

FLOWTRENDS 371-R THROTTLING VALVE

BODY STYLES 10, 21, 30



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FLOWTRENDS

SMARTER, FASTER FLUID HANDLING SOLUTIONS

Flowtrend Replacement for the Tri-Clover® 371 Series Throttling Valve

- Air-operated throttling valve featuring the positive action of a short-stroke actuator in applications where level or pressure control is desired
- Ideal for high volume, sanitary liquid processing applications
- Sanitary, flexible design can be used for metering, blending, weighing, and filling system applications
- Remotely controlled by means of compressed air
- Few and simple moveable parts which result in a very reliable valve
- All parts are intended to be interchangeable with OEM

Features

- Open yoke with visible stem coupler
- Assembled with clamp rings and stem-clip system
- Single O-ring stem design, allows o-ring and stem groove to be cleaned and sanitized.
- Valve porting is flush with bottom surface to ensure full drainage of the valve body
- Highly polished wetted areas eliminate crevices that can trap and harbor bacteria
- Operates in temperatures of up to 285°(EPDM)
- Repairable actuator
- Standard stock item

Materials

Product wetted steel surfaces: Stainless steel AISI 316L

Finish: 32 Ra Standard ID

Plug stem: 316L tapered plug

Product wetted seals: Buna®

Other seals: Buna®

Product connections: Clamp

Options

- Pneumatic upward and downward movement (A/A)
- Special taper stem plugs
- Seals and gaskets of EPDM or FPM
- Bonded stainless steel gasket

ACTUATOR

- Pneumatic downward movement, spring return (NO)
- Pneumatic upward movement, spring return (NC)
- Pneumatic positioner controlled (NO)
- Pneumatic positioner controlled (NC)

AIR SUPPLY SPECS

- Air pressure range for sizes 1"– 3" is 35 to 50 psi (normal)
- Air volume required, sizes 1"– 3" is 16 cubic inches

PISTON ACTUATORS

Recommended for higher pressure applications and line sizes above 2 inches. Can be used in a wide range of product pressures. Used on Flowtrend 371-10-R and Flowtrend 371-30-R valves.

TYPE 10 (AIR-TO-CLOSE, SPRING-TO-OPEN)

- Normally open
- Spring automatically opens valve in event of failure
- Minimum air supply required 40 psi [2.75 bar]
- Maximum air supply 80 psi [5.5 bar]

SIZE (TUBE OD)	PRODUCT LINE PRESSURE VALVE WILL HOLD AGAINST	
	35 PSI AIR-TO-AIR ACTUATOR	50 PSI AIR-TO-AIR ACTUATOR
1"	250 psi	250 psi
1.5"	250 psi	135 psi
2"	140 psi	65 psi
2.5"	78 psi	33 psi
3"	57 psi	27 psi

* Note, actuator can accommodate air supply pressure in excess of 50 psi to close against higher line pressures.

TYPE 20 (AIR-TO-OPEN, SPRING-TO-CLOSE)

- Applications where normally-closed valves are required for fail-safe operations.
- Minimum air supply required 40 psi [2.75 bar]
- Maximum air supply 80 psi [5.5 bar]

HOLDING PRESSURES

SIZE (TUBE OD)	PRODUCT LINE PRESSURE VALVE WILL HOLD AGAINST
1"	60 psi
1.5"	120 psi
2"	72 psi
2.5"	38 psi
3"	31 psi

DIAPHRAGM ACTUATORS

TYPE 15 (AIR-TO-CLOSE, SPRING-TO-OPEN)

Recommended in applications where positioners are not usually required. Low-friction characteristics create a smooth modulating action. Since it is easy to overpower this type of actuator, it should only be used in applications where product pressures are low. For use on Flowtrend 371-10-R, Flowtrend 371-30-R and Flowtrend 371-21-R Valves.

- Available with valve positioner No. 214 or 224 as integral part of assembly
- Maximum air pressure 20-40 psi [1.5 - 2.75 bar] depending on valve size

SHUT-OFF LINE PRESSURE

	SIZE	AIR SUPPLY PRESSURE					
		20 PSI	30 PSI	40 PSI	50 PSI	60 PSI	80 PSI
PRODUCT LINE PRESSURE VALVE WILL HOLD AGAINST	1"	70 psi	100 psi	-	-	-	-
	1.5"	40 psi	60 psi	110 psi	-	-	-
	2"	20 psi	40 psi	78 psi	100 psi	-	-
	2.5"	0 psi	25 psi	40 psi	55 psi	70 psi	100 psi
	3"	0 psi	0 psi	31 psi	45 psi	57 psi	82 psi

Integral valve positioners are also available. They operate with a pneumatic signal span, typically 3 - 15 psi. This signal drives the valve by using the full force of the air supply (up to 50 psi). The positioner works with the signal from the controller and a supply air line. This allows the valve to act as if it has a built in air booster. In addition, the positioner will hold the stem in a static position regardless of product flow or pressure. Positioners may be attached to either piston or diaphragm type actuators.

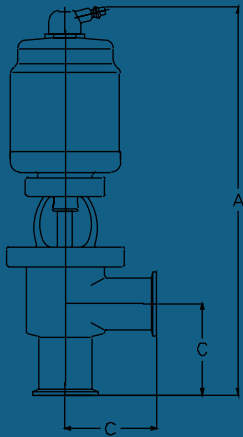


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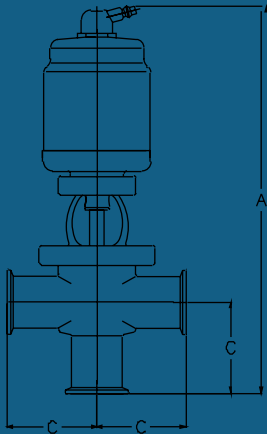
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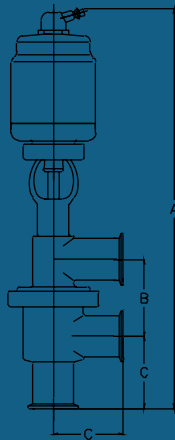
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Flowtrend 371-10-R



Flowtrend 371-30-R



Flowtrend 371-21-R

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*Optimum operating point

**Other taper stems available upon request

Dimensional Drawings

POSITIONER ACTUATED THROTTLING VALVE

VALVE SIZE	A				B		C	
	Shut-Off Valves		Divert Valves		Divert Valves			
	in	mm	in	mm	in	mm	in	mm
1.5"	20.90	531	24.19	632	3.25	82.55	2.75	70
2"	21.89	556	26.42	671	3.75	95.25	3.50	89
2.5"	22.17	563	27.09	688	4.25	107.95	3.50	89
3"	22.64	575	28.11	714	4.75	120.65	3.75	95

DIAPHRAGM ACTUATED THROTTLING VALVE

VALVE SIZE	A				B		C	
	Shut-Off Valves		Divert Valves		Divert Valves			
	in	mm	in	mm	in	mm	in	mm
1.5"	13.88	352.5	17.91	455	3.25	82.55	2.75	70
2"	14.88	378	19.41	493	3.75	95.25	3.50	89
2.5"	15.12	384	20.16	512	4.25	107.95	3.50	89
3"	15.63	397	21.16	537.5	4.75	120.65	3.75	95

PISTON ACTUATED THROTTLING VALVE

VALVE SIZE	A				B		C	
	Shut-Off Valves		Divert Valves		Divert Valves			
	in	mm	in	mm	in	mm	in	mm
1"	13.96	355	-	-	-	-	2.5	63.5
1.5"	13.89	352	17.91	455	3.25	82.55	2.75	70
2"	14.87	378	19.41	493	3.75	95.25	3.50	89
2.5"	15.12	384	20.16	512	4.25	107.95	3.50	89
3"	15.62	397	21.14	537	4.75	120.65	3.75	95

VALVE SIZING

Chart A: Flowtrend 371-R Series Shut-off Valves Cv Factor (Standard) Parabolic Taper

% of Valve stroke	Flowtrend 371-10-R & Flowtrend 371-30-R					Flowtrend 371-21-R				
	1"	1½"	2"	2½"	3"	1"	1½"	2"	2½"	3"
10	4.0	4.0	4.0	6.0	11.5	3.05	6.6	14.0	21.6	23.3
20	5.3	5.0	15.5	26.0	35.0	5.0	11.3	23.8	36.0	40.7
30	6.9	8.4	30.0	45.0	56.0	6.6	15.5	32.5	49.0	55.5
40	8.3	11.8	41.0	60.0	76.0	8.1	19.4	40.0	58.8	69.0
50*	9.8	16.5	51.5	78.0	99.0	9.6	23.0	47.8	70.0	82.0
60	11.3	21.5	62.0	98.0	120.0	10.8	26.5	54.7	80.0	96.0
70	12.6	26.5	72.0	113.0	140.0	12.0	30.0	61.0	89.5	110.0
80	14.3	31.5	82.0	129.0	161.0	13.2	33.2	67.0	98.0	123.0
90	16.0	37.5	92.0	145.0	180.0	14.3	36.8	73.5	109.0	134.0
100	20.0	43.0	102.0	155.0	197.0	15.4	40.0	79.0	118.0	145.0

VALVE SIZING

Chart B: Flowtrend 371-R Series Valves Cv Factor Special Taper Stems**

% of Valve stroke	1"			1½"				2"		
	½° Taper	2° Taper	6° Taper	1° Taper	2° Taper	6° Taper	9° Taper	2° Taper	6° Taper	15° Taper
10	1.5	1.7	2.5	1.0	2.0	2.9	6.0	3.2	6.7	11.8
20	1.7	2.0	3.4	1.4	2.5	4.8	4.8	4.5	11.0	17.2
30	1.9	2.2	4.1	1.8	3.0	6.3	8.0	6.4	14.2	22.6
40	2.1	2.5	4.7	2.2	3.5	7.7	10.0	7.6	17.0	27.2
50*	2.3	2.8	5.3	2.6	4.0	9.2	11.5	9.0	20.0	32.7
60	2.5	3.1	5.8	3.0	4.5	10.5	13.0	10.3	22.7	38.1
70	2.6	3.4	6.2	3.5	4.9	11.5	14.2	11.8	24.8	43.7
80	2.7	3.7	6.6	4.0	5.4	12.6	16.0	12.5	27.8	49.0
90	2.9	4.1	7.0	4.5	5.7	14.0	18.0	13.2	31.2	53.8
100	3.2	4.7	7.3	5.5	6.6	15.7	20.0	14.2	35.2	60.0

% of Valve stroke	2½"				3"			
	2° Taper	6° Taper	9° Taper	15° Taper	2° Taper	6° Taper	9° Taper	15° Taper
10	4.2	5.2	6.5	11.6	6.5	6.7	10.0	11.6
20	6.0	8.7	8.9	18.5	8.9	12.4	15.4	18.2
30	7.4	11.6	10.6	25.1	10.6	15.8	20.2	24.0
40	8.6	14.4	12.2	31.0	12.2	18.7	24.2	30.0
50*	9.7	17.0	13.8	37.0	13.8	21.8	28.6	36.8
60	10.6	19.6	15.6	42.4	15.6	25.0	34.0	44.0
70	11.5	21.8	17.0	46.8	17.0	27.9	38.0	50.0
80	12.4	24.0	18.6	50.0	18.6	30.6	44.8	56.0
90	13.2	26.0	20.2	53.8	20.2	33.7	45.6	63.0
100	14.0	28.2	21.6	56.4	21.6	36.2	49.2	69.0

