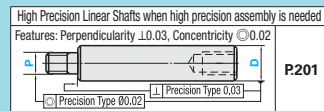


Shafts

One End Threaded, One End Tapped



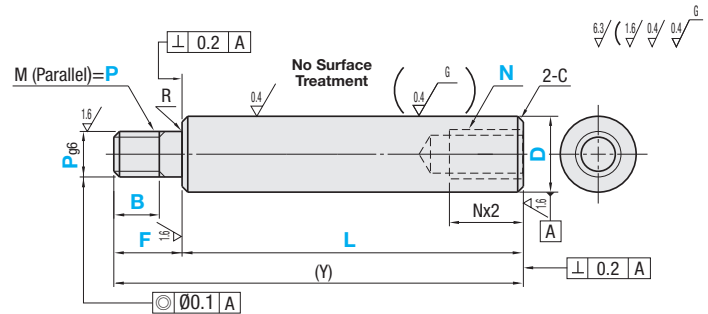
■ For High Precision Linear Shafts with high perpendicular precision of the shaft end ($\perp$ 0.03), see  **P201**.
■ For Shafts with Wrench Flats / Cross-Drilled Hole, see  **P143**.



RoHS10

- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm).  **P.112**
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness  **P.111**
- Features of LTBC Plating  **P.128**

Type			Material	Hardness	Surface Treatment
D Tol. g6	D Tol. h5	D Tol. f8			
SFAD	SFUD	-	EN 1.3505 Equiv.	Effective Hardened Depth of Induction Hardening EN P 112 EN 1.3505 Equiv. 58HRC- EN 1.4037 Equiv. 58HRC-56HRC-	-
SSFAD	SSFUD	-	EN 1.4037 Equiv.		-
PSFAD	PSFUD	-	EN 1.3505 Equiv.		Hard Chrome Plating Plating Hardness: HV750 - Plating Thickness: 5µ or More
PSSFAD	PSSFUD	-	EN 1.4037 Equiv.		58HRC- 56HRC- LBC Plating
RSFAD	-	-	EN 1.3505 Equiv.		-
-	-	PSFGD	EN 1.1191 Equiv.	-	Hard Chrome Plating Plating Hardness: HV750 - Plating Thickness: 10µ or More
-	-	PSSFGD	EN 1.4301 Equiv.	-	-



D Tol.			
D	g6	h5	f8
4			
5	-0.004	0	
6	-0.012	-0.005	-0.010
			-0.028
8	-0.005	0	-0.013
10	-0.014	-0.006	-0.035
12			
13			
15	-0.006	0	-0.016
16	-0.017	-0.008	-0.043
18			
20			
25	-0.007	0	-0.020
30	-0.020	-0.009	-0.053
35			
40	-0.009	0	-0.025
50	-0.025	-0.011	-0.064

Part Number		1mm Increment			P (Coarse) Selection	N (Coarse) Selection	(Y) Max.	R	C	Coarse Thread Dimension	
Type	D	L	F	B						M	Pitch
(D Tolerance g6) SFAD SSFAD PSFAD PSSFAD RSFAD (D≤30 L≤500)	4	25-298	2≤F≤Px5	(When P≤6) B≤F-2	3 4	2	300	0.2 or Less	0.2 or Less	3	0.5
	5	25-398			3 4 5	2.6 3	400			4	0.7
	6	25-598			3 4 5 6	3	600			5	0.8
	8	25-798			3 4 5 6 8	3 4 5	800			6	1.0
	10	25-798			4 5 6 8 10	3 4 5 6	800			8	1.25
	12	25-998			5 6 8 10 12	4 5 6 8	1000			10	1.5
	13	25-998			5 6 8 10 12	4 5 6 8	1000			12	1.75
	15	25-998			5 6 8 10 12	4 5 6 8 10	1000			16	2.0
	16	25-1198			5 6 8 10 12 16	4 5 6 8 10	1200			20	2.5
	18	25-1198			5 6 8 10 12 16	4 5 6 8 10 12	1200			24	3.0
	20	25-1198			6 8 10 12 16 20	4 5 6 8 10 12	1200			30	3.5
	25	25-1198			8 10 12 16 20 24	4 5 6 8 10 12 16	1200				
	30	25-1498			8 10 12 16 20 24 30	6 8 10 12 16 20	1500				
	35	25-1498			10 12 16 20 24 30	8 10 12 16 20 24	1500				
	40	40-1498			12 16 20 24 30	10 12 16 20 24 30	1500				
	50	50-1498			16 20 24 30	12 16 20 24 30	1500				
(D Tolerance f8) PSFGD PSSFGD				(When P≥.10) B≤F-3				0.3 or Less	0.5 or Less		
				(When P≥12) B≤F-5							
				(W/o Threads) B=0							
				⚙️ B≥Pitchx3					1.0 or Less		
									0.5 or Less		

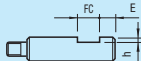
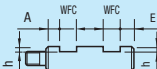
⚠ Overall length L requires $N \times 3 \leq L$.

⚠ When $D=P$, specify $F=B$ as B dimensions. However, L and F dimensions have manufacturing priority and B dimension of the product will be $F - (\text{Pitch} \times 2)$.

 Ordering Example Part Number - **L** - **F** - **B** - **P** - **N**
 SFAD20 - 277 - F25 - B12 - P10 - N12

Alterations  Part Number - L - F - B - P (PMC, PMS) - N (NSC, ND) - (LKC, WSC...etc.)
SFAD30 - 250 - F40 - B30 - P10 - N10 - LKC

Alteration Details P.113

Alterations	Code	Spec.																																																
	LKC	Alteration to L dimension tolerance <u>(Ordering Code)</u> LKC ⊗ Not applicable when D-P=2. L dimensions can be specified in 0.1mm increment for LKC. Ⓜ L < 200 → L ± 0.03 200 ≤ L < 500 → L ± 0.05 L ≥ 500 → L ± 0.1																																																
	WSC	Wrench Flats at Two Locations <u>(Ordering Code)</u> WSC12-X8 <u>(Application Notes)</u> Applicable to D=6 or more WSC, X=1mm increment Ⓜ WSC=X+l1+l2-X-L Ⓜ WSC(X) ≥ 0 ⊗ Orientation between two set screw flats is not coplanar. <table> <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>18</td><td>16</td><td>16</td><td>10</td></tr> <tr> <td>8</td><td>7</td><td>20</td><td>17</td><td>10</td><td>15</td></tr> <tr> <td>10</td><td>8</td><td>25</td><td>22</td><td>12</td><td>10</td></tr> <tr> <td>12</td><td>10</td><td>30</td><td>25</td><td>13</td><td>11</td></tr> <tr> <td>13</td><td>11</td><td>35</td><td>30</td><td>15</td><td>13</td></tr> <tr> <td>15</td><td>13</td><td>40</td><td>36</td><td>16</td><td>14</td></tr> <tr> <td>20</td><td>14</td><td>50</td><td>41</td><td>18</td><td>16</td></tr> </table>	D	W	l1	D	W	l1	6	5	18	16	16	10	8	7	20	17	10	15	10	8	25	22	12	10	12	10	30	25	13	11	13	11	35	30	15	13	15	13	40	36	16	14	20	14	50	41	18	16
D	W	l1	D	W	l1																																													
6	5	18	16	16	10																																													
8	7	20	17	10	15																																													
10	8	25	22	12	10																																													
12	10	30	25	13	11																																													
13	11	35	30	15	13																																													
15	13	40	36	16	14																																													
20	14	50	41	18	16																																													
	FC	Set Screw Flat at One Location <u>(Ordering Code)</u> FC10-E8 FC, E=1mm increment Ⓜ FC ≥ 3xD Ⓜ When 1.5xD < FC, FC ≤ L/2 Ⓜ E=0 or E ≥ 2 ⊗ Not available in combination with WFC. <table> <tr> <th>D</th><th>h</th></tr> <tr> <td>4-5</td><td>0.5</td></tr> <tr> <td>6-18</td><td>1</td></tr> <tr> <td>20-40</td><td>2</td></tr> <tr> <td>50</td><td>3</td></tr> </table>	D	h	4-5	0.5	6-18	1	20-40	2	50	3																																						
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50	3																																																	
	WFC	Set Screw Flats at Two Locations <u>(Ordering Code)</u> WFC8-A8-E4 WFC, A, E=1mm increment Ⓜ WFC ≥ 3xD Ⓜ When 1.5xD < WFC, 2WFC ≤ L/2 Ⓜ A(E)=0 or A(E) ≥ 2 ⊗ Orientation between set screw flats is not coplanar. Not available in combination with FC. <table> <tr> <th>D</th><th>h</th></tr> <tr> <td>4-5</td><td>0.5</td></tr> <tr> <td>6-18</td><td>1</td></tr> <tr> <td>20-40</td><td>2</td></tr> <tr> <td>50</td><td>3</td></tr> </table>	D	h	4-5	0.5	6-18	1	20-40	2	50	3																																						
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6-18	1																																																	
20-40	2																																																	
50	3																																																	

Alterations	Code	Spec.
	RC	90-deg. Set Screw Flat at One Location <u>Ordering Code</u> RC10 <u>Application Notes</u> Only applicable to D=10 ~ 30. ❗ Not available in combination with WRC.
	WRC	90-deg. Set Screw Flats at Two Locations <u>Ordering Code</u> WRC10-Y10 <u>Application Notes</u> Only applicable to D=10 ~ 30. ❗ Not available in combination with RC. ❗ Orientation between two set screw flats is not coplanar.
	PMC PMS	Change to Fine Thread <u>Ordering Code</u> PMC14 (P is changed to PMC) PMS14 (P is changed to PMS)
	NSC	Change to Fine Tapped Thread <u>Ordering Code</u> NSC14 (N is changed to NSC) <u>Application Notes</u> Applicable to D=12 or more
	ND	Change the effective length of tapped part to Nx3. <u>Ordering Code</u> ND6 (N is changed to ND) <u>Application Notes</u> Only applicable to D=10 ~ 30, N=6 ~ 20 ❗ One End Tapped: NDx3.5+4>L

For details,
see Sheet
Alteration
Overview.

P.113

- ⚠ Please see Shaft Alteration Overview for details if provided.  **P.113**
- ⚠ When selecting multiple alteration additions, the distance between machined areas should be greater than 2mm. **P.114**
- ⚠ Alterations may lower hardness. See  **P.112**

[illegible]

Part Number		Unit Price						
Type	D	Min. L 50	L51 100	L101 150	L151 200	L201 300	L301 400	L401 500
RSFAD	4						-	-
	5							-
	6							
	8							
	10							
	12							
	13							
	15							
	16							
	18							
	20							
	25							
30								

Part Number		Unit Price							
Type	D	Min. L	L101	L201	L401	L601	L801	L1001	L1201
		1	1	1	1	1	1	1	1
		100	200	400	600	800	1000	1200	1498
PSFGD	6					-	-	-	-
	8					-	-	-	-
	10						-	-	-
	12							-	-
	13							-	-
	15, 16								-
	18, 20								-
	25								-
	30								-
	35								
	40								
50									
PSSFGD	6					-	-	-	-
	8						-	-	-
	10						-	-	-
	12, 13							-	-
	15, 16							-	-
	18, 20								-
	25								-
	30								
	35								
	40								
	50								

