The Industry Standard - 300 to 700 conversion valve

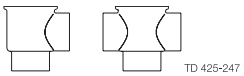
736 "Swap" Valve

Application
The 736 "swap" valve is used to convert existing "welded in" Tri-Clover 361 series shut off valves into a version of the Tri-Clover 700 series valve. This conversion provides an upgrade to all features and benefits of the Tri-Clover 700 series, without cutting or welding.

Working principle
The valve is remote-controlled by means of compressed air. It has few and simple moveable parts which results in a very reliable valve.

Standard Design
Like all 700 series valves, the 736 valve is designed to deliver years of reliable performance. Utilizing a specially designed bonnet, it's easy to replace existing 300 series Shut-off valves. Simply remove the body-bonnet clamp, pull the 300 series components (from stem to the actuator) out of the existing 300 series valve body, replace with the 736 "swap" valve and gasket, and reattach with the provided body-bonnet clamp. The 736 valve design utilizes all 761 valve spares and features including ThinkTop and GreenTop indication units, TR2, and LP elastomer stems, with high-pressure and "sealed-for-life" reversible actuators.

Applicable to valve body combinations



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Technical data

Max. product pressure:	depends on valve specifications and size (contact Alfa Laval)
Temperature range	200° F to 284° F (EPDM)
Air pressure:	60-80 PSI

Materials

Product wetted steel parts:	Stainless steel AISI 316L
Finish:	32 Ra Standard
Other steel parts:	Stainless steel AISI 304
Plug stem	Buna bonded or "TR"/"TR2" PTFE replaceable, TR2
Product wetted seals	Buna

736 "Swap" Valve

Options
Equipment

- Control and indication (Control Top or ThinkTop®)
- High pressure actuator for 2½" and 3" size
- Three Position Actuator (80)
- Long stroke actuator

Material grades

- Molded elastomers of EPDM or SFY
- O-rings and seals of EPDM or SFY (Flouroelastomer)

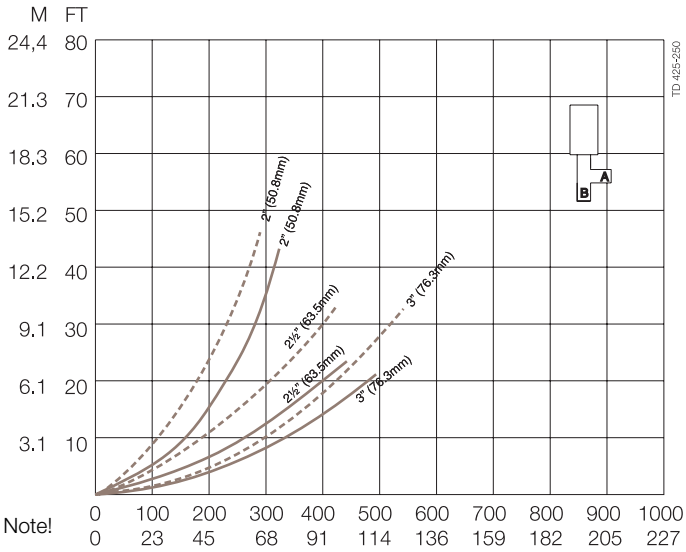
Ordering
Please state the following when ordering:

- Size.
- Actuator function, NC, NO or A/A.
- Options.

Pressure drop/capacity diagrams

Shut-Off Valve

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



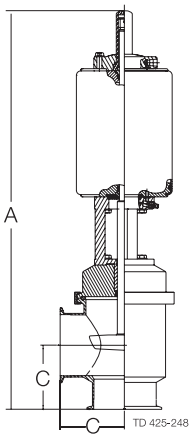
Note!

For the diagram the following applies:

Medium: Water (68°F)

Measurements: In accordance with VDI 2173.

Installed dimensions



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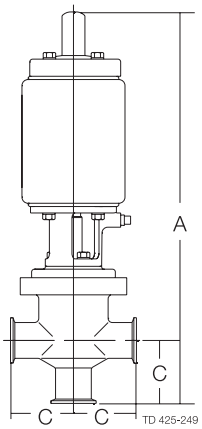

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736 Shut-Off Valves

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

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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)

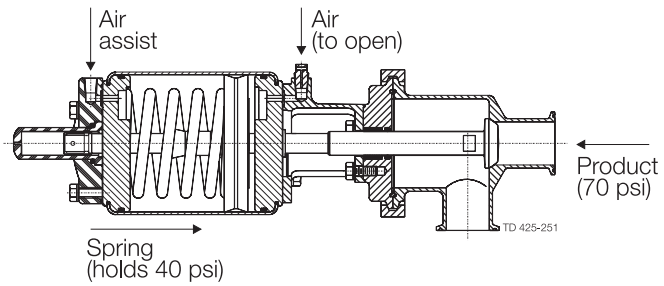
Short Stroke Actuator (Standard*)				Long Stroke Actuator (Standard*)		
Size	Elastomer	"TR"	Stroke Length	Elastomer	"TR"	Stroke Length
2½-inch	120 psi	120 psi	1"	155 psi	120 psi	2"
3-inch	105 psi	100 psi	1"	110 psi	105 psi	2"

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

1A Stem

None	Elastomer (3A)
TR	PTFE Replaceable (3A)
TR2	PTFE Replaceable (3A)

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

4 Size

in.	mm
2	50.8
2 ½	63.5
3	76.2

5 Elastomer

U	Buna
E	EPDM
SFY	Fluoroelastomer

6 Valve-Body Material

316L All Wetted Parts

7 Switches - Solenoid

	No Solenoid Norm	24 (VDC) Norm	110 VAC Norm	24 VAC 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

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

9 Special Options

Customer description required.

TD 709-001

The information contained herein is correct at the time of issue, but may be subject to change without prior notice.

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