

Shafts

One End Stepped Hollow

Type	Material	Hardness	Surface Treatment
SPJG		Effective Hardened Depth of Induction Hardening	
PSPJG	SUJ2 Equivalent	P112 58HRC~	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5μ or More
RSPJG			Low Temp. Black Chrome Plating

Features of Low Temp. Black Chrome Plating **P128**
 L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness **P111**
 Low temp. black chrome plating is not applied to the inside of hollow shafts, taps, bored holes and lateral holes, and may rust.
 Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). About Hollow Shaft Wall Thickness Deviations See **P111**

Part Number	Type	Dg6	1mm Increment			(Y) Max.	d	R	C
			L	F	P				
SPJG	6	-0.004	25~598		5≤P<D	600	2	0.5 or Less	
	8	-0.005	25~798		6≤P<D	800	3		
	10	-0.014	25~798		7≤P<D	1000	4		
	12	-0.006	25~998		10≤P<D	1000	6		
	13	-0.017	25~998		13≤P<D	1000	7		
PSPJG	16	-0.007	25~1198	2≤F≤Px3	13≤P<D	1200	10	0.3 or Less	
	20	-0.017	25~1198		16≤P<D	1200	14		
	25	-0.007	25~1198		20≤P<D	1200	16		
RSPJG (D≤30, L≤500)	30	-0.020	25~1498		22≤P<D	1500	17	1.0 or Less	
	35	-0.009	25~1498		24≤P<D	1500	19		
	40	-0.025	25~1498		25≤P<D	1500	20		
	40	-0.025	25~1498		25≤P<D	1500	20		
	50	-0.025	25~1498		32≤P<D	1500	26		

Ordering Example: SPJG20 - 400 - F25 - P16
 Alterations Example: SPJG30 - 400 - F25 - P22 - VC
 When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm.
 Alterations may lower hardness. See **P112**

Alterations	Code	Spec.																																							
	DKC	O.D. tolerance is altered to h5. (Ordering Code) DKC <table border="1"> <tr><th>D</th><th>h5 Tolerance</th></tr> <tr><td>6</td><td>0 -0.005</td></tr> <tr><td>8, 10</td><td>0 -0.006</td></tr> <tr><td>12~16</td><td>0 -0.008</td></tr> <tr><td>20~30</td><td>0 -0.009</td></tr> <tr><td>35~50</td><td>0 -0.011</td></tr> </table> Not applicable to Low Temp. Black Chrome Plated Shafts.	D	h5 Tolerance	6	0 -0.005	8, 10	0 -0.006	12~16	0 -0.008	20~30	0 -0.009	35~50	0 -0.011																											
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	LKC	Changes L tolerance. (Ordering Code) LKC L<200→ L±0.03 200≤L<500 → L±0.05 L≥500→ L±0.1 L dimensions can be specified in 0.1mm increment for LKC. Not applicable when D-P≤2.																																							
	SC	Adds wrench flats. (Ordering Code) SC5 SC=1mm Increment SC+ℓ1≤L SC≥0 <table border="1"> <tr><th>D</th><th>W</th><th>ℓ1</th></tr> <tr><td>6</td><td>5</td><td>8</td></tr> <tr><td>8</td><td>7</td><td>8</td></tr> <tr><td>10</td><td>8</td><td>10</td></tr> <tr><td>12</td><td>10</td><td>10</td></tr> <tr><td>13</td><td>11</td><td>10</td></tr> <tr><td>16</td><td>14</td><td>10</td></tr> <tr><td>20</td><td>17</td><td>10</td></tr> <tr><td>25</td><td>22</td><td>15</td></tr> <tr><td>30</td><td>27</td><td>15</td></tr> <tr><td>35</td><td>30</td><td>20</td></tr> <tr><td>40</td><td>36</td><td>20</td></tr> <tr><td>50</td><td>41</td><td>20</td></tr> </table>	D	W	ℓ1	6	5	8	8	7	8	10	8	10	12	10	10	13	11	10	16	14	10	20	17	10	25	22	15	30	27	15	35	30	20	40	36	20	50	41	20
D	W	ℓ1																																							
6	5	8																																							
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30	27	15																																							
35	30	20																																							
40	36	20																																							
50	41	20																																							
	VC	One end is bored. (Used as a pilot hole) Hole diameter Vh7 is shown in the table below. K=1mm Increment 3<K≤Vx2 (Ordering Code) VC-K5 <table border="1"> <tr><th>D</th><th>d1</th><th>Vh7</th></tr> <tr><td>6</td><td>-</td><td>-</td></tr> <tr><td>8</td><td>-</td><td>-</td></tr> <tr><td>10</td><td>6</td><td>12</td></tr> <tr><td>12</td><td>8</td><td>12</td></tr> <tr><td>13</td><td>8</td><td>12</td></tr> <tr><td>16</td><td>10</td><td>12</td></tr> <tr><td>20</td><td>12</td><td>12</td></tr> <tr><td>25</td><td>16</td><td>12</td></tr> <tr><td>30</td><td>20</td><td>12</td></tr> <tr><td>35</td><td>24</td><td>12</td></tr> <tr><td>40</td><td>28</td><td>12</td></tr> <tr><td>50</td><td>36</td><td>12</td></tr> </table>	D	d1	Vh7	6	-	-	8	-	-	10	6	12	12	8	12	13	8	12	16	10	12	20	12	12	25	16	12	30	20	12	35	24	12	40	28	12	50	36	12
D	d1	Vh7																																							
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	RH	Adds a lateral hole on one side. Lateral hole diameters are shown in the table below. RH=1mm Increment d1+1<RH<Dx3 (Ordering Code) RH5 <table border="1"> <tr><th>D</th><th>d1</th><th>D</th><th>d1</th></tr> <tr><td>10</td><td>2</td><td>20</td><td>6</td></tr> <tr><td>12</td><td>3</td><td>25</td><td>6</td></tr> <tr><td>13</td><td>3</td><td>35</td><td>6</td></tr> <tr><td>16</td><td>5</td><td>50</td><td>10</td></tr> </table> The hollow I.D. "d" may vary due to the wall thickness deviations. Not applicable to stepped sides. Burns might remain inside after alteration. Orientation in relation to other features will be random. Not applicable if interferes with other alterations.	D	d1	D	d1	10	2	20	6	12	3	25	6	13	3	35	6	16	5	50	10																			
D	d1	D	d1																																						
10	2	20	6																																						
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Part Number	Type	D	Unit Price															
			Min. L - 50	L51-100	L101-150	L151-200	L201-300	L301-400	L401-500	L501-600	L601-800	L801-1000	L1001-1200	L1201-1498				
SPJG RSPJG Price on right + Price in the table below	6																	
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Low Temp. Black Chrome Plating Additional Charge	D	Additional Price				
		Min. L - 50	L51-100	L101-150	L151-200	L201-300
	6					
	8					
	10					
	12					
	13					
	16					
	20					
	25					
	30					

For Low Temp. Chrome Plated Shafts, please add Low Temp. Black Chrome Plating Additional Charge on the left to the non-plated shaft Unit Price above.
 Features of Low Temp. Black Chrome Plating **P128**

Shafts

Both Ends Stepped Hollow

Type	Material	Hardness	Surface Treatment
SPJQ		Effective Hardened Depth of Induction Hardening	
PSPJQ	SUJ2 Equivalent	P112 58HRC~	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5μ or More
RSPJQ			Low Temp. Black Chrome Plating

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 L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness **P111**
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 Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm). About Hollow Shaft Wall Thickness Deviations See **P111**

Part Number	Type	Dg6	1mm Increment			(Y) Max.	d	R	C
			L	F, T	P, Q				
SPJQ	6	-0.004	25~596		5≤P(Q)<D	600	2	0.3 or Less	0.5 or Less
	8	-0.005	25~796		6≤P(Q)<D	800	3		
	10	-0.014	25~796		7≤P(Q)<D	800	4		
	12	-0.006	25~996		10≤P(Q)<D	1000	6		
	13	-0.017	25~996		13≤P(Q)<D	1000	7		
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	20	-0.017	25~1196		16≤P(Q)<D	1200	14		
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RSPJQ (D≤30, L≤500)	30	-0.020	25~1496	2≤T≤Qx3	22≤P(Q)<D	1500	17	0.5 or Less	1.0 or Less
	35	-0.009	25~1496		24≤P(Q)<D	1500	19		
	40	-0.025	25~1496		25≤P(Q)<D	1500	20		
	40	-0.025	25~1496		25≤P(Q)<D	1500	20		
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Ordering Example: SPJQ20 - 400 - F25 - P16 - T25 - Q18
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	6					
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	25					
	30					

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 Features of Low Temp. Black Chrome Plating **P128**