CLA-VAL™

— MODEL — 40-32

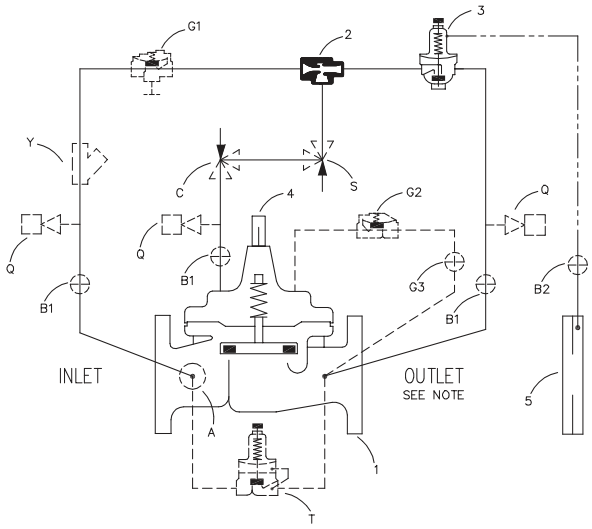
Rate of Flow Non-Surge Check Valve

- **Accurately Limits Flow Rate**
- **Protects Pumps against reverse flow**
- **Surge-Free Operation**
- **Adjustable opening & closing rates**
- **Fail Safe operation**
- **Easy to Maintain**

The Cla-Val Model 40-32 Rate of Flow Non-Surge Check Valve is a hydraulically operated, pilot controlled, diaphragm actuated control valve that limits flow to a preselected maximum rate, regardless of changing line pressure. The pilot control responds to the differential pressure produced across an orifice plate installed downstream of the valve. Accurate control is assured as very small changes in the controlling differential pressure produce immediate corrective action of the main valve. The orifice bore is factory sized based on flow rate to ensure proper control valve performance. Flow rate adjustments can be made by turning an adjusting screw on the pilot control. The integrated check feature protects upstream equipment like pumps by admitting downstream pressure into the main valve cover chamber, closing the main valve upon pressure reversal.

Schematic Diagram

Item	Description
1	100-34 Hytrol (Reverse Flow)
	100-37 Hytrol
2	X47A Ejector
3	CDHS18 Pressure Differential Control
4	X101 Valve Position Indicator
	X105L Limit Switch Assembly (optional)
5	X52A Orifice Plate Assembly



Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)
G	Check Feature (81-01)
Q	Quick Connect Assembly
S	CV Flow Control (Opening)
T	55F Thermal Relief Control
Y	X43 "Y" Strainer

Specifications

Sizes
Globe: 1 1/2" - 16" flanged
Angle: 2" - 16" flanged

End Details
Flanged:
Cast Aluminum, 150 ANSI B16.1
Cast Bronze, 150 & 300 ANSI B16.24
Ductile Iron, 150 & 300 ANSI B16.42
Cast Steel, 150 & 300 ANSI B16.5

Temperature Range
Light Petroleum Product -40° to+140°F

Pressure Ratings
150 class 175-PSI Max.
150 class 275-PSI Max.
250 class 300-PSI Max.
300 class 400-PSI Max.

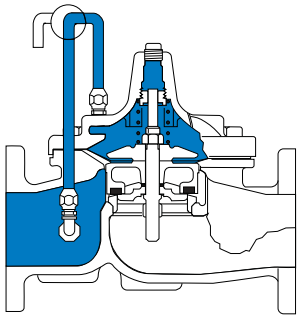
Material
Body & cover:
Cast Aluminum 356-T6
Cast Bronze ASTM B62
Ductile Iron ASTM A-536
Cast Stainless Steel 303
Cast Steel ASTM A216-WCB

Valve trim:
Bronze ASTM B61
Stainless Steel 303

Rubber parts:
Buna-N® Synthetic Rubber
Viton

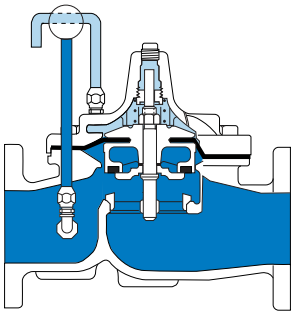
Other Materials
Available on Special Order

Principle of Operation



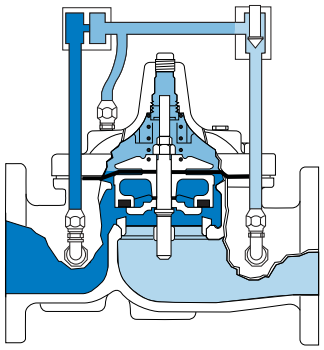
Tight Closing Operation

When pressure from the valve inlet (or an equivalent independent operating pressure) is applied to the diaphragm chamber, the valve closes drip-tight.



Full Open Operation

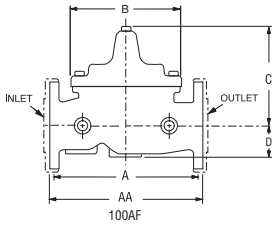
When pressure in the diaphragm chamber is relieved to zone of lower pressure under the valve, flow in either direction is permitted.



Modulating Action

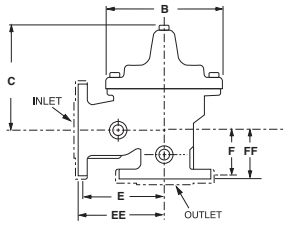
The valve modulates when diaphragm chamber pressure is held at an intermediate point between inlet and discharge pressure changes, the pressure above the diaphragm is varied allowing the valve to modulate and compensate for the changes.

SIZE	1 1/2	2	2 1/2	3	4	6	8	10	12	14	16
A 125 & 150 ANSI	8.50	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00	39.00	41.38
AA 250 & 300 ANSI	9.00	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50	40.50	43.50
B DIAMETER	5.62	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00	32.75	35.50
C MAX.	5.50	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88	24.19	25.00
D	1.12	1.50	1.69	2.06	3.19	4.31	5.31	9.25	10.75	12.62	15.50
E 125 & 150 ANSI		4.75	5.00	6.00	7.50	10.00	12.75	14.88	17.00	19.50	20.81
EE 250 & 300 ANSI		5.00	5.88	6.38	7.88	10.50	13.25	15.56	17.75	20.25	21.62
F 125 & 150 ANSI		3.25	4.00	4.00	5.00	6.00	8.00	8.62	13.75	14.88	15.69
FF 250 & 300 ANSI		3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50	15.62	16.50



C_V Factor

VALVE SIZE	1 1/2	2	2 1/2	3	4	6	8	10	12
100-34 GLOBE PATTERN	26	49	80	107	200	440	771	1151	1600
100-34 ANGLE PATTERN	30	62	100	137					



Cv factor is defined as the number of gallons per minute of water at 60°F that will flow with a 1 psi pressure differential across the valve.

Purchase Specifications

Pilot Control System

The 40-32 Rate of Flow Non-Surge Check Valve shall limit flow to a preselected maximum rate regardless of changing line pressure. The hydraulic control valve pilot system shall consist of a direct acting diaphragm valve designed to close when the controlling differential exceeds the adjustable spring setting. The pilot control is normally held open by the force of the compression on the spring above the diaphragm and it closes when the pressure acting on the underside of the diaphragm exceeds the spring setting. The pilot control system shall contain a fixed orifice. No variable orifices shall be permitted. A flanged orifice plate assembly shall be included and mounted to the downstream (outlet) flange. Optional pilot system features shall include (A) Flow Clean Strainer, (B) CK2 Isolation Ball Valves, (C) CV Closing Speed Control, (G) Check Feature, (Q) Quick Connect Assembly, (S) CV Opening Speed Control, (T) 55F Thermal Pressure Relief Control, (Y) X43 "Y" Strainer.

Main Valve

The valve shall be hydraulically operated, single diaphragm-actuated, globe or angle pattern. It shall contain a resilient, synthetic disc with a rectangular cross-section contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm consists of nylon fabric bonded with synthetic rubber and shall not be used as the seating surface. The valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. To insure proper alignment of the valve stem, the valve body and cover shall be machined with a locating lip. No "pinned" covers to the valve body shall be permitted. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the main valve or pilot controls. All necessary repairs and/or modifications other than replacement of the main valve body shall be possible without removing the valve from the pipeline. The valve manufacturer shall warrant the valve to be free of defects in material and workmanship for a period of three years from date of shipment, provided the valve is installed and used in accordance with all applicable instructions.

CLA-VAL™

E-40-32 (R-03/2015)

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Specify When Ordering

1. Size
2. Model 40-32 Globe or Angle
3. Pressure Class
4. Temperature and fluid to be handled
5. Static and flowing line pressure
6. Operating fluid and pressure (if other than line pressure)
7. Body and trim materials
8. End details