

### Features

- Pneumatic actuator with integral manual override
- Functions as a diverter, selector or mixing valve
- Ball and stem 316 stainless steel
- Energized PTFE ball seats for lower torque and longer life
- Triple PTFE/FKM stem seal packing design
- Valve Certified NSF372 & NSF61 for potable/drinking water
- Rack and pinion quarter turn (90°) rotation
- Spring Return or Double Acting Actuators
- Type IP67 weatherproof actuator
- Variable open/close stroke setting
- ATEX approved
- Valve Certified NSF372 & NSF61 for potable/drinking water

### Applications

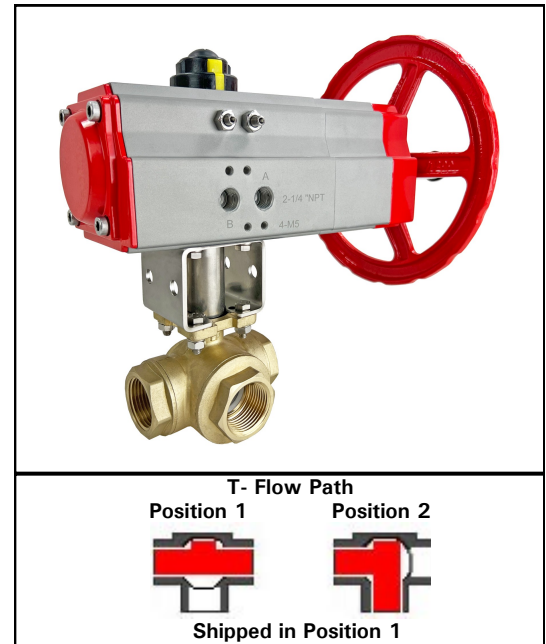
Pneumatic/manual actuated 3-way brass ball valves for control of water, air, oil and other media compatible with the materials of construction. The de-clutch option can be used for manual operation or to set a stop limit for opening or closing. Ideal where lead free and NSF approved construction are required for potable drinking water as well as general industrial applications. Unique four ball seat design allows for full pressure at any port. Cycle times approximately 1 to 3 seconds per 90° rotation. Valve can be mounted in any orientation. Suitable for steam service up to 25 PSI with optional high temperature mounting kit and vacuum service to 29"Hg.

### Operation

Double acting actuators require air pressure to open and air pressure to close. Spring return actuators require air pressure to open and utilize springs to close for failsafe operation. Pulling the handwheel détente pin allows manual operation of the valve via the handwheel. Re-engaging the détente pin mid-stroke creates a partial stroke position, ie the automatic stroke begins/ends at the locked handwheel position. Rotating the handwheel counterclockwise rotates the output drive counterclockwise when viewed from the top.

### Construction

|                           |                                                                                |
|---------------------------|--------------------------------------------------------------------------------|
| <b>Valve Body</b>         | Lead Free Brass C69300                                                         |
| <b>Ball/Stem</b>          | 316 stainless steel                                                            |
| <b>Ball Seats</b>         | PTFE (Teflon) energized with FKM (Viton)                                       |
| <b>Stem Seals</b>         | PTFE (Teflon) with dual FKM (Viton) seals                                      |
| <b>Actuator Seals</b>     | NBR (Buna-N)                                                                   |
| <b>Actuator Body</b>      | Extruded aluminium- 35 micron anodizing, 40 micron polyester coated end covers |
| <b>Position Indicator</b> | Glass filled Polyamide                                                         |
| <b>Fasteners</b>          | Stainless Steel                                                                |



### Description

Valworx heavy duty pneumatic/manual combination actuator features hard anodized aluminum enclosure, type IP67 weatherproof. Actuators are available in double acting and spring return models. Full port lead free brass T-port ball valve functions as a diverter, selector or mixing valve. Unique 316 stainless steel ball and stem rather than your typical plated brass. Ball seats are energized PTFE for low torque and Standard Namur mounting pads for optional accessory confirmation switches, pilot valves and valve positioners. Rotation adjustment +5° at the 0° and 90° positions. The integral handwheel is used for manual operation and setting a limit stop.

### Approvals

#### Actuators

- CE Declaration of conformity
- EN ISO 12100:2010
- EN ISO 4414:2010
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting
- ATEX

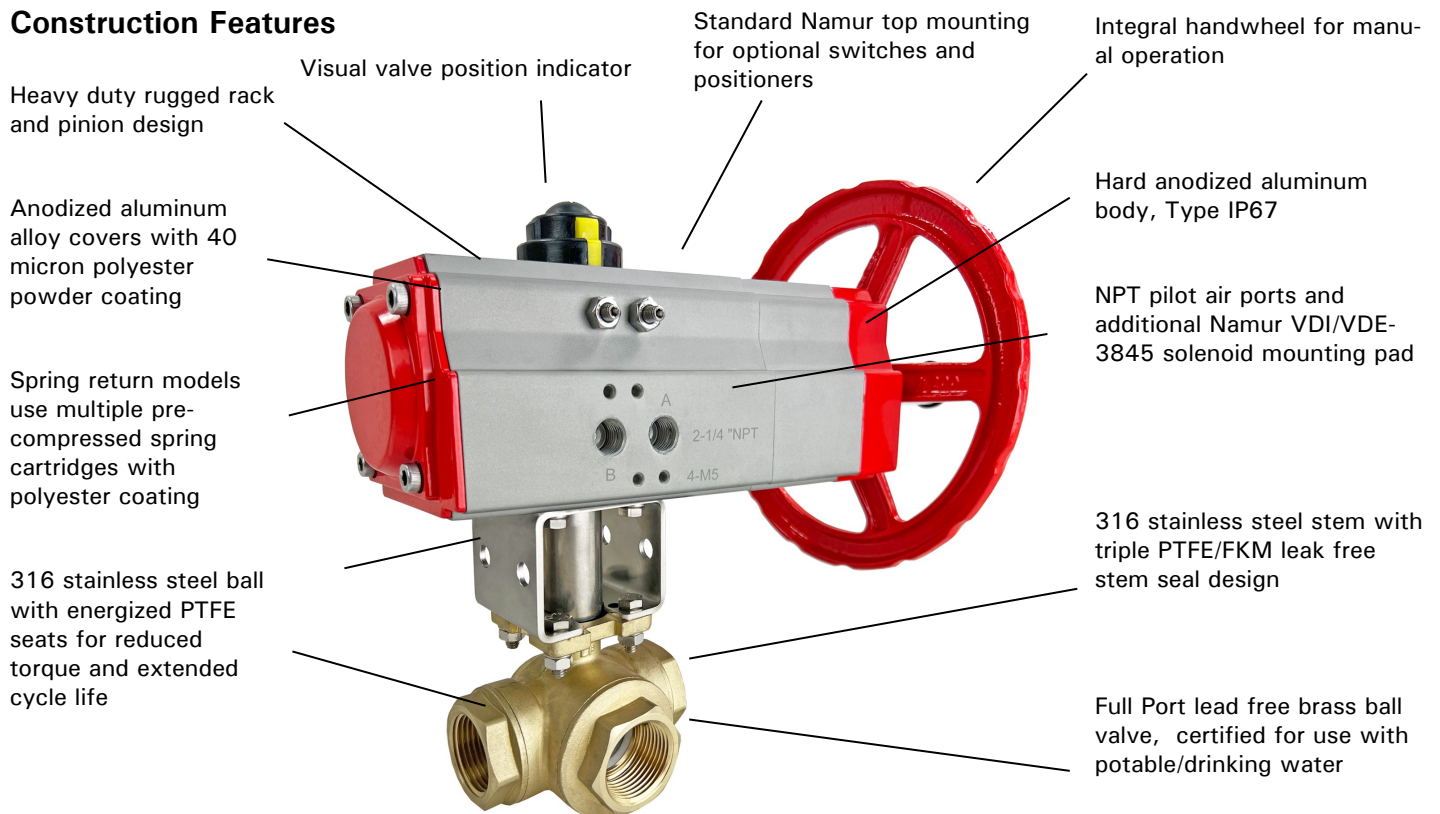


#### Valves

- IAPMO RT certified to:
  - NSF/ANSI 372 -2011 Drinking Water
  - NSF/ANSI 61 - 2015
  - California Health & Safety 116875
  - Section 1417 of Safe Drinking Water Act
  - Weighted average lead content <= 0.25%
- Meets design MSS-SP-110



### Construction Features



### Pressure Rating

**Valve Pressure Rating:** 400 PSI (27 Bar) \* non-shock, 1-4" to 2" NPT sizes  
25 PSI saturated steam with high temp kit  
29" Hg vacuum

\*See P/T chart

**Pilot Air Pressure– Double Acting:** 29-120 PSI (2-8 Bar)

**Pilot Air Pressure– Spring Return:** 87-120 PSI (6-8 Bar)

### Temperature Rating

**Ball Valve Temperature Rating:** -4 to 366° F (-20 to 186° C)

**Actuator Temperature Rating:** -4 to 176° F (-20 to 80° C)

\*See P/T chart

### Optional Accessories

DMS: Direct Mount Solenoid  
- pilot to electrically operate the ball valve  
VPS: Valve Position Switches  
- limit switches to confirm valve position  
PVP: Pneumatic Valve Positioner  
- position the ball with 4-20mA  
HTB: High Temperature Bracket  
- increases media working temperature  
Lock out/Tag out device  
Inline mounting

## Specifications (English units)

| Stock Number                                                                                 | Pipe Size (NPT) | Orifice Size (inch) | Cv Flow Factor | Pressure Max.(PSI) * | Air Volume/90° (cubic inches) | Cycle Time/90° (open-close) | Pilot Air Port (NPT) |
|----------------------------------------------------------------------------------------------|-----------------|---------------------|----------------|----------------------|-------------------------------|-----------------------------|----------------------|
| <b>3-WAY T-PORT LEAD FREE BRASS BALL VALVE WITH PNEUMATIC/ MANUAL SPRING RETURN ACTUATOR</b> |                 |                     |                |                      |                               |                             |                      |
| 545802                                                                                       | 1/4             | 0.39                | 3.2            | 400                  | 18.3                          | 1-1                         | 1/4                  |
| 545803                                                                                       | 3/8             | 0.39                | 3.5            | 400                  | 18.3                          | 1-1                         | 1/4                  |
| 545804                                                                                       | 1/2             | 0.59                | 4.5            | 400                  | 18.3                          | 1-1                         | 1/4                  |
| 545806                                                                                       | 3/4             | 0.75                | 10             | 400                  | 24.4                          | 1-1                         | 1/4                  |
| 545808                                                                                       | 1               | 1.00                | 16             | 400                  | 54.9                          | 1-1                         | 1/4                  |
| 545810                                                                                       | 1-1/4           | 1.22                | 31             | 400                  | 91.5                          | 1-1                         | 1/4                  |
| 545812                                                                                       | 1-1/2           | 1.50                | 49             | 400                  | 128.1                         | 2-1                         | 1/4                  |
| 545816                                                                                       | 2               | 2.00                | 82             | 400                  | 201.4                         | 3-1                         | 1/4                  |
| <b>3-WAY T-PORT LEAD FREE BRASS BALL VALVE WITH PNEUMATIC/ MANUAL DOUBLE ACTING ACTUATOR</b> |                 |                     |                |                      |                               |                             |                      |
| 545702                                                                                       | 1/4             | 0.39                | 3.2            | 400                  | 18.3                          | 1-1                         | 1/4                  |
| 545703                                                                                       | 3/8             | 0.39                | 3.5            | 400                  | 18.3                          | 1-1                         | 1/4                  |
| 545704                                                                                       | 1/2             | 0.59                | 4.5            | 400                  | 18.3                          | 1-1                         | 1/4                  |
| 545706                                                                                       | 3/4             | 0.75                | 10             | 400                  | 18.3                          | 1-1                         | 1/4                  |
| 545708                                                                                       | 1               | 1.00                | 16             | 400                  | 24.4                          | 1-1                         | 1/4                  |
| 545710                                                                                       | 1-1/4           | 1.22                | 31             | 400                  | 24.4                          | 1-1                         | 1/4                  |
| 545712                                                                                       | 1-1/2           | 1.50                | 49             | 400                  | 42.7                          | 1-1                         | 1/4                  |
| 545716                                                                                       | 2               | 2.00                | 82             | 400                  | 91.5                          | 2-1                         | 1/4                  |

Cv is the GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

\* Pressure at 176° F (reduced pressure for higher temperatures—see P/T chart)

## Pressure/Temperature Chart (PSI/°F)

| P/T Chart |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|
| PSI       | 400 | 400 | 400 | 400 | 375 | 275 |
| °F        | 0   | 50  | 100 | 176 | 200 | 266 |

## Specifications (Metric units)

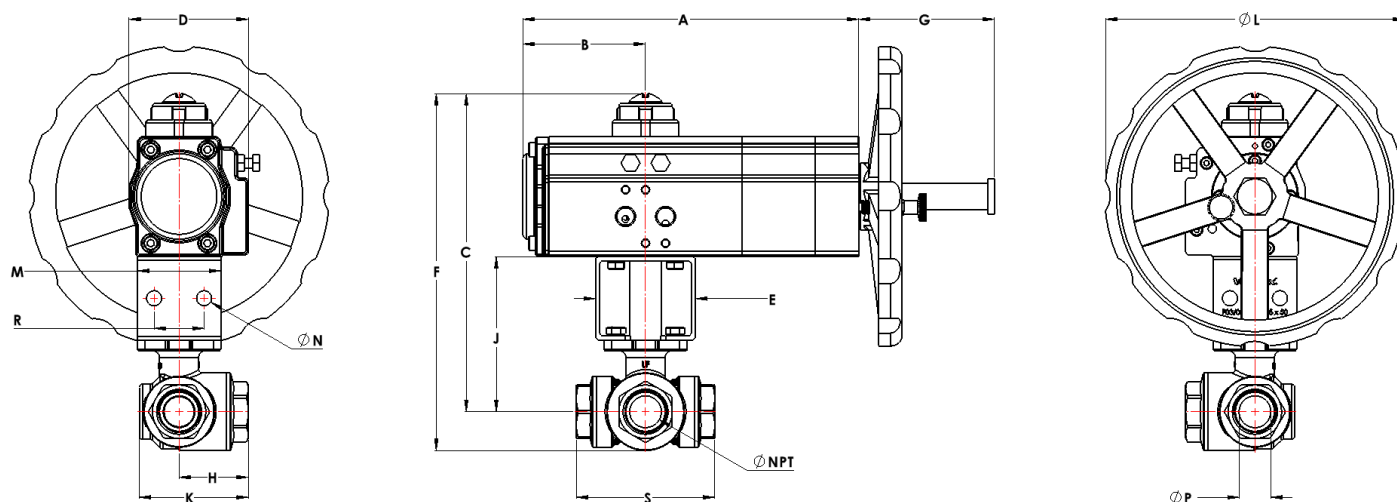
| Stock Number                                                                                 | Pipe Size (NPT) | Orifice Size (mm) | Kv Flow Factor | Pressure Max.(Bar)* | Air Volume/90° (cubic liters) | Cycle Time/90° (open-close) | Pilot Air Port (NPT) |
|----------------------------------------------------------------------------------------------|-----------------|-------------------|----------------|---------------------|-------------------------------|-----------------------------|----------------------|
| <b>3-WAY T-PORT LEAD FREE BRASS BALL VALVE WITH PNEUMATIC/ MANUAL SPRING RETURN ACTUATOR</b> |                 |                   |                |                     |                               |                             |                      |
| 545802                                                                                       | 1/4             | 10                | 2.8            | 27                  | 0.3                           | 1-1                         | 1/4                  |
| 545803                                                                                       | 3/8             | 10                | 3.0            | 27                  | 0.3                           | 1-1                         | 1/4                  |
| 545804                                                                                       | 1/2             | 15                | 3.9            | 27                  | 0.3                           | 1-1                         | 1/4                  |
| 545806                                                                                       | 3/4             | 19                | 8.6            | 27                  | 0.4                           | 1-1                         | 1/4                  |
| 545808                                                                                       | 1               | 25                | 14             | 27                  | 0.9                           | 1-1                         | 1/4                  |
| 545810                                                                                       | 1-1/4           | 31                | 27             | 27                  | 1.5                           | 1-1                         | 1/4                  |
| 545812                                                                                       | 1-1/2           | 38                | 42             | 27                  | 2.1                           | 2-1                         | 1/4                  |
| 545816                                                                                       | 2               | 50                | 70             | 27                  | 3.3                           | 3-1                         | 1/4                  |
| <b>3-WAY T-PORT LEAD FREE BRASS BALL VALVE WITH PNEUMATIC/ MANUAL DOUBLE ACTING ACTUATOR</b> |                 |                   |                |                     |                               |                             |                      |
| 545702                                                                                       | 1/4             | 10                | 2.8            | 27                  | 0.3                           | 1-1                         | 1/4                  |
| 545703                                                                                       | 3/8             | 10                | 3.0            | 27                  | 0.3                           | 1-1                         | 1/4                  |
| 545704                                                                                       | 1/2             | 15                | 3.9            | 27                  | 0.3                           | 1-1                         | 1/4                  |
| 545706                                                                                       | 3/4             | 19                | 8.6            | 27                  | 0.3                           | 1-1                         | 1/4                  |
| 545708                                                                                       | 1               | 25                | 14             | 27                  | 0.4                           | 1-1                         | 1/4                  |
| 545710                                                                                       | 1-1/4           | 31                | 27             | 27                  | 0.4                           | 1-1                         | 1/4                  |
| 545712                                                                                       | 1-1/2           | 38                | 42             | 27                  | 0.7                           | 1-1                         | 1/4                  |
| 545716                                                                                       | 2               | 50                | 70             | 27                  | 1.5                           | 2-1                         | 1/4                  |

\* Pressure at 80° C (reduced pressure for higher temperatures—see P/T chart)

## Pressure/Temperature Chart (Bar/°C)

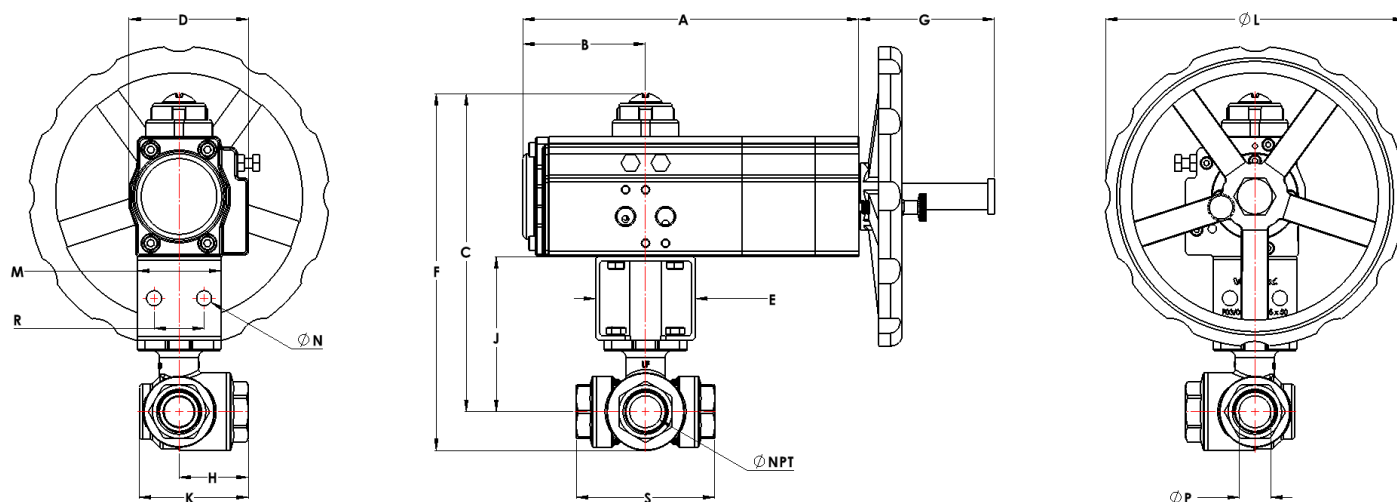
| P/T Chart |     |    |    |    |    |     |
|-----------|-----|----|----|----|----|-----|
| Bar       | 27  | 27 | 27 | 27 | 26 | 19  |
| °C        | -18 | 10 | 38 | 80 | 93 | 130 |

## Dimensions: Spring Return



| Pipe Size (NPT) |      | A     | B     | C     | D     | E    | F     | G     | H    | J     | K     | L     | M    | N   | P    | R    | S     | Weight  |
|-----------------|------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|-------|------|-----|------|------|-------|---------|
| 1/4             | inch | 8.3   | 3.1   | 7.0   | 2.6   | 2.4  | 7.6   | 2.9   | 1.1  | 3.4   | 1.7   | 7.1   | 2.0  | 0.3 | 0.4  | 1.2  | 2.2   | 7.7 lb  |
|                 | mm   | 210.8 | 78.7  | 177.8 | 66.0  | 60.0 | 193.0 | 73.7  | 27.5 | 86.4  | 43.1  | 180.0 | 50.0 | 9.0 | 10.0 | 30.0 | 55.6  | 3.5 kg  |
| 3/8             | inch | 8.3   | 3.1   | 7.0   | 2.6   | 2.4  | 7.6   | 2.9   | 1.1  | 3.4   | 1.7   | 7.1   | 2.0  | 0.3 | 0.4  | 1.2  | 2.2   | 7.6 lb  |
|                 | mm   | 21.0  | 78.7  | 177.8 | 66.0  | 60.0 | 193.0 | 73.7  | 27.5 | 86.4  | 43.1  | 180.0 | 50.0 | 9.0 | 10.0 | 30.0 | 55.6  | 3.4 kg  |
| 1/2             | inch | 8.3   | 3.1   | 7.3   | 2.6   | 2.4  | 8.1   | 2.9   | 1.4  | 3.7   | 2.3   | 7.1   | 2.0  | 0.3 | 0.6  | 1.2  | 2.9   | 8.2 lb  |
|                 | mm   | 210.0 | 78.7  | 185.4 | 66.0  | 60.0 | 205.7 | 73.7  | 36.5 | 94.0  | 57.7  | 180.0 | 50.0 | 9.0 | 15.0 | 30.0 | 73.0  | 3.7 kg  |
| 3/4             | inch | 9.2   | 3.3   | 8.4   | 2.8   | 2.4  | 9.3   | 3.3   | 1.6  | 4.1   | 2.6   | 7.7   | 2.0  | 0.3 | 0.8  | 1.2  | 3.3   | 13.0 lb |
|                 | mm   | 233.7 | 83.8  | 213.4 | 71.1  | 60.0 | 236.2 | 83.8  | 41.5 | 104.1 | 65.4  | 195.0 | 50.0 | 9.0 | 19.0 | 30.0 | 83.0  | 5.9 kg  |
| 1               | inch | 10.7  | 4.2   | 9.4   | 3.6   | 2.4  | 10.4  | 4.0   | 1.8  | 4.3   | 2.9   | 7.7   | 2.0  | 0.3 | 1.0  | 1.2  | 3.8   | 17.7 lb |
|                 | mm   | 271.8 | 106.7 | 238.8 | 91.4  | 60.0 | 264.2 | 101.6 | 46.8 | 109.2 | 74.5  | 195.0 | 50.0 | 9.0 | 25.0 | 30.0 | 95.6  | 8.0 kg  |
| 1-1/4           | inch | 13.4  | 5.2   | 10.0  | 3.9   | 2.4  | 11.3  | 4.3   | 2.0  | 4.6   | 3.3   | 9.8   | 2.0  | 0.3 | 1.2  | 1.2  | 4.2   | 27.1 lb |
|                 | mm   | 340.4 | 132.1 | 254.0 | 99.1  | 60.0 | 287.0 | 109.2 | 51.0 | 116.8 | 83.6  | 250.0 | 50.0 | 9.0 | 31.0 | 30.0 | 107.0 | 12.3 kg |
| 1-1/2           | inch | 13.6  | 5.3   | 11.7  | 4.3   | 3.1  | 13.3  | 4.9   | 2.3  | 5.7   | 3.9   | 9.8   | 2.8  | 0.3 | 1.5  | 1.4  | 4.9   | 33.6 lb |
|                 | mm   | 345.4 | 134.6 | 297.2 | 109.2 | 80.0 | 337.8 | 124.5 | 60.0 | 144.8 | 99.1  | 250.0 | 70.0 | 9.0 | 38.0 | 35.0 | 126.0 | 15.3 kg |
| 2               | inch | 15.8  | 5.9   | 13.0  | 5.0   | 3.1  | 14.9  | 5.2   | 2.7  | 6.1   | 4.7   | 15.7  | 2.8  | 0.3 | 2.0  | 1.4  | 5.9   | 55.2 lb |
|                 | mm   | 401.3 | 149.9 | 330.2 | 127.0 | 80.0 | 378.5 | 132.1 | 69.0 | 154.9 | 118.2 | 400.0 | 70.0 | 9.0 | 50.0 | 35.0 | 149.0 | 25.1 kg |

## Dimensions: Double Acting



| Pipe Size (NPT) |      | A     | B     | C     | D    | E    | F     | G     | H    | J     | K     | L     | M    | N   | P    | R    | S     | Weight  |
|-----------------|------|-------|-------|-------|------|------|-------|-------|------|-------|-------|-------|------|-----|------|------|-------|---------|
| 1/4             | inch | 8.3   | 3.1   | 7.0   | 2.6  | 2.4  | 7.6   | 2.9   | 1.1  | 3.4   | 1.7   | 7.1   | 2.0  | 0.3 | 0.4  | 1.2  | 2.2   | 7.7 lb  |
|                 | mm   | 210.8 | 78.7  | 177.8 | 66.0 | 60.0 | 193.0 | 73.7  | 27.5 | 86.4  | 43.1  | 180.0 | 50.0 | 9.0 | 10.0 | 30.0 | 55.6  | 3.5 kg  |
| 3/8             | inch | 8.3   | 3.1   | 7.0   | 2.6  | 2.4  | 7.6   | 2.9   | 1.1  | 3.4   | 1.7   | 7.1   | 2.0  | 0.3 | 0.4  | 1.2  | 2.2   | 7.6 lb  |
|                 | mm   | 210.8 | 78.7  | 177.8 | 66.0 | 60.0 | 193.0 | 73.7  | 27.5 | 86.4  | 43.1  | 180.0 | 50.0 | 9.0 | 10.0 | 30.0 | 55.6  | 3.4 kg  |
| 1/2             | inch | 8.3   | 3.1   | 7.3   | 2.6  | 2.4  | 8.1   | 2.9   | 1.4  | 3.7   | 2.3   | 7.1   | 2.0  | 0.3 | 0.6  | 1.2  | 2.9   | 8.2 lb  |
|                 | mm   | 210.8 | 78.7  | 185.4 | 66.0 | 60.0 | 205.7 | 73.7  | 36.5 | 94.0  | 57.7  | 180.0 | 50.0 | 9.0 | 15.0 | 30.0 | 73.0  | 3.7 kg  |
| 3/4             | inch | 8.3   | 3.1   | 7.7   | 2.6  | 2.4  | 8.6   | 2.9   | 1.6  | 4.1   | 2.6   | 7.1   | 2.0  | 0.3 | 0.8  | 1.2  | 3.3   | 8.8 lb  |
|                 | mm   | 210.8 | 78.7  | 195.6 | 66.0 | 60.0 | 218.4 | 73.7  | 41.5 | 104.1 | 65.4  | 180.0 | 50.0 | 9.0 | 19.0 | 30.0 | 83.0  | 4.0 kg  |
| 1               | inch | 9.2   | 3.3   | 8.6   | 2.8  | 2.4  | 9.6   | 3.3   | 1.8  | 4.3   | 2.9   | 7.7   | 2.0  | 0.3 | 1.0  | 1.2  | 3.8   | 13.2 lb |
|                 | mm   | 233.7 | 83.8  | 218.4 | 71.1 | 60.0 | 243.8 | 83.8  | 46.8 | 109.2 | 74.5  | 195.0 | 50.0 | 9.0 | 25.0 | 30.0 | 95.6  | 6.0 kg  |
| 1-1/4           | inch | 9.2   | 3.3   | 8.9   | 2.8  | 2.4  | 10.2  | 3.3   | 2.0  | 4.6   | 3.3   | 7.7   | 2.0  | 0.3 | 1.2  | 1.2  | 4.2   | 14.2 lb |
|                 | mm   | 233.7 | 83.8  | 226.1 | 71.1 | 60.0 | 259.1 | 83.8  | 51.0 | 116.8 | 83.6  | 195.0 | 50.0 | 9.0 | 31.0 | 30.0 | 107.0 | 6.5 kg  |
| 1-1/2           | inch | 9.6   | 3.6   | 10.4  | 3.1  | 3.1  | 12.0  | 3.5   | 2.3  | 5.7   | 3.9   | 7.1   | 2.8  | 0.3 | 1.5  | 1.4  | 4.9   | 18.3 lb |
|                 | mm   | 243.8 | 91.4  | 264.2 | 78.7 | 80.0 | 304.8 | 88.9  | 60.0 | 144.8 | 99.1  | 180.0 | 70.0 | 9.0 | 38.0 | 35.0 | 126.0 | 8.3 kg  |
| 2               | inch | 13.4  | 5.2   | 11.5  | 3.9  | 3.1  | 13.4  | 4.3   | 2.7  | 6.1   | 4.7   | 9.8   | 2.8  | 0.3 | 2.0  | 1.4  | 5.9   | 31.4 lb |
|                 | mm   | 340.4 | 132.1 | 292.1 | 99.1 | 80.0 | 340.4 | 109.2 | 69.0 | 154.9 | 118.2 | 250.0 | 70.0 | 9.0 | 50.0 | 35.0 | 149.0 | 14.3 kg |