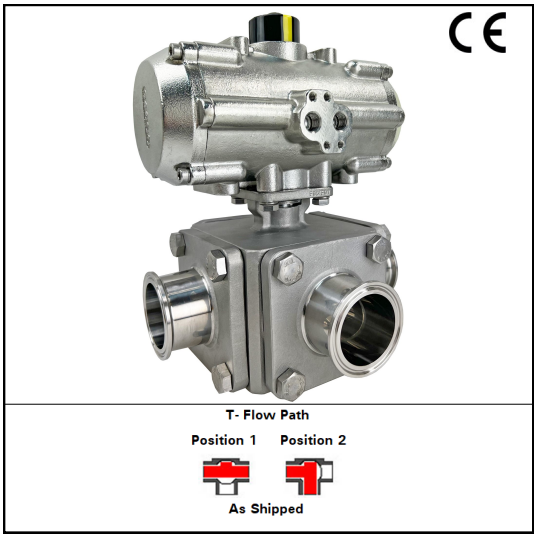
# Stainless Steel Air Actuated Sanitary Ball Valves

## 3-Way T-Port Stainless Steel, Full Port
## 1/2" to 3" Tri-Clamp

**SERIES**
**5764**
**5765**

### Features

- Functions as a diverter, selector, or mixing valve
- All materials comply with FDA and USDA requirements
- Dyneon® TF-1641 (PTFE) FDA approved ball seats and cavity fillers
- Triple PTFE/Viton® high cycle live loaded stem seal packing
- Highly polished internals and end caps with 8-12 Ra finish
- Tri-Clamp ends for hygienic connections
- Electro-polished exterior actuator surfaces
- Spring Return or Double Acting Actuators
- Corrosion resistant 316 stainless steel body, pistons & rack
- NEMA 4/4X (IP66) enclosure for washdown applications
- Coated springs for additional corrosion resistance (for spring return models)
- Externally adjustable stroke
- Pre-lubricated and tested to minimum 1 million operations
- Highly visible valve position indicator
- Valve tested per API598




### Applications

Sanitary 3–way ball valves are typically used for food, beverage, pharmaceutical, personal care, and pet care applications where sanitary construction is required, as well as for utility, process, and corrosive environment applications where quick clamp connections are beneficial. Often used as a diverter, selector, or mixing valve with a variety of flow path options through the valve.

### Operation

Double acting rack & pinion actuators use air pressure to open and air pressure to close the ball valve (4-way pilot). Spring return rack & pinion actuators use air pressure to open and springs to close the ball valve (3-way pilot). Actuator will work with filtered dry or lubricated compressed air. Air supply pilot pressure should be between 80 and 120 PSI. Easy to read visual valve position indicator located on top of actuator.

### Construction

| | |
|---|---|
| **Valve Body** | ASTM 316 Stainless Steel |
| **Ball/Stem** | ASTM 316 stainless steel |
| **Ball Seats/ Cavity Filler** | Dyneon® PTFE |
| **Stem Seals** | PTFE/ Viton® |
| **Actuator Seals** | NBR (Buna-N) |
| **Actuator Body** | ASTM 316 Stainless Steel |
| **Position Indicator** | Plastic |
| **Fasteners** | ASTM 304 Stainless Steel |

### Description

Heavy duty stainless steel quarter turn rack & pinion actuators designed for long life and tested for a minimum 1 million operations. Investment cast 3-piece full port stainless steel body and end caps for unrestricted flow and minimum pressure loss. Valve seats are cavity filled Dyneon® PTFE. Self adjusting live loaded stem seal packing helps compensate for wear, pressure or temperature fluctuations, extending the cycle life of the valve. Blow-out proof stem. Cavity fillers avoid media entrapment and quick clamp end connections allow for easy cleaning. Standard Namur mounting pads for optional accessory confirmation switches, pilot valves and valve positioners.

**Approvals– Actuators**

- CE Declaration of conformity
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting

**Standards- Valves**

- Construction:

- ANSI B16/B2/B18
- FDA 21 CFR 177.1550
- ANSI B16.34

- Pressure Testing:

- API 598

- Marking

- MSS-SP-25

## Features

Heavy duty rugged rack and pinion design

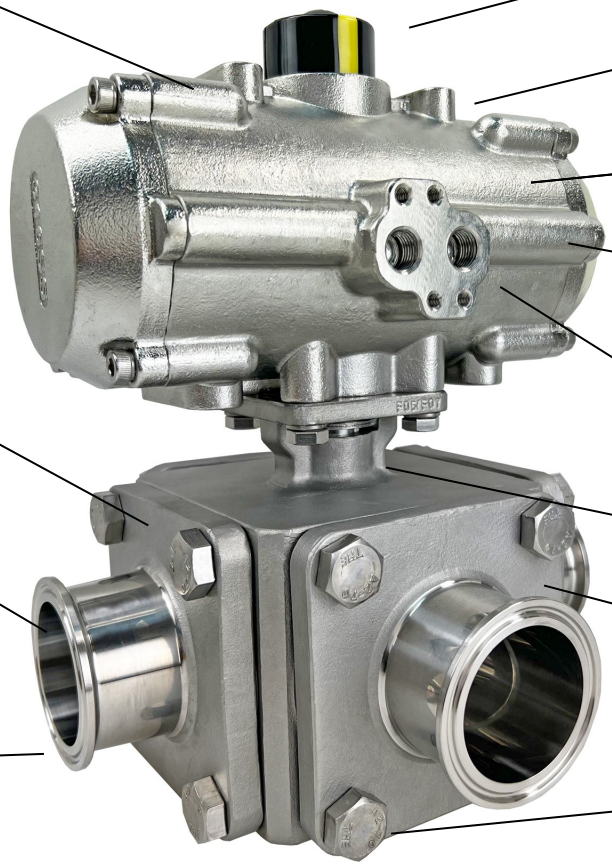
316 stainless end caps and body

Spring return models use multiple pre-compressed spring cartridges with polyester coating

Encapsulated Dyneon® PTFE ball seats with cavity fillers

Internals polished to Ra 8-12

Standard Tri-Clamp end caps for sanitary connections *



Visual valve position indicator

Standard Namur top mounting for optional limit switches and positioners

316 stainless actuator body, pistons & pinion

Electro-polished external actuator surfaces

NPT pilot air ports and additional Namur VDI/ VDE-3845 solenoid mounting pad

Live-loaded triple PTFE stem seal

ASTM 316 (CF8M) investment grade casting (body & end caps)

ASTM 304 stainless steel fasteners

* Refer to specifications table for Tri-Clamp size

* Note: Tri-Clamp size is **NOT** determined by the OD of the end cap

International standard ISO5211 valve mounting pad

## Pressure-Temperature

**Shell Pressure Rating (Max)*:** 1000 PSI @ 120°F (1/2" to 2"), 600 PSI (2 1/2" to 3")

**Air Pilot Pressure Required:** 80-120 PSI (5.5-8.3 Bar)

**Temperature Rating:** -4° to 356° F (-20 to 180°C)

*See P/T Chart

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

### Optional Accessories

DMS: Direct Mount Solenoid
- pilot to electrically operate the ball valve
VPS: Valve Position Switches
- limit switches to confirm valve position
HTB: High Temperature Bracket
- increases media working temperature

## Specifications (English units)

| Stock Number | Pipe Size (inch) | Tri-Clamp Size (inch) | Cv Flow Factor | Max Shell Pressure (PSI)* | Cycle Time /90° (seconds) | Pilot Air Port (NPT) | Air Volume/ 90° (cubic inches) |
|---|---|---|---|---|---|---|---|
| **VALVE WITH SPRING RETURN ACTUATOR** | | | | | | | |
| **576500A** | 1/2 | 3/4 | 4.3 | 1000 | 1 | 1/4 | 12.2 |
| **576501A** | 3/4 | 3/4 | 10.4 | 1000 | 1 | 1/4 | 12.2 |
| **576502A** | 1 | 1-1/2 | 17.3 | 1000 | 1 | 1/4 | 12.2 |
| **576503A** | 1-1/2 | 1-1/2 | 43.3 | 1000 | 1 | 1/4 | 12.2 |
| **576504A** | 2 | 2 | 77.9 | 1000 | 1 | 1/4 | 24.4 |
| **576505A** | 2-1/2 | 2-1/2 | 115.9 | 600 | 3 | 1/4 | 54.9 |
| **576506A** | 3 | 3 | 210.2 | 600 | 3 | 1/4 | 54.9 |
| **VALVE WITH DOUBLE ACTING ACTUATOR** | | | | | | | |
| **576400A** | 1/2 | 3/4 | 4.3 | 1000 | 1 | 1/4 | 12.2 |
| **576401A** | 3/4 | 3/4 | 10.4 | 1000 | 1 | 1/4 | 12.2 |
| **576402A** | 1 | 1-1/2 | 17.3 | 1000 | 1 | 1/4 | 12.2 |
| **576403A** | 1-1/2 | 1-1/2 | 43.3 | 1000 | 1 | 1/4 | 12.2 |
| **576404A** | 2 | 2 | 77.9 | 1000 | 1 | 1/4 | 12.2 |
| **576405A** | 2-1/2 | 2-1/2 | 115.9 | 600 | 1 | 1/4 | 24.4 |
| **576406A** | 3 | 3 | 210.2 | 600 | 3 | 1/4 | 54.9 |

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

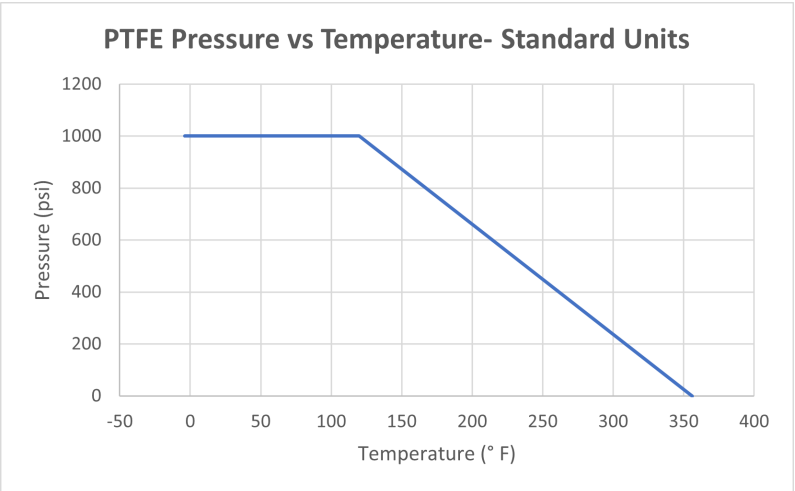
*Maximum Shell Pressure @ -4°to 356° F (reduced pressure at higher temperatures—see P/T chart)

• Torque at 1000 PSI and 72°F

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

Standard Units

| Temp °F | -4 | 120 | 356 |
|---|---|---|---|
| Pressure | 1000 | 1000 | 0 |



## Specifications (Metric units)

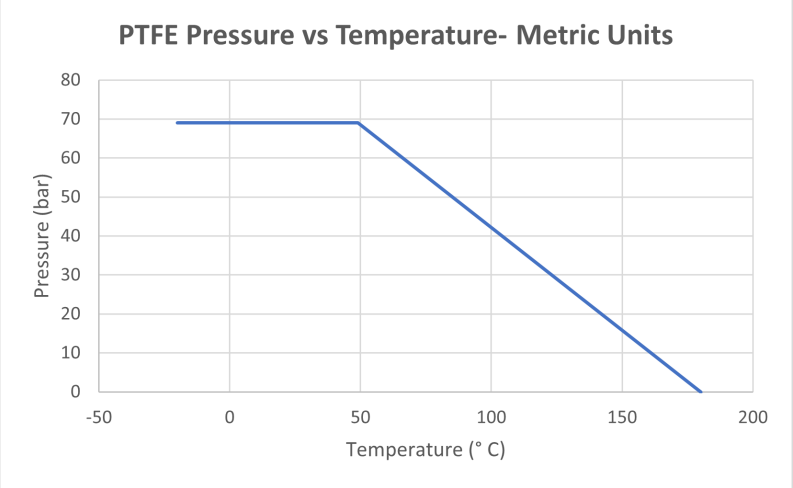
| Stock Number | Pipe Size (mm) | Tri-Clamp Size (inch) | Kv Flow Factor | Max Shell Pressure (Bar)* | Cycle Time/90° (seconds) | Pilot Air Port (NPT) | Air Volume/ 90° (liters) |
|---|---|---|---|---|---|---|---|
| **VALVE WITH SPRING RETURN ACTUATOR** | | | | | | | |
| **576500A** | 12.7 | 3/4 | 5.0 | 69 | 1 | 1/4 | 0.2 |
| **576501A** | 19.1 | 3/4 | 12.0 | 69 | 1 | 1/4 | 0.2 |
| **576502A** | 25.4 | 1-1/2 | 20.0 | 69 | 1 | 1/4 | 0.2 |
| **576503A** | 38.1 | 1-1/2 | 50.0 | 69 | 1 | 1/4 | 0.2 |
| **576504A** | 50.8 | 2 | 90.0 | 69 | 1 | 1/4 | 0.4 |
| **576505A** | 63.5 | 2-1/2 | 134.0 | 41 | 3 | 1/4 | 0.9 |
| **576506A** | 76.2 | 3 | 243.0 | 41 | 3 | 1/4 | 0.9 |
| **VALVE WITH DOUBLE ACTING ACTUATOR** | | | | | | | |
| **576400A** | 12.7 | 3/4 | 5.0 | 69 | 1 | 1/4 | 0.2 |
| **576401A** | 19.1 | 3/4 | 12.0 | 69 | 1 | 1/4 | 0.2 |
| **576402A** | 25.4 | 1-1/2 | 20.0 | 69 | 1 | 1/4 | 0.2 |
| **576403A** | 38.1 | 1-1/2 | 50.0 | 69 | 1 | 1/4 | 0.2 |
| **576404A** | 50.8 | 2 | 90.0 | 69 | 1 | 1/4 | 0.2 |
| **576405A** | 63.5 | 2-1/2 | 134.0 | 41 | 1 | 1/4 | 0.4 |
| **576406A** | 76.2 | 3 | 243.0 | 41 | 3 | 1/4 | 0.9 |

* Maximum Shell Pressure range @ -20° to 180° C (reduced pressure for higher temperatures—see P/T chart)

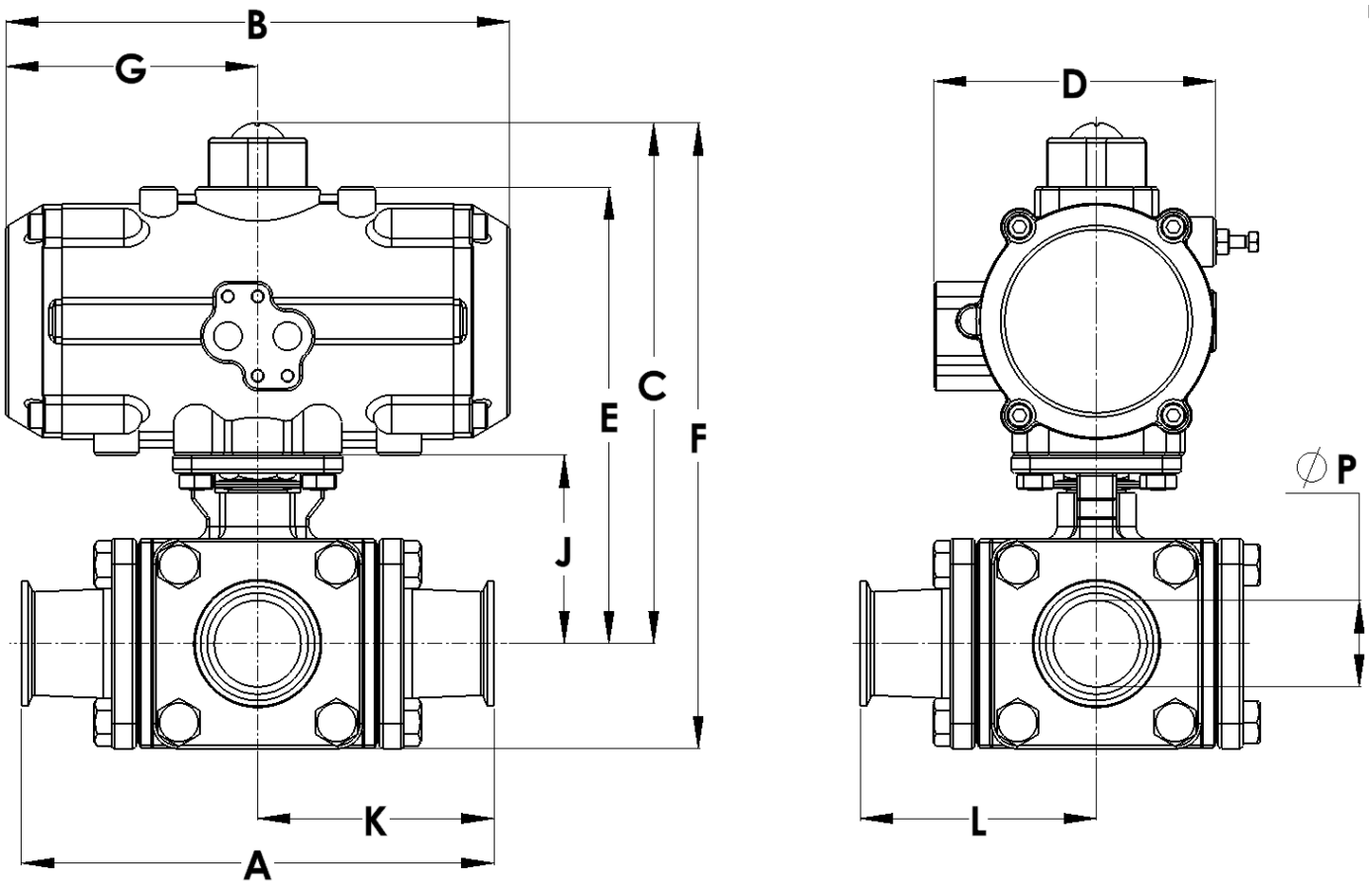
## Pressure/Temperature Chart (Bar/°C)

Metric Units

| Temp °C | -20 | 49 | 180 |
|---|---|---|---|
| Pressure | 69 | 69 | 0 |

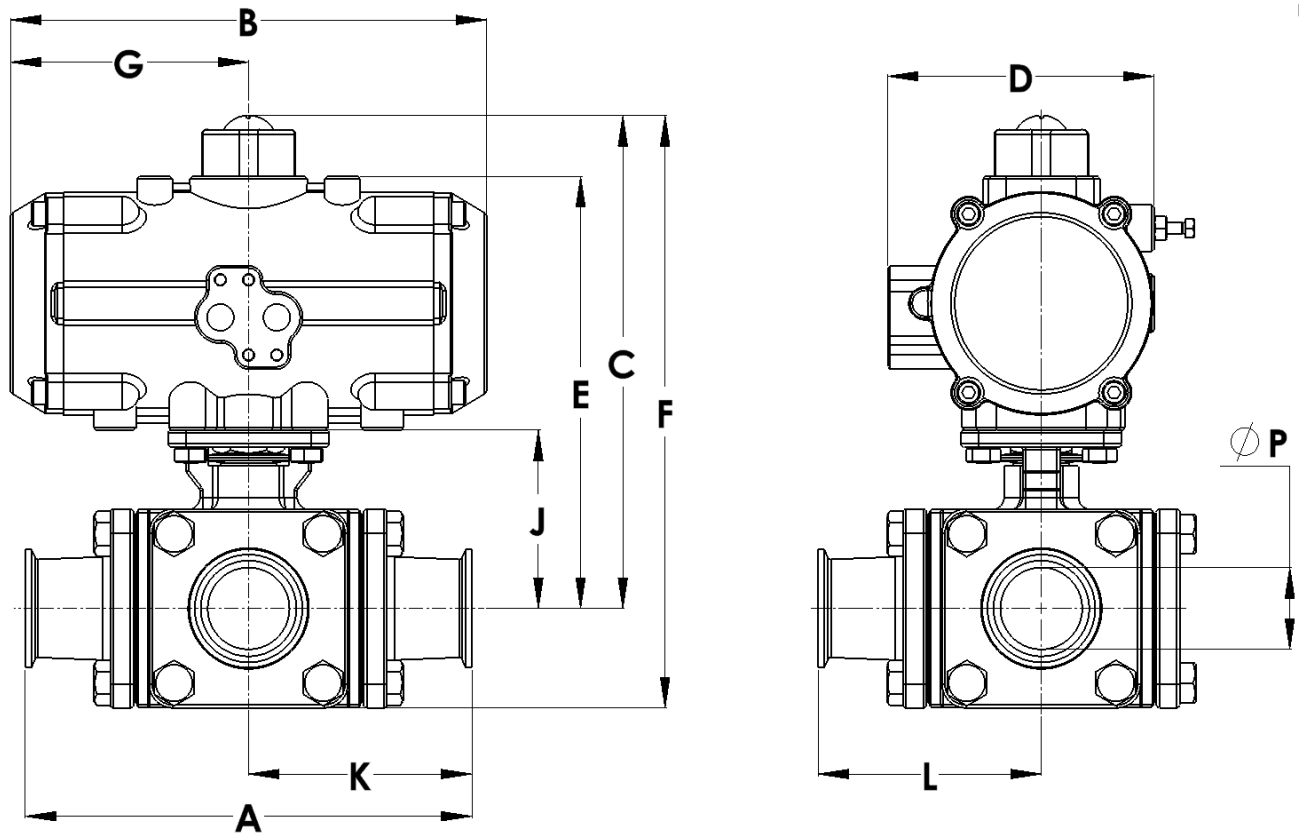


## Dimensions: Spring Return




| Stock Number | Pipe Size | | A | B | C | D | E | F | G | J | K | L | P | A & B Ports (NPT) | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 576500A | 1/2 | inch | 4.6 | 5.7 | 5.8 | 3.0 | 5.1 | 6.7 | 2.9 | 1.8 | 2.3 | 2.3 | 0.4 | 1/4 | 8.9 lb |
| | | mm | 118.0 | 144.8 | 147.3 | 76.2 | 129.5 | 170.2 | 73.7 | 44.5 | 59.0 | 59.0 | 9.4 | - | 4.0 kg |
| 576501A | 3/4 | inch | 5.0 | 5.7 | 6.1 | 3.0 | 5.4 | 7.1 | 2.9 | 1.9 | 2.5 | 2.6 | 0.6 | 1/4 | 9.5 lb |
| | | mm | 127.0 | 144.8 | 154.9 | 76.2 | 137.2 | 180.3 | 73.7 | 48.0 | 63.5 | 64.9 | 15.8 | - | 4.3 kg |
| 576502A | 1 | inch | 6.0 | 6.8 | 7.1 | 3.5 | 6.4 | 8.2 | 3.4 | 2.3 | 3.1 | 3.0 | 0.9 | 1/4 | 14.9 lb |
| | | mm | 152.4 | 173.0 | 180.3 | 88.9 | 162.6 | 208.3 | 86.4 | 59.0 | 77.5 | 76.2 | 22.2 | - | 6.8 kg |
| 576503A | 1-1/2 | inch | 6.9 | 6.8 | 7.9 | 3.5 | 7.2 | 9.4 | 3.4 | 2.8 | 3.4 | 3.5 | 1.4 | 1/4 | 20.8 lb |
| | | mm | 175.0 | 173.0 | 200.7 | 88.9 | 182.9 | 238.8 | 86.4 | 72.0 | 87.5 | 88.8 | 35.0 | - | 9.4 kg |
| 576504A | 2 | inch | 7.5 | 8.0 | 9.1 | 4.5 | 8.3 | 10.9 | 4.0 | 3.2 | 3.7 | 3.8 | 1.9 | 1/4 | 33.5 lb |
| | | mm | 190.0 | 204.0 | 231.1 | 114.3 | 210.8 | 276.9 | 101.6 | 82.0 | 95.0 | 96.3 | 47.6 | - | 15.2 kg |
| 576505A | 2-1/2 | inch | 9.0 | 10.6 | 11.0 | 5.0 | 10.3 | 13.2 | 5.3 | 4.0 | 4.5 | 4.2 | 2.4 | 1/4 | 48.0 lb |
| | | mm | 228.0 | 269.2 | 279.4 | 127.0 | 261.6 | 335.3 | 134.6 | 102.5 | 114.0 | 107.0 | 60.2 | - | 21.8 kg |
| 576506A | 3 | inch | 10.2 | 10.6 | 11.4 | 5.0 | 10.7 | 14.0 | 5.3 | 4.9 | 5.1 | 4.2 | 2.9 | 1/4 | 64.2 lb |
| | | mm | 260.0 | 269.2 | 289.6 | 127.0 | 271.8 | 355.6 | 134.6 | 125.5 | 130.0 | 107.0 | 72.9 | - | 29.1 kg |

## Dimensions: Double Acting




| Stock Number | Pipe Size | | A | B | C | D | E | F | G | J | K | L | P | A & B Ports (NPT) | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 576400A | 1/2 | inch | 4.6 | 5.7 | 5.8 | 3.0 | 5.1 | 6.7 | 2.9 | 1.8 | 2.3 | 2.3 | 0.4 | 1/4 | 8.9 lb |
| | | mm | 118.0 | 144.8 | 147.3 | 76.2 | 129.5 | 170.2 | 73.7 | 44.5 | 59.0 | 59.0 | 10.2 | - | 4.0 kg |
| 576401A | 3/4 | inch | 5.0 | 5.7 | 6.1 | 3.0 | 5.4 | 7.1 | 2.9 | 1.9 | 2.5 | 2.6 | 0.6 | 1/4 | 9.5 lb |
| | | mm | 127.0 | 144.8 | 154.9 | 76.2 | 137.2 | 180.3 | 73.7 | 48.0 | 63.5 | 64.9 | 15.2 | - | 4.3 kg |
| 576402A | 1 | inch | 6.0 | 5.7 | 6.4 | 3.0 | 5.7 | 7.5 | 2.9 | 2.3 | 3.1 | 3.0 | 0.9 | 1/4 | 11.4 lb |
| | | mm | 152.4 | 144.8 | 162.6 | 76.2 | 144.8 | 190.5 | 73.7 | 59.0 | 77.5 | 76.2 | 22.9 | - | 5.2 kg |
| 576403A | 1-1/2 | inch | 6.9 | 6.8 | 7.9 | 3.5 | 7.2 | 9.4 | 3.4 | 2.8 | 3.4 | 3.5 | 1.4 | 1/4 | 20.4 lb |
| | | mm | 175.0 | 173.0 | 200.7 | 88.9 | 182.9 | 238.8 | 86.4 | 72.0 | 87.5 | 88.8 | 35.6 | - | 9.3 kg |
| 576404A | 2 | inch | 7.5 | 6.8 | 8.3 | 3.5 | 7.6 | 10.1 | 3.4 | 3.2 | 3.7 | 3.8 | 1.9 | 1/4 | 27.6 lb |
| | | mm | 190.0 | 173.0 | 210.8 | 88.9 | 193.0 | 256.5 | 86.4 | 82.0 | 95.0 | 96.3 | 48.3 | - | 12.5 kg |
| 576405A | 2-1/2 | inch | 9.0 | 8.0 | 10.1 | 4.5 | 9.3 | 12.3 | 4.0 | 4.0 | 4.5 | 4.2 | 2.4 | 1/4 | 36.7 lb |
| | | mm | 228.0 | 204.0 | 256.5 | 114.3 | 236.2 | 312.4 | 101.6 | 102.5 | 114.0 | 107.0 | 61.0 | - | 16.6 kg |
| 576406A | 3 | inch | 10.2 | 10.6 | 11.4 | 5.0 | 10.7 | 14.0 | 5.3 | 4.9 | 5.1 | 4.2 | 2.9 | 1/4 | 64.2 lb |
| | | mm | 260.0 | 269.2 | 289.6 | 127.0 | 271.8 | 355.6 | 134.6 | 125.5 | 130.0 | 107.0 | 73.7 | - | 29.1 kg |