

Type	D	Material Unit Price										Shaft End Alteration Unit Price						
		Left End: Shape A		Right End: Shape A								B	C	D	E	F		
		Min. L - 50	50.5-100	100.5-150	150.5-200	200.5-300	300.5-400	400.5-500	500.5-600	600.5-800	800.5-1000	1000.5-1200	1200.5-1500					
FSPJ	6-10																	
	12, 13																	
	16, 20																	
	25																	
	30																	
	35																	
FPSPJ	40																	
	50																	
	6-10																	
	12, 13																	
	16, 20																	
	25																	

Alterations Part Number **D - L - F - M - B - T - N - S - H - U - P - Q - (DKC...etc.)**

Type **FSPJ A C - D12 - L100 - T20 - N6 - S12 - DKC**

Alterations	Revise O.D. Tolerance (Precision Grade)	Alteration to L dimension tolerance	Wrench Flats	Wrench Flats at Two Locations																																																																																																
Code	DKC	LKC	SC	WSC																																																																																																
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 -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 FPSPJ.	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	Changes L tolerance. Ordering Code LKC ☒ L<200→ L±0.03 200≤L<500 → L±0.05 L≥500→ L±0.1 ☒ For use of LKC L dimensions can be specified in 0.1mm increment. ☒ Not applicable when D-M(N)≤2 for Shape C. ☒ Not applicable when D-P(Q)≤2 for Shape E.	Adds wrench flats. Ordering Code SC5 ☒ SC=1mm Increment ☒ SC+ℓ₁≤L SC=0 or SC≥1 ☒ When selecting Shape B When D≤25, SC≥Mx2 SC+ℓ₁≤L-Nx2 <table border="1"> <tr><th>D</th><th>W</th><th>ℓ₁</th><th>D</th><th>W</th><th>ℓ₁</th></tr> <tr><td>6</td><td>5</td><td></td><td>20</td><td>17</td><td></td></tr> <tr><td>8</td><td>7</td><td>8</td><td>25</td><td>22</td><td></td></tr> <tr><td>10</td><td>8</td><td></td><td>30</td><td>27</td><td></td></tr> <tr><td>12</td><td>10</td><td></td><td>35</td><td>30</td><td>15</td></tr> <tr><td>13</td><td>11</td><td>10</td><td>40</td><td>36</td><td></td></tr> <tr><td>16</td><td>14</td><td></td><td>50</td><td>41</td><td>20</td></tr> </table>	D	W	ℓ₁	D	W	ℓ₁	6	5		20	17		8	7	8	25	22		10	8		30	27		12	10		35	30	15	13	11	10	40	36		16	14		50	41	20	Adds Wrench Flats at two locations. Ordering Code WSC12-X8 ☒ WSC, X=1mm Increment ☒ WSC+X+ℓ₁x2≤L WSC=0 or WSC≥1 X=0 or X≥1 ☒ When selecting Shape B WSC+X+ℓ₁x2≤L WSC≥Mx2 X≥Nx2 ☒ Orientation between two wrench flats is not coplanar. <table border="1"> <tr><th>D</th><th>W</th><th>ℓ₁</th><th>D</th><th>W</th><th>ℓ₁</th></tr> <tr><td>6</td><td>5</td><td></td><td>20</td><td>17</td><td></td></tr> <tr><td>8</td><td>7</td><td>8</td><td>25</td><td>22</td><td>10</td></tr> <tr><td>10</td><td>8</td><td></td><td>30</td><td>27</td><td></td></tr> <tr><td>12</td><td>10</td><td></td><td>35</td><td>30</td><td>15</td></tr> <tr><td>13</td><td>11</td><td>10</td><td>40</td><td>36</td><td></td></tr> <tr><td>16</td><td>14</td><td></td><td>50</td><td>41</td><td>20</td></tr> </table>	D	W	ℓ₁	D	W	ℓ₁	6	5		20	17		8	7	8	25	22	10	10	8		30	27		12	10		35	30	15	13	11	10	40	36		16	14		50	41	20
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☒ Alterations may lower hardness. See **P.112**

End-Washers for Linear Shafts

RoHS 10

WSF

*D=16 or Less: C0.2 or Less
D=20 or More: C0.5 or Less

M Material: S45C Equivalent
S Surface Treatment: Black Oxide

OX

End-Washer for Linear Shafts

Part Number	D	d	T	Unit Price
WSF	10	3	3	
	12	4		
	13	5		
	16	6		
	20	8		
	25	10	5	
	30	12		
	35	12		
	40	16		
	50	16		

Ordering Example **Part Number WSF10**

☒ For Washers other than above, see **P.112-113**.