



Stainless Steel Sanitary Tubing,  
Fittings, Valves, Sight glass,  
Spray balls and Filters

# ASTM A270 Stainless Steel Sanitary Tubing

## Dimensional Tolerances

| Size OD       | Tolerances, OD                    | Wall thickness | Tolerances on wall thickness <sup>a)</sup> | Tolerances on Length | Weight Kg/M |
|---------------|-----------------------------------|----------------|--------------------------------------------|----------------------|-------------|
| 1/2" (12.7)   | +/-0.005" (0.13)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 0.4571      |
| 3/4" (19.1)   | +/-0.005" (0.13)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 0.7218      |
| 1" (25.4)     | +/-0.005" (0.13)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 0.9824      |
| 1-1/4" (31.8) | +/-0.008" (0.20)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 1.2412      |
| 1-1/2" (38.1) | +/-0.008" (0.20)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 1.5078      |
| 2" (50.8)     | +/-0.008" (0.20)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 2.0331      |
| 2-1/2" (63.5) | +/-0.010" (0.25)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 2.5585      |
| 3" (76.2)     | +/-0.010" (0.25)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 3.0797      |
| 4" (101.6)    | +/-0.015" (0.38)                  | 0.065" (1.65)  | +/-10.0%                                   | +1/8" (3.18)         | 5.2628      |
| 6" (152.4)    | +/-0.030" (0.76)                  | 0.083" (2.11)  | +/-10.0%                                   | +3/16" (4.8)         | 7.9116      |
| 6" (152.4)    | +/-0.030" (0.76)                  | 0.109" (2.77)  | +/-10.0%                                   | +3/16" (4.8)         | 10.3909     |
| 8" (203.2)    | +0.061" (1.55)<br>- 0.031" (0.79) | 0.109" (2.77)  | +/-10.0%                                   | +3/16" (4.8)         | 13.9166     |

\*\*\*Uniform wall thickness for 1/2" through 3" size measure.065(16ga).In 4" Size, wall thickness measures .083(14ga),6" and 8" .109(12ga).

## Chemical Composition

| Elements |                  | 304 (wt%) | 304L (wt%) | 316L (wt%) |
|----------|------------------|-----------|------------|------------|
| (C)      | Carbon, Max.     | 0.080     | 0.035      | 0.035      |
| (Mn)     | Manganese, Max.  | 2.00      | 2.00       | 2.00       |
| (P)      | Phosphorus, Max. | 0.040     | 0.040      | 0.040      |
| (S)      | Sulfur, Max.     | 0.030     | 0.030      | 0.030**    |
| (Si)     | Silicon, Max.    | 0.75      | 0.75       | 0.75       |
| (Ni)     | Nickel           | 8.0-11.0  | 8.0-13.0   | 10.0-15.0  |
| (Cr)     | Chromium         | 18.0-20.0 | 18.0-20.0  | 16.0-18.0  |
| (Mo)     | Molybdenum       | N/A       | N/A        | 2.0-3.0    |
| (Fe)     | Iron             | Bal.      | Bal.       | Bal.       |
| (Cu)     | Copper           | N/A       | N/A        | N/A        |
| (N)      | Nitrogen         | N/A       | N/A        | N/A        |

## Product Marking

In addition to the marking prescribed in Specification A 1016/A 1016M and specified in the order, the marking shall include whether the tubing is seamless (SML), welded (WLD), or heavily cold worked (HCW), and the surface finish.



# ASTM A270 Inch Stainless Steel Sanitary Tubing

## Dimensional Tolerances

all dimensions in inches (mm)

| Size OD       | Tolerances, OD  | Wall thickness | Tolerances on wall thickness <sup>a)</sup> | Tolerances on Length | Weight Kg/M |
|---------------|-----------------|----------------|--------------------------------------------|----------------------|-------------|
| 1/2" (12.7)   | +/-0.005 (0.13) | 0.059"(1.50)   | +/-10.0%                                   | +1/8" (3.18)         | 0.4185      |
| 3/4" (19.1)   | +/-0.005 (0.13) | 0.059"(1.50)   | +/-10.0%                                   | +1/8" (3.18)         | 0.6576      |
| 1" (25.4)     | +/-0.005 (0.13) | 0.059"(1.50)   | +/-10.0%                                   | +1/8" (3.18)         | 0.8930      |
| 1-1/4" (31.8) | +/-0.008 (0.20) | 0.059"(1.50)   | +/-10.0%                                   | +1/8" (3.18)         | 1.1322      |
| 1-1/2" (38.1) | +/-0.008 (0.20) | 0.059"(1.50)   | +/-10.0%                                   | +1/8" (3.18)         | 1.3676      |
| 2" (50.8)     | +/-0.008 (0.20) | 0.059"(1.50)   | +/-10.0%                                   | +1/8" (3.18)         | 1.8421      |
| 2-1/2" (63.5) | +/-0.010 (0.25) | 0.059"(1.50)   | +/-10.0%                                   | +1/8" (3.18)         | 2.3166      |
| 3" (76.2)     | +/-0.010 (0.25) | 0.059"(1.50)   | +/-10.0%                                   | +1/8" (3.18)         | 2.7912      |
| 4" (101.6)    | +/-0.015 (0.38) | 0.079"(2.00)   | +/-10.0%                                   | +1/8" (3.18)         | 4.9621      |
| 6" (152.4)    | +/-0.030 (0.76) | 0.079"(2.00)   | +/-10.0%                                   | +3/16" (4.8)         | 7.4929      |
| 6" (152.4)    | +/-0.030 (0.76) | 0.12"(3.05)    | +/-10.0%                                   | +3/16" (4.8)         | 11.3469     |
| 8"(203.2)     | +/-0.040(1.016) | 0.12"(3.05)    | +/-10.0%                                   | +3/16" (4.8)         | 15.2065     |
| 10"(254)      | +/-0.040(1.016) | 0.12"(3.05)    | +/-10.0%                                   | +3/16" (4.8)         | 19.0661     |
| 10"(254)      | +/-0.040(1.016) | 0.134"(3.4)    | +/-10.0%                                   | +3/16" (4.8)         | 21.2243     |
| 12"(304.8)    | +/-0.040(1.016) | 0.12"(3.05)    | +/-10.0%                                   | +3/16" (4.8)         | 22.9256     |
| 12"(304.8)    | +/-0.040(1.016) | 0.134"(3.4)    | +/-10.0%                                   | +3/16" (4.8)         | 25.5268     |

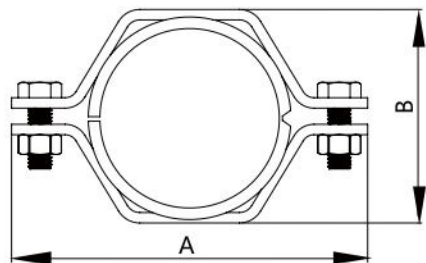
## Ordering Information

It is the responsibility of the purchaser to specify all requirements that are necessary for material ordered under this specification. Such requirements may be included, but are not limited to, the following:

- Quantity (feet, meters, or number of lengths).
- Name of material (austenitic steel tube).
- Process seamless (SML), welded (WLD), or heavily cold worked (HCW).
- Size (outside diameter and average wall thickness).
- Length (specific or random).
- Surface finish .
- Optional requirements (product analysis, hydrostatic or nondestructive electric test.
- Test report required (Certification Section of Specification A 1016/A 1016M).
- Specification designation.
- Special requirements, and any supplementary requirements.

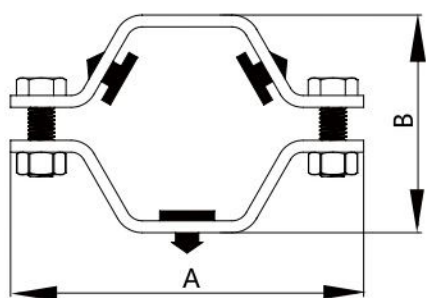
# HANGERS

PIPE Hex Hanger with PVC



| Size | A     |       | B     |       |
|------|-------|-------|-------|-------|
|      | inch  | mm    | inch  | mm    |
| 1"   | 3.625 | 92.1  | 2.125 | 54.0  |
| 1.5" | 4.312 | 109.5 | 2.625 | 66.7  |
| 2"   | 4.875 | 123.8 | 3.125 | 79.4  |
| 2.5" | 4.812 | 122.2 | 3.125 | 79.4  |
| 3"   | 6     | 152.4 | 4.25  | 108.0 |
| 4"   | 7.5   | 190.5 | 5.625 | 142.9 |
| 6"   | 9.75  | 247.7 | 7.375 | 187.3 |

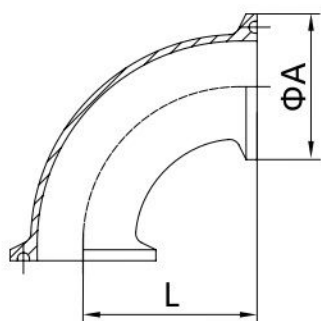
Hex Hanger with Rubber Grommets



| Size | A     |       | B     |       |
|------|-------|-------|-------|-------|
|      | inch  | mm    | inch  | mm    |
| 1"   | 3.625 | 92.1  | 2.125 | 54.0  |
| 1.5" | 3.625 | 92.1  | 2.125 | 54.0  |
| 2"   | 4.312 | 109.5 | 2.625 | 66.7  |
| 2.5" | 4.875 | 123.8 | 3.125 | 79.4  |
| 3"   | 5.375 | 136.5 | 3.625 | 92.1  |
| 4"   | 6.562 | 166.7 | 4.75  | 120.7 |
| 6"   | 9     | 228.6 | 6.625 | 168.3 |

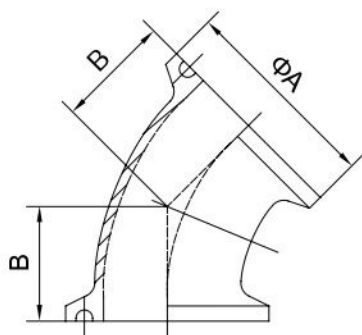
# CLAMP FITTINGS

## 90° Clamp Elbow



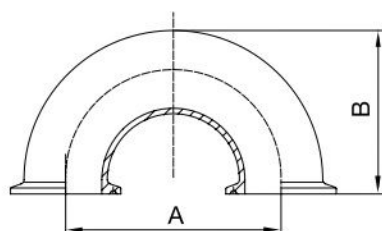
| Size | A    |       | L    |       |
|------|------|-------|------|-------|
|      | inch | mm    | inch | mm    |
| 1.0" | 1.99 | 50.5  | 2.00 | 50.8  |
| 1.5" | 1.99 | 50.5  | 2.75 | 69.9  |
| 2.0" | 2.52 | 64.0  | 3.50 | 88.9  |
| 2.5" | 3.05 | 77.5  | 4.25 | 107.9 |
| 3.0" | 3.58 | 91.0  | 5.00 | 127.0 |
| 4.0" | 4.69 | 119.0 | 6.62 | 168.2 |

## 45° Clamp Elbow



| Size | A    |       | B    |       |
|------|------|-------|------|-------|
|      | inch | mm    | inch | mm    |
| 1.0" | 1.99 | 50.5  | 1.12 | 28.5  |
| 1.5" | 1.99 | 50.5  | 1.44 | 36.5  |
| 2.0" | 2.52 | 64.0  | 1.75 | 44.45 |
| 2.5" | 3.05 | 77.5  | 2.06 | 52.3  |
| 3.0" | 3.58 | 91.0  | 2.37 | 60.3  |
| 4.0" | 4.69 | 119.0 | 3.12 | 79.4  |

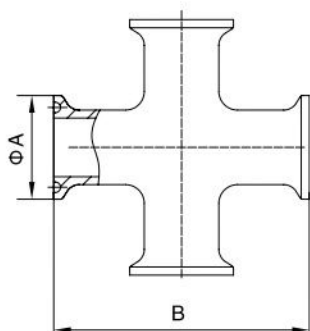
## Clamp 180° Return Bend



| Size | A    |       | B     |       |
|------|------|-------|-------|-------|
|      | inch | mm    | inch  | mm    |
| 1"   | 3    | 76.2  | 2.5   | 63.5  |
| 1.5" | 4.5  | 114.3 | 3.5   | 88.9  |
| 2"   | 6    | 152.4 | 4.5   | 114.3 |
| 2.5" | 7.5  | 190.5 | 5.5   | 139.7 |
| 3"   | 9    | 228.6 | 6.5   | 165.1 |
| 4"   | 12   | 304.8 | 8.625 | 219.1 |

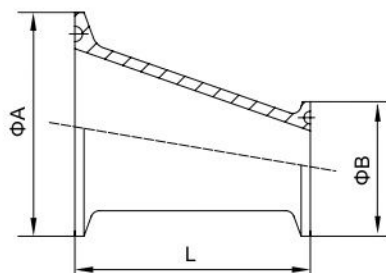
# CLAMP FITTINGS

## Clamp Equal Cross

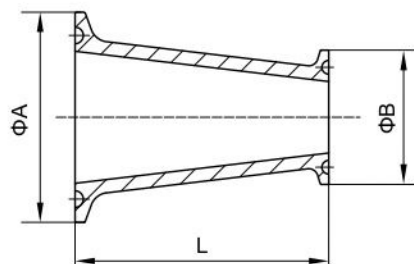


| Size | A     |       | B     |       |
|------|-------|-------|-------|-------|
|      | inch  | mm    | inch  | mm    |
| 1.0" | 1.988 | 50.5  | 4.748 | 120.6 |
| 1.5" | 1.988 | 50.5  | 5.504 | 139.8 |
| 2.0" | 2.520 | 64.0  | 7.000 | 177.8 |
| 2.5" | 3.051 | 77.5  | 7.000 | 177.8 |
| 3.0" | 3.583 | 91.0  | 7.504 | 190.6 |
| 4.0" | 4.685 | 119.0 | 8.992 | 228.4 |

## Quick install size head



**Eccentric Reducer**

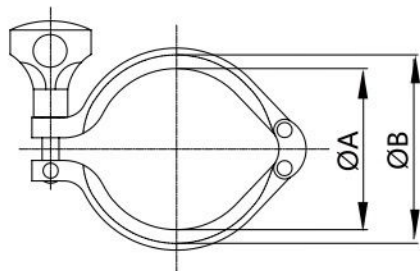


**Concentric Reducer**

| Size      | A     |       | B     |      | L      |       |
|-----------|-------|-------|-------|------|--------|-------|
|           | inch  | mm    | inch  | mm   | inch   | mm    |
| 1.5"×1.0" | 1.988 | 50.5  | 1.988 | 50.5 | 3.000  | 76.2  |
| 2.0"×1.0" | 2.520 | 64.0  | 1.988 | 50.5 | 5.000  | 127.0 |
| 2.0"×1.5" | 2.520 | 64.0  | 1.988 | 50.5 | 3.000  | 76.2  |
| 2.5"×1.0" | 3.051 | 77.5  | 1.988 | 50.5 | 7.000  | 177.8 |
| 2.5"×1.5" | 3.051 | 77.5  | 1.988 | 50.5 | 5.000  | 127.0 |
| 2.5"×2.0" | 3.051 | 77.5  | 2.520 | 64.0 | 3.000  | 76.2  |
| 3.0"×1.0" | 3.583 | 91.0  | 1.988 | 50.5 | 9.000  | 228.6 |
| 3.0"×1.5" | 3.583 | 91.0  | 1.988 | 50.5 | 7.000  | 177.8 |
| 3.0"×2.0" | 3.583 | 91.0  | 2.520 | 64.0 | 5.000  | 127.0 |
| 3.0"×2.5" | 3.583 | 91.0  | 3.051 | 77.5 | 3.000  | 76.2  |
| 4.0"×1.5" | 4.685 | 119.0 | 1.988 | 50.5 | 11.125 | 282.5 |
| 4.0"×2.0" | 4.685 | 119.0 | 2.520 | 64.0 | 9.125  | 231.7 |
| 4.0"×2.5" | 4.685 | 119.0 | 3.051 | 77.5 | 7.125  | 180.9 |
| 4.0"×3.0" | 4.685 | 119.0 | 3.583 | 91.0 | 5.125  | 130.1 |

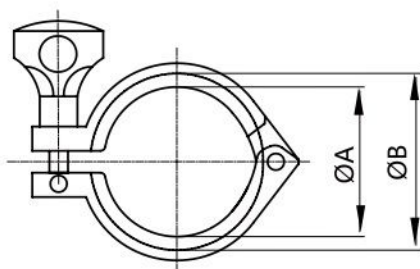
# CLAMP FITTINGS

## Double Hinge Heavy Duty Clamp



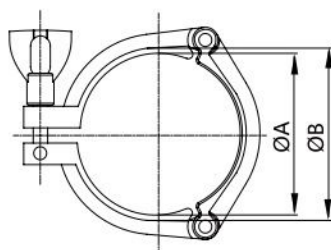
| Size    | A     |       | B     |       |
|---------|-------|-------|-------|-------|
|         | inch  | mm    | inch  | mm    |
| 1"-1.5" | 1.748 | 44.4  | 2.122 | 53.6  |
| 2"      | 2.276 | 57.8  | 2.654 | 67    |
| 2.5"    | 2.881 | 71.4  | 3.185 | 80.6  |
| 3"      | 3.307 | 84    | 3.717 | 94.2  |
| 3.5"    | 3.898 | 99    | 4.299 | 109.2 |
| 4"      | 4.331 | 110   | 4.820 | 122.2 |
| 4.5"    | 4.843 | 123   | 5.244 | 133.2 |
| 6"      | 6.118 | 155.4 | 6.695 | 170.4 |

## Single Hinge Heavy Duty Clamp



| Size       | A      |       | B      |       |
|------------|--------|-------|--------|-------|
|            | inch   | mm    | inch   | mm    |
| 0.5"-0.75" | 0.787  | 20    | 1.062  | 28    |
| 1"-1.5"    | 1.748  | 44.4  | 2.122  | 53.6  |
| 2"         | 2.276  | 57.8  | 2.654  | 67    |
| 2.5"       | 2.811  | 71.4  | 3.185  | 80.6  |
| 3"         | 3.307  | 84    | 3.717  | 94.2  |
| 3.5"       | 3.898  | 99    | 4.299  | 109.2 |
| 4"         | 4.331  | 110   | 4.820  | 122.2 |
| 4.5"       | 4.843  | 123   | 5.244  | 133.2 |
| 6"         | 6.118  | 155.4 | 6.695  | 170.4 |
| 8"         | 8.071  | 205   | 8.695  | 220   |
| 10"        | 10.118 | 257   | 10.695 | 272   |
| 12"        | 12.126 | 308   | 12.695 | 323   |

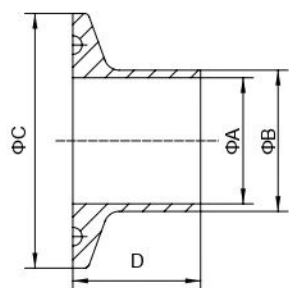
## 3-Segment Heavy Duty Clamp



| Size    | A     |       | B     |       |
|---------|-------|-------|-------|-------|
|         | inch  | mm    | inch  | mm    |
| 1"-1.5" | 1.748 | 44.4  | 2.122 | 53.6  |
| 2"      | 2.276 | 57.8  | 2.654 | 67    |
| 2.5"    | 2.811 | 71.4  | 3.185 | 80.6  |
| 3"      | 3.307 | 84    | 3.717 | 94.2  |
| 3.5"    | 3.898 | 99    | 4.299 | 109.2 |
| 4"      | 4.331 | 110   | 4.820 | 122.2 |
| 4.5"    | 4.843 | 123   | 5.244 | 133.2 |
| 6"      | 6.118 | 155.4 | 6.695 | 170.4 |

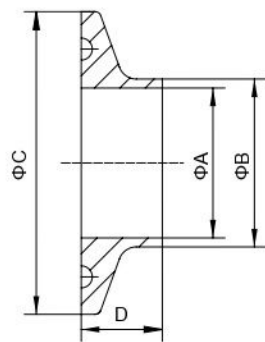
# CLAMP FITTINGS

## Long Weld Ferrule



| Size  | A      |       | B      |       | C      |       | D     |      |
|-------|--------|-------|--------|-------|--------|-------|-------|------|
|       | inch   | mm    | inch   | mm    | inch   | mm    | inch  | mm   |
| 0.5"  | 0.370  | 9.4   | 0.500  | 12.7  | 0.992  | 25.2  | 1.126 | 28.6 |
| 0.75" | 0.620  | 15.7  | 0.750  | 19.05 | 0.992  | 25.2  | 1.126 | 28.6 |
| 1"    | 0.874  | 22.2  | 1.000  | 25.4  | 1.988  | 50.5  | 1.126 | 28.6 |
| 1.5"  | 1.370  | 34.8  | 1.500  | 38.1  | 1.988  | 50.5  | 1.126 | 28.6 |
| 2"    | 1.870  | 47.5  | 2.000  | 50.8  | 2.520  | 64.0  | 1.126 | 28.6 |
| 2.5"  | 2.370  | 60.2  | 2.500  | 63.5  | 3.051  | 77.5  | 1.126 | 28.6 |
| 3"    | 2.870  | 72.9  | 3.000  | 76.2  | 3.583  | 91.0  | 1.126 | 28.6 |
| 4"    | 3.834  | 97.4  | 4.000  | 101.6 | 4.685  | 119.0 | 1.126 | 28.6 |
| 6"    | 5.782  | 146.9 | 6.000  | 152.4 | 6.567  | 166.8 | 1.500 | 38.1 |
| 8"    | 3.845  | 97.7  | 8.000  | 203.2 | 8.571  | 217.7 | 1.500 | 38.1 |
| 10"   | 9.732  | 247.2 | 10.000 | 254.0 | 10.571 | 268.5 | 1.500 | 38.1 |
| 12"   | 11.732 | 298   | 12.000 | 304.8 | 12.571 | 319.3 | 1.750 | 44.4 |

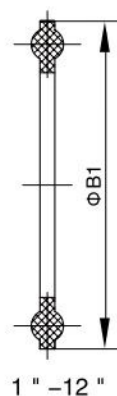
## Short Weld Ferrule



| Size  | A      |       | B      |       | C      |       | D     |      |
|-------|--------|-------|--------|-------|--------|-------|-------|------|
|       | inch   | mm    | inch   | mm    | inch   | mm    | inch  | mm   |
| 0.5"  | 0.370  | 9.4   | 0.500  | 12.7  | 0.992  | 25.2  | 0.500 | 12.7 |
| 0.75" | 0.620  | 15.75 | 0.750  | 19.05 | 0.992  | 25.2  | 0.500 | 12.7 |
| 1"    | 0.870  | 22.1  | 1.000  | 25.4  | 1.988  | 50.5  | 0.500 | 12.7 |
| 1.5"  | 1.370  | 34.8  | 1.500  | 38.1  | 1.988  | 50.5  | 0.500 | 12.7 |
| 2"    | 1.870  | 47.5  | 2.000  | 50.8  | 2.520  | 64.0  | 0.500 | 12.7 |
| 2.5"  | 2.370  | 60.2  | 2.500  | 63.5  | 3.051  | 77.5  | 0.500 | 12.7 |
| 3"    | 2.870  | 72.9  | 3.000  | 76.2  | 3.583  | 91.0  | 0.500 | 12.7 |
| 4"    | 3.834  | 97.4  | 4.000  | 101.6 | 4.685  | 119.0 | 0.625 | 15.8 |
| 6"    | 5.782  | 146.9 | 6.000  | 152.4 | 6.567  | 166.8 | 0.875 | 22.2 |
| 8"    | 7.760  | 197.1 | 8.000  | 203.2 | 8.571  | 217.7 | 0.875 | 22.2 |
| 10"   | 9.782  | 248.5 | 10.000 | 254.0 | 10.571 | 268.5 | 0.875 | 22.2 |
| 12"   | 11.760 | 298.7 | 12.000 | 304.8 | 12.571 | 319.3 | 0.875 | 22.2 |

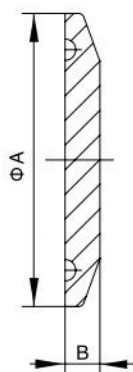
# CLAMP FITTINGS

## Gasket



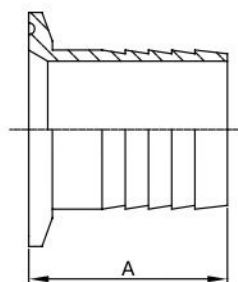
| Size       | B1     |       |
|------------|--------|-------|
|            | inch   | mm    |
| 0.5"-0.75" | 0.858  | 21.8  |
| 1"-1.5"    | 1.988  | 50.5  |
| 2"         | 2.520  | 64    |
| 2.5"       | 3.051  | 77.5  |
| 3"         | 3.583  | 91    |
| 4"         | 4.685  | 119   |
| 4.5"       | 5.118  | 130   |
| 6"         | 6.567  | 166.8 |
| 8"         | 8.571  | 217.7 |
| 10"        | 10.571 | 268.5 |
| 12"        | 12.571 | 319.3 |

## Solid End Cap



| Size       | A      |       | B     |      |
|------------|--------|-------|-------|------|
|            | inch   | mm    | inch  | mm   |
| 0.5"-0.75" | 0.992  | 25.2  | 0.252 | 6.4  |
|            | 1.339  | 34    | 0.252 | 6.4  |
| 1"-1.5"    | 1.988  | 50.5  | 0.252 | 6.4  |
| 2"         | 2.520  | 64    | 0.252 | 6.4  |
| 2.5"       | 3.051  | 77.5  | 0.252 | 6.4  |
| 3"         | 3.583  | 91.0  | 0.252 | 6.4  |
| 4"         | 4.685  | 119.0 | 0.311 | 7.9  |
| 6"         | 6.567  | 166.8 | 0.437 | 11.1 |
| 8"         | 8.571  | 217.7 | 0.437 | 11.1 |
| 10"        | 10.571 | 268.5 | 0.437 | 11.1 |
| 12"        | 12.571 | 319.3 | 0.437 | 11.1 |

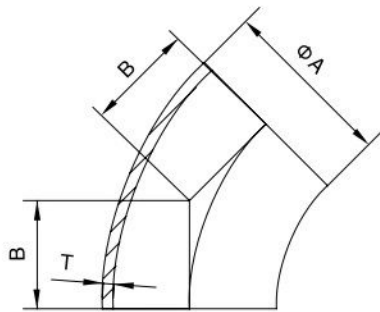
## Rubber Hose Adapter



| Size | A     |      |
|------|-------|------|
|      | inch  | mm   |
| 1"   | 1.687 | 42.8 |
| 1.5" | 1.687 | 42.8 |
| 2"   | 2.312 | 58.7 |
| 2.5" | 2.343 | 59.5 |
| 3"   | 3.093 | 78.5 |
| 4"   | 3.406 | 86.5 |
| 6"   | 3.406 | 86.5 |
| 8"   | 3.406 | 86.5 |

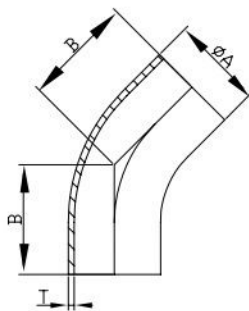
# WELD FITTINGS

## Bend 45°



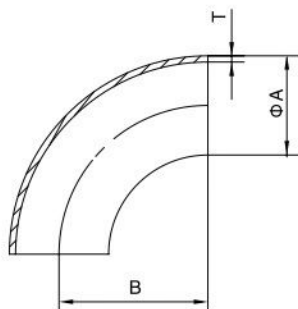
| Size | A     |       | B     |      | T     |      |
|------|-------|-------|-------|------|-------|------|
|      | inch  | mm    | inch  | mm   | inch  | mm   |
| 1.0" | 1.000 | 25.4  | 0.625 | 15.8 | 0.065 | 1.65 |
| 1.5" | 1.500 | 38.1  | 0.937 | 23.8 | 0.065 | 1.65 |
| 2.0" | 2.000 | 50.8  | 1.250 | 31.7 | 0.065 | 1.65 |
| 2.5" | 2.500 | 63.5  | 1.562 | 39.6 | 0.065 | 1.65 |
| 3.0" | 3.000 | 76.2  | 1.875 | 47.6 | 0.065 | 1.65 |
| 4.0" | 4.000 | 101.6 | 2.500 | 63.5 | 0.083 | 2.11 |

## Polished Long Elbow 45 °



| Size | A     |       | B     |       | T     |      |
|------|-------|-------|-------|-------|-------|------|
|      | inch  | mm    | inch  | mm    | inch  | mm   |
| 1.0" | 1.000 | 25.4  | 1.189 | 30.2  | 0.065 | 1.65 |
| 1.5" | 1.500 | 38.1  | 1.626 | 41.3  | 0.065 | 1.65 |
| 2.0" | 2.000 | 50.8  | 2.311 | 58.7  | 0.065 | 1.65 |
| 2.5" | 2.500 | 63.5  | 3.000 | 76.2  | 0.065 | 1.65 |
| 3.0" | 3.000 | 76.2  | 3.689 | 93.7  | 0.065 | 1.65 |
| 4.0" | 4.000 | 101.6 | 4.811 | 122.2 | 0.083 | 2.11 |

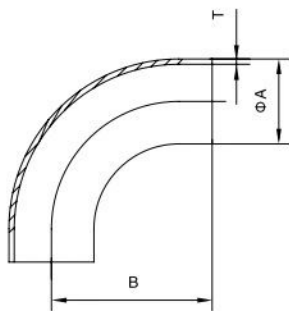
## Elbow 90°



| Size | A     |       | B     |       | T     |      |
|------|-------|-------|-------|-------|-------|------|
|      | inch  | mm    | inch  | mm    | inch  | mm   |
| 1.0" | 1.000 | 25.4  | 1.500 | 38.1  | 0.065 | 1.65 |
| 1.5" | 1.500 | 38.1  | 2.252 | 57.2  | 0.065 | 1.65 |
| 2.0" | 2.000 | 50.8  | 3.000 | 76.2  | 0.065 | 1.65 |
| 2.5" | 2.500 | 63.5  | 3.750 | 95.25 | 0.065 | 1.65 |
| 3.0" | 3.000 | 76.2  | 4.500 | 114.3 | 0.065 | 1.65 |
| 4.0" | 4.000 | 101.6 | 6.000 | 152.4 | 0.083 | 2.11 |
| 6.0" | 6.000 | 152.4 | 9.000 | 228.6 | 0.109 | 2.77 |
| 8.0" | 8.000 | 203.2 | 12.00 | 304.8 | 0.109 | 2.77 |

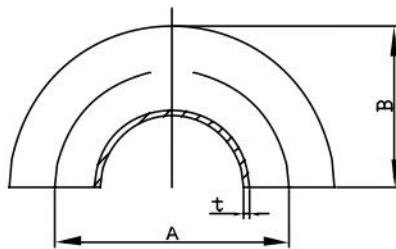
# WELD FITTINGS

## Long Elbow 90°



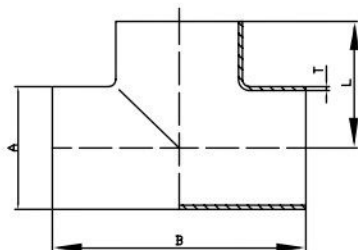
| Size | A     |       | B     |       | T     |      |
|------|-------|-------|-------|-------|-------|------|
|      | inch  | mm    | inch  | mm    | inch  | mm   |
| 1.0" | 1.000 | 25.4  | 2.063 | 52.4  | 0.065 | 1.65 |
| 1.5" | 1.500 | 38.1  | 2.937 | 74.6  | 0.065 | 1.65 |
| 2.0" | 2.000 | 50.8  | 4.063 | 103.2 | 0.065 | 1.65 |
| 2.5" | 2.500 | 63.5  | 5.189 | 131.8 | 0.065 | 1.65 |
| 3.0" | 3.000 | 76.2  | 6.311 | 160.3 | 0.065 | 1.65 |
| 4.0" | 4.000 | 101.6 | 8.311 | 211.1 | 0.083 | 2.11 |

## 180° Return Bend Weld End



| Size | B    |       | A    |       | T     |      |
|------|------|-------|------|-------|-------|------|
|      | inch | mm    | inch | mm    | inch  | mm   |
| 1.0" | 3    | 76.2  | 2    | 50.8  | 0.065 | 1.65 |
| 1.5" | 4.5  | 114.3 | 3    | 76.2  | 0.065 | 1.65 |
| 2.0" | 6    | 152.4 | 4    | 101.6 | 0.065 | 1.65 |
| 2.5" | 7.5  | 190.5 | 5    | 127   | 0.065 | 1.65 |
| 3.0" | 9    | 228.6 | 6    | 152.4 | 0.065 | 1.65 |
| 4.0" | 12   | 304.8 | 8    | 203.2 | 0.083 | 2.11 |

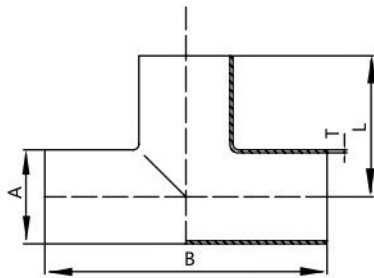
## Short Equal Tee



| Size | A     |       | B     |       | L     |      | T     |      |
|------|-------|-------|-------|-------|-------|------|-------|------|
|      | inch  | mm    | inch  | mm    | inch  | mm   | inch  | mm   |
| 1.0" | 1.000 | 25.4  | 2.252 | 57.2  | 1.126 | 28.6 | 0.065 | 1.65 |
| 1.5" | 1.500 | 38.1  | 3.315 | 84.2  | 1.657 | 42.1 | 0.065 | 1.65 |
| 2.0" | 2.000 | 50.8  | 4.126 | 104.8 | 2.063 | 52.4 | 0.065 | 1.65 |
| 2.5" | 2.500 | 63.5  | 4.685 | 119.0 | 2.343 | 59.5 | 0.065 | 1.65 |
| 3.0" | 3.000 | 76.2  | 5.189 | 131.8 | 2.594 | 65.9 | 0.065 | 1.65 |
| 4.0" | 4.000 | 101.6 | 6.874 | 174.6 | 3.437 | 87.3 | 0.083 | 2.11 |
| 6.0" | 6.000 | 152.4 | 10    | 254   | 5     | 127  | 0.109 | 2.77 |
| 8.0" | 8.000 | 203.2 | 14    | 356   | 7     | 178  | 0.109 | 2.77 |

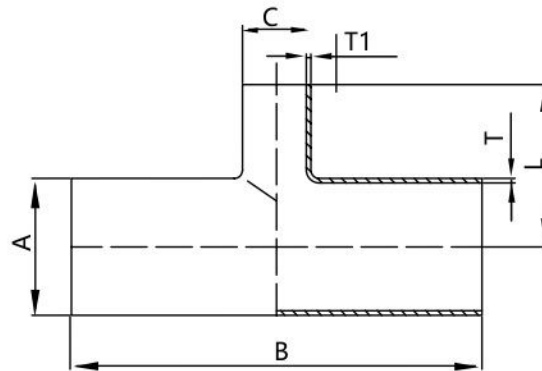
# WELD FITTINGS

## Long Equal Tee



| Size  | A     |       | B      |       | L     |       | T     |      |
|-------|-------|-------|--------|-------|-------|-------|-------|------|
|       | inch  | mm    | inch   | mm    | inch  | mm    | inch  | mm   |
| 0.5"  | 0.500 | 12.7  | 3.750  | 95.2  | 1.875 | 47.6  | 0.065 | 1.65 |
| 0.75" | 0.750 | 19.05 | 4.000  | 101.6 | 2.000 | 50.8  | 0.065 | 1.65 |
| 1.0"  | 1.000 | 25.4  | 3.750  | 95.2  | 1.875 | 47.6  | 0.065 | 1.65 |
| 1.5"  | 1.500 | 38.1  | 4.500  | 114.3 | 2.250 | 57.2  | 0.065 | 1.65 |
| 2.0"  | 2.000 | 50.8  | 6.000  | 152.4 | 3.000 | 76.2  | 0.065 | 1.65 |
| 2.5"  | 2.500 | 63.5  | 6.000  | 152.4 | 3.000 | 76.2  | 0.065 | 1.65 |
| 3.0"  | 3.000 | 76.2  | 6.500  | 165.2 | 3.250 | 82.6  | 0.065 | 1.65 |
| 4.0"  | 4.000 | 101.6 | 7.750  | 196.8 | 3.875 | 98.4  | 0.083 | 2.11 |
| 6.0"  | 6.000 | 152.4 | 11.250 | 285.7 | 5.625 | 142.9 | 0.109 | 2.77 |
| 8.0"  | 8.000 | 203.2 | 14.000 | 355.6 | 7.000 | 177.8 | 0.120 | 3.05 |

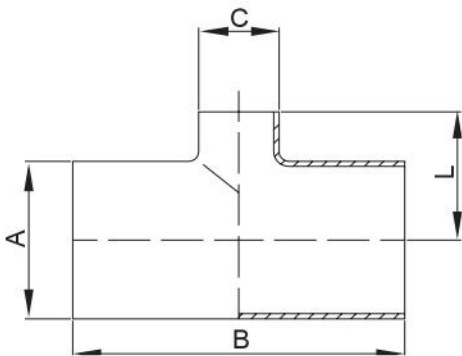
## Long Reducing Tee



| Size      | A     |       | C     |      | B     |       | L     |       | T     |      | T1    |      |
|-----------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|------|
|           | inch  | mm    | inch  | mm   | inch  | mm    | inch  | mm    | inch  | mm   | inch  | mm   |
| 1.5"×1.0" | 1.500 | 38.1  | 1.000 | 25.4 | 4.500 | 114.3 | 2.125 | 54.0  | 0.065 | 1.65 | 0.065 | 1.65 |
| 2.0"×1.0" | 2.000 | 50.8  | 1.000 | 25.4 | 6.000 | 152.4 | 2.374 | 60.3  | 0.065 | 1.65 | 0.065 | 1.65 |
| 2.0"×1.5" | 2.000 | 50.8  | 1.500 | 38.1 | 6.000 | 152.4 | 2.500 | 63.5  | 0.065 | 1.65 | 0.065 | 1.65 |
| 2.5"×1.5" | 2.500 | 63.5  | 1.500 | 38.1 | 6.000 | 152.4 | 2.750 | 69.8  | 0.065 | 1.65 | 0.065 | 1.65 |
| 2.5"×2.0" | 2.500 | 63.5  | 2.000 | 50.8 | 6.000 | 152.4 | 3.250 | 82.5  | 0.065 | 1.65 | 0.065 | 1.65 |
| 3.0"×1.5" | 3.000 | 76.2  | 1.500 | 38.1 | 6.500 | 165.1 | 3.000 | 76.2  | 0.065 | 1.65 | 0.065 | 1.65 |
| 3.0"×2.0" | 3.000 | 76.2  | 2.000 | 50.8 | 6.500 | 165.1 | 3.500 | 88.9  | 0.065 | 1.65 | 0.065 | 1.65 |
| 3.0"×2.5" | 3.000 | 76.2  | 2.500 | 63.5 | 6.500 | 165.1 | 3.250 | 82.5  | 0.065 | 1.65 | 0.065 | 1.65 |
| 4.0"×2.0" | 4.000 | 101.6 | 2.000 | 50.8 | 7.750 | 196.8 | 4.000 | 101.6 | 0.083 | 2.11 | 0.065 | 1.65 |
| 4.0"×2.5" | 4.000 | 101.6 | 2.500 | 63.5 | 7.750 | 196.8 | 3.750 | 95.2  | 0.083 | 2.11 | 0.065 | 1.65 |
| 4.0"×3.0" | 4.000 | 101.6 | 3.000 | 76.2 | 7.750 | 196.8 | 3.750 | 95.2  | 0.083 | 2.11 | 0.065 | 1.65 |

# WELD FITTINGS

## Short Reducing Tee

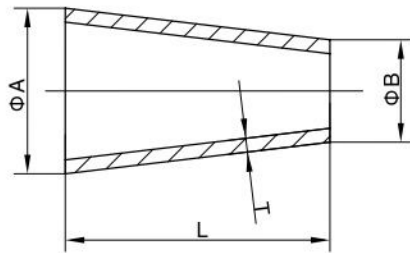


| Size       | A     |       | B      |       | C     |       | L     |       |
|------------|-------|-------|--------|-------|-------|-------|-------|-------|
|            | inch  | mm    | inch   | mm    | inch  | mm    | inch  | mm    |
| 0.75"x0.5" | .750  | 19.0  | 4.000  | 101.6 | 0.500 | 12.7  | 2.000 | 50.8  |
| 1"x0.5"    | 1.000 | 25.4  | 4.250  | 107.9 | 0.500 | 12.7  | 2.125 | 54.0  |
| 1"x0.75"   | 1.000 | 25.4  | 4.250  | 107.9 | 0.750 | 19.0  | 2.125 | 54.0  |
| 1.5"x0.5"  | 1.500 | 38.1  | 4.750  | 120.6 | 0.500 | 12.7  | 2.375 | 60.3  |
| 1.5"x0.75" | 1.500 | 38.1  | 4.750  | 120.6 | 0.750 | 19.0  | 2.375 | 60.3  |
| 1.5"x1"    | 1.500 | 38.1  | 3.312  | 84.12 | 1.000 | 25.4  | 1.375 | 34.9  |
| 2"x0.5"    | 2.000 | 50.8  | 5.750  | 146.0 | 0.500 | 12.7  | 2.625 | 66.7  |
| 2"x0.75"   | 2.000 | 50.8  | 5.750  | 146.0 | 0.750 | 19.0  | 2.625 | 66.7  |
| 2"x1"      | 2.000 | 50.8  | 4.124  | 104.7 | 1.000 | 25.4  | 1.625 | 41.3  |
| 2"x1.5"    | 2.000 | 50.8  | 4.124  | 104.7 | 1.500 | 38.1  | 1.906 | 48.4  |
| 2.5"x1.5"  | 2.500 | 63.5  | 4.688  | 119.1 | 1.500 | 38.1  | 2.156 | 54.8  |
| 2.5"x2"    | 2.500 | 63.5  | 4.688  | 119.1 | 2.000 | 50.8  | 2.312 | 58.7  |
| 3"x1.5"    | 3.000 | 76.2  | 5.188  | 131.8 | 1.500 | 38.1  | 2.406 | 61.1  |
| 3"x2"      | 3.000 | 76.2  | 5.188  | 131.8 | 2.000 | 50.8  | 2.562 | 65.1  |
| 3"x2.5"    | 3.000 | 76.2  | 5.188  | 131.8 | 2.500 | 63.5  | 2.594 | 65.9  |
| 4"x1.5"    | 4.000 | 101.6 | 6.876  | 174.6 | 1.500 | 38.1  | 2.906 | 73.8  |
| 4"x2"      | 4.000 | 101.6 | 6.876  | 174.6 | 2.000 | 50.8  | 3.062 | 77.8  |
| 4"x2.5"    | 4.000 | 101.6 | 6.876  | 174.6 | 2.500 | 63.5  | 3.094 | 78.6  |
| 4"x3"      | 4.000 | 101.6 | 6.876  | 174.6 | 3.000 | 76.2  | 3.094 | 78.6  |
| 6"x2"      | 6.000 | 152.4 | 11.250 | 285.7 | 2.000 | 50.8  | 4.500 | 114.3 |
| 6"x3"      | 6.000 | 152.4 | 11.250 | 285.7 | 3.000 | 76.2  | 4.875 | 123.8 |
| 6"x4"      | 6.000 | 152.4 | 11.250 | 285.7 | 4.000 | 101.6 | 5.125 | 130.2 |

\*\*T304 and T316L are available.

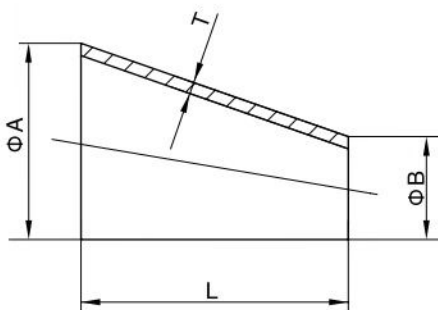
# WELD FITTINGS

## Concentric Reducer Butt Weld



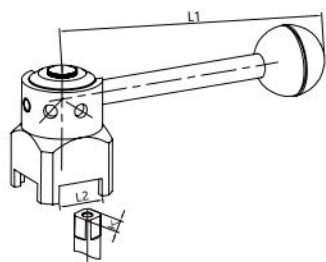
| Size      | A     |       | B     |      | L      |       | T     |      |
|-----------|-------|-------|-------|------|--------|-------|-------|------|
|           | inch  | mm    | inch  | mm   | inch   | mm    | inch  | mm   |
| 1.5"×1.0" | 1.500 | 38.1  | 1.000 | 25.4 | 2.000  | 50.8  | 0.065 | 1.65 |
| 2.0"×1.0" | 2.000 | 50.8  | 1.000 | 25.4 | 4.000  | 101.6 | 0.065 | 1.65 |
| 2.0"×1.5" | 2.000 | 50.8  | 1.500 | 38.1 | 2.000  | 50.8  | 0.065 | 1.65 |
| 2.5"×1.0" | 2.500 | 63.5  | 1.000 | 25.4 | 6.000  | 152.4 | 0.065 | 1.65 |
| 2.5"×1.5" | 2.500 | 63.5  | 1.500 | 38.1 | 4.000  | 101.6 | 0.065 | 1.65 |
| 2.5"×2.0" | 2.500 | 63.5  | 2.000 | 50.8 | 2.000  | 50.8  | 0.065 | 1.65 |
| 3.0"×1.0" | 3.000 | 76.2  | 1.000 | 25.4 | 8.000  | 203.2 | 0.065 | 1.65 |
| 3.0"×1.5" | 3.000 | 76.2  | 1.500 | 38.1 | 6.000  | 152.4 | 0.065 | 1.65 |
| 3.0"×2.0" | 3.000 | 76.2  | 2.000 | 50.8 | 4.000  | 101.6 | 0.065 | 1.65 |
| 3.0"×2.5" | 3.000 | 76.2  | 2.500 | 63.5 | 2.000  | 50.8  | 0.065 | 1.65 |
| 4.0"×1.5" | 4.000 | 101.6 | 1.500 | 38.1 | 10.000 | 254.0 | 0.083 | 2.11 |
| 4.0"×2.0" | 4.000 | 101.6 | 2.000 | 50.8 | 8.000  | 203.2 | 0.083 | 2.11 |
| 4.0"×2.5" | 4.000 | 101.6 | 2.500 | 63.5 | 6.000  | 152.4 | 0.083 | 2.11 |
| 4.0"×3.0" | 4.000 | 101.6 | 3.000 | 76.2 | 4.000  | 101.6 | 0.083 | 2.11 |
| 8.0"×2.0" | 8.000 | 203.2 | 2.000 | 50.8 | 6.000  | 152.4 | 0.109 | 2.77 |

## Eccentric Reducer Butt Weld



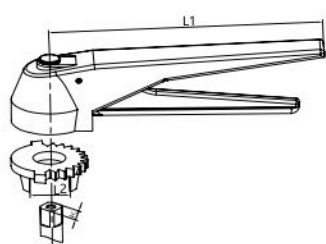
| Size      | A     |       | B     |      | L      |       | T     |      |
|-----------|-------|-------|-------|------|--------|-------|-------|------|
|           | inch  | mm    | inch  | mm   | inch   | mm    | inch  | mm   |
| 1.5"×1.0" | 1.500 | 38.1  | 1.000 | 25.4 | 2.000  | 50.8  | 0.065 | 1.65 |
| 2.0"×1.0" | 2.000 | 50.8  | 1.000 | 25.4 | 4.000  | 101.6 | 0.065 | 1.65 |
| 2.0"×1.5" | 2.000 | 50.8  | 1.500 | 38.1 | 2.000  | 50.8  | 0.065 | 1.65 |
| 2.5"×1.0" | 2.500 | 63.5  | 1.000 | 25.4 | 6.000  | 152.4 | 0.065 | 1.65 |
| 2.5"×1.5" | 2.500 | 63.5  | 1.500 | 38.1 | 4.000  | 101.6 | 0.065 | 1.65 |
| 2.5"×2.0" | 2.500 | 63.5  | 2.000 | 50.8 | 2.000  | 50.8  | 0.065 | 1.65 |
| 3.0"×1.0" | 3.000 | 76.2  | 1.000 | 25.4 | 8.000  | 203.2 | 0.065 | 1.65 |
| 3.0"×1.5" | 3.000 | 76.2  | 1.500 | 38.1 | 6.000  | 152.4 | 0.065 | 1.65 |
| 3.0"×2.0" | 3.000 | 76.2  | 2.000 | 50.8 | 4.000  | 101.6 | 0.065 | 1.65 |
| 3.0"×2.5" | 3.000 | 76.2  | 2.500 | 63.5 | 2.000  | 50.8  | 0.065 | 1.65 |
| 4.0"×1.5" | 4.000 | 101.6 | 1.500 | 38.1 | 10.000 | 254.0 | 0.083 | 2.11 |
| 4.0"×2.0" | 4.000 | 101.6 | 2.000 | 50.8 | 8.000  | 203.2 | 0.083 | 2.11 |
| 4.0"×2.5" | 4.000 | 101.6 | 2.500 | 63.5 | 6.000  | 152.4 | 0.083 | 2.11 |
| 4.0"×3.0" | 4.000 | 101.6 | 3.000 | 76.2 | 6.000  | 101.6 | 0.083 | 2.11 |

# BUTTERFLY VALVES



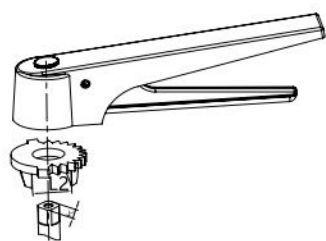
## Pulling Handle

| Size      | L1  | L2   | K x K |
|-----------|-----|------|-------|
| 0.5"-1.5" | 126 | 20.2 | 8x8   |
| 2"        | 133 | 20.2 | 10x10 |
| 2.5"-3"   | 144 | 22.2 | 10x10 |
| 3.5"-4"   | 160 | 22.2 | 11x11 |
| 5"-6"     | 220 | 22.2 | 11x11 |
| 8"        | 284 | 30.2 | 14x14 |



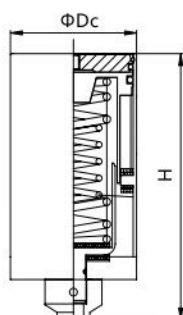
## Plastic Multi-Position Handle

| Size      | L1  | L2   | K x K |
|-----------|-----|------|-------|
| 0.5"-1.5" | 150 | 20.2 | 8x8   |
| 2"-3"     | 150 | 20.2 | 10x10 |
| 3.5"-4"   | 150 | 22.2 | 11x11 |



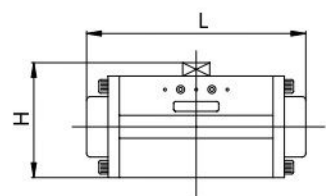
## Stainless Steel Multi-Position Handle

| Size      | L1  | L2   | K x K |
|-----------|-----|------|-------|
| 0.5"-1.5" | 155 | 20.2 | 8x8   |
| 2"-3"     | 155 | 20.2 | 10x10 |
| 3.5"-6"   | 155 | 22.2 | 11x11 |
| 8"        | 230 | 30.2 | 14x14 |



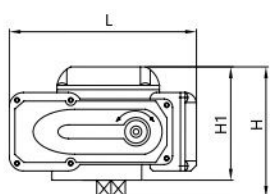
## Stainless Steel Pneumatic Actuator

| Size | Dc   | H     | match with butterfly valve | match with ball valve |
|------|------|-------|----------------------------|-----------------------|
| Ø85  | 85.0 | 180.5 | 1"-4"                      | 1"-2"                 |
| Ø108 | 108  | 223   | 5"-6"                      | 2.5"-3"               |
| Ø133 | 133  | 400   | 8"                         | 4"                    |



## Aluminium Pneumatic Actuator

| Size | H     | L     | match with butterfly valve | match with ball valve |
|------|-------|-------|----------------------------|-----------------------|
| AT1  | 91.0  | 131.0 | 1/2"-1 1/4"                | 1/2"-1"               |
| AT2  | 112.0 | 185.0 | 2"-4"                      | 1 1/4"-2"             |
| AT3  | 128.0 | 230.0 | 5"                         | 2 1/2"-3"             |
| AT4  | 154.0 | 290.0 | 6"-8"                      | 3 1/2"-4"             |

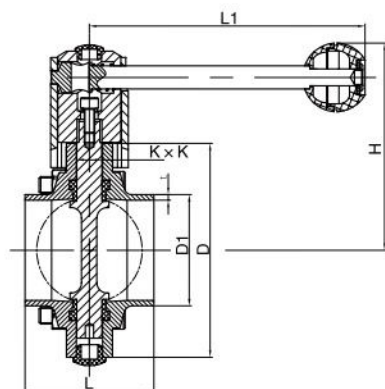


## Electric Actuator

| Size  | L     | H     | H1    | match with butterfly valve | match with ball valve |
|-------|-------|-------|-------|----------------------------|-----------------------|
| HL-05 | 157.5 | 115.0 | 103.0 | 1"-4"                      | 1"-2"                 |
| HL-10 | 208.0 | 124.0 | 115.0 | 5"-8"                      | 2.5"-3"               |
| HL-20 | 280.0 | 135.0 | 109.0 |                            | 4"                    |

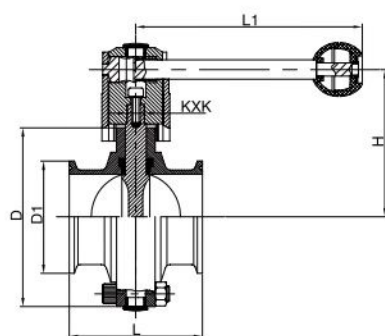
# BUTTERFLY VALVES

## Welded Butterfly Valve



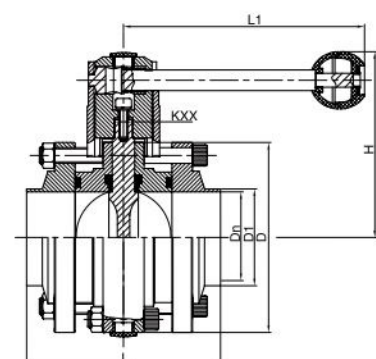
| Size   | D1    | D   | L  | L1  | H     | KxK   |
|--------|-------|-----|----|-----|-------|-------|
| 1/2"   | 12.7  | 78  | 50 | 126 | 86    | 8x8   |
| 3/4"   | 19    | 78  | 50 | 126 | 86    | 8x8   |
| 1"     | 25.4  | 78  | 50 | 126 | 86    | 8x8   |
| 1 1/4" | 31.8  | 78  | 50 | 126 | 86    | 8x8   |
| 1 1/2" | 38.1  | 86  | 50 | 126 | 90    | 8x8   |
| 2"     | 50.8  | 102 | 52 | 133 | 102   | 8x8   |
| 2 1/2" | 63.5  | 115 | 56 | 144 | 109   | 10x10 |
| 3"     | 76.2  | 128 | 56 | 144 | 115   | 10x10 |
| 3.5"   | 89    | 139 | 60 | 144 | 123.5 | 11x11 |
| 4"     | 102   | 154 | 64 | 144 | 131   | 11x11 |
| 5"     | 127   | 185 | 80 | 220 | 146.5 | 11x11 |
| 6"     | 152.4 | 215 | 90 | 220 | 161.5 | 11x11 |
| 8"     | 203.2 | 285 | 90 | 284 | 199   | 14x14 |

## Clamped Butterfly Valve



| Size   | D1    | D   | L     | L1  | H     | KxK   |
|--------|-------|-----|-------|-----|-------|-------|
| 1/2"   | 25.4  | 78  | 66    | 126 | 86    | 8x8   |
| 3/4"   | 25.4  | 78  | 66    | 126 | 86    | 8x8   |
| 1"     | 50.5  | 78  | 66    | 126 | 86    | 8x8   |
| 1 1/4" | 50.5  | 78  | 66    | 126 | 86    | 8x8   |
| 1 1/2" | 50.5  | 86  | 70    | 126 | 90    | 8x8   |
| 2"     | 64    | 102 | 76    | 133 | 102   | 10x10 |
| 2 1/2" | 77.5  | 115 | 80    | 144 | 109   | 10x10 |
| 3"     | 91    | 128 | 84    | 144 | 115   | 10x10 |
| 3.5"   | 106   | 139 | 86    | 144 | 123.5 | 11x11 |
| 4"     | 119   | 154 | 104   | 144 | 131   | 11x11 |
| 5"     | 144.5 | 185 | 122   | 220 | 146.5 | 11x11 |
| 6"     | 167   | 215 | 146   | 220 | 161.5 | 11x11 |
| 8"     | 217.4 | 285 | 166.8 | 284 | 199   | 14x14 |

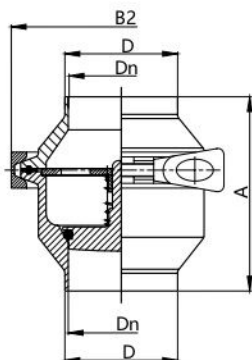
## Three-Piece Butterfly Valve



| Size   | D1    | D   | L   | L1  | H     | KxK   |
|--------|-------|-----|-----|-----|-------|-------|
| 1/2"   | 12.7  | 78  | 100 | 126 | 86    | 8x8   |
| 3/4"   | 19    | 78  | 100 | 126 | 86    | 8x8   |
| 1"     | 25.4  | 78  | 100 | 126 | 86    | 8x8   |
| 1 1/4" | 31.8  | 78  | 100 | 126 | 86    | 8x8   |
| 1 1/2" | 38.1  | 86  | 100 | 126 | 90    | 8x8   |
| 2"     | 50.8  | 102 | 104 | 133 | 102   | 10x10 |
| 2 1/2" | 63.5  | 115 | 112 | 144 | 109   | 10x10 |
| 3"     | 76.2  | 128 | 112 | 144 | 115   | 10x10 |
| 3.5"   | 89    | 139 | 120 | 144 | 123.5 | 11x11 |
| 4"     | 101.6 | 154 | 128 | 144 | 131   | 11x11 |
| 5"     | 127   | 185 | 160 | 220 | 146.5 | 11x11 |
| 6"     | 152.4 | 215 | 180 | 220 | 161.5 | 11x11 |
| 8"     | 203.2 | 285 | 180 | 284 | 199   | 14x14 |

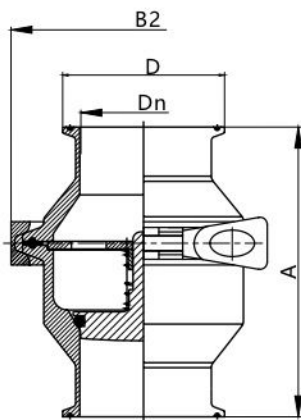
# CHECK VALVES

## Welded Check Valve



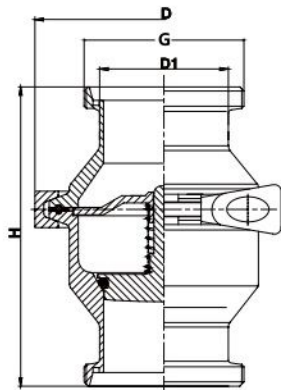
| Size | A   | B2   | D     | Dn   |
|------|-----|------|-------|------|
| 1/2" | 70  | 76.5 | 12.7  | 9.4  |
| 3/4" | 70  | 76.5 | 19.05 | 15.8 |
| 1"   | 70  | 76.5 | 25.4  | 22.1 |
| 1.5" | 70  | 87   | 38.1  | 34.8 |
| 2"   | 80  | 100  | 50.8  | 47.5 |
| 2.5" | 90  | 115  | 63.5  | 60.2 |
| 3"   | 100 | 128  | 76.2  | 72.9 |
| 4"   | 100 | 164  | 101.6 | 97.4 |

## Clamped Check Valve



| Size | A   | B2   | D    | Dn   |
|------|-----|------|------|------|
| 1/2" | 81  | 76.5 | 25.4 | 9.4  |
| 3/4" | 81  | 76.5 | 25.4 | 15.8 |
| 1"   | 95  | 76.5 | 50.5 | 22.1 |
| 1.5" | 95  | 87   | 50.5 | 34.8 |
| 2"   | 105 | 100  | 64   | 47.5 |
| 2.5" | 115 | 115  | 77.5 | 60.2 |
| 3"   | 125 | 128  | 91   | 72.9 |
| 4"   | 137 | 164  | 119  | 97.4 |

## Threaded Check Valve



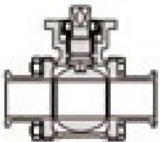
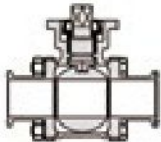
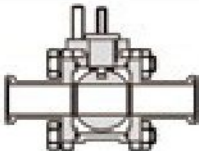
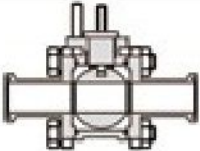
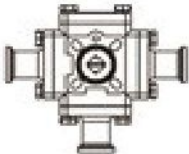
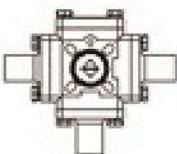
| Size  | H   | D1    | D    | G               |
|-------|-----|-------|------|-----------------|
| 1"    | 108 | 25.4  | 76.5 | 37.13×1/8 Acme  |
| 1.25" | 113 | 31.8  | 76.5 | 45.9×1/8 Acme   |
| 1.5"  | 113 | 38.1  | 87   | 50.65×1/8 Acme  |
| 2"    | 126 | 50.8  | 100  | 64.1×1/8 Acme   |
| 2.5"  | 141 | 63.5  | 115  | 77.6×1/8 Acme   |
| 3"    | 152 | 76.2  | 128  | 91.1×1/8 Acme   |
| 4"    | 167 | 101.6 | 164  | 119.25×1/6 Acme |

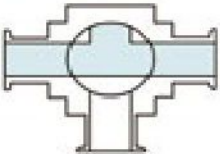
# BALL VALVES

## Modular system

S = Welded end  
G = Male  
K/M = Liner / nut  
Fl = Flange  
Cl = Clamp

| Pneumatical                                                                       |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 140.5x60.5                                                                        | 158.5x83                                                                           | 210.5x94.5                                                                          |
|  |  |  |

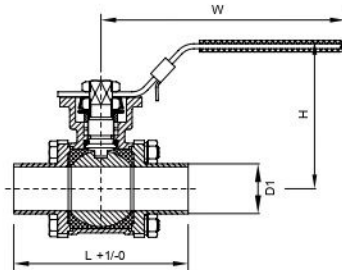
| Body Configuration                                                                 |                                                                                    |                                                                                    |                                                                                     |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Cl-Cl                                                                              | S-S                                                                                | Cl-Cl                                                                              | S-S                                                                                 |
|   |   |  |  |
| Cl-Cl                                                                              | S-S                                                                                |                                                                                    |                                                                                     |
|  |  |                                                                                    |                                                                                     |

| Ball Type                                                                           |                                                                                     |                                                                                      |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| "T" Port                                                                            |                                                                                     |                                                                                      |                                                                                       |
|  |  |  |  |
| "L" Port                                                                            |                                                                                     |                                                                                      |                                                                                       |
|  |  |                                                                                      |                                                                                       |

| Sealing Material                                                                    |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Encapsulated                                                                        | Standard                                                                              |
|  |  |

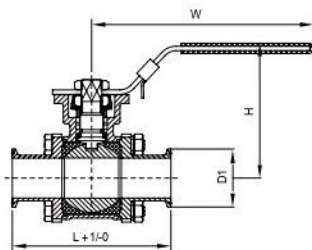
# BALL VALVES

## Weld Ball Valve With High Platform



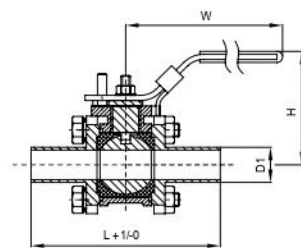
| Size   | D1    | L     | W   | H   |
|--------|-------|-------|-----|-----|
| 1/2"   | 12.7  | 90    | 130 | 70  |
| 3/4"   | 19.05 | 102.2 | 125 | 80  |
| 1"     | 25.4  | 115.3 | 166 | 90  |
| 1 1/2" | 38.1  | 137.6 | 193 | 105 |
| 2"     | 50.8  | 156   | 212 | 112 |
| 2 1/2" | 63.5  | 171   | 370 | 174 |
| 3"     | 76.2  | 196.7 | 370 | 185 |
| 4"     | 101.6 | 242   | 400 | 205 |

## Clamp Ball Valve With High Platform



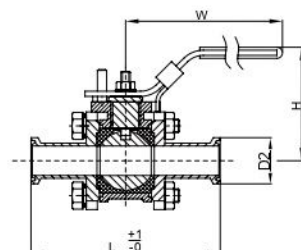
| Size   | D2   | L     | W   | H   |
|--------|------|-------|-----|-----|
| 1/2"   | 25.2 | 90    | 130 | 70  |
| 3/4"   | 25.2 | 102.2 | 125 | 80  |
| 1"     | 50.5 | 115.3 | 166 | 90  |
| 1 1/2" | 50.5 | 137.6 | 193 | 105 |
| 2"     | 64   | 156   | 212 | 112 |
| 2 1/2" | 77.5 | 171   | 370 | 174 |
| 3"     | 91   | 196.7 | 370 | 185 |
| 4"     | 119  | 242   | 400 | 205 |

## Weld Ball Valve With Low Platform



| Size   | D1    | L     | W   | H     |
|--------|-------|-------|-----|-------|
| 1/2"   | 12.7  | 91    | 130 | 62    |
| 3/4"   | 19.05 | 102.5 | 130 | 68.5  |
| 1"     | 25.4  | 114.8 | 176 | 74.5  |
| 1 1/4" | 31.8  | 125   | 170 | 74.5  |
| 1 1/2" | 38.1  | 137.3 | 226 | 98    |
| 2"     | 50.8  | 156.4 | 226 | 100   |
| 2 1/2" | 63.5  | 171   | 326 | 123.5 |
| 3"     | 76.2  | 196.7 | 325 | 150   |
| 4"     | 101.6 | 242   | 332 | 159   |

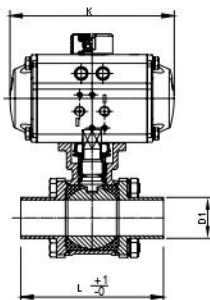
## Clamp Ball Valve With Low Platform



| Size   | D2   | L     | W   | H     |
|--------|------|-------|-----|-------|
| 1/2"   | 25.2 | 91    | 130 | 62    |
| 3/4"   | 25.2 | 102.5 | 130 | 68.5  |
| 1"     | 50.5 | 114.8 | 176 | 74.5  |
| 1 1/4" | 50.5 | 125   | 170 | 74.5  |
| 1 1/2" | 50.5 | 137.3 | 226 | 98    |
| 2"     | 64   | 156.4 | 226 | 100   |
| 2 1/2" | 77.5 | 171   | 326 | 123.5 |
| 3"     | 91   | 196.7 | 325 | 150   |
| 4"     | 119  | 242   | 332 | 159   |

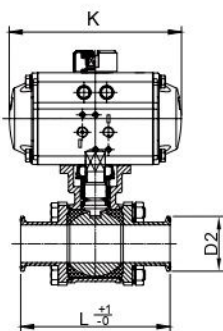
# BALL VALVES

## Pneumatic Weld Ball Valve



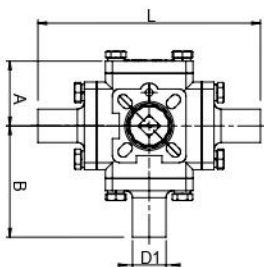
| Size   | D1    | L     | K   |
|--------|-------|-------|-----|
| 1/2"   | 12.7  | 90    | 130 |
| 3/4"   | 19.05 | 102.2 | 125 |
| 1"     | 25.4  | 115.3 | 166 |
| 1 1/2" | 38.1  | 137.6 | 193 |
| 2"     | 50.8  | 156   | 212 |
| 2 1/2" | 63.5  | 171   | 370 |
| 3"     | 76.2  | 196.7 | 370 |
| 4"     | 101.6 | 242   | 400 |

## Pneumatic Clamp Ball Valve



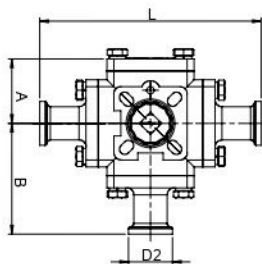
| Size   | D2   | L     | K   |
|--------|------|-------|-----|
| 1/2"   | 25.2 | 90    | 130 |
| 3/4"   | 25.2 | 102.2 | 125 |
| 1"     | 50.5 | 115.3 | 166 |
| 1 1/2" | 50.5 | 137.6 | 193 |
| 2"     | 64   | 156   | 212 |
| 2 1/2" | 77.5 | 171   | 370 |
| 3"     | 94   | 196.7 | 370 |
| 4"     | 119  | 242   | 400 |

## Sanitary Three-way Weld Ball Valve



| Size   | D1    | A    | B      | L     |
|--------|-------|------|--------|-------|
| 1/2"   | 12.7  | 34   | 59     | 118   |
| 3/4"   | 19.05 | 37   | 63.5   | 127   |
| 1"     | 25.4  | 41   | 76.3   | 152.6 |
| 1 1/2" | 38.1  | 52.5 | 87.5   | 175   |
| 2"     | 50.8  | 65   | 100.7  | 201.4 |
| 2 1/2" | 63.5  | 75   | 113.85 | 227.7 |
| 3"     | 76.2  | 95   | 130.3  | 260.6 |
| 4"     | 101.6 | 120  | 160    | 320   |

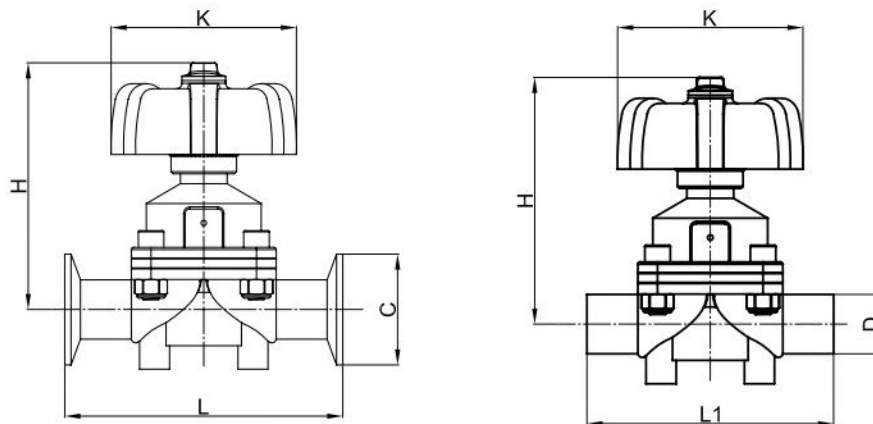
## Sanitary Three-way Clamp Ball Valve



| Size   | D2   | A    | B      | L     |
|--------|------|------|--------|-------|
| 1/2"   | 25.2 | 34   | 59     | 118   |
| 3/4"   | 25.2 | 37   | 63.5   | 127   |
| 1"     | 50.5 | 41   | 76.3   | 152.6 |
| 1 1/2" | 50.5 | 52.5 | 87.5   | 175   |
| 2"     | 64   | 65   | 100.7  | 201.4 |
| 2 1/2" | 77.5 | 75   | 113.85 | 227.7 |
| 3"     | 91   | 95   | 130.3  | 260.6 |
| 4"     | 119  | 120  | 160    | 320   |

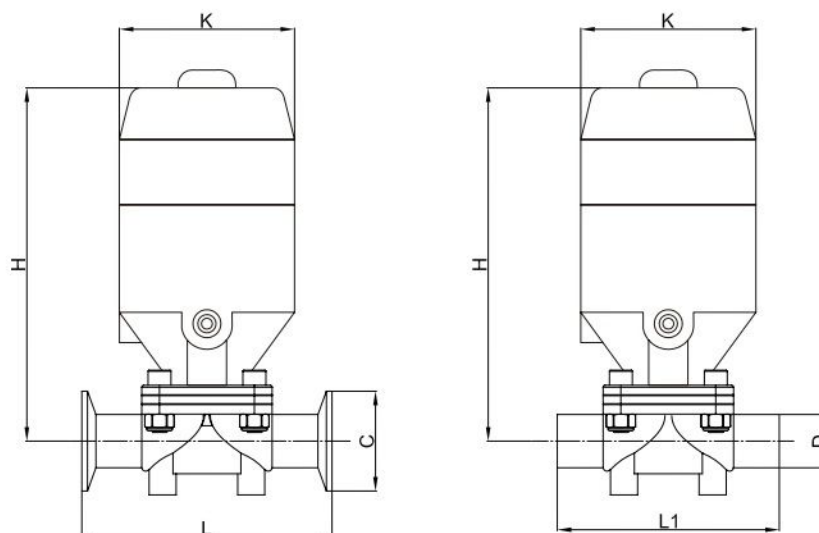
# DIAPHRAGM VALVES

## Manual Diaphragm Valve



| Size  | L   | L1  | K   | D     | C    |
|-------|-----|-----|-----|-------|------|
| 0.5"  | 108 | 102 | 65  | 12.7  | 50.5 |
| 0.75" | 126 | 120 | 87  | 19.05 | 50.5 |
| 1"    | 126 | 120 | 87  | 25.4  | 50.5 |
| 1.5"  | 160 | 140 | 104 | 38.1  | 50.5 |
| 2"    | 193 | 150 | 114 | 50.8  | 64   |

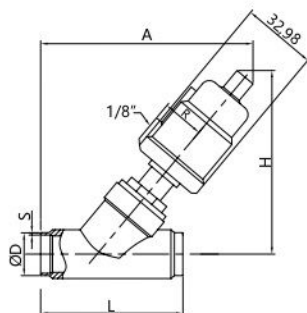
## Pneumatic Diaphragm Valve



| Size  | L   | L1  | K   | D     | C    |
|-------|-----|-----|-----|-------|------|
| 0.5"  | 108 | 125 | 62  | 12.7  | 50.5 |
| 0.75" | 126 | 152 | 72  | 19.05 | 50.5 |
| 1"    | 126 | 154 | 72  | 25.4  | 50.5 |
| 1.5"  | 160 | 193 | 92  | 38.1  | 50.5 |
| 2"    | 193 | 225 | 114 | 50.8  | 64   |

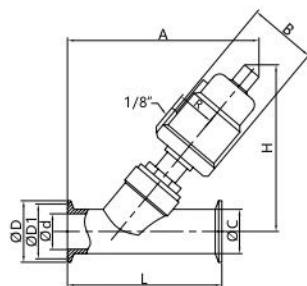
# ANGLE SEAT VALVES

## Stainless Steel Angle Seat Valve



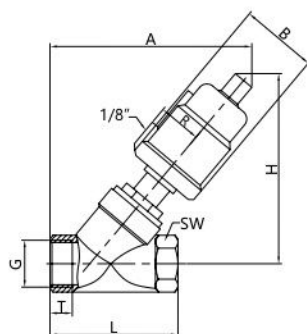
| Size   | Actuator | B    | R  | H   | D     | S    | A   | L   |
|--------|----------|------|----|-----|-------|------|-----|-----|
| 1/2"   | 40       | 50.5 | 27 | 112 | 12.7  | 1.65 | 118 | 70  |
|        | 50       | 60   | 33 | 125 |       |      | 128 |     |
| 1"     | 50       | 60   | 33 | 136 | 25.4  | 1.65 | 150 | 100 |
|        | 63       | 75   | 41 | 162 |       |      | 175 |     |
|        | 90AL     | 112  | 57 | 210 |       |      | 216 |     |
|        | 90       | 106  | 55 | 211 |       |      | 218 |     |
| 1 1/4" | 63       | 75   | 41 | 174 | 31.75 | 1.65 | 186 | 125 |
|        | 90AL     | 112  | 57 | 220 |       |      | 230 |     |
|        | 90       | 106  | 55 | 223 |       |      | 232 |     |
| 1 1/2" | 63       | 75   | 41 | 175 | 38.1  | 1.65 | 190 | 130 |
|        | 90AL     | 112  | 57 | 220 |       |      | 232 |     |
|        | 90       | 106  | 55 | 223 |       |      | 235 |     |
| 2"     | 63       | 75   | 41 | 183 | 50.8  | 1.65 | 206 | 155 |
|        | 90AL     | 112  | 57 | 232 |       |      | 247 |     |
|        | 90       | 106  | 55 | 232 |       |      | 250 |     |
|        | 125AL    | 148  | 74 | 287 |       |      | 250 |     |

## Tri-clamp Angle Seat Valve



| Size  | Actuator | D    | D1   | C    | d    | L   | A   | H   |
|-------|----------|------|------|------|------|-----|-----|-----|
| 3/4"  | 50       | 25.2 | 27.5 | 19.1 | 15.8 | 80  | 140 | 126 |
| 1"    | 50       | 50.5 | 43.5 | 25.4 | 22.1 | 130 | 165 | 140 |
|       | 63       |      |      |      |      |     | 188 | 166 |
| 1.25" | 63       | 50.5 | 43.5 | 31.8 | 28.5 | 146 | 200 | 174 |
|       | 90       |      |      |      |      |     | 245 | 223 |
| 1.5"  | 63       | 50.5 | 56.5 | 38.1 | 34.8 | 160 | 210 | 175 |
|       | 90       |      |      |      |      |     | 255 | 223 |
| 2"    | 63       | 64   | 56.5 | 50.8 | 47.5 | 175 | 221 | 185 |
|       | 90       |      |      |      |      |     | 265 | 235 |

## Stainless Steel Angle Seat Valve



| Size   | Actuator | B    | R  | H   | G      | T  | A   | L   | SW  |
|--------|----------|------|----|-----|--------|----|-----|-----|-----|
| 3/8"   | 40       | 50.5 | 27 | 112 | 3/8"   | 12 | 124 | 68  | 27  |
|        | 50       | 60   | 33 | 125 |        |    | 135 |     |     |
| 1/2"   | 40       | 50.5 | 27 | 112 | 1/2"   | 15 | 124 | 68  | 27  |
|        | 50       | 60   | 33 | 125 |        |    | 135 |     |     |
| 1"     | 50       | 60   | 33 | 136 | 1"     | 17 | 150 | 90  | 40  |
|        | 63       | 75   | 41 | 162 |        |    | 172 |     |     |
|        | 90AL     | 112  | 57 | 210 |        |    | 215 |     |     |
|        | 90       | 106  | 55 | 211 |        |    | 216 |     |     |
| 1 1/4" | 63       | 75   | 41 | 174 | 1 1/4" | 21 | 190 | 116 | 50  |
|        | 90AL     | 112  | 57 | 220 |        |    | 230 |     |     |
|        | 90       | 106  | 55 | 223 |        |    | 235 |     |     |
| 1 1/2" | 63       | 75   | 41 | 175 | 1 1/2" | 21 | 190 | 116 | 56  |
|        | 90AL     | 112  | 57 | 220 |        |    | 230 |     |     |
|        | 90       | 106  | 55 | 223 |        |    | 235 |     |     |
| 2"     | 63       | 75   | 41 | 183 | 2"     | 26 | 205 | 138 | 69  |
|        | 90AL     | 112  | 57 | 232 |        |    | 245 |     |     |
|        | 90       | 106  | 55 | 232 |        |    | 250 |     |     |
|        | 125AL    | 148  | 74 | 287 |        |    | 294 |     |     |
| 2 1/2" | 90AL     | 112  | 57 | 262 | 2 1/2" | 26 | 282 | 178 | 85  |
|        | 90       | 106  | 55 | 265 |        |    | 285 |     |     |
|        | 125AL    | 148  | 74 | 302 |        |    | 320 |     |     |
| 3"     | 125AL    | 148  | 74 | 313 | 3"     | 27 | 372 | 210 | 100 |

# SIGHT GLASS

Sight glasses provide a clear view of product flow through process lines. Made with borosilicate glass and sealed with buna gaskets, various end configurations are available including: clamp, bevel seat, I-line, Q-line, and John Perry. P&E Brien offers many styles of sight glass including bolt style and socket head cap screw style. Bolt style sight glasses can also be supplied with a protective acrylic shield to prevent breakage of the glass from inadvertent contact.



## Design and features

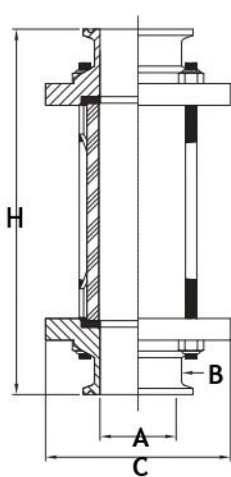
- Sizes:1"–4".
- Full bore design.
- 360° viewing angle.
- Can be used in vertical or horizontal position.

## Materials

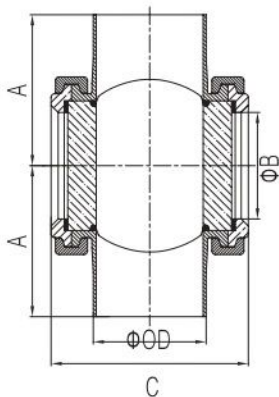
- Protective net: AISI304
- Glass: tempered glass
- Gasket: VMQ FDA177.2600
- Surface treatment: CNC machining

## Technical specifications

- Working temp: – 10°C to 120°C (Silicone)
- Max.operating pressure (bar)



| Size | A     | B     | C   | H   |
|------|-------|-------|-----|-----|
| 1.0" | 22.1  | 25.4  | 76  | 162 |
| 1.5" | 31.8  | 38.1  | 85  | 166 |
| 2.0" | 47.5  | 50.8  | 100 | 170 |
| 2.5" | 60.2  | 63.5  | 112 | 174 |
| 3.0" | 72.9  | 76.2  | 125 | 174 |
| 4.0" | 97.38 | 101.6 | 162 | 192 |



| Size | A   | B    | C   | OD    |
|------|-----|------|-----|-------|
| 1.5" | 65  | 38   | 80  | 38.1  |
| 2.0" | 75  | 50   | 97  | 50.8  |
| 2.5" | 85  | 63.5 | 111 | 63.5  |
| 3.0" | 95  | 73   | 124 | 76.2  |
| 4.0" | 120 | 100  | 149 | 101.6 |