

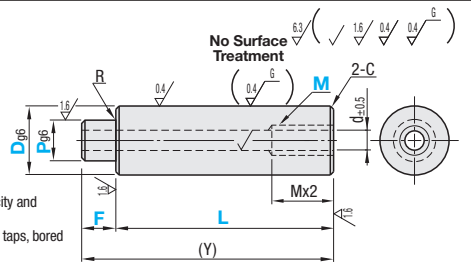
Shafts

One End Stepped, One End Tapped Hollow



Type	M Material	H Hardness	S Surface Treatment
SPJA		Effective Hardened Depth of Induction Hardening	-
PSPJA	SUJ2 Equivalent	\geq P.112 58HRC~	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5 μ or More
RSPJA			Low Temp. Black Chrome Plating

- Features of Low Temp. Black Chrome Plating \geq P.128
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness \geq P.111
- Low temp. black chrome plating is not applied to the inside of hollow shafts, taps, bored holes and lateral holes, and may rust.
- Shaft End Machined Area (Effective Thread Length + Approx. 10mm) Annealing may lower hardness.



About Hollow Shaft Wall Thickness Deviations See \geq P.111

Part Number		1mm Increment			M (Coarse) Selection		(Y) Max.	d	R	C
Type	Dg6	L	F	P						
SPJA	6	-0.004	25~598		5 \leq P<D	3	600	2	0.5 or Less	
	8	-0.005	25~798		6 \leq P<D	4 5	800	3		
	10	-0.014	25~798		7 \leq P<D	5 6	800	4		
	12	-0.006	25~998		10 \leq P<D	8 T1 (RC1/8)	1000	6		
	13	-0.006	25~998		10 \leq P<D	10 T1 (RC1/8)	1000	7		
PSPJA	16	-0.017	25~1198	2 \leq F \leq Px3	13 \leq P<D	12 T2 (RC1/4)	1200	10	0.3 or Less	
	20	-0.007	25~1198		16 \leq P<D	16 T3 (RC3/8)	1200	14		
RSPJA (D \leq 30, L \leq 500)	25	-0.020	25~1198		20 \leq P<D	20	1200	16	1.0 or Less	
	30	-0.020	25~1498		22 \leq P<D	20	1500	17		
	35	-0.009	25~1498		24 \leq P<D	24	1500	19		
	40	-0.025	25~1498		25 \leq P<D	24 30	1500	20		
	50	-0.025	25~1498		32 \leq P<D	30	1500	26		
										0.5 or Less

- When T1, T2 or T3 is selected as M, tapered thread machining is applied. (Ordering Code: MT1)
- Overall length L requires Mx3 \leq L.

Ordering Example: **Part Number** - L - F - P - M
 SPJA20 - 277 - F25 - P16 - M16

Alterations: **Part Number** - L - F - P - M - (DKC, LKC, SC)
 SPJA20 - 277 - F25 - P16 - M16 - LKC

Alterations	Revise O.D. Tolerance (Precision Grade)	Alteration to L dimension tolerance	Wrench Flats																																																																		
Code	DKC	LKC	SC																																																																		
Spec.	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</td></tr> <tr><td>8, 10</td><td>-0.005</td></tr> <tr><td>12-16</td><td>-0.006</td></tr> <tr><td>20-30</td><td>-0.008</td></tr> <tr><td>35-50</td><td>-0.009</td></tr> <tr><td>50</td><td>-0.011</td></tr> </table> * Low Temp. Black Chrome Plating	D	h5 Tolerance	6	0	8, 10	-0.005	12-16	-0.006	20-30	-0.008	35-50	-0.009	50	-0.011	Changes L tolerance. Ordering Code LKC * L<200...L \pm 0.03 200 \leq L<500 ...L \pm 0.05 L \geq 500...L \pm 0.1 * For use of LKC L dimensions can be specified in 0.1mm increment. * Not applicable when D-P \leq 2.	Adds wrench flats. Ordering Code SC5 * SC=1mm Increment * SC+ ϕ 1 \leq L-Mx2 <table border="1"> <tr><th>SC\geq0</th><th>D</th><th>W</th><th>ϕ1</th></tr> <tr><td></td><td>6</td><td>5</td><td></td></tr> <tr><td></td><td>8</td><td>7</td><td>8</td></tr> <tr><td></td><td>10</td><td>8</td><td></td></tr> <tr><td></td><td>12</td><td>10</td><td></td></tr> <tr><td></td><td>13</td><td>11</td><td></td></tr> <tr><td></td><td>16</td><td>14</td><td>10</td></tr> <tr><td></td><td>20</td><td>17</td><td></td></tr> <tr><td></td><td>25</td><td>22</td><td></td></tr> <tr><td></td><td>30</td><td>27</td><td>15</td></tr> <tr><td></td><td>35</td><td>30</td><td></td></tr> <tr><td></td><td>40</td><td>36</td><td></td></tr> <tr><td></td><td>50</td><td>41</td><td>20</td></tr> </table>	SC \geq 0	D	W	ϕ 1		6	5			8	7	8		10	8			12	10			13	11			16	14	10		20	17			25	22			30	27	15		35	30			40	36			50	41	20
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Alterations may lower hardness. See \geq P.112

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
SPJA RSPJA	Price on right + Price in the table below	6												
		8												
		10												
		12												
		13												
		16												
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		25												
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		13												
		16												
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		30												
		35												

Low Temp. Black Chrome Plating Additional Charge	D	Additional Price						
		Min. L - 50	L51-100	L101-150	L151-200	L201-300	L301-400	L401-500
	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 \geq P.128