

# ***Needle Valves (U Series)***

*Catalog 4110-U  
Revised, October 2000*



# U Series Needle Valves

## Introduction

Parker U Series Union Bonnet Valves have been engineered for use at pressures up to 6,000 (414 bar) and temperatures as high as 1,200 °F (649 °C). A non-rotating lower stem helps to extend packing life by removing rotation from the packing area. Stem packing below the threads isolates the thread lubricant from the flow, ensuring adequate lubrication regardless of the media.

## Features

- Union bonnet design ensures high integrity seal under severe service applications
- Packing below the power threads protects thread lubricants from media and isolates the lubricants from the media
- Dust seal in the packing nut protects stem threads from external contamination
- Stem swivel above the packing eliminates entrapment area and increases packing life
- Choice of Grafoil® or PTFE packing
- Choice of Regulating or Blunt stem types. Blunt stem type helps combat wire draw which may occur when two phase flow is present (i.e. steam service)
- 316 stainless steel construction
- Wide variety of US Customary and SI ports
- Panel mountable
- 100% factory tested

## Specifications

### Pressure Rating:

6000 psig (414 bar) CWP

### Temperature Rating:

PTFE packing:

-65 °F to 450 °F (-54 °C to 232 °C)

Grafoil® packing:

-65 °F to 700 °F (-54 °C to 371 °C)

Grafoil® packing with HT option:

-65 °F to 1200 °F (-54 °C to 649 °C)

**Orifice:** .177 to .437 (4.5mm to 11.1mm)

**C<sub>v</sub>:** .53 to 3.55

## Materials of Construction

| Item # | Description    | Material                   |
|--------|----------------|----------------------------|
| *1     | Body           | ASTM A 182, Type F316      |
| 2      | Bonnet Nut     | ASTM A 479, Type 316       |
| *3     | Bonnet         | ASTM A 479, Type 316       |
| *4     | Lower Stem*    | ASTM A 564, Type 630       |
| 5      | Upper Stem     | ASTM A 564, Type 630       |
| 6      | Stem Guide     | ASTM A 581, Type 416       |
| 7      | Ball           | 440-C Stainless Steel      |
| *8     | Bonnet Seal**  | Nickel-Chromium-Iron Alloy |
| 9      | Packing Nut    | ASTM A 479, Type 316       |
| *10    | Packing***     | Grafoil®                   |
| *11    | Packing Washer | 316 Stainless Steel        |
| 12     | Handle****     | Aluminum                   |
| 13     | Handle Screw   | 316 Stainless Steel        |
| 14     | Dust Seal***** | Nylon 6/6                  |
| 15     | Locking Nut    | Stainless Steel            |

\* Wetted parts

\* Lower Stem material is ASTM A 276 Type 316 with HT option

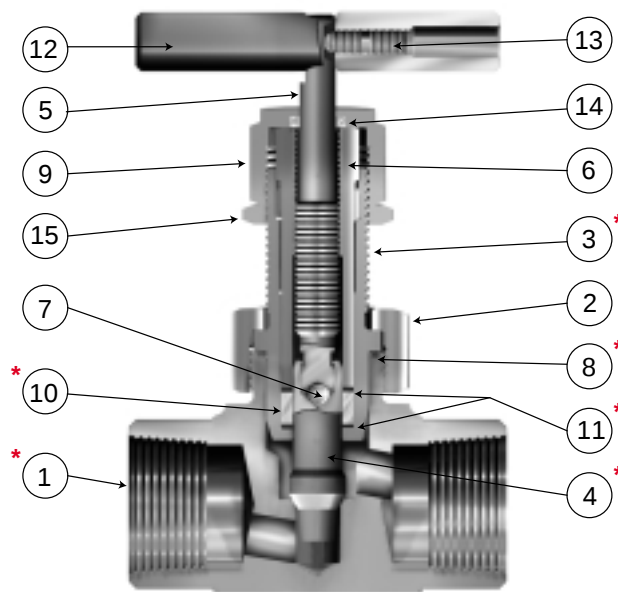
\*\* Not required on U6 and U12 Series which have metal-to-metal seals

\*\*\* Optional PTFE Packing is available

\*\*\*\* Handle material is stainless steel with HT option

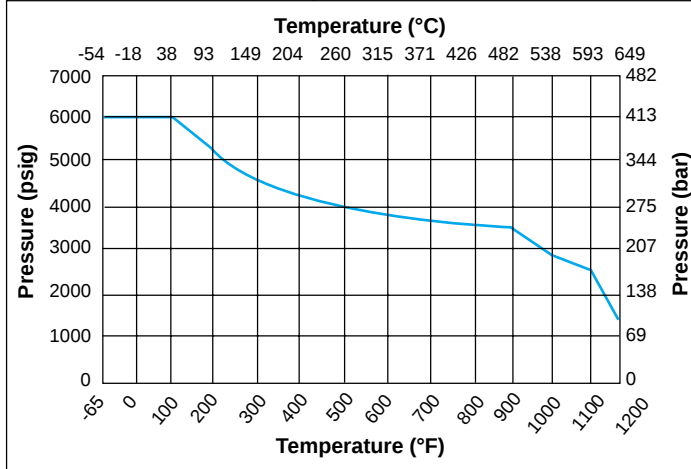
\*\*\*\*\* Dust Seal not available with HT option

Lubrication: Molybdenum disulfide with soft metallic fillers

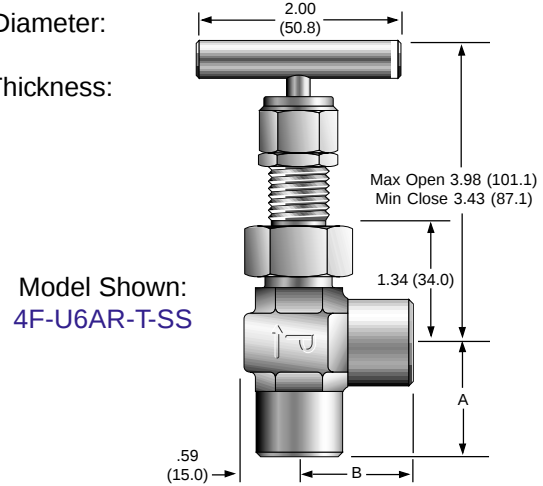
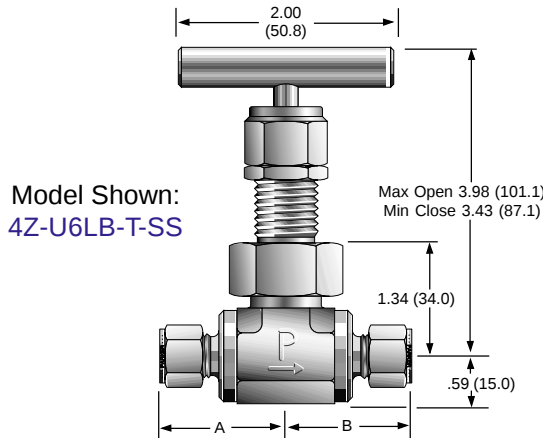
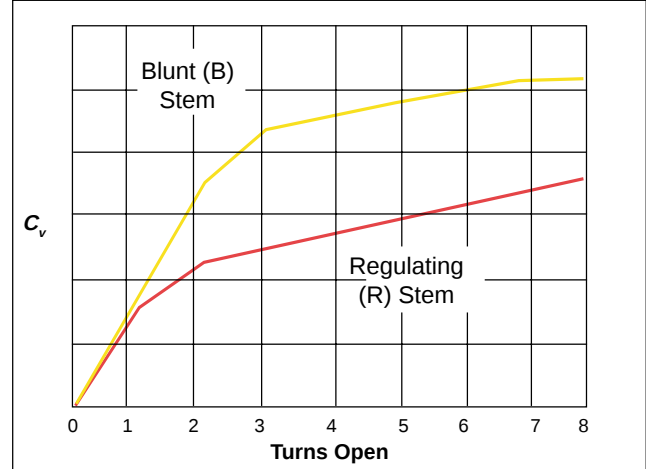


Model Shown: 16F-U16LR-G-SS

## Pressure vs. Temperature



## Flow Characteristics



## U6 Series Dimensions / Flow Data

( ) Denotes dimensions in millimeters

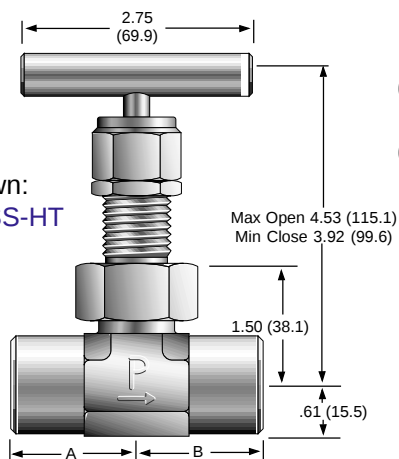
| Basic Part Number    |                      | End Connections         |                 | Stem Type           | Flow Data |     |              |              |              |              | Dimensions |      |      |      |
|----------------------|----------------------|-------------------------|-----------------|---------------------|-----------|-----|--------------|--------------|--------------|--------------|------------|------|------|------|
|                      |                      | Inlet (Port 1)          | Outlet (Port 2) |                     | Orifice   |     | Inline       |              | Angle        |              | A†         |      | B†   |      |
| Inline               | Angle                |                         |                 |                     | Inch      | mm  | Cv           | xT*          | Cv           | xT*          | Inch       | mm   | Inch | mm   |
| 2F-U6LR<br>2F-U6LB   | 2F-U6AR<br>2F-U6AB   | 1/8" Female NPT         |                 | Regulating<br>Blunt | 0.188     | 4.8 | 0.58<br>0.69 | 0.83<br>0.50 | 0.77<br>0.91 | 0.70<br>0.42 | 1.00       | 25.4 | 1.00 | 25.4 |
| 4A-U6LR<br>4A-U6LB   | 4A-U6AR<br>4A-U6AB   | 1/4" Compression A-LOK® |                 | Regulating<br>Blunt | 0.177     | 4.5 | 0.53<br>0.65 | 0.80<br>0.48 | 0.70<br>0.86 | 0.67<br>0.40 | 1.38       | 35.1 | 1.38 | 35.1 |
| 4F-U6LR<br>4F-U6LB   | 4F-U6AR<br>4F-U6AB   | 1/4" Female NPT         |                 | Regulating<br>Blunt | 0.228     | 5.8 | 0.78<br>0.82 | 0.95<br>0.59 | 1.04<br>1.09 | 0.80<br>0.50 | 1.03       | 26.2 | 1.03 | 26.2 |
| 4M-U6LR<br>4M-U6LB   | 4M-U6AR<br>4M-U6AB   | 1/4" Male NPT           |                 | Regulating<br>Blunt | 0.177     | 4.5 | 0.53<br>0.65 | 0.80<br>0.48 | 0.70<br>0.86 | 0.67<br>0.40 | 1.09       | 27.7 | 1.09 | 27.7 |
| 4Z-U6LR<br>4Z-U6LB   | 4Z-U6AR<br>4Z-U6AB   | 1/4" Compression CPI™   |                 | Regulating<br>Blunt | 0.177     | 4.5 | 0.53<br>0.65 | 0.80<br>0.48 | 0.70<br>0.86 | 0.67<br>0.40 | 1.38       | 35.1 | 1.38 | 35.1 |
| M6A-U6LR<br>M6A-U6LB | M6A-U6AR<br>M6A-U6AB | 6mm Compression A-LOK®  |                 | Regulating<br>Blunt | 0.177     | 4.5 | 0.53<br>0.65 | 0.80<br>0.48 | 0.70<br>0.86 | 0.67<br>0.40 | 1.38       | 35.1 | 1.38 | 35.1 |
| M6Z-U6LR<br>M6Z-U6LB | M6Z-U6AR<br>M6Z-U6AB | 6mm Compression CPI™    |                 | Regulating<br>Blunt | 0.177     | 4.5 | 0.53<br>0.65 | 0.80<br>0.48 | 0.70<br>0.86 | 0.67<br>0.40 | 1.38       | 35.1 | 1.38 | 35.1 |
| M8A-U6LR<br>M8A-U6LB | M8A-U6AR<br>M8A-U6AB | 8mm Compression A-LOK®  |                 | Regulating<br>Blunt | 0.177     | 4.5 | 0.53<br>0.65 | 0.80<br>0.48 | 0.70<br>0.86 | 0.67<br>0.40 | 1.38       | 35.1 | 1.38 | 35.1 |
| M8Z-U6LR<br>M8Z-U6LB | M8Z-U6AR<br>M8Z-U6AB | 8mm Compression CPI™    |                 | Regulating<br>Blunt | 0.177     | 4.5 | 0.53<br>0.65 | 0.80<br>0.48 | 0.70<br>0.86 | 0.67<br>0.40 | 1.38       | 35.1 | 1.38 | 35.1 |

\* Tested in accordance with ISA S75.02. Gas flow will be choked when  $P_1 - P_2 / P_1 = X_T$

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position

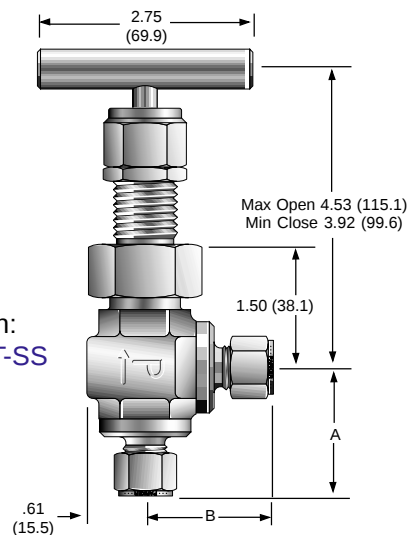
# U Series Needle Valves

Model Shown:  
6F-U12LB-G-SS-HT



Panel Hole Diameter:  
0.83 (21.1)  
Max Panel Thickness:  
0.61 (15.5)

Model Shown:  
M12A-U12AB-T-SS



## U12 Series Dimensions / Flow Data

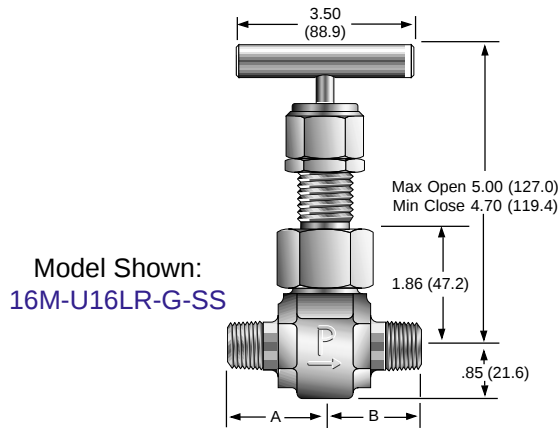
( ) Denotes dimensions in millimeters

| Basic<br>Part Number     |                          | End Connections         |                    | Stem<br>Type        | Flow Data      |                  |                |                  |              |              | Dimensions |      |      |      |
|--------------------------|--------------------------|-------------------------|--------------------|---------------------|----------------|------------------|----------------|------------------|--------------|--------------|------------|------|------|------|
|                          |                          | Inlet<br>(Port 1)       | Outlet<br>(Port 2) |                     | Orifice        |                  | Inline         |                  | Angle        |              | A†         |      | B†   |      |
| Inch                     | mm                       |                         |                    |                     | C <sub>v</sub> | x <sub>r</sub> * | C <sub>v</sub> | x <sub>r</sub> * | Inch         | mm           | Inch       | mm   |      |      |
| 4A-U12LR<br>4A-U12LB     | 4A-U12AR<br>4A-U12AB     | 1/4" Compression A-LOK® |                    | Regulating<br>Blunt | 0.125          | 3.2              | 0.44<br>0.51   | 0.57<br>0.40     | 0.60<br>0.68 | 0.49<br>0.33 | 1.39       | 35.3 | 1.39 | 35.3 |
| 4F-U12LR<br>4F-U12LB     | 4F-U12AR<br>4F-U12AB     | 1/4" Female NPT         |                    | Regulating<br>Blunt | 0.250          | 6.4              | 0.94<br>1.03   | 0.65<br>0.60     | 1.25<br>1.37 | 0.55<br>0.51 | 1.13       | 28.7 | 1.13 | 28.7 |
| 4W-U12LR<br>4W-U12LB     | 4W-U12AR<br>4W-U12AB     | 1/4" Tube Socket Weld   |                    | Regulating<br>Blunt | 0.177          | 4.5              | 0.65<br>0.73   | 0.60<br>0.48     | 0.87<br>0.96 | 0.52<br>0.41 | 1.18       | 30.0 | 1.18 | 30.0 |
| 4Z-U12LR<br>4Z-U12LB     | 4Z-U12AR<br>4Z-U12AB     | 1/4" Compression CPI™   |                    | Regulating<br>Blunt | 0.125          | 3.2              | 0.44<br>0.51   | 0.57<br>0.40     | 0.60<br>0.68 | 0.49<br>0.33 | 1.39       | 35.3 | 1.39 | 35.3 |
| 6A-U12LR<br>6A-U12LB     | 6A-U12AR<br>6A-U12AB     | 3/8" Compression A-LOK® |                    | Regulating<br>Blunt | 0.187          | 4.7              | 0.69<br>0.77   | 0.61<br>0.50     | 0.92<br>1.02 | 0.52<br>0.42 | 1.60       | 40.6 | 1.60 | 40.6 |
| 6F-U12LR<br>6F-U12LB     | 6F-U12AR<br>6F-U12AB     | 3/8" Female NPT         |                    | Regulating<br>Blunt | 0.312          | 7.9              | 1.19<br>1.31   | 0.78<br>0.80     | 1.58<br>1.74 | 0.66<br>0.68 | 1.30       | 33.0 | 1.30 | 33.0 |
| 6W-U12LR<br>6W-U12LB     | 6W-U12AR<br>6W-U12AB     | 3/8" Tube Socket Weld   |                    | Regulating<br>Blunt | 0.228          | 5.8              | 0.85<br>0.94   | 0.64<br>0.57     | 1.13<br>1.25 | 0.54<br>0.48 | 1.13       | 28.7 | 1.13 | 28.7 |
| 6Z-U12LR<br>6Z-U12LB     | 6Z-U12AR<br>6Z-U12AB     | 3/8" Compression CPI™   |                    | Regulating<br>Blunt | 0.187          | 4.7              | 0.69<br>0.77   | 0.61<br>0.50     | 0.92<br>1.02 | 0.52<br>0.42 | 1.60       | 40.6 | 1.60 | 40.6 |
| 8A-U12LR<br>8A-U12LB     | 8A-U12AR<br>8A-U12AB     | 1/2" Compression A-LOK® |                    | Regulating<br>Blunt | 0.250          | 6.4              | 0.94<br>1.03   | 0.65<br>0.60     | 1.25<br>1.37 | 0.55<br>0.51 | 1.49       | 37.8 | 1.49 | 37.8 |
| 8F-U12LR<br>8F-U12LB     | 8F-U12AR<br>8F-U12AB     | 1/2" Female NPT         |                    | Regulating<br>Blunt | 0.312          | 7.9              | 1.19<br>1.31   | 0.78<br>0.80     | 1.58<br>1.74 | 0.66<br>0.68 | 1.50       | 38.1 | 1.50 | 38.1 |
| 8W-U12LR<br>8W-U12LB     | 8W-U12AR<br>8W-U12AB     | 1/2" Tube Socket Weld   |                    | Regulating<br>Blunt | 0.312          | 7.9              | 1.19<br>1.31   | 0.78<br>0.80     | 1.58<br>1.74 | 0.66<br>0.68 | 1.13       | 28.7 | 1.13 | 28.7 |
| 8Z-U12LR<br>8Z-U12LB     | 8Z-U12AR<br>8Z-U12AB     | 1/2" Compression CPI™   |                    | Regulating<br>Blunt | 0.250          | 6.4              | 0.94<br>1.03   | 0.65<br>0.60     | 1.25<br>1.37 | 0.55<br>0.51 | 1.49       | 37.8 | 1.49 | 37.8 |
| M10A-U12LR<br>M10A-U12LB | M10A-U12AR<br>M10A-U12AB | 10mm Compression A-LOK® |                    | Regulating<br>Blunt | 0.250          | 6.4              | 0.94<br>1.03   | 0.65<br>0.60     | 1.25<br>1.37 | 0.55<br>0.51 | 1.53       | 38.9 | 1.53 | 38.9 |
| M10Z-U12LR<br>M10Z-U12LB | M10Z-U12AR<br>M10Z-U12AB | 10mm Compression CPI™   |                    | Regulating<br>Blunt | 0.250          | 6.4              | 0.94<br>1.03   | 0.65<br>0.60     | 1.25<br>1.37 | 0.55<br>0.51 | 1.53       | 38.9 | 1.53 | 38.9 |
| M12A-U12LR<br>M12A-U12LB | M12A-U12AR<br>M12A-U12AB | 12mm Compression A-LOK® |                    | Regulating<br>Blunt | 0.312          | 7.9              | 1.19<br>1.31   | 0.78<br>0.80     | 1.58<br>1.74 | 0.66<br>0.68 | 1.70       | 43.2 | 1.70 | 43.2 |
| M12Z-U12LR<br>M12Z-U12LB | M12Z-U12AR<br>M12Z-U12AB | 12mm Compression CPI™   |                    | Regulating<br>Blunt | 0.312          | 7.9              | 1.19<br>1.31   | 0.78<br>0.80     | 1.58<br>1.74 | 0.66<br>0.68 | 1.70       | 43.2 | 1.70 | 43.2 |
| M14A-U12LR<br>M14A-U12LB | M14A-U12AR<br>M14A-U12AB | 14mm Compression A-LOK® |                    | Regulating<br>Blunt | 0.312          | 7.9              | 1.19<br>1.31   | 0.78<br>0.80     | 1.58<br>1.74 | 0.66<br>0.68 | 1.70       | 43.2 | 1.70 | 43.2 |
| M14Z-U12LR<br>M14Z-U12LB | M14Z-U12AR<br>M14Z-U12AB | 14mm Compression CPI™   |                    | Regulating<br>Blunt | 0.312          | 7.9              | 1.19<br>1.31   | 0.78<br>0.80     | 1.58<br>1.74 | 0.66<br>0.68 | 1.70       | 43.2 | 1.70 | 43.2 |

\* Tested in accordance with ISA S75.02. Gas flow will be choked when  $P_1 - P_2 / P_1 = x_T$

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position

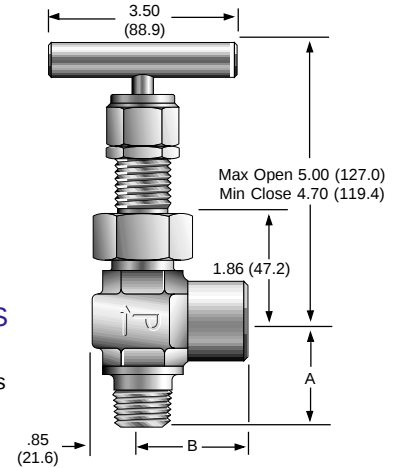
# U Series Needle Valves



Model Shown:  
16M-U16LR-G-SS

Panel Hole Diameter:  
1.02 (25.9)  
Max Panel Thickness:  
0.62 (15.7)

( ) Denotes dimensions in millimeters



Model Shown:  
16M16F-U16AB-T-SS

## U16 Series Dimensions / Flow Data

| Basic<br>Part Number       |                            | End Connections         |                    | Stem<br>Type        | Flow Data |      |              |              |              |              | Dimensions |      |      |      |
|----------------------------|----------------------------|-------------------------|--------------------|---------------------|-----------|------|--------------|--------------|--------------|--------------|------------|------|------|------|
|                            |                            | Inlet<br>(Port 1)       | Outlet<br>(Port 2) |                     | Orifice   |      | Inline       |              | Angle        |              | A†         |      | B†   |      |
| Inline                     | Angle                      |                         |                    |                     | Inch      | mm   | $C_v$        | $x_r^*$      | $C_v$        | $x_r^*$      | Inch       | mm   | Inch | mm   |
| 8A-U16LR<br>8A-U16LB       | 8A-U16AR<br>8A-U16AB       | 1/2" Compression A-LOK® |                    | Regulating<br>Blunt | 0.394     | 10.0 | 1.59<br>1.90 | 0.73<br>0.95 | 2.11<br>2.53 | 0.62<br>0.81 | 1.97       | 50.0 | 1.97 | 50.0 |
| 8F-U16LR<br>8F-U16LB       | 8F-U16AR<br>8F-U16AB       | 1/2" Female NPT         |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.56       | 39.6 | 1.56 | 39.6 |
| 8M-U16LR<br>8M-U16LB       | 8M-U16AR<br>8M-U16AB       | 1/2" Male NPT           |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.92       | 48.8 | 1.92 | 48.8 |
| 8PSW-U16LR<br>8PSW-U16LB   | 8PSW-U16AR<br>8PSW-U16AB   | 1/2" Pipe Socket Weld   |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.56       | 39.6 | 1.56 | 39.6 |
| 8W-U16LR<br>8W-U16LB       | 8W-U16AR<br>8W-U16AB       | 1/2" Tube Socket Weld   |                    | Regulating<br>Blunt | 0.394     | 10.0 | 1.59<br>1.90 | 0.73<br>0.95 | 2.11<br>2.53 | 0.62<br>0.81 | 1.56       | 39.6 | 1.56 | 39.6 |
| 8Z-U16LR<br>8Z-U16LB       | 8Z-U16AR<br>8Z-U16AB       | 1/2" Compression CPI™   |                    | Regulating<br>Blunt | 0.394     | 10.0 | 1.59<br>1.90 | 0.73<br>0.95 | 2.11<br>2.53 | 0.62<br>0.81 | 1.97       | 50.0 | 1.97 | 50.0 |
| 12A-U16LR<br>12A-U16LB     | 12A-U16AR<br>12A-U16AB     | 3/4" Compression A-LOK® |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.97       | 50.0 | 1.97 | 50.0 |
| 12F-U16LR<br>12F-U16LB     | 12F-U16AR<br>12F-U16AB     | 3/4" Female NPT         |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.63       | 41.4 | 1.63 | 41.4 |
| 12M-U16LR<br>12M-U16LB     | 12M-U16AR<br>12M-U16AB     | 3/4" Male NPT           |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.63       | 41.4 | 1.63 | 41.4 |
| 12PSW-U16LR<br>12PSW-U16LB | 12PSW-U16AR<br>12PSW-U16AB | 3/4" Pipe Socket Weld   |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.56       | 39.6 | 1.56 | 39.6 |
| 12W-U16LR<br>12W-U16LB     | 12W-U16AR<br>12W-U16AB     | 3/4" Tube Socket Weld   |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.56       | 39.6 | 1.56 | 39.6 |
| 12Z-U16LR<br>12Z-U16LB     | 12Z-U16AR<br>12Z-U16AB     | 3/4" Compression CPI™   |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.97       | 50.0 | 1.20 | 30.5 |
| 16A-U16LR<br>16A-U16LB     | 16A-U16AR<br>16A-U16AB     | 1" Compression A-LOK®   |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.97       | 50.0 | 1.20 | 30.5 |
| 16F-U16LR<br>16F-U16LB     | 16F-U16AR<br>16F-U16AB     | 1" Female NPT           |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.81       | 46.0 | 1.81 | 46.0 |
| 16M-U16LR<br>16M-U16LB     | 16M-U16AR<br>16M-U16AB     | 1" Male NPT             |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.81       | 46.0 | 1.81 | 46.0 |
| 16Z-U16LR<br>16Z-U16LB     | 16Z-U16AR<br>16Z-U16AB     | 1" Compression CPI™     |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.97       | 50.0 | 1.97 | 50.0 |
| M12A-U16LR<br>M12A-U16LB   | M12A-U16AR<br>M12A-U16AB   | 12mm Compression A-LOK® |                    | Regulating<br>Blunt | 0.394     | 10.0 | 1.59<br>1.90 | 0.73<br>0.95 | 2.11<br>2.53 | 0.62<br>0.81 | 1.97       | 50.0 | 1.97 | 50.0 |
| M12Z-U16LR<br>M12Z-U16LB   | M12Z-U16AR<br>M12Z-U16AB   | 12mm Compression CPI™   |                    | Regulating<br>Blunt | 0.394     | 10.0 | 1.59<br>1.90 | 0.73<br>0.95 | 2.11<br>2.53 | 0.62<br>0.81 | 1.97       | 50.0 | 1.97 | 50.0 |
| M20A-U16LR<br>M20A-U16LB   | M20A-U16AR<br>M20A-U16AB   | 20mm Compression A-LOK® |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.97       | 50.0 | 1.97 | 50.0 |
| M20Z-U16LR<br>M20Z-U16LB   | M20Z-U16AR<br>M20Z-U16AB   | 20mm Compression CPI™   |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.97       | 50.0 | 1.97 | 50.0 |
| M25A-U16LR<br>M25A-U16LB   | M25A-U16AR<br>M25A-U16AB   | 25mm Compression A-LOK® |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.97       | 50.0 | 1.97 | 50.0 |
| M25Z-U16LR<br>M25Z-U16LB   | M25Z-U16AR<br>M25Z-U16AB   | 25mm Compression CPI™   |                    | Regulating<br>Blunt | 0.437     | 11.1 | 1.82<br>2.67 | 0.72<br>0.80 | 2.42<br>3.55 | 0.61<br>0.68 | 1.97       | 50.0 | 1.97 | 50.0 |

\* Tested in accordance with ISA S75.02. Gas flow will be choked when  $P_1 - P_2 / P_1 = x_r$

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position

# U Series Needle Valves

## How to Order

The correct part number is easily derived from the following number sequence. The six product characteristics required are coded as shown below. \*Note: If the inlet and outlet ports are the same, eliminate the outlet port designator.

Example: **4Z** **\*** **-** **U6A** **R** **-** **G** **-** **SS**

① ② ③ ④ ⑤ ⑥

Inlet Port Outlet Port Valve Series Stem Type Packing Body Material

Describes an angle pattern U6 Series needle valve equipped with 1/4" CPI™ compression inlet and outlet ports, a regulating stem type, Grafoil® packing, stainless steel construction.

| ①<br>Inlet Port                                                                                                        | ②<br>Outlet Port | ③<br>Valve Series | ④<br>Stem Type                  | ⑤<br>Packing                 | ⑥<br>Body Material  |
|------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|---------------------------------|------------------------------|---------------------|
| 2F, 4A, 4F, 4M, 4W, 4Z,<br>M6A, M6Z, M8A, M8Z                                                                          |                  | U6A<br>U6L        | B - Blunt<br><br>R - Regulating | T - PTFE<br><br>G - Grafoil® | SS- Stainless Steel |
| 4A, 4F, 4Z, 6A, 6F, 6W, 6Z,<br>8A, 8F, 8W, 8Z, 10A, 10Z, 12A, 12Z,<br>M10A, M10Z, M12A, M12Z, M14A, M14Z               |                  | U12A<br>U12L      |                                 |                              |                     |
| 8A, 8F, 8M, 8PSW, 8W, 8Z, 12A, 12F,<br>12M, 12PSW, 12W, 12Z, 16A, 16F, 16M,<br>16Z, M12A, M12Z, M20A, M20Z, M25A, M25Z |                  | U16A<br>U16L      |                                 |                              |                     |

## How to Order Options

**High Temperature** - Add the suffix **-HT** to the end of the part number to receive valves with a 316 stainless steel lower stem and stainless steel handle. Example: 4M-U6LB-G-SS-**HT**

**Oxygen Cleaning** - Add the suffix **-C3** to the end of the part number to receive valves cleaned and assembled for oxygen service in accordance with Parker Specification ES8003. Example: 8A-U12LR-T-SS-**C3**

**Sour Gas** - To obtain valves suitable for sour gas service in accordance with NACE Standard MR0175, add the suffix **NACE** to the end of the part number. Example: 12Z-U16AB-G-SS-**NACE**

## How to Order Maintenance Kits

**Stainless Steel T-Bar Handles with Handle Screw** - U6: V4-BAR-HANDLE-SS; U12: U12-BAR-HANDLE-SS; U16: U16-BAR-HANDLE-SS

**Aluminum T-Bar Handles with Handle Screw** - U6: V4-BAR-HANDLE-AL; U12: U12-BAR-HANDLE-AL; U16: U16-BAR-HANDLE-AL

**Panel Mounting Nuts** - U6: U6-LOCKNUT; U12: U12-LOCKNUT; U16: U16-LOCKNUT

**PTFE Packing Kits** - Consists of One PTFE Packing; One Dust Seal; Maintenance Instructions. Kit-Valve Series-T. Example: **KIT-U12-T**

**Grafoil® Packing Kits** - Consists of One Grafoil® Packing; One Dust Seal; Maintenance Instructions. Kit-Valve Series-G. Example: **KIT-U16-G**

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11/98-P



Catalog 4110-U, 20M, 10/00

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