

# Short Spring Plungers

Steel / Stainless Steel

**Short Spring Plungers – Steel Type**

Load Category	Type		Body			Pin			Spring Material	Operating Temperature
	Standard	Without Thread-Locking	Material	Hardness	Surface Treatment	Material	Hardness	Surface Treatment		
Steel Nose	Ultra Light Load	SPJS	4137 Alloy Steel	29~35 HRC min.	Black Oxide	1045 Carbon Steel or Equivalent	57~63 HRC min. (Carburized)	Trivalent Chromate	JIS SWP-B	-30~80°C
	Light Load	SPJL								
	Heavy Load	SPJH								
	Extra Heavy Load	SPJF								
Plastic Nose	Ultra Light Load	SPRS	Polyacetal	-	Black Oxide	-	-	-	-	-
	Light Load	SPRM								
	Heavy Load	SPRH								
	Extra Heavy Load	SPRF								

Thread Locking Adhesive (MS-M16)

W/o thread-locking adhesive type is not available for M3 or M4 (M3 and M4 Standard Type don't have thread-locking adhesive applied to them.)  
To fix position of the ball plunger, microencapsulated anaerobic adhesive is applied. Once the parts have been loosened, adhesion is lost. Use an anaerobic thread locking compound when reassembling.

**Standard** kgf=Nx0.101972

Part Number	Type	M (Coarse)	d	S	L	ℓ	B	Ultra Light Load (N)		Light Load (N)		Heavy Load (N)		Extra Heavy Load (N)	
								min.	max.	min.	max.	min.	max.	min.	max.
								<b>Steel Tip</b> SPJS SPJL SPJH SPJF	<b>Plastic Tip</b> SPRS SPRM SPRH SPRF	3	1.2	1	7	1	1.5
		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	2	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

**Without Thread-Locking Adhesive** kgf=Nx0.101972

Part Number	Type	M (Coarse)	d	S	L	ℓ	B	Ultra Light Load (N)		Light Load (N)		Heavy Load (N)		Extra Heavy Load (N)	
								min.	max.	min.	max.	min.	max.	min.	max.
								<b>Steel Tip</b> SPJS-N SPJL-N SPJH-N SPJF-N	<b>Plastic Tip</b> SPRS-N SPRM-N SPRH-N SPRF-N	5	2.7	1.5	12	2	2.5
		6	3.2	2	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

**Part Number Example** Part Number - **S**

Example: **SPJL12** - **5**

No slits for swaging on the tip. Min. is the initial load, and max. is the load when the tip is fully compressed.

**Short Spring Plungers – Stainless Steel Type**

Load Category	Type	Body		Pin		Spring Material	Operating Temperature
		Material	Hardness	Material	Hardness		
Stainless Steel Nose	Ultra Light Load	304 Stainless Steel	440C	Stainless Steel	55 HRC min.	631 Stainless Steel	-30~260°C
	Light Load						
	Heavy Load						
	Extra Heavy Load						
Plastic Nose	Ultra Light Load	Polyacetal	-	-	-	-30~80°C	
	Light Load						
	Heavy Load						
	Extra Heavy Load						

Part Number	Type	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)	
								min.	max.	min.	max.	min.	max.	min.	max.
								<b>Stainless Tip</b> SPJY SPJK SPJZ SPJX	<b>Plastic Tip</b> SPRY SPRK SPRZ SPRX	3	1.2	1	7	1	1.5
		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	2	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 adhesive is not applied.

**Part Number Example** Part Number - **S**

Example: **SPJZ10**

# Micro Spring Plungers

Standard / Short / Flat Set Screw

**Micro Spring Plungers – Standard**

Load Category	Type			Body	Pin	Spring	Operating Temperature
	Flat	Sphere	Taper R	Material	Material	Material	
Light Load	MPFL	MPJL	MPTL	303 Stainless Steel	304 Stainless Steel	304 Stainless Steel	-30~140°C
Heavy Load	MPFH	MPJH	—	—	—	—	—

Taper R Portion: R, 30°

kgf=Nx0.101972

Part Number	Type	D <sub>H7</sub>	S	d	D <sub>1</sub>	L	C	R	Light Load		Heavy Load	
									min.	max.	min.	max.
									<b>Flat</b> MPFL MPFH	1.5 2	1.5 1.5 3	0.5 1
<b>Sphere</b> MPJL MPJH	3 4	3 3 6	2 3	3.5 4.5	16 26 32	0.15 0.2	0.5 1	0.49 0.98 1.96 2.94 3.92	1.47 2.94 5.88 8.82 11.76	1.47 2.94 4.90 7.35 9.80	3.43 5.88 8.82 11.76 15.69	
<b>Taper R</b> MPTL	5	4 4 8 12	4	5.5	17 24 32	0.3	1.5	0.64 0.78 0.83	1.96 3.82 5.79	3.73 3.04 2.75	6.96 7.06 7.06	

\*Recommended Diameter of Mounting Hole D<sub>H7</sub>. Use adhesive to prevent loosening.

**Part Number Example** Part Number - **S**

Example: **MPJL2** - **1.5**

**Short Micro Spring Plungers**

Load Category	Type		Body	Pin	Spring	Operating Temperature
	Flat	Sphere	Material	Material	Material	
Light Load	MPFS	MPJS	303 Stainless Steel	304 Stainless Steel	304 Stainless Steel	-30~140°C

Part Number	Type	D <sub>H7</sub>	S	d	D <sub>1</sub>	L	C	Light Load (N)	
								min.	max.
								<b>Flat</b> MPFS Sphere MPJS	1.5 2 3 4 5

\*Recommended Diameter of Mounting Hole D<sub>H7</sub>. Use adhesive when installing.

**Part Number Example** Part Number - **S**

Example: **MPFS4** - **3**

**Micro Spring Plunger with Flat Set Screw**

Load Category	Type	Body	Pin	Spring	Operating Temperature
	Flat	Material	Material	Material	
Light Load	MPFLT	303 Stainless Steel	304 Stainless Steel	304 Stainless Steel	-30~140°C
Heavy Load	MPFHT	—	—	—	—

The D dimension tolerance of the set screw part is D<sub>2</sub>.

kgf=Nx0.101972

Part Number	Type	D <sub>H7</sub>	S	d	D <sub>1</sub>	L	ℓ	F	G	C	Light Load		Heavy Load	
											min.	max.	min.	max.
											<b>Flat</b> MPFLT MPFHT	1.5 2 3 4 5	1.5 1.5 3 3 6	0.5 1 2 3

\*Recommended Diameter of Mounting Hole D<sub>H7</sub>. Use adhesive to prevent loosening.

Check out [misumiusa.com](http://misumiusa.com) for the most current pricing and lead time.