

Locating Pins - Shouldered

Tapered, Threaded

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

Features: Shouldered, Press Fit + Lock Nut Type. Improved maintainability compared to Press Fit Type.

Material No. | Material | Surface Treatment | Hardness | P, L, B Configurable (Round, Diamond)

(1) SKS3 Equivalent | - | Treated Hardness: 60-63HRC | FPTNA, FPTND

(2) SKS3 Equivalent | Hard Chrome Plating | Treated Hardness: 50-55HRC, Plating Hardness: 750HV ~ | GFPTNA, GFPTND

RoHS 10

Step on Machining (Round, Diamond)

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.

P, L, B Configurable

Part Number	Type	D	D Tolerance g6	P	L	B	m	H	(W)	M (Coarse)	*Tightening Torque N·cm	Unit Price	
												Round Shape	Diamond Shape
				0.01mm Increment	1mm Increment	0.1mm Increment						(1) Treated SKS3	(2) Hard SKS3
												FPTNA	GFPTNA
												FPTND	GFPTND
	(Round) FPTNA (Diamond) GFPTNA	3	-0.002 -0.008	2.00-4.00	2-6	2.0-10.0	1	6	1	M 3	98		
		4	-0.004 -0.012	2.00-5.00	2-8	2.0-10.0	1	6	1.2	M 4	225		
		5	-0.004 -0.012	3.00-6.00	3-10	2.0-15.0(10.0)	2	8	1.5	M 5	461		
		6	-0.005 -0.014	4.00-7.00	3-10	2.0-15.0	2	8	1.8	M 6	784		
		8	-0.005 -0.014	5.00-9.00	5-10	2.0-20.0(15.0)	3	11	2.2	M 8	1911		
		10	-0.006 -0.017	7.00-11.00	8-15	3.0-30.0(25.0)	3	13	3	M10	3783		
		12	-0.006 -0.017	7.00-12.00	8-15	3.0-30.0(25.0)	3	13	3.2	M12	6605		
		16	-0.007 -0.020	13.00-16.00	8-20	5.0-30.0	4	19	4	M16	16366		
		20	-0.007 -0.020	16.00-20.00	10-20	5.0-30.0	5	23	5.5	M20	32928		

B dimension in () is applicable to Diamond Shape. *The tightening torque (ref. value) for hardened products is strength class 8.8. (See technical data on P.2365.) Not applicable when using locking materials or lock washers.

Ordering Example: Part Number - P - L - B
FPTNA6 - P4.01 - L8 - B3.5

Alterations: Part Number - P - L - B - (HC, TC, RC, RAC, LAC)
FPTNA6 - P4.01 - L8 - B3.5 - HC7.0

Alterations	Wrench Flats Alteration	Length of Tapered Point	Sphere Tip	Hex Socket Machining	Wrench Hole Machining																																															
Code	HC	TC	RC	RAC	LAC																																															
Spec.	<p>HC = 0.5mm Increment</p> <p>HC > D HC > P</p> <p>(Ordering Code) HC10.0</p>	<p>Changes the m dimension.</p> <p>(Ordering Code) TC8 (1mm increment)</p> <table border="1"> <tr><th>D</th><th>TC</th></tr> <tr><td>6</td><td>3-11</td></tr> <tr><td>8</td><td>4-14</td></tr> <tr><td>10</td><td>4-18</td></tr> <tr><td>12</td><td>4-20</td></tr> </table> <p>B+m ≥ TC+2 (Straight Section min. 2mm)</p> <p>P/2 - TC × tan15° (> 0.27) > 0.5 (Tip Ø1.0min.)</p> <p>B dimension changes when TC is specified. (Changed B dimension = B+m-TC)</p> <p>Combination with RAC or LAC is not available.</p>	D	TC	6	3-11	8	4-14	10	4-18	12	4-20	<p>Changes the relief to R0.5.</p> <p>(Ordering Code) RC</p> <p>Applicable when H-P ≥ 2.</p> <p>Combination with LAC is not available.</p>	<p>Machines hex sockets.</p> <p>(Ordering Code) RAC</p> <table border="1"> <tr><th>D</th><th>Applicable Dimension</th><th>Hex Hole Dimensions</th></tr> <tr><td></td><td>Threaded</td><td>E S</td></tr> <tr><td>8</td><td>6.00-</td><td>3.5- 2 3</td></tr> <tr><td>10</td><td>7.00-</td><td></td></tr> <tr><td>12</td><td>7.00-</td><td></td></tr> <tr><td>13</td><td>13.00-</td><td>4.5- 3 5</td></tr> <tr><td>16</td><td>16.00-</td><td>6.0- 4 6</td></tr> </table> <p>Applicable to P, L, B Dimension Configurable Type only.</p> <p>Diamond Shape is applicable to D ≥ 8, and Diamond Shape is applicable to D ≥ 10.</p> <p>Combination with TC or LAC is not available.</p>	D	Applicable Dimension	Hex Hole Dimensions		Threaded	E S	8	6.00-	3.5- 2 3	10	7.00-		12	7.00-		13	13.00-	4.5- 3 5	16	16.00-	6.0- 4 6	<p>Machines wrench holes.</p> <p>(Ordering Code) LAC</p> <table border="1"> <tr><th>D</th><th>Applicable Dim.</th><th>P</th><th>Q</th></tr> <tr><td></td><td>B</td><td>6.00-9.99</td><td>2</td></tr> <tr><td></td><td></td><td>10.00-16.99</td><td>3.5</td></tr> <tr><td></td><td></td><td>17.00-</td><td>5</td></tr> </table> <p>Round Shape is applicable to D ≥ 8 and P ≥ 6, and Diamond Shape to D ≥ 10 and P ≥ 8.</p> <p>Diamond Shape Hole is drilled on the diamond head vertically but with arbitrary orientation of its diamond surfaces against those of the diamond head.</p> <p>Combination with TC, RC or RAC is not available.</p>	D	Applicable Dim.	P	Q		B	6.00-9.99	2			10.00-16.99	3.5			17.00-	5
D	TC																																																			
6	3-11																																																			
8	4-14																																																			
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		17.00-	5																																																	

Locating Pins - Shouldered

Taper Angle, D and P Selectable Tolerance

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

Features: Shouldered with each dimension configurable.

Material No. | Material | Surface Treatment | Hardness | Type (Press Fit, Tapped, Threaded)

(1) SKS3 Equivalent | - | Treated Hardness: 60-63HRC | KFHA, KFHTA, KFHNA

(2) SKS3 Equivalent | Hard Chrome Plating | Treated Hardness: 50-55HRC, Plating Hardness: 750HV ~ | GKFHA, GKFHTA, GKFHNA

(3) SUS304 | - | - | SKFHA, SKFHTA, SKFHNA

(5) SUS440C or 13Cr stainless | - | Treated Hardness: 50-55HRC | CKFHA, CKFHTA, CKFHNA

RoHS 10

Press Fit, Tapped, Threaded

Tolerance Selection

D or P	Standard Grade				Precision Grade	
	M	P	G	H	S	A B
1.00	+0.008	+0.012	-0.002	0	-	-
3.00	+0.002	+0.006	-0.008	-0.010	-	-
3.01	+0.012	+0.020	-0.004	0	-	-
6.00	+0.004	+0.012	-0.012	-0.012	-	-
6.01	+0.015	+0.024	-0.005	0	+0.005	0
10.00	+0.006	+0.015	-0.014	-0.015	0	-0.005
10.01	+0.018	+0.029	-0.006	0	-	-
18.00	+0.007	+0.018	-0.017	-0.018	-	-
18.01	+0.021	+0.035	-0.007	0	-	-
20.00	+0.008	+0.022	-0.020	-0.021	-	-

The unit price of Precision Type is the price of Standard Type multiplied by 1.1.

SUS440C or 13Cr stainless has an identification groove at any position on D part.

SUS304 may not be polished and may have no centering hole.

P-2EtanA ≥ 0.73 (Tip dia. Ø0.73 or more)

Reference: tan15° = 0.267, tan30° = 0.577, tan45° = 1, tan60° = 1.732

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

Part Number	Type	D Tolerance	P Tolerance	D	P	L	B	E	A Selection	C	H	Unit Price							
												(1) KFHA	(2) GKFHA	(3) SKFHA	(4) CKFHA	(5) CKFHA			
				0.01mm Increment	1mm Increment	0.1mm Increment	0.1mm Increment	0.1mm Increment											
				2	1.00-2.00	2-4	2.0-10.0												
				3	2.00-4.00	3-6	2.0-10.0												
				4	2.00-5.00	4-8	2.0-10.0												
				5	3.00-6.00	5-10	2.0-15.0												
				6	4.00-7.00	5-12	2.0-15.0												
				8	5.00-9.00	5-16	2.0-20.0												
				10	7.00-11.00	8-20	3.0-30.0	0.5-10.0											
				12	7.00-12.00	10-24	3.0-30.0												
				13	8.00-13.00	13-26	5.0-30.0												
				16	13.00-16.00	16-32	5.0-30.0												
				20	16.00-20.00	20-40	5.0-30.0												

Hard Chrome Plating products are not available for * marked Precision Grade (Precision Grade A and B).

Tapped

Part Number	Type	D Tolerance	P Tolerance	D	P	L	B	E	A Selection	H	M (Coarse)	*Tightening Torque N·cm	ℓ	Unit Price					
														(1) KFHTA	(2) GKFHTA	(3) SKFHTA	(4) CKFHTA	(5) CKFHTA	
				6	4.00-7.00	6-12	2.0-15.0												
				8	5.00-9.00	8-16	2.0-20.0												
				10	7.00-12.00	10-20	2.0-30.0	0.5-10.0											
				12	7.00-12.00	12-24	3.0-30.0												
				13	8.00-13.00	13-26	3.0-30.0												
				16	13.00-16.00	16-32	5.0-30.0												
				20	16.00-20.00	20-40	5.0-30.0												

Pins of D dimension with T have one size smaller thread diameter and larger wall thickness. (Actual D dimension is the number without "T").

Note the strength of under-head part. P.1618 Please confirm pilot hole depth on P.1618. Holes may go through.

The tightening torque (ref. value) for hardened products is strength class 8.8. (See technical data on P.2365.) Not applicable when using locking materials or lock washers.

Threaded

Part Number	Type	D Tolerance	P Tolerance	D	P	L	B	E	A Selection	H	M (Coarse)	*Tightening Torque N·cm	ℓ	Unit Price					
														(1) KFHNA	(2) GKFHNA	(3) SKFHNA	(4) CKFHNA	(5) CKFHNA	
				3	2.00-4.00	2-6	2.0-10.0												
				4	2.00-5.00	2-8	2.0-10.0												
				5	3.00-6.00	3-10	2.0-15.0												
				6	4.00-7.00	3-10	2.0-15.0												
				8	5.00-9.00	5-10	2.0-20.0												
				10	7.00-11.00	5-15	3.0-30.0	0.5-10.0											
				12	7.00-12.00	6-15	3.0-30.0												
				16	13.00-16.00	8-20	5.0-30.0												
				20	16.00-20.00	10-20	5.0-30.0												

Hard Chrome Plating products are not available for * marked Precision Grade (Precision Grade A and B).

The tightening torque (ref. value) for hardened products is strength class 8.8. (See technical data on P.2365.) Not applicable when using locking materials or lock washers.

Precision Grade Price

When A, B tolerance is selected, multiply by 1.1 to the above unit price.

Ordering Example: Part Number - P - L - B - E - A
KFHA M S 6 - P6.00 - L6 - B3.0 - E3.0 - A30

Alterations: Part Number - P - L - B - E - A - (HC, RC)
KFHMS6 - P6.00 - L6 - B3.0 - E3.0 - A30 - RC

Alterations	Wrench Flats Alteration	Sphere Tip
Code	HC	RC
Spec.	<p>HC = 0.5mm Increment</p> <p>HC > D HC > P</p> <p>(Ordering Code) HC10.0</p>	<p>Changes the relief to R0.5.</p> <p>(Ordering Code) RC</p> <p>Applicable when H-P ≥ 2.</p>