


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

One End Stepped

Select from h9 (Cold-drawn), h7 (Ground) and g6 (Ground) for your applications. Furthermore, h7 or g6 can be selected for P part tolerance of h9 (Cold-drawn).



Rotary Shafts – One End Stepped

RoHS10

ⓘ Surface roughness of D part for h9 (Cold-Drawn) is $\frac{1}{2}$ for h7 (Ground) and g6 (Ground) is $\frac{1}{5}$

Type	Tolerance		Material	Surface Treatment
	D	P		
(1) NSFRMHP SFRMHP PSFRMHP SSFRMHP	h9 (Cold-Drawn)	h7	1045 Carbon Steel or Equivalent	— Black Oxide Electroless Nickel Plating
			304 Stainless Steel	—
			1045 Carbon Steel or Equivalent	— Black Oxide Electroless Nickel Plating
(2) NSFRMGP SFRMGP PSFRMGP SSFRMGP	g6	g6	1045 Carbon Steel or Equivalent	— Black Oxide Electroless Nickel Plating
			304 Stainless Steel	—
			1045 Carbon Steel or Equivalent	— Black Oxide Electroless Nickel Plating
(3) NSFRHP SFRHP PSFRHP SSFRHP	h7 (Ground)	h7	1045 Carbon Steel or Equivalent	— Black Oxide Electroless Nickel Plating
			304 Stainless Steel	—
			1045 Carbon Steel or Equivalent	— Black Oxide Electroless Nickel Plating
(4) NSFRP SFRP PSFRP SSFRP HFRP	g6 (Ground)	g6	1045 Carbon Steel or Equivalent	— Black Oxide Electroless Nickel Plating
			304 Stainless Steel	—
			4137 Alloy Steel or Equivalent	Black Oxide Hardness 30–35 HRC min.

Tolerance Table

D, P	h9 (Cold-Drawn)	h7 (Ground)	g6 (Ground)
3	0	0	-0.002
3.1–6	-0.025	-0.010	-0.008
6.1–10	-0.030	-0.012	-0.012
10.1–18	0	0	-0.005
18.1–30	-0.043	-0.018	-0.017
30.1–50	0	0	-0.007
	-0.052	-0.021	-0.020
	0	0	-0.009
	-0.062	-0.025	-0.025

Circularity of Part D

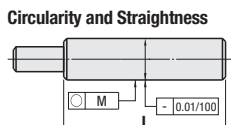
D	Over or Less	Circularity M
5	13	0.004
13	20	0.005
20	40	0.006
40	50	0.007

ⓘ Not applicable to h9 (Cold-Drawn).

Tolerances of L, Y & Other Dimensions

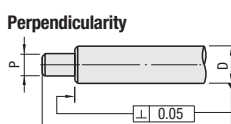
Dimension	Over or Less	Tolerance
2	6	±0.1
6	30	±0.2
30	120	±0.3
120	400	±0.5
400	800	±0.8

Circularity and Straightness



ⓘ Not applicable to h9 (Cold-Drawn).

Perpendicularity



ⓘ Not applicable to h9 (Cold-Drawn).

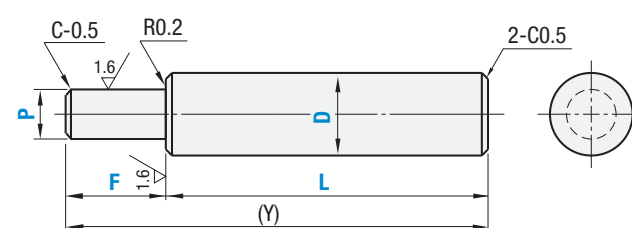


Diagram showing dimensions: C-0.5, R0.2, 1.6, 2-C0.5, P, D, F, L, Y.

(1) D Tolerance h9 (Cold-Drawn) / P Tolerance h7 (2) D Tolerance h9 (Cold-Drawn) / P Tolerance g6

Type	Part Number	0.1 mm Increment		F	P	(Y) max.
		D	L			
(1) D part h9 / P part h7 (2) D part h9 / P part g6	6	15.0–398.0	2 ≤ F ≤ P × 5	3 4 5	5 ≤ P < D	300
	8	15.0–498.0				400
	10	15.0–598.0				500
	12	15.0–698.0				600
	15	15.0–798.0				700
	20	30.0–998.0				800
	25	30.0–998.0				
	30	30.0–998.0				
	35	40.0–998.0				
	40	40.0–998.0				

D6 is not available for SSFRMHP and SSFRMGP.

(3) h7 (Ground) Type

Type	Part Number	0.1 mm Increment		F	P	(Y) max.
		D	L			
NSFRHP SFRHP PSFRHP SSFRHP	6	15.0–398.0	2 ≤ F ≤ P × 5	3 4 5	5 ≤ P < D	300
	8	15.0–498.0				400
	10	15.0–598.0				500
	12	15.0–698.0				600
	15	15.0–798.0				700
	17	30.0–898.0				800
	20	30.0–998.0				
	25	30.0–998.0				
	30	30.0–998.0				
	35	40.0–998.0				
40	40.0–998.0					
50	40.0–998.0					

(4) g6 (Ground) Type

Type	Part Number	0.1 mm Increment		F	P	(Y) max.
		D	L			
NSFRP SFRP PSFRP SSFRP	6	15.0–398.0	2 ≤ F ≤ P × 5	3 4 5	5 ≤ P < D	300
	8	15.0–498.0				400
	10	15.0–598.0				500
	12	15.0–698.0				600
	13	15.0–798.0				700
	*15	15.0–898.0				800
	*16	15.0–998.0				
	*17	30.0–898.0				
	*18	30.0–898.0				
	*20	30.0–998.0				
*22	30.0–998.0					
*25	30.0–998.0					
*30	30.0–998.0					
*35	40.0–998.0					
*40	40.0–998.0					
*50	40.0–998.0					

D13, 16, 18 and 22 are not available for SSFRP.

Only * marked sizes are available.

ⓘ When D-P ≤ 2, chamfer C at the step is 0.2 or less.

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

One End Stepped, continued

Available Types

(1) D tolerance h9 (Cold-Drawn) / P tolerance h7 (2) D tolerance h9 (Cold-drawn) / P tolerance g6

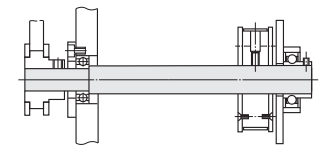
Type	NSFRMHP, NSFRMGP, PSFRMHP, PSFRMGP, SFRMHP, SFRMGP										SSFRMHP, SSFRMGP								Type	HFRP																	
	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	998.0	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1		L800.1	998.0	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1							
D	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	998.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	998.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	998.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	998.0	
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
40	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

(3) h7 (Ground) 4g6 (Ground)

Type	NSFRHP, NSFRP, SFRHP, SFRP, PSFRHP, PSFRP										SSFRHP, SSFRP																									
	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	998.0	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	L800.1	998.0																
D	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	998.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	998.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	800.0	998.0									
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
25	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
40	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
50	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Application Example

Select from h9 (Cold-Drawn), h7 (Ground) and g6 (Ground) for your applications. Furthermore, h7 or g6 can be selected for P part tolerance of h9 (Cold-Drawn).



Part Number Alterations

Part Number - L - F - P - (KC, WKC, FC...etc.)

SSFRMGP10 - 200 - F10 - P5 - SFC10-SG10-AG90

Part Number Example

Part Number - L - F - P

SFRMHP30 - 250 - F30 - P10

SFRHP25 - 200 - F25 - P15

Alterations	Keyway	Keyway on Shaft End	Set Screw Flat	2 Set Screw Flats (Angle Specified)	Slit Cam Groove	Wrench Flats	L Dimension Tolerance - Concentricity
Code	KC / WKC / KZ	PKC	FC, WFC	SFC	UC	SC	LKC, CKC
Spec.	<p>KC: Adds a keyway.</p> <p>Ordering Code: KC50-A10</p> <p>WKC: Adds two keyways.</p> <p>Ordering Code: WKC50-C8-K40-E10</p> <p>Ordering Code: KZ100-Z10</p> <p>ⓘ KC, A, WKC, C, E, K, KZ, Z = 0.1 mm increment</p> <p>ⓘ A, C, E, Z ≤ 100</</p>						