

Rods

Material: Stainless Steel, Aluminum, Brass, Pure Titanium Class 2

Rods		Material
O.D. Selectable	O.D. Configurable	
RDOF	-	SUS303
RDOS	FRDOS	SUS304
RDOH	-	SUS316
RDOA	-	2000series Aluminum Alloy
RDOK	-	5000series Aluminum Alloy
RD52A	-	C3604-LCD (Brass with Low Cadmium)
RDOG	-	Pure Titanium Class 2
RDOT	-	

or More	or Less	C
D3	D16	0.5
D17	D80	1.0

or More	or Less	Tolerance
10	30	±0.2
31	120	±0.3
121	400	±0.5
401	1000	±0.8

RoHS

Rods (O.D. Selectable)

Part Number	D	L
Type		1mm Increment
RDOF RDOS RDOH RDOA RDOK RD52A (D5~12, 15~20) RDOG RDOT (D3~6)	3	
	4	10~250
	5	
	6	
	8	10~500
	10	
	12	
	13	10~750
	15	
	16	10~900
RDOF RDOS	18	
	20	20~1000
	25	
	30	
	50	30~1000
	60	
	80	30~200



Ordering Example

Rods (O.D. Selectable)

Part Number - L

RDOA15 - 700

Rods (O.D. Configurable)

Part Number - D - L

FRDOS - D11 - L113

Rods (O.D. Configurable)

Part Number	D	L
	1mm Increment	1mm Increment
FRDOS	6~10	10~500
	11~15	10~750
	16~17	10~900
	18~30	20~1000



Alterations

Part Number - L - (MC, WMC)

RDOF20 - 535 - MC8

O.D. Tolerance

Part Number	RDOF RDOS	FRDOS RDOH RDOT	RDOA	RDOK RD52A RDOG
D				
3				
4				
5				
6			±0.1	
8				
10				
12	0	0		±0.1
13	-0.1	-0.1		
15			±0.3	
16				
18				
20			±0.4	
25				
30				
50	0			
60	-0.2			
80				

Alterations	One End Tapped	Both Ends Tapped																															
Code	MC	WMC																															
Spec.	Adds a tap on one end. Ordering Code MC8 6 ≤ D ≤ 30 When L ≤ Mx2, the tap goes through.	Adds taps on both ends. Ordering Code WMC12 6 ≤ D ≤ 30 When L ≤ Mx4, the tap goes through.																															
	<table border="1"> <thead> <tr> <th>D</th> <th>MC (Selection Range)</th> </tr> </thead> <tbody> <tr><td>6, 7</td><td>3</td></tr> <tr><td>8, 9</td><td>3, 4</td></tr> <tr><td>10, 11</td><td>3, 4, 5</td></tr> <tr><td>12~14</td><td>3, 4, 5, 6</td></tr> <tr><td>15~19</td><td>3, 4, 5, 6, 8</td></tr> <tr><td>20~24</td><td>3, 4, 5, 6, 8, 10, 12</td></tr> <tr><td>25~30</td><td>3, 4, 5, 6, 8, 10, 12, 16</td></tr> </tbody> </table> When L ≤ Mx4, the pilot hole for tapping may go through.	D	MC (Selection Range)	6, 7	3	8, 9	3, 4	10, 11	3, 4, 5	12~14	3, 4, 5, 6	15~19	3, 4, 5, 6, 8	20~24	3, 4, 5, 6, 8, 10, 12	25~30	3, 4, 5, 6, 8, 10, 12, 16	<table border="1"> <thead> <tr> <th>D</th> <th>WMC (Selection Range)</th> </tr> </thead> <tbody> <tr><td>6, 7</td><td>3</td></tr> <tr><td>8, 9</td><td>3, 4</td></tr> <tr><td>10, 11</td><td>3, 4, 5</td></tr> <tr><td>12~14</td><td>3, 4, 5, 6</td></tr> <tr><td>15~19</td><td>3, 4, 5, 6, 8</td></tr> <tr><td>20~24</td><td>3, 4, 5, 6, 8, 10, 12</td></tr> <tr><td>25~30</td><td>3, 4, 5, 6, 8, 10, 12, 16</td></tr> </tbody> </table>	D	WMC (Selection Range)	6, 7	3	8, 9	3, 4	10, 11	3, 4, 5	12~14	3, 4, 5, 6	15~19	3, 4, 5, 6, 8	20~24	3, 4, 5, 6, 8, 10, 12	25~30
D	MC (Selection Range)																																
6, 7	3																																
8, 9	3, 4																																
10, 11	3, 4, 5																																
12~14	3, 4, 5, 6																																
15~19	3, 4, 5, 6, 8																																
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10, 11	3, 4, 5																																
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15~19	3, 4, 5, 6, 8																																
20~24	3, 4, 5, 6, 8, 10, 12																																
25~30	3, 4, 5, 6, 8, 10, 12, 16																																

Rods (O.D. Selectable)

Part Number	D	Unit Price					
		Min. L - 100	101-200	201-400	401-600	601-800	801-1000
RDOF (SUS303)	3						
	4						
	5						
	6						
	8						
	10						
	12						
	13						
	15						
	16						
	18						
	20						
	25						
	30						
	50						
60							
80							
RDOS (SUS304)	3						
	4						
	5						
	6						
	8						
	10						
	12						
	13						
	15						
	16						
	18						
	20						
	25						
	30						
	50						
60							
80							
RDOH (SUS316)	3						
	4						
	5						
	6						
	8						
	10						
	12						
	13						
	15						
	16						
	18						
	20						
	25						
	30						
	RDOA (A2017)	3					
4							
5							
6							
8							
10							
12							
13							
15							
16							
18							
20							
25							
30							

For maximum L dimension in each D dimension, refer to the specification table shown on the left-hand page.

Part Number	D	Unit Price						
		Min. L - 100	101-200	201-400	401-600	601-800	801-1000	
RDOK (A5056)	3							
	4							
	5							
	6							
	8							
	10							
	12							
	13							
	15							
	16							
RD52A (A5052)	18							
	20							
	5							
	6							
	8							
	10							
RDOG (C3604-LCD)	12							
	15							
	16							
	18							
	20							
	3							
	4							
	5							
	6							
	8							
RDOT (Pure Titanium Class 2)	10							
	12							
	13							
	15							
	16							
	18							
Rods (O.D. Configurable)	20							
	25							
	30							
	FRDOS (SUS304)	D						
		6~10						
		11~15						
		16~19						
	20~24							
	25~27							
	28~30							

Precision Rods (Tolerance h7, g6)

S45C, SUS303, SUS304

Mini Rods



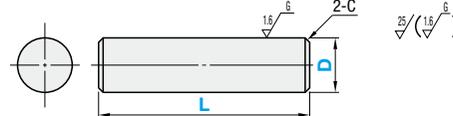
Type	D Tolerance	Material	Surface Treatment
RGOC	h7	S45C Equivalent	-
RGBOB			Black Oxide
RGOM			Electroless Nickel Plating
RGOF			-
RGOS	g6	SUS303	-
RGOCG		SUS304	-
RGOCG		S45C Equivalent	-
RGOFG		SUS303	-

C Dimension
or More or Less

D	C
D 3	D16
D17	D30
	0.5
	1.0

L Dimension Tolerance
or More or Less

L	Tolerance
10	±0.2
31	±0.3
120	±0.3
401	±0.5
1000	±0.8



Precision Rods

Part Number	D	L
Type	D	1mm increment
3	3	
4	4	10~250
5	5	
6	6	
7	7	
8	8	10~500
9	9	
10	10	
11	11	
12	12	10~750
13	13	
14	14	
15	15	
16	16	10~900
17	17	
18	18	
19	19	
20	20	20~1000
25	25	
30	30	

RGOC
RGBOB
RGOM
RGOF
RGOS
RGOCG
RGOFG

Ordering Example: Part Number - L
RGOC15 - 700

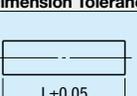
Part Number	Type	D	Unit Price				
			Min. L - 100	101-200	201-400	401-800	801-1000
3	RGOC (h7, S45C)	3					
4		4					
5		5					
6		6					
7		7					
8		8					
9		9					
10		10					
11		11					
12		12					
13		13					
14		14					
15		15					
16		16					
17		17					
18		18					
19		19					
20		20					
25		25					
30		30					
3	RGBOB (h7, S45C)	3					
4		4					
5		5					
6		6					
7		7					
8		8					
9		9					
10		10					
11		11					
12		12					
13		13					
14		14					
15		15					
16		16					
17		17					
18		18					
19		19					
20		20					
25		25					
30		30					
3	RGOM (h7, S45C)	3					
4		4					
5		5					
6		6					
7		7					
8		8					
9		9					
10		10					
11		11					
12		12					
13		13					
14		14					
15		15					
16		16					
17		17					
18		18					
19		19					
20		20					
25		25					
30		30					

Part Number	Type	D	Unit Price				
			Min. L - 100	101-200	201-400	401-800	801-1000
3	RGOF (h7, SUS303)	3					
4		4					
5		5					
6		6					
7		7					
8		8					
9		9					
10		10					
11		11					
12		12					
13		13					
14		14					
15		15					
16		16					
17		17					
18		18					
19		19					
20		20					
25		25					
30		30					
3	RGOS (h7, SUS304)	3					
4		4					
5		5					
6		6					
7		7					
8		8					
9		9					
10		10					
11		11					
12		12					
13		13					
14		14					
15		15					
16		16					
17		17					
18		18					
19		19					
20		20					
25		25					
30		30					

Part Number	Type	D	Unit Price				
			Min. L - 100	101-200	201-400	401-800	801-1000
3	RGOCG (g6, S45C)	3					
4		4					
5		5					
6		6					
7		7					
8		8					
9		9					
10		10					
11		11					
12		12					
13		13					
14		14					
15		15					
16		16					
17		17					
18		18					
19		19					
20		20					
25		25					
30		30					
3	RGOFG (g6, SUS303)	3					
4		4					
5		5					
6		6					
7		7					
8		8					
9		9					
10		10					
11		11					
12		12					
13		13					
14		14					
15		15					
16		16					
17		17					
18		18					
19		19					
20		20					
25		25					
30		30					

For the maximum L dimension in each D dimension, refer to the specification table shown upper right.

Alterations: Part Number - L - (MC, WMC, LKC)
 RGOC20 - 535 - MC8
 RGOM18 - 200 - LKC

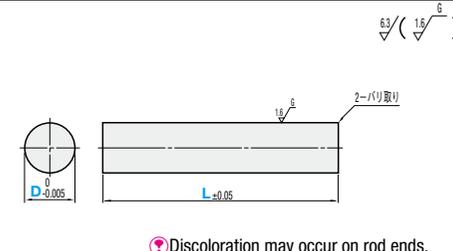
Alterations	One End Tapped	Both Ends Tapped	L Dimension Tolerance																																
																																			
Code	MC	WMC	LKC																																
Spec.	Adds a tap on one end. (Ordering Code) MC8 6 ≤ D ≤ 30 When L ≤ Mx2, the tap goes through.	Adds taps on both ends. (Ordering Code) WMC12 6 ≤ D ≤ 30 When L ≤ Mx4, the tap goes through.	Changes L dimension tolerance within ±0.05 (Ordering Code) LKC																																
	<table border="1"> <tr><th>D</th><th>MC (Selection Range)</th></tr> <tr><td>6</td><td>3</td></tr> <tr><td>7, 8</td><td>3, 4</td></tr> <tr><td>9, 10</td><td>3, 4, 5</td></tr> <tr><td>11, 12, 13</td><td>3, 4, 5, 6</td></tr> <tr><td>14~18</td><td>3, 4, 5, 6, 8</td></tr> <tr><td>19, 20</td><td>3, 4, 5, 6, 8, 10, 12</td></tr> <tr><td>25, 30</td><td>3, 4, 5, 6, 8, 10, 12, 16</td></tr> </table>	D	MC (Selection Range)	6	3	7, 8	3, 4	9, 10	3, 4, 5	11, 12, 13	3, 4, 5, 6	14~18	3, 4, 5, 6, 8	19, 20	3, 4, 5, 6, 8, 10, 12	25, 30	3, 4, 5, 6, 8, 10, 12, 16	<table border="1"> <tr><th>D</th><th>WMC (Selection Range)</th></tr> <tr><td>6</td><td>3</td></tr> <tr><td>7, 8</td><td>3, 4</td></tr> <tr><td>9, 10</td><td>3, 4, 5</td></tr> <tr><td>11, 12, 13</td><td>3, 4, 5, 6</td></tr> <tr><td>14~18</td><td>3, 4, 5, 6, 8</td></tr> <tr><td>19, 20</td><td>3, 4, 5, 6, 8, 10, 12</td></tr> <tr><td>25, 30</td><td>3, 4, 5, 6, 8, 10, 12, 16</td></tr> </table>	D	WMC (Selection Range)	6	3	7, 8	3, 4	9, 10	3, 4, 5	11, 12, 13	3, 4, 5, 6	14~18	3, 4, 5, 6, 8	19, 20	3, 4, 5, 6, 8, 10, 12	25, 30	3, 4, 5, 6, 8, 10, 12, 16	
D	MC (Selection Range)																																		
6	3																																		
7, 8	3, 4																																		
9, 10	3, 4, 5																																		
11, 12, 13	3, 4, 5, 6																																		
14~18	3, 4, 5, 6, 8																																		
19, 20	3, 4, 5, 6, 8, 10, 12																																		
25, 30	3, 4, 5, 6, 8, 10, 12, 16																																		
D	WMC (Selection Range)																																		
6	3																																		
7, 8	3, 4																																		
9, 10	3, 4, 5																																		
11, 12, 13	3, 4, 5, 6																																		
14~18	3, 4, 5, 6, 8																																		
19, 20	3, 4, 5, 6, 8, 10, 12																																		
25, 30	3, 4, 5, 6, 8, 10, 12, 16																																		

When L ≤ Mx4, the pilot hole for tapping may go through.

For materials SUS304 and S45C with tolerance g6 (black oxide and electroless nickel plating), refer to the Rotary Shaft Straight Type on P. 823.



Type	D Tolerance	Material	Hardness	Surface Treatment
MRS	0 -0.005	SKH51	58HRC~	-
MRSB				Black Oxide
MRSM		SUJ2	60HRC~	Electroless Nickel Plating
MRSK				-
MRSD		SKD11	60HRC~	-
MRSS		SUS440C	56HRC~	-
MRSJ		SUS304	-	-
MRSF		P/M High-Speed Steel	65~68HRC	-
MRSC		C3604 (Brass with Low Cadmium)	-	-



Discoloration may occur on rod ends.

Part Number	Type	D	L	Unit Price																
				0.1mm Increment	MRS	MRSB	MRSM	MRSK	MRSJ	MRSS	MRSF	MRSC								
0.5		0.5																		
0.6		0.6																		
0.7		0.7																		
0.8		0.8	5.0~50.0																	
0.9		0.9																		
1.0		1.0																		
1.1		1.1																		
1.2		1.2	5.0~60.0																	
1.3		1.3																		
1.4		1.4	5.0~70.0																	
1.5		1.5	5.0~75.0																	
1.6		1.6																		
1.7		1.7	5.0~80.0																	
1.8		1.8																		
1.9		1.9	5.0~90.0																	
2.0		2.0																		
2.1		2.1																		
2.2		2.2																		
2.3		2.3	5.0~100.0																	
2.4		2.4																		
2.5		2.5																		
2.6		2.6																		
2.7		2.7																		
2.8		2.8																		

Mini Rods

Selectable Tips

Mini Rods

O.D. Tolerance Selectable

End Shape			Material	Hardness
Sphere	Tapered	Taper SR		
MRSHQ	MRSHT	MRSHR	SKH51	58HRC~
MRSSQ	MRSST	MRSSR	SUS440C	56HRC~
MRSQG	MRSQT	-	SUS304	-

Sphere
 Dimensions: $C0.1$, 0.4 , L , $+0.1/0$, D , $0/-0.005$, $SR=D/2$

Tapered
 Dimensions: $C0.1$, 0.4 , L , $+0.1/0$, D , $0/-0.005$, 15° , RL

Taper SR
 Dimensions: $C0.1$, 0.4 , L , $+0.1/0$, D , $0/-0.005$, 15° , SR , a

Sphere Type

Part Number	0.1mm Increment		Unit Price		
	D	L	SKH51 MRSHQ	SUS440C MRSSQ	SUS304 MRSQG
MRSHQ MRSSQ MRSQG	2.0~2.9	5.0~20.0			
		20.1~50.0			
		50.1~100.0			
	3.0~3.9	5.0~20.0			
		20.1~50.0			
		50.1~100.0			
4.0~5.0	8.0~20.0				
	20.1~50.0				
	50.1~100.0				

Tapered Type

Part Number	0.1mm Increment		RL D-2 ($RL \tan 15^\circ \geq 0.2$)	Unit Price		
	D	L		SKH51 MRSHT	SUS440C MRSST	SUS304 MRSQT
MRSHT MRSST MRSQT	2.0~2.9	5.0~20.0	0.5~10			
		20.1~50.0				
		50.1~100.0				
	3.0~3.9	5.0~20.0				
		20.1~50.0				
		50.1~100.0				
4.0~5.0	5.0~20.0					
	20.1~50.0					
	50.1~100.0					

Taper SR Type

Part Number	0.1mm Increment		SR a (Reference)	Unit Price	
	D	L		SKH51 MRSHR	SUS440C MRSSR
MRSHR MRSSR	2.0~2.9	8.0~20.0	0.5	2.4~4.1	
		20.1~50.0			
		50.1~100.0			
	3.0~3.9	8.0~20.0		4.2~6.0	
		20.1~50.0			
		50.1~100.0			
4.0~5.0	8.0~20.0	1	4.7~6.6		
	20.1~50.0				
	50.1~100.0				

Ordering Example: **Part Number** - **D** - **L** - **RL**
 MRSHT - D3.5 - L100.0 - RL5

a dimensions vary within values listed above according to D dimensions.

O.D. Selectable	O.D. Configurable	Material	Hardness
KRSH	KRBSH	SKH51	58HRC~
KRSK	KRBSK	SUJ2	-
KRSD	KRBSD	SKD11	60HRC~
KRSS	KRBSS	SUS440C	56HRC~
KRSG	KRBSG	SUS304	-

D	Tolerance Selection				
	M	P	G	H	S
0.30	+0.008	+0.012	-0.002	0	-
3.00	+0.002	+0.006	-0.008	0	-0.010
3.01	+0.012	+0.020	-0.004	0	-
5.00	+0.004	+0.012	-0.012	-0.012	-0.01

C Dimension
 or More or Less C
 D0.3 D0.59 Deburring D0.6 D5 0.1

L Dimension Tolerance
 or More or Less Tolerance
 5.0 6.0 ±0.1
 6.1 30.0 ±0.2
 30.1 120.0 ±0.3
 120.1 150.0 ±0.5

O.D. Selectable

Part Number	Type	Tolerance Selection	L 0.1mm Increment	Unit Price					
				D	KRSH	KRSK	KRSD	KRSS	KRSG
KRSH (D0.3-5) KRSK (D0.5-5) KRSD (D1-5) KRSS (D0.3-5) KRSG (D1-5)	M G H	D	5.0~50.0	0.3					
				0.4					
				0.5					
				0.6					
				0.7					
				0.8					
				0.9					
				1					
				1.1					
				1.2					
				1.3					
				1.4					
				1.5					
				1.6					
				1.7					
1.8									
1.9									
2									
2.5									
3									
3.5									
4									
4.5									
5									



O.D. Selectable

Ordering Example: **Part Number** - **L**
 KRSH M 0.5 - 50.0

O.D. Configurable

Ordering Example: **Part Number** - **L** - **D**
 KRBSH H 0.6 - 30.0 - D0.55

O.D. Configurable (0.01mm Increment)

Part Number	Type	Tolerance Selection	No.	L 0.1mm Increment	D 0.01mm Increment	Unit Price				
						KRBSH	KRBSK	KRBSD	KRBSS	KRBSG
KRBSH (No.0.5-5) KRBSK (No.0.6-5) KRBSD (No.1.5-5) KRBSS (No.0.5-5) KRBSG (No.1.5-5)	M P G H S	D	5.0~100.0	5.0~50.0	0.30~0.49					
					0.50~0.59					
					0.60~0.99					
					1.00~1.49					
					1.50~1.99					
					2.00~2.49					
					2.50~2.99					
					3.00~3.49					
					3.50~3.99					
					4.00~4.49					
					4.50~4.99					



Alterations: **Part Number** - **L** - (AC, LKC)
 KRSHM0.5 - 50.0 - LKC

Alterations	Point Taper	L Dimension Tolerance
Code	AC	LKC
Spec.	AC: 0.1mm Increment. ● 0.5 ≤ AC ≤ 10.0 ● D-2(AC tan 15°) ≥ 0.2 ● One end only is tapered. [Ordering Code] AC 5.5	Changes L dimension tolerance within ±0.05 [Ordering Code] LKC