

Locating Pins - Sphere Large Head

D and P Selectable Tolerance

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

Material No.	Material	Surface Treatment	Hardness	Press Fit	Type Tapped	Threaded	Shape Code
(1)	SKS3 Equivalent	-	Treated Hardness: 60~63HRC	KFQ	KFQT	KFQN	A (Round)
(2)	SKS3 Equivalent	Hard Chrome Plating	Treated Hardness: 50~55HRC	GKFQ	GKFQT	GKFQN (Round only)	
(3)	SUS304	-	-	SKFQ	SKFQT (Round only)	SKFQN	
(4)	SUS304	Hard Chrome Plating	-	HKFQ	-	-	
(5)	SUS440C Equivalent	-	Treated Hardness: 50~55HRC	CKFQ	CKFQT (Round only)	CKFQN	D (Diamond)
(7)	SKS3 Equivalent	Buffing	Treated Hardness: 60~63HRC	MKFQ	-	-	
(8)	SKS3 Equivalent	Hard Chrome Plating + Buffing	Treated Hardness: 50~55HRC	MGKFQ	MGKFQT	MGKFQN	
(9)	SUS440C Equivalent	Buffing	Treated Hardness: 50~55HRC	-	MCKFQT	-	

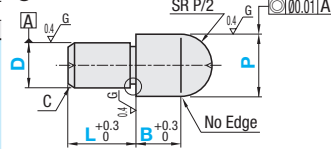
④ Hard Chrome Plating: Plating Thickness 3μm or more, Plating Hardness: 750HV ~

Tolerance Selection

D or P	Standard Grade				Precision Grade		
	M	P	G	H	S	A	B
	m6	p6	g6	h7	-	-	-
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	+0.005	0
10.00	+0.006	+0.015	-0.014	-0.015	-0.01	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			
30.00	+0.008	+0.022	-0.020	-0.021			

④ Precision Type Unit Price: Standard Type Price x 1.1
④ Hard Chrome Plating and buff finished products are not available with Precision Grade Tolerance.
④ SUS440C Equivalent has an identification groove at any position on D part.
④ Polished, centering hole is sometimes not available for SUS304.
④ When the P dimension is small, a centering hole will cause the sphere section to become small.
④ The spherical head may be polished.

Press Fit



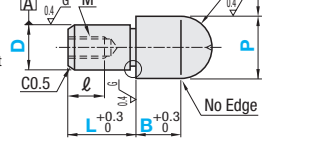
④ When D=P
(1) Round Shape has no relief.
(i) When D=P and tolerances are different

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

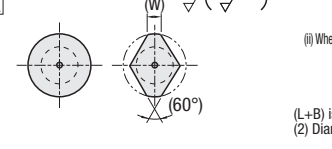
(L+B) is general tolerance.
(2) Diamond Shape has a relief.

④ Straight Sphere Type for which D=P is standardized is also available. ④ P1690

Tapped



Threaded



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

When D≥3
a=1.0
d=D-0.2

④ Relief dimension is a reference value.

Press Fit

Type	Part Number	D Tolerance	P Tolerance	D	P	L	B	C	(W)
KFQ GKFQ* SKFQ HKFQ* CKFQ	A (Round) D (Diamond)	M P G H A B	S M P G H A B	1	1.00~3.00(2.50)	2~3	2.0~5.0	0.1	-
				2	2.00~6.00(4.00)	2~6	2.0~15.0(10.0)	0.5	1.2
				3	3.00~8.00	3~10	2.0~15.0(10.0)	-	1.5
				4	4.00~8.00	3(4)~14	2.0~15.0(10.0)	-	1.8
				5	5.00~10.00	5~15	2.0~15.0(10.0)	-	2.2
				6	6.00~10.00	5~15	2.0~30.0(15.0)	-	3.0
				8	8.50~15.00	5(6)~16	2.0~30.0(15.0)	1.5	3.5
				10	10.00~17.00	5(10)~20	3.0~30.0(25.0)	-	4.0
				12	12.00~18.00	6(10)~24	3.0~30.0(25.0)	-	5.0
				13	13.00~20.00	7(12)~26	5.0~30.0(25.0)	-	5.5
				16	16.00~27.00	8(15)~32	5.0~30.0	-	7.0
				20	20.00~30.00	10(15)~40	5.0~30.0	-	9.0

④ P, L, B dimensions in () are applicable to Diamond Shape. ④ Hard Chrome Plating and buffed products are not available with * marked Precision Grade Tolerance (Precision Grade A and B).

Tapped

Type	Part Number	D Tolerance	P Tolerance	D	P	L	B	(W)	M	* Tightening Torque N·cm	ℓ
KFQT GKFQT SKFQT CKFQT	A (Round) D (Diamond)	M P G H	S M P G H	5	5.00~8.00	5(9)~10	1.5~15.0(12.0)	2.2	M2	-	3
				6	6.00~10.00	6(9)~12	1.5~15.0(12.0)	3	M3	147	5
				8	8.50~15.00	8(12)~16	1.5~30.0(15.0)	3.5	M2.6	-	4
				8T	8.50~15.00	8(12)~16	1.5~30.0(15.0)	3.5	M5	676	8
				10	10.00~17.00	10(12)~20	3.0~30.0(20.0)	4	M4	333	6
				10T	10.00~17.00	10(12)~20	3.0~30.0(20.0)	4	M5	676	8
				12	12.00~18.00	12~24	3.0~30.0(20.0)	5	M4	333	6
				12T	12.00~18.00	12~24	3.0~30.0(20.0)	5	M8	2803	10
				13	13.00~20.00	13(14)~26	5.0~30.0(20.0)	5.5	M6	1156	9
				13T	13.00~20.00	13(14)~26	5.0~30.0(20.0)	5.5	M8	2803	12
				16	16.00~27.00	16~32	5.0~30.0(27.0)	7	M6	1156	9
				16T	16.00~27.00	16~32	5.0~30.0(27.0)	7	M8	2803	12
				20	20.00~30.00	20~40	5.0~30.0	9	M6	1156	9
				20T	20.00~30.00	20~40	5.0~30.0	9	M8	2803	12

④ Pins of D dimension with T have one size smaller thread diameter and larger wall thickness. (Actual D dimension is the number without "T".)
④ L, B dimensions in () are applicable to Diamond Shape. ④ Note the strength of under-head part ④ P1618. ④ Please confirm pilot hole depth on ④ P1618. Holes may go through.

* Tightening torque (reference) is of Tightening Torque Strength Class (10.9) indicated on Technical Data ④ P2365. Not applicable when using locking materials or lock washers.

Threaded

Type	Part Number	D Tolerance	P Tolerance	D	P	L	B	(W)	M	* Tightening Torque N·cm
KFQN GKFQN* SKFQN CKFQN	A (Round) D (Diamond)	M P G H A B	S M P G H A B	3	3.50~8.00	2~6	2.0~10.0	1.5	M 3	147
				4	4.50~8.00	2~8	2.0~10.0	1.8	M 4	333
				5	5.50~8.00	3~10	2.0~15.0(10.0)	2.2	M 5	676
				6	6.50~10.00	3~10	2.0~15.0	3	M 6	1156
				8	8.50~15.00	5~10	2.0~30.0(15.0)	3.5	M 8	2803
				10	11.00~17.00	5~15	3.0~30.0(25.0)	4	M10	5557
				12	13.00~20.00(18.00)	5(8)~15	3.0~30.0(25.0)	5	M12	9702
				16	17.00~27.00	5(8)~20	5.0~30.0	7	M16	24108
				20	22.00~30.00	5(10)~20	5.0~30.0	9	M20	46942

④ P, L, B dimensions in () are applicable to Diamond Shape. ④ Hard Chrome Plating and buffed products are not available with * marked Precision Grade Tolerance (Precision Grade A and B).

* Technical Data ④ P2365 Tightening torque (reference) will be within Strength Class of Tightening Torque on Technical Data in (10.9). Not applicable when using locking materials or lock washers.

④ For products uncovered by e-Catalog Standard, see ④ P.131.

Ordering Example

Type	D Tol.	P Tolerance	D	P	L	B	
KFQ	A	M	S	6	P8.00	L8	B6.0

④ Precision Grade Price
When A and B tolerance is selected, multiply the unit price below by 1.1.

Press Fit

D	Unit Price Round Shape	Unit Price Diamond Shape
1	KFQA	GKFA
2	GKFA	SKFA
3	SKFA	HKFA
4	HKFA	CKFA
5	CKFA	MGKFA
6	MGKFA	MCKFA
8	MCKFA	-
10	-	-
12	-	-
13	-	-
16	-	-
20	-	-

Tapped

D	Unit Price Round Shape	Unit Price Diamond Shape
5	KFQTA	GKFQTA
6	GKFQTA	SKFQTA
6T	SKFQTA	HKFQTA
8	HKFQTA	CKFQTA
8T	CKFQTA	MGKFQTA
10	MGKFQTA	MCKFQTA
10T	MCKFQTA	-
12	-	-
12T	-	-
13	-	-
13T	-	-
16	-	-
16T	-	-
20	-	-
20T	-	-

Threaded

D	Unit Price Round Shape	Unit Price Diamond Shape
3	KFQNA	GKFQNA
4	GKFQNA	SKFQNA
5	SKFQNA	HKFQNA
6	HKFQNA	CKFQNA
8	CKFQNA	MGKFQNA
10	MGKFQNA	MCKFQNA
12	MCKFQNA	-
16	-	-
20	-	-

Alterations

Part Number	P	L	B
KFQAMS6	P8.0	L8	B6.0

Alterations	Insertion Guide	Sphere Tip	Air Vent	Wrench Flats	Wrench Hole Machining
Code	GDC	RC	AC	SC	LAC
Spec.	Adds the insertion guide. (Ordering Code) GDC Insertion Guide D 0.01 Insertion Guide D 0.03	Changes the relief to R0.5. (Ordering Code) RC RC (R0.5)	Adds an air vent. (Ordering Code) AC D-0.15 D-P (Round)	SC = 1mm Increment P-3<SC≤P-1, SC≥D When B≤11, adds wrench flats on the tip. Combination with LAC is not available.	Machines wrench holes. (Ordering Code) LAC Diamond Shape Hole is drilled on the diamond head vertically but with arbitrary orientation of their diamond surfaces against those of the diamond head. For Threaded Type, the alteration is applicable when D≥5. Combination with SC is not available. Not applicable to Press Fit Type. Applicable when Q+1.5≤B.

D	Applicable Dimension
5	5.0~
6	6.0~
8	8.0~
10	10.0~
12	12.0~
13	13.0~
16	16.0~
20	20.0~

Wrench Hole Dimensions	P	Q
5.0~9.99	2	2
10.00~16.99	3	3
17.00~	5	5