

Features

- Spring Return or Double Acting Actuators
- Full Port direct mount ISO5211 valve
- 316 stainless steel body, ball and stem
- Actuators designed for minimum 1 million cycles
- Quarter turn rack and pinion design
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime
- Triple RTFE/Viton live loaded stem seals, adjustable
- Valve Anti-static device
- Silicone free valve

Applications

On-off control of water, air, oil and other media compatible with the materials of construction. Cycle times approx. 1 to 1.5 seconds per 90° rotation. Steam service up to 50 PSI with optional high temperature mounting bracket. Suitable for vacuum service to 29"Hg.

Pressure-Temperature

Valve Pressure Rating: 1000 PSI* (69 Bar*)

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

Working Temperature: 0 to 180° F (-18 to 82° C)
Media temperatures up to 300° F (149° C)
with optional high temp. mounting bracket

Ball Valve Temperature Rating: 0 to 356° F (-18 to 180° C)

Actuator Temperature Rating: 0 to 180° F (-18 to 82° C)

*See P/T chart

Construction

| | |
|---------------------------|---|
| Valve Body | 316 stainless steel ASTM A351 CF8M |
| Ball/Stem | 316 stainless steel |
| Ball Seats | RTFE (reinforced Teflon) |
| Stem Seals | RTFE, Viton |
| Anti-static Device | Ball to Stem (1/4" - 2") + Stem to Body (1-1/2" - 2") |
| Actuator Seals | NBR (Buna-N) |
| Actuator Body | Anodized aluminium, epoxy-polyester coated end covers |
| Position Indicator | Glass filled Polyamide |
| Fasteners | Stainless Steel |



Operation

Double acting actuators use air pressure to open and air pressure to close the ball valve (4-way pilot). Spring return 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.

Description

Heavy duty quarter turn air actuators designed for long life and tested for a minimum 1 million operations. Investment cast 2-piece full port stainless steel body/ball for unrestricted flow and minimum pressure loss. Adjustable live loaded stem seal helps compensate for wear, pressure or temperature fluctuations, extending the cycle life of the valve. Blow-out proof stem. Standard Namur mounting pads for optional accessory confirmation switches, pilot valves and valve positioners.

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 or 0-10v
- HTB: High Temperature Bracket
- increases media working temperature

Specifications (English units)

| Stock Number | Pipe Size (NPT) | Orifice Size (inch) | Cv Flow Factor | Pressure Max.(PSI)* | Cycle Time /90° (seconds) | Pilot Air Port (NPT) |
|--|-----------------|---------------------|----------------|---------------------|---------------------------|----------------------|
| Valve with Spring Return Actuator | | | | | | |
| 523602A | 1/4 | 0.45 | 8 | 1000 | 1 | 1/8 |
| 523603A | 3/8 | 0.49 | 10 | 1000 | 1 | 1/8 |
| 523604A | 1/2 | 0.59 | 15 | 1000 | 1 | 1/8 |
| 523606A | 3/4 | 0.79 | 35 | 1000 | 1 | 1/4 |
| 523608C | 1 | 1.00 | 60 | 1000 | 1 | 1/4 |
| 523610A | 1-1/4 | 1.25 | 90 | 1000 | 1 | 1/4 |
| 523612A | 1-1/2 | 1.50 | 125 | 1000 | 1 | 1/4 |
| 523616A | 2 | 2.00 | 240 | 1000 | 1 | 1/4 |
| Valve with Double Acting Actuator | | | | | | |
| 523502A | 1/4 | 0.45 | 8 | 1000 | 1 | 1/8 |
| 523503A | 3/8 | 0.49 | 10 | 1000 | 1 | 1/8 |
| 523504A | 1/2 | 0.59 | 15 | 1000 | 1 | 1/8 |
| 523506A | 3/4 | 0.79 | 35 | 1000 | 1 | 1/8 |
| 523508A | 1 | 1.00 | 60 | 1000 | 1 | 1/8 |
| 523510A | 1-1/4 | 1.25 | 90 | 1000 | 1 | 1/4 |
| 523512A | 1-1/2 | 1.50 | 125 | 1000 | 1 | 1/4 |
| 523516A | 2 | 2.00 | 240 | 1000 | 1 | 1/4 |

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

* Pressure @ 100° F (see P/T chart)

Pressure/Temperature Chart (PSI/°F)

| P/T Chart | | | | | | | |
|-----------|------|------|------|-----|-----|-----|-----|
| PSI | 1000 | 1000 | 1000 | 925 | 875 | 675 | 375 |
| °F | 0 | 50 | 100 | 150 | 200 | 250 | 300 |

Specifications (Metric units)

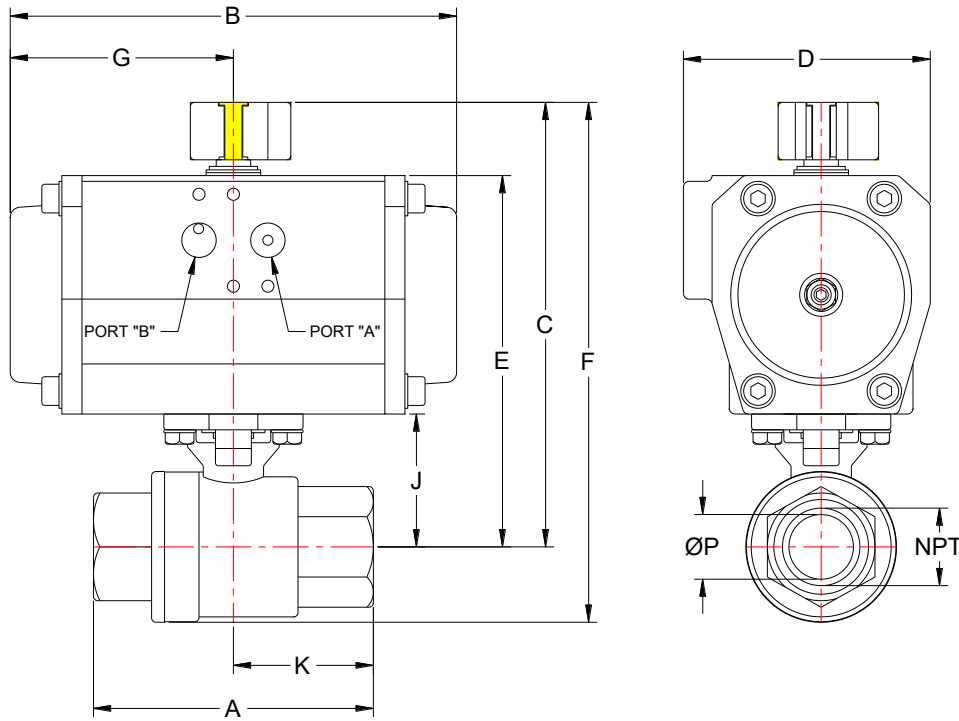
| Stock Number | Pipe Size (NPT) | Orifice Size (mm) | Kv Flow Factor | Pressure Max.(Bar)* | Cycle Time/90° (seconds) | Pilot Air Port (NPT) |
|--|-----------------|-------------------|----------------|---------------------|--------------------------|----------------------|
| VALVE WITH SPRING RETURN ACTUATOR | | | | | | |
| 523602A | 1/4 | 11.5 | 7 | 69 | 1 | 1/8 |
| 523603A | 3/8 | 12.5 | 8.6 | 69 | 1 | 1/8 |
| 523604A | 1/2 | 15 | 13 | 69 | 1 | 1/8 |
| 523606A | 3/4 | 20 | 30 | 69 | 1 | 1/4 |
| 523608C | 1 | 25 | 52 | 69 | 1 | 1/4 |
| 523610A | 1-1/4 | 32 | 77 | 69 | 1 | 1/4 |
| 523612A | 1-1/2 | 38 | 107 | 69 | 1 | 1/4 |
| 523616A | 2 | 50 | 206 | 69 | 1 | 1/4 |
| VALVE WITH DOUBLE ACTING ACTUATOR | | | | | | |
| 523502A | 1/4 | 11.5 | 7 | 69 | 1 | 1/8 |
| 523503A | 3/8 | 12.5 | 8.6 | 69 | 1 | 1/8 |
| 523504A | 1/2 | 15 | 13 | 69 | 1 | 1/8 |
| 523506A | 3/4 | 20 | 30 | 69 | 1 | 1/8 |
| 523508A | 1 | 25 | 52 | 69 | 1 | 1/8 |
| 523510A | 1-1/4 | 32 | 77 | 69 | 1 | 1/4 |
| 523512A | 1-1/2 | 38 | 107 | 69 | 1 | 1/4 |
| 523516A | 2 | 50 | 206 | 69 | 1 | 1/4 |

* Pressure @ 70° C (see P/T chart)

Pressure/Temperature Chart (Bar/°C)

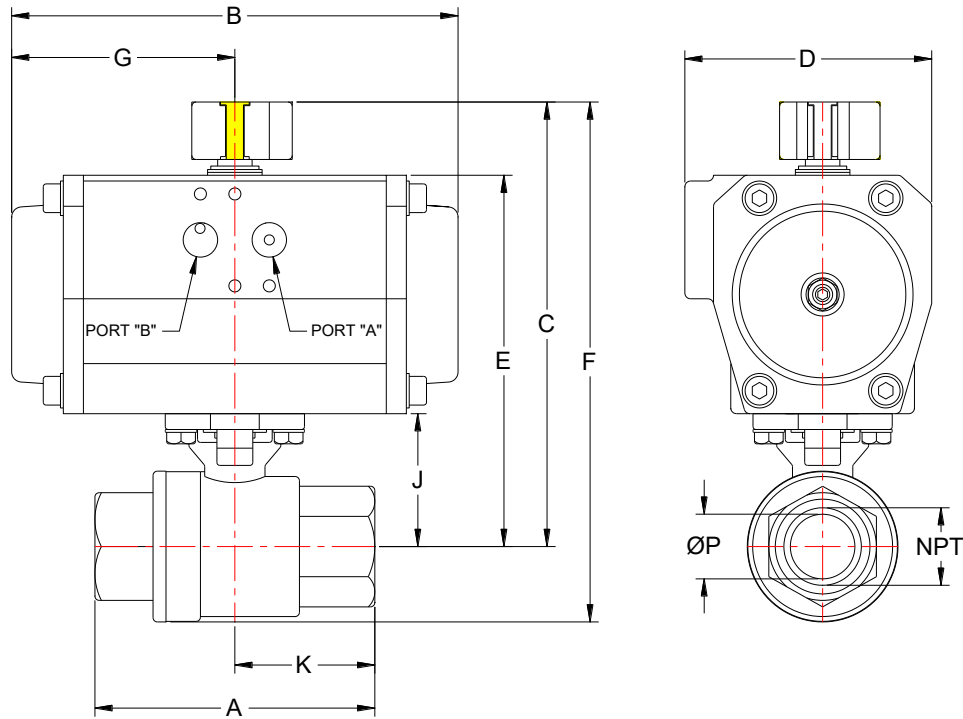
| P/T Chart | | | | | | | |
|------------|-----|----|----|----|----|------|-----|
| Bar | 69 | 69 | 69 | 65 | 60 | 46.5 | 26 |
| °C | -18 | 10 | 38 | 70 | 93 | 121 | 149 |

Dimensions: Spring Return



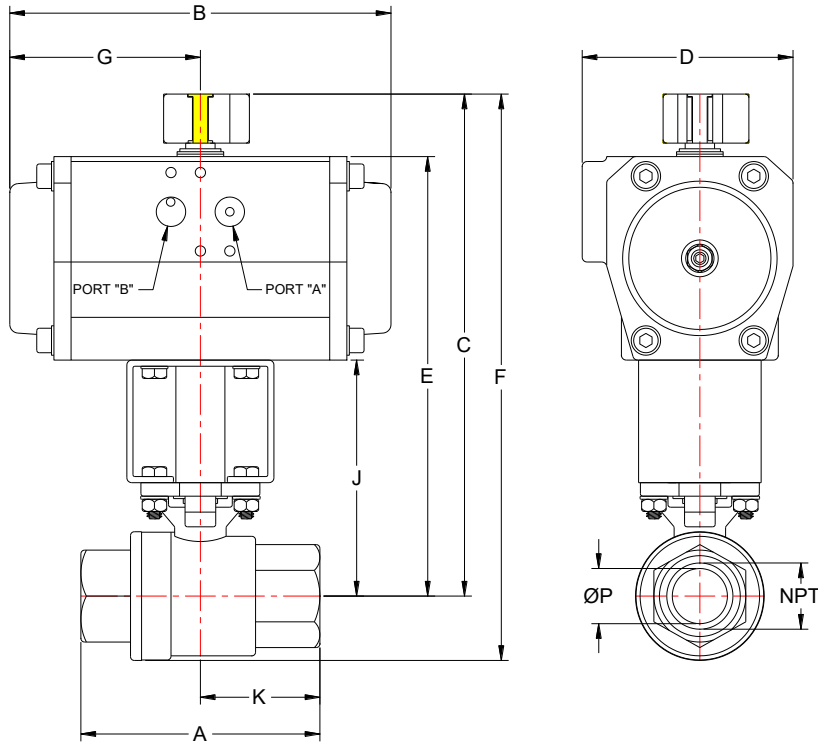
| Pipe Size (NPT) | | A | B | C | D | E | F | G | J | K | P | A & B Ports (NPT) | Weight |
|-----------------|------|------|-------|------|------|------|-------|------|------|------|------|-------------------|---------|
| 1/4 | inch | 2.57 | 5.47 | 4.88 | 2.95 | 4.09 | 5.55 | 2.74 | 1.46 | 1.22 | 0.45 | 1/8 | 3.7 lb |
| | mm | 65.3 | 139 | 124 | 75 | 104 | 141 | 69.5 | 37 | 31.0 | 11.5 | - | 1.7 kg |
| 3/8 | inch | 2.57 | 5.47 | 4.88 | 2.95 | 4.09 | 5.55 | 2.74 | 1.46 | 1.22 | 0.49 | 1/8 | 3.6 lb |
| | mm | 65.3 | 139 | 124 | 75 | 104 | 141 | 69.5 | 37 | 31.0 | 12.5 | - | 1.6 kg |
| 1/2 | inch | 2.57 | 5.47 | 4.88 | 2.95 | 4.09 | 5.55 | 2.74 | 1.46 | 1.22 | 0.59 | 1/8 | 3.6 lb |
| | mm | 65.3 | 139 | 124 | 75 | 104 | 141 | 69.5 | 37 | 31.0 | 15 | - | 1.6 kg |
| 3/4 | inch | 3.04 | 6.14 | 5.83 | 3.39 | 5.04 | 6.69 | 3.07 | 1.77 | 1.52 | 0.79 | 1/4 | 5.4 lb |
| | mm | 77.3 | 156 | 148 | 86 | 128 | 170 | 78 | 45.0 | 38.7 | 20 | - | 2.5 kg |
| 1 | inch | 3.49 | 8.27 | 6.85 | 3.70 | 6.06 | 7.83 | 4.18 | 2.11 | 1.72 | 0.98 | 1/4 | 9.2 lb |
| | mm | 88.7 | 210 | 174 | 94 | 154 | 199 | 105 | 53.5 | 43.8 | 25 | - | 4.2 kg |
| 1-1/4 | inch | 4.03 | 8.27 | 7.05 | 3.70 | 6.26 | 8.35 | 4.13 | 2.32 | 2.00 | 1.26 | 1/4 | 10.2 lb |
| | mm | 102 | 210 | 179 | 94 | 159 | 212 | 105 | 59 | 50.7 | 32 | - | 4.6 kg |
| 1-1/2 | inch | 4.29 | 9.06 | 8.07 | 4.09 | 7.28 | 9.53 | 4.53 | 2.94 | 2.17 | 1.50 | 1/4 | 14.9 lb |
| | mm | 109 | 230 | 205 | 104 | 185 | 242 | 115 | 74.8 | 55.0 | 38 | - | 6.8 kg |
| 2 | inch | 4.93 | 11.02 | 9.02 | 4.72 | 8.23 | 10.87 | 2.46 | 3.29 | 2.41 | 1.97 | 1/4 | 21.5 lb |
| | mm | 125 | 280 | 229 | 120 | 209 | 276 | 62.5 | 83.5 | 61.3 | 50 | - | 9.8 kg |

Dimensions: Double Acting



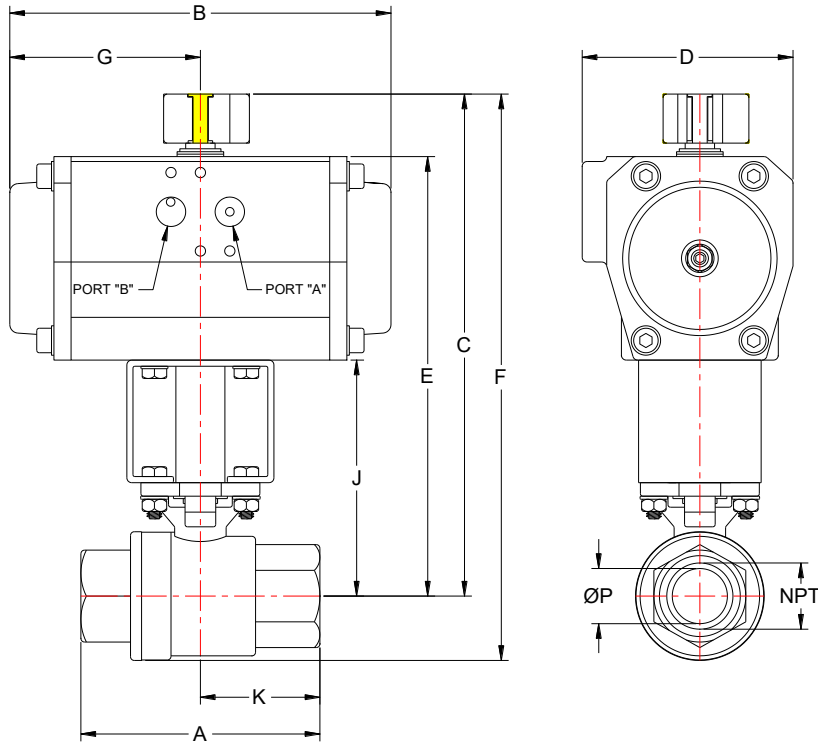
| Pipe Size (NPT) | | A | B | C | D | E | F | G | J | K | P | A & B Ports (NPT) | Weight |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|-------------------|---------|
| 1/4 | inch | 2.57 | 5.47 | 4.88 | 2.95 | 4.09 | 5.55 | 2.74 | 1.46 | 1.22 | 0.45 | 1/8 | 3.4 lb |
| | mm | 65.3 | 139 | 124 | 75 | 104 | 141 | 69.5 | 37 | 31 | 11.5 | - | 1.5 kg |
| 3/8 | inch | 2.57 | 5.47 | 4.88 | 2.95 | 4.09 | 5.55 | 2.74 | 1.46 | 1.22 | 0.49 | 1/8 | 3.3 lb |
| | mm | 65.3 | 139 | 124 | 75 | 104 | 141 | 69.5 | 37 | 31 | 12.5 | - | 1.5 kg |
| 1/2 | inch | 2.57 | 5.47 | 4.88 | 2.95 | 4.09 | 5.55 | 2.74 | 1.46 | 1.22 | 0.59 | 1/8 | 3.3 lb |
| | mm | 65.3 | 139 | 124 | 75 | 104 | 141 | 69.5 | 37 | 31 | 15 | - | 1.5 kg |
| 3/4 | inch | 3.04 | 5.47 | 5.20 | 2.95 | 4.41 | 6.06 | 2.74 | 1.77 | 1.52 | 0.79 | 1/8 | 3.7 lb |
| | mm | 77.3 | 139 | 132 | 75 | 112 | 154 | 69.5 | 45 | 38.7 | 20 | - | 1.7 kg |
| 1 | inch | 3.49 | 5.47 | 5.55 | 2.95 | 4.76 | 6.54 | 2.74 | 2.11 | 1.72 | 0.98 | 1/8 | 4.4 lb |
| | mm | 88.7 | 139 | 141 | 75 | 121 | 166 | 69.5 | 53.5 | 43.8 | 25 | - | 2.0 kg |
| 1-1/4 | inch | 4.03 | 6.14 | 6.38 | 3.39 | 5.59 | 7.68 | 3.07 | 2.32 | 2.00 | 1.26 | 1/4 | 6.5 lb |
| | mm | 102 | 156 | 162 | 86 | 142 | 195 | 78.0 | 59 | 50.7 | 32 | - | 3.0 kg |
| 1-1/2 | inch | 4.29 | 8.27 | 7.68 | 3.70 | 6.89 | 9.13 | 4.13 | 2.94 | 2.17 | 1.50 | 1/4 | 10.9 lb |
| | mm | 109 | 210 | 195 | 94 | 175 | 232 | 105 | 74.8 | 55 | 38 | - | 5.0 kg |
| 2 | inch | 4.93 | 8.27 | 8.03 | 3.70 | 7.24 | 9.88 | 4.13 | 3.29 | 2.41 | 1.97 | 1/4 | 13.2 lb |
| | mm | 125 | 210 | 204 | 94 | 184 | 251 | 105 | 83.5 | 61.3 | 50 | - | 6.0 kg |

Dimensions: Spring Return with High Temp. Mounting Bracket



| Pipe Size (NPT) | | A | B | C | D | E | F | G | J | K | P | A & B Ports (NPT) | Weight |
|-----------------|------|------|-------|-------|------|-------|-------|------|------|------|------|-------------------|---------|
| 1/4 | inch | 2.57 | 5.47 | 6.85 | 2.95 | 6.06 | 7.52 | 2.74 | 3.43 | 1.22 | 0.45 | 1/8 | 4.4 lb |
| | mm | 65.3 | 139 | 174 | 75 | 154 | 191 | 69.5 | 87 | 31.0 | 11.5 | - | 2.0 kg |
| 3/8 | inch | 2.57 | 5.47 | 6.85 | 2.95 | 6.06 | 7.52 | 2.74 | 3.43 | 1.22 | 0.49 | 1/8 | 4.3 lb |
| | mm | 65.3 | 139 | 174 | 75 | 154 | 191 | 69.5 | 87 | 31.0 | 12.5 | - | 2.0 kg |
| 1/2 | inch | 2.57 | 5.47 | 6.85 | 2.95 | 6.06 | 7.52 | 2.74 | 3.43 | 1.22 | 0.59 | 1/8 | 4.3 lb |
| | mm | 65.3 | 139 | 174 | 75 | 154 | 191 | 69.5 | 87 | 31.0 | 15 | - | 2.0 kg |
| 3/4 | inch | 3.04 | 6.14 | 7.80 | 3.39 | 7.01 | 8.66 | 3.07 | 3.74 | 1.52 | 0.79 | 1/4 | 6.10 lb |
| | mm | 77.3 | 156 | 198 | 86 | 178 | 220 | 78 | 95 | 38.7 | 20 | - | 2.8 kg |
| 1 | inch | 3.49 | 8.27 | 8.82 | 3.70 | 8.03 | 9.80 | 4.13 | 4.09 | 1.72 | 0.98 | 1/4 | 9.9 lb |
| | mm | 88.7 | 210 | 224 | 94 | 204 | 249 | 105 | 104 | 43.8 | 25 | - | 4.5 kg |
| 1-1/4 | inch | 4.03 | 8.27 | 9.02 | 3.70 | 8.23 | 10.31 | 4.13 | 4.29 | 2.00 | 1.26 | 1/4 | 10.9 lb |
| | mm | 102 | 210 | 229 | 94 | 209 | 262 | 105 | 109 | 50.7 | 32 | - | 4.9 kg |
| 1-1/2 | inch | 4.29 | 9.06 | 10.04 | 4.09 | 9.25 | 11.50 | 4.53 | 4.92 | 2.17 | 1.50 | 1/4 | 15.9 lb |
| | mm | 109 | 230 | 255 | 104 | 235 | 292 | 115 | 125 | 55 | 38 | - | 7.2 kg |
| 2 | inch | 4.93 | 11.02 | 10.98 | 4.72 | 10.20 | 12.83 | 2.46 | 5.28 | 2.41 | 1.97 | 1/4 | 22.5 lb |
| | mm | 125 | 280 | 279 | 120 | 259 | 326 | 62.5 | 134 | 61.3 | 50 | - | 10.2 kg |

Dimensions: Double Acting with High Temp. Mounting Bracket



| Pipe Size (NPT) | | A | B | C | D | E | F | G | J | K | P | A & B Ports (NPT) | Weight |
|-----------------|------|------|------|------|------|------|-------|------|------|------|------|-------------------|---------|
| 1/4 | inch | 2.57 | 5.47 | 6.85 | 2.95 | 6.06 | 7.52 | 2.74 | 3.43 | 1.22 | 0.45 | 1/8 | 4.1 lb |
| | mm | 65.3 | 139 | 174 | 75 | 154 | 191 | 69.5 | 87.0 | 31 | 11.5 | - | 1.8 kg |
| 3/8 | inch | 2.57 | 5.47 | 6.85 | 2.95 | 6.06 | 7.52 | 2.74 | 3.43 | 1.22 | 0.49 | 1/8 | 4.0 lb |
| | mm | 65.3 | 139 | 174 | 75 | 154 | 191 | 69.5 | 87.0 | 31 | 12.5 | - | 1.8 kg |
| 1/2 | inch | 2.57 | 5.47 | 6.85 | 2.95 | 6.06 | 7.52 | 2.74 | 3.43 | 1.22 | 0.59 | 1/8 | 4.0 lb |
| | mm | 65.3 | 139 | 174 | 75 | 154 | 191 | 69.5 | 87.0 | 31 | 15 | - | 1.8 kg |
| 3/4 | inch | 3.04 | 5.47 | 7.17 | 2.95 | 6.38 | 8.03 | 2.74 | 3.74 | 1.52 | 0.79 | 1/8 | 4.4 lb |
| | mm | 77.3 | 139 | 182 | 75 | 162 | 204 | 69.5 | 95.0 | 38.7 | 20 | - | 2.0 kg |
| 1 | inch | 3.49 | 5.47 | 7.52 | 2.95 | 6.73 | 8.50 | 2.74 | 4.09 | 1.72 | 0.98 | 1/8 | 5.1 lb |
| | mm | 88.7 | 139 | 191 | 75 | 171 | 216 | 69.5 | 104 | 43.8 | 25 | - | 2.3kg |
| 1-1/4 | inch | 4.03 | 6.14 | 8.35 | 3.39 | 7.56 | 9.65 | 3.07 | 4.29 | 2.00 | 1.26 | 1/4 | 7.2 lb |
| | mm | 102 | 156 | 212 | 86 | 192 | 245 | 78.0 | 109 | 50.7 | 32 | - | 3.3 kg |
| 1-1/2 | inch | 4.29 | 8.27 | 9.65 | 3.70 | 8.86 | 11.10 | 4.13 | 4.92 | 2.17 | 1.50 | 1/4 | 11.9 lb |
| | mm | 109 | 210 | 245 | 94 | 225 | 282 | 105 | 125 | 55 | 38 | - | 5.4 kg |
| 2 | inch | 4.93 | 8.27 | 10.0 | 3.70 | 9.21 | 11.85 | 4.13 | 5.28 | 2.41 | 1.97 | 1/4 | 14.2 lb |
| | mm | 125 | 210 | 254 | 94 | 234 | 301 | 105 | 134 | 61.3 | 50 | - | 6.4 kg |