	3/16	.117-.118
SSSD55A	1.0	2.5	4.0	1/4-28	1	3/16	.117-.118
SSSD57	1.5	3.0	4.5	5/16-18	1	3/16	.133-.135
SSSD59	2.8	5.0	7.2	3/8-16	1 1/8	3/16	.185-.187
SSSD61	2.7	6.0	9.3	1/2-13	1 1/4	1/4	.246-.248
SSSD63	3.5	7.0	10.5	5/8-11	1 1/2	5/16	.308-.310

DELIRIN IS A REGISTERED TRADEMARK OF DUPONT CORP.



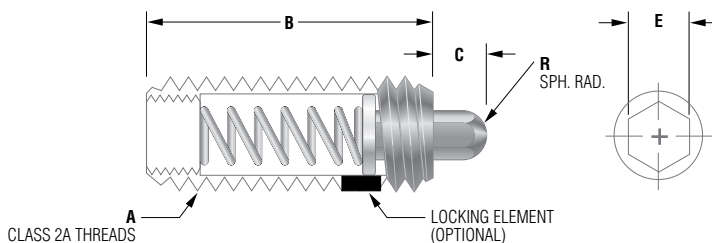
Standard Plungers

Hexnose® Steel Plungers

Vlier Hexnose Standard Steel Plungers provide a hexagonal plunger nose for easy adjustment with a standard end or socket wrench plunger end to speed installation or removal. Hexagonal plungers are hardened for long life.

Special Features

- ◆ Hexagonal nose design
- ◆ Case hardened plunger
- ◆ Fast installation or removal
- ◆ Steel black finish



Hexnose-Steel				Heavy End Force				
Part No.	End Force, Lbs.			A	B	C	E	R
	Init.	Mid.	Final					
H54	3.0	8.0	13.0	1/4-20	1	3/16	1/8	.071
H56	3.0	9.0	15.0	5/16-18	1	3/16	1/8	.071
H58	5.5	10.0	14.5	3/8-16	1 1/8	3/16	3/16	.108
H60	6.6	12.0	17.4	1/2-13	1 1/4	1/4	1/4	.144
H62	10.5	18.0	25.5	5/8-11	1 1/2	5/16	5/16	.179
H64	6.7	22.0	37.3	3/4-10	1 3/4	5/16	3/8	.215
H66	16.0	42.0	68.0	1-8	2 13/32	1/2	1/2	.290

Standard Plungers - Special Types

Hexnose-Steel				Light End Force				
Part No.	End Force, Lbs.			A	B	C	E	R
	Init.	Mid.	Final					
H55	1.0	2.5	4.0	¼-20	1	⅜	⅛	.071
H57	1.5	3.0	4.5	⅝-18	1	⅜	⅛	.071
H59	2.8	5.0	7.2	⅜-16	1⅛	⅜	⅜	.108
H61	2.7	6.0	9.3	½-13	1¼	¼	¼	.144
H63	3.5	7.0	10.5	⅝-11	1½	⅝	⅝	.179
H67	4.0	17.5	31.0	1-8	2⅜	½	½	.290

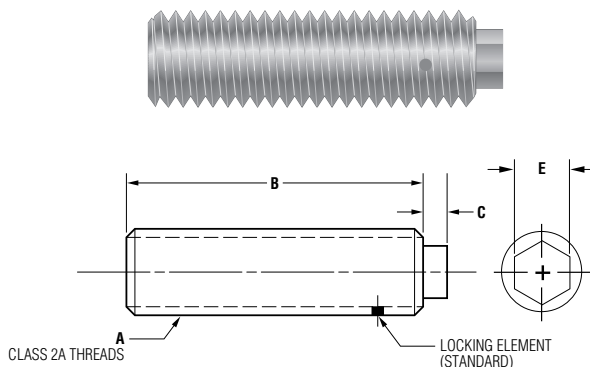
To order with locking element – ADD “N” AT END OF PART NUMBER.

Hi-Life® Steel Plungers

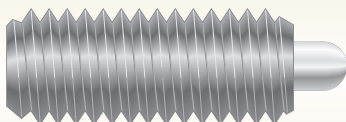
Vlier Hi-Life steel plungers are specially designed to take tough abuse of high-speed, long-life product applications.

Special Features

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



Hi-Life-Steel						
Part No.	End Force, Lbs.		A	B	C	E
	Initial	Final				
HT54N	½	6 ⅛	¼-20	1.343	.078	⅛
HT56N	½	8	⅝-18	1.406	.088	⅛
HT58N	½	9 ⅞	⅜-16	1.532	.097	⅜
HT60N	½	16	½-13	1.718	.105	¼



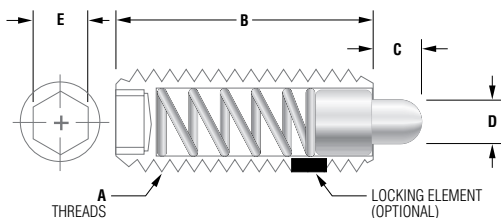
Standard Plungers

Posi Hex - Steel Plungers

Vlier Posi Hex Steel 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.

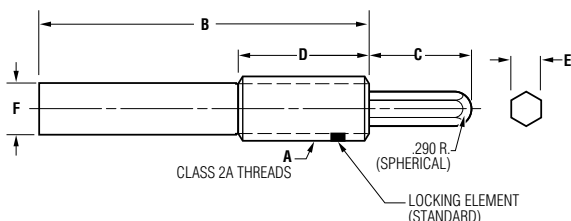
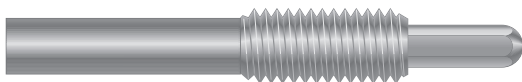
Posi Hex - Stainless Steel Plungers

Vlier Posi Hex Stainless Steel Plungers are made entirely of stainless steel alloy and provide maximum protection against rust and corrosion.



Long Travel - Steel Plungers

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.



Standard Plungers - Posi Hex & Long Travel

Posi Hex - Steel/Stainless Steel					Heavy End Force				
Part No.		End Force, Lbs.			A	B	C	D	E
Steel	Stainless Steel	Init.	Mid.	Final					
PH48	SSPH48	1.5	3.0	4.5	6-32	17/32	1/16	.044-.045	.050
PH48B	SSPH48B	1.0	1.3	1.6	6-32	17/32	1/16	.044-.045	.050
PH50	SSPH50	2.7	5.0	7.3	8-32	5/8	3/32	.069-.070	.063
PH52	SSPH52	2.9	7.0	11.1	10-32	3/4	1/8	.091-.092	.063
PH54	SSPH54	3.0	8.0	13.0	1/4-20	1	3/16	.117-.118	.079
PH54A	SSPH54A	3.0	8.0	13.0	1/4-28	1	3/16	.117-.118	.079
PH54B	SSPH54B	2.0	5.5	9.0	1/4-20	3/4	1/8	.117-.118	.079
PH56	SSPH56	3.0	9.0	15.0	5/16-18	1	3/16	.133-.135	.093

Posi Hex - Steel/Stainless Steel					Light End Force				
Part No.		End Force, Lbs.			A	B	C	D	E
Steel	Stainless Steel	Init.	Mid.	Final					
PH49	SSPH49	0.5	1.0	1.5	6-32	17/32	1/16	.044-.045	.050
PH51	SSPH51	0.7	1.5	2.3	8-32	5/8	3/32	.069-.070	.063
PH53	SSPH53	1.3	2.0	2.7	10-32	3/4	1/8	.091-.092	.063
PH55	SSPH55	1.0	2.5	4.0	1/4-20	1	3/16	.117-.118	.079
PH55A	SSPH55A	1.0	2.5	4.0	1/4-28	1	3/16	.117-.118	.079
PH57	SSPH57	1.5	3.0	4.5	5/16-18	1	3/16	.133-.135	.093

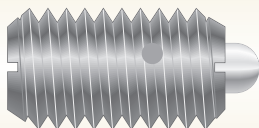
To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES 1/4-20 AND LARGER; 10-32 AND SMALLER, ADD “P” AT END OF PART NO.

Long Travel - Steel			Heavy End Force					
Part No.	End Force, Lbs.		A	B	C	D	E	F
	Initial	Final						
HH6251	4.0	20.0	5⁄8-11	3.12	1.00	1.25	.31	.510
HH7501	4.0	35.0	3⁄4-10	3.75	1.00	1.50	.38	.612
HH1000	16	50¾	1-8	5.00	1.00	2.00	.50	.844
HH1015	16	68	1-8	5.00	1.50	2.00	.50	.844

Long Travel - Steel				Light End Force				
Part No.	End Force, Lbs.		A	B	C	D	E	F
	Initial	Final						
HL1000	4	22	1-8	5	1.00	2.00	.50	.844
HL1015	4	31	1-8	5	1.50	2.00	.50	.844

ENHANCED SPRINGS

Spring-Loaded Devices



Stubby Plungers

Description

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

Typical Uses

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

STUBBY PLUNGER FAMILY

Materials

Steel

Stainless Steel

Types

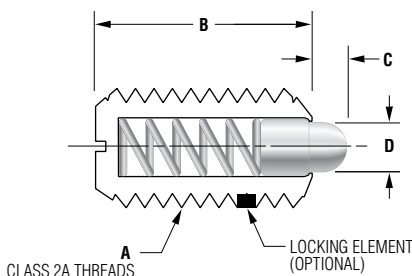
Unified ANSI
Delrin[®] Nose
Steel Nose

Unified ANSI
Delrin[®] Nose

Special Features

- ◆ Case hardened plunger
- ◆ Wear & corrosion resistance
- ◆ Compact size
- ◆ Allows some sideloads
- ◆ Intermediate travel
- ◆ Screwdriver installation

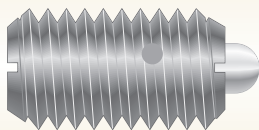
Stubby Plungers-Steel Nose



Steel/Stainless Steel				Heavy End Force			
Part No.		End Force, Lbs.		A	B	C	D
Steel	Stainless Steel	Initial	Final				
M50A	SSM50A	1½	4¾	8-32	.437	.052	.070
M50	SSM50	1½	4¾	8-36	.437	.052	.070
M52	SSM52	1¾	6¼	10-32	.468	.065	.093
M54	SSM54	3	10½	¼-20	.531	.078	.119
M56	SSM56	3¾	15½	⅝-18	.562	.084	.135
M58	SSM58	4½	18½	⅜-16	.625	.110	.186
M60	SSM60	5	28	½-13	.750	.151	.248
M62	SSM62	7	50	⅝-11	1.062	.215	.310

Steel/Stainless Steel				Light End Force			
Part No.		End Force, Lbs.		A	B	C	D
Steel	Stainless Steel	Initial	Final				
M51A	SSM51A	½	1½	8-32	.437	.052	.070
M51	SSM51	½	1½	8-36	.437	.052	.070
M53	SSM53	¾	2½	10-32	.468	.065	.093
M55	SSM55	1	3½	¼-20	.531	.078	.119
M57	SSM57	1¼	4	⅝-18	.562	.084	.135
M59	SSM59	1½	5	⅜-16	.625	.110	.186
M61	SSM61	1¾	5½	½-13	.750	.151	.248
M63	SSM63	2	8½	⅝-11	1.062	.215	.310

To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES ¼-20 AND LARGER; 10-32 AND SMALLER, ADD “P” AT END OF PART NO.

**Stubby Plungers****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.

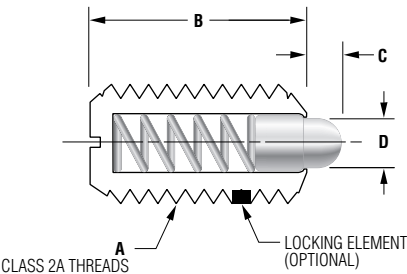
Stubby Stainless Steel - Delrin® Nose

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

Special Features

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

Stubby Plungers - Delrin Nose



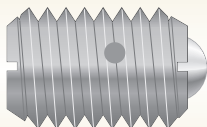
Steel/Stainless Steel Body-Delrin Nose B NosHeavy End Force							
Part No.		End Force, Lbs.		A	B	C	D
Steel Body	Stainless Steel Body	Initial	Final				
NM50A	SSMD50A	1½	4¾	8-32	.437	.052	.070
NM50	SSMD50	1½	4¾	8-36	.437	.052	.070
NM52	SSMD52	1¾	6¼	10-32	.468	.065	.093
NM54	SSMD54	3	10½	¼-20	.531	.078	.119
NM56	SSMD56	3¾	15½	⅝-18	.562	.084	.135
NM58	SSMD58	4½	18½	⅜-16	.625	.110	.186
NM60	SSMD60	5	28	½-13	.750	.151	.248
NM62	SSMD62	7	50	⅝-11	1.062	.215	.310

Steel/Stainless Steel Body-Delrin Nose				Light End Force			
Part No.		End Force, Lbs.		A	B	C	D
Steel Body	Stainless Steel Body	Initial	Final				
NM51A	SSMD51A	½	1½	8-32	.437	.052	.070
NM51	SSMD51	½	1½	8-36	.437	.052	.070
NM53	SSMD53	¾	2½	10-32	.468	.065	.093
NM55	SSMD55	1	3½	¼-20	.531	.078	.119
NM57	SSMD57	1¼	4	⅝-18	.562	.084	.135
NM59	SSMD59	1½	5	⅜-16	.625	.110	.186
NM61	SSMD61	1¾	5½	½-13	.750	.151	.248
NM63	SSMD63	2	8½	⅝-11	1.062	.215	.310

To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES ¼-20 AND LARGER; 10-32 AND SMALLER, ADD “P” AT END OF PART NO.
DELRIN IS A REGISTERED TRADEMARK OF DUPONT CORP.

ENHANCED SPRINGS

Spring-Loaded Devices



Ball Plungers

Description

Vlier Steel & Stainless Steel Ball plungers are compact units suitable for applications with side loading requirements. Stainless Steel Ball plungers offer maximum protection against rust and corrosion ideal for food, medical, and special environments.

Typical Uses

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

BALL PLUNGER FAMILY

Materials

Steel

Types

Unified ANSI & Metric
Delrin® Body - Stainless Ball
Steel Body - Nylon Ball
Steel Body - Stainless Ball

Stainless Steel

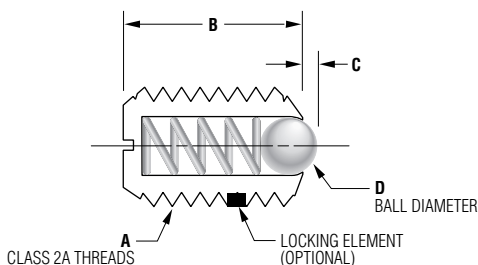
Unified ANSI & Metric
Stainless Body - Nylon Ball
Delrin Body - Stainless Ball
Stainless Steel Ball & Body

Delrin

Delrin Body - Nylon Ball

Special Features

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



Steel/ Stainless Steel Ball Plunger							
Part No.		End Force, Lbs.		A	B	C	D
Steel	Stainless Steel	Init.	Final				
B46	SSB46	1/8	1/2	4-48	.187	.020	.062
B47	SSB47	1/4	3/4	5-40	.250	.020	.062
B48	SSB48	1/2	1	6-40	.312	.023	.078
B50A	SSB50A	1/2	1 1/4	8-32	.344	.025	.094
B50	SSB50	1/2	1 1/4	8-36	.344	.025	.094
B52	SSB52	1 1/2	3	10-32	.513	.025	.094
BL52	SSBL52	1/2	1 1/2				
BH52	SSBH52	2	5				
B54	SSB54	3	7	1/4-20	.531	.035	.125
BL54	SSBL54	2	4				
BH54	SSBH54	4	12				
B56	SSB56	4	9	5/16-18	.578	.040	.156
BL56	SSBL56	2	4 1/2				
BH56	SSBH56	6	17				
B58	SSB58	5	10	3/8-16	.625	.048	.188
BL58	SSBL58	2 1/2	5				
BH58	SSBH58	6	21				
B60	SSB60	6	12	1/2-13	.750	.072	.281
BL60	SSBL60	3	6				
BH60	SSBH60	6	30				
B62	SSB62	9	18	5/8-11	.984	.096	.375
BL62	SSBL62	4 1/2	9				
BH62	SSBH62	7	50				

To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES 1/4 -20 AND LARGER; 10-32 AND SMALLER, ADD “P” AT END OF PART NO.

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 AS LISTED 8-36 AND SMALLER ARE NOT COLOR CODED.



Posi Hex Ball Plungers

Posi Hex - Steel Ball Plungers

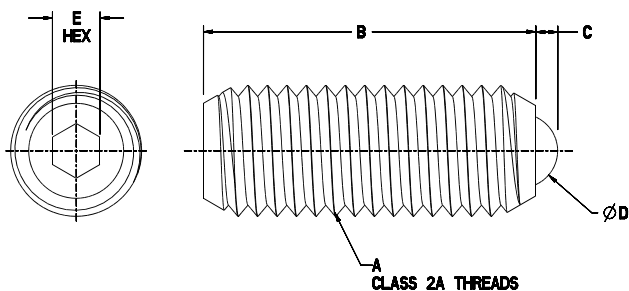
The Vlier Posi Hex Steel Ball Plungers allow for easy installation and removal using a hex wrench. Posi Hex plungers withstand high torque and are recommended for use with nylon locking elements.

Posi Hex - Stainless Steel Ball Plungers

The Vlier Posi Hex Stainless Steel Ball Plungers are made entirely of stainless steel alloy and provide maximum protection against rust and corrosion.

Special Features

- ◆ Hex Wrench Installation
- ◆ Will withstand high torque
- ◆ Quick installation and removal
- ◆ Controlled end forces

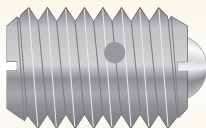


Enhanced Posi-Hex Ball Plungers - Steel

PART NUMBERS	END FORCES (LB)		A	B (+/- .010)	C	D	E
	INITIAL	FINAL	THREAD SIZE	BODY LENGTH	PROJECTION	BALL DIAMETER	HEX SIZE
PHB48A	.50	1.0	6-40	.350	.023	.078	.050
PHB50	.50	1.25	8-32	.445	.025	.094	.063
PHB52	1.5	3.0	10-32	.570	.025	.094	.079
PHB54	3.0	7.0	1/4-20	.675	.035	.125	.079
PHB56	4.0	9.0	5/16-18	.720	.040	.156	.095
PHB58	5.0	10.0	3/8-16	.800	.048	.188	.156
PHB60	6.0	12.0	1/2-13	1.05	.072	.281	.219
PHB62	9.0	18.0	5/8-11	1.25	.096	.375	.253

Enhanced Posi-Hex Ball Plungers - Stainless Steel

PART NUMBERS	END FORCES (LB)		A	B (+/- .010)	C	D	E
	INITIAL	FINAL	THREAD SIZE	BODY LENGTH	PROJECTION	BALL DIAMETER	HEX SIZE
SSPHB48A	.50	1.0	6-40	.350	.023	.078	.050
SSPHB50	.50	1.25	8-32	.445	.025	.094	.063
SSPHB52	1.5	3.0	10-32	.570	.025	.094	.079
SSPHB54	3.0	7.0	1/4-20	.675	.035	.125	.079
SSPHB56	4.0	9.0	5/16-18	.720	.040	.156	.095
SSPHB58	5.0	10.0	3/8-16	.800	.048	.188	.156
SSPHB60	6.0	12.0	1/2-13	1.05	.072	.281	.219
SSPHB62	9.0	18.0	5/8-11	1.25	.096	.375	.253

**Ball Plungers**

Metric Steel

Vlier Metric Steel Ball Plungers provide all the benefits of Vlier Ball plungers in a metric thread.

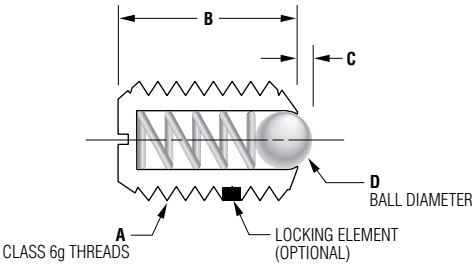
Metric Stainless Steel

Vlier Metric Stainless Steel Ball Plungers offer metric thread sizes in an all stainless steel design for maximum protection against rust and corrosion.

Special Features

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

Ball Plungers - Metric



Steel/ Stainless Steel Ball Plunger					Metric		
Part No.		End Force, N (Lbs.)		A (Class Threads) 6g-ISO	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Init.	Final				
BM4A	SBM4	4 (.90)	10 (2.25)	M4 x 0.7	9 (.354)	0,8 (.032)	2,5 (.098)
BM6A	SBM6	9 (2.02)	13 (2.92)	M6 x 1.0	14 (.551)	1 (.039)	3,5 (.138)
BML6A	SBML6	2 (.45)	6 (1.35)				
BMH6A	SBMH6	28 (6.30)	40 (9.0)				
BM8A	SBM8	15 (3.37)	30 (6.75)	M8 x 1.25	16 (.630)	1,5 (.059)	5,0 (.196)
BML8A	SBML8	5 (1.12)	10 (2.25)				
BMH8A	SBMH8	40 (9)	60 (13.5)				
BM10A	SBM10	20 (4.5)	35 (7.87)	M10 x 1.5	19 (.748)	2 (.079)	6 (.236)
BML10A	SBML10	8 (1.8)	15 (3.37)				
BMH10A	SBMH10	60 (13.5)	90 (20.23)				
BM12A	SBM12	30 (6.75)	55 (12.36)	M12 x 1.75	22 (.866)	2,5 (.098)	8 (.315)
BML12A	SBML12	10 (2.25)	20 (4.5)				
BMH12A	SBMH12	75 (16.86)	115 (25.85)				

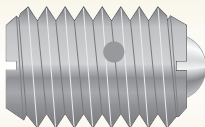
To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES M8 X 1.25 AND LARGER; M6 X 1.0 AND SMALLER, ADD “P” AT END.

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.

**Ball Plungers****Steel Body - Nylon Ball**

Vlier Steel Body - Nylon Ball Plungers provide resistance to repeated impacts, moisture, solvents, heat up to 190°F.

Plunger tip provides electrical insulating properties.

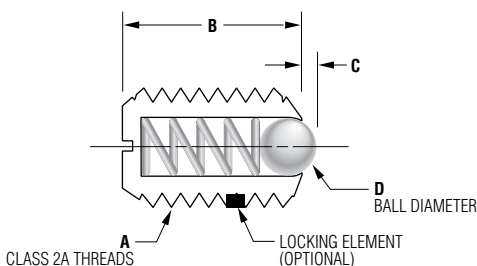
Stainless Steel Body - Nylon Ball

Vlier Stainless Steel Body - Nylon Ball Plungers provide the added benefit of a stainless steel body for maximum protection against rust and corrosion.

Special Features

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

Ball Plungers - Nylon Ball



ENHANCED SPRINGS

Metric Ball Plungers Steel/Stainless Steel Body Nylon Ball

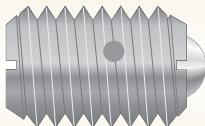
Metric Steel / Stainless Steel Body-Nylon Ball							
Nylon Ball		End Force, Lbs.		A	B	C	D
Steel Body	Stainless Steel Body	Init.	Final				
DB46	DSSB46	1/8	1/2	4-48	.187	.020	.062
DB47	DSSB47	1/4	3/4	5-40	.250	.020	.062
DB48	DSSB48	1/2	1	6-40	.312	.023	.078
DB50A	DSSB50A	1/2	1 1/4	8-32	.344	.025	.094
DB50	DSSB50	1/2	1 1/4	8-36	.344	.025	.094
DB52	DSSB52	1 1/2	3	10-32	.513	.025	.094
DBL52	DSSBL52	1/2	1 1/2				
DBH52	DSSBH52	2	5				
DB54	DSSB54	3	7	1/4-20	.531	.035	.125
DBL54	DSSBL54	2	4				
DBH54	DSSBH54	4	12	5/16-18	.578	.040	.156
DB56	DSSB56	4	9				
DBL56	DSSBL56	2	4 1/2				
DBH56	DSSBH56	6	17	3/8-16	.625	.048	.188
DB58	DSSB58	5	10				
DBL58	DSSBL58	2 1/2	5	1/2-13	.750	.072	.281
DBH58	DSSBH58	6	21				
DB60	DSSB60	6	12				
DBL60	DSSBL60	3	6	5/8-11	.984	.096	.375
DBH60	DSSBH60	6	30				
DB62	DSSB62	9	18				
DBL62	DSSBL62	4 1/2	9	7	50		
DBH62	DSSBH62	7	50				

To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES 5/16-18 AND LARGER; 1/4-20 AND SMALLER, ADD “P” AT END OF PART NO. 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 AS LISTED 8-36 AND SMALLER ARE NOT COLOR CODED.

**Ball Plungers****Metric Steel Body - Nylon Ball**

Vlier Steel Body - Nylon Ball Plungers provide resistance to repeated impacts, moisture, solvents, heat up to 190°F.

Plunger tip provides electrical insulating properties.

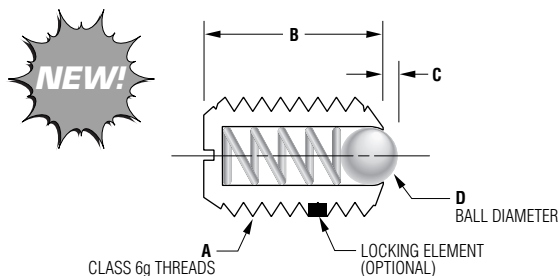
Metric Stainless Steel Body - Nylon Ball

Vlier Stainless Steel Body - Nylon Ball Plungers provide the added benefit of a stainless steel body for maximum protection against rust and corrosion.

Special Features

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

Metric Ball Plungers - Nylon Ball



Steel/ Stainless Steel Ball Plunger					Metric		
Part No.		End Force, N (Lbs.)		A (Class Threads) 6g-ISO	B mm (in.)	C mm (in.)	D mm (in.)
Steel	Stainless Steel	Init.	Final				
DBM4A	DSBM4	4 (.90)	10 (2.25)	M4 x 0.7	9 (.354)	0,8 (.032)	2,5 (.098)
DBM6A	DSBM6	9 (2.02)	13 (2.92)	M6 x 1.0	14 (.551)	1 (.039)	3,5 (.138)
DBML6A	DSBML6	2 (.45)	6 (1.35)				
DBMH6A	DSBMH6	28 (6.30)	40 (9.0)				
DBM8A	DSBM8	15 (3.37)	30 (6.75)	M8 x 1.25	16 (.630)	1,5 (.059)	5,0 (.196)
DBML8A	DSBML8	5 (1.12)	10 (2.25)				
DBMH8A	DSBMH8	40 (9)	60 (13.5)				
DBM10A	DSBM10	20 (4.5)	35 (7.87)	M10 x 1.5	19 (.748)	2 (.079)	6 (.236)
DBML10A	DSBML10	8 (1.8)	15 (3.37)				
DBMH10A	DSBMH10	60 (13.5)	90 (20.23)				
DBM12A	DSBM12	30 (6.75)	55 (12.36)	M12 x 1.75	22 (.866)	2,5 (.098)	8 (.315)
DBML12A	DSBML12	10 (2.25)	20 (4.5)				
DBMH12A	DSBMH12	75 (16.86)	115 (25.85)				

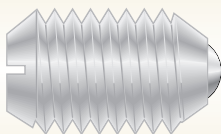
To order with locking element – ADD “N” AT END OF PART NUMBER FOR THREAD SIZES M8 X 1.25 AND LARGER; M6 X 1.0 AND SMALLER, ADD “P” AT END.

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.

**Ball Plungers****Delrin® Body - Stainless Steel/Nylon Ball**

Vlier Delrin Body Ball Plungers with stainless steel or nylon ball are ideal for applications where products or components are made mostly or entirely of plastic.

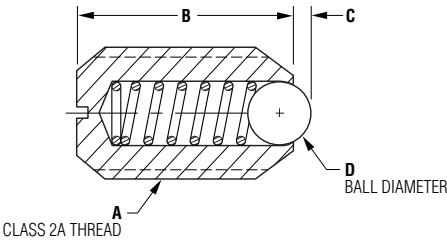
Special Features

- ◆ Electrical isolation
- ◆ Highly durable
- ◆ Stainless steel spring
- ◆ Compact and lightweight
- ◆ Withstands side loading
- ◆ Controlled end forces

Special Uses

- ◆ Lightweight applications

Ball Plungers - Delrin Body



Delrin Body - Stainless Steel Ball							
Part No.	Body Color Code	End Force, Lbs.		A	B	C	D
Stainless Ball		Initial	Final				
D54	White	2	5	1/4-20	.531	.030	.125
DL54	Blue	1	2.5				
D56	White	4	9	5/16-18	.578	.039	.156
DL56	Blue	2	4.5				
D58	White	5	10	3/8-16	.625	.053	.187
DL58	Blue	2.5	5				

Delrin Body - Nylon Ball							
Part No.	Body Color Code	End Force, Lbs.		A	B	C	D
Nylon Ball		Initial	Final				
ND54	White	2	5	1/4-20	.531	.030	.125
NDL54	Blue	1	2.5				
ND56	White	4	9	5/16-18	.578	.039	.156
NDL56	Blue	2	4.5				
ND58	White	5	10	3/8-16	.625	.053	.187
NDL58	Blue	2.5	5				

color code – BODIES ARE COLOR-CODED TO INDICATE END FORCES; BLUE = LIGHT END FORCE; WHITE = HEAVY END FORCE.

DELRIN IS A REGISTERED TRADEMARK OF DUPONT CORP.



Pushfit Plungers

Pushfit Steel

Vlier Pushfit Steel Ball Plungers are designed for simple, easy installation into wood, soft plastic or aluminum. Ideal where a threaded ball plunger is impractical or when threaded adjustments are not required.

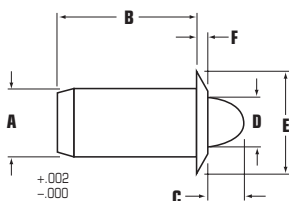
Pushfit Stainless Steel

Vlier Pushfit Stainless Steel Ball Plungers offer the added benefit of an all stainless steel design for maximum protection against rust and corrosion.

Special Features

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

STANDARD PUSH-FIT PLUNGERS



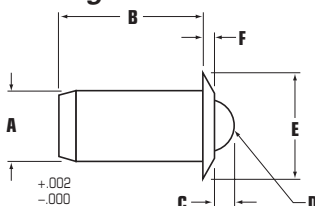
Standard Plungers Steel/Stainless Steel – Heavy Force

Steel	Stainless Steel	End Force Lbs		O.D.					
		Initial	Final	A	B	C	D	E	F
PFP52	SPFP52	1.5	4.5	0.188	0.441	0.094	0.121	0.250	0.044
PFP54	SPFP54	2.5	6	0.250	0.521	0.125	0.168	0.312	0.055
PFP58	SPFP58	5	14	0.375	0.786	0.187	0.234	0.500	0.096
PFP60	SPFP60	8	18	0.500	1.100	0.250	0.332	0.688	0.134

Standard Plungers Steel/Stainless Steel – Light Force

Steel	Stainless Steel	End Force Lbs		O.D.					
		Initial	Final	A	B	C	D	E	F
PFP51	SPFP51	0.75	2	0.188	0.441	0.094	0.121	0.250	0.044
PFP53	SPFP53	1.25	3	0.250	0.521	0.125	0.168	0.312	0.055
PFP57	SPFP57	2.5	7	0.375	0.786	0.187	0.234	0.500	0.096
PFP59	SPFP59	4	9	0.500	1.100	0.250	0.332	0.688	0.134

Ball Push-Fit Plungers



Ball Plungers Stainless Steel Ball – Heavy Force

Steel	Stainless Steel	End Force Lbs		O.D.					
		Initial	Final	A	B	C	D	E	F
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	3.0	7.0	0.250	0.471	0.070	0.187	0.312	0.045
PFB56	SPFB56	4.0	10.0	0.312	0.643	0.090	0.250	0.375	0.045
PFB58	SPFB58	5.0	14.0	0.375	0.786	0.110	0.312	0.500	0.078
PFB60	SPFB60	8.0	18.0	0.500	1.100	0.161	0.437	0.688	0.110

Ball Plungers Stainless Steel Ball – Light Force

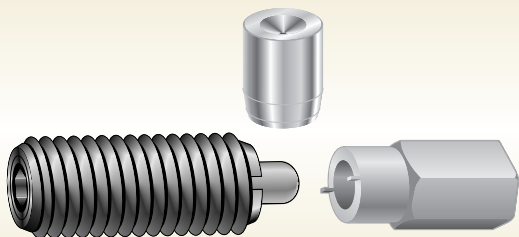
Steel	Stainless Steel	End Force Lbs		O.D.					
		Initial	Final	A	B	C	D	E	F
PFB47	SPFB47	0.4	1.3	0.125	0.252	0.035	0.094	0.187	0.032
PFB51	SPFB51	1.0	2.5	0.188	0.394	0.058	0.156	0.250	0.040
PFB53	SPFB53	1.5	3.5	0.250	0.471	0.070	0.187	0.312	0.045
PFB55	SPFB55	2.0	5.0	0.312	0.643	0.090	0.250	0.375	0.045
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

Ball Plungers Nylon Ball – Heavy Force

Steel	Stainless Steel	End Force Lbs		O.D.					
		Initial	Final	A	B	C	D	E	F
DPFB48	DSPFB48	0.75	2.5	0.125	0.252	0.035	0.094	0.187	0.032
DPFB52	DSPFB52	2.0	5.0	0.188	0.394	0.058	0.156	0.250	0.040
DPFB54	DSPFB54	3.0	7.0	0.250	0.471	0.070	0.187	0.312	0.045
DPFB56	DSPFB56	4.0	10.0	0.312	0.643	0.090	0.250	0.375	0.045
DPFB58	DSPFB58	5.0	14.0	0.375	0.786	0.110	0.312	0.500	0.078
DPFB60	DSPFB60	8.0	18.0	0.500	1.100	0.161	0.437	0.688	0.110

Ball Plungers Nylon Ball – Light Force

Steel	Stainless Steel	End Force Lbs		O.D.					
		Initial	Final	A	B	C	D	E	F
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

**Ball Buttons & Vlier Wrench**

Ball Buttons

Vlier Ball Buttons can be easily pushed into a reamed hole to provide the perfect ball plunger mating detent. Ball Buttons 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

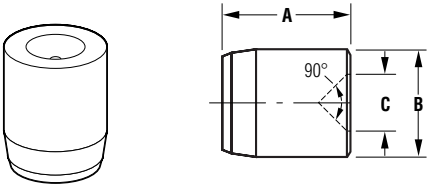
The Vlier Wrench provides fast installation of Vlier Standard Spring, Ball and Stubby Plungers and prevents spring damage that can result when a screwdriver is used on the ball or plunger end.

Special Features

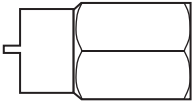
- ◆ Fast installation
- ◆ Prevents spring damage

Ball Buttons - Vlier Wrench

BALL
BUTTON



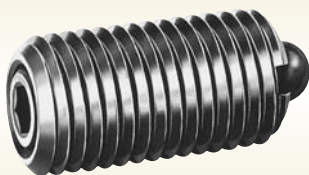
VLIER
WRENCH



Ball Buttons				
Part No.	For Ball Plunger	A	B+.0002 -.000	C
BB46	SSB46, SSB47, DSSB46 & 47 B46, B47	1/8	.1075	.056
BB48	SSB48, DSSB48, B48	1/8	.1175	.061
BB50	B52, BM4, BM6, BL52, BH52, BML6 BMH6, SSB50, SSB52, SSBL52, SSBH52 DSSB50, 50A, 52	3/16	.1614	.069
BB54	SSB54, SSBL54, SSBH54, D54N, D54, DSSB Series	1/4	.2034	.111
BB56	B56, BM8, BMH8, BML8, BL56, BH56, SSB56, SSBH56, SSBH56, D56, DL56, ND56, NDL56, DSSB Series	5/16	.2659	.139
BB58	BM10, BML10, BMH10, B58, BL58, BH58 SSB58, SSBL58, SSBH58, D58, DL58, ND58, NDL58, DSSB Series	3/8	.3284	.164
BB60	B60, BL60, BH60, BM12, BMH12, BML12 SSB60, SSBL60, SSBH60, DSSB Series	1/2	.4378	.241
BB62	B62, BL62, BH62, SSBH62, SSBL62 SSB62	5/8	.5472	.330

Vlier Wrench	
Wrench No.	For Thread Size
VW48	6-32
VW50	8-32 & 8-36
VW52	10-32, M4 & M6
VW54	1/4-20 & 1/4-28
VW56	5/16-18 & M8

Vlier Wrench	
Wrench No.	For Thread Size
VW58	3/8-16 & M10
VW60	1/2-13 & M12
VW62	5/8-11
VW64	3/4-10
VW66	1-8

**Standard Plunger**

Standard Plunger

Vlier Standard Metric steel and stainless standard plungers offer large bearing surfaces that prevent binding and assure perfect alignment at any extension. Our stainless steel is designed for maximum corrosion resistances and elevated temperature.

Typical Uses

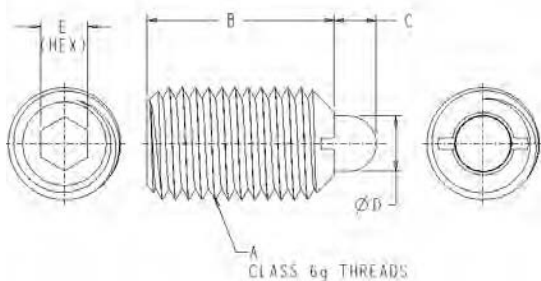
- | | |
|---------------|-------------------|
| * Positioning | * Indexes |
| * Ejecting | * Lifters Latches |
| * Contacts | * Pivot hinge |

Special Features

- ◆ Metric Threads
- ◆ Long travel
- ◆ Heavy & light end forces
- ◆ Slotted plunger body for blind hole installation

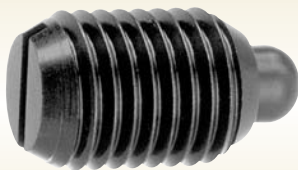
Special Note:

Steel with increased spring force = bright finish plunger.



Standard Plungers

Steel	Steel w/Delrin Plunger	Stainless Steel	Stainless Steel w/Delrin Plunger	End Force, N (Lbs)		A	B	C	ØD	E
PART#	PART#	PART#	PART#	Initial	Final	Thread 6g-ISO	mm (in.)	mm (in.)	mm (in.)	mm (in.)
HPSM3	-	-	-	2.0 (.45)	4.0 (.9)	M3	12 (.472)	1.0 (.039)	1.0 (.039)	0.7 (.028)
HPSM4	HDPSM4	HSPSM4	HSDPSM4	4.5 (1.01)	16 (3.6)	M4	15.0 (.591)	1.5 (.059)	1.5 (.059)	1.3 (.051)
HPSM5	HDPSM5	HSPSM5	HSDPSM5	6 (1.35)	19 (4.27)	M5	18 (.709)	2.3 (.091)	2.4 (.094)	1.5 (.059)
HPSMH5	-	-	-	11 (2.47)	40.0 (8.99)	M5	18 (.709)	2.3 (.091)	2.4 (.094)	1.5 (.059)
HPSM6	HDPSM6	HSPSM6	HSDPSM6	6 (1.35)	19 (4.27)	M6	20.0 (.787)	2.5 (.098)	2.7 (.106)	2.0 (.079)
HPSMH6	-	-	-	15.0 (3.37)	43 (9.67)	M6	20.0 (.787)	2.5 (.098)	2.7 (.106)	2.0 (.079)
HPSM8	HDPSM8	HSPSM8	HSDPSM8	10.0 (2.25)	39 (8.77)	M8	22 (.866)	3.0 (.118)	3.5 (.138)	2.5 (.098)
HPSMH8	-	-	-	20 (4.5)	75.0 (16.86)	M8	22 (.866)	3.0 (.118)	3.5 (.138)	2.5 (.098)
HPSM10	HDPSM10	HSPSM10	HSDPSM10	10.0 (2.25)	39 (8.77)	M10	22 (.866)	3.0 (.118)	4.0 (.157)	3.0 (.118)
HPSMH10	-	-	-	20 (4.5)	75.0 (16.86)	M10	22 (.866)	3.0 (.118)	4.0 (.157)	3.0 (.118)
HPSM12	HDPSM12	HSPSM12	HSDPSM12	12 (2.7)	53.0 (11.91)	M12	28 (1.102)	4.0 (.157)	6.0 (.236)	4.0 (.157)
HPSMH12	-	-	-	45 (10.12)	120.0 (26.98)	M12	28 (1.102)	4.0 (.157)	6.0 (.236)	4.0 (.157)
HPSM16	HDPSM16	HSPSM16	HSDPSM16	45 (10.12)	100 (22.48)	M16	32 (1.26)	5.0 (.197)	7.5 (.295)	5.0 (.197)
HPSMH16	-	-	-	64.0 (14.39)	160.0 (35.97)	M16	32 (1.26)	5.0 (.197)	7.5 (.295)	5.0 (.197)
HPSM20	-	HSPSM20	-	52 (11.69)	125 (28.1)	M20	40 (1.575)	7.0 (.276)	10.0 (.393)	6.0 (.236)
HPSMH20	-	-	-	75.0 (16.86)	195.0 (43.84)	M20	40 (1.575)	7.0 (.276)	10.0 (.393)	6.0 (.236)
HPSM24	-	-	-	70 (15.74)	170.0 (38.22)	M24	52 (2.047)	10.0 (.393)	12.0 (.472)	8.0 (.315)
HPSMH24	-	-	-	75.0 (16.69)	245.0 (55.0)	M24	52 (2.047)	10.0 (.393)	12.0 (.472)	8.0 (.315)

**Stubby Plunger**

Stubby Plunger

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

Typical Uses

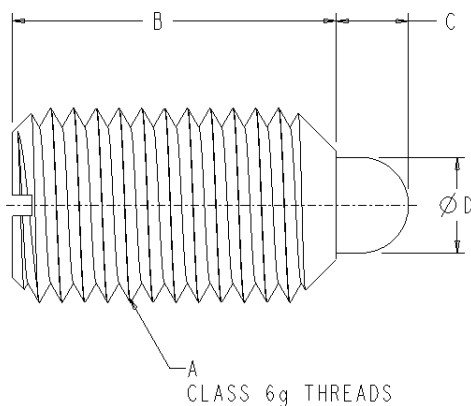
- * Limited Space
- * Indexing
- * Locking
- * Electrical Contacts
- * Detents
- * Part position

Special Features

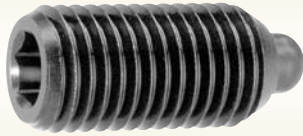
- ◆ Allows some side loading
- ◆ Screwdriver installation
- ◆ Wear resistance
- ◆ Compact size
- ◆ Stainless steel or steel
- ◆ Intermediate travel

Special Note:

Free cutting steel finish with increased spring load = plunger is blue zinc coated. Stainless steel finish with increased spring load = body tip is yellow.



Stubby Plungers							
Steel	Stainless Steel			A	B	C	ØD
Part Number	Part Number	Initial	Final	Thread 6g-ISO	mm (in.)	mm (in.)	mm (in.)
HMM4	HSMM4	4,5 (1.01)	12,5 (2.81)	M4	9 (.354)	1,5 (.059)	1,8 (.071)
HMM5	HSMM5	5 (1.12)	13 (2.92)	M5	12 (.472)	2,0 (.079)	2,4 (.094)
HMM6	HSMM6	6 (1.35)	17 (3.82)	M6	14 (.551)	2,0 (.079)	2,7 (.106)
HMMH6	HSMMH6	11 (2.47)	25 (5.62)	M6	14 (.551)	2,0 (.079)	2,7 (.106)
HMM8	HSMM8	16 (3.6)	33 (7.42)	M8	16 (.63)	2,0 (.079)	3,8 (.15)
HMMH8	HSMMH8	23 (5.17)	59 (13.26)	M8	16 (.63)	2,0 (.079)	3,8 (.15)
HMM10	HSMM10	19 (4.27)	42 (9.44)	M10	19 (.748)	2,5 (.098)	4,5 (.177)
HMMH10	HSMMH10	20 (4.5)	54 (12.14)	M10	19 (.748)	2,5 (.098)	4,5 (.177)
HMM12	HSMM12	22 (4.95)	57 (12.81)	M12	22 (.866)	3,5 (.138)	6,2 (.244)
HMMH12	HSMMH12	38 (8.54)	96 (21.58)	M12	22 (.866)	3,5 (.138)	6,2 (.244)
HMM16	HSMM16	38 (8.54)	78 (17.54)	M16	24 (.945)	4,5 (.177)	8,5 (.335)
HMMH16	HSMMH16	50 (11.24)	100 (22.48)	M16	24 (.945)	4,5 (.177)	8,5 (.335)
HMM20	HSMM20	39 (8.77)	81 (18.21)	M20	30 (1.181)	6,5 (.256)	10,0 (.394)
HMMH20	HSMMH20	52 (11.69)	133 (29.9)	M20	30 (1.181)	6,5 (.256)	10,0 (.394)
HMM24	HSMM24	72 (16.19)	155 (34.85)	M24	34 (1.339)	8,0 (.315)	13,0 (.512)
HMMH24	HSMMH24	91 (20.46)	223 (50.13)	M24	34 (1.339)	8,0 (.315)	13,0 (.512)

**Posi-Hex Stubby**

Posi-Hex Stubby

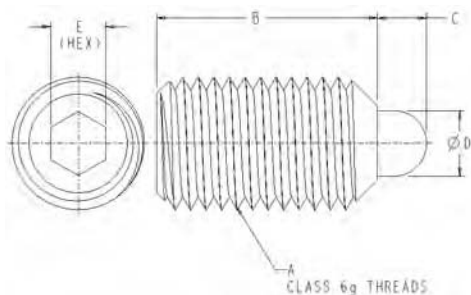
Vliet Posi-hex Stubby plungers offer the same features as the standard stubby plunger with one exception. The feature of using a hex wrench to speed up the installation and removal process. These compact units like the standard Stubby plunger, come in two spring force choices in both steel and stainless steel.

Typical Uses

- * Limited Space
- * Indexing
- * Locking
- * Electrical Contacts
- * Detents
- * Part position

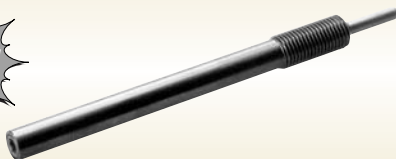
Special Features

- ◆ Allows some Side loading
- ◆ Hex Wrench installation
- ◆ Accurate Repeatable end force
- ◆ Compact Size
- ◆ Stainless Steel or steel
- ◆ Intermediate travel



Posi-Hex Stubby Plunger

Steel	Stainless	End Force, N (Lbs)		A	B	C	ØD	E
Part Number	Part Number	Initial	Final	Thread 6g-ISO	mm (in.)	mm (in.)	mm (in.)	mm (in.)
HPMM4	HSPMM4	4,5 (1.01)	12,5 (2.81)	M4	12 (.472)	1,5 (.059)	1,8 (.071)	2 (.079)
HPMM5	HSPMM5	5 (1.12)	13 (2.92)	M5	14 (.551)	2 (.079)	2,4 (.094)	2,5 (.098)
HPMM6	HSPMM6	6 (1.35)	17 (3.82)	M6	15,0 (.591)	2,0 (.079)	2,7 (.61)	3 (.118)
HPMMH6	HSPMMH6	11 (2.47)	25 (5.62)	M6	15,0 (.591)	2,0 (.079)	2,7 (.61)	3 (.118)
HPMM8	HSPMM8	16 (3.6)	33 (7.42)	M8	18 (.709)	2,0 (.079)	3,8 (.15)	4 (.157)
HPMMH8	HSPMMH8	23 (5.17)	59 (13.26)	M8	18 (.709)	2,0 (.079)	3,8 (.15)	4 (.157)
HPMM10	HSPMM10	19 (4.27)	42 (9.44)	M10	23 (.906)	2,5 (.098)	4,5 (.177)	5 (.197)
HPMMH10	HSPMMH10	20 (4.5)	54 (12.14)	M10	23 (.906)	2,5 (.098)	4,5 (.177)	5 (.197)
HPMM12	HSPMM12	22 (4.95)	57 (12.81)	M12	26 (1.024)	3,5 (.138)	6,2 (.244)	6 (.236)
HPMMH12	HSPMMH12	38 (8.54)	96 (21.58)	M12	26 (1.024)	3,5 (.138)	6,2 (.244)	6 (.236)
HPMM16	HSPMM16	38 (8.54)	78 (17.54)	M16	33 (1.299)	4,5 (.177)	8,5 (.335)	8,0 (.315)
HPMMH16	HSPMMH16	50 (11.24)	100 (22.48)	M16	33 (1.299)	4,5 (.177)	8,5 (.335)	8,0 (.315)
HPMM20	HSPMM20	39 (8.77)	81 (18.21)	M20	43 (1.69)	6,5 (.256)	10 (.393)	10 (.393)
HPMMN20	HSPMMH20	52 (11.69)	133 (29.9)	M20	43 (1.69)	6,5 (.256)	10 (.393)	10 (.393)
HPMM24	HSPMM24	72 (16.19)	155 (34.85)	M24	48 (1.89)	8,0 (.315)	13 (.512)	12 (.472)
HPMMH24	HSPMMH24	91 (20.46)	223 (50.13)	M24	48 (1.89)	8,0 (.315)	13 (.512)	12 (.472)



Long Travel Metric Steel Plungers

Long Travel Metric Steel Plungers

Long travel plungers ideal for high speed, long life applications. Slotted plunger body for blind hole installation.

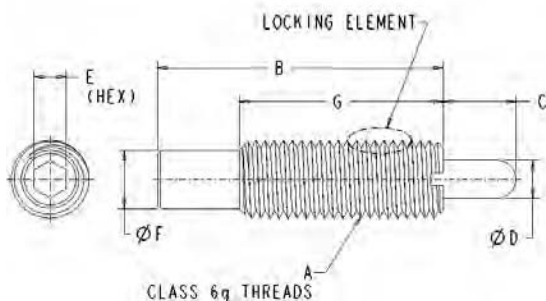
Special Features

- ◆ Impact resistance
- ◆ Choice of spring forces
- ◆ 10mm to 24mm
- ◆ Choice of with or with-out locking element

Long Travel Plunger

Steel W/O Locking Element			A	B	C	ØD	E	ØF	G
Part Number	Initial	Final	Thread 6g-ISO	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)
HTHL16A	17,0 (3.82)	74 (16.64)	M16	80 (3.15)	11 (.433)	7,3 (.287)	8 (.315)	13,4 (.528)	35 (1.378)
HTHL16B	21,0 (4.72)	81 (18.21)	M16	120 (4.724)	21 (.827)	7,3 (.287)	8 (.315)	13,4 (.528)	35 (1.378)
HTHL16C	21,0 (4.72)	89 (20.0)	M16	150 (5.91)	31 (1.22)	7,3 (.287)	8 (.315)	13,4 (.528)	35 (1.378)
HTHL16D	16,0 (3.6)	80 (17.98)	M16	200 (7.874)	41 (1.614)	7,3 (.287)	8 (.315)	13,4 (.528)	35 (1.378)
HTHL22A	80 (17.98)	214 (48.11)	M22	130 (5.118)	21 (.827)	9,0 (.354)	8 (.315)	19,0 (.748)	50 (1.97)
HTHL22B	70,0 (15.74)	210 (47.21)	M22	168 (6.614)	31 (1.22)	9,0 (.354)	8 (.315)	19,0 (.748)	50 (1.97)
HTHL22C	76,0 (17.09)	208 (46.76)	M22	226 (8.898)	41 (1.614)	9,0 (.354)	8 (.315)	19,0 (.748)	50 (1.97)

Steel with Locking Element			A	B	C	ØD	E	ØF	G
Part Number	Initial	Final	Thread 6g-ISO	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)
HHL10	6,0 (1.35)	16 (3.6)	M10	35 (1.38)	8 (.315)	4,0 (.157)	3 (.118)	7,8 (.307)	25 (.984)
HHL12	4,0 (.90)	18 (4.05)	M12	43 (1.693)	10 (.394)	5,5 (.217)	4 (.157)	9,5 (.374)	35 (1.378)
HHLH12	7,0 (1.57)	46 (10.34)	M12	43 (1.693)	10 (.394)	5,5 (.217)	4 (.157)	9,5 (.374)	35 (1.378)
HHL16A	7,0 (1.57)	24 (5.4)	M16	48 (1.89)	10 (.394)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHLH16A	10,0 (2.25)	43 (9.67)	M16	48 (1.89)	10 (.394)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)



Long Travel Plunger

Steel with Locking Element			A	B	C	ØD	E	ØF	G
Part Number	Initial	Final	Thread 6g-ISO	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)
HHL16B	15,0 (3.37)	42 (9.44)	M16	58 (2.283)	10 (.394)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHLH16B	14,0 (3.15)	84 (18.88)	M16	58 (2.283)	10 (.394)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL16C	9,0 (2.02)	33 (7.42)	M16	58 (2.283)	15 (.591)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHLH16C	10,0 (2.25)	57 (12.81)	M16	58 (2.283)	15 (.591)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL16D	4,0 (.90)	23 (5.17)	M16	58 (2.283)	20 (.787)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL16E	11,0 (2.47)	43 (9.67)	M16	83 (3.268)	20 (.787)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHLH16E	18,0 (4.05)	72 (16.19)	M16	83 (3.268)	20 (.787)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL16F	13,0 (2.92)	41 (9.22)	M16	98 (3.858)	25 (.984)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHLH16F	20,0 (4.5)	70 (15.74)	M16	98 (3.858)	25 (.984)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL16G	13,0 (2.92)	47 (10.57)	M16	98 (3.858)	30 (1.181)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHLH16G	20,0 (4.5)	80 (17.98)	M16	98 (3.858)	30 (1.181)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL16H	24,0 (5.4)	110 (24.73)	M16	118 (4.646)	30 (1.181)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL16K	13,0 (2.92)	63 (14.16)	M16	148 (5.827)	40 (1.575)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHLH16K	21,0 (4.72)	113 (25.4)	M16	148 (5.827)	40 (1.575)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL16L	7,0 (1.57)	43 (9.67)	M16	148 (5.827)	50 (1.969)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHLH16L	13,0 (2.92)	75 (16.86)	M16	148 (5.827)	50 (1.969)	8,0 (.315)	6 (.236)	13,4 (.528)	35 (1.378)
HHL24	14,0 (3.15)	87 (19.56)	M24	60 (2.362)	15 (.591)	10,0 (.394)	8 (.315)	19,6 (.772)	45 (1.772)
HHLH24	24,0 (5.4)	192 (43.16)	M24	60 (2.362)	15 (.591)	10,0 (.394)	8 (.315)	19,6 (.772)	45 (1.772)

**Ball Plunger**

Ball Plunger

Vlier Steel & Stainless Steel Metric Ball plungers are compact units. Suitable for applications with side loading requirements. Stainless Steel Ball plungers offer maximum protection against rust and corrosion. Ideal for food, medical, and special environments.

Typical Uses

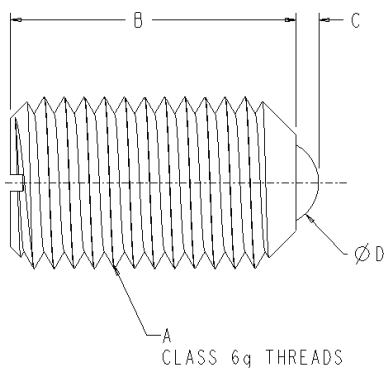
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|-------------------|-----------------|------------|
| * Indexing | * Gear Shifters | * Locators |
| * Torque Limiting | * Positioning | * Detents |

Special Features

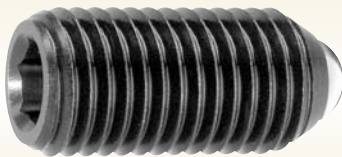
- ◆ Metric Thread
- ◆ Side-load Tolerant
- ◆ Controlled end forces
- ◆ Screwdriver installation
- ◆ Stainless Steel resists Corrosion
- ◆ Stainless Steel withstands high temperatures

Special Note

Free cutting steel finish with increase spring load ball is yellow. Stainless steel finish with increased spring load body tip is yellow.



Ball Plungers							
Steel	Stainless Steel			A	B	C	ØD
Part Number	Part Number	Initial	Final	Thread 6g-ISO	mm (in.)	mm (in.)	mm (in.)
HBM3	HSBM3	3 (.67)	4,5 (1.01)	M3	7 (.276)	0,4 (.016)	1,5 (.059)
HBM4	HSBM4	8,5 (1.91)	14 (3.15)	M4	9 (.354)	0,8 (.031)	2,5 (.098)
HBM5	HSBM5	8 (1.8)	14 (3.15)	M5	12 (.472)	0,9 (.035)	3,0 (.118)
HBMH5	HSBMH5	15,0 (3.37)	22 (4.95)	M5	12 (.472)	0,9 (.035)	3,0 (.118)
HBM6	HSBM6	11 (2.47)	18 (4.05)	M6	14 (.551)	1,0 (.039)	3,5 (.137)
HBMH6	HSBMH6	19,0 (4.27)	28 (6.29)	M6	14 (.551)	1,0 (.039)	3,5 (.137)
HBM8	HSBM8	18,0 (4.05)	31 (6.97)	M8	16 (.63)	1,5 (.059)	4,5 (.177)
HBMH8	HSBMH8	36,0 (8.09)	62 (13.94)	M8	16 (.63)	1,5 (.059)	4,5 (.177)
HBM10	HSBM10	24,0 (5.4)	45 (10.12)	M10	19 (.748)	2,0 (.079)	6,0 (.236)
HBMH10	HSBMH10	57,0 (12.81)	104 (23.38)	M10	19 (.748)	2,0 (.079)	6,0 (.236)
HBM12	HSBM12	26,0 (5.85)	49 (11.02)	M12	22 (.866)	2,5 (.098)	8,0 (.315)
HBMH12	HSBMH12	61,0 (13.71)	110 (24.73)	M12	22 (.866)	2,5 (.098)	8,0 (.315)
HBM16	HSBM16	41,0 (9.22)	86 (19.33)	M16	24 (.945)	3,5 (.138)	10,0 (.394)
HBMH16	HSBMH16	68 (15.29)	142 (31.92)	M16	24 (.945)	3,5 (.138)	10,0 (.394)
HBM20	HSBM20	56,0 (12.59)	111 (24.95)	M20	30 (1.181)	4,5 (.177)	12,0 (.472)
HBMH20	HSBMH20	84 (18.88)	166 (37.32)	M20	30 (1.181)	4,5 (.177)	12,0 (.472)
HBM24	HSBM24	81,0 (18.21)	151 (33.95)	M24	34 (1.339)	5,5 (.217)	15,0 (.591)
HBMH24	HSBMH24	127 (28.55)	237 (53.28)	M24	34 (1.339)	5,5 (.217)	15,0 (.591)

**Posi-Hex Metric Ball**

Posi-Hex Metric Ball

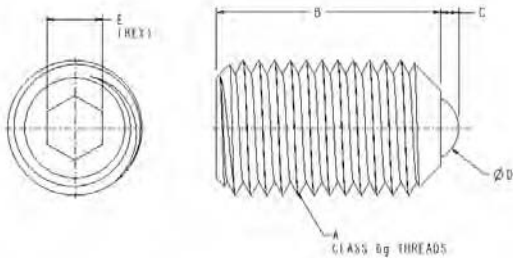
Vliet Steel & Stainless Steel Posi-Hex Metric Ball plungers allow for easy installation and removal using a hex wrench. These units are suitable for high torque applications. The Stainless Steel Ball plungers offer maximum protection against rust and corrosion. Ideal for food, medical, and special environments.

Special Features

- ◆ Metric thread
- ◆ Side-load tolerant
- ◆ Controlled end forces
- ◆ Hex wrench installation
- ◆ Stainless steel resists corrosion
- ◆ Stainless steel withstands high temperatures

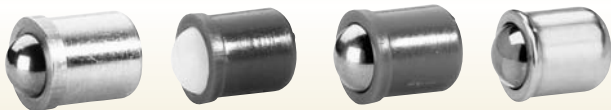
Special Note

Free cutting steel finish with increase spring load ball is yellow. Stainless steel finish with increased spring load body tip is yellow.



Posi-Hex Ball Plunger

Steel	Stainless	End Force, N (Lbs)		A	B	C	ØD	E
Part Number	Part Number	Initial	Final	Thread 6g-ISO	mm (in.)	mm (in.)	mm (in.)	mm (in.)
HPM4	HSPM4	8.5 (1.91)	14 (3.15)	M4	12 (.472)	0.8 (.031)	2.5 (.098)	2 (.079)
HPM5	HSPM5	8 (1.8)	14 (3.15)	M5	14 (.551)	0.9 (.035)	3 (.118)	2.5 (.098)
HPMH5	HSPMH5	15.0 (3.37)	22 (4.95)	M5	14 (.551)	0.9 (.035)	3 (.118)	2.5 (.098)
HPM6	HSPM6	11 (2.47)	18 (4.05)	M6	15 (.591)	1.0 (.039)	3.5 (.138)	3 (.118)
HPMH6	HSPMH6	19.0 (4.27)	28 (6.29)	M6	15 (.591)	1.0 (.039)	3.5 (.138)	3 (.118)
HPM8	HSPM8	18.0 (4.05)	31 (6.97)	M8	18 (.709)	1.5 (.059)	4.5 (.177)	4 (.157)
HPMH8	HSPMH8	36.0 (8.09)	62 (13.94)	M8	18 (.709)	1.5 (.059)	4.5 (.177)	4 (.157)
HPM10	HSPM10	24.0 (5.4)	45 (10.12)	M10	23 (.906)	2.0 (.079)	6.0 (.236)	5 (.197)
HPMH10	HSPMH10	57.0 (12.81)	104 (23.38)	M10	23 (.906)	2.0 (.079)	6.0 (.236)	5 (.197)
HPM12	HSPM12	26.0 (5.85)	49 (11.02)	M12	26 (1.024)	2.5 (.098)	8.0 (.315)	6 (.236)
HPMH12	HSPMH12	61.0 (13.71)	110 (24.73)	M12	26 (1.024)	2.5 (.098)	8.0 (.315)	6 (.236)
HPM16	HSPM16	41.0 (9.22)	86 (19.33)	M16	33 (1.299)	3.5 (.138)	10.0 (.394)	8.0 (.315)
HPMH12	HSPMH16	68 (15.29)	142 (31.92)	M16	33 (1.299)	3.5 (.138)	10.0 (.394)	8.0 (.315)
HPM20	HSPM20	66.0 (14.84)	111 (24.95)	M20	43 (1.69)	4.5 (.177)	12.0 (.472)	10 (.393)
HPMH20	HSPMH20	84 (18.88)	166 (37.32)	M20	43 (1.69)	4.5 (.177)	12.0 (.472)	10 (.393)
HPM24	HSPM24	81.0 (18.21)	151 (33.95)	M24	48 (1.89)	5.5 (.217)	15.0 (.591)	12 (.472)
HPMH24	HSPMH24	127 (28.55)	237 (53.28)	M24	48 (1.89)	5.5 (.217)	15.0 (.591)	12 (.472)

Spring-Loaded Devices**NEW!****Push-Fit Plungers****Push-Fit Plungers**

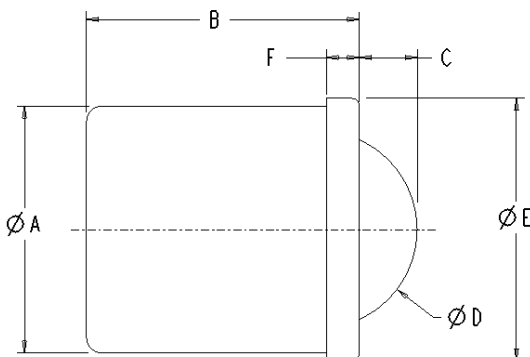
Vlier push-fit Metric Ball plungers are designed for simple easy installation into wood, soft plastics or aluminum. Ideal quick changes or multiple installations when threaded adjustments are not needed.

Typical Uses

- | | | |
|-------------------|---------------------|------------|
| * Indexing | * Electric Contacts | * Locators |
| * Torque Limiting | * Positioning | * Detents |

Special Features

- ◆ Simple Quick installation
- ◆ No thread adjustments
- ◆ Brass, Stainless Steel, Delrin material choices
- ◆ Minimize design time



Push-Fit Plunger

SS Body with SS Ball	Brass Body with SS Ball	End Force, N (lbs)		ØA	B	C	ØD	ØE	F, REF
Part Number	Part Number	Initial	Final	+0,1 (+.004)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)
HSPFB4	HBPFB4	2,5 (.56)	6,0 (1.35)	4,0 (.157)	5,0 (.197)	0,8 (.031)	3,0 (.118)	4,6 (.181)	0,9 (.035)
HSPFB5	HBPFB5	3,0 (.67)	6,5 (1.46)	5,0 (.197)	6,0 (.236)	1,0 (.039)	4,0 (.157)	5,6 (.220)	0,9 (.035)
HSPFB6	HBPFB6	5,5 (1.24)	11,5 (2.59)	6,0 (.236)	7,0 (.276)	1,6 (.062)	5,0 (.197)	6,5 (.256)	1,0 (.039)
HSPFB8	HBPFB8	7,0 (1.57)	12,5 (2.81)	8,0 (.315)	9,0 (.354)	1,9 (.075)	6,5 (.256)	8,5 (.335)	1,1 (.043)
HSPFB10	N/A	8,5 (1.91)	18,5 (4.16)	10,0 (.394)	13,5 (.531)	3,1 (.122)	8,5 (.335)	11,0 (.433)	1,9 (.075)
HSPFB12	N/A	12,0 (2.7)	26,5 (5.96)	12,0 (.472)	16,0 (.63)	3,8 (.15)	10,0 (.394)	13,0 (.512)	2,5 (.098)

Delrin Body with SS Ball	Delrin Body & Ball	End Force, N (lbs)		ØA	B	C	ØD	ØE	F, REF
Part Number	Part Number	Initial	Final	+0,1 (+.004)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)
HDPFB4	HDDPFB4	2,5 (.56)	6,0 (1.35)	4,0 (.157)	5,0 (.197)	0,8 (.031)	3,0 (.118)	4,6 (.181)	0,9 (.035)
HDPFB5	HDDPFB5	3,0 (.67)	6,5 (1.46)	5,0 (.197)	6,0 (.236)	1,0 (.039)	4,0 (.157)	5,6 (.220)	0,9 (.035)
HDPFB6	HDDPFB6	5,5 (1.24)	11,5 (2.59)	6,0 (.236)	7,0 (.276)	1,6 (.062)	5,0 (.197)	6,5 (.256)	1,0 (.039)
HDPFB8	HDDPFB8	7,0 (1.57)	12,5 (2.81)	8,0 (.315)	9,0 (.354)	1,9 (.075)	6,5 (.256)	8,5 (.335)	1,1 (.043)
HDPFB10	HDDPFB10	8,5 (1.91)	18,5 (4.16)	10,0 (.394)	13,5 (.531)	3,1 (.122)	8,5 (.335)	11,0 (.433)	1,9 (.075)
HDPFB12	HDDPFB12	12,0 (2.7)	26,5 (5.96)	12,0 (.472)	16,0 (.63)	3,8 (.15)	10,0 (.394)	13,0 (.512)	2,5 (.098)

Spring-Loaded Devices

No collar push



Double ended

Push-Fit Plungers**Push-Fit Plungers**

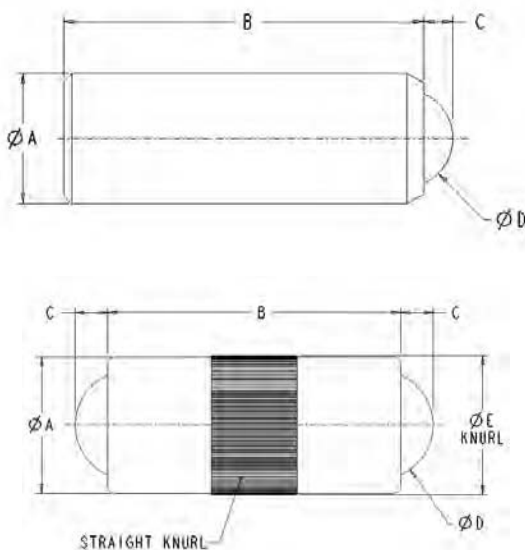
Vlier push-fit Metric Ball plungers are designed for simple easy installation into wood, soft plastics or aluminum. Ideal quick changes or multiple installations when threaded adjustments are not needed.

Typical Uses

- | | | |
|-------------------|---------------------|------------|
| * Indexing | * Electric Contacts | * Locators |
| * Torque Limiting | * Positioning | * Detents |

Special Features

- ◆ Simple Quick installation
- ◆ No thread adjustments
- ◆ Brass, Stainless Steel, Delrin material choices
- ◆ Minimize design time



Double Ended Push-Fit Plunger

			ØA	B	C	ØD	ØE
Part Number	Initial	Final	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm +0.05/-0.0 (in. +.022/-0.0)
HBPF25	1,3 (.29)	2,5 (.56)	2,5 (.098)	5,3 (.209)	0,65 (.026)	2,0 (.079)	2,52 (.099)
HBPF30	2,0 (.45)	4,5 (1.01)	3,0 (.118)	7,3 (.287)	0,80 (.031)	2,5 (.098)	3,02 (.119)
HBPF40	2,5 (.562)	7,5 (.3)	4,0 (.157)	9,0 (.354)	0,90 (.035)	3,0 (.118)	4,03 (.169)
HBPF50	3,5 (.79)	8,0 (1.8)	5,0 (.197)	10,8 (.425)	1,2 (.047)	4,0 (.157)	5,03 (.198)
HBPF70	4,0 (.9)	12,0 (2.7)	7,0 (.276)	14,0 (.551)	2,00 (.079)	6,0 (.236)	7,03 (.277)
HBPF80	6,0 (1.35)	15,0 (3.37)	8,0 (.315)	18,0 (.709)	2,10 (.083)	6,5 (.256)	8,03 (.316)

Single Ended Push-Fit Plunger

			ØA	B	C	ØD
Part Number	Initial	Final	mm ± 0.04 (in. ± .002)	mm (in.)	mm (in.)	mm (in.)
HSPFS30	4,5 (1.01)	7,5 (1.69)	3,0 (.118)	7,0 (.276)	0,65 (.026)	2,0 (.079)
HSPFS35	6,0 (1.35)	14,5 (3.26)	3,5 (.138)	9,0 (.354)	0,80 (.031)	2,5 (.098)
HSPFS40	8,0 (1.8)	14,0 (3.15)	4,0 (.157)	11,0 (.433)	0,90 (.035)	3,0 (.118)
HSPFS45	9,5 (2.14)	16,5 (3.71)	4,5 (.177)	12,0 (.472)	0,95 (.037)	3,2 (.125)
HSPFS50	11,0 (2.47)	18,0 (4.05)	5,0 (.197)	13,0 (.512)	1,00 (.039)	3,5 (.138)
HSPFS55	15,5 (3.48)	25,0 (5.62)	5,5 (.217)	14,0 (.551)	1,20 (.047)	4,0 (.157)
HSPFS60	18,0 (4.05)	31,0 (6.97)	6,0 (.236)	15,0 (.591)	1,50 (.059)	4,5 (.177)

Spring-Loaded Devices

Metric Screwdriver



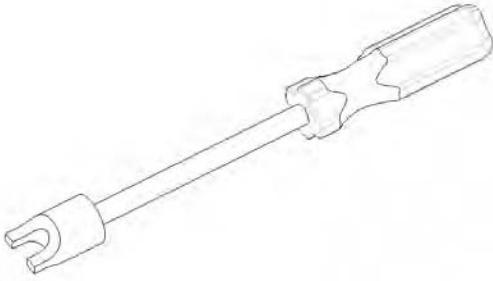
Metric Wrench

Vlier Wrench

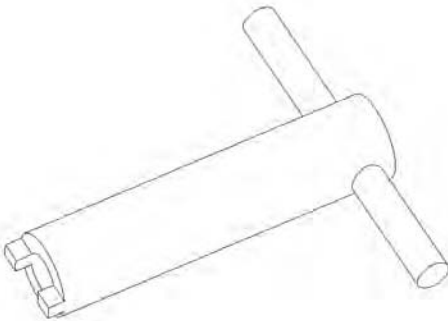
The Vlier Wrench provides fast installation of Vlier Standard Spring, Ball and Stubby Plungers and prevents spring damage that can result when a screwdriver is used on the ball or plunger end.

Special Features

- ◆ Fast installation
- ◆ Prevents spring damage



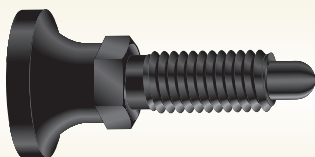
Wrench for Vlier Long Travel Plunger HPM/HDPM Series	
Part Number	For Thread Size
HMW3	M3
HMW4	M4
HMW5	M5
HMW6	M6
HMW8	M8
HMW10	M10
HMW12	M12
HMW16	M16
HMW20	M20
HMW24	M24



Wrench for Vlier Long Travel Plunger HTHL/HHL Series	
Part Number	For Thread Size
HLW10	M10
HLW12	M12
HLW16	M16
HLW22	M22
HLW24	M24

QUICK-RELEASE PLUNGERS

Spring-Loaded Devices



Quick Release Plungers

Description

Vlier Quick Release Plungers provide a variety of hand retractable plunger design and material options offering excellent versatility and wide application potential.

Typical Uses

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

QUICK RELEASE PLUNGER FAMILY

Materials & Types

Steel

Unified ANSI

Black Delrin® Knob*
 Knurled Knob*
 T-Handle
 Pull-Ring - Locking
 Stubby Pull Ring *
 Lever Type *
 Lever Type Stubby *

Metric

Black Delrin® Knob*
 Knurled Knob
 Lever Type - Locking

Stainless Steel

Unified ANSI

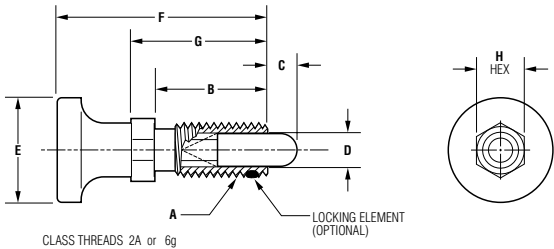
White Delrin® Knob*
 Knurled Knob *
 T-Handle
 Pull Ring - Locking
 Stubby Pull Ring - Non-Locking
 Lever Type - Locking

Metric

White Delrin® Knob*
 Knurled Knob
 Lever Type - Locking

* Locking & Non-Locking models

Delrin Knob Steel Retractable



Delrin® Knob Steel Retractable/Non-Locking

Vlier Delrin Knob Steel Retractable Plungers are a new cosmetically-appealing retractable plunger design with improved appearance and functionality.

Special Features

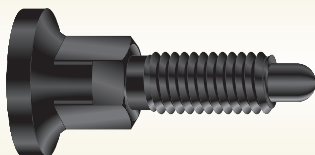
- ◆ Contoured delrin knob
- ◆ Radiused, case-hardened steel plunger
- ◆ Tough steel body & spring
- ◆ Attractive, black finish
- ◆ Non-locking design
- ◆ Unified ANSI & metric threads

Delrin Knob - Steel			Non-Locking							
Part No.	End Force, Lbs.		A	B	C	D	E	F	G	H Hex
	Initial	Final								
PRT250*	.12	.36	¼-20	.50	.13	.16	.50	.97	.63	¼
PRT375	.25	2.0	⅜-16	.75	.19	.25	.75	1.4	.94	⅜
PRT500	.50	1.75	½-13	1.0	.25	.31	1.0	1.9	1.25	½

*NO THREAD RELIEF IN 1/4 - 20 THREAD SIZE.
TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Delrin Knob - Steel-Metric			Non-Locking							
Part No.	End Force		A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)
	Init	Final								
MPRT6*	0.5 (.11)	1.5 (.34)	M6 x 1.0	13 (.50)	3 (.118)	3 (.117)	12 (.48)	25 (.98)	16 (.63)	6 (.236)
MPRT10	1.0 (.22)	9.0 (2.02)	M10 x 1.5	20 (.79)	5 (.196)	6 (.236)	19 (.75)	38 (1.5)	25 (.98)	10 (.39)
MPRT12	2.5 (.56)	8.0 (1.80)	M12 x 1.75	25 (.98)	6 (.236)	8 (.314)	25 (.98)	47 (1.85)	31 (1.2)	12 (.472)

*NO THREAD RELIEF IN M6 THREAD SIZE.
To order with locking element – ADD “P” AT END OF PART NUMBER.

QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****Delrin® Knob Steel Retractable - Locking**

Vlier Delrin Knob Steel Retractable Locking Plungers offer all the benefits of the non-locking Delrin Knob Plunger with the advantage of a plunger that locks in the open position.

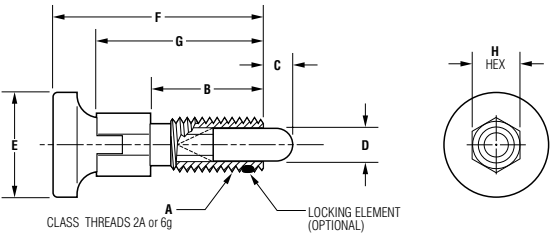
Special Features

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

Special Uses

- ◆ Cosmetic quick-release fastening
- ◆ Latching and indexing
- ◆ Slides and detents

Delrin Knob Steel Retractables

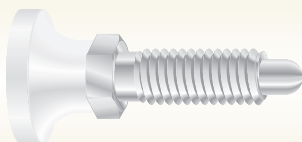


Delrin Knob Steel			Locking							
Part No.	End Force, Lbs.		A	B	C	D	E	F	G	H Hex
	Initial	Final								
PRTL250*	.12	.36	1/4-20	.50	.13	.16	.50	.97	.75	1/4
PRTL375	.25	2.0	3/8-16	.75	.19	.25	.75	1.4	1.13	3/8
PRTL500	.50	1.75	1/2-13	1.0	.25	.31	1.0	1.9	1.50	1/2

*NO THREAD RELIEF IN 1/4 - 20 THREAD SIZE.
TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Delrin Knob Steel-Metric			Locking							
Part No.	End Force		A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)
	Init	Final								
MPRTL6*	0.5 (.11)	1.5 (.34)	M6 x 1.0	13 (.50)	3 (.118)	3 (.117)	12 (.48)	25 (.98)	19 (.75)	6 (.236)
MPRTL10	1.0 (.22)	9.0 (2.02)	M10 x 1.5	20 (.79)	5 (.196)	6 (.236)	19 (.75)	38 (1.5)	30 (1.18)	10 (.39)
MPRTL12	2.5 (.56)	8.0 (1.80)	M12 x 1.75	25 (.98)	6 (.236)	8 (.314)	25 (.98)	47 (1.8)	37 (1.46)	12 (.47)

*NO THREAD RELIEF IN M6 THREAD SIZE.
To order with locking element – ADD “P” AT END OF PART NUMBER.

QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****Delrin® Knob Stainless Steel Retractable/Non-Locking**

Vlier White Delrin Knob Stainless Steel Retractable Plungers are a new Retractable plunger design with improved appearance and functionality. Ideal for food and medical industry applications.

Special Features

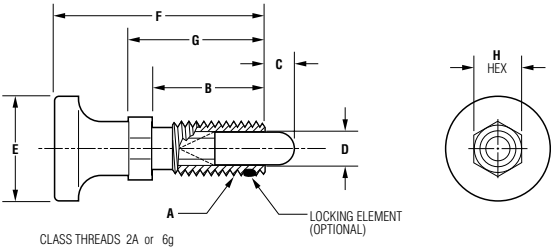
- ◆ Contoured natural (white) delrin knob
- ◆ Radiused, stainless steel plunger
- ◆ Stainless steel body & spring
- ◆ Unified ANSI & metric threads
- ◆ Non-locking design

Special Uses

- ◆ Food & medical applications
- ◆ Special environments

Delrin Knob Stainless Steel Retractable

QUICK-RELEASE PLUNGERS



Delrin Knob - Stainless Steel							Non-Locking			
Part No.	End Force, Lbs.		A	B	C	D	E	F	G	H Hex
	Initial	Final								
SPRT250*	.12	.36	1/4-20	.50	.13	.16	.50	.97	.63	1/4
SPRT375	.25	2.0	3/8-16	.75	.19	.25	.75	1.4	.94	3/8
SPRT500	.50	1.75	1/2-13	1.0	.25	.31	1.0	1.9	1.25	1/2

*NO THREAD RELIEF IN 1/4 - 20 THREAD SIZE.
TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Delrin Knob - Stainless Steel-Metric							Non-Locking			
Part No.	End Fce, N		A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)
	Init	Final								
SMPRT6*	0.5 (.11)	1.5 (.34)	M6 x 1.0	13 (.50)	3 (.118)	3 (.117)	12 (.48)	25 (.98)	16 (.63)	6 (.236)
SMPRT10	1.0 (.22)	9.0 (2.02)	M10 x 1.5	20 (.79)	5 (.196)	6 (.236)	19 (.75)	38 (1.5)	25 (.98)	10 (.39)
SMPRT12	2.5 (.56)	8.0 (1.80)	M12 x 1.75	25 (.98)	6 (.236)	8 (.314)	25 (.98)	47 (1.85)	31 (1.2)	12 (.472)

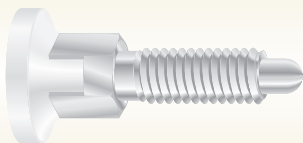
*NO THREAD RELIEF IN M6 THREAD SIZE.
To order with locking element – ADD “P” AT END OF PART NUMBER.

Delrin Knob Stainless Steel Non-Locking Unified ANSI & Metric



QUICK-RELEASE PLUNGERS

Spring-Loaded Devices



Quick Release Plungers

Delrin® Knob Stainless Steel Retractable/Locking

Vlier White Delrin Knob Stainless Steel Retractable Plungers are a new Retractable plunger design with improved appearance and functionality. Ideal for food and medical industry applications.

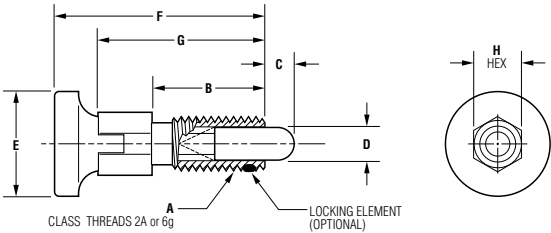
Special Features

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

Special Uses

- ◆ Food & medical applications
- ◆ Special environments

Delrin Knob Stainless Steel Retractable

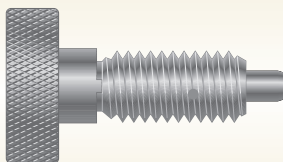


Delrin Knob		Stainless Steel		Locking						
Part No.	End Force, Lbs.		A	B	C	D	E	F	G	H Hex
	Initial	Final								
SPRTL250*	.12	.36	1/4-20	.50	.13	.16	.50	.97	.75	1/4
SPRTL375	.25	2.0	3/8-16	.75	.19	.25	.75	1.4	1.13	3/8
SPRTL500	.50	1.75	1/2-13	1.0	.25	.31	1.0	1.9	1.50	1/2

*NO THREAD RELIEF IN 1/4 - 20 THREAD SIZE.
TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Delrin Knob		Stainless Steel-Metric		Locking						
Part No.	End Fce,N		A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)	G mm (in.)	H mm (in.)
	Init	Final								
SMPRTL6*	0.5 (.11)	1.5 (.34)	M6 x 1.0	13 (.50)	3 (.118)	3 (.117)	12 (.48)	25 (.98)	19 (.75)	6 (.236)
SMPRTL10	1.0 (.22)	9.0 (2.02)	M10 x 1.5	20 (.79)	5 (.196)	6 (.236)	19 (.75)	38 (1.5)	30 (1.18)	10 (.39)
SMPRTL12	2.5 (.56)	8.0 (1.80)	M12 x 1.75	25 (.98)	6 (.236)	8 (.314)	25 (.98)	47 (1.8)	37 (1.46)	12 (.47)

*NO THREAD RELIEF IN M6 THREAD SIZE.
To order with locking element – ADD “P” AT END OF PART NUMBER.

QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****Knurled Knob Steel Retractable Plungers**

Vlier Knurled Knob Steel/Non-Locking Plungers provide a retractable plunger that can be easily withdrawn and reengaged. Large hardened bearing surfaces permit greater side loading. Slight end taper for easy alignment. Tough steel body and spring. Zinc gold chromate finish.

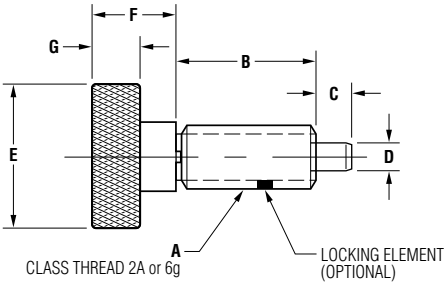
Knurled Knob Stainless Steel Retractable Plungers

Vlier Knurled Knob Stainless Steel/Non-Locking Plungers offer the added benefit of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Knurled knob design
- ◆ Hand-retractable
- ◆ Unified ANSI & metric threads
- ◆ Stainless steel resists corrosion
- ◆ Non-locking design

Knurled Knob Retractable



Knurled Knob-Steel/Stainless Steel								Non-Locking		
Part No.		End Force, Lbs.		A	B	C	D*	E	F	G
Steel	Stainless	Init	Final							
SL190	SSL190	0.50	3.0	10-32	.400	.094	.104**	0.38	.250	.19
SL250	SSL250	1.00	4.0	¼-20	.500	.125	.123	0.50	.313	.19
SL312	SSL312	1.00	6.0	5⁄16-18	.625	.188	.154	0.63	.375	.25
SL375	SSL375	1.00	8.0	⅜-16	.750	.218	.185	0.75	.500	.31
SL500	SSL500	1.00	10.0	½-13	.875	.250	.248	1.00	.625	.38

*TOLERANCE: +.001; -.000

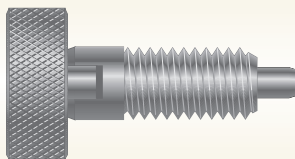
**190 SERIES HAS A RADIUSED NOSE

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER

Knurled Knob-Steel/Stainless Steel-Metric								Non-Locking		
Part No.		End Force		A	B	C	D*	E	F	G
Steel	Stainless	Init	Final							
SLM5	SSLM5	2.22 (0.5)	13.34 (3.0)	M5 x 0.8	10 (.394)	2 (.078)	2,5 (.0984)	9 (.355)	6 (.236)	4 (.157)
SLM6	SSLM6	4.45 (1.0)	17.8 (4.0)	M6 x 1.0	13 (.512)	3 (.118)	3 (.118)	13 (.512)	8 (.315)	5 (.197)
SLM10	SSLM10	4.45 (1.0)	35.6 (8.0)	M10 x 1.5	19 (.748)	6 (.236)	5 (.1968)	19 (.748)	13 (.512)	8 (.315)
SLM12	SSLM12	4.45 (1.0)	44.5 (10.0)	M12 x 1.75	23 (.905)	6 (.236)	6 (.236)	25 (.984)	16 (.630)	10 (.315)

*TOLERANCE: +.000; -.0254 (+.000; -.001)

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****Knurled Knob Steel Retractable Locking Plungers**

Vlier Knurled Knob Steel/Locking Plungers provide a retractable plunger that locks in the retracted position and can be easily withdrawn and reengaged. Large hardened bearing surfaces permit greater side loading. Slight end taper for easy alignment. Tough steel body and spring. Zinc gold chromate finish.

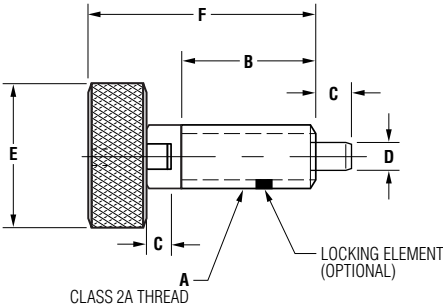
Knurled Knob Stainless Steel Retractable Locking Plungers

Vlier Knurled Knob Stainless Steel/Locking Plungers offer the added benefit of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Knurled knob design
- ◆ Hand-retractable locking plunger
- ◆ Large hardened bearing surface
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment
- ◆ Steel or stainless steel design option

Knurled Knob Retractable



Knurled Knob - Steel							Locking	
Part No.	End Force, Lbs.		A	B	C	D	E	F
	Initial	Final						
SLF250	.50	2.0	¼-20	.400	.125	.123-.124	.50	.805
SLF375	.50	3.0	⅜-16	.750	.22	.185-.186	.75	1.26
SLF500	.50	4.0	½-13	.650	.25	.248-.249	1.0	1.38

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Knurled Knob - Stainless Steel							Locking	
Part No.	End Force, Lbs.		A	B	C	D	E	F
	Initial	Final						
SSLF250	.50	2.0	¼-20	.400	.125	.123-.124	.50	.805
SSLF375	.50	3.0	⅜-16	.750	.22	.185-.186	.75	1.26
SSLF500	.50	4.0	½-13	.650	.25	.248-.249	1.0	1.38

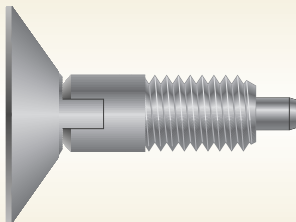
TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Knurled Knob - Steel							Locking	
Part No.	End Force, Lbs.		A	B	C	D	E	F
	Initial	Final						
SLFH250	1.0	4.0	¼-20	.400	.125	.123-.124	.50	.805
SLFH375	1.0	8.0	⅜-16	.750	.22	.185-.186	.75	1.26
SLFH500	1.0	10.0	½-13	.650	.25	.248-.249	1.0	1.38

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Knurled Knob - Stainless Steel							Locking	
Part No.	End Force, Lbs.		A	B	C	D	E	F
	Initial	Final						
SSLFH250	1.0	4.0	¼-20	.400	.125	.123-.124	.50	.805
SSLFH375	1.0	8.0	⅜-16	.750	.22	.185-.186	.75	1.26
SSLFH500	1.0	10.0	½-13	.650	.25	.248-.249	1.0	1.38

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

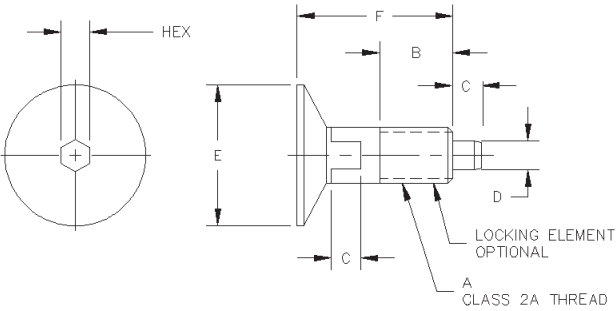
QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****Hex Drive Knob Retractable Locking Plungers**

Vliet Hex Drive Knob Steel Locking Plungers provide a retractable plunger that locks in the retracted position and can be easily withdrawn and reengaged. Built in hex drive wrench provides rapid installation and adjustment with hex tool. Zinc gold chromate finish.

Special Features

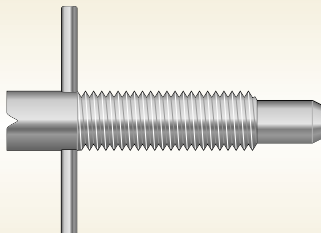
- ◆ C ' Sink knob with hex
- ◆ Hand-retractable locking plunger
- ◆ Large hardened bearing surface
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment

Hex Drive Knob Retractable



Hex Drive Knob								Locking	
Part No.	End Force, Lbs.		A	B	C	D	E	F	HEX
	Initial	Final							
SLR250	1	4	1/4-20	.400	.125	.123	.750	.805	.125
SLR312	1	6	5/16-18	.530	.187	.154	.875	1.070	.125
SLR375	1	8	3/8-16	.750	.220	.185	1.000	1.260	.218
SLR500	1	10	1/2-13	.650	.250	.248	1.250	1.380	.250

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****T-Handle Steel Retractable Plungers**

Vlier T-Handle Steel Locking Retractable Plungers provide an easy to grasp T-handle for withdrawing and engaging the plunger.

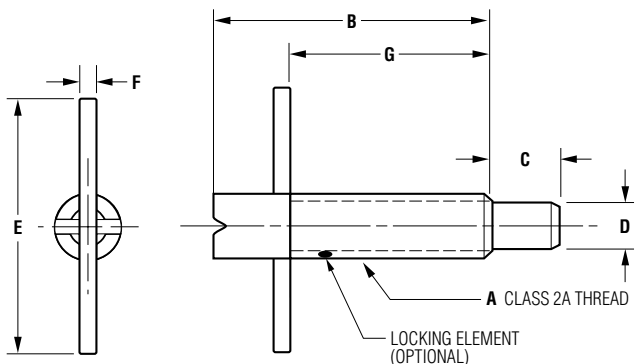
T-Handle Stainless Steel Retractable Plungers

Vlier T-Handle Stainless Steel Locking Retractable Plungers provide the added advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ T-handle design
- ◆ Locking plunger
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment
- ◆ Steel or stainless steel design option

T-Handle Retractable



QUICK-RELEASE PLUNGERS

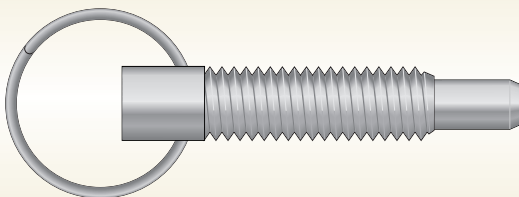
T-Handle Retractable Steel/Stainless Steel Locking

T-Handle - Steel								Locking	
Part No.	End Force Lbs.		A	B	C	D	E	F	G
	Initial	Final							
FRT250	1.0	2.5	1/4-20	1.14	.250	.155	1.13	.13	.8
FRT375	2.0	4.0	3/8-16	1.68	.375	.233	1.50	.13	1.2
FRT500	2.5	5.0	1/2-13	2.00	.500	.312	2.00	.16	1.4
FRT625	2.5	5.0	5/8-11	2.38	.625	.375	2.50	.19	1.7

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

T-Handle - Stainless Steel								Locking	
Part No.	End Force Lbs.		A	B	C	D	E	F	G
	Initial	Final							
SFRT250	1.0	2.5	1/4-20	1.14	.250	.155	1.13	.13	.8
SFRT375	2.0	4.0	3/8-16	1.68	.375	.233	1.50	.13	1.2
SFRT500	2.5	5.0	1/2-13	2.00	.500	.312	2.00	.16	1.4
SFRT625	2.5	5.0	5/8-11	2.38	.625	.375	2.50	.19	1.7

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****Pull-Ring Steel Retractable Plungers**

Vlier Pull-Ring Steel Locking Retractable Plungers are designed for limited space applications and provide an easy to grasp pull-ring handle for withdrawing and engaging the plunger.

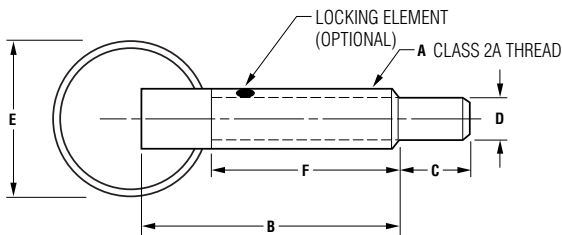
Pull-Ring Stainless Steel Retractable Plungers

Vlier Pull-Ring Stainless Steel Locking Retractable Plungers provide the added advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Pull-ring design
- ◆ Locking plunger
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment
- ◆ Steel or stainless steel design option

Pull-Ring Retractable

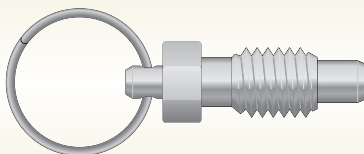


Pull-Ring - Steel							Locking	
Part No.	End Force, Lbs.		A	B	C	D	E	F
	Initial	Final						
PR250	1.0	2.5	¼-20	1.14	.250	.155	0.62	.8
PR375	2.0	4.0	⅜-16	1.68	.375	.233	0.98	1.2
PR500	2.5	5.0	½-13	2.00	.500	.312	1.26	1.4

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Pull-Ring - Stainless Steel							Locking	
Part No.	End Force, Lbs.		A	B	C	D	E	F
	Initial	Final						
SPR250	1.0	2.5	¼-20	1.14	.250	.155	0.62	.8
SPR375	2.0	4.0	⅜-16	1.68	.375	.233	0.98	1.2
SPR500	2.5	5.0	½-13	2.00	.500	.312	1.26	1.4

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****Pull-Ring Stubby Steel Retractable Plungers**

Vlier Pull-Ring Stubby Steel Retractable Plungers offer a shorter plunger body for limited space applications with an easy to grasp pull-ring handle for withdrawing and engaging the plunger.

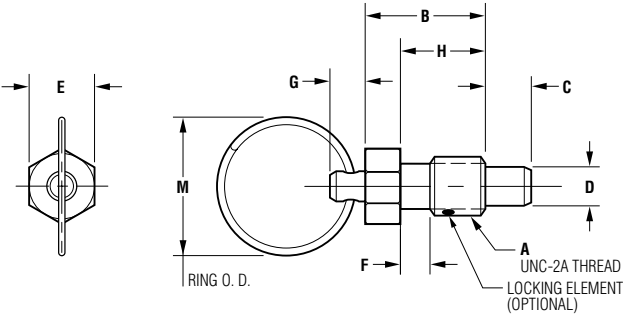
Pull-Ring Stubby Stainless Steel Retractable Plungers

Vlier Pull-Ring Stubby Stainless Steel Retractable Plungers provide the added advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Pull-ring stubby design
- ◆ Non-locking plunger
- ◆ Withstands side loading
- ◆ Tapered end for easy alignment
- ◆ Steel or stainless steel design option

Pull-Ring Stubby Retractable



Pull-Ring Stubby Steel							Non-Locking				
Part No.	End Force, Lbs.		A	B	C	D	E Hex	F	G	H	M
	Initial	Final									
PRSN250	.50	2.0	¼-20	.44	.19	.16	.25	*	.18	.31	.62
PRSN250A	.50	2.0	¼-20	.44	.19	.16	.25	*	.18	.31	.75
PRSN375	.75	3.0	⅜-16	.63	.28	.25	.38	.13	.19	.44	.75
PRSN500	1.0	4.0	½-13	.81	.38	.31	.50	.13	.25	.56	1.0
PRSN625	1.25	5.0	⅝-11	1.0	.44	.38	.62	.13	.31	.69	1.0

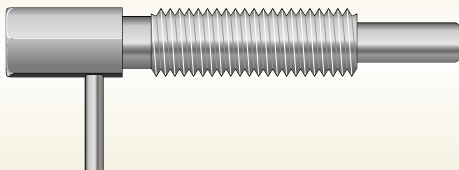
*NO THREAD RELIEF FOR 250 SERIES.

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

Pull-Ring Stubby Stainless Steel							Non-Locking				
Part No.	End Force, Lbs.		A	B	C	D	E Hex	F	G	H	M
	Initial	Final									
SPRSN250	.50	2.0	¼-20	.44	.19	.16	.25	*	.18	.31	.62
SPRSN250A	.50	2.0	¼-20	.44	.19	.16	.25	*	.18	.31	.75
SPRSN375	.75	3.0	⅜-16	.63	.28	.25	.38	.13	.19	.44	.75
SPRSN500	1.0	4.0	½-13	.81	.38	.31	.50	.13	.25	.56	1.0
SPRSN625	1.25	5.0	⅝-11	1.0	.44	.38	.62	.13	.31	.69	1.0

*NO THREAD RELIEF FOR 250 SERIES.

TO ORDER WITH LOCKING ELEMENT – ADD “P” AT END OF PART NUMBER.

QUICK-RELEASE PLUNGERS***Spring-Loaded Devices*****Quick Release Plungers****Lever Type Steel Retractable Plungers**

Vlier Lever Type Steel Locking Plungers permit the plunger to be fully withdrawn into the body. Fully retractable plunger locks into retracted position.

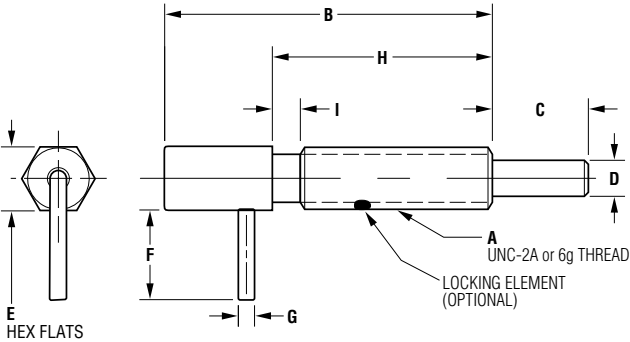
Lever Type Stainless Steel Retractable Plungers

Vlier Lever Type Stainless Steel Locking Plungers offer the added advantage of an all stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Lever handle design
- ◆ Locks in retracted position
- ◆ Tapered end for easy alignment
- ◆ Steel & stainless steel
- ◆ Unified ANSI & metric threads

Lever Type Retractable



QUICK-RELEASE PLUNGERS

Lever Type Steel/Stainless Steel Locking Unified ANSI & Metric

Lever Type Steel/Stainless Steel										Locking		
Part No.		End Force		A	B	C	D	E Hex	F	G	H	I
Steel	Stainless	Init	Final									
FR250	SSFR250	0.50	2.50	¼-20	1.25	0.38	.16	.25	0.50	.09	0.80	*
FR375	SSFR375	0.75	3.75	⅜-16	2.00	0.56	.25	.38	0.75	.14	1.31	.13
FR500	SSFR500	1.00	5.0	½-13	2.11	0.75	.31	.50	0.93	.19	1.25	.15
FR625	SSFR625	1.00	5.0	⅝-11	3.05	1.00	.38	.62	1.00	.19	2.00	.18

*NO THREAD RELIEF FOR ¼-20 SERIES.
To order with locking element – ADD “P” AT END OF PART NUMBER.

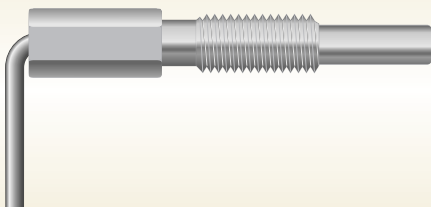
Lever Type Steel/Stainless Steel-Metric								Locking Metric				
Part No.		End Force		A	B	C	D	E	F	G	H	I
Steel	Stainless	Init	Final	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)	mm (in.)
FRM6	SFRM6	2,2 (.50)	11,1 (2.5)	M6 x 1.0	32 (1.26)	10 (.39)	4 (.157)	6 (.236)	12,7 (.50)	2,3 (.09)	20 (.788)	*
FRM10	SFRM10	3,3 (.75)	16,7 (3.75)	M10 x 1.5	51 (2)	14 (.55)	6 (.236)	10 (.39)	19 (.75)	3,5 (.14)	33 (1.3)	3,3 (.13)
FRM12	SFRM12	4,5 (1.0)	22,3 (5.0)	M12 x 1.75	54 (2.1)	19 (.75)	7 (.275)	12 (.47)	25,4 (1.0)	4,8 (.19)	32 (1.26)	3,8 (.15)

*NO THREAD RELIEF FOR M6 THREAD SIZE.
To order with locking element – ADD “P” AT END OF PART NUMBER.



QUICK-RELEASE PLUNGERS

Spring-Loaded Devices



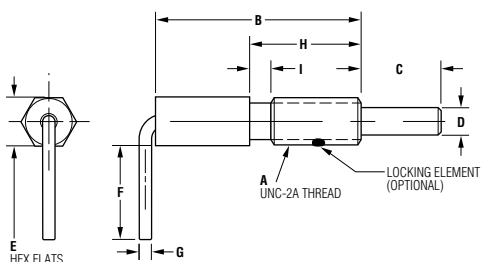
Quick Release Plungers

Lever Type Steel/Non-Locking Plungers

Vlier Lever Type Steel Non-Locking Plungers feature a fully retractable plunger with tapered end for easy alignment. Lever handle provides easy withdrawing and reengagement.

Lever Type Stubby Steel Plungers

Vlier Lever Type Stubby Steel Plungers are available in both Locking and Non-Locking and offer a compact retractable plunger ideal for limited space applications.

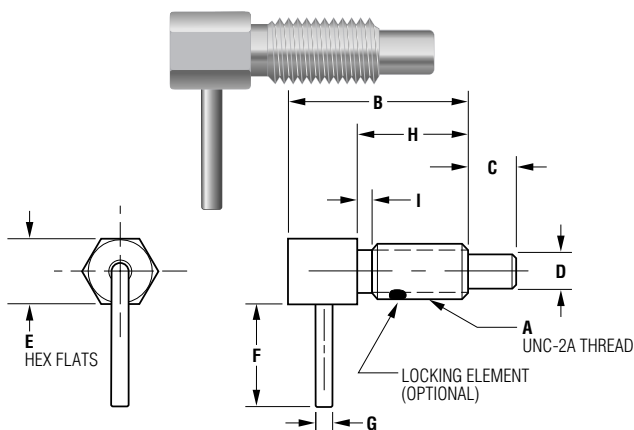


Lever Type Steel			Non-Locking								
Part No.	End Force, Lbs.		A	B	C	D	E Hex	F	G	H	I
	Initial	Final									
FRN250	.50	2.50	¼-20	1.25	.38	.16	.25	.50	.09	.80	*
FRN375	.75	3.75	⅜-16	2.00	.56	.25	.38	.75	.14	1.31	.13
FRN500	1.0	5.0	½-13	2.11	.75	.31	.50	1.0	.19	1.25	.15
FRN625	1.0	5.0	⅝-11	3.05	1.0	.38	.62	1.0	.19	2.0	.18

*NO THREAD RELIEF FOR 1/4-20 SERIES.

To order with locking element – ADD “P” AT END OF PART NUMBER.

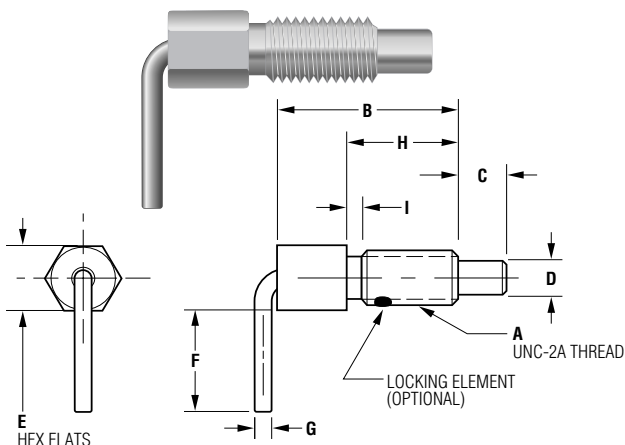
Lever Type Stubby Retractable



Lever Type Stubby Steel								Locking			
Part No.	End Force, Lbs.		A	B	C	D	E Hex	F	G	H	I
	Initial	Final									
FRS250	.12	.50	¼-20	.75	.20	.16	.25	.40	.09	.50	*
FRS375	.25	1.25	⅜-16	1.13	.30	.25	.38	.56	.14	.75	.13
FRS500	.50	2.0	½-13	1.50	.40	.31	.50	.75	.19	1.0	.15
FRS625	.75	2.5	⅝-11	1.88	.50	.38	.62	.88	.19	1.25	.18

*NO THREAD RELIEF FOR 1/4-20 SERIES.

To order with locking element – ADD “P” AT END OF PART NUMBER.



Lever Type Stubby Steel								Non-Locking			
Part No.	End Force, Lbs.		A	B	C	D	E Hex	F	G	H	I
	Initial	Final									
FRSN250	.12	.50	1/4-20	.75	.20	.16	.25	.40	.09	.50	*
FRSN375	.25	1.25	3/8-16	1.13	.30	.25	.38	.56	.14	.75	.13
FRSN500	.50	2.0	1/2-13	1.50	.40	.31	.50	.75	.19	1.0	.15
FRSN625	.75	2.5	5/8-11	1.88	.50	.38	.62	.88	.19	1.25	.18

*NO THREAD RELIEF FOR 1/4-20 SERIES.

To order with locking element – ADD “P” AT END OF PART NUMBER.

BALL LOCKING PINS**"T" Handle****Vlier-Lock, Commercial Grade**

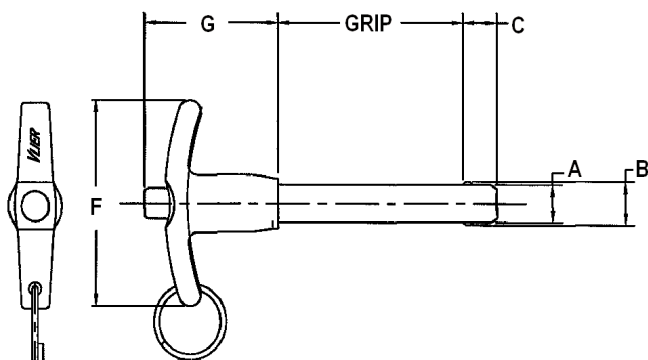
Vlier-Lock quick release pins are the newest addition to our product family for 2006. These commercial grade pins are readily available and are offered in the most popular sizes at an economical cost. Designed for industrial applications such as Manufacturing, Medical, Vehicle, Marine, and many others.

Special Features

- ◆ T-handle and Button handle options
- ◆ L-handle option available as a special
- ◆ Handles are black anodized aluminum with brass push button
- ◆ Shank body is made from high quality 300-Series stainless steel

Special Uses

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



T-Handle w/Stainless Steel Pin

Part Number	Nom Ø	Grip Length (+.020 / -.0015)	A (+.0000 / -.0015)	B (+.005 / -.000)	C (+.000 -.030)	F (T- Handle)	G (T- Handle)
SVLP25CT05	0.25 (1/4)	0.50	0.2485	0.289	0.290	1.815	1.270
SVLP25CT10		1.00	0.2485	0.289	0.290	1.815	1.270
SVLP25CT15		1.50	0.2485	0.289	0.290	1.815	1.270
SVLP25CT20		2.00	0.2485	0.289	0.290	1.815	1.270
SVLP25CT25		2.50	0.2485	0.289	0.290	1.815	1.270
SVLP25CT30		3.00	0.2485	0.289	0.290	1.815	1.270
SVLP25CT40		4.00	0.2485	0.289	0.290	1.815	1.270
SVLP31CT05	0.31 (5/16)	0.50	0.311	0.375	0.330	1.815	1.270
SVLP31CT10		1.00	0.311	0.375	0.330	1.815	1.270
SVLP31CT15		1.50	0.311	0.375	0.330	1.815	1.270
SVLP31CT20		2.00	0.311	0.375	0.330	1.815	1.270
SVLP31CT25		2.50	0.311	0.375	0.330	1.815	1.270
SVLP31CT30		3.00	0.311	0.375	0.330	1.815	1.270
SVLP31CT35		3.50	0.311	0.375	0.330	1.815	1.270
SVLP31CT40		4.00	0.311	0.375	0.330	1.815	1.270
SVLP37CT05	0.37 (3/8)	0.50	0.3735	0.44	0.365	2.065	1.450
SVLP37CT10		1.00	0.3735	0.44	0.365	2.065	1.450
SVLP37CT15		1.50	0.3735	0.44	0.365	2.065	1.450
SVLP37CT20		2.00	0.3735	0.44	0.365	2.065	1.450
SVLP37CT25		2.50	0.3735	0.44	0.365	2.065	1.450
SVLP37CT30		3.00	0.3735	0.44	0.365	2.065	1.450
SVLP37CT35		3.50	0.3735	0.44	0.365	2.065	1.450
SVLP37CT40		4.00	0.3735	0.44	0.365	2.065	1.450
SVLP50CT05	0.50 (1/2)	0.50	0.4985	0.594	0.460	2.345	1.600
SVLP50CT10		1.00	0.4985	0.594	0.460	2.345	1.600
SVLP50CT15		1.50	0.4985	0.594	0.460	2.345	1.600
SVLP50CT20		2.00	0.4985	0.594	0.460	2.345	1.600
SVLP50CT25		2.50	0.4985	0.594	0.460	2.345	1.600
SVLP50CT30		3.00	0.4985	0.594	0.460	2.345	1.600
SVLP50CT35		3.50	0.4985	0.594	0.460	2.345	1.600
SVLP50CT40		4.00	0.4985	0.594	0.460	2.345	1.600
SVLP62CT05	0.62 (5/8)	0.50	0.6235	0.750	0.580	3.100	1.700
SVLP62CT10		1.00	0.6235	0.750	0.580	3.100	1.700
SVLP62CT15		1.50	0.6235	0.750	0.580	3.100	1.700
SVLP62CT20		2.00	0.6235	0.750	0.580	3.100	1.700
SVLP62CT25		2.50	0.6235	0.750	0.580	3.100	1.700
SVLP62CT30		3.00	0.6235	0.750	0.580	3.100	1.700
SVLP62CT35		3.50	0.6235	0.750	0.580	3.100	1.700
SVLP62CT40		4.00	0.6235	0.750	0.580	3.100	1.700

BALL LOCKING PINS**Button Handle****Coming mid 2006**

Vlier Lock Pins

Vlier-Lock, Commercial Grade

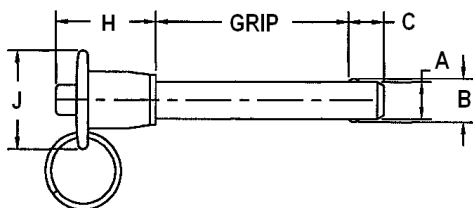
Vlier-Lock quick release pins are the newest addition to our product family for 2006. These commercial grade pins are readily available and are offered in the most popular sizes at an economical cost. Designed for applications such as Manufacturing, Medical, Vehicle, Marine, and many others.

Special Features

- ◆ T-handle and Button handle options
- ◆ Handles are black anodized aluminum with brass push button
- ◆ Shank is made from high quality stainless steel
- ◆ Low cost and readily available

Special Uses

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



Button Handle w/Stainless Steel Pin

Part Number	Nom $\varnothing$	Grip Length (+.020/ -.000)	A (+.0000/ .0015)	B (+.005/ .000)	C (+.000/ .030)	H Button	J (Button Handle)	
							Max	Min
SVLP25CB05	0.25 (1/4)	0.50	0.2485	0.289	0.290	0.890	0.800	0.720
SVLP25CB10		1.00	0.2485	0.289	0.290	0.890	0.800	0.720
SVLP25CB15		1.50	0.2485	0.289	0.290	0.890	0.800	0.720
SVLP25CB20		2.00	0.2485	0.289	0.290	0.890	0.800	0.720
SVLP25CB25		2.50	0.2485	0.289	0.290	0.890	0.800	0.720
SVLP25CB30		3.00	0.2485	0.289	0.290	0.890	0.800	0.720
SVLP25CB35		3.50	0.2485	0.289	0.290	0.890	0.800	0.720
SVLP25CB40		4.00	0.2485	0.289	0.290	0.890	0.800	0.720
SVLP31CB05	0.31 (5/16)	0.50	0.311	0.375	0.330	0.930	1.135	0.810
SVLP31CB10		1.00	0.311	0.375	0.330	0.930	1.135	0.810
SVLP31CB15		1.50	0.311	0.375	0.330	0.930	1.135	0.810
SVLP31CB20		2.00	0.311	0.375	0.330	0.930	1.135	0.810
SVLP31CB25		2.50	0.311	0.375	0.330	0.930	1.135	0.810
SVLP31CB30		3.00	0.311	0.375	0.330	0.930	1.135	0.810
SVLP31CB35		3.50	0.311	0.375	0.330	0.930	1.135	0.810
SVLP31CB40		4.00	0.311	0.375	0.330	0.930	1.135	0.810
SVLP37CB05	0.37 (3/8)	0.50	0.3735	0.44	0.365	1.040	1.135	0.875
SVLP37CB10		1.00	0.3735	0.44	0.365	1.040	1.135	0.875
SVLP37CB15		1.50	0.3735	0.44	0.365	1.040	1.135	0.875
SVLP37CB20		2.00	0.3735	0.44	0.365	1.040	1.135	0.875
SVLP37CB25		2.50	0.3735	0.44	0.365	1.040	1.135	0.875
SVLP37CB30		3.00	0.3735	0.44	0.365	1.040	1.135	0.875
SVLP37CB35		3.50	0.3735	0.44	0.365	1.040	1.135	0.875
SVLP37CB40		4.00	0.3735	0.44	0.365	1.040	1.135	0.875
SVLP50CB05	0.50 (1/2)	0.50	0.4985	0.594	0.460	1.190	1.400	1.300
SVLP50CB10		1.00	0.4985	0.594	0.460	1.190	1.400	1.300
SVLP50CB15		1.50	0.4985	0.594	0.460	1.190	1.400	1.300
SVLP50CB20		2.00	0.4985	0.594	0.460	1.190	1.400	1.300
SVLP50CB25		2.50	0.4985	0.594	0.460	1.190	1.400	1.300
SVLP50CB30		3.00	0.4985	0.594	0.460	1.190	1.400	1.300
SVLP50CB35		3.50	0.4985	0.594	0.460	1.190	1.400	1.300
SVLP50CB40		4.00	0.4985	0.594	0.460	1.190	1.400	1.300
SVLP62CB05	0.62 (5/8)	0.50	0.6235	0.750	0.580	1.500	1.700	1.530
SVLP62CB10		1.00	0.6235	0.750	0.580	1.500	1.700	1.530
SVLP62CB15		1.50	0.6235	0.750	0.580	1.500	1.700	1.530
SVLP62CB20		2.00	0.6235	0.750	0.580	1.500	1.700	1.530
SVLP62CB25		2.50	0.6235	0.750	0.580	1.500	1.700	1.530
SVLP62CB30		3.00	0.6235	0.750	0.580	1.500	1.700	1.530
SVLP62CB35		3.50	0.6235	0.750	0.580	1.500	1.700	1.530
SVLP62CB40		4.00	0.6235	0.750	0.580	1.500	1.700	1.530

Leveling Device Selector Guide™ ★

**Follow These
5 Simple Steps
to Select Which
Vlier Leveling
Device is Best
for your
Application.**

STEP 1: Style

Do You Need A Stud or Socket Model?

Vlier Original and High-Value Levelers are available in two basic models— Stud or Socket. Stud models feature a threaded stud with integral machined and hardened ball for superior strength and rigidity.

For applications with an existing stud installation, Socket models offer base and socket with internal thread and nut.

STEP 2: Length

Do You Need A Regular or Extended Length Stud?

Vlier Original and High-Value Stud lengths range from 1.0 to 4.25 inches. For applications which require additional clearance, Extended Stud lengths range from 2.0 to 8.0 inches.

Original Leveling Devices



STUD STYLE

Load Range
0-22,000 lbs

STANDARD LENGTH

Load Range
0-22,000 lbs



EXTENDED LENGTH

Load Range 0-22,000 lbs

SOCKET STYLE

Load Range 0-22,000 lbs

High-Value Leveling Devices

STUD STYLE

Load Range
0-22,000 lbs

STANDARD LENGTH

Load Range
0-22,000 lbs



EXTENDED LENGTH

Load Range 0-22,000 lbs

SOCKET STYLE

Load Range 0-22,000 lbs

STEP 3: Thread

Do You Need A Stud or Socket Model?

Most VLIER Levelers are available in both Inch or Metric threads.

STEP 4: Base

Do You Need A Regular or Extended Length Stud?

Steel is the standard material of choice for VLIER Levelers. Steel offers a tough, dependable leveler at a lower cost than stainless steel. Case hardening of integrally machined ball on stud provides superior strength.

Stainless Steel is the premium material for Vlier Levelers. Stainless Steel is non-corrosive and non-absorptive, making it ideal for industries where equipment is routinely cleaned with strong chemical agents to meet rigorous hygienic standards—i.e. food, beverage, dairy, chemical, pharmaceutical etc.

Natural (White) Delrin is a non-absorptive lightweight, rugged and non-marring material for protecting floor or surface finishes and meets FDA regulations for such materials.

STEP 5: Stud/Socket

Do You Need A Stud or Socket Model?

For applications requiring a more sensitive leveling adjustment, VLIER offers Original Stud Levelers with Extra Fine threads.

All VLIER Levelers both Stud and Socket models are available with a 0.125 inch neoprene elastomer bonded to the pad bottom to prevent skidding or creeping.

VLIER Original Steel Levelers come standard zinc plated with gold chromate finish. Black and silver chromate finishes are optional and require a 4 week lead time.

METRIC

Load Range 0-7,200 lbs



INCH

Load Range 0-22,000 lbs

METRIC

Load Range 0-7,200 lbs



INCH

STEEL BASE

Load Range 0-22,000 lbs

STAINLESS BASE

Load Range 0-22,000 lbs

DELIRIN® BASE

Load Range 0-2,400 lbs

STEEL BASE

Load Range 0-22,000 lbs

STAINLESS BASE

Load Range 0-22,000 lbs

DELIRIN® BASE

Load Range 0-2,400 lbs

STEEL STUD

FINE THREAD STEEL STUD

STEEL STUD/ELASTOMER PAD

STAINLESS STUD

STAINLESS STUD/ELASTOMER PAD

STEEL STUD

STAINLESS STUD

STEEL SOCKET

FINE THREAD STEEL SOCKET

STEEL SOCKET/ELASTOMER PAD

STAINLESS SOCKET

STAINLESS SOCKET/ELASTOMER PAD

STEEL SOCKET

STAINLESS SOCKET

STEEL BASE

Load Range 0-22,000 lbs

STAINLESS BASE

Load Range 0-22,000 lbs

STEEL STUD

STEEL STUD/ELASTOMER PAD

STAINLESS STUD

STAINLESS STUD/ELASTOMER PAD

STEEL BASE

Load Range 0-22,000 lbs

STAINLESS BASE

Load Range 0-22,000 lbs

STEEL SOCKET

STEEL SOCKET/ELASTOMER PAD

STAINLESS SOCKET

STAINLESS SOCKET/ELASTOMER PAD

LEVELING DEVICES**Econoline® Stud Style and Socket Style****ECONOLINE®** Leveling Devices**Inch-Standard and Extended Length****Steel****Stainless Steel****Black Delrin**

Vlier ECONOLINE® Stud Style Leveling Devices offer a lighter weight, lower cost leveling and support solution for today's equipment and instrumentation markets. Design of base utilizes plastic socket collar for maximum assembly flexibility.

Steel has black oxide finish. **Stainless Steel** offers maximum protection against rust and corrosion

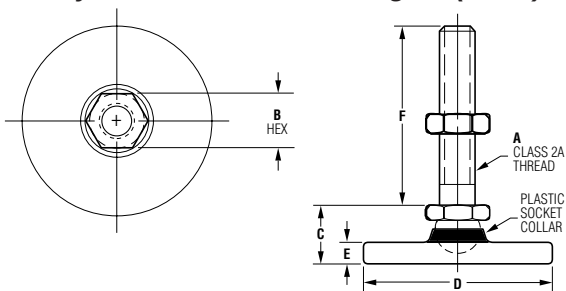
Special Features

- ◆ Higher load supporting metal base and stud design
- ◆ Pop-in assembly/disassembly with plastic socket collar
- ◆ 1.5, 2.0, 2.5 inch base diameters
- ◆ Patent pending product design
- ◆ Optional Hand Adjustment Knobs

Visit www.vlier.com for Complete Product Specification



Stud Style - Inch - Standard Length - (Metal)



ECONOLINE™-Steel Base, Steel Stud

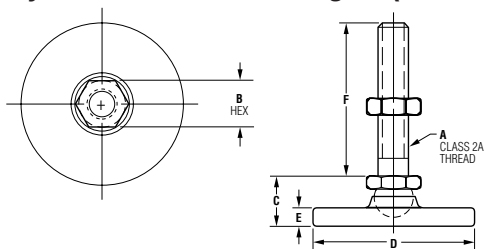
Part No.	Max load (lbs)	A	B	C	D	E	F	OPTIONAL KNOB
ELS151	700	1/4-20	5/8	0.72	1.5	0.25	1.25	—
ELS259	3800	3/4-10	3/4	0.72	2.5	0.25	2.0	—

ECONOLINE™-Stainless Base, Stainless Stud

Part No.	Max load (lbs)	A	B	C	D	E	F	OPTIONAL KNOB
ELSS151	700	1/4-20	5/8	0.72	1.5	0.25	1.25	—
ELSS259	3800	3/4-10	3/4	0.72	2.5	0.25	2.0	—

Visit www.vlier.com for Additional Sizes

Stud Style - Inch - Standard Length - (Delrin Bases)



ECONOLINE™-Delrin Base, Delrin Stud

Part No.	Max load (lbs)	A	B	C	D	E	F	OPTIONAL KNOB
PEL153	200	3/8-16	5/8	0.67	1.5	0.26	2.0	AKP153
PEL257	250	5/8-11	5/8	0.67	2.5	0.26	2.0	AKP257

ECONOLINE™-Delrin® Base, Steel/Stainless Stud

Part No.		Max load (lbs)	A	B	C	D	E	F	OPTIONAL KNOB
Steel	Stainless Steel								
EL151	SEL151	225	1/4-20	5/8	0.67	1.5	0.26	1.25	—
EL259	SEL259	350	3/4-10	3/4	0.67	2.5	0.26	2.0	—

Optional Hand Adjustment knobs provide fingertip, tool free leveling adjustment for light loads. See page 93.

Visit www.vlier.com for Additional Sizes

Stud Style - Extended Length

ECONOLINE EXTENDED LENGTH

Part No.		Max Load (lbs)	A	B	C	D	E	F	OPTIONAL KNOB
Steel Stud	Stainless Stud								
ELSX151	ELSSX151	500	1/4-20	5/8	0.72	1.5	0.25	2.5	—
ELSX259	ELSSX259	3800	3/4-10	3/4	0.72	2.5	0.25	4	—

ECONOLINE™ EXTENDED LENGTH-Delrin® Base

Part No.		Max Load (lbs)	A	B	C	D	E	F	OPTIONAL KNOB
Delrin Base Steel Stud	Delrin Base Stainless Stud								
ELX151	SELX151	225	1/4-20	5/8	0.67	1.5	0.26	2.5	—
ELX259	SELX259	350	3/4-10	3/4	0.67	2.5	0.26	4	—

Visit www.vlier.com for Additional Sizes

Metric

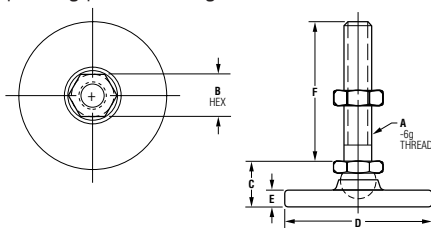
Black Oxide Steel Base, Black Oxide Steel Stud

Black Delrin Base, Black Oxide Steel Stud

Vlier ECONOLINE® Stud Style Leveling Devices offer a lighter weight, lower cost leveling and support solution for today's equipment and instrumentation markets. Design of base utilizes plastic socket collar for maximum assembly flexibility.

Special Features

- ◆ Low-profile design
- ◆ Pop-in assembly/disassembly
- ◆ 1.5, 2.0, 2.5 inch base diameters
- ◆ Patent pending product design



ECONOLINE™ METRIC- Steel Base, Steel Stud

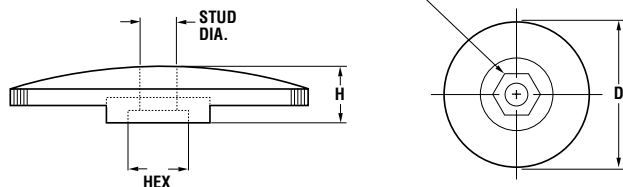
Part No.	Max load (lbs)	A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
ELSM380	830 kg (1825 lbs)	M10x1.5	17 (.67)	18.3 (.72)	38 (1.50)	6.4 (.25)	50 (2.00)
ELSM646	1,364 (3000 lbs)	M16x2	17 (.67)	18.3 (.72)	64 (2.50)	6.4 (.25)	50 (2.00)

ECONOLINE™ METRIC-Delrin Base, Steel Stud

Part No.	Max load (lbs)	A	B mm (in.)	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
ELM380	114 kg (250 lbs)	M10x1.5	17 (.67)	17 (.67)	38 (1.50)	6.6 (.26)	50 (2.00)
ELM646	136 kg (300 lbs)	M16x2	17 (.67)	17 (.67)	64 (2.50)	6.6 (.26)	50 (2.00)

Visit www.vlier.com for Additional Sizes

Hand Adjustment Knobs



Black Delrin® hand adjustment knobs provide finger tip, tool free leveling adjustment for light loads and fit easily over the adjustment nut on Econoline Stud Style Inch Levelers.

ECONOLINE™ Hand Adjustment Knobs-For Steel & Stainless Steel Studs

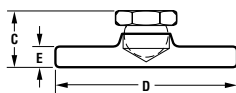
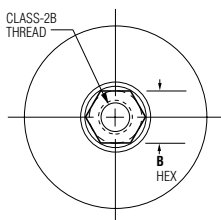
Part No.	D	H	Hex	Stud Dia.
AK153	1.37	0.35	5/8	3/8
AK257	1.87	0.35	5/8	3/8

ECONOLINE™ Hand Adjustment Knobs-For Delrin Studs

Part No.	D	H	Hex	Stud Dia.
AKP153	1.37	0.35	5/8	3/8
AKP257	1.87	0.35	5/8	3/8

Visit www.vlier.com for Additional Sizes

Socket Style



Inch

Black Oxide Steel

Stainless Steel

Black Delrin

Vlier ECONOLINE® Socket Style Leveling Devices offer a lighter weight, lower cost alternative for applications with an existing stud installation.

ECONOLINE™ Steel/Stainless Base

Part No.		Max load (Lbs)	A	B	C	D	E
Steel Base, Steel Socket	Stainless Base, Stainless Socket						
ELS151B	ELSS151B	700	1/4-20	5/8	0.84	1.5	0.25
ELS259B	ELSS259B	3800	3/4-10	1.06	1.59	2.5	0.25

ECONOLINE™ Delrin® Base

Part No.		Max load (lbs)	A	B	C	D	E
Delrin Base Steel Socket	Delrin Base Stainless Socket						
EL151B	SEL151B	225	1/4-20	5/8	0.79	1.5	0.26
EL259B	SEL259B	350	3/4-10	1.06	1.54	2.5	0.26

Visit www.vlier.com for Additional Sizes

LEVELING DEVICES*Original Stud Style*

Original Leveling Devices

Inch-Standard Length**Steel**

Vlier Stud Style Steel Leveling Devices provide an integrally machined stud as part of the ball. Stud Style Bases swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, etc. Zinc plate with gold chromate finish is standard. Black and clear (silver) finishes are optional and require extra lead time.

Stainless Steel

Vlier Stud Style Stainless Steel Leveling Devices offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

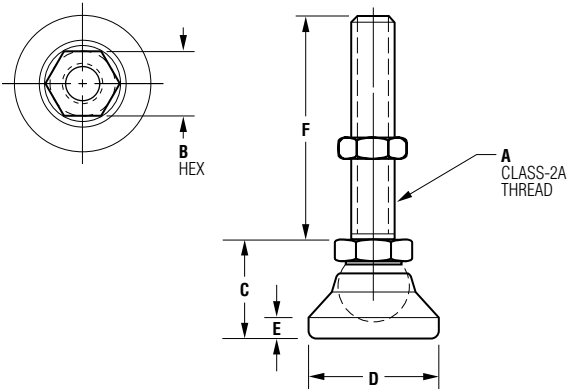
Steel (Fine Thread)

Ideal for applications which require a more sensitive leveling adjustment.

Special Features

- ◆ Hardened ball
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Inch - Standard Length (Metal)
Unified ANSI & Fine Thread



Stud Style - Steel/Stainless Steel

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

Steel Base, Steel Stud (Fine Thread)

Part No.	Max load (lbs)	A	B	C	D	E	F
FP304S	3,750	3/8-24	5/8	7/8	1-1/4	3/16	2
FP306S	5,000	1/2-20	3/4	1-1/8	1-7/8	1/4	2
FP308S	6,000	5/8-18	7/8	1-1/4	2-1/2	5/16	2
FP310S	7,200	3/4-16	1-1/16	1-1/2	3	1/2	2
FP312S	22,000	1-12	1-3/8	1-7/8	4	13/32	4-1/4

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time.

LEVELING DEVICES*Original Stud Style***Original Leveling Devices****Inch - Standard Length****Steel with Elastomer Pad**

Vlier Stud Style Steel with Elastomer Pads offer a .125 neoprene elastomer bonded to the bottom of the base to provide non-skid support. Zinc plate with gold chromate finish is standard. Black and clear (silver) finishes are optional and require extra lead time.

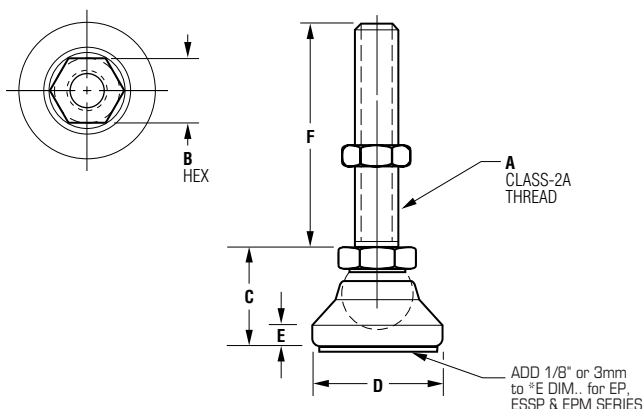
Stainless Steel with Elastomer Pad

Vlier Stud Style Stainless Steel with Elastomer Pads offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Non-skid elastomer pad
- ◆ Protects floor or surface finish
- ◆ Hardened ball
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Inch - Standard Length (Elastomer Pad)

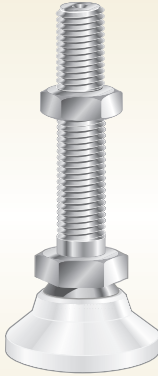


Steel Base w/Elastomer Pad, Steel Stud

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

Stainless Base w/Elastomer Pad, Stainless Stud

Part No.	Max load (lbs)	A	B	C	D	E	F
ESSP298S	525	10-32	3/8	17/32	3/4	7/64	1
ESSP300S	800	1/4-20	1/2	45/64	1	5/32	1 1/4
ESSP304S	2,800	3/8-16	5/8	7/8	1 1/4	3/16	2
ESSP306S	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	2
ESSP308S	4,500	5/8-11	7/8	1 1/4	2 1/2	5/16	2
ESSP310S	5,400	3/4-10	1 1/16	1 1/2	3	1/2	2
ESSP312S	16,400	1-8	1 3/8	1 7/8	4	13/32	4 1/4

LEVELING DEVICES*Original Stud Style***Original Leveling Devices****Inch-Standard Length****Delrin® Base with Steel Stud**

Vlier Stud Style Delrin Base/Steel Stud Leveling Devices feature natural (white) delrin plastic bases that provide protection for floor or surface finishes. Delrin offers high resistance to repeated impacts, moisture, solvents and heat up to 190°F. Zinc plate with gold chromate finish is standard. Black and clear(silver) finishes are optional and require extra lead time.

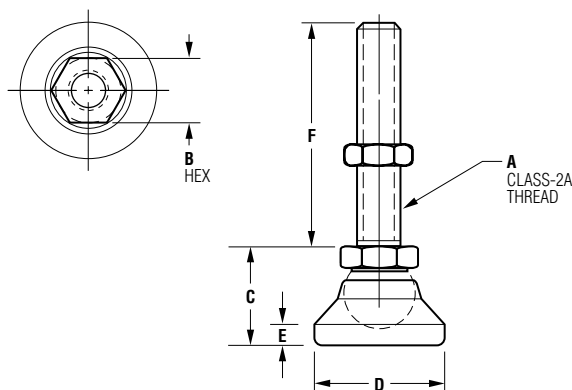
Delrin® Base with Stainless Steel Stud

Stainless Steel offers additional protection against rust and corrosion.

Special Features

- ◆ Hardened ball
- ◆ Protects surface finish
- ◆ Long-life, high-impact Delrin pad
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Inch - Standard Length (Delrin)



Delrin Base, Steel Stud

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	1200	5/8-11	7/8	1 1/4	2 1/2	5/16	2
NP310S	1800	3/4-10	1 1/16	1 1/2	3	1/2	2
NP312S	2400	1-8	1 3/8	1 7/8	4	13/32	4 1/4

Delrin® Base, Stainless Steel Stud

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

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time.

LEVELING DEVICES

Original Stud Style



Original Leveling Devices

Metric

Steel

Vlier Stud Style Steel Leveling Devices provide an integrally machined stud as part of the ball. Stud Style Bases swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, etc. Zinc plate with gold chromate finish is standard. Black and clear(silver) finishes are optional and require extra lead time.

Steel with Elastomer Pad

Vlier Stud Style Steel with Elastomer Leveling Pads offer a .125 neoprene elastomer bounded to the bottom of the base to provide non-skid support.

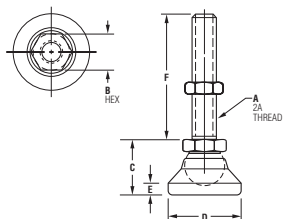
Stainless Steel

Delrin Base

Vlier Stud Style Steel with Delrin Base Leveling Devices feature natural (white) Delrin plastic bases that provide protection for floor or surface finishes. Delrin offers high resistance to repeated impacts, moisture solvents and heat up to 190° F.

Special Features

- ◆ Non-skid elastomer pad
- ◆ Protects floor or surface finish
- ◆ Hardened ball
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline



Stud Style - Metric

METRIC Steel Base, Steel Stud							
Part No.	Max load (lbs)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
PM10S	1705 kg (3750 lbs)	M10 X 1.5	17	22 (.87)	32 (1.26)	5 (.20)	51 (2.00)
PM12S	2273 kg (5000 lbs)	M12 X 1.75	19	29 (1.14)	48 (1.89)	6 (.24)	51 (2.00)
PM16S	2727 kg (6000 lbs)	M16 X 2.0	24	32 (1.26)	64 (2.52)	8 (.31)	51 (2.00)
PM20S	3273 kg (7200 lbs)	M20 X 2.5	30	38 (1.50)	76 (3.00)	13 (.51)	51 (2.00)
NEW SIZE PM24S	9979 kg (22,000 lbs)	M24 X 3.0	35	48 (1.88)	102 (4.00)	10 (.41)	108 (4.25)

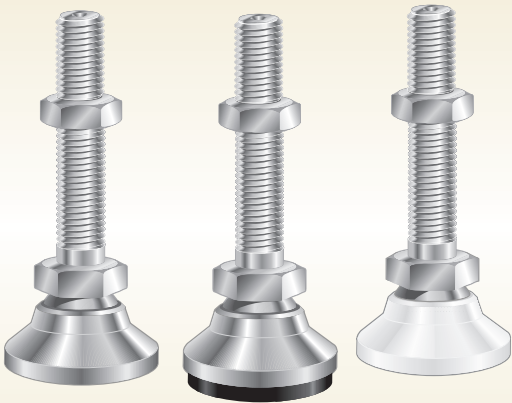
METRIC Steel Base w/Elastomer Pad, Steel Stud							
Part No.	Max load (lbs)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
EPM10S	1273 kg (2800 lbs)	M10 X 1.5	17	22 (.87)	32 (1.26)	5 (.20)	51 (2.00)
EPM12S	1705 kg (3750 lbs)	M12 X 1.75	19	29 (1.14)	48 (1.89)	6 (.24)	51 (2.00)
EPM16S	2046 kg (4500 lbs)	M16 X 2.0	24	32 (1.26)	64 (2.52)	8 (.31)	51 (2.00)
EPM20S	2455 kg (5400 lbs)	M20 X 2.5	30	38 (1.50)	76 (3.00)	13 (.51)	51 (2.00)

METRIC Delrin Base, Steel Stud							
Part No.	Max load (lbs)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
NPM10S	136 kg (300 lbs)	M10 X 1.5	17	22 (.87)	32 (1.26)	5 (.20)	51 (2.00)
NPM12S	318 kg (700 lbs)	M12 X 1.75	19	29 (1.14)	48 (1.89)	6 (.24)	51 (2.00)
NPM16S	546 kg (1200 lbs)	M16 X 2.0	24	32 (1.26)	64 (2.52)	8 (.31)	51 (2.00)
NPM20S	818 kg (1800 lbs)	M20 X 2.5	30	38 (1.50)	76 (3.00)	13 (.51)	51 (2.00)

METRIC Stainless Steel Base, Stainless Steel Stud							
Part No.	Max load (lbs)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)	F mm (in.)
SSPM10S	136 kg (300 lbs)	M10 X 1.5	17	22 (.87)	32 (1.26)	5 (.20)	51 (2.00)
SSPM12S	2273 kg (5000 lbs)	M12 X 1.75	19	29 (1.13)	48 (1.88)	6 (.25)	51 (2.00)
SSPM16S	2727 kg (6000 lbs)	M16 X 2.0	24	32 (1.25)	64 (2.50)	8 (.31)	51 (2.00)
SSPM20S	3273 kg (7200 lbs)	M20 X 2.5	30	38 (1.50)	76 (3.0)	13 (.50)	51 (2.00)
SSPM24S	9979 kg (22,000 lbs)	M24 X 3.0	35	48 (1.88)	102.00 (4.00)	10.00 (.41)	108 (4.25)

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time. **107**

LEVELING DEVICES*Original Stud Style***Original Leveling Devices****Extended Length****Steel**

Vlier Stud Style Extended Length Steel Leveling Devices provide an integrally machined stud as part of the ball. They are for applications which require additional clearance. Zinc plate with gold chromate finish is standard. Black and clear (silver) finishes are optional and require extra lead time.

Steel with Elastomer Pad

Vlier Stud Style Extended Length Steel with Elastomer Pads offer the advantage of an all-stainless steel design for maximum protection against rust & corrosion.

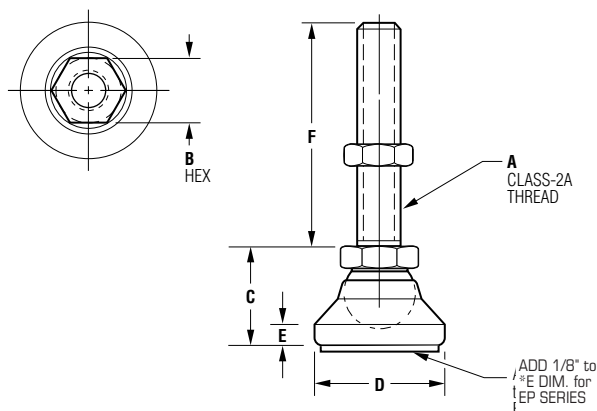
Delrin® Base with Steel Stud

Vlier Stud Style Extended Length Delrin Base Leveling Devices provide protection for floor or surface finishes.

Special Features

- ◆ Extended length studs twice as long as standard length
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Extended Length (Steel)



Stud Type Pads Extended Length - Steel

Part No.	Max (Lbs) Work Load	A	B	C	D	E	F
P299S	700	10-32	3/8	17/32	3/4	7/64	2
P301S	1100	1/4-20	1/2	45/64	1	5/32	2.5
P305S	3750	3/8-16	5/8	7/8	1 1/4	3/16	4
P307S	5000	1/2-13	3/4	1 1/8	1 7/8	1/4	4
P309S	6000	5/8-11	7/8	1 1/4	2 1/2	5/16	4
P311S	7200	3/4-10	1 1/16	1 1/2	3	1/2	4
P313S	22000	1-8	1 3/8	1 7/8	4	13/32	8

Stud Type Pads Extended Length - Steel with Elastomer

Part No.	Max (Lbs) Work Load	A	B	C	D	E	F
EP299S	525	10-32	3/8	17/32	3/4	7/64	2
EP301S	800	1/4-20	1/2	45/64	1	5/32	2.5
EP305S	2800	3/8-16	5/8	7/8	1 1/4	3/16	4
EP307S	3750	1/2-13	3/4	1 1/8	1 7/8	1/4	4
EP309S	4500	5/8-11	7/8	1 1/4	2 1/2	5/16	4
EP311S	5400	3/4-10	1 1/16	1 1/2	3	1/2	4
EP313S	16400	1-8	1 3/8	1 7/8	4	13/32	8

Stud Type Pads Extended Length - Steel with Delrin

Part No.	Max (Lbs) Work Load	A	B	C	D	E	F
NP299S	150	10-32	3/8	17/32	3/4	7/64	2
NP301S	200	1/4-20	1/2	45/64	1	5/32	2.5
NP305S	300	3/8-16	5/8	7/8	1 1/4	3/16	4
NP307S	700	1/2-13	3/4	1 1/8	1 7/8	1/4	4
NP309S	1200	5/8-11	7/8	1 1/4	2 1/2	5/16	4
NP311S	1800	3/4-10	1 1/16	1 1/2	3	1/2	4
NP313S	2400	1-8	1 3/8	1 7/8	4	13/32	8

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time.

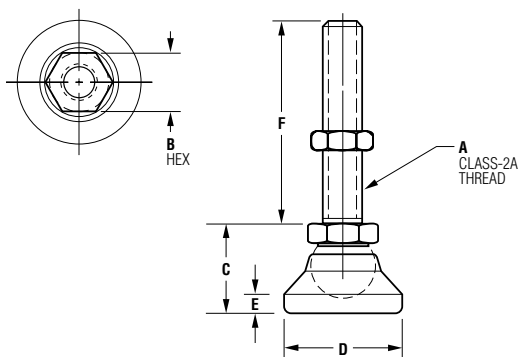
LEVELING DEVICES***Original Stud Style*****Original Leveling Devices****Extended Length****Stainless Steel****Stainless Steel with Elastomer Pad****Delrin® Base with Stainless Steel Stud**

Extended Length Stainless Steel Leveling Devices are for applications which require additional clearance, and offer maximum protection against rust and corrosion.

Special Features

- ◆ Extended length studs twice as long as standard length
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Extended Length (Stainless Steel)



EXTENDED LENGTH Stainless Steel Base, Stainless Steel Stud

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

EXTENDED LENGTH Stainless Steel Base w/Elastomer Pad, Stainless Steel Stud

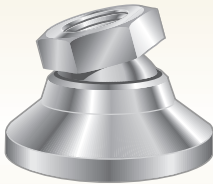
Part No.	Max load (lbs)	A	B	C	D	E	F
ESSP299S	525	10-32	3/8	17/32	3/4	7/64	2
ESSP301S	800	1/4-20	1/2	45/64	1	5/32	2-1/2
ESSP305S	2,800	3/8-16	5/8	7/8	1-1/4	3/16	4
ESSP307S	3,450	1/2-13	3/4	1-1/8	1-7/8	1/4	4
ESSP309S	4,500	5/8-11	7/8	1-1/4	2-1/2	5/16	4
ESSP311S	5,400	3/4-10	1-1/16	1-1/2	3	1/2	4
ESSP313S	16,400	1-8	1-3/8	1-7/8	4	13/32	8

EXTENDED LENGTH-Delrin® Base, Stainless Steel Stud

Part No.	Max load (lbs)	A	B	C	D	E	F
SSNP299S	150	10-32	3/8	17/32	3/4	7/64	2
SSNP301S	200	1/4-20	1/2	45/64	1	5/32	2-1/2
SSNP305S	300	3/8-16	5/8	7/8	1-1/4	3/16	4
SSNP307S	700	1/2-13	3/4	1-1/8	1-7/8	1/4	4
SSNP309S	1200	5/8-11	7/8	1-1/4	2-1/2	5/16	4
SSNP311S	1800	3/4-10	1-1/16	1-1/2	3	1/2	4
SSNP313S	2400	1-8	1-3/8	1-7/8	4	13/32	8

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time.

LEVELING DEVICES***Original Socket Style*****Original Leveling Devices****Inch****Steel**

Vlier Socket Style Steel Leveling Devices swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, etc. Zinc plate with gold chromate finish is standard. Black and clear (silver) finishes are optional and require extra lead time.

Stainless Steel

Vlier Socket Style Stainless Steel Leveling Devices offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

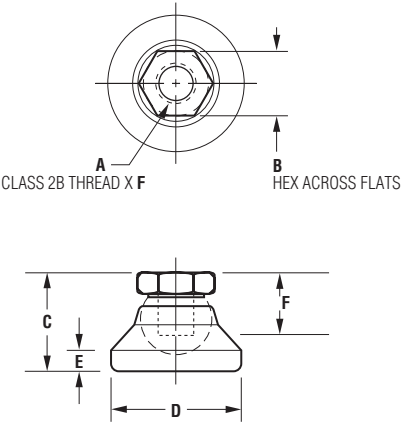
Fine Thread-NEW

Ideal for applications which require a more sensitive leveling adjustment.

Special Features

- ◆ Hardened ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Socket Style - Inch (Metal)
Unified ANSI Course & Fine Thread



Socket Style - Steel/Stainless Steel								
Part No.		Max load (lbs)	A	B	C	D	E	F
Steel	Stainless Steel							
P298B	SSP298B	700	10-32	3/8	17/32	3/4	7/64	15/64
P300B	SSP300B	1100	1/4-20	1/2	45/64	1	5/32	5/16
P304B	SSP304B	3,750	3/8-16	5/8	7/8	1 1/4	3/16	3/8
P306B	SSP306B	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
P308B	SSP308B	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	7/16
P310B	SSP310B	7,200	3/4-10	1 1/16	1 1/2	3	1/2	5/8
P312B	SSP312B	22,000	1-8	1 3/8	1 7/8	4	13/32	13/16

Steel Base, Steel Socket (Fine Thread)							
Part No.	Max load (lbs)	A	B	C	D	E	F
FP304B	3,750	3/8-24	5/8	7/8	1-1/4	3/16	3/8
FP306B	5,000	1/2-20	3/4	1-1/8	1-7/8	1/4	7/16
FP308B	6,000	5/8-18	7/8	1-1/4	2-1/2	5/16	7/16
FP310B	7,200	3/4-16	1-1/16	1-1/2	3	1/2	5/8
FP312B	22,000	1-12	1-3/8	1-7/8	4	13/32	13/16

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time .

LEVELING DEVICES***Original Socket Style*****Original Leveling Devices****Inch****Steel with Elastomer Pad**

Vlier Socket Style Steel with Elastomer Pads provide a .125 inch neoprene elastomer bonded to the base bottom for non-skid support. Zinc plate with gold chromate finish is standard. Black and clear (silver) finishes are optional and require extra lead time.

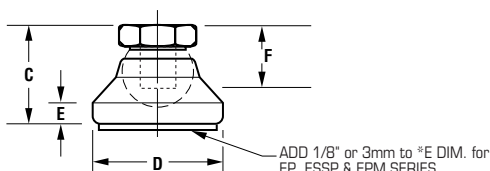
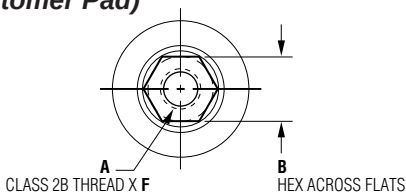
Stainless Steel with Elastomer Pad

Vlier Socket Type Stainless Steel with Elastomer Pads offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Non-skid elastomer pad
- ◆ Protects floor/surface finish
- ◆ Hardened ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Socket Style - Inch (Elastomer Pad)



Steel Base w/Elastomer Pad

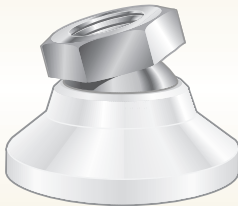
Part No.	Max load (lbs)	A	B	C	D	E	F
EP298B	525	10-32	3/8	17/32	3/4	7/64	15/64
EP300B	800	1/4-20	1/2	45/64	1	5/32	5/16
EP304B	2,800	3/8-16	5/8	7/8	1 1/4	3/16	3/8
EP306B	3,750	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
EP308B	4,500	5/8-11	7/8	1 1/4	2 1/2	5/16	7/16
EP310B	5,400	3/4-10	1 1/16	1 1/2	3	1/2	5/8
EP312B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

Stainless Base w/Elastomer Pad

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

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time .

LEVELING DEVICES***Original Socket Style*****Original Leveling Devices****Inch-Standard Length****Delrin® Base with Steel Socket**

Vlier Delrin Base/Steel Socket Leveling Devices feature steel sockets and Delrin plastic bases that provide protection for floor and surface finishes. Delrin offers high resistance to repeated impacts, moisture, solvents and heat up to 190°F. Zinc plate with gold chromate finish is standard. Black and clear (silver) finishes are optional and require extra lead time.

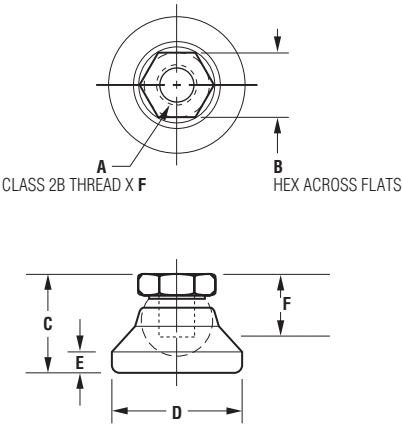
Delrin® Base with Stainless Steel Socket-NEW

Stainless steel offers additional protection against rust and corrosion.

Special Features

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

Socket Style - Inch (Delrin®)



Delrin Base							
Part No.	Max (Lbs)	A	B	C	D	E	F
NP298B	150	10-32	3/8	17/32	3/4	7/64	15/64
NP300B	200	1/4-20	1/2	45/64	1	5/32	5/16
NP304B	300	3/8-16	5/8	7/8	1 1/4	3/16	3/8
NP306B	700	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
NP308B	1200	5/8-11	7/8	1 1/4	2 1/2	5/16	7/16
NP310B	1800	3/4-10	1 1/16	1 1/2	3	1/2	5/8
NP312B	2400	1-8	1 3/8	1 7/8	4	13/32	13/16

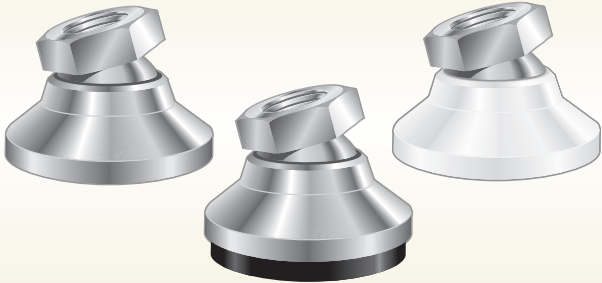
Delrin® Base, Stainless Steel Socket							
Part No.	Max load (lbs)	A	B	C	D	E	F
SSNP298B	150	10-32	3/8	17/32	3/4	7/64	15/64
SSNP300B	200	1/4-20	1/2	45/64	1	5/32	5/16
SSNP304B	300	3/8-16	5/8	7/8	1-1/4	3/16	3/8
SSNP306B	700	1/2-13	3/4	1-1/8	1-7/8	1/4	7/16
SSNP308B	1200	5/8-11	7/8	1-1/4	2-1/2	5/16	7/16
SSNP310B	1800	3/4-10	1-1/16	1-1/2	3	1/2	5/8
SSNP312B	2400	1-8	1-3/8	1-7/8	4	13/32	13/16

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time.

LEVELING DEVICES

Original Socket Style



Original Leveling Devices

Metric

Steel Base

Vlier Socket Style Steel Leveling Devices swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, etc. Zinc plate with gold chromate finish is standard. Black and clear (silver) finishes are optional and require extra lead time.

Steel with Elastomer Pad

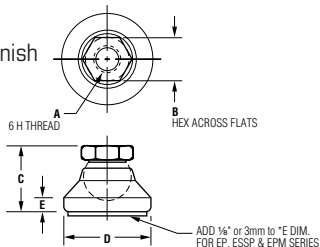
Vlier Socket Style Steel with Elastomer Pads provide a .125 inch (neoprene) elastomer bonded to the pad bottom for non-skid support.

Stainless Steel

Delrin® Base with Steel Socket

Vlier Socket Style Delrin Base Steel Socket Leveling Device feature steel sockets and Delrin plastic bases that provide protection for floor and surface finishes. Delrin offers high resistance to repeated impacts, moisture, solvents and heat up to 190°F.

- ◆ Non-skid elastomer pads
- ◆ Delrin protects floor/surface finish
- ◆ Hardened ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline



Socket Style - Metric

METRIC-Steel Base

Part No.	Max load (lbs)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)
PM10B	1705 kg (3750 lbs)	M10 X 1.5	17	22 (.87)	32 (1.26)	5 (.20)
PM12B	2273 kg (5000 lbs)	M12 X 1.75	19	29 (1.14)	48 (1.89)	6 (.24)
PM16B	2727 kg (6000 lbs)	M16 X 2.0	24	32 (1.26)	64 (2.52)	8 (.31)
PM20B	3273 kg (7200 lbs)	M20 X 2.5	30	38 (1.50)	76 (3.00)	13 (.51)
PM24B	9979 kg (22,000 lbs)	M24 X 3.0	35	48 (1.88)	102 (4.00)	10 (.41)

METRIC-Steel Base w/Elastomer Pad

Part No.	Max load (lbs)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)
EPM10B	1273 kg (2800 lbs)	M10 X 1.5	17	22 (.87)	32 (1.26)	5 (.20)
EPM12B	1705 kg (3750 lbs)	M12 X 1.75	19	29 (1.14)	48 (1.89)	6 (.24)
EPM16B	2046 kg (4500 lbs)	M16 X 2.0	24	32 (1.26)	64 (2.52)	8 (.31)
EPM20B	2455 kg (5400 lbs)	M20 X 2.5	30	38 (1.50)	76 (3.00)	13 (.51)

METRIC-Delrin® Base

Part No.	Max load (lbs)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)
NPM10B	136 kg (300 lbs)	M10 X 1.5	17	22 (.87)	32 (1.26)	5 (.20)
NPM12B	318 kg (700 lbs)	M12 X 1.75	19	29 (1.14)	48 (1.89)	6 (.24)
NPM16B	546 kg (1200 lbs)	M16 X 2.0	24	32 (1.26)	64 (2.52)	8 (.31)
NPM20B	818 kg (1800 lbs)	M20 X 2.5	30	38 (1.50)	76 (3.00)	13 (.51)

METRIC-Stainless Steel Base

Part No.	Max load (lbs)	A	B mm	C mm (in.)	D mm (in.)	E mm (in.)
SSPM12B	2273 kg (5000 lbs)	M12 X 1.75	19	29 (1.13)	48 (1.88)	6 (.25)
SSPM16B	2727 kg (6000 lbs)	M16 X 2.0	24	32 (1.25)	64 (2.50)	8 (.31)
SSPM20B	3273 kg (7200 lbs)	M20 X 2.5	30	38 (1.50)	76 (3.00)	13 (.50)
SSPM24B	9979 kg (22,000 lbs)	M24 X 3.0	35	48 (1.88)	102 (4.00)	10 (.41)

Ordering for Optional Steel Finishes

To order black, add "1" at the end of the part number. To order silver, add "2" at the end of the part number. Allow four weeks lead time. **119**

High-Value Stud Style**High-Value Leveling Devices****Inch-Standard Length****Steel**

Vlier Stud Style Steel Leveling Devices provide an integrally machined stud as part of the ball. Stud Style Bases swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, etc. Zinc plate with gold chromate, or the new nickel finish is standard.

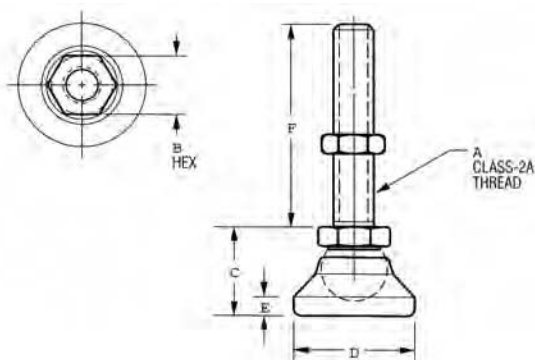
Stainless Steel

Vlier Stud Style Stainless Steel Leveling Devices offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Hardened ball
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Inch - Standard Length (Metal) Unified ANSI



Stud Style - Steel w/Gold Chromate

Part No.	Max load (lbs)	A	B	C	D	E	F
HVP298S	700	10-32	3/8	17/32	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

Stud Style - Steel w/ Nickel Finish

NEW

Part No.	Max load (lbs)	A	B	C	D	E	F
HVP298S3	700	10-32	3/8	17/32	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

Stud Style - Stainless Steel

Part No.	Max load (lbs)	A	B	C	D	E	F
HVSSP298S	700	10-32	3/8	17/32	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

High-Value Stud Style**High-Value Leveling Devices****Inch-Standard Length****Steel with Elastomer Pad**

Vlier Stud Style Steel with Elastomer Pads offer a .125 neoprene elastomer bonded to the bottom of the base to provide non-skid support. Zinc plate with gold chromate, or the new nickel finish is standard.

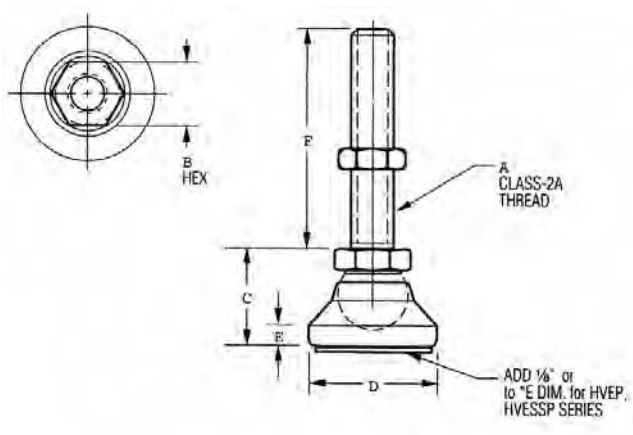
Stainless Steel with Elastomer Pad

Vlier Stud Style Stainless Steel with Elastomer Pads offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Non-skid elastomer pad
- ◆ Protects floor or surface finish
- ◆ Hardened ball
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Inch - Standard Length (Elastomer Pad)



Stud Style - Steel - Gold Chromate Finish w/Elastomer Pad

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

Stud Style - Steel - Nickel Finish w/Elastomer Pad

NEW

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

Stud Style - Stainless Steel w/Elastomer Pad

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

High-Value Stud Style**High-Value Leveling Devices****Extended Length****Steel**

Vlier Stud Style Extended Length Steel Leveling Devices provide an integrally machined stud as part of the ball. They are for applications which require additional clearance. Zinc plate with gold chromate, or the new nickel finish is standard.

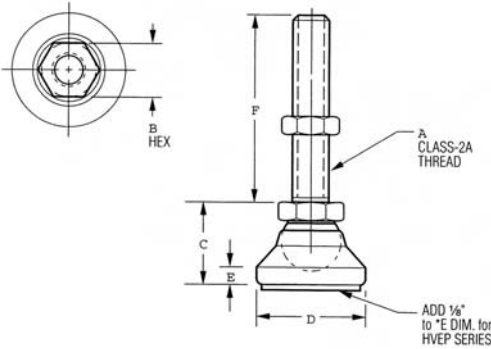
Steel with Elastomer Pad

Vlier Stud Style Extended Length Steel with Elastomer Pads offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Extended length studs twice as long as standard length
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Extended Length (Steel)



Stud Style Extended Length - Steel - Gold Chromate

Part No.	Max (Lbs) Work Load	A	B	C	D	E	F
HVP299S	700	10-32	3/8	17/32	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

Stud Style Extended Length - Steel - Nickel Finish

NEW

Part No.	Max (Lbs) Work Load	A	B	C	D	E	F
HVP299S3	700	10-32	3/8	17/32	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

Stud Style Extended Length - Steel - Gold Chromate w/ Elastomer Pad

Part No.	Max (Lbs) Work Load	A	B	C	D	E	F
HVEP299S	525	10-32	3/8	17/32	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

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

NEW

Part No.	Max (Lbs) Work Load	A	B	C	D	E	F
HVEP299S3	525	10-32	3/8	17/32	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

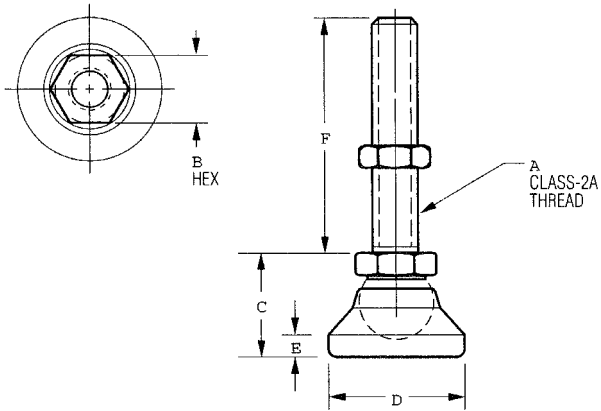
High-Value Stud Style**High-Value Leveling Devices****Extended Length****Stainless Steel****Stainless Steel with Elastomer Pad**

Extended Length Stainless Steel Leveling Devices are for applications which require additional clearance, and offer maximum protection against rust and corrosion.

Special Features

- ◆ Extended length studs twice as long as standard length
- ◆ Stud and integrally machined ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Stud Style - Extended Length (Stainless Steel)



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

Stud Style Extended Length - Stainless Steel w/Elastomer Pad

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	3,450	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

High-Value Socket Style**Inch****Steel**

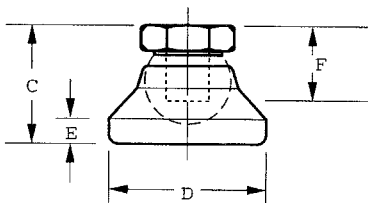
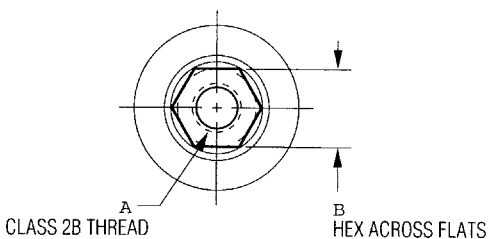
Vlier Socket Style Steel Leveling Devices swivel 15° off the centerline to adjust to uneven surfaces and level machine tools, electronic racks, benches, etc. Zinc plate with gold chromate, or new nickel finish is standard.

Steel

Vlier Socket Style Stainless Steel Leveling Devices offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Hardened ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline



Socket Style - Steel - Gold Chromate

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

Socket Style - Steel - Nickel Finish

NEW

Part No.	Max Load (Lbs)	A	B	C	D	E	F
HVP298B3	700	10-32	3/8	17/32	3/4	7/64	15/64
HVP300B3	1,100	1/4-20	1/2	45/64	1	5/32	5/16
HVP304B3	3,750	3/8-16	5/8	7/8	1 1/4	3/16	3/8
HVP306B3	5,000	1/2-13	3/4	1 1/8	1 7/8	1/4	7/16
HVP308B3	6,000	5/8-11	7/8	1 1/4	2 1/2	5/16	7/16
HVP310B3	7,200	3/4-10	1 1/16	1 1/2	3	1/2	5/8
HVP312B	22,000	1-8	1 3/8	1 7/8	4	13/32	13/16

Socket Style - Stainless Steel

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

High-Value Socket Style**Inch****Steel with Elastomer Pad**

Vlier Socket Style Steel with Elastomer Pads provide a .125 inch neoprene elastomer bonded to the base bottom for non-skid support. Zinc plate with gold chromate, or new nickel finish is standard.

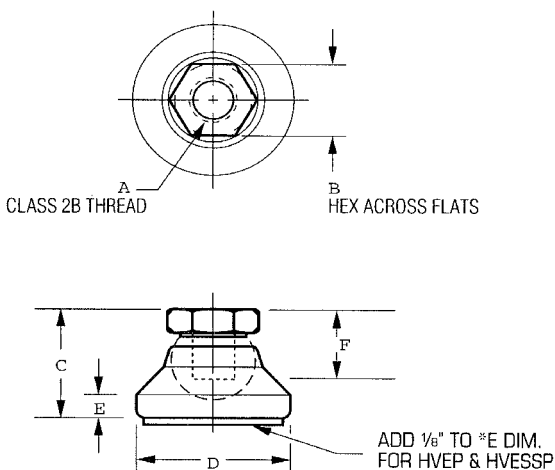
Stainless Steel with Elastomer Pad

Vlier Socket Type Stainless Steel with Elastomer pads offer the advantage of an all-stainless steel design for maximum protection against rust and corrosion.

Special Features

- ◆ Non-skid elastomer pad
- ◆ Protects floor/surface finish
- ◆ Hardened ball
- ◆ Large diameter base support
- ◆ 15° swivel off centerline

Socket Style - Inch (Elastomer Pad)



Steel - Gold Chromate w/ Elastomer Pad

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 1/4	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	16,400	1-8	1 3/8	1 7/8	4	13/32	13/16

Socket Style - Steel w/ Elastomer Pad

NEW

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 1/4	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	16,400	1-8	1 3/8	1 7/8	4	13/32	13/16

Socket Style - Stainless Base w/ Elastomer Pad

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 1/4	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	16,400	1-8	1 3/8	1 7/8	4	13/32	13/16

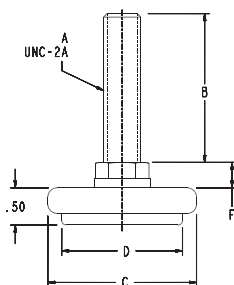
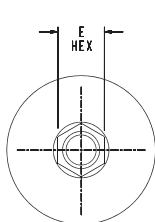
**Level★Star**

LEVEL★STAR

For light duty & medium leveling applications. Can be used on furniture, light duty machinery, tables, cabinets, light & medium weight equipment, etc. Made of Zinc plated steel for a pleasing appearance in all applications. Available with elastomer pad for non-skid applications or nylon pad for glide applications.

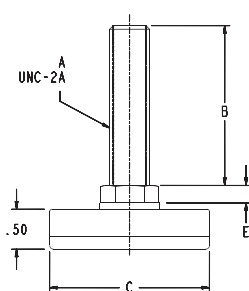
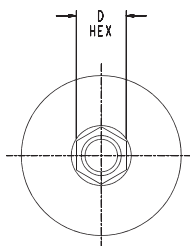
Special Features

- ◆ NON-SWIVEL STUD
 - ◆ Zinc-plated stud & Shell
- ◆ INTEGRAL HEX NUT
 - ◆ Aids adjustment under load
- ◆ NYLON PAD or RUBBER PAD
 - ◆ Protects floor and surface with two choices



Rubber Pad for Non-Skid Applications

PART NUMBER	LOAD RATING	A	B	C	D	E	F
FSE300S	300 LBS	1/4 20	1.50"	1.50"	*.500	*.16	1.22
FSE302S	300 LBS	5/16 18	1.50"	1.50"	*.500	*.16	1.22
FSE304S	300 LBS	3/8 16	2.00"	2.00"	*.563	*.20	1.71
FSE306S	300 LBS	1/2 13	2.00"	2.00"	*.563	*.20	1.71



Nylon Pad for Glide Applications

PART NUMBER	LOAD RATING	A	B	C	D	E
FSN300S	300 LBS	1/4 20	1.50"	1.38"	*.500	*.16
FSN302S	300 LBS	5/16 18	1.50"	1.38"	*.500	*.16
FSN304S	300 LBS	3/8 16	2.00"	2.00"	*.563	*.20
FSN306S	300 LBS	1/2 13	2.00"	2.00"	*.563	*.20

Low Cost Industrial Glides**Vlier Glides “VG Series”**

Introducing for 2006, ten new light-duty glide designs from Vlier Products. Find the perfect design for your light-duty leveling application with Vlier Glides. These new glides are conveniently packaged in quantities of 12 and are standard off the shelf product to maintain low-cost to you.

Special Features

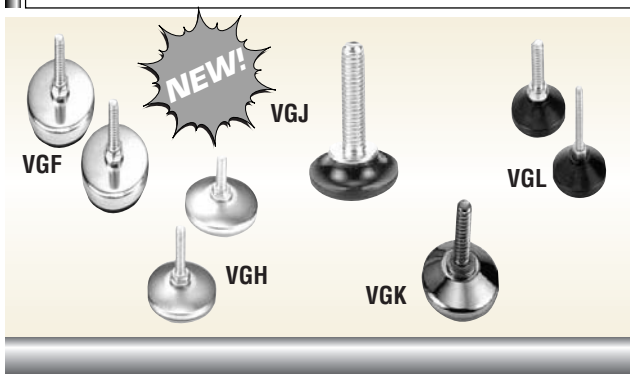
- ◆ Low cost
- ◆ Ten different designs
- ◆ Offered in both metric and inch sizes
- ◆ Zinc plated steel stud for durability

**Over
80
New Part
Numbers!**



Low Cost Standard Glides

VG Series	THREAD	THREAD LENGTH	PAD DIA mm (in)	PAD HT mm (in)
Part Number				
VGA24I625	1/4-20	25.0 (.98)	24.0 (9.25)	8.0 (.32)
VGA24I820	5/16-18	20.0 (.79)		
VGA24M625	M6 x 1.0	25.0 (1.0)		
VGA24M822	M8 x 1.25	22.0 (.87)		
VGA38I625	1/4-20	25.0 (.98)	36.6 (1.44)	8.5 (.34)
VGA38I827	5/16-18	27.0 (1.06)		
VGA38I925	3/8-16	25.0 (.98)		
VGA38M615	M6 x 1.0	15.0 (.59)		
VGA38M818	M8 x 1.25	18.0 (.71)		
VGA38M830		30.0 (1.18)		
VGB51AI960	3/8-16	60.0 (2.36)	51.0 (2.0)	11.0 (.43)
VGB51AM867	M8 x 1.25	67.0 (2.64)		
VGB51AI960-1	3/8-16	60.0 (2.36)		
VGB51AM867-1	M8 x 1.25	67.0 (2.64)		
VGC28I618	1/4-20	18.0 (.71)	28.0 (1.10)	14.5 (.57)
VGC28I625		25.0 (1.0)		
VGC28I818	5/16-18	18.0 (.71)		
VGC28I832		32.0 (1.26)		
VGC28M618	M6 x 1.0	18.0 (.71)		
VG28M818	M8 x 1.25	18.0 (.71)		
VGC28M828		28.0 (1.10)		
VGC50AM1030	M10 x 1.5	30.0 (1.18)	50.0 (1.97)	21.0 (.83)
VGC50AM840	M8 x 1.25	40.0 (1.58)		
VGC50AI1268	1/2-13	68.0 (2.68)		
VGD32I620	1/4-20	20.0 (.79)	31.3 (1.23)	14.2 (.56)
VGD32I640		40.0 (1.58)		
VGD32I820	5/16-18	20.0 (.79)		
VGD32I832		32.0 (1.26)		
VGD32I914	3/8-16	14.0 (.55)		
VGD32I934		34.0 (1.34)		
VGD32M615	M6 x 1.0	15.0 (.59)		
VGD32M630		30.0 (1.18)		
VGD32M815	M8 x 1.25	15.0 (.59)		
VGD32M830		30.0 (1.18)		
VGE29AI615	1/4-20	15.0 (.59)	29.0 (1.14)	14.0 (.55)
VGE29AI825	5/16-18	25.0 (.98)		
VGE29AM615	M6 x 1.0	15.0 (.59)		
VGE29AM815	M8 x 1.25			



Vlier Glides “VG Series”

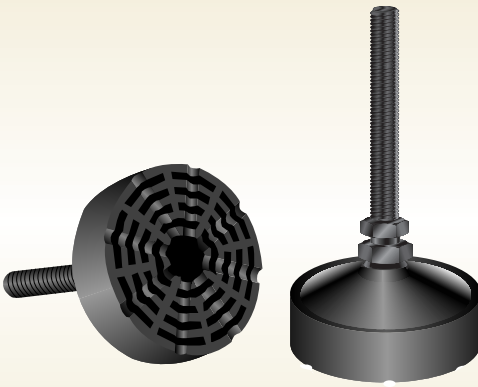
Introducing for 2006, ten new light-duty glide designs from Vlier Products. Find the perfect design for your light-duty leveling application with Vlier Glides. These new glides are conveniently packaged in quantities of 12 and are standard off the shelf product to maintain low-cost to you.

Special Features

- ◆ Low cost
- ◆ Ten different designs
- ◆ Offered in both metric and inch sizes
- ◆ Zinc plated steel stud for durability



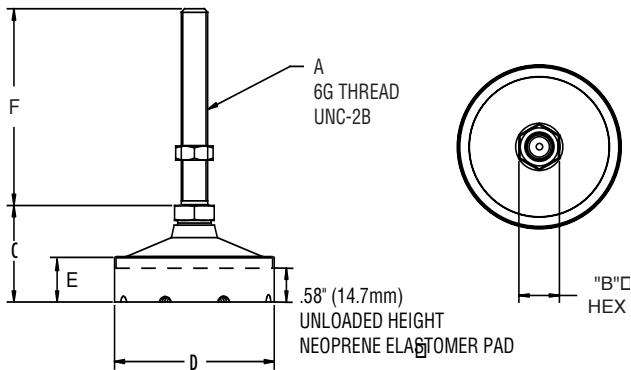
Low Cost Standard Glides					
VG Series	THREAD	THREAD LENGTH	PAD DIA mm (in)	PAD HT mm (in)	
Part Number					
VGf35I625	1/4-20	25.0 (.98)	35.0 (1.38)	13.0 (.51)	
VGf35I630		30.0 (1.18)			
VGf35I815	5/16-18	15.0 (.59)			
VGf35I825		25.0 (.98)			
VGf35I915	3/8-16	15.0 (.59)			
VGf35I925		25.0 (.98)			
VGf35M615	M6 x 1.0	15.0 (.59)			
VGf35M630		30.0 (1.18)			
VGf35M820	M8 x 1.25	20.0 (.79)			
VGf35M830		30.0 (1.18)			
VGf35M1020	M10 x 1.15	20.0 (.79)			
VGf42I615	1/4-20	15.0 (.59)	42.0 (1.65)		
VGf42I630		30.0 (1.18)			
VGf42I825	5/16-18	25.0 (.98)			
VGf42I830		30.0 (1.18)			
VGf42I925	3/8-16	25.0 (.98)			
VGf42M815	M8 x 1.25	15.00 (.59)			
VGf42M840	M8 x 1.25	40.0 (1.58)			
VGH50I815	5/8-18	15.0 (.59)	50.0 (1.97)	11.5 (.45)	
VGH50I835		35.0 (1.38)			
VGH50I925	3/8-16	25.0 (.98)			
VGH50I950		50.0 (1.97)			
VGH50M815	M8 x 1.25	15.0 (.59)			
VGH50M840		40.0 (1.58)			
VGH50M1030	M10 x 1.5	30.0 (1.18)			
VGH50M1075		75.0 (2.95)			
VGJ29I825	5/16-18	25.0 (.98)	29.0 (1.14)	9.7 (.38)	
VGJ29I925	3/8-16				
VGJ29M820	M8 x 1.25	20.0 (.79)			
VGJ29M1030	M10 x 1.5	30.0 (1.18)			
VGJ43I835	5/16-18	35.0 (1.38)	43.0 (1.69)	11.0 (.43)	
VGJ43I925	3/8-16	25.0 (.98)			
VGJ43M815	M8 x 1.25	15.0 (.59)			
VGJ43M1025	M10 x 1.5	25.0 (.98)			
VGK29I620	1/4-20	20.0 (.79)	29.0 (1.14)	8.0 (.32)	
VGK29I625		25.0 (1.0)			
VGK29I825	5/16-18				
VGK29M625	M6 x 1.0				
VGK29M819	M8 x 1.25	19.0 (.75)			
VGK35AI614	1/4-20	14.0 (.55)	35.0 (1.38)	11.0 (.43)	
VGK36AI825	5/16-18	25.0 (1.0)			
VGK35AM625	M6 x 1.0				
VGK35AM825	M8 x 1.25				
VGL38I635	1/4-20	35.0 (1.38)	38.0 (1.18)	12.4 (.49)	
VGL38I825	5/16-18	25.0 (.98)			
VGL38I915	3/8-16	15.0 (.59)			
VGL38M620	M6 x 1.0	20.0 (.79)			
VGL38M820	M8 x 1.25	20.0 (.79)			
VGL38M840		40.0 (1.58)			

LEVELING DEVICES**Anti Vibration****LMS Anti Vibration Leveler****Steel****Inch & Metric**

Swivel leveling device specifically designed to provide low frequency vibration isolation and shock attenuation. Steel base molded to 1/2" neoprene elastomer provides superior shock, vibration and noise control. Stud style base swivels 15° off the centerline to adjust to uneven surfaces and level machine tools, high precision equipment, light machinery, etc.

Special Features

- ◆ Steel based molded to 1/2" black neoprene elastomer
- ◆ Three inch radial ring pad design
- ◆ Natural frequency 10-20 Hz
- ◆ Transmissibility at resonance 8:1
- ◆ Black corrosion resistant steel
- ◆ Operating temperature -20°F to 180°F (-30°C to 82°C)



LMS-Unified ANSI (Inches)								
Part No.	Max load (lbs)	Max Deflection	A	B	C	D	E	F
LMS-12042	400	.10	1/2-13	.75	1.63	3.0	.77	2.0
LMS-12044	400	.10	1/2-13	.75	1.63	3.0	.77	4.0
LMS-12082	800	.10	1/2-13	.75	1.63	3.0	.77	2.0
LMS-12084	800	.10	1/2-13	.75	1.63	3.0	.77	4.0
LMS-12122	1,200	.10	1/2-13	.75	1.63	3.0	.77	2.0
LMS-12124	1,200	.10	1/2-13	.75	1.63	3.0	.77	4.0

LMS-Metric (mm)								
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	180 (400)	2.5 mm (.10)	M12 x 1.75	19 (.75)	41 (1.63)	76 (3.0)	19.6 (.77)	51 (2.0)
LMS-M112043	180 (400)	2.5 mm (.10)	M12 x 1.75	19 (.75)	41 (1.63)	76 (3.0)	19.6 (.77)	84 (3.31)
LMS-M112082	360 (800)	2.5 mm (.10)	M12 x 1.75	19 (.75)	41 (1.63)	76 (3.0)	19.6 (.77)	51 (2.0)
LMS-M112083	360 (800)	2.5 mm (.10)	M12 x 1.75	19 (.75)	41 (1.63)	76 (3.0)	19.6 (.77)	84 (3.31)
LMS-M112122	550 (1,200)	2.5 mm (.10)	M12 x 1.75	19 (.75)	41 (1.63)	76 (3.0)	19.6 (.77)	51 (2.0)
LMS-M112123	550 (1,200)	2.5 mm (.10)	M12 x 1.75	19 (.75)	41 (1.63)	76 (3.0)	19.6 (.77)	84 (3.31)

Industrial Mounts**NSR & LB Industrial Mounts**

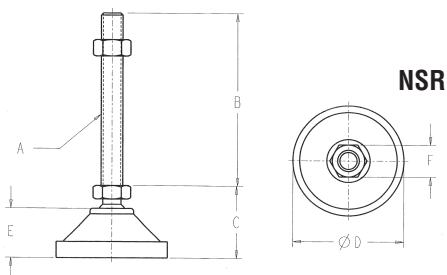
Vlier Industrial Mounts are designed for the many challenges of leveling industrial applications. Whether you need to secure equipment using our LB Lag Bolt Leveler, or adjust to uneven surfaces with the NSR swivel design. The combination of these new economical designs from Vlier Products are packed with features to level it right.

NSR Features

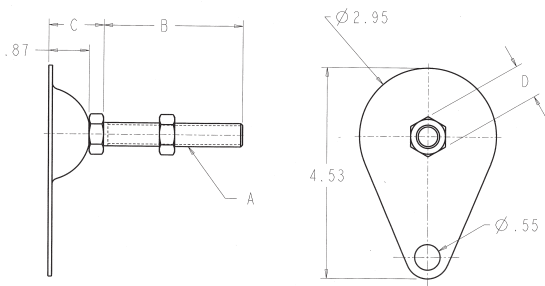
- ◆ Swivel stud for uneven surfaces
- ◆ Integral hex nut for adjusting
- ◆ Poly/rubber pad to protect floor and reduce creeping

LB Features

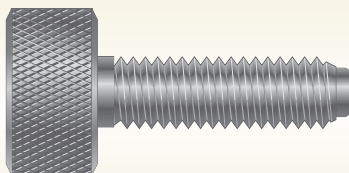
- ◆ Fixed stud with lag bolt base
- ◆ Integral hex nut for adjusting
- ◆ Steel/stainless steel option

**NSR INDUSTRIAL MOUNTS**

		A	B	C	D	E	F
PART NUMBER	LOAD RATING	THREAD	STUD LENGTH	HEIGHT TO HEX	PAD DIAMETER	PAD HEIGHT	HEX
NSR306S	800	1/2-13	4.00	1.39	2.08	0.93	0.750
NSR308S	1000	5/8-11	4.00	1.64	2.74	1.16	0.875

LB**LB INDUSTRIAL MOUNTS**

			A	B	C	D
PART NUMBER	LOAD RATING	MATERIAL	THREAD	STUD LENGTH	HEIGHT TO HEX	HEX
LB306S	400	STEEL	1/2-13	4.00	1-1/8	0.75
LB308S	600	STEEL	5/8-11	4.00	1-1/8	0.88
SSLB306S	400	STAINLESS	1/2-13	4.00	1-1/8	0.75
SSLB308S	600	STAINLESS	5/8-11	4.00	1-1/8	0.88



Torque Thumb Screws

Torque Thumb Screws

Vlier Torque Thumb Screws provide a variety of holding support including regular, reverse, variable and off-angle support. All Vlier torque thumb screws are provided with a checknut to prevent back-off during operation.

Regular - Type A

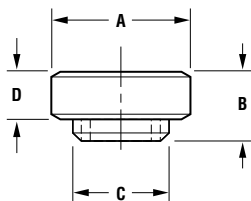
Vlier Regular (Type A) Torque Thumb Screws offer numerous holding applications in building jigs, fixtures and special tooling.

Swivel Pad Type

Vlier Swivel Pad Torque Thumb Screws combine torque-limiting with a surface-protecting ball bearing swivel pad available in steel or Delrin to hold off-angle surfaces without marring or damage.

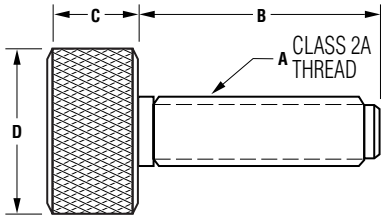
Special Features

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

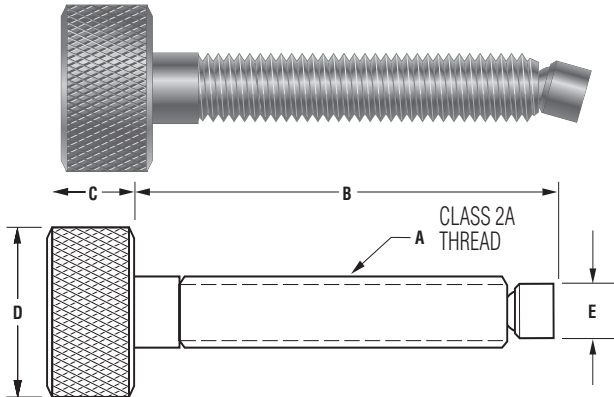


Checknuts					
Part No.	Thread Size	A	B	C	D
T102CN	10-32	3/4	7/32	1/2	5/32
T103CN	1/4-20	3/4	7/32	1/2	5/32
T103ACN	5/16-18	3/4	5/16	1/2	1/4
T104CN	3/8-16	3/4	5/16	1/2	1/4
T106CN	1/2-13	1	3/8	3/4	1/4
T108CN	5/8-11	1	3/8	3/4	1/4

Torque Thumb Screws

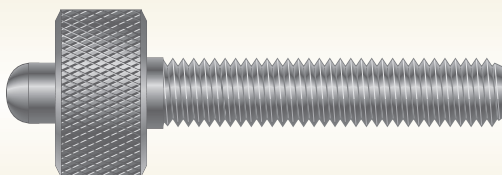


Torque Thumb Screws Regular Type A					
Part No.	A	B	C	D	Estimated End Force Pounds
T102	10-32	1 ¼	.47	7/8	8-15
T103	¼-20	1 ¾			9-18
T1031	¼-20	2 ½			9-18
T103A	5/16-18	1 ¾	.47	7/8	10-20
T103A1		2 ¼			
T103B		3			
T104	3/8-16	1 ¾	.47	7/8	12-23
T1041		2 ¼			
T105		3			
T106	½-13	1 ¾	.53	1 ⅝	13-25
T1061		2 ¼			
T107		3			
T1071		3 ½			
T108	5/8-11	1 ¾	.53	1 ⅝	15-28
T109		3			



Torque Thumb Screws Swivel Pad							
Part Number		A	B	C	D	Estimated End Force Pounds	E
Steel Pad	Delrin Pad						
TS103	NTS103	¼-20	2¼	.47	7/8	9-18	.19
TS103A	NTS103A	5/16-18	2¼	.47	7/8	10-20	.25
TS104	NTS104	3/8-16	2¼	.47	7/8	12-23	.29
TS107	NTS107	½-13	3	.53	1⅝	13-25	.40

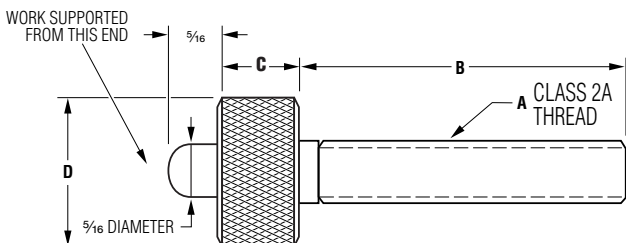
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Torque Thumb Screws

Inverted Type B

Vlier Inverted Torque Thumb Screws (Type B) apply reverse holding support ideal in limited space applications.



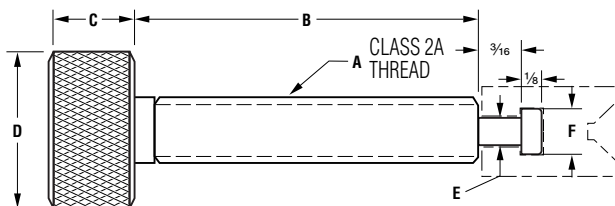
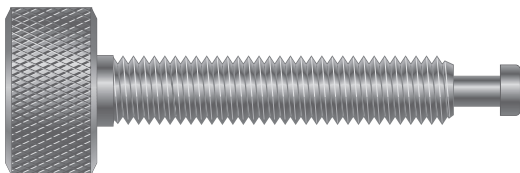
Torque Thumb Screws Inverted Type B

Part No.	A	B	C	D	Estimated End Force Pounds
T125	1/4-20	1 3/4	7/16	7/8	9-18
T126	3/8-16	1 3/4	7/16	7/8	12-23
T127	1/2-13	1 3/4	1/2	1 1/8	13-25
T128	5/8-11	1 3/4	1/2	1 1/8	15-28

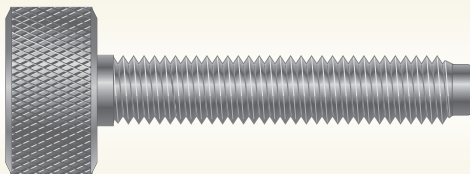
Torque Thumb Screws

Tee Head Type C

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



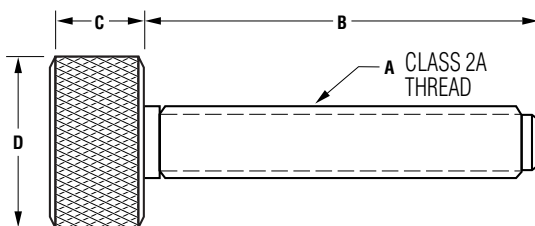
Torque Thumb Screws Tee Head Type C							
Part No.	A	B	C	D	E	F	Estimated End Force Pounds
T150	1/4-20	1 3/4	7/16	7/8	.093	.184	13-25
T151	3/8-16	1 3/4	7/16	7/8	.174	.290	17-33
T152	1/2-13	1 3/4	1/2	1 1/8	.276	.396	19-35



Torque Thumb Screws

Adjustable Type D

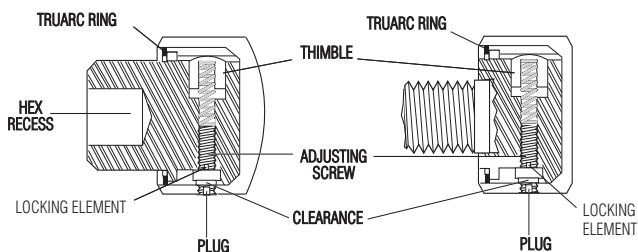
Vlier Adjustable Torque Thumb Screws (Type D) provide variable holding force with a simple hex wrench adjustment made to the head of the screw.



Torque Thumb Screws 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 1/32	1 3/16	3-6	10-125
T199	3/8-16	3	2 1/32	1 3/16	3-6	10-125
T200	1/2-13	1 3/4	2 1/32	1 3/16	3-6	10-125
T201	1/2-13	3	2 1/32	1 3/16	3-6	10-125

Adjustable Torque Thumb Screws & Handles

END PRESSURE ADJUSTMENT

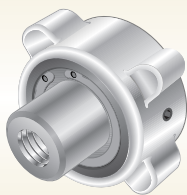


Instructions for Setting End Pressures

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 pages 148 and 149.

**Adjustable Torque Handles**

Adjustable Torque Handles

Vlier Adjustable Torque Handles control forward force on assemblies, machinery, etc. where ordinary torque thumb screws would require considerable machining or customizing.

Options

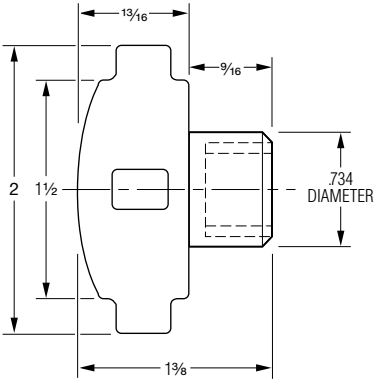
- ◆ Available with $\frac{5}{16}$, $\frac{3}{8}$ and $\frac{1}{2}$ inch tapped holes
- ◆ Models TH103A to TH106 die-cast aluminum handles
- ◆ Models TH225 to TH227 steel with black oxide finish

Special Features

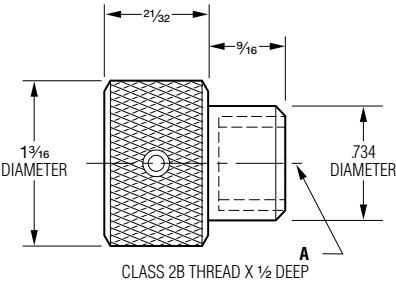
- ◆ Adjustable torque
- ◆ Variable holding force with hex head adjustment
- ◆ Holds fragile and heavy materials
- ◆ Controlled end pressure
- ◆ Checknuts prevent back-off
- ◆ Head ratches freely at preset pressure

Setting End Pressures

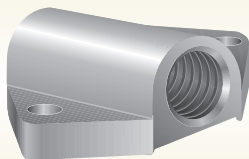
See the instructions given on page 135 for setting end pressures of Vlier Adjustable Torque Handles and Thumb Screws.



Adjustable Torque Handles Models TH103A to TH106		
Part No.	Tapped Hole Size	Adjustable Torque Inch-Pounds
TH103A	5/16-18	3-12
TH104	3/8-16	3-12
TH106	1/2-13	3-12



Adjustable Torque Handles Models TH225 to TH227		
Part No.	Tapped Hole Size	Adjustable Torque Inch-Pounds
TH225	5/16-18	3-6
TH226	3/8-16	3-6
TH227	1/2-13	3-6

**Tooling Flanges**

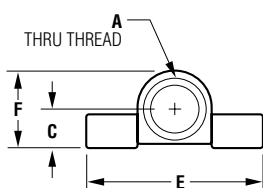
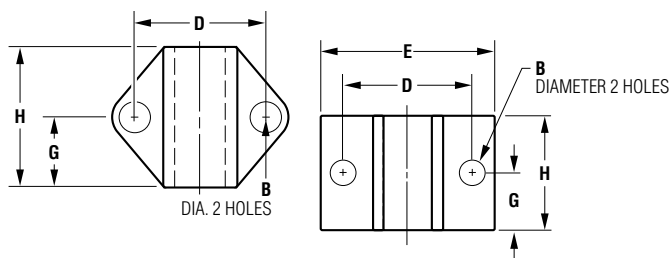
Tooling Flanges

Vlier Tooling Flanges are compatible with a wide variety of spring-loaded devices and tooling components. Ideal for fixtures that require a horizontal application of a 1/4-20 and 1/2-13 threaded spring-loaded device.

Special Features

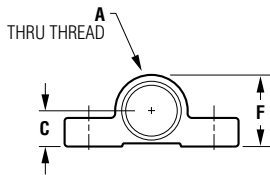
- ◆ Eliminates need for custom tooling blocks
- ◆ Works with a range of devices and product

Tooling Flanges



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

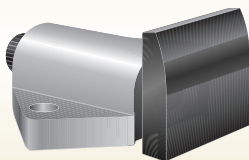
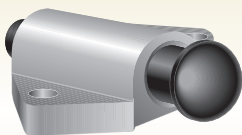


TF50 1/2-13 Thd.

S60 Series
S61 Series
H60
H61
HT60N
M60 Series
M61 Series
B60 Series
FR500
FRN500
FRS500
FRSN500
SSFR500
SL500
T106, 107 Series
T127, T152,
T200
P306S Series
SC346-349
PR500

Part No.	A	B	C	D	E	F	G	H
TF25	1/4-20	.136	.22	.66	.88	.41	.34	.69

Tooling Flange Model TF-50								
Part No.	A	B	C	D	E	F	G	H
TF50	1/2-13	.203	.31	1.13	1.50	.63	.50	1.00



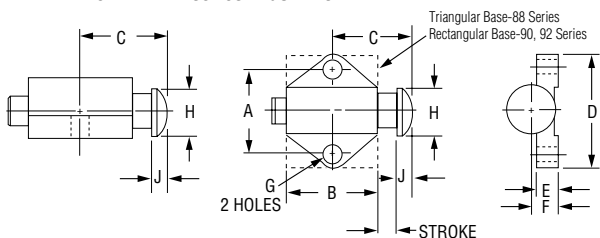
Spring Stops

Spring Stops

Vlier Spring Stops provide accurate, controlled end forces where fixture walls are not available. Spring Stop series has an aluminum body design.

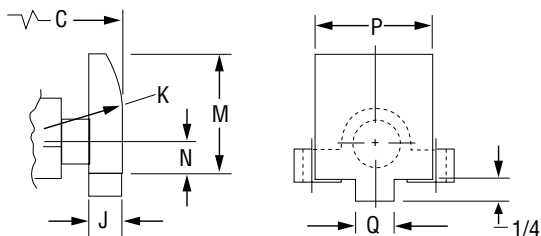
Note: SS90 and SS92 series have rectangular bases not shown in above picture but indicated on illustration below.

STANDARD NOSE CONFIGURATION

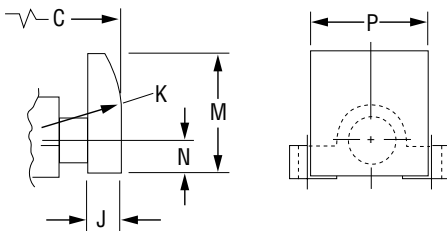


Springstops									
Part No.		End Force							
Steel Nose	Delrin Nose	Initial	Mid	Final	Stroke	A	B	C	D
SS88	NSS88	5.13	10.0	14.58	1/8	.656	.688	.593	.875
SS88A	—	5.13	10.0	14.58	1/8	.656	.688	.656	.875
SS88B	—	5.13	10.0	14.58	1/8	.656	.688	.656	.875
SS88C	—	5.13	10.0	14.58	1/8	.656	.688	.656	.875
SS90	NSS90	2.25	14.0	25.75	3/16	1.125	1.00	.875	1.50
SS90A	—	2.25	14.0	25.75	3/16	1.125	1.00	.938	1.50
SS90B	—	2.25	14.0	25.75	3/16	1.125	1.00	.938	1.50
SS90C	—	2.25	14.0	25.75	3/16	1.125	1.00	.938	1.50
SS92	NSS92	16.5	32.0	47.50	1/4	1.50	1.375	1.218	2.00
SS92A	—	16.5	32.0	47.50	1/4	1.50	1.375	1.312	2.00
SS92B	—	16.5	32.0	47.50	1/4	1.50	1.375	1.312	2.00
SS92C	—	16.5	32.0	47.50	1/4	1.50	1.375	1.312	2.00

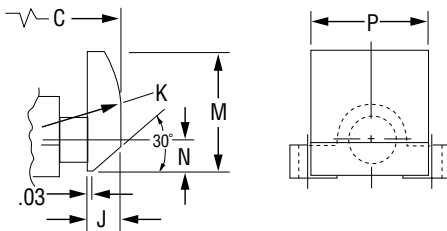
NOSE OPTION A (part #'s with "A" at end)



NOSE OPTION B (part #'s with "B" at end)



NOSE OPTION C (part #'s with "C" at end)



Springstops (Cont)

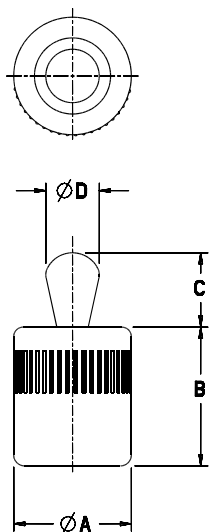
E	F	G	H	K	J	M	N	P	Q
.187	.218	.136	.375	—	.125	—	—	—	—
.187	.218	.136	—	.562	.187	.625	.200	.625	.250
.187	.218	.136	—	.562	.187	.625	.200	.625	—
.187	.218	.136	—	.562	.187	.625	.200	.625	—
.250	.312	.203	.562	—	.187	—	—	—	—
.250	.312	.203	—	1.000	.250	.875	.297	.875	.375
.250	.312	.203	—	1.000	.250	.875	.297	.875	—
.250	.312	.203	—	1.000	.250	.875	.297	.875	—
.250	.437	.266	.812	—	.281	—	—	—	—
.250	.437	.266	—	1.250	.375	1.250	.44	1.250	.500
.250	.437	.266	—	1.250	.375	1.250	.44	1.250	—
.250	.437	.266	—	1.250	.375	1.250	.44	1.250	—

Spring Locating Pin**Spring Locating Pins**

The Vlier Locating Pins are specially designed for fixturing small parts in a tight, compact space. Ideal for positioning and chucking flat or round parts for clamping. These carefully crafted components have an aluminum body with an alloy steel pressure pin. The 17-7 stainless steel high performance spring provides the repeatable end force you need. These versatile components can also be used for profiles if needed. For great performance when fluids are present, all our spring locating pins have the VLIER seal.

Special Features

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



Spring Locating Pins

PART NUMBER	END FORCES	BODY DIA	BODY LENGTH	TOGGLE LENGTH	TOGGLE DIA.
	SIDE FORCE (LBS)	A	B	C	D
SLPL250	2.2	1/4	0.30	0.16	0.11
SLP250	4.5	1/4	0.30	0.16	0.11
SLPH250	9.0	1/4	0.30	0.16	0.11
SLPL438	4.5	7/16	0.45	0.24	0.20
SLP438	11.2	7/16	0.45	0.24	0.20
SLPH438	22.5	7/16	0.45	0.24	0.20
SLPL438A	9.0	7/16	0.45	0.40	0.20
SLP438A	17.0	7/16	0.45	0.40	0.20
SLPH438A	34.0	7/16	0.45	0.40	0.20
SLPL500	11.2	1/2	0.53	0.51	0.31
SLP500	22.5	1/2	0.53	0.51	0.31
SLPH500	45.0	1/2	0.53	0.51	0.31
SLPL625	22.5	5/8	0.69	0.63	0.39
SLP625	45.0	5/8	0.69	0.63	0.39
SLPH625	67.5	5/8	0.69	0.63	0.39

MECHANICAL COMPONENTS

Tooling, Jig & Fixture Products



Toggle Pads

Steel or Steel with Delrin® Pad

Vlier Steel, Steel with Delrin Pad, and Serrated Toggle Pads solidly clamp parts with uneven or off-angle surfaces. Self-aligning and self-leveling with a 15° angle of movement from center for pad seating against workpiece surface with applied force. Eliminates clamp slippage. Delrin pads avoid damage to soft metals, polished surfaces or other finishes.

Toggle Pads Steel, Steel with Delrin Pad, Serrated

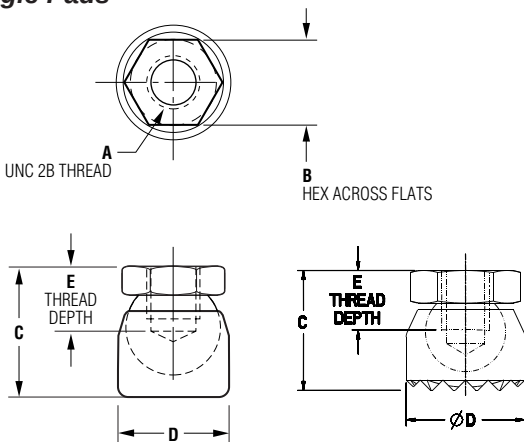
Part No.			A	B	C	D	E
Delrin Pads	Steel Pads	Serrated Pads					
NP300	P300	PS300	1/4-20	1/2 Hex	5/8	5/8	5/16
NP302	P302	PS302	5/16-18	9/16 Hex	3/4	11/16	3/8
NP304	P304	PS304	3/8-16	5/8 Hex	13/16	3/4	3/8
NP306	P306	PS306	1/2-13	3/4 Hex	15/16	7/8	7/16
NP308	P308	PS308	5/8-11	7/8 Hex	1	1	7/16
NP310	P310	PS310	3/4-10	1 1/16 Hex	1 11/32	1 1/4	5/8
NP312	P312	PS312	1-8	1 3/8 Hex	1 53/64	1 5/8	13/16

Toggle Pads Stainless Steel, Stainless Steel with Delrin Pad, Serrated

Part No.			Max. Recommended Load (Lbs)	
Delrin Pads	Steel Pads	Serrated Pads	Delrin Pads	Stainless Steel Pads
NP300	P300	PS300	360	3900
NP302	P302	PS302	360	5900
NP304	P304	PS304	570	6400
NP306	P306	PS306	570	7000
NP308	P308	PS308	1000	10000
NP310	P310	PS310	1300	13500
NP312	P312	PS312	1570	18750

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Toggle Pads



Stainless Steel or Stainless Steel with Delrin® Pad

Vlier Stainless Steel, Stainless Steel with Delrin Pad, and Serrated Toggle Pads provide the added advantage of maximum protection against rust and corrosion.

Toggle Pad Features

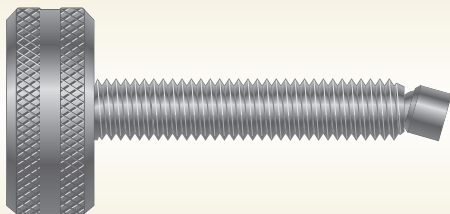
- ◆ Unidirectional force distribution
- ◆ Self-leveling
- ◆ No binding or distortion
- ◆ Serrated bottom

Toggle Pads Stainless Steel, Stainless Steel with Delrin Pad, Serrated

Part No.			A	B	C	D	E
Delrin Pads	Stainless	Serrated Pads					
NSSP300	SSP300	SSPS300	1/4-20	1/2 Hex	5/8	5/8	5/16
NSSP302	SSP302	SSPS302	5/16-18	9/16 Hex	3/4	11/16	3/8
NSSP304	SSP304	SSPS304	3/8-16	5/8 Hex	13/16	3/4	3/8
NSSP306	SSP306	SSPS306	1/2-13	3/4 Hex	15/16	7/8	7/16
NSSP308	SSP308	SSPS308	5/8-11	7/8 Hex	1	1	7/16
NSSP310	SSP310	SSPS310	3/4-10	1 1/16 Hex	1 11/32	1 1/4	5/8
NSSP312	SSP312	Ø	1-8	1 3/8 Hex	1 53/64	1 5/8	13/16

Toggle Pads Stainless Steel, Stainless Steel with Delrin Pad, Serrated

Part No.			Max. Recommended Load (Lbs)	
Delrin Pads	Stainless	Serrated Pads	Delrin Pads	Stainless Steel Pads
NSSP300	SSP300	SSPS300	360	5000
NSSP302	SSP302	SSPS302	360	7600
NSSP304	SSP304	SSPS304	570	8250
NSSP306	SSP306	SSPS306	570	9000
NSSP308	SSP308	SSPS308	1000	12900
NSSP310	SSP310	SSPS310	1300	17400
NSSP312	SSP312	Ø	1570	24200

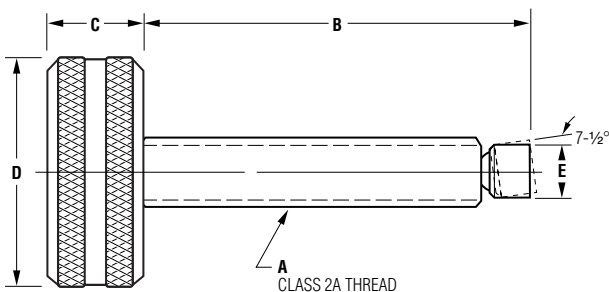
**Swivel Pad Clamps****Knurled Head - Steel or Delrin® Pad**

Vlier Knurled Head Model Swivel Pad Clamps offer finger-tight clamping with an easy to grip knurled head. Holds parts with off-angle surfaces without marring or damaging the surfaces. Hardened bearing surface absorbs screw torque.

Special Features

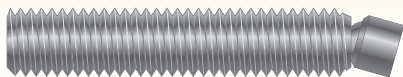
- ◆ Pad swivels 7-1/2° off centerline in all directions
- ◆ Large flat-pad face insures tight clamping
- ◆ Pad designed to pass through tapped hole
- ◆ Conical seat distributes clamping pressure uniformly
- ◆ Heat-treated alloy steel for long life
- ◆ Black finish
- ◆ Delrin & steel pads

Swivel Pad Clamps - Knurled Head



Swivel Pad Clamps Knurled Head Models - Steel/Delrin Pad						
Part No.		A	B	C	D	E
Delrin Pads	Steel Pads					
NSCH329	SCH329	1/4-20	1 1/2	3/8	1	.185
NSCH330	SCH330		2			
NSCH334	SCH334	5/16-18	1 1/2	7/16	1 1/8	.240
NSCH335	SCH335		2			
NSCH336	SCH336		2 1/2			
NSCH340	SCH340	3/8-16	1 1/2	1/2	1 1/4	.293
NSCH341	SCH341		2			
NSCH342	SCH342		2 1/2			
NSCH343	SCH343		3			
NSCH346	SCH346	1/2-13	1 1/2	9/16	1 1/4	.400
NSCH347	SCH347		2			
NSCH348	SCH348		2 1/2			
NSCH349	SCH349		3			

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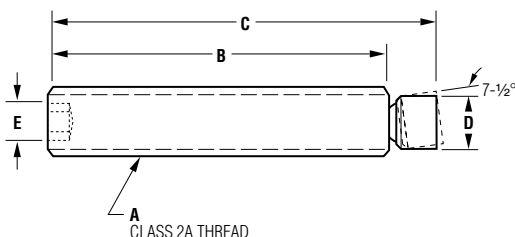
Swivel Pad Clamps

Socket Set Models

Vlier Socket Set Model Swivel Pad Clamps with steel, steel and delrin, stainless steel, and stainless steel & delrin bodies and swivel pads offer maximum support and rigidity. Ideal in limited spaces, pads hold parts with off-angle surfaces without surface marring or damage.

Special Features

- ◆ Steel & stainless steel bodies
- ◆ Steel, stainless steel & delrin pads
- ◆ Pad swivels 7-1/2° off centerline in all directions
- ◆ Large flat-pad face insures tight clamping
- ◆ Pad designed to pass through tapped hole
- ◆ Conical seat distributes clamping pressure uniformly
- ◆ Heat-treated alloy steel for long life
- ◆ Black finish

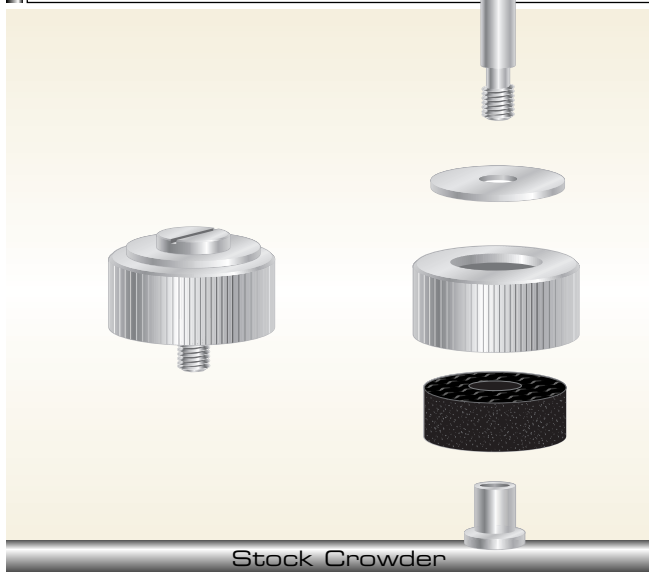


Swivel Pad Clamps - Socket Set Models

Socket Set Models Steel - Steel/Delrin Pads						
Part No.		A	B	C	D	E Hex
Delrin Pads	Steel Pads					
NSC324	SC324	10-32	1 ¹ / ₃₂	1/2	.146	3/32
NSC326	SC326	1/4-20	1 ¹ / ₃₂	1/2	.185	1/8
NSC327	SC327	1/4-20	19/32	3/4		
NSC328	SC328		27/32	1		
NSC329	SC329		1 11/32	1 1/2		
NSC332	SC332	5/16-18	35/64	3/4	.250	5/32
NSC333	SC333		51/64	1		
NSC334	SC334		1 19/64	1 1/2		
NSC335	SC335		1 51/64	2		
NSC338	SC338	3/8-16	1/2	3/4	.293	3/16
NSC339	SC339		3/4	1		
NSC340	SC340		1 1/4	1 1/2		
NSC341	SC341		1 3/4	2		
NSC344	SC344	1/2-13	7/16	3/4	.400	1/4
NSC345	SC345		11/16	1		
NSC346	SC346		1 3/16	1 1/2		
NSC347	SC347		1 11/16	2		
NSC349	SC349		2 11/16	3		
NSC350	SC350	5/8-11	5/8	1	.506	5/16
NSC351	SC351		1 5/8	2		
NSC353	SC353		2 5/8	3		
NSC354	SC354	3/4-10	1	1 1/2	.625	3/8
NSC356	SC356		2	2 1/2		
NSC364	SC364	1-8	53/64	1 1/2	.813	9/16

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Socket Set Models Stainless Steel - Stainless Steel/Delrin Pad						
Part No.		A	B	C	D	E Hex
Delrin Pads	Stainless					
NSSC324	SSC324	10-32	1 ¹ / ₃₂	1/2	.146	3/32
NSSC327	SSC327	1/4-20	19/32	3/4	.185	1/8
NSSC328	SSC328		27/32	1		
NSSC329	SSC329		1 11/32	1 1/2		
NSSC332	SSC332	5/16-18	35/64	3/4	.240	5/32
NSSC333	SSC333		51/64	1		
NSSC334	SSC334		1 19/64	1 1/2		
NSSC335	SSC335		1 51/64	2		
NSSC339	SSC339	3/8-16	3/4	1	.293	3/16
NSSC340	SSC340		1 1/4	1 1/2		
NSSC341	SSC341		1 3/4	2		
NSSC345	SSC345	1/2-13	11/16	1	.400	1/4
NSSC347	SSC347	1/2-13	1 11/16	2	.400	1/4
NSSC356	SSC356	3/4-10	2	2 1/2	.625	3/8

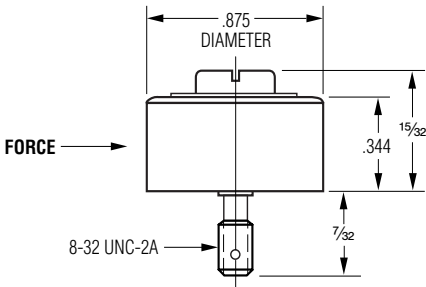


Stock Crowders

Vlier Stock Crowders provide positive alignment of stock in dies and fixtures. Saves pilots, easy to remove for die sharpening. Handles stock as thin as .010 and width variations up to $\frac{1}{16}$.

Special Features

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



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.

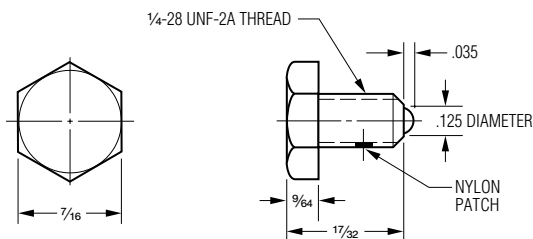
TO ASSURE THAT THE PROPER FORCE WILL BE APPLIED AS SHOWN IN CHART, LOCATE TAPPED HOLE .407 FROM EDGE OF STOCK (FOR 2, 3, AND 5 LBS.), OR .376 FROM EDGE OF STOCK (FOR 4, 6, AND 10 LBS.).

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 ball plunger with nylon patch used in loading mechanism of an automatic weapon. Plunger exerts sufficient force against the magazine to require a certain force before the magazine can be removed.

Final Force: 4.0 lbs.

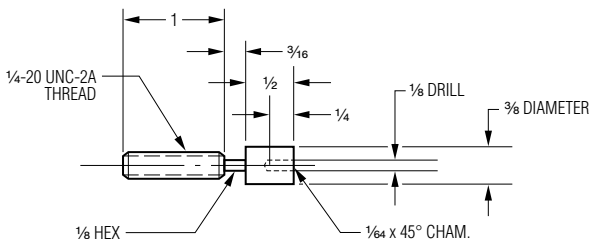
Initial Force: 1.0 lb.

Body: 12L14 steel.

Ball: 440C stainless steel.

Spring: music wire.

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



Final Force: 4.0 lbs.

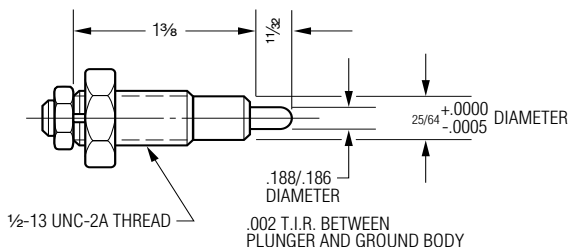
Initial Force: 1.0 lb.

Plunger: 303 stainless steel.

Body: 303 stainless steel.

Spring: 17-7 Ph stainless steel.

SPECIAL PRODUCTS



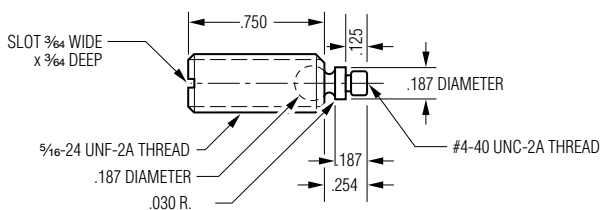
Application: A spring plunger that can be used as both a locator and an adjustable-force positioner.

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.

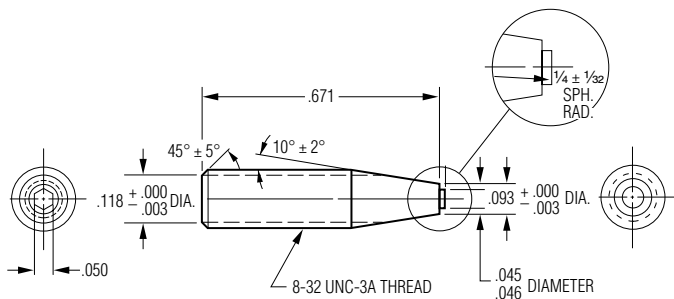
Body: 12L14 steel.

Spring: 17-7 Ph stainless steel.

APPLICATIONS

Special Products

SPECIAL PRODUCTS



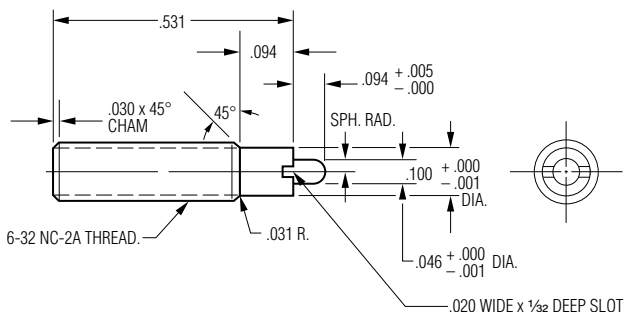
Application: Positioner in an air armament gyro.

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. $\pm .2$ lb.

Final Force: 1.0 lb. $\pm .4$ lb.

Plunger: 304 stainless steel $.094$ travel.

Body: 12L14 steel.

Spring: music wire.

Notes



Special Product Design Quotation Request Form

**PLEASE FILL OUT THE FORM BELOW AND TO THE RIGHT
FAX A COPY TO THE NUMBER ON THE CATALOG COVER**

Date: _____

CUSTOMER INFORMATION:

Name: _____

Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: Ext. FAX:

APPLICATION INFORMATION:

☐ Standard Product

 Special Design

Quote Due Date:

Quantity Required: _____

Annual Quantity: _____

Target Price:

When is product needed? _____

What is product used on?

Type of Application?

 OEM

☐ In Plant

Quality Requirements/Special Qualifications/Other Remarks:

[illegible]

ENVIRONMENT:

Temperature: _____

Chemical: _____

Load: _____

Friction: _____

Durability:

Other: _____

STANDARD PRODUCT INFORMATION:

Standard Design Catalog Part No.: _____

SPECIAL DESIGN INFORMATION:**SPRING-LOADED DEVICES**Standard Plunger ☐Stubby Plunger ☐Ball Plunger ☐Quick-Release Plunger ☐*Indicate dimensions on diagram or sketch.*

Similar to standard design catalog part number: _____

Thread/Outside Diameter: _____

Initial Force: _____ Final Force: _____

Length of Travel: _____ Ball or Plunger: _____

End Radius: _____ Flats or Hex: _____

Locking Element? Yes ☐ No ☐

Material (Steel, Stainless Steel, Plastic, Other): _____

Body: _____ Ball or Plunger: _____

Coating/plating: _____ Spring: _____

Installation method: Automatic ☐ Hand Assembly ☐Other ☐ _____**LEVELING DEVICES**Stud ☐Socket ☐*Indicate dimensions on diagram or sketch.*

Similar to standard design catalog part number: _____

Load: _____ Degree of Swivel: _____

Permanent Assembly ☐Snap Apart Assembly ☐

Internal/External Thread: _____

Stud Length: _____ Base Diameter: _____

Overall Height: _____

Elastomer Pad? Yes ☐ No ☐

Material (Steel, Stainless Steel, Plastic, Other): _____

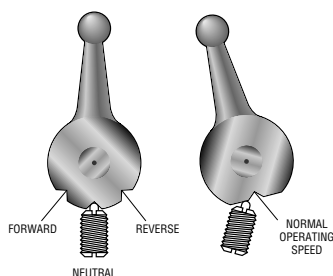
Base: _____ Socket/Stud: _____

Coating or Plating: _____

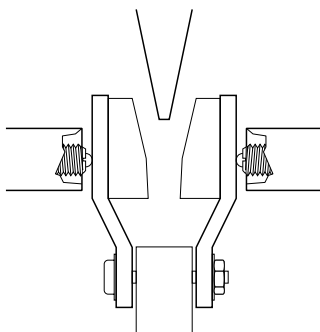
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Spring-Loaded Devices & Leveling Devices

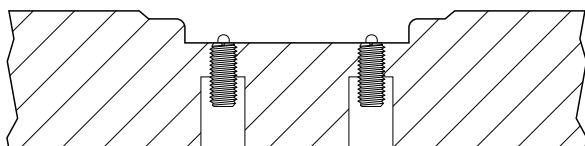
STANDARD PLUNGERS



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.

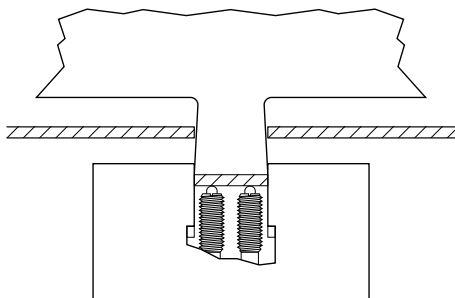


In a knife-type high voltage circuit breaker, Vlier Spring-Loaded Devices provide clamping force necessary to hold the conductive surfaces together, countering the heat expansion of the very high currents.

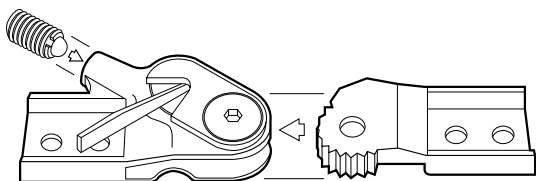


A metal fabrication shop uses Vlier Spring-Loaded Devices to break oil seals and eject parts and scrap from punch presses and forging dies.

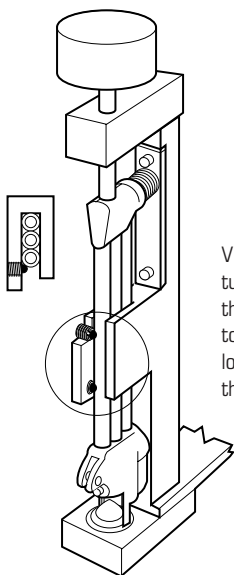
STANDARD PLUNGERS



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.

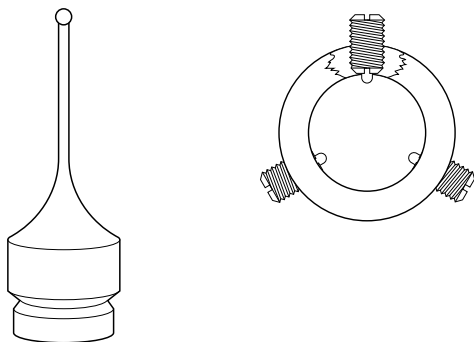


Vlier Spring-Loaded Devices hold stainless steel tubes in a welding jig. The pressure applied by the plunger keeps the tubes in perfect alignment to allow cutting, brazing and welding. The spring-loaded device maintains alignment despite thermal expansion.

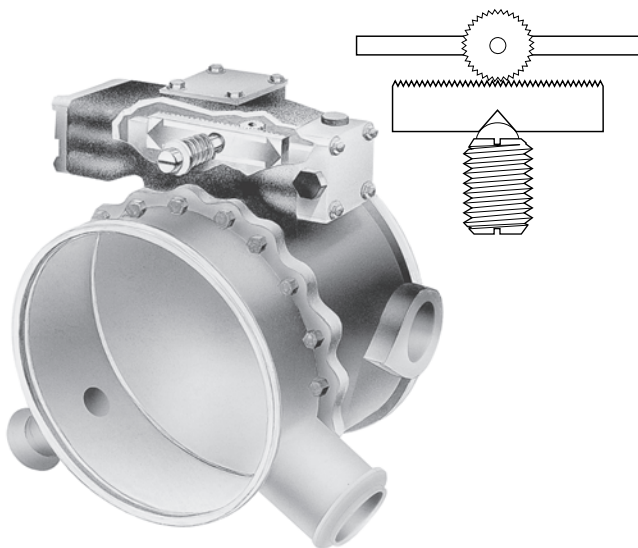
APPLICATIONS

Spring-Loaded Devices & Leveling Devices

BALL & STUBBY PLUNGERS

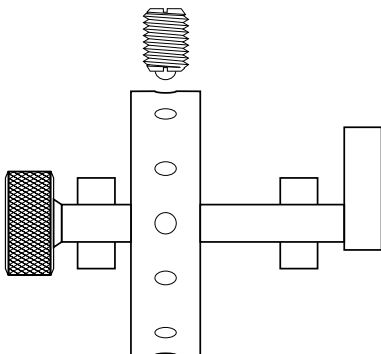


A measuring instrument employs Vlier Stubby Plungers to create a quick disconnect. Varying probe types and lengths can be quickly interchanged and secured when plunger tips snap into the mating groove.

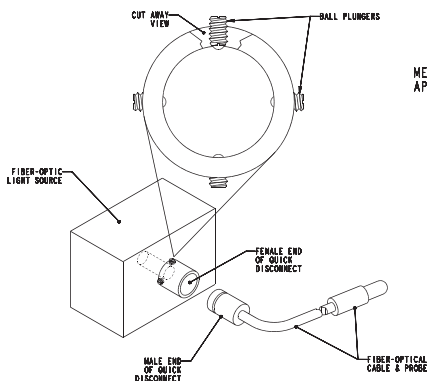


Here a Vlier Ball Plunger and detent assist a hermetic barrier valve which detents on a rack to control a pinion and operate a butterfly. Air pressure forces the rack out of detent, opening or closing the valve. The Ball Plunger acts as a positive stop until the air pressure is sufficient to force the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

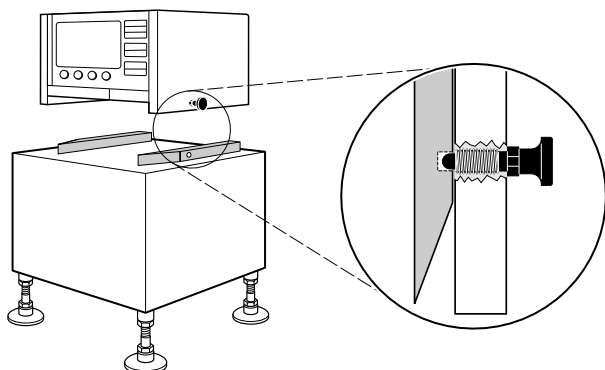


Fiber optic probe quick disconnect. Features 4-48 threads, .187 body length, .020 travel, 1/8-1/2 lb. end force. Steel body, spring and ball, quick cable interchange. Compact and lightweight. High quality mating connection.

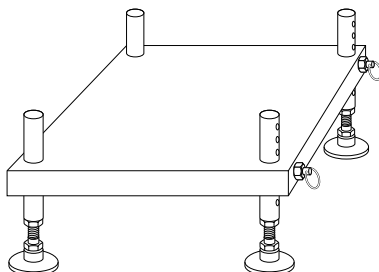
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Spring-Loaded Devices & Leveling Devices

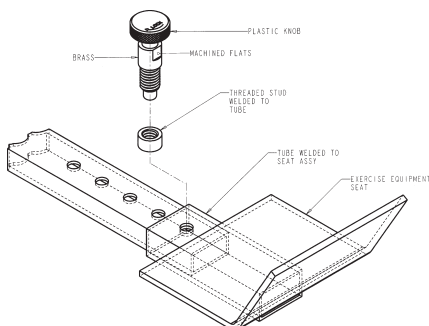
QUICK RELEASE PLUNGERS



Vlier Delrin® Knob Steel Retractable plungers provide the perfect cosmetic fastener for this medical monitor. Vlier Leveling Devices support base unit.

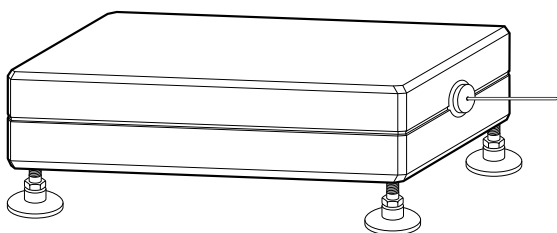


Vlier Pull-Ring Quick Release Plungers replace locking pins for rapid height adjustment for all kinds of tables and platforms.

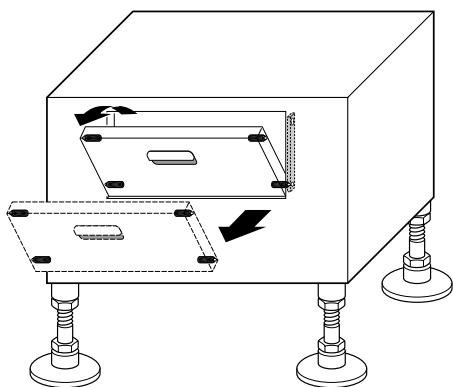


Hand activated seat position adjustment knob. Lockable knob. Features plunger locks for safety, simple operation, rapid position adjustment.

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 preceeding 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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