Rotary Shafts – D Tolerance h9 (Cold-drawn) / h7 (Ground) / g6 (Ground)
Both Ends Stepped and Tapped

■Select from h9 (Cold-drawn), h7 (Ground) and g6 (Ground) for your applications.

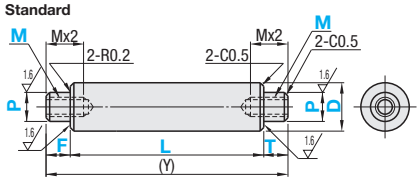
	Type Standard	Type Wrench Flats	Tolerance D	Tolerance P	Material	Surface Treatment
(1)	SFRMHH	SFRMHHS	h9 (Cold-drawn)	h7	S45C Equivalent	Black Oxide
	PSFRMHH	PSFRMHHS				Electroless Nickel Plating
	SSFRMHH	SSFRMHHS			SUS304	-
(2)	SFRMGH	SFRMGHS		g6	S45C Equivalent	Black Oxide
	PSFRMGH	PSFRMGHS				Electroless Nickel Plating
	SSFRMGH	SSFRMGHS			SUS304	-
(3)	SFRHH	SFRHHS	h7 (Ground)	h7	S45C Equivalent	Black Oxide
	PSFRHH	PSFRHHS				Electroless Nickel Plating
	SSFRHH	SSFRHHS			SUS304	-
(4)	SFRH	SFRHS	g6 (Ground)	g6	S45C Equivalent	Black Oxide
	PSFRH	PSFRHS				Electroless Nickel Plating
	SSFRH	SSFRHS			SUS304	-

■Tolerance Table

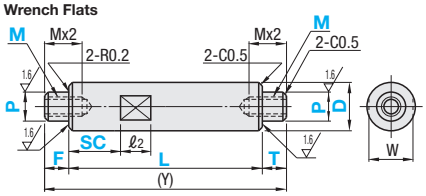
D, P	h9 (Cold-drawn)	h7 (Ground)	g6 (Ground)
3.1~6	0 -0.030	0 -0.012	-0.004 -0.012
6.1~10	0 -0.036	0 -0.015	-0.005 -0.014
10.1~18	0 -0.043	0 -0.018	-0.006 -0.017
18.1~30	0 -0.052	0 -0.021	-0.007 -0.020
30.1~50	0 -0.062	0 -0.025	-0.009 -0.025

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

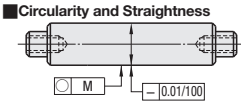
Standard



Wrench Flats



■Circularity and Straightness



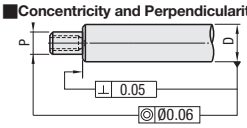
Not applicable to h9 (Cold-drawn).

■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).

■Concentricity and Perpendicularity



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

(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, T	1mm Increment P	M (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	15.0~398.0	2≤F, T≤Px5	5	2.6 3	SC+2≤L SC=0 or SC≥1 (For SC≤Mx3-F (T), W-M≥2)	5	8	400
SFRMHH	SFRMHHS	8	15.0~498.0			2.6 3 4 5		7		500
PSFRMHH	PSFRMHHS	10	15.0~598.0		For M3 ~ M8, M+2≤P<D	3 4 5 6		8		600
SSFRMHH	SSFRMHHS	12	15.0~698.0		M+2≤P<D	4 5 6 8		10	10	700
(D6 is not available for SSFRMHH.)	(D6 is not available for SSFRMHHS.)	15	15.0~798.0		For M10 ~ 16, M+3≤P<D	4 5 6 8 10		13		800
(2)D Tol. h9 / P Tol. g6	(2)D Tol. h9 / P Tol. g6	20	30.0~998.0			4 5 6 8 10 12		17		1000
SFRMGH	SFRMGHS	25	30.0~998.0		For M20 or M24 M+4≤P<D	4 5 6 8 10 12 16		22		
PSFRMGH	PSFRMGHS	30	30.0~998.0			6 8 10 12 16 20		27	15	
SSFRMGH	SSFRMGHS	35	40.0~998.0			6 8 10 12 16 20 24		30		
(D6 is not available for SSFRMGH.)	(D6 is not available for SSFRMGHS.)									

(3)h7 (Ground)

Part Number Type Standard	Type Wrench Flats	D	0.1mm Increment L	F, T	1mm Increment P	M (Coarse) Selection	1mm Increment SC Wrench Flats Type only	W	ℓ2	(Y) max.
		6	15.0~398.0	2≤F, T≤Px5	5	2.6 3	SC+2≤L SC=0 or SC≥1 (For SC≤Mx3-F (T), W-M≥2)	5	8	400
		8	15.0~498.0			2.6 3 4 5		7		500
		10	15.0~598.0		For M3 ~ M8, M+2≤P<D	3 4 5 6		8		600
SFRHH	SFRHHS	12	15.0~698.0			4 5 6 8		10	10	700
		15	15.0~798.0		For M10 ~ 16, M+3≤P<D	4 5 6 8 10		13		800
PSFRHH	PSFRHHS	17	30.0~898.0			4 5 6 8 10 12		14		900
		20	30.0~998.0			4 5 6 8 10 12		17		
SSFRHH	SSFRHHS	25	30.0~998.0		For M20 or M24 M+4≤P<D	4 5 6 8 10 12 16		22		
		30	30.0~998.0			6 8 10 12 16 20		27	15	1000
		35	40.0~998.0		For M30 M+5≤P<D	6 8 10 12 16 20 24		30		
		40	40.0~998.0			10 12 16 20 24 30		36	20	
		50	40.0~998.0			12 16 20 24 30		41		

(4)g6 (Ground)

Part Number Type Standard	Type Wrench Flats	D	0.1mm Increment L	F, T	1mm Increment P	M (Coarse) Selection	1mm Increment SC Wrench Flats Type only	W	ℓ2	(Y) max.
		6	15.0~398.0	2≤F, T≤Px5	5	2.6 3	SC+2≤L SC=0 or SC≥1 (For SC≤Mx3-F (T), W-M≥2)	5	8	400
		8	15.0~498.0			2.6 3 4 5		7		500
		10	15.0~598.0			4 5 6		8		600
		12	15.0~698.0		For M3 ~ M8, M+2≤P<D	4 5 6 8		10	10	700
SFRH	SFRHS	13	15.0~698.0			4 5 6 8		11		
		15	15.0~798.0			4 5 6 8 10		13		800
PSFRH	PSFRHS	16	15.0~898.0		For M10 ~ 16, M+3≤P<D	4 5 6 8 10		14		900
		17	30.0~898.0			4 5 6 8 10 12		15		
SSFRH	SSFRHS	18	30.0~898.0			4 5 6 8 10 12		17		
(D13, D16, D18 or D22 is not available for SSFRH.)	(D13, D16, D18 or D22 is not available for SSFRHS.)	20	30.0~998.0		For M20 or M24 M+4≤P<D	4 5 6 8 10 12		19		
		22	30.0~998.0			4 5 6 8 10 12 16		22		
		25	30.0~998.0			4 5 6 8 10 12 16		27	15	1000
		30	30.0~998.0		For M30 M+5≤P<D	6 8 10 12 16 20		30		
		35	40.0~998.0			6 8 10 12 16 20 24		36	20	
		40	40.0~998.0			10 12 16 20 24 30		41		
		50	40.0~998.0			12 16 20 24 30				

When D - P (Q) ≤ 2, chamfer C at the step is 0.2 or less. Mx4≤(Y) is required for (Y). When (Y) is less than the depth of tapped thread, the pilot hole might go through.

Ordering Example

	Part Number	-	L	-	F	-	P	-	T	-	M	-	SC
(1)D part h9 / P part h7	SFRMHH30	-	250	-	F30	-	P28	-	T30	-	M20		
(3)h7 (Ground) with Wrench Flat	SSFRHHS20	-	200	-	F25	-	P18	-	T25	-	M10	-	SC20