

Locating Pins - Shouldered

Tapered - Shoulder Thickness Configurable

For products uncovered by e-Catalog Standard, see P.131.

Features: Shoulder thickness of the Shouldered Type configurable in 0.5 mm increment.



RoHS 10

Material No.	Material	Surface Treatment	Hardness	Type	Press Fit	Tapped	Threaded	Shape Code
(1)	SKS3 Equivalent	-	Treated Hardness: 60-63HRC	FPJ	FPJ	FPN		
(2)	SKS3 Equivalent	Hard Chrome Plating Plating Thickness: 3µm or more	Treated Hardness: 50-55HRC Plating Hardness: 750HV	GFPJ	GFPJ	GFPN		
(3)	SUS304	-		SFPJ	SFPJ	SFPN		
(4)	SUS304	Hard Chrome Plating Plating Thickness: 3µm or more	Plating Hardness: 750HV	HFPJ	HFPJ	HFPN		
(5)	SUS440C Equivalent	-	Treated Hardness: 50-55HRC	CFPJ	CFPJ	CFPN		



When D (P) ≥ 3
a=1.0
d=D(P)-0.2

When D(P)<3
a=0.5
d=D(P)-0.1

Relief dimension is a reference value.

• Press Fit

• Tapped

• Threaded

• Round

• Diamond

Step on Machining

(60°)

Press Fit

Part Number		D dim.		P	L	B	T	H	C	m	(W)	Unit Price Round Shape					Unit Price Diamond Shape				
Type	Shape	D	Tolerance	Increment	Increment	Increment	Increment					(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
FPJ GFPJ SFPJ HFPJ CFPJ	AT (Round) DT (Diamond)	2	+0.008	1.00-2.00	2-4	2.0-10.0		7	0.5	-	-	FPJAT	GFPJAT	SFPJAT	HFPJAT	CFPJAT	FPJDT	GFPJDT	SFPJDT	HFPJDT	CFPJDT
		3	+0.002	2.00-4.00	3-6	2.0-10.0		8	1	1.0	-										
		4	+0.012	2.00-5.00	4-8	2.0-10.0		9	1	1.2	-										
		5	+0.004	3.00-6.00	5-10	2.0-10.0		10	2	1.5	-										
		6	+0.015	4.00-7.00	5-12	2.0-15.0		11	2	1.8	-										
		8	+0.015	5.00-9.00	5-16	2.0-20.0		13	1.5	2.2	-										
		10	+0.006	7.00-11.00	8(10)-20	3.0-30.0		15	2	3	-										
		12	+0.018	7.00-12.00	10-24	3.0-30.0		17	2	3.2	-										
		13	+0.007	8.00-13.00	13-26	5.0-30.0		18	4	3.5	-										
		16	+0.007	13.00-16.00	16-32	5.0-30.0		21	3	4	-										
		20	+0.021	16.00-20.00	20-40	5.0-30.0		25	5	5.5	-										

L, B dimensions in () are applicable to Diamond Shape.

Tapped

Part Number		D dim.		P	L	B	T	H	m	(W)	M	Unit Price Round Shape					Unit Price Diamond Shape				
Type	Shape	D	Tolerance	Increment	Increment	Increment	Increment					(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
FPU GFPU SFPU HFPU CFPU	AT (Round) DT (Diamond)	5	-0.004	3.00-6.00	7-10	2.0-15.0		10	2	1.5	M2	FPUAT	GFPUAT	SFPUAT	HFPUAT	CFPUAT	FPUDT	GFPUdT	SFPUdT	HFPUdT	CFPUdT
		6	-0.012	4.00-7.00	6(9)-12	2.0-15.0		11	2	1.8	M3										
		8	-0.005	5.00-9.00	8(12)-16	2.0-20.0		13	2.2												
		10	-0.014	7.00-12.00	10(12)-20	2.0-30.0		15	3	3	M5										
		12	-0.006	7.00-12.00	12-24	3.0-30.0		17	3.2												
		13	-0.017	8.00-13.00	13(14)-26	3.0-30.0		18	4	3.5											
		16	-0.017	13.00-16.00	16-32	5.0-30.0		21	4	M8	2803										
		20	-0.027	16.00-20.00	20-40	5.0-30.0		25	5	5.5											

L, B dimensions in () are applicable to Diamond Shape.

Note the strength of under-head part. P1618 Please confirm pilot hole depth on P1618. Holes may go through.

Tightening torque (reference) will be within Strength Class of Tightening Torque on Technical Data in P2365 (10.9). Not applicable when using locking materials or lock washers.

Threaded

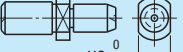
Part Number		D dim.		P	L	B	T	H	m	(W)	Tighten.	Unit Price Round Shape					Unit Price Diamond Shape				
Type	Shape	D	Tolerance	Increment	Increment	Increment	Increment				N-cm	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
FPN GFPN SFPN HFPN CFPN	AT (Round) DT (Diamond)	3	-0.002	2.00-4.00	2-6	2.0-10.0		8	1	1.0	147	FPNAT	GFPNAT	SFPNAT	HFPNAT	CFPNAT	FPNDT	GFPNdT	SFPNDT	HFPNdT	CFPNdT
		4	-0.004	2.00-5.00	2-8	2.0-10.0		9	1	1.2	333										
		5	-0.004	3.00-6.00	3-10	2.0-15.0		10	2	1.5	676										
		6	-0.012	4.00-7.00	3-10	2.0-15.0		11	2	1.8	1156										
		8	-0.005	5.00-9.00	5-10	2.0-20.0		13	2.2	2803											
		10	-0.014	7.00-11.00	5-15	3.0-30.0		15	3	3	5557										
		12	-0.006	7.00-12.00	6(8)-15	3.0-30.0		17	3.2	9702											
		16	-0.017	13.00-16.00	8-20	5.0-30.0		21	4	24108											
		20	-0.027	16.00-20.00	10-20	5.0-30.0		25	5	5.5	46942										

L, B dimensions in () are applicable to Diamond Shape.

Tightening torque (reference) will be within Strength Class of Tightening Torque (10.9) on Technical Data in P2365. Not applicable when using locking materials or lock washers.

Ordering Example: Part Number P - L - B - T
FPJ AT 10 - P8.03 - L10 - B4.0 - T5.0

Alterations: Part Number P - L - B - T - (HC, TC, RC, TKC)
FPJAT8 - P5.03 - L9 - B5.5 - T8.5 RC

Alterations	Wrench Flats Alteration	Length of Tapered Point	Sphere Tip	Shoulder Thickness Tolerance																														
Code	HC	TC	RC	TKC																														
Spec.	 HC = 0.5mm Increment HC>DHC>P <u>Ordering Code</u> HC10.0	Changes the m dimension. <u>Ordering Code</u> TC8 (1mm increment)  <table><tr><td>D</td><td>TC</td><td>D</td><td>TC</td><td>D</td><td>TC</td></tr><tr><td>2</td><td>1</td><td>6</td><td>3-11</td><td>13</td><td>5-22</td></tr><tr><td>3</td><td>2-5</td><td>8</td><td>4-14</td><td>16</td><td>6-23</td></tr><tr><td>4</td><td>2-7</td><td>10</td><td>4-18</td><td>20</td><td>6-23</td></tr><tr><td>5</td><td>3-9</td><td>12</td><td>4-20</td><td></td><td></td></tr></table> ⚡ B+m≥TC+2 (Straight Section min. 2mm) ⚡ Applicable when P≥2.00. ⚡ P/2 - TC x tan15° (≈0.27) > 0.5 (Tip Ø1.0min.) ⚡ B dimension changes when TC is specified. (Changed B dimension = B+m-TC)	D	TC	D	TC	D	TC	2	1	6	3-11	13	5-22	3	2-5	8	4-14	16	6-23	4	2-7	10	4-18	20	6-23	5	3-9	12	4-20			Changes the relief to R0.5. <u>Ordering Code</u> RC  ⚡ Applicable when H-P≥2.	Changes shoulder thickness tolerance T±0.05 to ±0.02 . <u>Ordering Code</u> TKC
	D	TC	D	TC	D	TC																												
	2	1	6	3-11	13	5-22																												
3	2-5	8	4-14	16	6-23																													
4	2-7	10	4-18	20	6-23																													
5	3-9	12	4-20																															

Locating Pins - Shouldered

Tapered - Shoulder Diameter and Thickness Configurable

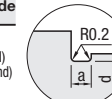
For products uncovered by e-Catalog Standard, see P.131.

Features: The Shoulder thickness is configurable in 0.1 mm increment and the Shoulder diameter is configurable in 0.5 mm increment for the Shouldered type.



RoHS 10

Material No.	Material	Surface Treatment	Hardness	Type	Press Fit	Tapped	Threaded	Shape Code
(1)	SKS3 Equivalent	-	Treated Hardness: 60-63HRC	FPJ	FPJ	FPN		
(2)	SKS3 Equivalent	Hard Chrome Plating Plating Thickness: 3µm or more	Treated Hardness: 50-55HRC Plating Hardness: 750HV	GFPJ	GFPJ	GFPN		
(3)	SUS304	-		SFPJ	SFPJ	SFPN		
(4)	SUS304	Hard Chrome Plating Plating Thickness: 3µm or more	Plating Hardness: 750HV	HFPJ	HFPJ	HFPN		
(5)	SUS440C Equivalent	-	Treated Hardness: 50-55HRC	CFPJ	CFPJ	CFPN		



When D (P) ≥ 3
a=1.0
d=D(P)-0.2

When D(P)<3
a=0.5
d=D(P)-0.1

Relief dimension is a reference value.

• Press Fit

• Tapped

• Threaded

• Round

• Diamond

Step on Machining

(60°)

Press Fit

Part Number		D dim.		P	L	B	T	H	C	m	(W)	Unit Price Round Shape					Unit Price Diamond Shape				
Type	Shape	D	Tolerance	Increment	Increment	Increment	Increment	Increment				(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
FPJ GFPJ SFPJ HFPJ CFPJ	ATD (Round) DTD (Diamond)	2	+0.008	1.00-2.00	2-4	2.0-10.0		5.0-10.0	0.5	-	-	FPJATD	GFPJATD	SFPJATD	HFPJATD	CFPJATD	FPJDTD	GFPJDTD	SFPJDTD	HFPJDTD	CFPJDTD
		3	+0.002	2.00-4.00	3-6	2.0-10.0		6.0-12.0	1	1.0	-										
		4	+0.012	2.00-5.00	4-8	2.0-10.0		7.0-13.0	1	1.2	-										
		5	+0.004	3.00-6.00	5-10	2.0-15.0		8.0-14.0	2	1.5	-										
		6	+0.015	4.00-7.00	5-12	2.0-15.0		9.0-15.0	1.5	1.8	-										
		8	+0.015	5.00-9.00	5-16	2.0-20.0		11.0-17.0	2.2	2.2	-										
		10	+0.006	7.00-11.00	8(10)-20	3.0-30.0		13.0-19.0	3	3	-										
		12	+0.018	7.00-12.00	10-24	3.0-30.0		13.0-20.0	2	3.2	-										
		13	+0.007	8.00-13.00	13-26	5.0-30.0		15.0-21.0	4	3.5	-										
		16	+0.007	13.00-16.00	16-32	5.0-30.0		18.0-24.0	3	4	-										
		20	+0.021	16.00-20.00	20-40	5.0-30.0		21.0-27.0	5	5.5	-										

L, B dimensions in () are applicable to Diamond Shape.

Tapped

Part Number		D dim.		P	L	B	T	H	m	(W)	M	Tighten.	Unit Price Round Shape					Unit Price Diamond Shape				
Type	Shape	D	Tolerance	Increment	Increment	Increment	Increment	Increment				N-cm	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
FPU GFPU SFPU HFPU CFPU	ATD (Round) DTD (Diamond)	5	-0.004	3.00-6.00	7-10	2.0-15.0		8.0-14.0	2	1.5	M2	-	FPUATD	GFPUATD	SFPUATD	HFUATD	CFPUATD	FPUDTD	GFPUTD	SFPUTD	HPUTD	CFPUTD
		6	-0.012	4.00-7.00	6(9)-12	2.0-15.0		9.0-15.0	1.8	M3	147	5										
		8	-0.005	5.00-9.00	8(12)-16	2.0-20.0		11.0-17.0	2.2			3										
		10	-0.014	7.00-12.00	10(12)-20	2.0-30.0		13.0-19.0	3	3	M5	676	8									
		12	-0.006	7.00-12.00	12-24	3.0-30.0		13.0-20.0	3.2			10										
		13	-0.017	8.00-13.00	13(14)-26	3.0-30.0		15.0-21.0	3.5			12										
		16	-0.017	13.00-16.00	16-32	5.0-30.0		18.0-24.0	4	4	M8	2803										
		20	-0.027	16.00-20.00	20-40	5.0-30.0		21.0-27.0	5	5.5												

L, B dimensions in () are applicable to Diamond Shape.

Note the strength of under-head part. P1618 Please confirm pilot hole depth on P1618. Holes may go through.

Tightening torque (reference) will