

Rotary Shafts

MISUMI Round Bar Lineup

For shafts intended for **rotary motion**.

Product Name Rotary Shafts (Rotary Motion Applications)

App. Example

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Shaft Dia. Tolerance h7/g6/h9

Material/Hardness EN 1.1191 Equiv. EN 1.4301 Equiv. EN 1.7220 Equiv.

Related Components Bearing Pulley Coupling

When shafts for linear motion are required

Product Name Shafts (Linear Motion Applications)

App. Example

Shaft Dia. Tolerance g6/h8/h5

Material/Hardness EN 1.3505 Equiv. 58HRC~ EN 1.1191 Equiv. or EN 1.4301 Equiv. EN 1.4125 Equiv. 55HRC~

Related Components Linear Bearing Shaft Support Oil Free Bearing

When posts are needed

Product Name Posts (Post Applications)

App. Example

Shaft Dia. Tolerance 0 -0.1

Material/Hardness EN 1.0038 Equiv. EN 1.4301 Equiv.

Related Components Strut Clamp Stand Shaft Collar

When material are needed

Product Name Round Bar (Material)

Product Photo

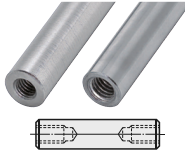
Shaft Dia. Tolerance 0 -0.1 0 -0.2 ±0.1-0.4

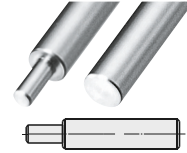
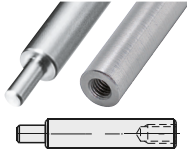
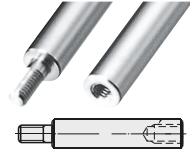
Material/Hardness Stainless Steel, Aluminum, Carbon Steel, Chrome, Molybdenum Steel, Copper

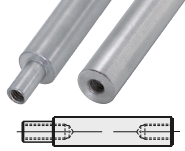
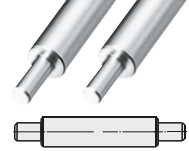
Related Components Unfinished material sales For your various application requirements.

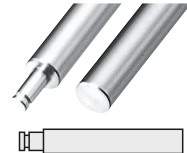
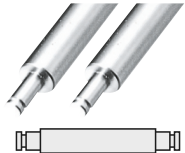
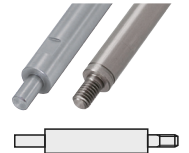
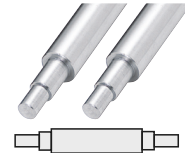
Rotary Shafts

Rotary Shafts				
	Product Name Straight	Straight with Keyway	Retaining Ring Grooves on Both Ends	Retaining Ring Grooves on Both Ends with Keyway
Page	823	825	827	829

			
One End Tapped	One End Tapped with Keyway	Both Ends Tapped	Both Ends Tapped with Keyways
831	833	835	837

			
One End Stepped	One End Stepped, One End Tapped	One End Stepped, One End Threaded	One End Stepped and Threaded, One End Tapped
839	841	843	845

				
One End Stepped and Tapped	One End Stepped, Both Ends Tapped	Both Ends Stepped	Both Ends Stepped and Threaded	Both Ends Stepped and Tapped
847	849	851	853	855

				
One End Stepped with Retaining Ring Groove	Both Ends Stepped with Retaining Ring Grooves	Both Ends Stepped, One End Threaded	Both Ends Stepped, One End Threaded, One End Tapped	Both Ends Double Stepped
857	857	859	859	861

Hollow Rotary Shafts - Lightweight, Straight 862	Rotary Shafts - D-Cut 863	Shafts for Tension - Pull, Retaining Ring Groove 864	Push / Pull 865	Rotary Shafts - End Shape Selectable 867	
Driving Shafts - Straight 869	Driving Shafts - One End Stepped 871	Both Ends Stepped 873	One End Stepped One End Double Stepped 875	Shouldered 877	One End Stepped with Shoulder 879

D Tolerance h9 (Cold-drawn) / h7 (Ground)

Traditional Type (D Tolerance g6), Economy type h9 (Cold-drawn) or standard grade h7 (Ground) is selectable depending on intended use.

Standard Model: SFMR

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Rotary Shafts with Keyways have been standardized.

Number of keyways can be specified up to 3.

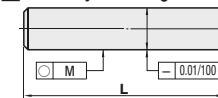
Standard Model: SFMKR

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Accuracy Standards of Rotary Shafts and Driving Shafts Values in () are for driving shafts.

⚠ Not applicable to h9 (Cold-drawn).

Circularity and Straightness



⚠ Straightness of size D2, D2.5 is 0.1/100.

Circularity of Part D

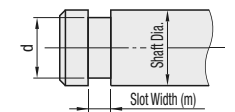
D over	2	2.5	3	13	20	40	50
or Less	0.006(0.003)	0.004(0.003)	0.005(0.003)	0.006(0.005)	0.007(0.005)		
Circularity M							

Circularity of Driving Shafts Straight Type KZAN, KZAC and KZAP is the same as that of rotary shafts.

Tolerances of L, Y and Other Dimensions

Dimension over	2	6	30	120	400	800(500)
or Less	±0.1(±0.1)	±0.2(±0.1)	±0.3(±0.1)	±0.5(±0.2)	±0.8(±0.2)	
Tolerance						

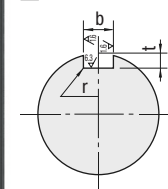
Detailed Retaining Ring Groove Dimensions for Rotary and Driving Shafts



Shaft Dia.	d	Tolerance	Slot Width (mm)	Tolerance	Applicable Retaining Ring
2	1.2	0.4	0.4	+0.05	JIS E Type 1.2
2.5	1.5	+0.06	0.5	0	JIS E Type 1.5
3	2	0			JIS E Type 2
4	3				JIS E Type 3
5	4	+0.075	0.7	+0.1	JIS E Type 4
6	5	0		0	JIS E Type 5
7	6				JIS E Type 6
8	7	+0.09	0.9		JIS E Type 7
9	8	0			JIS E Type 8
10	9.6	0/-0.09			JIS C Type 10
11	10.5				JIS C Type 11
12	11.5				JIS C Type 12
13	12.4				JIS C Type 13
14	13.4				JIS C Type 14
15	14.3				JIS C Type 15
16	15.2				JIS C Type 16
17	16.2				JIS C Type 17
18	17				JIS C Type 18
19	18				JIS C Type 19
20	19				JIS C Type 20
21	20				JIS C Type 21
22	21				JIS C Type 22
23	22				JIS C Type 23
24	22.9				JIS C Type 24
25	23.9				JIS C Type 25
26	24.9				JIS C Type 26
28	26.6				JIS C Type 28
29	27.6				JIS C Type 29
30	28.6				JIS C Type 30
32	30.3				JIS C Type 32
35	33				JIS C Type 35
40	38				JIS C Type 40
45	42.5				JIS C Type 45
50	47				JIS C Type 50

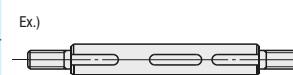
Detailed Dimensions for Keyway and Threaded Relief of Rotary Shafts and Driving Shafts

Detailed Dimensions of Keyway for Shaft Dia. (D, P, Q)



Shaft Dia.	Reference Dimension	Tolerance (N)	Reference Dimension	Tolerance	r
6~7	2	-0.004	1.2		0.08~0.16
8~10	3	-0.029	1.8		
11~12	4		2.5	+0.1	
13~17	5	0	3.0		0.16~0.25
18~22	6	-0.03	3.5		
23~30	8	0	4.0		
31~38	10	-0.036	5.0	+0.2	0.25~0.4
39~44	12	0	5.0		
45~50	14	-0.043	5.5		

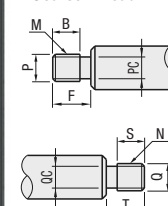
The example below shows the keyway shape for the specs KC, WKC, K=0, KC+A≥L and WKC+C+K+E>L.



Rotary Shafts Thread Undercut (PC, QC) Dimensions (Reference)

When thread undercut machining (PC, QC) is specified, PC, QC dimension is as shown in the table below. As for the PC and QC dimensions for the fine thread alteration (PMC, QMC), also refer to the tables below.

Coarse Thread

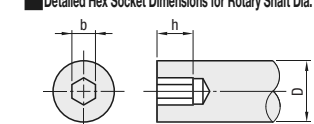


P(=M) Q(=N)	PC	QC
3	2.4	
4	3.2	
5	4.1	
6	4.4	
8	6.0	
10	7.7	
12	9.4	
16	13.0	
20	16.4	
24	19.6	
30	25.0	

Combined with Fine Thread Alteration

PMC QMC	PC	QC
3	2.4	
4	3.2	
5	4.1	
6	4.8	
8	6.4	
10	8.4	
12	10.4	
15	13.4	
17	15.4	
20	18.4	
25	22.7	
30	27.7	

Detailed Hex Socket Dimensions for Rotary Shaft Dia. D



Shaft Dia.	b	h
6~7	2.5	4
8~9	3	5
10~11	4	6
12~15	5	8
16~19	6	9
20~24	8	12
25~30	10	15