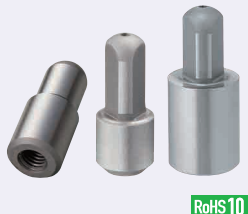


# Locating Pins - Sphere Small Head

D and P Selectable Tolerance

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

Features: Sphere Small Head with each dimension configurable. The tolerances on both ends are also configurable.



Material No.	Material	Surface Treatment	Hardness	Type		Shape Code
				Press Fit	Tapped	
(1)	SKS3 Equivalent	-	Treated Hardness: 60~63HRC	KFQS	KFQST	A (Round)
(2)	SKS3 Equivalent	Hard Chrome Plating	Treated Hardness: 50~55HRC Plating Hardness: 750HV~	GKFQS	GKFQST	D (Diamond)
(3)	SUS304	-	-	SKFQS	SKFQST	
(4)	SUS440C or 13Cr stainless	-	Treated Hardness: 50~55HRC	CKFQS	-	

When P < 3  
a=0.5  
d=P-0.1

When P ≥ 3  
a=1.0  
d=P-0.2

SR=P/2  
No Edge  
L+0.3  
B+0.3

**Press Fit**

**Tapped**

SR=P/2  
No Edge  
L+0.3  
B+0.3

⊙P.1690

### 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	+0.004	+0.006	-0.008	0	-	-
3.01	+0.012	+0.020	-0.004	0	-	-
6.00	+0.006	+0.012	-0.012	0	-	-
6.01	+0.015	+0.024	-0.005	0	+0.005	0
10.00	+0.006	+0.015	-0.014	0	-0.015	0
10.01	+0.018	+0.029	-0.006	0	-0.018	0
16.00	+0.007	+0.018	-0.017	0	-0.018	0
16.01	+0.021	+0.035	-0.007	0	-	-
20.00	+0.008	+0.022	-0.020	0	-0.021	0

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.

The spherical head may be polished.

### Press Fit

Type	Shape	D Tol.	P Tolerance	D	P 0.01mm Increment	L 1mm Increment	B 0.1mm Increment	C	W	Unit Price Round Shape				Unit Price Diamond Shape						
										(1)Treated SKS3	(2)Hard SKS3	(3)SUS304	(4)SUS440C or 13Cr stainless	(1)Treated SKS3	(2)Hard SKS3	(3)SUS304	(4)SUS440C or 13Cr stainless			
KFQS GKFQS* SKFQS CKFQS	A (Round) D (Diamond)	M P G H A *A *B	S M P G H A *A *B	2	1.00~2.00	2~5	2.0~10.0	0.3	-	-	-	-	-	-	-	-	-	-		
				3	1.00~3.00	3~10	2.0~10.0	0.5	1.0	-	-	-	-	-	-	-	-	-	-	
				4	1.50(2.00)~4.00	4~10	2.0~10.0	1	1.2	-	-	-	-	-	-	-	-	-	-	-
				5	2.00~5.00	5~10	2.0~15.0(10.0)	1.5	1.8	-	-	-	-	-	-	-	-	-	-	-
				6	2.00~6.00	5~17	2.0~15.0	1	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	2.5	-	-	-	-	-	-	-	-	-	-	-
				13	6.00~13.00	13~26	5.0~30.0(25.0)	3	3	-	-	-	-	-	-	-	-	-	-	-
				16	10.00~16.00	16~32	5.0~30.0	4	4	-	-	-	-	-	-	-	-	-	-	-
				20	13.00~20.00	20~40	5.0~30.0	5	5	-	-	-	-	-	-	-	-	-	-	-

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

### Tapped

Type	Shape	D Tol.	P Tolerance	D	P 0.01mm Increment	L 1mm Increment	B 0.1mm Increment	W	M (Coarse)	*Tightening Torque N·cm	ℓ	Unit Price Round Shape				Unit Price Diamond Shape				
												(1)Treated SKS3	(2)Hard SKS3	(3)SUS304	(4)SUS440C or 13Cr stainless	(1)Treated SKS3	(2)Hard SKS3	(3)SUS304	(4)SUS440C or 13Cr stainless	
KFQST GKFQST SKFQST	A (Round) D (Diamond)	M P G H	S M P G H	6	4.00~6.00	8(9)~17	2.0~15.0	1.5	M3	98	5	-	-	-	-	-	-	-		
				8	6.00~8.00	11(12)~21	2.0~20.0(15.0)	1.8	-	-	-	-	-	-	-	-	-	-	-	
				10	7.00~10.00	11(12)~23	3.0~20.0	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	-	-	-	-	-	-	-	-	-	-	-	-
				16	10.00~16.00	16~32	5.0~30.0	4	M8	1911	12	-	-	-	-	-	-	-	-	-
				20	13.00~20.00	20~40	5.0~30.0	5	-	-	-	-	-	-	-	-	-	-	-	-

L, B dimensions in ( ) are applicable to Diamond Shape. 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: KFQS A G S 10 - P8.00 - L10 - B8.0

Alterations: KFQSAGS10 - P8.00 - L10 - B8.0 - RC

Alterations	Insertion Guide	Sphere Tip	Air Vent	Wrench Hole Machining
Code	GDC	RC	AC	LAC
Spec.	Adds the insertion guide. (Ordering Code) GDC Insertion Guide D-0.01	Changes the relief to R0.5. (Ordering Code) RC	Adds an air vent. (Ordering Code) AC	Machines wrench holes. (Ordering Code) LAC

⊙Not applicable when D≥2

⊙Applicable when D-P≥2.


⊙Applicable when Q+1.5≤B. ⊙Not applicable to Press Fit Type.

# Locating Pins - Sphere Large/Small Head

Set Screw

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

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



Material No.	Material	Surface Treatment	Hardness	Type			Shape Code
				Circumference Groove	Notched	Set Screw Flat	
(1)	SKS3 Equivalent	-	Treated Hardness: 60~63HRC	JPGQ	JPCQ	JPDQ	S (Round)
(2)	SKS3 Equivalent	Hard Chrome Plating	Treated Hardness: 50~55HRC Plating Hardness: 750HV~	GJPGQ	GJPCQ	-	D (Diamond)
(3)	SUS304	-	-	SJPGQ	SJPCQ	-	
(4)	SUS440C or 13Cr stainless	-	Treated Hardness: 50~55HRC	CJPGQ	-	-	

SR=P/2  
No Edge  
L+0.3  
B+0.3

**Circumference Groove Shape**

**Notch Shape**

**Set Screw Flat Shape**

SR=P/2  
No Edge  
L+0.3  
B+0.3

⊙P.1690

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

\*1. ℓ2 is the recommended dimension of the position of set screw tip.

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

When D < P (Large Head)

When D = P (Straight)

\*Diamond Shape end has a relief.

When D > P (Small Head)

The spherical head may be polished.

Relief dimension is a reference value.

### Circumference Groove Shape

Type	Part Number	D	D dim. Tolerance g6	P	L	B	d	ℓ1	ℓ2	C1	W		
											0.01mm Increment	1mm Increment	0.1mm Increment
JPGQ GJPGQ SJPGQ CJPGQ	S (Round) D (Diamond)	6	-0.004	2.00~10.00	3~12	2.0~20.0	4.5	5	5	1	1	1.5	
		6S	-0.012	-	-	2~12	-	-	-	-	0.5	3	1.5
		8	-0.005	3.00~13.00	4~16	2.0~20.0(15.0)	6.5	6	6	1.5	3.5	1.8	
		8S	-0.014	-	-	3~16	-	-	-	-	0.5	4	2.2
		10	-0.006	5.00~16.00	5~20	3.0~20.0	8	8	8	2	5	2.5	
		10S	-0.017	-	-	4~20	-	-	-	-	0.5	7	4
		12	-0.006	10.00~25.00	6~24	3.0~30.0(25.0)	10	10	10	4	3	4	
		12S	-0.017	-	-	5~24	-	-	-	-	0.5	7	4
		16	-0.007	13.00~30.00	7~32	5.0~30.0	14	14	14	4	3	9	5
		16S	-0.022	-	-	10~40	-	-	-	-	0.5	9	5

### Notch Shape, Set Screw Flat Shape

Type	Part Number	Shape	D	D dim. Tolerance g6	P	L	B	G	A	Flat Position	ℓ3	ℓ4	h	C	W			
															0.01mm Increment	1mm Increment	0.1mm Increment	1mm Increment
(Notched) JPCQ GJPCQ SJPCQ	(Set Screw Flat) JPDQ	S (Round) D (Diamond)	6	-0.004	5.00~10.00	12~20	5.0~20.0(15.0)	-	-	-	X	5.5	2.5	1	1	M4	3	1.5
			6	-0.005	5.00~13.00	14~22	5.0~30.0(15.0)	-	-	-	Y	7.5	3.5	1.2	1.5	M5	3.5	1.8
			8	-0.014	5.00~15.00	15~25	5.0~30.0(15.0)	-	-	-	3-9	10.5	5.5	2	2	M6	4	2.2
			10	-0.006	5.00~16.00	15~25	5.0~30.0(15.0)	-	-	-	Applicable to Diamond Shape Type only.	13.5	8.5	2	3	M8	5	2.5
			12	-0.017	10.00~25.00	24~35	-	-	-	-	-	-	-	-	-	-	7	4
			16	-0.017	10.00~25.00	24~35	-	-	-	-	-	-	-	-	-	-	7	4
			20	-0.022	13.00~30.00	27~40	5.0~30.0	-	-	-	-	-	-	-	-	-	9	5

B dimension in ( ) is applicable to Diamond Shape. Applicable set screws in the table are the recommended sizes for Notch Shape.

### Circumference Groove Shape

D	Unit Price Round Shape				Unit Price Diamond Shape			
	(1)Treated SKS3	(2)Hard SKS3	(3)SUS304	(4)SUS440C or 13Cr stainless	(1)Treated SKS3	(2)Hard SKS3	(3)SUS304	(4)SUS440C or 13Cr stainless
6								
6S								
8								
8S								
10								
10S								
12								
12S								
16								
16S								
20								

### Notch Shape

D	Unit Price Round Shape			Unit Price Diamond Shape		
	(1)Treated SKS3	(2)Hard SKS3	(3)SUS304	(1)Treated SKS3	(2)Hard SKS3	(3)SUS304
6						
8						
10						
12						
16						
20						

### Set Screw Flat Shape

D	Unit Price Round Shape		Unit Price Diamond Shape	
	(1)Treated SKS3	(2)Hard SKS3	(1)Treated SKS3	(2)Hard SKS3
6				
8				
10				
12				
16				
20				

Part Number: JPGQS10 - P12.00 - L6 - B3.5  
SJPCQD8 - P5.05 - L15 - B10.1 - G4 - A8.0 - Y