

## Monoflange Manifold

## Monoflange Manifold

- Improved safety : leak paths reduced by up to 60%, less susceptibility to vibration
- Reduced costs : installation and component costs saving up to 80%
- Reduced weight : up to 85%

### Features

- Combined needle and OS & Y valves available.
- Raised face and ring type joint flange styles.
- One-piece forged construction flange as standard.
- Locking and anti tamper devices for all valve types available. (as option)
- Standard materials of Stainless steel ASTM A182 F316/F316L, Carbon steel ASTM
- Optional materials include Super Duplex, Monel, Hastelloy, Inconel.

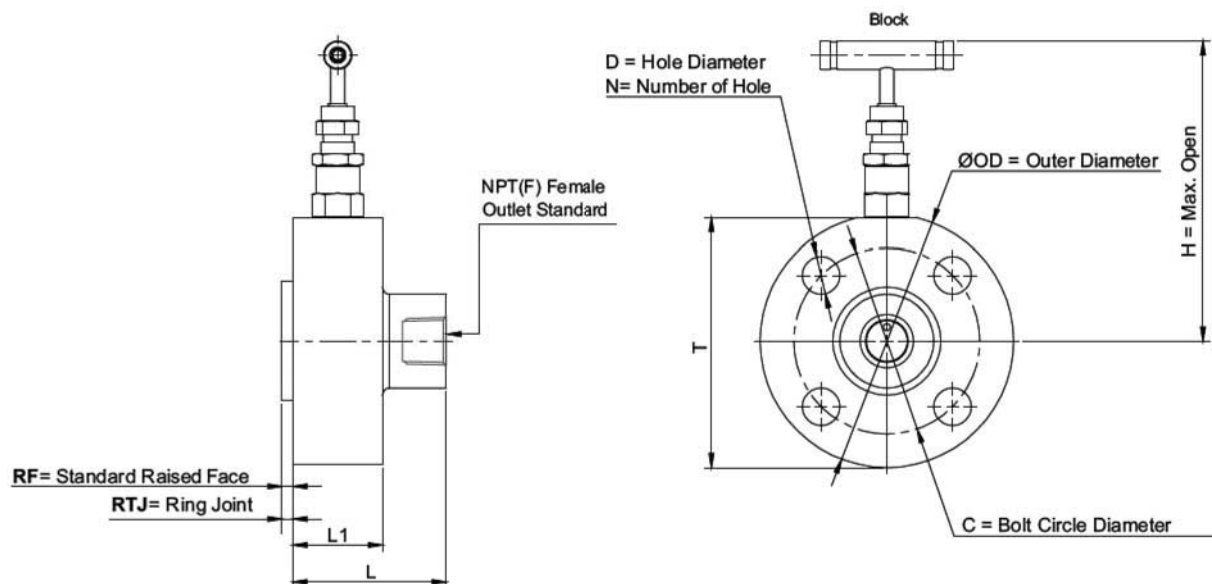
### Applications

- Isolation
- Block and Bleed
- Double Block and Bleed
- Pressure Measurement
- Chemical Injection
- Level Measurement
- Sampling
- Flow Measurement



## Monoflange Manifold

### Single Block Needle Type

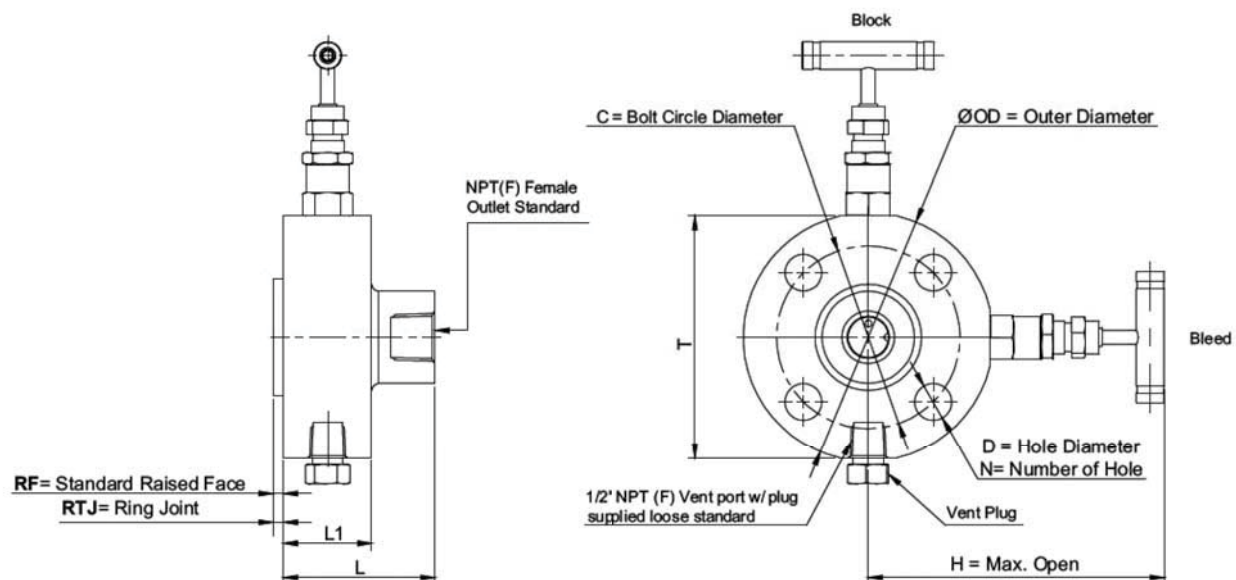


Standard Screwed Bonnet Dimensions (inches)

| Size   | Class    | RF   | RTJ   | OD   | L    | L1   | C    | N | D     | H    | T    |
|--------|----------|------|-------|------|------|------|------|---|-------|------|------|
| 1/2"   | 150      | 0.06 | N/A   | 3.50 | 2.44 | 1.50 | 2.38 | 4 | 5/8   | 4.50 | 3.40 |
|        | 300      | 0.06 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 4.63 | 3.65 |
|        | 600      | 0.25 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 4.63 | 3.65 |
|        | 900/1500 | 0.25 | 0.250 | 4.75 | 2.63 | 1.50 | 3.25 | 4 | 7/8   | 5.13 | 4.65 |
|        | 2500     | 0.25 | 0.250 | 5.25 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.38 | 5.15 |
| 3/4"   | 150      | 0.06 | N/A   | 3.88 | 2.63 | 1.50 | 2.75 | 4 | 5/8   | 4.75 | 3.78 |
|        | 300      | 0.06 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 5.06 | 4.52 |
|        | 600      | 0.25 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 5.06 | 4.52 |
|        | 900/1500 | 0.25 | 0.250 | 5.12 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.31 | 5.02 |
|        | 2500     | 0.25 | 0.250 | 5.50 | 2.63 | 1.50 | 3.75 | 4 | 7/8   | 5.50 | 5.40 |
| 1"     | 150      | 0.06 | 0.250 | 4.25 | 2.63 | 1.50 | 3.12 | 4 | 5/8   | 4.88 | 4.15 |
|        | 300      | 0.06 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 5.19 | 4.78 |
|        | 600      | 0.25 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 5.19 | 4.78 |
|        | 900/1500 | 0.25 | 0.250 | 5.88 | 2.63 | 1.50 | 3.50 | 4 | 1     | 5.88 | 5.78 |
|        | 2500     | 0.25 | 0.250 | 6.25 | 2.63 | 1.50 | 4.25 | 4 | 1     | 5.88 | 6.15 |
| 1-1/2" | 150      | 0.06 | 0.250 | 5.00 | 2.63 | 1.50 | 3.88 | 4 | 5/8   | 5.25 | 4.90 |
|        | 300      | 0.06 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 5.88 | 6.02 |
|        | 600      | 0.25 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 5.88 | 6.02 |
|        | 900/1500 | 0.25 | 0.250 | 7.00 | 2.63 | 1.50 | 4.88 | 4 | 1-1/8 | 6.25 | 6.90 |
|        | 2500     | 0.25 | 0.312 | 8.00 | 2.63 | 1.75 | 5.75 | 4 | 1-1/4 | 6.75 | 7.90 |
| 2"     | 150      | 0.06 | 0.250 | 6.00 | 2.63 | 1.50 | 4.75 | 4 | 3/4   | 5.75 | 5.90 |
|        | 300      | 0.06 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.00 | 6.40 |
|        | 600      | 0.25 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.00 | 6.40 |
|        | 900/1500 | 0.25 | 0.312 | 8.50 | 2.63 | 1.50 | 6.50 | 8 | 1     | 7.00 | 8.40 |
|        | 2500     | 0.25 | 0.312 | 9.25 | 3.13 | 2.00 | 6.75 | 8 | 1-1/8 | 7.38 | 9.15 |

## Monoflange Manifold

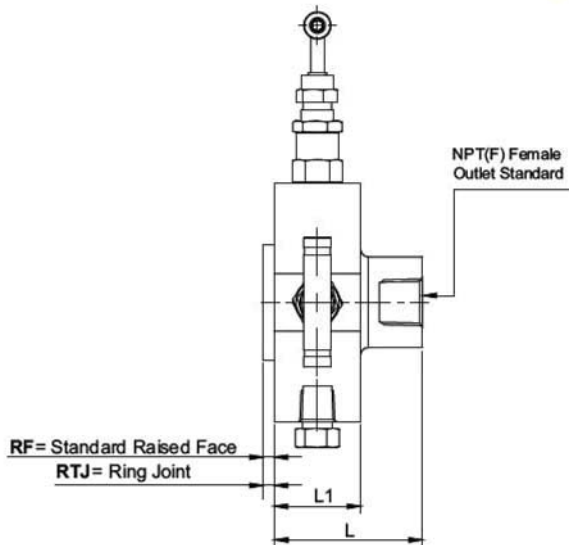
## Block & Bleed Needle Type



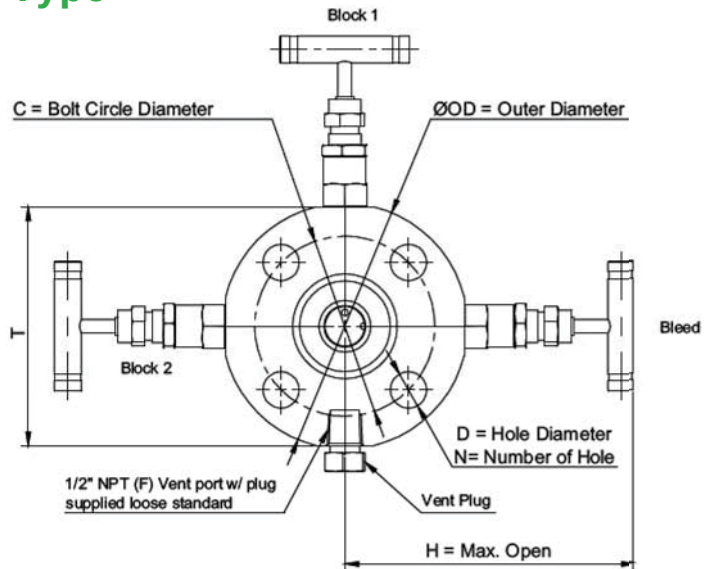
Standard Screwed Bonnet Dimensions (inches)

| 1/2"   | 150      | 0.06 | N/A   | 3.50 | 2.44 | 1.50 | 2.38 | 4 | 5/8   | 3.40 | 4.50 |
|--------|----------|------|-------|------|------|------|------|---|-------|------|------|
|        | 300      | 0.06 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 3.65 | 4.63 |
|        | 600      | 0.25 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 3.65 | 4.63 |
|        | 900/1500 | 0.25 | 0.250 | 4.75 | 2.63 | 1.50 | 3.25 | 4 | 7/8   | 4.65 | 5.13 |
|        | 2500     | 0.25 | 0.250 | 5.25 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.15 | 5.38 |
| 3/4"   | 150      | 0.06 | N/A   | 3.88 | 2.63 | 1.50 | 2.75 | 4 | 5/8   | 3.78 | 4.75 |
|        | 300      | 0.06 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 4.52 | 5.06 |
|        | 600      | 0.25 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 4.52 | 5.06 |
|        | 900/1500 | 0.25 | 0.250 | 5.12 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.02 | 5.31 |
|        | 2500     | 0.25 | 0.250 | 5.50 | 2.63 | 1.50 | 3.75 | 4 | 7/8   | 5.40 | 5.50 |
| 1"     | 150      | 0.06 | 0.250 | 4.25 | 2.63 | 1.50 | 3.12 | 4 | 5/8   | 4.15 | 4.88 |
|        | 300      | 0.06 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 4.78 | 5.19 |
|        | 600      | 0.25 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 4.78 | 5.19 |
|        | 900/1500 | 0.25 | 0.250 | 5.88 | 2.63 | 1.50 | 4.00 | 4 | 1     | 5.78 | 5.88 |
|        | 2500     | 0.25 | 0.250 | 6.25 | 2.63 | 1.50 | 4.25 | 4 | 1     | 6.15 | 5.88 |
| 1-1/2" | 150      | 0.06 | 0.250 | 5.00 | 2.63 | 1.50 | 3.88 | 4 | 5/8   | 4.90 | 5.25 |
|        | 300      | 0.06 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 6.02 | 5.88 |
|        | 600      | 0.25 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 6.02 | 5.88 |
|        | 900/1500 | 0.25 | 0.250 | 7.00 | 2.63 | 1.50 | 4.88 | 4 | 1-1/8 | 6.90 | 6.25 |
|        | 2500     | 0.25 | 0.312 | 8.00 | 2.63 | 1.50 | 5.75 | 4 | 1-1/4 | 7.90 | 6.75 |
| 2"     | 150      | 0.06 | 0.250 | 6.00 | 2.63 | 1.50 | 4.75 | 4 | 3/4   | 5.90 | 5.75 |
|        | 300      | 0.06 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.40 | 6.00 |
|        | 600      | 0.25 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.40 | 6.00 |
|        | 900/1500 | 0.25 | 0.312 | 8.50 | 2.63 | 1.50 | 6.50 | 8 | 1     | 8.40 | 7.00 |
|        | 2500     | 0.25 | 0.312 | 9.25 | 3.13 | 2.00 | 6.75 | 8 | 1-1/8 | 9.15 | 7.38 |

## Double Block & Bleed Needle Type



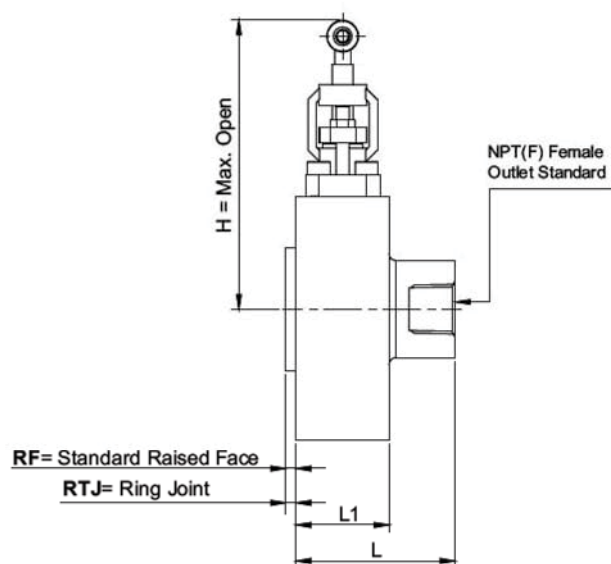
## Monoflange Manifold



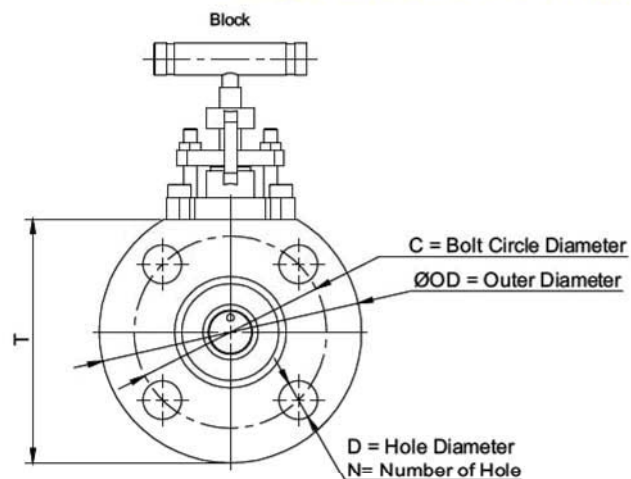
Standard Screwed Bonnet Dimensions (inches)

| 1/2"   | 150      | 0.06 | N/A   | 3.50 | 2.44 | 1.50 | 2.38 | 4 | 5/8   | 4.50 | 3.40 |
|--------|----------|------|-------|------|------|------|------|---|-------|------|------|
|        | 300      | 0.06 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 4.63 | 3.65 |
|        | 600      | 0.25 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 4.63 | 3.65 |
|        | 900/1500 | 0.25 | 0.250 | 4.75 | 2.63 | 1.50 | 3.25 | 4 | 7/8   | 5.13 | 4.65 |
|        | 2500     | 0.25 | 0.250 | 5.25 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.38 | 5.15 |
| 3/4"   | 150      | 0.06 | N/A   | 3.88 | 2.63 | 1.50 | 2.75 | 4 | 5/8   | 4.75 | 3.78 |
|        | 300      | 0.06 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 5.06 | 4.52 |
|        | 600      | 0.25 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 5.06 | 4.52 |
|        | 900/1500 | 0.25 | 0.250 | 5.12 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.31 | 5.02 |
|        | 2500     | 0.25 | 0.250 | 5.50 | 2.63 | 1.50 | 3.75 | 4 | 7/8   | 5.50 | 5.40 |
| 1"     | 150      | 0.06 | 0.250 | 4.25 | 2.63 | 1.50 | 3.12 | 4 | 5/8   | 4.88 | 4.15 |
|        | 300      | 0.06 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 5.19 | 4.78 |
|        | 600      | 0.25 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 5.19 | 4.78 |
|        | 900/1500 | 0.25 | 0.250 | 5.88 | 2.63 | 1.50 | 4.00 | 4 | 1     | 5.88 | 5.78 |
|        | 2500     | 0.25 | 0.250 | 6.25 | 2.63 | 1.50 | 4.25 | 4 | 1     | 5.88 | 6.15 |
| 1-1/2" | 150      | 0.06 | 0.250 | 5.00 | 2.63 | 1.50 | 3.88 | 4 | 5/8   | 5.25 | 4.90 |
|        | 300      | 0.06 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 5.88 | 6.02 |
|        | 600      | 0.25 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 5.88 | 6.02 |
|        | 900/1500 | 0.25 | 0.250 | 7.00 | 2.63 | 1.50 | 4.88 | 4 | 1-1/8 | 6.25 | 6.90 |
|        | 2500     | 0.25 | 0.312 | 8.00 | 2.63 | 1.50 | 5.75 | 4 | 1-1/4 | 6.75 | 7.90 |
| 2"     | 150      | 0.06 | 0.250 | 6.00 | 2.63 | 1.50 | 4.75 | 4 | 3/4   | 5.75 | 5.90 |
|        | 300      | 0.06 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.00 | 6.40 |
|        | 600      | 0.25 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.00 | 6.40 |
|        | 900/1500 | 0.25 | 0.312 | 8.50 | 2.63 | 1.50 | 6.50 | 8 | 1     | 7.00 | 8.40 |
|        | 2500     | 0.25 | 0.312 | 9.25 | 3.13 | 2.00 | 6.75 | 8 | 1-1/8 | 7.38 | 9.15 |

## Monoflange Manifold



## Single Block - OS&Y Bonnet

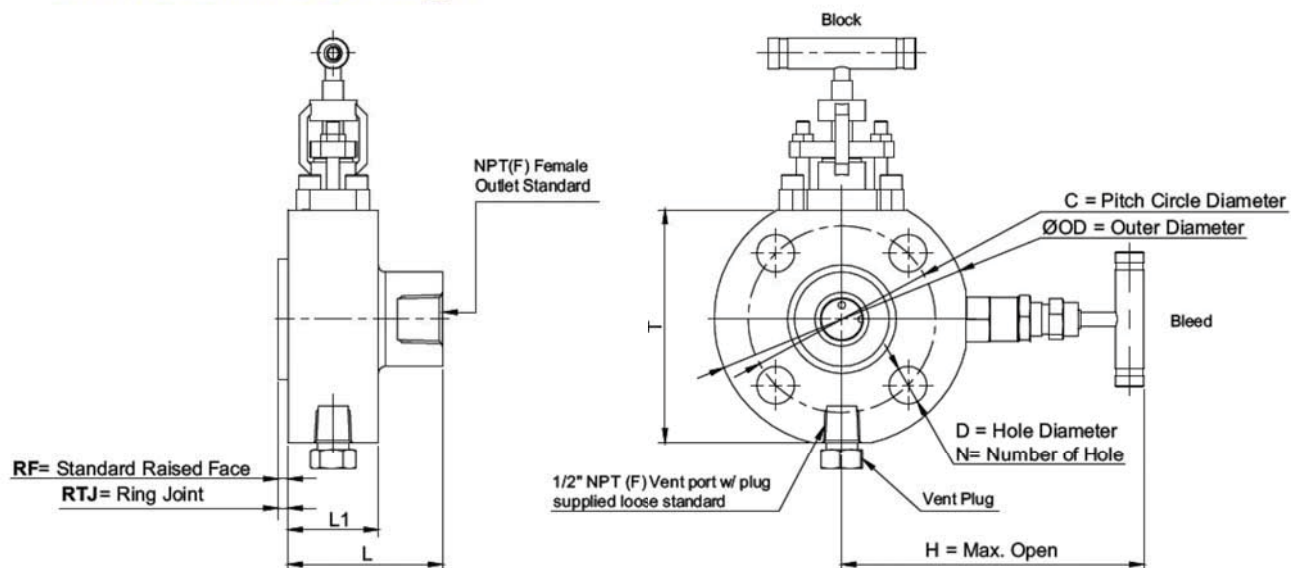


OS&Y Bonnet Dimensions (inches)

| Size   | Pressure Class | Weight (lb) | Material | Height (in) | Length (in) | Flange Thickness (in) | Bolt Circle Diameter (in) | Outer Diameter (in) | Hole Diameter (in) | Number of Holes | Weight (lb) |
|--------|----------------|-------------|----------|-------------|-------------|-----------------------|---------------------------|---------------------|--------------------|-----------------|-------------|
| 1/2"   | 150            | 0.06        | N/A      | 3.50        | 2.44        | 1.50                  | 2.38                      | 4                   | 5/8                | 3.40            | 5.50        |
|        | 300            | 0.06        | 0.219    | 3.75        | 2.63        | 1.50                  | 2.62                      | 4                   | 5/8                | 3.65            | 5.63        |
|        | 600            | 0.25        | 0.219    | 3.75        | 2.63        | 1.50                  | 2.62                      | 4                   | 5/8                | 3.65            | 5.63        |
|        | 900/1500       | 0.25        | 0.250    | 4.75        | 2.63        | 1.50                  | 3.25                      | 4                   | 7/8                | 4.65            | 6.13        |
|        | 2500           | 0.25        | 0.250    | 5.25        | 2.63        | 1.50                  | 3.50                      | 4                   | 7/8                | 5.15            | 6.38        |
| 3/4"   | 150            | 0.06        | N/A      | 3.88        | 2.63        | 1.50                  | 2.75                      | 4                   | 5/8                | 3.78            | 5.75        |
|        | 300            | 0.06        | 0.250    | 4.62        | 2.63        | 1.50                  | 3.25                      | 4                   | 3/4                | 4.52            | 6.06        |
|        | 600            | 0.25        | 0.250    | 4.62        | 2.63        | 1.50                  | 3.25                      | 4                   | 3/4                | 4.52            | 6.06        |
|        | 900/1500       | 0.25        | 0.250    | 5.12        | 2.63        | 1.50                  | 3.50                      | 4                   | 7/8                | 5.02            | 6.31        |
|        | 2500           | 0.25        | 0.250    | 5.50        | 2.63        | 1.50                  | 3.75                      | 4                   | 7/8                | 5.40            | 6.50        |
| 1"     | 150            | 0.06        | 0.250    | 4.25        | 2.63        | 1.50                  | 3.12                      | 4                   | 5/8                | 4.15            | 5.88        |
|        | 300            | 0.06        | 0.250    | 4.88        | 2.63        | 1.50                  | 3.50                      | 4                   | 3/4                | 4.78            | 6.19        |
|        | 600            | 0.25        | 0.250    | 4.88        | 2.63        | 1.50                  | 3.50                      | 4                   | 3/4                | 4.78            | 6.19        |
|        | 900/1500       | 0.25        | 0.250    | 5.88        | 2.63        | 1.50                  | 4.00                      | 4                   | 1                  | 5.78            | 6.88        |
|        | 2500           | 0.25        | 0.250    | 6.25        | 2.63        | 1.50                  | 4.25                      | 4                   | 1                  | 6.15            | 6.88        |
| 1-1/2" | 150            | 0.06        | 0.250    | 5.00        | 2.63        | 1.50                  | 3.88                      | 4                   | 5/8                | 4.90            | 6.25        |
|        | 300            | 0.06        | 0.250    | 6.12        | 2.63        | 1.50                  | 4.50                      | 4                   | 7/8                | 6.02            | 6.88        |
|        | 600            | 0.25        | 0.250    | 6.12        | 2.63        | 1.50                  | 4.50                      | 4                   | 7/8                | 6.02            | 6.88        |
|        | 900/1500       | 0.25        | 0.250    | 7.00        | 2.63        | 1.50                  | 4.88                      | 4                   | 1-1/8              | 6.90            | 7.25        |
|        | 2500           | 0.25        | 0.312    | 8.00        | 2.69        | 1.50                  | 5.75                      | 4                   | 1-1/4              | 7.90            | 7.25        |
| 2"     | 150            | 0.06        | 0.250    | 6.00        | 2.63        | 1.50                  | 4.75                      | 4                   | 3/4                | 5.90            | 6.75        |
|        | 300            | 0.06        | 0.312    | 6.50        | 2.63        | 1.50                  | 5.00                      | 8                   | 3/4                | 6.40            | 7.00        |
|        | 600            | 0.25        | 0.312    | 6.50        | 2.63        | 1.50                  | 5.00                      | 8                   | 3/4                | 6.40            | 7.00        |
|        | 900/1500       | 0.25        | 0.312    | 8.50        | 2.63        | 1.50                  | 6.50                      | 8                   | 1                  | 8.40            | 8.00        |
|        | 2500           | 0.25        | 0.312    | 9.25        | 3.13        | 2.00                  | 6.75                      | 8                   | 1-1/8              | 9.15            | 8.38        |

## Block & Bleed - OS&Y Bonnet

## Monoflange Manifold

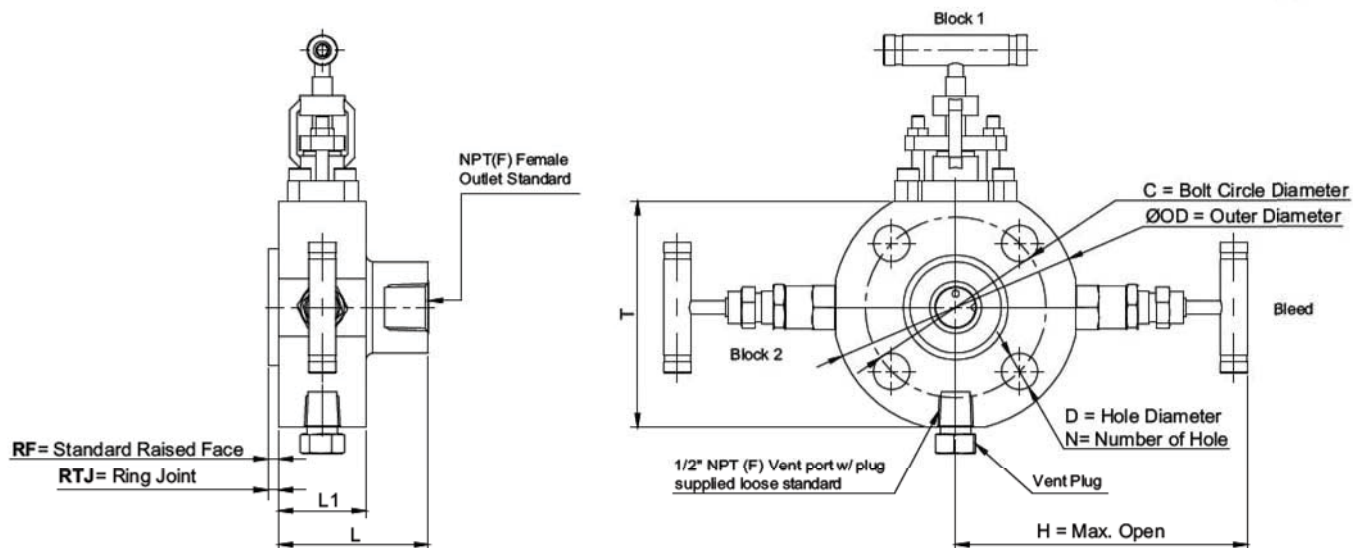


OS&Y Bonnet Dimensions (inches)

| Size   | Class    | RF   | RTJ   | OD   | L    | L1   | C    | N | D     | T    | H    |
|--------|----------|------|-------|------|------|------|------|---|-------|------|------|
| 1/2"   | 150      | 0.06 | N/A   | 3.50 | 2.44 | 1.50 | 2.38 | 4 | 5/8   | 3.40 | 5.50 |
|        | 300      | 0.06 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 3.65 | 5.63 |
|        | 600      | 0.25 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 3.65 | 5.63 |
|        | 900/1500 | 0.25 | 0.250 | 4.75 | 2.63 | 1.50 | 3.25 | 4 | 7/8   | 4.65 | 6.13 |
|        | 2500     | 0.25 | 0.250 | 5.25 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.15 | 6.38 |
| 3/4"   | 150      | 0.06 | N/A   | 3.88 | 2.63 | 1.50 | 2.75 | 4 | 5/8   | 3.78 | 5.75 |
|        | 300      | 0.06 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 4.52 | 6.06 |
|        | 600      | 0.25 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 4.52 | 6.06 |
|        | 900/1500 | 0.25 | 0.250 | 5.12 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.02 | 6.31 |
|        | 2500     | 0.25 | 0.250 | 5.50 | 2.63 | 1.50 | 3.75 | 4 | 7/8   | 5.40 | 6.50 |
| 1"     | 150      | 0.06 | 0.250 | 4.25 | 2.63 | 1.50 | 3.12 | 4 | 5/8   | 4.15 | 5.88 |
|        | 300      | 0.06 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 4.78 | 6.19 |
|        | 600      | 0.25 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 4.78 | 6.19 |
|        | 900/1500 | 0.25 | 0.250 | 5.88 | 2.63 | 1.50 | 4.00 | 4 | 1     | 5.78 | 6.88 |
|        | 2500     | 0.25 | 0.250 | 6.25 | 2.63 | 1.50 | 4.25 | 4 | 1     | 6.15 | 6.88 |
| 1-1/2" | 150      | 0.06 | 0.250 | 5.00 | 2.63 | 1.50 | 3.88 | 4 | 5/8   | 4.90 | 6.25 |
|        | 300      | 0.06 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 6.02 | 6.88 |
|        | 600      | 0.25 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 6.02 | 6.88 |
|        | 900/1500 | 0.25 | 0.250 | 7.00 | 2.63 | 1.50 | 4.88 | 4 | 1-1/8 | 6.90 | 7.25 |
|        | 2500     | 0.25 | 0.312 | 8.00 | 2.63 | 1.50 | 5.75 | 4 | 1-1/4 | 7.90 | 7.25 |
| 2"     | 150      | 0.06 | 0.250 | 6.00 | 2.63 | 1.50 | 4.75 | 4 | 3/4   | 5.90 | 6.75 |
|        | 300      | 0.06 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.40 | 7.00 |
|        | 600      | 0.25 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.40 | 7.00 |
|        | 900/1500 | 0.25 | 0.312 | 8.50 | 2.63 | 1.50 | 6.50 | 8 | 1     | 8.40 | 8.00 |
|        | 2500     | 0.25 | 0.312 | 9.25 | 3.13 | 2.00 | 6.75 | 8 | 1-1/8 | 9.15 | 8.38 |

## Monoflange Manifold

## Double Block & Bleed - OS&Y Bonnet



OS&Y Bonnet Dimensions (inches)

| Size   | Class    | RF   | RTJ   | OD   | L    | L1   | C    | N | D     | T    | H    |
|--------|----------|------|-------|------|------|------|------|---|-------|------|------|
| 1/2"   | 150      | 0.06 | N/A   | 3.50 | 2.44 | 1.50 | 2.38 | 4 | 5/8   | 3.40 | 5.50 |
|        | 300      | 0.06 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 3.65 | 5.63 |
|        | 600      | 0.25 | 0.219 | 3.75 | 2.63 | 1.50 | 2.62 | 4 | 5/8   | 3.65 | 5.63 |
|        | 900/1500 | 0.25 | 0.250 | 4.75 | 2.63 | 1.50 | 3.25 | 4 | 7/8   | 4.65 | 6.13 |
|        | 2500     | 0.25 | 0.250 | 5.25 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.15 | 6.38 |
| 3/4"   | 150      | 0.06 | N/A   | 3.88 | 2.63 | 1.50 | 2.75 | 4 | 5/8   | 3.78 | 5.75 |
|        | 300      | 0.06 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 4.52 | 6.06 |
|        | 600      | 0.25 | 0.250 | 4.62 | 2.63 | 1.50 | 3.25 | 4 | 3/4   | 4.52 | 6.06 |
|        | 900/1500 | 0.25 | 0.250 | 5.12 | 2.63 | 1.50 | 3.50 | 4 | 7/8   | 5.02 | 6.31 |
|        | 2500     | 0.25 | 0.250 | 5.50 | 2.63 | 1.50 | 3.75 | 4 | 7/8   | 5.40 | 6.50 |
| 1"     | 150      | 0.06 | 0.250 | 4.25 | 2.63 | 1.50 | 3.12 | 4 | 5/8   | 4.15 | 5.88 |
|        | 300      | 0.06 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 4.78 | 6.19 |
|        | 600      | 0.25 | 0.250 | 4.88 | 2.63 | 1.50 | 3.50 | 4 | 3/4   | 4.78 | 6.19 |
|        | 900/1500 | 0.25 | 0.250 | 5.88 | 2.63 | 1.50 | 4.00 | 4 | 1     | 5.78 | 6.88 |
|        | 2500     | 0.25 | 0.250 | 6.25 | 2.63 | 1.50 | 4.25 | 4 | 1     | 6.15 | 6.88 |
| 1-1/2" | 150      | 0.06 | 0.250 | 5.00 | 2.63 | 1.50 | 3.88 | 4 | 5/8   | 4.90 | 6.25 |
|        | 300      | 0.06 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 6.02 | 6.88 |
|        | 600      | 0.25 | 0.250 | 6.12 | 2.63 | 1.50 | 4.50 | 4 | 7/8   | 6.02 | 6.88 |
|        | 900/1500 | 0.25 | 0.250 | 7.00 | 2.63 | 1.50 | 4.88 | 4 | 1-1/8 | 6.90 | 7.25 |
|        | 2500     | 0.25 | 0.312 | 8.00 | 2.63 | 1.50 | 5.75 | 4 | 1-1/4 | 7.90 | 7.25 |
| 2"     | 150      | 0.06 | 0.250 | 6.00 | 2.63 | 1.50 | 4.75 | 4 | 3/4   | 5.90 | 6.75 |
|        | 300      | 0.06 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.40 | 7.00 |
|        | 600      | 0.25 | 0.312 | 6.50 | 2.63 | 1.50 | 5.00 | 8 | 3/4   | 6.40 | 7.00 |
|        | 900/1500 | 0.25 | 0.312 | 8.50 | 2.63 | 1.50 | 6.50 | 8 | 1     | 8.40 | 8.00 |
|        | 2500     | 0.25 | 0.312 | 9.25 | 3.13 | 2.00 | 6.75 | 8 | 1-1/8 | 9.15 | 8.38 |