


Rotary Shafts – D Tolerance h9 (Cold-Drawn) / h7 & g6 (Ground)

Both Ends Tapped with Keyways

Number of keyways can be specified up to 3.

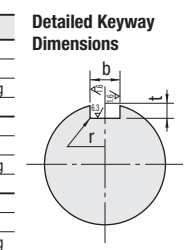
Rotary Shafts – Both Ends Tapped with Keyways



RoHS10


Type	D Tolerance	Material	Surface Treatment
(1) NSFMKRW	h9 (Cold-Drawn)	1045 Carbon Steel or Equivalent	—
SFMKRW			Black Oxide
PSFMKRW			Electroless Nickel Plating
SSFMRKW			—
(2) NSFHKRW	h7 (Ground)	1045 Carbon Steel or Equivalent	—
SFHKRW			Black Oxide
PSFHKRW			Electroless Nickel Plating
SSFHKRW			—
(3) NSFGKRW	g6 (Ground)	1045 Carbon Steel or Equivalent	—
SFGKRW			Black Oxide
PSFGKRW			Electroless Nickel Plating
SSFGKRW			—

Detailed Keyway Dimensions



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

When KA=0, KA+A=L, KB+B=L, KC+C=L, keyway shape is as shown below.



Circularity of Part D

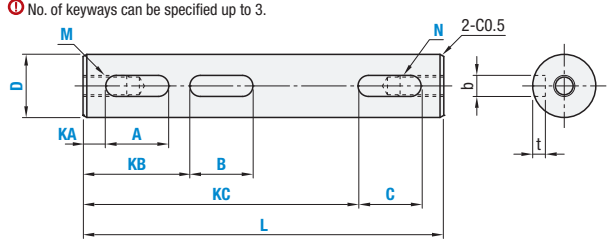
Over	or Less	Circularity M
5	13	0.004
13	20	0.005
20	40	0.006
40	50	0.007

Not applicable to h9 (Cold-Drawn).

Tolerances of L & Other Dimensions

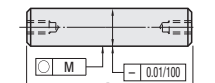
Dimension	or Less	Tolerance
2	6	±0.1
6	30	±0.2
30	120	±0.3
120	400	±0.5
400	800	±0.8

(1) h9 (Cold-Drawn)



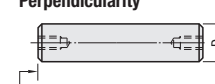
Thread depth of M (Coarse) and N (Coarse) is M x 2 and N x 2 respectively.

Circularity, Straightness



Not applicable to h9 (Cold-Drawn).

Perpendicularity



Not applicable to h9 (Cold-Drawn).

Type	Part Number	D _{h9}	L	M (Coarse) - N (Coarse) Selection	Keyway (1) KA, A	Keyway (2) KB, B	Keyway (3) KC, C
NSFMKRW SFMKRW PSFMKRW SSFMRKW	6	0	15.0-400.0	2.6 (3) (4)	KA+A≤L	KB+B≤L	KC+C≤L
	8	-0.030	15.0-500.0	2.6 (3) (4) (5) (6)			
	10	-0.036	15.0-600.0	3 4 (5) (6)			
	12	0	15.0-700.0	4 5 (6) (8)			
	15	-0.043	15.0-800.0	4 5 6 (8)			
	20	0	30.0-1000.0	4 5 6 8 10			
	25	-0.052	50.0-1000.0	4 5 6 8 10 12			
	30	0	60.0-1000.0	6 8 10 12 16			
	35	-0.062	70.0-1000.0	6 8 10 12 16 20			

M, N Sizes in () can be selected when KA=M x 2, L-KC-CaNx2.

Type	Part Number	D _{h7}	L	M (Coarse) - N (Coarse) Selection	Keyway (1) KA, A	Keyway (2) KB, B	Keyway (3) KC, C
NSFMKRW SFMKRW PSFMKRW SSFMRKW	6	0	15.0-400.0	2.6 (3) (4)	KA+A≤L	KB+B≤L	KC+C≤L
	8	-0.012	15.0-500.0	2.6 (3) (4) (5) (6)			
	10	-0.015	15.0-600.0	3 4 (5) (6)			
	12	0	15.0-700.0	4 5 (6) (8)			
	15	-0.018	15.0-800.0	4 5 6 (8)			
	17	0	30.0-900.0	4 5 6 8 (10) (12)			
	20	0	30.0-1000.0	4 5 6 8 (10) (12) (16)			
	25	-0.021	50.0-1000.0	4 5 6 8 10 12 (16)			
	30	0	60.0-1000.0	6 8 10 12 16			
	35	0	70.0-1000.0	6 8 10 12 16 20			
NSFHKRW SFHKRW PSFHKRW SSFHKRW	12	0	15.0-700.0	4 5 (6) (8)	KA≥0	KB≥KA+A	KC≥KB+B
	15	-0.018	15.0-800.0	4 5 6 (8)			
	17	0	30.0-900.0	4 5 6 8 (10) (12)			
	20	0	30.0-1000.0	4 5 6 8 (10) (12) (16)			
	25	-0.021	50.0-1000.0	4 5 6 8 10 12 (16)			

M, N Sizes in () can be selected when KA=M x 2, L-KC-CaNx2.

Type	Part Number	D _{g6}	L	M (Coarse) - N (Coarse) Selection	Keyway (1) KA, A	Keyway (2) KB, B	Keyway (3) KC, C
NSFGKRW SFGKRW PSFGKRW SSFGKRW	6	-0.004	15.0-400.0	2.6 (3) (4)	KA+A≤L	KB+B≤L	KC+C≤L
	8	-0.012	15.0-500.0	2.6 (3) (4) (5) (6)			
	10	-0.014	15.0-600.0	3 4 (5) (6)			
	12	0	15.0-700.0	4 5 (6) (8)			
	13	-0.006	15.0-700.0	4 5 6 (8)			
	15	-0.006	15.0-800.0	4 5 6 (8)			
	16	-0.017	15.0-900.0	4 5 6 8 (10)			
	17	0	30.0-900.0	4 5 6 8 (10) (12)			
	18	0	30.0-900.0	4 5 6 8 (10) (12)			
	20	0	30.0-1000.0	4 5 6 8 10 (12) (16)			
D13, 16, 18 and 22 are not available for SSFGKRW.	22	-0.007	40.0-1000.0	4 5 6 8 10 12 (16)	KA≥0	KB≥KA+A	KC≥KB+B
	25	-0.020	50.0-1000.0	4 5 6 8 10 12 (16)			
	30	0	60.0-1000.0	6 8 10 12 16			
	35	-0.009	70.0-1000.0	6 8 10 12 16 20			
	40	-0.025	80.0-1000.0	10 12 16 20 24			

M, N Sizes in () can be selected when KA=M x 2, L-KC-CaNx2.

Rotary Shafts – D Tolerance h9 (Cold-Drawn) / h7 & g6 (Ground)

Both Ends Tapped with Keyways, continued

Available Types

Type	NSFMKRW, SFMKRW, PSFMKRW										SSFMRKW																	
	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	L1000.1	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	L1000.1								
6	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
35	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

(2) h7 (Ground) (3) g6 (Ground)

Type	NSFHKRW, NSFGRW, SFHKRW, SFGKRW, PSFHKRW, PSFGKRW										SSFHKRW, SSFGKRW																
	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	L1000.1	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	L1000.1							
6	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	1000.0
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
40	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Part Number Example

Part Number: L - M - N - Keyway (1) - Keyway (2) - Keyway (3)

1 Keyway: SFMKRW10 - 325 - M4 - N4 - KA20 - A50

2 Keyways: SFHKRW30 - 300 - M10 - N10 - KA20 - A50 - KB120 - B20

3 Keyways: SFGKRW25 - 350 - M8 - N8 - KA10 - A60 - KB90 - B30 - KC210 - C30

Part Number Alterations

Part Number: SFHKRW30 - 300 - M10 - N10 - KA20 - A50 - KB120 - B20 - LKC

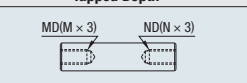
Application Example

Number of keyways can be specified up to 3.



Alterations	Set Screw Flat	2 Set Screw Flats (Angle Specified)	Slit Cam Groove	Wrench Flats	L Dimension Tolerance	Retaining Ring Groove
	Code	FC / WFC	SFC	UC	SC	LKC
Spec.	FC: Adds 1 set screw flat. Ordering Code: FC10-G3 WFC: Adds 2 set screw flats. Ordering Code: WFC10-J3-W10-V3 ① FC, G, WFC, J, W, V = 1 mm Increment ② G, J, V=50 ③ Set screw flat and keyway (s) are added to the same surface.	Adds a set screw flat at any designated angle besides the datum plane (0°). SFC, SG = 1 mm Increment AG = 15° Increment ① SG=50 Ordering Code: SFC10-SG3-AG120	Adds a slit cam groove. UC = 1 mm Increment Ordering Code: UC10 ① UC+ℓ ₁ ≤L ② UC≥1 ③ Not applicable to D13 or more.	Adds a wrench flat. SC = 1 mm Increment Ordering Code: SC+ℓ ₂ ≤L SC=0 or SC≥1 ① A wrench flat is added to the opposite surface of keyway alteration.	Changes L Dimension Tolerance. Ordering Code: LKC ① L<500 L±0.05 L≥500 L±0.1 ② Not applicable to L=800 or more.	Adds a retaining ring groove. (Applicable retaining rings are included.) TA, TB = 1 mm Increment Ordering Code: TA10-TB10 ① 2≤TA, TB≤150 ② For dimensions of the retaining ring groove, please refer to P.853.

Tapped Depth



Code: MD, ND

Spec. To specify, replace M with MD and N with ND.
Ordering Code: MD6-ND6
① Not applicable when M=2, 2.6, 24 or 30.