

Rotary Shafts - D Tolerance h9 (Cold-drawn) / h7 (Ground) / g6 (Ground)

Retaining Ring Grooves on Both Ends with Keyway

Number of keyways can be specified up to 3.



RoHS 10

Type	D	M	S
Standard Retaining Ring	Tolerance	Material	Surface Treatment
(1) SFMKRR SFMKRRA	h9 (Cold-drawn)	S45C	Black Oxide
PSFMKRR PSFMKRRA		Equivalent	Electroless Nickel Plating
SSFMKRR SSFMKRRA		SUS304	-
(2) SFHKRR SFHKRRA	h7 (Ground)	S45C	Black Oxide
PSFHKRR PSFHKRRA		Equivalent	Electroless Nickel Plating
SSFHKRR SSFHKRRA		SUS304	-
(3) SFGKRR SFGKRRA	g6 (Ground)	S45C	Black Oxide
PSFGKRR PSFGKRRA		Equivalent	Electroless Nickel Plating
SSFSGKRR SSFGKRRA		SUS304	-

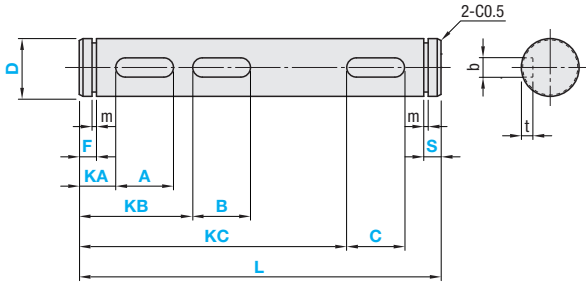
Detailed Keyway Dimensions

Shaft Dia.	Reference Dimension	Tolerance (N9)	Reference Dimension	Tolerance	r
6	2	-0.004	1.2	+0.1	0.08-0.16
8, 10	3	-0.029	1.8		
12	4	0	2.5		
13-17	5	-0.03	3.0	+0.2	0.18-0.25
18-22	6	0	3.5		
25, 30	8	0	4.0	+0.2	0.25-0.4
35	10	-0.036	5.0		
40	12	0	5.0		
50	14	-0.043	5.5		

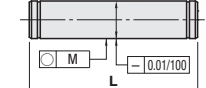
When KA<C, KA+A=L, KB+B=L and L-KC<C, keyway is shaped as shown below.



- Surface roughness of Part D for h9 (Cold-drawn) is $R_a \leq 3.2$. Surface roughness for h7 (Ground) and g6 (Ground) is $R_a \leq 1.6$.
- The number of keyways can be specified within the range between 1 and 3.
- The position of keyways should be specified within inner dimension (L-F-S) of a retaining ring.
- When the clearance between keyways is less than 2mm, these keyways will interfere.



Circularity and Straightness



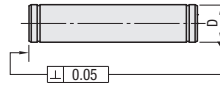
Not applicable to h9 (Cold-drawn).

Circularity of Part D

D	over	or Less	Circularity M
5	13		0.004
13	20		0.005
20	40		0.006
40	50		0.007

Not applicable to h9 (Cold-drawn).

Perpendicularity



Not applicable to h9 (Cold-drawn).

Tolerances of L and Other Dimensions

Dimension	over	or Less	Tolerance
2	6		±0.1
6	30		±0.2
30	120		±0.3
120	400		±0.5
400	1000		±0.8

(1)h9 (Cold-drawn)

Part Number		Dh9	L	F, S	Keyway (1) KA, A	Keyway (2) KB, B	Keyway (3) KC, C	Retaining Ring No. Accessory: Retaining Ring 2 pcs. (Retaining Ring Type only)
Type	Retaining Ring							
SFMKRR	SFMKRA	6	15.0-400.0	2≤F, S<L/2	KA+A≤L-S	KB+B≤L-S	KC+C≤L-S	NETWS5
		8	15.0-500.0					NETWS7
		10	15.0-600.0					STWS10
PSFMKRR	PSFMKRA	12	15.0-700.0	3≤F, S<L/2	KA≥F	KB≥KA+A	KC≥KB+B	STWS12
		15	15.0-800.0					STWS15
		20	30.0-1000.0					STWS20
SSFMKRR	SSFMKRA	25	50.0-1000.0	4≤F, S<L/2	b≤A≤100	b≤B≤100	b≤C≤100	STWS25
		30	60.0-1000.0					STWS30
		35	70.0-1000.0					STWS35

(D6 is not available for SSFMKRR.) (D=6 is not available for SSFMKRA.)

(2)h7 (Ground)

Part Number		Dh7	L	F, S	Keyway (1) KA, A	Keyway (2) KB, B	Keyway (3) KC, C	Retaining Ring No. Accessory: Retaining Ring 2 pcs. (Retaining Ring Type only)
Type	Retaining Ring							
SFHKRR	SFHKRA	6	15.0-400.0	2≤F, S<L/2	KA+A≤L-S	KB+B≤L-S	KC+C≤L-S	NETWS5
		8	15.0-500.0					NETWS7
		10	15.0-600.0					STWS10
PSFHKRR	PSFHKRA	12	15.0-700.0	3≤F, S<L/2	KA≥F	KB≥KA+A	KC≥KB+B	STWS12
		15	15.0-800.0					STWS15
		20	30.0-1000.0					STWS20
SSFHKRR	SSFHKRA	25	50.0-1000.0	4≤F, S<L/2	b≤A≤100	b≤B≤100	b≤C≤100	STWS25
		30	60.0-1000.0					STWS30
		35	70.0-1000.0					STWS35
		40	80.0-1000.0					STWS40
		50	100.0-1000.0					STWS50

(3)g6 (Ground)

Part Number		Dg6	L	F, S	Keyway (1) KA, A	Keyway (2) KB, B	Keyway (3) KC, C	Retaining Ring No. Accessory: Retaining Ring 2 pcs. (Retaining Ring Type only)
Type	Retaining Ring							
SFGKRR	SFGKRA	6	15.0-400.0	2≤F, S<L/2	KA+A≤L-S	KB+B≤L-S	KC+C≤L-S	NETWS5
		8	15.0-500.0					NETWS7
		10	15.0-600.0					STWS10
PSFGKRR	PSFGKRA	12	15.0-700.0	3≤F, S<L/2	KA≥F	KB≥KA+A	KC≥KB+B	STWS12
		15	15.0-800.0					STWS15
		20	30.0-1000.0					STWS20
SSFSGKRR	SSFSGKRA	25	50.0-1000.0	4≤F, S<L/2	b≤A≤100	b≤B≤100	b≤C≤100	STWS25
		30	60.0-1000.0					STWS30
		35	70.0-1000.0					STWS35
		40	80.0-1000.0					STWS40
		50	100.0-1000.0					STWS50

(D13, 16, 18 and 22 are not available for SSFGKRR.) (D13, 16, 18 and 22 are not available for SSFGKRA.)

Ordering Example: Part Number - L - F - S - Keyway (1) KA - A - Keyway (2) KB - B - Keyway (3) KC - C

1 Keyway SFMKRR10 - 325 - F10 - S10 - KA20 - A50
 2 Keyways SFHKRR30 - 300 - F10 - S10 - KA20 - A20 - KB120 - B20
 3 Keyways SFHKRR25 - 350 - F10 - S10 - KA10 - A10 - KB90 - B30 - KC210 - C30