

# Rotary Shafts

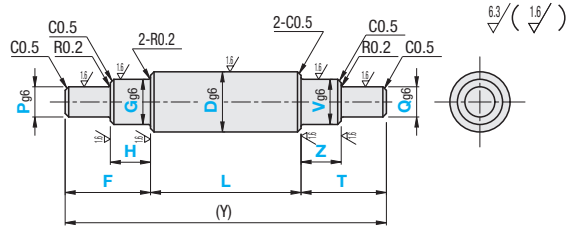
## Both Ends Double Stepped



Type	Material	Surface Treatment
SFRJ	S45C Equivalent	Black Oxide
SSFRJ	SUS304	-



Ⓢ Circularity, Straightness, Perpendicularity, Concentricity Ⓢ P820



Part Number	Type	Dg6	0.1mm Increment			1mm Increment		(Y) max.
			L	F, T	H, Z	G, V	P, Q	
SFRJ (D13, 16, 17, 18 and 22 are not available for SSFRJ.)	6	-0.004 -0.012	20.0~296.0	2<F≤P×5 2<T≤Q×5	2≤H 2≤Z	4~ 5	3~ 4	300
	8	-0.005	20.0~396.0			4~ 7	3~ 6	400
	10	-0.014	20.0~496.0			4~ 9	3~ 8	500
	12	-0.006	25.0~596.0			6~11	5~10	600
	13		25.0~596.0			6~12	5~11	600
	15	-0.017	25.0~696.0			6~14	5~13	700
	16		25.0~796.0			6~15	5~14	800
	17	25.0~796.0	6~15			5~14	800	
	18	-0.007	25.0~796.0			6~17	5~16	800
	20		30.0~796.0			6~19	5~18	800
	22	-0.020	30.0~796.0			6~21	5~20	800
	25		30.0~796.0			11~24	10~23	800
	30	30.0~796.0	11~29			10~28	800	

Ⓢ When D-G(V)≤2 and G(V)-P(Q)≤2, chamfer C at the step is 0.2 or less. Ⓢ P<G<D, Q<V<D

**Ordering Example** Part Number - L - F - H - G - P - T - Z - V - Q  
SFRJ10 - 400 - F25 - H20 - G8 - P6 - T20 - Z10 - V8 - Q6

**Alterations** Part Number - L - F - H - G - P - T - Z - V - Q - (KC, WKC, FC-etc.)  
SFRJ20 - 300 - F30 - H20 - G15 - P12 - T25 - Z15 - V15 - Q12 - SC10

Alterations	Keyway	Keyway on Shaft End	Set Screw Flat	2 Set Screw Flats (Angle Specified)	Slit Cam Groove	Wrench Flats	L Dimension Tolerance																																																	
Code	KC, WKC	PKC, QKC	FC, WFC	KFC	UC	SC	LKC																																																	
Spec.	<p>KC: Adds a keyway. Ordering Code: KC50-A10</p> <p>WKC: Adds two keyways. Ordering Code: WKCS0-C8-K40-E10</p> <p>Ⓢ KC, A, WKC, C, K, E = 1mm Increment</p> <p>Ⓢ A, E, C≤100</p> <p>Ⓢ For Keyway Details, refer to P820</p> <p>Ⓢ If 3 keyways are required, use both KC and WKC.</p> <p>Ⓢ When the keyway position is less than 1mm away from the end face, R is not applied.</p> <p>Ex. </p>	<p>Adds a keyway on the shaft end P (Q).</p> <p>Ordering Code: PKC10(QKC10)</p> <p>Ⓢ PKC, QKC = 1mm Increment</p> <p>Ⓢ PKC, QKC≤50</p> <p>PKC(QKC)≠(F)</p> <p>Ⓢ Keyway Details P820</p> <p>Ⓢ Not applicable to P (Q)=5 or less.</p>	<p>FC: Adds 1 set screw flat. Ordering Code: FC10-G3</p> <p>WFC: Adds 2 set screw flats. Ordering Code: WFC10-J3-W10-V3</p> <p>Ⓢ FC, G, WFC, J, W, V = 1mm Increment</p> <p>Ⓢ G, J, V≤50</p> <table border="1"> <thead> <tr> <th>D</th> <th>H</th> </tr> </thead> <tbody> <tr> <td>6-15</td> <td>1</td> </tr> <tr> <td>16-30</td> <td>2</td> </tr> </tbody> </table>	D	H	6-15	1	16-30	2	<p>Adds a set screw flat at any desired angle besides the datum plane (0°).</p> <p>KFC, G= 1mm Increment</p> <p>AG = 15° Increment</p> <p>Ⓢ G≤50</p> <p>Ordering Code: KFC10-G3-AG90</p> <table border="1"> <thead> <tr> <th>D</th> <th>H</th> </tr> </thead> <tbody> <tr> <td>6-15</td> <td>1</td> </tr> <tr> <td>16-30</td> <td>2</td> </tr> </tbody> </table> <p>Ⓢ When combined with other alterations, ±2 degree phase differential may occur.</p>	D	H	6-15	1	16-30	2	<p>Adds a slit cam groove.</p> <p>UC = 1mm Increment</p> <p>Ordering Code: UC10</p> <p>Ⓢ UC+δ1≤L</p> <p>Ⓢ UC≥1</p> <p>Ⓢ Not applicable to D13 or more.</p> <table border="1"> <thead> <tr> <th>D</th> <th>d</th> <th>δ1</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>5</td> <td rowspan="3">4</td> </tr> <tr> <td>8</td> <td>7</td> </tr> <tr> <td>10</td> <td>8</td> </tr> <tr> <td>12</td> <td>10</td> <td>5</td> </tr> </tbody> </table>	D	d	δ1	6	5	4	8	7	10	8	12	10	5	<p>Adds a wrench flat.</p> <p>SC = 1mm Increment</p> <p>Ordering Code: SC=0 or SC≥1</p> <p>Ⓢ SC+δ2≤L</p> <p>Ⓢ SC=0 or SC≥1</p> <table border="1"> <thead> <tr> <th>D</th> <th>W</th> <th>δ2</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>5</td> <td rowspan="3">8</td> </tr> <tr> <td>8</td> <td>7</td> </tr> <tr> <td>10</td> <td>8</td> </tr> <tr> <td>12, 13</td> <td>10</td> <td rowspan="3">10</td> </tr> <tr> <td>15, 16</td> <td>13</td> </tr> <tr> <td>17, 18</td> <td>14</td> </tr> <tr> <td>20, 22</td> <td>17</td> <td rowspan="3">15</td> </tr> <tr> <td>25</td> <td>22</td> </tr> <tr> <td>30</td> <td>27</td> </tr> </tbody> </table> <p>Ⓢ When combined with other alterations, ±2 degree phase differential may occur.</p>	D	W	δ2	6	5	8	8	7	10	8	12, 13	10	10	15, 16	13	17, 18	14	20, 22	17	15	25	22	30	27	<p>Changes L dimension tolerance.</p> <p>Ordering Code: LKC</p> <p>Ⓢ L&lt;500→L±0.05</p> <p>Ⓢ L≥500→L±0.1</p>
D	H																																																							
6-15	1																																																							
16-30	2																																																							
D	H																																																							
6-15	1																																																							
16-30	2																																																							
D	d	δ1																																																						
6	5	4																																																						
8	7																																																							
10	8																																																							
12	10	5																																																						
D	W	δ2																																																						
6	5	8																																																						
8	7																																																							
10	8																																																							
12, 13	10	10																																																						
15, 16	13																																																							
17, 18	14																																																							
20, 22	17	15																																																						
25	22																																																							
30	27																																																							
<p>Ⓢ Keyway(s) and set screw flats are added in the same plane. When the distance of the alterations are over 500mm, ±2 degree phase differential may occur.</p>																																																								

D	SFRJ								SSFRJ							
	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1	Min. L	L50.1	L100.1	L150.1	L200.1	L300.1	L400.1	L600.1
6	50.0	100.0	150.0	200.0	300.0	400.0	600.0	796.0	50.0	100.0	150.0	200.0	300.0	400.0	600.0	796.0
8																
10																
12																
13																
15																
16																
17																
18																
20																
22																
25																
30																