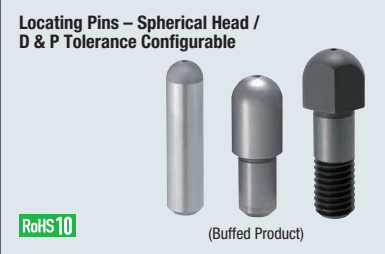


# Locating Pins (Spherical Large Head)

D & P Tolerance Configurable

Ⓛ D=5 is now available for Tapped Type.



## Tolerance Selection

D or P	Standard Grade				Precision Grade	
	M	P	G	H	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		
30.00	+0.008	+0.022	-0.020	-0.021		

⊗ Precision Grade Tolerance is not available for Chrome Plating and Buffered Product Types.  
 Ⓛ 440C or 420 Stainless Steel has an identification groove on D part.  
 Ⓛ Pins with small P dimension will have little sphere remaining due to the centering holes.

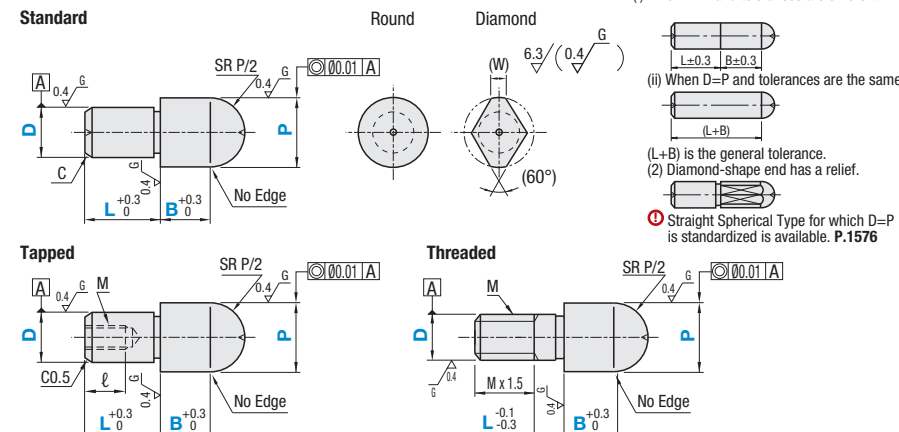
Material No.	Material	Surface Treatment	Hardness	Type			Shape Code
				Standard	Tapped	Threaded	
(1)	O1 Tool Steel Equivalent	—	60-63 HRC min.	KFQ	KFQT	KFQN	A Round
(2)	O1 Tool Steel Equivalent	Chrome Plating	50-55 HRC min. Plating Hardness: 750 HV min.	GKFQ	GKFQT	GKFQN	
(3)	304 Stainless Steel Equivalent	—	—	SKFQ	SKFQT	SKFQN	
(4)	304 Stainless Steel Equivalent	Chrome Plating	Plating Hardness: 750 HV min.	HKFQ	—	—	
(5)	440C or 420 Stainless Steel	—	50-55 HRC min.	CKFQ	CKFQT	CKFQN	D Diamond
(7)	O1 Tool Steel Equivalent	Buffered Surface	60-63 HRC min.	MKFQ	MKFQT	MKFQN	
(8)	O1 Tool Steel Equivalent	Chrome Plating + Buffered Surface	50-55 HRC min. Plating Hardness: 750 HV min.	MGKFQ	MGKFQT	MGKFQN	
(9)	440C or 420 Stainless Steel	Buffered Surface	50-55 HRC min.	MCKFQ	MCKFQT	MCKFQN	

Ⓛ Refer to the price list to select the available combination.

Ⓛ 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 the general tolerance.

(2) Diamond-shape end has a relief.

Ⓛ Straight Spherical Type for which D=P is standardized is available. P.1576

## Standard

Type	Shape	D Tolerance Selection	P Tolerance Selection	D	P			C	(W)	
					0.01 mm Increment	L 1 mm Increment	B 0.1 mm Increment			
KFQ GKFQ* SKFQ HKFQ* CKFQ	A Round	M P G H *A *B	S M P G H *A *B	1	1.00-2.50	2, 3	2.0-5.0	0.1	—	
				2	2.00-4.00	2-6	2.0-10.0	0.5	1.2	
				3	3.00-6.00	3-6	2.0-10.0	1	1.5	
				4	4.00-7.00	4-8	2.0-10.0	1.8		
				5	5.00-8.00	5-10	2.0-10.0	2.2		
				6	6.00-10.00	6-12	2.0-12.0	3.0		
				8	8.00-13.00	8-16	2.0-15.0	3.5		
				10	10.00-15.00	10-20	3.0-20.0	4.0		
	D Diamond	M P G H	S M P G H	S M P G H	12	12.00-16.00	12-24	3.0-20.0	2	5.0
					13	13.00-18.00	13-26	5.0-20.0	2	5.5
					16	16.00-25.00	16-32	5.0-20.0	3	7.0
					20	20.00-30.00	20-40	5.0-20.0	3	9.0

⊗ Precision Grade Tolerance is not available for Chrome Plating and Buffered Product Types.  
 \*(Precision Grade A and B)

## Tapped

Type	Shape	D Tolerance Selection	P Tolerance Selection	D	P			(W)	M (Coarse)	ℓ	
					0.01 mm Increment	L 1 mm Increment	B 0.1 mm Increment				
KFQT GKFQT SKFQT CKFQT	A Round	M P G H	S M P G H	5	5.00-8.00	5 (9)-10	2.0-10.0	2.2	M2	3	
				6	6.00-10.00	6 (9)-12	2.0-12.0	3.0	M3	5	
				6T	6.00-10.00	6 (9)-12	2.0-12.0	3.0	M2.6	4	
				8	8.00-13.00	8 (12)-16	2.0-15.0	3.5	M5	8	
				8T	8.00-13.00	8 (12)-16	2.0-15.0	3.5	M4	6	
				10	10.00-15.00	10 (12)-20	3.0-20.0	4.0	M5	8	
				10T	10.00-15.00	10 (12)-20	3.0-20.0	4.0	M4	6	
				12	12.00-16.00	12-24	3.0-20.0	5.0	M5	8	
	D Diamond	M P G H	S M P G H	S M P G H	12T	12.00-16.00	8 (12)-18	3.0-20.0	5.0	M4	6
					13	13.00-18.00	13 (14)-26	5.0-20.0	5.5	M8	10
					13T	13.00-18.00	8 (14)-20	5.0-20.0	5.5	M6	9
					16	16.00-25.00	16-32	5.0-20.0	7.0	M8	12
					16T	16.00-25.00	10 (14)-24	5.0-20.0	7.0	M6	9
					20	20.00-30.00	20-40	5.0-20.0	9.0	M8	12
					20T	20.00-30.00	12 (18)-30	5.0-20.0	9.0	M6	9

Ⓛ Pins with D value ending in T (ex. 8T) have one size smaller thread diameter and larger wall thickness. (Actual D dimension is the number without "T").

Ⓛ L dimension in (i) is applicable to diamond shape. Ⓛ Note the strength of under-head part. P.1542 Ⓛ Please confirm pilot hole depth on P.1542. Holes may go through.

# Locating Pins (Spherical Large Head)

D & P Tolerance Configurable, continued

## Threaded

Type	Shape	D Tolerance Selection	P Tolerance Selection	D	P			(W)	M
					0.01 mm Increment	L 1 mm Increment	B 0.1 mm Increment		
KFQN GKFQN* SKFQN CKFQN	A Round	M P G H *A *B	S M P G H *A *B	3	3.50-6.00	2-6	2.0-10.0	1.5	M3
				4	4.50-7.00	2-8	2.0-10.0	1.8	M4
				5	5.50-8.00	3-10	2.0-10.0	2.2	M5
				6	6.50-10.00	3-10	2.0-12.0	3.0	M6
				8	9.00-13.00	5-10	2.0-15.0	3.5	M8
				10	11.00-15.00	5-15	3.0-20.0	4.0	M10
				12	13.00-18.00	8-15	3.0-20.0	5.0	M12
				16	17.00-25.00	8-20	5.0-20.0	7.0	M16
				20	22.00-30.00	10-20	5.0-20.0	9.0	M20

⊗ Precision Grade Tolerance is not available for Chrome Plated and Buffered Product Types.  
 \*(Precision Grade A and B)

## Standard

D	Available Types for Round Shape									Available Types for Diamond Shape								
	(1) O1 Tool Steel Hardened KFQA	(2) Hard O1 Tool Steel GKFQA	(3) 304 Stainless Steel SKFQA	(4) Hard 304 Stainless Steel HKFQA	(5) 440C or 420 Stainless Steel CKFQA	(7) O1 Tool Steel Hardened + Buffered MKFQA	(8) Hard O1 Tool Steel + Buffered MGKFQA	(9) 440C or 420 Stainless Steel + Buffered MCKFQA	(1) O1 Tool Steel Hardened KFQD	(2) Hard O1 Tool Steel GKFQD	(3) 304 Stainless Steel SKFQD	(4) Hard 304 Stainless Steel HKFQD	(5) 440C or 420 Stainless Steel CKFQD	(7) O1 Tool Steel Hardened + Buffered MKFQD	(8) Hard O1 Tool Steel + Buffered MGKFQD	(9) 440C or 420 Stainless Steel + Buffered MCKFQD		
1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
12	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
13	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
16	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
20	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		

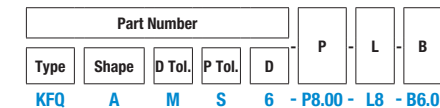
## Tapped

D	Available Types for Round Shape									Available Types for Diamond Shape								
	(1) O1 Tool Steel Hardened KFQTA	(2) Hard O1 Tool Steel GKFQTA	(3) 304 Stainless Steel SKFQTA	(5) 440C or 420 Stainless Steel CKFQTA	(7) O1 Tool Steel Hardened + Buffered MKFQTA	(8) Hard O1 Tool Steel + Buffered MGKFQTA	(9) 440C or 420 Stainless Steel + Buffered MCKFQTA	(1) O1 Tool Steel Hardened KFQTD	(2) Hard O1 Tool Steel GKFQTD	(3) 304 Stainless Steel SKFQTD	(5) 440C or 420 Stainless Steel CKFQTD	(7) O1 Tool Steel Hardened + Buffered MKFQTD	(8) Hard O1 Tool Steel + Buffered MGKFQTD	(9) 440C or 420 Stainless Steel + Buffered MCKFQTD				
5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
6T	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
8T	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
10T	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
12	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
12T	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
13	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
13T	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
16	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
16T	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
20	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
20T	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		

## Threaded

D	Available Types for Round Shape									Available Types for Diamond Shape								
	(1) O1 Tool Steel Hardened KFQNA	(2) Hard O1 Tool Steel GKFQNA	(3) 304 Stainless Steel SKFQNA	(5) 440C or 420 Stainless Steel CKFQNA	(7) O1 Tool Steel Hardened + Buffered MKFQNA	(8) Hard O1 Tool Steel + Buffered MGKFQNA	(9) 440C or 420 Stainless Steel + Buffered MCKFQNA	(1) O1 Tool Steel Hardened KFQND	(2) Hard O1 Tool Steel GKFQND	(3) 304 Stainless Steel SKFQND	(5) 440C or 420 Stainless Steel CKFQND	(7) O1 Tool Steel Hardened + Buffered MKFQND	(8) Hard O1 Tool Steel + Buffered MGKFQND	(9) 440C or 420 Stainless Steel + Buffered MCKFQND				
3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
5	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
6	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
12	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
16	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
20	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		

Part Number Example



Part Number Alterations

Alterations	Insertion Guide Machining	Radius	Air Vent
Code	GDC	RC	AC
Spec.	Adds Insertion Guide. Ordering Code: GDC. Ⓛ Not applicable to D≤2 Ⓛ Not applicable to Threaded Type.		