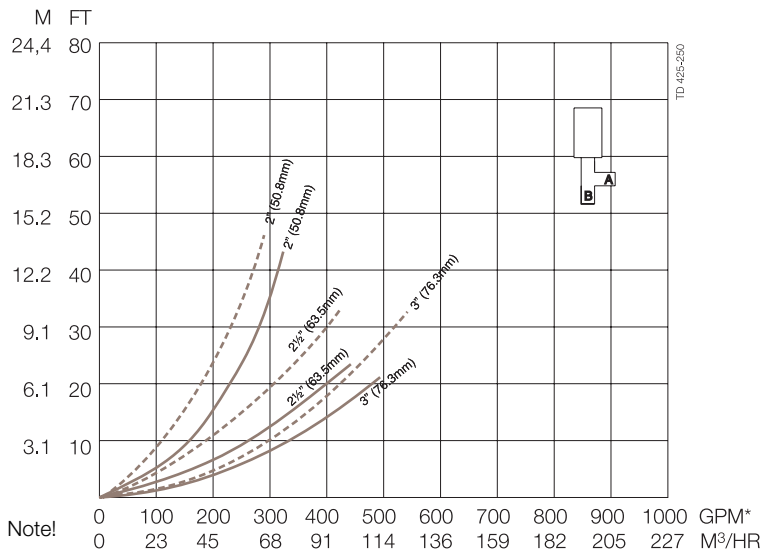




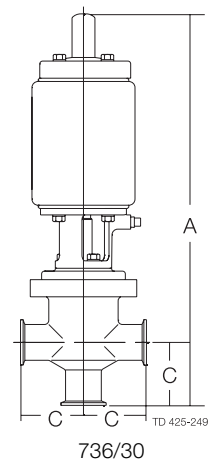
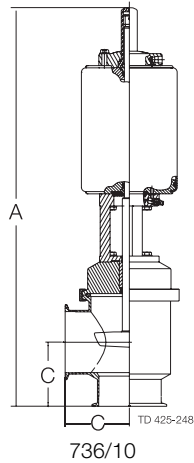
## Pressure drop/capacity diagrams

### Shut-Off Valve

Flow Pattern: B to A (Solid Curve), A to B (Broken Curve)



## Installed dimensions



### 736 Shut-Off Valves

| Valve Size (Tube OD) | A     |        |       |        | C    |       |
|----------------------|-------|--------|-------|--------|------|-------|
|                      | Short |        | Long  |        | inch | mm    |
|                      | inch  | mm     | inch  | mm     |      |       |
| 2-inch               | 17.32 | 440.00 | 21.25 | 540.00 | 3.50 | 89.00 |
| 2½-inch              | 17.56 | 446.00 | 21.53 | 547.00 | 3.50 | 89.00 |
| 3-inch               | 18.06 | 459.00 | 22.03 | 560.00 | 3.75 | 95.00 |

## Actuator function

- Pneumatic downward movement, spring return (NO)
- Pneumatic upward movement, spring return (NC)
- Pneumatic upward and downward movement (A/A),
- Actuator for intermediate position of the valve plug as option

### Type 20 (Normally-Closed)

#### Shut-off valve holding pressures (Standard)\*\*

| Short Stroke Actuator (Standard*) |           |        |               | Long Stroke Actuator (Standard*) |        |               |
|-----------------------------------|-----------|--------|---------------|----------------------------------|--------|---------------|
| Size                              | Elastomer | "TR"   | Stroke Length | Elastomer                        | "TR"   | Stroke Length |
| 2-inch                            | 95 psi    | 95 psi | 1"            | 95 psi                           | 95 psi | 2"            |
| 2½-inch                           | 60 psi    | 60 psi | 1"            | 65 psi                           | 60 psi | 2"            |
| 3-inch                            | 45 psi    | 45 psi | 1"            | 37 psi                           | 30 psi | 2"            |

\* 4½" diameter actuator is standard on the 1"-3" valves. A 6" diameter actuator is supplied with the 4" valve. The 6" diameter actuator is available, as a heavy duty option, for the 3" valve.

\*\* On a standard actuator it takes 30 psi to offset the spring force when fully extended and 60 psi to fully compress the spring.

### Type 20 (Normally-Closed)

#### Optional "HP" high pressure actuator. (6" diameter actuator)

| Short Stroke Actuator (Standard*) |           |         |               | Long Stroke Actuator (Standard*) |         |               |
|-----------------------------------|-----------|---------|---------------|----------------------------------|---------|---------------|
| Size                              | Elastomer | "TR"    | Stroke Length | Elastomer                        | "TR"    | Stroke Length |
| 2½-inch                           | 120 psi   | 120 psi | 1"            | 155 psi                          | 120 psi | 2"            |
| 3-inch                            | 105 psi   | 100 psi | 1"            | 110 psi                          | 105 psi | 2"            |

## Actuator Air Supply Specifications

See chart below for minimum air pressure requirements.

Maximum air pressure is 100 psi (normal).

Air volume required is identified by the length of the stroke.

| Valve Size              | Stroke (inch) | Volume (cu. in.) |
|-------------------------|---------------|------------------|
| 2 - 3-inch short stroke | 1             | 14.80            |
| 2 - 3-inch long stroke  | 2             | 29.50            |

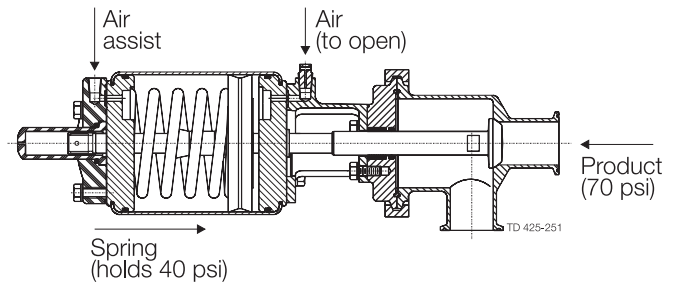
Lubricated air is not required. Filtered air and a pressure regulator valve are required.

## Additional Holding Pressure

Additional air supply must be relieved when product pressure is not present. Failure to do so will result in pressure damage to the seat. When using additional air loading it should exceed the minimum required by no more that 3 to 5 psig.

Example: A customer has an application for a 3" valve that is required to hold 70 psi product pressure with an elastomer (Buna). The valve without an air assist will hold 40 psi. An additional holding force to overcome 30 psi (70 psi-40 psi) is needed. Since the ratio is 5:10 (air-to-product pressure ratio) a 15 psi air assist is needed.

**Note:** Since it takes 60 psi to fully stroke the valve without air assist, it will take 75 psi to open the example. (60 psi+15 psi)



| Valve Size | Air to Product Pressure Ratio | Max Recommended Air Assist | Max. Product Holding Pressure |
|------------|-------------------------------|----------------------------|-------------------------------|
| 2-inch     | 02:10                         | 10                         | 150                           |
| 2½-inch    | 03:10                         | 20                         | 100                           |
| 3-inch     | 05:10                         | 35                         | 100                           |

**Description code**

|     |    |   |     |   |   |      |    |   |   |
|-----|----|---|-----|---|---|------|----|---|---|
| 736 | TR | X | 29L | 2 | U | 316L | 14 | 4 | 0 |
| 1   | 1A | 2 | 3   | 4 | 5 | 6    | 7  | 8 | 9 |

**1 MODEL**  
736 761 / 361 Swap Valve

**6 Valve-Body Material**  
316L All Wetted Parts

**1A Stem**  
None Elastomer (3A)  
TR PTFE Replaceable (3A)  
TR2 PTFE Replaceable (3A)

**7 Switches - Solenoid**

|                       | No Solenoid | 24 (VDC) | 110 VAC | 24 VAC |
|-----------------------|-------------|----------|---------|--------|
|                       | Norm        | Norm     | Norm    | Norm   |
| Mechanical (Qty. 1)   | 02          | 14       | 16      | 39     |
| (VAC/VDC) (Qty. 2)    | 04          | 18       | 20      | 40     |
| Proximity (Qty. 1)    | 10          | 30       | 32      | 43     |
| (VAC/VDC) Qty. 2)     | 12          | 34       | 36      | 44     |
| No switches/Sol. Only |             | 37       | 38      | 45     |

**2 BODY/PORT\* LINE**  
Body config. not applicable

**3 Actuators\***  
10 Normally Open Piston  
19 Normally Open With Switches  
20 Normally Closed Piston  
29 Normally Closed with Switches  
30 Air-To-Air Piston  
\*L=Long Stroke S=Short Stroke: 700 series only  
HP=High Pressure: 2½" (63.5mm) - 3" (std. 4") only

**8 SETUP #**

**Chart A**

| Description   | Setup # |
|---|---------|
| No solenoid normally open or normally closed valve        | 1       |
| Normally open valve closes when solenoid is de-energized  | 2       |
| Normally closed valve opens when solenoid is de-energized | 3       |
| Normally closed valve opens when solenoid is energized    | 4       |
| Normally open valve closes when solenoid is energized     | 5       |
| Air both ways, normally closed                            | 6       |

**4 Size**  
in. mm  
2 50.8  
2 ½ 63.5  
3 76.2

**5 ELASTOMER**  
U Buna  
E EPDM  
SFY Fluoroelastomer

**9 SPECIAL OPTIONS**  
Customer description required.

TD 759-001