

# Weld Fittings

## M Series



## L Series



## A Series



## T Series



# Weld Fittings

## Features

- ⊙ Radius junction design with elbows to provide smooth flow path
- ⊙ Precision machined diameter to match tube diameter
- ⊙ Square, burr-free tube weld ends to enhance alignment
- ⊙ Manual or automatic welding equipment both applicable
- ⊙ Tube wall uniformity to promote weld repeatability
- ⊙ Standard surface roughness finished to an average of Ra 10  $\mu\text{in.}$  (0.25  $\mu\text{m}$ ) or electropolished to Ra 5  $\mu\text{in.}$  (0.13  $\mu\text{m}$ ) optional
- ⊙ Each fitting marked with brand, material and heat number

## Technical Data

- ⊙ Materials:

| Material        | Bar Stock <sup>①</sup> | Forging <sup>②</sup> | Designator |
|-----------------|------------------------|----------------------|------------|
| 316 SS          | ASTM A479              | ASTM A182            | SS         |
| 316L SS         |                        |                      | 6L         |
| 316L VAR SS     | SEMI F20               | —                    | 6LV        |
| 316L VIM-VAR SS |                        |                      | 6LW        |

① Only for straight configurations and all M Series weld fittings.

② Includes all elbows, crosses and tees, excluding M Series weld fittings.

- ⊙ Working Pressure:
  - a. Working pressures shown in the Catalog are calculated according to ASME B31.3 and B31.1 at ambient temperature.
  - b. To get the allowable working pressure at elevated temperature, use the allowable working pressure at ambient temperature to multiply the elevated temperature factors. Please refer to Table 22 - Elevated Temperature Factors in the FITOK Catalog **Tubing** for the elevated temperature factors.

- ⊙ Working Temperature:

| Material        | Minimum Temperature | Maximum Temperature |
|-----------------|---------------------|---------------------|
| 316 SS          | -325°F (-198°C)     | 1000°F (538°C)      |
| 316L SS         |                     |                     |
| 316L VAR SS     |                     |                     |
| 316L VIM-VAR SS |                     |                     |

## Ordering Information

- ⊙ Add the material designator as a prefix, process specification as a suffix to the basic ordering number to get the complete ordering number.
- ⊙ Cleaning and Packaging
  - a. FC-01 Standard Cleaning and Packaging. No suffix is needed.
  - b. FC-02 Special Cleaning and Packaging. Add "-F2" as a suffix when needed.
  - c. FC-03 Ultra High Purity Process Specification. Add "-F3" as suffix when needed.

Example: For 1/2" 316L VAR SS Union Tee with FC-03 Ultra High Purity Process Specification, the ordering number is 6LV-WT1-TB8-F3.

## Cautions

- ⊙ Dimensions are for reference only and are subject to change.
- ⊙ Welding of the same material is more advisable considering the same coefficient of expansion, lower possibility of poor weld such as out-of-roundness or dimensional changes..
- ⊙ Tungsten Inert Gas Welding (TIG) is recommended.

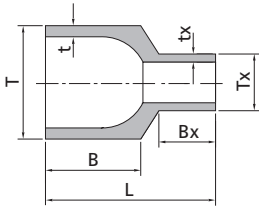
# M Series Micro Weld Fittings

## Features

- Compact design
- Sizes range from 1/8" to 1/2" and 6 mm to 12 mm
- Applicable to miniaturized tubing system

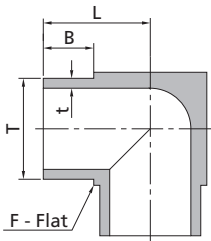


## Reducing Unions



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Tx-Tube<br>O.D.<br>(in.) | tx-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |             |            | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------------|-------------------------------|-----------------------------|----------------------|-------------|------------|-----------------------------------|
|                         |                              |                          |                               |                             | L                    | B           | Bx         |                                   |
| 1/4                     | 0.035                        | 1/8                      | 0.028                         | -WU1-TB4-TB2                | 0.75 (19.1)          | 0.42 (10.7) | 0.25 (6.4) | 5100 (351)                        |
| 3/8                     | 0.035                        | 1/4                      | 0.035                         | -WU1-TB6-TB4                | 0.75 (19.1)          | 0.42 (10.7) | 0.25 (6.4) | 3300 (227)                        |
| 1/2                     | 0.049                        | 1/4                      | 0.035                         | -WU1-TB8-TB4                | 0.75 (19.1)          | 0.42 (10.7) | 0.25 (6.4) | 3700 (254)                        |
| 1/2                     | 0.049                        | 3/8                      | 0.035                         | -WU1-TB8-TB6                | 0.75 (19.1)          | 0.42 (10.7) | 0.25 (6.4) | 3300 (227)                        |

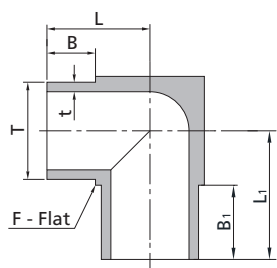
## 90° Union Elbows



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |            |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                         |                              |                             | L                    | B          | F           |                                   |
| 1/8                     | 0.028                        | -WL1-TB2                    | 0.41 (10.4)          | 0.25 (6.4) | 5/16 (7.9)  | 8500 (585)                        |
| 1/4                     | 0.035                        | -WL1-TB4                    | 0.41 (10.3)          | 0.25 (6.4) | 5/16 (7.9)  | 5100 (351)                        |
| 3/8                     | 0.035                        | -WL1-TB6                    | 0.47 (11.9)          | 0.25 (6.4) | 7/16 (11.1) | 3300 (227)                        |
| 1/2                     | 0.049                        | -WL1-TB8                    | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3700 (254)                        |

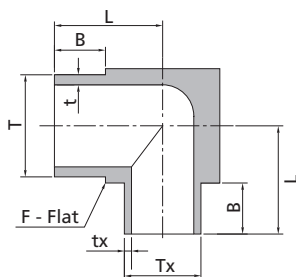
| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |            |             | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                        |                             |                             | L                    | B          | F           |                                   |
| 6                      | 1.0                         | -WL1-MTB6                   | 10.4 (0.41)          | 6.4 (0.25) | 7.9 (5/16)  | 420 (6095)                        |
| 8                      | 1.0                         | -WL1-MTB8                   | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 310 (4499)                        |
| 10                     | 1.0                         | -WL1-MTB10                  | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 240 (3483)                        |
| 12                     | 1.0                         | -WL1-MTB12                  | 13.5 (0.53)          | 6.4 (0.25) | 14.3 (9/16) | 200 (2902)                        |

## Extended Leg 90° Union Elbows



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |             |            |             |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|-------------|------------|-------------|-------------|-----------------------------------|
|                         |                              |                             | B                    | B1          | F          | L           | L1          |                                   |
| 1/4                     | 0.035                        | -WL1-TB4-1                  | 0.25 (6.4)           | 0.45 (11.4) | 5/16 (7.9) | 0.41 (10.4) | 0.61 (15.5) | 5100 (351)                        |
| 1/4                     | 0.035                        | -WL1-TB4-2                  | 0.25 (6.4)           | 0.50 (12.7) | 5/16 (7.9) | 0.41 (10.4) | 0.66 (16.8) | 5100 (351)                        |
| 1/4                     | 0.035                        | -WL1-TB4-3                  | 0.45 (11.4)          | 0.45 (11.4) | 5/16 (7.9) | 0.61 (15.5) | 0.61 (15.5) | 5100 (351)                        |
| 1/4                     | 0.035                        | -WL1-TB4-4                  | 0.50 (12.7)          | 0.50 (12.7) | 5/16 (7.9) | 0.66 (16.8) | 0.66 (16.8) | 5100 (351)                        |

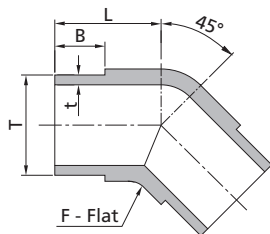
## Reducing 90° Union Elbows



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Tx-Tube<br>O.D.<br>(in.) | tx-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |            |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------------|-------------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                         |                              |                          |                               |                             | L                    | B          | F           |                                   |
| 3/8                     | 0.035                        | 1/4                      | 0.035                         | -WL1-TB6-TB4                | 0.47 (11.9)          | 0.25 (6.4) | 7/16 (11.1) | 3300 (227)                        |
| 1/2                     | 0.049                        | 1/4                      | 0.035                         | -WL1-TB8-TB4                | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3700 (254)                        |
| 1/2                     | 0.049                        | 3/8                      | 0.035                         | -WL1-TB8-TB6                | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3300 (227)                        |

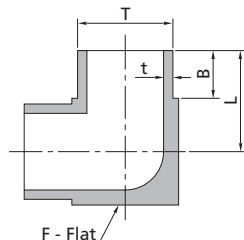
| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Tx-Tube<br>O.D.<br>(mm) | tx-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |            |             | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-------------------------|------------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                        |                             |                         |                              |                             | L                    | B          | F           |                                   |
| 8                      | 1.0                         | 6                       | 1.0                          | -WL1-MTB8-MTB6              | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 310 (4499)                        |
| 10                     | 1.0                         | 6                       | 1.0                          | -WL1-MTB10-MTB6             | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 240 (3483)                        |
| 12                     | 1.0                         | 6                       | 1.0                          | -WL1-MTB12-MTB6             | 13.5 (0.53)          | 6.4 (0.25) | 14.3 (9/16) | 200 (2902)                        |
| 12                     | 1.0                         | 8                       | 1.0                          | -WL1-MTB12-MTB8             | 13.5 (0.53)          | 6.4 (0.25) | 14.3 (9/16) | 200 (2902)                        |

## 45° Union Elbows

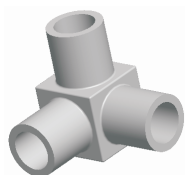


| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |            |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                         |                              |                             | L                    | B          | F           |                                   |
| 1/4                     | 0.035                        | -WV1-TB4                    | 0.41 (10.4)          | 0.25 (6.4) | 5/16 (7.9)  | 5100 (351)                        |
| 3/8                     | 0.035                        | -WV1-TB6                    | 0.47 (11.9)          | 0.25 (6.4) | 7/16 (11.1) | 3300 (227)                        |
| 1/2                     | 0.049                        | -WV1-TB8                    | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3700 (254)                        |

## Tribows

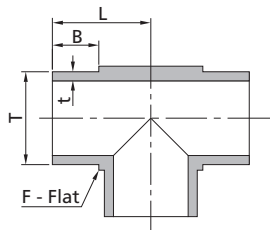


| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |            |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                         |                              |                             | L                    | B          | F           |                                   |
| 1/4                     | 0.035                        | -WB1-TB4                    | 0.41 (10.3)          | 0.25 (6.4) | 5/16 (7.9)  | 5100 (351)                        |
| 3/8                     | 0.035                        | -WB1-TB6                    | 0.47 (11.9)          | 0.25 (6.4) | 7/16 (11.1) | 3300 (227)                        |
| 1/2                     | 0.049                        | -WB1-TB8                    | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3700 (254)                        |



| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |            |            | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-----------------------------|----------------------|------------|------------|-----------------------------------|
|                        |                             |                             | L                    | B          | F          |                                   |
| 6                      | 1.0                         | -WB1-MTB6                   | 10.4 (0.41)          | 6.4 (0.25) | 7.9 (5/16) | 420 (6095)                        |

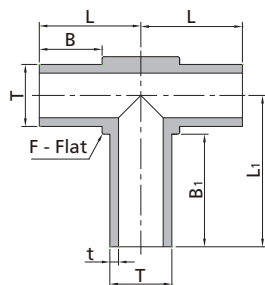
## Union Tees



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |            |             | Working<br>pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                         |                              |                             | L                    | B          | F           |                                   |
| 1/8                     | 0.028                        | -WT1-TB2                    | 0.41 (10.4)          | 0.25 (6.4) | 5/16 (7.9)  | 8500 (585)                        |
| 1/4                     | 0.035                        | -WT1-TB4                    | 0.41 (10.3)          | 0.25 (6.4) | 5/16 (7.9)  | 5100 (351)                        |
| 3/8                     | 0.035                        | -WT1-TB6                    | 0.47 (11.9)          | 0.25 (6.4) | 7/16 (11.1) | 3300 (227)                        |
| 1/2                     | 0.049                        | -WT1-TB8                    | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3700 (254)                        |

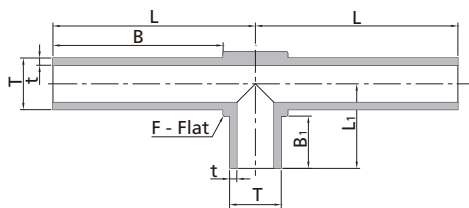
| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |            |             | Working<br>pressure<br>bar (psig) |
|------------------------|-----------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                        |                             |                             | L                    | B          | F           |                                   |
| 6                      | 1.0                         | -WT1-MTB6                   | 10.4 (0.41)          | 6.4 (0.25) | 7.9 (5/16)  | 420 (6095)                        |
| 8                      | 1.0                         | -WT1-MTB8                   | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 310 (4499)                        |
| 10                     | 1.0                         | -WT1-MTB10                  | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 240 (3483)                        |
| 12                     | 1.0                         | -WT1-MTB12                  | 13.5 (0.53)          | 6.4 (0.25) | 14.3 (9/16) | 200 (2902)                        |

## Extended Branch Leg Union Tees



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |                |            |                |            | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|----------------|------------|----------------|------------|-----------------------------------|
|                         |                              |                             | L                    | L <sub>1</sub> | B          | B <sub>1</sub> | F          |                                   |
| 1/4                     | 0.035                        | -WT1-TB4-45                 | 0.41 (10.4)          | 0.61 (15.5)    | 0.25 (6.4) | 0.45 (11.4)    | 5/16 (7.9) | 5100 (351)                        |

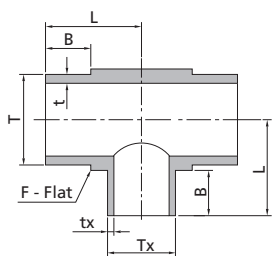
## Extended Run Leg Union Tees



There may be a minor step between run ends at drill intersection.

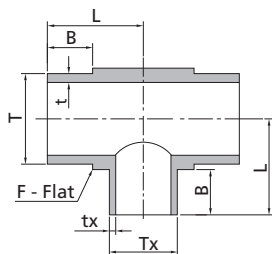
| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |                |             |                |            | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|----------------|-------------|----------------|------------|-----------------------------------|
|                         |                              |                             | L                    | L <sub>1</sub> | B           | B <sub>1</sub> | F          |                                   |
| 1/4                     | 0.035                        | -WT1-TB4-98                 | 0.98 (24.9)          | 0.41 (10.4)    | 0.83 (21.1) | 0.25 (6.4)     | 5/16 (7.9) | 5100 (351)                        |

## Reducing Tees



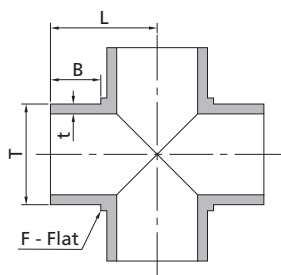
| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Tx-Tube<br>O.D.<br>(in.) | tx-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |            |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------------|-------------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                         |                              |                          |                               |                             | L                    | B          | F           |                                   |
| 3/8                     | 0.035                        | 1/4                      | 0.035                         | -WT1-TB6-TB6-TB4            | 0.47 (11.9)          | 0.25 (6.4) | 7/16 (11.1) | 3300 (227)                        |
| 1/2                     | 0.049                        | 1/4                      | 0.035                         | -WT1-TB8-TB8-TB4            | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3700 (254)                        |
| 1/2                     | 0.049                        | 3/8                      | 0.035                         | -WT1-TB8-TB8-TB6            | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3300 (227)                        |

## F-07 Weld Fittings



| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Tx-Tube<br>O.D.<br>(mm) | tx-Wall<br>Thickness<br>(mm) | Basic Ordering Number | Dimensions, mm (in.) |            |             | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-------------------------|------------------------------|-----------------------|----------------------|------------|-------------|-----------------------------------|
|                        |                             |                         |                              |                       | L                    | B          | F           |                                   |
| 10                     | 1.0                         | 6                       | 1.0                          | -WT1-MTB10-MTB10-MTB6 | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 240 (3483)                        |
| 12                     | 1.0                         | 6                       | 1.0                          | -WT1-MTB12-MTB12-MTB6 | 0.53 (13.5)          | 6.4 (0.25) | 14.3 (9/16) | 200 (2902)                        |
| 12                     | 1.0                         | 8                       | 1.0                          | -WT1-MTB12-MTB12-MTB8 | 0.53 (13.5)          | 6.4 (0.25) | 14.3 (9/16) | 200 (2902)                        |

## Union Crosses



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |            |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                         |                              |                             | L                    | B          | F           |                                   |
| 1/8                     | 0.028                        | -WC1-TB2                    | 0.41 (10.4)          | 0.25 (6.4) | 5/16 (7.9)  | 8500 (585)                        |
| 1/4                     | 0.035                        | -WC1-TB4                    | 0.41 (10.3)          | 0.25 (6.4) | 5/16 (7.9)  | 5100 (351)                        |
| 3/8                     | 0.035                        | -WC1-TB6                    | 0.47 (11.9)          | 0.25 (6.4) | 7/16 (11.1) | 3300 (227)                        |
| 1/2                     | 0.049                        | -WC1-TB8                    | 0.53 (13.5)          | 0.25 (6.4) | 9/16 (14.3) | 3700 (254)                        |

| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |            |             | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-----------------------------|----------------------|------------|-------------|-----------------------------------|
|                        |                             |                             | L                    | B          | F           |                                   |
| 6                      | 1.0                         | -WC1-MTB6                   | 10.4 (0.41)          | 6.4 (0.25) | 7.9 (5/16)  | 420 (6095)                        |
| 8                      | 1.0                         | -WC1-MTB8                   | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 310 (4499)                        |
| 10                     | 1.0                         | -WC1-MTB10                  | 11.9 (0.47)          | 6.4 (0.25) | 11.1 (7/16) | 240 (3483)                        |
| 12                     | 1.0                         | -WC1-MTB12                  | 13.5 (0.53)          | 6.4 (0.25) | 14.3 (9/16) | 200 (2902)                        |

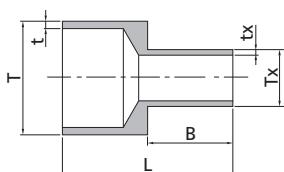
# L Series Tube Butt Weld Fittings

## Features

- Extended tube design
- Machined from forging blanks except for straight configurations
- Sizes range from 1/4" to 1" and 6 mm to 18 mm



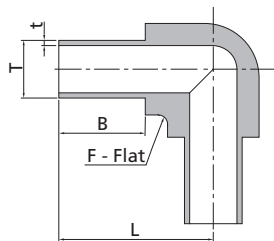
## Reducing Unions



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Tx-Tube<br>O.D.<br>(in.) | tx-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------------|-------------------------------|-----------------------------|----------------------|-------------|-----------------------------------|
|                         |                              |                          |                               |                             | L                    | B           |                                   |
| 3/8                     | 0.035                        | 1/4                      | 0.035                         | -WU2-TB6-TB4                | 1.50 (38.1)          | 0.75 (19.1) | 3300 (227)                        |
| 1/2                     | 0.049                        | 1/4                      | 0.035                         | -WU2-TB8-TB4                | 1.50 (38.1)          | 0.75 (19.1) | 3700 (254)                        |
| 1/2                     | 0.049                        | 3/8                      | 0.035                         | -WU2-TB8-TB6                | 1.50 (38.1)          | 0.75 (19.1) | 3300 (227)                        |
| 3/4                     | 0.049                        | 1/2                      | 0.049                         | -WU2-TB12-TB8               | 1.50 (38.1)          | 0.75 (19.1) | 2400 (165)                        |
| 1                       | 0.065                        | 1/2                      | 0.049                         | -WU2-TB16-TB8               | 1.50 (38.1)          | 0.75 (19.1) | 2400 (165)                        |
| 1                       | 0.065                        | 3/4                      | 0.049                         | -WU2-TB16-TB12              | 1.50 (38.1)          | 0.75 (19.1) | 2400 (165)                        |

| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Tx-Tube<br>O.D.<br>(mm) | tx-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |             | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-------------------------|------------------------------|-----------------------------|----------------------|-------------|-----------------------------------|
|                        |                             |                         |                              |                             | L                    | B           |                                   |
| 10                     | 1.0                         | 6                       | 1.0                          | -WU2-MTB10-MTB6             | 38.1 (1.50)          | 19.1 (0.75) | 240 (3483)                        |
| 10                     | 1.0                         | 8                       | 1.0                          | -WU2-MTB10-MTB8             | 38.1 (1.50)          | 19.1 (0.75) | 240 (3483)                        |
| 12                     | 1.0                         | 6                       | 1.0                          | -WU2-MTB12-MTB6             | 38.1 (1.50)          | 19.1 (0.75) | 200 (2902)                        |
| 12                     | 1.0                         | 8                       | 1.0                          | -WU2-MTB12-MTB8             | 38.1 (1.50)          | 19.1 (0.75) | 200 (2902)                        |
| 12                     | 1.0                         | 10                      | 1.0                          | -WU2-MTB12-MTB10            | 38.1 (1.50)          | 19.1 (0.75) | 200 (2902)                        |
| 18                     | 1.5                         | 6                       | 1.5                          | -WU2-MTB18-MTB6             | 38.1 (1.50)          | 19.1 (0.75) | 200 (2902)                        |
| 18                     | 1.5                         | 12                      | 1.5                          | -WU2-MTB18-MTB12            | 38.1 (1.50)          | 19.1 (0.75) | 200 (2902)                        |

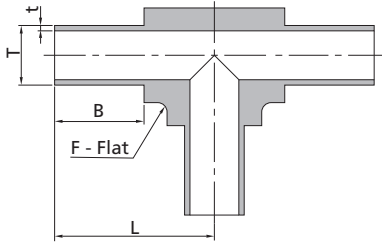
## Union Elbows



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |             |              | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|-------------|--------------|-----------------------------------|
|                         |                              |                             | L                    | B           | F            |                                   |
| 1/4                     | 0.035                        | -WL2-TB4                    | 1.23 (31.2)          | 0.75 (19.1) | 7/16 (11.1)  | 5100 (351)                        |
| 3/8                     | 0.035                        | -WL2-TB6                    | 1.20 (30.5)          | 0.75 (19.1) | 7/16 (11.1)  | 3300 (227)                        |
| 1/2                     | 0.049                        | -WL2-TB8                    | 1.34 (34.0)          | 0.75 (19.1) | 11/16 (17.5) | 3700 (254)                        |
| 3/4                     | 0.049                        | -WL2-TB12                   | 1.46 (37.1)          | 0.75 (19.1) | 15/16 (23.8) | 2400 (165)                        |

| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |             |              | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-----------------------------|----------------------|-------------|--------------|-----------------------------------|
|                        |                             |                             | L                    | B           | F            |                                   |
| 6                      | 1.0                         | -WL2-MTB6                   | 31.2 (1.23)          | 19.1 (0.75) | 11.1 (7/16)  | 420 (6095)                        |
| 8                      | 1.0                         | -WL2-MTB8                   | 31.2 (1.23)          | 19.1 (0.75) | 11.1 (7/16)  | 310 (4499)                        |
| 10                     | 1.0                         | -WL2-MTB10                  | 34.0 (1.34)          | 19.1 (0.75) | 17.5 (11/16) | 240 (3483)                        |
| 12                     | 1.0                         | -WL2-MTB12                  | 34.0 (1.34)          | 19.1 (0.75) | 17.5 (11/16) | 200 (2902)                        |
| 18                     | 1.5                         | -WL2-MTB18                  | 37.6 (1.48)          | 19.1 (0.75) | 23.8 (15/16) | 200 (2902)                        |

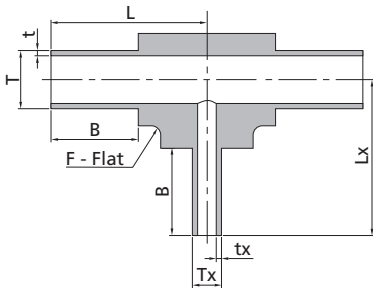
## Union Tees



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |             |              | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|-------------|--------------|-----------------------------------|
|                         |                              |                             | L                    | B           | F            |                                   |
| 1/4                     | 0.035                        | -WT2-TB4                    | 1.23 (31.2)          | 0.75 (19.1) | 7/16 (11.1)  | 5100 (351)                        |
| 3/8                     | 0.035                        | -WT2-TB6                    | 1.20 (30.5)          | 0.75 (19.1) | 7/16 (11.1)  | 3300 (227)                        |
| 1/2                     | 0.049                        | -WT2-TB8                    | 1.34 (34.0)          | 0.75 (19.1) | 11/16 (17.5) | 3700 (254)                        |
| 3/4                     | 0.049                        | -WT2-TB12                   | 1.46 (37.1)          | 0.75 (19.1) | 15/16 (23.8) | 2400 (165)                        |

| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |             |              | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-----------------------------|----------------------|-------------|--------------|-----------------------------------|
|                        |                             |                             | L                    | B           | F            |                                   |
| 6                      | 1.0                         | -WT2-MTB6                   | 31.2 (1.23)          | 19.1 (0.75) | 11.1 (7/16)  | 420 (6095)                        |
| 8                      | 1.0                         | -WT2-MTB8                   | 31.2 (1.23)          | 19.1 (0.75) | 11.1 (7/16)  | 310 (4499)                        |
| 10                     | 1.0                         | -WT2-MTB10                  | 34.0 (1.34)          | 19.1 (0.75) | 17.5 (11/16) | 240 (3483)                        |
| 12                     | 1.0                         | -WT2-MTB12                  | 34.0 (1.34)          | 19.1 (0.75) | 17.5 (11/16) | 200 (2902)                        |
| 18                     | 1.5                         | -WT2-MTB18                  | 37.6 (1.48)          | 19.1 (0.75) | 23.8 (15/16) | 200 (2902)                        |

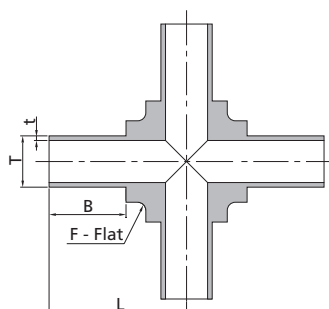
## Reducing Tees



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Tx-Tube<br>O.D.<br>(in.) | tx-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |             |             |              | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------------|-------------------------------|-----------------------------|----------------------|-------------|-------------|--------------|-----------------------------------|
|                         |                              |                          |                               |                             | L                    | Lx          | B           | F            |                                   |
| 3/8                     | 0.035                        | 1/4                      | 0.035                         | -WT2-TB6-TB6-TB4            | 1.20 (30.5)          | 1.23 (31.2) | 0.75 (19.1) | 7/16 (11.1)  | 3300 (227)                        |
| 1/2                     | 0.049                        | 1/4                      | 0.035                         | -WT2-TB8-TB8-TB4            | 1.34 (34.0)          | 1.34 (34.0) | 0.75 (19.1) | 11/16 (17.5) | 3700 (254)                        |
| 1/2                     | 0.049                        | 3/8                      | 0.035                         | -WT2-TB8-TB8-TB6            | 1.34 (34.0)          | 1.35 (34.3) | 0.75 (19.1) | 11/16 (17.5) | 3700 (254)                        |
| 3/4                     | 0.049                        | 1/4                      | 0.035                         | -WT2-TB12-TB12-TB4          | 1.46 (37.1)          | 1.48 (37.6) | 0.75 (19.1) | 15/16 (23.8) | 2400 (165)                        |
| 3/4                     | 0.049                        | 3/8                      | 0.035                         | -WT2-TB12-TB12-TB6          | 1.46 (37.1)          | 1.35 (34.3) | 0.75 (19.1) | 15/16 (23.8) | 2400 (165)                        |

| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Tx-Tube<br>O.D.<br>(mm) | tx-Wall<br>Thickness<br>(mm) | Basic Ordering Number | Dimensions, mm (in.) |             |             |              | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-------------------------|------------------------------|-----------------------|----------------------|-------------|-------------|--------------|-----------------------------------|
|                        |                             |                         |                              |                       | L                    | Lx          | B           | F            |                                   |
| 8                      | 1.0                         | 6                       | 1.0                          | -WT2-MTB8-MTB8-MTB6   | 31.3 (1.23)          | 31.3 (1.23) | 19.1 (0.75) | 11.1 (7/16)  | 310 (4499)                        |
| 10                     | 1.0                         | 6                       | 1.0                          | -WT2-MTB10-MTB10-MTB6 | 34.0 (1.34)          | 34.0 (1.34) | 19.1 (0.75) | 17.5 (11/16) | 240 (3483)                        |
| 10                     | 1.0                         | 8                       | 1.0                          | -WT2-MTB10-MTB10-MTB8 | 34.0 (1.34)          | 34.0 (1.34) | 19.1 (0.75) | 17.5 (11/16) | 240 (3483)                        |
| 12                     | 1.0                         | 6                       | 1.0                          | -WT2-MTB12-MTB12-MTB6 | 34.0 (1.34)          | 34.0 (1.34) | 19.1 (0.75) | 17.5 (11/16) | 200 (2902)                        |
| 12                     | 1.0                         | 8                       | 1.0                          | -WT2-MTB12-MTB12-MTB8 | 34.0 (1.34)          | 34.0 (1.34) | 19.1 (0.75) | 17.5 (11/16) | 200 (2902)                        |

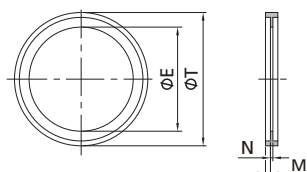
## Union Crosses



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |             |              | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------------------|----------------------|-------------|--------------|-----------------------------------|
|                         |                              |                             | L                    | B           | F            |                                   |
| 1/4                     | 0.035                        | -WC2-TB4                    | 1.23 (31.2)          | 0.75 (19.1) | 7/16 (11.1)  | 5100 (351)                        |
| 3/8                     | 0.035                        | -WC2-TB6                    | 1.20 (30.5)          | 0.75 (19.1) | 7/16 (11.1)  | 3300 (227)                        |
| 1/2                     | 0.049                        | -WC2-TB8                    | 1.34 (34.0)          | 0.75 (19.1) | 11/16 (17.5) | 3700 (254)                        |

| T-Tube<br>O.D.<br>(mm) | t-Wall<br>Thickness<br>(mm) | Basic<br>Ordering<br>Number | Dimensions, mm (in.) |             |             | Working<br>Pressure<br>bar (psig) |
|------------------------|-----------------------------|-----------------------------|----------------------|-------------|-------------|-----------------------------------|
|                        |                             |                             | L                    | B           | F           |                                   |
| 6                      | 1.0                         | -WC2-MTB6                   | 31.2 (1.23)          | 19.1 (0.75) | 11.1 (7/16) | 420 (6095)                        |
| 8                      | 1.0                         | -WC2-MTB8                   | 31.2 (1.23)          | 19.1 (0.75) | 11.1 (7/16) | 310 (4499)                        |
| 10                     | 1.0                         | -WC2-MTB10                  | 34.0 (1.34)          | 19.1 (0.75) | 15.9 (5/8)  | 240 (3483)                        |
| 12                     | 1.0                         | -WC2-MTB12                  | 34.0 (1.34)          | 19.1 (0.75) | 15.9 (5/8)  | 200 (2902)                        |

## Weld Rings



| T-Tube<br>O.D.<br>(in.) | Basic<br>Ordering<br>Number | Dimensions, in. (mm) |             |             |             |
|-------------------------|-----------------------------|----------------------|-------------|-------------|-------------|
|                         |                             | E                    | M           | N           | T           |
| 1/4                     | -WR-4                       | 0.20 (5.1)           | 0.02 (0.51) | 0.01 (0.25) | 0.28 (7.1)  |
| 3/8                     | -WR-6                       | 0.32 (8.1)           | 0.02 (0.51) | 0.01 (0.25) | 0.41 (10.4) |
| 1/2                     | -WR-8                       | 0.42 (10.7)          | 0.02 (0.51) | 0.01 (0.25) | 0.54 (13.7) |

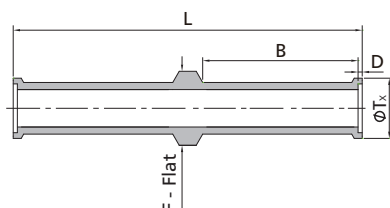
# A Series Automatic Tube Butt Weld Fittings

## Features

- Extended tube design for L series tube butt weld fittings with locating ring
- Machined from forging blanks except for straight configurations
- Sizes range from 1/4" to 1" and 6 mm to 18 mm



## Locator Unions



| Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |             |            |             |                | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------------|----------------------|-------------|------------|-------------|----------------|-----------------------------|
|                 |                      |                       | L                    | B           | D          | F           | T <sub>x</sub> |                             |
| 1/4             | 0.035                | -WU2-L-TB4A           | 1.69 (42.9)          | 0.75 (19.1) | 0.02 (0.5) | 0.36 (9.1)  | 0.29 (7.4)     | 5100 (351)                  |
| 3/8             | 0.035                | -WU2-L-TB6A           | 1.71 (43.4)          | 0.75 (19.1) | 0.03 (0.8) | 0.42 (10.7) | 0.41 (10.4)    | 3300 (227)                  |
| 1/2             | 0.049                | -WU2-L-TB8A           | 1.73 (43.9)          | 0.75 (19.1) | 0.04 (1.0) | 0.60 (15.2) | 0.55 (14.0)    | 3700 (254)                  |

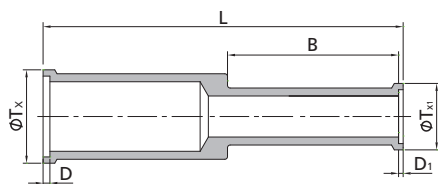
## Unions



| Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |            |                | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------------|----------------------|------------|----------------|-----------------------------|
|                 |                      |                       | L                    | D          | T <sub>x</sub> |                             |
| 1/4             | 0.035                | -WU2-TB4A             | 1.00 (25.4)          | 0.02 (0.5) | 0.29 (7.4)     | 5100 (351)                  |
| 3/8             | 0.035                | -WU2-TB6A             | 1.00 (25.4)          | 0.03 (0.8) | 0.41 (10.4)    | 3300 (227)                  |
| 1/2             | 0.049                | -WU2-TB8A             | 1.00 (25.4)          | 0.04 (1.0) | 0.55 (14.0)    | 3700 (254)                  |
| 3/4             | 0.049                | -WU2-TB12A            | 1.00 (25.4)          | 0.04 (1.0) | 0.80 (20.3)    | 2400 (165)                  |
| 1               | 0.065                | -WU2-TB16A            | 1.25 (31.8)          | 0.04 (1.0) | 1.06 (26.9)    | 2400 (165)                  |

| Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, mm (in.) |            |                | Working Pressure bar (psig) |
|-----------------|----------------------|-----------------------|----------------------|------------|----------------|-----------------------------|
|                 |                      |                       | L                    | D          | T <sub>x</sub> |                             |
| 6               | 1                    | -WU2-MTB6A            | 31.8 (1.25)          | 0.5 (0.02) | 6.9 (0.27)     | 420 (6095)                  |
| 8               | 1                    | -WU2-MTB8A            | 31.8 (1.25)          | 0.8 (0.03) | 8.9 (0.35)     | 310 (4499)                  |
| 10              | 1                    | -WU2-MTB10A           | 31.8 (1.25)          | 0.8 (0.03) | 10.9 (0.43)    | 240 (3483)                  |
| 12              | 1                    | -WU2-MTB12A           | 31.8 (1.25)          | 1.0 (0.04) | 13.2 (0.52)    | 200 (2902)                  |
| 18              | 1.5                  | -WU2-MTB18A           | 31.8 (1.25)          | 1.0 (0.04) | 19.3 (0.76)    | 200 (2902)                  |

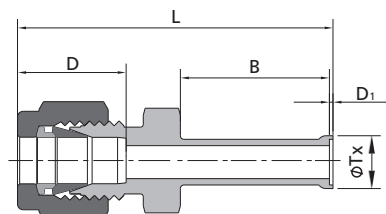
## Reducing Unions



| Tube O.D. (in.) | Wall Thickness (in.) | Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |             |            |                |                |                 | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------|----------------------|-----------------------|----------------------|-------------|------------|----------------|----------------|-----------------|-----------------------------|
|                 |                      |                 |                      |                       | L                    | B           | D          | D <sub>1</sub> | T <sub>x</sub> | T <sub>x1</sub> |                             |
| 3/8             | 0.035                | 1/4             | 0.035                | -WU2-TB6A-TB4A        | 1.58 (40.1)          | 0.75 (19.1) | 0.03 (0.8) | 0.02 (0.5)     | 0.41 (10.4)    | 0.29 (7.4)      | 3300 (227)                  |
| 1/2             | 0.049                | 1/4             | 0.035                | -WU2-TB8A-TB4A        | 1.58 (40.1)          | 0.75 (19.1) | 0.04 (1.0) | 0.02 (0.5)     | 0.55 (14.0)    | 0.29 (7.4)      | 3700 (254)                  |
| 1/2             | 0.049                | 3/8             | 0.035                | -WU2-TB8A-TB6A        | 1.58 (40.1)          | 0.75 (19.1) | 0.04 (1.0) | 0.03 (0.8)     | 0.55 (14.0)    | 0.41 (10.4)     | 3300 (227)                  |
| 3/4             | 0.049                | 1/2             | 0.049                | -WU2-TB12A-TB8A       | 1.62 (41.1)          | 0.75 (19.1) | 0.04 (1.0) | 0.04 (1.0)     | 0.80 (20.3)    | 0.55 (14.0)     | 2400 (165)                  |

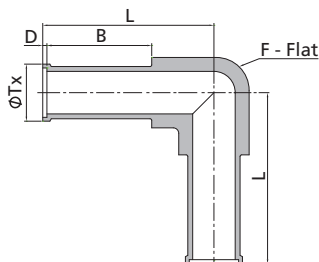
| Tube O.D. (mm) | Wall Thickness (mm) | Tube O.D. (mm) | Wall Thickness (mm) | Basic Ordering Number | Dimensions, mm (in.) |             |            |                |                |                 | Working Pressure bar (psig) |
|----------------|---------------------|----------------|---------------------|-----------------------|----------------------|-------------|------------|----------------|----------------|-----------------|-----------------------------|
|                |                     |                |                     |                       | L                    | B           | D          | D <sub>1</sub> | T <sub>x</sub> | T <sub>x1</sub> |                             |
| 8              | 1                   | 6              | 1                   | -WU2-MTB8A-MTB6A      | 39.9 (1.57)          | 19.1 (0.75) | 0.8 (0.03) | 0.5 (0.02)     | 8.90 (0.35)    | 6.8 (0.27)      | 310 (4499)                  |
| 12             | 1                   | 6              | 1                   | -WU2-MTB12A-MTB6A     | 40.1 (1.58)          | 19.1 (0.75) | 1.0 (0.04) | 0.5 (0.02)     | 13.2 (0.52)    | 6.8 (0.27)      | 200 (2902)                  |
| 12             | 1                   | 8              | 1                   | -WU2-MTB12A-MTB8A     | 40.4 (1.59)          | 19.1 (0.75) | 1.0 (0.04) | 0.8 (0.03)     | 13.2 (0.52)    | 8.9 (0.35)      | 200 (2902)                  |

## Automatic Tube Butt Weld Fittings



| Tube O.D. (in.) | Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |             |             |                |                | Working Pressure psig (bar) |
|-----------------|-----------------|----------------------|-----------------------|----------------------|-------------|-------------|----------------|----------------|-----------------------------|
|                 |                 |                      |                       | L                    | B           | D           | D <sub>1</sub> | T <sub>x</sub> |                             |
| 1/4             | 1/4             | 0.035                | -WU2-FL4-TB4A         | 1.74 (44.2)          | 0.75 (19.1) | 0.60 (15.2) | 0.02 (0.5)     | 0.29 (7.4)     | 5100 (351)                  |
| 3/8             | 3/8             | 0.035                | -WU2-FL6-TB6A         | 1.84 (46.7)          | 0.75 (19.1) | 0.66 (16.8) | 0.03 (0.8)     | 0.41 (10.4)    | 3300 (227)                  |
| 1/2             | 1/2             | 0.049                | -WU2-FL8-TB8A         | 1.99 (50.5)          | 0.75 (19.1) | 0.90 (22.9) | 0.04 (1.0)     | 0.55 (14.0)    | 3700 (254)                  |

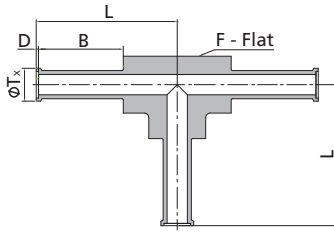
## 90° Union Elbows



| Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |             |            |              |                | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------------|----------------------|-------------|------------|--------------|----------------|-----------------------------|
|                 |                      |                       | L                    | B           | D          | F            | T <sub>x</sub> |                             |
| 1/4             | 0.035                | -WL2-TB4A             | 1.25 (31.8)          | 0.75 (19.1) | 0.02 (0.5) | 7/16 (11.1)  | 0.29 (7.4)     | 5100 (351)                  |
| 3/8             | 0.035                | -WL2-TB6A             | 1.23 (31.2)          | 0.75 (19.1) | 0.03 (0.8) | 7/16 (11.1)  | 0.41 (10.4)    | 3300 (227)                  |
| 1/2             | 0.049                | -WL2-TB8A             | 1.38 (35.1)          | 0.75 (19.1) | 0.04 (1.0) | 11/16 (17.5) | 0.55 (14.0)    | 3700 (254)                  |
| 3/4             | 0.049                | -WL2-TB12A            | 1.50 (38.1)          | 0.75 (19.1) | 0.04 (1.0) | 15/16 (23.8) | 0.80 (20.3)    | 2400 (165)                  |

| Tube O.D. (mm) | Wall Thickness (mm) | Basic Ordering Number | Dimensions, mm (in.) |             |            |              |                | Working Pressure bar (psig) |
|----------------|---------------------|-----------------------|----------------------|-------------|------------|--------------|----------------|-----------------------------|
|                |                     |                       | L                    | B           | D          | F            | T <sub>x</sub> |                             |
| 6              | 1                   | -WL2-MTB6A            | 31.8 (1.25)          | 19.1 (0.75) | 0.5 (0.02) | 11.1 (7/16)  | 6.90 (0.27)    | 351 (5100)                  |
| 8              | 1                   | -WL2-MTB8A            | 32.0 (1.26)          | 19.1 (0.75) | 0.8 (0.03) | 11.1 (7/16)  | 8.90 (0.35)    | 227 (3300)                  |
| 10             | 1                   | -WL2-MTB10A           | 34.8 (1.37)          | 19.1 (0.75) | 0.8 (0.03) | 17.5 (11/16) | 10.9 (0.43)    | 254 (3700)                  |
| 12             | 1                   | -WL2-MTB12A           | 35.1 (1.38)          | 19.1 (0.75) | 1.0 (0.04) | 17.5 (11/16) | 13.2 (0.52)    | 199 (2888)                  |
| 18             | 1.5                 | -WL2-MTB18A           | 38.6 (1.52)          | 19.1 (0.75) | 1.0 (0.04) | 23.8 (15/16) | 19.3 (0.76)    | 206 (2989)                  |

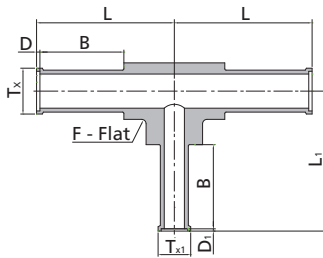
## Union Tees



| Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |             |            |              |                | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------------|----------------------|-------------|------------|--------------|----------------|-----------------------------|
|                 |                      |                       | L                    | B           | D          | F            | T <sub>x</sub> |                             |
| 1/4             | 0.035                | -WT2-TB4A             | 1.25 (31.8)          | 0.75 (19.1) | 0.02 (0.5) | 7/16 (11.1)  | 0.29 (7.4)     | 5100 (351)                  |
| 3/8             | 0.035                | -WT2-TB6A             | 1.23 (31.2)          | 0.75 (19.1) | 0.03 (0.8) | 7/16 (11.1)  | 0.41 (10.4)    | 3300 (227)                  |
| 1/2             | 0.049                | -WT2-TB8A             | 1.38 (35.1)          | 0.75 (19.1) | 0.04 (1.0) | 11/16 (17.5) | 0.55 (14.0)    | 3500 (241)                  |
| 3/4             | 0.049                | -WT2-TB12A            | 1.50 (38.1)          | 0.75 (19.1) | 0.04 (1.0) | 15/16 (23.8) | 0.80 (20.3)    | 2400 (165)                  |

| Tube O.D. (mm) | Wall Thickness (mm) | Basic Ordering Number | Dimensions, mm (in.) |             |            |              |                | Working Pressure bar (psig) |
|----------------|---------------------|-----------------------|----------------------|-------------|------------|--------------|----------------|-----------------------------|
|                |                     |                       | L                    | B           | D          | F            | T <sub>x</sub> |                             |
| 6              | 1                   | -WT2-MTB6A            | 31.8 (1.25)          | 19.1 (0.75) | 0.5 (0.02) | 11.1 (7/16)  | 6.90 (0.27)    | 454 (6589)                  |
| 8              | 1                   | -WT2-MTB8A            | 32.0 (1.26)          | 19.1 (0.75) | 0.8 (0.03) | 11.1 (7/16)  | 8.90 (0.35)    | 323 (4687)                  |
| 10             | 1                   | -WT2-MTB10A           | 34.8 (1.37)          | 19.1 (0.75) | 0.8 (0.03) | 17.5 (11/16) | 10.9 (0.43)    | 254 (3686)                  |
| 12             | 1                   | -WT2-MTB12A           | 35.1 (1.38)          | 19.1 (0.75) | 1.0 (0.04) | 17.5 (11/16) | 13.2 (0.52)    | 206 (2989)                  |
| 18             | 1.5                 | -WT2-MTB18A           | 38.6 (1.52)          | 19.1 (0.75) | 1.0 (0.04) | 23.8 (15/16) | 19.3 (0.76)    | 206 (2989)                  |

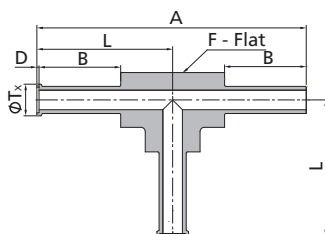
## Reducing Tees



| Tube O.D. (in.) | Wall Thickness (in.) | Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |             |             |            |            |                |                 |              | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------|----------------------|-----------------------|----------------------|-------------|-------------|------------|------------|----------------|-----------------|--------------|-----------------------------|
|                 |                      |                 |                      |                       | L                    | L1          | B           | D          | D1         | T <sub>x</sub> | T <sub>x1</sub> | F            |                             |
| 3/8             | 0.035                | 1/4             | 0.035                | -WT2-TB6A-TB6A-TB4A   | 1.23 (31.2)          | 1.25 (31.8) | 0.75 (19.1) | 0.03 (0.8) | 0.02 (0.5) | 0.41 (10.4)    | 0.29 (7.4)      | 7/16 (11.1)  | 3300 (227)                  |
| 1/2             | 0.049                | 1/4             | 0.035                | -WT2-TB8A-TB8A-TB4A   | 1.38 (35.1)          | 1.38 (35.1) | 0.75 (19.1) | 0.04 (1.0) | 0.02 (0.5) | 0.55 (14.0)    | 0.29 (7.4)      | 11/16 (17.5) | 3700 (254)                  |
| 1/2             | 0.049                | 3/8             | 0.035                | -WT2-TB8A-TB8A-TB6A   | 1.38 (35.1)          | 1.37 (34.8) | 0.75 (19.1) | 0.04 (1.0) | 0.03 (0.8) | 0.55 (14.0)    | 0.41 (10.4)     | 11/16 (17.5) | 3300 (227)                  |
| 3/4             | 0.049                | 3/8             | 0.035                | -WT2-TB12A-TB12A-TB6A | 1.50 (38.1)          | 1.50 (38.1) | 0.75 (19.1) | 0.04 (1.0) | 0.03 (0.8) | 0.80 (20.3)    | 0.41 (10.4)     | 15/16 (23.8) | 2400 (165)                  |
| 3/4             | 0.049                | 1/2             | 0.049                | -WT2-TB12A-TB12A-TB8A | 1.50 (38.1)          | 1.50 (38.1) | 0.75 (19.1) | 0.04 (1.0) | 0.04 (1.0) | 0.80 (20.3)    | 0.55 (14.0)     | 15/16 (23.8) | 2400 (165)                  |

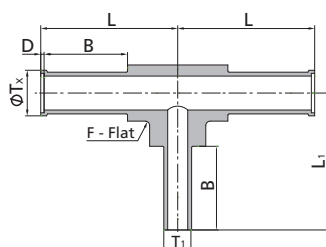
| Tube O.D. (mm) | Wall Thickness (mm) | Tube O.D. (mm) | Wall Thickness (mm) | Basic Ordering Number    | Dimensions, mm (in.) |             |             |            |            |                |                 |              | Working Pressure bar (psig) |
|----------------|---------------------|----------------|---------------------|--------------------------|----------------------|-------------|-------------|------------|------------|----------------|-----------------|--------------|-----------------------------|
|                |                     |                |                     |                          | L                    | L1          | B           | D          | D1         | T <sub>x</sub> | T <sub>x1</sub> | F            |                             |
| 12             | 1                   | 6              | 1                   | -WT2-MTB12A-MTB12A-MTB6A | 35.1 (1.38)          | 34.5 (1.36) | 19.1 (0.75) | 0.5 (0.02) | 0.5 (0.02) | 13.2 (0.52)    | 6.9 (0.27)      | 17.5 (11/16) | 200 (2902)                  |

## Manifold Tees



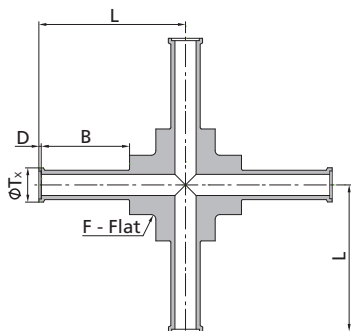
| Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |             |             |            |              |                | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------------|----------------------|-------------|-------------|------------|--------------|----------------|-----------------------------|
|                 |                      |                       | A                    | L           | B           | D          | F            | T <sub>x</sub> |                             |
| 1/4             | 0.035                | -WT2-TB4A-TB4-TB4A    | 2.48 (63.0)          | 1.25 (31.8) | 0.75 (19.1) | 0.02 (0.5) | 7/16 (11.1)  | 0.29 (7.4)     | 5100 (351)                  |
| 3/8             | 0.035                | -WT2-TB6A-TB6-TB6A    | 2.43 (61.7)          | 1.23 (31.2) | 0.75 (19.1) | 0.03 (0.8) | 11/16 (17.5) | 0.41 (10.4)    | 3300 (227)                  |
| 1/2             | 0.049                | -WT2-TB8A-TB8-TB8A    | 2.72 (69.1)          | 1.38 (35.1) | 0.75 (19.1) | 0.04 (1.0) | 11/16 (17.5) | 0.55 (14.0)    | 3700 (254)                  |

## Reducing Tees



| Tube O.D. (in.) | Wall Thickness (in.) | Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |                |             |            |                |              | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------|----------------------|-----------------------|----------------------|----------------|-------------|------------|----------------|--------------|-----------------------------|
|                 |                      |                 |                      |                       | L                    | L <sub>1</sub> | B           | D          | T <sub>x</sub> | F            |                             |
| 3/8             | 0.035                | 1/4             | 0.035                | -WT2-TB6A-TB6A-TB4    | 1.23 (31.2)          | 1.23 (31.2)    | 0.75 (19.1) | 0.03 (0.8) | 0.41 (10.4)    | 7/16 (11.1)  | 3300 (227)                  |
| 1/2             | 0.049                | 1/4             | 0.035                | -WT2-TB8A-TB8A-TB4    | 1.38 (35.1)          | 1.36 (34.5)    | 0.75 (19.1) | 0.04 (1.0) | 0.55 (14.0)    | 11/16 (17.5) | 3700 (254)                  |
| 1/2             | 0.049                | 3/8             | 0.035                | -WT2-TB8A-TB8A-TB6    | 1.38 (35.1)          | 1.35 (34.3)    | 0.75 (19.1) | 0.04 (1.0) | 0.55 (14.0)    | 11/16 (17.5) | 3300 (227)                  |

## Union Crosses



| Tube O.D. (in.) | Wall Thickness (in.) | Basic Ordering Number | Dimensions, in. (mm) |             |            |             |                | Working Pressure psig (bar) |
|-----------------|----------------------|-----------------------|----------------------|-------------|------------|-------------|----------------|-----------------------------|
|                 |                      |                       | L                    | B           | D          | F           | T <sub>x</sub> |                             |
| 1/4             | 0.035                | -WC2-TB4A             | 1.25 (31.8)          | 0.75 (19.1) | 0.02 (0.5) | 7/16 (11.1) | 0.29 (7.4)     | 5100 (351)                  |
| 3/8             | 0.035                | -WC2-TB6A             | 1.23 (31.2)          | 0.75 (19.1) | 0.03 (0.8) | 7/16 (11.1) | 0.41 (10.4)    | 3300 (227)                  |
| 1/2             | 0.049                | -WC2-TB8A             | 1.35 (34.3)          | 0.75 (19.1) | 0.04 (1.0) | 5/8 (17.5)  | 0.55 (14.0)    | 3700 (254)                  |

| Tube O.D. (mm) | Wall Thickness (mm) | Basic Ordering Number | Dimensions, mm (in.) |             |            |             |                | Working Pressure bar (psig) |
|----------------|---------------------|-----------------------|----------------------|-------------|------------|-------------|----------------|-----------------------------|
|                |                     |                       | L                    | B           | D          | F           | T <sub>x</sub> |                             |
| 6              | 1                   | -WC2-MTB6A            | 31.8 (1.25)          | 19.1 (0.75) | 0.5 (0.02) | 11.1 (7/16) | 6.9 (0.27)     | 420 (6095)                  |
| 8              | 1                   | -WC2-MTB8A            | 31.8 (1.25)          | 19.1 (0.75) | 0.8 (0.03) | 11.1 (7/16) | 8.9 (0.35)     | 310 (4499)                  |

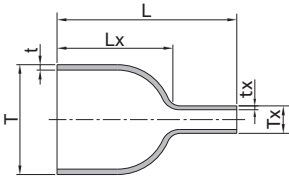
# T Series Tubular Fittings

## Features

- 316L Stainless Steel
- Sizes range from 1/4" to 2"
- Available in a variety of configurations

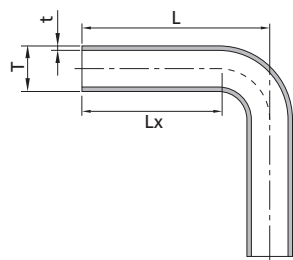


## Concentric Reducings



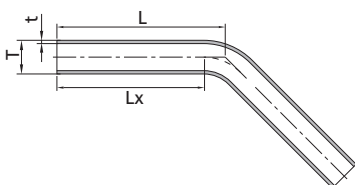
| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Tx-Tube<br>O.D.<br>(in.) | tx-Wall<br>Thickness<br>(in.) | Ordering Number  | Dimensions, in. (mm) |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------------|-------------------------------|------------------|----------------------|-------------|-----------------------------------|
|                         |                              |                          |                               |                  | L                    | Lx          |                                   |
| 3/4                     | 0.065                        | 1/4                      | 0.035                         | 6L-WU3-TB12-TB4  | 2.13 (54.0)          | 0.75 (19.1) | 3330 (230)                        |
| 3/4                     | 0.065                        | 3/8                      | 0.035                         | 6L-WU3-TB12-TB6  | 2.13 (54.0)          | 0.75 (19.1) | 3330 (230)                        |
| 3/4                     | 0.065                        | 1/2                      | 0.049                         | 6L-WU3-TB12-TB8  | 2.13 (54.0)          | 0.75 (19.1) | 3330 (230)                        |
| 1                       | 0.065                        | 1/4                      | 0.035                         | 6L-WU3-TB16-TB4  | 2.36 (60.0)          | 1.00 (25.4) | 2420 (167)                        |
| 1                       | 0.065                        | 3/8                      | 0.035                         | 6L-WU3-TB16-TB6  | 2.36 (60.0)          | 1.00 (25.4) | 2420 (167)                        |
| 1                       | 0.065                        | 1/2                      | 0.049                         | 6L-WU3-TB16-TB8  | 2.36 (60.0)          | 1.00 (25.4) | 2420 (167)                        |
| 1                       | 0.065                        | 3/4                      | 0.065                         | 6L-WU3-TB16-TB12 | 2.64 (67.0)          | 1.00 (25.4) | 2420 (167)                        |
| 1 1/2                   | 0.065                        | 1/4                      | 0.035                         | 6L-WU3-TB24-TB4  | 2.87 (73.0)          | 1.50 (38.1) | 1550 (107)                        |
| 1 1/2                   | 0.065                        | 3/8                      | 0.035                         | 6L-WU3-TB24-TB6  | 2.87 (73.0)          | 1.50 (38.1) | 1550 (107)                        |
| 1 1/2                   | 0.065                        | 1/2                      | 0.049                         | 6L-WU3-TB24-TB8  | 2.87 (73.0)          | 1.50 (38.1) | 1550 (107)                        |
| 1 1/2                   | 0.065                        | 3/4                      | 0.065                         | 6L-WU3-TB24-TB12 | 3.15 (80.0)          | 1.50 (38.1) | 1550 (107)                        |
| 1 1/2                   | 0.065                        | 1                        | 0.065                         | 6L-WU3-TB24-TB16 | 3.15 (80.0)          | 1.50 (38.1) | 1160 (80)                         |
| 2                       | 0.065                        | 1/4                      | 0.035                         | 6L-WU3-TB32-TB4  | 2.87 (73.0)          | 1.50 (38.1) | 1160 (80)                         |
| 2                       | 0.065                        | 3/8                      | 0.035                         | 6L-WU3-TB32-TB6  | 2.87 (73.0)          | 1.50 (38.1) | 1160 (80)                         |
| 2                       | 0.065                        | 1/2                      | 0.049                         | 6L-WU3-TB32-TB8  | 2.87 (73.0)          | 1.50 (38.1) | 1160 (80)                         |
| 2                       | 0.065                        | 3/4                      | 0.065                         | 6L-WU3-TB32-TB12 | 3.15 (80.0)          | 1.50 (38.1) | 1160 (80)                         |
| 2                       | 0.065                        | 1                        | 0.065                         | 6L-WU3-TB32-TB16 | 3.15 (80.0)          | 1.50 (38.1) | 1160 (80)                         |
| 2                       | 0.065                        | 1 1/2                    | 0.065                         | 6L-WU3-TB32-TB24 | 3.54 (90.0)          | 1.50 (38.1) | 1160 (80)                         |

## 90° Elbows



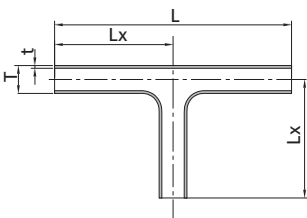
| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Ordering<br>Number | Dimensions, in. (mm) |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------|----------------------|-------------|-----------------------------------|
|                         |                              |                    | L                    | Lx          |                                   |
| 1/4                     | 0.035                        | 6L-WL3-TB4         | 1.93 (49.0)          | 1.14 (29.0) | 5150 (355)                        |
| 3/8                     | 0.035                        | 6L-WL3-TB6         | 2.05 (52.0)          | 1.14 (29.0) | 3330 (230)                        |
| 1/2                     | 0.049                        | 6L-WL3-TB8         | 2.13 (54.0)          | 1.14 (29.0) | 3530 (243)                        |
| 3/4                     | 0.065                        | 6L-WL3-TB12        | 2.60 (66.0)          | 1.42 (36.0) | 3330 (230)                        |
| 1                       | 0.065                        | 6L-WL3-TB16        | 2.72 (69.0)          | 1.42 (36.0) | 2420 (167)                        |
| 1 1/2                   | 0.065                        | 6L-WL3-TB24        | 4.09 (104.0)         | 1.81 (46.0) | 1550 (107)                        |
| 2                       | 0.065                        | 6L-WL3-TB32        | 4.84 (123.0)         | 1.81 (46.0) | 1160 (80)                         |

## 45° Elbows



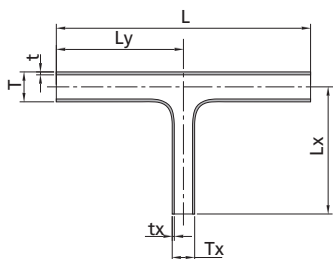
| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Ordering<br>Number | Dimensions, in. (mm) |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------|----------------------|-------------|-----------------------------------|
|                         |                              |                    | L                    | Lx          |                                   |
| 1/4                     | 0.035                        | 6L-WV3-TB4         | 1.50 (38.0)          | 1.14 (29.0) | 5150 (355)                        |
| 3/8                     | 0.035                        | 6L-WV3-TB6         | 1.54 (39.0)          | 1.14 (29.0) | 3330 (230)                        |
| 1/2                     | 0.049                        | 6L-WV3-TB8         | 1.57 (40.0)          | 1.14 (29.0) | 3530 (243)                        |
| 3/4                     | 0.065                        | 6L-WV3-TB12        | 1.93 (49.0)          | 1.42 (36.0) | 3330 (230)                        |
| 1                       | 0.065                        | 6L-WV3-TB16        | 1.97 (50.0)          | 1.42 (36.0) | 2420 (167)                        |
| 1 1/2                   | 0.065                        | 6L-WV3-TB24        | 2.76 (70.0)          | 1.81 (46.0) | 1550 (107)                        |
| 2                       | 0.065                        | 6L-WV3-TB32        | 3.07 (78.0)          | 1.81 (46.0) | 1160 (80)                         |

## Tees



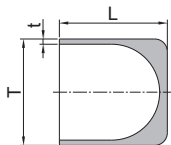
| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Ordering<br>Number | Dimensions, in. (mm) |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------|----------------------|-------------|-----------------------------------|
|                         |                              |                    | L                    | Lx          |                                   |
| 1/4                     | 0.035                        | 6L-WT3-TB4         | 2.76 (70.0)          | 1.38 (35.0) | 5150 (355)                        |
| 3/8                     | 0.035                        | 6L-WT3-TB6         | 2.91 (74.0)          | 1.46 (37.0) | 3330 (230)                        |
| 1/2                     | 0.049                        | 6L-WT3-TB8         | 3.07 (78.0)          | 1.54 (39.0) | 3530 (243)                        |
| 3/4                     | 0.065                        | 6L-WT3-TB12        | 4.09 (104.0)         | 2.05 (52.0) | 3330 (230)                        |
| 1                       | 0.065                        | 6L-WT3-TB16        | 4.33 (110.0)         | 2.17 (55.0) | 2420 (167)                        |
| 1 1/2                   | 0.065                        | 6L-WT3-TB24        | 5.83 (148.0)         | 2.91 (74.0) | 1550 (107)                        |
| 2                       | 0.065                        | 6L-WT3-TB32        | 6.06 (154.0)         | 3.03 (77.0) | 1160 (80)                         |

## Reducing Tees



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Tx-Tube<br>O.D.<br>(in.) | tx-Wall<br>Thickness<br>(in.) | Ordering Number       | Dimensions, in. (mm) |             |             | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|--------------------------|-------------------------------|-----------------------|----------------------|-------------|-------------|-----------------------------------|
|                         |                              |                          |                               |                       | L                    | Lx          | Ly          |                                   |
| 3/8                     | 0.035                        | 1/4                      | 0.035                         | 6L-WT3-TB6-TB6-TB4    | 2.91 (74.0)          | 1.46 (37.0) | 1.46 (37.0) | 3330 (230)                        |
| 1/2                     | 0.049                        | 1/4                      | 0.035                         | 6L-WT3-TB8-TB8-TB4    | 3.07 (78.0)          | 1.54 (39.0) | 1.54 (39.0) | 3530 (243)                        |
| 1/2                     | 0.049                        | 3/8                      | 0.035                         | 6L-WT3-TB8-TB8-TB6    | 3.07 (78.0)          | 1.54 (39.0) | 1.54 (39.0) | 3330 (230)                        |
| 3/4                     | 0.065                        | 1/4                      | 0.035                         | 6L-WT3-TB12-TB12-TB4  | 3.70 (94.0)          | 1.73 (44.0) | 1.85 (47.0) | 3330 (230)                        |
| 3/4                     | 0.065                        | 3/8                      | 0.035                         | 6L-WT3-TB12-TB12-TB6  | 3.70 (94.0)          | 1.73 (44.0) | 1.85 (47.0) | 3330 (230)                        |
| 3/4                     | 0.065                        | 1/2                      | 0.049                         | 6L-WT3-TB12-TB12-TB8  | 3.70 (94.0)          | 1.73 (44.0) | 1.85 (47.0) | 3330 (230)                        |
| 1                       | 0.065                        | 1/4                      | 0.035                         | 6L-WT3-TB16-TB16-TB4  | 3.70 (94.0)          | 1.85 (47.0) | 1.85 (47.0) | 2420 (167)                        |
| 1                       | 0.065                        | 3/8                      | 0.035                         | 6L-WT3-TB16-TB16-TB6  | 3.70 (94.0)          | 1.85 (47.0) | 1.85 (47.0) | 2420 (167)                        |
| 1                       | 0.065                        | 1/2                      | 0.049                         | 6L-WT3-TB16-TB16-TB8  | 3.70 (94.0)          | 1.85 (47.0) | 1.85 (47.0) | 2420 (167)                        |
| 1                       | 0.065                        | 3/4                      | 0.065                         | 6L-WT3-TB16-TB16-TB12 | 4.33 (110.0)         | 2.17 (55.0) | 2.17 (55.0) | 2420 (167)                        |
| 1 1/2                   | 0.065                        | 1/4                      | 0.035                         | 6L-WT3-TB24-TB24-TB4  | 4.49 (114.0)         | 2.13 (54.0) | 2.24 (57.0) | 1550 (107)                        |
| 1 1/2                   | 0.065                        | 3/8                      | 0.035                         | 6L-WT3-TB24-TB24-TB6  | 4.49 (114.0)         | 2.13 (54.0) | 2.24 (57.0) | 1550 (107)                        |
| 1 1/2                   | 0.065                        | 1/2                      | 0.049                         | 6L-WT3-TB24-TB24-TB8  | 4.49 (114.0)         | 2.13 (54.0) | 2.24 (57.0) | 1550 (107)                        |
| 1 1/2                   | 0.065                        | 3/4                      | 0.065                         | 6L-WT3-TB24-TB24-TB12 | 5.35 (136.0)         | 2.44 (62.0) | 2.68 (68.0) | 1550 (107)                        |
| 1 1/2                   | 0.065                        | 1                        | 0.065                         | 6L-WT3-TB24-TB24-TB16 | 5.35 (136.0)         | 2.44 (62.0) | 2.68 (68.0) | 1550 (107)                        |
| 2                       | 0.065                        | 1/4                      | 0.035                         | 6L-WT3-TB32-TB32-TB4  | 4.49 (114.0)         | 2.24 (57.0) | 2.24 (57.0) | 1160 (80)                         |
| 2                       | 0.065                        | 3/8                      | 0.035                         | 6L-WT3-TB32-TB32-TB6  | 4.49 (114.0)         | 2.24 (57.0) | 2.24 (57.0) | 1160 (80)                         |
| 2                       | 0.065                        | 1/2                      | 0.049                         | 6L-WT3-TB32-TB32-TB8  | 4.49 (114.0)         | 2.24 (57.0) | 2.24 (57.0) | 1160 (80)                         |
| 2                       | 0.065                        | 3/4                      | 0.065                         | 6L-WT3-TB32-TB32-TB12 | 5.35 (136.0)         | 2.56 (65.0) | 2.68 (68.0) | 1160 (80)                         |
| 2                       | 0.065                        | 1                        | 0.065                         | 6L-WT3-TB32-TB32-TB16 | 5.35 (136.0)         | 2.56 (65.0) | 2.68 (68.0) | 1160 (80)                         |
| 2                       | 0.065                        | 1 1/2                    | 0.065                         | 6L-WT3-TB32-TB32-TB24 | 6.06 (154.0)         | 3.03 (77.0) | 3.03 (77.0) | 1160 (80)                         |

## End Caps



| T-Tube<br>O.D.<br>(in.) | t-Wall<br>Thickness<br>(in.) | Ordering Number | Dimensions, in. (mm) | Working<br>Pressure<br>psig (bar) |
|-------------------------|------------------------------|-----------------|----------------------|-----------------------------------|
|                         |                              |                 | L                    |                                   |
| 1/4                     | 0.035                        | 6L-CW3-TB4      | 0.50 (12.7)          | 5150 (355)                        |
| 3/8                     | 0.035                        | 6L-CW3-TB6      | 0.50 (12.7)          | 3330 (230)                        |
| 1/2                     | 0.049                        | 6L-CW3-TB8      | 0.50 (12.7)          | 3530 (243)                        |
| 3/4                     | 0.065                        | 6L-CW3-TB12     | 0.75 (19.1)          | 3330 (230)                        |
| 1                       | 0.065                        | 6L-CW3-TB16     | 1.00 (25.4)          | 2420 (167)                        |
| 1 1/2                   | 0.065                        | 6L-CW3-TB24     | 1.50 (38.1)          | 1550 (107)                        |
| 2                       | 0.065                        | 6L-CW3-TB32     | 1.50 (38.1)          | 1160 (80)                         |