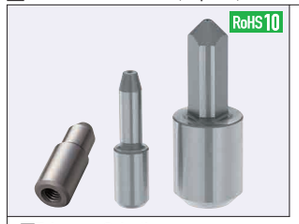
Locating Pins - Small Head, Tapered

Configurable Taper Angle / D and P Selectable Tolerance

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

Features: Small Head, Tapered, with each dimension configurable. The tolerances on both ends and the tapered dimensions are also configurable.



Material No.	M Material	S Surface Treatment	H Hardness	Press Fit Type	Press Fit Shape Code	Tapped Type	Tapped Shape Code
(1)	SKS3 Equivalent	-	Treated Hardness: 60~63HRC	KFS	A (Round)	KFST	A (Round)
(2)	SKS3 Equivalent	Hard Chrome Plating	Treated Hardness: 50~55HRC Plating Hardness: 750HV~	GKFS	A (Round)	GKFST	A (Round)
(4)	SUS304	-	-	SKFS	D (Diamond)	SKFST	D (Diamond)
(5)	SUS304	Hard Chrome Plating	Plating Hardness: 750HV~	HKFS	D (Diamond)	HKFST	D (Diamond)
(6)	SUS440C or 13Cr stainless	-	Treated Hardness: 50~55HRC	CKFS	D (Diamond)	CKFST	D (Diamond)

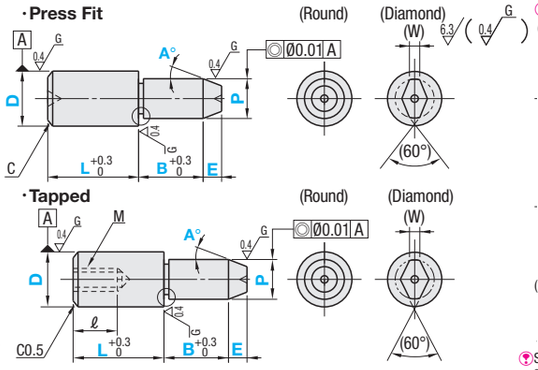
When P<3 a=0.5 d=P-0.1
When P≥3 a=1.0 d=P-0.2

Relief dimension is a reference value.

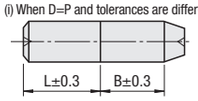
Tolerance Selection

D or P	Standard Grade M	P	G	H	S	Precision Grade A	B
	m6	p6	g6	h7	-	-	-
1.00 ~ 3.00	+0.008 +0.002	+0.012 +0.006	-0.002 -0.008	0 -0.010	0 -0.01	+0.005 0	0 -0.005
3.01 ~ 6.00	+0.012 +0.004	+0.020 +0.012	-0.004 -0.012	0 -0.012			
6.01 ~ 10.00	+0.015 +0.006	+0.024 +0.015	-0.005 -0.014	0 -0.015			
10.01 ~ 18.00	+0.018 +0.007	+0.029 +0.018	-0.006 -0.017	0 -0.018			
18.01 ~ 20.00	+0.021 +0.008	+0.035 +0.022	-0.007 -0.020	0 -0.021			

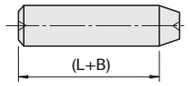
The unit price of Precision Type is the price of Standard Type multiplied by 1.1.
Hard Chrome Plating products are not available with Precision Grade Tolerance.
SUS440C or 13Cr stainless has an identification groove at any position on D part.
Polished, centering hole is sometimes not available for SUS304.
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,
(1) Round Shape has no relief.
(i) When D=P and tolerances are different

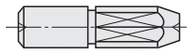


(ii) When D=P and tolerances are the same



(L+B) is general tolerance.

(2) Diamond Shape has a relief.



Straight Tapered Type for which D=P is standardized is also available. P.1689

Press Fit

Part Number Type	Shape	D Tolerance	P Tolerance	D	P 0.01mm Increment	L 1mm Increment	B 0.1mm Increment	E 0.1mm Increment	A Selection	C	(W)	Unit Price Round Shape (1) KFSA	(2) GKFSA	(4) SKFSA	(5) HKFSA	(6) CKFSA	Unit Price Diamond Shape (1) KFSD	(2) GKFSD	(4) SKFSD	(5) HKFSD	(6) CKFSD
KFS GKFS * SKFS HKFS * CKFS	A (Round) D (Diamond)	M P G H *A *B	S M P G H *A *B	2	1.00~2.00	2~5	2.0~10.0	0.5 ~ 10.0	15 30 45 60	0.3	-						-	-	-	-	-
				3	1.00(2.00)~3.00	3~10	2.0~10.0			0.5	1.0										
				4	1.50(2.00)~4.00	4~10	2.0~10.0			1	1.0										
				5	2.00~5.00	5~10	2.0~15.0(10.0)				1.2										
				6	2.00~6.00	5~17	2.0~15.0				1.5										
				8	3.00~8.00	8~21	2.0~20.0(15.0)			1.5	1.8										
				10	3.00~10.00	10~23	3.0~20.0			2	2.2										
				12	5.00~12.00	12~24	3.0~30.0(25.0)				2.5										
				13	6.00~13.00	13~26	5.0~30.0(25.0)				3										
				16	10.00~16.00	16~32	5.0~30.0			3	4										
				20	13.00~20.00	20~40	5.0~30.0				5										

P, B dimensions in ( ) are applicable to Diamond Shape. Hard Chrome Plating products are not available with * marked Precision Grade Tolerance (Precision Grade A and B).

Tapped

Part Number Type	Shape	D Tolerance	P Tolerance	D	P 0.01mm Increment	L 1mm Increment	B 0.1mm Increment	E 0.1mm Increment	A Selection	(W)	M (Coarse)	*Tightening Torque N·cm	ℓ	Unit Price Round Shape (1) KFSTA	(2) GKFSTA	(4) SKFSTA	(5) HKFSTA	(6) CKFSTA	Unit Price Diamond Shape (1) KFSTD	(2) GKFSTD	(4) SKFSTD	(5) HKFSTD	(6) CKFSTD
KFST GKFST SKFST HKFST CKFST	A (Round) D (Diamond)	M P G H	S M P G H	5	3.00~5.00	8~10	2.0~15.0(10.0)	0.5 ~ 10.0	15 30 45 60	1.2	M2	-	3									-	-
				6	4.00~6.00	8(9)~17	2.0~15.0			1.5	M3	98	5										
				6T							M2.6	-	4										
				8	6.00~8.00	11(12)~21	2.0~30.0(15.0)			1.8	M5	461	8										
				8T							M4	225	6										
				10	7.00~10.00	11(12)~23	3.0~30.0(25.0)			2.2	M5	461	8										
				12	7.00~12.00	12~24	3.0~30.0(25.0)			2.5													
				13	8.00~13.00	13(14)~26	5.0~30.0(25.0)			3	M8	1911	10										
				16	10.00~16.00	16~32	5.0~30.0			4			12										
				20	13.00~20.00	20~40	5.0~30.0			5													

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

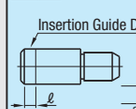
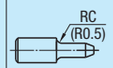
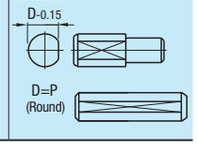
Precision Grade Price
When A, B tolerance is selected, multiply by 1.1 to the above unit price.

Ordering Example

Part Number	-	P	-	L	-	B	-	E	-	A
Type	Shape	D Tol.	P Tolerance	D						
KFS	A	G	S	10	- P8.00	- L10	- B8.0	- E3.0	- A30	

Alterations

Part Number	-	P	-	L	-	B	-	E	-	A	-	(GDC, RC, AC)
KFSAGS10	-	P8.00	-	L10	-	B8.0	-	E3.0	-	A30	-	RC

Alterations	Insertion Guide	Sphere Tip	Air Vent
Code	GDC	RC	AC
Spec.	Adds the insertion guide. Ordering Code GDC	Changes the relief to R0.5 Ordering Code RC	Adds an air vent. Ordering Code AC
	 Insertion Guide D -0.01 -0.03; ℓ: D 3~6 → 1, 8~20 → 2	 RC (R0.5)	 D-0.15; D=P (Round)
	Not applicable when D≤2	Applicable when D-P≥2.	

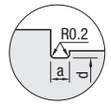
Locating Pins - Large/Small Head, Tapered

Set Screw

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

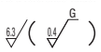
Features: Large Head/Small Head, Tapered, Set Screw Type. Selectable from Circumference Groove, Notched and Set Screw Flat Shapes.

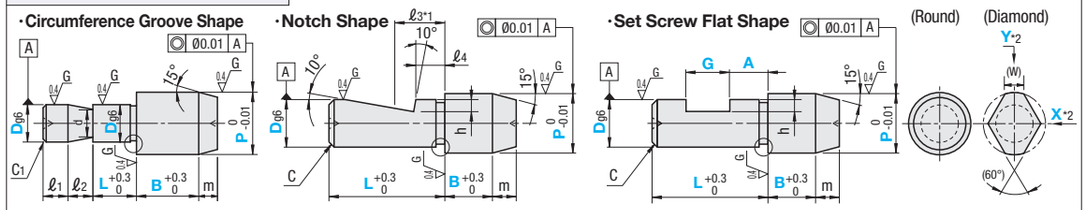
Material No.	M Material	S Surface Treatment	H Hardness	Type: Circumference Groove	Type: Notched	Type: Set Screw Flat	Shape Code
(1)	SKS3 Equivalent	-	Treated Hardness: 60~63HRC	JPGT	JPCT	JPDT	S (Round) D (Diamond)
(2)	SKS3 Equivalent	Hard Chrome Plating	Treated Hardness: 50~55HRC Plating Hardness: 750HV~	GJPGT	GJPCT	GJPDT	
(3)	SUS304	-	-	SJPGT	-	SJPDT	
(4)	SUS304	Hard Chrome Plating	Plating Hardness: 750HV~	HJPGT	HJPCT	-	
(5)	SUS440C or 13Cr stainless	-	Treated Hardness: 50~55HRC	CJPGT	CJPCT	CJPDT	



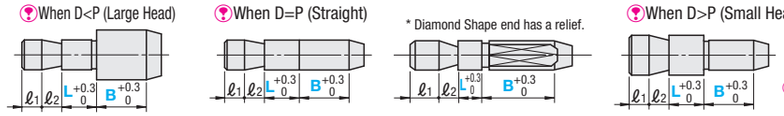
When D (P) ≥ 3 a=1.0 d=D(P)-0.2
When D(P)<3 a=0.5 d=D(P)-0.1

Relief dimension is a reference value.





SUS440C or 13Cr stainless has an identification groove at any position on D part.
*1. ℓ3 is the recommended dimension of the position of set screw tip.
L>A+G+1



*2. Select set screw position X or Y for Notched Diamond Type and Set Screw Flat Diamond Type.

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

Circumference Groove Shape

Part Number Type		D	D dim. Tolerance g6	P 0.01mm Increment	L 1mm Increment	B 0.1mm Increment	d	ℓ1	ℓ2	m	C1	(W) When D<P	(W) When D≥P
JPGT GJPGT SJPGT HJPGT CJPGT	S (Round) D (Diamond)	6	-0.004 -0.012	2.00~10.00	3~12	2.0~20.0	4.5	5	5	3	1	3	1.5
		6S			2~12			2			0.5		
		8	-0.005 -0.014	3.00~13.00	4~16	2.0~20.0(15.0)	6.5	6	6	4	1.5	3.5	1.8
		8S			3~16			3			0.5		
		10		3.00~15.00	5~20	3.0~20.0	8	8	8		2	4	2.2
		10S			4~20			3			0.5		
		12	-0.006 -0.017	5.00~16.00	6~24	3.0~30.0(25.0)	10	8			2	5	2.5
		12S			5~24			4			0.5		
		16		10.00~25.00	8~32	5.0~30.0	14	8		5	3	7	4
		16S			7~32			4			0.5		
		20	-0.007 -0.020	13.00~30.00	10~40		18	8			3	9	5

B dimension in ( ) is applicable to Diamond Shape. Pins having "S" inserted after the D dimension are of space-saving type with mounting parts (L and ℓ1) shortened. (Actual D dimension is the number without "S".)

Notch Shape, Set Screw Flat Shape

Part Number Type (Notched)	(Set Screw Flat)		D	D dim. Tolerance g6	P 0.01mm Increment	L 1mm Increment	B 0.1mm Increment	G 1mm Increment	A 0.1mm Increment	Flat Position	ℓ3	ℓ4	h	C	m	Applicable Set Screw	(W) When D<P	(W) When D≥P
JPCT GJPCT HJPCT CJPCT	JPDT GJPDT SJPDT CJPDT	S (Round) D (Diamond)	6	-0.004 -0.012	5.00~10.00	12~20	5.0~20.0	3~9	2.0~8.0	X Y Applicable to Diamond Shape Type only.	5.5	2.5	1.0	1	3	M4	3	1.5
			8	-0.005	5.00~13.00	14~22	5.0~30.0(15.0)		2.0~12.0		7.5	3.5	1.2	1.5	4	M5	3.5	1.8
			10	-0.014	5.00~15.00	15~25	5.0~30.0(25.0)		2.0~16.0					2		M6	4	2.2
			12	-0.006	5.00~16.00	15~25			2.0~20.0								5	2.5
			16	-0.017	10.00~25.00	15~35	5.0~30.0		2.0~28.0		10.5	5.5	2.0	3	5	M8	7	4
			20	-0.007 -0.020	13.00~30.00	27~40			2.0~36.0		13.5	8.5					9	5

B dimension in ( ) is applicable to Diamond Shape. Applicable set screw sizes in the table are the recommended values for Notched Shape.

Ordering Example

Part Number	-	P	-	L	-	B	-	G	-	A	-	Flat Position
JPGTS10	-	P12.00	-	L6	-	B3.5						
JPDTD10	-	P10.05	-	L22	-	B7.5	-	G5	-	A14.3	-	X

Notch Shape

D	Unit Price Round Shape (1) JPCTS	(2) GJPCTS	(4) HJPCTS	(5) CJPCTS	Unit Price Diamond Shape (1) JPCTD	(2) GJPCTD	(4) HJPCTD	(5) CJPCTD
6								
8								
10								
12								
16								
20								

Set Screw Flat Shape

D	Unit Price Round Shape (1) JPDTS	(2) GJPDTS	(3) SJPDTS	(5) CJPDTS	Unit Price Diamond Shape (1) JPDTD	(2) GJPDTD	(3) SJPDTD	(5) CJPDTD
6								
8								
10								
12								
16								
20								

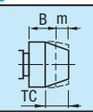
Circumference Groove Shape

D	Unit Price Round Shape (1) JPGTS	(2) GJPGTS	(3) SJPGTS	(4) HJPGTS	(5) CJPGTS	Unit Price Diamond Shape (1) JPGTD	(2) GJPGTD	(3) SJPGTD	(4) HJPGTD	(5) CJPGTD
6										
6S										
8										
8S										
10										
10S										
12										
12S										
16										
16S										
20										

Alterations

Part Number	-	P	-	L	-	B	-	(TC)
JPGTS10	-	P12.00	-	L6	-	B7.5	-	TC6

Alterations	Length of Tapered Point
Code	TC
Spec.	Changes the m dimension. Ordering Code TC8 (1mm increment)
	B+m≥TC+2 (Straight Section min. 2mm)
	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
6	4~13	13	5~22
8	5~16	16	6~23
10	5~22	20	
12			