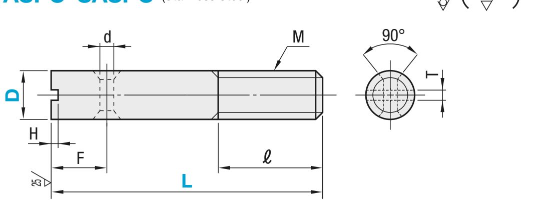
Posts for Tension Springs
Hole / Notched Type

■Hole

Straight, ℓ Dimension Selectable

ASPO SASPO (Stainless Steel)



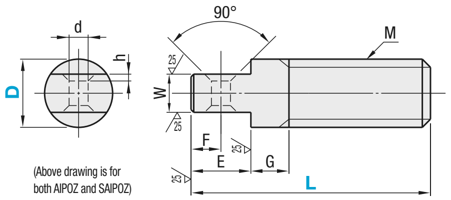
Type	M Material	S Surface Treatment	A Accessory / Material
ASPO AIPO AIPOZ	EN 1.1191 Equiv.	Black Oxide	Nut 1 pc. JIS-SWCH Equiv. (JIS Class 1)
SASPO	EN 1.4305 Equiv.	-	Nut 1 pc. EN 1.4301 Equiv. (JIS Class 1)
SAIPO SAIPOZ	EN 1.4301 Equiv.		

The ℓ dimensions marked with * in the specification table are for dimensions in the right table.

Type	D-L	ℓ
ASPO SASPO	3-10	5
	5-15	8
	6-20	12
	8-20	11
	8-25	16
	10-30	17
	10-35	22
	12-40	20

Wrench Flats

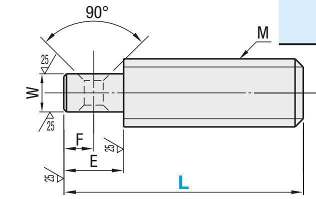
AIPO SAIPO (Stainless Steel)



(Above drawing is for both AIPOZ and SAIPOZ)

Wrench Flats, Full Thread under Head

AIPOZ SAIPOZ (Stainless Steel)



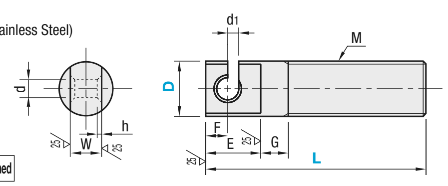
Part Number Type	D	L									M (Coarse)	ℓ*	F	H	T	d	ASPO Unit Price 1 ~ 49 pc(s)	ASPO Volume Discount Rate 50 ~ 100 pcs.	SASPO Unit Price 1 ~ 49 pc(s)	SASPO Volume Discount Rate 50 ~ 100 pcs.
ℓ Dimension Selectable ASPO SASPO (Stainless Steel)	3	*10	15	20	25	30	35	40			M3	10	3	1.0	1.2	1.5				
	4		15	20	25	30	35	40	50		M4					2.0				
	5		*15	20	25	30	35	40	50		M5		5	2.0						
	6			*20	25	30	35	40	45 50	60	M6	16								
	8			*20	*25	30	35	40	45 50	60 70	M8	20	6	2.5		3.0				
	10					*30	*35	40	45 50	60 70	M10	25	7			4.0				
	12							*40	50	60 70	M12	30	9		1.8	6.0				

Part Number Type	D	L	M (Coarse)	d	W	G	E	F	h	AIPO Unit Price 1 ~ 49 pc(s)	AIPO Volume Discount Rate 50 ~ 100 pcs.	SAIPO Unit Price 1 ~ 49 pc(s)	SAIPO Volume Discount Rate 50 ~ 100 pcs.
Wrench Flats AIPO SAIPO (Stainless Steel)	3	15 20 25 30	M3	1.5	1.5	3	3.0	1.5	0.2				
	4	15 20 25 30 35	M4		2.5		3.5	1.75	0.3				
	5	15 20 25 30 35 40	M5	2.0	3.0	5	4.0	2.0	0.4				
	6	20 25 30 35 40 50	M6		3.5		5.0	2.5	0.5				
	8	20 25 30 35 40 50 60 70	M8	3.0	5.0		7.0	3.5	1.0				
	10	30 35 40 50 60 70	M10	4.0	6.0		10.0	4.0	1.2				
	12	35 40 50 60 70	M12	5.0	7.0		12.0	5.0	1.4				

Part Number Type	D	L	M (Coarse)	d	W	E	F	h	AIPOZ Unit Price 1 ~ 49 pc(s)	AIPOZ Volume Discount Rate 50 ~ 100 pcs.	SAIPOZ Unit Price 1 ~ 49 pc(s)	SAIPOZ Volume Discount Rate 50 ~ 100 pcs.
Full Thread under Head AIPOZ SAIPOZ (Stainless Steel)	3	10 15 20 25	M3	1.5	1.5	3.0	1.5	0.2				
	4	10 15 20 25 30	M4		2.5	3.5	1.75	0.3				
	5	10 15 20 25 30 35	M5	2.0	3.0	4.0	2.0	0.4				
	6	15 20 25 30 35 45	M6		3.5	5.0	2.5	0.5				
	8	15 20 25 30 35 45 55 65	M8	3.0	5.0	7.0	3.5	1.0				
	10	25 30 35 45 55 65	M10	4.0	6.0	10.0	4.0	1.2				
	12	45 55 65	M12	5.0	7.0	12.0	5.0	1.4				

■Notched Type RoHS

AIPOK
SAIPOK(Stainless Steel)



Utility Model Right Obtained

Type	M Material	S Surface Treatment	A Accessory / Material
AIPOK	EN 1.1191 Equiv.	Black Oxide	Nut 1 pc. JIS-SWCH Equiv. (JIS Class 1)
SAIPOK	EN 1.4301 Equiv.	-	Nut 1 pc. EN 1.4301 Equiv. (JIS Class 1)

Part Number Type	D	L	M (Coarse)	d	d_1	W	G	E	F	h	Working Max. Load N AIPOK	Working Max. Load N SAIPOK	AIPOK Unit Price 1 ~ 49 pc(s)	AIPOK Volume Discount Rate 50 ~ 100 pcs.	SAIPOK Unit Price 1 ~ 49 pc(s)	SAIPOK Volume Discount Rate 50 ~ 100 pcs.
Notched Type AIPOK SAIPOK (Stainless Steel)	4	15 20 25 30	M4	1.5	1.0	2.5	5	3.5	1.75	0.3	80	50				
	5	15 20 25 30 40	M5	2.0		3.0		4.0	2.0	0.4	115	72				
	6	20 25 30 40 50	M6			3.5		5.0	2.5	0.5	179	113				
	8	25 30 40 50 60 70	M8	3.0	1.5	5.0		7.0	3.5	1.0	300	189				
	10	30 40 50 60 70	M10	4.0	2.0	6.0		10.0	4.0	1.2	433	273				
	12	40 50 60 70	M12	5.0	2.5	7.0		12.0	5.0	1.4	590	-			-	-

kgf=Nx0.101972

Ordering Example

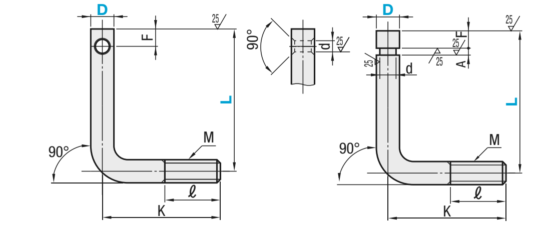
Part Number	-	L
ASPO5	-	20
AIPOK8	-	40

Posts for Tension Springs
L-Shaped / Hex Socket Type / Hex Type

■L-Shaped

Hole **ASPL SASPL** (Stainless Steel)

Groove **BSPL SBSPL** (Stainless Steel)

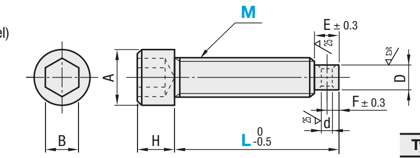


Type	M Material	S Surface Treatment	A Accessory / Material
ASPL BSPL	EN 1.1191 Equiv.	Black Oxide	Nut 1 pc. JIS-SWCH Equiv. (JIS Class 1)
SASPL SBSPL	EN 1.4301 Equiv.	-	Nut 1 pc. EN 1.4301 Equiv. (JIS Class 1)

Part Number Type	D	L	M (Coarse)	K	ℓ	A	F ASPL SASPL	F BSPL SBSPL	d ASPL SASPL	d BSPL SBSPL	ASPL Unit Price 1 ~ 49 pc(s)	ASPL Volume Discount Rate 50 ~ 100 pcs.	SASPL Unit Price 1 ~ 49 pc(s)	SASPL Volume Discount Rate 50 ~ 100 pcs.	BSPL Unit Price 1 ~ 49 pc(s)	BSPL Volume Discount Rate 50 ~ 100 pcs.	SBSPL Unit Price 1 ~ 49 pc(s)	SBSPL Volume Discount Rate 50 ~ 100 pcs.
L-Shaped Hole ASPL SASPL (Stainless Steel) Groove BSPL SBSPL (Stainless Steel)	3	10 15	M3	20	10	1.0	3	1.5	1.5	1.8								
	4	15 20 25	M4			1.2		3	2.0	2.0								
	5	20 25 30	M5			2.0	5	4		3.0								
	6	20 25 30	M6	30	16	3.0				3.6								
	8	25 30	M8	40	20		6		3.0	5.0								
	10	30 40	M10	50	25		7		4.0	6.0							-	-
	12	30 40	M12	60	30	4.0	9		6.0	6.5							-	-

■Hex Socket Type

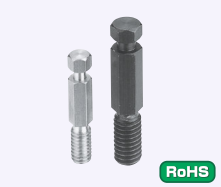
ARPO
SARPO(Stainless Steel)



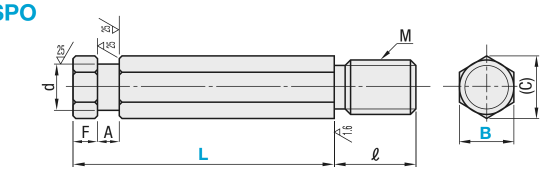
Type	M Material	S Surface Treatment	A Accessory / Material
ARPO	EN 1.7220 Equiv.	Black Oxide	Nut 1 pc. JIS-SWCH Equiv. (JIS Class 3)
SARPO	EN 1.4301 Equiv.	-	Nut 1 pc. EN 1.4301 Equiv. (JIS Class 3)

Part Number Type	M	L	d	D	E	F	A	B	H	ARPO Unit Price 1 ~ 49 pc(s)	ARPO Volume Discount Rate 50 ~ 100 pcs.	SARPO Unit Price 1 ~ 49 pc(s)	SARPO Volume Discount Rate 50 ~ 100 pcs.
Hex Socket ARPO SARPO (Stainless Steel)	4	15 20 25 30	1.5	3.0	3	1.5	7	3	4				
	5	15 20 25 30 35 40	2	3.8	4	2	8.5	4	5				
	6	20 25 30 35 40		4.5			10	5	6				
	8	20 25 30 35 40 50	3	6.1	7	3.5	13	6	8				
	10	30 35 40 50 60	4	7.8	10	4	16	8	10				
	12	40 50 60	5	9.5	12	5	18	10	12				

■Hex Type



DSPO
PDSPO



Type	M Material	S Surface Treatment
DSPO	Free Cutting Steel	Black Oxide
PDSPO		Electroless Nickel Plating

Part Number Type	B	L	M (Coarse)	(C)	ℓ	A	F	d	DSPO Unit Price 1 ~ 49 pc(s)	DSPO Volume Discount Rate 50 ~ 100 pcs.	PDSPO Unit Price 1 ~ 49 pc(s)	PDSPO Volume Discount Rate 50 ~ 100 pcs.
DSPO PDSPO	3	10 15	M3	3.5	6	1.0	3	1.8				
	4	10 15 20	M4	4.6	8	1.2		2.0				
	5	10 15 20	M5	5.8	10	2.0		3.0				
	6	10 15 20 25	M6	6.9	12			3.6				
	8	10 15 20 25 30	M8	9.2	16	3.0	4	5.0				
	10	15 20 25 30	M10	11.5	20			6.0				
	12	20 25 30	M12	13.9	24	4.0		6.5				

Ordering Example

Part Number	-	L
ASPL4	-	15
ARPO6	-	20
DSPO8	-	25

Posts for Tension Springs

Groove Type / Roller Type

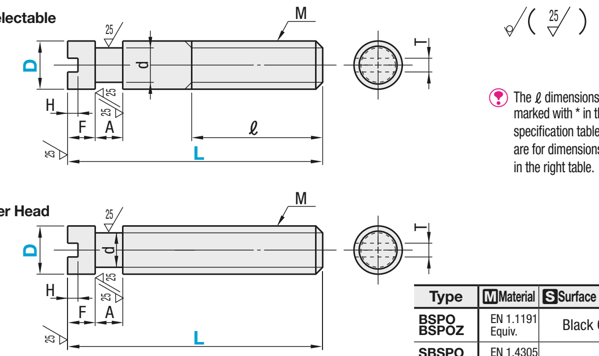
■Groove Type

ℓ Dimension Selectable

BSPO
SBSPO
(Stainless Steel)

Full Thread under Head

BSPOZ
SBSPOZ
(Stainless Steel)



The ℓ dimensions marked with * in the specification table are for dimensions in the right table.

Type	D-L	ℓ
BSPO SBSPO	5-15	8
	6-15	7
	6-20	12
	8-20	11
	8-25	16
	10-30	17
	10-35	22
	12-40	20

Type	M Material	S Surface Treatment	A Accessory / Material
BSPO BSPOZ	EN 1.1191 Equiv.	Black Oxide	Nut 1 pc. (JIS Class 1) JIS-SWCH Equiv.
SBSPO SBSPOZ	EN 1.4305 Equiv.	-	Nut 1 pc. (JIS Class 1) EN 1.4301 Equiv.

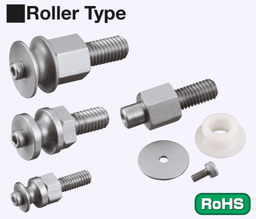
Part Number Type	D	L	M (Coarse)	ℓ*	A	F	H	T	d	BSPO Unit Price 1 ~ 49 pc(s)	BSPO Volume Discount Rate 50 ~ 100 pcs.	SBSPO Unit Price 1 ~ 49 pc(s)	SBSPO Volume Discount Rate 50 ~ 100 pcs.
ℓ Dimension Selectable BSPO SBSPO (Stainless Steel)	3	15 20 25 30 35 40	M3	10	1.0	3	1.0	1.2	1.8				
	4	15 20 25 30 35 40 50	M4		1.2				2.0				
	5	*15 20 25 30 35 40 50	M5		2.0	4	2.0		3.0				
	6	*15 *20 25 30 35 40 45 50 60	M6	16	3.0				3.6				
	8	*20 *25 30 35 40 45 50 60 70	M8	20			2.5		5.0				
	10	*30 *35 40 45 50 60 70	M10	25					6.0				
	12	*40 50 60 70	M12	30	4.0			1.8	6.5				

Part Number Type	D	L	M (Coarse)	A	F	H	T	d	BSPOZ Unit Price 1 ~ 49 pc(s)	BSPOZ Volume Discount Rate 50 ~ 100 pcs.	SBSPOZ Unit Price 1 ~ 49 pc(s)	SBSPOZ Volume Discount Rate 50 ~ 100 pcs.
Full Thread under Head BSPOZ SBSPOZ (Stainless Steel)	3	10 15 20 25	M3	1.0	3	1.0	1.2	1.8				
	4	10 15 20 25 30	M4	1.2				2.0				
	5	15 20 25 30 35	M5	2.0	4	2.0		3.0				
	6	20 25 30 35 45	M6	3.0				3.6				
	8	25 30 35 45 55 65	M8			2.5		5.0				
	10	30 35 45 55 65	M10					6.0				
	12	35 45 55	M12	4.0			1.8	6.5				

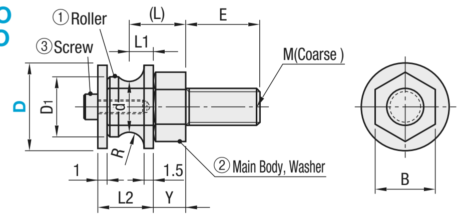
Ordering Example

Part Number	-	L
BSPO8	-	40

■Roller Type



YSPO
YJPO



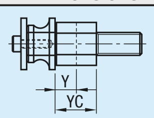
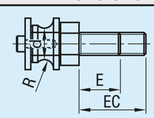
Components	Material / Treatment	YSPO	YJPO
①Roller	M Material	EN 1.4305 Equiv.	Polyacetal (White)
	S Surface Treatment	Electroless Nickel Plating	-
	H Hardness	Hv1000 (Effective Depth 0.01)	-
②Main Body, Washer	M Material	EN 1.1191 Equiv.	EN 1.4305 Equiv.
	S Surface Treatment	Electroless Nickel Plating	-
③Screw	M Material	EN 1.4567 Equiv.	EN 1.4567 Equiv.

Part Number Type	D	Mounting Length (L)	①Roller L1	D1	d	R	②Main Body, Washer L2	Y	M	E	B	Accessory ③Screw	Applicable Tension Spring	Unit Price 1 ~ 10 pc(s).	Volume Discount Rate 11~20	21~50	51~100
YSPO YJPO	8	8	2.5	5.5	4.5	1	5.5	5.5	M4	10	7	SCB2-5	D 8				
	9	9	3	6.5	5.5	1.5	6.5	6	M5	12	8		D9 • D10				
	12	11	3.5	8	7	2	7.5	7.5	M6		10		D12 • D14				
	15	13		10	8			9.5				SCB3-5	D16 • D18				
	18	16	4	13	11	2.5	8.5	12	M8	16	13		D20 • D24				

Ordering Example

Part Number
YSPO12

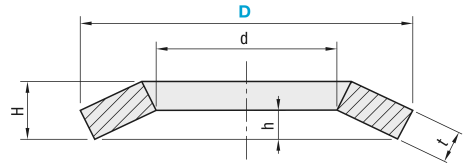
Alterations

Alterations	Y Dimensions	E Dimensions
		
Code	YC	EC
Spec.	Changes Y dimension. Y<YC≤30 Specify in 1mm Increment	Changes E dimension. M≤EC≤Mx5 Specify in 1mm Increment

Part Number	-	YC(EC)
YSPO9	-	YC10

Disk Springs

SRBN
SSRBN
(Stainless Steel)



t	Load Tolerance (75% Deflection)
0.3~1.1	+25% -7.5%
1.2~3	+15% -7.5%

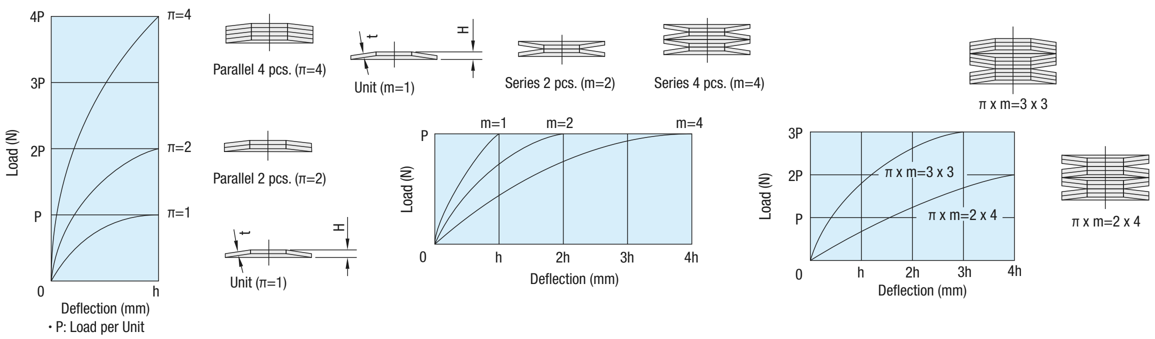
Type	M Material	S Surface Treatment	H Hardness
SRBN	S65~70C	Black Oxide D45 and 50 are not treated.	43~50HRC
SSRBN	EN 1.4301 (CSP) Equiv.	-	37~46HRC

Part Number Type	D	Load Type	D	d	d tol.	t	H	H tol.	h	Load (75% Deflection) N SRBN	SSRBN	SRBN Unit Price 1 ~ 49 pc(s).	SRBN Volume Discount Rate 50~74	75~99	100~500	SSRBN Unit Price 1 ~ 49 pc(s).	SSRBN Volume Discount Rate 50~74	75~99	100~500
SRBN SSRBN (Stainless Steel)	8	A	0 -0.15	4.2	+0.15 0	0.3	0.55	±0.10	0.25	117	105								
		B				0.4	0.60		0.20	205	185								
	10	A		5.2		0.4	0.70		0.30	205	185								
		B				0.5	0.75		0.25	323	291								
	12.5	A	0 -0.20	6.2		0.5	0.85		0.35	294	264								
		B				0.7	1.00		0.30	657	591								
	14	A		7.2		0.5	0.90		0.40	274	247								
		B				0.8	1.10		0.30	794	714								
	16	A		8.2		0.6	1.05		0.45	411	370								
		B				0.9	1.25		0.35	1,029	926								
	18	A		9.2		0.7	1.20		0.50	568	511								
		B				1.0	1.40	±0.15	0.40	1,274	1,147								
	20	A	0 -0.25	10.2	+0.20 0	0.8	1.35	±0.10	0.55	745	670								
		B				1.1	1.55	±0.15	0.45	1,520	1,368								
	22.5	A		11.2		0.8	1.45	±0.10	0.65	706	635								
		B				1.2(1.25)	1.7(1.75)	±0.15	0.50	1,716	1,544								
	25	A		12.2		0.9	1.60	±0.10	0.70	863	776								
		B				1.6(1.5)	2.15(2.05)	±0.15	0.55	3,530	3,177								
	28	A		14.2		1.0	1.80	±0.10	0.80	1,127	1,015								
		B				1.6(1.5)	2.25(2.15)	±0.15	0.65	3,432	3,089								
	31.5	A	0 -0.30	16.3		1.2(1.25)	2.1(2.15)		0.90	1,716	1,544								
		B				1.8(1.75)	2.5(2.45)		0.70	4,216	3,795								
	35.5	A		18.3	+0.25 0	1.2(1.25)	2.2(2.25)		1.00	1,520	1,368								
		B				2.0	2.80		0.80	5,197	4,677								
	40	A		20.4		1.6(1.5)	2.75(2.65)		1.15	3,138	2,824								
		B				2.2(2.25)	3.1(3.15)		0.90	6,080	5,472								
	45	A		22.4		1.8(1.75)	3.1(3.05)		1.30	3,922	3,530								
		B				2.5	3.50	±0.2	1.00	7,698	6,928								
	50	A		25.4		2.0	3.40	±0.15	1.40	4,756	4,280								
		B				3.0	4.10	±0.2	1.10	11,964	10,767								

t and H dimensions for SSRBN are shown in ( ). (Different from JIS) kgf=Nx0.101972

Load is reference value.

■Load Characteristics in Combination (Excerpt from JIS B 2706 (2003))



• Parallel Combination • Series Combination • Parallel and Series Combination

A guide is necessary to keep the springs aligned.

Please use the disc springs of same size and load only.

Ordering Example

Part Number	-	Load Type A, B
SRBN22.5	-	A