

Ball Plungers

- Standard / Stainless Steel Body Type -

Different from C-VALUE Products | Hex Socket-shaped. RoHS Compliant (except for some types)

BPJF / BSJF: BPJ / BSJ is changed to this Part Number with the existing dimensions retained.

Ordering Example
Part Number (Type-M)
BPY6

Standard

Type	Type		Body			Ball		Spring	Spacer	Operating Temperature
	Standard	No Thread Locking Compound	Material	Hardness	Surface Treatment	Material	Hardness	Material	Material	
Metal Ball	Ultra Light Load	BPY	SCM435	29~35HRC	Black Oxide	SUJ2	55HRC~	SWP-B	SUS304	-30~80°C
	Light Load	BPJF								
	Heavy Load	BSJF								
Plastic Ball	Ultra Light Load	NBPS	SUS304 Equivalent	29~35HRC	Nickel Plating	Polyacetal	-	SWP-B	SUS304	-30~80°C
	Light Load	NBPJ								
	Heavy Load	NBSJ								

Part Number is Not RoHS Compliant.

Load min. max.

⚠ M3 and M4 Standard Type are not thread-locking treated.
 ⚠ Thread Locking Treatment is to fix thread by anaerobic adhesive in micro capsules. Once parts have been loosened, adhesion is lost. Use an anaerobic adhesive for Screws 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.

Standard

Part Number	Type	M(Coarse)	Metal Ball		Plastic Ball		L	ℓ	B	Ultra Light Load Load (N)		Light Load Load (N)		Heavy Load Load (N)		Extra Heavy Load Load (N)	
			d	S	d	S				min.	max.	min.	max.	min.	max.	min.	max.
(Metal Ball) BPY BPJF BSJF BPW	(Plastic Ball) NBPS(*only) NBPJ(*only) NBSJ(*only) NBPW(*only)	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	0.8	2.4	0.8	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	0.8	3.2	0.8	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	6.9	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		

⚠ M3 and M4 have no slits for a wrench on the tip. It can be installed only by using a bolt. ⚠ Min. load is the initial load, and max. load is the one when the tip is fully compressed. kgf = Nx0.101972

No Thread Locking Compound

Part Number	Type	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)	
								min.	max.	min.	max.	min.	max.	min.	max.
(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. kgf = Nx0.101972

BSZF: BSZ is changed to this Part Number with the existing dimensions retained.

Stainless Steel

Type	Type		Body		Ball		Spring	Spacer	Operating Temperature
	Material	Hardness	Material	Hardness	Material	Hardness	Material		
Metal Ball	Ultra Light Load	BMS	SUS440C	55HRC~	SUS631J1	SUS304			-30~260°C
	Light Load	BSM							
	Heavy Load	BSZF							
Plastic Ball	Ultra Light Load	BSX	SUS304 Equivalent						
	Light Load	NBSM	Polyacetal		SUS631J1	SUS304			-30~80°C
	Heavy Load	NBSZ							

Load min. max.

Part Number	Type	M(Coarse)	Metal Ball		Plastic Ball		L	ℓ	B	For Ultra Light Load (BMS / NBSX) Load (N)		For Light Load (BSM) Load (N)		For Light Load (NBSM) Load (N)		For Heavy Load (BSZF / NBSZ) Load (N)		For Extra Heavy Load (BSX / NBSX) Load (N)	
			d	S	d	S				min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
(Metal Ball) BMS BSM BSZF		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	1.9	4.9	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	3.3	9.8	2.9	9.8	4.9	19.6	11.2	24.1
		*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
		*8	4	1	4.0	1.0	15	2.5	4	2.4	6.36	6.5	19.1	6.9	19.6	12.7	39.2	21.4	45.3
		*10	5	1.2	4.8	1.2	16	3	5	3	8.1	8.9	24.1	8.8	24.5	18.6	49	23.5	60
		*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
*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		

⚠ M3 and M4 have no slits for a wrench on the tip. It can be installed only by using a bolt. ⚠ Thread locking treatment not applied. kgf = Nx0.101972

C-VALUE Ball Plungers

- Straight Slot -

Difference from Quality Products | Straight Slot Groove Not RoHS Compliant

Ordering Example
Part Number (Type-M)
C-BPES6

Economy

Type	Body			Ball		Spring
	Material	Hardness	Surface Treatment	Material	Hardness	Material
Heavy Load	C-BPES	SCM435	29~35HRC	Black Oxide	SUJ2	55HRC~
	C-BPEU	SUS304	-	-	SUS304	-

Part Number is Not RoHS Compliant.

Load min. max.

Part Number	Type	M(Coarse)	d	S	L	a	Heavy Load Load (N)	
							min.	max.
C-BPES C-BPEU		3	1.5	(0.5)	7	(0.5)	(1.5)	(2.9)
		4	2.5	(0.8)	9	(1)	(3.9)	(9.8)
		5	3	(0.8)	12	(1.2)	(4.9)	(19.6)
		6	3.5	(0.8)	14	(1.2)	(9.8)	(29.4)
		8	4.5	(1.2)	16	(1.5)	(12.7)	(39.2)
		10	6	(1.3)	19	(1.5)	(18.6)	(49)
12	8	(1.8)	22	(2)	(19.6)	(58.8)		
16	10	(2.5)	24	(2)	(29.4)	(98)		

⚠ Has no slit for a wrench on the tip. Only the straight slit is used for tightening.
 ⚠ Stroke (S), Slot Dimension (a), and Load are for reference, not guaranteed.
 ⚠ Thread locking treatment not applied.

Common Applications of Ball Plungers

Plunger

For positioning fixture. For indexing. For use as various stoppers.