


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

Retaining Ring Grooves on Both Ends

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



RoHS 10

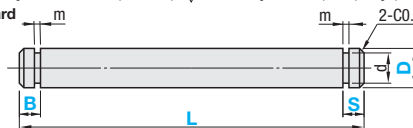
	Type			D Tolerance	Material	Surface Treatment
	Without Retaining Ring	With Retaining Ring	Retaining Ring Groove Outside Datum			
(1)	SFMRR	SFMRRR	-	h9 (Cold-drawn)	S45C	Black Oxide
	PSFMRR	PSFMRRR	-		Equivalent	Electroless Nickel Plating
	SSFMR	SSFMRRA	-		SUS304	-
(2)	SFHRR	SFHRRR	-	h7 (Ground)	S45C	Black Oxide
	PSFHRR	PSFHRRR	-		Equivalent	Electroless Nickel Plating
	SSFHRR	SSFHRRR	-		SUS304	-
(3)	SFRR	SFRRR	SFRRGA	g6 (Ground)	S45C	Black Oxide
	PSFRR	PSFRRR	PSFRRGA		Equivalent	Electroless Nickel Plating
	SSFRR	SSFRRR	SSFRRGA		SUS304	-
	-	HFRRR	-		SCM435	Black Oxide
	-	PHFRRR	-		Hardness: 30 - 35HRC	Electroless Nickel Plating

Tolerance Table

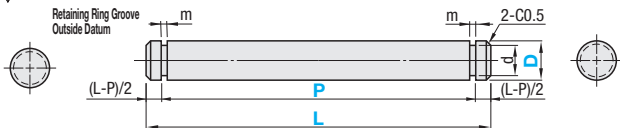
D	h9 (Cold-drawn)	h7 (Ground)	g6 (Ground)
2, 2.5, 3	-	-	-0.002 -0.008
4-6	0 -0.030	0 -0.012	-0.004 -0.012
8, 10	0 -0.036	0 -0.015	-0.005 -0.014
12-18	0 -0.043	0 -0.018	-0.006 -0.017
20-30	0 -0.052	0 -0.021	-0.007 -0.020
35-50	0 -0.062	0 -0.025	-0.009 -0.025

For Retaining Ring Groove Dimensions **P844**

Surface roughness of Part D for h9 (Cold-drawn) is $\sqrt{1.6}$. Surface roughness for h7 (Ground) and g6 (Ground) is $\sqrt{0.8}$.

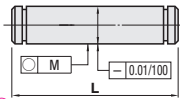


Standard



Retaining Ring Groove Outside Datum

Circularity and Straightness



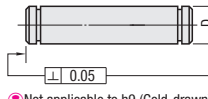
Straightness of size D2, D2.5 is 0.1/100.
Not applicable to h9 (Cold-drawn).

Circularity of Part D

D	over	or Less	Circularity M
1	2.5		0.006
3	13		0.004
13	20		0.005
20	40		0.006
40	50		0.007

Not applicable to h9 (Cold-drawn).

Perpendicularity



Not applicable to h9 (Cold-drawn).

Tolerances of L 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

(1)h9 (Cold-drawn)

Part Number		D	L	B, S	Retaining Ring No.		
Type	Standard		1mm Increment	0.1mm Increment	Accessory: Retaining Ring 2 pcs. (Retaining Ring Type only)		
Without Retaining Ring	With Retaining Ring	3	15.0-150.0	2≤B, S<L/2	NETWS2		
		4	15.0-200.0		NETWS3		
		5	15.0-250.0		NETWS4		
		6	15.0-400.0		NETWS5		
		SFMRR	SFMRRR	8	15.0-500.0	3≤B, S<L/2	NETWS7
		PSFMRR	PSFMRRR	10	15.0-600.0	4≤B, S<L/2	STWS10
		SSFMR	SSFMRRA	12	15.0-700.0		STWS12
		(D6 is not available for SSFMRR.)	(D6 is not available for SSFMRRR.)	15	15.0-800.0		STWS15
		20	30.0-1000.0	STWS20			
		25	50.0-1000.0	STWS25			
30	60.0-1000.0	STWS30					
35	70.0-1000.0	5≤B, S<L/2	STWS35				
40	80.0-1000.0	STWS40					
50	100.0-1000.0	STWS50					

(2)h7 (Ground)

Part Number		D	L	B, S	Retaining Ring No.		
Type	Standard		1mm Increment	0.1mm Increment	Accessory: Retaining Ring 2 pcs. (Retaining Ring Type only)		
Without Retaining Ring	With Retaining Ring	6	15.0-400.0	2≤B, S<L/2	NETWS5		
		8	15.0-500.0		NETWS7		
		10	15.0-600.0		STWS10		
		SFHRR	SFHRRR	12	15.0-700.0	3≤B, S<L/2	STWS12
		PSFHRR	PSFHRRR	15	15.0-800.0		STWS15
		SSFHRR	SSFHRRR	17	30.0-900.0		STWS17
		20	30.0-1000.0	STWS20			
		25	80.0-1000.0	STWS25			
		30	80.0-1000.0	4≤B, S<L/2	STWS30		
		35	80.0-1000.0		STWS35		
40	80.0-1000.0	STWS40					
50	100.0-1000.0	STWS50					

(3)g6 (Ground)

Part Number		D	L	B, S	P	m	d	Retaining Ring No.					
Type	Standard		1mm Increment	0.1mm Increment	0.1mm Increment	Tolerance	Tolerance	Accessory: Retaining Ring 2 pcs. (Retaining Ring Type only)					
Without Retaining Ring	With Retaining Ring	With Retaining Ring	2	15.0-50.0	2≤B, S<L/2	3≤P≤L-4	0.4	1.2	NETWS1.2				
			2.5	15.0-50.0			+0.05	1.5	NETWS1.5				
			3	15.0-150.0			0	2	NETWS2				
			4	15.0-200.0			+0.1	3	NETWS3				
			5	15.0-250.0				4	+0.075	NETWS4			
			6	15.0-400.0				5	0	NETWS5			
			8	15.0-500.0				7	+0.09	NETWS7			
			PSFRR	PSFRRR			10	15.0-600.0	3≤B, S<L/2	5≤P≤L-5	0.9	9.6	STWS10
			SSFRR	SSFRRR			12	15.0-700.0			+0.14	11.5	STWS12
			(D13, D16, D18 or D22 is not available for SSFRR.)	(D13, D16, D18 or D22 is not available for SSFRRR.)			13	15.0-700.0				12.4	STWS13
			*HFRRR	(Only * marked sizes are available.)	*15	15.0-800.0	14.3	0				STWS15	
			*PHFRRR	(Only * marked sizes are available.)	16	15.0-900.0	15.2	-0.11				STWS16	
			17	30.0-900.0	16.2	STWS17							
			18	30.0-900.0	17	STWS18							
			20	30.0-1000.0	19	STWS20							
			22	70.0-1000.0	21	0	STWS22						
			25	80.0-1000.0	23.9	-0.21	STWS25						
			30	80.0-1000.0	28.6	STWS30							
			35	80.0-1000.0	33	STWS35							
			40	80.0-1000.0	38	0	STWS40						
50	100.0-1000.0	47	-0.25	STWS50									

For NETWS and STWS retaining rings details, see P2-293. The material of retaining ring is SUS304. For HFRRR, PHFRRR, the upper limit for L dim. is 800.

Ordering Example

Part Number	L	B	S	P
SFMRR30	150	B6	S6	
SFHRR40	230	B10	S10	
SFRRGA20	180			P150

1-849