

# tubing and fittings dimensional specifications

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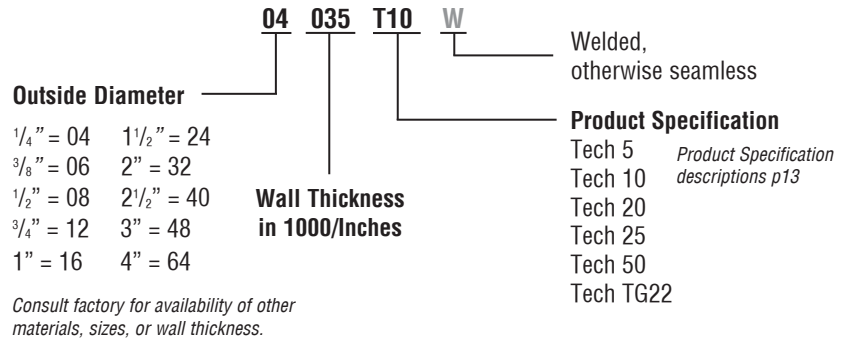
# part description system

## Cap Color Code:

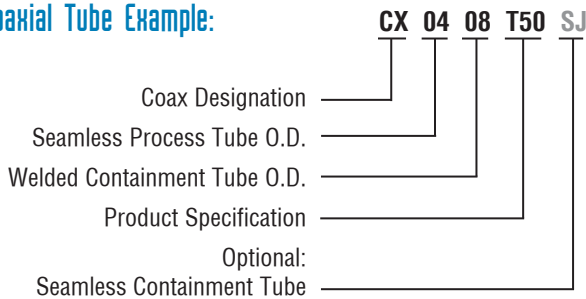
Product Specification  
descriptions p13

- Tech CM (white)
- Tech 5 (white)
- Tech 10 (white)
- Tech 20 (white)
- Tech 25 (blue)
- Tech 50 (blue)
- Tech TG22 (yellow)

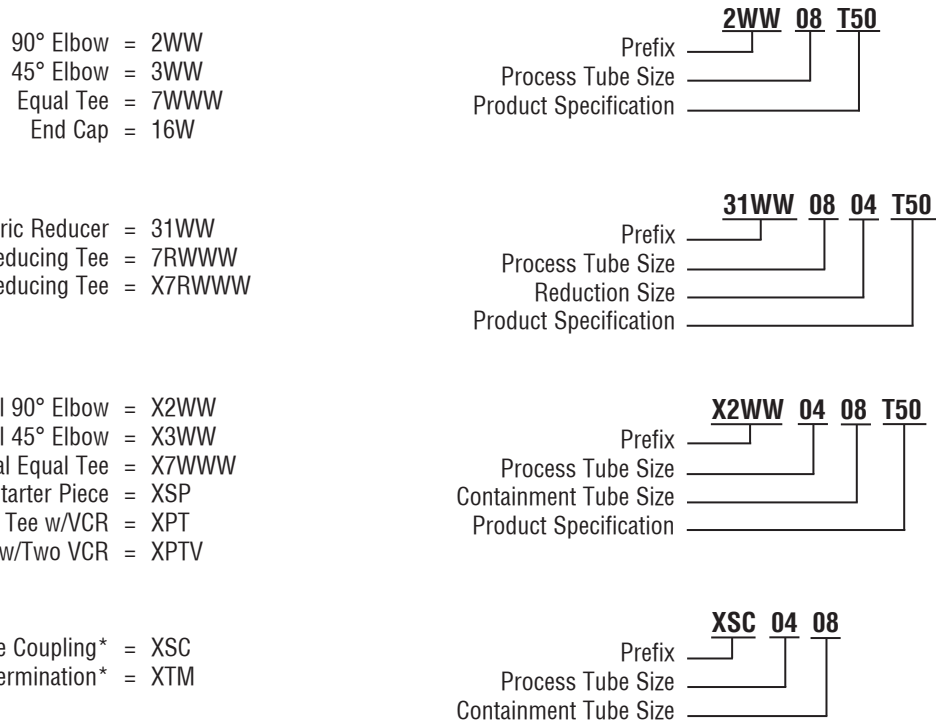
### Single Wall Tube Example:



### Coaxial Tube Example:

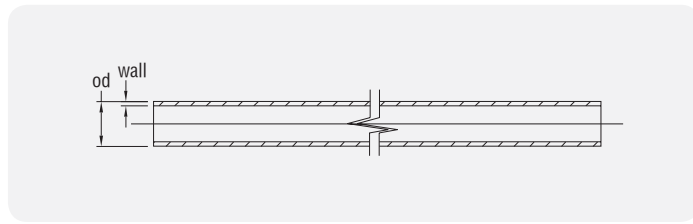


### Fitting Example:



\*These components are manufactured to containment tube specifications and do not have a specification suffix.

## tubing specifications



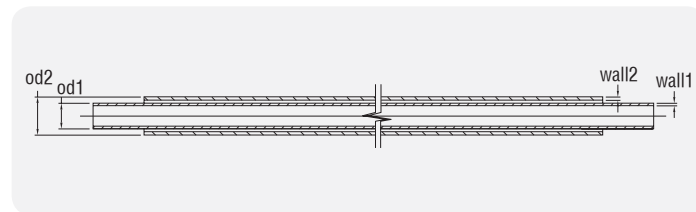
To complete part number add product specification.

Example: 04035T50

| part no.  | material            | dimensions |      |       | product specifications |    |    |    |    |      |
|-----------|---------------------|------------|------|-------|------------------------|----|----|----|----|------|
|           |                     | od         | wall | lb/ft | 5                      | 10 | 20 | 25 | 50 | TG22 |
| 04035T_   | 316L SS SMLS        | .250       | .035 | .080  | ●                      | ●  | ●  | ●  | ●  |      |
| 04035TG22 | Hastelloy® C22 SMLS | .250       | .035 | .080  |                        |    |    |    |    | ●    |
| 06035T_   | 316L SS SMLS        | .375       | .035 | .130  | ●                      | ●  | ●  | ●  | ●  |      |
| 06035TG22 | Hastelloy C22 SMLS  | .375       | .035 | .130  |                        |    |    |    |    | ●    |
| 08049T_   | 316L SS SMLS        | .500       | .049 | .240  | ●                      | ●  | ●  | ●  | ●  |      |
| 08049TG22 | Hastelloy C22 SMLS  | .500       | .049 | .240  |                        |    |    |    |    | ●    |
| 12065T_   | 316L SS SMLS        | .750       | .065 | .480  | ●                      | ●  | ●  | ●  | ●  |      |
| 16065T_W  | 316L SS WLD         | 1.00       | .065 | .650  | ●                      | ●  | ●  | ●  | ●  |      |
| 16065T_   | 316L SS SMLS        | 1.00       | .065 | .650  |                        |    | ●  | ●  | ●  |      |
| 24065T_W  | 316L SS WLD         | 1.50       | .065 | 1.00  | ●                      | ●  | ●  | ●  | ●  |      |
| 32065T_W  | 316L SS WLD         | 2.00       | .065 | 1.34  | ●                      | ●  | ●  | ●  | ●  |      |
| 48065T_W  | 316L SS WLD         | 3.00       | .065 | 2.03  | ●                      | ●  | ●  | ●  | ●  |      |
| 64065T_W  | 316L SS WLD         | 4.00       | .083 | 3.47  | ●                      | ●  | ●  | ●  | ●  |      |

Consult factory for availability of other materials, sizes, or wall thickness.

## coaxial tubing specifications



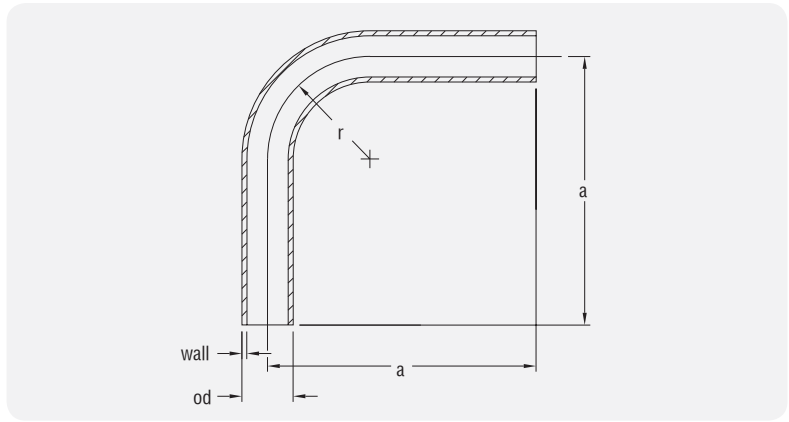
To complete part number add product specification.

Example: CX0408T50

| part no.   | process tube        | dimensions  |       |             |       | product specifications |    |    |    |    |      |
|------------|---------------------|-------------|-------|-------------|-------|------------------------|----|----|----|----|------|
|            |                     | process od1 | wall1 | contain od2 | wall2 | lb/ft                  | 10 | 20 | 25 | 50 | TG22 |
| CX0408T_   | 316L SS SMLS        | .250        | .035  | .500        | .049  | .320                   | ●  | ●  | ●  | ●  |      |
| CX0408TG22 | Hastelloy® C22 SMLS | .250        | .035  | .500        | .049  | .320                   |    |    |    |    | ●    |
| CX0610T_   | 316L SS SMLS        | .375        | .035  | .625        | .049  | .490                   | ●  | ●  | ●  | ●  |      |
| CX0610TG22 | Hastelloy C22 SMLS  | .375        | .035  | .625        | .049  | .490                   |    |    |    |    | ●    |
| CX0812T_   | 316L SS SMLS        | .500        | .049  | .750        | .065  | .720                   | ●  | ●  | ●  | ●  |      |
| CX0812TG22 | Hastelloy C22 SMLS  | .500        | .049  | .750        | .065  | .720                   |    |    |    |    | ●    |
| CX1216T_   | 316L SS SMLS        | .750        | .065  | 1.00        | .065  | 1.13                   | ●  | ●  | ●  | ●  |      |
| CX1620T_   | 316L SS SMLS        | 1.00        | .265  | 1.25        | .065  | 1.52                   | ●  | ●  | ●  | ●  |      |

Consult factory for availability of coaxial tubing with seamless containment tube.

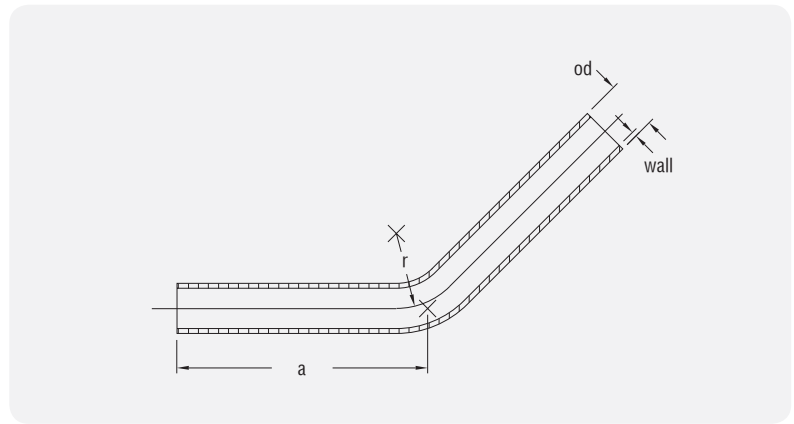
90° elbow  
2WW



To complete part number add product specification.  
Example: 2WW04T50

| part no.  | material            | dimensions |      |      |      | product specifications |    |    |    |    |      |
|-----------|---------------------|------------|------|------|------|------------------------|----|----|----|----|------|
|           |                     | od         | wall | a    | r    | 5                      | 10 | 20 | 25 | 50 | TG22 |
| 2WW04T    | 316L SS SMLS        | .250       | .035 | 2.06 | .560 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW04TG22 | Hastelloy® C22 SMLS | .250       | .035 | 2.06 | .560 |                        |    |    |    |    | ●    |
| 2WW06T    | 316L SS SMLS        | .375       | .035 | 2.62 | .560 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW06TG22 | Hastelloy C22 SMLS  | .375       | .035 | 2.62 | .560 |                        |    |    |    |    | ●    |
| 2WW08T    | 316L SS SMLS        | .500       | .049 | 2.62 | .750 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW08TG22 | Hastelloy C22 SMLS  | .500       | .049 | 2.62 | .750 |                        |    |    |    |    | ●    |
| 2WW12T    | 316L SS SMLS        | .750       | .065 | 2.62 | 1.12 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW16T_W  | 316L SS WLD         | 1.00       | .065 | 4.00 | 1.50 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW16T    | 316L SS SMLS        | 1.00       | .065 | 4.00 | 1.50 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW24T_W  | 316L SS WLD         | 1.50       | .065 | 3.75 | 2.25 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW32T_W  | 316L SS WLD         | 2.00       | .065 | 4.75 | 3.00 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW48T_W  | 316L SS WLD         | 3.00       | .065 | 6.25 | 4.50 | ●                      | ●  | ●  | ●  | ●  |      |
| 2WW64T_W  | 316L SS WLD         | 4.00       | .083 | 8.00 | 6.00 | ●                      | ●  | ●  | ●  | ●  |      |

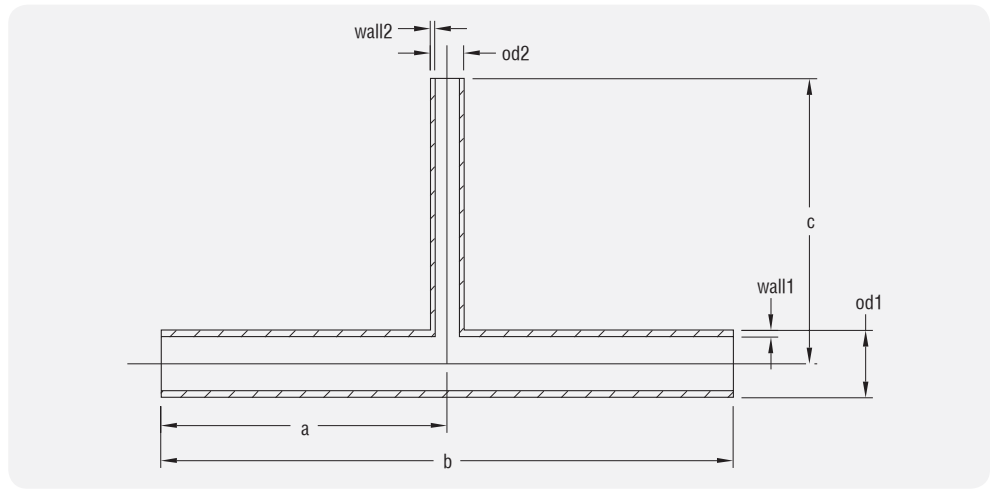
# 45° elbow 3WW



To complete part number add  
product specification.  
Example: 3WW04T50

| part no.  | material            | dimensions |      |       |      | product specifications |    |    |    |    |      |
|-----------|---------------------|------------|------|-------|------|------------------------|----|----|----|----|------|
|           |                     | od         | wall | a     | r    | 5                      | 10 | 20 | 25 | 50 | TG22 |
| 3WW04T_   | 316L SS SMLS        | .250       | .035 | 1.10  | .560 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW04TG22 | Hastelloy® C22 SMLS | .250       | .035 | 1.10  | .560 |                        |    |    |    |    | ●    |
| 3WW06T_   | 316L SS SMLS        | .375       | .035 | 2.00  | .560 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW06TG22 | Hastelloy C22 SMLS  | .375       | .035 | 2.00  | .560 |                        |    |    |    |    | ●    |
| 3WW08T_   | 316L SS SMLS        | .500       | .049 | 2.50  | .750 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW08TG22 | Hastelloy C22 SMLS  | .500       | .049 | 2.50  | .750 |                        |    |    |    |    | ●    |
| 3WW12T_   | 316L SS SMLS        | .750       | .065 | 2.50  | 1.12 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW16T_W  | 316L SS WLD         | 1.00       | .065 | 3.12  | 1.50 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW16T_   | 316L SS SMLS        | 1.00       | .065 | 3.12  | 1.50 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW24T_W  | 316L SS WLD         | 1.50       | .065 | 2.50  | 2.25 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW32T_W  | 316L SS WLD         | 2.00       | .065 | 3.00  | 3.00 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW48T_W  | 316L SS WLD         | 3.00       | .065 | 3.625 | 4.50 | ●                      | ●  | ●  | ●  | ●  |      |
| 3WW64T_W  | 316L SS WLD         | 4.00       | .083 | 4.50  | 6.00 | ●                      | ●  | ●  | ●  | ●  |      |

# reducing tee 7RWWW



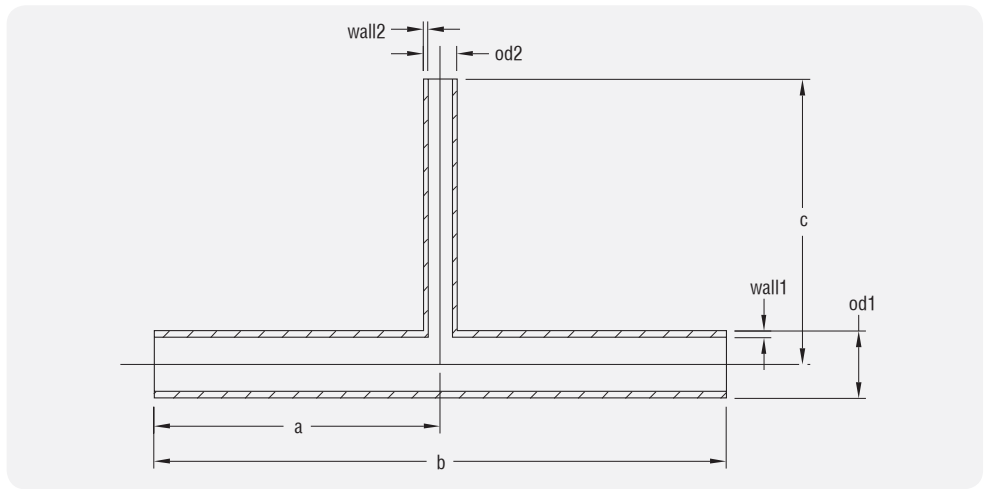
To complete part number add product specification.  
Example: 7RWWW0604T50

| part no.      | material            | dimensions |      |       |       |       |      |       | product specifications |    |    |    |    |      |
|---------------|---------------------|------------|------|-------|-------|-------|------|-------|------------------------|----|----|----|----|------|
|               |                     | od1        | od2  | wall1 | wall2 | a     | b    | c     | 5                      | 10 | 20 | 25 | 50 | T622 |
| 7RWWW0604T    | 316L SS SMLS        | .375       | .250 | .035  | .035  | 1.75  | 3.50 | 1.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW0604TG22 | Hastelloy® C22 SMLS | .375       | .250 | .035  | .035  | 1.75  | 3.50 | 1.75  |                        |    |    |    |    | ●    |
| 7RWWW0804T    | 316L SS SMLS        | .500       | .250 | .049  | .035  | 2.12  | 4.25 | 2.12  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW0804TG22 | Hastelloy C22 SMLS  | .500       | .250 | .049  | .035  | 2.12  | 4.25 | 2.12  |                        |    |    |    |    | ●    |
| 7RWWW0806T    | 316L SS SMLS        | .500       | .375 | .049  | .035  | 2.12  | 4.25 | 2.12  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW0806TG22 | Hastelloy C22 SMLS  | .500       | .375 | .049  | .035  | 2.12  | 4.25 | 2.12  |                        |    |    |    |    | ●    |
| 7RWWW1204T    | 316L SS SMLS        | .750       | .250 | .065  | .035  | 2.12  | 4.25 | 2.12  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW1206T    | 316L SS SMLS        | .750       | .375 | .065  | .035  | 2.12  | 4.25 | 2.12  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW1208T    | 316L SS SMLS        | .750       | .500 | .065  | .049  | 2.12  | 4.25 | 2.12  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW1604T    | 316L SS SMLS        | 1.00       | .250 | .065  | .035  | 2.50  | 5.00 | 2.50  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW1606T    | 316L SS SMLS        | 1.00       | .375 | .065  | .035  | 2.50  | 5.00 | 2.50  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW1608T    | 316L SS SMLS        | 1.00       | .500 | .065  | .049  | 2.50  | 5.00 | 2.50  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW1612T    | 316L SS SMLS        | 1.00       | .750 | .065  | .065  | 2.50  | 5.00 | 2.50  | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW2404T_W  | 316L SS WLD         | 1.50       | .250 | .065  | .035  | 2.375 | 4.75 | 2.375 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW2406T_W  | 316L SS WLD         | 1.50       | .375 | .065  | .035  | 2.375 | 4.75 | 2.375 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW2408T_W  | 316L SS WLD         | 1.50       | .500 | .065  | .049  | 2.375 | 4.75 | 2.375 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW2412T_W  | 316L SS WLD         | 1.50       | .750 | .065  | .065  | 2.375 | 4.75 | 2.375 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW2416T_W  | 316L SS WLD         | 1.50       | 1.00 | .065  | .065  | 2.375 | 4.75 | 2.375 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW3204T_W  | 316L SS WLD         | 2.00       | .250 | .065  | .035  | 2.875 | 5.75 | 2.875 | ●                      | ●  | ●  | ●  | ●  |      |

continued next page

## reducing tee (cont.)

### 7RWWW

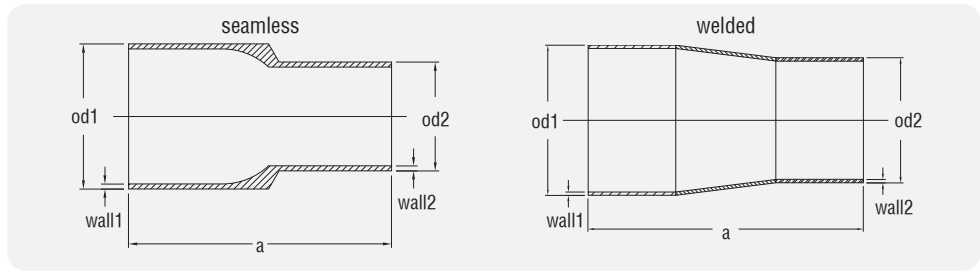


To complete part number add product specification.

Example: 7RWWW0604T50

| part no.     | material    | dimensions |      |       |       |       |      |       | product specifications |    |    |    |    |      |
|--------------|-------------|------------|------|-------|-------|-------|------|-------|------------------------|----|----|----|----|------|
|              |             | od1        | od2  | wall1 | wall2 | a     | b    | c     | 5                      | 10 | 20 | 25 | 50 | T622 |
| 7RWWW3206T_W | 316L SS WLD | 2.00       | .375 | .065  | .035  | 2.875 | 5.75 | 2.875 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW3208T_W | 316L SS WLD | 2.00       | .500 | .065  | .049  | 2.875 | 5.75 | 2.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW3212T_W | 316L SS WLD | 2.00       | .750 | .065  | .065  | 2.875 | 5.75 | 2.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW3216T_W | 316L SS WLD | 2.00       | 1.00 | .065  | .065  | 2.875 | 5.75 | 2.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW3224T_W | 316L SS WLD | 2.00       | 1.50 | .065  | .065  | 2.875 | 5.75 | 2.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW4804T_W | 316L SS WLD | 3.00       | .250 | .065  | .035  | 3.375 | 6.75 | 3.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW4806T_W | 316L SS WLD | 3.00       | .375 | .065  | .035  | 3.375 | 6.75 | 3.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW4808T_W | 316L SS WLD | 3.00       | .500 | .065  | .049  | 3.375 | 6.75 | 3.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW4812T_W | 316L SS WLD | 3.00       | .750 | .065  | .065  | 3.375 | 6.75 | 3.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW4816T_W | 316L SS WLD | 3.00       | 1.00 | .065  | .065  | 3.375 | 6.75 | 3.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW4824T_W | 316L SS WLD | 3.00       | 1.50 | .065  | .065  | 3.375 | 6.75 | 3.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW4832T_W | 316L SS WLD | 3.00       | 2.00 | .065  | .065  | 3.375 | 6.75 | 3.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW6404T_W | 316L SS WLD | 4.00       | .250 | .083  | .035  | 4.125 | 8.25 | 3.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW6406T_W | 316L SS WLD | 4.00       | .375 | .083  | .035  | 4.125 | 8.25 | 3.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW6408T_W | 316L SS WLD | 4.00       | .500 | .083  | .049  | 4.125 | 8.25 | 3.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW6412T_W | 316L SS WLD | 4.00       | .750 | .083  | .065  | 4.125 | 8.25 | 3.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW6416T_W | 316L SS WLD | 4.00       | 1.00 | .083  | .065  | 4.125 | 8.25 | 3.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW6424T_W | 316L SS WLD | 4.00       | 1.50 | .083  | .065  | 4.125 | 8.25 | 3.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW6432T_W | 316L SS WLD | 4.00       | 2.00 | .083  | .065  | 4.125 | 8.25 | 3.875 | ●                      | ●  | ●  | ●  | ●  |      |
| 7RWWW6448T_W | 316L SS WLD | 4.00       | 3.00 | .083  | .065  | 4.125 | 8.25 | 3.875 | ●                      | ●  | ●  | ●  | ●  |      |

# concentric reducer 31WW



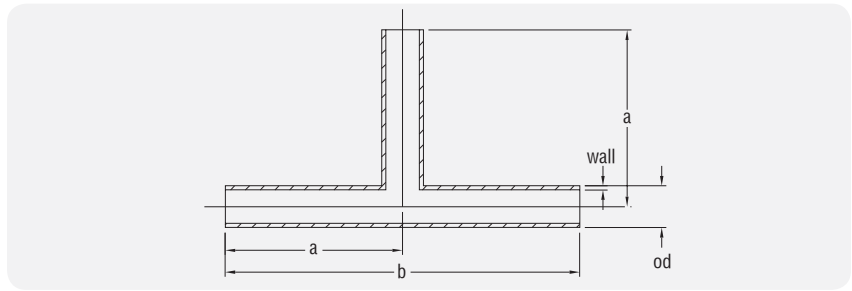
To complete part number add product specification.

Example: 31WW0604T50

| part no.     | material            | dimensions |      |       |       |       | product specifications |    |    |    |    |      |
|--------------|---------------------|------------|------|-------|-------|-------|------------------------|----|----|----|----|------|
|              |                     | od1        | od2  | wall1 | wall2 | a     | 5                      | 10 | 20 | 25 | 50 | TG22 |
| 31WW0604T_   | 316L SS SMLS        | .375       | .250 | .035  | .035  | 2.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW0604TG22 | Hastelloy® C22 SMLS | .375       | .250 | .035  | .035  | 2.75  |                        |    |    |    |    | ●    |
| 31WW0804T_   | 316L SS SMLS        | .500       | .250 | .049  | .035  | 2.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW0804TG22 | Hastelloy C22 SMLS  | .500       | .250 | .049  | .035  | 2.75  |                        |    |    |    |    | ●    |
| 31WW0806T_   | 316L SS SMLS        | .500       | .375 | .049  | .035  | 2.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW0806TG22 | Hastelloy C22 SMLS  | .500       | .375 | .049  | .035  | 2.75  |                        |    |    |    |    | ●    |
| 31WW1204T_   | 316L SS SMLS        | .750       | .250 | .065  | .035  | 2.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW1206T_   | 316L SS SMLS        | .750       | .375 | .065  | .035  | 2.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW1208T_   | 316L SS SMLS        | .750       | .500 | .065  | .049  | 2.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW1604T_   | 316L SS SMLS        | 1.00       | .250 | .065  | .035  | 3.00  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW1606T_   | 316L SS SMLS        | 1.00       | .375 | .065  | .035  | 3.00  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW1608T_   | 316L SS SMLS        | 1.00       | .500 | .065  | .049  | 3.00  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW1612T_   | 316L SS SMLS        | 1.00       | .750 | .065  | .065  | 3.00  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW2412T_W  | 316L SS WLD         | 1.50       | .750 | .065  | .065  | 3.00  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW2416T_W  | 316L SS WLD         | 1.50       | 1.00 | .065  | .065  | 2.50  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW3212T_W  | 316L SS WLD         | 2.00       | .750 | .065  | .065  | 2.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW3216T_W  | 316L SS WLD         | 2.00       | 1.00 | .065  | .065  | 3.375 | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW3224T_W  | 316L SS WLD         | 2.00       | 1.50 | .065  | .065  | 2.50  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW4816T_W  | 316L SS WLD         | 3.00       | 1.00 | .065  | .065  | 4.25  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW4824T_W  | 316L SS WLD         | 3.00       | 1.50 | .065  | .065  | 4.25  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW4832T_W  | 316L SS WLD         | 3.00       | 2.00 | .065  | .065  | 3.375 | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW4840T_W  | 316L SS WLD         | 3.00       | 2.50 | .065  | .065  | 2.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW6416T_W  | 316L SS WLD         | 4.00       | 1.00 | .083  | .065  | 5.00  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW6424T_W  | 316L SS WLD         | 4.00       | 1.50 | .083  | .065  | 4.625 | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW6432T_W  | 316L SS WLD         | 4.00       | 2.00 | .083  | .065  | 5.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW6440T_W  | 316L SS WLD         | 4.00       | 2.50 | .065  | .065  | 4.25  | ●                      | ●  | ●  | ●  | ●  |      |
| 31WW6448T_W  | 316L SS WLD         | 4.00       | 3.00 | .083  | .065  | 3.875 | ●                      | ●  | ●  | ●  | ●  |      |



## equal tee 7WWW

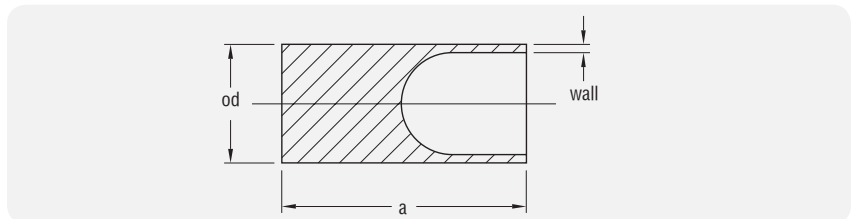


To complete part number add  
product specification.

Example: 7WWW04T50

| part no.   | material            | dimensions |      |       |      | product specifications |    |    |    |    |      |
|------------|---------------------|------------|------|-------|------|------------------------|----|----|----|----|------|
|            |                     | od         | wall | a     | b    | 5                      | 10 | 20 | 25 | 50 | TG22 |
| 7WWW04T    | 316L SS SMLS        | .250       | .035 | 1.75  | 3.50 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW04TG22 | Hastelloy® C22 SMLS | .250       | .035 | 1.75  | 3.50 |                        |    |    |    |    | ●    |
| 7WWW06T    | 316L SS SMLS        | .375       | .035 | 1.75  | 3.50 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW06TG22 | Hastelloy C22 SMLS  | .375       | .035 | 1.75  | 3.50 |                        |    |    |    |    | ●    |
| 7WWW08T    | 316L SS SMLS        | .500       | .049 | 2.12  | 4.25 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW08TG22 | Hastelloy C22 SMLS  | .500       | .049 | 2.12  | 4.25 |                        |    |    |    |    | ●    |
| 7WWW12T    | 316L SS SMLS        | .750       | .065 | 2.12  | 4.25 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW16T_W  | 316L SS WLD         | 1.00       | .065 | 2.50  | 5.00 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW16T    | 316L SS SMLS        | 1.00       | .065 | 2.50  | 5.00 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW24T_W  | 316L SS WLD         | 1.50       | .065 | 2.375 | 4.75 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW32T_W  | 316L SS WLD         | 2.00       | .065 | 2.875 | 5.75 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW48T_W  | 316L SS WLD         | 3.00       | .065 | 3.375 | 6.75 | ●                      | ●  | ●  | ●  | ●  |      |
| 7WWW64T_W  | 316L SS WLD         | 4.00       | .083 | 4.125 | 8.25 | ●                      | ●  | ●  | ●  | ●  |      |

## end cap 16W

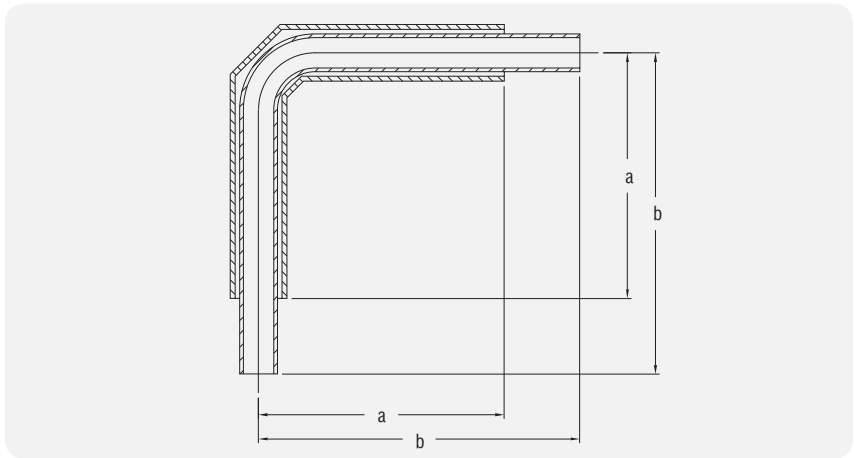


To complete part number add  
product specification.

Example: 16W04T50

| part no.  | material            | dimensions |      |       | product specifications |    |    |    |    |      |
|-----------|---------------------|------------|------|-------|------------------------|----|----|----|----|------|
|           |                     | od         | wall | a     | 5                      | 10 | 20 | 25 | 50 | TG22 |
| 16W04T    | 316L SS SMLS        | .250       | .035 | 1.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 16W04TG22 | Hastelloy® C22 SMLS | .250       | .035 | 1.125 |                        |    |    |    |    | ●    |
| 16W06T    | 316L SS SMLS        | .375       | .035 | 1.125 | ●                      | ●  | ●  | ●  | ●  |      |
| 16W06TG22 | Hastelloy C22 SMLS  | .375       | .035 | 1.125 |                        |    |    |    |    | ●    |
| 16W08T    | 316L SS SMLS        | .500       | .049 | 1.375 | ●                      | ●  | ●  | ●  | ●  |      |
| 16W08TG22 | Hastelloy C22 SMLS  | .500       | .049 | 1.375 |                        |    |    |    |    | ●    |
| 16W12T    | 316L SS SMLS        | .750       | .065 | 1.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 16W16T    | 316L SS SMLS        | 1.00       | .065 | 1.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 16W24T_W  | 316L SS WLD         | 1.50       | .065 | 1.50  | ●                      | ●  | ●  | ●  | ●  |      |
| 16W32T_W  | 316L SS WLD         | 2.00       | .065 | 1.50  | ●                      | ●  | ●  | ●  | ●  |      |
| 16W48T_W  | 316L SS WLD         | 3.00       | .065 | 1.75  | ●                      | ●  | ●  | ●  | ●  |      |
| 16W64T_W  | 316L SS WLD         | 4.00       | .083 | 2.00  | ●                      | ●  | ●  | ●  | ●  |      |

## coaxial 90° elbow X2WW

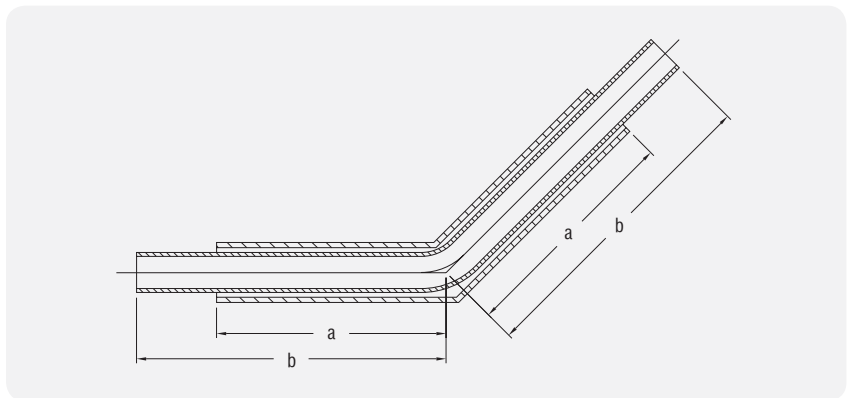


To complete part number add product specification.

Example: X2WW0408T50

| part no.     | process tube        | dimensions |              |            |              |      |      | product specifications |   |    |    |    |    |      |
|--------------|---------------------|------------|--------------|------------|--------------|------|------|------------------------|---|----|----|----|----|------|
|              |                     | process od | process wall | contain od | contain wall | a    | b    | r                      | 5 | 10 | 20 | 25 | 50 | T622 |
| X2WW0408T    | 316L SS SMLS        | .250       | .035         | .500       | .049         | 3.37 | 4.37 | .560                   | ● | ●  | ●  | ●  | ●  |      |
| X2WW0408TG22 | Hastelloy® C22 SMLS | .250       | .035         | .500       | .049         | 3.37 | 4.37 | .560                   |   |    |    |    |    | ●    |
| X2WW0610T    | 316L SS SMLS        | .375       | .035         | .625       | .049         | 3.12 | 4.12 | .560                   | ● | ●  | ●  | ●  | ●  |      |
| X2WW0610TG22 | Hastelloy C22 SMLS  | .375       | .035         | .625       | .049         | 3.12 | 4.12 | .560                   |   |    |    |    |    | ●    |
| X2WW0812T    | 316L SS SMLS        | .500       | .049         | .750       | .065         | 3.25 | 4.25 | .750                   | ● | ●  | ●  | ●  | ●  |      |
| X2WW0812TG22 | Hastelloy C22 SMLS  | .500       | .049         | .750       | .065         | 3.25 | 4.25 | .750                   |   |    |    |    |    | ●    |
| X2WW1216T    | 316L SS SMLS        | .750       | .065         | 1.00       | .065         | 5.00 | 6.75 | 1.12                   | ● | ●  | ●  | ●  | ●  |      |
| X2WW1620T    | 316L SS SMLS        | 1.00       | .065         | 1.25       | .065         | 5.37 | 7.12 | 1.50                   | ● | ●  | ●  | ●  | ●  |      |

## coaxial 45° elbow X3WW

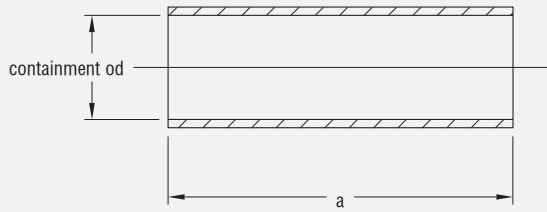


To complete part number add product specification.

Example: X3WW0408T50

| part no.     | process tube        | dimensions |              |            |              |      |      | product specifications |   |    |    |    |    |      |
|--------------|---------------------|------------|--------------|------------|--------------|------|------|------------------------|---|----|----|----|----|------|
|              |                     | process od | process wall | contain od | contain wall | a    | b    | r                      | 5 | 10 | 20 | 25 | 50 | T622 |
| X3WW0408T    | 316L SS SMLS        | .250       | .035         | .500       | .049         | 3.00 | 4.00 | .560                   | ● | ●  | ●  | ●  | ●  |      |
| X3WW0408TG22 | Hastelloy® C22 SMLS | .250       | .035         | .500       | .049         | 3.00 | 4.00 | .560                   |   |    |    |    |    | ●    |
| X3WW0610T    | 316L SS SMLS        | .375       | .035         | .625       | .049         | 2.87 | 3.87 | .560                   | ● | ●  | ●  | ●  | ●  |      |
| X3WW0610TG22 | Hastelloy C22 SMLS  | .375       | .035         | .625       | .049         | 2.87 | 3.87 | .560                   |   |    |    |    |    | ●    |
| X3WW0812T    | 316L SS SMLS        | .500       | .049         | .750       | .065         | 2.87 | 3.87 | .750                   | ● | ●  | ●  | ●  | ●  |      |
| X3WW0812TG22 | Hastelloy C22 SMLS  | .500       | .049         | .750       | .065         | 2.87 | 3.87 | .750                   |   |    |    |    |    | ●    |
| X3WW1216T    | 316L SS SMLS        | .750       | .065         | 1.00       | .065         | 4.37 | 6.12 | 1.12                   | ● | ●  | ●  | ●  | ●  |      |
| X3WW1620T    | 316L SS SMLS        | 1.00       | .065         | 1.25       | .065         | 4.50 | 6.25 | 1.50                   | ● | ●  | ●  | ●  | ●  |      |

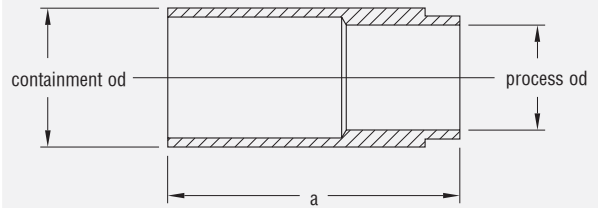
### coaxial sleeve coupling XSC



| part no. | process tube  | dimensions |      |
|----------|---------------|------------|------|
|          |               | contain od | a    |
| XSC0408  | 316L SS SMLS  | .500       | 4.00 |
| XSC0610  | 316L SS SMLS  | .625       | 4.00 |
| XSC0812  | 316L SS SMLS  | .750       | 4.00 |
| XSC1216  | 316L SS SMLS. | 1.00       | 4.00 |
| XSC1620  | 316L SS SMLS  | 1.25       | 4.00 |

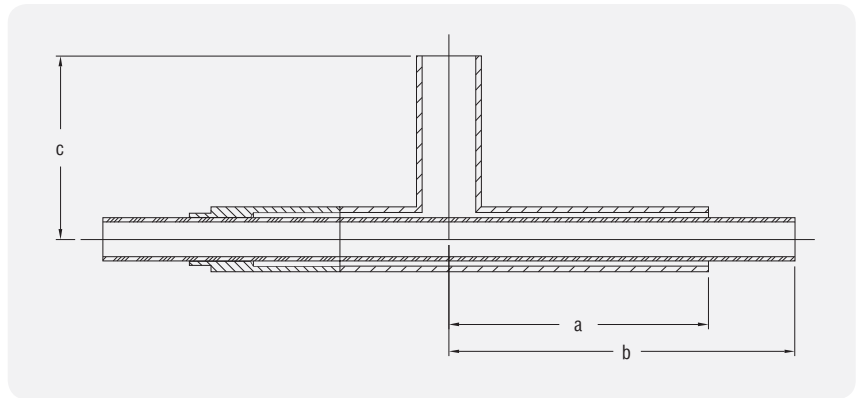
Consult factory for extended lengths.

### coaxial termination XTM



| part no. | process tube | dimensions |            |      |
|----------|--------------|------------|------------|------|
|          |              | process od | contain od | a    |
| XTM0408  | 316L SS SMLS | .250       | .500       | 1.25 |
| XTM0610  | 316L SS SMLS | .375       | .625       | 1.25 |
| XTM0812  | 316L SS SMLS | .500       | .750       | 1.25 |
| XTM1216  | 316L SS SMLS | .750       | 1.00       | 2.00 |
| XTM1620  | 316L SS SMLS | 1.00       | 1.25       | 2.00 |

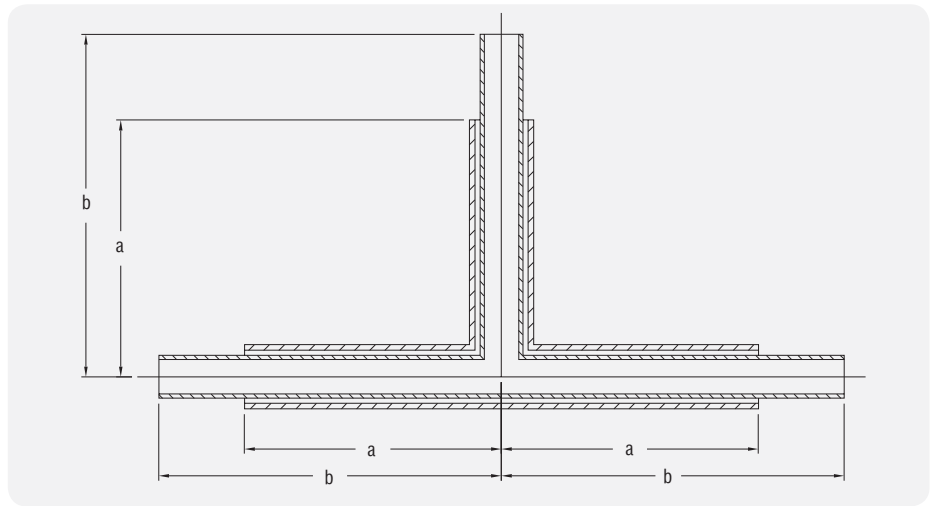
### coaxial starter piece XSP<sub>n</sub>



To complete part number add product specification.  
Example: XSP0408I50

| part no.  | process tube | dimensions |      |            |      |      |      | product specifications |   |    |    |    |    |
|-----------|--------------|------------|------|------------|------|------|------|------------------------|---|----|----|----|----|
|           |              | process od | wall | contain od | wall | a    | b    | c                      | 5 | 10 | 20 | 25 | 50 |
| XSP0408T_ | 316L SS SMLS | .250       | .035 | .500       | .049 | 2.87 | 3.87 | 2.12                   | ● | ●  | ●  | ●  | ●  |
| XSP0610T_ | 316L SS SMLS | .375       | .035 | .625       | .049 | 3.00 | 4.00 | 2.12                   | ● | ●  | ●  | ●  | ●  |
| XSP0812T_ | 316L SS SMLS | .500       | .049 | .750       | .065 | 3.00 | 4.00 | 2.12                   | ● | ●  | ●  | ●  | ●  |
| XSP1216T_ | 316L SS SMLS | .750       | .065 | 1.00       | .065 | 4.62 | 5.62 | 2.12                   | ● | ●  | ●  | ●  | ●  |
| XSP1620T_ | 316L SS SMLS | 1.00       | .065 | 1.25       | .065 | 4.75 | 5.75 | 2.50                   | ● | ●  | ●  | ●  | ●  |

# coaxial equal tee X7WWW

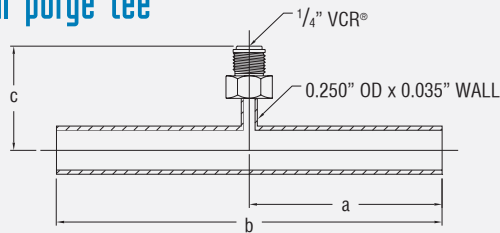


To complete part number add product specification.

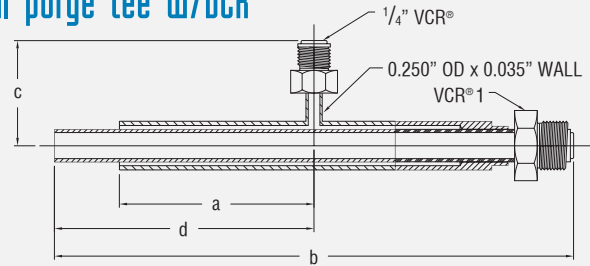
Example: X7WWW0408T50

| part no.      | process tube        | dimensions |      |            |      |      |      | product specifications |    |    |    |    |      |
|---------------|---------------------|------------|------|------------|------|------|------|------------------------|----|----|----|----|------|
|               |                     | process od | wall | contain od | wall | a    | b    | 5                      | 10 | 20 | 25 | 50 | TG22 |
| X7WWW0408T    | 316L SS SMLS        | .250       | .035 | .500       | .049 | 2.87 | 3.87 | ●                      | ●  | ●  | ●  | ●  |      |
| X7WWW0408TG22 | Hastelloy® C22 SMLS | .250       | .035 | .500       | .049 | 2.87 | 3.87 |                        |    |    |    |    | ●    |
| X7WWW0610T    | 316L SS SMLS        | .375       | .035 | .625       | .049 | 3.00 | 4.00 | ●                      | ●  | ●  | ●  | ●  |      |
| X7WWW0610TG22 | Hastelloy C22 SMLS  | .375       | .035 | .625       | .049 | 3.00 | 4.00 |                        |    |    |    |    | ●    |
| X7WWW0812T    | 316L SS SMLS        | .500       | .049 | .750       | .065 | 3.00 | 4.00 | ●                      | ●  | ●  | ●  | ●  |      |
| X7WWW0812TG22 | Hastelloy C22 SMLS  | .500       | .049 | .750       | .065 | 3.00 | 4.00 |                        |    |    |    |    | ●    |
| X7WWW1216T    | 316L SS SMLS        | .750       | .065 | 1.00       | .065 | 4.62 | 6.37 | ●                      | ●  | ●  | ●  | ●  |      |
| X7WWW1620T    | 316L SS SMLS        | 1.00       | .065 | 1.25       | .065 | 4.75 | 6.50 | ●                      | ●  | ●  | ●  | ●  |      |

## coaxial purge tee XPT



## coaxial purge tee w/UCR XPTU



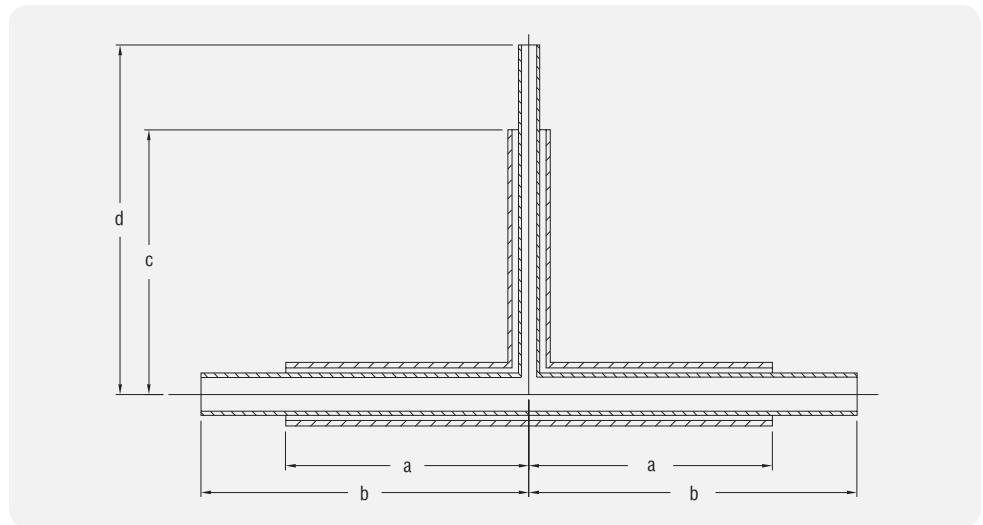
| part no. | process tube | dimensions |                |      |      |      |      | product specifications |       |   |    |    |    |    |      |
|----------|--------------|------------|----------------|------|------|------|------|------------------------|-------|---|----|----|----|----|------|
|          |              | process od | containment od | wall | a    | b    | c    | d                      | UCR®1 | 5 | 10 | 20 | 25 | 50 | TG22 |
| XPT0408  | 316L SS SMLS | .250       | .500           | .049 | 2.87 | 5.75 | 1.51 | —                      | —     |   |    |    |    |    |      |
| XPT0610  | 316L SS SMLS | .375       | .625           | .049 | 3.00 | 6.00 | 1.57 | —                      | —     |   |    |    |    |    |      |
| XPT0812  | 316L SS SMLS | .500       | .750           | .065 | 3.00 | 6.00 | 1.62 | —                      | —     |   |    |    |    |    |      |
| XPT1216  | 316L SS SMLS | .750       | 1.00           | .065 | 4.62 | 9.25 | 1.74 | —                      | —     |   |    |    |    |    |      |

|           |              |      |      |      |      |      |      |      |      |   |   |   |   |   |  |
|-----------|--------------|------|------|------|------|------|------|------|------|---|---|---|---|---|--|
| XPTV0408T | 316L SS SMLS | .250 | .500 | .049 | 2.87 | 7.75 | 1.51 | 3.87 | .250 | ● | ● | ● | ● | ● |  |
| XPTV0610T | 316L SS SMLS | .375 | .625 | .049 | 3.00 | 8.00 | 1.57 | 4.00 | .370 | ● | ● | ● | ● | ● |  |
| XPTV0812T | 316L SS SMLS | .500 | .750 | .065 | 3.00 | 8.00 | 1.62 | 4.00 | .500 | ● | ● | ● | ● | ● |  |

Consult factory for Hastelloy® process tube.

Consult factory for availability of other materials, sizes, or wall thickness.

## coaxial reducing tee X7RWWW



To complete part number add  
product specification.  
Example: X7RWWW0604T50

| part no.       | process tube        | dimensions |            |            |      |      |      |      |      | product specifications |    |    |    |    |      |
|----------------|---------------------|------------|------------|------------|------|------|------|------|------|------------------------|----|----|----|----|------|
|                |                     | base leg   |            | branch leg |      | a    | b    | c    | d    | 5                      | 10 | 20 | 25 | 50 | TG22 |
| process od     | contain od          | process od | contain od |            |      |      |      |      |      |                        |    |    |    |    |      |
| X7RWWW0604T    | 316L SS SMLS        | .375       | .625       | .250       | .500 | 2.87 | 3.87 | 3.12 | 4.12 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW0604TG22 | Hastelloy® C22 SMLS | .375       | .625       | .250       | .500 | 2.87 | 3.87 | 3.12 | 4.12 |                        |    |    |    |    | ●    |
| X7RWWW0804T    | 316L SS SMLS        | .500       | .750       | .250       | .500 | 2.87 | 3.87 | 3.12 | 4.12 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW0804TG22 | Hastelloy C22 SMLS  | .500       | .750       | .250       | .500 | 2.87 | 3.87 | 3.12 | 4.12 |                        |    |    |    |    | ●    |
| X7RWWW0806T    | 316L SS SMLS        | .500       | .750       | .375       | .625 | 3.00 | 4.00 | 3.12 | 4.12 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW0806TG22 | Hastelloy C22 SMLS  | .500       | .750       | .375       | .625 | 3.00 | 4.00 | 3.12 | 4.12 |                        |    |    |    |    | ●    |
| X7RWWW1204T    | 316L SS SMLS        | .750       | 1.00       | .250       | .500 | 4.37 | 6.12 | 3.25 | 4.25 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW1206T    | 316L SS SMLS        | .750       | 1.00       | .375       | .625 | 4.50 | 6.25 | 3.25 | 4.25 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW1208T    | 316L SS SMLS        | .750       | 1.00       | .500       | .750 | 4.50 | 6.25 | 3.25 | 4.25 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW1604T    | 316L SS SMLS        | 1.00       | 1.25       | .250       | .500 | 4.37 | 6.12 | 3.37 | 4.37 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW1606T    | 316L SS SMLS        | 1.00       | 1.25       | .375       | .625 | 4.50 | 6.25 | 3.37 | 4.37 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW1608T    | 316L SS SMLS        | 1.00       | 1.25       | .500       | .750 | 4.50 | 6.25 | 3.37 | 4.37 | ●                      | ●  | ●  | ●  | ●  |      |
| X7RWWW1612T    | 316L SS SMLS        | 1.00       | 1.25       | .750       | 1.00 | 4.62 | 6.37 | 4.87 | 6.62 | ●                      | ●  | ●  | ●  | ●  |      |

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Consult factory for availability of other materials, sizes, or wall thickness.

ultra high purity

# product specifications

## ○ tech CM

- High quality seamless and welded 316L SS tubing.
- Thermocouple cleaned and capped per ASTM 632 supplement S3.
- Purged with filtered nitrogen, capped and bulk bagged in heat sealed polyethylene.
- Used for instrumentation, clean dry air, and other gas systems requiring cleaned high purity tubing.

## ○ tech 5

- Surface roughness of 40  $\mu\text{in}$  / 1.0  $\mu\text{m}$  Ra.
- High quality seamless and welded 316L SS tubing.
- Thermocouple cleaned and capped per ASTM 632 supplement S3.
- Purged with filtered nitrogen, capped and bulk bagged in heat sealed polyethylene.
- Used for instrumentation, clean dry air, and other gas systems requiring cleaned high purity tubing.

## ○ tech 10

- Average surface roughness of 25  $\mu\text{in}$  / 0.63  $\mu\text{m}$  Ra.
- High quality ASTM 269 and ASTM 270 316L SS tubing.
- Controlled sulfur for consistent weldability.
- Exceeds CFOS CGA G4.1 cleaning.
- Fully passivated with nitric acid.
- Rinsed with DI water, purged with filtered nitrogen, capped and individually bagged in heat sealed polyethylene.
- Used for analyzer sample lines, O<sub>2</sub> piping (CFOS), medical gas distribution and vent lines.
- Cleaned to ASTM G93-96 Level A.

## ○ tech 20

- Chemically polished with an average surface roughness of 15  $\mu\text{in}$  / 0.20  $\mu\text{m}$  Ra.
- High quality ASTM 269 and ASTM 270 316L SS tubing.
- Low particulate cleaning.
- Final cleaning and packaging performed in a cleanroom.
- DI water final rinse, purged with filtered nitrogen until dry, capped and individually bagged in heat sealed polyethylene.
- Used for general high purity systems, such as high grade analyzer lines, compressed dry air, argon, nitrogen and other inert bulk gas services.
- Cleaned to ASTM G93-96 Level A.



## ● tech 25

- Electropolished to 10 Ra Max / 0.20  $\mu\text{m Ra}$ .
- 316L SS tubing meets ASTM specifications for consistent physical, dimensional and chemical composition.
- Controlled sulfur content to insure consistent weldability and reduced non-metallic inclusions.
- Final cleaning and packaging performed in a Class 10 cleanroom.
- 0.1  $\mu$  filtered 60°C DI water rinse.
- 0.005  $\mu$  filtered 120°C Nitrogen dried.
- Ends are sealed by pressing LDPE caps over polyamide nylon film.
- Individually double bagged in heat sealed polyethylene.
- Used in ultra high purity gas, chemical distribution, and WFI systems.

## ● tech 50

- Electropolished with an average surface roughness of 7  $\mu\text{in}$  / 0.18  $\mu\text{m Ra}$ .
- 316L SS tubing meets ASTM specifications for consistent physical, dimensional and chemical composition.
- Restricted sulfur content insures consistent weldability and low non-metallic inclusions.
- Final cleaning and packaging performed in a Class 10 cleanroom.
- 0.1  $\mu$  filtered 18 Megohm 60°C DI water rinse until effluent surpasses 17.5 Megohm.
- Dried with 0.005  $\mu$  filtered 120°C Nitrogen.
- Ends are sealed by pressing LDPE caps over polyamide nylon film.
- Individually double bagged in heat sealed polyethylene.
- Subjected to numerous quality verification tests including: particle and moisture analysis, SEM, ESCA and Auger.
- Used for ultra high purity gas distribution systems.

## ● TG22

- Hastelloy® C22 – a nickel chromium alloy is extremely resistant to pitting and crevice corrosion.
- Surface roughness of 20  $\mu\text{in}$  / 0.5  $\mu\text{m Ra}$ .
- Chemically polished and passivated in nitric acid bath followed by a DI water rinse.
- Final cleaning and packaging performed in a Class 10 cleanroom.
- Rinsed with 0.1  $\mu$  filtered 18 Megohm 60°C DI water.
- Dried with 0.005  $\mu$  filtered 120°C Nitrogen.
- Ends are sealed by pressing LDPE caps over polyamide nylon film.
- Individually double bagged in heat sealed polyethylene.
- Verified quality by particle and moisture testing.
- Used for high purity distribution of highly corrosive gasses.





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