

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

One End Stepped, Both Ends 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

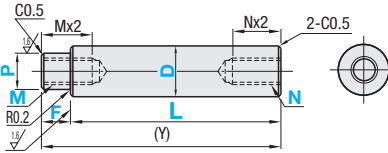
Type	Tolerance		Material	Surface Treatment
	Standard	Wrench Flats		
(1) SFRMHA PSFRMHA SSFRMHA	SFRMHAS	SFRMHAS	S45C Equivalent	Black Oxide Electroless Nickel Plating
	SFRMGAS	SFRMGAS	S45C Equivalent	Black Oxide Electroless Nickel Plating
	SFRHGA	SFRHGA	SUS304	-
(2) PSFRMGA SSFRMGA	PSFRHAS	PSFRHAS	S45C Equivalent	Black Oxide Electroless Nickel Plating
	PSFRHGA	PSFRHGA	S45C Equivalent	Black Oxide Electroless Nickel Plating
	SSFRHAS	SSFRHAS	SUS304	-
(3) SFRHA PSFRHA SSFRHA	SFRHAS	SFRHAS	S45C Equivalent	Black Oxide Electroless Nickel Plating
	PSFRHAS	PSFRHAS	S45C Equivalent	Black Oxide Electroless Nickel Plating
	SSFRHAS	SSFRHAS	SUS304	-
(4) SFRGA PSFRGA SSFRGA	SFRGAS	SFRGAS	S45C Equivalent	Black Oxide Electroless Nickel Plating
	PSFRGAS	PSFRGAS	S45C Equivalent	Black Oxide Electroless Nickel Plating
	SSFRGAS	SSFRGAS	SUS304	-

Tolerance Table

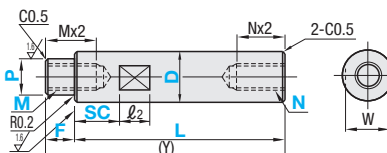
D, P	h9 (Cold-drawn)	h7 (Ground)	g6 (Ground)
3.1-6	0 -0.030	0 -0.012	-0.004 -0.012
6.1-10	0 -0.036	0 -0.015	-0.005 -0.014
10.1-18	0 -0.043	0 -0.018	-0.006 -0.017
18.1-30	0 -0.052	0 -0.021	-0.007 -0.020
30.1-50	0 -0.062	0 -0.025	-0.009 -0.025

Surface roughness of Part D for h9 (Cold-drawn) is $\frac{6.3}{\sqrt{}}$.
Surface roughness for h7 (Ground) and g6 (Ground) is $\frac{1.6}{\sqrt{}}$.

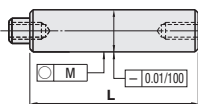
Standard



Wrench Flats



Circularity and Straightness



Not applicable to h9 (Cold-drawn).

Circularity of Part D

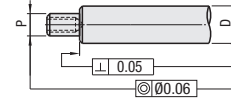
D	over	or Less	Circularity M
5	13		0.004
8	20		0.005
10	20		0.006
12	40		0.007

Not applicable to h9 (Cold-drawn).

Tolerances of L, Y 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

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		0.1mm Increment			1mm Increment	M (Coarse) Selection	N (Coarse) Selection	1mm Increment SC	W	ℓ ₂	(Y) max.	
Standard	Wrench Flats	D	L	F	P			Wrench Flats Type only				
(1) D Tol. h9 / P Tol. h7 SFRMHA PSFRMHA SSFRMHA	(1) D Tol. h9 / P Tol. h7 SFRMHAS PSFRMHAS SSFRMHAS	6	15.0-398.0	2≤F≤P×5	5	2 3	2 3	SC+ℓ ₂ ≤L SC=0 or SC≥1	5	7	400 500 600	
		8	15.0-498.0			2 3 4 5	2 3 4 5 6		8	8	400	
		10	15.0-598.0			3 4 5 6	3 4 5 6		10	8	600	
		12	15.0-698.0			4 5 6 8	4 5 6 8		12	10	700	
		15	15.0-798.0			4 5 6 8 10	4 5 6 8 10		15	13	800	
(2) D Tol. h9 / P Tol. g6 SFRMGA PSFRMGA SSFRMGA	(2) D Tol. h9 / P Tol. g6 SFRMGAS PSFRMGAS SSFRMGAS	20	30.0-998.0			M+2≤P<D For M3 - M8, M+2≤P<D	4 5 6 8 10 12		4 5 6 8 10 12 16	20	10	1000
		25	50.0-998.0			M+3≤P<D For M10 - 16, M+3≤P<D	4 5 6 8 10 12		4 5 6 8 10 12 16	25	17	
		30	60.0-998.0			M+4≤P<D For M20 or M24, M+4≤P<D	4 5 6 8 10 12 16		4 5 6 8 10 12 16	30	27	
		35	70.0-998.0			M+5≤P<D For M30, M+5≤P<D	6 8 10 12 16 20		6 8 10 12 16 20	35	30	

(3) h7 (Ground)

Part Number		0.1mm Increment			1mm Increment	M (Coarse) Selection	N (Coarse) Selection	1mm Increment SC	W	ℓ ₂	(Y) max.
Standard	Wrench Flats	D	L	F	P			Wrench Flats Type only			
SFRHA PSFRHA SSFRHA	SFRHAS PSFRHAS SSFRHAS	6	15.0-398.0	2≤F≤P×5	5	2 3	2 3	SC+ℓ ₂ ≤L SC=0 or SC≥1	5	7	400 500 600
		8	15.0-498.0			2 3 4 5	2 3 4 5 6		8	8	400
		10	15.0-598.0			3 4 5 6	3 4 5 6		10	8	600
		12	15.0-698.0			4 5 6 8	4 5 6 8		12	10	700
		15	15.0-798.0			4 5 6 8 10	4 5 6 8 10		15	13	800
		17	30.0-998.0			4 5 6 8 10 12	4 5 6 8 10 12		17	14	900
		20	30.0-998.0			4 5 6 8 10 12	4 5 6 8 10 12 16		20	17	
		25	50.0-998.0			4 5 6 8 10 12 16	4 5 6 8 10 12 16		25	22	
		30	60.0-998.0			6 8 10 12 16 20	6 8 10 12 16 20		30	27	
		35	70.0-998.0			6 8 10 12 16 20 24	6 8 10 12 16 20 24		35	30	

(4) g6 (Ground)

Part Number		0.1mm Increment			1mm Increment	M (Coarse) Selection	N (Coarse) Selection	1mm Increment SC	W	ℓ ₂	(Y) max.
Standard	Wrench Flats	D	L	F	P			Wrench Flats Type only			
SFRGA PSFRGA SSFRGA	SFRGAS PSFRGAS SSFRGAS	6	15.0-398.0	2≤F≤P×5	5	2 3	2 3	SC+ℓ ₂ ≤L SC=0 or SC≥1	5	7	400 500 600
		8	15.0-498.0			2 3 4 5	2 3 4 5 6		8	8	400
		10	15.0-598.0			3 4 5 6	3 4 5 6		10	8	600
		12	15.0-698.0			4 5 6 8	4 5 6 8		12	10	700
		15	15.0-798.0			4 5 6 8 10	4 5 6 8 10		15	13	800
		17	30.0-998.0			4 5 6 8 10 12	4 5 6 8 10 12		17	14	900
		20	30.0-998.0			4 5 6 8 10 12	4 5 6 8 10 12 16		20	17	
		25	50.0-998.0			4 5 6 8 10 12 16	4 5 6 8 10 12 16		25	22	
		30	60.0-998.0			6 8 10 12 16 20	6 8 10 12 16 20		30	27	
		35	70.0-998.0			6 8 10 12 16 20 24	6 8 10 12 16 20 24		35	30	

When D-P≤2, chamfer C at the step is 0.2 or less. Overall length requires Nx3≤L. Mx2+Nx2≤(Y) is required for (Y).

Ordering Example

Part Number	-	L	-	F	-	P	-	M	-	N	-	SC
(1) D part h9 / P part h7	SFRMHA30	-	250	-	F30	-	P16	-	M10	-	N10	
(3) h7 (Ground) with Wrench Flat	SFRMHAS25	-	200	-	F40	-	P20	-	M10	-	N10	- SC30