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

One End Stepped and Threaded, One End Tapped

■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).

RoHS 10

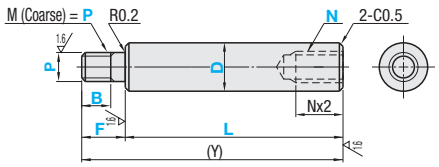
	Type Standard	Type Wrench Flats	Tolerance D	Tolerance P	M Material	S Surface Treatment
(1)	SFRMHD	SFRMHDS	h9 (Cold-drawn)	h7	S45C Equivalent	Black Oxide
	PSFRMHD	PSFRMHDS				Electroless Nickel Plating
	SSFRMHD	SSFRMHDS			SUS304	-
(2)	SFRMGD	SFRMGDS		g6	S45C Equivalent	Black Oxide
	PSFRMGD	PSFRMGDS				Electroless Nickel Plating
	SSFRMGD	SSFRMGDS			SUS304	-
(3)	SFRHD	SFRHDS	h7 (Ground)	h7	S45C Equivalent	Black Oxide
	PSFRHD	PSFRHDS				Electroless Nickel Plating
	SSFRHD	SSFRHDS			SUS304	-
(4)	SFRD	SFRDS	g6 (Ground)	g6	S45C Equivalent	Black Oxide
	PSFRD	PSFRDS				Electroless Nickel Plating
	SSFRD	SSFRDS			SUS304	-

■Tolerance Table

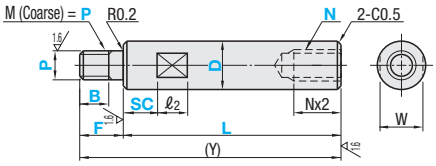
D·P	h9 (Cold-drawn)	h7 (Ground)	g6 (Ground)
3	0 -0.025	0 -0.010	-0.002 -0.008
3.1~6	0 -0.030	0 -0.012	-0.004 -0.012
6.1~10	0 -0.036	0 -0.015	-0.005 -0.014
10.1~18	0 -0.043	0 -0.018	-0.006 -0.017
18.1~30	0 -0.052	0 -0.021	-0.007 -0.020
30.1~50	0 -0.062	0 -0.025	-0.009 -0.025

Surface roughness of Part D for h9 (Cold-drawn) is 6.3. Surface roughness for h7 (Ground) and g6 (Ground) is 1.6.

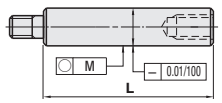
Standard



Wrench Flats



■Circularity and Straightness



Not applicable to h9 (Cold-drawn).

■Circularity of Part D

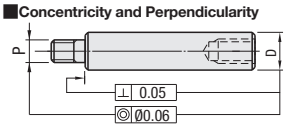
D over	D or Less	Circularity M
5	13	0.004
13	20	0.005
20	40	0.006
40	50	0.007

Not applicable to h9 (Cold-drawn).

■Tolerances of L, Y and Other Dimensions

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

■Concentricity and Perpendicularity



Not applicable to h9 (Cold-drawn).

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

Part Number Type Standard	Type Wrench Flats	D	0.1mm Increment L	F	1mm Increment B	P Selection	N (Coarse) Selection	1mm Increment SC Wrench Flats Type only	W	ℓ2	(Y) max.
(1)D Tol. h9 / P Tol. h7	(1)D Tol. h9 / P Tol. h7	6	15.0~395.0	5≤F≤Px7	When P≤6	3 4 5	2.6 3 4	SC+ℓ2≤L SC=0 or SC≥1 When SC≤Mx3, W-M≥2	5	8	400
SFRMHD	SFRMHDS	8	15.0~495.0		B≤Px3 & B≤F-2	3 4 5 6	2.6 3 4 5 6		7		500
PSFRMHD	PSFRMHDS	10	15.0~595.0			4 5 6 8	3 4 5 6		8		600
SSFRMHD	SSFRMHDS	12	15.0~695.0		When P = 8 or 10	5 6 8 10	4 5 6 8		10	10	700
(D6 is not available for SSFRMHD.)	(D6 is not available for SSFRMHDS.)	15	15.0~795.0		B≤Px3 & B≤F-3	5 6 8 10 12	4 5 6 8 10		13		800
(2)D Tol. h9 / P Tol. g6	(2)D Tol. h9 / P Tol. g6	20	30.0~995.0			5 6 8 10 12 16	4 5 6 8 10 12 16		17		
SFRMGD	SFRMGDS	25	50.0~995.0		When P≥12	5 6 8 10 12 16 20	4 5 6 8 10 12 16		22		1000
PSFRMGD	PSFRMGDS	30	60.0~995.0		B≤Px3 & B≤F-5	8 10 12 16 20 24	6 8 10 12 16 20		27	15	
SSFRMGD	SSFRMGDS	35	70.0~995.0			8 10 12 16 20 24 30	10 12 16 20 24		30		
(D6 is not available for SSFRMGD.)	(D6 is not available for SSFRMGDS.)										

(3)h7 (Ground)

Part Number Type Standard	Type Wrench Flats	D	0.1mm Increment L	F	1mm Increment B	P Selection	N (Coarse) Selection	1mm Increment SC Wrench Flats Type only	W	ℓ2	(Y) max.
		6	15.0~395.0	5≤F≤Px7	When P≤6	3 4 5	2.6 3 4	SC+ℓ2≤L SC=0 or SC≥1 When SC≤Mx3, W-M≥2	5	8	400
		8	15.0~495.0		B≤Px3 & B≤F-2	3 4 5 6	2.6 3 4 5 6		7		500
		10	15.0~595.0			4 5 6 8	3 4 5 6		8		600
SFRHD	SFRHDS	12	15.0~695.0		When P = 8 or 10	5 6 8 10	4 5 6 8		10	10	700
PSFRHD	PSFRHDS	15	15.0~795.0		B≤Px3 & B≤F-3	5 6 8 10 12	4 5 6 8 10		13		800
SSFRHD	SSFRHDS	17	30.0~895.0			5 6 8 10 12	4 5 6 8 10 12		14		900
		20	30.0~995.0			5 6 8 10 12 16	4 5 6 8 10 12 16		17		
		25	50.0~995.0		When P≥12	5 6 8 10 12 16 20	4 5 6 8 10 12 16		22		1000
		30	60.0~995.0		B≤Px3 & B≤F-5	8 10 12 16 20 24	6 8 10 12 16 20		27	15	
		35	70.0~995.0			8 10 12 16 20 24 30	10 12 16 20 24		30		
		40	80.0~995.0			12 16 20 24 30	10 12 16 20 24 30		36	20	
		50	100.0~995.0			16 20 24 30	12 16 20 24 30		41		

(4)g6 (Ground)

Part Number Type Standard	Type Wrench Flats	D	0.1mm Increment L	F	1mm Increment B	P Selection	N (Coarse) Selection	1mm Increment SC Wrench Flats Type only	W	ℓ2	(Y) max.
		6	15.0~395.0	5≤F≤Px7		3 4 5	2.6 3 4	SC+ℓ2≤L SC=0 or SC≥1 When L-SC≤Nx3, W-N≥2, W-N≥2	5	8	400
		8	15.0~495.0			3 4 5 6	2.6 3 4 5 6		7		500
		10	15.0~595.0		When P≤6	4 5 6	3 4 5 6		8		600
		12	15.0~695.0		B≤Px3 & B≤F-2	5 6 8	4 5 6 8		10	10	700
SFRD	SFRDS	13	15.0~695.0			5 6 8	4 5 6 8		11		
PSFRD	PSFRDS	15	15.0~795.0			5 6 8 10	4 5 6 8 10		13		800
SSFRD	SSFRDS	16	15.0~895.0		When P = 8 or 10	5 6 8 10	4 5 6 8 10		14		900
(D13, D16, D18 or D22 is not available for SSFRD.)	(D13, D16, D18 or 22 is not available for SSFRDS.)	17	30.0~895.0		B≤Px3 & B≤F-3	5 6 8 10 12	4 5 6 8 10 12		15		
		18	30.0~895.0			5 6 8 10 12	4 5 6 8 10 12		17		
		20	30.0~995.0			5 6 8 10 12 16	4 5 6 8 10 12 16		19		
		22	30.0~995.0		When P≥12	5 6 8 10 12 16	4 5 6 8 10 12 16		22		1000
		25	50.0~995.0		B≤Px3 & B≤F-5	5 6 8 10 12 16	4 5 6 8 10 12 16		27	15	
		30	60.0~995.0			8 10 12 16 20	8 10 12 16 20		30		
		35	70.0~995.0			8 10 12 16 20 24	8 10 12 16 20 24		36	20	
		40	80.0~995.0			12 16 20 24 30	12 16 20 24 30		41		
		50	100.0~995.0			16 20 24 30	16 20 24 30				

When D-P≤2, chamfer C at the step is 0.2 or less. Overall length requires Nx3≤L.

Ordering Example

Part Number	-	L	-	F	-	B	-	P	-	N	-	SC
(1)D part h9 / P part h7		SFRMHD30	-	250	-	F30	-	B8	-	P10	-	N8	
(3)h7 (Ground)		SFRHDS25	-	200	-	F25	-	B15	-	P12	-	N12	- SC30
(4)g6 (Ground)													