

Plungers

Plungers

Expanded Spec.

Product Name	Ball Plungers - Economy		Standard		Stainless Steel		Roller		Load Adjustable		Plastic Body	
	1763		1763		1764		1764		1764		1765	

								
Fine Thread	Short	Long	Wrenches for Ball Plungers	Hex Screw	Flanged	Ball Buttons	Press Fit Plungers - Standard	Roller
1765	1765	1766, 1767	1767	1768	1768	1768	1769	1769

							
Ball Buttons - Tapped	Roller Plungers - Compact	Surface Mount Type	Hex Screw	Spring Plungers - Steel	Stainless Steel	Wrenches for Spring Plungers	Block Plungers
1769	1770	1770	1770	1771	1772	1772	1772

							
Short Spring Plungers - Steel	Stainless Steel	Micro Spring Plungers - Standard	Short	Set Screw Type	Micro Stroke Pins	Stroke Pins	Spring Plungers - Tapped Tip
1773	1773	1774	1774	1774	1775	1775	1776

							
Long Sleeve Plungers	With Hexagon Socket Hole	With Hex Nose	Flat Tip	For Inclined Surface	Flanged	Indexing Plungers - Standard	Flanged
1776	1777	1777	1778	1778	1778	1779	1780

											
Indexing Plungers - Tapped Tip		Short Threaded		Compact	Long	Pilot, Precision	Knobs for Press Fit Plungers		Knobless Standard		Knobless Large Screws for Mounting Knobs
1780		1781		1782	1782	1783	1783		1784		1784

								
Indexing Plungers - Coarse/Fine Thread Lever		Switch Lever Type	Push Type	Plate Mount Type	Fine Thread / Coarse Thread	Ball Lock Pins - Spring Type	Push Type	Blocks with Plungers
1785		1786	1786	1786	1787	1788	1788	1786

Plungers - Overview

Ball Plungers

As the tip ball strokes, it can be used for tentative locating the workpiece or indexing.

Type	Economy	Standard	Roller	Load Adjustable	Plastic	Fine Thread	Short	Long
Features	By omitting the hardening on the plunger, dramatically competitive pricing is achieved.	General Ball Plunger	As the ball rotates smoothly, it prevents the mating parts from being damaged.	By compressing the inner spring, the load can be adjusted.	Ball Plunger with the plastic body	Fine threads provide an easy fine adjustment of strokes.	As the overall length is shorter than conventional ball plungers by 30%, it can be mounted to a thin plate.	Long overall length enables the use of nuts. Length Selectable Type is also available.
Page	P.1763	P.1763	P.1764	P.1764	P.1765	P.1765	P.1765	P.1766 · 1767

Some products have color marked hex socket for product identification.

Roller Plungers

As the tip bearing stroke is longer than that of ball plungers, it is suitable for positioning of sliding workpieces.

Type	Hex Screw	Flanged	Press Fit	Press Fit Rollers
Features	As the plunger bodies are screw shaped, easy positioning of the tips is possible.	Flanges keep constant heights from the plate.	Ball Plungers for press-fit mounting. It keeps constant heights from the plate.	Press Fit Plungers with smooth rotating balls.
Page	P.1768	P.1768	P.1769	P.1769

Type	Compact	Surface Type	Hex Screw
Features	Compact Roller Plungers. The load can be adjusted.	Can be mounted to flat locations. The position can be adjusted with slotted holes.	Can be mounted to a plate with tapped holes.
Page	P.1770	P.1770	P.1770

Spring Plungers

The pin shaped heads make the plunger useful for pushing the workpiece, or used as stoppers.

Type	Standard	Short	Block Integrated	Micro	Micro Stroke Pins	Stroke Pins	Tapped Tip	Long Sleeve	With Hexagon Socket Hole	With Hex Nose	Flat Tip	Flanged
Features	General Spring Plungers.	A Spring Plunger with both short length and stroke.	Block and Plunger are integrated.	The Small Diameter Type with Ø1.5 ~ 5 in O.D. It contributes to space-saving.	It has a resin tip, thus suitable for holding the base.	Bushing built-in plungers specialized in holding.	Stop pins can be mounted on the tip.	The long pin-guide makes the plunger able to bear diagonal loads.	A wrench can be used on the hex socket at the pin tip to install the plungers.	As the pin is hex shape, users can mount it using a spanner.	Suitable for working with its flat tip on the workpiece.	Flanges keep constant heights from the plate.
Page	P.1771	P.1773	P.1772	P.1774	P.1775	P.1775	P.1776	P.1776	P.1777	P.1777	P.1778	P.1778

Some products have color marked hex socket for product identification.

Indexing Plungers

The pin can be pushed in/out manually by using a knob or lever. Suitable for tentative workpiece positioning.

Type	Standard	Flanged	Tapped Tip	Short Threaded	Compact	Long	Pilot, Precision Grade	Press Fit
Features	Most general indexing plungers.	Flange plate allows for positioning adjustment.	The attachment can be mounted on the tip.	Has shorter threads than those of the Standard Type and saves space.	As the overall length is 2/3 of conventional products, it can be used in the limited space.	Having longer mounting threads than those of Standard Type, it can be mounted to a thick plate.	The combination of pilots and the inner structure keeps high repeatability.	Can be mounted by press-fit, instead of using screws.
Page	P.1779	P.1780	P.1780	P.1781	P.1782	P.1782	P.1783	P.1783

Ball Lock Pins

The pins and their side balls can smoothly locate and fix the workpiece.

Type	Knobless	Lever Type	Push Type	Plate Mount Type
Features	Suitable knob for each purpose can be mounted.	Can be used in locations with limited spaces.	Push Type can be operated by one finger.	Can be used in locations with limited spaces.
Page	P.1784	P.1785	P.1786	P.1786

Type	Spring	Push Type
Features	The spring moves the ball. Economical products.	The ball can be manually operated.
Page	P.1788	P.1788

Ball Plungers

Economy / Standard

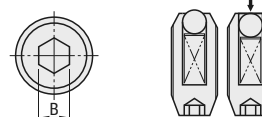
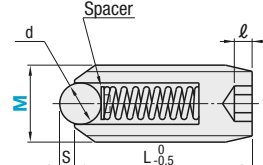
■ **Features:** By omitting heat treating, wrench slot and thread locking treatment, overwhelmingly low price is achieved.

Economy



RoHS

Type	Body	Ball	Spring	Spacer	Operating Temperature			
	M Material	S Surface Treatment	M Material	H Hardness	M Material			
Light Load	BPU	EN 1.7220 Equiv.	Trivalent Chromate	EN 1.3505 Equiv.	55HRC~	JIS-SWP-B	EN 1.4301 Equiv.	-30~80°C
Heavy Load	BPM							
Extra Heavy Load	BPQ							



M	Breaking Torque (N-cm)
3	98
4	98
5	226
6	520
8	1726
10	2746
12	5099
16	7845
20	10787

Part Number		M (Coarse)	d	S	L	ℓ	B	Light Load Load (N)		Heavy Load Load (N)		Extra Heavy Load Load (N)		Unit Price
Type								min.	max.	min.	max.	min.	max.	
BPU BPM BPQ	3	1.5	0.5	7	1	1.5	1	2	1.5	2.9	2.2	5		
	4	2.5		9	2.4	2	2	4.9	3.9	9.8	2.5	12.5		
	5		0.8	12	2	2.5	2.9	9.8	4.9	19.6	11.2	24.1		
	6	3		13	2.5	3	4.9	14.7	9.8	29.4	17.7	33.4		
	8	4	1	15	2.5	4	6.9	19.6	12.7	39.2	21.4	45.3		
	10	5	1.2	16	3	5	8.8	24.5	18.6	49	23.5	58.7		
	12	7.1	1.8	20	3	6	9.8	29.4	19.6	58.8	24.1	62.3		
	16	9.5	2.5	25	3	8	15.7	49	29.4	98	43.6	116		
20	11.9	4.5	40	6	10	53.9	98	78.4	147.6	84.6	196.6			

⚠ Has no Slit for a wrench on the tip. It can be installed only by using a hex socket. ⚠ Min. load is the initial load, and max. load is the one when the tip is fully compressed.

Part Number		Unit Price	(Reference)	 PACK-BPU is sold by the package.  For package sales, minimum order is 1 pack.  100 pcs./package  For orders larger than indicated quantity, please request a quotation.
Type	M (Coarse)	1 ~ 4 pack(s)	Price per Unit	
PACK-BPU (Light Load)	3			
	4			
	5			
	6			
	8			

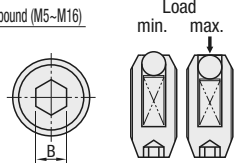
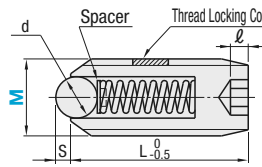
■ **BPJF, BSJF:** BPJ, BSJ (Identical Standard Products mentioned in Press Catalog) are also available.

Standard



RoHS

Type	Standard	Body	Ball	Spring	Spacer	Operating Temperature		
		M Material	H Hardness	S Surface Treatment	M Material	H Hardness	M Material	
Metal Ball	Ultra Light Load	BPY	BPY-N	EN 1.7220 Equiv.	29~35HRC	Black Oxide	EN 1.3505 Equiv.	55HRC~
	Light Load	BPJF	BPJ-N	EN 1.4301 Equiv.	-	-		
	Heavy Load	BSJF	BSJ-N	EN 1.4301 Equiv.	-	-		
Plastic Ball	Extra Heavy Load	BPW	BPW-N	EN 1.7220 Equiv.	29~35HRC	Electroless Nickel Plating	Polyacetal	-
	Ultra Light Load	NBPS						
	Light Load	NBPJ						
Plastic Ball	Heavy Load	NBSJ					EN 1.4301 Equiv.	-
	Extra Heavy Load	NBPW						



⚠ Part Number is not RoHS Compliant

⚠ Thread Locking Treatment is not provided on M2, M3 and M4 of Standard Type.

⚠ Thread Locking Treatment is where anaerobic thread locking compound in micro capsules is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when reassembling.

⚠ The thread locking is most effective by leaving the parts for 72 hours or more in 25°C. It should be noted if the parts are left for short period of time and in low temperature, the thread locking compound will be less-effective.

Part Number		M (Coarse)	d	S	L	ℓ	B	Ultra Light Load Load (N)		Light Load Load (N)		Heavy Load Load (N)		Extra Heavy Load Load (N)		Unit Price	
Type								min.	max.	min.	max.	min.	max.	min.	max.	Metal Ball	Plastic Ball
(Metal Ball) BPY (* only) BPJF BSJF BPW (* only)	(Plastic Ball) NBPS (* only) NBPJ (* only) NBSJ (* only) NBPW (* only)	2	1	0.2	-	-	5	1	0.9	-	-	0.7	1.4	2	-	-	-
		* 3	1.5	0.5	-	-	7	1	1.5	0.3	0.64	1	2	1.5	2.9	2.2	5
		** 4	2.5		2.4		9	1.5	2	0.6	1.6	2	4.9	3.9	9.8	2.5	12.5
		* 5	3	0.8	3.2	0.8	12	2	2.5	1	3.12	2.9	9.8	4.9	19.6	11.2	24.1
		** 6	3		3.2		13	2.5	3	1.6	4.85	4.9	14.7	9.8	29.4	17.7	33.4
		* 8	4	1	4	1.0	15	2.5	4	2.4	6.36	5.5	19.6	12.7	39.2	21.4	45.3
		** 10	5	1.2	4.8	1.2	16	3	5	3	8.1	8.8	24.5	18.6	49	23.5	58.7
		* 12	7.1	1.8	7.1	1.8	20	3	6	3.5	9.68	9.8	29.4	19.6	58.8	24.1	62.3
* 16		9.5	2.5	9.5	2.5	25	3	8	5.7	15.8	15.7	49	29.4	98	43.6	116	

⚠ M2, M3 and M4 have no slits for a wrench on the tip. Has no Slit for a wrench on the tip. It can be installed only by using a hex socket. ⚠ Min. load is the initial load, and max. load is the one when the tip is fully compressed.

Part Number		M (Coarse)	d	S	L	ℓ	B	Ultra Light Load Load (N)		Light Load Load (N)		Heavy Load Load (N)		Extra Heavy Load Load (N)		Unit Price	
Type								min.	max.	min.	max.	min.	max.	min.	max.	Metal Ball	Plastic Ball
(Metal Ball) BPY-N BPJ-N BSJ-N BPW-N		5	3	0.8	12	2	2.5	1	3.12	2.9	9.8	4.9	19.6	11.2	24.1		
		6	3		13	2.5	3	1.6	4.85	4.9	14.7	9.8	29.4	17.7	33.4		
		8	4	1	15	2.5	4	2.4	6.36	6.9	19.6	12.7	39.2	21.4	45.3		
		10	5	1.2	16	3	5	3	8.1	8.8	24.5	18.6	49	23.5	58.7		
		12	7	1.8	20	3	6	3.5	9.68	9.8	29.4	19.6	58.8	24.1	62.3		
		16	9.5	2.5	25	3	8	5.7	15.8	15.7	49	29.4	98	43.6	116		

⚠ Min. load is the initial load, and max. load is the one when the tip is fully compressed.



Ordering Example

Part Number

BPQ8
PACK-BPU8
BPW-N12

Ball Plungers

Stainless Steel / Roller / Load Adjustable

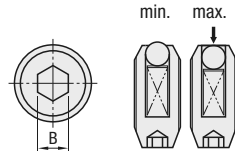
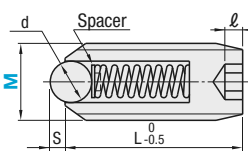
■ **BSZF:** Equiv. to BSZ (old product). Up to 12% price reduction compared to BSZ.

Stainless Steel



RoHS

Type	Body	Ball	Spring	Spacer	Operating Temperature	
	M Material	M Material	H Hardness	M Material	M Material	
Ultra Light Load	BMS	EN 1.4125 Equiv.	55HRC~	EN 1.4568 Equiv.	EN 1.4301 Equiv.	-30~260°C
Light Load	BSM					
Heavy Load	BSZF					
Extra Heavy Load	BSX	EN 1.4301 Equiv.				
Ultra Light Load	NBSS	Polyacetal	-	EN 1.4568 Equiv.	EN 1.4301 Equiv.	-30~80°C
Light Load	NBSM					
Heavy Load	NBSZ					
Extra Heavy Load	NBSX					



Part Number		Metal Ball		Plastic Ball		L	ℓ	B	Ultra Light Load (BMS, NBSS) Load (N)		Light Load (BSM) Load (N)		Light Load (NBSM) Load (N)		Heavy Load (BSZF, NBSZ) Load (N)		Extra Heavy Load (BSX, NBSX) Load (N)		Unit Price	
Type		M (Coarse)	d	S	d				min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	Metal Ball	Plastic Ball
(Metal Ball)		2	1	0.2	-	-	5	1	0.9	-	-	0.7	1.4	2	-	-	1.2	2		
BMS (* only)		* 3	1.5	0.5	-	-	7	1	1.5	0.3	0.64	1	2	-	-	1.5	2.9	2.2	5	
BSM		** 4	2.5		2.4		9	1.5	2	0.6	1.6	1.9	4.9	2	4.9	3.9	9.8	2.5	12.5	
BSZF		* 5	3	0.8	3.2	0.8	12	2	2.5	1	3.12	3.3	9.8	2.9	9.8	4.9	19.6	11.2	24.1	
BSX (* only)		** 6	3		3.2		13	2.5	3	1.6	4.85	5.1	15.3	4.9	14.7	9.8	29.4	17.7	33.4	
(Plastic Ball)		* 8	4	1	4.0	1.0	15	2.5	4	2.4	6.36	5.5	19.1	6.9	19.6	12.7	39.2	21.4	45.3	
NBSS (* only)		** 10	5	1.2	4.8	1.2	16	3	5	3	8.1	8.9	24.1	8.8	24.5	18.6	49	23.5	60	
NBSM (* only)		* 12	7.1	1.8	7.1	1.8	20	3	6	3.5	9.68	10.5	29.3	9.8	29.4	19.6	58.8	24.1	63.7	
NBSZ (* only)		* 16	9.5	2.5	9.5	2.5	25	3	8	5.7	15.8	14.9	48.9	15.7	49	29.4	98	43.6	116.3	

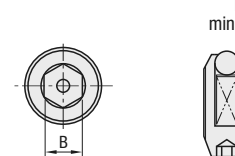
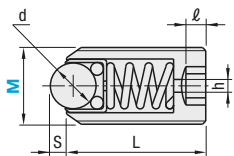
⚠ M2, M3 and M4 have no slits for a wrench on the tip. Has no Slit for a wrench on the tip. It can be installed only by using a hex socket. ⚠ Thread locking treatment not applied.

Roller



RoHS

Type	Body	Ball	Sub Ball	Spring	Operating Temperature			
	M Material	M Material	H Hardness	M Material	H Hardness	M Material		
Metal Ball	BPRM	EN 1.4567 Equiv.	EN 1.4125 Equiv.	55HRC~	EN 1.4125 Equiv.	55HRC~	EN 1.4568 Equiv.	-30~100°C
Plastic Ball	BPRJ		Polyacetal	-	-	-		-30~80°C



Part Number		M (Coarse)	d	S	L	ℓ	B	h	Load (N)		Unit Price
Type									min.	max.	
BPRM BPRJ		5	2.4	0.7	12	2	2.5	1.2	4.4	19.6	
		6	3	0.8	13	3	3	1.5	8.1	29.6	
		8	4	1.3	15	4	4	2	12.6	39.8	
		10	5	1.6	16	5	5	2.5	13.5	44.4	
		12	7.1	2.3	20	6	6	3	16.1	46.9	
		16	9.5	3.1	25	8	8	4	26.1	88.2	

⚠ Has no Slit for a wrench on the tip. It can be installed only by using a hex socket. ⚠ Thread locking treatment not applied.

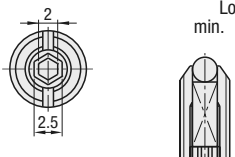
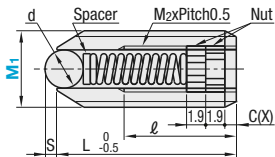
■ **Features:** By moving the nut for compressing the inner spring, the load can be adjusted freely.

Load Adjustable



RoHS

Type	Body	Ball	Spring	Nut	Spacer	Operating Temperature
	M Material	M Material	H Hardness	M Material	H Hardness	M Material
Metal Ball	BPCF	EN 1.4305 Equiv.	55HRC~	EN 1.4301 Equiv.	EN 1.4305 Equiv.	-30~80°C
Plastic Ball	NPCF		Polyacetal	-	-	



Part Number		Metal Ball		Plastic Ball		LℓM ₂ (Fine)C X					Min. Tightening (X=0)		Max. Tightening (X=Xmax)		Unit Price	
Type	M ₁ (Coarse)	d	S	d	S						Load (N)		Load (N)		BPCF	NPCF
											min.	max.	min.	max.		
BPCF NPCF	8	4	1	4	1	16	6.4	5	1	0~2.6	10	20	32	41		
	10	4.8	1.2	4.8	1.2	18	6.5	6	1.3	0~2.7	7	21	38	52		
	12	7.1	1.8	7.1	1.8	22	6.6	8	1.8	0~2.8	3	29	42	62		

Ball Plungers

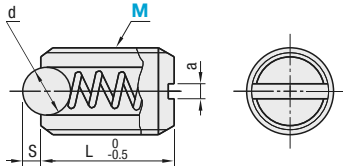
Plastic Body / Fine Thread / Short

Plastic Body



RoHS

Type	Body		Ball	Spring	Operating Temperature
	M	H			
Metal Ball	Light Load	BSMN	Polyacetal (Black)	EN 1.4125 Equiv.	-30~80°C
	Heavy Load	BSZN	Nylon 66 (White)	EN 1.4568 Equiv.	
Plastic Ball	Light Load	BNMN	Polyacetal (Black)	EN 1.4301 Equiv.	-30~80°C
	Heavy Load	BNZN	Nylon 66 (White)	EN 1.4568 Equiv.	



Part Number		Type	M (Coarse)	d	S	L	a	Load (N)				Unit Price			
								Light Load min.	Light Load max.	Heavy Load min.	Heavy Load max.	BSMN	BSZN	BNMN	BNZN
Metal Ball	Plastic Ball	BSMN	6	3.2	0.8	13	1	0.2	5	8	16				
			8	4	1	15	1.2	2	12	15	30				
			10	4.8	1.2	16	1.5	2.5	16	20	39				

Has no slit for a wrench on the tip.

kgf=Nx0.101972



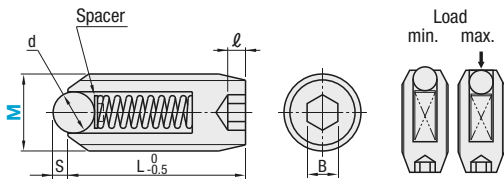
Ordering Example
Part Number
BSZN6

Fine Thread

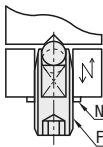


RoHS

Type	Body		Ball	Spring	Spacer	Operating Temperature
	M	H				
Light Load	BMPJ	EN 1.1191 Equiv.	29~35HRC	Black Oxide	EN 1.3505 Equiv.	55HRC~
Heavy Load	BMSJ	EN 1.1191 Equiv.	29~35HRC	Black Oxide	EN 1.3505 Equiv.	55HRC~



Features
Fine threads provide an easy fine adjustment of strokes.



Part Number		Pitch (Fine)	Metal Ball		L	ℓ	B	Light Load (N)		Heavy Load (N)		Unit Price
Type	M (Fine)		d	S				min.	max.	min.	max.	
Light Load BMPJ	3	0.35	1.5	0.8	7	1	1.5	1	2	1.5	2.9	
	4	0.5	2.5		9	1.5	2	2	4.9	3.9	9.8	
	5	0.5	3		12	2	2.5	2.9	9.8	4.9	19.6	
Heavy Load BMSJ	6	0.75	3		13	2.5	3	4.9	14.7	9.8	29.4	
	8	0.75	4	1	15	2.5	4	6.9	19.6	12.7	39.2	

Thread locking treatment not applied.

kgf=Nx0.101972



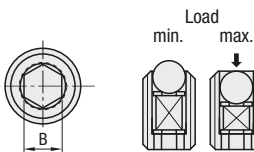
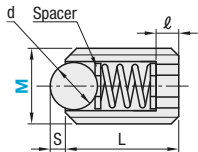
Ordering Example
Part Number
BMPJ5

Short

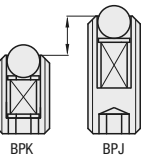


RoHS

Type	Body		Ball	Spring	Spacer	Operating Temperature
	M	H				
BPK	EN 1.4567 Equiv.	EN 1.4125 Equiv.	59~66HRC	EN 1.4301 (WPB) Equiv.	EN 1.4301 Equiv.	-30~80°C



Features: As the overall length is shorter than conventional ball plungers by about 30%, it does not stick out even if mounted to a thin plate.



Part Number		Type	M (Coarse)	d	S	L	ℓ	B	Load (N)		Unit Price
									min.	max.	
BPK			3	2	0.5	5	1	1.5	(1.0)	(2.0)	
			4	2.5	0.8	6	1.2	2	(1.1)	(3.7)	
			5	3		8	1.9	2.5	(2.2)	(5.9)	
			6	4	1	9	1.8	3	(4.6)	(8.7)	
			8	5	1.2	10	1.8	4	(7.5)	(11.9)	

Has no slit for a wrench on the tip. It can be installed only by using a hex socket.

Min. load is the initial load, and max. load is the one when the tip is fully compressed.

kgf=Nx0.101972



Ordering Example
Part Number
BPK4

Ball Plungers

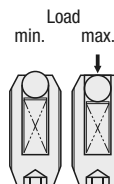
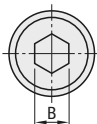
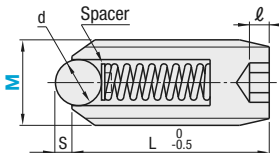
Long / Stainless Steel Long

Long



RoHS

Type	Body		Ball	Spring	Spacer	Operating Temperature
	M	H				
Metal Ball	Ultra Light Load	BPSL	EN 1.1191 Equiv.	29~35HRC	Black Oxide	-30~80°C
	Light Load	BPJL	EN 1.1191 Equiv.	-	-	
	Heavy Load	BSJL	EN 1.4301 Equiv.	-	-	
Plastic Ball	Extra Heavy Load	BPWL	EN 1.1191 Equiv.	29~35HRC	Electroless Nickel Plating	-30~80°C
	Light Load	NPJL	EN 1.1191 Equiv.	-	-	
	Heavy Load	NSJL	EN 1.1191 Equiv.	-	-	



Combination of these app. examples can be selected on our website.

Selection Detail

e-Catalog Search Keyword

#MA371

Search

* Enter the search keyword in the search box on e-Catalog. The search result will be shown in "Modular Assembler" area.



Part Number		Type	M (Coarse)	Metal Ball		L	ℓ	B	Ultra Light Load (BPSL, NPJL)		Light Load (BPJL, NPJL)		Heavy Load (BSJL, NSJL)		Extra Heavy Load (BPWL, NSWL)		Unit Price	
				d	S				min.	max.	min.	max.	min.	max.	min.	max.	Metal Ball	Plastic Ball
Metal Ball	BPSL	BPJL	3	1.5	0.5	-	-	13	1	1.5	0.3	0.64	1	2	1.5	2.9	2.2	5
			4	2.5		2.4	0.7	15	1.5	2	0.6	1.6	2	4.9	3.9	9.8	2.5	12.6
			5	3	0.8	3	0.8	18	2	2.5	1	3.12	2.9	9.8	4.9	19.6	11.7	25.1
Plastic Ball	BPWL	NPJL	6	3		3	0.8	20	2.5	3	1.6	4.85	4.9	14.7	9.8	29.4	18.7	35.3
			8	4	1	4	1	23	2.5	4	2.4	6.36	6.9	19.6	12.7	39.2	24.5	46.8
			10	5	1.2	5	1.2	27	3	5	3	8.1	8.8	24.5	18.6	49	26.7	58.7
Plastic Ball	NPJL	NSJL	12	7.1	1.8	7	1.8	32	3	6	3.5	9.68	9.8	29.4	19.6	58.8	26.1	62.3
			16	9.5	2.5	9.5	2.5	40	3	8	5.7	15.8	15.7	49	29.4	98	55.4	116

M3 and M4 have no slits for a wrench on the tip. It can be installed only by using a hex socket.

Min. load is the initial load, and max. load is the one when the tip is fully compressed.

kgf=Nx0.101972



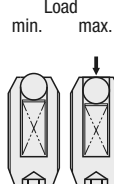
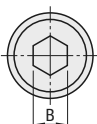
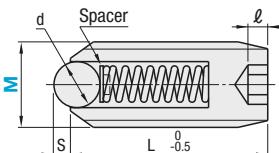
Ordering Example
Part Number
BPSL6

Stainless Steel Long



RoHS

Type	Body		Ball	Spring	Spacer	Operating Temperature
	M	H				
Metal Ball	Ultra Light Load	BMSL	EN 1.4125 Equiv.	55HRC~		-30~260°C
	Light Load	BSML	EN 1.4125 Equiv.	-	-	
	Heavy Load	BSZL	EN 1.4301 Equiv.	-	-	
Plastic Ball	Extra Heavy Load	BSXL	EN 1.4301 Equiv.	EN 1.4568 Equiv.	EN 1.4301 Equiv.	-30~80°C
	Light Load	NSML	Polyacetal	-	-	
	Heavy Load	NSZL	Polyacetal	-	-	



Combination of these app. examples can be selected on our website.

Selection Detail

e-Catalog Search Keyword

#MA371

Search

* Enter the search keyword in the search box on e-Catalog. The search result will be shown in "Modular Assembler" area.



Part Number		Type	M (Coarse)	Metal Ball		L	ℓ	B	Ultra Light Load (BMSL, NSML)		Light Load (BSML, NSML)		Heavy Load (BSZL, NSZL)		Extra Heavy Load (BSXL, NSXL)		Unit Price	
				d	S				min.	max.	min.	max.	min.	max.	min.	max.	Metal Ball	Plastic Ball
Metal Ball	BMSL	BSML	3	1.5	0.5	-	-	13	1	1.5	0.3	0.65	1	2	1.5	2.9	2.2	5
			4	2.5		2.4	0.7	15	1.5	2	0.6	1.62	1.9	4.9	3.9	9.8	2.5	12.5
			5	3	0.8	3	0.8	18	2	2.5	1.1	3.21	3.3	9.8	4.9	19.6	11.2	24.1
Plastic Ball	BSXL	NSXL	6	3		3	0.8	20	2.5	3	1.7	4.96	5.1	15.3	9.8	29.4	17.7	33.4
			8	4	1	4	1	23	2.5	4	2.5	6.56	5.5	19.1	12.7	39.2	21.4	45.3
			10	5	1.2	5	1.2	27	3	5	3.2	8	8.9	24.1	18.6	49	23.5	60
Plastic Ball	NSML	NSZL	12	7.1	1.8	7	1.8	32	3	6	3.5	9.8	10.5	29.3	19.6	58.8	24.1	63.7
			16	9.5	2.5	9.5	2.5	40	3	8	6.1	15.6	14.9	48.9	29.4	98	43.6	116.3

M3 and M4 have no slits for a wrench on the tip. It can be installed only by using a hex socket.

Min. load is the initial load, and max. load is the one when the tip is fully compressed.

kgf=Nx0.101972



Ordering Example
Part Number
NSML8

L Selectable Long / L Selectable Stainless Steel Long

⚠ M3 and M4 have no slits for a wrench on the tip. It can be installed only by using a hex socket. ⚠ Min. load is the initial load, and max. load is the one when the tip is fully compressed. $kqf = N \times 0.101972$



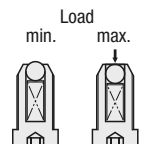
⚠ M3 and M4 have no slits for a wrench on the tip. It can be installed only by using a hex socket. ⚠ Min. load is the initial load, and max. load is the one when the tip is fully compressed. $kqf = N \times 0.101972$



S Surface Treatment: Black Oxide (Fe₃O₄)

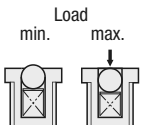
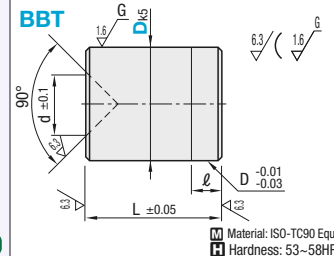


📢 For orders larger than indicated quantity, please request a quotation.



The incomplete threaded portion (Pitchx2) is included in L dim.

⚠ BPHL and BPHH are available for L sizes marked with * only.


$$\text{kqf} = \text{Nx}0.101972$$


⚠ When using it with a ball plunger, select the same No.(M=D). (BBT6 is also applicable to M5)



Press Fit Plungers / Ball Buttons

Standard / Roller

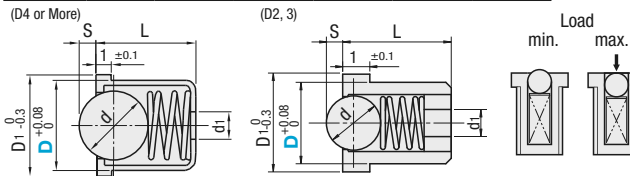
Tapped

Press Fit Plungers Standard

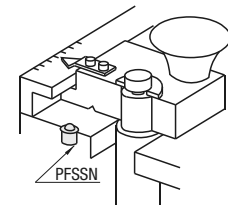


RoHS

Type	Body	Ball	Spring	Operating Temperature
Light Load	PFSSN	EN 1.4305 Equiv.	EN 1.4568 Equiv.	-20~120°C
Heavy Load	PFSSR	EN 1.4125 Equiv.	EN 1.4568 Equiv.	-20~120°C
Light Load	PFPSN	Polyacetal	-	-30~80°C
	PFPPN	Polyacetal	-	-30~80°C



ex Example



Part Number	Type	D	D1	L	S	d	d1	Light Load (N)				Heavy Load (N)		Unit Price			
								PFSSN	PFSSR	PFPSN	PFPPN	min.	max.	PFSSN	PFSSR	PFPSN	PFPPN
PFSSN PFSSR PFPSN PFPPN		2	2.5	3	-	0.3	1	0.54	0.78	0.54	0.78	-	-	-	-	-	-
		3	3.6	4	-	0.6	2	0.74	0.98	0.74	0.94	-	-	-	-	-	-
		4	4.6	5	6.5	0.8	3	0.65	5.6	1.3	6.4	3.1	8.7	-	-	-	-
		5	5.6	6	8	1	4	2	2.8	6.3	2.7	8	5.1	13.5	-	-	-
		6	6.6	7	9	1.6	5	2.95	9.6	1.15	10.2	5.3	16.5	-	-	-	-
		8	8.6	9	12	1.9	6.35	3	6.5	11.7	6.15	17.2	8	28	-	-	-
		10	10.6	11.5	14.5	2.4	8	9	15	2.1	18.8	13.5	30.5	-	-	-	-

Recommended Diameter of Mounting Hole D: $\phi 0.13$

Use adhesive to prevent loosening.

kgf=Nx0.101972

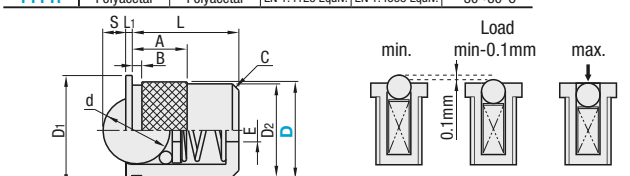
Ordering Example
Part Number
PFSSN4

Press Fit Plungers Roller

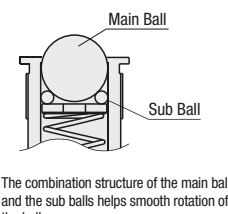


RoHS

Type	Body	Main Ball	Sub Balls	Spring	Operating Temperature
PFPR	Polyacetal	Polyacetal	EN 1.4125 Equiv.	EN 1.4568 Equiv.	-30~80°C



Features



The combination structure of the main ball and the sub balls helps smooth rotation of the ball.

Part Number	Type	D	D1	D2	L	S	L1	d	A	B	E	C	Allowable Load (N)			Unit Price
													min.	min-0.1mm	max.	
PFPR		7	9	-	7.5	1.5	1	4.76	7.5	1	1.5	0.8	0	0.1	2	
		9	11	8.4	10	1.7	1	5.56	7	1.2	2.5	1	0	0.2	4	
		13	15	12.4	15	2.8	1	8.73	7	1.5	3	1	0	0.3	7	
		15	17	14.7	16.5	3.5	1	10.32	8.5	1.5	3.5	1	0	0.3	11	
		20	22	19.4	22.5	5.2	1.5	15.88	10.5	1.5	5.3	1	0	0.3	14	
		24	26	23.4	29	6.6	1.5	19.05	13.5	1.5	6.4	1	0	0.3	21	

Recommended Diameter of Mounting Hole DH8

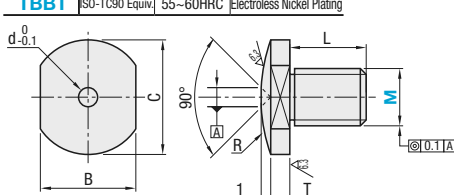
Ordering Example
Part Number
PFPR15

Ball Buttons - Tapped



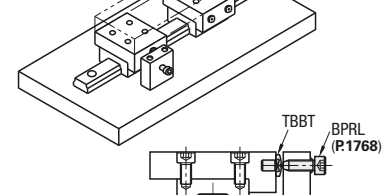
RoHS

Type	Material	Hardness	Surface Treatment
TBBT	ISO-TC90 Equiv.	55~60HRC	Electroless Nickel Plating



When using it with a ball plunger, select the same M.

ex Example



Part Number	Type	M (Coarse)	B	L	C	T	R	d	Unit Price
TBBT		4	7	5	8	2	8.4	1.5	
		5	8	6	9	2	10.2	2	
		6	10	8	12	2	18	2	
		8	13	10	15	3	27.6	3	
		10	17	12	20	3	48.5	4	
		12	19	15	22	3	57.8	5	

Ordering Example
Part Number
TBBT6

Roller Plungers

Compact / Surface Mount / Hex Screw

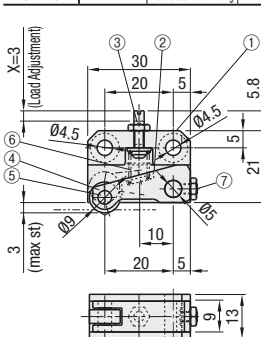
Features: Has a ball bearing on the tip.

Compact Load Adjusting Function

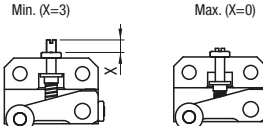


RoHS

Type	①②③ Main Body, Arm, Adjustment Screw	④ Bearing	⑤ Bearing Shaft	⑥ Spring	⑦ Set Screw	⑧ Nut
CBPJ	EN 1.1191 Equiv. Electroless Nickel Plating	EN 1.4112 Equiv.	EN 1.3505 Equiv.	58HRC~	EN 1.4301 (WPB) Equiv.	JIS-SWCH Equiv. Electroless Nickel Plating



Load
By tightening adjustment screw ③, the load can be adjusted freely.
Tightening Amount X

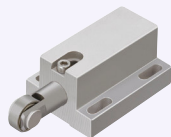


Features
Compact Roller Plungers.
(The length along the direction of the stroke is approx. 1/3 of that of Surface Mount Type.)
With rolling mechanics at the tip, this product is suitable for the position setting of sliding plate or indexing for rotating table.

Part Number	Type	No.	Min. Tightening (X=3)		Max. Tightening (X=0)		Unit Price
			min	max	min	max	
CBPJ		9	0.4	4.2	6.6	10.2	

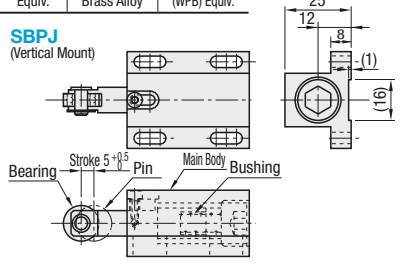
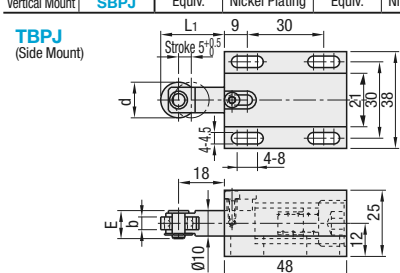
Ordering Example
Part Number
CBPJ9

Surface Mount



RoHS

Type	Main Body	Pin	Bearing	Bushing	Spring
Side Mount Vertical Mount	TBPJ SBPJ	EN 1.1191 Equiv. Electroless Nickel Plating	EN 1.1191 Equiv. Electroless Nickel Plating	EN 1.3505 Equiv. High-Tensile Brass Alloy	EN 1.4301 (WPB) Equiv.



Part Number	Type	No.	d	b	E	L1	Load (N)		Unit Price
							min.	max.	
Light Load	TBPJ (Side Mount)	1	14	5	11	25	3	5.1	
		1A	19	6	12.8	27.5	6.1	10.4	
		2	14	5	11	25	3	5.1	
		2A	19	6	12.8	27.5	6.1	10.4	
Heavy Load	SBPJ (Vertical Mount)	1	14	5	11	25	3	5.1	
		1A	19	6	12.8	27.5	6.1	10.4	
		2	14	5	11	25	3	5.1	
		2A	19	6	12.8	27.5	6.1	10.4	

No. 1A and 2A have larger bearing dia. than that of conventional products.

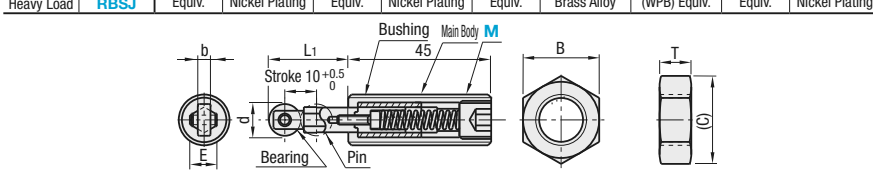
Ordering Example
Part Number
TBPJ2A

Hex Screw



RoHS

Type	Main Body	Pin	Bearing	Bushing	Spring	Accessory (Nut x2 pcs.)
Light Load Heavy Load	RBPJ RBSJ	EN 1.1191 Equiv. Electroless Nickel Plating	EN 1.1191 Equiv. Electroless Nickel Plating	EN 1.3505 Equiv. High-Tensile Brass Alloy	EN 1.4301 (WPB) Equiv.	EN 1.0038 Equiv. Electroless Nickel Plating



Part Number	Type	M (Coarse)	d	b	E	L1	M (Coarse)	B	Nut (C)	T	Load (N)		Unit Price
											min.	max.	
Light Load	RBPJ	16	10	4	9	25	16x2.0	24	27.7	10	1.6	4.8	
		20	19	6	11.5	30	20x2.5	30	34.6	12			
Heavy Load	RBSJ	16	10	4	9	25	16x2.0	24	27.7	10	2.9	8.4	
		20	19	6	11.5	30	20x2.5	30	34.6	12			

Ordering Example
Part Number
RBPJ20

Spring Plungers

Steel

For details of spring plungers with a switch, see P2107.

Load Category	Type	Body		Pin		Spring		Operating Temperature
		Standard	Material	Material	Hardness	Material	Material	
Steel Nose	Ultra Light Load	PJS	EN 1.1191 Equiv.	29~35HRC	Black Oxide	Trivalent Chromate	JIS-SWP-B	-30~80°C
	Light Load	PJL						
	Heavy Load	PJH						
	Extra Heavy Load	PJX						
Plastic Tip	Ultra Light Load	NPJS	EN 1.1191 Equiv.	29~35HRC	Black Oxide	Polyacetal	JIS-SWP-B	-30~80°C
	Light Load	NPJL						
	Heavy Load	NPJH						
	Extra Heavy Load	NPJX						

Electroless Nickel Plating for only M3 and M4.

Thread Locking Treatment is not provided on M3 and M4.

Thread Locking Treatment

Micro-encapsulated anaerobic adhesive used to hold objects in place. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when reassembling.

The thread locking is most effective by leaving the parts for 72 hours or more in 25°C. It should be noted if the parts are left for short period of time and in low temperature, the thread locking compound will be less-effective.

Do not use the rear hex socket at the time of mounting or removal.

Part Number		d	ℓ	L		B	Ultra Light Load		Light Load		Heavy Load		Extra Heavy Load		Unit Price			
Type	M (Coarse)			S	Ultra Light / Light / Heavy Load		Extra Heavy Load	min.	N Load max.	min.	N Load max.	min.	N Load max.	min.	N Load max.	Ultra Light / Light / Heavy Load	Extra Heavy Load	
(Steel Tip) PJS PJL PJH PJX (* only)	3	**1.5	1.1	10(15)	10	15	0.9	0.05	0.32	0.49	1.0	0.78	2.9	2.2	4.5			
		**3	1.1	15(20)	15	20	0.9	0.09	0.32	0.29	1.0	0.78	2.9	1.8	4.5			
		**2	1.6	15(24)	15	24	1.3	0.23	0.65	1.0	2.0	2.9	8.8	5.2	13			
		**4	1.6	24	24	24	1.3	0.24	0.65	0.59	2.0	2.0	8.8	5.2	13			
	4	**3	2.0	20(27)	20	27	1.5	0.74	2.95	2.0	9.8	4.9	19.6	9.1	24.5			
		**5	2.0	27(39)	27	39	1.5	0.72	2.95	2.0	9.8	2.9	19.6	8.8	24.8			
	5	**3	2.5	25(30)	25	30	2	0.85	3.2	5.9	9.8	7.8	29.4	14.2	39.5			
		**5	2.5	30(36)	30	36	2	0.85	3.2	2.0	9.8	4.9	29.4	14.1	39.4			
		10	2.5	30	39	-	2	-	-	1.4	9.8	5.0	28.0	-	-		-	
		**3	3.1	25(27)	25	27	2.5	0.9	3.3	5.9	9.8	14.7	29.4	35.3	41.2			
	8	**5	3.1	27(30)	27	35	2.5	0.9	3.3	2.9	9.8	7.8	29.4	14.7	41.2			
		10	3.1	30	43	-	2.5	-	-	3.0	9.8	7.0	28.8	-	-		-	
		**5	3.8	30	30	35	3	1.9	4.7	5.9	14.7	8.8	49.0	15.7	62.8			
		**10	3.8	30	43	53	3	1.7	4.7	2.9	14.7	7.8	49.0	12.7	62.8			
	10	15	3.8	30	58	-	3	-	-	2.9	14.7	6.2	48.7	-	-		-	
		**5	5.5	30(35)	30	43	4	1.5	4.7	5.9	14.7	18.6	49.0	37.2	98.1			
		**10	5.5	35	43	58	4	1.3	5.9	2.9	19.6	7.8	49.0	14.7	98.1			
		**15	5.5	35	51	78	4	1.6	5.9	2.9	19.6	4.9	49.0	14.9	98.1			
	(Plastic Tip) NPJS (* only) NPJL (* only) NPJH (* only) NPJX (* only)	12	20	5.5	35	78	-	4	-	-	3.5	19.6	6.9	49.0	-	-		-
			**10	8	35	60	60	5	1.7	12.8	5.9	39.2	12.7	78.5	23.5	147.2		
			**15	8	35	60	70	5	1.7	12.8	3.9	39.2	12.7	78.5	21.6	147.2		
			**20	8	35	85	90	5	1.7	12.8	4.9	39.2	9.8	78.5	12.7	147.2		
		16	* 30	8	35	125	125	5	-	-	2.9	39.2	6.9	78.5	19.6	147.2		
			40	8	35	125	-	5	-	-	4.9	39.2	6.9	78.5	-	-		
50			8	35	155	-	5	-	-	19.6	49.0	29.4	78.5	-	-			
60			8	35	159	-	5	-	-	2.9	49.0	3.9	78.5	-	-		-	
70			8	35	185	-	5	-	-	3.4	49.0	5.5	78.5	-	-			
80			8	35	185	-	5	-	-	19.6	49.0	29.4	93.2	-	-			
* 15			10	45	60	80	6	-	-	12.7	78.5	24.5	147.1	12.7	245.3			
20			10	45	72	-	6	-	-	11.7	78.5	22.6	147.1	-	-		-	
20	30	10	45	96	-	6	-	-	11.7	78.5	22.6	147.1	-	-		-		
	40	10	45	120	-	6	-	-	11.7	78.5	22.6	147.1	-	-		-		
	24	* 7	10	45	60	-	10	-	-	19.6	98.1	44.1	196.1	-	-			
		15	10	45	60	84	10	-	-	19.6	98.1	47.1	215.7	24.5	314.0			
20		10	45	75	-	10	-	-	17.7	98.1	44.1	215.7	-	-				
30		10	45	100	-	10	-	-	17.7	98.1	44.1	215.7	-	-				
30	40	10	45	124	-	10	-	-	17.7	98.1	44.1	215.7	-	-				
	15	14	45	66	-	14	-	-	27.5	117.7	44.1	274.6	-	-		-		
	20	14	45	78	-	14	-	-	27.5	117.7	53.0	274.6	-	-				
	30	14	45	100	-	14	-	-	27.5	117.7	45.1	274.6	-	-				
40	14	45	123	-	14	-	-	27.5	117.7	47.1	274.6	-	-					

No Thread Locking Compound															Unit Price		
Part Number			d	ℓ	L		B	Ultra Light Load		Light Load		Heavy Load		Extra Heavy Load		Ultra Light / Light / Heavy Load	Extra Heavy Load
Type	M (Coarse)	S			Ultra Light / Light / Heavy Load	Extra Heavy Load		min.	N Load	max.	min.	N Load	max.	min.	N Load		
(Steel Tip)	5	3	2.0	20(27)	20	27	1.5	0.74	2.95	2.0	9.8	4.9	19.6	9.1	24.5		
PJS-N		5	2.0	27(39)	27	39	1.5	0.72	2.95	2.0	9.8	2.9	19.6	8.8	24.8		
PJL-N		3	2.5	25(30)	25	30	2	0.85	3.2	5.9	9.8	7.8	29.4	14.2	39.5		
PJH-N		5	2.5	30(36)	30	36	2	0.85	3.2	2.0	9.8	4.9	29.4	14.1	39.4		
PJX-N		3	3.1	25(27)	25	27	2.5	0.9	3.3	5.9	9.8	14.7	29.4	35.3	41.2		
	8	5	3.1	27(30)	27	35	2.5	0.9	3.3	2.9	9.8	7.8	29.4	14.7	41.2		
		5	3.8	30	30	35	3	1.9	4.7	5.9	14.7	8.8	49.0	15.7	62.8		
(Plastic Tip)	10	10	3.8	30	43	53	3	1.7	4.7	2.9	14.7	7.8	49.0	12.7	62.8		
		5	5.5	30(35)	30	43	4	1.5	4.7	5.9	14.7	18.6	49.0	37.2	98.1		
NPJS-N	12	10	5.5	35	43	58	4	1.3	5.9	2.9	19.6	7.8	49.0	14.7	98.1		
NPJL-N		15	5.5	35	51	78	4	1.6	5.9	2.9	19.6	4.9	49.0	14.9	98.1		
NPJH-N		10	8	35	60	60	5	1.7	12.8	5.9	39.2	12.7	78.5	23.5	147.2		
	16	15	8	35	60	70	5	1.7	12.8	3.9	39.2	12.7	78.5	21.6	147.2		
		20	8	35	85	90	5	1.7	12.8	4.9	39.2	9.8	78.5	12.7	147.2		

Part Number
NPJH3-1.5
PJS-N10-5

Spring Plungers / Wrenches / Block Plungers

Stainless Steel

Load Category	Type	Body		Nose		Spring		Operating Temperature
		Material	Material	Material	Hardness	Material	Material	
Stainless Steel Tip	Ultra Light Load	PJLSW	EN 1.4301 Equiv.	EN 1.4125 Equiv.	55HRC~	JIS-SWP-B	EN 1.4568 Equiv.	-30~260°C
	Light Load	PJLW						
	Heavy Load	PJHW						
	Extra Heavy Load	PJXW						
Plastic Tip	Ultra Light Load	PJLSK	Polyacetal	-	-	JIS-SWP-B	EN 1.4568 Equiv.	-30~80°C
	Light Load	PJLW						
	Heavy Load	PJHW						
	Extra Heavy Load	PJXW						

Part Number			d	ℓ	ℓ	B	Ultra Light Load (PJLSW, PJLSK)			Light Load (PJLW, PJLK)			Heavy Load (PJHW, PJHK)			Extra Heavy Load (PJXW, PJXK)			Unit Price	
Type	M (Coarse)	S					min.	N	max.	min.	N	max.	min.	N	max.	min.	N	max.	min.	N
(Stainless Steel Tip)	PJLSW PJLW PJHW PJXW	3	1.5	1.0	15	15	0.9	0.12	0.4	0.4	1.3	0.8	2.94	1.1	3.42					
		4	2	1.5	15	15	0.12	0.4	0.2	1.3	0.6	2.93	0.8	3.41						
		4	4	1.6	24	24	1.3	0.27	0.65	0.9	2.0	2.0	8.8	6.1	13.8					
	5	3	2.0	20	20	1.5	0.4	3	1.4	9.7	2.7	16.3	6.8	22.0						
		3	2.0	27	27	1.5	0.35	3	1.1	10.3	1.0	17.1	5.7	21.5						
		3	2.5	25	25	2	1.8	3.05	6.0	9.8	8.0	26.4	15.8	35.6						
(Plastic Tip)	PJLSK PJLK PJHK PJXK	6	5	3	30	30	2	1.5	3.05	3.4	9.86	4.4	26.6	12.9	34.4					
		8	5	3.1	25	25	2.5	1.9	3.15	6.0	9.9	14.7	27.0	21.9	36.3					
		5	3.1	27	27	2.5	1.4	3.15	4.0	9.83	6.7	26.6	14.7	34.5						
	10	5	3.8	30	30	3	1.6	4.6	5.7	14.7	8.2	45.7	24.5	58.6						
		10	3.8	30	43	3	1.6	4.6	4.4	14.7	6.2	45.1	19.8	58.7						
		5	3.8	30	30	3	1.7	4.7	5.8	14.7	18.2	49.0	34.9	63.6						
	12	5	5.5	35	43	4	1.6	4.7	5.0	14.7	8.2	49.1	25.5	63.6						
		15	5.5	35	51	4	1.8	4.7	6.9	14.7	7.5	48.9	20.1	63.7						
		10	5.5	35	57	4	2.8	10.8	9.2	34.2	18.9	68.5	38.7	88.4						
16	15	8.0	35	57	5	2.6	10.8	8.6	34.4	14.4	68.6	33.9	88.1							
	20	8.0	35	65	5	2	11	7.1	34.4	4.2	68.6	25.4	88.1							

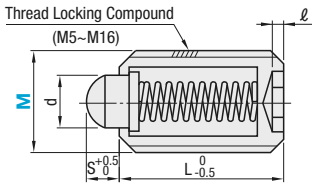
Short Spring Plungers

Steel / Stainless Steel

Steel



Load Category	Type	Body		Pin		Spring		Operating Temperature
		Standard	Material	Surface Treatment	Material	Surface Treatment	Material	
Steel Tip	Ultra Light Load	SPJS	SPJS-N	EN 1.7220 Equiv.	Black Oxide	57-63HRC (Carburized)	Trivalent Chromate	JIS-SWP-B -30~80°C
	Light Load	SPJL	SPJL-N					
	Heavy Load	SPJH	SPJH-N					
	Extra Heavy Load	SPJF	SPJF-N					
Plastic Tip	Ultra Light Load	SPRRS	SPRRS-N	EN 1.7220 Equiv.	Black Oxide	-	-	-
	Light Load	SPRM	SPRM-N					
	Heavy Load	SPRH	-					
	Extra Heavy Load	SPRF	SPRF-N					



Thread-Lock Untreated Type is not available for M3 or M4 (M3 and M4 Standard Type are not thread-locking treated.)
Thread Locking Treatment
Micro-encapsulated anaerobic adhesive used to hold objects in place. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when reassembling.

Standard

Part Number		M (Coarse)	d	S	L	l	B	Ultra Light Load		Light Load		Heavy Load		Extra Heavy Load		Unit Price		
Type								min.	max.	min.	max.	min.	max.	min.	max.	SPJL	SPJH	SPRRS, SPRM, SPRH, SPRF
(Steel Tip)	3	1.2	1	7	1	1.5	0.11	0.48	0.4	1.5	0.8	2.0	-	-	-			
	4	2.1	1.2	9	1.5	2	0.49	1.55	1.6	5.0	2.0	9.0	4.4	11.9	-			
	5	2.7	1.5	12	2	2.5	0.53	2.53	2.0	7.8	4.9	14.7	4.1	24.9	-			
	6	3.2	1.5	13	2.5	3	0.89	3.11	2.9	9.8	5.9	19.6	7.7	30.6	-			
	8	4	2	15	2.5	4	0.9	3.14	2.9	9.8	5.9	19.6	8.6	43	-			
	10	5	2.5	16	3	5	1.76	4.71	4.9	14.7	9.8	29.4	14.1	53.1	-			
	12	6	3.5	20	3	6	1.96	4.82	4.9	14.7	9.8	29.4	23.1	58.3	-			
	16	8	4.5	22	3	8	3.29	9	9.8	29.4	19.6	58.8	26.6	78.8	-			
(Plastic Tip)	3	1.2	1	7	1	1.5	0.11	0.48	0.4	1.5	0.8	2.0	-	-	-			
	4	2.1	1.2	9	1.5	2	0.49	1.55	1.6	5.0	2.0	9.0	4.4	11.9	-			
	5	2.7	1.5	12	2	2.5	0.53	2.53	2.0	7.8	4.9	14.7	4.1	24.9	-			
	6	3.2	1.5	13	2.5	3	0.89	3.11	2.9	9.8	5.9	19.6	7.7	30.6	-			
	8	4	2	15	2.5	4	0.9	3.14	2.9	9.8	5.9	19.6	8.6	43	-			
	10	5	2.5	16	3	5	1.76	4.71	4.9	14.7	9.8	29.4	14.1	53.1	-			
	12	6	3.5	20	3	6	1.96	4.82	4.9	14.7	9.8	29.4	23.1	58.3	-			
	16	8	4.5	22	3	8	3.29	9	9.8	29.4	19.6	58.8	26.6	78.8	-			

No slits for swaging on the tip.

Min. is the initial load, and max. is the load when the tip is fully compressed. Extra Heavy Load Type is available from M4 size.

No Thread Locking Compound

Part Number		M (Coarse)	d	S	L	l	B	Ultra Light Load		Light Load		Heavy Load		Extra Heavy Load		Unit Price
Type								min.	max.	min.	max.	min.	max.	min.	max.	
(Steel Tip)	5	2.7	1.5	12	2	2.5	0.53	2.53	2	7.8	4.9	14.7	4.1	24.9	-	
	6	3.2	1.5	13	2.5	3	0.89	3.11	2.9	9.8	5.9	19.6	7.7	30.6	-	
	8	4	2	15	2.5	4	0.9	3.14	2.9	9.8	5.9	19.6	8.6	43	-	
	10	5	2.5	16	3	5	1.76	4.71	4.9	14.7	9.8	29.4	14.1	53.1	-	
	12	6	3.5	20	3	6	1.96	4.82	4.9	14.7	9.8	29.4	23.1	58.3	-	
	16	8	4.5	22	3	8	3.29	9	9.8	29.4	19.6	58.8	26.6	78.8	-	
(Plastic Tip)	5	2.7	1.5	12	2	2.5	0.53	2.53	2	7.8	4.9	14.7	4.1	24.9	-	
	6	3.2	1.5	13	2.5	3	0.89	3.11	2.9	9.8	5.9	19.6	7.7	30.6	-	
	8	4	2	15	2.5	4	0.9	3.14	2.9	9.8	5.9	19.6	8.6	43	-	
	10	5	2.5	16	3	5	1.76	4.71	4.9	14.7	9.8	29.4	14.1	53.1	-	
	12	6	3.5	20	3	6	1.96	4.82	4.9	14.7	9.8	29.4	23.1	58.3	-	
	16	8	4.5	22	3	8	3.29	9	9.8	29.4	19.6	58.8	26.6	78.8	-	
(Steel Tip)	5	2.7	1.5	12	2	2.5	0.53	2.53	2	7.8	4.9	14.7	4.1	24.9	-	
	6	3.2	1.5	13	2.5	3	0.89	3.11	2.9	9.8	5.9	19.6	7.7	30.6	-	
	8	4	2	15	2.5	4	0.9	3.14	2.9	9.8	5.9	19.6	8.6	43	-	
	10	5	2.5	16	3	5	1.76	4.71	4.9	14.7	9.8	29.4	14.1	53.1	-	
	12	6	3.5	20	3	6	1.96	4.82	4.9	14.7	9.8	29.4	23.1	58.3	-	
	16	8	4.5	22	3	8	3.29	9	9.8	29.4	19.6	58.8	26.6	78.8	-	
(Plastic Tip)	5	2.7	1.5	12	2	2.5	0.53	2.53	2	7.8	4.9	14.7	4.1	24.9	-	
	6	3.2	1.5	13	2.5	3	0.89	3.11	2.9	9.8	5.9	19.6	7.7	30.6	-	
	8	4	2	15	2.5	4	0.9	3.14	2.9	9.8	5.9	19.6	8.6	43	-	
	10	5	2.5	16	3	5	1.76	4.71	4.9	14.7	9.8	29.4	14.1	53.1	-	
	12	6	3.5	20	3	6	1.96	4.82	4.9	14.7	9.8	29.4	23.1	58.3	-	
	16	8	4.5	22	3	8	3.29	9	9.8	29.4	19.6	58.8	26.6	78.8	-	

No slits for swaging on the tip.

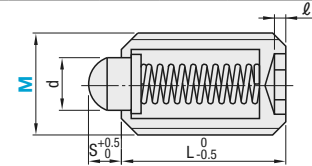
Min. is the initial load, and max. is the load when the tip is fully compressed.

Ordering Example
Part Number
SPJL12
SPJS-N5

Stainless Steel



Load Category	Type	Body		Pin		Spring	Operating Temperature
		Material	Material	Hardness	Material		
Stainless Steel Tip	Ultra Light Load	SPJY	SPJK	EN 1.4125 Equiv.	55HRC~	EN 1.4568 Equiv.	-30~260°C
	Light Load	SPJY	SPJK				
	Heavy Load	SPJY	SPJK				
	Extra Heavy Load	SPJY	SPJK				
Plastic Tip	Ultra Light Load	SPRY	SPRZ	EN 1.4301 Equiv.	Polyacetal	-	-30~80°C
	Light Load	SPRY	SPRZ				
	Heavy Load	SPRY	SPRZ				
	Extra Heavy Load	SPRY	SPRZ				



Part Number		M (Coarse)	d	S	L	l	B	Ultra Light Load (SPJY, SPRY)		Light Load (SPJK, SPRK)		Heavy Load (SPJZ, SPRZ)		Extra Heavy Load (SPJX, SPRX)		Unit Price
Type								min.	max.	min.	max.	min.	max.	min.	max.	
(Stainless Steel Tip)	3	1.2	1	7	1	1.5	0.11	0.49	0.5	1.51	0.8	2.0	-	-	-	
	4	2.1	1.2	9	1.5	2	0.51	1.54	1.6	4.8	2.0	9.0	4.0	11.5	-	
	5	2.7	1.5	12	2	2.5	0.62	2.49	2	7.9	5.1	14.7	6.0	24.2	-	
	6	3.2	1.5	13	2.5	3	0.97	3.06	2.8	9.9	5.5	19.6	9.4	29.5	-	
	8	4	2	15	2.5	4	1.16	3.26	3.6	10.9	6.1	19.6	13.5	43.7	-	
	10	5	2.5	16	3	5	1.54	4.76	4.2	14.6	9.6	29.4	19.1	53.3	-	
	12	6	3.5	20	3	6	1.81	4.82	4.6	14.8	10.4	29.4	24.5	58.8	-	
	16	8	4.5	22	3	8	3.1	9.1	9.9	29.3	18.0	58.8	26.6	78.7	-	
(Plastic Tip)	3	1.2	1	7	1	1.5	0.11	0.49	0.5	1.51	0.8	2.0	-	-	-	
	4	2.1	1.2	9	1.5	2	0.51	1.54	1.6	4.8	2.0	9.0	4.0	11.5	-	
	5	2.7	1.5	12	2	2.5	0.62	2.49	2	7.9	5.1	14.7	6.0	24.2	-	
	6	3.2	1.5	13	2.5	3	0.97	3.06	2.8	9.9	5.5	19.6	9.4	29.5	-	
	8	4	2	15	2.5	4	1.16	3.26	3.6	10.9	6.1	19.6	13.5	43.7	-	
	10	5	2.5	16	3	5	1.54	4.76	4.2	14.6	9.6	29.4	19.1	53.3	-	
	12	6	3.5	20	3	6	1.81	4.82	4.6	14.8	10.4	29.4	24.5	58.8	-	
	16	8	4.5	22	3	8	3.1	9.1	9.9	29.3	18.0	58.8	26.6	78.7	-	

No slits for swaging on the tip.

Min. is the initial load, and max. is the load when the tip is fully compressed. Thread locking treatment is not applied.

Ordering Example
Part Number
SPJZ10

Micro Spring Plungers

Standard / Short / Set Screw

Standard



Load Category	Type			Body	Pin	Spring	Operating Temperature
	Flat	Spherical	Taper R	Material	Material	Material	
Light Load	MPFL	MPJL	MPTL	EN 1.4305 Equiv.	EN 1.4301 Equiv.	EN 1.4301 Equiv.	-30°~140°C
Heavy Load	MPFH	MPJH	-				

Micro Stroke Pins / Stroke Pins

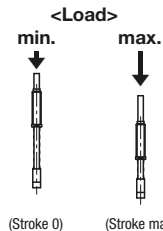
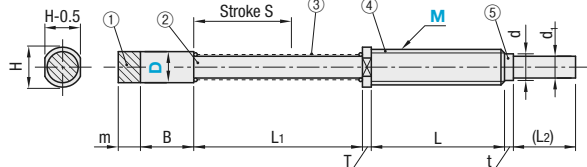
■Features: Suited for soldering or bonding electronic parts on a circuit board.

Micro Stroke Pins



RoHS

Type	①Pin End	②Pin	③Spring	④Sleeve	⑤Collar
	MMaterial	MMaterial	HHardness	S Surface Treatment	MMaterial
JJPPN	Polyacetal	SK	Heat Treated HRC620-720	Electroless Nickel Plating Nickel Plating	EN 1.4301 Equiv.
				SK	Electroless Nickel Plating Nickel Plating
					BS (Brass)



⚠ Maintain the stroke not to exceed S dimensions, otherwise the spring may be damaged.
⚠ Tighten the nut with forces under 23.43N for M2, 98.07N for M3 ~ 5.

Part Number		D	Stroke S	H	m	B	L1	T	L	t	(d)	d1	(L2)	Load (N)		Unit Price
Type	M													min.	max.	
JJPPN	2 (Fine)	1.5	8	2.5	2	3.5	14	0.5	9	0.8	1.7	1	4.2	0.20	0.883	
	3 (Coarse)	2.5		3.5							2.25	1.72		0.39	3.432	
	4 (Coarse)	3.5	11	4.5	2.5	6	19	1	15	1	3	2.45	7	0.76		
	5 (Coarse)	4.5		5.5							4	3.45		1.25		

	Ordering Example	Part Number	-	D			
		JJPPN4	-	3.5			
	Alterations		Part Number	-	D	-	(NT)
			JJPPN2	-	1.5	-	NT1



Alteration	Nuts Included
Code	NT
Spec.	One nut is included with NT1, 2 nuts with NT2. NT1 ⚠ Applicable to M2 only

■Features: Bushing built-in plungers specialized in holding. The tip can be ordered separately.

Stroke Pins



RoHS

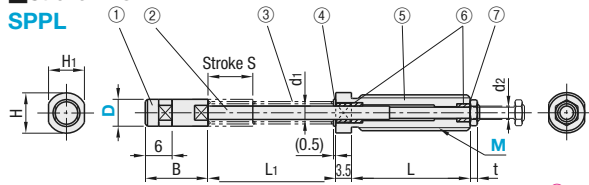
Stroke Pins

Type	①Pin End	②Pin	③Spring	④Shim	⑤Body	⑥Oil Free Bushing	⑦Nut
	MMaterial	MMaterial	MMaterial	MMaterial	MMaterial	S Surface Treatment	MMaterial
SPPL	Polyacetal	EN 1.4301 Equiv.	EN 1.4301 Equiv.	EN 1.4301 Equiv.	EN 1.4301 Equiv.	Electroless Nickel Plating Nickel Plating	PTFE Equiv.
						EN 1.1191 Equiv.	Trivalent Chromate

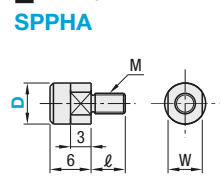
Pin End

Type	Tip	Core Rod
SPPHA	Polyacetal	EN 1.4301 Equiv.

Stroke Pins



Pin End



⚠ The rear nut is swaged, it cannot be removed.

⚠ Can be used as a replacement stroke pin.

Stroke Pins

Part Number	Type	M	D	Stroke S	H	H1	B	L1	L	t	d1	d2	Load (N)	Unit Price	Volume Discount Rate
SPPL	6	5	10	8	7	14	27.5	20	(1.2)	2.5	2	2.0	5.9		
	8	6		9	8	14	28.5	26.5	(1.6)	3	2.5	3.8	8.0		
	10	8	15	12	10	15	39.5	31.5	(1.8)	4	3	4.7	12.6		

Pin End

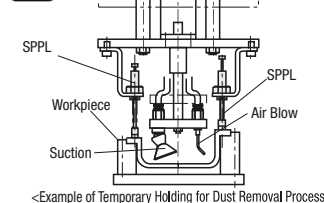
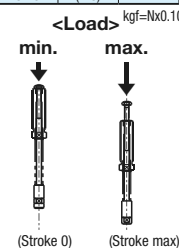
Part Number	Type	D	Applicable Stroke Pin	L	W	M x Pitch	Unit Price	Volume Discount Rate
SPPHA	5	5	SPPL6-5	4	4	M2.5x0.45	1 ~ 9 pc(s)	10-50 pcs.
	6	6	SPPL8-6	5	5	M3x0.5		
	8	8	SPPL10-8	6	7	M4x0.7		

	Ordering	Part Number	-	D
	Example	SPPL6 SPPHA5	-	5

⚠ For orders larger than indicated quantity, please request a quotation.

M	Allowable Tightening Torque (N·m)
6	3.5
8	9
10	20

⚠ Do not exceed the torque values shown above when tightening.



Spring Plungers / Long Sleeve Plungers

Tapped Tip

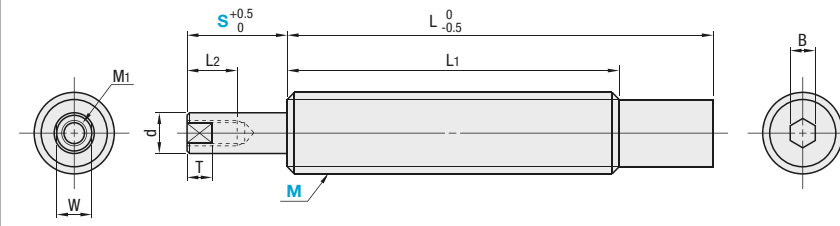
■Features: Stop Pins (P1719) or Urethane Pushers (P1553) can be mounted on the tip.

Spring Plungers - Tapped Tip



RoHS

Type	Body			Pin			Spring	Operating Temperature
	M Material	H Hardness	S Surface Treatment	M Material	H Hardness	S Surface Treatment	M Material	
Light Load	PJLTP	EN 1.1191 Equiv.	29~35HRC	Black Oxide	EN 1.1191 Equiv.	57~63HRC (Carburized)	Electroless Nickel Plating Black Oxide	JIS-SWP-B
Heavy Load	PJHTP							-30~80°C



Part Number	Type	Stroke S	d	L	L1	M1	L2	W	T	B	Light Load Load (N)	Heavy Load Load (N)	Unit Price
PJLTP	12	15	5.5	51	35	M3	6	4	4	4	2.9	19.6	4.9
		20		78	35						3.5	19.6	6.9
		15		60	35						3.9	39.2	12.7
		20		85	35	M4	8	7	5	5	4.9	39.2	9.8
		30		125	35						2.9	39.2	6.9
		15		60	45						12.7	78.5	24.5
		20		72	45	M5	10	8	6	6	11.7	78.5	22.6
		30		96	45						11.7	78.5	22.6

kgf=Nx0.101972

	Ordering	Part Number	-	S
	Example	PJLTP	-	20
		PJHTP	-	15

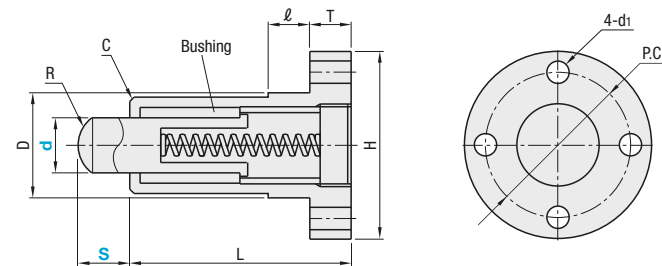
■Features: As a long pin-guide is used, the structure of this plunger is strong enough to bear the diagonal load.

Long Sleeve Plungers



RoHS

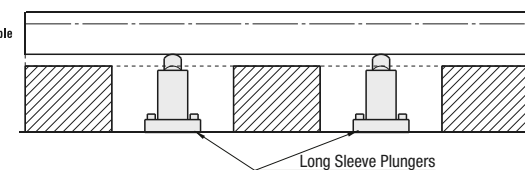
Type	Pin			Main Body		Bushing	Spring
	MMaterial	HHardness	SSurface Treatment	MMaterial	SSurface Treatment	MMaterial	MMaterial
GLPN	EN 1.1191 Equiv.	HRC50~55	Black Oxide	EN 1.1191 Equiv.	Black Oxide	High-Tensile Brass Alloy Solid Lubricant Embedded	SUS304WPI



Part Number	Type	d	Stroke S	R	D	L	H	T	l	C	d1	P.C.D	Load (N)	Unit Price
GLPN	6	5	4	14	32	30	8	5	1	4.5	22	18	29	
		10			38							8	29	
		5			38							22	30	
		10			42							14	30	
		15			48							26	47	
		20			52							15	47	
		15			52							27	48	
		20			58							20	48	
		15			60							42	73	
		25			70							22	73	
		20			70							48	86	
		30			80							30	86	

⚠ For orders larger than indicated quantity, please request a quotation.

 Ordering Example	Part Number	-	S
	GLPN8	-	10
	GLPN16	-	25



Spring Plungers

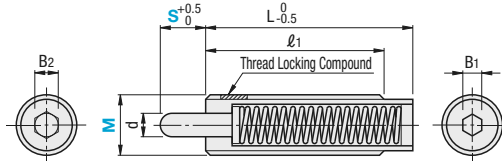
With Hex Socket Hole / Hex Nose

■ **Features:** As it can be fixed with a hex wrench from the top, no dedicated wrench is required.

■ **Body with Hexagon Socket Hole**



Type	Body			Pin			Spring	Operating Temperature
	M	H	S	M	H	S		
PJLH (Light Load)	EN 1.1191 Equiv.	29~35HRC	Black Oxide	EN 1.1191 Equiv.	57~63HRC (Carburized)	Trivalent Chromate	JIS-SWP-B	-30~80°C

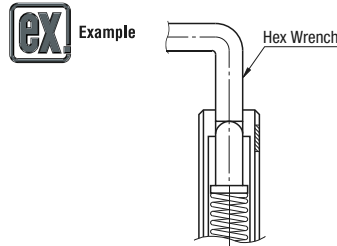


- ⚠ Thread Locking Treatment is where anaerobic thread locking compound in micro capsules is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when reassembling.
- ⚠ The thread locking is most effective by leaving the parts for 72 hours or more in 25°C. It should be noted if the parts are left for short period of time and in low temperature, the thread locking compound will be less-effective.
- ⚠ Do not use the rear hex socket at the time of mounting or removal.

Part Number Type	M	S	d	ℓ1	L	B1	B2	For Light Load N {kgf}		Unit Price
								min.	max.	
PJLH	8	3	3	25	25	2.5	3	5.8 {0.6}	9.8 {1.0}	
		5						2.7 {0.3}	9.8 {1.0}	
	10	5	4	30	34	3	4	5.8 {0.6}	14.7 {1.5}	
		10			38			2.6 {0.3}	14.7 {1.5}	
12	5	5	5	35	35	4	5	5.6 {0.6}	14.7 {1.5}	
		10			40			3.0 {0.3}	19.7 {2.0}	

kgf=Nx0.101972

Ordering Example Part Number - S PJLH 8 - 3

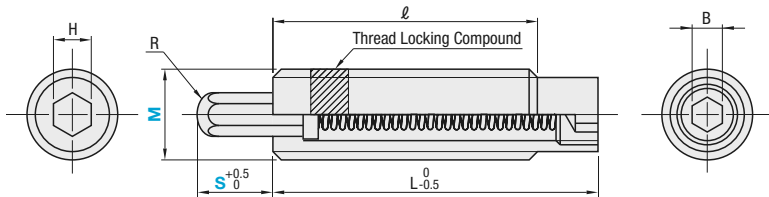


■ **Features:** The hex shape of pin allow this spring plunger to be installed with socket wrenches or spanners, without any dedicated wrenches.

■ **With Hex Nose**



Type	Body			Pin			Spring	Operating Temperature
	M	H	S	M	H	S		
Light Load PJLR	EN 1.1191 Equiv.	29~35HRC	Black Oxide	EN 1.1191 Equiv.	57~63HRC (Carburized)	Trivalent Chromate	JIS-SWP-B	-30~80°C
Heavy Load PJHR						Black Oxide		

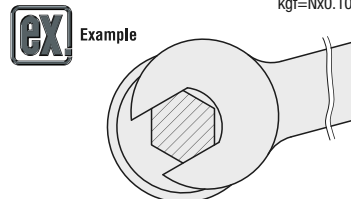


- ⚠ Thread Locking Treatment is where anaerobic thread locking compound in micro capsules is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when reassembling.
- ⚠ Do not use the rear hex socket at the time of mounting or removal.
- ⚠ The thread locking is most effective by leaving the parts for 72 hours or more in 25°C. It should be noted if the parts are left for short period of time and in low temperature, the thread locking compound will be less-effective.

Part Number		S	M x Pitch (Coarse)	H	R	ℓ	L	B	Light Load		Heavy Load		Unit Price
Type	M								Load N {kgf}				
									min.	max.	min.	max.	
PJLR PJHR	10	5	10x1.5	4	2.2	30	30	3	5.9 {0.6}	14.7 {1.5}	8.8 {0.9}	49.0 {5.0}	
		10					43		2.9 {0.3}	14.7 {1.5}	7.8 {0.8}	49.0 {5.0}	
	12	5	12x1.75	5	2.9		30	4	5.9 {0.6}	14.7 {1.5}	18.6 {1.9}	49.0 {5.0}	
		10					43		2.9 {0.3}	19.6 {2.0}	7.8 {0.8}	49.0 {5.0}	
	16	15	16x2.0	7	4.1	51	5	2.9 {0.3}	19.6 {2.0}	4.9 {0.5}	49.0 {5.0}		
		10				60		5.9 {0.6}	39.2 {4.0}	12.7 {1.3}	78.5 {8.0}		
		20				60		3.9 {0.4}	39.2 {4.0}	12.7 {1.3}	78.5 {8.0}		
						85		4.9 {0.5}	39.2 {4.0}	9.8 {1.0}	78.5 {8.0}		

kgf=Nx0.101972

Ordering Example Part Number - S PJHR 10 - 10



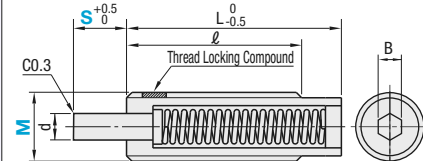
Spring Plungers

Flat Tip, For Inclined Surface, Flanged

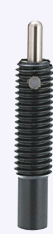
■ **Flat Tip**



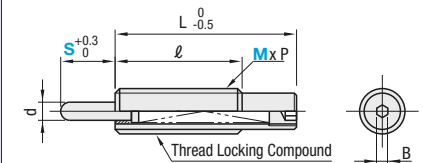
Type	Body			Pin			Spring	Operating Temperature
	M	H	S	M	H	S		
PJLF (Light Load)	EN 1.1191 Equiv.	29~35HRC	Black Oxide	EN 1.1191 Equiv.	57~63HRC (Carburized)	Trivalent Chromate	JIS-SWP-B	-30~80°C



■ **For Inclined Surface**



Type	Body			Pin			Spring	Operating Temperature
	M	H	S	M	H	S		
PJHZ	EN 1.1191 Equiv.	29~35HRC	Black Oxide	EN 1.1191 Equiv.	50HRC~ (Carburized)	Electroless Nickel Plating	JIS-SWP-B	-30~80°C



■ **Features of PJHZ**

- ① Special structure with high abrasion resistance and seizing resistance enables the use on inclines. (For conventional spring plungers, use 0°, under oil free condition; 5° or less with oil lubrication.)
- ② Oil free use is possible.
- ③ Angle : 0~30°

Part Number Type	M (Coarse)	S	d	ℓ	L	B	Load N min. max.		Unit Price
PJLF	5	3	2.0	20	20	1.5	2.0	9.8	
		5	2.0	27	27	1.5	2.0	9.8	
	6	3	2.5	25	25	2	5.9	9.8	
		5	2.5	30	30	2	2.0	9.8	
	8	3	3.1	25	25	2.5	5.9	9.8	
		5	3.1	27	27	2.5	2.9	9.8	
	10	5	3.8	30	30	3	5.9	14.7	
		10	3.8	30	43	3	2.9	14.7	
	12	5	5.5	35	43	4	2.9	19.6	
		10							

kgf=Nx0.101972

- ⚠ Thread Locking Treatment is where anaerobic thread locking compound in micro capsules is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when reassembling.
- ⚠ The thread locking is most effective by leaving the parts for 72 hours or more in 25°C. It should be noted if the parts are left for short period of time and in low temperature, the thread locking compound will be less-effective.
- ⚠ Do not use the rear hex socket at the time of mounting or removal.

Part Number Type	M (Coarse)	S	d	S	ℓ	L	B	Load N min. max.		Unit Price
PJHZ	10	10	4	10	30	43	3	7.8	49.0	
		10			35	43		7.8	49.0	
	12	15	5	15	35	51	4	4.9	49.0	
		10			10	35	60	12.7	78.5	
	16	15			15	35	60	12.7	78.5	
		20			20	35	85	9.8	78.5	
		30			30	35	125	6.9	78.5	

kgf=Nx0.101972

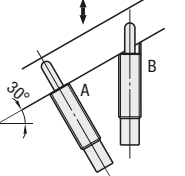
Test Conditions

Press Machine : 20 TON Crank Press
Cyclic Speed : 130SPM
Inclination Angle : 30°
Lubrication : Oil-Free

Type	Operating Life	
	A	B
PJHZ16-30	Over 300 thousand times or more	Over 300 thousand times or more
PJH16-30	Gauging at 17,000 cycles	Gauging at 50,000 cycles

(Note) This test result was obtained in conditions specified above. The service life changes according to the usage condition.

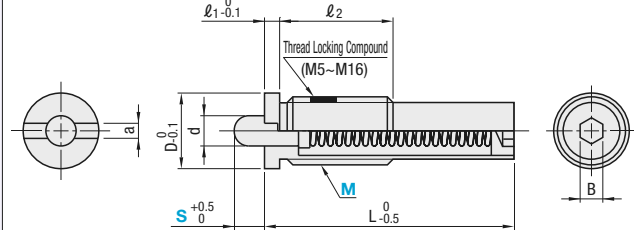
- ⚠ Do not use the rear hex socket at the time of mounting or removal.



■ **Flanged**



Type	Body			Pin			Spring	Operating Temperature
	M	H	S	M	H	S		
Light Load FPJL	EN 1.1191 Equiv.	29~35HRC	Black Oxide	EN 1.1191 Equiv.	57~63HRC (Carburized)	Trivalent Chromate	JIS-SWP-B	-30~80°C
Heavy Load FPJH						Black Oxide		



- ⚠ Thread Locking Treatment is where anaerobic thread locking compound in micro capsules is used to retain the threads. Once parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when reassembling.
- ⚠ The thread locking is most effective by leaving the parts for 72 hours or more in 25°C. It should be noted if the parts are left for short period of time and in low temperature, the thread locking compound will be less-effective.

Part Number		S	d	L	B	D	ℓ1	ℓ2	a	FPJL Load (N)		FPJH Load (N)		Applicable Wrench	Unit Price
Type	M (Coarse)									min.	max.	min.	max.		
FPJL FPJH	3	1.5	1.1	10	0.9	5	1.5	5	0.5	0.5	1	0.8	2.9	-	
		3		0.3						1	0.8	2.9			
		2	15	1	2	2.9	8.8								
	4	3	1.6	24	1.3	6	1.8	6	0.7	0.6	2	2	8.8		
		4		2						2	8.8				
		5	20	2	9.8	4.9	19.6								
	5	3	2	27	1.5	7	2	8	1.2	2	9.8	2.9	19.6	PJG1	
		5		5.9						9.8	7.8	29.4			
		6	25	2	9.8	4.9	29.4								
	6	3	2.5	30	2	8		9		2	9.8	4.9	29.4		
		5		5.9						9.8	14.7	29.4			
		8	25	2.9	9.8	7.8	29.4								
	8	3	3.1	27	2.5	10	2.5	12	1.5	5.9	9.8	14.7	29.4	PJG2A	
		5		2.9						9.8	7.8	29.4			
		10	30	5.9	14.7	8.8	49								
	10	5	3.8	43	3	12	15			2.9	14.7	7.8	49		
10		5.9		14.7						18.6	49				
12		30	2.9	19.6	7.8	49									
12	5	5.5	43	4	14	20			2.9	19.6	4.9	49	PJG3		
	15		51						2.9	19.6	4.9	49			
	16	60	5.9	39.2	12.7	78.5									
16	15	8	60	5	18	3.0	25	2.0	3.9	39.2	12.7	78.5	PJG4		
	20		4.9						39.2	9.8	78.5				
	30		2.9						39.2	6.9	78.5				
	40		4.9						39.2	6.9	78.5				

Indexing Plungers

Standard

■ **Features:** Alteration of tip shapes makes it possible to use the product as the application demands.

Standard

Screw	Returning			Rest Position			Material	Surface Treatment	Material	Hardness	Surface Treatment	Material	Surface Treatment		
	Spherical	Tapered	Flat	Spherical	Tapered	Flat									
Fine Thread	PXAN	PXAT	PXAF	PXYAN	PXYAT	PXYAF	EN AW-2017 Equiv. (Black Anodize)	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	50~60HRC	Black Oxide	EN 1.4568 Equiv.	EN 1.0038 Equiv.	Black Oxide
	PXKN	PXKT	PXKF	PXYKN	PXYKT	PXYKF		EN 1.4305 Equiv.	-	EN 1.4125 Equiv.	45HRC~	-	EN 1.4305 Equiv.	-	
	SXPAN	SXPAT	SXPAF	SXYAN	SXYAT	SXYAF		-	-	-	-	-	-	-	
	SXPKN	SXPKT	SXPKF	SXYKN	SXYKT	SXYKF		-	-	-	-	-	-	-	

For M=5, 6 and 8L, the pin hardness is 40~45HRC.

Returning

PXA PXAT PXAF PXKN PXKT PXKF PXAN PXAT PXAF PXKN PXKT PXKF

With Lock Nut

PXK PXKT PXKF PXKN PXKT PXKF PXKN PXKT PXKF PXKN PXKT PXKF

Rest Position

PXYA PXYAT PXYAF PXYKN PXYKT PXYKF PXYAN PXYAT PXYAF PXYKN PXYKT PXYKF

With Lock Nut

PXYK PXYKT PXYKF PXYKN PXYKT PXYKF PXYKN PXYKT PXYKF PXYKN PXYKT PXYKF

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Part Number		Pitch (Fine Thread)	D	D ₁	S	B	L		L ₁	L ₂	L ₃	L ₄	L ₅	Sw1	Sw2	SR	Load (N)		
Type	M						Returning	Rest Position									min.	max.	
Returning (Spherical) (Tapered) (Flat)	Rest Position (Spherical) (Tapered) (Flat)	5	0.5	10	8.1	5	2	35	41	15	3	14	2.7	1.5	7	8	1	1	6
		6	0.75	12	9.2	5	2.5	36	42	15	4	13.5	3.2	1.5	8	10	1.3	1	6
		8	1.0	15	11.5	4	4	40	46	16	5	14	4	1.5	10	13	2	3	9
		8L				6	4	42	48										12
		10				5	5	45	50										11.5
		10L	1.0	18	13.8	8	5	48	53	17	5	15	5	2.0	12	17	2.5	5	16
		12				6	6	54.5	60.5										14.5
		12L	1.5	21	16.2	10	6	58.5	64.5	20	6	17	6	2.5	14	19	3	6.5	20
		16				7	8	68	75.5										18
		16L	1.5	26	21.9	12	8	73	80.5	26	8	23	8	3.0	19	24	4	7.15	25

</

For M dimensions with "L" have longer strokes compared to the conventional products.

Relief at Thread Base : None for M=5 and 6; provided for M=8 ~16.

kgf=Nx0.101972

Ordering Example
Part Number
SXPAN12L
PXKF10

Returning

M	Spherical				Unit Price Tapered				Flat			
	PXAN	PXKN	SXPAN	SXPKN	PXAT	PXKT	SXPAT	SXPKT	PXAF	PXKF	SXPAF	SXPKF
5												
6												
8												
8L												
10												
10L												
12												
12L												
16												
16L												

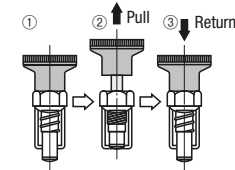
Rest Position

M	Spherical				Unit Price Tapered				Flat			
	PXYAN	PXYKN	SXYAN	SXYKN	PXYAT	PXYKT	SXYAT	SXYKT	PXYAF	PXYKF	SXYAF	SXYKF
5												
6												
8												
8L												
10												
10L												
12												
12L												
16												
16L												

Features of the Returning Type and Rest Position Type

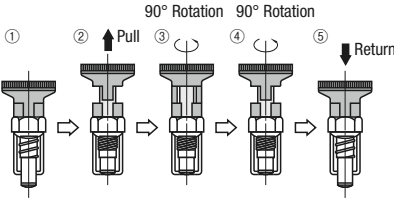
Returning

- In normal condition, the tip protrudes.
- When pulling up the knob, the tip retracts.
- When releasing the knob, the internal spring resets the plunger to the protruding position.



Rest Position

- In normal condition, the tip protrudes.
- When pulling up the knob, the tip retracts.
- Pulling the knob and turning it by 90° locks the plunger with the tip retracted.
- To unlock, pull the knob slightly and turn it by 90°.
- When releasing the knob, the internal spring resets the plunger to the protruding position.



Indexing Plungers

Flanged / Tapped Tip

■ **Features:** The flanges enable the indexing plunger to be adjusted to right or left.

Flanged

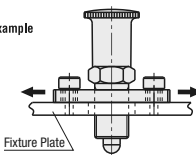
Screw		Returning		Rest Position		Main Body		Surface Treatment		Material		Hardness		Surface Treatment		Material		Surface Treatment		Material		Surface Treatment	
Fine Thread		FPXA	FPXK	FPXY	FPXN	FPXT	FPXS	EN AW-2017 Equiv. (Black Anodize)	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	50~60HRC	Black Oxide	EN 1.4568 Equiv.	EN 1.0038 Equiv.	Trivalent Chromate	EN 1.0038 Equiv.	Black Oxide					
		⚠ For M=8 and 8L, the pin hardness is 40~45HRC.																					
		🔍 The Indexing Plunger is mounted to the flange through a tapped hole making vertical adjustments possible. After adjustment, lock nuts can be used for fixing the plunger at the determined position.																					
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M dimensions with "L" have longer strokes compared to the conventional products.

Ordering Example
Part Number
FPXA8

M	Unit Price			
	FPXA	FPXK	FPXY	FPXR
8				
8L				
10				
10L				
12				
12L				
16				
16L				

Example



The flanges enable the plunger to be adjusted to right or left.

■ **Features:** By mounting the attachment to the tip, the pin dia. and length are adjustable, and the workpiece can be clamped.

Tapped Tip

Type	Returning			Rest Position	
------	-----------	--	--	---------------	--

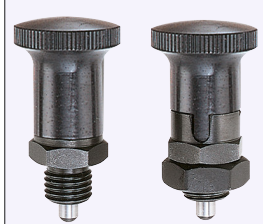
Indexing Plungers

Short Threaded, Aluminum/Plastic Knob

Indexing Plungers

Compact / Long

Short Threaded, Aluminum Knob



RoHS

Type		Knob	Main Body		Pin		Spring	(Lock Nut)	
Returning	Rest Position	M	M	S	M	H	M	M	S
PXSAN	PXRAN	EN AW-2017 Equiv. (Black Anodize)	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	50~60HRC (Carburized)	Black Oxide	EN 1.4568 Equiv.	EN 1.0038 Equiv.
PXSKN	PXRKN								Black Oxide

Returning

With Lock Nut

Rest Position

With Lock Nut

PXSAN

PXSKN

PXRAN

PXRKN

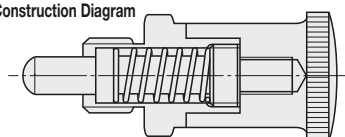
• Features of the Returning Type and Rest Position Type P.1779

Part Number		Pitch (Fine Thread)	D	D1	B	S	L	L1	L2	L3	Sw1	Sw2	R1	Load (N)		Mass (g)		Unit Price				
Type	M													min.	max.	PXSAN PXRN	PXSKN PXRN	PXSAN	PXSKN	PXRN	PXRN	
(Returning)	(Rest Position)	12	1.5	21	19.6	6	6	48	10	5	6	17	19	3	6.5	14.5	35	45				
PXSAN	PXRAN	16	1.5	26	21.9	8	7	56	12	6	8	19	24	4	7.5	18	60	80				
PXSKN	PXRKN																					

Ordering Example
Part Number
PXSAN16
PXRKN12

kgf=Nx0.101972

Construction Diagram



Short Threaded, Plastic Knob



RoHS

Type		Knob	Main Body		Pin		Spring	(Lock Nut)	
Returning	Rest Position	M	M	S	M	H	M	M	S
PXSA	PXRA	Nylon 6 (Mat Black)	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	50~60HRC	Black Oxide	JIS-SWP-B	EN 1.1191 Equiv.
PXSK	PXRK								Black Oxide

Returning

With Lock Nut

Rest Position

With Lock Nut

PXSA

PXSK

PXRA

PXRK

• Features of the Returning Type and Rest Position Type P.1779

Part Number		Pitch (Fine Thread)	D	D1	B	S	L	L1	L2	L3	Sw1	Sw2	Load (N)		Mass (g)		Unit Price				
Type	M												min.	max.	PXSA PXRK	PXSK PXRK	PXSA	PXSK	PXRA	PXRK	
(Returning)	(Rest Position)	12	1.5	25	19.6	6	6	45	10	5	6	17	18	7	18	35	45				
PXSA	PXRK	16	1.5	31	21.9	8	8	54	12	6	8	19	24	14	24	60	80				

Ordering Example
Part Number
PXSA16
PXRK12

kgf=Nx0.101972

■Features: Has shorter length by 2/3 compared to the general indexing plungers. Can be used in narrow space.

Compact



RoHS

Type		Screw	Knob	Main Body		Pin		Spring	(Lock Nut)	
Returning	Rest Position		M	M	S	M	H	M	M	S
PMXSB	PMXYSB	Coarse Thread	Nylon 6	EN 1.1191 Equiv.	Black Oxide	EN 1.1191 Equiv.	50~60HRC	Black Oxide	EN 1.4305 Equiv.	EN 1.4301 (WPB) Equiv.
PMXSM	PMXYSM				Electroless Nickel Plating					

Returning

Rest Position

PMXSB

PMXSM

PMXYSB

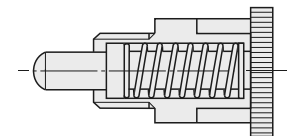
PMXYSM

• Features of the Returning Type and Rest Position Type P.1779

Part Number		Pitch (Fine Thread)	D	D1	S	B	L	L1	SW	R	Load (N)		Unit Price			
Type	M										min	max	PMXSB	PMXSM	PMXYSB	PMXYSM
Returning																
PMXSB	PMXSM	8	1.25	20	14.5	5	5	25	5	13	2.5	6.0				
PMXSB	PMXSM	10	1.5	24	19	6	6	31	7	17	3.5	9.5				

Ordering Example
Part Number
PMXSB10

Construction Diagram



■Features: Having longer mounting threads, the plunger can be mounted to a thick plate.

Long, Returning



RoHS

Type		Knob	Main Body		Pin		Spring	(Lock Nut)	
Returning	Rest Position	M	M	S	M	H	M	M	S
PXAL	PXKL	EN AW-2017 Equiv. (Black Anodize)	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	50~60HRC	Black Oxide	EN 1.4568 Equiv.	EN 1.0038 Equiv.
SXPAL	SXPKL				EN 1.4305 Equiv.	45HRC~			EN 1.4305 Equiv.

Returning

With Lock Nut

PXAL

SXPAL

PXKL

SXPKL

For M=8 and 8L, the pin hardness is 40~45HRC.

Mass (g)		PXAL	PXKL	SXPAL	SXPKL
M					
8		13	18		
10		22	29		
12		35	45		
16		78	98		

Part Number		Pitch (Fine Thread)	D	D1	S	B	L	L1	L2	L3	L4	Sw1	Sw2	R	Load (N)		Unit Price			
Type	M														min.	max.	PXAL	PXKL	SXPAL	SXPKL
PXAL PXKL SXPAL SXPKL	8	1.0	15	11.5	4	4	46	22	5	20	4	10	13	2	3	9				
	8L				6	4	48									12				
	10	1.0	18	13.8	5	5	53	25	5	23	5	12	17	2.5	5	11.5				
	10L				8		56									16				
	12	1.5	21	16.2	6	6	64.5	30	6	27	6	14	19	3	6.5	14.5				
	12L				10		68.5									20				
	16	1.5	26	21.9	7	8	80	38	8	34.5	8	19	24	4	7.15	18				
	16L				12		85									25				

kgf=Nx0.101972

Ordering Example
Part Number
PXAL8
SXPKL16L

Indexing Plungers

Pilot, Precision Grade / Press Fit / Knobs for Press Fit Plungers

■Features: Clearance of the pin is 0.035 or less.

■Pilot, Precision

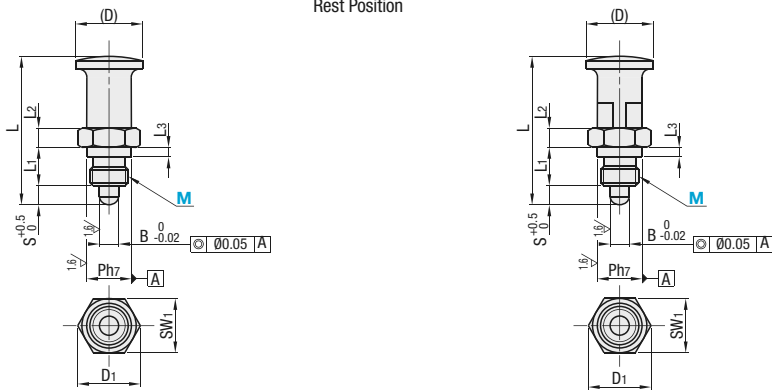


RoHS

Load	Type		Thread Type	Knob			Main Body			Pin			Spring	
	Returning	Rest Position		M Material	M Material	H Hardness	S Surface Treatment	M Material	H Hardness	S Surface Treatment	M Material	S Surface Treatment		
Light Load	PMXSL	PMXYSL	Coarse Thread	Nylon 6	EN 1.1191 Equiv.	33-38HRC	Black Oxide	EN 1.1191 Equiv.	HV500~600	Black Oxide	EN 1.4301 (WPB) Equiv.			
Heavy Load	PMXSH	PMXYSH												
Light Load	PXSL	PXYSL	Fine Thread											
Heavy Load	PXSH	PXYSH												

Returning

Rest Position



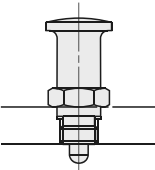
Part Number		Pitch		Ph7	(D)	D1	S	B	L	L1	L2	L3	SW1	Light Load/Heavy Load				Unit Price			
Type	M	Coarse Thread	Fine Thread											Load (N) min.	Load (N) max.	Load (N) min.	Load (N) max.	PMXSL/PMXSH	PMXYSL/PXYSH	PXSL/PXSH	PXYSL/PXYSH
(Coarse Thread)	10	1.5	1	12	18	16.2	5	5	38	10	5	3	14	4.5	7.3	5.7	11.9				
(Fine Thread)	12	1.75	1.5	14	20	19.6	6	6	46	12	6	3	17	5.3	8.8	6.7	13.2				
PMXSL	16	2	1.5	18	26	25.4	8	8	56.5	16	6	4	22	5.7	10.1	7.4	17.2				
PMXSH	20	2.5	1.5	22	32	31.2	10	10	70	20	10	4	27	6.6	15.0	8.0	26.8				
PMXYSL																					
PMXYSH																					

Ordering Example Part Number PXSL20

Example

■Features

- h7 finished pilot ensures high repeatability.
- Clearance of the pin part is 0.035 or less, which helps to prevent backlash.



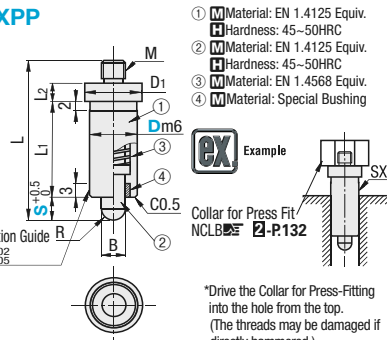
Press Fit

■Press Fit



RoHS

SXPP



Example

① M Material: EN 1.4125 Equiv.
H Hardness: 45~50HRC
② M Material: EN 1.4125 Equiv.
H Hardness: 45~50HRC
③ M Material: EN 1.4568 Equiv.
④ M Material: Special Bushing

*Drive the Collar for Press-Fitting into the hole from the top. (The threads may be damaged if directly hammered.)

Part Number		S min	D1	B	L	L1	L2	M (Coarse)	R	Load (N)		Mass (g)	Unit Price
Type	Dm6									min.	max.		
SXPP	8	+0.015	4	10	4	32	19	3	2	3	9	9	
	10	+0.006	5	12	5	34	20	4	5	2.5	5	11.5	
	12	+0.018	6	14	6	42	24	6	3	6.5	14.5	26.5	
	15	+0.007	7	19	8	52	32	8	4	7.15	18	54	

Recommended Tolerance of Mounting Hole : H7 kgf=Nx0.101972

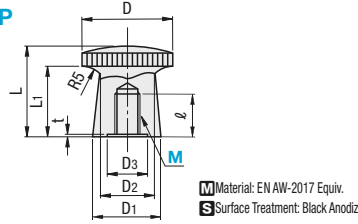
Knobs for Press Fit Plungers

■Knobs for Press Fit Plungers



RoHS

NSXP



Example

M Material: EN AW-2017 Equiv.
S Surface Treatment: Black Anodize

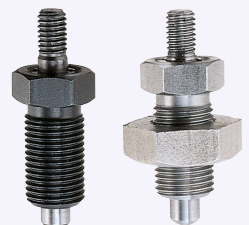
Ordering Example Part Number SXPP10 NSXP8

Indexing Plungers

Knobless Standard / Knobless Large Screws for Mounting Knobs

■Features: The most suitable knob for each purpose can be mounted.

■Knobless Standard

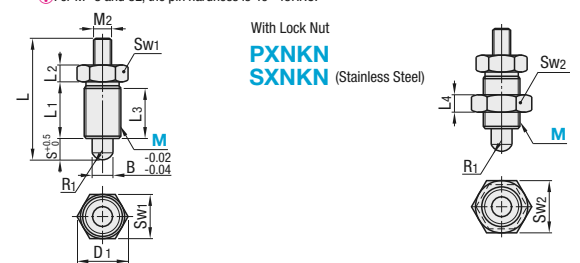


RoHS

Type	Main Body		Pin			Spring		(Lock Nut)	
	M Material	S Surface Treatment	M Material	H Hardness	S Surface Treatment	M Material	S Surface Treatment	M Material	S Surface Treatment
PXNAN	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	50~60HRC (Carburized)	Black Oxide	EN 1.4568 Equiv.	-	-	-
PXNKN	EN 1.4305 Equiv.	-	EN 1.4125 Equiv.	45HRC~	-	EN 1.4305 Equiv.	-	-	-

PXNAN SXNAN (Stainless Steel)

PXNKN SXNKN (Stainless Steel)



Part Number		Pitch (Fine Thread)	D1	B	S	L	L1	L2	L3	L4	M2 (Coarse)	SW1	SW2	R1	Load (N)		Mass (g)		Unit Price			
Type	M														min.	max.	PXNAN SXNAN	PXNKN SXNKN	PXNAN	SXNAN	PXNKN	SXNKN
PXNAN SXNAN PXNKN SXNKN	8	1.0	11.5	4	4	30	16	5	14	4	3	10	13	2	3	9	10	15				
	8L				6	32										12						
	10	1.0	13.8	5	5	32	17	5	15	5	4	12	17	2.5	5	11.5	15	22				
	10L				8	35										16						
	12	1.5	16.2	6	6	39	20	6	17	6	5	14	19	3	6.5	14.5	25	35				
	12L				10	44										20						
	16	1.5	21.9	8	7	49	26	8	23	8	6	19	24	4	7.5	18	57	77				
	16L				12	54										25						

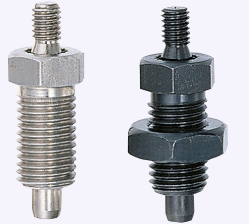
M dimensions with "L" have longer strokes compared to the conventional products.

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Ordering Example Part Number PXNAN12L

■Features: Screws for mounting knobs (M2) are larger by 1 size than the Standard Type.

■Knobless Large Screws for Mounting Knobs

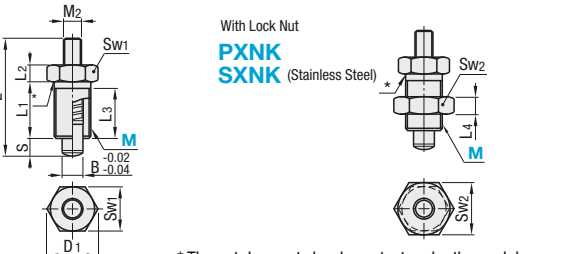


RoHS

Type	Main Body		Pin			Spring		(Lock Nut)	
	M Material	S Surface Treatment	M Material	H Hardness	S Surface Treatment	M Material	S Surface Treatment	M Material	S Surface Treatment
PXNK	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	50~60HRC	Black Oxide	JIS-SWP-B	EN 1.1191 Equiv.	-	-
SXNA	EN 1.4305 Equiv.	-	EN 1.4305 Equiv.	-	Nickel Plating	EN 1.4319 Equiv.	EN 1.4305 Equiv.	-	-

SXNA (Stainless Steel)

PXNK SXNK (Stainless Steel)

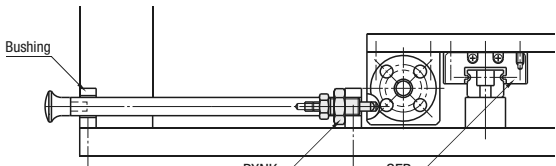


* The nut does not closely contact under the neck because of the radius.

Part Number		Pitch (Fine Thread)	D1	B	S min.	L	L1	L2	L3	L4	M2 (Coarse)	SW1	SW2	Load (N)		Mass (g)		Unit Price			
Type	M													PXNK	SXNA	PXNK SXNK	SXNA	PXNK	SXNK		
SXNA PXNK SXNK	10	1.0	13.8	5	5	33	17	5	15	5	5	12	17	7	17	6	15	15	22		
	12	1.5	16.2	6	6	42	20	6	17	6	6	14	18	9	24	8	21	25	35		
	16	1.5	21.9	8	8	54	26	8	23	8	8	19	24	24	30	9	26	57	77		

Ordering Example Part Number SXNA12 PXNK16

Example



Features of the Returning Type and Rest Position Type P.1779

Indexing Plungers

Coarse/Fine Thread Lever

■Features: The pin can be operated by turning the lever making it useable in limited spaces. The pin is retractable in the body by 180° turn of the lever. The lever can be locked by the notch.

Coarse Thread Lever

Type	Screw	Lever	Main Body	Pin	Spring	Lock Nut
PMXRB	Coarse Thread	EN 1.1191 Equiv.	Black Oxide	EN 1.1191 Equiv.	Black Oxide	EN 1.4301 (WPB) Equiv.
PMXRM	Coarse Thread	EN 1.1191 Equiv.	Electroless Nickel Plating	EN 1.1191 Equiv.	Black Oxide	EN 1.4301 (WPB) Equiv.

RoHS

Part Number Type	M	Pitch (Coarse Thread)	B	S	L	(L1)	D	H	L2	Sw	R	Load (N)		Unit Price	
												min.	max.	PMXRB	PMXRM
PMXRB	10	1.5	5	5	34	20	24	8	6	17	3	5	9.5	22	
PMXRM	12	1.75	6	6	39	25	30	11	7	19	3.5	8	13	33	

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Ordering Example Part Number
PMXRB10

Fine Thread Lever

Type	Lever Cap	Main Body	Pin	Spring	Lock Nut
PXVB	Nylon 6 (Mat Black)	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	JIS-SWP-B
PXVBK	Nylon 6 (Mat Black)	EN 1.0715 Equiv.	Black Oxide	EN 1.1191 Equiv.	Black Oxide
SPXVB	Nylon 6 (Mat Black)	EN 1.4305 Equiv.	-	EN 1.4305 Equiv.	-
SPXVBK	Nylon 6 (Mat Black)	EN 1.4305 Equiv.	Nickel Plating	EN 1.4319 Equiv.	-

RoHS

Part Number Type	M	Pitch (Fine Thread)	B (Selection)	S	L	L1	D	H	L2	Sw	Unit Price			
											PXVB	PXVBK	SPXVB	SPXVBK
(Steel)	16	1.5	6 8 10	10	47	30	42	15.5	8	24				
(Stainless Steel)	20	1.5	8 10 12	12	59	36	52	19	10	30				

Ordering Example Part Number - B
PXVB16 - 8
SPXVBK20 - 12

M	B	Mass (g)	Load (N)	
			min.	max.
16	6	79	12	32
	8	80		
	10	82		
20	8	112	21	58
	10	115		
	12	118		

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Indexing Plungers

Switch Lever Type / Push Type / Plate Mount Type

■Features: The ON/OFF state can be visually recognized by the indication on the lever.

Switch Lever Type

Type	Thread Type	Lever	Main Body	Pin	Spring	Lock Nut
PMXSR	Coarse Thread	EN 1.1191 Equiv.	Black Oxide	EN 1.0038 Equiv.	EN 1.1191 Equiv.	EN 1.4301 (WPB) Equiv.
PXSR	Fine Thread	EN 1.1191 Equiv.	Black Oxide	EN 1.0038 Equiv.	EN 1.1191 Equiv.	EN 1.4301 (WPB) Equiv.

RoHS

Ordering Example Part Number
PMXSR12

Push Type

Type	Screw	Button	Shaft	Main Body 1	Main Body 2	Pin	Spring	Lock Nut
PMXPB	Coarse Thread	Nylon 6 (Black)	Polycetal (White)	EN 1.1191 Equiv.	Black Oxide	EN 1.1191 Equiv.	Black Oxide	EN 1.4301 (WPB) Equiv.
PMXPM	Coarse Thread	Nylon 6 (Black)	Polycetal (White)	EN 1.1191 Equiv.	Black Oxide	EN 1.1191 Equiv.	Black Oxide	EN 1.4301 (WPB) Equiv.

RoHS

Ordering Example Part Number
PMXPB10

Plate Mount Type

Type	Knob	Main Body	Pin	Spring
PXSP	Polycetal	EN 1.1191 Equiv.	Black Oxide	EN 1.1191 Equiv.
PXSPL	Polycetal	EN 1.1191 Equiv.	Black Oxide	EN 1.1191 Equiv.

RoHS

Part Number Type	B	Load (N)		Unit Price
		min.	max.	
PXSP	6	0.1	1.9	
PXSPL	6	0.1	1.9	

Indexing Plungers

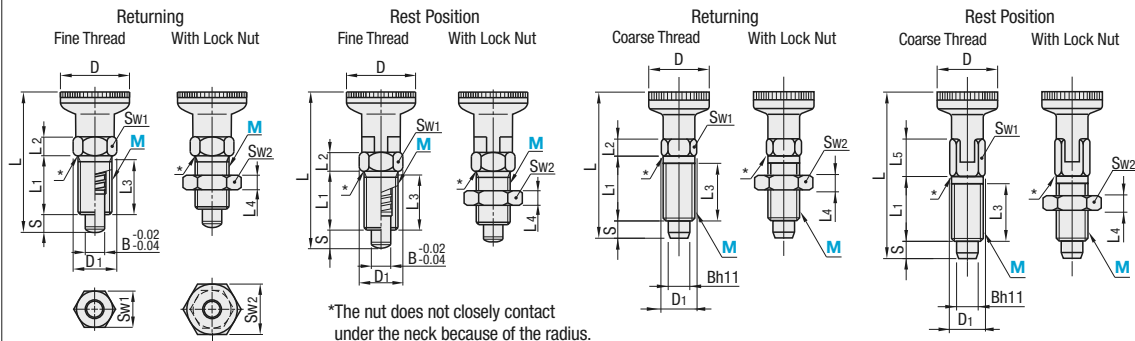
Fine Thread / Coarse Thread

Fine Thread / Coarse Thread



RoHS

Screw	Returning	Rest Position	Knob	Main Body	Pin	Spring	(Lock Nut)
			Material	Material	Material	Material	Material
Fine Thread	PXA PXK SXPB	PXYA PXYK	Nylon 6 (Mat Black)	EN 1.0715 Equiv. Black Oxide	EN 1.1191 Equiv. 50~60HRC	Black Oxide	JIS-SWP-B
Coarse Thread	PMXA PMXK	PMXYA PMXYK	EN 1.4305 Equiv. EN 1.0715 Equiv.	Trivalent Chromate	EN 1.4305 Equiv.	EN 1.4319 Equiv.	EN 1.1191 Equiv. Trivalent Chromate



• Features of the Returning Type and Rest Position Type **P.1779**

Tolerance	B	h11
4	0	-0.075
5	0	-0.075
6	0	-0.090
8	0	-0.090

Fine Thread

M	Pitch (Fine Thread)	D	D1	B	S min.	L		L1	L2	L3	L4	Sw1	Sw2	Load (N)				Mass (g)			
						Returning	Rest Position							PXA, PKX	PXY, PKY	SXPA min.	SXPX max.	PXA SXPX	PXX SXPX	PXYA	PXXY SXPX
10	1.0	21	13.8	5	5	45	51	17	5	15	5	12	17	7	17	6	15	20	27	23	30
12	1.5	25	16.2	6	6	54.5	61	20	6	17	6	14	18	9	24	8	21	32	42	38	48
16	1.5	31	21.9	8	8(7)	69	75.5	26	8	23	8	19	24	11	30	9	26	70	90	79	99

Min. S dimension of Rest Position Type M16 is shown in the ().

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Part Number	Unit Price
Type	M
PXA (Stainless Steel)	10
SXPB	12
PXYA	16
PXYK	
SXYK	

Coarse Thread

Part Number		Pitch (Coarse Thread)	D	D1	B	S min.	L		L1	L2	L3	L4	L5	Sw1	Sw2	Load (N)		Mass (g)				Unit Price	
Type	M						Returning	Rest Position								min.	max.	PMXA	PMXK	PMXYA	PMXYK	PMXA PMXYA	PMXK PMXYK
PMXA	6M	1.0	12	6.9	4	4	30.5	33	12	4.5	10	3.2	7	6	10	3	12	5	9	4	8	PMXA PMXYA	PMXK PMXYK
PMXK	8M	1.25	16	9.2	5	5	40	43.5	16	6	14	4	9.5	8	13	5	24	10	15	11	16		
PMXYA	10M	1.5	18	11.5	6	6	49	52	20	7.5	18	5	10.5	10	16	5	21	17	24	18	15		
PMXYK	12M	1.75	21	13.8	8	8	59	63.5	24	9	22	6	13.5	12	18	6	22	31	41	36	46		

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Ordering Example
Part Number
SXPB16
PMXK10M

Since the Coarse Thread Type (PMXA, PMXK, PMXYA, PMXYK) are thin threaded, do not exceed the tightening torques shown in the table to the right.

M	Allowable Tightening Torque (N · m)
6	1.5
8	9
10	20
12	25

Ball Lock Pins

Spring Type / Push Type

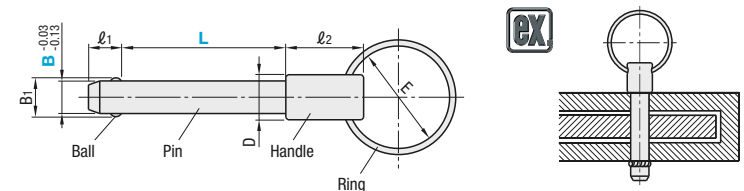
■ Features: Locks with the spring force. Priced at approx. 1/3 of the Push Type.

Ball Lock Pins - Spring Type



RoHS

Type		Ball		Pin		Handle		Ring	
L Selectable	L Configurable	M Material	H Hardness	M Material	S Surface Treatment	M Material	S Surface Treatment	M Material	S Surface Treatment
BLPS	BLPF	EN 1.4125 Equiv.	HRC55~	EN 1.1191 Equiv.	Electroless Nickel Plating	EN 1.0736 Equiv.	Electroless Nickel Plating	JIS-SWRH	Nickel Plating



L Selectable

Part Number	Type	B	L Selection	B1	l1	D	l2	E	Unit Price
BLPS	5	30	5.5	6	11	22	25	-	-
	6	25 30 40 50	7	7	11	22	25	-	-
	8	25 30 40 50	9.5	8	11	22	25	-	-
	10	25 30 40 50 60	12	9	16	27	25	-	-
	12	60	14.5	10	16	27	25	-	-
	16	60	19	14	19	32	25	-	-

L Configurable

Part Number	Type	B	L 5mm Increment	B1	l1	D	l2	E	Unit Price
BLPF	5	10~30	5.5	6	11	22	25	-	-
	6	15~50	7	7	11	22	25	-	-
	8	20~100	9.5	8	11	22	25	-	-
	10	25~100	12	9	16	27	25	-	-
	12	30~100	14.5	10	16	27	25	-	-
	16	50~100	19	14	19	32	25	-	-



Ordering Example
Part Number
BLPS8
BLPF10

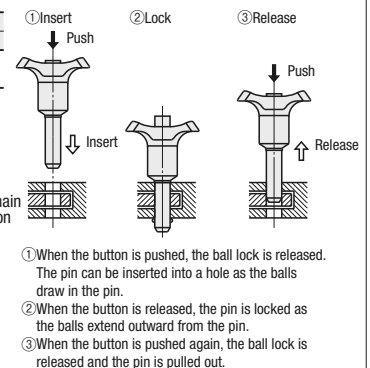
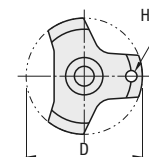
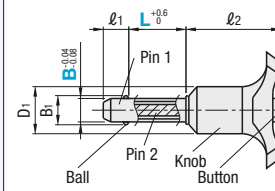
B	Mating Hole Dimensions	Resistance when Removed (N)	Pin Fracture Load (kN)	Mass (g)
5	5 +0.07 0	9	5	19~22
6	6 +0.07 0	9	7	21~28
8	8 +0.09 0	9	13	27~58
10	10 +0.09 0	20	20	59~105
12	12 +0.11 0	30	29	73~135
16	16 +0.11 0	50	51	159~237

Ball Lock Pins - Push Type



RoHS

Type	Ball	Pin 1	Pin 2	Spring	Knob
	Material	Material	Material	Material	Material
BLP	EN 1.4125 Equiv.	55HRC~	EN 1.4542 Equiv.	EN 1.4568 Equiv.	Nylon 6 (Black, Orange)



Part Number	Type	B	L	D	D1	B1	l1	l2	Mating Hole Recommended Dimensions	Shear Load (kN)	Mass (g)	Unit Price
BLP	5	10 15 20 25 30	38	16	5.5	6	31.5	5	5 +0.07 0	24	30~32	-
	6	10 15 20 25 30 40 50	7	7	11	22	25	6	6 +0.07 0	35	31~39	-
	8	20 25 30 40 50	9.5	8	11	22	25	8	8 +0.09 0	63	38~47	-
	10	25 30 40 50 60	12	9	16	27	25	10	10 +0.09 0	100	76~97	-
	12	40 50 60 80	14.5	10	16	27	25	12	12 +0.11 0	144	100~135	-
	16	60 80 100	19	14	19	32	25	16	16 +0.11 0	257	171~232	-



Ordering Example
Part Number
BLP8
BLP25