



Precision Linear Shafts –Retaining Ring Grooves on Both Ends–



Precision Linear Shafts match most common U.S. standards for O.D. tolerance as well as material, hardness and plating specifications. Case Hardened Steel shafts may be used with typical linear bearing applications. The 440 stainless steel shafts are suitable for cleanroom environment or when introduced to rough conditions such as high humidity or unstable temperatures.



One of our most significant advantages is the ability to designate the shaft length without a cutting charge. Additional features like only one end with retaining groove can also be selected. Simply add the modification ordering code to the end of the part number.



☐: New Price

| Material | Heat Treatment | Surface Treatment | Type |
|----------------------|-----------------------------|-----------------------------|---------|
| Case Hardened Steel | Induction Hardening* 58HRC~ | — | U-SFAR |
| | | Hard Chrome Plating** 750HV | U-PSFAR |
| 440C Stainless Steel | Induction Hardening* 56HRC~ | — | U-SSFAR |

*Hardening Depth and **Plating Thickness **P.38**
 Ⓢ Material Characteristics **P.628, 629**

Length Tolerance **P.38**
 General Tolerance Unless otherwise specified use the table below.

| From | To | Tolerance |
|--------|--------|-----------|
| 0.000 | 5.000 | ±0.01 |
| 5.001 | 16.000 | ±0.02 |
| 16.001 | 60.000 | ±0.05 |

Ⓢ Thread or hole location tolerance: ±0.005" non-cumulative.

Ⓢ Surface Roughness: Unless otherwise specified **25/32**
 Ⓢ Circularity, Straightness, Perpendicularity and Concentricity **P.38**

| Type | Part No. D (Class L) | | | L Choose in | | d | | | M | | | R max. | N | Compatible Retaining Rings (ASME B18.27-1998) | C |
|------------------------------|----------------------|---------|---------------|------------------|----------|-----------|--------|-----------|-------|-----------|-------|--------|---------|---|---|
| | Callout | Nominal | Tolerance | 0.01" Increments | Diameter | Tolerance | Width | Tolerance | Width | Tolerance | | | | | |
| U-SFAR U-PSFAR U-SSFAR | 0.25 | 1/4 | 0.2495 0.2490 | 0.75 ~ 22.00 | 0.230 | 0.2315 | 0.2285 | 0.029 | 0.032 | 0.029 | 0.003 | 0.094 | NA1-25 | 0.015 | |
| | 0.38 | 3/8 | 0.3745 0.3740 | 0.75 ~ 30.00 | 0.352 | 0.3540 | 0.3500 | 0.029 | 0.032 | 0.029 | 0.005 | 0.125 | NA1-37 | 0.015 | |
| | 0.50 | 1/2 | 0.4995 0.4990 | 1.00 ~ 30.00 | 0.468 | 0.4700 | 0.4660 | 0.039 | 0.042 | 0.039 | 0.005 | 0.156 | NA1-50 | 0.015 | |
| | 0.63 | 5/8 | 0.6245 0.6240 | 1.00 ~ 36.00 | 0.588 | 0.5910 | 0.5850 | 0.039 | 0.042 | 0.039 | 0.005 | 0.156 | NA1-62 | 0.015 | |
| | 0.75 | 3/4 | 0.7495 0.7490 | 1.25 ~ 45.00 | 0.704 | 0.7070 | 0.7010 | 0.046 | 0.049 | 0.046 | 0.005 | 0.156 | NA1-75 | 0.015 | |
| | 1.00 | 1" | 0.9995 0.9990 | 1.25 ~ 45.00 | 0.940 | 0.9450 | 0.9350 | 0.046 | 0.049 | 0.046 | 0.005 | 0.156 | NA1-100 | 0.030 | |

Order Example

Ⓢ The part number consists only of the fields with blue characters.

Part No. — **L**

Type **D**

U-SFAR 0.50 — **L 4.25**



Days to Ship

Standard **3** Days

Express **1** Day

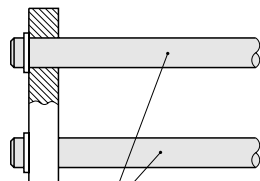
(Specify Express **A**) \$ 8.00/piece **P.30**

Ⓢ Non-Returnable **P.30**

Ⓢ A flat charge of \$21.60 for 3 or more identical pieces.



Example



Retaining Ring Grooves on Both Ends



Optional Modifications



Part No. — **L (LLC)** — (Ordering Code)

Type **D**

U-SFAR 0.50 — **LLC4.31** — **NWC**

| Optional Modifications | Retaining Ring Groove on One End Only | Length Size Leader Position |
|------------------------|--|---|
| | | |
| Ordering Code | NWC | LLC |
| Details | Example NWC Only one end of the shaft has a retaining ring groove. | Example LLC20.56 The position of L size leader is changed to the outside of the retaining ring grooves. |
| | | Ⓢ Changes L to LLC specify the dimensions like order example. Ⓢ LLC=0.01" Increments |
| \$ Price Adder | Free of Charge | Free of Charge |

Ⓢ When using Optional Modifications, add the "Price Adder" to the standard "Unit Price".



Price

Quantity Discount Rate

| Quantity | 1 | 2-4 | 5-19 | 20~ |
|----------|---|-----|------|-----|
| Rate | — | 5% | 15% | 20% |

Ⓢ Prices below include Set-Up Charges.

Ⓢ For larger quantity orders "Days to Ship" may differ from published catalog term. **P.29**

| Part No. | Type | D | \$ Unit Price | | | | | | | | | |
|----------|------|-------|----------------|---------------|---------------|---------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | | Min. L 2.00 | L2.01 4.00 | L4.01 6.00 | L6.01 8.00 | L8.01 12.00 | L12.01 16.00 | L16.01 20.00 | L20.01 24.00 | L24.01 32.00 | L32.01 40.00 |
| U-SFAR | 0.25 | 8.40 | 12.10 | 16.10 | 20.00 | 24.00 | 27.80 | 31.80 | 35.80 | - | - | - |
| | 0.38 | 9.70 | 13.40 | 17.40 | 21.30 | 25.20 | 29.20 | 33.10 | 37.10 | 49.70 | - | - |
| | 0.50 | 9.90 | 15.40 | 20.90 | 26.40 | 31.90 | 37.50 | 43.00 | 48.40 | 54.00 | - | - |
| | 0.63 | 9.90 | 15.80 | 21.80 | 27.70 | 33.70 | 39.60 | 45.50 | 51.60 | 57.50 | 64.80 | - |
| | 0.75 | 11.00 | 17.70 | 24.50 | 31.50 | 38.20 | 45.00 | 51.90 | 58.60 | 65.50 | 72.40 | 79.20 |
| U-PSFAR | 0.25 | 9.80 | 14.60 | 19.60 | 24.40 | 29.30 | 34.20 | 39.10 | 48.00 | - | - | - |
| | 0.38 | 10.80 | 16.00 | 23.00 | 29.90 | 37.00 | 44.00 | 50.90 | 58.00 | 64.90 | - | - |
| | 0.50 | 11.10 | 16.60 | 23.70 | 30.60 | 37.60 | 44.70 | 51.60 | 58.60 | 65.60 | - | - |
| | 0.63 | 11.90 | 19.80 | 28.30 | 36.70 | 45.10 | 53.60 | 62.00 | 70.50 | 79.00 | 90.00 | - |
| | 0.75 | 13.30 | 23.20 | 33.60 | 43.80 | 54.10 | 64.50 | 74.70 | 85.00 | 95.30 | 105.60 | 122.50 |
| U-SSFAR | 0.25 | 15.80 | 25.90 | 37.40 | 48.80 | 60.30 | 71.80 | 83.30 | 94.80 | 112.90 | 130.90 | 149.10 |
| | 0.38 | 10.10 | 16.70 | 23.50 | 30.10 | 36.70 | 43.50 | 50.10 | 56.80 | - | - | - |
| | 0.50 | 11.90 | 21.60 | 31.10 | 40.90 | 50.60 | 60.20 | 69.90 | 79.40 | 89.20 | - | - |
| | 0.63 | 14.10 | 23.80 | 33.40 | 43.00 | 52.80 | 62.50 | 72.10 | 81.70 | 91.30 | - | - |
| | 0.75 | 16.50 | 28.30 | 39.80 | 51.60 | 63.40 | 75.10 | 86.90 | 98.50 | 110.20 | 122.00 | - |
| | 1.00 | 18.40 | 32.60 | 46.90 | 61.20 | 75.40 | 89.70 | 103.80 | 118.10 | 132.40 | 146.60 | 160.90 |
| | 1.00 | 20.40 | 36.30 | 52.30 | 68.20 | 84.30 | 100.30 | 116.30 | 132.20 | 148.30 | 164.20 | 182.90 |

