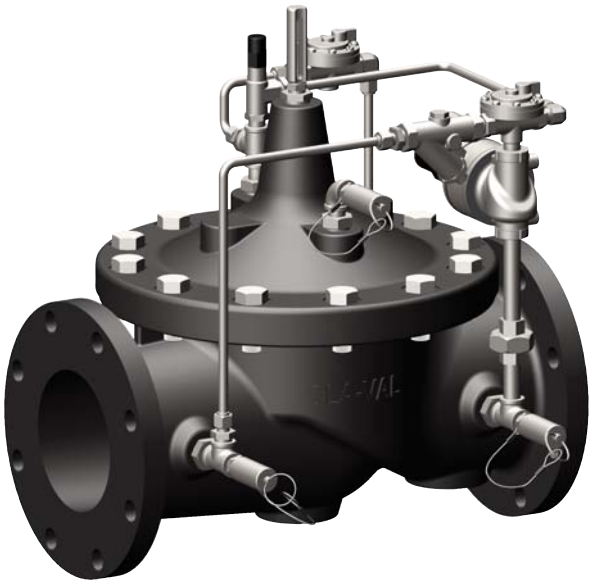
CLA-VAL™

— MODEL — **50-48**

Back Pressure Control Valve

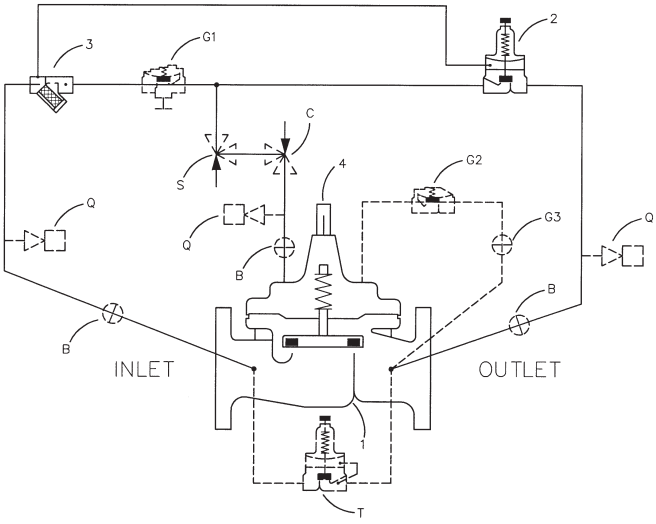


- **Opens rapidly for maximum relief protection**
- **Maintains constant upstream pressure to close limits, and maintains preselected pressure during periods of low demand**
- **Controls surge created by the starting of a pump**
- **Modulates to maintain constant back pressure**
- **No packing glands assure leak-proof service**
- **No lubrication required**
- **Tight sealing single seat**

The Cla-Val Model 50-48 Hytrol Valve is used as the basic unit in almost all Cla-Val automatic control valves for petroleum application. The 50-48 is a Hydaulically-operated, diaphragm actuated, globe or angle pattern valve. It is available in various materials and full range of sizes. It consists of three major components: body, diaphragm assembly and cover. The diaphragm assembly is the only moving part. The rugged simplicity of design and packless construction assure a long life dependable, trouble-free operation. Should the diaphragm become damaged the valve will fully open.. The 50-48 Hytrol Valve is used in many types of piping systems requiring back pressure and relief operations.

Schematic Diagram

Item	Description
1	100-34 Hytrol (Reverse Flow)
	100-37 Hytrol
2	CRL Pressure Relief Control
3	X44A Strainer & Orifice
4	X101 Valve Position Indicator
	X105L Switch Assembly



Optional Features

Item	Description
B	CK2 (Isolation Valve)
C	CV Flow Control (Closing)
G	81-01 Check Valve With Cock
Q	Quick Connect Assembly
S	CV Flow Control (Opening)
T	55F Thermal Relief Control

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

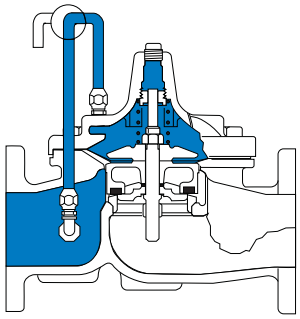
Valve trim:
Bronze ASTM B61
Stainless Steel 303

Rubber parts:
Buna-N® Synthetic Rubber
Viton

Other Materials
Available on Special Order

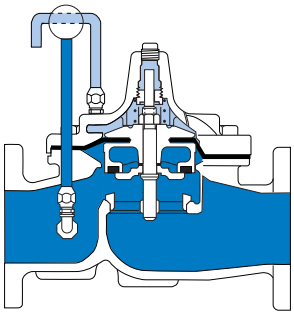
CLA-VAL®

Principle of Operation



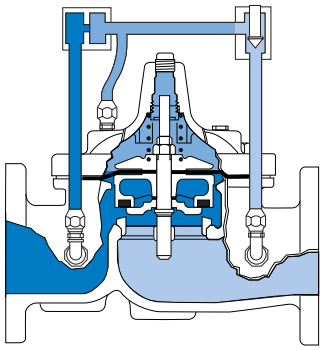
Tight Closing Operation

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

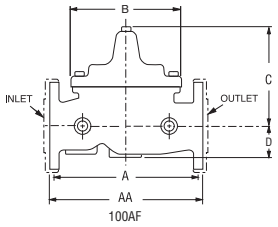
When pressure in the diaphragm chamber is relieved to zone of lower pressure under the valve. Flow in either direction is permitted.



Modulating Action

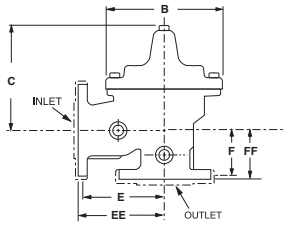
The valve modulates when diaphragm chamber pressure is held at an intermediate point between inlet and discharge pressure changes, the pressure above the diaphragm is varied allowing the valve to modulate and compensate for the changes.

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 & 150 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					



C_V factor is defined as the number of gallons per minute of water at 60˚F. which will flow at a 60˚F. which will flow at a one pound per square inch differential.

Purchase Specifications

The valve shall be hydraulically-operated, diaphragm-actuated, globe or angle pattern valve. It shall contain a resilient, synthetic rubber disc, having a rectangular cross section, contained on three and on-half sides by a disc retainer and disc guide, forming a tight seal against a single renewable seat. The valve stem shall be guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. 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 consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the valve. All necessary repairs shall be possible without removing the valve from the line. If the diaphragm becomes damaged the valve shall open. This valve shall be a Model 100-34 (globe pattern or angle pattern) Hytrol Valve as manufactured by Cla-Val. Newport Beach, California.

Specify When Ordering

1. Size
2. Model 50-48 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

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