# Shafts

## One End Tapered, One End Tapped / One End Stepped and Tapped / One End Threaded

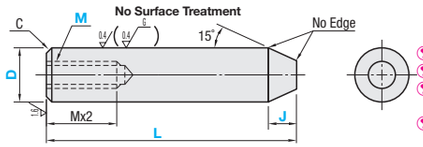
### ■One End Tapered, One End Tapped

RoHS10

| Type | | Material | Hardness | Surface Treatment |
|---|---|---|---|---|
| D Tol. g6 | D Tol. h5 | | | |
| SFTF | SFLU | EN 1.3505 Equiv. | Effective Hardened Depth of Induction Hardening P.112 | - |
| SSFTF | SSFLU | EN 1.4037 Equiv. | | |
| PSFTF | PSFLU | EN 1.3505 Equiv. | EN 1.3505 Equiv. 58HRC~ | Hard Chrome Plating<br>Plating Hardness: HV750 ~<br>Plating Thickness: 5μ or More ~ |
| PSSFTF | PSSFLU | EN 1.4037 Equiv. | EN 1.4037 Equiv. 56HRC~ | |

| D Tol. | | |
|---|---|---|
| D | g6 | h5 |
| 6 | -0.004<br>-0.012 | 0<br>-0.005 |
| 8<br>10 | -0.005<br>-0.014 | 0<br>-0.006 |

| D Tol. | | |
|---|---|---|
| D | g6 | h5 |
| 12<br>13<br>15<br>16<br>18 | -0.006<br>-0.017 | 0<br>-0.008 |
| 20 | -0.007<br>-0.020 | 0<br>-0.009 |

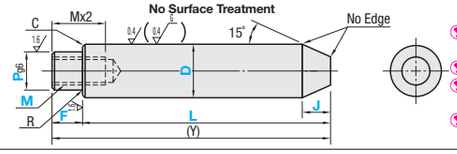



- Hardness of J+10 area will be lower due to annealing required for machining.
- Case hardening and plating layers do not remain on the tapered area.
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.111
- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm).

### ■One End Tapered, One End Stepped and Tapped

RoHS10

| Type | | Material | Hardness | Surface Treatment |
|---|---|---|---|---|
| D Tol. g6 | D Tol. h5 | | | |
| SFTG | SFJU | EN 1.3505 Equiv. | Effective Hardened Depth of Induction Hardening P.112 | - |
| SSFTG | SSFJU | EN 1.4037 Equiv. | | |
| PSFTG | PSFJU | EN 1.3505 Equiv. | EN 1.3505 Equiv. 58HRC~ | Hard Chrome Plating<br>Plating Hardness: HV750 ~<br>Plating Thickness: 5μ or More ~ |
| PSSFTG | PSSFJU | EN 1.4037 Equiv. | EN 1.4037 Equiv. 56HRC~ | |

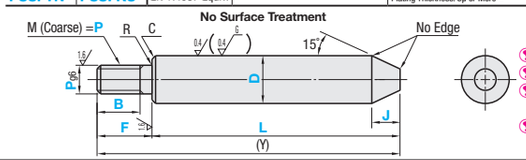



- Hardness of J+10 area will be lower due to annealing required for machining.
- Case hardening and plating layers do not remain on the tapered area.
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.111
- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm).

### ■One End Tapered, One End Threaded

RoHS10

| Type | | Material | Hardness | Surface Treatment |
|---|---|---|---|---|
| D Tol. g6 | D Tol. h5 | | | |
| SFTN | SFKU | EN 1.3505 Equiv. | Effective Hardened Depth of Induction Hardening P.112 | - |
| SSFTN | SSFKU | EN 1.4037 Equiv. | | |
| PSFTN | PSFKU | EN 1.3505 Equiv. | EN 1.3505 Equiv. 58HRC~ | Hard Chrome Plating<br>Plating Hardness: HV750 ~<br>Plating Thickness: 5μ or More ~ |
| PSSFTN | PSSFKU | EN 1.4037 Equiv. | EN 1.4037 Equiv. 56HRC~ | |




- Hardness of J+10 area will be lower due to annealing required for machining.
- Case hardening and plating layers do not remain on the tapered area.
- L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness P.111
- Annealing may lower hardness at shaft end machined areas (effective thread length + approx. 10mm).

### ■One End Tapered, One End Tapped

| Part Number Type | | D | 1mm Increment L | J | M (Coarse) Selection | C |
|---|---|---|---|---|---|---|
| (D Tolerance g6) | (D Tolerance h5) | 6 | 25~200 | 5~7 | 3 | 0.5 or Less |
| | | 8 | 25~200 | 5~10 | 3 4 5 | |
| | | 10 | 30~200 | 5~14 | 3 4 5 6 | |
| SFTF | SFLU | 12 | 40~300 | 5~18 | 4 5 6 8 | |
| SSFTF | SSFLU | 13 | 40~300 | 5~20 | 4 5 6 8 | |
| PSFTF | PSFLU | 15 | 50~300 | 10~24 | 4 5 6 8 | |
| PSSFTF | PSSFLU | 16 | 50~500 | 10~25 | 4 5 6 8 10 | |
| | | 18 | 60~500 | 10~28 | 4 5 6 8 10 12 | |
| | | 20 | 60~500 | 10~32 | 4 5 6 8 10 12 | 1.0 or Less |

L requires L-J≥20.

### ■One End Tapered, One End Stepped and Tapped

| Part Number Type | | D | 1mm Increment L | F | P | J | M (Coarse) Selection | (Y) Max. | R | C |
|---|---|---|---|---|---|---|---|---|---|---|
| (D Tolerance g6) | (D Tolerance h5) | 8 | 25~198 | 2≤F≤Px4 | 6 | 5~10 | 3 | 200 | 0.3 or Less | 0.5 or Less |
| | | 10 | 30~198 | | 6~8 | 5~14 | 3 4 5 | 200 | | |
| | | 12 | 40~298 | | 6~10 | 5~18 | 3 4 5 6 | 300 | | |
| SFTG | SFJU | 13 | 40~298 | | 6~11 | 5~20 | 3 4 5 6 8 | 300 | | |
| SSFTG | SSFJU | 15 | 50~298 | | 6~13 | 10~24 | 3 4 5 6 8 10 | 300 | | |
| PSFTG | PSFJU | 16 | 50~498 | | 6~14 | 10~25 | 3 4 5 6 8 10 | 500 | | |
| PSSFTG | PSSFJU | 18 | 60~498 | | 8~16 | 10~28 | 4 5 6 8 10 12 | 500 | | |
| | | 20 | 60~498 | | 8~17 | 10~32 | 4 5 6 8 10 12 | 500 | | 1.0 or Less |

P dimensions require M+3≤P. L requires L-J≥20.

### ■One End Tapered, One End Threaded

| Part Number Type | | D | 1mm Increment L | F | B | P Selection | 1mm Increment J | (Y) Max. | R | C |
|---|---|---|---|---|---|---|---|---|---|---|
| (D Tolerance g6) | (D Tolerance h5) | 6 | 25~198 | 2≤F≤Px5 | B≤F-2 (When P≤6)<br>B≤F-3 (When P=8, 10)<br>B≤F-5 (When P≥12)<br>B=0 (W/o Threads) | 3 4 5 6 | 5~7 | 200 | 0.3 or Less | 0.5 or Less |
| | | 8 | 25~198 | | | 3 4 5 6 8 | 5~10 | 200 | | |
| | | 10 | 30~198 | | | 4 5 6 8 10 | 5~14 | 200 | | |
| SFTN | SFKU | 12 | 40~298 | | | 5 6 8 10 12 | 5~18 | 300 | | |
| SSFTN | SSFKU | 13 | 40~298 | | | 5 6 8 10 12 | 5~20 | 300 | | |
| PSFTN | PSFKU | 15 | 50~298 | | | 5 6 8 10 12 | 10~24 | 300 | | |
| PSSFTN | PSSFKU | 16 | 50~498 | | | 5 6 8 10 12 16 | 10~25 | 500 | | |
| | | 18 | 60~498 | | | 5 6 8 10 12 16 | 10~28 | 500 | | |
| | | 20 | 60~498 | | | 5 6 8 10 12 16 20 | 10~32 | 500 | | 1.0 or Less |

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 -(Pitchx2).
Thread machining will not be applied when B=0 is specified. L requires L-J≥20. B≥Pitchx3 is required.

Ordering Example

- One End Tapered, One End Tapped

| Part Number | - | L | - | J | - | M |
|---|---|---|---|---|---|---|
| SFTF20 | - | 350 | - | J15 | - | M6 |

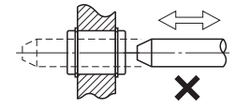
- One End Tapered, One End Stepped and Tapped

| Part Number | - | L | - | F | - | P | - | J | - | M |
|---|---|---|---|---|---|---|---|---|---|---|
| SFTG20 | - | 350 | - | F25 | - | P16 | - | J10 | - | M8 |

- One End Tapered, One End Threaded

| Part Number | - | L | - | F | - | B | - | P | - | J |
|---|---|---|---|---|---|---|---|---|---|---|
| SFTN20 | - | 350 | - | F40 | - | B30 | - | P10 | - | J10 |

Example



Not suitable for usage requiring frequent insertions with Linear Bushings. (Linear bushing damages may result.)

### ■One End Tapered, One End Tapped

| Part Number Type | D | Unit Price Min. L~50 | L51~100 | L101~150 | L151~200 | L201~300 | L301~400 | L401~500 |
|---|---|---|---|---|---|---|---|---|
| SFTF<br>SFLU | 6 | | | | | - | - | - |
| | 8 | | | | | - | - | - |
| | 10 | | | | | - | - | - |
| | 12 | | | | | | - | - |
| | 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |
| SSFTF<br>SSFLU | 6 | | | | | - | - | - |
| | 8 | | | | | - | - | - |
| | 10 | | | | | - | - | - |
| | 12 | | | | | | - | - |
| | 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |

| Part Number Type | D | Unit Price Min. L~50 | L51~100 | L101~150 | L151~200 | L201~300 | L301~400 | L401~500 |
|---|---|---|---|---|---|---|---|---|
| PSFTF<br>PSFLU | 6 | | | | | | - | - |
| | 8, 10 | | | | | - | - | - |
| | 12, 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |
| PSSFTF<br>PSSFLU | 6, 8, 10 | | | | | - | - | - |
| | 12, 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |

### ■One End Tapered, One End Stepped and Tapped

| Part Number Type | D | Unit Price Min. L~50 | L51~100 | L101~150 | L151~200 | L201~300 | L301~400 | L401~498 |
|---|---|---|---|---|---|---|---|---|
| SFTG<br>SFJU | 8, 10 | | | | | - | - | - |
| | 12 | | | | | | - | - |
| | 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |
| SSFTG<br>SSFJU | 8, 10 | | | | | - | - | - |
| | 12, 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |

| Part Number Type | D | Unit Price Min. L~50 | L51~100 | L101~150 | L151~200 | L201~300 | L301~400 | L401~498 |
|---|---|---|---|---|---|---|---|---|
| PSFTG<br>PSFJU | 8, 10 | | | | | | - | - |
| | 12, 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |
| PSSFTG<br>PSSFJU | 8, 10 | | | | | - | - | - |
| | 12, 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |

### ■One End Tapered, One End Threaded

| Part Number Type | D | Unit Price Min. L~50 | L51~100 | L101~150 | L151~200 | L201~300 | L301~400 | L401~498 |
|---|---|---|---|---|---|---|---|---|
| SFTN<br>SFKU | 6, 8, 10 | | | | | - | - | - |
| | 12 | | | | | | - | - |
| | 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |
| SSFTN<br>SSFKU | 6, 8, 10 | | | | | - | - | - |
| | 12, 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |

| Part Number Type | D | Unit Price Min. L~50 | L51~100 | L101~150 | L151~200 | L201~300 | L301~400 | L401~498 |
|---|---|---|---|---|---|---|---|---|
| PSFTN<br>PSFKU | 6, 8, 10 | | | | | | - | - |
| | 12, 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |
| PSSFTN<br>PSSFKU | 6, 8, 10 | | | | | - | - | - |
| | 12, 13 | | | | | | - | - |
| | 15 | | | | | | - | - |
| | 16 | | | | | | | |
| | 18, 20 | - | | | | | | |

Alterations

- One End Tapered, One End Tapped

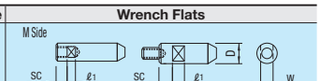
| Part Number | - | L | - | J | - | M | - | (LKC, SC) |
|---|---|---|---|---|---|---|---|---|
| SFTF20 | - | 350 | - | J15 | - | M6 | - | LKC |

- One End Tapered, One End Stepped and Tapped

| Part Number | - | L | - | F | - | P | - | J | - | M | - | (SC) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFTG20 | - | 350 | - | F25 | - | P16 | - | J10 | - | M8 | - | SC5 |

- One End Tapered, One End Threaded

| Part Number | - | L | - | F | - | B | - | P | - | J | - | (SC) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFTN20 | - | 350 | - | F40 | - | B30 | - | P10 | - | J10 | - | SC5 |

| Alterations | Alteration to L dimension tolerance | Wrench Flats |
|---|---|---|
| |  |  |
| Code | LKC | SC |
| Spec. | Changes L tolerance.<br>Ordering Code LKC<br>L<200⋯L±0.03<br>200≤L<500<br>⋯L±0.05<br>L=500⋯L±0.1<br>L dimensions can be specified in 0.1mm increment for LKC.<br>⊗Not applicable to D=P.<br>⊗Not Applicable to One End Stepped and Tapped One End Threaded Type. | Adds wrench flats.<br>Ordering Code SCS<br>SC=1mm Increment<br>SC+ℓ1≤L-J<br>SC≥0 |

| D | W | ℓ1 |
|---|---|---|
| 6 | 5 | 8 |
| 8 | 7 | |
| 10 | 8 | |
| 12 | 10 | 10 |
| 13 | 11 | |
| 15 | 13 | |
| 16 | 14 | |
| 18 | 16 | |
| 20 | 17 | |

Alterations may lower hardness. See P.112