

- > **Port size: DN 8 ... 50, G1/4 ... 2 (ISO G/NPT)**
- > **High flow rate**
- > **Damped operation**
- > **Functional compact design**
- > **Solenoid interchangeable without tools (Click-on®)**



### Technical features

**Medium:**

Neutral gases and liquids

**Switching function:**

Normally closed

**Operation:**

Indirectly solenoid actuated

**Mounting position:**

Optional, preferably solenoid vertical on top

**Flow direction:**

Determined

**Port size:**

G1/4, G3/8, G1/2, G3/4, G1, G1 1/4, G1 1/2, G2

1/4 NPT, 3/8 NPT, 1/2 NPT

3/4 NPT, 1 NPT, 1 1/4 NPT,

1 1/2 NPT, 2 NPT

**Operating pressure:**

See table

**Fluid temperature:**

-10° ... +90°C (+14° ... +194°F)

**Ambient temperature:**

-10° ... +50°C (+14° ... +122°F)

**Material:**

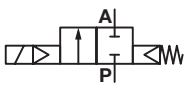
Body: Brass (CW617N)

Seat seal: NBR

Internal parts: Stainless steel, PVDF

For contaminated fluids insertion of a strainer is recommended.

### Technical data - standard models

| Symbol  | Port size | Orifice (mm) | Valve length (mm) | Flow kv value *1) (m³/h) | Operating pressure *2) (bar) | Weight (kg) | Model Solenoid in V d.c./a.c. |
|---|-----------|--------------|-------------------|--------------------------|------------------------------|-------------|-------------------------------|
|  | G1/4      | 8            | 60                | 1,9                      | 0,1 ... 16                   | 0,47        | 8240000.9101.xxxxx            |
|   | 1/4 NPT   | 8            | 60                | 1,9                      | 0,1 ... 16                   | 0,47        | 8241000.9101.xxxxx            |
|   | G3/8      | 10           | 60                | 3                        | 0,1 ... 16                   | 0,45        | 8240100.9101.xxxxx            |
|   | 3/8 NPT   | 10           | 60                | 3                        | 0,1 ... 16                   | 0,45        | 8241100.9101.xxxxx            |
|   | G1/2      | 12           | 67                | 3,8                      | 0,1 ... 16                   | 0,5         | 8240200.9101.xxxxx            |
|   | 1/2 NPT   | 12           | 67                | 3,8                      | 0,1 ... 16                   | 0,5         | 8241200.9101.xxxxx            |
|   | G3/4      | 20           | 80                | 6,1                      | 0,1 ... 16                   | 0,65        | 8240300.9101.xxxxx            |
|   | 3/4 NPT   | 20           | 80                | 6,1                      | 0,1 ... 16                   | 0,65        | 8241300.9101.xxxxx            |
|   | G1        | 25           | 95                | 9,5                      | 0,1 ... 16                   | 0,95        | 8240400.9101.xxxxx            |
|   | 1 NPT     | 25           | 95                | 9,5                      | 0,1 ... 16                   | 0,95        | 8241400.9101.xxxxx            |
|   | G1 1/4    | 32           | 132               | 23                       | 0,1 ... 10 (16) *3)          | 2,73        | 8240500.9101.xxxxx            |
|   | 1 1/4 NPT | 32           | 132               | 23                       | 0,1 ... 10 (16) *3)          | 2,73        | 8241500.9101.xxxxx            |
|   | G1 1/2    | 40           | 132               | 25                       | 0,1 ... 10 (16) *3)          | 2,53        | 8240600.9101.xxxxx            |
|   | 1 1/2 NPT | 40           | 132               | 25                       | 0,1 ... 10 (16) *3)          | 2,53        | 8241600.9101.xxxxx            |
|   | G2        | 50           | 160               | 41                       | 0,1 ... 10 (16) *3)          | 3,85        | 8240700.9101.xxxxx            |
|   | 2 NPT     | 50           | 160               | 41                       | 0,1 ... 10 (16) *3)          | 3,85        | 8241700.9101.xxxxx            |

xxxxx Please insert voltage and frequency codes

\*1) Cv-value (US) ≈ kv value x 1,2

\*2) For gases and liquid fluids up to 25 mm³/s (cSt)

\*3) With Solenoid 9151

Option selector

824\*\*\*\*\*.\*\*\*\*\*

| Thread form   | Substitute |
|---|------------|
| ISO G   | 0          |
| NPT   | 1          |
| Port size   | Substitute |
| 1/4   | 0          |
| 3/8   | 1          |
| 1/2   | 2          |
| 3/4   | 3          |
| 1   | 4          |
| 1 1/4   | 5          |
| 1 1/2   | 6          |
| 2   | 7          |
| Valve options   | Substitute |
| Normally open (NO),<br>from G1 1/4 with solenoid 9151<br>0,1 ... 16 bar   | 01         |
| Manual override   | 02         |
| Seat seal FPM,<br>Fluid temperature -5 ... +110°C   | 03         |
| Seat seal EPDM,<br>for hot water,<br>max. fluid temperature +110°C<br>0,3 ... 16 bar (up to G1)<br>0,3 ... 10 bar (from G1 1/4) | 14         |
| Latching system<br>impuls time min. 30 ms<br>only for d.c. 6 V, 12 V and 24 V   | 50         |
| Version for drinking water<br>with test according to KTW  | 88         |

| Frequency  | Substitute |
|--|------------|
| See table frequency codes                            | xx         |
| Voltage  | Substitute |
| See Voltage codes                                    | xxx        |
| Solenoid options                                     | Substitute |
| G1/4 ... 1<br>Operating pressure<br>0,1 ... 16 bar   | 9101       |
| G1 1/4 ... 2<br>Operating pressure<br>0,1 ... 10 bar | 9101       |
| G1 1/4 ... 2<br>Operating pressure<br>0,1 ... 16 bar | 9151       |

Standard solenoid systems

| Voltage and Frequency Solenoid 9101 *1) |                |            |           |        |         |
|---|----------------|------------|-----------|--------|---------|
| Code Voltage                            | Code Frequency | Voltage    | Frequency | Inrush | Holding |
| 024                                     | 00             | 24 V d.c.  | -         | 8 W    | 8 W     |
| 024                                     | 50             | 24 V a.c.  | 50 Hz     | 15 VA  | 12 VA   |
| 110                                     | 50             | 110 V a.c. | 50 Hz     | 15 VA  | 12 VA   |
| 120                                     | 60             | 120 V a.c. | 60 Hz     | 15 VA  | 12 VA   |
| 230                                     | 50             | 230 V a.c. | 50 Hz     | 15 VA  | 12 VA   |
| Voltage and Frequency Solenoid 9151 *1) |                |            |           |        |         |
| 024                                     | 00             | 24 V d.c.  | -         | 18 W   | 18 W    |
| 024                                     | 50             | 24 V a.c.  | 50 Hz     | 45 VA  | 35 VA   |
| 110                                     | 50             | 110 V a.c. | 50 Hz     | 45 VA  | 35 VA   |
| 120                                     | 60             | 120 V a.c. | 60 Hz     | 45 VA  | 35 VA   |
| 230                                     | 50             | 230 V a.c. | 50 Hz     | 45 VA  | 35 VA   |

\*1)  coil only

Electrical details for all solenoid systems

|                  |   |
|------------------|---|
| Design           | DIN VDE 0580                                |
| Voltage range    | ±10%  |
| Duty cycle       | 100% ED                                     |
| Protection class | EN 60529 IP65                               |
| Socket           | Form A acc. to DIN EN 175301-803 (included) |

According to DIN VDE 0580 at a solenoid temperature of +20°C.  
At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.



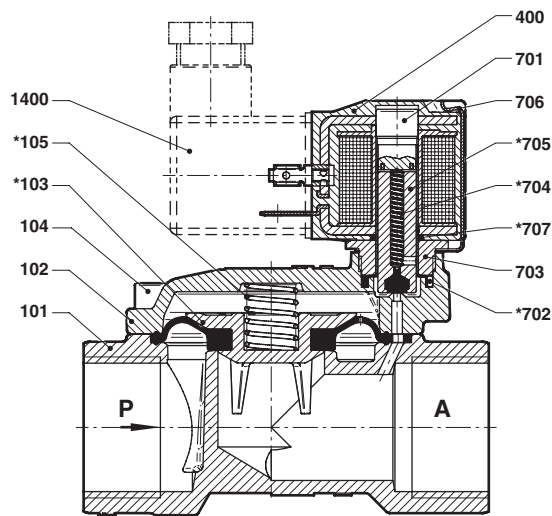
Additional solenoid systems

| ATEX category | Protection class                                 | Solenoid | Standard voltages                 |
|---------------|--|----------|-----------------------------------|
| II2GD         | EEx m II T4 T 130°C<br>wi h 3 m connection cable | 9136     | 24 V d.c., 110 V a.c., 230 V a.c. |

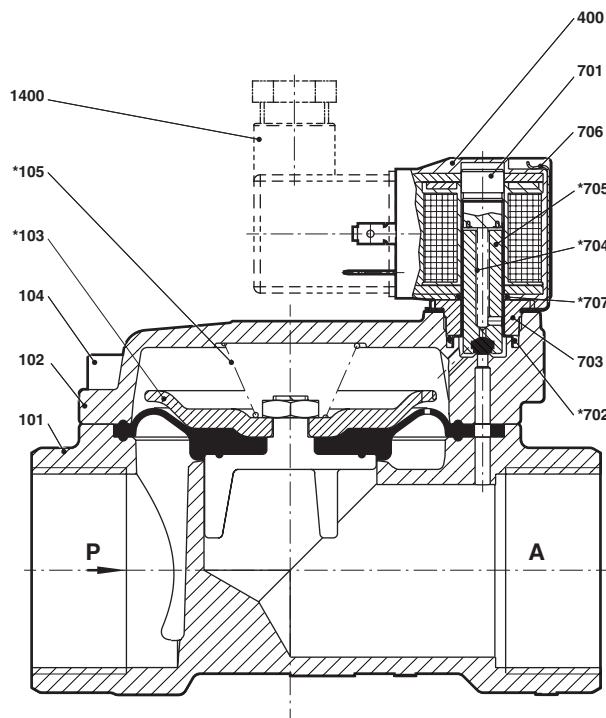
Attention!

The conditions imposed on the Ex approvals lead to reduction of the permissible standard temperature ranges in the cases of explosion protected solenoids.

Further versions on request!

**Section View**
**G1/4 ... 1**  
**1/4 ... 1 NPT**


| No.  | Description       |
|------|-------------------|
| 101  | Valve body        |
| 102  | Valve cover       |
| *103 | Diaphragm         |
| 104  | Allen head screw  |
| *105 | Pressure spring   |
| 400  | Solenoid          |
| 701  | Core tube         |
| *702 | O-ring            |
| 703  | Screw piece       |
| *704 | Pressure spring   |
| *705 | Plunger           |
| 706  | Spring clip       |
| *707 | O-ring            |
| 1400 | Socket (included) |

**G1 1/4 ... 2**  
**1 1/4 ... 2 NPT**


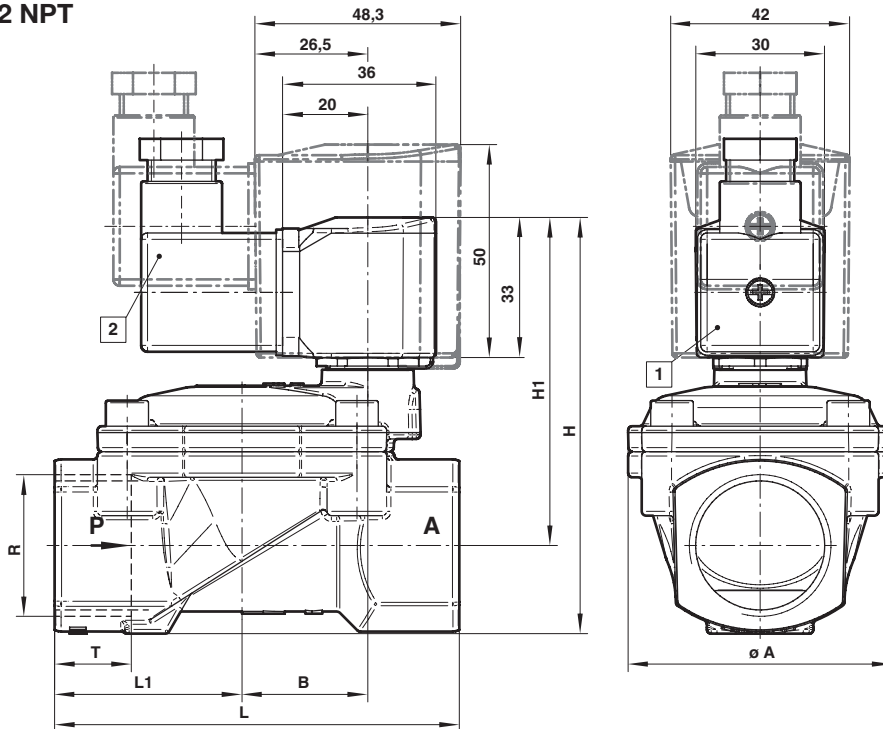
| No.  | Description       |
|------|-------------------|
| 101  | Valve body        |
| 102  | Valve cover       |
| *103 | Diaphragm         |
| 104  | Allen head screw  |
| *105 | Pressure spring   |
| 400  | Solenoid          |
| 701  | Core tube         |
| *702 | O-ring            |
| 703  | Screw piece       |
| *704 | Pressure spring   |
| *705 | Plunger           |
| 706  | Spring clip       |
| *707 | O-ring            |
| 1400 | Socket (included) |

\* These individual parts form a complete wearing unit.  
 When ordering spare parts please state Model No. and Series No.

**Dimensions**

**G1/4 ... 2**  
**1/4 ... 2 NPT**

Dimensions in mm  
Projection/First angle



- 1 Solenoid rotatable 360°
- 2 Socket turnable 4 x 90°  
(Socket included)

| Port size R | A   | B    | H     | H1   | L   | L1   | T    | Typ                |
|-------------|-----|------|-------|------|-----|------|------|--------------------|
| G1/4        | 44  | 19,5 | 78,5  | 67   | 60  | 27,5 | 12   | 8240000.9101.xxxxx |
| 1/4 NPT     | 44  | 19,5 | 78,5  | 67   | 60  | 27,5 | 10   | 8241000.9101.xxxxx |
| G3/8        | 44  | 19,5 | 78,5  | 67   | 60  | 27,5 | 12   | 8240100.9101.xxxxx |
| 3/8 NPT     | 44  | 19,5 | 78,5  | 67   | 60  | 27,5 | 10,5 | 8241100.9101.xxxxx |
| G1/2        | 44  | 19,5 | 81    | 67   | 67  | 31   | 14   | 8240200.9101.xxxxx |
| 1/2 NPT     | 44  | 19,5 | 81    | 67   | 67  | 31   | 13,5 | 8241200.9101.xxxxx |
| G3/4        | 50  | 24   | 88    | 71,5 | 80  | 36,5 | 16   | 8240300.9101.xxxxx |
| 3/4 NPT     | 50  | 24   | 88    | 71,5 | 80  | 36,5 | 14   | 8241300.9101.xxxxx |
| G1          | 62  | 29,5 | 97,5  | 77   | 95  | 44   | 18   | 8240400.9101.xxxxx |
| 1 NPT       | 62  | 29,5 | 97,5  | 77   | 95  | 44   | 17   | 8241400.9101.xxxxx |
| G 1 1/4     | 92  | 44,5 | 124,5 | 95,5 | 132 | 60   | 20   | 8240500.9101.xxxxx |
| 1 1/4 NPT   | 92  | 44,5 | 124,5 | 95,5 | 132 | 60   | 17   | 8241500.9101.xxxxx |
| G1 1/2      | 92  | 44,5 | 124,5 | 95,5 | 132 | 60   | 22   | 8240600.9101.xxxxx |
| 1 1/2 NPT   | 92  | 44,5 | 124,5 | 95,5 | 132 | 60   | 17   | 8241600.9101.xxxxx |
| G2          | 109 | 54,5 | 142,5 | 108  | 160 | 74   | 24   | 8240700.9101.xxxxx |
| 2 NPT       | 109 | 54,5 | 142,5 | 108  | 160 | 74   | 17,5 | 8241700.9101.xxxxx |

**Note to Pressure Equipment Directive (PED):**

The valves of this series, including the connection size DN 25 (G 1), are according to Art. 3 § 3 of the Pressure Equipment Directive (PED) 97/23/EG. This means interpretation and production are in accordance to engineers practice wellknown in the member countries.

The CE-sign at the valve refers not to the PED. Thus the declaration of conformity is not longer applicable for this directive.

For valves > DN 25 (G 1) Art. 3 § (1) No.1.4 applies.

The basic requirements of the Enclosure I of the PED must be fulfilled. The CE-sign at the valve includes the PED. A certificate of conformity of this directive will be available on request.

**Note to Electromagnetic Compatibility Guideline (EEC):**

The valves shall be provided with an electrical circuit which ensures the limits of the harmonised standards EN 61000-6-3 and EN 61000-6-1 are observed, and hence the requirements of the Electromagnetic Compatibility Guideline (2004/108/EG) satisfied.

## Function Fittings, Flow Controls, and Accessory Valves



|  |               |
|--|---------------|
| 12 VA0 Right Angle (Banjo) Flow Control (inch-knob adj.)   | ..FIT-3-3     |
| 12 VB0 Right Angle (Banjo) Flow Control (inch-slot adj.)   | ..FIT-3-3     |
| 10 TA0 Right Angle (Banjo) Flow Control (metric-knob adj.) | FIT-3-4       |
| 10 K51 Right Angle (Banjo) Flow Control (metric-slot adj.) | ..FIT-3-4     |
| T1000 In-line Flow Control (NPT and ISO G)                 | .....FIT-3-6  |
| T15 Push-In Flow Regulators                                | .....FIT-3-8  |
| M/800, C/800 Heavy Duty In-Line Flow Control               | .....FIT-3-10 |
| M/600, C/600 Heavy Duty In-Line Flow Control               | .....FIT-3-12 |
| M/650, C/650, M/677, C/677 Precision Flow Controls         | .....FIT-3-14 |
| T51/T52/T53 Series, PIF Non Return Valves                  | .....FIT-3-16 |
| T55, T56 Non-Return Valves                                 | .....FIT-3-16 |
| T60 Air Fuse (Excess Flow Check) (NPT and ISO G)           | .....FIT-3-18 |
| Pressure Reducing Fitting (inch and metric)                | .....FIT-3-23 |
| Pilot Operated Check Valve (inch and metric)               | .....FIT-3-26 |
| T70 Quick Exhaust Valves (NPT and ISO G)                   | .....FIT-3-28 |
| T65 1/8" and 1/4" Shuttle Valves (NPT and ISO G)           | .....FIT-3-30 |

## Right Angle (Banjo) Flow Controls

- 360° rotation of the banjo body around the bolt allows for ideal positioning of tubing.
- Low profile and reduced physical size provide space saving installations, while internal configuration provides the flow capacity of much bulkier designs.
- Tapered adjustment needles with large adjustment ranges provide linear flows and greater precision.
- Knurled adjustment knobs (w/screw driver slot) and lock nuts on 12 VA0 and 10 TA0 series provide finger tip adjustment. Tamper resistance on the 12 VBO and 10 K51 is provided by a slotted adjustment screw covered by a protective plastic cap.
- Direct mounting of flow controls on pneumatic actuators minimizes the adjustment problems encountered due to the compressibility of air in long tubing runs between the actuator and control valving. Additionally, direct mounted flow controls end the confusion over which actuator in a circuit is being controlled.
- Metallic components are limited to nickel plated all brass construction, eliminating the potential problems encountered with products constructed of dissimilar metals.
- Adjustment needles and banjo bodies are retained, preventing accidental loss of the needle or lock nut.



### Operation:

Flow Controls are checked adjustable controls of the meter out type. Compressed air passes freely into the push-in fitting portion of the flow control, flowing past the check seal and entering the connected component. In reverse flow conditions, air passes back into the flow control and energizes the check seal. Air must now flow through the metered passage controlled by the tapered adjustment needle of the flow control, and finally exits through the push-in fitting end.

### Specifications

Fluid: Compressed air.

**Note:** For other types of fluids or compressed gases, please consult factory.

Working Pressure: 5 to 150 psig (.3 to 10 bar)

Temperature Range: 0° to 175°F (-20° to 80°C)

### Materials of Construction:

Banjo bolt, collet, adjustment knob and lock nut: Nickel plated brass

Tapered adjusting needle: Brass

Banjo Body, 12 VA0 XXXX and 10 TA0: Thermoplastic

12 VBO and 10 K51 XXXX: Nickel plated brass

O-rings and check-seal: Silicone free Nitrile

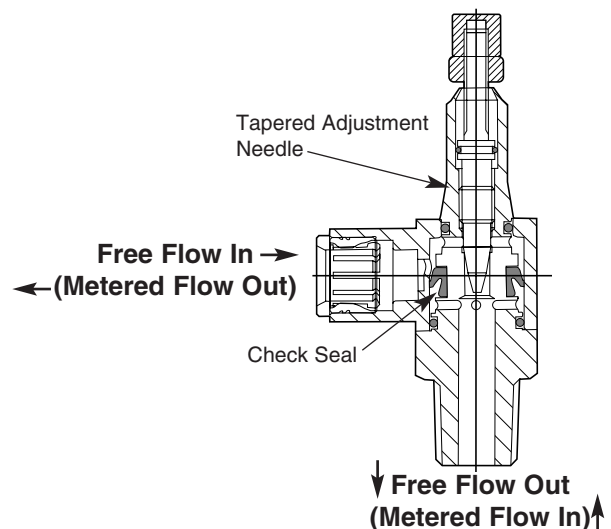
Sealing washer: Thermoplastic (ISO G and 10-32 UNF)

Tubing: Nylon 11 or 12, 95 durometer polyurethane.

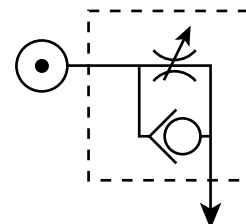
Thread Sealant: Thread sealant is applied to the full circumference of tapered male threads.

### Options

Special versions of the flow controls are available, including meter-in (12 WA0 Series) and bi-directional control configurations. Please consult factory with specific quantities and requirements.



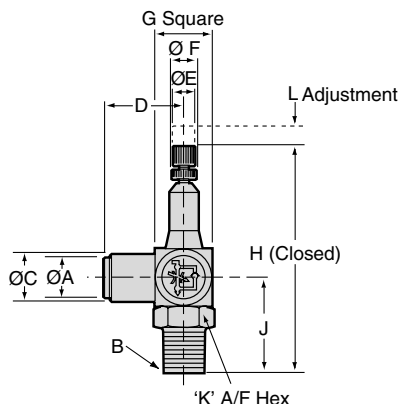
### Pneumatic Symbol





**VAO Series**

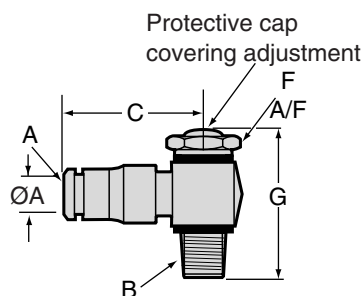
Dimensions in Inches (mm)



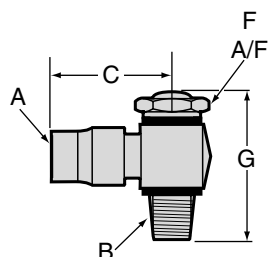
| A<br>Tube<br>O.D. | B<br>NPT or<br>UNF<br>Thread | Part Number        | C              | D              | E              | F              | G              | H              | J              | K<br>A/F | L<br>Adj      |
|-------------------|------------------------------|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|---------------|
| 5/32"             | 10-32 UNF                    | <b>12 VAO 0210</b> | 0.37<br>(9.5)  | 1.04<br>(26.5) | 0.16<br>(4.0)  | 0.74<br>(18.7) | 0.38<br>(9.5)  | 1.51<br>(38.4) | 0.45<br>(11.4) | -        | 0.12<br>(3.0) |
|                   | 1/8                          | <b>12 VAO 0218</b> | 0.45<br>(11.5) | 0.87<br>(22.0) | 0.31<br>(8.0)  | 0.35<br>(9.0)  | 0.63<br>(16.0) | 2.09<br>(53.0) | 0.89<br>(22.5) | 9/16"    | 0.12<br>(3.0) |
| 1/4"              | 1/8                          | <b>12 VAO 0418</b> | 0.51<br>(13.0) | 0.91<br>(23.0) | 0.31<br>(8.0)  | 0.35<br>(9.0)  | 0.63<br>(16.0) | 2.09<br>(53.0) | 0.89<br>(22.5) | 9/16"    | 0.12<br>(3.0) |
|                   | 1/4                          | <b>12 VAO 0428</b> | 0.53<br>(13.5) | 1.00<br>(25.5) | 0.39<br>(10.0) | 0.43<br>(11.0) | 0.79<br>(20.0) | 2.64<br>(67.0) | 1.16<br>(29.5) | 11/16"   | 0.24<br>(6.0) |
| 3/8"              | 1/4                          | <b>12 VAO 0628</b> | 0.77<br>(19.5) | 1.24<br>(31.5) | 0.39<br>(10.0) | 0.43<br>(11.0) | 0.79<br>(20.0) | 2.64<br>(67.0) | 1.16<br>(29.5) | 11/16"   | 0.24<br>(6.0) |
|                   | 3/8                          | <b>12 VAO 0638</b> | 0.77<br>(19.5) | 1.28<br>(32.5) | 0.47<br>(12.0) | 0.51<br>(13.0) | 0.87<br>(22.0) | 3.07<br>(78.0) | 1.30<br>(33.0) | 3/4"     | 0.24<br>(6.0) |
| 1/2"              | 1/2"                         | <b>12 VAO 0748</b> | 0.91<br>(23.0) | 1.50<br>(38.0) | 0.63<br>(16.0) | 0.71<br>(18.0) | 1.06<br>(27.0) | 3.66<br>(93.0) | 1.65<br>(42.0) | 7/8"     | 0.28<br>(7.0) |

**VB0 Series**

Dimensions in Inches (mm)



| A<br>Tube<br>O.D. | B NPT<br>or<br>UNF<br>Thread | Part Number        | C            | F<br>A/F | G            |
|-------------------|------------------------------|--------------------|--------------|----------|--------------|
| 5/32"             | 10-32 UNF                    | <b>12 VB0 0210</b> | 0.74<br>(19) | -        | 1.06<br>(27) |
|                   | 1/8                          | <b>12 VB0 0218</b> | 0.88<br>(22) | 9/16"    | 1.57<br>(40) |
| 1/4"              | 1/8                          | <b>12 VB0 0418</b> | 0.91<br>(23) | 9/16"    | 1.57<br>(40) |
|                   | 1/4                          | <b>12 VB0 0428</b> | 0.99<br>(25) | 3/4"     | 1.83<br>(46) |
| 3/8"              | 1/4                          | <b>12 VB0 0628</b> | 1.23<br>(31) | 3/4"     | 1.83<br>(46) |
|                   | 3/8                          | <b>12 VB0 0638</b> | 1.29<br>(33) | 7/8"     | 2.22<br>(56) |
| 1/2"              | 3/8                          | <b>12 VB0 0738</b> | 1.46<br>(37) | 7/8"     | 2.22<br>(56) |
|                   | 1/2                          | <b>12 VB0 0748</b> | 1.56<br>(40) | 11/16"   | 2.55<br>(65) |



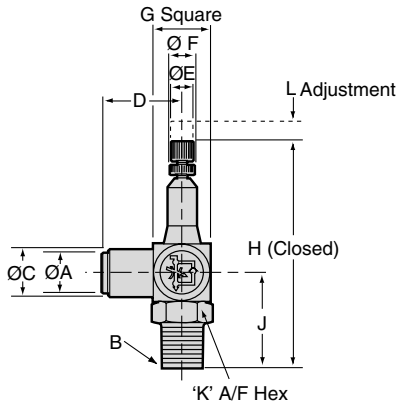
| A<br>NPT<br>Female | B<br>NPT<br>Male | Part Number        | C            | F      | G            |
|--------------------|------------------|--------------------|--------------|--------|--------------|
| 1/8                | 1/8              | <b>12 VB0 1818</b> | 0.83<br>(21) | 9/16"  | 1.57<br>(40) |
| 1/4                | 1/4              | <b>12 VB0 2828</b> | 1.14<br>(29) | 3/4"   | 1.83<br>(46) |
| 3/8                | 3/8              | <b>12 VB0 3838</b> | 1.24<br>(31) | 7/8"   | 2.22<br>(56) |
| 1/2                | 1/2              | <b>12 VB0 4848</b> | 1.53<br>(39) | 11/16" | 2.55<br>(65) |



# Function Fittings and Flow Controls

## TA0 Series

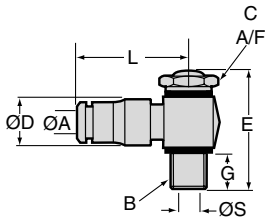
Dimensions in MM (inches)



| A<br>Tube<br>O.D. | B<br>ISO R<br>Thread | Part Number | C             | D              | E             | F             | G           | H            | J              | K<br>A/F    | L<br>Adj   |
|-------------------|----------------------|-------------|---------------|----------------|---------------|---------------|-------------|--------------|----------------|-------------|------------|
| 4                 | 1/8                  | 10 TA0 0418 | 11.5<br>(.45) | 22.0<br>(.87)  | 8.0<br>(.31)  | 9.0<br>(.35)  | 16<br>(.63) | 53<br>(2.09) | 22.5<br>(.89)  | 14<br>(.55) | 3<br>(.12) |
|                   | 1/8                  | 10 TA0 0618 | 13.0<br>(.51) | 23.0<br>(.91)  | 8.0<br>(.31)  | 9.0<br>(.35)  | 16<br>(.63) | 53<br>(2.09) | 22.5<br>(.89)  | 14<br>(.55) | 3<br>(.12) |
| 6                 | 1/4                  | 10 TA0 0628 | 13.5<br>(.53) | 25.5<br>(1.00) | 10.0<br>(.39) | 11.0<br>(.43) | 20<br>(.79) | 67<br>(2.64) | 29.5<br>(1.16) | 17<br>(.67) | 6<br>(.24) |
|                   | 1/4                  | 10 TA0 0828 | 15.5<br>(.61) | 27.0<br>(1.06) | 10.0<br>(.39) | 11.0<br>(.43) | 20<br>(.79) | 67<br>(2.64) | 29.5<br>(1.16) | 17<br>(.67) | 6<br>(.24) |
| 8                 | 3/8                  | 10 TA0 0838 | 15.5<br>(.61) | 28.0<br>(1.10) | 12.0<br>(.47) | 13.0<br>(.51) | 22<br>(.87) | 78<br>(3.07) | 33.0<br>(1.30) | 19<br>(.75) | 6<br>(.24) |
|                   | 1/4                  | 10 TA0 1028 | 19.5<br>(.77) | 31.5<br>(1.24) | 10.0<br>(.39) | 11.0<br>(.43) | 20<br>(.79) | 67<br>(2.64) | 29.5<br>(1.16) | 17<br>(.67) | 6<br>(.24) |
| 10                | 3/8                  | 10 TA0 1038 | 19.5<br>(.77) | 32.5<br>(1.28) | 12.0<br>(.47) | 13.0<br>(.51) | 22<br>(.87) | 78<br>(3.07) | 33.0<br>(1.30) | 19<br>(.75) | 6<br>(.24) |

## K51 Series

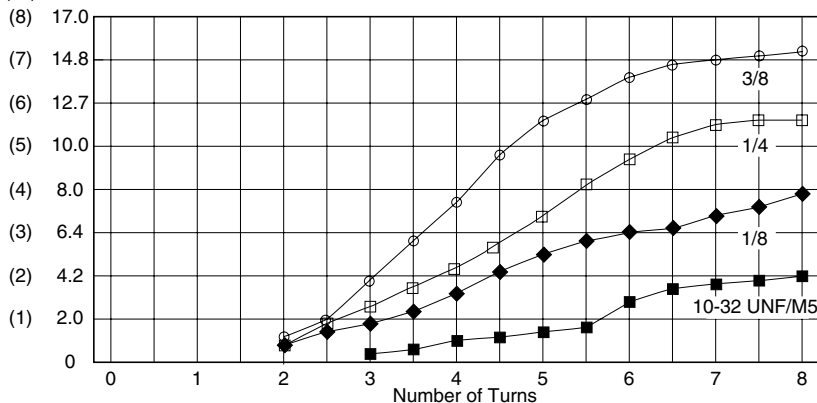
Dimensions in Inches (mm)



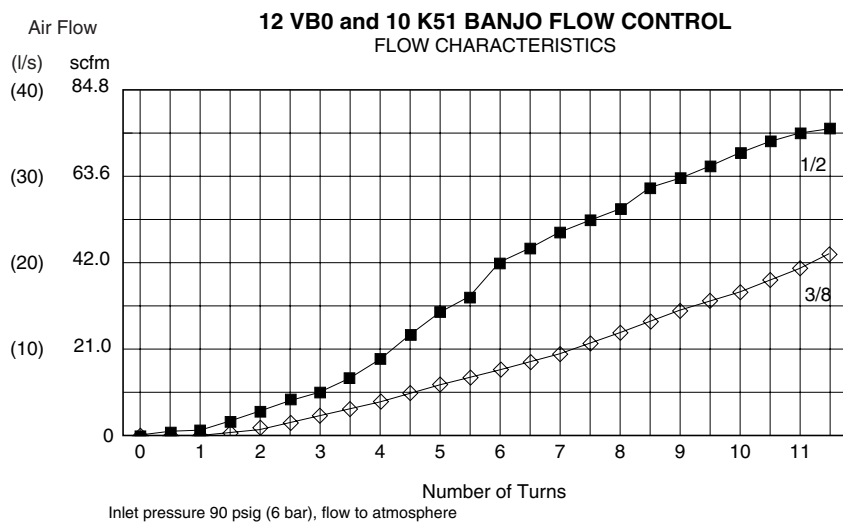
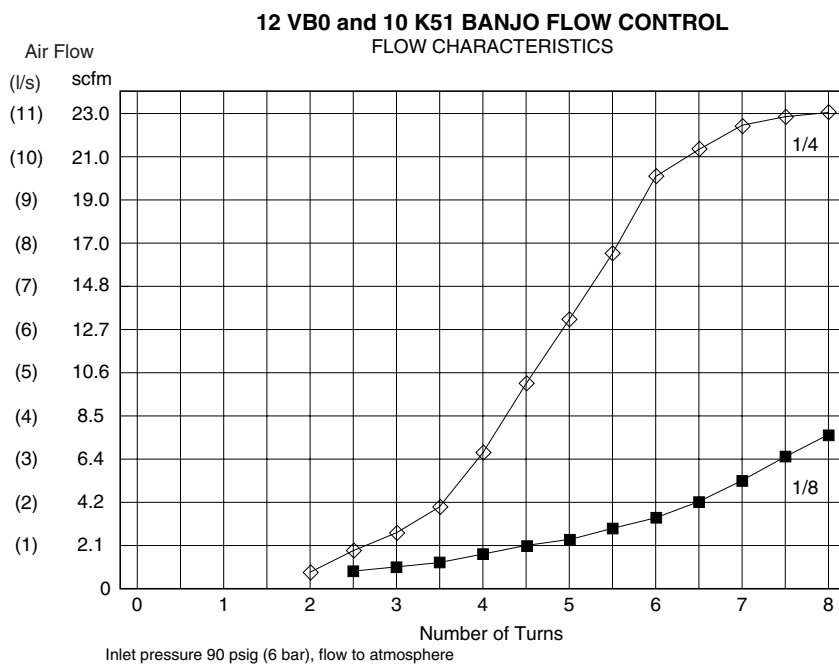
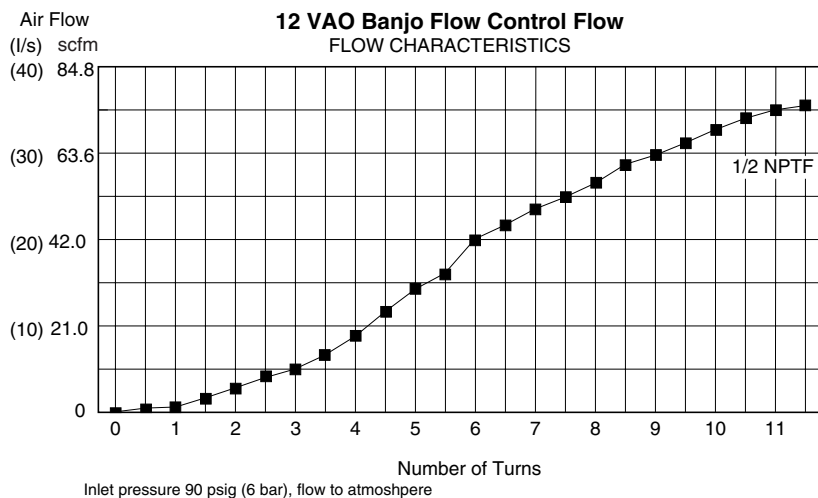
| A<br>Tube<br>O.D. | B<br>ISO G or<br>Metric<br>Thread | Part Number | C<br>A/F     | D             | E              | G             | L              | S             |
|-------------------|-----------------------------------|-------------|--------------|---------------|----------------|---------------|----------------|---------------|
| 4                 | M5 X .8                           | 10 K51 0405 | 8<br>(.31)   | 9.5<br>(.37)  | 26.5<br>(1.04) | 4.0<br>(.16)  | 18.7<br>(.74)  | 2.5<br>(.10)  |
|                   | 1/8                               | 10 K51 0418 | 14<br>(.55)  | 11.0<br>(.43) | 34.0<br>(1.34) | 6.5<br>(.26)  | 20.6<br>(.81)  | 5.0<br>(.20)  |
| 5                 | M5 X .8                           | 10 K51 0505 | 8<br>(.31)   | 11.0<br>(.43) | 26.5<br>(1.04) | 4.0<br>(.16)  | 20.2<br>(.80)  | 2.5<br>(.10)  |
|                   | 1/8                               | 10 K51 0518 | 14<br>(.55)  | 11.5<br>(.45) | 34.0<br>(1.34) | 6.5<br>(.26)  | 21.7<br>(.85)  | 5.0<br>(.20)  |
| 6                 | M5 X .8                           | 10 K51 0605 | 8<br>(.31)   | 12.5<br>(.49) | 26.5<br>(1.04) | 4.0<br>(.16)  | 22.2<br>(.87)  | 2.5<br>(.10)  |
|                   | 1/8                               | 10 K51 0618 | 14<br>(.55)  | 12.5<br>(.49) | 34.0<br>(1.34) | 6.5<br>(.26)  | 23.7<br>(.93)  | 5.0<br>(.20)  |
|                   | 1/4                               | 10 K51 0628 | 17<br>(.67)  | 13.0<br>(.51) | 36.5<br>(1.44) | 7.0<br>(.28)  | 24.2<br>(.95)  | 8.5<br>(.33)  |
| 8                 | 1/8                               | 10 K51 0818 | 14<br>(.55)  | 13.5<br>(.53) | 34.0<br>(1.34) | 6.0<br>(.26)  | 23.7<br>(.93)  | -             |
|                   | 1/4                               | 10 K51 0828 | 17<br>(.67)  | 14.0<br>(.55) | 36.5<br>(1.44) | 7.0<br>(.28)  | 24.7<br>(.97)  | 8.5<br>(.33)  |
|                   | 3/8                               | 10 K51 0838 | 22<br>(.87)  | 16.5<br>(.65) | 51.5<br>(2.03) | 10.0<br>(.39) | 26.7<br>(1.05) | 10.0<br>(.39) |
| 10                | 3/8                               | 10 K51 1038 | 22<br>(.87)  | 17.0<br>(.67) | 51.5<br>(2.03) | 10.0<br>(.39) | 31.2<br>(1.23) | 10.0<br>(.39) |
| 12                | 1/2                               | 10 K51 1248 | 27<br>(1.06) | 17.5<br>(.69) | 57.5<br>(2.26) | 10.0<br>(.39) | 38.2<br>(1.50) | -             |

Air Flow  
(l/s) scfm  
(8) 17.0

### 12 VA0 and 10 TA0 BANJO FLOW CONTROL FLOW CHARACTERISTICS



Inlet pressure 90 psig (6 bar), flow to atmosphere



- Compact size/low weight/In-line units
- High Flow Performance
- Suitable for panel and wall mounting
- Provides linear flow adjustment
- Locking adjustment
- Captive adjustment needle will not blow out when unscrewed
- Index line on adjusting knob
- Available in M5, 1/8, 1/4, 3/8, and 1/2 porting



### Technical Data

Fluid: Compressed air, nitrogen, inert and non-combustible gases compatible with materials of construction.

**Note:** For other types of fluids or compressed gases, please consult factory.

Operation:

Uni-directional flow control.

Mounting:

In-line. Panel mounted by hexagonal mounting nut. Wall mounted via through-holes in regulator body.

Port size: NPT

|     |                   |
|-----|-------------------|
| 1/8 | <b>T1000A1800</b> |
| 1/4 | <b>T1000A2800</b> |
| 3/8 | <b>T1000A3800</b> |
| 1/2 | <b>T1000A4800</b> |

ISO G

|                        |
|------------------------|
| <b>T1000M0500 - M5</b> |
| <b>T1000C1800</b>      |
| <b>T1000C2800</b>      |
| <b>T1000C3800</b>      |
| <b>T1000C4800</b>      |

Operating pressure:

15 to 145 psig (1-10 bar)  
5 to 145 psig (0.3 to 10 bar) -M5

Operating Temperature:

0° to 175°F (-20° to 80°C)  
Consult our technical service for use below 35°F (2°C)

Opening Pressure (N-R Valve)

15 psig (1 bar)

### Materials

- 1/8, 1/4: Aluminum alloy body, Nitrile seals, brass needle and internal parts, external parts in aluminum alloy.
- 3/8, 1/2: Aluminum alloy body, Nitrile seals, brass needle and internal parts, external parts in aluminum alloy.
- M5: Aluminum alloy body, nitrile seals and brass needle.

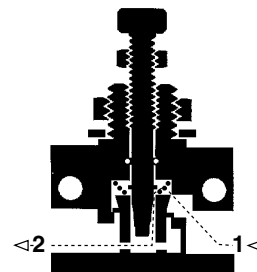
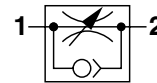
### Ordering Information

To order, quote product number from table on page FIT-3-7: i.e. T1000A2800 for 1/4 NPT model.

Alternate Models:

- T1100C1800 - 1/8" Bi-directional ISO G
- T1100A1800 - 1/8" Bi-directional NPT
- T1100C2800 - 1/4" Bi-directional ISO G
- T1100A2800 - 1/4" Bi-directional NPT

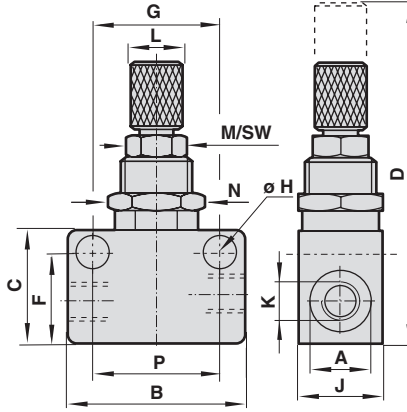
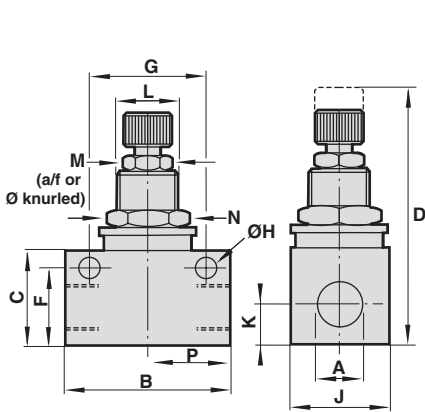
### ISO Symbol





## Model T1000A and T1000C

## Model T1000M



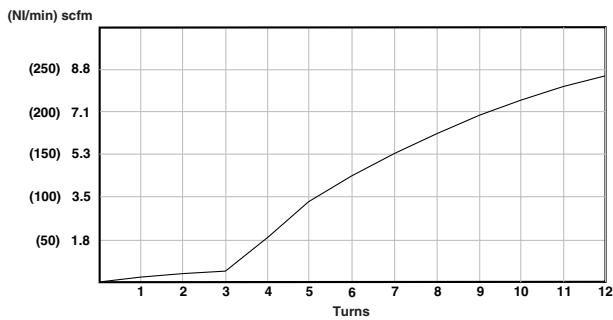
| Model      | Cv Regulating NPT port | Cv Free Flow NPT port | Weight grams oz. (g) |
|------------|------------------------|-----------------------|----------------------|
| T1000M0500 | 0.07                   | 0.07                  | .0007 (.020)         |
| T1000A1800 | 0.14                   | 0.37                  | 1.1 (31)             |
| T1000A2800 | 0.32                   | 0.69                  | 2.0 (56)             |
| T1000A3800 | 1.00                   | 1.45                  | 5.3 (150)            |
| T1000A4800 | 1.60                   | 1.90                  | 6.3(180)             |

| Model      | A       | B           | C           | D           | F           | G           | H          | J           | K           | L         | A/F M             | N           | P           | Panel Hole  | Max Panel Thickness |
|------------|---------|-------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-----------|-------------------|-------------|-------------|-------------|---------------------|
| T1000M0500 | M5      | 0.98 (25.0) | 0.59 (15.0) | 1.77 (45.0) | 0.47 (12.0) | 0.70 (18.0) | 0.17 (4.5) | 0.47 (12.0) | 0.21 (5.5)  | M10x.75 - | 0.31 (8)          | 0.47 (12)   | 0.49 (12.5) | 0.41 (10.5) | 0.15 (4.0)          |
| T1000C1800 | G1/8    | 1.33 (34.0) | 0.78 (20.0) | 2.0 (51.0)  | 0.64 (16.5) | 0.94 (24.0) | 0.17 (4.5) | 0.62 (16.0) | 0.31 (8.0)  | M12 x 1 - | 0.39 (Ø10)        | 0.55 (14)   | 0.66 (17.0) | 0.49 (12.5) | 0.15 (4.0)          |
| T1000C2800 | G1/4    | 1.77 (45.0) | 1.0 (25.5)  | 2.42 (61.5) | 0.82 (21.0) | 1.26 (32.0) | 0.17 (4.5) | 0.74 (19.0) | 0.37 (9.5)  | M14 x 1 - | 0.39 (Ø10)        | 0.66 (17)   | 0.88 (22.5) | 0.57 (14.5) | 0.15 (4.0)          |
| T1000C3800 | G3/8    | 2.28 (58.0) | 1.27 (32.5) | 3.9 (78.5)  | 1.06 (27.0) | 1.69 (43.0) | 0.25 (6.5) | 1.1 (28.0)  | 0.51 (13.0) | M20 x 1 - | 0.55 (14)         | 0.94 (24)   | 1.14 (29.0) | 0.80 (20.5) | 0.15 (4.0)          |
| T1000C4800 | G1/2    | 2.55 (65.0) | 1.41 (36.0) | 3.22 (82.0) | 1.20 (30.5) | 1.96 (50.0) | 0.25 (6.5) | 1.18 (30.0) | 0.59 (15.0) | M20 x 1 - | 0.55 (14)         | 0.94 (24)   | 1.27 (32.5) | 0.8 (20.5)  | 0.15 (4.0)          |
| T1000A1800 | 1/8 NPT | 1.33 (34.0) | 0.79 (20.0) | 2.0 (51.0)  | 0.65 (16.5) | 0.94 (24.0) | 0.18 (4.5) | 0.63 (16.0) | 0.38 (8.0)  | M12 x 1 - | 0.39 (Ø10.0)      | 0.55 (14.0) | 0.67 (17.0) | 0.49 (12.5) | 0.16 (4.0)          |
| T1000A2800 | 1/4 NPT | 1.77 (45.0) | 1.0 (25.4)  | 2.42 (61.5) | 0.82 (20.8) | 1.26 (32.0) | 0.18 (4.5) | 0.75 (19.0) | 0.38 (9.7)  | M14 x 1 - | 0.39 (Ø10.0)      | 0.67 (17.0) | 0.89 (22.5) | 0.57 (14.5) | 0.16 (4.0)          |
| T1000A3800 | 3/8 NPT | 2.28 (58.0) | 1.28 (32.5) | 3.09 (78.5) | 1.06 (27.0) | 1.69 (43.0) | 0.26 (6.5) | 1.10 (28.0) | 0.51 (13.0) | M20 x 1 - | 0.39(a/f) (14.0)  | 0.94 (24.0) | 1.14 (29.0) | 0.81 (20.5) | 0.16 (4.0)          |
| T1000A4800 | 1/2 NPT | 2.56 (65.0) | 1.42 (36.0) | 3.23 (82.0) | 1.20 (30.5) | 1.97 (50.0) | 0.26 (6.5) | 1.18 (30.0) | 0.29 (15.0) | M20 x 1 - | 0.39 (a/f) (14.0) | 0.94 (24.0) | 1.28 (32.5) | 0.81 (20.5) | 0.16 (4.0)          |

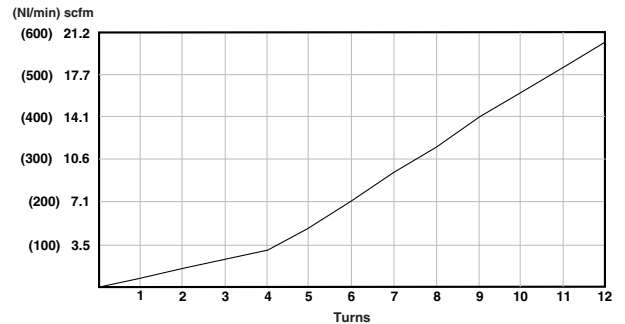
NPT according to ANSI B 1.20.1

## Flow vs Turns at 90 psi (6 bar)

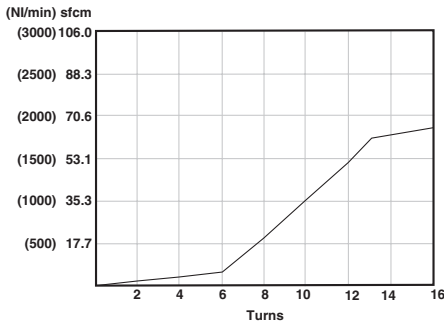
### T1000A1800



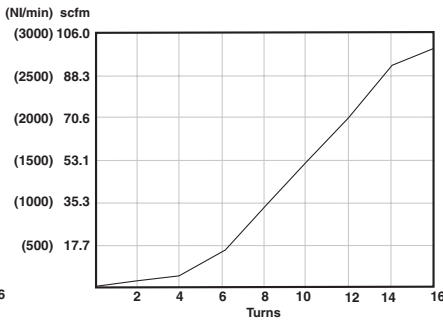
### T1000A2800



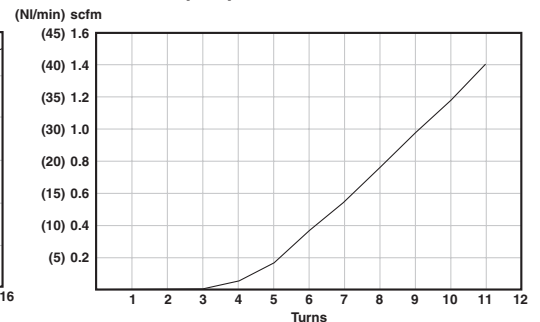
### T1000A3800



### T1000A4800



### T1000M0500 (M5)



- High flow performance
- Suitable for panel/wall mounting and manifold
- Adjustment can be locked
- Captive regulator needle will not blow out when unscrewed
- Adjusting knob position
- Releasable grab ring technology combining plastic and brass components for a compact and superior fitting design
- Color coding option with tamper-resistant feature
- Red release sleeve indicating metric tube sizes
- Grey release sleeve indicating inch tube sizes
- Reliable and corrosion resistant



### Technical Data

Medium: Compressed Air, filtered

Operation: Uni-directional

Operating Pressure:

1.5 to 145 psig (0.1 to 10 bar)

Ambient Temperature:

0° to 175°F (-20°C\* to 80°C)

Consult our Technical Service for use below 35°F (2°C)

Mounting:

In-line. Panel mounted by hexagonal mounting nut. Wall mounted by through-holes in regulator body. Manifold by quick connection

### Alternative Models

Block form flow regulators, T1000 series

Heavy duty flow regulators, M/800, M/600

Precision flow regulators, M/650, M677 and S/790

### Materials

1/8" (3mm), 5/32" (4mm), 3/16" (5mm), 1/4" (6mm),

5/16" (8mm), 3/8" (10mm)

Body: plastic PBT

Seals: silicone free nitrile seal, external metal parts: nickel plated brass

Internal parts: brass

Spring: stainless steel

Grab ring: stainless steel, BS 1440 Pt 2, grade 301.S21

Knob and panel nut: plastic POM

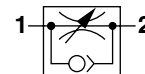
3/16" (5mm), – 1/2" (12mm)

Collet: nickel plated brass

### Ordering Information

To order, quote model number from table on page FIT-3-9, e.g. T15Y0004 to order 1/4" model.

### ISO Symbol





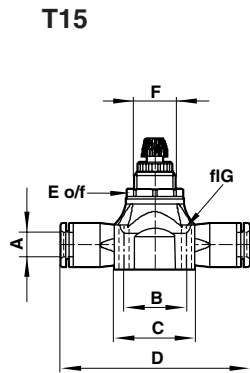
Push-In Flow Regulators

T-15

| Inch Tube | Model     | Metric Tube | Model     | Maxi regulated flow factor Cv** | Free flow factor Cv** | oz (kg)      |
|-----------|-----------|-------------|-----------|---------------------------------|-----------------------|--------------|
| 1/8"      | T15Y0001  | 3 mm        | T15P0003  | 0.3                             | 0.3                   | .46 (0.013)  |
| 5/32"     | T15Y0002  | 4 mm        | T15P0004  | 0.45                            | 0.45                  | .46 (0.013)  |
| 3/16"     | T15Y0003* | 5 mm        | T15P0005* | 0.85                            | 0.85                  | 1.13 (0.032) |
| 1/4"      | T15Y0004  | 6 mm        | T15P0006  | 1.3                             | 1.3                   | .99 (0.028)  |
| 5/16"     | T15Y0005  | 8 mm        | T15P0008  | 2.2                             | 2.2                   | 1.66 (0.047) |
| 3/8"      | T15Y0006  | 10 mm       | T15P0010  | 2.9                             | 3.2                   | 3.28 (0.093) |
| 1/2"      | T15Y0007* | 12 mm       | T15P0012* | 5.4                             | 5.4                   | .50 (0.0143) |

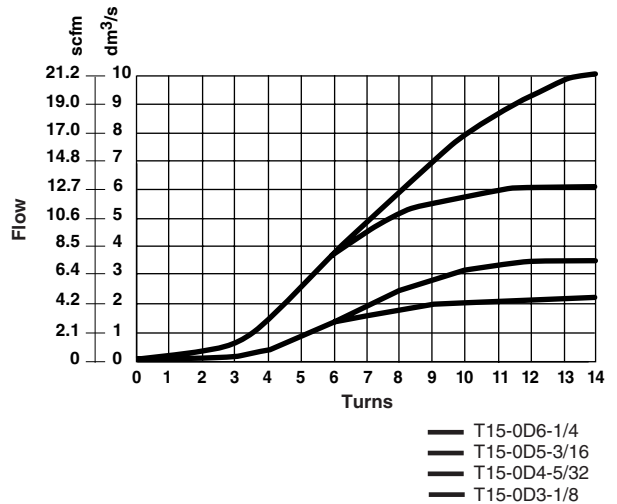
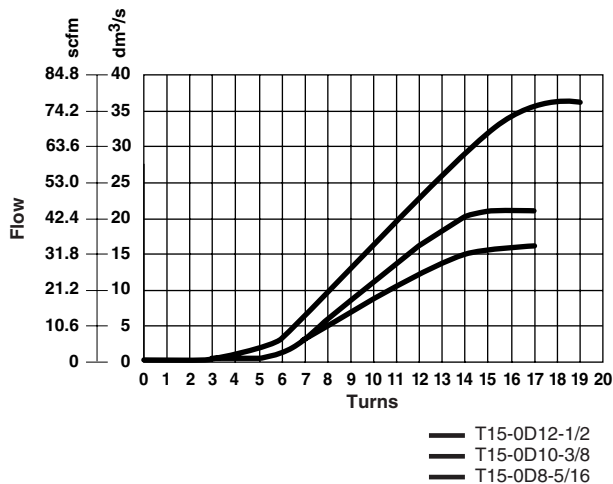
\* Available in collet system

\*\* C measured in dm<sup>3</sup>/(s.bar) Cv measured in US gal/min



| Metric   | A        | B         | C         | D         | E         | F       | ØG       |
|----------|----------|-----------|-----------|-----------|-----------|---------|----------|
| T15P0003 | 0.12 (3) | 0.51 (13) | 0.67 (17) | 1.81 (46) | 0.51 (13) | M10x1   | 0.09 (2) |
| T15P0004 | 0.16(4)  | 0.51 (13) | 0.67 (17) | 1.81 (46) | 0.51 (13) | M10x1   | 0.09 (2) |
| T15P0005 | 0.20(5)  | 0.75 (19) | 0.98 (25) | 1.93 (49) | 0.59 (15) | M12x1   | 0.14 (4) |
| T15P0006 | 0.24(6)  | 0.75 (19) | 0.98 (25) | 2.17 (55) | 0.59 (15) | M12x1   | 0.14 (4) |
| T15P0008 | 0.31(8)  | 0.83 (21) | 1.06 (27) | 2.58 (66) | 0.71 (18) | M14x1.5 | 0.14 (4) |
| T15P0010 | 0.39(10) | 1.04 (27) | 1.34 (34) | 3.02 (77) | 0.94 (24) | M20x1.5 | 0.17 (4) |
| T15P0012 | 0.47(12) | 1.12 (29) | 1.42 (36) | 3.64 (93) | 0.94 (24) | M20x1.5 | 0.17 (4) |
| Inch     | A        | B         | C         | D         | E         | F       | ØG       |
| T15Y0001 | 1/8      | 0.51 (13) | 0.67 (17) | 1.81 (46) | 0.51 (13) | M10x1   | 0.09 (2) |
| T15Y0002 | 5/32     | 0.51 (13) | 0.67 (17) | 1.81 (46) | 0.51 (13) | M10x1   | 0.09 (2) |
| T15Y0003 | 3/16     | 0.75 (19) | 0.98 (25) | 1.93 (49) | 0.59 (15) | M12x1   | 0.14 (4) |
| T15Y0004 | 1/4      | 0.75 (19) | 0.98 (25) | 2.17 (55) | 0.59 (15) | M12x1   | 0.14 (4) |
| T15Y0005 | 5/16     | 0.83 (21) | 1.06 (27) | 2.58 (66) | 0.71 (18) | M14x1.5 | 0.14 (4) |
| T15Y0006 | 3/8      | 1.04 (27) | 1.34 (34) | 3.02 (77) | 0.94 (24) | M20x1.5 | 0.17 (4) |
| T15Y0007 | 1/2      | 1.12 (29) | 1.42 (36) | 3.64 (93) | 0.94 (24) | M20x1.5 | 0.17 (4) |

Flow vs turns at 6 bar - flow in dm<sup>3</sup>/s ANR



- In-line general purpose flow controls
- Captive adjustment needle will not blow out when unscrewed
- Lockable, calibrated adjustment knob
- Suitable for wall mounting
- High operating pressure



### Technical Data

Fluid: Compressed air, nitrogen, inert and non-combustible gases compatible with materials of construction.

**Note:** For other types of fluids or compressed gases, please consult factory.

Operation: Uni-directional

Mounting:

Line mounted, concentrically

Port Size:

|         | NPT   | ISO G      | Weight lbs. (Kg) |
|---------|-------|------------|------------------|
| 1/8 NPT | C/836 | G1/8 S/836 | .22 (.10)        |
| 1/4 NPT | C/837 | G1/4 M/837 | .33 (.15)        |
| 1/2 NPT | C/839 | G1/2 M/839 | 1.32 (.60)       |
| 3/4 NPT | C/840 | G3/4 M/840 | 2.65 (1.20)      |
| 1 NPT   | C/855 | G1 M/855   | 7.72 (3.50)      |

Operating Pressure:

5 - 230 psig (0.3 - 16 bar)

Operating Temperature:

0°\* to 175°F (-20° to +80°C) (Alternative models to 300°F [150°C])

\* Consult our Technical Service for use below 35°F (2°C.)

### Materials

Brass body, adjusting knob, and locking ring (C/836, C/837, C/839), aluminum body, adjusting knob and locking ring (C/840, C/855), nitrile rubber seals.

### Repair Kits

| Product Number |       | Kit Number |           |
|----------------|-------|------------|-----------|
| NPT            | ISO G | NPT        | ISO G     |
| C/836          | S/836 | QC/520/00  | QS/520/00 |
| C/837          | M/837 | QC/521/00  | QS/521/00 |
| C/839          | M/839 | QC/822/00  | QS/522/00 |
| C/840          | M/840 | QC/523/00  | QS/523/00 |
| C/855          | M/855 | QC/524/00  | QS/524/00 |

### Ordering Information

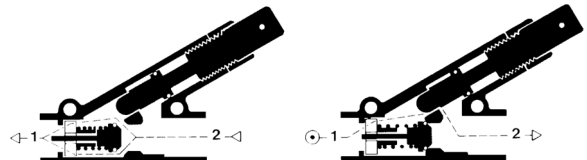
To order, quote model number from table on page FIT-3-11, e.g. C/837 for the 1/4" NPT model

### Alternative models

C/600 range of heavy duty panel mounting Flow Controls (air & hydraulic), see page FIT-3-12.

T1000 range of Inline Flow Controls, see page FIT-3-6.

TM, TC/800 High Temperature version (150° C max.)

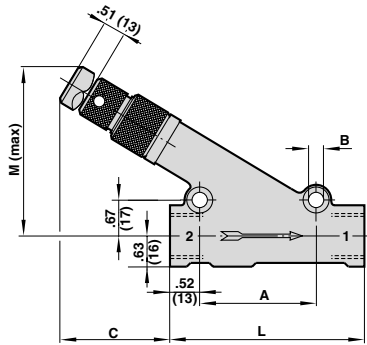
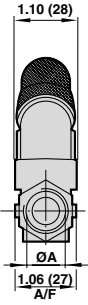


# Function Fittings and Flow Controls

Dimensions in Inches (mm)



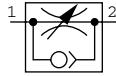
## Flow Control



| Thread | NPT          | G     | A            | L             | C             | B           | M (max)       | D            |
|--------|--------------|-------|--------------|---------------|---------------|-------------|---------------|--------------|
| 1/8    | <b>C/836</b> | S/836 | .96<br>(25)  | 1.81<br>(46)  | 1.06<br>(27)  | .33<br>(8)  | 3.11<br>(79)  | .67<br>(17)  |
| 1/4    | <b>C/837</b> | M/837 | 1.63<br>(42) | 2.36<br>(60)  | .98<br>(25)   | .20<br>(5)  | 1.46<br>(37)  | .87<br>(22)  |
| 1/2    | <b>C/839</b> | M/839 | 2.25<br>(57) | 3.7<br>(94)   | 2.09<br>(53)  | .33<br>(8)  | 3.11<br>(79)  | 1.10<br>(28) |
| 3/4    | C/840        | M/840 | 2.99<br>(76) | 4.69<br>(119) | 2.60<br>(66)  | .34<br>(9)  | 4.09<br>(104) | 1.38<br>(35) |
| 1      | C/855        | M/855 | 3.54<br>(90) | 5.90<br>(150) | 4.22<br>(107) | .51<br>(13) | 5.79<br>(147) | 2.04<br>(52) |

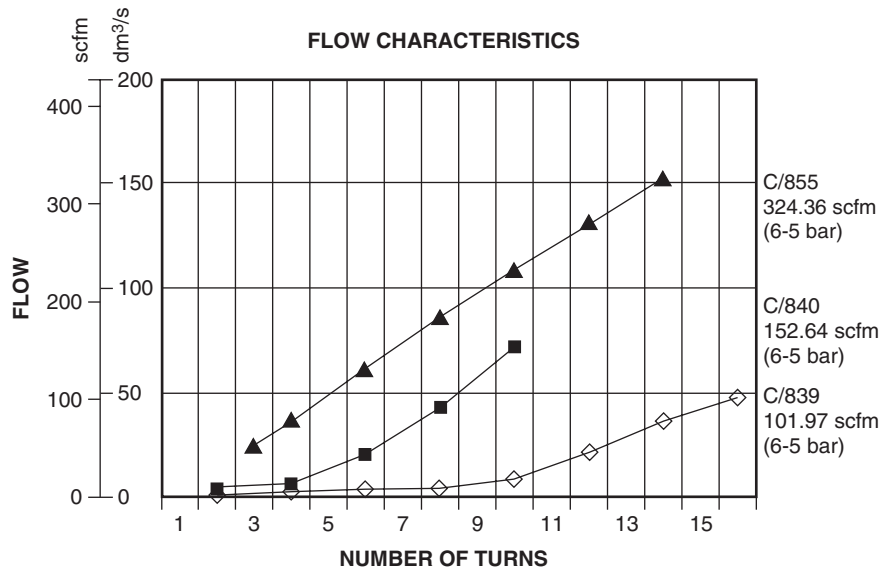
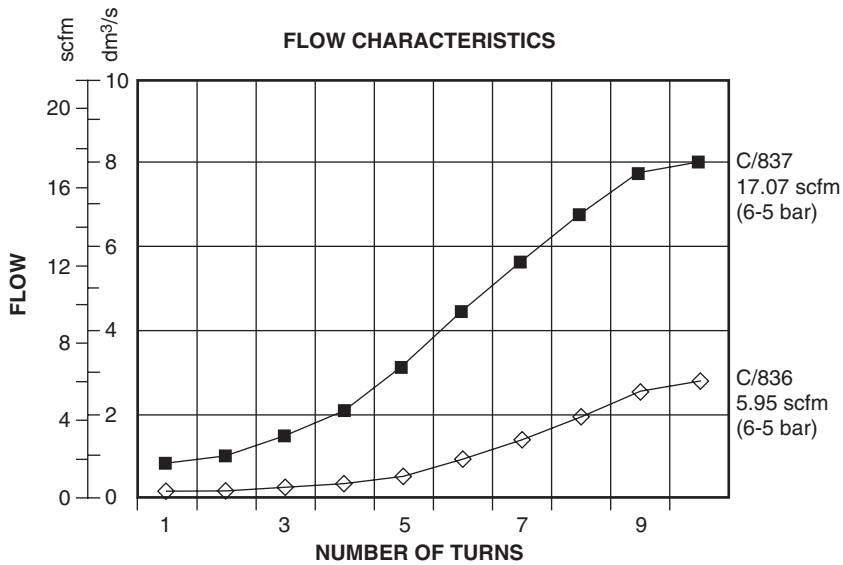
Typical Model Number: **C/839**  
M/839

ØA  
1/2 NPT  
G1/2



Type: Uni-directional  
Free flow is from '2' to '1', indicated by arrow

| Port | Model NPT    | ISO G        | Max. Regulating Flow Cv | Max. Free Flow Cv |
|------|--------------|--------------|-------------------------|-------------------|
| 1/8  | <b>C/836</b> | S/836        | 0.17                    | 0.6               |
| 1/4  | <b>C/837</b> | <b>M/837</b> | 0.49                    | 1.0               |
| 1/2  | <b>C/839</b> | M/839        | 2.6                     | 3.6               |
| 3/4  | C/840        | M/840        | 3.7                     | 6.5               |
| 1    | C/855        | M/855        | 8.4                     | 8.9               |



- Panel mounted general purpose flow controls
- Captive adjustment needle will not blow out when unscrewed
- Calibrated adjusting knob, can be locked on 1/8 and 1/2 models
- Panel mount legend plate indicating direction of flow control supplied as standard
- High operating pressure

### Technical Data

Fluid: Compressed air, nitrogen, inert and non-combustible gases compatible with materials of construction.

**Note:** For other types of fluids or compressed gases, please consult factory.

### Operation:

Uni-directional

### Mounting:

Panel mounted

### Port Sizes:

|         | NPT   | ISO G      | Weight lbs. (Kg) |
|---------|-------|------------|------------------|
| 1/8 NPT | C/636 | G1/8 S/636 | .29 (.13)        |
| 1/4 NPT | C/637 | G1/4 M/637 | .49 (.22)        |
| 1/2 NPT | C/639 | G1/2 M/639 | 1.72 (.78)       |

### Operating Pressure:

5 - 230 psig (0.3 - 16 bar)

### Operating Temperature:

0°\* to 175°F (-20° to 80°C)

\*Consult our Technical Service for use below 35°F (2°C)

### Flow

| Product | Port Size | Cv Max Reg Flow | Cv Max Free Flow |
|---------|-----------|-----------------|------------------|
| C/636   | 1/8"      | 0.17            | 0.51             |
| C/637   | 1/4"      | 0.49            | 1.05             |
| C/639   | 1/2"      | 2.94            | 4.16             |

### Materials

Brass body, chromium plated adjusting knob, locking ring and panel mounting ring, nitrile rubber seals.

### Spares Kits

| Product Number |       | Kit Number |           |
|----------------|-------|------------|-----------|
| NPT            | ISO G | NPT        | ISO G     |
| C/636          | S/636 | QC/520/00  | QS/520/00 |
| C/637          | M/637 | QC/521/00  | QS/521/00 |
| C/639          | M/639 | QC/522/00  | QS/522/00 |



### Ordering Information

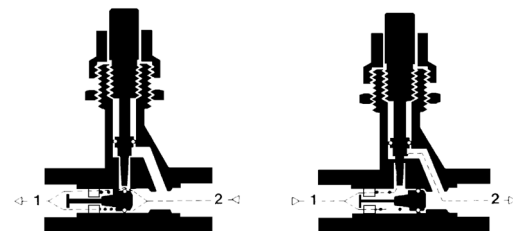
To order, quote model number from table on page FIT-3-12, e.g. C/637 for the 1/4" model

### Alternative models

C/800 range of Heavy duty flow controls, see page FIT-3-10.

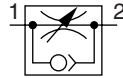
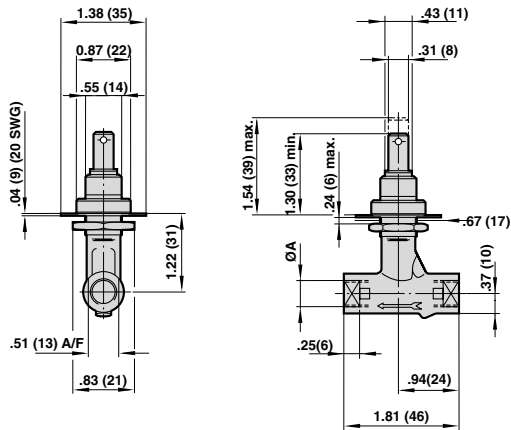
T1000 range of In-Line Flow Controls, see page FIT-3-6.

TM, TC/800 high temperature version 300°F (150°C) max.





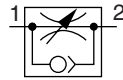
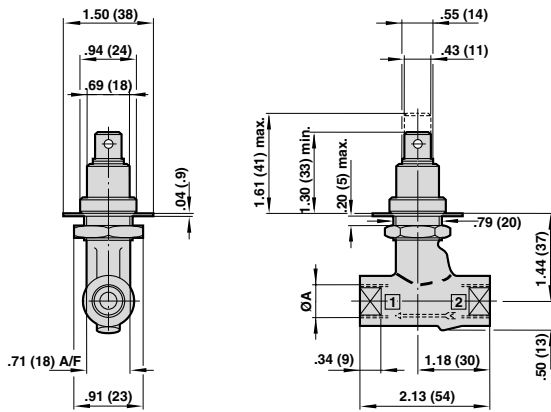
Panel Mounted Flow Control



Model Number: **C/636**       $\varnothing A$   
                                  **S/636**      **1/8 NPT**  
    **G1/8**

Type: Uni-directional  
 Free flow is from '2' to '1', indicated by arrow

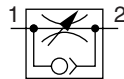
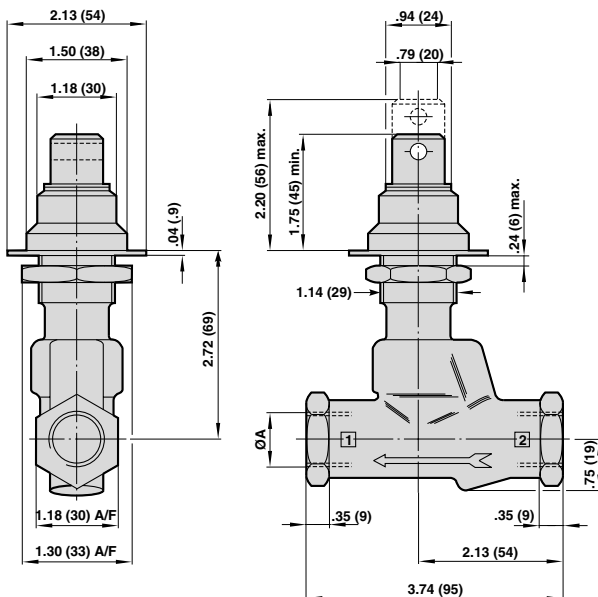
Panel Mounted Flow Control



Model Number: **C/637**       $\varnothing A$   
                                  **M/637**      **1/4 NPT**  
    **G1/4**

Type: Uni-directional  
 Free flow is from '2' to '1', indicated by arrow

Panel Mounted Flow Control



Model Number: **C/639**       $\varnothing A$   
                                  **M/639**      **1/2 NPT**  
    **G1/2**

Type: Uni-directional  
 Free flow is from '2' to '1', indicated by arrow

- Allow free flow in one direction only
- Low cracking pressure
- PIF-PIF, PIF-Male and Male-PIF alternatives
- Non-PTFE based thread sealant on taper threads
- Releasable grab ring technology combining plastic and brass components for a compact and superior fitting design
- Molded mounting brackets on tub connector designs
- Low weight design
- Red release sleeve indicating metric tube sizes
- Grey release sleeve indicating inch tube sizes
- Easy tube insertion for rapid and quick assembly of pneumatic circuits
- Reliable and corrosion resistant
- Silicon free
- Color coding option with tamper-resistant feature



### Technical Data

Medium: Compressed Air, filtered, lubricated or non-lubricated, vacuum

Operating Pressure:

1.5 to 145 psig (0.1 to 10 bar) (T51, T52)

4.4 to 145 psig (0.3 to 10 bar) (T53)

-1.5 to -14.5 psig (-0.1 to -1 bar) vacuum (T51, T52)

Ambient Temperature:

0° to 175°F (-20°C\* to 80°C)

Consult our Technical Service for use below 35°F (2°C)

Mounting:

Tube/tube PIF

Tube PIF/male thread

Male threaded/tube PIF

### Alternative Models

T55, T56 range of aluminum threaded non return valves.

TS/520 range of brass threaded non return valve.

### Materials

5/32" – 5/16"

Body: Plastic PBT

Seal: Silicon free nitrile

Valve: Plastic PBT

Insert: Natural brass

Spring: Stainless steel

Grab Ring: Stainless steel - BS 1440

PT 2, grade 301.S21 (4-6-8 sizes)

*OD-5 collet system*

T-52 and T-53 series, nickel brass threads.

3/8" – 1/2" sizes

Collet: Nickel plated brass

Body: Black anodized aluminum

Valve and Insert: Aluminum

### Ordering Information

To order, quote model number from table on page FIT-3-15, e.g. T51Y0004 for the 1/4" model.

NOTE: T51 and T52 flow is threaded end to push-in (check is in reverse).

T53 flow is from push-in to threaded end (check is in reverse).

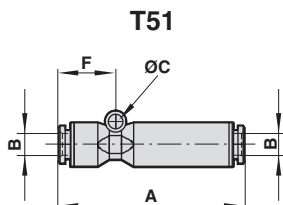
### ISO Symbol





## Inline Push-in Non Return Valves

T-51, T-52 and T-53 Series. Operating pressure: 10 bar (14 psi)



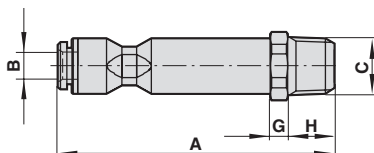
| Inch PIF/PIF | Model #   | Metric PIF/PIF | Model #   |
|--------------|-----------|----------------|-----------|
| 5/32"        | T51Y0002  | 4              | T51P0004  |
| 3/16"        | T51Y0003* | 5              | T51P0005* |
| 1/4"         | T51Y0004  | 6              | T51P0006  |
| 5/16"        | T51Y0005  | 8              | T51P0008  |
| 3/8"         | T51Y0006* | 10             | T51P0010* |
| 1/2"         | T51Y0007* | 12             | T51P0012* |

\* Available only with collet tube connection

| Inch Model | A    | B    | F    | ØC  | Flow factor C/CV* | Cracking pressure (bar) |
|------------|------|------|------|-----|-------------------|-------------------------|
| T51Y0002   | 49.8 | 5/32 | 15.5 | 4.3 | 0.75/0.18         | 0.03+0.06               |
| T51Y0003*  | 53.1 | 3/16 | 15.2 | 4.3 | 1.16/0.28         | 0.03+0.06               |
| T51Y0004   | 55.3 | 1/4  | 16.9 | 4.3 | 1.9/0.47          | 0.03+0.06               |
| T51Y0005   | 62.5 | 5/16 | 19.0 | 4.3 | 3.5/0.86          | 0.03+0.06               |
| T51Y0006*  | 77.4 | 3/8  | -    | -   | 4.7/1.15          | 0.03+0.06               |
| T51Y0007*  | 88.4 | 1/2  | -    | -   | 7.5/1.84          | 0.03+0.06               |

| Metric Model | A    | B  | F    | ØC  | Flow factor C/CV* | Cracking pressure (bar) |
|--------------|------|----|------|-----|-------------------|-------------------------|
| T51P0004     | 48.8 | 4  | 15.5 | 4.3 | 0.75/0.18         | 0.03+0.06               |
| T51P0005*    | 53.1 | 5  | 15.2 | 4.3 | 1.16/0.28         | 0.03+0.06               |
| T51P0006     | 55.3 | 6  | 16.9 | 4.3 | 1.9/0.47          | 0.03+0.06               |
| T51P0008     | 62.5 | 8  | 19.0 | 4.3 | 3.5/0.86          | 0.03+0.06               |
| T51P0010*    | 77.4 | 10 | -    | -   | 4.7/1.15          | 0.03+0.06               |
| T51P0012*    | 88.4 | 12 | -    | -   | 7.5/1.84          | 0.03+0.06               |

## T52, T53



| Inch PIF/Male Thrd. | Model #   | Metric PIF/ISO Rc | Model #   |
|---------------------|-----------|-------------------|-----------|
| 5/32" x 1/8"        | T52A1802  | 4 x M5            | T52M0504  |
| 3/16" x 1/8"        | T52A1803* | 4 x 1/8"          | T52B1804  |
| 3/16" x 1/4"        | T52A2803* | 5 x 1/8"          | T52B1805* |
| 1/4" x 1/8"         | T52A1804  | 5 x 1/4"          | T52B2805* |
| 1/4" x 1/4"         | T52A2804  | 6 x 1/8"          | T52B1806  |
| 5/16" x 1/8"        | T52A1805* | 6 x 1/4"          | T52B2806  |
| 5/16" x 1/4"        | T52A2805  | 8 x 1/8"          | T52B1808  |
|                     |           | 8 x 1/4"          | T52B2808  |

| Inch Male Thrd./PIF | Model #   | Metric ISO Rc/PIF | Model #   |
|---------------------|-----------|-------------------|-----------|
| 1/8 x 5/32"         | T53A1802  | M5 x 4            | T53M0504  |
| 1/8 x 3/16"         | T53A1803* | 1/8 x 4           | T53B1804  |
| 1/4 x 3/16"         | T53A2803* | 1/8 x 5           | T53B1805* |
| 1/8 x 1/4"          | T53A1804  | 1/4 x 5           | T53B2805* |
| 1/4 x 1/4"          | T53A2804  | 1/8 x 6           | T53B1806  |
| 1/8 x 5/16"         | T53A1805  | 1/4 x 6           | T53B2806  |
| 1/4 x 5/16"         | T53A2805  | 1/8 x 8           | T53B1808  |
|                     |           | 1/4 x 8           | T53B2808  |

| Inch Model | A    | B    | C** | G | H    |
|------------|------|------|-----|---|------|
| T52A1802   | 54.4 | 5/32 | 1/8 | 4 | 9.5  |
| T52A1803*  | 57.9 | 3/16 | 1/8 | 4 | 9.5  |
| T52A2803*  | 62.7 | 3/16 | 1/4 | 4 | 14.3 |
| T52A1804   | 59.2 | 1/4  | 1/8 | 4 | 9.5  |
| T52A2804   | 64   | 1/4  | 1/4 | 4 | 14.3 |
| T52A1805   | 63.7 | 1/8  | 1/8 | 4 | 9.5  |
| T52A2805   | 68.5 | 1/4  | 1/4 | 4 | 14.3 |

\*\* NPTF

| Metric Model | A    | B | C** | G | H   |
|--------------|------|---|-----|---|-----|
| T52M0504     | 49.2 | 4 | M5  | 4 | 4.3 |
| T52B1804     | 54.4 | 4 | 1/8 | 4 | 9.5 |
| T52B1805*    | 57.9 | 5 | 1/8 | 4 | 9.5 |
| T52B2805*    | 59.4 | 5 | 1/4 | 4 | 11  |
| T52B1806     | 59.2 | 6 | 1/8 | 4 | 9.5 |
| T52B2806     | 60.7 | 6 | 1/4 | 4 | 11  |
| T52B1808     | 63.7 | 8 | 1/8 | 4 | 9.5 |
| T52B2808     | 65.2 | 8 | 1/4 | 4 | 11  |

\*\* BSPT

- Permits free flow of air in one direction only
- Simple, reliable design
- Light weight
- Silicone free
- Low cracking pressure
- T56 male connections have an O-ring in parallel threads



### Technical Data

#### Medium:

Compressed air, filtered, lubricated and non-lubricated

#### Operation:

Non-return valve

#### Mounting:

Line mounted

#### Port Sizes:

| Metric      | ISO G         | ISO Rc         | NPT                     |
|-------------|---------------|----------------|-------------------------|
| M5 T55M0500 | G1/8 T55C1800 | Rc1/8 T55B1800 | 1/8 NPT <b>T55A1800</b> |
| M5 T56M0500 | G1/8 T56C1800 | Rc1/8 T56B1800 | 1/8 NPT <b>T56A1800</b> |
|             | G1/4 T55C2800 | Rc1/4 T55B2800 | 1/4 NPT <b>T55A2800</b> |
|             | G1/4 T56C2800 | Rc1/4 T56B2800 | 1/4 NPT <b>T56A2800</b> |
|             | G3/8 T55C3800 | Rc3/8 T55B3800 | 3/8 NPT <b>T55A3800</b> |
|             | G1/2 T55C4800 | Rc1/2 T55B4800 | 1/2 NPT <b>T55A4800</b> |
|             | G3/4 TS/523   |                | 3/4 NPT <b>TC/523</b>   |
|             | G1 TS/524     |                | 1 NPT <b>TC/524</b>     |

\*High temperature viton seals

#### Operating Pressure:

1.5 - 145 psi (0.1 - 10 bar) T55-T56  
5 - 230 psi (0.3 - 16 bar) TC/523-TC/524

#### Operating Temperature:

0°\* to 300°F (-20°\* to +150°C)

\*Consult our Technical Service for use below 35°F (2°C). For high temperature applications (300°F [150°C] Max) TM, TC/520 Series version should be ordered

### Materials

T55: Aluminum body (T55), brass (T56), silicone free nitrile rubber 'O' ring, POM valve, stainless steel spring.

TC/TS: Brass body, aluminum valve

High temp viton seals

### Ordering Information

To order, quote model number from table on page FIT-3-17.

### Alternative Models

T51 Series in-line push-in non-return valves, see page FIT-3-14

### ISO Symbol

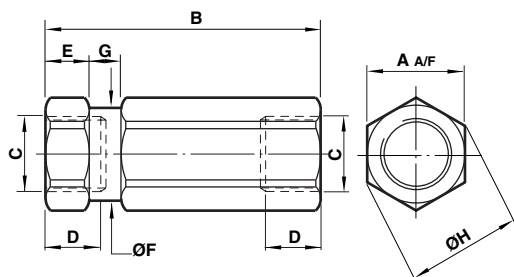




## T55 Series

| Port Size | Flow Factor Cv** | Flow Factor C* | Cracking pressure (bar) | oz (kg)      | Model Metric | BSPB     | BSPT     | NPT      |
|-----------|------------------|----------------|-------------------------|--------------|--------------|----------|----------|----------|
| M5        | 0.19             | 0.8            | 0.73 (0.05)             | 0.35 (0.010) | T55M0500     |          |          |          |
| 1/8       | 0.59             | 2.4            | 0.73 (0.05)             | 0.53 (0.015) |              | T55C1800 | T55B1800 | T55A1800 |
| 1/4       | 1.35             | 5.5            | 0.73 (0.05)             | 0.88 (0.025) |              | T55C2800 | T55B2800 | T55A2800 |
| 3/8       | 2.20             | 9.0            | 0.73 (0.05)             | 2.12 (0.060) |              | T55C3800 | T55B3800 | T55A3800 |
| 1/2       | 3.70             | 15.0           | 0.73 (0.05)             | 2.82 (0.080) |              | T55C4800 | T55B4800 | T55A4800 |

\* C measured in dm<sup>3</sup>/(s.bar) \*\* Cv measured in US gal/min.



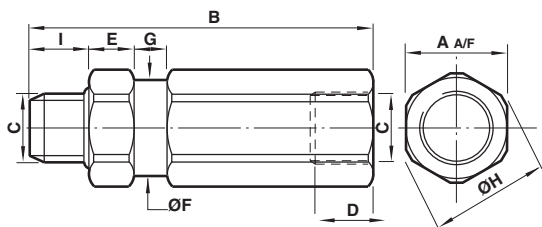
| Model    | A         | B           | C     | D          | E        | F           | G        | H          |
|----------|-----------|-------------|-------|------------|----------|-------------|----------|------------|
| T55M0500 | .43 (11)  | 1.08 (27.5) | (M5)  | .20 (5)    | .16 (4)  | .42 (10.7)  | .12 (3)  | .47 (12)   |
| T55A1800 | .55 (14)  | 1.67 (42.5) | (1/8) | -          | .28 (7)  | .54 (13.7)  | .16 (4)  | .59 (15)   |
| T55B1800 | .55 (14)  | 1.67 (42.5) | (1/8) | -          | .28 (7)  | .54 (13.7)  | .16 (4)  | .59 (15)   |
| T55C1800 | .55 (14)  | 1.67 (42.5) | (1/8) | .28 (7)    | .28 (7)  | .54 (13.7)  | .16 (4)  | .59 (15)   |
| T55A2800 | .67 (17)  | 2.13 (54)   | (1/4) | -          | .31 (8)  | .66 (16.7)  | .20 (5)  | .73 (18.5) |
| T55B2800 | .67 (17)  | 2.13 (54)   | (1/4) | -          | .31 (8)  | .66 (16.7)  | .20 (5)  | .73 (18.5) |
| T55C2800 | .67 (17)  | 2.13 (54)   | (1/4) | .41 (10.5) | .31 (8)  | .66 (16.7)  | .20 (5)  | .73 (18.5) |
| T55A3800 | .94 (24)  | 2.48 (63)   | (3/8) | -          | .35 (9)  | .93 (23.7)  | .28 (7)  | 1.02 (26)  |
| T55B3800 | .94 (24)  | 2.48 (63)   | (3/8) | -          | .35 (9)  | .93 (23.7)  | .28 (7)  | 1.02 (26)  |
| T55C3800 | .94 (24)  | 2.48 (63)   | (3/8) | .47 (12)   | .35 (9)  | .93 (23.7)  | .28 (7)  | 1.02 (26)  |
| T55A4800 | 1.06 (27) | 3.03 (77)   | (1/2) | -          | .47 (12) | 1.05 (26.7) | .39 (10) | 1.18 (30)  |
| T55B4800 | 1.06 (27) | 3.03 (77)   | (1/2) | -          | .47 (12) | 1.05 (26.7) | .39 (10) | 1.18 (30)  |
| T55C4800 | 1.06 (27) | 3.03 (77)   | (1/2) | .59 (15)   | .47 (12) | 1.05 (26.7) | .39 (10) | 1.18 (30)  |

\* Available only with collet tube connection

## T56 Series

| Port Size | Flow Factor Cv** | Flow Factor C* | Cracking pressure (bar) | oz (kg)      | Model Metric | BSPB     | BSPT     | NPT      |
|-----------|------------------|----------------|-------------------------|--------------|--------------|----------|----------|----------|
| M5        | 0.19             | 0.55           | 0.73 (0.05)             | 0.64 (0.018) | T56M0500     |          |          |          |
| 1/8       | 0.59             | 2.4            | 0.73 (0.05)             | 1.59 (0.045) |              | T56C1800 | T56B1800 | T56A1800 |
| 1/4       | 1.23             | 5.0            | 0.73 (0.05)             | 2.82 (0.080) |              | T56C2800 | T56B2800 | T56A2800 |

\* C measured in dm<sup>3</sup>/(s.bar) \*\* Cv measured in US gal/min.

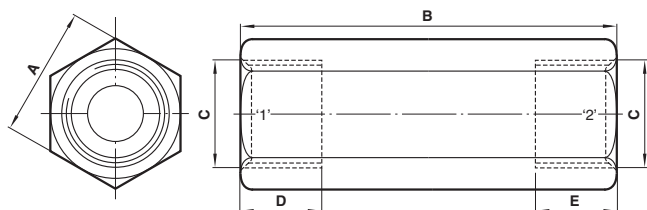


| Model    | A        | B           | C     | D          | F          | G       | H          | I          |
|----------|----------|-------------|-------|------------|------------|---------|------------|------------|
| T56M0500 | .43 (11) | 1.25 (31.8) | (M5)  | .20 (5)    | .42(10.7)  | .12 (3) | .47 (12)   | .17 (4.3)  |
| T56A1800 | .55 (14) | 1.93 (49)   | (1/8) | (-)        | .54 (13.7) | .16 (4) | .59 (15)   | .37 (9.5)  |
| T56B1800 | .55 (14) | 1.93 (49)   | (1/8) | (-)        | .54 (13.7) | .16 (4) | .59 (15)   | .37 (9.5)  |
| T56C1800 | .55 (14) | 1.77 (45)   | (1/8) | .28 (7)    | .54 (13.7) | .16 (4) | .59 (15)   | .22 (5.5)  |
| T56A2800 | .67 (17) | 2.46 (62.5) | (1/4) | (-)        | .66 (16.7) | .20 (5) | .73 (18.5) | .56 (14.3) |
| T56B2800 | .67 (17) | 2.32(59)    | (1/4) | (-)        | .66 (16.7) | .20 (5) | .73 (18.5) | .43 (11)   |
| T56C2800 | .67 (17) | 2.21 (56.2) | (1/4) | .41 (10.5) | .66 (16.7) | .20 (5) | .73 (18.5) | .31 (8)    |

## C/523 - C/524 Series

| Model |       | Port Size | Flow factor Cv | Cracking Pressure psi (bar) | Weight lbs. (kg) | Spares Kit |           |
|-------|-------|-----------|----------------|-----------------------------|------------------|------------|-----------|
| NPT   | ISO G |           |                |                             |                  | NPT        | ISO G     |
| C/523 | S/523 | 3/4       | 6.5            | 0.9 (0.06)                  | 1.21 (.55)       | QC/523/00  | QS/523/00 |
| C/524 | S/524 | 1         | 8.9            | 0.9 (0.06)                  | 2.43 (1.10)      | QC/524/00  | QS/524/00 |

Note : For high temperature applications a T should be added on spares kit part number (i.e. TQS/520/00)  
Initial cracking pressure may be higher if valve has been stored for a long period.



| Model | A         | B          | C   | D        | E        |
|-------|-----------|------------|-----|----------|----------|
| C/523 | 1.42 (36) | 3.6 (92)   | 3/4 | .71 (18) | .71 (18) |
| S/523 | 1.42 (36) | 3.6 (92)   | 3/4 | .71 (18) | .71 (18) |
| C/524 | 1.93(49)  | 4.88 (124) | (1) | .98 (25) | .98 (25) |
| S/524 | 1.93(49)  | 4.88 (124) | (1) | .98 (25) | .98 (25) |

- Assists in complying with OSHA and related safety regulations
- Tamper proof
- Compact
- Low pressure drop
- Automatically resets after failure correction
- High air pressure rating



### Technical Data

Fluid: Compressed air, nitrogen, inert and non-combustible gases compatible with materials of construction.

**Note:** For other types of fluids or compressed gases, please consult factory.

#### Operation:

Fixed uni-directional excess flow automatic shut off valve (air fuse)

#### Mounting:

In-line two way valve

To be inserted between fixed air supply and flexible air lines

See guidelines for typical installation

#### Port Size: Female Thread

| NPT       |                 | ISO G   |          |
|-----------|-----------------|---------|----------|
| 1/4 NPT   | <b>T60A289*</b> | G 1/4   | T60C289* |
| 3/8 NPT   | <b>T60A389*</b> | G 3/8   | T60C389* |
| 1/2 NPT   | <b>T60A489*</b> | G 1/2   | T60C489* |
| 3/4 NPT   | <b>T60A689*</b> | G 3/4   | T60C689* |
| 1 NPT     | <b>T60A889*</b> | G 1     | T60C889* |
| 1-1/2 NPT | <b>T60A889*</b> | G 1-1/2 | T60C889* |

\* Last digit depends on flow range

#### Operating Pressure:

Maximum 232 psi (16 bar)

Minimum according to hose length

Drop pressure at shut-off flow: 2 to 4.5 psi (0.14 or 0.3 bar)

#### Operating Temperature:

0<sup>\*\*\*</sup> to 175° F (-20° to 80°C)

**\*\*Consult our Technical Service for use below 35°F (2°C)**

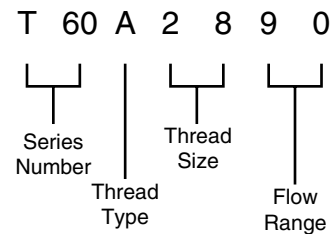
At low temperature ensure air fuse is not subjected to freezing conditions which may prevent its function.

#### Materials

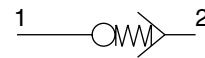
Aluminium body, brass internal parts, stainless steel spring

### Ordering Information

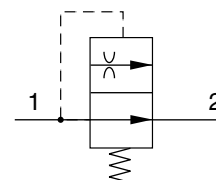
To order, quote appropriate product number from the tables on the following pages. i.e. T60A2890 for the 1/4 NPT with 2 psi pressure drop at shut off.



#### Simplified Symbol



#### ISO Symbol





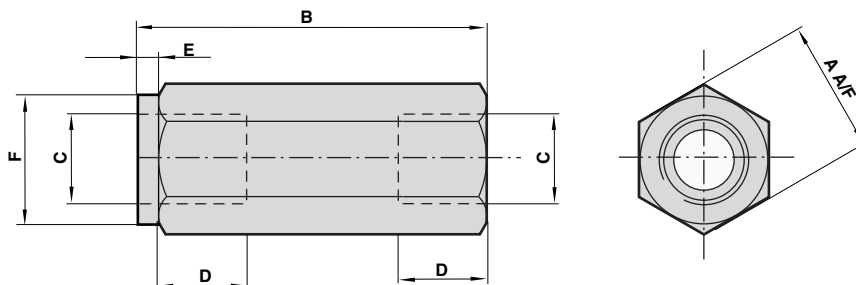
General Information

| Model    |          | Port size | Drop pressure at shut off flow |       | Shut off flow rate at |         | Flow at 100 psi (7 bar) ΔP 1 psi (0.07 bar) |                      | Weight |       |
|----------|----------|-----------|--------------------------------|-------|-----------------------|---------|---|----------------------|--------|-------|
| NPT      | ISO G    |           | psi                            | (bar) | 100 psi               | (7 bar) | scfm  | (dm <sup>3</sup> /s) | oz.    | (Kg)  |
| T60A2890 | T60C2890 | 1/4       | 2.0                            | (.14) | 17.6                  | (8)     | 13.8  | (7)                  | 1.4    | (.04) |
| T60A2891 | T60C2891 |           | 4.4                            | (.3)  | 29.7                  | (14)    | 13.8  | (7)                  | 1.4    | (.04) |
| T60A3890 | T60C3890 | 3/8       | 2.0                            | (.14) | 41.1                  | (19)    | 28.6  | (14)                 | 2.3    | (.07) |
| T60A3891 | T60C3891 |           | 4.4                            | (.3)  | 68.2                  | (32)    | 28.6  | (14)                 | 2.3    | (.07) |
| T60A4890 | T60C4890 | 1/2       | 2.0                            | (.14) | 68.2                  | (32)    | 49.2  | (23)                 | 5.3    | (.15) |
| T60A4891 | T60C4891 |           | 4.4                            | (.3)  | 102.3                 | (48)    | 49.2  | (23)                 | 5.3    | (.15) |
| T60A6890 | T60C6890 | 3/4       | 2.0                            | (.14) | 102.3                 | (48)    | 91.1  | (43)                 | 4.6    | (.13) |
| T60A6891 | T60C6891 |           | 4.4                            | (.3)  | 169.5                 | (80)    | 91.1  | (43)                 | 4.6    | (.13) |
| T60A8890 | T60C8890 | 1         | 2.0                            | (.14) | 195.0                 | (92)    | 144   | (68)                 | 19.0   | (.54) |
| T60A8891 | T60C8891 |           | 4.4                            | (.3)  | 271.0                 | (128)   | 144   | (68)                 | 19.0   | (.54) |
| T60AB890 | T60CB890 | 1-1/2     | 2.0                            | (.14) | 394.0                 | (186)   | 307   | (145)                | 38.8   | (1)   |
| T60AB891 | T60CB891 |           | 4.4                            | (.3)  | 568.0                 | (268)   | 307   | (145)                | 38.8   | (1)   |

NPT : according to ANSI-B1.20.1.  
 ISO G : according to BS2779 and ISO-228/1

Flow and pressure test conducted according to ISO-6358 test circuit. Mean measured flow values are provided at standard reference conditions.

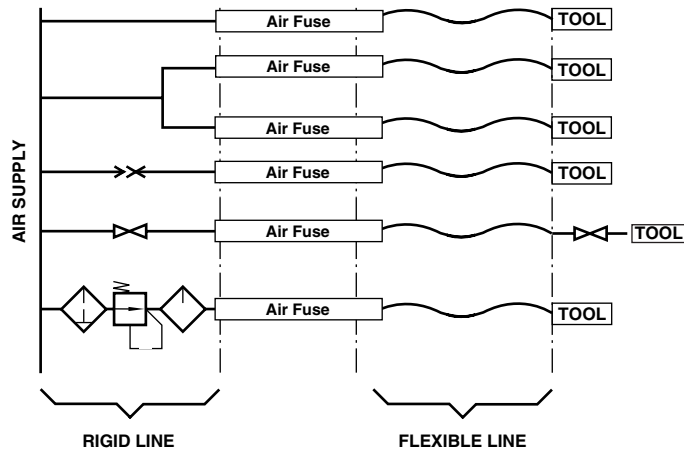
Air Fuse  
 (Excess Flow Check)



| Model | T60A289*     | T60C289*     | T60A389*     | T60C389*     | T60A489*     | T60C489*     | T60A689*     | T60C689*     | T60A889*      | T60C889*      | T60AB89*      | T60CB89*      |
|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|
|       | NPT          | ISO G        | NPT          | ISO G        | NPT          | ISO G        | NPT          | ISO G        | NPT           | ISO G         | NPT           | ISO G         |
| A     | 0.81<br>(21) | 0.81<br>(21) | 0.94<br>(24) | 0.94<br>(24) | 1.25<br>(32) | 1.25<br>(32) | 1.25<br>(32) | 1.25<br>(32) | 2.00<br>(51)  | 2.00<br>(51)  | 2.50<br>(64)  | 2.50<br>(64)  |
| B     | 2.01<br>(51) | 2.01<br>(51) | 2.44<br>(62) | 2.44<br>(62) | 3.07<br>(78) | 3.07<br>(78) | 3.54<br>(90) | 3.54<br>(90) | 4.65<br>(118) | 4.65<br>(118) | 5.71<br>(145) | 5.71<br>(145) |
| C     | 1/4          | 1/4          | 3/8          | 3/8          | 1/2          | 1/2          | 3/4          | 3/4          | 1.0           | 1.0           | 1.5           | 1.5           |
| D     | 0.39<br>(10) | 0.43<br>(11) | 0.41<br>(10) | 0.55<br>(14) | 0.59<br>(15) | 0.54<br>(14) | 0.56<br>(14) | 0.75<br>(19) | 0.66<br>(17)  | 1.00<br>(26)  | 0.68<br>(17)  | 1.00<br>(26)  |
| E     | 0.12<br>(3)  | 0.12<br>(3)  | 0.20<br>(5)  | 0.20<br>(5)  | 0.20<br>(5)  | 0.20<br>(5)  | 0.20<br>(5)  | 0.20<br>(5)  | 0.20<br>(5)   | 0.20<br>(5)   | 0.20<br>(5)   | 0.20<br>(5)   |
| F     | 0.81<br>(21) | 0.81<br>(21) | 0.94<br>(24) | 0.94<br>(24) | 1.25<br>(32) | 1.25<br>(32) | 1.25<br>(32) | 1.25<br>(32) | 2.00<br>(51)  | 2.00<br>(51)  | 2.50<br>(64)  | 2.50<br>(64)  |



### Guidelines for Typical Installation



The air fuse should be installed directly between fixed or rigid pipework and the flexible tube to protect the whole length of the flexible tube. Only tubing **after** the air fuse is protected. The air fuse must be installed in the correct orientation. Failure to do this will render it ineffective. When a shut off valve is located before the air fuse, the valve must be opened slowly in order to control initial air flow and avoid decompression effects which may trip the air fuse.

It should be noted that the OSHA standard (29 CFR ChXVII Para 1926.302-b7) relating to pneumatic power tools states "All hoses exceeding 1/2" inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in the case of hose failure."

### Choosing an Air Fuse\*

- The port size of the air fuse should be nominally equal to that of the supply lines - e.g. a 1/2 (12.7 mm) air fuse should be used with a 1/2" (12.7mm) ID hose.
- Always select the high flow model (91) if there is sufficient system pressure for the length of hose to be protected. See tables hose length vs. minimum supply pressure.
- If there is insufficient system pressure, or long hose lengths are to be protected, use model 90.
- After installation always test each valve for proper function. See section below on how to check an air fuse.
- The pneumatic system must be capable of delivering the flow required to activate the air fuse. For this reason, the air fuse is not suitable for use with the Norgren R07 miniature range in certain installations.
- For use with spring coils consult table. See table flow vs. pressure supply.

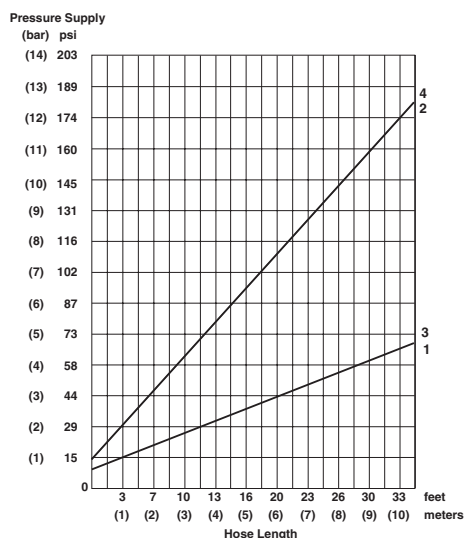
### Verifying Operation of an air fuse

- Install the air fuse following the instructions supplied
- Connect tool or complete circuit to the air line
- Switch on operation to ensure a complete cycle is performed
- If tool or complete circuit starts and runs satisfactorily, stop operation and drain air line. Disconnect hose from tool or circuit and secure hose end. Turn on air supply progressively (to avoid decompression effect). Prior to fully reaching operation conditions, the air fuse should suddenly activate and cut off the flow. A slight air flow will remain as part of the automatic re-set function. If the air fuse is not activated the unit should be disconnected and the lower flow range air fuse should be used.

\* Consult factory for the availability of Excel™ based sizing program.



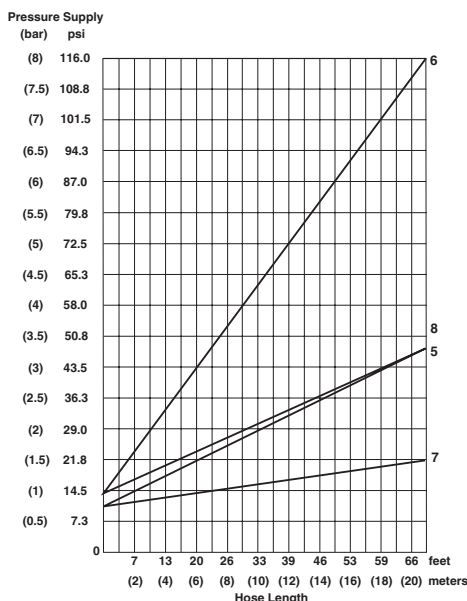
**Hose length vs minimum pressure supply (1/4 to 3/8)**



**KEY**

- 1 - T60 \* 2890 ID = 0.30" (7.5mm)
- 2 - T60 \* 2891 ID = 0.30" (7.5mm)
- 3 - T60 \* 3890 ID = 0.35" (9.0mm)
- 4 - T60 \* 3891 ID = 0.35" (9.0mm)

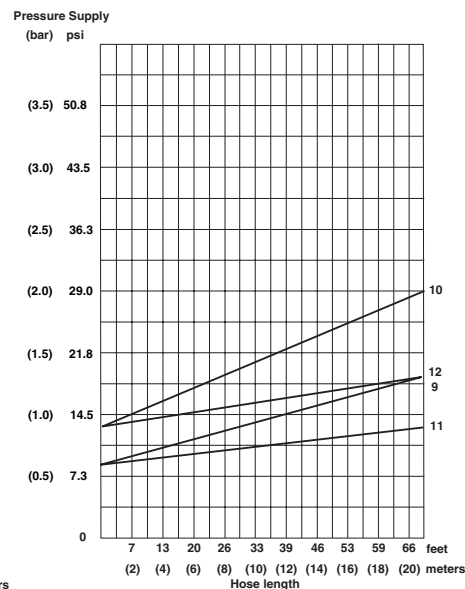
**Hose length vs minimum pressure supply (1/2 to 3/4)**



**KEY**

- 5 - T60 \* 4890 ID = 0.51" (13mm)
- 6 - T60 \* 4891 ID = 0.51" (13mm)
- 7 - T60 \* 6890 ID = 0.75" (19mm)
- 8 - T60 \* 6891 ID = 0.75" (19mm)

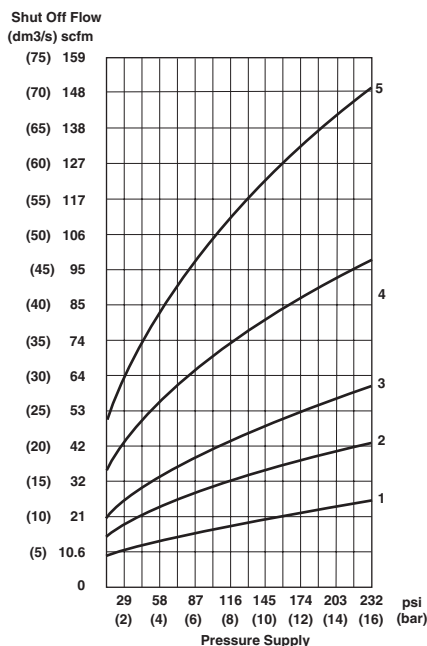
**Hose length vs pressure supply (1 to 1-1/2)**



**KEY**

- 9 - T60 \* 8890 ID = 1.00" (25.0mm)
- 10 - T60 \* 8891 ID = 1.00" (25.4mm)
- 11 - T60 \* B890 ID = 1.50" (38.1mm)
- 12 - T60 \* B891 ID = 1.50" (38.1mm)

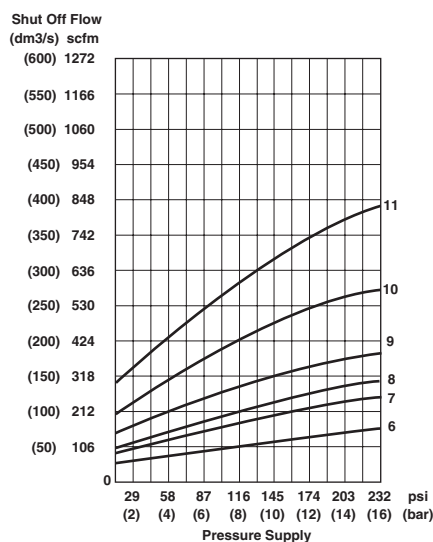
**Flow (±10%) vs pressure supply (1/4 to 1/2)**



**KEY**

- 1 - T60 \* 2890
- 2 - T60 \* 2891
- 3 - T60 \* 3890
- 4 - T60 \* 3891
- 5 - T60 \* 4891

**Flow (±10%) vs pressure supply (3/4 to 1-1/2)**



**KEY**

- 6 - T60 \* 6890
- 7 - T60 \* 6891
- 8 - T60 \* 8890
- 9 - T60 \* 8891
- 10 - T60 \* B890
- 11 - T60 \* B891

**Measurements**

- Flow and pressure tests conducted according to ISO-6358 test circuit
- Mean measured flow values are provided at standard reference condition 68°F, 15 psi, (20°C, 1.01 bar)
- Indicated pressure values are relative pressure in bar.

**Hose Lengths**

- Graphs are for indicated hose internal diameter in key.
- Consult our Technical Service for hose lengths and Internal diameters different from the recommended one.



## Function Fittings and Flow Controls

### Coiled hose selection table

Selection procedure for coiled hose:

Chose the thread size of your hose, the hose internal diameter in inches and the hose length in feet. The minimum supply pressure in psi is shown in the table below and the appropriate air fuse is shown in the left column. The “\*\*” in the middle of the part number represents the thread type - put an “A” for NPT and a “C” for ISO G threads. If no value is shown, it may not be possible to protect your hose with an air fuse. If in doubt, consult a Norgren distributor or Norgren.

| Valve Model | Thread Size | Hose length Feet | Internal Hose Diameter (inch) |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------|-------------|------------------|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|             |             |                  | 0.125                         | 0.188 | 0.215 | 0.250 | 0.313 | 0.370 | 0.470 | 0.500 | 0.590 | 0.750 | 1.000 | 1.250 | 1.500 |
| T60*2890    | 1/4         | 12               |                               | 124   | 64    | 29    | 16    | 11    | 8     | 8     | 8     | 7     | 7     | 7     | 7     |
| T60*2890    | 1/4         | 25               |                               |       | 126   | 52    | 25    | 14    | 9     | 9     | 8     | 7     | 7     | 7     | 7     |
| T60*2890    | 1/4         | 50               |                               |       | 244   | 97    | 42    | 21    | 11    | 10    | 8     | 8     | 7     | 7     | 7     |
| T60*2890    | 1/4         | 100              |                               |       |       | 187   | 76    | 35    | 15    | 13    | 10    | 8     | 7     | 7     | 7     |
| T60*2891    | 1/4         | 12               |                               |       |       | 70    | 31    | 17    | 10    | 9     | 8     | 7     | 7     | 7     | 7     |
| T60*2891    | 1/4         | 25               |                               |       |       | 137   | 57    | 27    | 13    | 11    | 9     | 8     | 7     | 7     | 7     |
| T60*2891    | 1/4         | 50               |                               |       |       |       | 107   | 47    | 19    | 15    | 11    | 8     | 7     | 7     | 7     |
| T60*2891    | 1/4         | 100              |                               |       |       |       | 207   | 87    | 30    | 23    | 14    | 9     | 8     | 7     | 7     |
| T60*3890    | 3/8         | 12               |                               |       |       | 125   | 52    | 25    | 12    | 11    | 9     | 8     | 7     | 7     | 7     |
| T60*3890    | 3/8         | 25               |                               |       |       |       | 102   | 45    | 18    | 15    | 10    | 8     | 7     | 7     | 7     |
| T60*3890    | 3/8         | 50               |                               |       |       |       | 196   | 82    | 29    | 22    | 14    | 9     | 8     | 7     | 7     |
| T60*3890    | 3/8         | 100              |                               |       |       |       |       | 157   | 50    | 38    | 20    | 11    | 8     | 7     | 7     |
| T60*3891    | 3/8         | 12               |                               |       |       |       | 132   | 57    | 21    | 17    | 11    | 8     | 8     | 7     | 7     |
| T60*3891    | 3/8         | 25               |                               |       |       |       |       | 111   | 37    | 28    | 16    | 10    | 8     | 7     | 7     |
| T60*3891    | 3/8         | 50               |                               |       |       |       |       | 215   | 67    | 49    | 25    | 12    | 8     | 8     | 7     |
| T60*3891    | 3/8         | 100              |                               |       |       |       |       |       | 126   | 91    | 42    | 17    | 9     | 8     | 7     |
| T60*4890    | 1/2         | 12               |                               |       |       |       | 132   | 57    | 21    | 17    | 11    | 8     | 8     | 7     | 7     |
| T60*4890    | 1/2         | 25               |                               |       |       |       |       | 111   | 37    | 28    | 16    | 10    | 8     | 7     | 7     |
| T60*4890    | 1/2         | 50               |                               |       |       |       |       | 215   | 67    | 49    | 25    | 12    | 8     | 8     | 7     |
| T60*4890    | 1/2         | 100              |                               |       |       |       |       |       | 126   | 91    | 42    | 17    | 9     | 8     | 7     |
| T60*4891    | 1/2         | 12               |                               |       |       |       |       | 119   | 39    | 30    | 17    | 10    | 8     | 7     | 7     |
| T60*4891    | 1/2         | 25               |                               |       |       |       |       |       | 74    | 54    | 27    | 13    | 8     | 8     | 7     |
| T60*4891    | 1/2         | 50               |                               |       |       |       |       |       | 141   | 102   | 46    | 18    | 10    | 8     | 8     |
| T60*4891    | 1/2         | 100              |                               |       |       |       |       |       |       | 196   | 85    | 29    | 12    | 9     | 8     |
| T60*6890    | 3/4         | 12               |                               |       |       |       |       | 119   | 39    | 30    | 17    | 10    | 8     | 7     | 7     |
| T60*6890    | 3/4         | 25               |                               |       |       |       |       |       | 74    | 54    | 27    | 13    | 8     | 8     | 7     |
| T60*6890    | 3/4         | 50               |                               |       |       |       |       |       | 141   | 102   | 46    | 18    | 10    | 8     | 8     |
| T60*6890    | 3/4         | 100              |                               |       |       |       |       |       |       | 196   | 85    | 29    | 12    | 9     | 8     |
| T60*6891    | 3/4         | 12               |                               |       |       |       |       |       | 96    | 70    | 33    | 15    | 9     | 8     | 7     |
| T60*6891    | 3/4         | 25               |                               |       |       |       |       |       | 193   | 139   | 62    | 23    | 11    | 8     | 8     |
| T60*6891    | 3/4         | 50               |                               |       |       |       |       |       |       |       | 116   | 38    | 14    | 9     | 8     |
| T60*6891    | 3/4         | 100              |                               |       |       |       |       |       |       |       | 224   | 69    | 20    | 11    | 9     |
| T60*8890    | 1           | 12               |                               |       |       |       |       |       | 123   | 89    | 41    | 17    | 9     | 8     | 7     |
| T60*8890    | 1           | 25               |                               |       |       |       |       |       |       | 178   | 78    | 27    | 12    | 9     | 8     |
| T60*8890    | 1           | 50               |                               |       |       |       |       |       |       |       | 148   | 47    | 16    | 10    | 8     |
| T60*8890    | 1           | 100              |                               |       |       |       |       |       |       |       |       | 88    | 24    | 13    | 9     |
| T60*8891    | 1           | 12               |                               |       |       |       |       |       | 231   | 166   | 73    | 26    | 11    | 8     | 8     |
| T60*8891    | 1           | 25               |                               |       |       |       |       |       |       |       | 144   | 46    | 16    | 10    | 8     |
| T60*8891    | 1           | 50               |                               |       |       |       |       |       |       |       |       | 85    | 24    | 12    | 9     |
| T60*8891    | 1           | 100              |                               |       |       |       |       |       |       |       |       | 163   | 41    | 17    | 11    |
| T60*B890    | 1-1/2       | 12               |                               |       |       |       |       |       |       |       | 147   | 47    | 16    | 10    | 8     |
| T60*B890    | 1-1/2       | 25               |                               |       |       |       |       |       |       |       |       | 90    | 25    | 13    | 9     |
| T60*B890    | 1-1/2       | 50               |                               |       |       |       |       |       |       |       |       | 173   | 43    | 18    | 11    |
| T60*B890    | 1-1/2       | 100              |                               |       |       |       |       |       |       |       |       |       | 78    | 29    | 16    |
| T60*B891    | 1-1/2       | 12               |                               |       |       |       |       |       |       |       |       | 89    | 25    | 13    | 9     |
| T60*B891    | 1-1/2       | 25               |                               |       |       |       |       |       |       |       |       | 179   | 44    | 18    | 12    |
| T60*B891    | 1-1/2       | 50               |                               |       |       |       |       |       |       |       |       |       | 81    | 30    | 16    |
| T60*B891    | 1-1/2       | 100              |                               |       |       |       |       |       |       |       |       |       | 154   | 52    | 24    |

# Function Fittings and Flow Controls



## Pressure Reducing Fitting Inch and Metric



- **Compact size**
- **Easy tube insertion for rapid assembly of pneumatic circuits**
- **Push-in and threaded ports**
- **Optimum pressure utilization**
- **Safer pneumatic systems**
- **Hex key adjustment and locking ring**
- **Relieving**

### Technical Data

Fluid: Compressed air, nitrogen, inert and non-combustible gases compatible with materials of construction.

**Note:** For other types of fluids or compressed gases, please consult factory.

Operating Pressure:

Primary (inlet) pressure 0 to 150 psi (0 - 10 bar)

Maximum secondary (regulated) pressure 115 psi (8 bar)

Operating Temperature:

0° to 175°F (-20° to +80°C)

Outlet Port:

5/32", 1/4", 5/16", 3/8", 1/2" O.D. tube Push-in Fittings

1/8, 1/4, 3/8, 1/2 NPTF Threaded Ports

4, 6, 8, 10mm O.D. tube Push-in Fittings

Inlet Port:

1/8, 1/4, 3/8, 1/2 NPTF Thread

1/8, 1/4, 3/8, 1/2 ISO G Thread

Tubing Types:

Nylon 11 or 12, polyurethane (95 durometer or above)

LDPE (Low Density Polyethylene)

Materials

Nickel plated brass body

Nickel plated brass collet

Plastic sealing washer

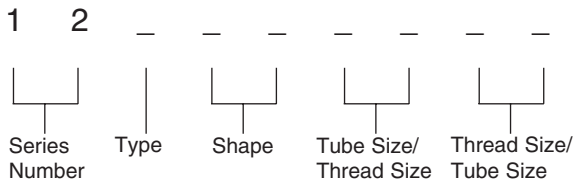
Nitrile and polyurethane elastomeric parts

Zinc plated brass banjo bolt

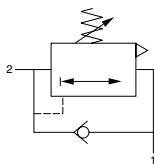
### Ordering Information

To order, quote appropriate product number from the tables on the following pages.

Product numbering system is designed to make identification and selection simple:



124GB



124GB



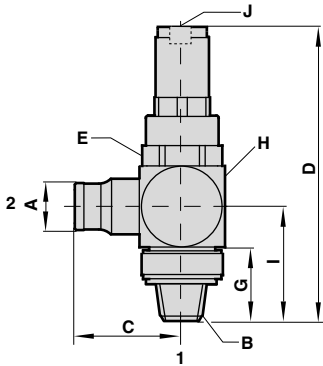


# Function Fittings and Flow Controls

Dimensions in Inches (mm)

## Pressure Reducing Fitting - 124GB

O.D. Tube

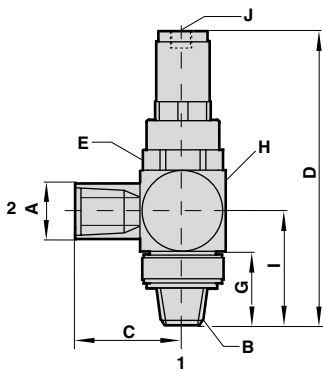


| Part Number | A<br>O/D<br>Tube | B<br>NPT<br>Thread | C            | D<br>(max)   | E<br>A/F     | G            | H SQ<br>A/F  | I            | J<br>A/F    |
|-------------|------------------|--------------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| 12 4GB 0218 | 5/32             | 1/8                | 0.89<br>(23) | 2.87<br>(73) | 0.67<br>(17) | —            | 0.63<br>(16) | 0.78<br>(20) | 0.20<br>(5) |
| 12 4GB 0418 | 1/4              | 1/8                | 0.91<br>(23) | 2.87<br>(73) | 0.67<br>(17) | —            | 0.63<br>(16) | 0.78<br>(20) | 0.20<br>(5) |
| 12 4GB 0428 | 1/4              | 1/4                | 1.0<br>(25)  | 3.10<br>(79) | 0.67<br>(17) | 0.64<br>(16) | 0.79<br>(20) | 1.02<br>(26) | 0.20<br>(5) |
| 12 4GB 0528 | 5/16             | 1/4                | 1.03<br>(26) | 3.10<br>(79) | 0.67<br>(17) | 0.64<br>(16) | 0.79<br>(20) | 1.02<br>(26) | 0.20<br>(5) |
| 12 4GB 0538 | 5/16             | 3/8                | 1.11<br>(28) | 3.35<br>(85) | 0.87<br>(22) | 0.69<br>(18) | 0.94<br>(24) | 1.14<br>(29) | 0.34<br>(6) |
| 12 4GB 0638 | 3/8              | 3/8                | 1.29<br>(33) | 3.35<br>(85) | 0.87<br>(22) | 0.69<br>(18) | 0.94<br>(24) | 1.14<br>(29) | 0.34<br>(6) |
| 12 4GB 0748 | 1/2              | 1/2                | 1.56<br>(40) | 3.54<br>(90) | 1.06<br>(27) | —            | 1.18<br>(30) | 1.38<br>(35) | 0.24<br>(6) |

- 1) Inlet Port
- 2) Outlet Port

Note: For mounting in ports 2 & 4 of a pneumatic directional control valve

## Pressure Reducing Fitting - 124GB

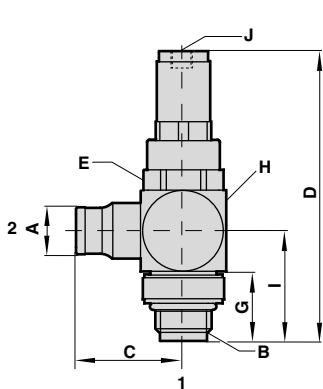


| Part Number | A<br>NPT<br>Thread | B<br>NPT<br>Thread | C            | D<br>(max)   | E<br>A/F     | G            | H SQ<br>A/F  | I            | J<br>A/F    |
|-------------|--------------------|--------------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| 12 4GB 1818 | 1/8                | 1/8                | 0.83<br>(21) | 2.87<br>(73) | 0.67<br>(17) | —            | 0.64<br>(16) | 0.78<br>(20) | 0.20<br>(5) |
| 12 4GB 2828 | 1/4                | 1/4                | 1.14<br>(29) | 3.10<br>(79) | 0.67<br>(17) | 0.64<br>(16) | 0.79<br>(20) | 1.02<br>(26) | 0.20<br>(5) |
| 12 4GB 3838 | 3/8                | 3/8                | 1.20<br>(31) | 3.35<br>(85) | 0.87<br>(22) | 0.69<br>(18) | 0.94<br>(24) | 1.14<br>(29) | 0.24<br>(6) |
| 12 4GB 4848 | 1/2                | 1/2                | 1.54<br>(39) | 3.54<br>(90) | 1.06<br>(27) | —            | 1.18<br>(30) | 0.98<br>(35) | 0.24<br>(6) |

- 1) Inlet Port
- 2) Outlet Port

Note: For mounting in ports 2 & 4 of a pneumatic directional control valve

## Pressure Reducing Fitting - 102GB



| Part Number | A<br>O/D<br>tube     | B<br>ISO G<br>Thread | C            | D<br>(max)   | E<br>A/F     | G            | H SQ<br>A/F  | I            | J<br>A/F    |
|-------------|----------------------|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| 10 2GB 0418 | 4                    | 1/8                  | 0.89<br>(22) | 2.87<br>(73) | 0.67<br>(17) | 0.25<br>(6)  | 0.64<br>(16) | 0.78<br>(20) | 0.20<br>(5) |
| 10 2GB 0628 | 6                    | 1/4                  | 1.00<br>(25) | 3.54<br>(90) | 0.67<br>(17) | 0.41<br>(11) | 0.79<br>(20) | 1.02<br>(26) | 0.20<br>(5) |
| 10 2GB 0828 | 8                    | 1/4                  | 1.03<br>(26) | 3.54<br>(90) | 0.67<br>(17) | 0.41<br>(11) | 0.79<br>(20) | 1.02<br>(26) | 0.20<br>(5) |
| 10 2GB 0838 | 8                    | 3/8                  | 1.11<br>(28) | 3.78<br>(96) | 0.87<br>(22) | 0.43<br>(11) | 0.94<br>(24) | 1.14<br>(29) | 0.24<br>(6) |
| 10 2GB 1038 | 10                   | 3/8                  | 1.29<br>(33) | 3.78<br>(96) | 0.87<br>(22) | 0.43<br>(11) | 0.94<br>(24) | 1.14<br>(29) | 0.24<br>(6) |
| Part Number | A<br>ISO G<br>Thread | B<br>ISO G<br>Thread | C            | D<br>(max)   | E<br>A/F     | G            | H SQ<br>A/F  | I            | J<br>A/F    |
| 10 2GB 1818 | 1/8                  | 1/8                  | 0.69<br>(18) | 2.87<br>(73) | 0.67<br>(17) | 0.25<br>(6)  | 0.64<br>(16) | 0.78<br>(20) | 0.20<br>(5) |
| 10 2GB 2828 | 1/4                  | 1/4                  | 0.96<br>(25) | 3.19<br>(81) | 0.37<br>(17) | 0.41<br>(11) | 0.79<br>(20) | 1.02<br>(26) | 0.20<br>(5) |
| 10 2GB 3838 | 3/8                  | 3/8                  | 1.06<br>(27) | 3.46<br>(88) | 0.87<br>(22) | 0.43<br>(11) | 0.94<br>(24) | 1.14<br>(29) | 0.24<br>(6) |
| 10 2GB 4848 | 1/2                  | 1/2                  | 1.34<br>(34) | 3.50<br>(89) | 1.06<br>(27) | 0.37<br>(10) | 1.18<br>(30) | 1.42<br>(36) | 0.24<br>(6) |

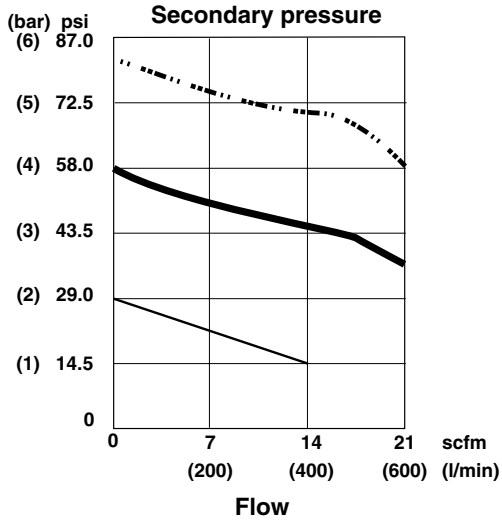
- 1) Inlet Port
- 2) Outlet Port

Note: For mounting in ports 2 & 4 of a pneumatic directional control valve

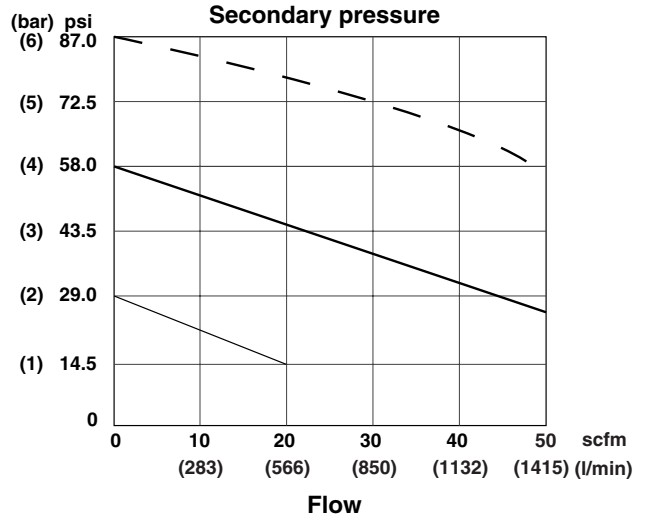


**Flow characteristics at primary pressure of 100 psi (7 bar)**  
 Inch and Metric Versions

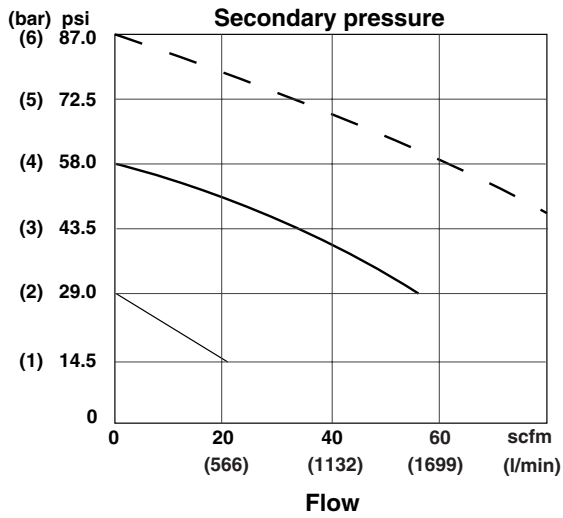
**1/8 Pipe**



**1/4 Pipe**



**3/8 and 1/2 Pipe**



## Pilot Operated Check Valve Inch and Metric

- Compact size
- Easy tube insertion for rapid assembly of pneumatic circuits
- Positive tube retention
- Safer pneumatic systems
- Push-in and threaded ports

### Technical Data

Fluid: Compressed air, nitrogen, inert and non-combustible gases compatible with materials of construction.

**Note:** For other types of fluids or compressed gases, please consult factory.

Operating Pressure:  
15-150 psi (1 - 10 bar)

Operating Temperature:  
0° to 175°F (-20° to +80°C)

Inlet Port:  
1/4", 3/8", 1/2" O.D. tube Push-in Fittings  
1/8, 1/4, 3/8, 1/2 NPTF Threaded Ports  
6, 8, 10, 12mm O.D. tube Push-in Fittings

Outlet Port:  
1/8, 1/4, 3/8, 1/2 NPTF Thread\*  
1/4, 3/8, 1/2 ISO G Thread

\* Male NPTF threads (port 2) should be assembled hand tight and then wrenched no more than 1/2 to 3/4 turn.

| NPTF Thread (male) | Maximum Tightening Torque ft lbs (Nm) |
|--------------------|---------------------------------------|
| 1/8                | 5 (7)                                 |
| 1/4                | 11 (15)                               |
| 3/8                | 14 (20)                               |
| 1/2                | 14 (20)                               |

Signal Port:  
10-32 UNF on NPT ported models  
M5 on metric models

Tube Sizes  
1/4", 3/8", 1/2" O/D  
6, 8, 10, 12mm O/D

Tubing Types:  
Nylon 11 or 12, polyurethane (95 durometer or above), and LDPE (Low Density Polyethylene)

### Materials

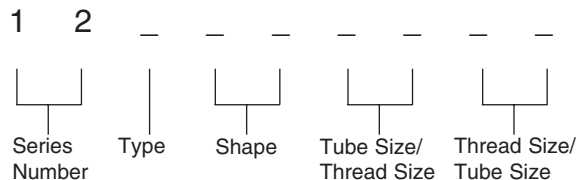
- Nickel plated brass body
- Nickel plated brass collet
- Plastic sealing washer (ISO G)
- Nitrile and polyurethane elastomeric parts
- Zinc plated brass banjo bolts



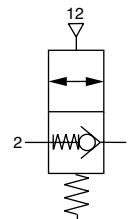
### Ordering Information

To order, quote appropriate product number from the tables on the following pages.

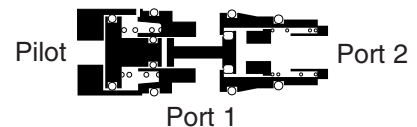
Product numbering system is designed to make identification and selection simple:



124GA



124GA

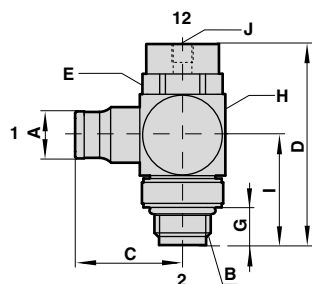


| Flow Rates (scfm)           |      |      |      |      |
|-----------------------------|------|------|------|------|
| Port Size                   | 1/8  | 1/4  | 3/8  | 1/2  |
| From 2 to 1<br>P12 = 88 psi | 10.2 | 23.9 | 40.8 | 67.4 |
| From 1 to 2<br>P12 = 0 psi  | 4.5  | 21.8 | 41.3 | 66.7 |



## Pilot Operated Check Valve - 124GA

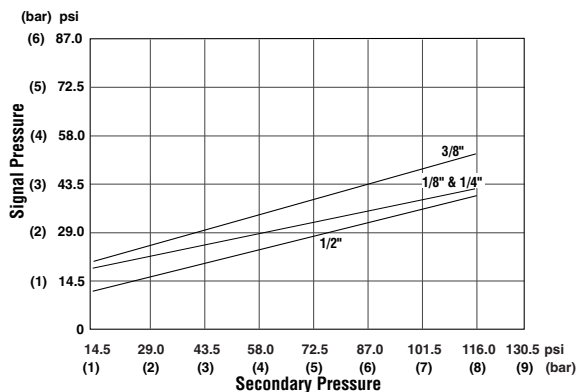
Inch O.D. Tube x NPTF thread



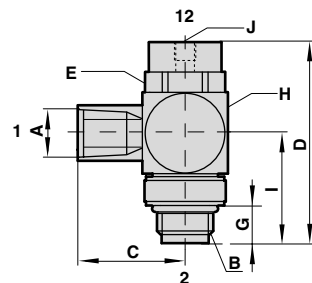
| Product Number | A O.D. Tube | B NPT Thread | C         | D         | E A/F     | G         | H SQ A/F  | I         | J         |
|----------------|-------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 12 4GA 0418    | 1/4"        | 1/8          | 0.91 (23) | 1.61 (41) | 0.51 (13) | 0.48 (12) | 0.63 (16) | 0.78 (20) | 10-32 UNF |
| 12 4GA 0428    | 1/4"        | 1/4          | 0.99 (25) | 1.89 (48) | 0.67 (17) | 0.64 (16) | 0.79 (20) | 1.02 (26) | 10-32 UNF |
| 12 4GA 0638    | 3/8"        | 3/8          | 1.29 (33) | 2.16 (55) | 0.87 (22) | 0.69 (18) | 0.94 (24) | 1.14 (29) | 10-32 UNF |
| 12 4GA 0748    | 1/2"        | 1/2          | 1.56 (40) | 2.58 (66) | 1.06 (27) | 0.87 (22) | 1.18 (30) | 1.42 (36) | 10-32 UNF |

- 1) Inlet Port
- 2) Outlet Port
- 12) Signal Port

Note: For mounting in pairs on a cylinder



## Pilot Operated Check Valve - 124GA



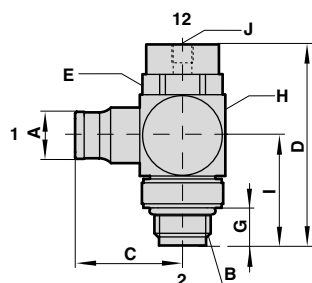
| Product Number | A NPT Thread | B NPT Thread | C         | D         | E         | G A/F     | HSQ A/F   | I         | J         |
|----------------|--------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 12 4GA 1818    | 1/8          | 1/8          | 0.87 (22) | 1.61 (41) | 0.51 (13) | 0.48 (12) | 0.63 (16) | 0.78 (20) | 10-32 UNF |
| 12 4GA 2828    | 1/4          | 1/4          | 1.14 (29) | 1.89 (48) | 0.67 (17) | 0.64 (16) | 0.79 (20) | 1.02 (26) | 10-32 UNF |
| 12 4GA 3838    | 3/8          | 3/8          | 1.20 (31) | 2.17 (55) | 0.87 (22) | 0.69 (18) | 0.94 (24) | 1.14 (29) | 10-32 UNF |
| 12 4GA 4848    | 1/2          | 1/2          | 1.54 (39) | 2.58 (66) | 1.06 (27) | 0.87 (22) | 1.18 (30) | 1.42 (36) | 10-32 UNF |

- 1) Inlet Port
- 2) Outlet Port
- 12) Signal Port

Note: For mounting in pairs on a cylinder

## Pilot Operated Check Valve - 102GA

mm O.D. tube x ISO G thread



| Product Number | A O/D tube | B ISO G Thread | C         | D         | E A/F     | G         | HSQ A/F   | I         | J  |
|----------------|------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|----|
| 10 2GA 0628    | 6          | 1/4            | 0.99 (25) | 1.87 (48) | 0.67 (17) | 0.41 (11) | 0.79 (20) | 1.02 (26) | M5 |
| 10 2GA 0828    | 8          | 1/4            | 1.03 (26) | 1.87 (48) | 0.67 (17) | 0.41 (11) | 0.79 (20) | 1.02 (26) | M5 |
| 10 2GA 0838    | 8          | 3/8            | 1.11 (28) | 2.15 (55) | 0.87 (22) | 0.43 (11) | 0.94 (24) | 1.14 (29) | M5 |
| 10 2GA 1038    | 10         | 3/8            | 1.29 (33) | 2.15 (55) | 0.87 (22) | 0.43 (11) | 0.94 (24) | 1.14 (29) | M5 |
| 10 2GA 1248    | 12         | 1/2            | 1.56 (40) | 2.56 (65) | 1.06 (27) | 0.50 (13) | 1.18 (30) | 1.42 (36) | M5 |

- 1) Inlet Port
- 2) Outlet Port
- 12) Signal Port

Note: For mounting in pairs on a cylinder

- Compact units
- Easy tube insertion for rapid assembly of pneumatic circuits
- Positive tube retention
- Simplifies pneumatic systems
- Eliminates need for electrical reed switches
- Exhausts on signal side (port 2)



### Technical Data

Fluid: Compressed air, nitrogen, inert and non-combustible gases compatible with materials of construction.

**Note:** For other types of fluids or compressed gases, please consult factory.

#### Operating Pressure:

|                        |                            |
|------------------------|----------------------------|
| Cylinder pressure (Pc) | 145 psi (10 bar) max       |
| Sensor supply pressure | 43 to 145 psi (3 - 10 bar) |
| Sensor switch pressure | 14.5 psi (1.0 bar) typical |

#### Operating Temperature:

0° to 175°F (-20° to +80°C)

#### Body Ports

- 5/32" O.D. tube Push-in
- 4mm O.D. tube Push-in
- 1/8, 1/4 NPTF Banjo Bolt
- 1/8, 1/4 ISO G Banjo Bolt

#### Tube Sizes

- 5/32" O/D
- 4mm O/D

#### Tubing Types:

- Nylon 11 or 12, polyurethane (95 durometer or above) and LPDE (Low Density Polyethylene)

### Materials

Body, swivel fitting and collet: Nickel plated brass

O-ring: Silicone free Nitrile

Sealing washer (parallel male threads): Thermoplastic

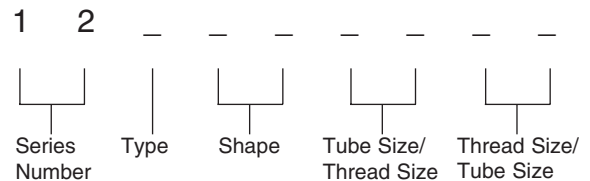
Tubing: Nylon 11 or 12, Polyurethane (95 durometer or above) and LDPE (Low Density Polyethylene).

**Note:** Lower durometer polyurethane may be used, however, an internal tube support is required to prevent internal collapse of the tube wall.

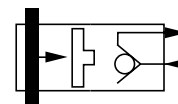
### Ordering Information

To order, quote appropriate product number from the tables on the following pages.

Product numbering system is designed to make identification and selection simple:



124GD



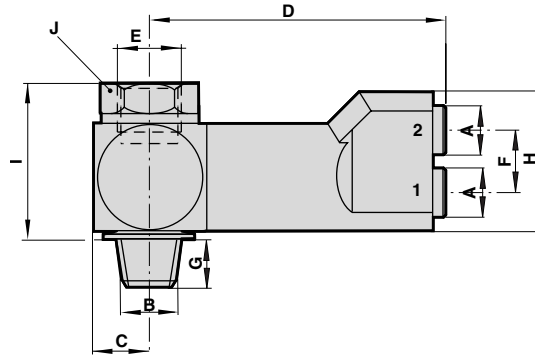
124GD





**Pressure Sensor Fitting- 124GD**

Inch O.D. tube x NPTF Banjo Bolt



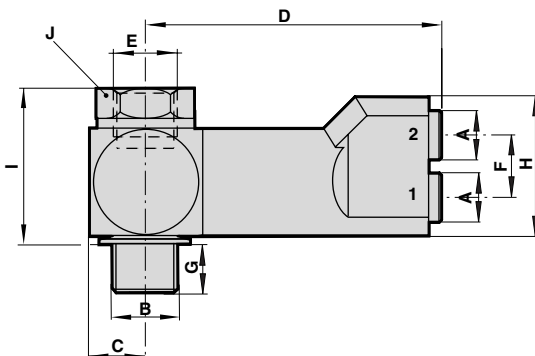
| Product Number | A Tube O/D | B NPT Thread | C            | D            | E NPT Thread | F            | G            | H            | I            | J A/F |
|----------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|
| 12 4GD 0218    | 5/32"      | 1/8          | 0.35<br>(9)  | 1.77<br>(45) | 1/8          | 0.39<br>(10) | 0.39<br>(10) | 0.83<br>(21) | 1.12<br>(29) | 9/16" |
| 12 4GD 0228    | 5/32"      | 1/4          | 0.43<br>(11) | 1.85<br>(47) | 1/4          | 0.39<br>(10) | 0.56<br>(14) | 0.83<br>(21) | 1.33<br>(34) | 3/4"  |

This sensor fitting produces an end of stroke signal when exhaust back pressure in a cylinder decays below a set value. It should be mounted directly on the cylinder and can be used with a flow control device mounted into the top port.

It is recommended that the sensor supply pressure to port 1 be the same as the nominal working pressure of the cylinder.

**Pressure Sensor Fitting- 102GD**

mm O.D. tube x ISO G Banjo Bolt



| Product Number | A Tube O/D | B ISO G Thrd | C            | D            | E ISO G thread | F            | G           | H            | I            | J A/F        |
|----------------|------------|--------------|--------------|--------------|----------------|--------------|-------------|--------------|--------------|--------------|
| 10 2GD 0418    | 4          | 1/8          | 0.35<br>(9)  | 1.77<br>(45) | 1/8            | 0.39<br>(10) | 0.24<br>(6) | 0.83<br>(21) | 0.98<br>(25) | 0.59<br>(15) |
| 10 2GD 0428    | 4          | 1/4          | 0.43<br>(11) | 1.85<br>(47) | 1/4            | 0.39<br>(10) | 0.28<br>(7) | 0.83<br>(21) | 1.14<br>(29) | 0.75<br>(19) |

This sensor fitting produces an end of stroke signal when exhaust back pressure in a cylinder decays below a set value. It should be mounted directly on the cylinder and can be used with a flow control device mounted into the top port.

It is recommended that the sensor supply pressure to port 1 be the same as the nominal working pressure of the cylinder.

- Enables air to be exhausted quickly from air reservoirs and cylinders
- Allows higher cylinder speeds to be achieved
- Simple, compact design and construction
- Reliable operation



### Technical Data

#### Fluid:

Compressed air, filtered, lubricated and non-lubricated

#### Operation:

Diaphragm

#### Mounting:

Line mounted

#### Port Size:

#### Female Thread

(Inlet, outlet and exhaust ports)

| NPT     |                 | ISO G |                 |
|---------|-----------------|-------|-----------------|
| 1/8 NPT | <b>T70A1800</b> | G1/8  | <b>T70C1800</b> |
| 1/4 NPT | <b>T70A2800</b> | G1/4  | <b>T70C2800</b> |
| 3/8 NPT | <b>T70A3800</b> | G3/8  | <b>T70C3800</b> |
| 1/2 NPT | <b>T70A4800</b> | G1/2  | <b>T70C4800</b> |
| 3/4 NPT | <b>C/511*</b>   |       |                 |

\* Note: C/511 has 1/2" NPT inlet port and 3/4" NPT outlet ports.

#### Operating Pressure:

7 - 145 psi (0.5 - 10 bar)

#### Operating Temperature:

0° to 175°F (-20°\*\* to +80°C)

\*\*Consult our Technical Service for use below 35°F (2°C)

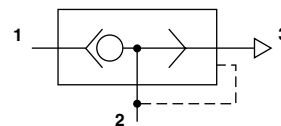
### Materials

Zinc or aluminum alloy body and cover, nitrile seals (PU seal on C/511).

### Ordering Information

To order, quote model number from page FIT-3-21, e.g. T70A2800 for the NPT ported version. This range replaces the C/510 and S/510 models.

### Quick Exhaust Valve



### Typical Fill and Exhaust Times (seconds)

| Model    | Port size | Volume    | Fill time | Exhaust time |
|----------|-----------|-----------|-----------|--------------|
| T70A1800 | 1/8" NPT  | 150 cc    | 0.036     | 0.021        |
| T70A2800 | 1/4" NPT  | 150 cc    | 0.023     | 0.017        |
| T70A3800 | 3/8" NPT  | 1500 cc   | 0.110     | 0.080        |
| T70A4800 | 1/2" NPT  | 15,000 cc | 0.460     | 0.480        |
| C/511    | 3/4" NPT  | 15,000 cc | 0.480     | 0.250        |

Note: Fill time is 0 to 80 psig (0 to 5.5 bar), and exhaust time is 101 to 20 psig (7.0 to 1.4 bar)



## General Information

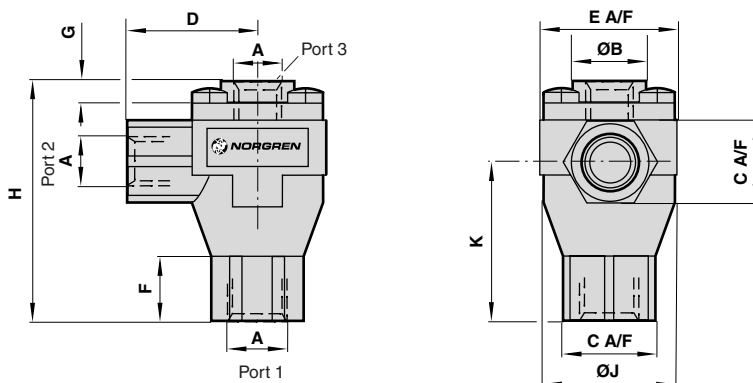
| Model<br>NPT | Model<br>ISO G | Inlet port | Outlet port | Exhaust port | Cv Flow Factor<br>Direction 1 - 2* | Cv Flow Factor<br>Direction 2 - 3 | Weight<br>oz (kg) | Repair kit<br>(seals only) |
|--------------|----------------|------------|-------------|--------------|------------------------------------|-----------------------------------|-------------------|----------------------------|
| T70A 1800    | T70C 1800      | 1/8        | 1/8         | 1/8          | 0.9                                | 1.8                               | 5.3 (0.15)        | T70C1800K0                 |
| T70A 2800    | T70C 2800      | 1/4        | 1/4         | 1/4          | 1.9                                | 2.5                               | 4.6 (0.13)        | T70C2800K0                 |
| T70A 3800    | T70C 3800      | 3/8        | 3/8         | 3/8          | 3.8                                | 5.5                               | 7.4 (0.21)        | T70C3800K0                 |
| T70A 4800    | T70C 4800      | 1/2        | 1/2         | 1/2          | 5.3                                | 5.9                               | 6.7 (0.19)        | T70C4800K0                 |
| C/511        | S/511          | 1/2        | 3/4         | 3/4          | **1.9/5.1                          | 10.8                              | 11.0 (0.31)       | QS/511/00                  |

\* Flow factor measured at 87 psi (6 bar) (inlet) guideline direction

\*\* Alternative Cv shown for 14.5 psi (1 bar). For T70 Series, Cv approximately the same as at 6 bar.

NPT threads per ANSI B1.20.1

## Quick Exhaust Valve

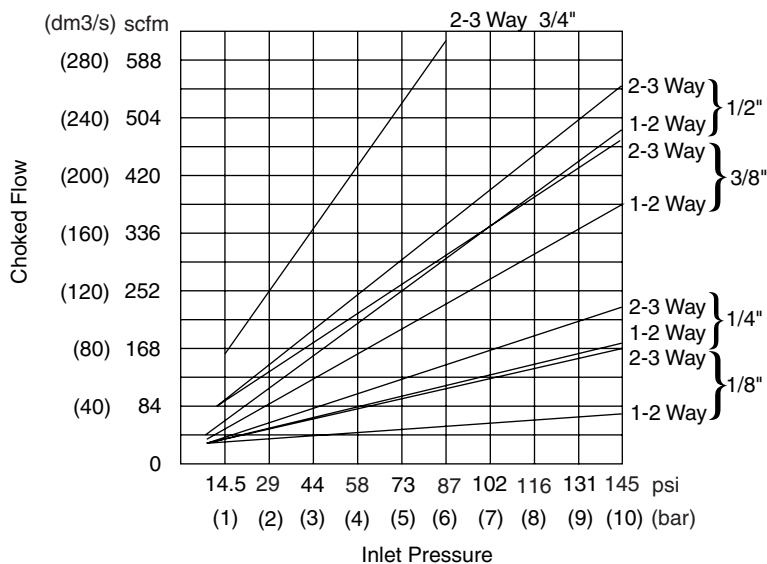


| Model | T70A1800    | T70C1800    | T70A2800    | T70C2800    | T70A3800    | T70C3800    | T70A4800    | T70C4800    | C/511*      |
|-------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| A     | 1/8 NPT     | G1/8        | 1/4 NPT     | G1/4        | 3/8 NPT     | G3/8        | 1/2 NPT     | G1/2        | 1/20 - 3/4  |
| ØB    | 0.75 (19)   | 0.75 (19)   | 0.75 (19)   | 0.75 (19)   | 1.18 (30)   | 1.18 (30)   | 1.18 (30)   | 1.18 (30)   | –           |
| C A/F | 0.75 (19)   | 0.75 (19)   | 0.75 (19)   | 0.75 (19)   | 1.18 (30)   | 1.18 (30)   | 1.18 (30)   | 1.18 (30)   | –           |
| D     | 1.10 (28)   | 1.10 (28)   | 1.10 (28)   | 1.10 (28)   | 1.57 (40)   | 1.57 (40)   | 1.57 (40)   | 1.57 (40)   | 2.0 (50)    |
| E A/F | 1.18 (30)   | 1.18 (30)   | 1.18 (30)   | 1.18 (30)   | 1.81 (46)   | 1.81 (46)   | 1.81 (46)   | 1.81 (46)   | 1.87 (47.5) |
| F     | 0.60 (15.3) | 0.60 (15.3) | 0.60 (15.3) | 0.60 (15.3) | 0.61 (15.5) | 0.61 (15.5) | 0.61 (15.5) | 0.61 (15.5) | –           |
| G     | 0.14 (3.5)  | 0.14 (3.5)  | 0.14 (3.5)  | 0.14 (3.5)  | 0.16 (4)    | 0.16 (4)    | 0.16 (4)    | 0.16 (4)    | –           |
| H     | 2.09 (53)   | 2.09 (53)   | 2.09 (53)   | 2.09 (53)   | 2.89 (73.5) | 2.89 (73.5) | 2.89 (73.5) | 2.89 (73.5) | 3.38 (86)   |
| ØJ    | 1.14 (29)   | 1.14 (29)   | 1.14 (29)   | 1.14 (29)   | 1.81 (46)   | 1.81 (46)   | 1.81 (46)   | 1.81 (46)   | –           |
| K     | 1.40 (35.5) | 1.40 (35.5) | 1.40 (35.5) | 1.40 (35.5) | 1.89 (48)   | 1.89 (48)   | 1.89 (48)   | 1.89 (48)   | 2.72 (69)   |

\* Note the shape of the C/511 is different. Consult our technical department for the exact specifications.

### T70 Series Flowrate

Choked flow versus inlet pressure  
(1 - 2) + (2 - 3)



- Allow two independent signal sources to be connected to a common pilot line
- Can be used to perform an 'OR' logic function
- Selects the highest of two applied pressures
- Can be combined to operate from three or more sources
- Valves can be ganged together



### Technical Data

#### Fluid:

Compressed air, filtered, lubricated and non-lubricated, inert gases

#### Operation:

Shuttle valve

#### Mounting:

Through holes in valve body

#### Port Size:

Female Thread

|                         |                      |
|-------------------------|----------------------|
| NPT                     | ISO G                |
| 1/8 NPT <b>T65A1800</b> | G1/8 <b>T65C1800</b> |
| 1/4 NPT <b>T65A2800</b> | G1/4 <b>T65C2800</b> |

#### Operating Pressure:

10 to 145 psi (0.7 - 10 bar)

#### Operating Temperature:

0° to 175°F (-20°\* to +80°C)

\*Consult our Technical Service for use below 35°F (2°C)

### Materials

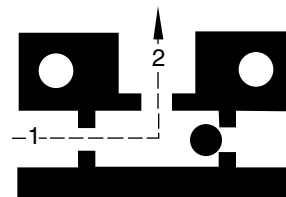
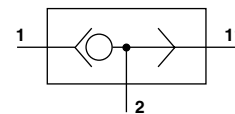
Body: Zinc

Ball: Nitrile

Seat: Brass

### Ordering Information

To order, quote model number from table on page. FIT-3-19, e.g. T65A1800 for the 1/8" NPT.

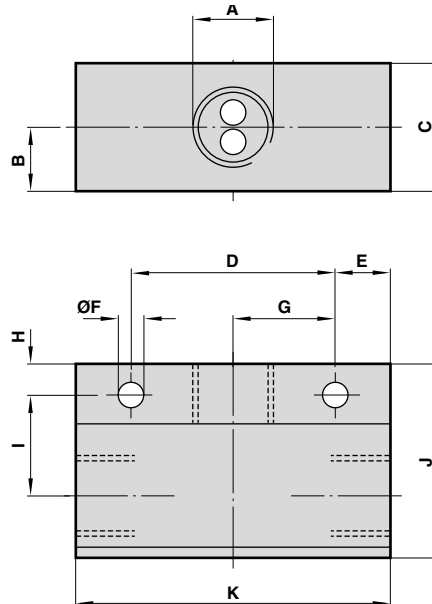




| Product Number |          | Port Size | Flow Factor Cv | Weight oz. (kg) |
|----------------|----------|-----------|----------------|-----------------|
| NPT            | ISO G    |           |                |                 |
| T65A1800       | T65C1800 | 1/8       | 0.42           | 1.9 (.055)      |
| T65A2800       | T65C2800 | 1/4       | 0.64           | 4.6 (.130)      |

NPT according to ANSI B1.20.1

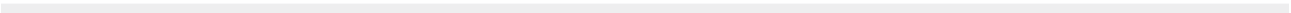
Shuttle Valve



| Model     | A       | B         | C         | D         | E         | F        | G         | H        | I         | J         | K         |
|-----------|---------|-----------|-----------|-----------|-----------|----------|-----------|----------|-----------|-----------|-----------|
| T65A 1800 | 1/8 NPT | 0.30 (8)  | 0.59 (15) | 0.79 (20) | 0.3 (8)   | 0.21 (5) | 0.39 (10) | 0.24 (6) | 0.39 (10) | 1.00 (25) | 1.42 (36) |
| T65C 1800 | G1/8    | 0.30 (8)  | 0.59 (15) | 0.79 (20) | 0.3 (8)   | 0.21 (5) | 0.39 (10) | 0.24 (6) | 0.39 (10) | 1.00 (25) | 1.42 (36) |
| T65A 2800 | NPT1/4  | 0.39 (10) | 0.79 (20) | 0.98 (25) | 0.49 (13) | 0.21 (5) | 0.49 (13) | 0.31 (8) | 0.47 (12) | 1.18 (30) | 2.00 (50) |
| T65C 2800 | G1/4    | 0.39 (10) | 0.79 (20) | 0.98 (25) | 0.49 (13) | 0.21 (5) | 0.49 (13) | 0.31 (8) | 0.47 (12) | 1.18 (30) | 2.00 (50) |

NPT according to ANSI B1.20.1

G according to BS 2779/ISO 228/1



# Nugget 200 Spool Valves

Solenoid, Air, Manual, and Mechanically Operated Pneumatic Valves. Available in 1/4", 3/8", or 1/2" ports

**Contents**

|  |                  |
|--|------------------|
| <b>Features</b> .....  | <b>VAL-10-2</b>  |
| <b>Solenoid Pilot Actuated Inline and Stacking Valves</b> . . .            | <b>VAL-10-4</b>  |
| <b>Air Pilot Actuated Inline and Stacking Valves</b> . . . . .             | <b>VAL-10-18</b> |
| <b>Manual and Mechanical Actuated Inline and Stacking Valves</b> . . . . . | <b>VAL-10-23</b> |
| <b>Fixed Length Manifold</b> . . . . .                                     | <b>VAL-10-32</b> |
| <b>Special Instructions - Stacking Valves</b> . . . . .                    | <b>VAL-10-34</b> |
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**Stacking Valve with Junction Box**



**Manual Lever Operator**



**Low Pressure Air Operator on Inline Valve**



## Nugget 200 Spool Valves

Norgren Nugget 200 valves feature a lightweight, one-piece aluminum spool and nitrile seal assembly. Shifting forces are minimized because of the low inertial spool made from high strength anodized aluminum. Highly durable low friction lip seals are designed to operate with lubricated or nonlubricated air.

### Rugged Solenoid, Air, Manual, or Mechanical Operators

Nugget 200's one hundred and twelve different operators are designed to last for millions of cycles. Bodies and operators are made of precision machined, cast aluminum, zinc, PPA, or acetal.

### High Flow

An inline Cv of 1.6 provides exceptionally high flow for its compact size. This makes the Nugget 200 valve appropriate for a wide range of applications, from machine control systems to air line control.

### Segmented Latch Type Detent

The spool is held securely in place by a unique segmented detent which engages a lip on the piston.

### Shock Absorbent Bumpers

Valve life is extended because of substantial bumpers which absorb the shock and vibration of the rapidly shifting spool and piston.

### Port and Operator Identification

Each of the ports is identified by a permanent number adjacent to the port on both the body and end plates. In addition, on inline valves, a two-digit number at each end of the body indicates the ports connected when the operator at that end is actuated.

### A Wide Range of Valve Accessories

Norgren offers a wide range of accessories for use with the Nugget 200 valve, including valve body cover plates, mufflers, intermediate supply exhaust block, isolating plugs, solenoid exhaust filter nut and many more. These accessories allow cost-efficient customizing for your specific application.



Stacking Valve with Junction Box

## Four Mounting Styles

**Inline Valves** mount directly to the air line and are available with the following features:

- 1/4", 3/8", or 1/2" PTF or ISO G ports.
- 3-port/2-position, 5-port/2-position, or 5-port/3-position configurations. The 3-port/2-position configuration is not available with 1/2" ports.

**Stacking Valve Assemblies** are two or more valves manifolded together with tie rods and end plates. They are available with either a common inlet port, independent exhaust ports, or with common inlet and exhaust ports located in the end plates. Features include:

- 3/8" ports in the end plate. 1/4" or 3/8" cylinder ports in valve body.
- 5-port/2-position or 5-port/3-position configurations.

### Stacking Valve Assemblies with Junction

**Box** feature a plug-in solenoid operator which allows the valve to be serviced without disturbing the electrical wires. The solenoid plugs into a terminal block in the junction box, with a gasket to prevent entry of dust or moisture. They are available only in the common inlet and exhaust ports configuration. Other features are the same as listed above for Stacking Valve Assemblies.

All **stacking valves** mount on approximately 1-1/4" centers reducing installation space requirements.

**Fixed Length Manifolds** are available for most Nugget 200 1/4" and 3/8" inline valves. The fixed length manifold reduces plumbing and installation time. The lightweight aluminum construction uses 3/4" PTF common inlet and exhaust ports.

These manifolds are available in 2 to 10 station lengths.

## Durable Finish

External surfaces are protected with an oven cured, epoxy resin paint which provides excellent corrosion protection and chip resistance.



### Aesthetic Appearance

Norgren's high luster black powder paint gives any control circuit installation the quality appearance reflecting the superior operating capacity built into every Nugget 200 valve.

### Low Watt Solenoid Options

The 120 VAC and 24 VAC solenoid operator options require only 3.5-watts of power and the 115 VDC operator requires 3.4 watts. All other DC operators require only 2 watts of power, ideal for computer based control systems as well as industrial applications where minimum energy consumption is desired.

### Rotatable Connector and Coil

The standard cable grip electrical connector can be rotated 180°, the solenoid coil can be turned in increments of 90°, and the solenoid operator housing can be turned in increments of 180° making the operators adaptable for easy installation.

### Electrical Connector Options

A cable grip connector with indicator light; a 1/2" NPT conduit connector; and a 5-foot, three-conductor, molded cable with or without indicator light, surge protection and reverse voltage protection are available.

### Solenoid Manual Overrides

Standard solenoid operators are furnished with locking manual overrides to provide a means of shifting the valve without electrical power. Optional solenoids without overrides and with nonlocking overrides are available.

### CSA Certified Valves

Completed inline and stacking valve assemblies with certain operators are CSA Certified. Stacking valves with junction box and indicator light are CSA Component Certified.

### Internal or External Solenoid Pilot Supply

All solenoid operated valves can be quickly converted from an internal to an external pilot supply by interchanging the positions of two interface seals and removing the external supply port pipe plug.

### High Flow Pilot Exhaust Orifice

Oversize pilot exhaust orifice provides rapid return time when valve is deactuated.



**Low Pressure Air Operator on  
Inline Valve**

### Solenoid Diffuser Plug

A diffuser plug is factory installed in every solenoid pilot exhaust to help prevent entry of contaminants during shipping and normal operation. It may be removed when minimum response times are desired.

### Electrical Connector Options

A cable grip connector with indicator light; a 1/2" NPT conduit connector; and a 5-foot, three-conductor, molded cable with or without indicator light, surge protection and reverse voltage protection are available.

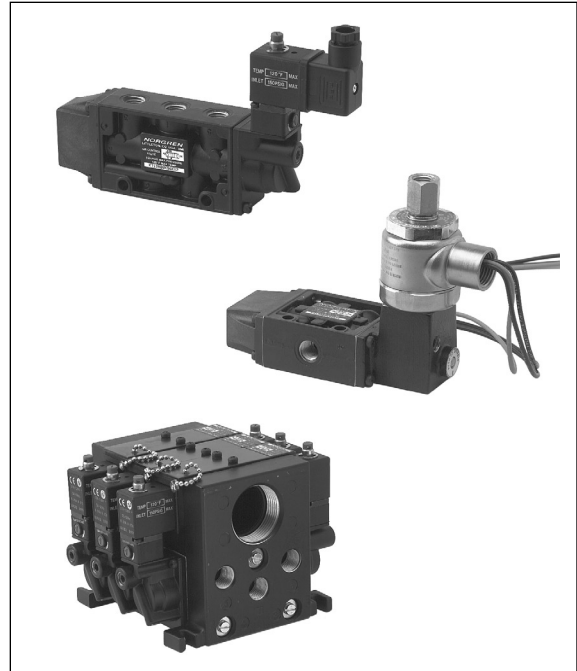


**Manual Lever Operator**

## Nugget 200 Spool Valves

1/4", 3/8", and 1/2" Solenoid Pilot Actuated  
3/2, 5/2, & 5/3 Inline and Stacking Valves

- Long lasting spool design
- High flow compact valves
- Four mounting styles: inline, stacking valve assemblies, stacking valve assemblies with junction box, and fixed length manifold.
- Wide range of operators and voltages available
- Three functional types: available in 3/2, 5/2, and 5/3 configurations



### Technical Data

**Medium:**

Filtered and lubricated or non-lubricated compressed air or vacuum.

**Operation:**

Spool valve solenoid pilot actuated.

**Mounting:**

Stacking – through holes on manifold base.

Inline – through holes in valve body.

**Port Size:**

PTF – 1/4", 3/8", 1/2"

ISO G – 1/4", 3/8" .

**Operating Pressure:**

Maximum 150 psig (10.3 bar). For details see overleaf.

**Operating Temperature:**

-20° to 120°F (-29° to 50°C)

Consult Technical Service for use below 36°F (2°C).

**Materials:**

Body: Aluminum

Spool: Anodized aluminum

Solenoid Operator Base: plastic

Plunger and spring: Stainless steel

Elastomers: Nitrile and special nitrile-based low-friction elastomers.

Note: See **Seal Compatibility** p. VAL-10-5.

### Ordering Information

To order standard Nugget 200 valves with coils, quote model number from tables overleaf, e.g. order: K71DA00-K36-KV21W2 for a 5-port/2-position, single Solenoid Pilot Operated, Spring Return model with an internal pilot supply, fitted with a 24 VDC standard wattage coil, and rotatable cable grip connector and locking override.



**Solenoid Operating Specifications**

Inlet Pressure Range for Solenoid Operated Valves:

With Internal Pilot Supply: 15 to 150 psig\*  
(1.03 to 10.3 bar)

With External Pilot Supply: 10" Hg vacuum to 150 psig  
(10.3 bar)

Temperature Range (Ambient/Inlet):

Solenoid Operated Valves: -20° to 120°F\*\* (-29° to 50°C)

Low Wattage Solenoids: -20° to 155°F\*\* (-29° to 68°C)

Operator Pilot Pressures:

Maximum Pilot Pressure: 150 psig (10.3 bar)

Minimum Pilot Pressure at 150 psig (10.3 bar) main valve inlet pressures are given in the following table:

- \* Minimum Inlet Pressure is dependent on the type of operator and return used. See Operator Pilot Pressure specifications in Operating Specifications.
- \*\* With the dew point of supply air less than air temperature below 35°F (2°C)

**Minimum Pilot Pressures**

| Operator | Return   | Nondetent<br>psig (bar) | Spring                 | Centered<br>psig (bar) |
|----------|----------|-------------------------|------------------------|------------------------|
|          |          |                         | Detented<br>psig (bar) |                        |
| Solenoid | Solenoid | 15 (1.0)                | 25 (1.7)               | 45 (3.1)               |
| Solenoid | Spring   | 35 (2.4)                | —                      | —                      |

**Average Flow Factors in Cv‡ (l/min)**

| Valve            | Port<br>Size | Flow Path  |            |
|------------------|--------------|------------|------------|
|                  |              | Port       | Port       |
|                  |              | 1 to 2     | 2 to 3     |
| 3-Port, Inline   | 1/4"         | 1.6 (1700) | 1.7 (1800) |
|                  | 3/8"         | 1.6 (1700) | 1.7 (1800) |
| 5-Port, Inline   | 1/4"         | 1.6 (1700) | 1.7 (1800) |
|                  | 3/8"         | 1.6 (1700) | 1.7 (1800) |
|                  | 1/2"         | 1.6 (1700) | 1.7 (1800) |
| 5-Port, Stacking | 1/4"         | 1.8 (1900) | 1.4 (1450) |
|                  | 3/8"         | 1.8 (1900) | 1.4 (1450) |

‡ Flow Rating determined in accordance with NFPA/T3.21.3, Pneumatic fluid power – Flow test procedure and reporting method – For fixed orifice components.

**Seal Compatibility**

Nugget 200 seals are compatible with the following lubricants:

DC BR-2+ grease (Dow Corning)

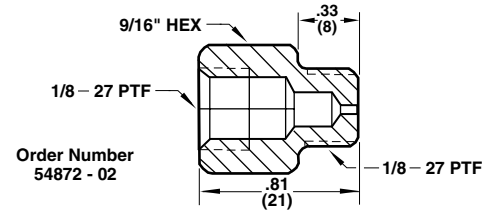
DC 44 grease (Dow Corning)

Nondetergent mineral based oil such as Mobil DTE light oil

Note: Nugget 200 seals are not compatible with WD-40 or commonly used de-icer fluids. Consult factory to verify compatibility of lubricants or fluids not listed above.

**Warning**

When a solenoid operator is used as a return for a manual or mechanical operator, the pilot pressure applied to the return operator must not exceed 40 psig (2.8 bar). Pilot pressures greater than 40 psig for a solenoid or air return will cause structural damage to the manual or mechanical operator and can also result in injury to the user. If the available pilot pressure exceeds 40 psig, an external pilot supply only must be used and a restrictor, part number 54872-02, must be installed in the pilot port of the return operator to reduce the return force to an acceptable level. Pilot pressure to the restrictor must not exceed 150 psig (10.3 bar).





### Solenoid Operator Specifications

#### KV<sub>x</sub>/KU<sub>x</sub>, K0<sub>x</sub>/K1<sub>x</sub>, K2<sub>x</sub>/K3<sub>x</sub>, K4<sub>x</sub>/K5<sub>x</sub>, & K6<sub>x</sub>/K7<sub>x</sub> Series

Voltages Available and Power Requirements:

Standard: 120V/60Hz-110V/50Hz: 7W  
Optional: KV<sub>x</sub>, K1<sub>x</sub>, K3<sub>x</sub>, K5<sub>x</sub>, & K7<sub>x</sub> Series  
12V/60Hz/50Hz: 7W  
24V/60Hz/50Hz: 7W  
48V/60Hz/50 Hz: 7W  
240V/60Hz: 7W  
220V/50Hz: 7W  
12 VDC: 6W  
24 VDC: 6W

Low Wattage: KU<sub>x</sub>, K0<sub>x</sub>, K2<sub>x</sub>, K4<sub>x</sub>, & K6<sub>x</sub> Series

Standard: 24 VDC: 2W  
Optional: 24V/50Hz/60Hz: 3.5W  
120V/60Hz: 3.5W  
110V/50Hz: 3.5W  
6 VDC: 2W  
12 VDC: 2W  
115 VDC: 3.4W

Duty: Continuous at 90 to 105% of rated voltage

Coil Type: Class H. Molded with three-pin plug-in connector

Enclosure Classification: NEMA 4, per DIN 40050 – IP 65

Connector Plug:

KU<sub>x</sub>/KV<sub>x</sub> Series: Standard, Cable grip for cables 1/4" to 5/16" (6 to 8 mm) in diameter

K2<sub>x</sub>/K3<sub>x</sub> Series: Rotatable 1/2" Conduit Connector

K4<sub>x</sub>/K5<sub>x</sub> Series: Class H. Molded with three-pin plug-in connector

Override: Manual, locking

Pilot Supply: Internal - standard, External - optional

External Pilot Supply Port: 1/8" PTF (ISO G Optional).

Minimum Electrical Signal Duration: Solenoid operated 2-position detented or nondetented valves can be shifted with a momentary electrical signal. Minimum signal duration is 13 milliseconds for single solenoid operated spring return valves. Double solenoid operated valves minimum signal duration is 20 milliseconds.

Electrical connector spades on the operator coil are 3-pin with 11 mm spacing.

#### KD<sub>x</sub> & KQ<sub>x</sub> Series

Voltages Available and Power Requirements:

Standard: 120V/60Hz: 6W  
Optional: 24V/60Hz/50Hz: 6W  
12VDC: 6W  
24VDC: 6W

Duty: Continuous at 85 to 105% of rated voltage

Coil Type: Class H. Molded with three-pins for electrical connection or optional electrical plug-in connector.

Enclosure Classification:

NEMA 4, per DIN 40050 – IP 65  
Connector Plug: Cable grip for cables 1/4" to 5/16" (6 to 8 mm) in diameter.

Electrical Connections –

KD Series Operators: Furnished with 1/2" conduit connector molded into coil, leads are 18" long  
KQ Series Operators: Furnished without a connector

Override: Manual, locking or nonlocking.

Pilot Supply: Internal - standard, External - optional

External Pilot Supply Port: 1/8" PTF (ISO G Optional).

Minimum Electrical Signal Duration: Solenoid operated 2-position detented or nondetented valves can be shifted with a momentary electrical signal. Minimum signal duration is 13 milliseconds for single solenoid operated spring return valves. Double solenoid operated valves minimum signal duration is 20 milliseconds.

Optional electrical connectors for KQ<sub>x</sub> Series operators conform to DIN43650 Form A for Three-Pin Electrical Connectors.

Electrical spades on the KQ<sub>x</sub> Series operator coil are 3-pin with 18 mm spacing.

#### CSA Certified Valves

KD<sub>x</sub> and KQ<sub>x</sub> Series solenoid operators are CSA Certified. Optional solenoid coil voltages, solenoid cable grip electrical connectors and 1/2" NPT conduit electrical connectors also qualify for CSA Certification.



**KM<sub>x</sub> Series**

Voltages Available and Power Requirements:

- Standard: KM<sub>x</sub>: 120V/60Hz, 6W
- Optional: KM<sub>x</sub>: 24V/60Hz/50Hz, 6W
- 12VDC: 6W
- 24VDC: 6W

Duty: Continuous at 85 to 105% of rated voltage.

Coil Type: Class H Molded with three-pin plug-in terminal block connector.  
KM<sub>x</sub> Series has an indicator light molded into coil

Enclosure Classification: NEMA 1

Override: Manual, locking or nonlocking

External Pilot Supply Port: 1/8" PTF (ISO G Optional).

Minimum Electrical Signal Duration: Solenoid operated 2-position detented or nondetented valves can be shifted with a momentary electrical signal. Minimum signal duration is 13 milliseconds for single solenoid operated valves. Double solenoid operated valves minimum signal duration is 20 milliseconds.

Electrical connectors conform to DIN43650 Form A for Three-Pin Electrical Connectors.  
CSA Component Certified

**KX<sub>x</sub> Series Hazardous Location Solenoid**

Voltages Available and Power Requirements

- Standard: 120V/60Hz-100V/50Hz: 12W
- Optional: 240V/60Hz: 12W
- 208V/50Hz: 12W
- 24V/60Hz: 12W
- 22V/50Hz: 12W
- 6 VDC: 12W
- 12 VDC: 12W
- 24 VDC: 12W
- 48 VDC: 12W
- 115 VDC: 12W

Duty: Continuous at 85 to 105% of rated voltage

Coil Type: Molded

Enclosure Classification: NEMA 7C, 7D, 8C, 8D, 9E, 9F and 9G. Meets the requirements of Underwriters Laboratories for use in hazardous locations as defined in National Electrical Code (ANSI CI-1975): Class I, Groups C & D; and Class II, Groups E, F & G. Per DIN 40050 – IP 65.

Electrical Connection: Furnished with fixed connection for 1/2" conduit.

Override: Manual, nonlocking - standard, locking - optional

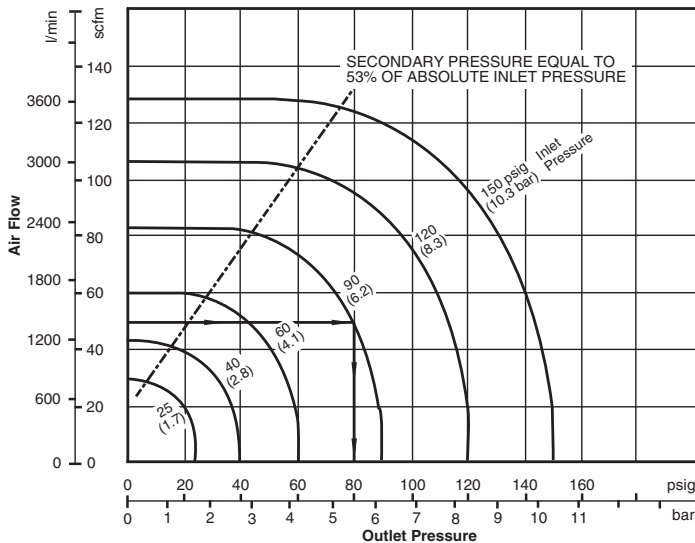
Pilot Supply: internal - standard, external - optional

External Pilot Port: 1/8-27 NPTF

Exhaust Port: 1/4" NPT

Minimum Electrical Signal Duration: Solenoid operated 2-position detented or nondetented valves can be shifted with a momentary air or electrical signal. Minimum signal duration is 17 milliseconds.

**Flow Chart**  
**1/4", 3/8" & 1/2" Ported Valves**



**Example –**

Find: Pressure drop

Given: Inlet pressure = 90 psig  
Air Flow = 50 scfm

Solution: Enter chart at 50 scfm and intersect with 90 psig inlet pressure line.  
Read outlet pressure = 80 psig.  
Pressure drop is equal to 90 minus 80 = 10 psig



# Nugget 200 Spool Valves

## Solenoid Pilot Operated Inline Valves

| Description                   | Symbol                         | Type   | Port Size             | Body*   | Operator | Pilot Pressure psig (bar) | Weight lbs. (kg)         | Repair Kit     |
|-------------------------------|--------------------------------|--|-----------------------|---------|----------|---------------------------|--------------------------|----------------|
| Single Solenoid Spring Return |                                | 3-Port/<br>2-Position                              | 1/4"                  | K41DA00 | KS1-KV2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-59       |
|                               |                                |  | 3/8"                  | K41EA00 | KS1-KV2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-59       |
|                               |                                | 5-Port/<br>2-Position                              | 1/4"                  | K71DA00 | KS6-KV2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |
|                               |                                |  | 3/8"                  | K71EA00 | KS6-KV2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |
|                               |                                |  | 1/2"                  | K71FA00 | KS6-KV2  | 35 - 150<br>(2.4 - 10.3)  | 4.40<br>(2.00)           | 54237-56       |
|                               | Double Solenoid (Non-Detented) |  | 3-Port/<br>2-Position | 1/4"    | K41DA00  | KV2-KV2                   | 15 - 150<br>(1.0 - 10.3) | 4.40<br>(2.00) |
| 3/8"                          |                                |  |                       | K41EA00 | KV2-KV2  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-59       |
|                               |                                | 5-Port/<br>2-Position                              | 1/4"                  | K71DA00 | KV2-KV2  | 15 - 150<br>(1.0 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |
|                               |                                |  | 3/8"                  | K71EA00 | KV2-KV2  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-56       |
|                               |                                |  | 1/2"                  | K71FA00 | KV2-KV2  | 15 - 150<br>(1.0 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |
|                               |                                | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"                  | K81DA00 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-56       |
|                               |                                |  | 3/8"                  | K81EA00 | KV0-KV0  | 1.0 - 10.3<br>(15 - 150)  | 4.40<br>(2.00)           | 54237-56       |
|                               |                                |  | 1/2"                  | K81FA00 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-56       |
|                               |                                | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"                  | K81DA05 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-57       |
|                               |                                |  | 3/8"                  | K81EA05 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-57       |
|                               |                                |  | 1/2"                  | K81FA05 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-57       |
|                               |                                | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"                  | K81DA06 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)  | 2.22<br>(1.01)           | 54237-58       |
|                               |                                |  | 3/8"                  | K81EA06 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-58       |
|                               |                                |  | 1/2"                  | K81FA06 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)  | 4.40<br>(2.00)           | 54237-58       |
| Double Solenoid (Detented)    |                                |  | 3-Port/<br>2-Position | 1/4"    | K41DA00  | KVL-KVL                   | 25 - 150<br>(1.7 - 10.3) | 4.40<br>(2.00) |
|                               | 3/8"                           |  |                       | K41EA00 | KVL-KVL  | 25 - 150<br>(1.7 - 10.3)  | 4.40<br>(2.00)           | 54237-59       |
|                               |                                | 5-Port/<br>2-Position                              | 1/4"                  | K71DA00 | KVL-KVL  | 25 - 150<br>(1.7 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |
|                               |                                |  | 3/8"                  | K71EA00 | KVL-KVL  | 25 - 150<br>(1.7 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |
|                               |                                |  | 1/2"                  | K71FA00 | KVL-KVL  | 25 - 150<br>(1.7 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |

\* Standard valves are equipped with PTF threads, solenoid operators with locking overrides, internal pilot, 120V/60 Hz-110V/50 Hz coils and cable grip connectors. Optional solenoid operators, coil voltages and electrical connectors can be ordered using the information on p. VAL-10-11/12. Solenoid specifications given on pp. VAL-10-6/7.

**Note:** For ISO-G threads, insert "G" in the 5th position. 1/2" ported bodies are not available with ISO G threads.



Solenoid Pilot Operated Stacking Valves

| Description   | Symbol | Type   | Port Size | Body*   | Operator | Pilot Pressure<br>psig (bar) | Weight<br>lbs. (kg) | Repair<br>Kit |
|---|--------|--|-----------|---------|----------|------------------------------|---------------------|---------------|
| Single Solenoid Spring Return                                       |        | 5-Port/<br>2-Position<br>Common<br>Inlet           | 1/4"      | K78DA00 | KS6-KV2  | 35 - 150<br>(2.4 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        |  | 3/8"      | K78EA00 | KS6-KV2  | 35 - 150<br>(2.4 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        | 5-Port/<br>2-Position<br>Common<br>Inlet & Exh.    | 1/4"      | K79DA00 | KS6-KV2  | 35 - 150<br>(2.4 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        |  | 3/8"      | K79EA00 | KS6-KV2  | 35 - 150<br>(2.4 - 10.3)     | .53<br>(.24)        | 54237-56      |
| Double Solenoid (Non-Detented)                                      |        | 5-Port/<br>2-Position<br>Common<br>Inlet           | 1/4"      | K78DA00 | KV2-KV2  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        |  | 3/8"      | K78EA00 | KV2-KV2  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        | 5-Port/<br>2-Position<br>Common<br>Inlet & Exh.    | 1/4"      | K79DA00 | KV2-KV2  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        |  | 3/8"      | K79EA00 | KV2-KV2  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-56      |
| Double Solenoid (Non-Detented) Common Inlet-Port 1                  |        | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"      | K88DA00 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        |  | 3/8"      | K88EA00 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"      | K88DA05 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-57      |
|   |        |  | 3/8"      | K88EA05 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-57      |
|   |        | 5-Port/<br>3-Position<br>Cyl Open to<br>Exhaust    | 1/4"      | K88DA06 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-58      |
|   |        |  | 3/8"      | K88EA06 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-58      |
| Double Solenoid (Non-Detented) Common Inlet & Exhaust - Ports 1,3&5 |        | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"      | K89DA00 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        |  | 3/8"      | K89EA00 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"      | K89DA05 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-57      |
|   |        |  | 3/8"      | K89EA05 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-57      |
|   |        | 5-Port/<br>3-Position<br>Cyl Open to<br>Exhaust    | 1/4"      | K89DA06 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-58      |
|   |        |  | 3/8"      | K89EA06 | KV0-KV0  | 15 - 150<br>(1.0 - 10.3)     | .53<br>(.24)        | 54237-58      |
| Double Solenoid (Detented)  |        | 5-Port/<br>2-Position<br>Common<br>Inlet           | 1/4"      | K78DA00 | KVL-KVL  | 25 - 150<br>(1.7 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        |  | 3/8"      | K78EA00 | KVL-KVL  | 25 - 150<br>(1.7 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        | 5-Port/<br>2-Position<br>Common<br>Inlet & Exh     | 1/4"      | K79DA00 | KVL-KVL  | 25 - 150<br>(1.7 - 10.3)     | .53<br>(.24)        | 54237-56      |
|   |        |  | 3/8"      | K79EA00 | KVL-KVL  | 25 - 150<br>(1.7 - 10.3)     | .53<br>(.24)        | 54237-56      |

\* Standard valves are equipped with PTF threads, solenoid operators with locking overrides, internal pilot, 120V/60 Hz-110V/50 Hz coils and cable grip connectors. Optional solenoid operators, coil voltages and electrical connectors can be ordered using the information on p. VAL-10-11/12. Solenoid specifications given on pp. VAL-10-6/7.

**Note:** For ISO-G threads, insert "G" in the 5th position.



# Nugget 200 Spool Valves

## Solenoid Pilot Operated Stacking Valves With Junction Box

| Description  | Symbol | Type                           | Port Size | Body*   | Operator | Pilot Pressure psig (bar) | Weight lbs. (kg) | Repair Kit |
|--|--------|--------------------------------|-----------|---------|----------|---------------------------|------------------|------------|
| Single Solenoid Spring Return  |        | 5-Port/2-Position No Lights    | 1/4"      | K79DA80 | KS6-K72  | 35 - 150 (2.4 - 150)      | .53 (.24)        | 54237-56   |
|  |        |                                | 3/8"      | K79EA80 | KS6-K72  | 35 - 150 (2.4 - 150)      | .53 (.24)        | 54237-56   |
|  |        | 5-Port/2-Position One Light    | 1/4"      | K79DA50 | KS6-KM1  | 35 - 150 (2.4 - 150)      | .53 (.24)        | 54237-56   |
|  |        |                                | 3/8"      | K79EA50 | KS6-KM1  | 35 - 150 (2.4 - 150)      | .53 (.24)        | 54237-56   |
| Double Solenoid (Non-Detented)   |        | 5-Port/2-Position No Lights    | 1/4"      | K79DA80 | K72-K72  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        |                                | 3/8"      | K79EA80 | K72-K72  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        | 5-Port/2-Position Two Lights   | 1/4"      | K79DA50 | KM1-KM1  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        |                                | 3/8"      | K79EA50 | KM1-KM1  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-56   |
| Double Solenoid (Non-Detented)<br>5-Port/3-Position Common Inlet & Exhaust - Ports 1,3,5 |        | All Ports Blocked No Lights    | 1/4"      | K89DA80 | K70-K70  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        |                                | 3/8"      | K89EA80 | K70-K70  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        | All Ports Blocked Two Lights   | 1/4"      | K89DA50 | KM8-KM8  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        |                                | 3/8"      | K89EA50 | KM8-KM8  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        | Inlet Open to Cyl No Lights    | 1/4"      | K89DA85 | K70-K70  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-57   |
|  |        |                                | 3/8"      | K89EA85 | K70-K70  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-57   |
|  |        | Inlet Open to Cyl Two Lights   | 1/4"      | K89DA55 | KM8-KM8  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-57   |
|  |        |                                | 3/8"      | K89EA55 | KM8-KM8  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-57   |
|  |        | Cyl Open to Exhaust No Lights  | 1/4"      | K89DA86 | K70-K70  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-58   |
|  |        |                                | 3/8"      | K89EA86 | K70-K70  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-58   |
|  |        | Cyl Open to Exhaust Two Lights | 1/4"      | K89DA56 | KM8-KM8  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-58   |
|  |        |                                | 3/8"      | K89EA56 | KM8-KM8  | 15 - 150 (1.0 - 10.3)     | .53 (.24)        | 54237-58   |
| Double Solenoid (Detented)   |        | 5-Port/2-Position No Lights    | 1/4"      | K79DA80 | K7L-K7L  | 25 - 150 (1.7 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        |                                | 3/8"      | K79EA80 | K7L-K7L  | 25 - 150 (1.7 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        | 5-Port/2-Position Two Lights   | 1/4"      | K79DA50 | KM6-KM6  | 25 - 150 (1.7 - 10.3)     | .53 (.24)        | 54237-56   |
|  |        |                                | 3/8"      | K79EA50 | KM6-KM6  | 25 - 150 (1.7 - 10.3)     | .53 (.24)        | 54237-56   |

\* Standard valves are equipped with PTF threads, solenoid operators with locking overrides, internal pilot, 120V/60 Hz-110V/50 Hz coils and cable grip connectors. Optional solenoid operators, coil voltages and electrical connectors can be ordered using the information on p. VAL-10-11/12. Solenoid specifications given on pp. VAL-10-6/7.

**Note:** For ISO-G threads, insert "G" in the 5th position.



Solenoid Pilot Operators

| Position   | Operator |     | Description   | Operating Pressure psig (bar)   | Weight lbs. (kg) | Repair Kit |
|--|----------|-----|---|---------------------------------|------------------|------------|
|  | ISO G    | PTF |   |                                 |                  |            |
| Standard Solenoid Operator with Rotatable Grip Connector*                              |          |     |   |                                 |                  |            |
| 2-Position Valves  | KVB      | KV1 | non-locking override, nondetented, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | KVC      | KV2 | locking override, nondetented, internal pilot         | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | KVE      | KV4 | non-locking override, nondetented, external pilot     | 10" Hg - 150<br>(Vacuum - 10.3) | .53<br>(.24)     | 54344-17   |
|  | KVF      | KV5 | locking override, nondetented, external pilot         | 10" Hg - 150<br>(Vacuum - 10.3) | .53<br>(.24)     | 54344-17   |
|  | KVG      | KV6 | non-locking override, detented, internal pilot        | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | KVN      | KVL | locking override, detented, internal pilot            | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
| 3-Position Valves  | KVJ      | KV8 | non-locking override, spring centered, internal pilot | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | KVA      | KV0 | locking override, spring centered, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | KVD      | KV3 | non-locking override, spring centered, external pilot | 10" Hg - 150<br>(Vacuum - 10.3) | .53<br>(.24)     | 54344-17   |
| Standard Solenoid Operator without Electrical Connector*                               |          |     |   |                                 |                  |            |
| 2-Position Valves  | K1B      | K11 | non-locking override, nondetented, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | K1G      | K16 | non-locking override, detented, internal pilot        | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | K1N      | K1L | locking override, detented, internal pilot            | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
| 3-Position Valves  | K1A      | K10 | locking override, spring centered, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
| Standard Solenoid Operator with Rotatable 1/2" Conduit Connector*                      |          |     |   |                                 |                  |            |
| 2-Position Valves  | K3B      | K31 | non-locking override, nondetented, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | K3C      | K32 | locking override, nondetented, internal pilot         | 15 - 150<br>(1.03 - 10.3)       | .53<br>(.24)     | 54344-17   |
|  | K3E      | K34 | non-locking override, nondetented, external pilot     | 10" Hg - 150<br>(Vacuum - 10.3) | .53<br>(.24)     | 54344-17   |
|  | K3F      | K35 | locking override, nondetented, external pilot         | 10" Hg - 150<br>(Vacuum - 10.3) | .53<br>(.24)     | 54344-17   |
|  | K3G      | K36 | non-locking override, detented, internal pilot        | 1.03 - 10.3<br>(15 - 150)       | .53<br>(.24)     | 54344-17   |
|  | K3N      | K3L | locking override, detented, internal pilot            | 1.03 - 10.3<br>(15 - 150)       | .53<br>(.24)     | 54344-17   |
|  | K3P      | K3M | locking override, detented, external pilot            | 10" Hg - 150<br>(Vacuum - 10.3) | .53<br>(.24)     | 54344-17   |
| 3-Position Valves  | K3J      | K38 | non-locking override, spring centered, internal pilot | 1.03 - 10.3<br>(15 - 150)       | .80<br>(.36)     | 54344-17   |
|  | K3A      | K30 | locking override, spring centered, internal pilot     | 1.03 - 10.3<br>(15 - 150)       | .80<br>(.36)     | 54344-17   |
| Standard Solenoid Operator with Molded Cord Connector, 1.6 mm (5/32") Connector Cable* |          |     |   |                                 |                  |            |
| 2-Position Valves  | K5C      | K52 | locking override, nondetented, internal pilot         | 1.03 - 10.3<br>(15 - 150)       | .80<br>(.36)     | 54344-17   |
|  | K5F      | K55 | locking override, nondetented, external pilot         | 10" Hg - 150<br>(Vacuum - 10.3) | .80<br>(.36)     | 54344-17   |
|  | K5N      | K5L | locking override, detented, internal pilot            | 15 - 150<br>(1.03 - 10.3)       | .80<br>(.36)     | 54344-17   |
| 3-Position Valves  | K5A      | K50 | locking override, spring centered, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | .82<br>(.37)     | 54344-17   |
| CSA Certified Solenoid Operator with Fixed 1/2" Conduit Connector Molded into Cord**   |          |     |   |                                 |                  |            |
| 2-Position Valves  | KDB      | KD1 | non-locking override, nondetented, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | .60<br>(.27)     | 54344-17   |
|  | KDC      | KD2 | locking override, nondetented, internal pilot         | 15 - 150<br>(1.03 - 10.3)       | .60<br>(.27)     | 54344-17   |
| CSA Certified Solenoid Operator without Electrical Connector**†                        |          |     |   |                                 |                  |            |
| 2-Position Valves  | KQB      | KQ1 | non-locking override, nondetented, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | .61<br>(.28)     | 54344-17   |
|  | KQC      | KQ2 | locking override, nondetented, internal pilot         | 15 - 150<br>(1.03 - 10.3)       | .61<br>(.28)     | 54344-17   |
|  | KQG      | KQ6 | non-locking override, detented, internal pilot        | 15 - 150<br>(1.03 - 10.3)       | .61<br>(.28)     | 54344-17   |
| 3-Position Valves  | KQJ      | KQ8 | non-locking override, spring centered, internal pilot | 15 - 150<br>(1.03 - 10.3)       | .62<br>(.29)     | 54344-17   |
| Hazardous Location Solenoid Operator**   |          |     |   |                                 |                  |            |
| 2-Position Valves  | KXB      | KX1 | non-locking override, nondetented, internal pilot     | 15 - 150<br>(1.03 - 10.3)       | 1.48<br>(.67)    | 53478-07   |
|  | KXC      | KX2 | locking override, nondetented, internal pilot         | 15 - 150<br>(1.03 - 10.3)       | 1.48<br>(.67)    | 53478-07   |
| 3-Position Valves  | KXJ      | KX8 | non-locking override, spring centered, internal pilot | 15 - 150<br>(1.03 - 10.3)       | 1.49<br>(.68)    | 53478-07   |

\* Standard voltage is 110/1250 AC 50/60 Hz. For optional voltages add three characters to the end of the part number. See p. VAL-10-12. For low wattage options contact Application Engineering.

\*\* For external pilot options contact Application Engineering.

† Electrical connectors for KQX series solenoid operators see VAL-10-12.



# Nugget 200 Spool Valves

## Lightweight Plastic\* Solenoid Operator

|     | Wattage       |          | Connector Type |            |         |           | Override |             |
|-----|---------------|----------|----------------|------------|---------|-----------|----------|-------------|
|     | Standard Watt | Low Watt | No Connector   | Cable Grip | Conduit | 5' Molded | Locking  | Non Locking |
| KY0 |               | X        | X              |            |         |           | X        |             |
| KY1 |               | X        | X              |            |         |           |          | X           |
| KY2 | X             |          | X              |            |         |           | X        |             |
| KY3 | X             |          | X              |            |         |           |          | X           |
| KY5 |               | X        |                | X          |         |           | X        |             |
| KY5 |               | X        |                | X          |         |           |          | X           |
| KY6 | X             |          |                | X          |         |           | X        |             |
| KY7 | X             |          |                | X          |         |           |          | X           |
| KY8 |               | X        |                |            | X       |           | X        |             |
| KY9 |               | X        |                |            | X       |           |          | X           |
| KYA | X             |          |                |            | X       |           | X        |             |
| KYB | X             |          |                |            | X       |           |          | X           |
| KYC |               | X        |                |            |         | X         | X        |             |
| KYD |               | X        |                |            |         | X         |          | X           |
| KYE | X             |          |                |            |         | X         | X        |             |
| KYF | X             |          |                |            |         | X         |          | X           |

\* Polyphthalamide resin (PPA)

### Optional Coil Voltages

Additional Part Number Characters

| Voltages<br>60 Hz 50 Hz DC |     |      | Standard Wattage<br>KV <sub>x</sub> , K1 <sub>x</sub> , K3 <sub>x</sub> , K5 <sub>x</sub> ,<br>& K7 <sub>x</sub> Series<br>Operators |                 | Low Wattage<br>KU <sub>x</sub> , K0 <sub>x</sub> , K2 <sub>x</sub> ,<br>K4 <sub>x</sub> , & K6 <sub>x</sub> Series<br>Operators |                 | KD <sub>x</sub> , Series<br>Operators |                 | KQ <sub>x</sub> Series<br>Operators |                 | KM <sub>x</sub> Series<br>Operators |                 | KX <sub>x</sub> Series<br>Operators |                 |
|----------------------------|-----|------|--|-----------------|---|-----------------|---------------------------------------|-----------------|-------------------------------------|-----------------|-------------------------------------|-----------------|-------------------------------------|-----------------|
|                            |     |      | Single Solenoid  | Double Solenoid | Single Solenoid   | Double Solenoid | Single Solenoid                       | Double Solenoid | Single Solenoid                     | Double Solenoid | Single Solenoid                     | Double Solenoid | Single Solenoid                     | Double Solenoid |
| 120                        | 110 | -    | Standard   | Standard        | 1WH   | 2WH             | Standard                              | Standard        | Standard                            | Standard        | Standard                            | Standard        | -                                   | -               |
| 240                        | 220 | -    | 1W6  | 2W6             | -   | -               | 1TE                                   | 2TE             | 1T2                                 | 2T2             | 1TN                                 | 2TN             | 1NH                                 | 2NH             |
| 12                         | 12  | -    | 1W3  | 2W3             | -   | -               | -                                     | -               | -                                   | -               | -                                   | -               | -                                   | -               |
| 24                         | 24  | -    | 1W4  | 2W4             | 1WJ   | 2WJ             | 1TD                                   | 2TD             | 1T1                                 | 2T1             | 1TM                                 | 2TM             | -                                   | -               |
| 48                         | 48  | -    | 1W5  | 2W5             | -   | -               | -                                     | -               | -                                   | -               | -                                   | -               | -                                   | -               |
| -                          | 240 | -    | -  | -               | -   | -               | -                                     | -               | 1T3                                 | 2T3             | -                                   | -               | -                                   | -               |
| 120                        | 100 | -    | -  | -               | -   | -               | -                                     | -               | -                                   | -               | -                                   | -               | Standard                            | Standard        |
| -                          | -   | 6    | 1W7  | 2W7             | 1WK   | 2WK             | 1TF                                   | 2TF             | 1T4                                 | 2T4             | -                                   | -               | 1N7                                 | 2N7             |
| -                          | -   | 12   | 1W1  | 2W1             | 1WF   | 2WF             | 1T6                                   | 2T6             | 1T5                                 | 2T5             | 1TS                                 | 2TS             | 1NA                                 | 2NA             |
| -                          | -   | 24   | 1W2  | 2W2             | Standard  |                 | 1TH                                   | 2TH             | 1T6                                 | 2T6             | 1TT                                 | 2TT             | 1ND                                 | 2ND             |
| -                          | -   | 48   | -  | -               | -   | -               | 1TJ                                   | 2TJ             | 1T7                                 | 2T7             | 1TU                                 | 2TU             | -                                   | -               |
| -                          | -   | 115  | -  | -               | 1WL   | 2WL             | 1TK                                   | 2TK             | 1T8                                 | 2T8             | 1TX                                 | 2TX             | -                                   | -               |
| -                          | -   | 10.5 | -  | -               | -   | -               | -                                     | -               | 1T9                                 | 2T9             | -                                   | -               | -                                   | -               |

Example: On K41DA00-KS6-KV1, change from standard 110VAC to 240VAC by adding 1W6 to the part number. New part number becomes K41DA00-KS6-KV11W6

### Electrical Connectors for KQ<sub>x</sub> Series Solenoid Operators – Order With Numbers

To order solenoid connectors for KQ<sub>x</sub> Series Operators, specify the desired solenoid connector part number listed below in addition to the desired valve model number, e. g. K41DA00-KQ1-KQ12VC

### CSA Certified Electrical Connectors for KQ<sub>x</sub> Series Solenoid Operators

Single/Dual

|   |              |
|---|--------------|
| Rotatable Cable Grip Connector                                | .....1VC/2VC |
| 1/2" NPT Conduit Connector                                    | .....1V2/2V2 |
| Rotatable Cable Grip with Indicator Light,<br>110V AC/DC only | .....1C3/2C3 |
| 24V AC/DC only  | .....1C2/2C2 |
| 12V AC/DC only  | .....1C1/2C1 |
| 220V AC/DC only   | .....1C4/2C4 |

### Optional KQ<sub>x</sub> Series Electrical Connectors Non-CSA Certified

5-Foot Molded Cord Connector 1V1/2V1

### KQ<sub>x</sub> Series Accessories – Non-CSA Certified

Extended Locking Override – Black Knob with Stainless Steel Plunger  
Contact Application Engineering



**Replacement Coils**

| Voltages |       |      | Standard Wattage<br>KV <sub>x</sub> , K1 <sub>x</sub> , K3 <sub>x</sub> ,<br>K5 <sub>x</sub> & K7 <sub>x</sub> Series<br>Operators<br>Coil Only | Low Wattage<br>KU <sub>x</sub> , K0 <sub>x</sub> , K2 <sub>x</sub> , K4 <sub>x</sub> ,<br>& K6 <sub>x</sub> Series<br>Operators<br>Coil Only | KD <sub>x</sub> Series<br>Operators<br>Coil Only | KQ <sub>x</sub> Series<br>Operators<br>Coil Only | KM <sub>x</sub> Series<br>Operators<br>Coil Only |
|----------|-------|------|---|--|--|--|--|
| 60 Hz    | 50 Hz | DC   |   |  |  |  |  |
| 120      | 110   | –    | 54452-01  | 54469-03   | 54944-21   | 54932-21   | 54960-21   |
| 240      | 220   | –    | 54452-07  | –  | 54944-23   | 54932-23   | 54960-23   |
| 12       | 12    | –    | 54452-04  | –  | –  | –  | –  |
| 24       | 24    | –    | 54452-05  | 54469-04   | 54944-22   | 54932-22   | 54960-22   |
| 48       | 48    | –    | 54452-06  | –  | –  | –  | –  |
| –        | 240   | –    | –   | –  | 54932-24   | –  | –  |
| 120      | 100   | –    | –   | –  | –  | –  | –  |
| 240      | 208   | –    | –   | –  | –  | –  | –  |
| 24       | 22    | –    | –   | –  | –  | –  | 2362-07  |
| –        | –     | 6    | –   | 54469-05   | 54944-25   | 54932-25   | –  |
| –        | –     | 12   | 54452-02  | 54469-01   | 54944-26   | 54932-26   | 54960-26   |
| –        | –     | 24   | 54452-03  | 54469-02   | 54944-27   | 54932-27   | 54960-27   |
| –        | –     | 48   | –   | –  | 54944-28   | 54932-28   | 54960-28   |
| –        | –     | 115  | –   | 54469-06   | 54944-29   | 54932-29   | 54960-29   |
| –        | –     | 10.5 | –   | –  | –  | 54932-30   | –  |

**Solenoid Assemblies Ordered Separately**

Includes coil, plunger, sleeve and seal

| Voltages |       |      | KD <sub>x</sub> Series<br>Operators | KQ <sub>x</sub> Series<br>Operators | KM <sub>x</sub> Series<br>Operators | KX <sub>x</sub><br>Series |
|----------|-------|------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------|
| 60 Hz    | 50 Hz | DC   |                                     |                                     |                                     |                           |
| 120      | 110   | –    | 54944-01                            | 54932-01                            | 54960-01                            | 53902-01                  |
| 240      | 220   | –    | 54944-03                            | 54932-03                            | 54960-03                            | 53902-14                  |
| 24       | 24    | –    | 54944-02                            | 54932-02                            | 54960-02                            | –                         |
| –        | 240   | –    | –                                   | 54932-04                            | –                                   | –                         |
| 120      | 100   | –    | –                                   | –                                   | –                                   | –                         |
| 240      | 208   | –    | –                                   | –                                   | –                                   | –                         |
| 24       | 22    | –    | –                                   | –                                   | –                                   | –                         |
| –        | –     | 6    | 54944-05                            | 54932-05                            | 54960-05                            | 53902-10                  |
| –        | –     | 12   | 54944-06                            | 54932-06                            | 54960-06                            | 53902-11                  |
| –        | –     | 24   | 54944-07                            | 54932-07                            | 54960-07                            | 53902-12                  |
| –        | –     | 48   | 54944-08                            | 54932-08                            | 54960-08                            | –                         |
| –        | –     | 115  | 54944-09                            | 54932-09                            | 54960-09                            | –                         |
| –        | –     | 10.5 | –                                   | 54932-10                            | –                                   | –                         |

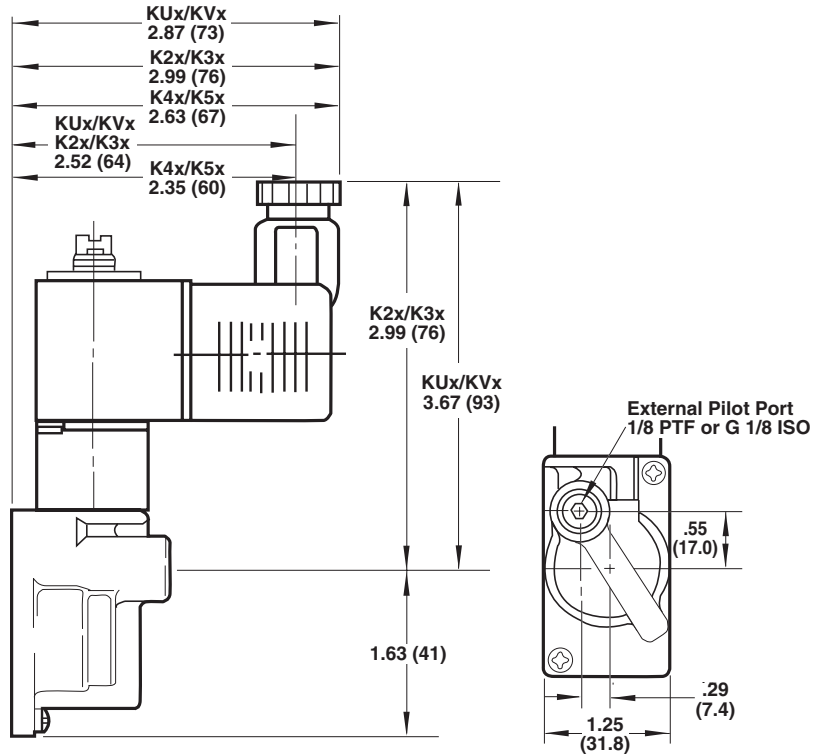
| KU <sub>x</sub> /KV <sub>x</sub> , K0 <sub>x</sub> /K1 <sub>x</sub> , K2 <sub>x</sub> /K3 <sub>x</sub> , K4 <sub>x</sub> /K5 <sub>x</sub> , K6 <sub>x</sub> /K7 <sub>x</sub> Series Operators   |   |   |
|---|---|---|
| Solenoid assemblies for these operators can be obtained by ordering a replacement coil from the ordering information on this page. Appropriate solenoid base, standard or low wattage assemblies can be ordered from the following table. |   |   |
|   | KV <sub>x</sub> , K1 <sub>x</sub> , K3 <sub>x</sub> , K5 <sub>x</sub><br>& K7 <sub>x</sub> Series | KU <sub>x</sub> , K0 <sub>x</sub> , K2 <sub>x</sub> , K4 <sub>x</sub><br>& K6 <sub>x</sub> Series |
|   | Replacement Bases   | Replacement Bases   |
| Locking Override  | 54462-02  | 54462-04  |
| Non-locking Override  | 54462-09  | 54462-10  |



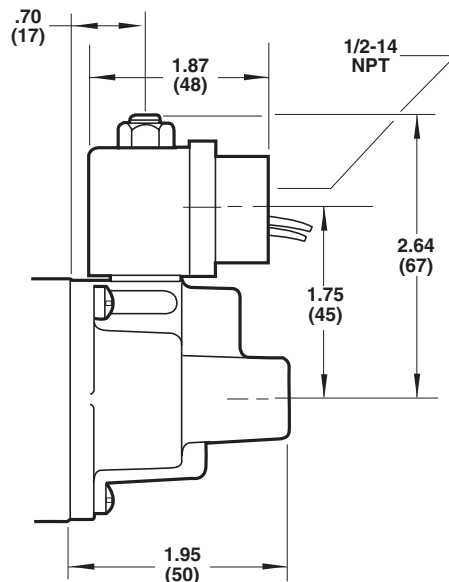
# Nugget 200 Spool Valves

All Dimensions in Inches (mm)

- KUx/KVx Series (cable grip)**
- K2x/K3x Series (conduit)**
- K4x/K5x Series (molded cord)**



## KD Series (integral conduit)

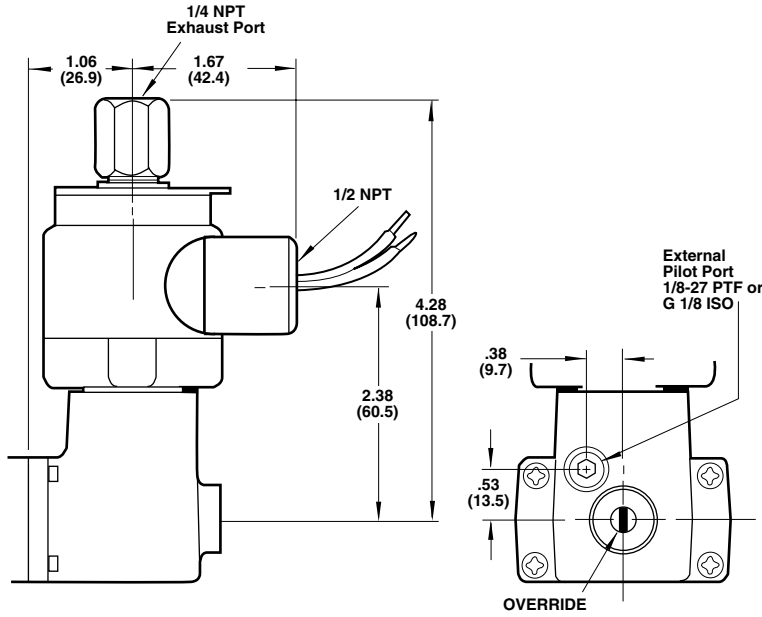


# Nugget 200 Spool Valves

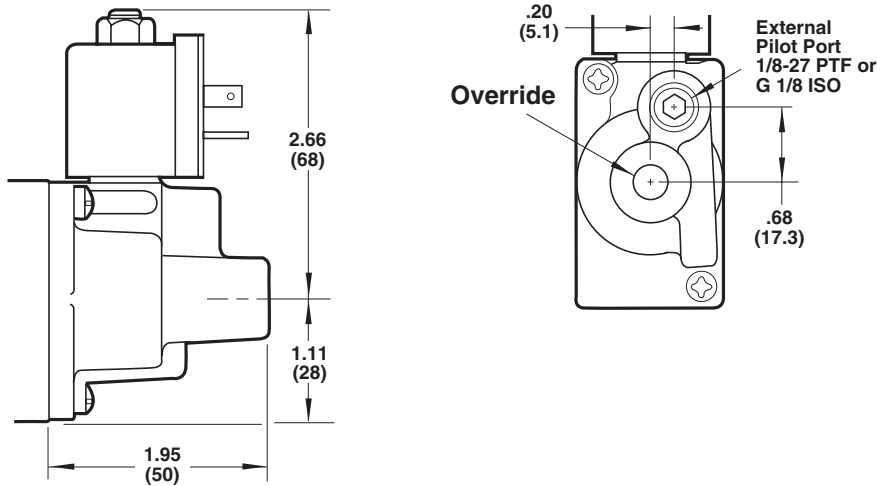
All Dimensions in Inches (mm)



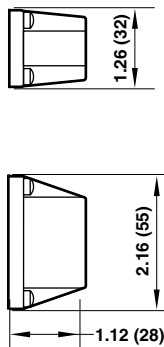
## KX Series Hazardous Location



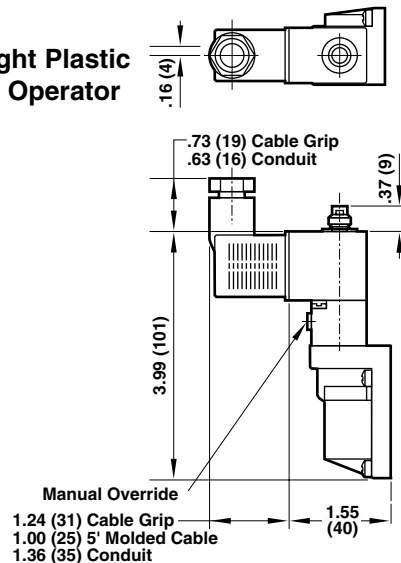
## KQx Series (no connector)



## KS6 Spring Return



## KYX Lightweight Plastic Solenoid Operator



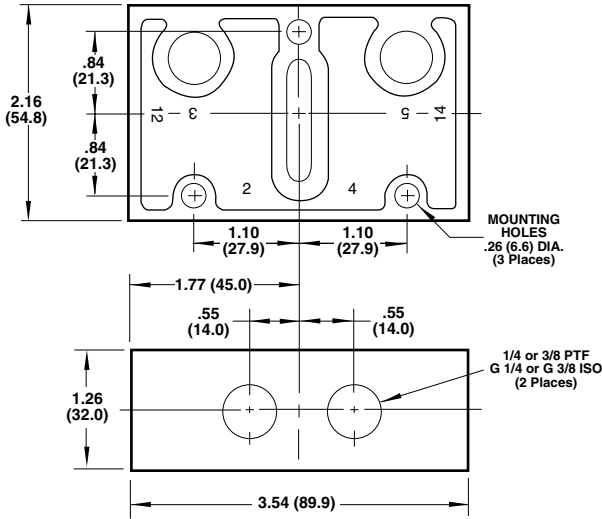


# Nugget 200 Spool Valves

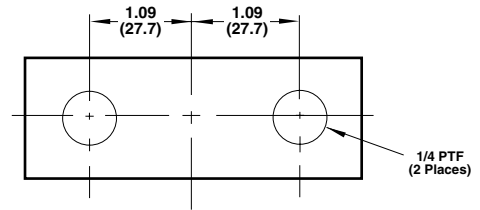
All Dimensions in Inches (mm)

## Stacking Bodies

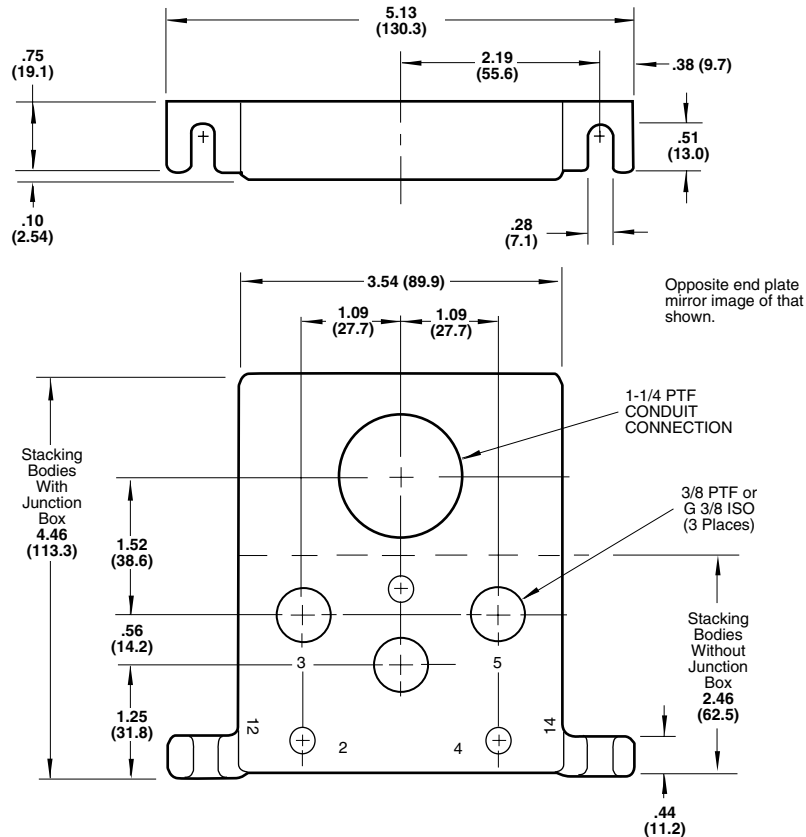
### COMMON PORTS 1, 3 & 5 K79 or K89



### COMMON PORT 1 K78 or K88



## Stacking Body End Plates



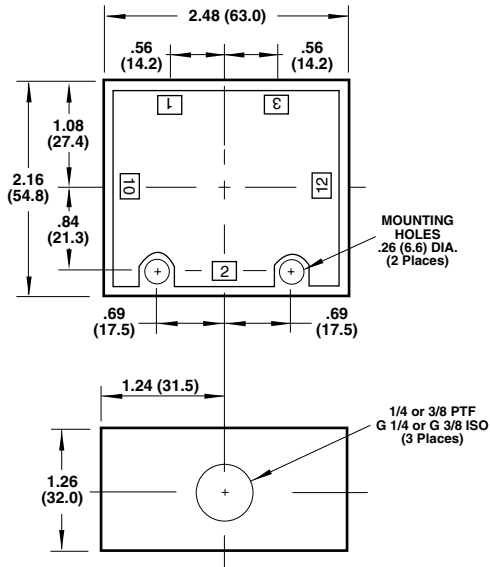
# Nugget 200 Spool Valves

All Dimensions in Inches (mm)

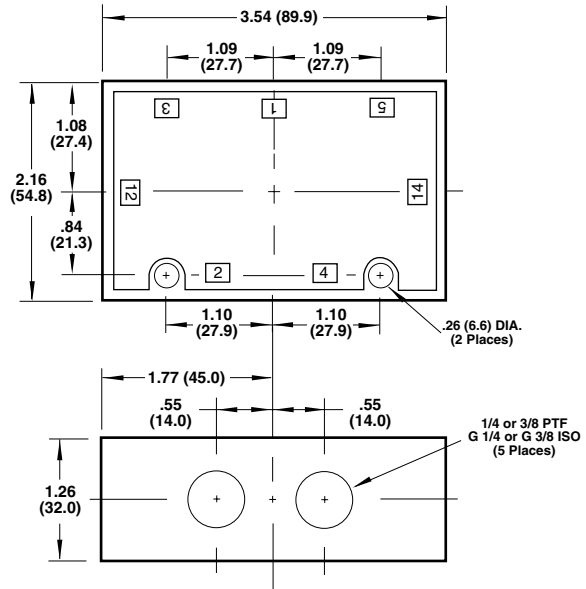


## Inline Bodies

**3-WAY – 1/4" & 3/8" PORTS  
K41**

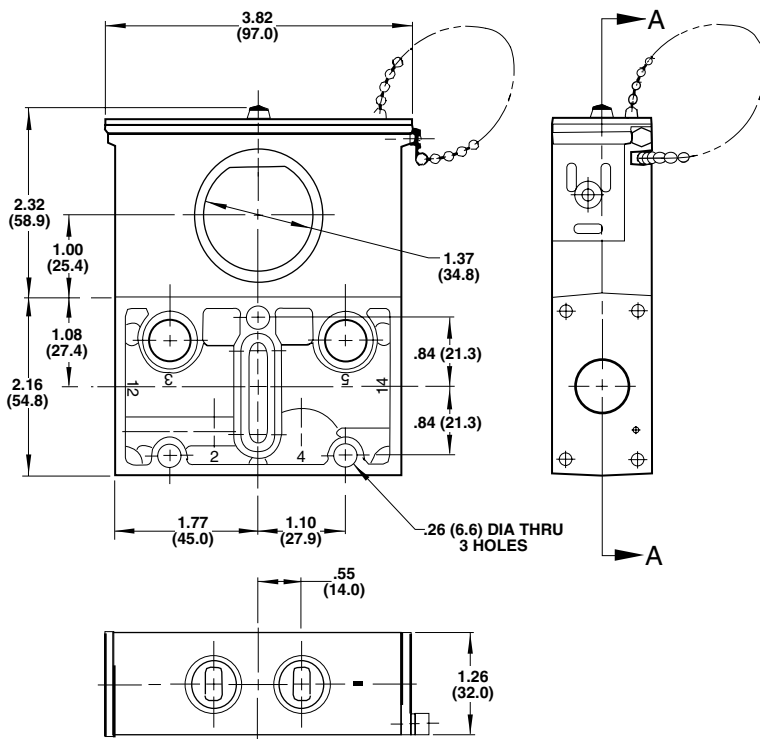


**4-WAY – 1/4" & 3/8" PORTS  
K71 or K81**

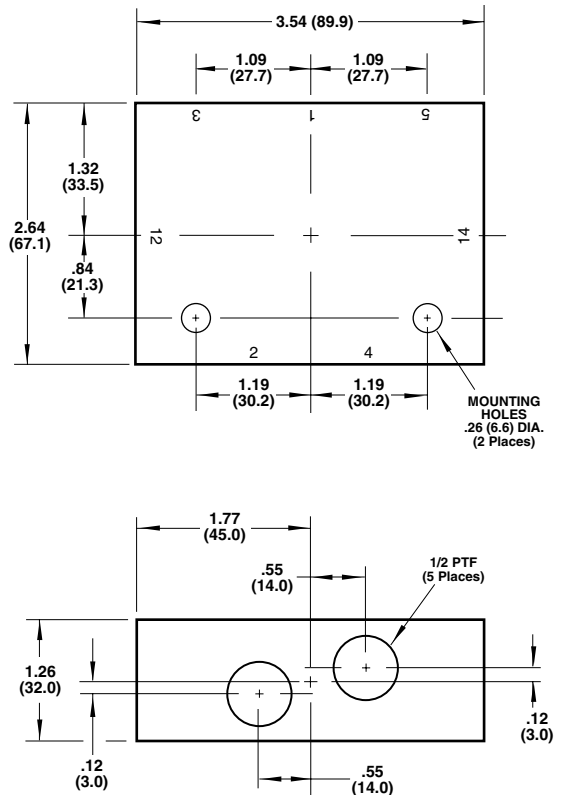


## Stacking Body Junction Box

**COMMON PORTS 1, 3 & 5  
K79 or K89**



**4-WAY – 1/2" PORTS  
K71 or K81**



## Nugget 200 Spool Valves

1/4", 3/8", and 1/2" Air Pilot Actuated  
3/2, 5/2, & 5/3 Inline and Stacking Valves

- Long lasting spool design
- High flow compact valves
- Wide range of Air Pilot Operators available
- Three functional types available in 3/2, 5/2, and 5/3 configurations



### Technical Data

#### Medium:

Filtered and lubricated or non-lubricated compressed air or vacuum.

#### Operation:

Spool valve air pilot actuated.

#### Mounting:

Stacking – through holes on manifold subbase.  
Inline – through holes in valve body.

#### Port Size:

1/4", 3/8", or 1/2" PTF, or 1/4" or 3/8" ISO G

#### Operating Pressure:

Maximum 150 psig (10.3 bar). For details see overleaf.

#### Operating Temperature:

-20°F to 160°F (-29°C to 71°C).

Consult Technical Service for use below +2°C (36°F).

#### Materials

Body: Aluminum

Spool: Anodized aluminum

Elastomers: Nitrile and special nitrile-based low-friction elastomers.

### Ordering Information

To order standard Nugget 200 air pilot operated valves, quote model number from tables overleaf, e.g. order: K71DA00-KS6-KA2 for a 5-port/2-position, single Air Pilot Operated, Spring Return model.

### Seal Compatibility

Nugget 200 seals are compatible with the following lubricants:

DC BR-2+ grease (Dow Corning)

DC 44 grease (Dow Corning)

Nondetergent mineral based oil such as Mobil DTE light oil

Nugget 200 seals are not compatible with WD-40 or commonly used de-icer fluids. Consult factory to verify compatibility of lubricants or fluids not listed above.



**Air Pilot Operating Specifications**

Inlet Pressure Range:  
 10" Hg vacuum to 150 psig (10.3 bar)  
 Temperature Range (Ambient/Inlet):  
 -20° to 160°F\* (-29° to 71°C)  
 Operator Pilot Pressures:  
 Maximum Pilot Pressure: 150 psig (10.3 bar)  
 Minimum Pilot Pressure at 150 psig (10.3 bar) main valve inlet pressures are given in the following table:  
 \* With the dew point of supply air less than air temperature below 35°F (2°C)

**Minimum Pilot Pressures**

| Operator            | Return    | Spring                  |                        |                        |
|---------------------|-----------|-------------------------|------------------------|------------------------|
|                     |           | Nondetent<br>psig (bar) | Detented<br>psig (bar) | Centered<br>psig (bar) |
| Large Air           | Large Air | 15 (1.0)                | 25 (1.7)               | 45 (3.1)               |
| Large Air †         | Small Air | 35 (2.4)                | —                      | —                      |
| Small Air           | Small Air | 25 (1.7)                | —                      | —                      |
| Large Air           | Spring    | 35 (2.4)                | —                      | —                      |
| Low Pressure Air †† | Spring    | 4 (.27)                 | —                      | —                      |
| Small Air           | Spring    | 65 (4.5)                | —                      | —                      |
| Air Bleed           | Air Bleed | 15 (1.0)                | 25 (1.7)               | —                      |
| Air Bleed           | Spring    | 35 (2.4)                | —                      | —                      |

- † Pressure applied simultaneously to both operators. The piston area of the KA2 operator is approximately twice that of the KA1 operator.
- †† Pressure applied to port B of KA6 operator (port A open). A minimum vacuum of 6.1 inches Hg (KS1 return) applied to A (port B open) will also operate the valve. The KA6 operator can also be used as a differential pressure operator with or without return spring. The differential pressure required to shift the valve without return spring is less than 1 psig (2" Hg). To reduce the possibility of internal contamination, it is suggested that a filter/breather be installed in the port.

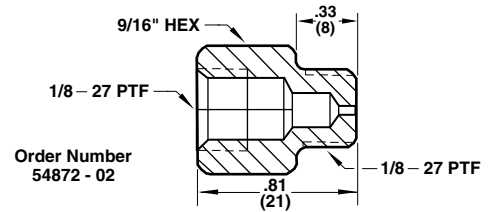
**Average Flow Factors in Cv ‡ (l/min)**

| Valve            | Port Size | Flow Path             |                       |
|------------------|-----------|-----------------------|-----------------------|
|                  |           | Port 1 to 2<br>1 to 4 | Port 2 to 3<br>4 to 5 |
| 3-Port, Inline   | 1/4"      | 1.6 (1700)            | 1.7 (1800)            |
|                  | 3/8"      | 1.6 (1700)            | 1.7 (1800)            |
| 5-Port, Inline   | 1/4"      | 1.6 (1700)            | 1.7 (1800)            |
|                  | 3/8"      | 1.6 (1700)            | 1.7 (1800)            |
|                  | 1/2"      | 1.6 (1700)            | 1.7 (1800)            |
| 5-Port, Stacking | 1/4"      | 1.8 (1900)            | 1.4 (1450)            |
|                  | 3/8"      | 1.8 (1900)            | 1.4 (1450)            |

‡ Flow Rating determined in accordance with NFPA/T3.21.3, Pneumatic fluid power – Flow test procedure and reporting method – For fixed orifice components.

**Warning**

When a solenoid or air operator is used as a return for a manual or mechanical operator, the pilot pressure applied to the return operator must not exceed 40 psig (2.8 bar). Pilot pressures greater than 40 psig for a solenoid or air return will cause structural damage to the manual or mechanical operator and can also result in injury to the user. If the available pilot pressure exceeds 40 psig, an external pilot supply only must be used and a restrictor, part number 54872-02, must be installed in the pilot port of the return operator to reduce the return force to an acceptable level. Pilot pressure to the restrictor must not exceed 150 psig (10.3 bar).





# Nugget 200 Spool Valves

## Air Pilot Operated Inline Valves

| Description               | Symbol                | Type   | Port Size             | Body*   | Operator | Pilot Pressure psig (bar) | Weight lbs. (kg)         | Repair Kit     |          |
|---------------------------|-----------------------|--|-----------------------|---------|----------|---------------------------|--------------------------|----------------|----------|
| Single Air Spring Return  |                       | 3-Port/<br>2-Position                              | 1/4"                  | K41DA00 | KS1-KA2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-59       |          |
|                           |                       |  | 3/8"                  | K41EA00 | KS1-KA2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-59       |          |
|                           |                       | 5-Port/<br>2-Position                              | 1/4"                  | K71DA00 | KS6-KA2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |
|                           |                       |  | 3/8"                  | K71EA00 | KS6-KA2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |
|                           |                       |  | 1/2"                  | K71FA00 | KS6-KA2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |
|                           |                       |  | 3/8"                  | K71EA00 | KS6-KA2  | 35 - 150<br>(2.4 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |
| Double Air (Non-Detented) |                       | 3-Port/<br>2-Position                              | 1/4"                  | K41DA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | 2.22<br>(1.01)           | 54237-59       |          |
|                           |                       |  | 3/8"                  | K41EA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | 2.22<br>(1.01)           | 54237-59       |          |
|                           |                       | 5-Port/<br>2-Position                              | 1/4"                  | K71DA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |
|                           |                       |  | 3/8"                  | K71EA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |
|                           |                       |  | 1/2"                  | K71FA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |
|                           |                       | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"                  | K81DA00 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-56       |          |
|                           |                       |  | 3/8"                  | K81EA00 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-56       |          |
|                           |                       |  | 1/2"                  | K81FA00 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-56       |          |
|                           |                       | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"                  | K81DA05 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-57       |          |
|                           |                       |  | 3/8"                  | K81EA05 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-57       |          |
|                           |                       |  | 1/2"                  | K81FA05 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-57       |          |
|                           |                       | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"                  | K81DA06 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-58       |          |
|                           |                       |  | 3/8"                  | K81EA06 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-58       |          |
|                           |                       |  | 1/2"                  | K81FA06 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | 4.40<br>(2.00)           | 54237-58       |          |
|                           | Double Air (Detented) |  | 3-Port/<br>2-Position | 1/4"    | K41DA00  | KA2-KAA                   | 25 - 150<br>(1.7 - 10.3) | 2.22<br>(1.01) | 54237-59 |
|                           |                       |  |                       | 3/8"    | K41EA00  | KA2-KAA                   | 25 - 150<br>(1.7 - 10.3) | 2.22<br>(1.01) | 54237-59 |
|                           |                       |  | 5-Port/<br>2-Position | 1/4"    | K71DA00  | KA2-KAA                   | 25 - 150<br>(1.7 - 10.3) | 2.22<br>(1.01) | 54237-56 |
|                           |                       |  |                       | 3/8"    | K71EA00  | KA2-KAA                   | 25 - 150<br>(1.7 - 10.3) | 2.22<br>(1.01) | 54237-56 |
| 1/2"                      |                       |  |                       | K71FA00 | KA2-KAA  | 25 - 150<br>(1.7 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |
| 3/8"                      |                       |  |                       | K71EA00 | KA2-KAA  | 25 - 150<br>(1.7 - 10.3)  | 2.22<br>(1.01)           | 54237-56       |          |

\* Standard valves are equipped with PTF threads, solenoid operators with locking overrides, internal pilot, 120V/60 Hz-110V/50 Hz coils and cable grip connectors.

Optional solenoid operators, coil voltages and electrical connectors can be ordered using the information on p. VAL-10-11/12.

**Note:** For ISO-G threads, insert "G" in the 5th position. 1/2" ported bodies are not available with ISO G threads.



**Air Pilot Operated Stacking Valve**

| Description   | Symbol | Type   | Port Size | Body*   | Operator | Pilot Pressure psig (bar) | Weight lbs. (kg) | Repair Kit |
|---|--------|--|-----------|---------|----------|---------------------------|------------------|------------|
| Single Solenoid Spring Return                                       |        | 5-Port/<br>2-Position                              | 1/4"      | K78DA00 | KS6-KA2  | 35 - 150<br>(2.4 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        |  | 3/8"      | K78EA00 | KS6-KA2  | 35 - 150<br>(2.4 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        | 5-Port/<br>2-Position<br>Common<br>Inlet & Exh.    | 1/4"      | K79DA00 | KS6-KA2  | 35 - 150<br>(2.4 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        |  | 3/8"      | K79EA00 | KS6-KA2  | 35 - 150<br>(2.4 - 10.3)  | .53<br>(.24)     | 54237-56   |
| Double Solenoid (Non-Detented)                                      |        | 5-Port/<br>2-Position                              | 1/4"      | K78DA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        |  | 3/8"      | K78EA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        | 5-Port/<br>2-Position<br>Common<br>Inlet & Exh.    | 1/4"      | K79DA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        |  | 3/8"      | K79EA00 | KA2-KA2  | 15 - 150<br>(1.0 - 10.3)  | .53<br>(.24)     | 54237-56   |
| Double Solenoid (Non-Detented) Common Inlet-Port 1                  |        | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"      | K88DA00 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        |  | 3/8"      | K88EA00 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"      | K88DA05 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-57   |
|   |        |  | 3/8"      | K88EA05 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-57   |
|   |        | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"      | K88DA06 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-58   |
|   |        |  | 3/8"      | K88EA06 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-58   |
| Double Solenoid (Non-Detented) Common Inlet & Exhaust - Ports 1,3&5 |        | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"      | K89DA00 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        |  | 3/8"      | K89EA00 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"      | K89DA05 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-57   |
|   |        |  | 3/8"      | K89EA05 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-57   |
|   |        | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"      | K89DA06 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-58   |
|   |        |  | 3/8"      | K89EA06 | KAC-KAC  | 45 - 150<br>(3.1 - 10.3)  | .53<br>(.24)     | 54237-58   |
| Double Solenoid (Detented)  |        | 5-Port/<br>2-Position                              | 1/4"      | K78DA00 | AAA-KAA  | 25 - 150<br>(1.7 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        |  | 3/8"      | K78EA00 | AAA-KAA  | 25 - 150<br>(1.7 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        | 5-Port/<br>2-Position<br>Common<br>Inlet & Exh     | 1/4"      | K79DA00 | AAA-KAA  | 25 - 150<br>(1.7 - 10.3)  | .53<br>(.24)     | 54237-56   |
|   |        |  | 3/8"      | K79EA00 | AAA-KAA  | 25 - 150<br>(1.7 - 10.3)  | .53<br>(.24)     | 54237-56   |

\* Standard valves are equipped with PTF threads, solenoid operators with locking overrides, internal pilot, 120V/60 Hz-110V/50 Hz coils and cable grip connectors. Optional solenoid operators, coil voltages and electrical connectors can be ordered using the information on p. VAL-10-11/12.

**Note:** For ISO-G threads, insert "G" in the 5th position.



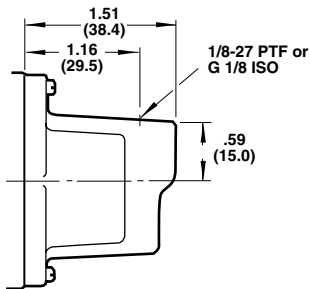
# Nugget 200 Spool Valves

## Air Operators

| Position             | Operator |     | Description   | Operating Pressure<br>psig (bar) | Weight<br>lbs. (kg) | Repair<br>Kit |
|----------------------|----------|-----|---|----------------------------------|---------------------|---------------|
|                      | ISO-G    | PTF |   |                                  |                     |               |
| 2-Position<br>Valves | KAB      | KAA | detent, large air   | 25<br>(1.7)                      | .73<br>(.33)        | 54344-16      |
|                      | KA5      | KA2 | nondetent, large air  | 15<br>(1.0)                      | .70<br>(.32)        | 54344-16      |
|                      | KAF      | KAE | detent bleed - .02 (.5mm) diameter bleed orifice  | 25<br>(1.7)                      | .73<br>(.33)        | 54344-16      |
|                      | KA9      | KA8 | nondetent bleed - .02 (.5mm) diameter bleed orifice   | 15<br>(1.0)                      | .70<br>(.32)        | 54344-16      |
|                      | KA7      | KA6 | nondetent, low pressure (inline only)   | 4<br>(.27)                       | 2.46<br>(1.12)      | -             |
|                      | KA4      | KA1 | nondetent, air bias (small air), return for manual operators or as air bias with KA2 or KA5 | 25<br>(1.7)                      | .33<br>(.15)        | 54344-16      |
|                      | KS5      | KS4 | nondetent, spring bias, use with KA2 or KA5   | 35<br>(2.5)                      | .44<br>(.20)        | 54344-16      |
| 3-Position<br>Valves | KAD      | KAC | spring centered   | 25<br>(1.7)                      | .73<br>(.33)        | 54344-16      |

## Air Operators

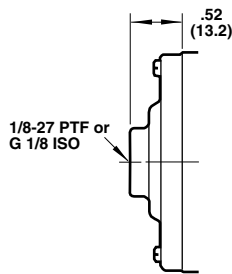
**KAA/KAF  
KA2, KA5  
KA8, KA9  
LARGE AIR**



### Air Bleed Operators

Air bleed operators have a 0.02" (0.5 mm) diameter orifice which connects pressure port 1 of the main valve to the operator piston and to atmosphere. A small amount of air constantly bleeds to atmosphere. The valve spool shifts when air bleed is stopped by a customer-supplied on-off valve.

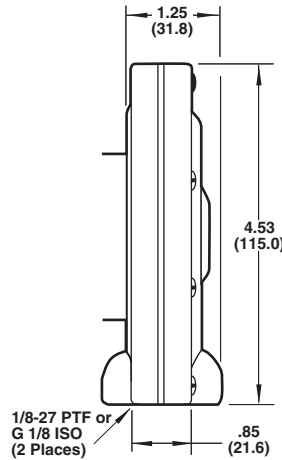
**KA1, KA4  
SMALL AIR  
(AIR BIAS)**



### KA1 Air Bias Operator

Piston area of the KA1 operator is approximately 1/2 of the KA2 piston. When pressure is applied to the KA1 operator the valve spool shifts to the KA2 end. When pressure is applied to both the KA1 and KA2 operators the valve spool shifts to the KA1 end.

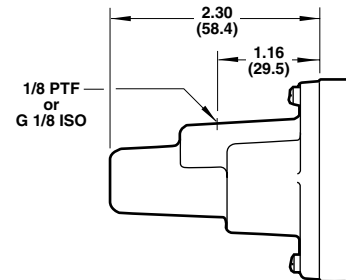
**KA6, KA7  
LOW PRESSURE**



### KA6 Low Pressure Operator (inline valves only)

The low pressure operator will shift the valve spool with only 4 psig (.28 bar) applied to Port B (Port A open). A minimum vacuum of 6.1" Hg (with HS1 spring return) applied to port A (Port B open) will also operate the valve. The KA6 operator can also be used as a differential pressure operator with or without spring return. The differential pressure required to shift the valve spool without a spring return is less than 1 psig (2" Hg). A filter/breather should be installed in the open port to reduce the possibility of internal contamination.

**KS4, KS5  
SPRING BIAS**



### KS4 Spring Bias Operator

Piston area of the KS4 operator is the same as the KA2 operator. The piston of the KS4 operator is spring loaded to shift the valve spool to the KA2 end. The valve spool shifts to the KS4 end when pressure is applied to the KA2 operator. When pressure is applied to both the KS4 and KA2 operators the valve spool shifts to the KA2 end.

## 1/4", 3/8", or 1/2" Ports, Manual and Mechanical Actuated 3/2, 5/2, & 5/3 Inline and Stacking Valves



- Long lasting spool design
- High flow compact valves
- Wide range of Manual and Mechanical Operators available
- Three functional types available in 3/2, 5/2, and 5/3 configurations

### Ordering Information

To order standard Nugget 200 manual/mechanical operated valves, quote model number from tables overleaf, e.g. order:

K71DA00-KS1-KK0 for a 5-port/2-position, single Manually Operated black knob, Spring Return (nondetented) model.

### Average Flow Factors in Cv‡ (l/min)

| Valve            | Port Size | Flow Path             |                       |
|------------------|-----------|-----------------------|-----------------------|
|                  |           | Port 1 to 2<br>1 to 4 | Port 2 to 3<br>4 to 5 |
| 3-Port, Inline   | 1/4"      | 1.6 (1700)            | 1.7 (1800)            |
|                  | 3/8"      | 1.6 (1700)            | 1.7 (1800)            |
| 5-Port, Inline   | 1/4"      | 1.6 (1700)            | 1.7 (1800)            |
|                  | 3/8"      | 1.6 (1700)            | 1.7 (1800)            |
|                  | 1/2"      | 1.6 (1700)            | 1.7 (1800)            |
| 5-Port, Stacking | 1/4"      | 1.8 (1900)            | 1.4 (1450)            |
|                  | 3/8"      | 1.8 (1900)            | 1.4 (1450)            |

‡ Flow Rating determined in accordance with NFPA/T3.21.3, Pneumatic fluid power – Flow test procedure and reporting method – For fixed orifice components.

### Technical Data

#### Medium:

Filtered and lubricated or non-lubricated compressed air or vacuum.

#### Operation:

Spool valve air pilot actuated.

#### Mounting:

Stacking – through holes on manifold base.  
Inline – through holes in valve body.

#### Port Size:

1/4", 3/8", or 1/2" PTF, or 1/4", or 3/8" ISO-G

#### Operating Pressure:

Maximum 150 psig (10.3 bar). For details see overleaf.

#### Operating Temperature:

-20°F to 160°F (-29°C to 71°C)  
Consult Technical Service for use below 36°F (2°C).

#### Materials:

Body: Aluminum  
Spool: Anodized aluminum  
Elastomers: Nitrile and special nitrile-based low-friction elastomers.



### Manual Operators

| Position   | Operator | Description                                  | Min. Operating Force lbs. (kg) |
|------------|----------|--|--------------------------------|
| 2-Position | KB0      | Palm Button - Black, Nondetent (Inline Only) | 18.0<br>(8.2)                  |
|            | KB1      | Palm Button - Red, Nondetent (Inline Only)   | 18.0<br>(8.2)                  |
|            | KB2      | Palm Button - Green, Nondetent (Inline Only) | 18.0<br>(8.2)                  |
|            | KB3      | Palm Button - Black, Detent (Inline Only)    | 9.0<br>(4.1)                   |
|            | KB4      | Palm Button - Red, Detent (Inline Only)      | 9.0<br>(4.1)                   |
|            | KB5      | Palm Button - Green, Detent (Inline Only)    | 9.0<br>(4.1)                   |
|            | KF0      | Foot Pedal, Nondetent                        | 11.0<br>(5.0)                  |
|            | KK0      | Knob - Black, Nondetent                      | 18.0<br>(8.2)                  |
|            | KK1      | Knob - Black, Detent                         | 9.0<br>(4.1)                   |
|            | KL0      | Lever, Nondetent (Inline Only)               | 9.0<br>(4.1)                   |
|            | KL1      | Lever, 2-Position Detent (Inline Only)       | 7.0<br>(3.2)                   |
|            | KL5      | Lever, Nondetent                             | 9.0<br>(4.1)                   |
|            | KL6      | Lever, 2-Position Detent                     | 7.0<br>(3.2)                   |
|            | KT0      | Treadle, Nondetent (Inline Only)             | 13.0<br>(5.9)                  |
|            | KT1      | Treadle, 2-Position Detent (Inline Only)     | 9.0<br>(4.1)                   |
| 3-Position | KB6      | Palm Button - Black, Spring Centered         | 9.0<br>(4.1)                   |
|            | KK2      | Knob - Black, Spring Centered                | 9.0<br>(4.1)                   |
|            | KK3      | Knob - black, 3-Position Detent              | 9.0<br>(4.1)                   |
|            | KL2      | Lever, Spring Centered (Inline Only)         | 7.0<br>(3.2)                   |
|            | KL3      | Lever, 3-Position Detent (Inline Only)       | 7.0<br>(3.2)                   |
|            | KL7      | Lever, Spring Centered                       | 7.0<br>(3.2)                   |
|            | KL8      | Lever, 3-Position Detent                     | 7.0<br>(3.2)                   |
|            | KT2      | Treadle, Spring Centered                     | 9.0<br>(4.1)                   |

### Mechanical Operators

| Position   | Operator | Description                                  | Min. Operating Force lbs. (kg) |
|------------|----------|--|--------------------------------|
| 2-Position | KP0      | Tappet, Nondetent                            | 18.0<br>(8.2)                  |
|            | KR2      | Lever Roller, Nondetent (Inline Only)        | 11.0<br>(5.0)                  |
|            | KR3      | One-Way Trip Roller, Nondetent               | 11.0<br>(5.0)                  |
|            | KR4      | Lever Roller, Nondetent                      | 11.0<br>(5.0)                  |
|            | KR5      | One-Way Trip Roller, Nondetent (Inline Only) | 11.0<br>(5.0)                  |



Manually Operated Inline Valves - Palm Button

| Description                  | Symbol | Type                                     | Port Size | Body*   | Operator | Miniature Operating Force lbs. (kg) | Weight lbs. (kg) | Repair Kits |
|------------------------------|--------|--|-----------|---------|----------|-------------------------------------|------------------|-------------|
| Spring Return (Non-Detented) |        | 3-Port/2-Position                        | 1/4"      | K41DA00 | KS1-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-59    |
|                              |        |  | 3/8"      | K41EA00 | KS1-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-59    |
|                              |        | 5-Port/2-Position                        | 1/4"      | K71DA00 | KS1-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-56    |
|                              |        |  | 3/8"      | K71EA00 | KS1-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-56    |
|                              |        |  | 1/2"      | K71FA00 | KS1-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-56    |
| End Cap (Non-Detented)       |        | 3-Port/2-Position                        | 1/4"      | K41DA00 | KC0-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-59    |
|                              |        |  | 3/8"      | K41EA00 | KC0-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-59    |
|                              |        | 5-Port/2-Position                        | 1/4"      | K71DA00 | KC0-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-56    |
|                              |        |  | 3/8"      | K71EA00 | KC0-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-56    |
|                              |        |  | 1/2"      | K71FA00 | KC0-KB0  | 18.0 (8.2)                          | 2.22 (1.01)      | 54237-56    |
|                              |        |  | 1/4"      | K71DA00 | KC0-KB3  | 9.0 (4.1)                           | 2.22 (1.01)      | 54237-59    |
| End Cap (Detented)           |        | 3-Port/2-Position                        | 3/8"      | K41EA00 | KC0-KB3  | 9.0 (4.1)                           | 2.22 (1.01)      | 54237-59    |
|                              |        |  | 1/4"      | K41DA00 | KC0-KB3  | 9.0 (4.1)                           | 2.22 (1.01)      | 54237-59    |
|                              |        | 5-Port/2-Position                        | 1/4"      | K71DA00 | KC0-KB3  | 9.0 (4.1)                           | 2.22 (1.01)      | 54237-56    |
|                              |        |  | 3/8"      | K71EA00 | KC0-KB3  | 9.0 (4.1)                           | 2.22 (1.01)      | 54237-56    |
|                              |        |  | 1/2"      | K71FA00 | KC0-KB3  | 9.0 (4.1)                           | 2.22 (1.01)      | 54237-56    |
| End Cap (Spring Centered)    |        | 5-Port/3-Position All Ports Blocked      | 1/4"      | K81DA00 | KC0-KB6  | 9.0 (4.1)                           | 4.40 (2.00)      | 54237-56    |
|                              |        |  | 3/8"      | K81EA00 | KC0-KB6  | 9.0 (4.1)                           | 4.40 (2.00)      | 54237-56    |
|                              |        |  | 1/2"      | K81FA00 | KC0-KB6  | 9.0 (4.1)                           | 4.40 (2.00)      | 54237-56    |
|                              |        | 5-Port/3-Position Inlet Open to Cylinder | 1/4"      | K81DA05 | KC0-KB6  | 9.0 (4.1)                           | 4.40 (2.00)      | 54237-57    |
|                              |        |  | 3/8"      | K81EA05 | KC0-KB6  | 9.0 (4.1)                           | 4.40 (2.00)      | 54237-57    |
|                              |        |  | 1/2"      | K81FA05 | KC0-KB6  | 9.0 (4.1)                           | 4.40 (2.00)      | 54237-57    |
|                              |        | 5-Port/3-Position Cyl Open to Exhaust    | 1/4"      | K81DA06 | KC0-KB6  | 9.0 (4.1)                           | 2.00 (0.90)      | 54237-58    |
|                              |        |  | 3/8"      | K81EA06 | KC0-KB6  | 9.0 (4.1)                           | 4.40 (2.00)      | 54237-58    |
|                              |        |  | 1/2"      | K81FA06 | KC0-KB6  | 9.0 (4.1)                           | 4.40 (2.00)      | 54237-58    |

\* Standard valves are equipped with PTF threads, solenoid operators with locking overrides, internal pilot, 120V/60 Hz-110V/50 Hz coils and cable grip connectors. Optional solenoid operators, coil voltages and electrical connectors can be ordered using the information on p. VAL-10-11/12.  
**Note:** For ISO-G threads, insert "G" in the 5th position. 1/2" ported bodies are not available with ISO G threads.



# Nugget 200 Spool Valves

## Manually Operated Inline Valves - Knob

| Description                  | Symbol                 | Type   | Port Size             | Body*   | Operator | Pilot Pressure psig (bar) | Weight lbs. (kg) | Repair Kit     |
|------------------------------|------------------------|--|-----------------------|---------|----------|---------------------------|------------------|----------------|
| Spring Return (Non-Detented) |                        | 3-Port/<br>2-Position                              | 1/4"                  | K41DA00 | KS1-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-59       |
|                              |                        |  | 3/8"                  | K41EA00 | KS1-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-59       |
|                              |                        | 5-Port/<br>2-Position                              | 1/4"                  | K71DA00 | KS1-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-56       |
|                              |                        |  | 3/8"                  | K71EA00 | KS1-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-56       |
|                              |                        |  | 1/2"                  | K71FA00 | KS1-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-56       |
|                              | End Cap (Non-Detented) |  | 3-Port/<br>2-Position | 1/4"    | K41DA00  | KC0-KK0                   | 18.0<br>(8.2)    | 2.22<br>(1.01) |
| 3/8"                         |                        |  |                       | K41EA00 | KC0-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-59       |
|                              |                        | 5-Port/<br>2-Position                              | 1/4"                  | K71DA00 | KC0-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-56       |
|                              |                        |  | 3/8"                  | K71EA00 | KC0-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-56       |
|                              |                        |  | 1/2"                  | K71FA00 | KC0-KK0  | 18.0<br>(8.2)             | 2.22<br>(1.01)   | 54237-56       |
| End Cap (Detented)           |                        |  | 3-Port/<br>2-Position | 1/4"    | K41DA00  | KC0-KK1                   | 9.0<br>(4.1)     | 2.22<br>(1.01) |
|                              | 3/8"                   |  |                       | K41EA00 | KC0-KK1  | 9.0<br>(4.1)              | 2.22<br>(1.01)   | 54237-59       |
|                              |                        | 5-Port/<br>2-Position                              | 1/4"                  | K71DA00 | KC0-KK1  | 9.0<br>(4.1)              | 2.22<br>(1.01)   | 54237-56       |
|                              |                        |  | 3/8"                  | K71EA00 | KC0-KK1  | 9.0<br>(4.1)              | 2.22<br>(1.01)   | 54237-56       |
|                              |                        |  | 1/2"                  | K71FA00 | KC0-KK1  | 9.0<br>(4.1)              | 2.22<br>(1.01)   | 54237-56       |
|                              |                        | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"                  | K81DA00 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-56       |
|                              |                        |  | 3/8"                  | K81EA00 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-56       |
|                              |                        |  | 1/2"                  | K81FA00 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-56       |
|                              |                        | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"                  | K81DA05 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-57       |
|                              |                        |  | 3/8"                  | K81EA05 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-57       |
|                              |                        |  | 1/2"                  | K81FA05 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-57       |
|                              |                        | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"                  | K81DA06 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-58       |
|                              |                        |  | 3/8"                  | K81EA06 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-58       |
|                              |                        |  | 1/2"                  | K81FA06 | KC0-KK3  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-58       |
| End Cap (Spring Centered)    |                        | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"                  | K81DA00 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-56       |
|                              |                        |  | 3/8"                  | K81EA00 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-56       |
|                              |                        |  | 1/2"                  | K81FA00 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-56       |
|                              |                        | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"                  | K81DA05 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-57       |
|                              |                        |  | 3/8"                  | K81EA05 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-57       |
|                              |                        |  | 1/2"                  | K81FA05 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-57       |
|                              |                        | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"                  | K81DA06 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-58       |
|                              |                        |  | 3/8"                  | K81EA06 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-58       |
|                              |                        |  | 1/2"                  | K81FA06 | KC0-KK2  | 9.0<br>(4.1)              | 4.40<br>(2.00)   | 54237-58       |

\* Standard valves are equipped with PTF threads, solenoid operators with locking overrides, internal pilot, 120V/60 Hz-110V/50 Hz coils and cable grip connectors. Optional solenoid operators, coil voltages and electrical connectors can be ordered using the information on p. VAL-10-11/12.

**Note:** For ISO-G threads, insert "G" in the 5th position. 1/2" ported bodies are not available with ISO G threads.



Manually Operated Inline Valves - Lever

| Description                  | Symbol                    | Type   | Port Size                                     | Body*   | Operator | Minimum Operating Force lbs. (kg) | Weight lbs. (kg) | Repair Kit     |
|------------------------------|---------------------------|--|---|---------|----------|-----------------------------------|------------------|----------------|
| Spring Return (Non-Detented) |                           | 3-Port/<br>2-Position                              | 1/4"  | K41DA00 | KS1-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-59       |
|                              |                           |  | 3/8"  | K41EA00 | KS1-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-59       |
|                              |                           | 5-Port/<br>2-Position                              | 1/4"  | K71DA00 | KS1-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                              |                           |  | 3/8"  | K71EA00 | KS1-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                              |                           |  | 1/2"  | K71FA00 | KS1-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                              | End Cap (Non-Detented)    |  | 3-Port/<br>2-Position                         | 1/4"    | K41DA00  | KC0-KL0                           | 9.0<br>(4.1)     | 2.22<br>(1.01) |
| 3/8"                         |                           |  |   | K41EA00 | KC0-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-59       |
|                              |                           | 5-Port/<br>2-Position                              | 1/4"  | K71DA00 | KC0-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                              |                           |  | 3/8"  | K71EA00 | KC0-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                              |                           |  | 1/2"  | K71FA00 | KC0-KL0  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
| End Cap (Detented)           |                           |  | 3-Port/<br>2-Position                         | 1/4"    | K41DA00  | KC0-KL1                           | 7.0<br>(4.1)     | 2.22<br>(1.01) |
|                              | 3/8"                      |  |   | K41EA00 | KC0-KL1  | 7.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-59       |
|                              |                           | 5-Port/<br>2-Position                              | 1/4"  | K71DA00 | KC0-KL1  | 7.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                              |                           |  | 3/8"  | K71EA00 | KC0-KL1  | 7.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                              |                           |  | 1/2"  | K71FA00 | KC0-KL1  | 7.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                              |                           | 5-Port/<br>3-Position<br>All Ports<br>Blocked      | 1/4"  | K81DA00 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-56       |
|                              |                           |  | 3/8"  | K81EA00 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-56       |
|                              |                           |  | 1/2"  | K81FA00 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-56       |
|                              |                           | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"  | K81DA05 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                              |                           |  | 3/8"  | K81EA05 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                              |                           |  | 1/2"  | K81FA05 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                              |                           | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"  | K81DA06 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |
|                              |                           |  | 3/8"  | K81EA06 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |
|                              |                           |  | 1/2"  | K81FA06 | KC0-KL3  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |
|                              | End Cap (Spring Centered) |  | 5-Port/<br>3-Position<br>All Ports<br>Blocked | 1/4"    | K81DA00  | KC0-KL2                           | 7.0<br>(4.1)     | 4.40<br>(2.00) |
| 3/8"                         |                           |  |   | K81EA00 | KC0-KL2  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-56       |
| 1/2"                         |                           |  |   | K81FA00 | KC0-KL2  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-56       |
|                              |                           | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"  | K81DA05 | KC0-KL2  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                              |                           |  | 3/8"  | K81EA05 | KC0-KL2  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                              |                           |  | 1/2"  | K81FA05 | KC0-KL2  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                              |                           | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"  | K81DA06 | KC0-KL2  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |
|                              |                           |  | 3/8"  | K81EA06 | KC0-KL2  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |
|                              |                           |  | 1/2"  | K81FA06 | KC0-KL2  | 7.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |

\* Standard valves are equipped with PTF threads, solenoid operators with locking overrides, internal pilot, 120V/60 Hz-110V/50 Hz coils and cable grip connectors. Optional solenoid operators, coil voltages and electrical connectors can be ordered using the information on p. VAL-10-11/12.  
**Note:** For ISO-G threads, insert "G" in the 5th position. 1/2" ported bodies are not available with ISO G threads.



# Nugget 200 Spool Valves

## Manually Operated Inline Valves - Foot Pedal

| Description               | Symbol | Type                  | Port Size | Body*   | Operator | Minimum Operating Force lbs. (kg) | Weight lbs. (kg) | Repair Kit |
|---------------------------|--------|-----------------------|-----------|---------|----------|-----------------------------------|------------------|------------|
| Foot Pedal (Non-Detented) |        | 3-Port/<br>2-Position | 1/4"      | K41DA00 | KS1-KF0  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-59   |
|                           |        |                       | 3/8"      | K41EA00 | KS1-KF0  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-59   |
|                           |        | 5-Port/<br>2-Position | 1/4"      | K71DA00 | KS6-KF0  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-56   |
|                           |        |                       | 3/8"      | K71EA00 | KS6-KF0  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-56   |
|                           |        |                       | 1/2"      | K71FA00 | KS6-KF0  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-56   |

\* Standard valves are equipped with PTF threads.

**Note:** For ISO-G threads, insert "G" in the 5th position. 1/2" ported bodies are not available with ISO G threads.

## Manually Operated Inline Valves - Treadle

| Description               | Symbol             | Type   | Port Size                                     | Body*   | Operator | Minimum Operating Force lbs. (kg) | Weight lbs. (kg) | Repair Kit     |
|---------------------------|--------------------|--|---|---------|----------|-----------------------------------|------------------|----------------|
| Treadle (Non-Detented)    |                    | 3-Port/<br>2-Position                              | 1/4"  | K41DA00 | KC0-KT0  | 13.0<br>(5.9)                     | 2.22<br>(1.01)   | 54237-59       |
|                           |                    |  | 3/8"  | K41EA00 | KC0-KT0  | 13.0<br>(5.9)                     | 2.22<br>(1.01)   | 54237-59       |
|                           |                    | 5-Port/<br>2-Position                              | 1/4"  | K71DA00 | KC0-KT0  | 13.0<br>(5.9)                     | 2.22<br>(1.01)   | 54237-56       |
|                           |                    |  | 3/8"  | K71EA00 | KC0-KT0  | 13.0<br>(5.9)                     | 2.22<br>(1.01)   | 54237-56       |
|                           |                    |  | 1/2"  | K71FA00 | KC0-KT0  | 13.0<br>(5.9)                     | 2.22<br>(1.01)   | 54237-56       |
|                           | Treadle (Detented) |  | 3-Port/<br>2-Position                         | 1/4"    | K41DA00  | KC0-KT1                           | 9.0<br>(4.1)     | 2.22<br>(1.01) |
| 3/8"                      |                    |  |   | K41EA00 | KC0-KT1  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-59       |
|                           |                    | 5-Port/<br>2-Position                              | 1/4"  | K71DA00 | KC0-KT1  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                           |                    |  | 3/8"  | K71EA00 | KC0-KT1  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
|                           |                    |  | 1/2"  | K71FA00 | KC0-KT1  | 9.0<br>(4.1)                      | 2.22<br>(1.01)   | 54237-56       |
| Treadle (Spring Centered) |                    |  | 5-Port/<br>3-Position<br>All Ports<br>Blocked | 1/4"    | K81DA00  | KC0-KT2                           | 9.0<br>(4.1)     | 4.40<br>(2.00) |
|                           | 3/8"               |  |   | K81EA00 | KC0-KT2  | 9.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-56       |
|                           | 1/2"               |  |   | K81FA00 | KC0-KT2  | 9.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-56       |
|                           |                    | 5-Port/<br>3-Position<br>Inlet Open<br>to Cylinder | 1/4"  | K81DA05 | KC0-KT2  | 9.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                           |                    |  | 3/8"  | K81EA05 | KC0-KT2  | 9.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                           |                    |  | 1/2"  | K81FA05 | KC0-KT2  | 9.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-57       |
|                           |                    | 5-Port/<br>3-Position<br>Cyl Open<br>to Exhaust    | 1/4"  | K81DA06 | KC0-KT2  | 9.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |
|                           |                    |  | 3/8"  | K81EA06 | KC0-KT2  | 9.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |
|                           |                    |  | 1/2"  | K81FA06 | KC0-KT2  | 9.0<br>(4.1)                      | 4.40<br>(2.00)   | 54237-58       |

\* Standard valves are equipped with PTF threads.

**Note:** For ISO-G threads, insert "G" in the 5th position. 1/2" ported bodies are not available with ISO G threads.



**Mechanically Operated Inline Valves - Lever Roller**

| Description                 | Symbol | Type                  | Port Size | Body*   | Operator | Minimum Operating Force lbs. (kg) | Weight lbs. (kg) | Repair Kit |
|-----------------------------|--------|-----------------------|-----------|---------|----------|-----------------------------------|------------------|------------|
| Lever Roller (Non-Detented) |        | 3-Port/<br>2-Position | 1/4"      | K41DA00 | KS1-KR2  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-59   |
|                             |        |                       | 3/8"      | K41EA00 | KS1-KR2  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-59   |
|                             |        | 5-Port/<br>2-Position | 1/4"      | K71DA00 | KS6-KR2  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-56   |
|                             |        |                       | 3/8"      | K71EA00 | KS6-KR2  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-56   |
|                             |        |                       | 1/2"      | K71FA00 | KS6-KR2  | 11.0<br>(5.0)                     | 2.22<br>(1.01)   | 54237-56   |

\* Standard valves are equipped with PTF threads.

**Note:** For ISO-G threads, insert "G" in the 5th position. 1/2" ported bodies are not available with ISO G threads.

**Mechanically Operated Inline Valves - Tappet**

| Description           | Symbol | Type                  | Port Size | Body*   | Operator | Minimum Operating Force lbs. (kg) | Weight lbs. (kg) | Repair Kit |
|-----------------------|--------|-----------------------|-----------|---------|----------|-----------------------------------|------------------|------------|
| Tappet (Non-Detented) |        | 3-Port/<br>2-Position | 1/4"      | K41DA00 | KS1-KP0  | 18.0<br>(8.2)                     | 2.22<br>(1.01)   | 54237-59   |
|                       |        |                       | 3/8"      | K41EA00 | KS1-KP0  | 18.0<br>(8.2)                     | 2.22<br>(1.01)   | 54237-59   |
|                       |        | 5-Port/<br>2-Position | 1/4"      | K71DA00 | KS6-KP0  | 18.0<br>(8.2)                     | 2.22<br>(1.01)   | 54237-56   |
|                       |        |                       | 3/8"      | K71EA00 | KS6-KP0  | 18.0<br>(8.2)                     | 2.22<br>(1.01)   | 54237-56   |

\* Standard valves are equipped with PTF threads.

**Note:** For ISO-G threads, insert "G" in the 5th position.

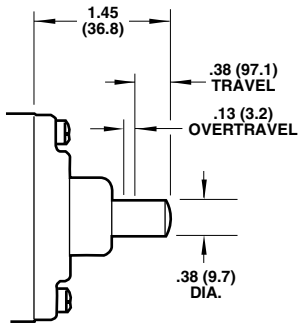


# Nugget 200 Spool Valves

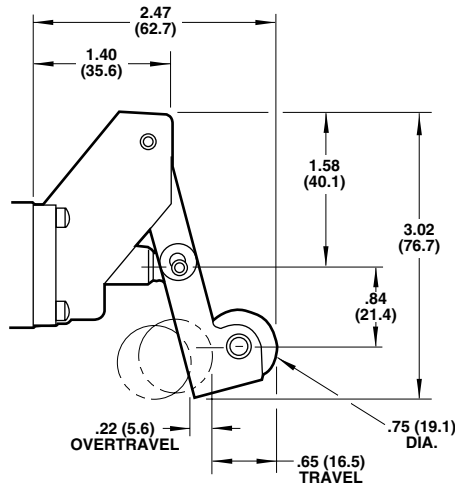
All Dimensions in Inches (mm)

## Mechanical Operators

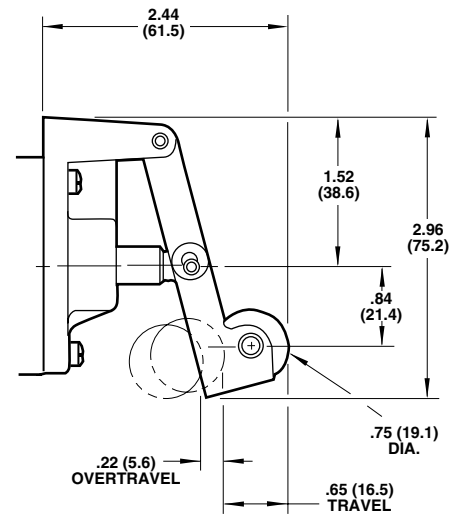
### KP0 – TAPPET



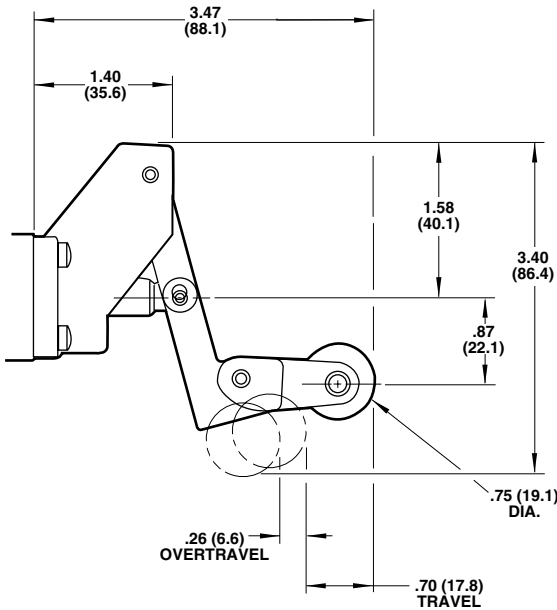
### KR2 – LEVER ROLLER



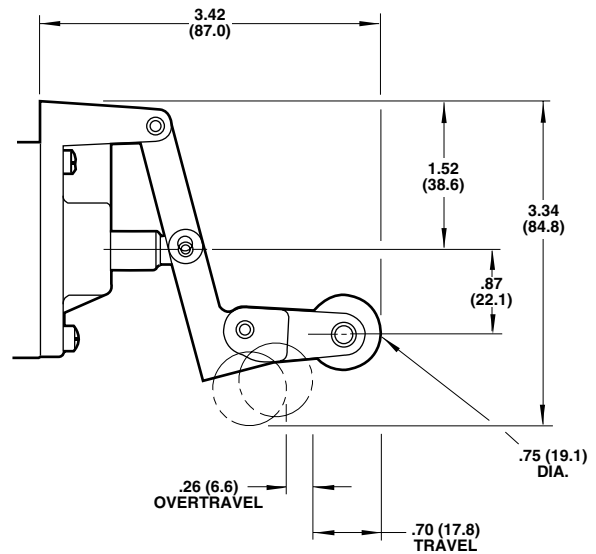
### KR4 – LEVER ROLLER



### KR5 – LEVER ROLLER ONE-WAY TRIP

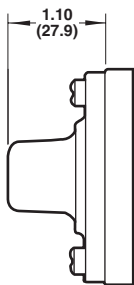


### KR3 – LEVER ROLLER ONE-WAY TRIP

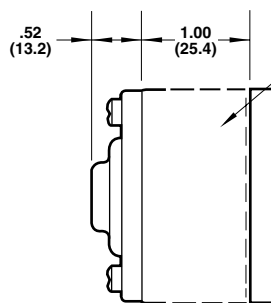


## Spring Return & End Cap

### KS1 – SPRING RETURN



### KC0 – END CAP



SPACER BLOCK – Used only with spring centered manual operators (KK2, KL2, KL7, KT2).

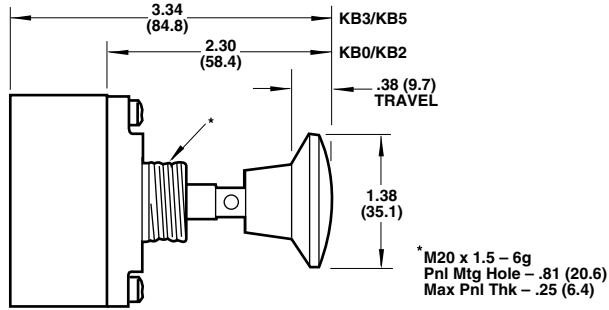
# Nugget 200 Spool Valves

All Dimensions in Inches (mm)

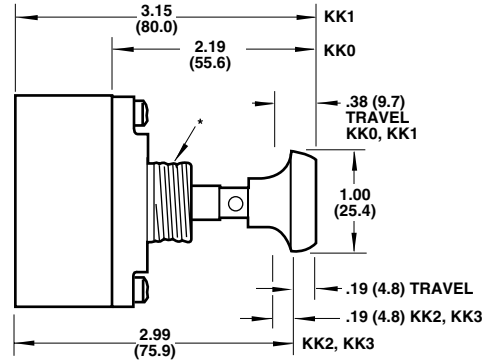


## Manual Operators

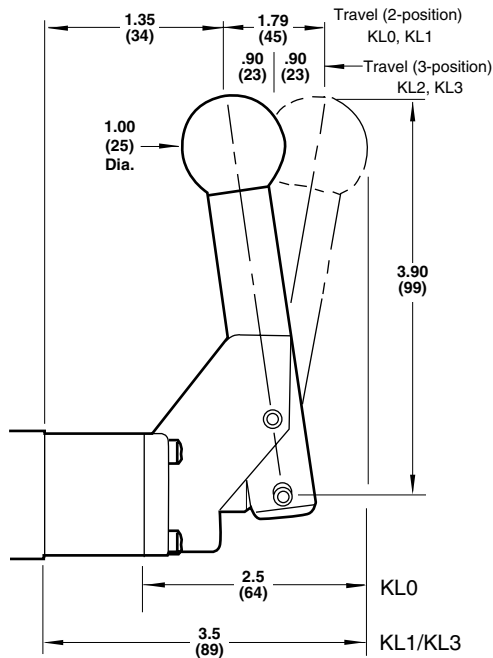
### KB0/KB5 – PALM BUTTON



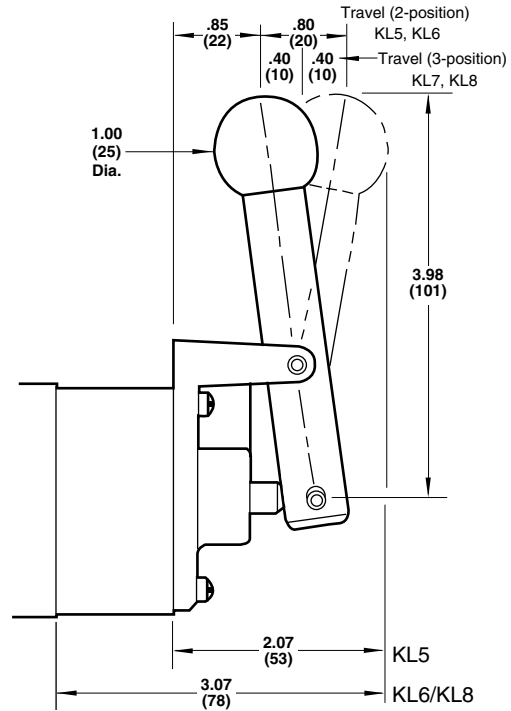
### KK0/KK3 – KNOB



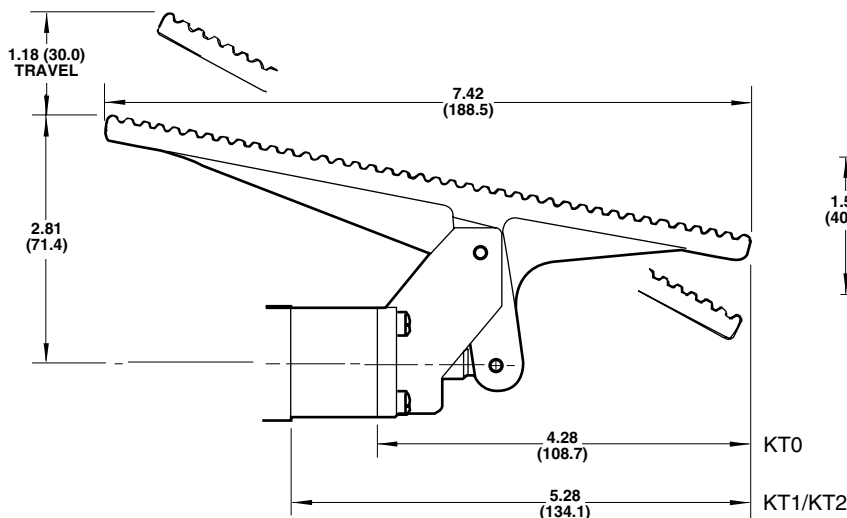
### KL0/KL3 – LEVER



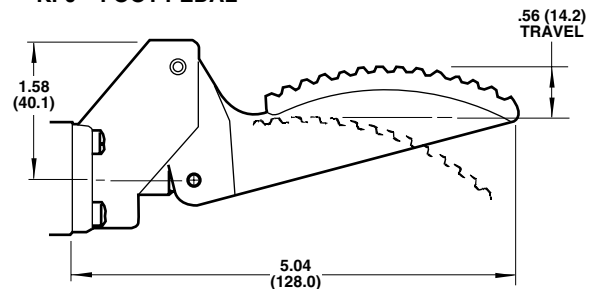
### KL5/KL8 – LEVER



### KT0/KT2 – TREADLE



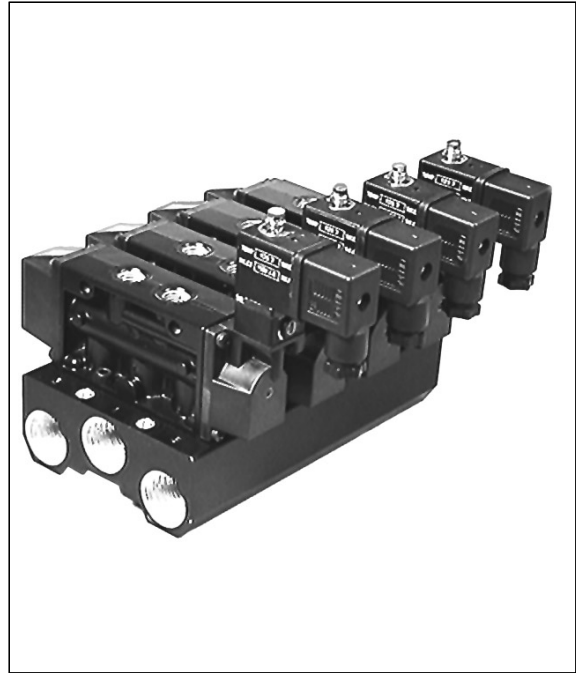
### KF0 – FOOT PEDAL



## Nugget 200 Spool Valves

### Fixed Length Manifold for 1/4" and 3/8" Inline Valves

- Reduces plumbing and installation time.
- Lightweight aluminum construction.
- 3/4" PTF common inlet and exhaust ports.
- For use with most Nugget 200 1/4" and 3/8" inline valves.
- Available in 2 to 10 station lengths.



#### Technical Data

Fluid: Compressed air

Maximum Pressure: See valve specifications

Operating Pressure: See valve specifications

Port Size: 3/4" PTF Inlet and Exhaust

Mounting Holes: 0.28" (7 mm) Diameter

Materials:

Manifold – Aluminum

Seals – Nitrile

#### Ordering Example

To order valves mounted to a fixed length manifold please follow these steps:

1. Order only 1/4" and 3/8" inline bodies ending in 2 (i.e. K71DA02)\*
2. Note the manifold is to be assembled.
3. Note positions of various valving.

Example:

One four station Nugget 200 fixed length manifold assembly consisting of:

**Position 1:**

- (1) K71DA02 - KY6 - KY6 (Dbl Sol Valve)

**Positions 2 - 4:**

- (3) K71DA02 - KS6 - KY6 (Single Solenoid Valve)
- (1) 13249-62 (Four Station Manifold)
- (4) 99-051-530 (Assembly Charge)

\* Note standard K71DA00 and K71EA00 bodies cannot be mounted to fixed length manifold.

**Blanking Plate Kit:** 54588-50

# Nugget 200 Spool Valves

All Dimensions in Inches (mm)



**Ordering Information** - Models listed include all mounting hardware and gaskets. Inlet and exhaust ports are 3/4" PTF.

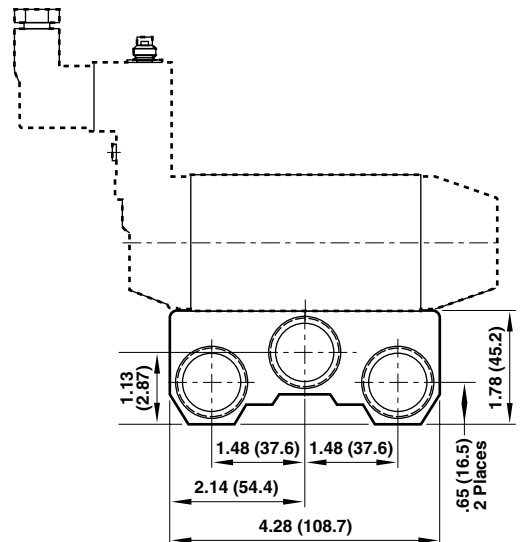
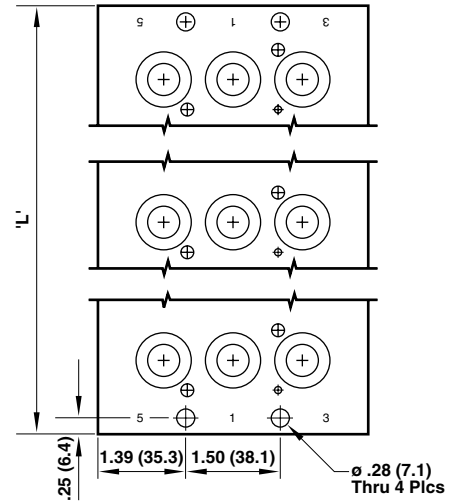
### Fixed Length Manifold

| Number of Stations | Part Number |
|--------------------|-------------|
| 2                  | 13249-60    |
| 3                  | 13249-61    |
| 4                  | 13249-62    |
| 5                  | 13249-63    |
| 6                  | 13249-64    |
| 8                  | 13249-65    |
| 10                 | 13249-66    |

### Repair Parts

| Item            | Number Required | Part Number |
|-----------------|-----------------|-------------|
| Mounting Screws | 2               | 6005-14     |
| Seals           | 3               | 2338-25     |

M5 x 0.8 - 6G  
(typ 2 places per station)



| Dash | "L"            |
|------|----------------|
| -60  | 4.000 (101.6)  |
| -61  | 5.750 (146.0)  |
| -62  | 7.375 (187.3)  |
| -63  | 9.125 (231.8)  |
| -64  | 10.750 (273.0) |
| -65  | 14.125 (358.8) |
| -66  | 17.375 (441.3) |



## Nugget 200 Spool Valves

### Special Instructions – Factory Assembled Stacking Valves

For Ordering purposes the valve stack is oriented as shown in column two:

#### Unless otherwise noted:

1. Cylinder (outlet) ports are oriented toward the bottom
2. The 1 2 operator is on the left side, the 1 4 operator on the right side.
3. Valves are listed from the FRONT to the BACK

Example 1: One stacking valve assembly with common inlet and exhaust (ports 1, 3 and 5) and junction boxes with solenoid operators with indicator lights. Isolating plugs for two different working pressures installed between valves 4 and 5.

Example 2: One Combination stacking valve assembly without junction boxes. Valves on one end of stack with common inlet and exhaust (ports 1, 3 and 5), and on the opposite end with common inlet only (port 1).

#### Answer Example 1

| Valve Pos. No. | Quantity | Product Number  | Special Instructions                        |
|----------------|----------|-----------------|---|
| 1              | 1        | K79DA50-KS6-KM1 |   |
| 2              | 1        | K79DA50-KS6-KM1 |   |
| 3              | 1        | K79DA50-KM6-KM6 |   |
| 4              | 1        | K89EA50-KM8-KM8 |   |
|                |          |                 | Isolating Plugs<br>Common<br>Ports 1, 3 & 5 |
| 5              | 1        | K79DA50-KM6-KM6 |   |
| 6              | 1        | K79DA50-KM6-KM6 |   |
| 7              | 1        | K79DA50-KM6-KM6 |   |
|                | 1        | 13295-50        | End Plate Kit                               |

#### Answer Example 2

| Valve Pos. No. | Quantity | Product Number  | Special Instructions |
|----------------|----------|-----------------|----------------------|
| 1              | 1        | K79DA00-KS6-KV2 |                      |
| 2              | 1        | K89EA00-KV0-KV0 |                      |
| 3              | 1        | K79EA00-KV2-KV2 |                      |
| 4              | 1        | K78DA00-KS6-KV2 |                      |
| 5              | 1        | K78EA00-KS6-KV2 |                      |
|                | 1        | 13295-52        | End Plate Kit        |

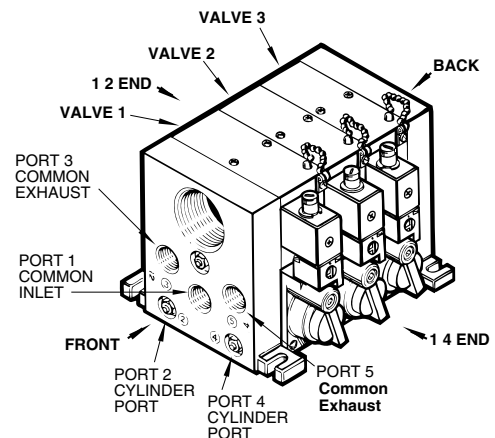
#### Note:

Mufflers or filter nuts should be used in all valve body, end plate, or solenoid operator exhaust ports to prevent entry of dirt and to reduce the noise level of the exhausting air. In wet locations, exhaust ports should not face upward to lessen the possibility of liquids entering the unit.

#### Important:

1. Solenoid operated 2-position detent and nondetent, and 3-position spring centered valves can be combined in the same stack.
2. Plain stacking valves with common port 1 only and plain valves with common ports 1, 3 and 5 can be combined in one stack if grouped together at opposite ends.
3. A stack or group of valves with common port 1 only must have isolating plugs installed in the manifolding exhaust ports (3 and 5) between each valve and each of the end plates. Two exhaust port isolating plugs are furnished with each valve. Installation need not be specified on orders for factory assembled stacks as this will be done automatically.
4. Isolating plugs furnished in the end plate kit at no extra cost can be placed between two stacking valves to block the common ports and separate a section of the valve stack to accommodate two different input pressures. One pressure is brought in from the front end plate and the second pressure from the end plate in the back. (Specify on order form under "Special Instructions" where to install isolating plugs.)
5. Ports 1, 3 and 5 in one end plate can be plugged if so specified on order under "Special Instructions".

#### Factory Assembled Stacking Valve Common Inlet & Exhaust





**Special Instructions – Stacking Valves**

- The numbers shown in the stacking valve Ordering Information tables include the valve plus the interface seals and threaded tie rods needed to connect the valve to the adjacent valve or end plate.
- An end plate kit is required to complete a valve stack assembly. It includes two end plates and the necessary seals and attaching hardware. Also included are three pipe plugs to close one end of the stack and three isolating plugs (discs). The isolating plugs can be used to separate the valve stack into two sections and thus allow valves with a common inlet only to be combined with valves having both a common inlet and common exhausts, or to allow the use of different inlet pressures.
- Always specify the valve order number, the end plate kit number and the quantity desired. See table below.

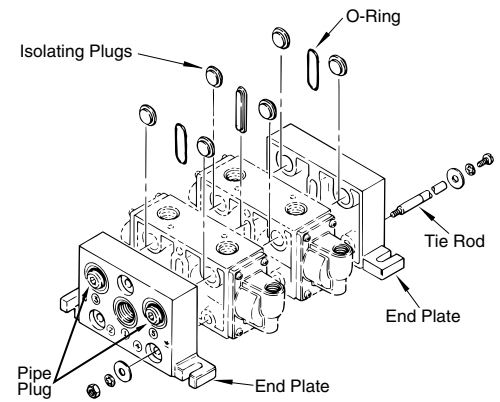
| End Plate Kit                   | Order Number  |                 |
|---------------------------------|---------------|-----------------|
|                                 | 3/8 PTF Ports | G 3/8 ISO Ports |
| For valves without junction box | 13295-52      | 13295-53        |
| For valves with junction box    | 13295-50      | 13295-51        |

- Valves and end plates are shipped unassembled. See pp. VAL-10-36/37 for factory assembled stacks.
- Stacking valves are available in two configurations – Common Inlet and Exhaust (Ports 1, 3, and 5) and Common Inlet Only (Port 1). Speed controls can be installed in the exhaust ports only on the Common Inlet (Port 1) configuration. The Common Inlet (Port 1) configuration cannot be used with the junction box.
- Solenoid operated 2-position detent and nondetent, and 3-position spring centered valves can be combined in the same stack.

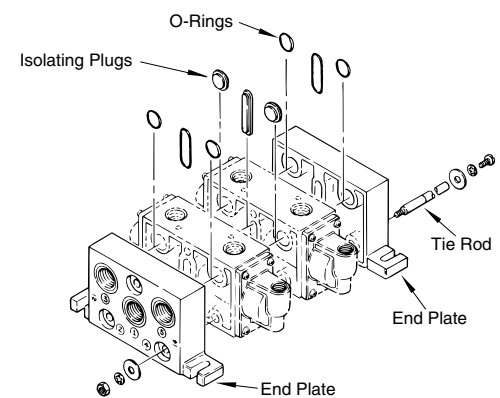
**Isolating Plugs**

Stacked banks of valves can be divided into two sections by substituting the isolating plugs for the O-rings between any two valves. They can also be used to block the end plate ports on one end if desired. Although one inlet port and two exhaust port isolating plugs are included with the end plate kit, the individual plugs can be ordered separately.

| Isolating Plugs       | Quantity Required | Order No. |
|-----------------------|-------------------|-----------|
| Inlet (Port 1)        | 1                 | 54350-89  |
| Exhaust (Ports 3 & 5) | 2                 | 54350-88  |



Typical Valve Stack (Common Inlet Only - Port1)



Typical Valve Stack (Common Inlet and Exhaust - Ports 1, 3 and 5)



# Nugget 200 Product Numbering System — Air, Manual, and Mechanical Operators and Solenoid Operators with Locking Override

1 0 End      1 2 End      3-Way Valves  
1 2 End      1 4 End      4-Way Valves  
Operator      Operator

Valve Body  
**K 4 1 D A 0 0 – K S 1 – K V 2**

### Valve Type (inline bodies)

- K41 – 3-Way, 2-Position, 3-Port
- K71 – 4-Way, 2-Position, 5-Port
- K81 – 4-Way, 3-Position, 5-Port

### STACKING BODIES WITHOUT JUNCTION BOX – COMMON PRESSURE PORT 1 ONLY (USE WHEN SPEED CONTROLS ARE NEEDED IN EXHAUST PORTS 3 & 5)

- K78 – 4-Way, 2-Position, 5-Port
- K88 – 4-Way, 3-Position, 5-Port

### STACKING BODIES – COMMON PRESSURE PORT 1 AND COMMON EXHAUST PORTS 3 & 5

- K79 – 4-Way, 2-Position, 5-Port
- K89 – 4-Way, 3-Position, 5-Port

### BASIC BODY/PORT SIZE

- D – 1/4" Body, 1/4" Ports
- E – 1/4" Body, 3/8" Ports
- F – 1/4" Body, 1/2" Ports

### PORT THREAD

- A – National Taper (PTF)
- G – ISO (G Series)

### JUNCTION BOX (STACKING BODY ONLY)

- 0 – No Junction Box
- 5 – Junction Box With Lights (KMx Series Operators only)
- 8 – Junction Box Without Lights (K6x/K7x Series Operators only)

### SPOOL TYPE

- 0 – 2- or 3-Position, All Ports Blocked
- 5 – 3-Position, Inlet Open to Cylinder
- 6 – 3-Position, Exhaust Open to Cylinder

### OPERATORS FOR INLINE AND STACKING BODIES

- 1 0 END 3-WAY, 1 2 END 4-WAY** Spring Operators and End Cap
- KS1 – Return For All 3-Way Valves and 4-Way Valves With Manual Operators (Except KF0 Foot Pedal)
- KS6 – Return For 4-Way Valves With Air, Solenoid, Mechanical Operators and KF0 Manual Operators
- KC0 – End Cap For Use With Manual Operators

### OPERATORS FOR 2-POSITION INLINE AND STACKING BODIES

- Pilot Port**  
PTF ISO
- Air Operators**  
KAA KAB Detent, Large Air  
KA2 KA5 Nondetent, Large Air  
KAE KAF Detent Bleed – .02 (.5 mm) Diameter Bleed Orifice

- Standard Solenoid Operator with Rotatable Cable Grip Connector & Locking Override**  
KV2 KVC Nondetent, Internal Pilot  
KV5 KVF Nondetent, External Pilot  
KVL KVN Detent, Internal Pilot

- Standard Solenoid Operator without Electrical Connector, with Locking Override**  
K1L K1N Detent, Internal Pilot

- Standard Solenoid Operator with Rotatable 1/2" Conduit Connector & Locking Override**  
K32 K3C Nondetent, Internal Pilot  
K35 K3F Nondetent, External Pilot  
K3L K3N Detent, Internal Pilot  
K3M K3P Detent, External Pilot

- Standard Solenoid Operator with Molded Cord Connector, 5 Foot/3-Conductor Cable & Locking Override**  
K52 K5C Nondetent, Internal Pilot  
K55 K5F Nondetent, External Pilot  
K5L K5N Detent, Internal Pilot

- CSA Listed Solenoid Operator with Fixed 1/2" Conduit Connector & Locking Override**  
KD2 KDC Nondetent, Internal Pilot

- CSA Listed Solenoid Operator without Electrical Connector, with Locking Override**  
KQ2 KQC Nondetent, Internal Pilot

- Hazardous Location Solenoid Operator — Inline Valves Only with Locking Override**  
KX2 KXC Nondetent, Internal Pilot

- Manual Operators**  
KB0 Palm Button – Black, Nondetent (Inline Only)  
KB1 Palm Button – Red, Nondetent (Inline Only)  
KB2 Palm Button – Green, Nondetent (Inline Only)  
KB3 Palm Button – Black, Detent (Inline Only)  
KB4 Palm Button – Red, Detent (Inline Only)  
KB5 Palm Button – Green, Detent (Inline Only)  
KF0 Foot Pedal, Nondetent  
KK0 Knob – Black, Nondetent  
KK1 Knob – Black, Detent  
KL0 Lever, Nondetent (Inline Only)  
KL1 Lever, 2-Position Detent (Inline Only)  
KL5 Lever, Nondetent  
KL6 Lever, 2-Position Detent  
KT0 Treadle, Nondetent (Inline Only)  
KT1 Treadle, 2-Position Detent (Inline Only)

- Mechanical Operators**  
KP0 Tappet, Nondetent  
KR2 Lever Roller, Nondetent (Inline Only)  
KR3 One-Way Trip Roller, Nondetent  
KR4 Lever Roller, Nondetent  
KR5 One-Way Trip Roller, Nondetent (Inline Only)

### OPERATORS FOR 3-POSITION INLINE AND STACKING BODIES

- Pilot Port**  
PTF ISO
- Air Operators**  
KAC KAD Spring Centered

- Standard Solenoid Operators with Rotatable Cable Grip Connector & Locking Override**  
KV0 KVA Spring Centered, Internal Pilot  
KV3 KVD Spring Centered, External Pilot

- Standard Solenoid Operator without Electrical Connector, with Locking Override**  
K10 K1A Spring Centered, Internal Pilot

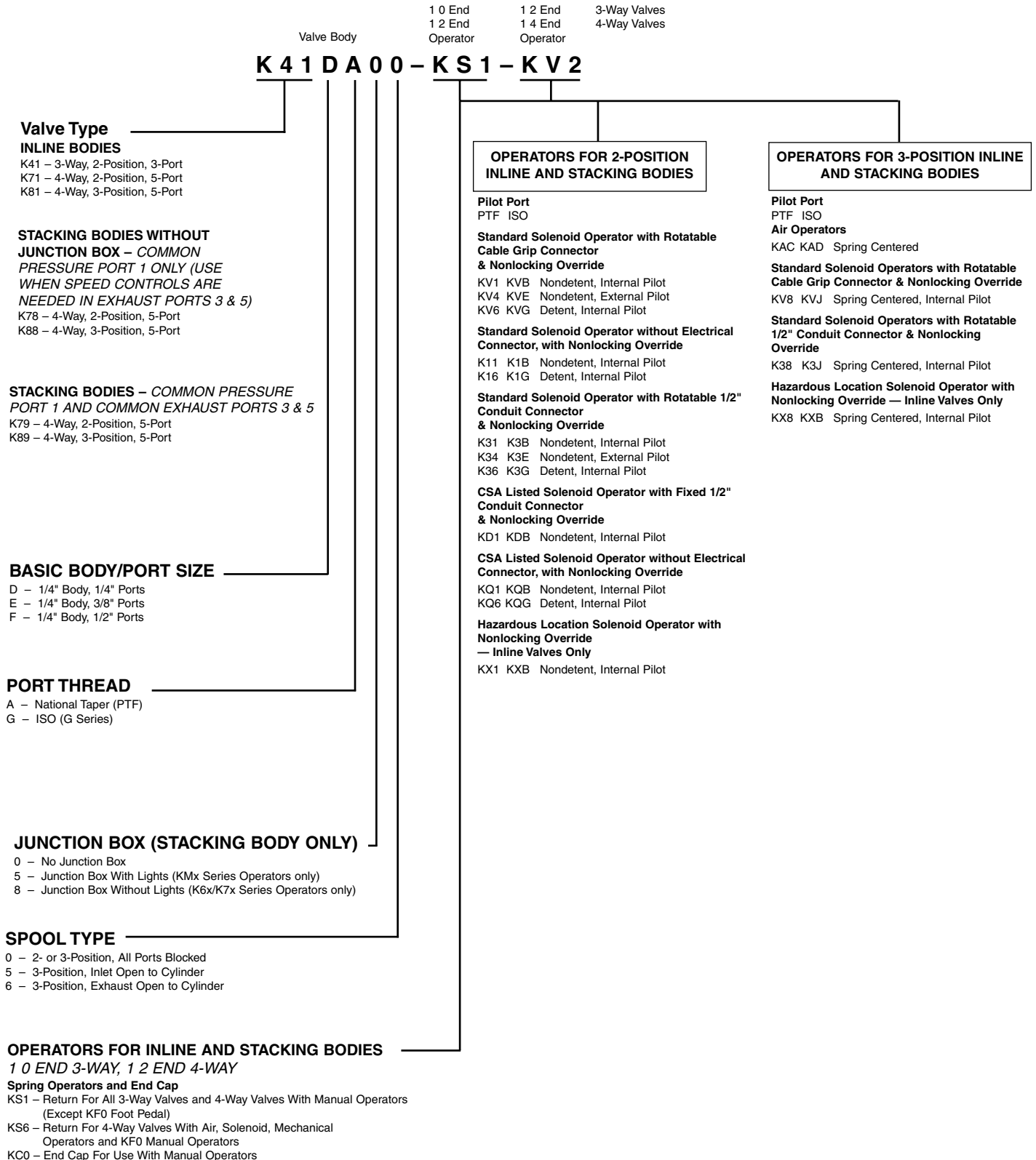
- Standard Solenoid Operators with Rotatable 1/2" Conduit Connector & Locking Override**  
K30 K3A Spring Centered, Internal Pilot

- Standard Solenoid Operator with Molded Plug Connector: 5-foot, 3-Conductor Cable & Locking Override**  
K50 K5A Spring Centered, Internal Pilot

- Manual Operators**  
KB6 Palm Button – Black, Spring Centered  
KK2 Knob – Black, Spring Centered  
KK3 Knob – Black, 3 Position Detent  
KL2 Lever, Spring Centered (Inline Only)  
KL3 Lever, 3-Position Detent (Inline Only)  
KL7 Lever, Spring Centered  
KL8 Lever, 3 Position Detent  
KT2 Treadle, Spring Centered



# Nugget 200 Product Numbering System — Solenoid Operators with Nonlocking Override





# V60, V61, and V62

## 3/2, 5/2, 5/3 and 2 x 3/2 Directional Control Valves

### Contents

|                                     |          |
|-------------------------------------|----------|
| Technical Data .....                | VAL-3-2  |
| 3/2 Solenoid Pilot Valves .....     | VAL-3-3  |
| 2 x 3/2 Solenoid Pilot Valves ..... | VAL-3-5  |
| 5/2 Solenoid Pilot Valves .....     | VAL-3-7  |
| 5/3 Solenoid Pilot Valves .....     | VAL-3-9  |
| 3/2 Solenoid Pilot Valves .....     | VAL-3-11 |
| 2 x 3/2 Air Pilot Valves .....      | VAL-3-11 |
| 5/2 Air Pilot Valves.....           | VAL-3-13 |
| 5/3 Air Pilot Valves.....           | VAL-3-13 |
| Manifold System .....               | VAL-3-15 |
| Mounting Instructions.....          | VAL-3-16 |
| Product Numbering System .....      | VAL-3-17 |



- High flow rate
- Manual override option
- Manifold system for easy assembly
- Low power consumption
- Maintenance-free


**Technical data**
**Medium:**

Compressed air, filtered to 50 µm, lubricated or non-lubricated.

**Operation:**

Solenoid pilot or air pilot operated

Mounting: Individual or fixed length manifold

**Connection:**

1/8" NPT up to 3/8" NPT

**Operating pressure:**

Maximum pressure 116 to 145 psi (8 to 10 bar)

**Flow direction:**

Internal pilot supply: fixed

External pilot supply: optional

**Flow:**

| Size NPT | 3/2, 5/2<br>Cv (l/min) | 2 x 3/2, 5/3<br>Cv (l/min) |
|----------|------------------------|----------------------------|
| 1/8      | 0.75 (750)             | 0.50 (500)                 |
| 1/4      | 1.3 (1300)             | 0.95 (950)                 |
| 3/8      | 2.6 (2600)             | 1.9 (1900)                 |

**Ambient temperature:**

14°F to +122°F (-10°C to +50°C)

**Fluid temperature:**

14°F to +122°F (-10°C to +50°C)

Consult our Technical Service for use below 36°F (+2°C).

**Materials**

Housing and base plate: aluminum

Spindle: stainless steel,

Piston, spacers and cover: synthetic material

Static and dynamic seals: NBR

Screws: zinc plated

Springs: stainless steel

**Alternative models**

ISO G ports.



3/2 Solenoid Pilot Valves

| Symbol | Model           | Port size | Pilot supply | Pilot exhaust | Solenoid variant | Flow Cv (l/min) | Operating pressure psi (bar) | Pilot pressure psi (bar) | lbs (kg)   | Dimensional drawing no. |
|--------|-----------------|-----------|--------------|---------------|------------------|-----------------|------------------------------|--------------------------|------------|-------------------------|
|        | V60P417A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.75 (750)      | 29 to 116 (2 to 8)           | –                        | 0.49 (.22) | 1                       |
|        | V60P427A-Ax**** | 1/8       | External     | Not collected | Primary          | 0.75 (750)      | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | 0.49 (.22) | 1                       |
|        | V60P417D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.75 (750)      | 29 to 145 (2 to 10)          | –                        | 0.46 (.21) | 4                       |
|        | V60P427D-Cx13AA | 1/8       | External     | Collected     | Secondary        | 0.75 (750)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.46 (.21) | 4                       |
|        | V61B417A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 1.30 (1300)     | 29 to 116 (2 to 8)           | –                        | 0.64 (.29) | 1                       |
|        | V61B427A-Ax**** | 1/4       | External     | Not collected | Primary          | 1.30 (1300)     | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | 0.64 (.29) | 1                       |
|        | V61B417D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 1.30 (1300)     | 29 to 145 (2 to 10)          | –                        | 0.60 (.27) | 4                       |
|        | V61B427D-Cx13AA | 1/4       | External     | Collected     | Secondary        | 1.30 (1300)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.60 (.27) | 4                       |
|        | V62S417A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 2.60 (2600)     | 29 to 116 (2 to 8)           | –                        | 1.15 (.52) | 1                       |
|        | V62S427A-Ax**** | 3/8       | External     | Not collected | Primary          | 2.60 (2600)     | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | 1.15 (.52) | 1                       |
|        | V62S417D-Cx13AA | 3/8       | Internal     | Collected     | Secondary        | 2.60 (2600)     | 29 to 145 (2 to 10)          | –                        | 1.10 (.50) | 4                       |
|        | V62S427D-Cx13AA | 3/8       | External     | Collected     | Secondary        | 2.60 (2600)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 1.10 (.50) | 4                       |
|        | V60P317A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.75 (750)      | 29 to 116 (2 to 8)           | –                        | 0.5 (.22)  | 2                       |
|        | V60P327A-Ax**** | 1/8       | External     | Not collected | Primary          | 0.75 (750)      | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | 0.5 (.22)  | 2                       |
|        | V60P317D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.75 (750)      | 29 to 145 (2 to 10)          | –                        | 0.5 (.21)  | 4                       |
|        | V60P327D-Cx13AA | 1/8       | External     | Collected     | Secondary        | 0.75 (750)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.5 (.21)  | 4                       |
|        | V61R317A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 1.30 (1300)     | 29 to 116 (2 to 8)           | –                        | 0.64 (.29) | 2                       |
|        | V61R327A-Ax**** | 1/4       | External     | Not collected | Primary          | 1.30 (1300)     | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | 0.64 (.29) | 2                       |
|        | V61R317D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 1.30 (1300)     | 29 to 145 (2 to 10)          | –                        | 0.60 (.27) | 4                       |
|        | V61R327D-Cx13AA | 1/4       | External     | Collected     | Secondary        | 1.30 (1300)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.60 (.27) | 4                       |
|        | V62S317A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 2.60 (2600)     | 29 to 116 (2 to 8)           | –                        | 1.15 (.52) | 2                       |
|        | V62S327A-Ax**** | 3/8       | External     | Not collected | Primary          | 2.60 (2600)     | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | 1.15 (.52) | 2                       |
|        | V62S317D-Cx13AA | 3/8       | Internal     | Collected     | Secondary        | 2.60 (2600)     | 29 to 145 (2 to 10)          | –                        | 1.10 (.50) | 4                       |
|        | V62S327D-Cx13AA | 3/8       | External     | Collected     | Secondary        | 2.60 (2600)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 1.10 (.50) | 4                       |
|        | V60P411A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.75 (750)      | 22 to 116 (1.5 to 8)         | –                        | .66 (.30)  | 3                       |
|        | V60P422A-Ax**** | 1/8       | External     | Not collected | Primary          | 0.75 (750)      | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | .66 (.30)  | 3                       |
|        | V60P411D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.75 (750)      | 22 to 145 (1.5 to 10)        | –                        | .44 (.20)  | 4                       |
|        | V60P422D-Cx13AA | 1/8       | External     | Collected     | Secondary        | 0.75 (750)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | .44 (.20)  | 4                       |
|        | V61R411A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 1.30 (1300)     | 22 to 116 (1.5 to 8)         | –                        | 0.84 (.38) | 3                       |
|        | V61R422A-Ax**** | 1/4       | External     | Not collected | Primary          | 1.30 (1300)     | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | 0.84 (.38) | 3                       |
|        | V61R411D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 1.30 (1300)     | 22 to 145 (1.5 to 10)        | –                        | 0.60 (.27) | 4                       |
|        | V61R422D-Cx13AA | 1/4       | External     | Collected     | Secondary        | 1.30 (1300)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.60 (.27) | 4                       |
|        | V62S411A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 2.60 (2600)     | 22 to 116 (1.5 to 8)         | –                        | 1.34 (.61) | 3                       |
|        | V62S422A-Ax**** | 3/8       | External     | Not collected | Primary          | 2.60 (2600)     | 26" Hg to 116 (-0.9 to 8)    | 44 to 116 (3 to 8)       | 1.34 (.61) | 3                       |
|        | V62S411D-Cx13AA | 3/8       | Internal     | Collected     | Secondary        | 2.60 (2600)     | 22 to 145 (1.5 to 10)        | –                        | 1.10 (.50) | 4                       |
|        | V62S422D-Cx13AA | 3/8       | External     | Collected     | Secondary        | 2.60 (2600)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 1.10 (.50) | 4                       |

\*\*\*\* Insert coil connector code from tables below.

For manual override options, substitute 'x' as follows:  
 1 = without manual override  
 2 = locking  
 3 = non-locking

NC = Normally closed  
 NO = Normally open

Coil & voltage codes

Primary (22 mm coil industrial standard)

| Voltage            | Coil code | Power inrush/hold | Model    |
|--------------------|-----------|-------------------|----------|
| 12 V d.c.          | 12J       | 2 W               | 54469-01 |
| 24 V d.c.          | 13J       | 2 W               | 54469-02 |
| 24 V 50/60 Hz      | 14J       | 4/2.5 VA          | 54469-04 |
| 48 V 50/60 Hz      | 16J       | 4/2.5 VA          | 54469-07 |
| 110/120 V 50/60 Hz | 18J       | 4/2.5 VA          | 54469-03 |
| 220/240 V 50/60 Hz | 19J       | 6/5 VA            | 54469-08 |

Secondary

Double solenoid DIN EN 175 301-803 (DIN 43650 type C) 4 pin

| Voltage   | Coil code | Power inrush/hold |
|-----------|-----------|-------------------|
| 24 V d.c. | 13 A      | 2 W               |

Plug configuration, valve side/twin pilot

| Symbol | Plug no. | Function | Actuation       |
|--------|----------|----------|-----------------|
|        | 1        | (+)      | 12 (Solenoid 2) |
|        | 2        | (-)      | 12 + 14         |
|        | 3        | (+)      | 14 (Solenoid 1) |

Electrical details

|                    |                                    |
|--------------------|------------------------------------|
| Voltage tolerance: | ±10%                               |
| Rating:            | 100% E.D.                          |
| Protection class:  | IP 65 with sealed plugs (ISO 6952) |

Connectors

3-Pin Industrial Standard 22mm

|   |          |
|---|----------|
| A = no connector  |          |
| B = Cable grip 0-240Vac/Vdc   | 54934-01 |
| C = 6 ft molded cable, 0-240Vac/Vdc                                   | 54934-21 |
| H = Cable grip w/indicator light 24Vdc                                | 54934-08 |
| J = Cable grip w/indicator light 120Vac                               | 54934-02 |
| Z = 1/2" Conduit 0-240Vac/Vdc   | 54934-05 |
| 5 = 6 ft molded cable w/indicator light, surge suppression, 24Vac/Vdc | 54934-30 |
| 6 = 6 ft molded cable w/indicator light, 120Vac                       | 54934-35 |

4-Pin Connector

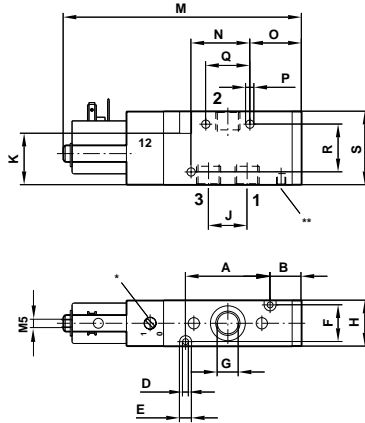
|   |         |
|---|---------|
| A = no connector                        |         |
| Y = 4-pin cable grip 0-240Vac/Vdc       | 0588666 |
| X = 4-pin 10' molded cable 0-240Vac/Vdc | 0102144 |



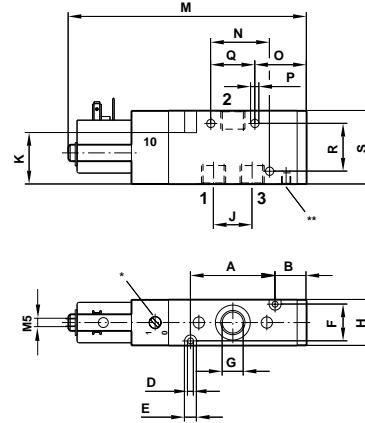
# V60 Series

All Dimensions in Inches (mm)

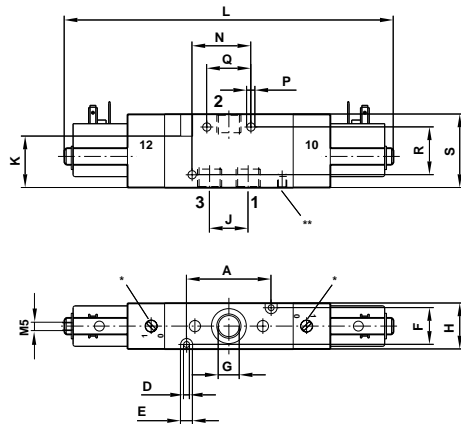
1



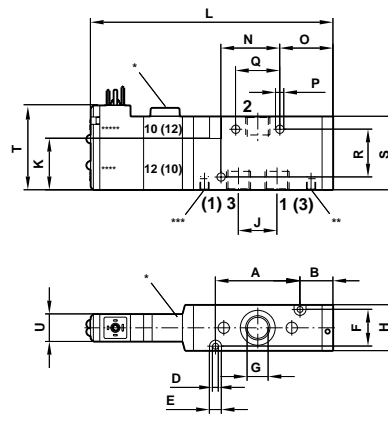
2



3



4



\* Manual override  
 \*\* External pilot supply 10-32  
 \*\*\* Collected pilot exhaust 10-32  
 \*\*\*\* Solenoid 1  
 \*\*\*\*\* Solenoid 2

| Dimensional drawing no. | Type | A            | B            | C | D             | E             | F            | G   | H            | J              | K            | L             | M             | N            | O            | P             | Q            | R            | S            | T            | U            |
|-------------------------|------|--------------|--------------|---|---------------|---------------|--------------|-----|--------------|----------------|--------------|---------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|
| 1                       | V60  | 1.38<br>(35) | 0.67<br>(17) | - | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 0.64<br>(16.2) | 1.10<br>(28) | -             | 4.49<br>(114) | 0.98<br>(25) | 0.98<br>(25) | 0.18<br>(4.5) | 0.71<br>(18) | 1.02<br>(26) | 1.38<br>(35) | -            | -            |
| 1                       | V61  | 1.81<br>(46) | 0.71<br>(18) | - | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 0.83<br>(21)   | 1.10<br>(28) | -             | 5.12<br>(130) | 1.26<br>(32) | 1.14<br>(29) | 0.18<br>(4.5) | 0.94<br>(24) | 1.02<br>(26) | 1.57<br>(40) | -            | -            |
| 1                       | V62  | 2.13<br>(54) | 0.83<br>(21) | - | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 0.96<br>(24)   | 1.73<br>(44) | -             | 5.71<br>(145) | 0.47<br>(12) | 1.42<br>(36) | 0.18<br>(4.5) | 1.02<br>(26) | 1.42<br>(36) | 2.17<br>(55) | -            | -            |
| 2                       | V60  | 1.38<br>(35) | 0.67<br>(17) | - | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 0.64<br>(16)   | 1.10<br>(28) | -             | 4.49<br>(114) | 0.98<br>(25) | 0.98<br>(25) | 0.18<br>(4.5) | 0.71<br>(18) | 1.02<br>(26) | 1.38<br>(35) | -            | -            |
| 2                       | V61  | 1.81<br>(46) | 0.71<br>(18) | - | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 0.83<br>(21)   | 1.10<br>(28) | -             | 5.12<br>(130) | 1.26<br>(32) | 1.14<br>(29) | 0.18<br>(4.5) | 0.94<br>(24) | 1.02<br>(26) | 1.57<br>(40) | -            | -            |
| 2                       | V62  | 2.13<br>(54) | 0.83<br>(21) | - | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 0.96<br>(24)   | 1.73<br>(44) | -             | 5.71<br>(145) | 0.47<br>(12) | 1.34<br>(34) | 0.18<br>(4.5) | 1.02<br>(26) | 1.42<br>(36) | 2.17<br>(55) | -            | -            |
| 3                       | V60  | 1.38<br>(35) | -            | - | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 0.64<br>(16)   | 1.10<br>(28) | 6.30<br>(160) | -             | 0.98<br>(25) | -            | 0.18<br>(4.5) | 0.71<br>(18) | 1.02<br>(26) | 1.38<br>(35) | -            | -            |
| 3                       | V61  | 1.81<br>(46) | -            | - | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 0.83<br>(21)   | 1.10<br>(28) | 7.05<br>(179) | -             | 1.26<br>(32) | -            | 0.18<br>(4.5) | 0.94<br>(24) | 1.02<br>(26) | 1.57<br>(40) | -            | -            |
| 3                       | V62  | 2.13<br>(54) | -            | - | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 0.96<br>(24)   | 1.73<br>(44) | 7.64<br>(194) | -             | 0.47<br>(12) | -            | 0.18<br>(4.5) | 1.02<br>(26) | 1.42<br>(36) | 2.17<br>(55) | -            | -            |
| 4                       | V60  | 1.38<br>(35) | 0.67<br>(17) | - | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 0.64<br>(16)   | 1.10<br>(28) | 4.69<br>(119) | -             | 0.98<br>(25) | 0.98<br>(25) | 0.18<br>(4.5) | 0.71<br>(18) | 1.02<br>(26) | 1.38<br>(35) | 1.81<br>(46) | 0.59<br>(15) |
| 4                       | V61  | 1.81<br>(46) | 0.71<br>(18) | - | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 0.83<br>(21)   | 1.10<br>(28) | 5.24<br>(133) | -             | 1.26<br>(32) | 1.14<br>(29) | 0.18<br>(4.5) | 0.94<br>(24) | 1.02<br>(26) | 1.57<br>(40) | 1.81<br>(46) | 0.59<br>(15) |
| 4                       | V62  | 2.13<br>(54) | 0.83<br>(21) | - | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 0.96<br>(24)   | 1.73<br>(44) | 5.79<br>(147) | -             | 0.47<br>(12) | 1.42<br>(36) | 0.18<br>(4.5) | 1.02<br>(26) | 1.42<br>(36) | 2.17<br>(55) | 2.13<br>(54) | 0.59<br>(15) |



## 2 x 3/2 Solenoid Pilot Valves

| Symbol | Model           | Port size | Pilot supply | Pilot exhaust | Solenoid variant | Flow Cv (l/min) | Operating pressure (bar) | Pilot pressure (bar) | lbs (kg)    | Dimensional drawing no. |
|--------|-----------------|-----------|--------------|---------------|------------------|-----------------|--------------------------|----------------------|-------------|-------------------------|
|        | V60PA11A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.50 (500)      | 29 to 116 (2-8)          | -                    | 0.75 (0.34) | 7                       |
|        | V60PA11D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.50 (500)      | 29 to 145 (2-10)         | -                    | 0.53 (0.24) | 8                       |
|        | V61RA11A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 0.95 (950)      | 29 to 116 (2-8)          | -                    | 0.95 (0.43) | 7                       |
|        | V61RA11D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 0.95 (950)      | 29 to 145 (2-10)         | -                    | 0.73 (0.33) | 8                       |
|        | V62SA11A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 1.90 (1900)     | 29 to 116 (2-8)          | -                    | 0.73 (0.33) | 7                       |
|        | V62SA11D-Cx13AA | 3/8       | Internal     | Collected     | Secondary        | 1.90 (1900)     | 29 to 145 (2-10)         | -                    | 1.39 (0.63) | 8                       |
|        | V60PB11A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.50 (500)      | 29 to 116 (2-8)          | -                    | 0.75 (0.34) | 7                       |
|        | V60PB11D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.50 (500)      | 29 to 145 (2-10)         | -                    | 0.53 (0.24) | 8                       |
|        | V61RB11A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 0.95 (950)      | 29 to 116 (2-8)          | -                    | 0.95 (0.43) | 7                       |
|        | V61RB11D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 0.95 (950)      | 29 to 145 (2-10)         | -                    | 0.73 (0.33) | 8                       |
|        | V62SB11A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 1.90 (1900)     | 29 to 116 (2-8)          | -                    | 1.61 (0.73) | 7                       |
|        | V62SB11D-Cx13AA | 3/8       | Internal     | Collected     | Secondary        | 1.90 (1900)     | 29 to 145 (2-10)         | -                    | 1.39 (0.63) | 8                       |
|        | V60PC11A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.50 (500)      | 29 to 116 (2-8)          | -                    | 0.75 (0.34) | 7                       |
|        | V60PC11D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.50 (500)      | 29 to 145 (2-10)         | -                    | 0.53 (0.24) | 8                       |
|        | V61RC11A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 0.95 (950)      | 29 to 116 (2-8)          | -                    | 0.95 (0.43) | 7                       |
|        | V61RC11D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 0.95 (950)      | 29 to 145 (2-10)         | -                    | 0.73 (0.33) | 8                       |
|        | V62SC11A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 1.90 (1900)     | 29 to 116 (2-8)          | -                    | 1.61 (0.73) | 7                       |
|        | V62SC11D-Cx13AA | 3/8       | Internal     | Collected     | Secondary        | 1.90 (1900)     | 29 to 145 (2-10)         | -                    | 1.39 (0.63) | 8                       |

\*\*\*\* Insert coil connector code from tables below.

For manual override options, substitute 'x' as follows:

- 1 = without manual override
- 2 = locking
- 3 = non-locking

NC/NC = Both valves normally closed  
 NO/NO = Both valves normally open  
 NO/NC = 1 valve normally open, 1 valve normally closed

### Coil & voltage codes

Primary (22 mm coil industrial standard)

| Voltage            | Coil code | Power inrush/hold | Model    |
|--------------------|-----------|-------------------|----------|
| 12 V d.c.          | 12J       | 2 W               | 54469-01 |
| 24 V d.c.          | 13J       | 2 W               | 54469-02 |
| 24 V 50/60 Hz      | 14J       | 4/2.5 VA          | 54469-04 |
| 48 V 50/60 Hz      | 16J       | 4/2.5 VA          | 54469-07 |
| 110/120 V 50/60 Hz | 18J       | 4/2.5 VA          | 54469-03 |
| 220/240 V 50/60 Hz | 19J       | 6/5 VA            | 54469-08 |

Secondary

Double solenoid DIN EN 175 301-803 (DIN 43650 type C) 4 pin

| Voltage   | Coil code | Power inrush/hold |
|-----------|-----------|-------------------|
| 24 V d.c. | 13 A      | 2 W               |

### Electrical details

|                    |                                    |
|--------------------|------------------------------------|
| Voltage tolerance: | ±10%                               |
| Rating:            | 100% E.D.                          |
| Protection class:  | IP 65 with sealed plugs (ISO 6952) |

### Connectors

#### 3-Pin Industrial Standard 22mm

|   |          |
|---|----------|
| A = no connector  |          |
| B = Cable grip 0-240Vac/Vdc   | 54934-01 |
| C = 6 ft molded cable, 0-240Vac/Vdc                                   | 54934-21 |
| H = Cable grip w/indicator light 24Vdc                                | 54934-08 |
| J = Cable grip w/indicator light 120Vac                               | 54934-02 |
| Z = 1/2" Conduit 0-240Vac/Vdc   | 54934-05 |
| 5 = 6 ft molded cable w/indicator light, surge suppression, 24Vac/Vdc | 54934-30 |
| 6 = 6 ft molded cable w/indicator light, 120Vac                       | 54934-35 |

#### 4-Pin Connector

|   |         |
|---|---------|
| A = no connector                        |         |
| Y = 4-pin cable grip 0-240Vac/Vdc       | 0588666 |
| X = 4-pin 10' molded cable 0-240Vac/Vdc | 0102144 |

### Plug configuration, valve side/twin pilot

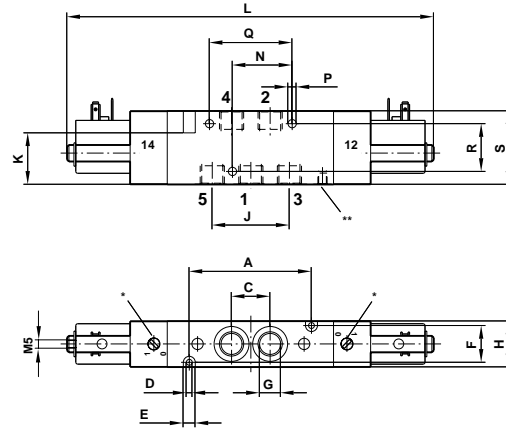
| Symbol | Plug no. | Function | Actuation       |
|--------|----------|----------|-----------------|
|        | 1        | (+)      | 12 (Solenoid 2) |
|        | 2        | (-)      | 12 + 14         |
|        | 3        | (+)      | 14 (Solenoid 1) |



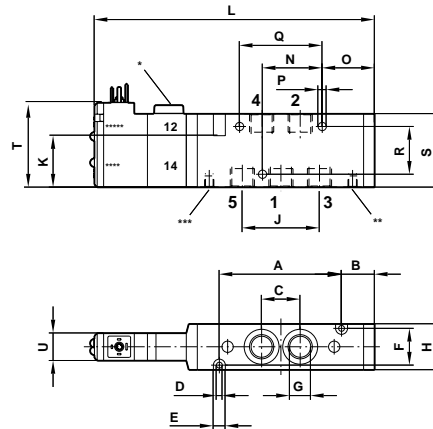
# V60 Series

All Dimensions in Inches (mm)

7



8



- \* Manual override
- \*\* External pilot supply 10-32
- \*\*\* Collected pilot exhaust 10-32
- \*\*\*\* Solenoid 1
- \*\*\*\*\* Solenoid 2

| Dimensional drawing no. | Type | A            | B            | C              | D             | E             | F            | G   | H            | J              | K            | L             | M | N            | O            | P             | Q              | R            | S            | T            | U            |
|-------------------------|------|--------------|--------------|----------------|---------------|---------------|--------------|-----|--------------|----------------|--------------|---------------|---|--------------|--------------|---------------|----------------|--------------|--------------|--------------|--------------|
| 7                       | V60  | 1.97<br>(50) | -            | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 6.89<br>(175) | - | 0.98<br>(25) | -            | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.02<br>(26) | 1.38<br>(35) | -            | -            |
| 7                       | V61  | 2.60<br>(66) | -            | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 7.83<br>(199) | - | 1.26<br>(32) | -            | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.57<br>(40) | -            | -            |
| 7                       | V62  | 3.07<br>(78) | -            | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 8.58<br>(218) | - | 0.47<br>(12) | -            | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | -            | -            |
| 8                       | V60  | 1.97<br>(50) | 0.67<br>(17) | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 5.28<br>(134) | - | 0.98<br>(25) | 0.98<br>(25) | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.02<br>(26) | 1.38<br>(35) | 1.81<br>(46) | 0.59<br>(15) |
| 8                       | V61  | 2.60<br>(66) | 0.71<br>(18) | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 6.02<br>(153) | - | 1.26<br>(32) | 1.14<br>(29) | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.57<br>(40) | 1.81<br>(46) | 0.59<br>(15) |
| 8                       | V62  | 3.07<br>(78) | 0.87<br>(22) | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 6.77<br>(172) | - | 0.47<br>(12) | 2.40<br>(61) | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | 2.13<br>(54) | 0.59<br>(15) |



5/2 Solenoid Pilot Valves

| Symbol          | Model           | Port size | Pilot supply | Pilot exhaust | Solenoid variant | Flow Cv (l/min)            | Operating pressure (bar)   | Pilot pressure (bar) | lbs (kg)    | Dimensional drawing no. |
|-----------------|-----------------|-----------|--------------|---------------|------------------|----------------------------|----------------------------|----------------------|-------------|-------------------------|
|                 | V60P517A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.75 (750)                 | 29 to 116 (2 to 8)         | –                    | 0.53 (0.24) | 9                       |
|                 | V60P527A-Ax**** | 1/8       | External     | Not collected | Primary          | 0.75 (750)                 | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 0.53 (0.24) | 9                       |
|                 | V60P517D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.75 (750)                 | 29 to 145 (2 to 10)        | –                    | 0.51 (0.23) | 11                      |
|                 | V60P5223-Cx13AA | 1/8       | External     | Collected     | Secondary        | 0.75 (750)                 | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.51 (0.23) | 11                      |
|                 | V61R517A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 1.30 (1300)                | 29 to 116 (2 to 8)         | –                    | 0.73 (0.33) | 9                       |
|                 | V61R527A-Ax**** | 1/4       | External     | Not collected | Primary          | 1.30 (1300)                | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 0.73 (0.33) | 9                       |
|                 | V61R517D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 1.30 (1300)                | 29 to 145 (2 to 10)        | –                    | 0.71 (0.32) | 11                      |
|                 | V62S517A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 2.60 (2600)                | 29 to 116 (2 to 8)         | –                    | 1.36 (0.62) | 9                       |
|                 | V62S527A-Ax**** | 3/8       | External     | Not collected | Primary          | 2.60 (2600)                | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 1.36 (0.62) | 9                       |
|                 | V62S517D-Cx13AA | 3/8       | Internal     | Collected     | Secondary        | 2.60 (2600)                | 29 to 145 (2 to 10)        | –                    | 1.34 (0.61) | 11                      |
|                 | V62S527D-Cx13AA | 3/8       | External     | Collected     | Secondary        | 2.60 (2600)                | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 1.34 (0.61) | 11                      |
|                 | V60P511A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.75 (750)                 | 29 to 116 (2 to 8)         | –                    | 0.73 (0.33) | 10                      |
|                 | V60P522A-Ax**** | 1/8       | External     | Not collected | Primary          | 0.75 (750)                 | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 0.51 (0.23) | 11                      |
|                 | V60P522D-Cx13AA | 1/8       | External     | Collected     | Secondary        | 0.75 (750)                 | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.51 (0.23) | 11                      |
|                 | V61R511A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 1.30 (1300)                | 29 to 116 (2 to 8)         | –                    | 0.93 (0.42) | 10                      |
|                 | V61R522A-Ax**** | 1/4       | External     | Not collected | Primary          | 1.30 (1300)                | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 0.93 (0.42) | 10                      |
|                 | V61R511D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 1.30 (1300)                | 29 to 145 (2 to 10)        | –                    | 0.71 (0.32) | 11                      |
|                 | V61R522D-Cx13AA | 1/4       | External     | Collected     | Secondary        | 1.30 (1300)                | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.71 (0.32) | 11                      |
|                 | V62S511A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 2.60 (2600)                | 29 to 116 (2 to 8)         | –                    | 1.59 (0.72) | 10                      |
|                 | V62S522A-Ax**** | 3/8       | External     | Not collected | Primary          | 2.60 (2600)                | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 1.59 (0.72) | 10                      |
| V62S511D-Cx13AA | 3/8             | Internal  | Collected    | Secondary     | 2.60 (2600)      | 29 to 145 (2 to 10)        | –                          | 1.36 (0.62)          | 11          |                         |
| V62S522D-Cx13AA | 3/8             | External  | Collected    | Secondary     | 2.60 (2600)      | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)        | 1.36 (0.62)          | 11          |                         |

\*\*\*\* Insert coil connector code from tables below.

For manual override options, substitute 'x' as follows: 1 = without manual override  
2 = locking  
3 = non-locking

Coil & voltage codes

Primary (22 mm coil industrial standard)

| Voltage            | Coil code | Power inrush/hold | Model    |
|--------------------|-----------|-------------------|----------|
| 12 V d.c.          | 12J       | 2 W               | 54469-01 |
| 24 V d.c.          | 13J       | 2 W               | 54469-02 |
| 24 V 50/60 Hz      | 14J       | 4/2.5 VA          | 54469-04 |
| 48 V 50/60 Hz      | 16J       | 4/2.5 VA          | 54469-07 |
| 110/120 V 50/60 Hz | 18J       | 4/2.5 VA          | 54469-03 |
| 220/240 V 50/60 Hz | 19J       | 6/5 VA            | 54469-08 |

Secondary

Double solenoid DIN EN 175 301-803 (DIN 43650 type C) 4 pin

| Voltage   | Coil code | Power inrush/hold |
|-----------|-----------|-------------------|
| 24 V d.c. | 13 A      | 2 W               |

Electrical details

|                    |                                    |
|--------------------|------------------------------------|
| Voltage tolerance: | ±10%                               |
| Rating:            | 100% E.D.                          |
| Protection class:  | IP 65 with sealed plugs (ISO 6952) |

Connectors

3-Pin Industrial Standard 22mm

|   |          |
|---|----------|
| A = no connector  |          |
| B = Cable grip 0-240Vac/Vdc   | 54934-01 |
| C = 6 ft molded cable, 0-240Vac/Vdc                                   | 54934-21 |
| H = Cable grip w/indicator light 24Vdc                                | 54934-08 |
| J = Cable grip w/indicator light 120Vdc                               | 54934-02 |
| Z = 1/2" Conduit 0-240Vac/Vdc   | 54934-05 |
| 5 = 6 ft molded cable w/indicator light, surge suppression, 24Vac/Vdc | 54934-30 |
| 6 = 6 ft molded cable w/indicator light, 120Vac                       | 54934-35 |

4-Pin Connector

|   |         |
|---|---------|
| A = no connector                        |         |
| Y = 4-pin cable grip 0-240Vac/Vdc       | 0588666 |
| X = 4-pin 10' molded cable 0-240Vac/Vdc | 0102144 |

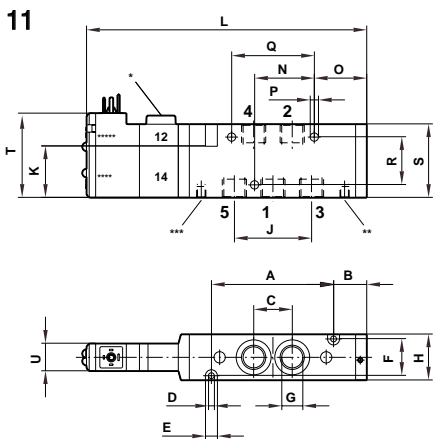
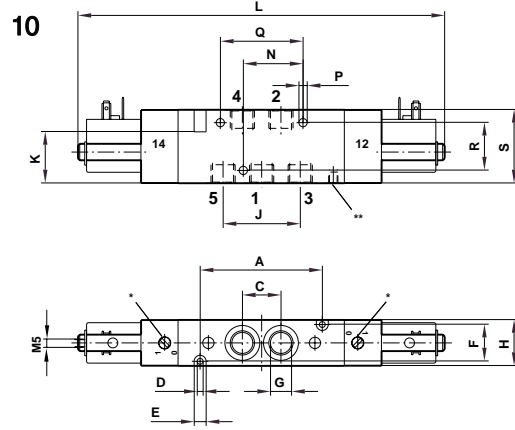
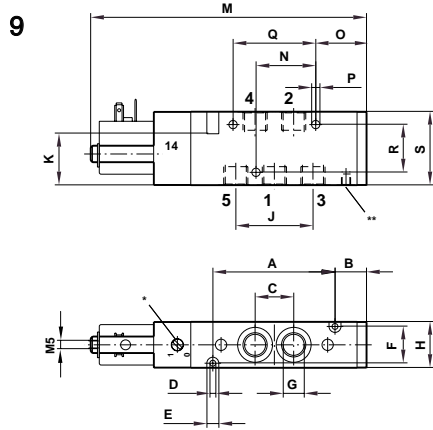
Plug configuration, valve side/twin pilot

| Symbol | Plug no. | Function | Actuation       |
|--------|----------|----------|-----------------|
|        | 1        | (+)      | 12 (Solenoid 2) |
|        | 2        | (-)      | 12 + 14         |
|        | 3        | (+)      | 14 (Solenoid 1) |



# V60 Series

All Dimensions in Inches (mm)

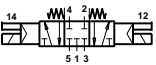

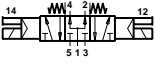


- \* Manual override
- \*\* External pilot supply 10-32
- \*\*\* Collected pilot exhaust 10-32
- \*\*\*\* Solenoid 1
- \*\*\*\*\* Solenoid 2

| Dimensional drawing no. | Type | A            | B            | C              | D             | E             | F            | G   | H            | J              | K            | L             | M             | N            | O            | P             | Q              | R            | S            | T            | U            |
|-------------------------|------|--------------|--------------|----------------|---------------|---------------|--------------|-----|--------------|----------------|--------------|---------------|---------------|--------------|--------------|---------------|----------------|--------------|--------------|--------------|--------------|
| 9                       | V60  | 1.97<br>(50) | 0.67<br>(17) | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | -             | 5.08<br>(129) | 0.98<br>(25) | 0.98<br>(25) | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.02<br>(26) | 1.38<br>(35) | -            | -            |
| 9                       | V6   | 2.60<br>(66) | 0.71<br>(18) | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | -             | 5.91<br>(150) | 1.26<br>(32) | 1.14<br>(29) | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.57<br>(40) | -            | -            |
| 9                       | V62  | 3.07<br>(78) | 0.83<br>(21) | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | -             | 6.69<br>(170) | 0.47<br>(12) | 2.36<br>(60) | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | -            | -            |
| 10                      | V60  | 1.97<br>(50) | -            | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 6.89<br>(175) | -             | 0.98<br>(25) | -            | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.02<br>(26) | 1.38<br>(35) | -            | -            |
| 10                      | V61  | 2.60<br>(66) | -            | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 7.83<br>(199) | -             | 1.26<br>(32) | -            | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.57<br>(40) | -            | -            |
| 10                      | V62  | 3.07<br>(78) | -            | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 8.58<br>(218) | -             | 0.47<br>(12) | -            | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | -            | -            |
| 11                      | V60  | 1.97<br>(50) | 0.67<br>(17) | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 5.28<br>(134) | -             | 0.98<br>(25) | 0.98<br>(25) | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.02<br>(26) | 1.38<br>(35) | 1.81<br>(46) | 0.59<br>(15) |
| 11                      | V61  | 2.60<br>(66) | 0.71<br>(18) | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 6.02<br>(153) | -             | 1.26<br>(32) | 1.14<br>(29) | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.57<br>(40) | 1.81<br>(46) | 0.59<br>(15) |
| 11                      | V62  | 3.07<br>(78) | 0.87<br>(22) | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 6.77<br>(172) | -             | 0.47<br>(12) | 2.40<br>(61) | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | 2.13<br>(54) | 0.59<br>(15) |



5/3 Solenoid Pilot Valves

| Symbol  | Model           | Port size | Pilot supply | Pilot exhaust | Solenoid variant | Flow Cv (l/min)            | Operating pressure (bar)   | Pilot pressure (bar) | lbs (kg)    | Dimensional drawing no. |
|---|-----------------|-----------|--------------|---------------|------------------|----------------------------|----------------------------|----------------------|-------------|-------------------------|
| <br>APB  | V60P611A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.50 (500)                 | 44 to 116 (3 to 8)         | –                    | 0.77 (0.35) | 14                      |
|   | V60P622A-Ax**** | 1/8       | External     | Not collected | Primary          | 0.50 (500)                 | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 0.77 (0.35) | 14                      |
|   | V60P611D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.50 (500)                 | 44 to 145 (3 to 10)        | –                    | 0.55 (0.25) | 15                      |
|   | V60P622D-Cx13AA | 1/8       | External     | Collected     | Secondary        | 0.50 (500)                 | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.55 (0.25) | 15                      |
|   | V61R611A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 0.95 (950)                 | 44 to 116 (3 to 8)         | –                    | 1.04 (0.47) | 14                      |
|   | V61R622A-Ax**** | 1/4       | External     | Not collected | Primary          | 0.95 (950)                 | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 1.04 (0.47) | 14                      |
|   | V61R611D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 0.95 (950)                 | 44 to 145 (3 to 10)        | –                    | 0.82 (0.37) | 15                      |
|   | V61R622D-Cx13AA | 1/4       | External     | Collected     | Secondary        | 0.95 (950)                 | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.82 (0.37) | 15                      |
|   | V62S611A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 1.90 (1900)                | 44 to 116 (3 to 8)         | –                    | 1.79 (0.81) | 14                      |
|   | V62S622A-Ax**** | 3/8       | External     | Not collected | Primary          | 1.90 (1900)                | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 1.79 (0.81) | 14                      |
| <br>COE  | V60P711A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.50 (500)                 | 44 to 116 (3 to 8)         | –                    | 0.77 (0.35) | 14                      |
|   | V60P722A-Ax**** | 1/8       | External     | Not collected | Primary          | 0.50 (500)                 | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 0.77 (0.35) | 14                      |
|   | V60P711D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.50 (500)                 | 44 to 145 (3 to 10)        | –                    | 0.55 (0.25) | 15                      |
|   | V60P722D-Cx13AA | 1/8       | External     | Collected     | Secondary        | 0.50 (500)                 | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.55 (0.25) | 15                      |
|   | V61R711A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 0.95 (950)                 | 44 to 116 (3 to 8)         | –                    | 1.04 (0.47) | 14                      |
|   | V61R722A-Ax**** | 1/4       | External     | Not collected | Primary          | 0.95 (950)                 | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 1.04 (0.47) | 14                      |
|   | V61R711D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 0.95 (950)                 | 44 to 145 (3 to 10)        | –                    | 0.82 (0.37) | 15                      |
|   | V61R722D-Cx13AA | 1/4       | External     | Collected     | Secondary        | 0.95 (950)                 | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.82 (0.37) | 15                      |
|   | V62S711A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 1.90 (1900)                | 44 to 116 (3 to 8)         | –                    | 1.79 (0.81) | 14                      |
|   | V62S722A-Ax**** | 3/8       | External     | Not collected | Primary          | 1.90 (1900)                | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 1.79 (0.81) | 14                      |
| <br>COP | V60P811A-Ax**** | 1/8       | Internal     | Not collected | Primary          | 0.50 (500)                 | 44 to 116 (3 to 8)         | –                    | 0.77 (0.35) | 14                      |
|   | V60P822A-Ax**** | 1/8       | External     | Not collected | Primary          | 0.50 (500)                 | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 0.77 (0.35) | 14                      |
|   | V60P811D-Cx13AA | 1/8       | Internal     | Collected     | Secondary        | 0.50 (500)                 | 44 to 145 (3 to 10)        | –                    | 0.55 (0.25) | 15                      |
|   | V60P822D-Cx13AA | 1/8       | External     | Collected     | Secondary        | 0.50 (500)                 | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.55 (0.25) | 15                      |
|   | V61R811A-Ax**** | 1/4       | Internal     | Not collected | Primary          | 0.95 (950)                 | 44 to 116 (3 to 8)         | –                    | 1.04 (0.47) | 14                      |
|   | V61R822A-Ax**** | 1/4       | External     | Not collected | Primary          | 0.95 (950)                 | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 1.04 (0.47) | 14                      |
|   | V61R811D-Cx13AA | 1/4       | Internal     | Collected     | Secondary        | 0.95 (950)                 | 44 to 145 (3 to 10)        | –                    | 0.82 (0.37) | 15                      |
|   | V61R822D-Cx13AA | 1/4       | External     | Collected     | Secondary        | 0.95 (950)                 | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)  | 0.82 (0.37) | 15                      |
|   | V62S811A-Ax**** | 3/8       | Internal     | Not collected | Primary          | 1.90 (1900)                | 44 to 116 (3 to 8)         | –                    | 1.79 (0.81) | 14                      |
|   | V62S822A-Ax**** | 3/8       | External     | Not collected | Primary          | 1.90 (1900)                | 26" Hg to 116 (-0.9 to 8)  | 44 to 116 (3 to 8)   | 1.79 (0.81) | 14                      |
| V62S811D-Cx13AA   | 3/8             | Internal  | Collected    | Secondary     | 1.90 (1900)      | 44 to 145 (3 to 10)        | –                          | 1.57 (0.71)          | 15          |                         |
| V62S822D-Cx13AA   | 3/8             | External  | Collected    | Secondary     | 1.90 (1900)      | 26" Hg to 145 (-0.9 to 10) | 44 to 145 (3 to 10)        | 1.57 (0.71)          | 15          |                         |

\*\*\*\* Insert coil connector code from tables below.

For manual override options, substitute 'x' as follows: 1 = without manual override  
2 = locking  
3 = non-locking

APB = All ports blocked  
COE = Center open exhaust  
COP = Center open pressure

Coil & voltage codes

Primary (22 mm coil industrial standard)


| Voltage            | Coil code | Power inrush/hold | Model    |
|--------------------|-----------|-------------------|----------|
| 12 V d.c.          | 12J       | 2 W               | 54469-01 |
| 24 V d.c.          | 13J       | 2 W               | 54469-02 |
| 24 V 50/60 Hz      | 14J       | 4/2,5 VA          | 54469-04 |
| 48 V 50/60 Hz      | 16J       | 4/2,5 VA          | 54469-07 |
| 110/120 V 50/60 Hz | 18J       | 4/2,5 VA          | 54469-03 |
| 220/240 V 50/60 Hz | 19J       | 6/5 VA            | 54469-08 |

Secondary

Double solenoid DIN EN 175 301-803 (DIN 43650 type C) 4 pin

| Voltage   | Coil code | Power inrush/hold |
|-----------|-----------|-------------------|
| 24 V d.c. | 13 A      | 2 W               |

Plug configuration, valve side/twin pilot

| Symbol   | Plug no. | Function | Actuation       |
|--|----------|----------|-----------------|
|  | 1        | (+)      | 12 (Solenoid 2) |
|  | 2        | (-)      | 12 + 14         |
|  | 3        | (+)      | 14 (Solenoid 1) |

Connectors

3-Pin Industrial Standard 22mm

|   |          |
|---|----------|
| A = no connector  |          |
| B = Cable grip 0-240Vac/Vdc   | 54934-01 |
| C = 6 ft molded cable, 0-240Vac/Vdc                                   | 54934-21 |
| H = Cable grip w/indicator light 24Vdc                                | 54934-08 |
| J = Cable grip w/indicator light 120Vac                               | 54934-02 |
| Z = 1/2" Conduit 0-240Vac/Vdc   | 54934-05 |
| 5 = 6 ft molded cable w/indicator light, surge suppression, 24Vac/Vdc | 54934-30 |
| 6 = 6 ft molded cable w/indicator light, 120Vac                       | 54934-35 |

4-Pin Connector

|   |         |
|---|---------|
| A = no connector                        |         |
| Y = 4-pin cable grip 0-240Vac/Vdc       | 0588666 |
| X = 4-pin 10' molded cable 0-240Vac/Vdc | 0102144 |

Electrical details

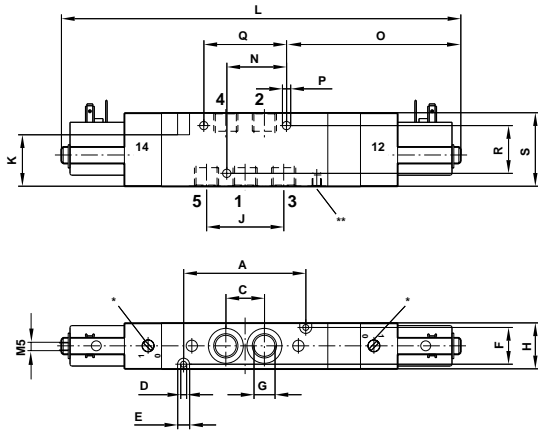
|  |
|--|
| Voltage tolerance: ±10%                              |
| Rating: 100% E.D.                                    |
| Protection class: IP 65 with sealed plugs (ISO 6952) |



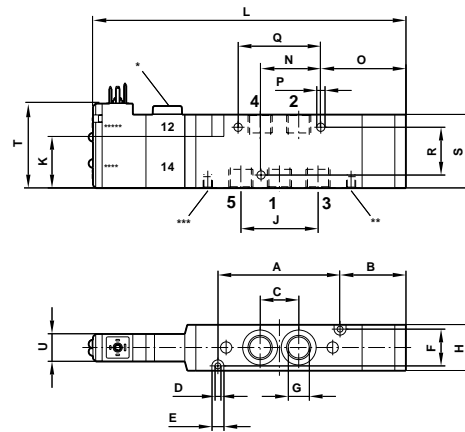
# V60 Series

All Dimensions in Inches (mm)

14



15



- \* Manual override
- \*\* External pilot supply 10-32
- \*\*\* Collected pilot exhaust 10-32
- \*\*\*\* Solenoid 1
- \*\*\*\*\* Solenoid 2

| Dimensional drawing no. | Type | A            | B              | C              | D             | E             | F            | G   | H            | J              | K            | L             | M | N            | O              | P             | Q              | R            | S            | T            | U            |
|-------------------------|------|--------------|----------------|----------------|---------------|---------------|--------------|-----|--------------|----------------|--------------|---------------|---|--------------|----------------|---------------|----------------|--------------|--------------|--------------|--------------|
| 14                      | V60  | 1.97<br>(50) | —              | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 7.44<br>(189) | — | 0.98<br>(25) | 3.33<br>(84.5) | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.02<br>(26) | 1.38<br>(35) | —            | —            |
| 14                      | V61  | 2.60<br>(66) | —              | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 8.54<br>(217) | — | 1.26<br>(32) | —              | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.57<br>(40) | —            | —            |
| 14                      | V62  | 3.07<br>(78) | —              | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 9.49<br>(241) | — | 0.47<br>(12) | 5.20<br>(132)  | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | —            | —            |
| 15                      | V60  | 1.97<br>(50) | 1.22<br>(31)   | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 5.83<br>(148) | — | 0.98<br>(25) | 1.54<br>(39)   | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.02<br>(26) | 1.38<br>(35) | 1.81<br>(46) | 0.59<br>(15) |
| 15                      | V61  | 2.60<br>(66) | 1.42<br>(36)   | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 6.73<br>(171) | — | 1.26<br>(32) | 1.85<br>(47)   | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.57<br>(40) | 1.81<br>(46) | 0.59<br>(15) |
| 15                      | V62  | 3.07<br>(78) | 1.75<br>(44.5) | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 7.68<br>(195) | — | 0.47<br>(12) | 3.31<br>(84)   | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | 2.13<br>(54) | 0.59<br>(15) |



### 3/2 Air Pilot Valves

| Symbol | Model          | Port size | Operator 12 | Operator 10 | Flow Cv (l/min) | Operating pressure psi (bar) | Pilot pressure psi (bar) | lbs (kg)    | Dimensional drawing no. |
|--------|----------------|-----------|-------------|-------------|-----------------|------------------------------|--------------------------|-------------|-------------------------|
|        | V60P4D7A-X5090 | 1/8       | Air         | Spring      | 0.75 (750)      | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.29 (0.13) | 16                      |
|        | V61R4D7A-X5090 | 1/4       | Air         | Spring      | 1.30 (1300)     | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.46 (0.21) | 16                      |
|        | V62S4D7A-X5090 | 3/8       | Air         | Spring      | 2.60 (2600)     | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.95 (0.43) | 16                      |
|        | V60P3D7A-X5090 | 1/8       | Spring      | Air         | 0.75 (750)      | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.29 (0.13) | 17                      |
|        | V61R3D7A-X5090 | 1/4       | Spring      | Air         | 1.30 (1300)     | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.46 (0.21) | 17                      |
|        | V62S3D7A-X5090 | 3/8       | Spring      | Air         | 2.60 (2600)     | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.95 (0.43) | 17                      |
|        | V60P4DDA-X5020 | 1/8       | Air         | Air         | 0.75 (750)      | 26" Hg to 145 (-0.9 to 10)   | 22 to 145 (1.5 to 10)    | 0.29 (0.13) | 18                      |
|        | V61R4DDA-X5020 | 1/4       | Air         | Air         | 1.30 (1300)     | 26" Hg to 145 (-0.9 to 10)   | 22 to 145 (1.5 to 10)    | 0.46 (0.21) | 18                      |
|        | V62S4DDA-X5020 | 3/8       | Air         | Air         | 2.60 (2600)     | 26" Hg to 145 (-0.9 to 10)   | 22 to 145 (1.5 to 10)    | 0.95 (0.43) | 18                      |

NC = Normally closed, NO = Normally open

### 2 x 3/2 Air Pilot Valves

| Symbol | Model          | Port size | Operator 14 | Operator 12 | Flow Cv (l/min) | Operating pressure psi (bar) | Pilot pressure psi (bar) | lbs (kg)    | Dimensional drawing no. |
|--------|----------------|-----------|-------------|-------------|-----------------|------------------------------|--------------------------|-------------|-------------------------|
|        | V60PADDA-X5020 | 1/8       | Air         | Air         | 0.50 (500)      | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 0.40 (0.18) | 19                      |
|        | V61RADDA-X5020 | 1/4       | Air         | Air         | 0.95 (950)      | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 0.67 (0.28) | 19                      |
|        | V62SADDA-X5020 | 3/8       | Air         | Air         | 1.90 (1900)     | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 1.32 (0.60) | 19                      |
|        | V60PBDDA-X5020 | 1/8       | Air         | Air         | 0.50 (500)      | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 0.40 (0.18) | 19                      |
|        | V61RBDDA-X5020 | 1/4       | Air         | Air         | 0.95 (950)      | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 0.67 (0.28) | 19                      |
|        | V62SBDDA-X5020 | 3/8       | Air         | Air         | 1.90 (1900)     | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 1.32 (0.60) | 19                      |
|        | V60PCDDA-X5020 | 1/8       | Air         | Air         | 0.50 (500)      | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 0.40 (0.18) | 19                      |
|        | V61RCDDA-X5020 | 1/4       | Air         | Air         | 0.95 (950)      | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 0.67 (0.28) | 19                      |
|        | V62SCDDA-X5020 | 3/8       | Air         | Air         | 1.90 (1900)     | 29 to 145 (2 to 10)          | 29 to 145 (2 to 10)      | 1.32 (0.60) | 19                      |

NC/NC = Both valves normally closed

NO/NO = Both valves normally open

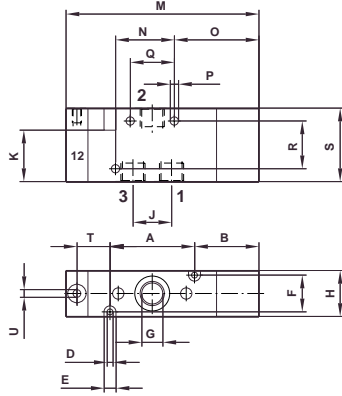
NO/NC = 1 valve normally open, 1 valve normally closed



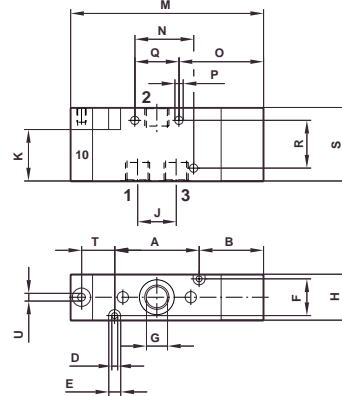
# V60 Series

All Dimensions in Inches (mm)

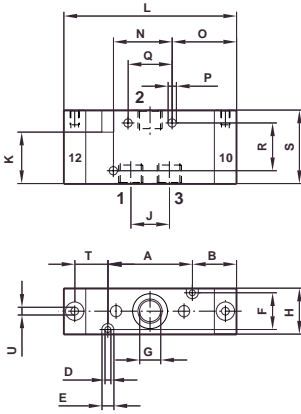
16



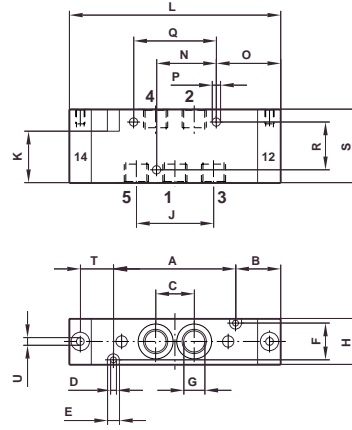
17



18



19



| Dimensional drawing no. | Type | A            | B            | C              | D             | E             | F            | G   | H            | J              | K            | L             | M             | N            | O            | P             | Q              | R            | S            | T            | U        |
|-------------------------|------|--------------|--------------|----------------|---------------|---------------|--------------|-----|--------------|----------------|--------------|---------------|---------------|--------------|--------------|---------------|----------------|--------------|--------------|--------------|----------|
| 16                      | V60  | 1.38<br>(35) | 1.14<br>(29) | -              | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 0.64<br>(16.2) | 1.10<br>(28) | -             | 3.39<br>(86)  | 0.98<br>(25) | 1.46<br>(37) | 0.18<br>(4.5) | 0.71<br>(18)   | 1.02<br>(26) | 1.38<br>(35) | 0.67<br>(17) | 1/8" NPT |
| 16                      | V61  | 1.81<br>(46) | 1.38<br>(35) | -              | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 0.83<br>(21)   | 1.10<br>(28) | -             | 4.13<br>(105) | 1.26<br>(32) | 1.81<br>(46) | 0.18<br>(4.5) | 0.94<br>(24)   | 1.02<br>(26) | 1.57<br>(40) | 0.71<br>(18) | 1/8" NPT |
| 16                      | V62  | 2.13<br>(54) | 1.69<br>(43) | -              | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 0.96<br>(24.4) | 1.73<br>(44) | -             | 4.88<br>(124) | 0.47<br>(12) | 2.28<br>(58) | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | 0.83<br>(21) | 1/8" NPT |
| 17                      | V60  | 1.38<br>(35) | 1.14<br>(29) | -              | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 0.64<br>(16.2) | 1.10<br>(28) | -             | 3.39<br>(86)  | 0.98<br>(25) | 1.46<br>(37) | 0.18<br>(4.5) | 0.71<br>(18)   | 1.02<br>(26) | 1.38<br>(35) | 0.67<br>(17) | 1/8" NPT |
| 17                      | V61  | 1.81<br>(46) | 1.38<br>(35) | -              | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 0.83<br>(21)   | 1.10<br>(28) | -             | 4.13<br>(105) | 1.26<br>(32) | 1.81<br>(46) | 0.18<br>(4.5) | 0.94<br>(24)   | 1.02<br>(26) | 1.57<br>(40) | 0.71<br>(18) | 1/8" NPT |
| 17                      | V62  | 2.13<br>(54) | 1.69<br>(43) | -              | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 0.96<br>(24.4) | 1.73<br>(44) | -             | 4.88<br>(124) | 0.47<br>(12) | 2.20<br>(56) | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | 0.83<br>(21) | 1/8" NPT |
| 18                      | V60  | 1.38<br>(35) | 0.91<br>(23) | -              | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 0.64<br>(16.2) | 1.10<br>(28) | 3.15<br>(80)  | -             | 0.98<br>(25) | 1.22<br>(31) | 0.18<br>(4.5) | 0.71<br>(18)   | 1.02<br>(26) | 1.38<br>(35) | 0.67<br>(17) | 1/8" NPT |
| 18                      | V61  | 1.81<br>(46) | 0.94<br>(24) | -              | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 0.83<br>(21)   | 1.10<br>(28) | 3.70<br>(94)  | -             | 1.26<br>(32) | 1.38<br>(35) | 0.18<br>(4.5) | 0.94<br>(24)   | 1.02<br>(26) | 1.57<br>(40) | 0.71<br>(18) | 1/8" NPT |
| 18                      | V62  | 2.13<br>(54) | 1.06<br>(27) | -              | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 0.96<br>(24.4) | 1.73<br>(44) | 4.25<br>(108) | -             | 0.47<br>(12) | 1.65<br>(42) | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | 0.83<br>(21) | 1/8" NPT |
| 19                      | V60  | 1.97<br>(50) | 0.91<br>(23) | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 3.74<br>(95)  | -             | 0.98<br>(25) | 1.22<br>(31) | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.02<br>(26) | 1.38<br>(35) | 0.67<br>(17) | 1/8" NPT |
| 19                      | V61  | 2.60<br>(66) | 0.94<br>(24) | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 4.49<br>(114) | -             | 1.26<br>(32) | 1.38<br>(35) | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.57<br>(40) | 0.71<br>(18) | 1/8" NPT |
| 19                      | V62  | 3.07<br>(78) | 1.06<br>(27) | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 5.20<br>(132) | -             | 0.47<br>(12) | 2.60<br>(66) | 0.18<br>(4.5) | 1.02<br>(26)   | 1.42<br>(36) | 2.17<br>(55) | 0.83<br>(21) | 1/8" NPT |



### 5/2 Air Pilot Valves

| Symbol | Model          | Port size | Operator 12 | Operator 10 | Flow Cv (l/min) | Operating pressure psi (bar) | Pilot pressure psi (bar) | lbs (kg)    | Dimensional drawing no. |
|--------|----------------|-----------|-------------|-------------|-----------------|------------------------------|--------------------------|-------------|-------------------------|
|        | V60P5D7A-X5090 | 1/8       | Air         | Spring      | 0.75 (750)      | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.35 (0.16) | 22                      |
|        | V61R5D7A-X5090 | 1/4       | Air         | Spring      | 1.30 (1300)     | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.57 (0.26) | 22                      |
|        | V62S5D7A-X5090 | 3/8       | Air         | Spring      | 2.60 (2600)     | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 1.23 (0.56) | 22                      |
|        | V60P5DDA-X5020 | 1/8       | Air         | Air         | 0.75 (750)      | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.37 (0.17) | 23                      |
|        | V61R5DDA-X5020 | 1/4       | Air         | Air         | 1.30 (1300)     | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 0.60 (0.27) | 23                      |
|        | V62S5DDA-X5020 | 3/8       | Air         | Air         | 2.60 (2600)     | 26" Hg to 145 (-0.9 to 10)   | 36 to 145 (2.5 to 10)    | 1.28 (0.58) | 23                      |

### 5/3 Air Pilot Valves

| Symbol | Model          | Port size | Operator 14 | Operator 12 | Flow Cv (l/min) | Operating pressure psi (bar) | Pilot pressure psi (bar) | lbs (kg)    | Dimensional drawing no. |
|--------|----------------|-----------|-------------|-------------|-----------------|------------------------------|--------------------------|-------------|-------------------------|
|        | V60P6DDA-X5020 | 1/8       | Air         | Air         | 0.50 (500)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.44 (0.2)  | 24                      |
|        | V61R6DDA-X5020 | 1/4       | Air         | Air         | 0.95 (950)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.71 (0.32) | 24                      |
|        | V62S6DDA-X5020 | 3/8       | Air         | Air         | 1.90 (1900)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 1.48 (0.67) | 24                      |
|        | V60P7DDA-X5020 | 1/8       | Air         | Air         | 0.50 (500)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.44 (0.2)  | 24                      |
|        | V61R7DDA-X5020 | 1/4       | Air         | Air         | 0.95 (950)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.71 (0.32) | 24                      |
|        | V62S7DDA-X5020 | 3/8       | Air         | Air         | 1.90 (1900)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 1.48 (0.67) | 24                      |
|        | V60P8DDA-X5020 | 1/8       | Air         | Air         | 0.50 (500)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.44 (0.2)  | 24                      |
|        | V61R8DDA-X5020 | 1/4       | Air         | Air         | 0.95 (950)      | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 0.71 (0.32) | 24                      |
|        | V62S8DDA-X5020 | 3/8       | Air         | Air         | 1.90 (1900)     | 26" Hg to 145 (-0.9 to 10)   | 44 to 145 (3 to 10)      | 1.48 (0.67) | 24                      |

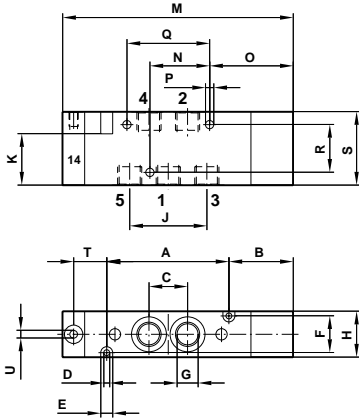
APB = All Ports Blocked,  
 COE = Center Open Exhaust  
 COP = Center Open Pressure



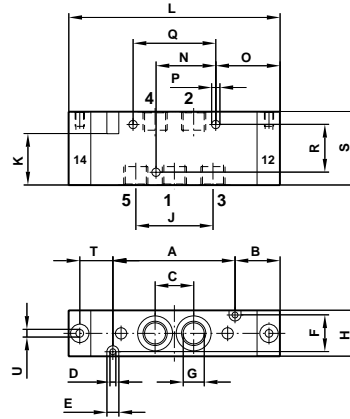
# V60 Series

All Dimensions in Inches (mm)

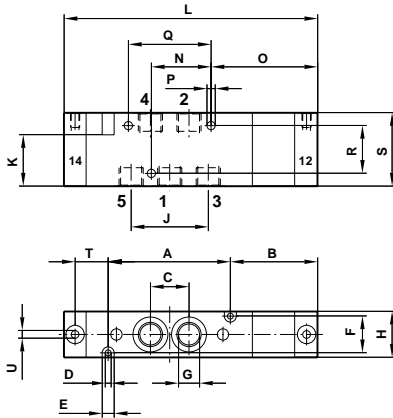
22



23



24



| Dimensional drawing no. | Type | A            | B              | C              | D             | E             | F            | G   | H            | J              | K            | L               | M             | N            | O              | P             | Q              | R            | S            | T            | U        |
|-------------------------|------|--------------|----------------|----------------|---------------|---------------|--------------|-----|--------------|----------------|--------------|-----------------|---------------|--------------|----------------|---------------|----------------|--------------|--------------|--------------|----------|
| 22                      | V60  | 1.97<br>(50) | 1.14<br>(29)   | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | -               | 3.98<br>(101) | 0.98<br>(25) | 1.46<br>(37)   | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.38<br>(35) | 0.67<br>(17) | 1/8" NPT |
| 22                      | V61  | 2.60<br>(66) | 1.38<br>(35)   | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | -               | 4.92<br>(125) | 1.26<br>(32) | 1.38<br>(35)   | 0.18<br>(4.5) | 1.02<br>(26)   | 1.02<br>(26) | 1.57<br>(40) | 0.71<br>(18) | 1/8" NPT |
| 22                      | V62  | 3.07<br>(78) | 1.69<br>(43)   | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | -               | 5.83<br>(148) | 0.47<br>(12) | 3.23<br>(82)   | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.42<br>(36) | 2.17<br>(55) | 0.83<br>(21) | 1/8" NPT |
| 23                      | V60  | 1.97<br>(50) | 0.91<br>(23)   | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 3.74<br>(95)    | -             | 0.98<br>(25) | 1.22<br>(31)   | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.38<br>(35) | 0.67<br>(17) | 1/8" NPT |
| 23                      | V61  | 2.60<br>(66) | 0.94<br>(24)   | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 4.49<br>(114)   | -             | 1.26<br>(32) | 1.38<br>(35)   | 0.18<br>(4.5) | 1.02<br>(26)   | 1.02<br>(26) | 1.57<br>(40) | 0.71<br>(18) | 1/8" NPT |
| 23                      | V62  | 3.07<br>(78) | 1.06<br>(27)   | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 5.20<br>(132)   | -             | 0.47<br>(12) | 2.60<br>(66)   | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.42<br>(36) | 2.17<br>(55) | 0.83<br>(21) | 1/8" NPT |
| 24                      | V60  | 1.97<br>(50) | 1.46<br>(37)   | 0.64<br>(16.2) | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.67<br>(17) | 1/8 | 0.87<br>(22) | 1.28<br>(32.4) | 1.10<br>(28) | 4.29<br>(109)   | -             | 0.98<br>(25) | 1.77<br>(45)   | 0.18<br>(4.5) | 1.73<br>(44)   | 1.02<br>(26) | 1.38<br>(35) | 0.67<br>(17) | 1/8" NPT |
| 24                      | V61  | 2.60<br>(66) | 1.85<br>(47)   | 0.83<br>(21)   | 0.13<br>(3.2) | 0.26<br>(6.5) | 0.79<br>(20) | 1/4 | 0.98<br>(25) | 1.65<br>(42)   | 1.10<br>(28) | 5.39<br>(137)   | -             | 1.26<br>(32) | 2.28<br>(58)   | 0.18<br>(4.5) | 1.02<br>(26v)  | 1.02<br>(26) | 1.57<br>(40) | 0.71<br>(18) | 1/8" NPT |
| 24                      | V62  | 3.07<br>(78) | 1.95<br>(49.5) | 0.96<br>(24.4) | 0.18<br>(4.5) | 0.31<br>(8)   | 1.10<br>(28) | 3/8 | 1.34<br>(34) | 1.92<br>(48.8) | 1.73<br>(44) | 6.08<br>(154.5) | -             | 0.47<br>(12) | 3.48<br>(88.5) | 0.18<br>(4.5) | 1.32<br>(33.6) | 1.42<br>(36) | 2.17<br>(55) | 0.83<br>(21) | 1/8" NPT |



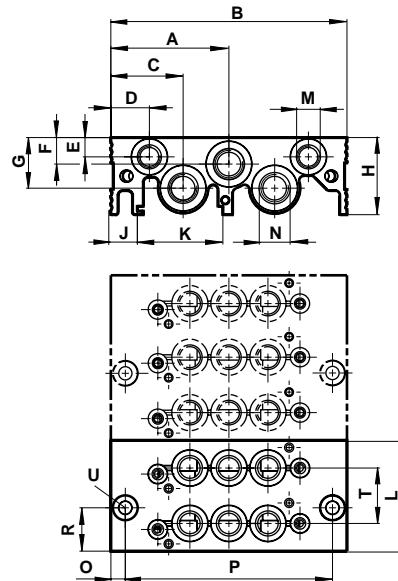
Manifold system

Manifold plate

| Valve ports | V60 Model | lbs (kg)    | V61 Model | lbs (kg)    | V62 Model | lbs (kg)    |
|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| 2           | 2221032   | 0.51 (0.23) | 2221132   | 0.62 (0.28) | 2221232   | 1.10 (0.50) |
| 3           | 2221033   | 0.62 (0.28) | 2221133   | 0.99 (0.45) | 2221233   | 1.87 (0.85) |

Drawing dimensions

Manifold plate 2 stations + 3 stations



| Type           | A            | B             | C            | D            | E           | F            | G            | H            | J            | K              | L             | M   | N   | O            | P            | R            | S | T            | U            |
|----------------|--------------|---------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|----------------|---------------|-----|-----|--------------|--------------|--------------|---|--------------|--------------|
| V60 2 stations | 1.93<br>(49) | 3.86<br>(98)  | 1.18<br>(30) | 0.63<br>(16) | 0.31<br>(8) | 0.43<br>(11) | 0.83<br>(21) | 1.26<br>(32) | 0.43<br>(11) | 1.40<br>(35.5) | 1.81<br>(46)  | 1/8 | 1/4 | 0.24<br>(6)  | 3.39<br>(86) | 1.10<br>(28) | - | 0.91<br>(23) | for<br>10-32 |
| V60 3 stations | 1.93<br>(49) | 3.86<br>(98)  | 1.18<br>(30) | 0.63<br>(16) | 0.31<br>(8) | 0.43<br>(11) | 0.83<br>(21) | 1.26<br>(32) | 0.43<br>(11) | 1.40<br>(35.5) | 2.72<br>(69)  | 1/8 | 1/4 | 0.24<br>(6)  | 3.39<br>(86) | 1.10<br>(28) | - | 0.91<br>(23) | for<br>10-32 |
| V61 2 stations | 2.05<br>(52) | 4.09<br>(104) | 1.02<br>(26) | 0.35<br>(9)  | 0.31<br>(8) | 0.51<br>(13) | 0.83<br>(21) | 1.30<br>(33) | 0.39<br>(10) | 1.40<br>(35.5) | 2.05<br>(52)  | 1/8 | 3/8 | 1.57<br>(40) | 0.94<br>(24) | 1.02<br>(26) | - | 1.02<br>(26) | for<br>10-32 |
| V61 3 stations | 2.05<br>(52) | 4.09<br>(104) | 1.02<br>(26) | 0.35<br>(9)  | 0.31<br>(8) | 0.51<br>(13) | 0.79<br>(20) | 1.30<br>(33) | 0.39<br>(10) | 1.40<br>(35.5) | 3.07<br>(78)  | 1/8 | 3/8 | 1.57<br>(40) | 0.94<br>(24) | 2.05<br>(52) | - | 1.02<br>(26) | for<br>10-32 |
| V62 2 stations | 2.36<br>(60) | 4.72<br>(120) | 1.14<br>(29) | 0.35<br>(9)  | 0.31<br>(8) | 0.59<br>(15) | 0.87<br>(22) | 1.50<br>(38) | 0.51<br>(13) | 1.40<br>(35.5) | 2.76<br>(70)  | 1/8 | 1/2 | 1.73<br>(44) | 1.26<br>(32) | 1.38<br>(35) | - | 1.38<br>(35) | for M6       |
| V62 3 stations | 2.36<br>(60) | 4.72<br>(120) | 1.14<br>(29) | 0.35<br>(9)  | 0.31<br>(8) | 0.59<br>(15) | 0.87<br>(22) | 1.50<br>(38) | 0.51<br>(13) | 1.40<br>(35.5) | 4.13<br>(105) | 1/8 | 1/2 | 1.73<br>(44) | 1.26<br>(32) | 2.76<br>(70) | - | 1.38<br>(35) | for M6       |

DIN Rail fixing kit



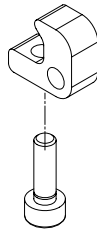
0101796 (V60→V62) 0.02 lbs (0.01 kg)



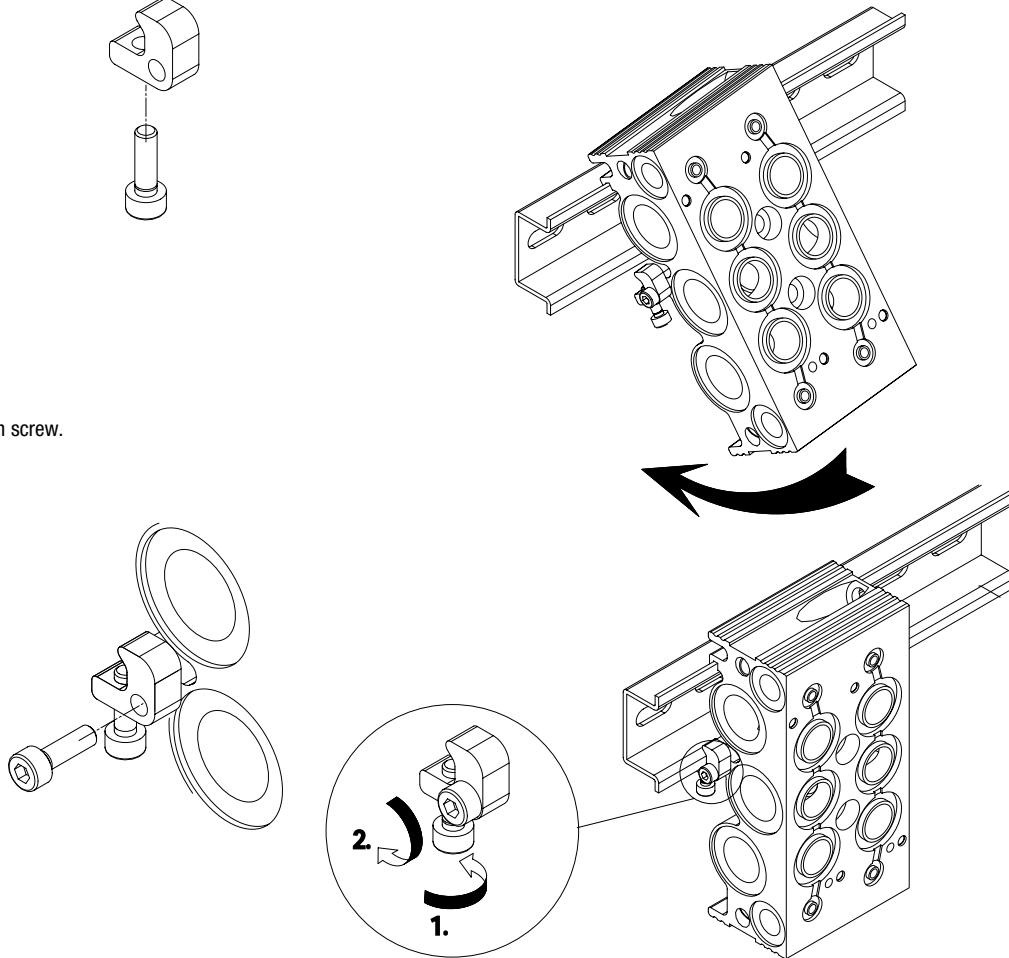
### Mounting instructions

DIN Rail

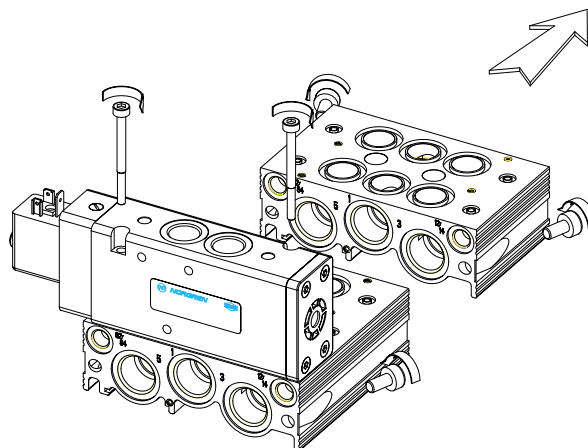
1. Mount screw in rod



2. Fix rod on manifold plate with screw.

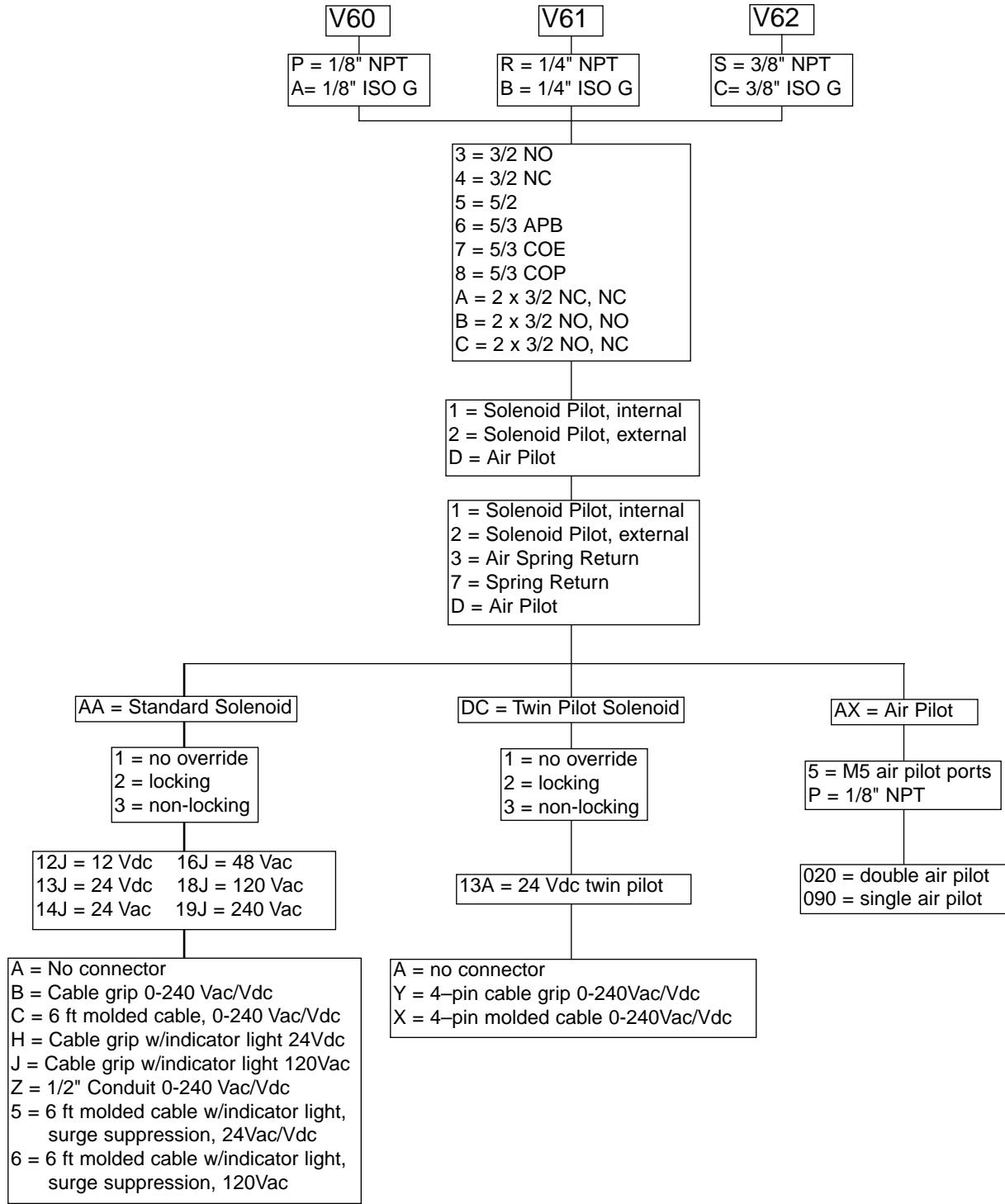


### Extension possibilities with manifold plates



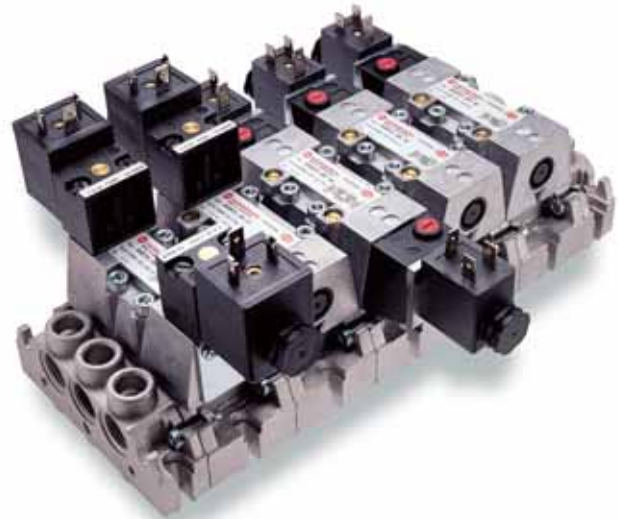


V 6 0 A 5 1 7 A – A 3 1 3 J B



# ISO Star Series Valves

5/2 and 5/3 solenoid and air pilot actuated valves



- NITUFF® coated non-corrosive spool and sleeve for long trouble free life (100 million plus cycles)**
- Integral flow controls for cylinder speed control on size #1, and #2 models**
- Low power solenoids with manual override options**
- End and CNOMO solenoid pilots**
- Base mounted soft start valves available**
- Minimal maintenance**

## Technical Data

Medium:

Compressed air, 40µm filtered, lubricated or non-lubricated

Operation:

Glandless spool valve, solenoid pilot or air pilot actuated

Mounting:

On sub-bases

Sizes:

#1, #2, #3

## Operating Pressure:

Maximum pressure

145 psig (10 bar) solenoid pilot actuated valves with internal pilot supply

232 psig (16 bar) solenoid pilot actuated valves with external pilot supply

232 psig (16 bar) air pilot actuated valves

Flow Characteristics (unregulated):

| Size | Cv  | l/min |
|------|-----|-------|
| #1   | 1.2 | 5.5   |
| #2   | 2.4 | 10.7  |
| #3   | 4.4 | 17.9  |

Ambient Temperature:

5°F\* to 122°F (-15°C to 50°C) solenoid pilot actuated valves

5°F\* to 176°F (-15°C to 80°C) air pilot actuated valves

\*Consult our Technical Service for use below 36°F (2°C)

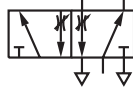
## Materials:

Die cast aluminum body. Hard anodized, Teflon coated, matched aluminum spool and sleeve. Viton and nitrile rubber seals. Zinc die cast locking plate. POM plastic parts. Zinc plated screws. Brass flow regulators.

## Ordering Information

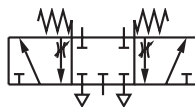
To order select model number, add voltage code and connector code, e.g. SXE 0573-A60-00/13JB for a 5/2 double end solenoid pilot size #1 valve with internal pilot air supply, integral flow regulators, shrouded push button lockable manual override, 22 mm coil 24V d.c. with cable grip connector.

### 5/2



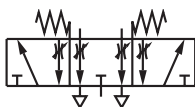
### 5/3

All ports blocked mid position



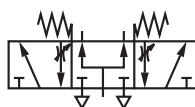
### 5/3

Center open exhaust mid position



### 5/3

Center open pressure mid position



# ISO Star Series Valves

## 5/2 and 5/3 solenoid and air pilot actuated valves

### 5/2 Solenoid Pilot Actuated Valves

| Model              | Size | Flow Control | Pilot Supply | Operator | Return     | Operating Pressure psig (bar) | Pilot Pressure psig (bar) | Weight lb. (kg) |
|--------------------|------|--------------|--------------|----------|------------|-------------------------------|---------------------------|-----------------|
| SXE9573-A70-00***† | #1   | -            | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)           | -                         | 0.74 (0.33)     |
| SXE9574-A70-00***† | #2   | -            | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)           | -                         | 1.34 (0.59)     |
| SXE9575-A70-00***† | #3   | -            | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)           | -                         | 1.93 (0.85)     |
| SXE9573-A80-00***† | #1   | Integral     | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)           | -                         | 0.74 (0.33)     |
| SXE9574-A80-00***† | #2   | Integral     | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)           | -                         | 1.34 (0.59)     |
| SXE9573-A75-00***† | #1   | -            | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)      | 14.5 - 145 (1 - 10)       | 0.74 (0.33)     |
| SXE9574-A75-00***† | #2   | -            | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)      | 14.5 - 145 (1 - 10)       | 1.34 (0.59)     |
| SXE9575-A75-00***† | #3   | -            | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)      | 14.5 - 145 (1 - 10)       | 1.93 (0.85)     |
| SXE9573-A85-00***† | #1   | Integral     | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)      | 14.5 - 145 (1 - 10)       | 0.74 (0.33)     |
| SXE9574-A85-00***† | #2   | Integral     | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)      | 14.5 - 145 (1 - 10)       | 1.34 (0.59)     |
| SXE0573-A50-00***† | #1   | -            | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)             | -                         | 1.02 (0.45)     |
| SXE0574-A50-00***† | #2   | -            | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)             | -                         | 1.63 (0.72)     |
| SXE0575-A50-00***† | #3   | -            | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)             | -                         | 2.18 (0.96)     |
| SXE0573-A60-00***† | #1   | Integral     | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)             | -                         | 1.02 (0.45)     |
| SXE0574-A60-00***† | #2   | Integral     | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)             | -                         | 1.63 (0.72)     |
| SXE0573-A55-00***† | #1   | -            | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.02 (0.45)     |
| SXE0574-A55-00***† | #2   | -            | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.63 (0.72)     |
| SXE0575-A55-00***† | #3   | -            | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 2.18 (0.96)     |
| SXE0573-A65-00***† | #1   | Integral     | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.02 (0.45)     |
| SXE0574-A65-00***† | #2   | Integral     | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.63 (0.72)     |

### 5/3 Solenoid Pilot Actuated Valves

| Model              | Size | Flow Control | Valve Function* | Pilot Supply | Operator | Operator | Operating Pressure psig (bar) | Pilot Pressure psig (bar) | Weight lb. (kg) |
|--------------------|------|--------------|-----------------|--------------|----------|----------|-------------------------------|---------------------------|-----------------|
| SXE9673-A60-00***† | #1   | Integral     | APB             | Internal     | Solenoid | Solenoid | 29 - 145 (2 - 10)             | -                         | 1.02 (0.45)     |
| SXE9674-A60-00***† | #2   | Integral     | APB             | Internal     | Solenoid | Solenoid | 29 - 145 (2 - 10)             | -                         | 1.63 (0.72)     |
| SXE9675-A50-00***† | #3   | -            | APB             | Internal     | Solenoid | Solenoid | 29 - 145 (2 - 10)             | -                         | 2.18 (0.96)     |
| SXE9673-A65-00***† | #1   | Integral     | APB             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.02 (0.45)     |
| SXE9674-A65-00***† | #2   | Integral     | APB             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.63 (0.72)     |
| SXE9675-A55-00***† | #3   | -            | APB             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 2.18 (0.96)     |
| SXE9773-A60-00***† | #1   | Integral     | COE             | Internal     | Solenoid | Solenoid | 29 - 145 (2 - 10)             | -                         | 1.02 (0.45)     |
| SXE9774-A60-00***† | #2   | Integral     | COE             | Internal     | Solenoid | Solenoid | 29 - 145 (2 - 10)             | -                         | 1.63 (0.72)     |
| SXE9775-A50-00***† | #3   | -            | COE             | Internal     | Solenoid | Solenoid | 29 - 145 (2 - 10)             | -                         | 2.18 (0.96)     |
| SXE9773-A65-00***† | #1   | Integral     | COE             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.02 (0.45)     |
| SXE9774-A65-00***† | #2   | Integral     | COE             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.63 (0.72)     |
| SXE9775-A55-00***† | #3   | -            | COE             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 2.18 (0.96)     |
| SXE9873-A60-00***† | #1   | Integral     | COP             | Internal     | Solenoid | Solenoid | 29 - 14 5 (2 - 10)            | -                         | 1.02 (0.45)     |
| SXE9874-A60-00***† | #2   | Integral     | COP             | Internal     | Solenoid | Solenoid | 29 - 14 5 (2 - 10)            | -                         | 1.63 (0.72)     |
| SXE9875-A50-00***† | #3   | -            | COP             | Internal     | Solenoid | Solenoid | 29 - 14 5 (2 - 10)            | -                         | 2.18 (0.96)     |
| SXE9873-A65-00***† | #1   | Integral     | COP             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.02 (0.45)     |
| SXE9874-A65-00***† | #2   | Integral     | COP             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 1.63 (0.72)     |
| SXE9874-A65-00***† | #3   | -            | COP             | External     | Solenoid | Solenoid | 26" Hg - 232 (-0.9 - 16)      | 29 - 145 (2 - 10)         | 2.18 (0.96)     |

\*\*\*Insert 3-digit voltage code from Voltage Codes and Replacement Coils table below.

† Insert letter from Connector Option Codes.

\* Valve Function Designations: APB = All Ports Blocked  
COE = Center Open Exhaust  
COP = Center Open Pressure

### Part Number Example

SXE9573-Z70-0012JA

Where "12J" is a 12V d.c. coil with a 22 mm connector interface, and "A" is a solenoid without connector.

### Voltage Codes and Replacement Coils

| Voltage            | 22 mm Coil with connector interface acc. to Industrial Standard |                   |                | 30 mm Coil with connector interface acc. to DIN 43650 table "A" |                   |                |
|--------------------|---|-------------------|----------------|---|-------------------|----------------|
|                    | Code  | Power Inrush/Hold | Coil Part.-no. | Code  | Power Inrush/Hold | Coil Part.-no. |
| 12 V d.c.          | 12J   | 2 W               | 54469-01       | 22N   | 1.5 W             | V10633-A22N    |
| 24 V d.c.          | 13J   | 2 W               | 54469-02       | 23N   | 1.5 W             | V10633-A23N    |
| 24 V 50/60 Hz      | 14J   | 4/2.5 VA          | 54469-04       | 24N   | 3/2 VA            | V10633-A24N    |
| 48 V 50/60 Hz      | 16J   | 4/2.5 VA          | 54469-07       | 26N   | 3/2 VA            | V10633-A26N    |
| 110/120 V 50/60 Hz | 18J   | 4/2.5 VA          | 54469-03       | 28N   | 3/2 VA            | V10633-A28N    |
| 220/240 V 50/60 Hz | 19J   | 9/5.0 VA          | 54469-08       | 89N   | 10/8VA            | V10633-A89N    |

Other Voltages available on request.

# ISO Star Series Valves

5/2 and 5/3 solenoid and air pilot actuated valves

## 5/2 CNOMO Solenoid Pilot Actuated Valves

(Consult factory for lead times)

| Model              | Size | Flow Control | Pilot Supply | Operator | Return     | Operating Pressure<br>psig (bar) | Pilot Pressure<br>psig (bar) | Weight<br>lb. (kg) |
|--------------------|------|--------------|--------------|----------|------------|----------------------------------|------------------------------|--------------------|
| SXE9573-Z70-90***† | #1   | -            | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)              | -                            | 0.74 (0.33)        |
| SXE9574-Z70-90***† | #2   | -            | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)              | -                            | 1.34 (0.59)        |
| SXE9575-Z70-90***† | #3   | -            | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)              | -                            | 1.93 (0.85)        |
| SXE9573-Z80-90***† | #1   | Integral     | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)              | -                            | 0.74 (0.33)        |
| SXE9574-Z80-90***† | #2   | Integral     | Internal     | Solenoid | Air Spring | 14.5 - 145 (1 - 10)              | -                            | 1.34 (0.59)        |
| SXE9573-Z75-90***† | #1   | -            | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)         | 14.5 - 145 (1 - 10)          | 0.74 (0.33)        |
| SXE9574-Z75-90***† | #2   | -            | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)         | 14.5 - 145 (1 - 10)          | 1.34 (0.59)        |
| SXE9575-Z75-90***† | #3   | -            | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)         | 14.5 - 145 (1 - 10)          | 1.93 (0.85)        |
| SXE9573-Z85-90***† | #1   | Integral     | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)         | 14.5 - 145 (1 - 10)          | 0.74 (0.33)        |
| SXE9574-Z85-90***† | #2   | Integral     | External     | Solenoid | Air Spring | 26" Hg - 232 (-0.9 - 16)         | 14.5 - 145 (1 - 10)          | 1.34 (0.59)        |
| SXE0573-Z50-90***† | #1   | -            | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)                | -                            | 1.02 (0.45)        |
| SXE0574-Z50-90***† | #2   | -            | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)                | -                            | 1.63 (0.72)        |
| SXE0575-Z50-90***† | #3   | -            | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)                | -                            | 2.18 (0.96)        |
| SXE0573-Z60-90***† | #1   | Integral     | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)                | -                            | 1.02 (0.45)        |
| SXE0574-Z60-90***† | #2   | Integral     | Internal     | Solenoid | Solenoid   | 29 - 145 (2 - 10)                | -                            | 1.63 (0.72)        |
| SXE0573-Z55-90***† | #1   | -            | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)            | 1.02 (0.45)        |
| SXE0574-Z55-90***† | #2   | -            | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)            | 1.63 (0.72)        |
| SXE0575-Z55-90***† | #3   | -            | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)            | 2.18 (0.96)        |
| SXE0573-Z65-90***† | #1   | Integral     | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)            | 1.02 (0.45)        |
| SXE0574-Z65-90***† | #2   | Integral     | External     | Solenoid | Solenoid   | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)            | 1.63 (0.72)        |

## 5/3 CNOMO Solenoid Pilot Actuated Valves

(Consult factory for lead times)

| Model              | Size | Flow Control | Valve Function* | Pilot Supply | Operator | Operator<br>psig (bar) | Operating Pressure<br>psig (bar) | Pilot Pressure<br>lb. (kg) | Weight      |
|--------------------|------|--------------|-----------------|--------------|----------|------------------------|----------------------------------|----------------------------|-------------|
| SXE9673-Z60-90***† | #1   | Integral     | APB             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 1.02 (0.45) |
| SXE9674-Z60-90***† | #2   | Integral     | APB             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 1.63 (0.72) |
| SXE9675-Z50-90***† | #3   | -            | APB             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 2.18 (0.96) |
| SXE9673-Z65-90***† | #1   | Integral     | APB             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 1.02 (0.45) |
| SXE9674-Z65-90***† | #2   | Integral     | APB             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 1.63 (0.72) |
| SXE9675-Z55-90***† | #3   | -            | APB             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 2.18 (0.96) |
| SXE9773-Z60-90***† | #1   | Integral     | COE             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 1.02 (0.45) |
| SXE9774-Z60-90***† | #2   | Integral     | COE             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 1.63 (0.72) |
| SXE9775-Z50-90***† | #3   | -            | COE             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 2.18 (0.96) |
| SXE9773-Z65-90***† | #1   | Integral     | COE             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 1.02 (0.45) |
| SXE9774-Z65-90***† | #2   | Integral     | COE             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 1.63 (0.72) |
| SXE9775-Z55-90***† | #3   | -            | COE             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 2.18 (0.96) |
| SXE9873-Z60-90***† | #1   | Integral     | COP             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 1.02 (0.45) |
| SXE9874-Z60-90***† | #2   | Integral     | COP             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 1.63 (0.72) |
| SXE9875-Z50-90***† | #3   | -            | COP             | Internal     | Solenoid | Solenoid               | 29 - 145 (2 - 10)                | -                          | 2.18 (0.96) |
| SXE9873-Z65-90***† | #1   | Integral     | COP             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 1.02 (0.45) |
| SXE9874-Z65-90***† | #2   | Integral     | COP             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 1.63 (0.72) |
| SXE9875-Z55-90***† | #3   | -            | COP             | External     | Solenoid | Solenoid               | 26" Hg - 232 (-0.9 - 16)         | 29 - 145 (2 - 10)          | 2.18 (0.96) |

\*\*\*Insert 3-digit voltage code from Voltage Codes and Replacement Coils.

\* Valve Function Designations: APB = All Ports Blocked  
COE = Center Open Exhaust  
COP = Center Open Pressure

† Insert letter from Connector Option Codes.

### Part Number Example

SXE9573-Z70-0012JA

Where "12J" is a 12V d.c. coil with a 22 mm connector interface, and "A" is a solenoid without connector.

### Voltage Codes and Replacement Coils

| Voltage            | 22 mm Coil<br>with connector interface<br>acc. to Industrial Standard |                   |                | 30 mm Coil<br>with connector interface<br>acc. to DIN 43650 table "A" |                   |                |
|--------------------|---|-------------------|----------------|---|-------------------|----------------|
|                    | Code  | Power Inrush/Hold | Coil Part.-no. | Code  | Power Inrush/Hold | Coil Part.-no. |
| 12 V d.c.          | 12J   | 2 W               | 54469-01       | 22N   | 1.5 W             | V10633-A22N    |
| 24 V d.c.          | 13J   | 2 W               | 54469-02       | 23N   | 1.5 W             | V10633-A23N    |
| 24 V 50/60 Hz      | 14J   | 4/2.5 VA          | 54469-04       | 24N   | 3/2 VA            | V10633-A24N    |
| 48 V 50/60 Hz      | 16J   | 4/2.5 VA          | 54469-07       | 26N   | 3/2 VA            | V10633-A26N    |
| 110/120 V 50/60 Hz | 18J   | 4/2.5 VA          | 54469-03       | 28N   | 3/2 VA            | V10633-A28N    |
| 220/240 V 50/60 Hz | 19J   | 9/5.0 VA          | 54469-08       | 89N   | 10/8VA            | V10633-A89N    |

Other Voltages available on request.

# ISO Star Series Valves

## 5/2 and 5/3 solenoid and air pilot actuated valves

### Part Number Example

SXE9573-Z70-0012JA

Where "12J" is a 12V d.c. coil with a 22 mm connector interface, and "A" is a solenoid without connector.

### Voltage Codes and Replacement Coils

| Voltage            | 22 mm Coil with connector interface acc. to Industrial Standard |                   |                | 30 mm Coil with connector interface acc. to DIN 43650 table "A" |                   |                |
|--------------------|---|-------------------|----------------|---|-------------------|----------------|
|                    | Code  | Power Inrush/Hold | Coil Part.-no. | Code  | Power Inrush/Hold | Coil Part.-no. |
| 12 V d.c.          | 12J   | 2 W               | 54469-01       | 22N   | 1.5 W             | V10633-A22N    |
| 24 V d.c.          | 13J   | 2 W               | 54469-02       | 23N   | 1.5 W             | V10633-A23N    |
| 24 V 50/60 Hz      | 14J   | 4/2.5 VA          | 54469-04       | 24N   | 3/2 VA            | V10633-A24N    |
| 48 V 50/60 Hz      | 16J   | 4/2.5 VA          | 54469-07       | 26N   | 3/2 VA            | V10633-A26N    |
| 110/120 V 50/60 Hz | 18J   | 4/2.5 VA          | 54469-03       | 28N   | 3/2 VA            | V10633-A28N    |
| 220/240 V 50/60 Hz | 19J   | 9/5.0 VA          | 54469-08       | 89N   | 10/8VA            | V10633-A89N    |

Other Voltages available on request.

### Connector option codes and replacement connectors

| Connector Option Codes Industrial standard                                     | 22 mm coil DIN 43650 table "A" | 30 mm coil  |
|--|--------------------------------|-------------|
| A = Solenoid without connector   |                                |             |
| B = Cable grip   | 54934-01                       | 54933-05    |
| C = 6 ft. molded cable, 0-240V a.c./V d.c.                                     | 54934-21                       | 54933-06    |
| 5 = 6 ft. molded cable with indicator light surge suppression, 24V a.c./V d.c. | 54934-30                       | 54933-09    |
| 6 = 6 ft. molded cable with indicator light, 110V/50 Hz - 120V/60 Hz           | 54934-35                       | M/P43316/23 |

Other Connectors available on request.

### 5/2 Air Pilot Actuated Valves

| Model           | Size | Flow Control | Operator | Return | Operating Pressure psig (bar) | Pilot Pressure psig (bar) | Weight lb. (kg) |
|-----------------|------|--------------|----------|--------|-------------------------------|---------------------------|-----------------|
| SXP9573-170-00B | #1   | -            | Air      | Spring | 26" Hg - 232 (-0.9 - 16)      | 23.2 - 232 (1.6 - 16)     | 0.47 (0.21)     |
| SXP9574-170-00B | #2   | -            | Air      | Spring | 26" Hg - 232 (-0.9 - 16)      | 23.2 - 232 (1.6 - 16)     | 1.02 (0.45)     |
| SXP9575-170     | #3   | -            | Air      | Spring | 26" Hg - 232 (-0.9 - 16)      | 23.2 - 232 (1.6 - 16)     | 1.63 (0.72)     |
| SXP9573-180-00B | #1   | Integral     | Air      | Spring | 26" Hg - 232 (-0.9 - 16)      | 23.2 - 232 (1.6 - 16)     | 0.47 (0.21)     |
| SXP9574-180-00B | #2   | Integral     | Air      | Spring | 26" Hg - 232 (-0.9 - 16)      | 23.2 - 232 (1.6 - 16)     | 1.02 (0.45)     |
| SXP0573-170-00B | #1   | -            | Air      | Air    | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 0.68 (0.30)     |
| SXP0574-170-00B | #2   | -            | Air      | Air    | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.13 (0.50)     |
| SXP0575-170     | #3   | -            | Air      | Air    | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.63 (0.72)     |
| SXP0573-180-00B | #1   | Integral     | Air      | Air    | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 0.68 (0.30)     |
| SXP0574-180-00B | #2   | Integral     | Air      | Air    | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.13 (0.50)     |

### 5/3 Air Pilot Actuated Valves

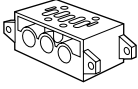
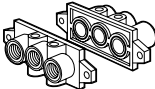
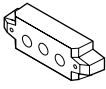

| Model           | Size | Flow Control | Valve Function* | Operator | Operator | Operating Pressure psig (bar) | Pilot Pressure psig (bar) | Weight lb. (kg) |
|-----------------|------|--------------|-----------------|----------|----------|-------------------------------|---------------------------|-----------------|
| SXP9673-180-00B | #1   | Integral     | APB             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 0.57 (0.25)     |
| SXP9674-180-00B | #2   | Integral     | APB             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.32 (0.58)     |
| SXP9675-170     | #3   | -            | APB             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.82 (0.80)     |
| SXP9773-180-00B | #1   | Integral     | COE             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 0.57 (0.25)     |
| SXP9774-180-00B | #2   | Integral     | COE             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.32 (0.58)     |
| SXP9775-170     | #3   | -            | COE             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.82 (0.80)     |
| SXP9873-180-00B | #1   | Integral     | COP             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 0.57 (0.25)     |
| SXP9874-180-00B | #2   | Integral     | COP             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.32 (0.58)     |
| SXP9875-170     | #3   | -            | COP             | Air      | Air      | 26" Hg - 232 (-0.9 - 16)      | 29 - 232 (2 - 16)         | 1.82 (0.80)     |

\* Valve Function Designations:  
 APB = All Ports Blocked  
 COE = Center Open Exhaust  
 COP = Center Open Pressure

# ISO Star Series Valves

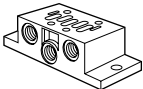
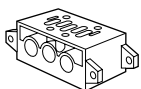
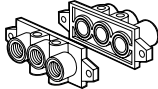
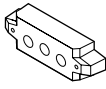

5/2 and 5/3 solenoid and air pilot actuated valves

## Side Ported Modular Base Range

|               | Modular Sub-base<br>Side Ported   | Modular Sub-base<br>End Plates (2)  | Transition plate  | Blanking disk   |
|---------------|---|---|---|---|
|               |  |  |  |  |
| NPT #1 models | 1001 (1/4)  | 1002 (3/8)  | 1009 (#1 #2)  | 1001-6-1  |
| NPT #2 models | 2101 (3/8)1   | 2102 (1/2)  | 2109 (#2 #3)  | 2106-1  |
| NPT #3 models | 3101 (3/4)1   | 3102-75-75 (3/4")2<br>3102-75-B (3/4") 3  | -   |   |

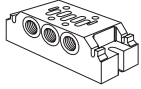
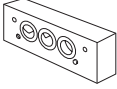

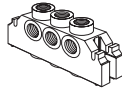
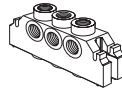
1-side and bottom ported 2-both ends ported 3-one end ported

## VDMA 24 345 Base Range

| VDMA 24 345         | Form 'A'<br>Single Station Sub-base<br>Side Ported                                | Form 'C'<br>Modular Sub-base<br>Bottom Ported                                     | Form 'D'<br>Modular Sub-base<br>End Plates (2)                                    | Transition plate   | Blanking disk *<br>(dual supply)  |
|---------------------|---|---|---|--|---|
|                     |  |  |  |  |  |
| NPT #1 models (1/4) | C/P19126  | 239-238B  | 239-289B  | CQM/22152/3/24 #1#2  | 239-251   |
| NPT #2 models (3/8) | C/P19132  | 239-242B  | 239-291B  | CQM/22253/3/24 #2#3  | 239-252   |
| NPT #3 models (1/2) | C/P19138  | 239-246B  | 239-293B  | CQM/22354/3/24 #3#4  | 239-253   |
| ISO G #1 models     | M/P19126  | CQM/22152/3/21  | CQM/22152/3/22  | CQM/22152/3/24 #1#2  | FP8382  |
| ISO G #2 models     | M/P19132  | CQM/22253/3/21  | CQM/22253/3/22  | CQM/22253/3/24 #2#3  | FP8482  |
| ISO G #3 models     | M/P19138  | CQM/22354/3/21  | CQM/22354/3/22  | CQM/22354/3/24 #3#4  | FP8582  |

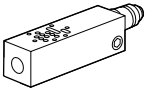
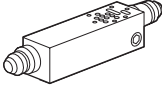
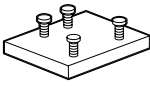
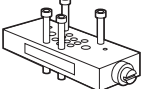
\* Only suitable for specific base range.

## Universal Base Range

|                      | Modular Sub-base<br>Side and bottom ported  | Transition Plate  | Blanking Disk**<br>(dual supply)  | Side End Plate<br>All Ports Closed  | Single End Plate<br>End Ports Open  |
|----------------------|---|---|---|---|---|
|                      |  |  |  |  |  |
| ISO #1 models (G1/4) | CQM/22152/3/27  | CQM/22152/3/29#1'2  | M/P43173  | CQM/22152/3/28  | CQM/22152/3/31  |
| ISO #2 models (G3/8) | CQM/22253/3/27  |   | M/P43174  | CQM/22253/3/28  | CQM/22253/3/31  |

\*\* Universal base range only.

## Accessories

|           | Single<br>Pressure Regulator<br>port 1 regulated                                    | Pressure Regulator<br>ports 2 & 4 regulated   | Blanking Plate  | Sandwich Flow<br>Control  |
|-----------|---|---|---|---|
|           |  |  |  |  |
| #1 models | RM1A-8B†  | DRM1A-8-8B†   | CQM/22152/3/23  |   |
| #2 models | RM2A-8B†  | DRM2A-8-8B†   | CQM/22253/3/23  |   |
| #3 models | RM3A-8B†  | -   | CQM/22354/3/23  | CQM/22354/3/26  |

† CNOMO style valves recommended

## Sandwich Regulators (valve mounts to regulator, regulator mounts to subbase)

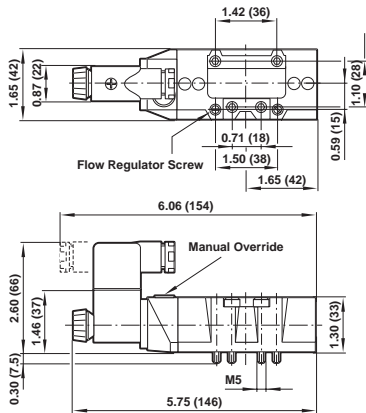
|        | Single Pressure<br>port 1 regulated | Dual Pressure<br>ports 2 & 4 | Single Pressure<br>port 2 | Single Pressure<br>Port 4 |
|--------|-------------------------------------|------------------------------|---------------------------|---------------------------|
| ISO #1 | V71020-KB1                          | V71022-KB4                   | V71022-KB2                | V71022-KB3                |
| ISO #2 | V71020-KC1                          | V71022-KC4                   | V71022-KC2                | V71022-KC3                |
| ISO #3 | V71020-KD1                          | V71022-KD4                   | V71022-KD2                | V71022-KD3                |

# ISO Star Series Valves

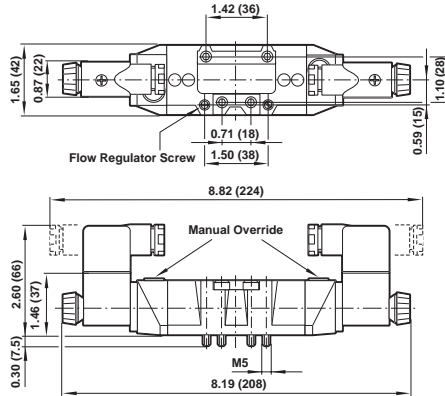
5/2 and 5/3 solenoid and air pilot actuated valves

Dimensions in inches (mm)

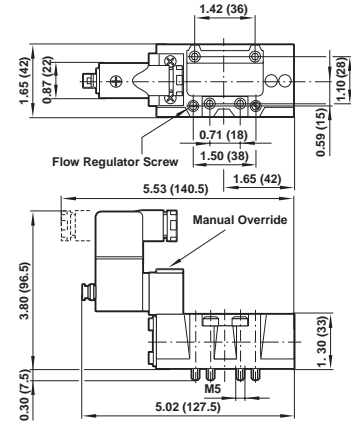
SXE 9573 – A Models  
Single End Solenoid Pilot Valves Size #1



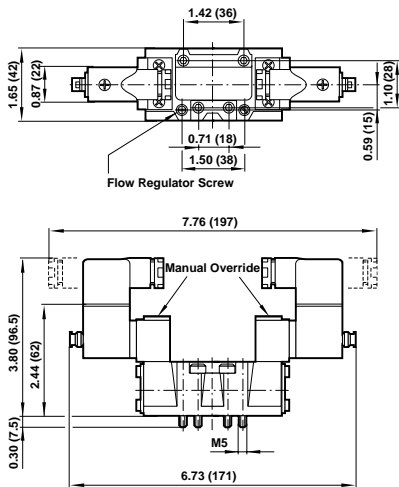
SXE 0573–A and SXE9\*73–A Models  
Double End Solenoid Pilot Valves Size #1



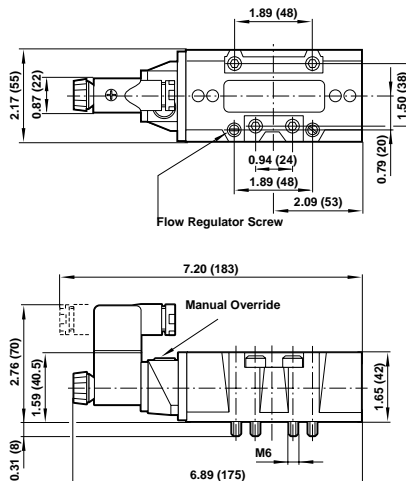
SXE 9573–Z Models  
Single CNOMO Solenoid Pilot Valves Size #1



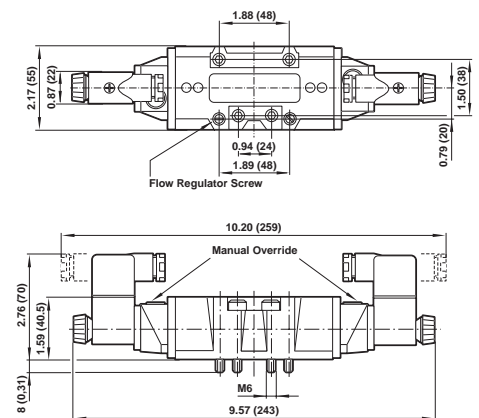
SXE 0573–Z and SXE 9\*73–Z Models  
Double CNOMO Solenoid Pilot Valves Size #1



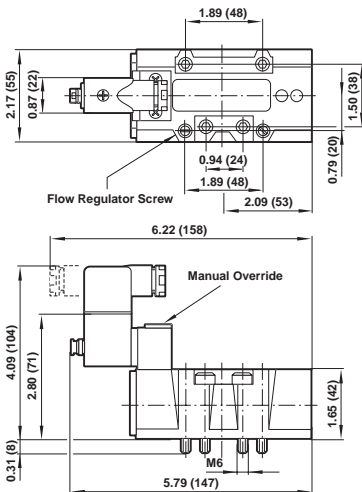
SXE 9574–A Models  
Single End Solenoid Pilot Valves Size #2



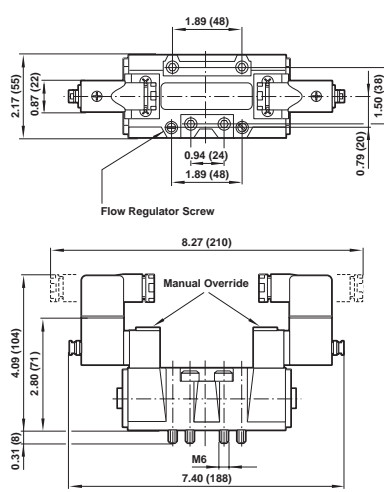
SXE 0574–A, SXE 9\*74–A Models  
Double End Solenoid Pilot Valves Size #2



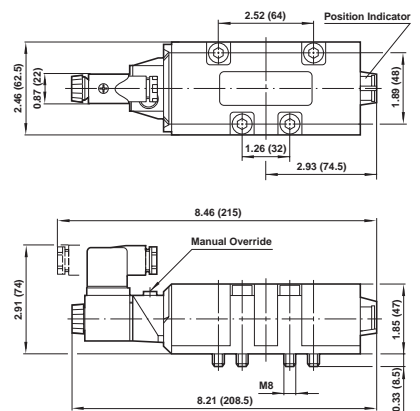
SXE 9574–Z Models  
Single CNOMO Solenoid Pilot Valves Size #2



SXE 0574–Z and SXE 9\*74–Z Models  
Double CNOMO Solenoid Pilot Valves Size #2



SXE 9575–A Models  
Single End Solenoid Pilot Valves Size #3

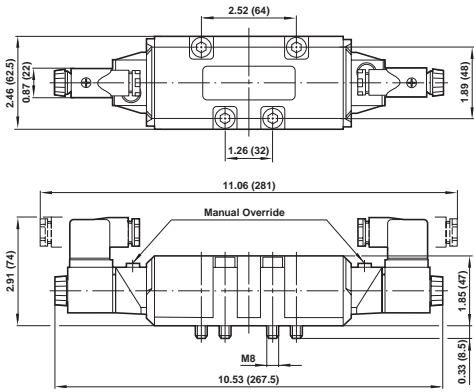


# ISO Star Series Valves

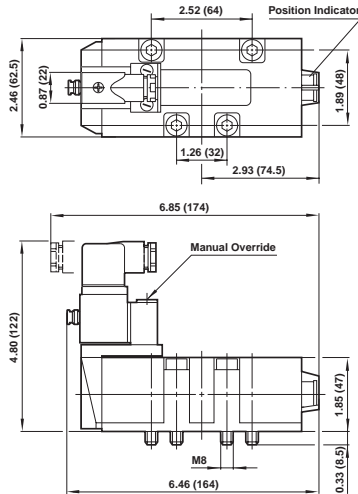
## 5/2 and 5/3 solenoid and air pilot actuated valves

Dimensions in inches (mm)

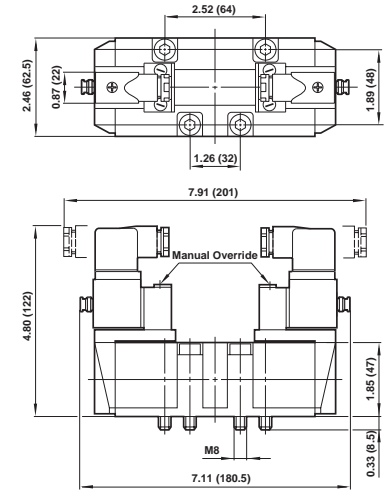
SXE 0575-A and SXE 9\*75-A Models  
Double End Solenoid Pilot Valves Size #3



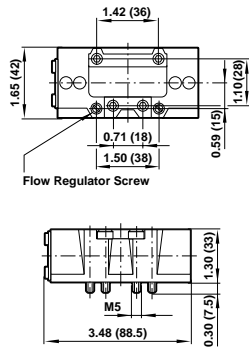
SXE 9575-Z Models  
Single CNOMO Solenoid Pilot Valves Size #3



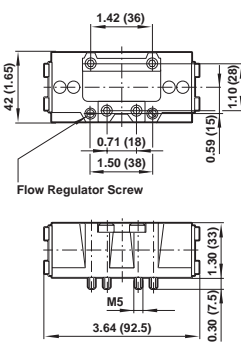
SXE 0575-Z and SXE 9\*75-Z Models  
Double CNOMO Solenoid Pilot Valves Size #3



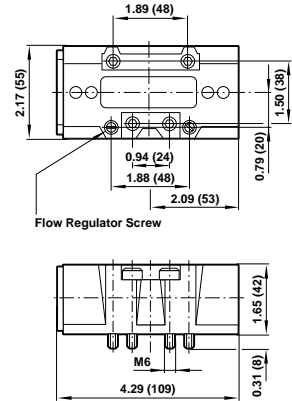
SXP 9573-1 Models  
Single Air Pilot Valves Size #1 (5/2)



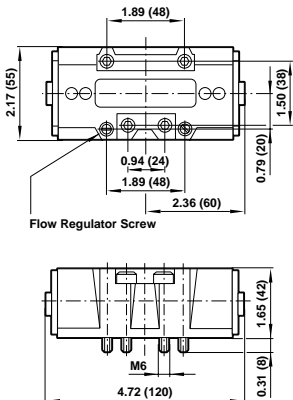
SXP 0573-1 and SXP 9\*73-1 Models  
Double Air Pilot, Spring Centered Valves  
Size #1 (5/3)



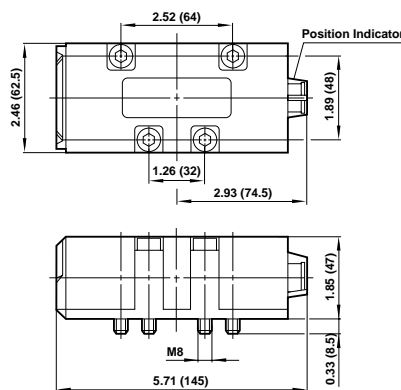
SXP \*574-1 Models  
Single and Double Air Pilot Valves Size #2 (5/2)



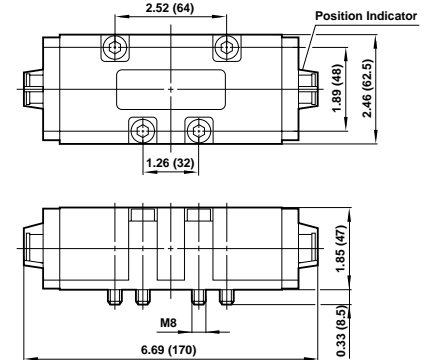
SXP 9\*74-1 Models  
Double Air Pilot, Spring Centered Valves  
Size #2 (5/3)



SXP \*575-1 Models  
Single and Double Air Pilot Valves  
Size #3 (5/2)



SXP 9\*75-1 Models  
Double Air Pilot, Spring Centered Valves  
Size #3 (5/3)



# ISO Star Series Valves

## 5/2 and 5/3 solenoid and air pilot actuated valves

SXE 9574 – A70 – 0018 J B

| Operator Type                 | Substitute |
|-------------------------------|------------|
| Solenoid pilot operated valve | SXE        |
| Air pilot operated valve      | SXP        |

| Signal Duration                             | Substitute |
|---|------------|
| Momentary (2-position double operator only) | 0          |
| Continuous                                  | 9          |

| Internal Variations   | Substitute |
|---|------------|
| 5-Port/2-position   | 5          |
| 5-Port/3-position, spring centered, all ports blocked               | 6          |
| 5-Port/3-position, spring centered, cylinder ports open to exhaust  | 7          |
| 5-Port/3-position, spring centered, cylinder ports open to pressure | 8          |

| Mounting Type   | Substitute |
|-----------------|------------|
| ISO Star Series | 7          |

| Size   | Substitute |
|--------|------------|
| Size 1 | 3          |
| Size 2 | 4          |
| Size 3 | 5          |

| Solenoid Type                    | Substitute |
|----------------------------------|------------|
| Standard solenoid pilot operator | A          |
| CNOMO solenoid pilot operator    | Z          |

| Valve Body Options |               |            |
|--------------------|---------------|------------|
| Coils              | Speed Control | Substitute |
| double solenoid    | no            | 5          |
| double solenoid    | yes           | 6          |
| single solenoid    | no            | 7          |
| single solenoid    | yes           | 8          |

| Connector  | Substitute |
|--|------------|
| No electrical connector  | A          |
| Cable grip   | B          |
| 6 ft molded cable, 0-240 V a.c./V d.c.                                   | C          |
| 6 ft molded cable, w/indicator light, surge suppression, 24V a.c./V d.c. | 5          |
| 6 ft molded cable, 110-120 V a.c./V d.c.                                 | 6          |
| Air pilot operated   | Left Blank |

| Connector Interface  | Substitute |
|--|------------|
| 22 mm coil with connector interface according to Industrial Standard | J          |
| 22 mm coil with connector interface according to DIN 43650 table "B" | L          |
| 30 mm coil with connector interface according to DIN 43650 table "A" | N          |
| No coil or air pilot operated  | Blank      |

| Solenoid Voltage              | Substitute |
|-------------------------------|------------|
| 12V d.c.                      | 2          |
| 24V d.c.                      | 3          |
| 24V 50/60 Hz                  | 4          |
| 48V 50/60 Hz                  | 6          |
| 110/120V 50/60 Hz             | 8          |
| 220/240V 50/60 Hz             | 9          |
| No coil or air pilot operated | Blank      |

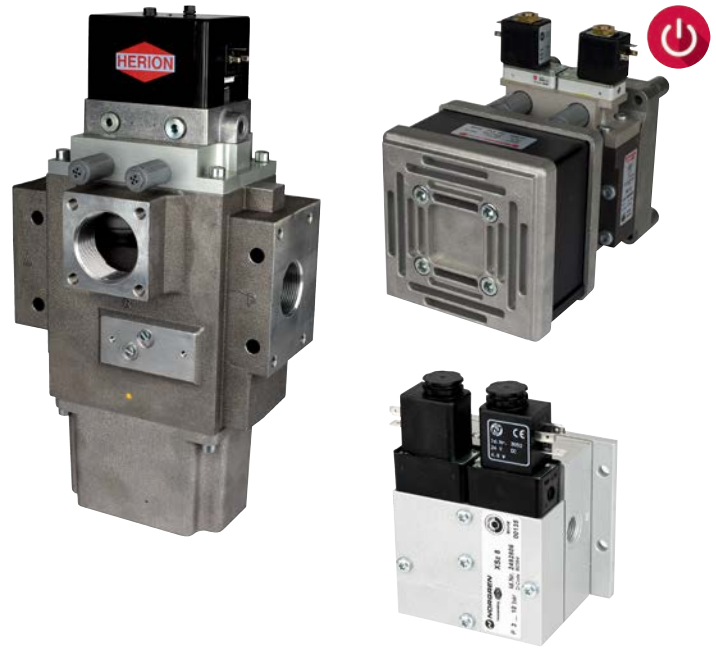
| Coil       | Substitute |
|------------|------------|
| 20 mm coil | 1          |
| 30 mm coil | 2          |

| Manual Override                | Substitute |
|--------------------------------|------------|
| Combination locking/nonlocking | 00         |
| Nonlocking                     | 01         |
| Low watt locking (CNOMO)       | 90         |

| Pilot Supply/Integral Air Return Operator | Substitute |
|---|------------|
| Internal / integral air return            | 0          |
| Internal / spring return                  | 1          |
| External / integral air                   | 5          |
| External / spring return                  | 6          |

- > 3/2-way  
 Port size:  
 G 1/4 ... G2, 1/4 ... 2 NPT
- > Double valve control system, inherently fail-safe without residual pressure
- > Dynamic self monitoring
- > For use with pneumatic clutch and brake systems and other 3-way safety functions
- > Fast exhaust capability
- > Improves safety and reduces downtime

- > With the appropriate application, performance level „e” (cat. 4) of DIN EN ISO 13849-1 is achieved for the safety function “Pressure building up from ‘1’ to ‘2’ and pressure dropping from ‘2’ to ‘3’”. DGUV and other approvals
- > Quick and easy adjustment of ‘overlap’ on mechanical presses
- > No additional electrical monitoring required



**Technical features**

**Medium:**

Compressed air, filtered ≤ 50 µm, lubricated or non-lubricated

**Suitable oils:**

Shell Tellus S2 MA 32, ExxonMobil Febis K 32 or comparable oil with DVI values < 8 (DIN ISO 1817) and ISO viscosity class 32-46 (DIN 51519)

**Operating Pressure:**

2 ... 10 bar (29 ... 145 psi)  
 For more details please see table overleaf.

**Mounting position:**

Preferably upright with solenoids on top

**Ambient/Media temperature:**

-10 ... +60°C (14 ... +140°F)  
 Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F)

**Additional equipment:**

- Soft clutch module - documentation no 5.14.320
- Soft brake module - documentation no 5.14.350
- Safety silencer - documentation no 5.14.525 and 5.14.550
- Failure indication elements - documentation no 5.14.420

**Materials:**

Body: aluminium  
 Seals: PUR, NBR

**Technical data**

**Port size: ISO G thread**

| Symbol | Series     | Pressure range |            | Flow                 |                      | Port sizes  |       |         |        | Weight (kg) | Drawing No. | Model *         |
|--------|------------|----------------|------------|----------------------|----------------------|-------------|-------|---------|--------|-------------|-------------|-----------------|
|        |            | (bar)          | (psi)      | 1 (P) » 2 (A) (m³/h) | 2 (A) » 3 (R) (m³/h) | 1 (P)       | 2 (A) | 2' (A') | 3 (R)  |             |             |                 |
|        | XSz 8 *1)  | 3 ... 10       | 43 ... 145 | 77                   | 93                   | G1/4        | G1/4  | —       | G1/4   | 1,1         | 1           | 24928063052     |
|        | XSz 8 *1)  | 3 ... 10       | 43 ... 145 | 77                   | 98                   | G1/4        | G1/4  | —       | G3/8   | 1,1         | 1           | 24928083052     |
|        | XSz 10 *2) | 2 ... 10       | 29 ... 145 | 190                  | 390                  | G1/2        | G1/2  | (G1/2)  | —      | 2,5         | 2           | 24929323052     |
|        | XSz 10 *4) | 2 ... 10       | 29 ... 145 | 190                  | 390                  | G1/2        | G1/2  | (G1/2)  | G3/4   | 2,5         | 2           | 24929303052     |
|        | XSz 20 *2) | 2 ... 8        | 29 ... 116 | 230                  | 840                  | G1/2 (G3/4) | G3/4  | G1      | —      | 4,7         | 3           | 24930320200     |
|        | XSz 20 *4) | 2 ... 8        | 29 ... 116 | 230                  | 840                  | G1/2 (G3/4) | G3/4  | G1      | G1     | 4,7         | 3           | 24930300200     |
|        | XSz 32 *2) | 2 ... 8        | 29 ... 116 | 495                  | 1800                 | G1          | G1    | G1 1/2  | —      | 7,5         | 4           | 24931050800     |
|        | XSz 32 *2) | 2 ... 8        | 29 ... 116 | 495                  | 1800                 | G1          | G1    | G1 1/2  | —      | 7,5         | 4           | 24931060800 *3) |
|        | XSz 32 *4) | 2 ... 8        | 29 ... 116 | 495                  | 1800                 | G1          | G1    | G1 1/2  | G1 1/2 | 7,5         | 4           | 24931300800     |
|        | XSz 32 *4) | 2 ... 8        | 29 ... 116 | 495                  | 1800                 | G1          | G1    | G1 1/2  | G1 1/2 | 7,5         | 4           | 24931310800 *3) |
|        | XSz 50 *4) | 2 ... 8        | 29 ... 116 | 1100                 | 3300                 | G1 1/2      | G2    | —       | G2     | 15          | 5           | 24932300800     |
|        | XSz 50 *4) | 2 ... 8        | 29 ... 116 | 1100                 | 3300                 | G1 1/2      | G2    | —       | G2     | 15          | 5           | 24932310800 *3) |

Port sizes in brackets are plugged.

\* To order please insert voltage requested for each valve. All solenoids are delivered without plugs.

\*1) XSz 8 valves are delivered with silencer.

\*2) Valves delivered with integrated silencer and without flange (R ports).

\*3) With pressure balance Model 102B100.

\*4) Valves delivered without silencer and with flange.

**Technical data**

**Port size: NPT thread**

| Symbol | Series     | Pressure range |            | Flow                 |                      | Port sizes        |         |           | Weight (kg) | Drawing No. | Model *         |
|--------|------------|----------------|------------|----------------------|----------------------|-------------------|---------|-----------|-------------|-------------|-----------------|
|        |            | (bar)          | (psi)      | 1 (P) » 2 (A) (m³/h) | 2 (A) » 3 (R) (m³/h) | 1 (P)             | 2 (A)   | 3 (R)     |             |             |                 |
|        | XSz 8 *1)  | 3 ... 10       | 43 ... 145 | 77                   | 93                   | 1/4 NPT           | 1/4 NPT | 1/4 NPT   | 1,1         | 1           | 24928053052     |
|        | XSz 8 *1)  | 3 ... 10       | 43 ... 145 | 77                   | 98                   | 1/4 NPT           | 1/4 NPT | 3/8 NPT   | 1,1         | 1           | 24928073052     |
|        | XSz 10 *2) | 2 ... 10       | 29 ... 145 | 190                  | 390                  | 1/2 NPT           | 1/2 NPT | —         | 2,5         | 2           | 24929333052     |
|        | XSz 10 *4) | 2 ... 10       | 29 ... 145 | 190                  | 390                  | 1/2 NPT           | 1/2 NPT | 3/4 NPT   | 2,5         | 2           | 24929313052     |
|        | XSz 20 *2) | 2 ... 8        | 29 ... 116 | 230                  | 840                  | 1/2 NPT (3/4 NPT) | 3/4 NPT | —         | 4,7         | 3           | 24930330200     |
|        | XSz 20 *4) | 2 ... 8        | 29 ... 116 | 230                  | 840                  | 1/2 NPT (3/4 NPT) | 3/4 NPT | 1 NPT     | 4,7         | 3           | 24930310200     |
|        | XSz 32 *2) | 2 ... 8        | 29 ... 116 | 495                  | 1800                 | 1 NPT             | 1 NPT   | —         | 7,5         | 4           | 24931070800     |
|        | XSz 32 *2) | 2 ... 8        | 29 ... 116 | 495                  | 1800                 | 1 NPT             | 1 NPT   | —         | 7,5         | 4           | 24931180800 *3) |
|        | XSz 32 *4) | 2 ... 8        | 29 ... 116 | 495                  | 1800                 | 1 NPT             | 1 NPT   | 1 1/2 NPT | 7,5         | 4           | 24931200800     |
|        | XSz 50 *4) | 2 ... 8        | 29 ... 116 | 1100                 | 3300                 | 1 1/2 NPT         | 2 NPT   | 2 NPT     | 15          | 5           | 24932200800     |
|        | XSz 50 *4) | 2 ... 8        | 29 ... 116 | 1100                 | 3300                 | 1 1/2 NPT         | 2 NPT   | 2 NPT     | 15          | 5           | 24932180800 *3) |

Port sizes in brackets are plugged.

\* To order please insert voltage requested for each valve. All solenoids are delivered without plugs.

\*1) XSz 8 valves are delivered with silencer.

\*2) Valves delivered with integrated silencer and without flange (R ports).

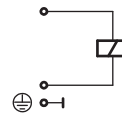
\*3) With pressure balance Model 1028100.

\*4) Valves delivered without silencer and with flange.

**Technical data – solenoids**

|                               |  |                                   |                  |
|-------------------------------|--|-----------------------------------|------------------|
| <b>Model:</b>                 | 0200, 0800, and 3052                       |                                   |                  |
| <b>Standard voltages:</b>     | 24 V d.c. and 230 V a.c., other on request |                                   |                  |
| <b>Duty cycle:</b>            | 100% ED                                    |                                   |                  |
| <b>Protection class:</b>      | IP65                                       |                                   |                  |
| <b>Electrical connection:</b> | DIN EN 175301-803 (DIN 43650), form A      |                                   |                  |
| <b>Model</b>                  | <b>Power consumption V d.c. (W)</b>        | <b>Current V a.c. Inrush (VA)</b> | <b>Hold (VA)</b> |
| 0200                          | 11   | 22                                | 15               |
| 0800                          | 16   | 50                                | 27               |
| 3052                          | 4,8  | 12                                | 8,5              |

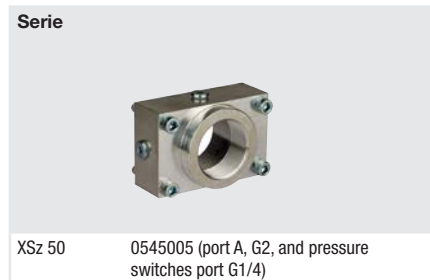
**Circuit diagram**



**Accessories**

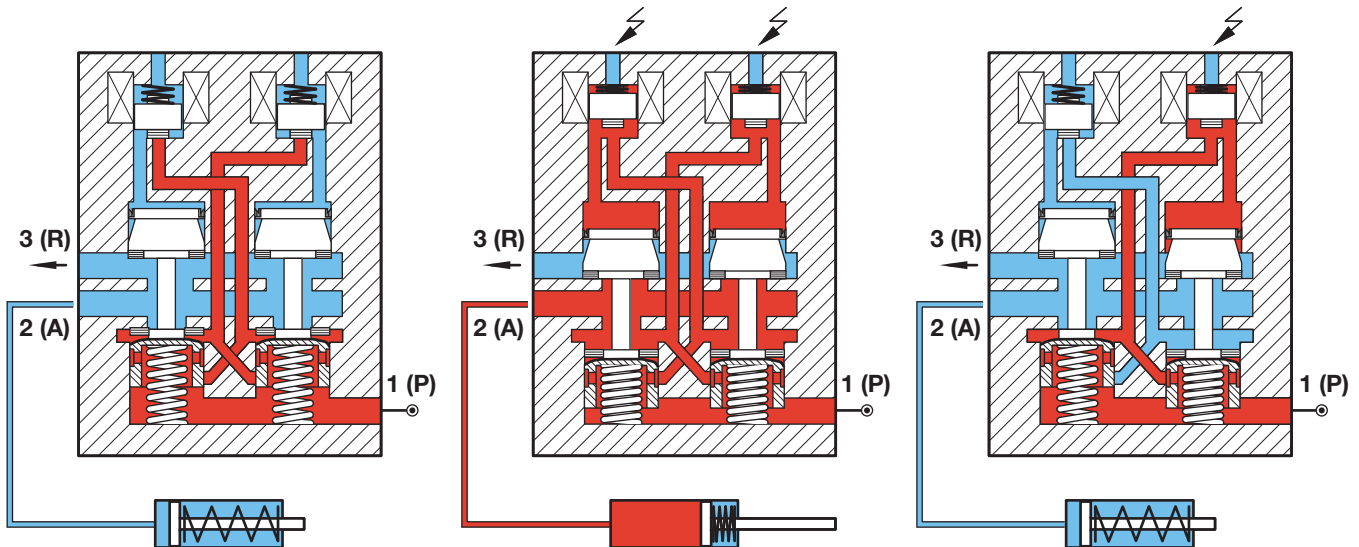
| Series | Connector<br>DIN EN 175301-803 | Silencer                           | Integrated silencer | Integrated silencer | High efficiency silencer |
|--------|--------------------------------|------------------------------------|---------------------|---------------------|--------------------------|
| XSz 8  | 0680003                        | MB002B (G 1/4), MB003B (G 3/8)     | —                   | —                   | —                        |
| XSz 8  | 0680003                        | MB002A (1/4 NPT), MB003A (3/8 NPT) | —                   | —                   | —                        |
| XSz 10 | 0680003                        | —                                  | 0016422             | —                   | 0016420                  |
| XSz 20 | 0570275                        | —                                  | —                   | 0016622             | 0016520                  |
| XSz 32 | 0570275                        | —                                  | —                   | 0016622             | 0016620                  |
| XSz 50 | 0570275                        | —                                  | —                   | —                   | 0016720                  |

Caution: the safety is related to the quality of the silencer, use only Norgren original silencers



**Spare parts**

| Series | Model (G-thread) | Model (NPT-thread) | Spare parts kits | Spare valve without base |
|--------|------------------|--------------------|------------------|--------------------------|
| XSz 8  | 24928063053      | 24928053053        | 0101534          | 2493805                  |
| XSz 10 | 24929323053      | 24929333053        | 0110641          | 2493930                  |
| XSz 20 | 24930320201      | —                  | 0110649          | 2494030                  |
| XSz 20 | —                | 24930330201        | 0110649          | 2494030                  |
| XSz 32 | 24931050801      | 24931070801        | 0558631          | 2494130                  |
| XSz 32 | 24931060801      | 24931180801        | 0558631          | 2494131                  |
| XSz 50 | 24932300801      | 24932200801        | 0542576          | —                        |
| XSz 50 | 24932310801      | 24932180801        | 0542576          | —                        |


**Solenoids de-energized:**

A port is exhausted. P port is closed, no connection from P to A. No residual pressure on port A as port A is freely exhausted through port R. No acting pressure on port A.

**Solenoids energized:**

Pilots are synchronously energised. Connection from port P to A. Working pressure on A. No passage from P to R. Dynamic self monitoring of both pilot systems, checking each other at each cycle for proper functioning.

**Malfunction:**

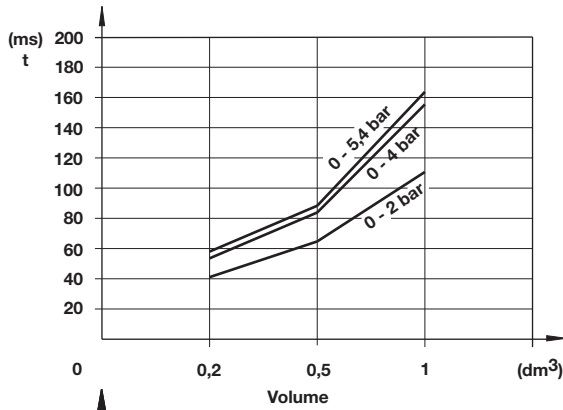
Pilots non-synchronously energised. Dynamic monitor notices failure operation and prevents the pistons from giving connection from P to A. Synchronously port A exhausts through R. No residual pressure remains in the system since P and A are not connected. The pilot line has lost the pressure and is locked.

1 (P) = Air pressure port / 2 (A) = Power port (clutch / brake) / 3 (R) = Exhaust

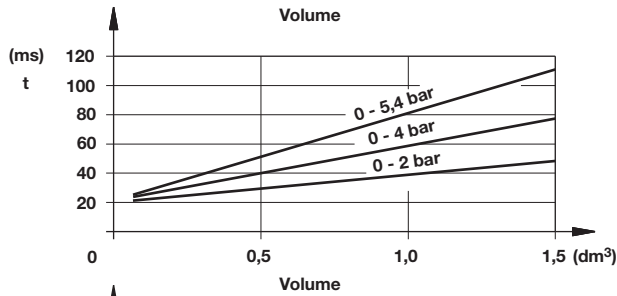
Norgren XSz Safety valves comply with the Category IV of DIN EN ISO 13849-1, if the operating system has been designed and realised according to Category IV.

**Pressurisation**

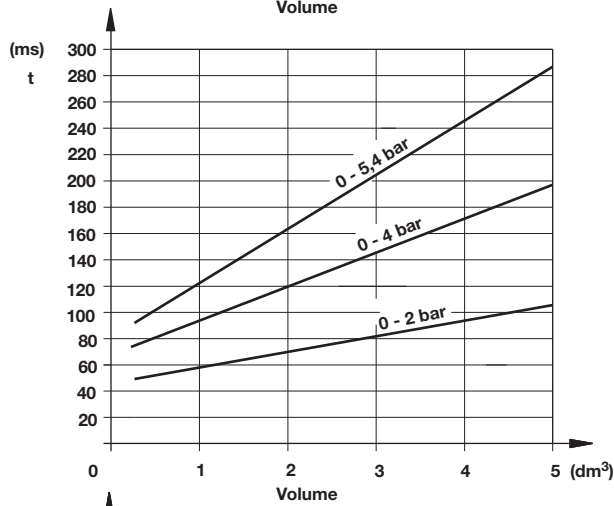
**XSz 8**



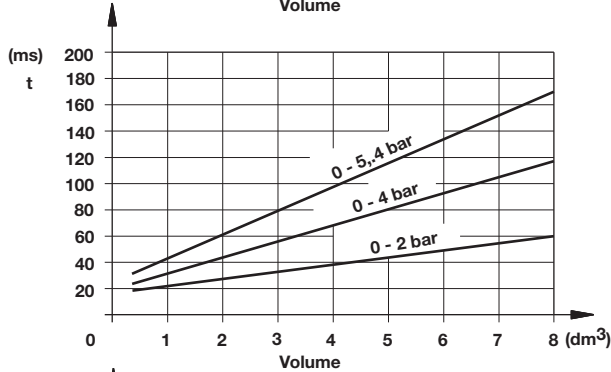
**XSz 10**



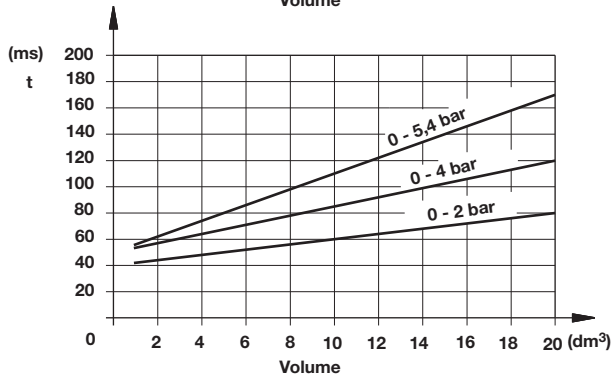
**XSz 20**



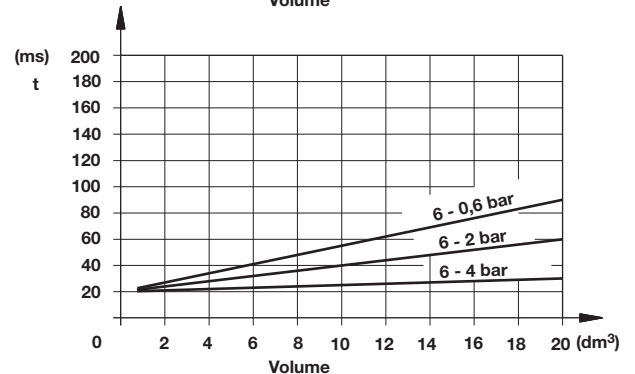
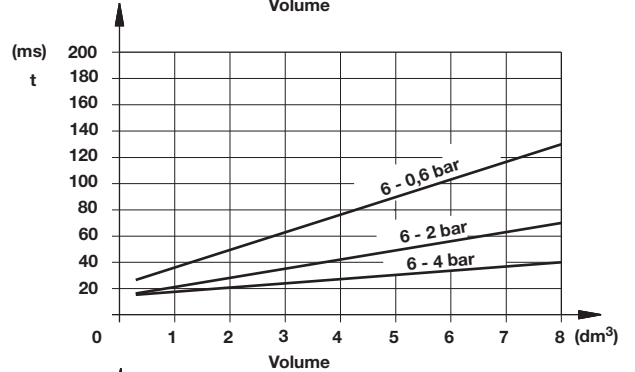
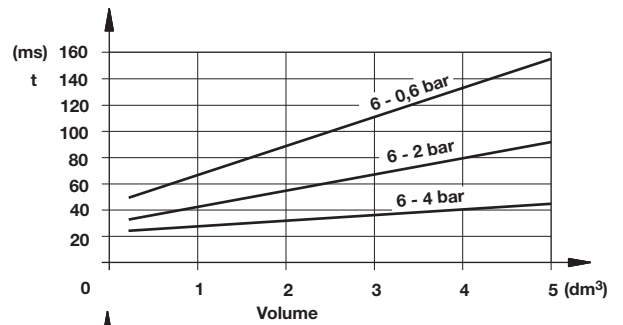
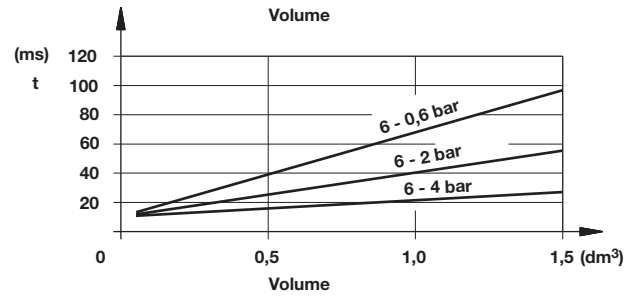
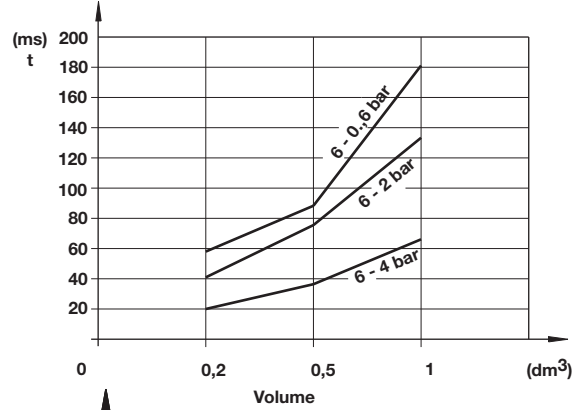
**XSz 32**



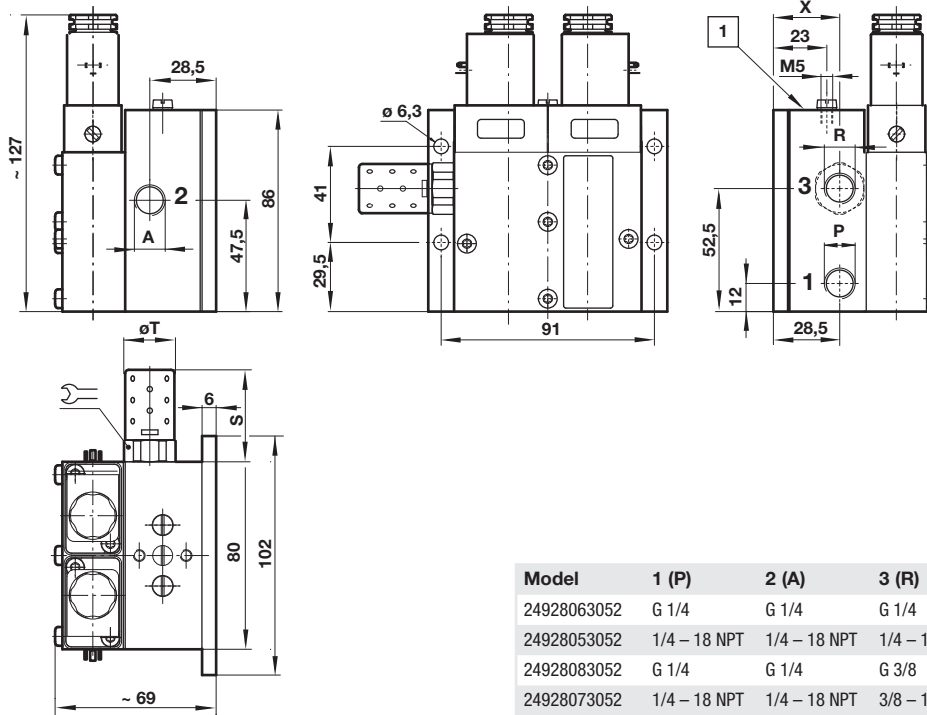
**XSz 50**




**Depressurisation without silencer**



**Drawings**
**1**
**XSz 8 - with silencer**

 Dimensions in mm  
 Projection/First angle


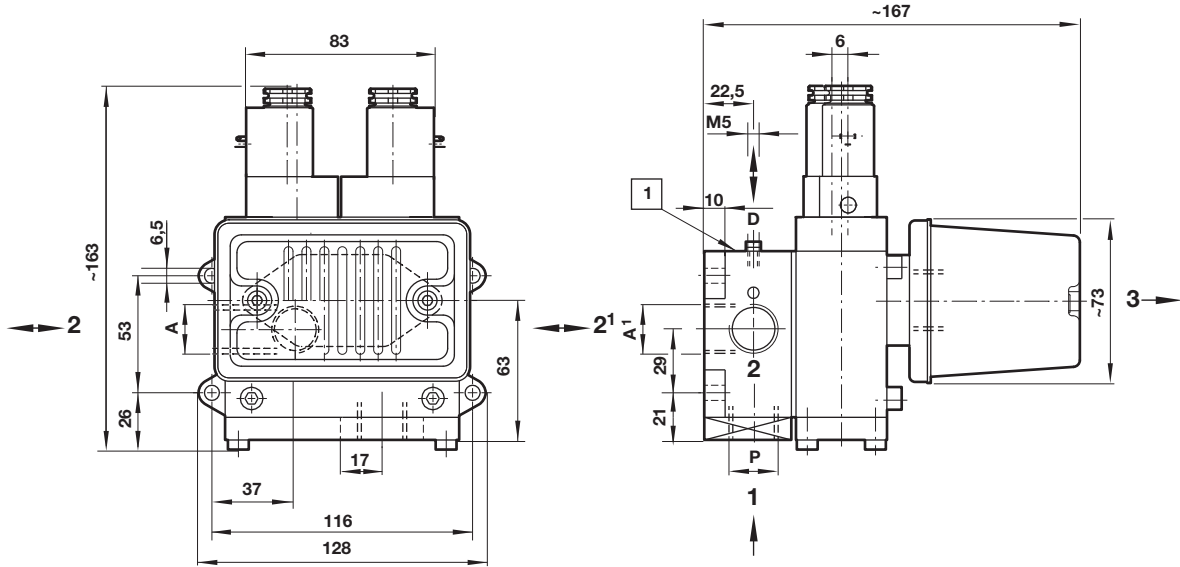
| Model       | 1 (P)        | 2 (A)        | 3 (R)        | S  | øT | X    |  |
|-------------|--------------|--------------|--------------|----|----|------|--|
| 24928063052 | G 1/4        | G 1/4        | G 1/4        | 42 | 21 | —    | 21   |
| 24928053052 | 1/4 - 18 NPT | 1/4 - 18 NPT | 1/4 - 18 NPT | 42 | 21 | —    | 21   |
| 24928083052 | G 1/4        | G 1/4        | G 3/8        | 75 | 32 | 26,5 | 32   |
| 24928073052 | 1/4 - 18 NPT | 1/4 - 18 NPT | 3/8 - 18 NPT | 75 | 32 | 26,5 | 32   |

**1** Flange surface for pressure switch and failure indicator unit

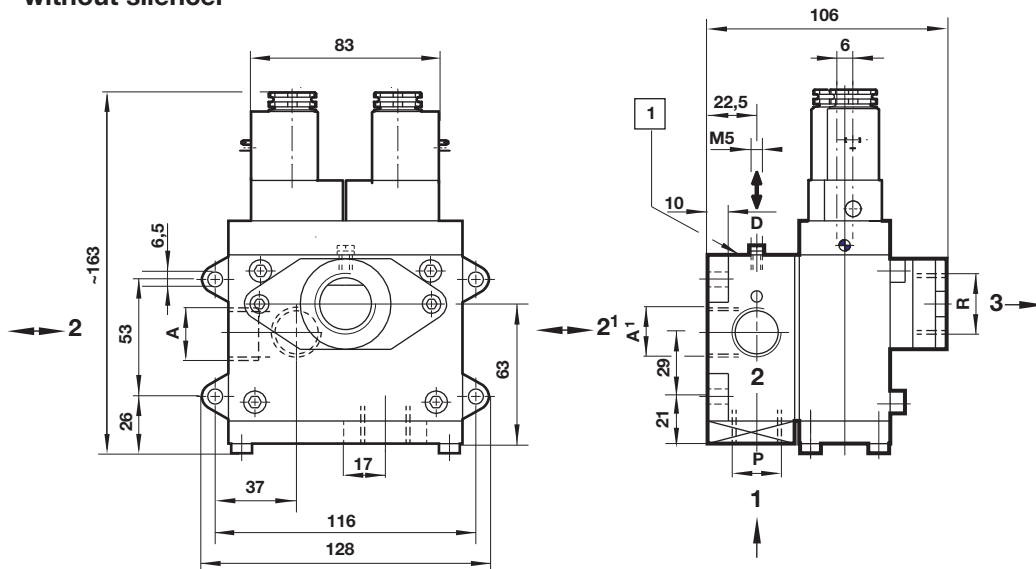
**2**

**XSz 10 - with silencer**

Dimensions in mm  
 Projection/First angle



**XSz 10 - without silencer**



**1** Flange surface for pressure switch and failure indicator unit

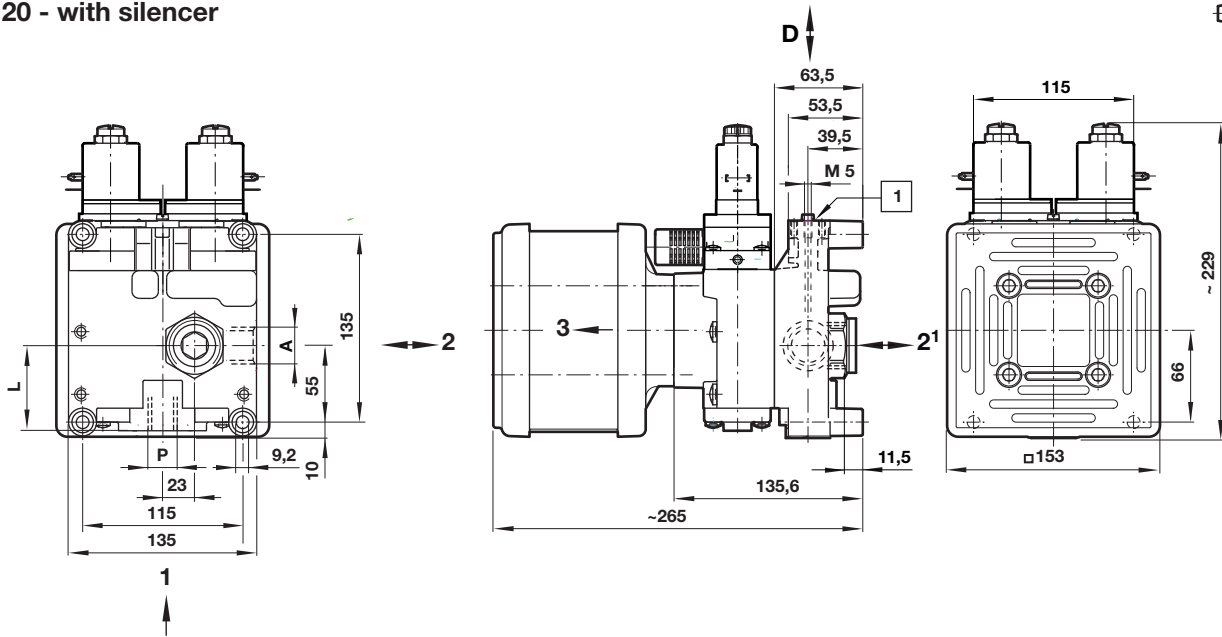
| Model       | 1 (P)   | 2 (A)   | 2' (A') | 3 (R)   |
|-------------|---------|---------|---------|---------|
| 24929323052 | G1/2    | G1/2    | G1/2 *  | —       |
| 24929333052 | 1/2 NPT | 1/2 NPT | —       | —       |
| 24929303052 | G1/2    | G1/2    | G1/2 *  | G3/4    |
| 24929313052 | 1/2 NPT | 1/2 NPT | —       | 3/4 NPT |

\* closed

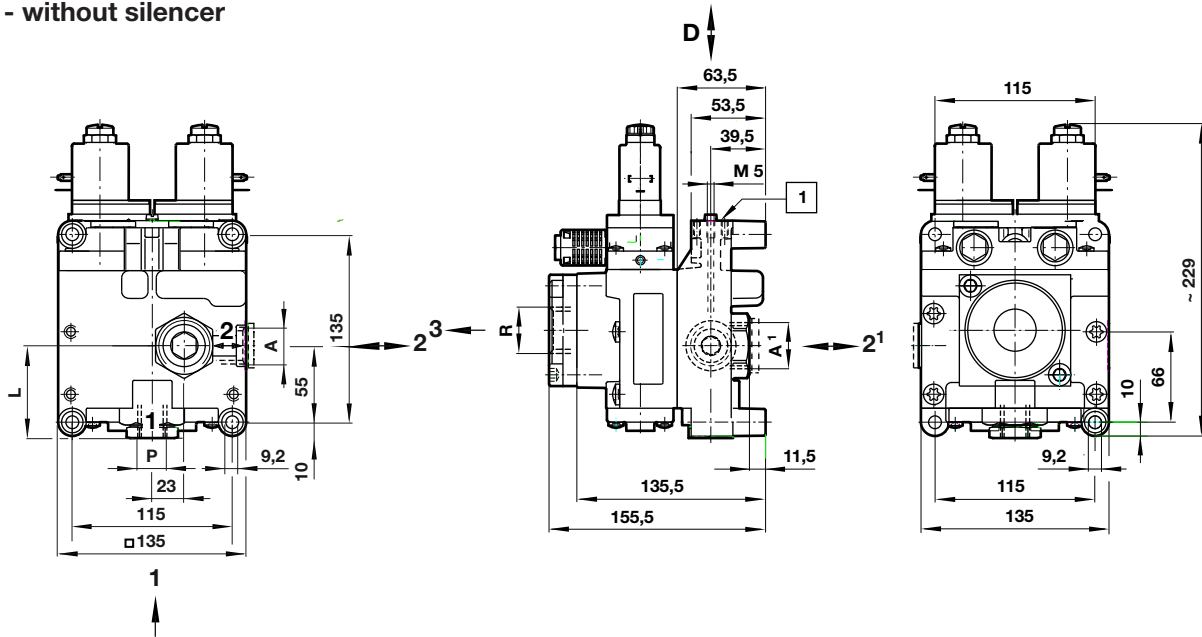
**3**

**XSz 20 - with silencer**

Dimensions in mm  
Projection/First angle



**XSz 20 - without silencer**



**1** Flange surface for pressure switch and failure indicator unit

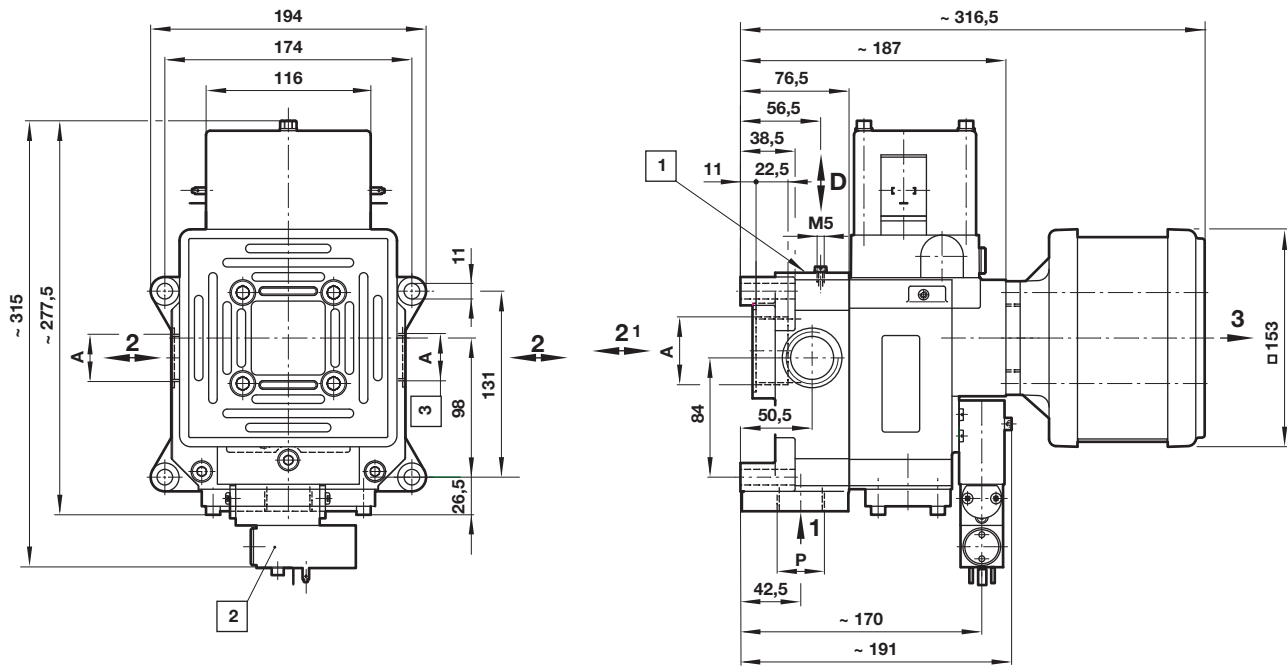
| Model       | 1 (P)         | 2 (A)   | 2' (A') | 3 (R) | L         |
|-------------|---------------|---------|---------|-------|-----------|
| 24930320200 | G 1/2 (G 3/4) | G 3/4   | G 1     | —     | 66,5 (57) |
| 24930330200 | 1/2 (3/4) NPT | 3/4 NPT | —       | —     | 77 (57)   |
| 24930300200 | G 1/2 (G 3/4) | G 3/4   | G 1     | G 1   | 66,5 (57) |
| 24930310200 | 1/2 (3/4) NPT | 3/4 NPT | —       | 1 NPT | 77 (57)   |

4

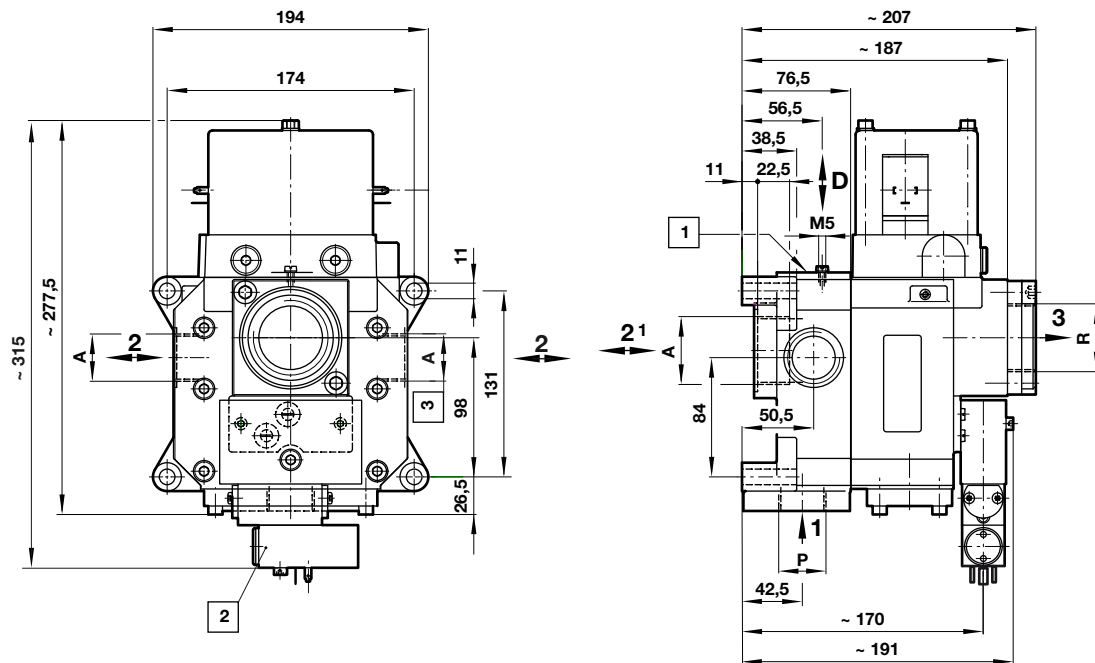
Dimensions in mm  
Projection/First angle



XSz 32 - with silencer and pressure balance



XSz 32 - without silencer, with pressure balance



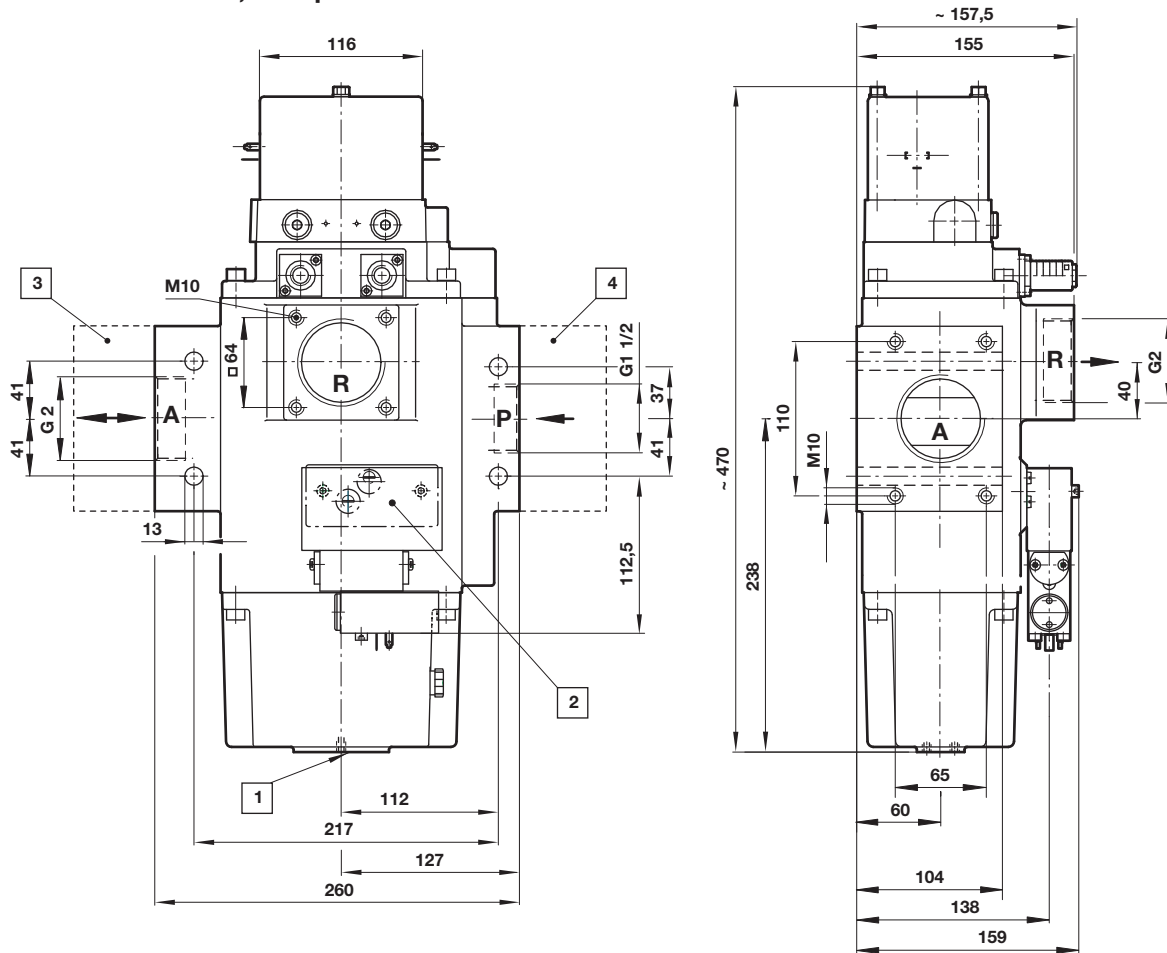
- 1 Flange surface for pressure switch and failure indicator unit
- 2 Pressure balance
- 3 ISO G thread only

| Model       | 1 (P)        | 2 (A)        | 2' (A') | 3 (R)        |
|-------------|--------------|--------------|---------|--------------|
| 24931060800 | G1           | G1           | G1 1/2  | —            |
| 24931310800 | G1           | G1           | G1 1/2  | G1 1/2       |
| 24931300800 | G1           | G1           | G1 1/2  | G1 1/2       |
| 24931050800 | G1           | G1           | G1 1/2  | —            |
| 24931180800 | 1 - 11.5 NPT | 1 - 11.5 NPT | —       | —            |
| 24931070800 | 1 - 11.5 NPT | 1 - 11.5 NPT | —       | —            |
| 24931200800 | 1 - 11.5 NPT | 1 - 11.5 NPT | —       | 1 - 11.5 NPT |

**5**

**XSz 50 - without silencer, with pressure balance**

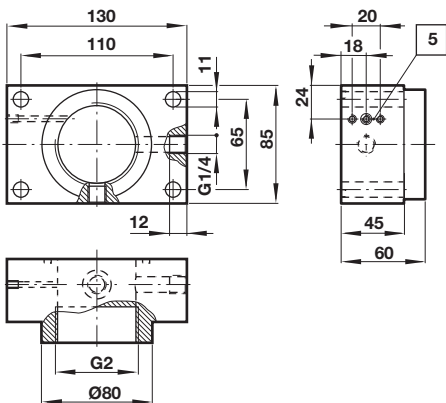
Dimensions in mm  
Projection/First angle



- 1 Flange surface for pressure switch and failure indicator unit
- 2 Pressure balance
- 3 Flange surface for 18D pressure switch

**Flange**

Model: 0545005 (for position 3)



For external indication (e.g. visual, electrical or acoustic signal) of a malfunction, the installation of a failure indication element is recommended. Such an element is not necessary to fulfil the safety function of the valve. (For further information please see the corresponding data sheet no. 5.14.420).

A suitable air treatment unit (dehydration, filtration, lubrication) must be connected upstream of pressure port 1(P). Lubrication can only be omitted if the connected consuming device and all additional equipment is suited for oil-free operation.

Degree of filtration: 50 µm. The lubrication should be adjusted to supply only enough oil to form a film on the valve spool and bore. Excessive lubrication may cause a build-up of oil in the pilot lines and cause sluggish operation of the valves. The size of pressure regulator, lubricator and filter must be consistent with the inlet port size. An accumulator tank is recommended between the pressure regulator and safety valve. The operating pressure must not drop below 2 bar and the use of a pressure switch is suggested. Safety valves must be installed as close as possible to the clutch and brake.

Caution: Non controllable elements such as quick exhaust valves, nozzles, non return valves, etc. must not be mounted between safety

valve and clutch brake. It is the responsibility of the purchaser and/or installer of the Norgren safety valves to make sure that the valve and all other components comply with all relevant national regulations and the specifications of the local safety associations.

The valves should be checked at intervals depending on the loads to which they are subjected, at least, however, once a year. The relevant tests must be carried out according to the corresponding operation and maintenance instructions of the unit and the local safety regulations. In case of malfunctions the unit has to be tested and/or replaced immediately. Repairs and maintenance must only be carried out by the after-sales service of the valve manufacturer or by a qualified engineer trained by the valve manufacturer. Important for use at presses: The combination with the electrical press control must meet the DIN EN ISO 13849-1 requirements. If two separate valves are used to control the clutch and brake, please observe data sheet no. 5.14.420.

All liability is denied for unauthorised modification of the units, installation or usage not in accordance with the manual, the local safety requirements and the principles of DIN EN ISO 13849-1.

## Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under

### »Technical features/data«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult IMI NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

# VP50

## Proportional Pressure Control Valve

**Air piloted proportional pressure control valve**

**Fully user adjustable for a wide range of applications**

**High speed**

**Lower power consumption**

**High flow capacity**

**Optional manifold mount utilizes the ISO Size 2 subbase**

### Technical Data

Medium:

Compressed air, filtered to 40micron, non-lubricated

Operation:

Proportional, direct acting air piloted spool

Output Pressure:

See website

Supply Pressure:

200 psig (14 bar) max

Supply Sensitivity:

Better than 0.75% span output change per bar supply pressure change

Flow Capacity:

Up to 50 scfm (1400 NI/min)

Response Time:

< 80 mS (from 10-90% of output pressure into a 0.1 litre load)

Air Consumption:

< .177 scfm (5 l/min)

Port Size:

1/4 PTF (G1/4)

Total Error:

Max. error < ±1% of span (independent error includes the combined effect of non-linearity, hysteresis, deadzone and repeatability)

Operating Temperature:

23° to 120°F (-5° to 50°C)

Temperature Effect:

Typically better than 0.03% of span/°C for span and zero over operating range

Degree of protection:

NEMA 4 (IP65) in normal operation

Vibration Immunity:

< 3% output shift for 3g 10-2000Hz

Mounting Position:

Any screw mounting or manifold mount



| Part Number*   | Pressure Range and Input Signal Options | Output Pressure in | Port Size |
|----------------|---|--------------------|-----------|
|                | Control Signal                          | psig (bar)         |           |
| VP5010PK111H00 | 0-10V                                   | 0-145 ( 0-10)      | 1/4" PTF  |
| VP5010PK411H00 | 4-20mA                                  | 0-145 ( 0-10)      | 1/4" PTF  |
| VP5006PK111H00 | 0-10V                                   | 0-90 ( 0-6)        | 1/4" PTF  |
| VP5006PK411H00 | 4-20mA                                  | 0-90 ( 0-6)        | 1/4" PTF  |
| VP5002PK111H00 | 0-10V                                   | 0-30 ( 0-2)        | 1/4" PTF  |
| VP5002PK411H00 | 4-20mA                                  | 0-30 ( 0-2)        | 1/4" PTF  |

\* To specify regulator calibration in BAR use "B" in the 7th position For 1/4" ISO G ports use "J" in the 8th position.

To order the VP50 with interface for manifold mounting, indicate an "X" in the 8th position of the part number.

All units shipped with M12 five pin electrical connector

### Electrical information

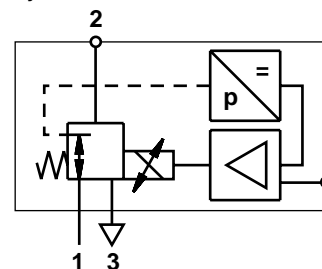
|                                 |  |
|---------------------------------|--|
| Electromagnetic Compatibility   | CE marked: conforms to E.C. requirements EN 50081-2 (1994) and EN 50082-2 (1995) |
| Electrical Input Signal         | 4-20mA or 0-10V factory set  |
| Electrical Power Input          | 24V dc ±25% (power consumption < 1W)   |
| Output Pressure Feedback Signal | 0-10V full range   |
| Connections                     | DIN 43650 or Brad Harrison connection for feedback output                        |

Material of Construction:

Aluminium body, zinc diecast lid and end cover

Weight: 1.76 lbs. (800g) approx

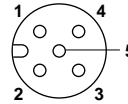
Symbol



# VP50

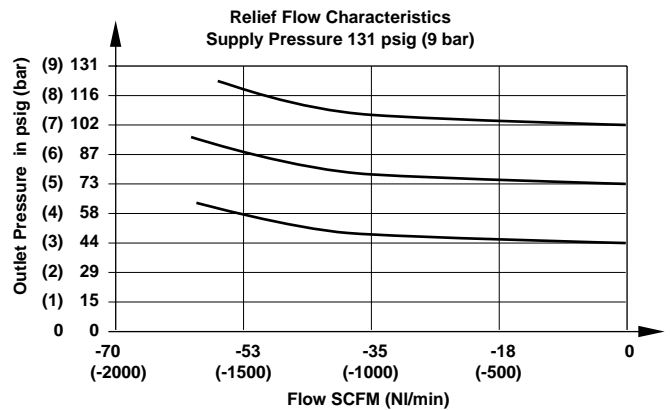
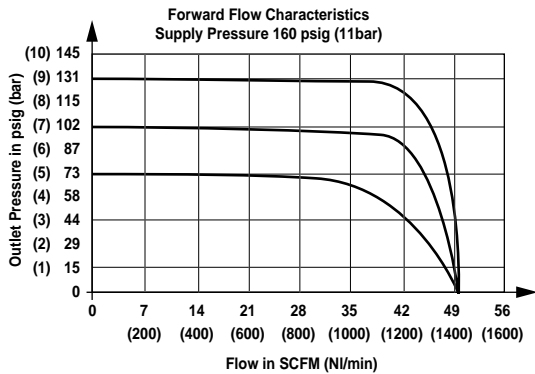
## Proportional Pressure Control Valve

### Instrument pin configuration



- 1 +24V d.c. supply
- 2 0-10 full range
- 3 Control signal (+ve)
- 4 Common (DC supply, signal and feedback return)
- 5 Chassis (earth)

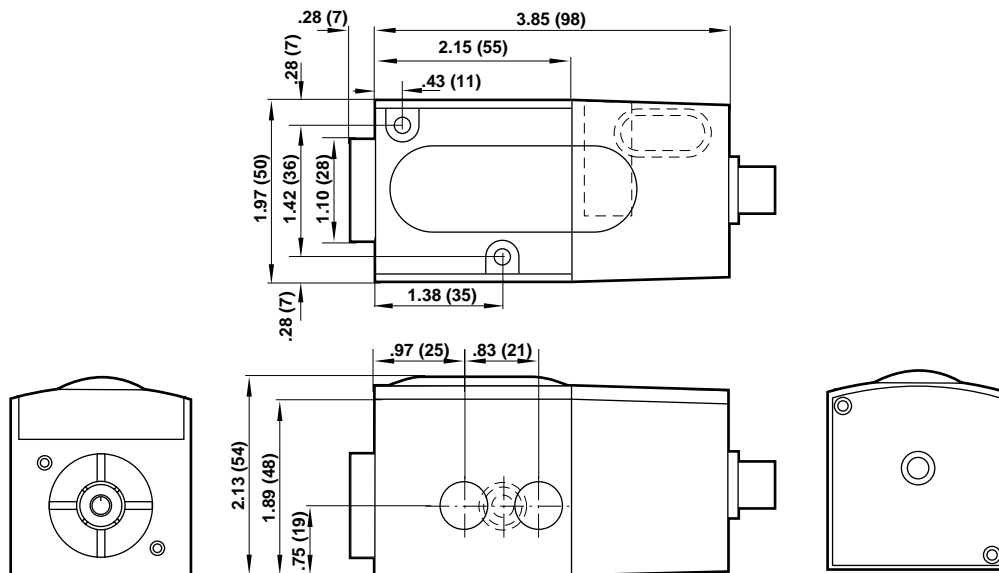
### Characteristic Curves



### Accessories

| Designation           | Specification  | Type     |
|-----------------------|--|----------|
| Connectors with cable | M12 x 1.5 pin; 16 ft (5m) 5 x 0.34 mm <sup>2</sup>   | 0250081  |
|                       | M12 x 1.5 pin; 30 ft (10 m) 5 x 0.34 mm <sup>2</sup> | 0250472  |
| Manifold Mounting Kit | Interface plate, gasket, mounting screws             | 53ZZ5M00 |

NOTE: Refer to website to select an ISO 2 size base and accessories.



Dimensions in inches (mm)