

## Features

- Industrial grade PVC functions as diverter or selector valve
- Energized ball seats for lower torque and extended cycle life
- Dual leak free stem seals
- Union nut locking device prevents back-off
- Valve NSF certified for use with potable/drinking water
- Spring Return or Double Acting Actuators
- Type IP66 & IP68 weatherproof actuator
- Rugged scotch yoke construction tested for 1 million+ cycles
- Anodized aluminum body with epoxy-polyester end covers
- Namur and ISO mounting standards
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime

## Applications

On-off control of water and other liquid media compatible with the materials of construction (not suitable for compressed air or gas). Cycle times 0.3 to 0.6 seconds per 90° rotation. Valve can be mounted in any orientation. Typical applications include industrial/process piping systems, pulp and paper, food processing, potable water and irrigation.

## Operation

Double acting scotch yoke actuators use air pressure to open and air pressure to close the ball valve (4-way pilot). Spring return scotch yoke 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. Recommended air supply pilot pressure should be between 58 and 87 PSI. Easy to read visual valve position indicator located on top of actuator.

## Construction

|                                     |   |
|-------------------------------------|---|
| <b>Valve Body</b>                   | PVC cell class 12454 per ASTM D1784 (dark gray)     |
| <b>Ball/Stem</b>                    | PVC cell class 12454 per ASTM D1784                 |
| <b>Ball Seats</b>                   | PTFE (Teflon) energized with EPDM seals             |
| <b>Stem Seals</b>                   | Dual EPDM seals                                     |
| <b>End Connectors and Lock Nuts</b> | PVC cell class 12454 per ASTM D1784                 |
| <b>Actuator Seals</b>               | NBR   |
| <b>Actuator Body/ End Covers</b>    | Hard anodized aluminium/ Polyester coated aluminium |
| <b>Position Indicator</b>           | Glass filled Polyamide                              |
| <b>Fasteners</b>                    | ASTM 304 Stainless Steel                            |



## Description

Heavy duty quarter turn scotch yoke actuators designed for long life and tested for a minimum 1 million+ operations. Three port valve has a L-Port flow path for diverter or selector applications. Industrial quality PVC ball valve with a unique union nut locking system preventing back-off due to vibration or thermal cycling. Features include a patented seat stop carrier for inline micro-adjustment of the ball seats, high quality machined stem/ball system and energized Teflon ball seats for lower torque and extended life. Valves are NSF certified for potable (drinking) water. Standard Namur mounting pads for optional accessory confirmation

## Approvals– Actuators

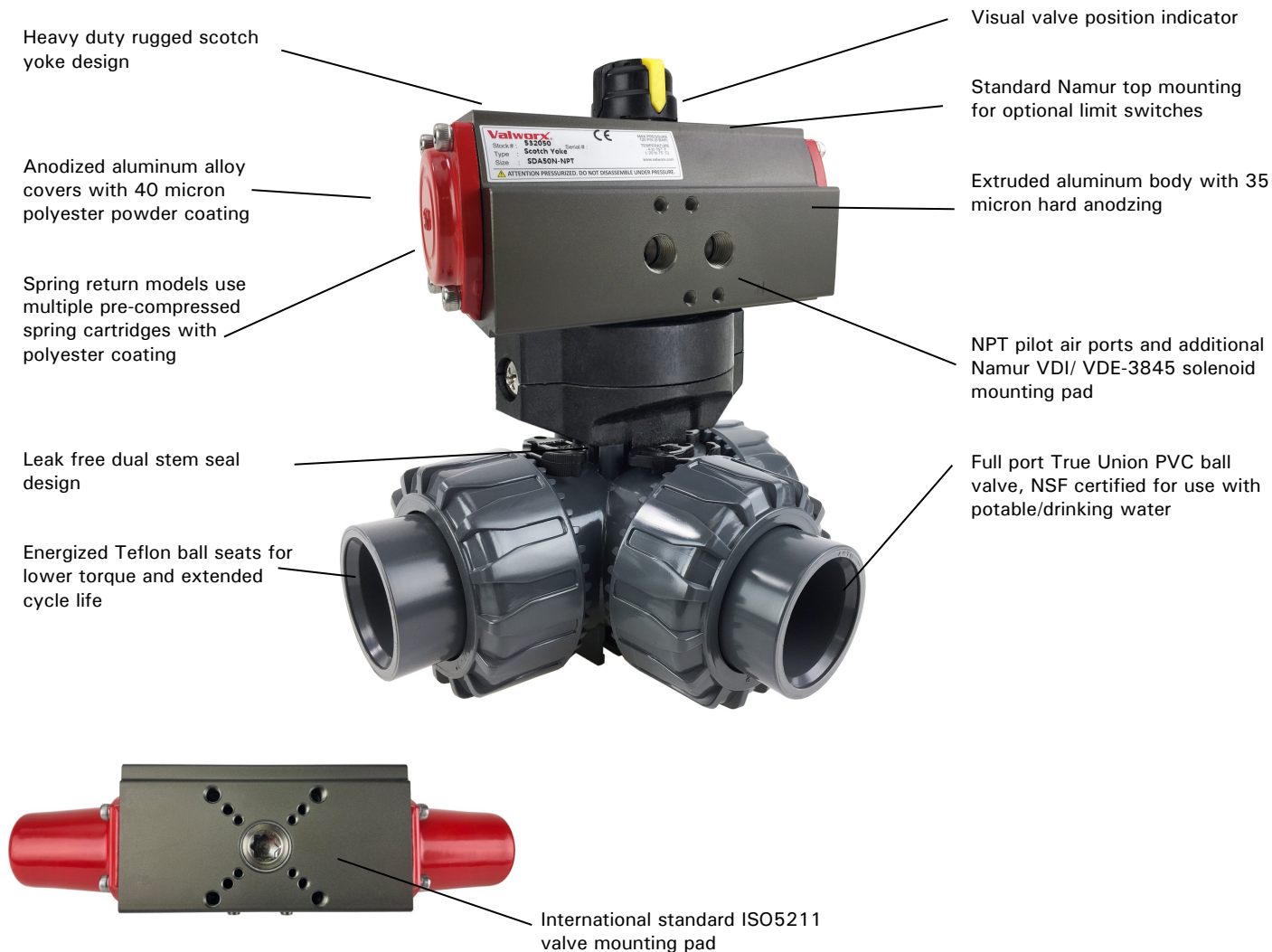
- CE conformity– MD 2006/42/CE
- EN ISO 12100:2010
- EN ISO 4414:2010
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting
- SIL3– EN 17955:2024 & IEC 61508-1/-2:2010

## Standards– Valves

- NSF International certified to:
  - NSF/ANSI 372 Drinking Water
  - NSF/ANSI 61 G
- ANSI B1.20.1
- ASTM D1784, cell class 12454
- CE conformity– PED 2014/68/UE



## Features



**Pressure Rating\*:** 232 PSI at 73 °F (16 Bar at 23 °C\*), Vacuum 29inHg

**Valve Temperature Rating:** 32 to 140° F (0 to 60° C)

\*See P/T Chart

**Recommended Air Pilot Pressure:** 58-87 PSI (4-6 Bar)

**Max Air Pilot Pressure:** 120 PSI

**Actuator Temperature Rating:** -4 to 167° F (-20 to 75° 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
- Actuator Mounting Kits
- DSP: Digital Smart Positioner
- simplify throttling applications

## Specifications (English units)

| Stock Number                             | Pipe Size (inch) | Pipe O.D. (inch) | Cv Flow Factor | Pressure Max. (PSI)* | Seals      | Cycle Time /90° (seconds) | Pilot Air Port (NPT) |
|--|------------------|------------------|----------------|----------------------|------------|---------------------------|----------------------|
| <b>VALVE WITH SPRING RETURN ACTUATOR</b> |                  |                  |                |                      |            |                           |                      |
| 546304                                   | 1/2              | 0.8              | 4.6            | 232                  | PTFE, EPDM | 0.3-0.5                   | 1/4                  |
| 546306                                   | 3/4              | 1.1              | 10.0           | 232                  | PTFE, EPDM | 0.3-0.5                   | 1/4                  |
| 546308                                   | 1                | 1.3              | 17.0           | 232                  | PTFE, EPDM | 0.3-0.5                   | 1/4                  |
| 546310                                   | 1-1/4            | 1.7              | 32.0           | 232                  | PTFE, EPDM | 0.4-0.6                   | 1/4                  |
| 546312                                   | 1-1/2            | 1.9              | 42.0           | 232                  | PTFE, EPDM | 0.4-0.6                   | 1/4                  |
| 546314                                   | 2                | 2.4              | 84.0           | 232                  | PTFE, EPDM | 0.4-0.6                   | 1/4                  |
| <b>VALVE WITH DOUBLE ACTING ACTUATOR</b> |                  |                  |                |                      |            |                           |                      |
| 546204                                   | 1/2              | 0.8              | 4.6            | 232                  | PTFE, EPDM | 0.3                       | 1/4                  |
| 546206                                   | 3/4              | 1.1              | 10.0           | 232                  | PTFE, EPDM | 0.3                       | 1/4                  |
| 546208                                   | 1                | 1.3              | 17.0           | 232                  | PTFE, EPDM | 0.3                       | 1/4                  |
| 546210                                   | 1-1/4            | 1.7              | 32.0           | 232                  | PTFE, EPDM | 0.3                       | 1/4                  |
| 546212                                   | 1-1/2            | 1.9              | 42.0           | 232                  | PTFE, EPDM | 0.3                       | 1/4                  |
| 546214                                   | 2                | 2.4              | 84.0           | 232                  | PTFE, EPDM | 0.3                       | 1/4                  |

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

\* Pressure at 73° F, reduced pressure for higher temperatures (see P/T chart)

Note: Both socket and threaded NPT end connectors included with each valve.

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

| P/T Chart |     |     |     |     |     |     |     |
|-----------|-----|-----|-----|-----|-----|-----|-----|
| PSI       | 232 | 232 | 232 | 180 | 150 | 100 | 35  |
| °F        | 32  | 50  | 70  | 90  | 110 | 120 | 140 |

## Specifications (Metric units)

| Stock Number                             | Pipe Size (NPT) | Pipe O.D. (mm) | Kv Flow Factor | Pressure Max.(Bar)* | Seals      | Cycle Time/90° (seconds) | Pilot Air Port (NPT) |
|--|-----------------|----------------|----------------|---------------------|------------|--------------------------|----------------------|
| <b>VALVE WITH SPRING RETURN ACTUATOR</b> |                 |                |                |                     |            |                          |                      |
| 546304                                   | 1/2             | 20.3           | 4.0            | 16.0                | PTFE, EPDM | 0.3-0.5                  | 1/4                  |
| 546306                                   | 3/4             | 27.9           | 8.6            | 16.0                | PTFE, EPDM | 0.3-0.5                  | 1/4                  |
| 546308                                   | 1               | 33.0           | 15.0           | 16.0                | PTFE, EPDM | 0.3-0.5                  | 1/4                  |
| 546310                                   | 1-1/4           | 43.2           | 27.5           | 16.0                | PTFE, EPDM | 0.4-0.6                  | 1/4                  |
| 546312                                   | 1-1/2           | 48.3           | 36.0           | 16.0                | PTFE, EPDM | 0.4-0.6                  | 1/4                  |
| 546314                                   | 2               | 61.0           | 72.0           | 16.0                | PTFE, EPDM | 0.4-0.6                  | 1/4                  |
| <b>VALVE WITH DOUBLE ACTING ACTUATOR</b> |                 |                |                |                     |            |                          |                      |
| 546204                                   | 1/2             | 20.3           | 4.0            | 16.0                | PTFE, EPDM | 0.3                      | 1/4                  |
| 546206                                   | 3/4             | 27.9           | 8.6            | 16.0                | PTFE, EPDM | 0.3                      | 1/4                  |
| 546208                                   | 1               | 33.0           | 15.0           | 16.0                | PTFE, EPDM | 0.3                      | 1/4                  |
| 546210                                   | 1-1/4           | 43.2           | 27.5           | 16.0                | PTFE, EPDM | 0.3                      | 1/4                  |
| 546212                                   | 1-1/2           | 48.3           | 36.0           | 16.0                | PTFE, EPDM | 0.3                      | 1/4                  |
| 546214                                   | 2               | 61.0           | 72.0           | 16.0                | PTFE, EPDM | 0.3                      | 1/4                  |

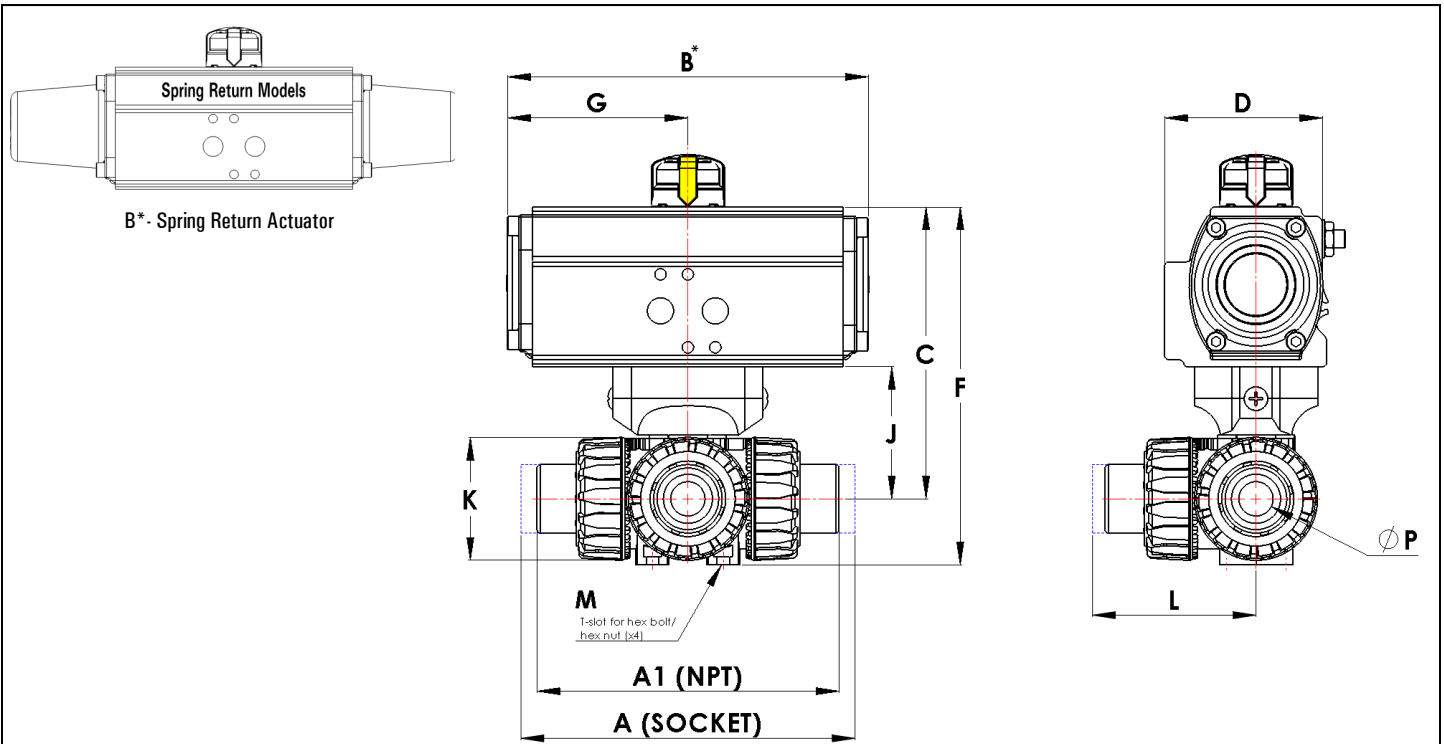
\* Pressure at 23° C, reduced pressure for higher temperatures (see P/T chart)

Note: Both socket and threaded NPT end connectors included with sizes 1/2 to 2 inch, socket only for sizes 3 and 4 inch

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

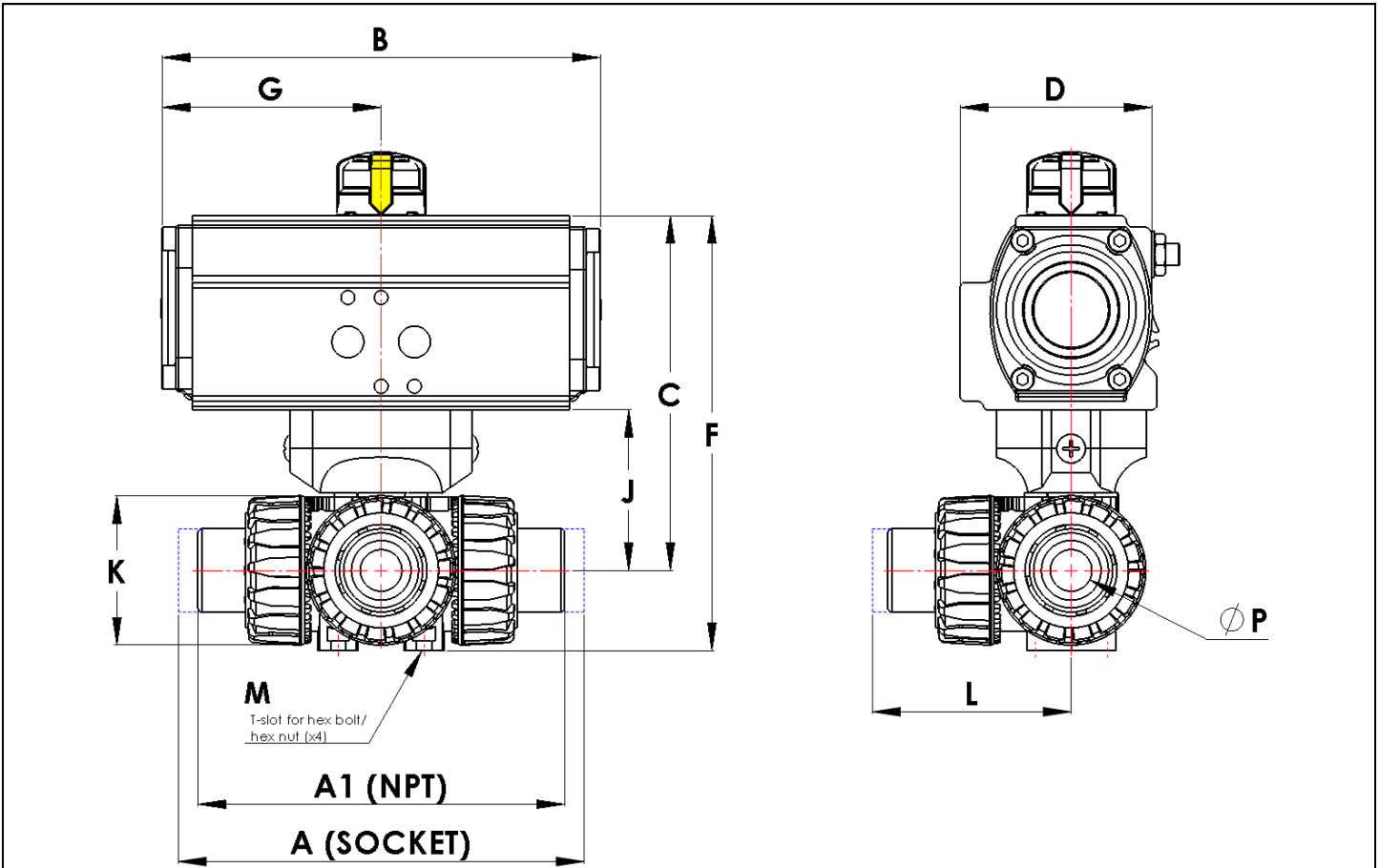
| P/T Chart |    |    |    |    |    |    |     |
|-----------|----|----|----|----|----|----|-----|
| Bar       | 16 | 16 | 16 | 12 | 10 | 7  | 2.4 |
| °C        | 0  | 10 | 21 | 32 | 43 | 49 | 60  |

## Dimensions: Spring Return



| Pipe Size (NPT) |      | A     | A1    | B* (SR) | C     | D    | F     | G     | J     | K     | L     | M  | P    | A & B Ports (NPT) | Weight  |
|-----------------|------|-------|-------|---------|-------|------|-------|-------|-------|-------|-------|----|------|-------------------|---------|
| 1/2             | inch | 5.2   | 5.0   | 10.1    | 5.5   | 2.9  | 6.7   | 5.1   | 2.5   | 2.1   | 2.6   | -  | 0.8  | 1/4               | 4.2 lb  |
|                 | mm   | 132.1 | 127.0 | 256.5   | 139.7 | 73.7 | 170.2 | 129.5 | 63.5  | 53.3  | 66.0  | M5 | 20.3 | -                 | 1.9 kg  |
| 3/4             | inch | 6.3   | 5.8   | 10.1    | 6.0   | 2.9  | 7.3   | 5.1   | 2.8   | 2.6   | 3.1   | -  | 1.1  | 1/4               | 4.7 lb  |
|                 | mm   | 160.0 | 147.3 | 256.5   | 152.4 | 73.7 | 185.4 | 129.5 | 71.1  | 66.0  | 78.4  | M5 | 27.9 | -                 | 2.1 kg  |
| 1               | inch | 6.9   | 6.6   | 10.1    | 6.1   | 2.9  | 7.7   | 5.1   | 2.9   | 2.9   | 3.4   | -  | 1.3  | 1/4               | 5.2 lb  |
|                 | mm   | 175.3 | 167.6 | 256.5   | 154.9 | 73.7 | 195.6 | 129.5 | 73.7  | 73.7  | 86.4  | M5 | 33.0 | -                 | 2.4 kg  |
| 1-1/4           | inch | 8.1   | 7.7   | 12.3    | 7.4   | 3.5  | 9.2   | 6.2   | 3.6   | 3.4   | 4.0   | -  | 1.7  | 1/4               | 9.4 lb  |
|                 | mm   | 205.7 | 195.6 | 312.4   | 188.0 | 88.9 | 233.7 | 157.5 | 91.4  | 86.4  | 101.6 | M6 | 43.2 | -                 | 4.3 kg  |
| 1-1/2           | inch | 9.0   | 8.3   | 12.3    | 7.6   | 3.5  | 9.7   | 6.2   | 3.8   | 3.7   | 4.5   | -  | 1.9  | 1/4               | 10.3 lb |
|                 | mm   | 228.6 | 210.8 | 312.4   | 193.0 | 88.9 | 246.4 | 157.5 | 96.5  | 94.0  | 114.3 | M6 | 48.3 | -                 | 4.7 kg  |
| 2               | inch | 10.5  | 10.0  | 12.3    | 8.4   | 3.5  | 10.8  | 6.2   | 4.4   | 4.8   | 5.3   | -  | 2.4  | 1/4               | 12.8 lb |
|                 | mm   | 266.7 | 254.0 | 312.4   | 213.4 | 88.9 | 274.3 | 157.5 | 111.8 | 121.9 | 134.6 | M6 | 61.0 | -                 | 5.8 kg  |

## Dimensions: Double Acting



| Pipe Size (NPT) |      | A     | A1    | B     | C     | D    | F     | G    | J     | K     | L     | M  | P    | A & B Ports (NPT) | Weight |
|-----------------|------|-------|-------|-------|-------|------|-------|------|-------|-------|-------|----|------|-------------------|--------|
| 1/2             | inch | 5.2   | 5.0   | 6.3   | 5.5   | 2.9  | 6.7   | 3.2  | 2.5   | 2.1   | 2.6   | -  | 0.8  | 1/4               | 3.8 lb |
|                 | mm   | 132.1 | 127.0 | 160.0 | 139.7 | 73.7 | 170.2 | 81.3 | 63.5  | 53.3  | 66.0  | M5 | 20.3 | -                 | 1.7 kg |
| 3/4             | inch | 6.3   | 5.8   | 6.3   | 6.0   | 2.9  | 7.3   | 3.2  | 2.8   | 2.6   | 3.1   | -  | 1.1  | 1/4               | 4.3 lb |
|                 | mm   | 160.0 | 147.3 | 160.0 | 152.4 | 73.7 | 185.4 | 81.3 | 71.1  | 66.0  | 78.4  | M5 | 27.9 | -                 | 2.0 kg |
| 1               | inch | 6.9   | 6.6   | 6.3   | 6.1   | 2.9  | 7.7   | 3.2  | 2.9   | 2.9   | 3.4   | -  | 1.3  | 1/4               | 4.8 lb |
|                 | mm   | 175.3 | 167.6 | 160.0 | 154.9 | 73.7 | 195.6 | 81.3 | 73.7  | 73.7  | 86.4  | M5 | 33.0 | -                 | 2.2 kg |
| 1-1/4           | inch | 8.1   | 7.7   | 6.3   | 6.7   | 2.9  | 8.5   | 3.2  | 3.6   | 3.4   | 4.0   | -  | 1.7  | 1/4               | 5.9 lb |
|                 | mm   | 205.7 | 195.6 | 160.0 | 170.2 | 73.7 | 215.9 | 81.3 | 91.4  | 86.4  | 101.6 | M6 | 43.2 | -                 | 2.7 kg |
| 1-1/2           | inch | 9.0   | 8.3   | 6.3   | 6.9   | 2.9  | 9.0   | 3.2  | 3.8   | 3.7   | 4.5   | -  | 1.9  | 1/4               | 6.8 lb |
|                 | mm   | 228.6 | 210.8 | 160.0 | 175.3 | 73.7 | 228.6 | 81.3 | 96.5  | 94.0  | 114.3 | M6 | 48.3 | -                 | 3.1 kg |
| 2               | inch | 10.5  | 10.0  | 6.3   | 7.7   | 2.9  | 10.1  | 3.2  | 4.4   | 4.8   | 5.3   | -  | 2.4  | 1/4               | 9.3 lb |
|                 | mm   | 266.7 | 254.0 | 160.0 | 195.6 | 73.7 | 256.5 | 81.3 | 111.8 | 121.9 | 134.6 | M6 | 61.0 | -                 | 4.2 kg |