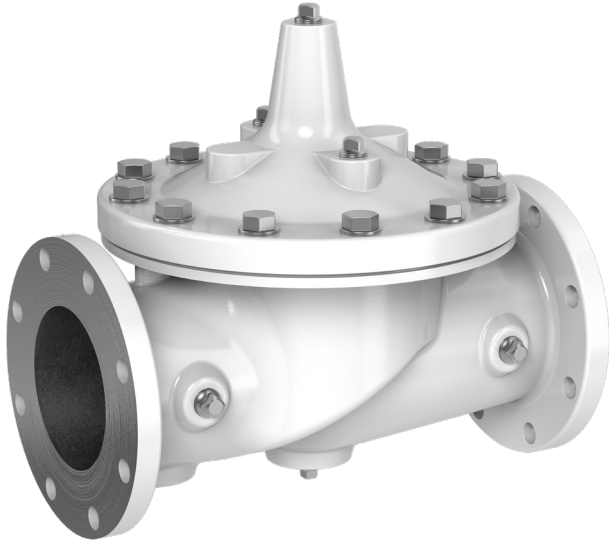




CLA-VAL 100-34

Hytrol Main Valve

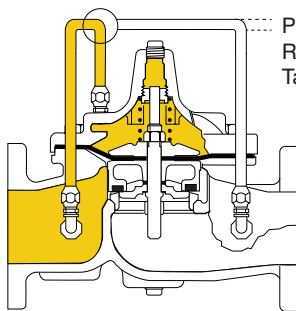


- ASME Drip-Tight, Positive Seating
- Service Without Removal From Line
- Globe or Angle Pattern
- Fail Closed or Fail Open Construction

The Cla-Val Model 100-34 Hytrol Valve is used as the basic valve in many Cla-Val Automatic Control Valves for petroleum applications. It is a hydraulically operated, diaphragm actuated, globe or angle pattern valve available in various materials and a full range of sizes.

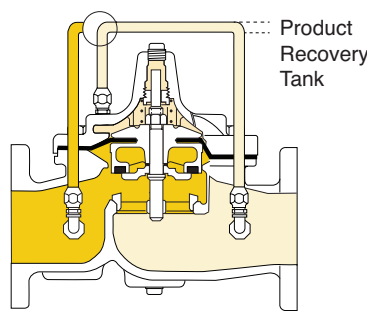
It consists of three major components: body, diaphragm assembly and cover. The diaphragm assembly is the only moving part. The rugged simplicity of design and pack-less construction assure a long life of dependable, trouble-free operation. Based on pilot system orientation, the valve can be configured in a "fail safe" open or "fail safe" closed design. The 100-34 Hytrol Valve is used in a variety of applications including flow control, back pressure control, pressure reducing control, remote control, liquid level control, solenoid operation or check valve operation.

PRINCIPLE OF OPERATION



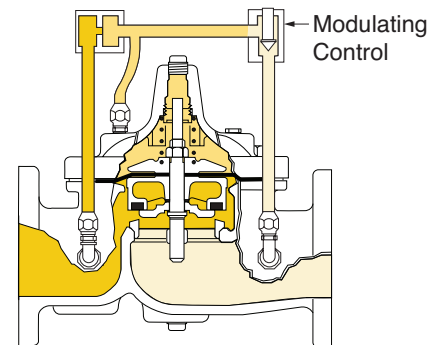
Tight Closing Operation

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



Opening Operation

When pressure in the cover is relieved to zone of lower pressure, the valve will open.



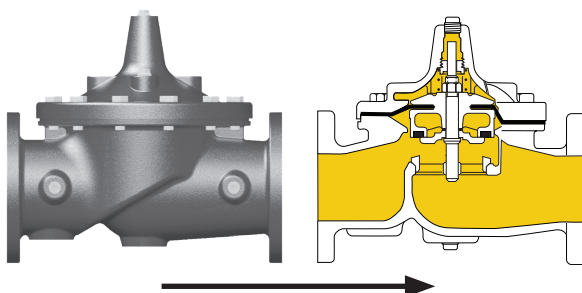
Modulating Action

When pressures are equal above and below the diaphragm, the valve holds an intermediate position between full open and closed. A Cla-Val "Modulating" Pilot Control will allow the valve to automatically compensate for line pressure changes.

FLOW ORIENTATION

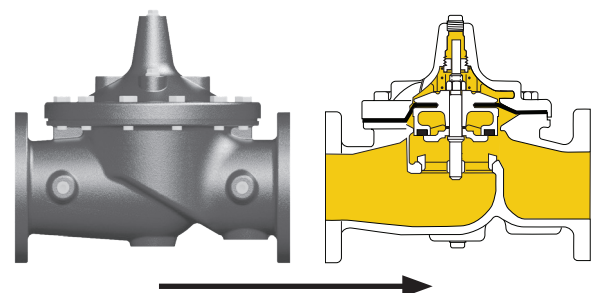
REVERSE FLOW

Flow Over Seat, Fail Close - Typical For Most Fuel Valves



NORMAL FLOW

Flow Under Seat, Fail Open - Typical For Relief Valves





CLA-VAL 100-34

Hytrol Main Valve

AVAILABLE SIZES

PATTERN	THREADED	FLANGED
Globe	NPS 3/8" - 3"	NPS 1.5" - 20"
Angle	NPS 1" - 3"	NPS 1.5" - 20"

*Larger Sizes Available on Special Request

PRESSURE RATINGS

VALVE BODY & COVER	PRESSURE CLASS				
	Material	FLANGED		THREADED	
Dimensions		150 Class*	300 Class*	Dimensions	NPT Class*
Ductile Iron	B16.42	250	640	ANSI B1.20.1	640
Cast Steel	B16.5	285	740	ANSI B1.20.1	740
Stainless Steel	B16.5	285	740	ANSI B1.20.1	740
Aluminum	B16.5	275	---	---	---

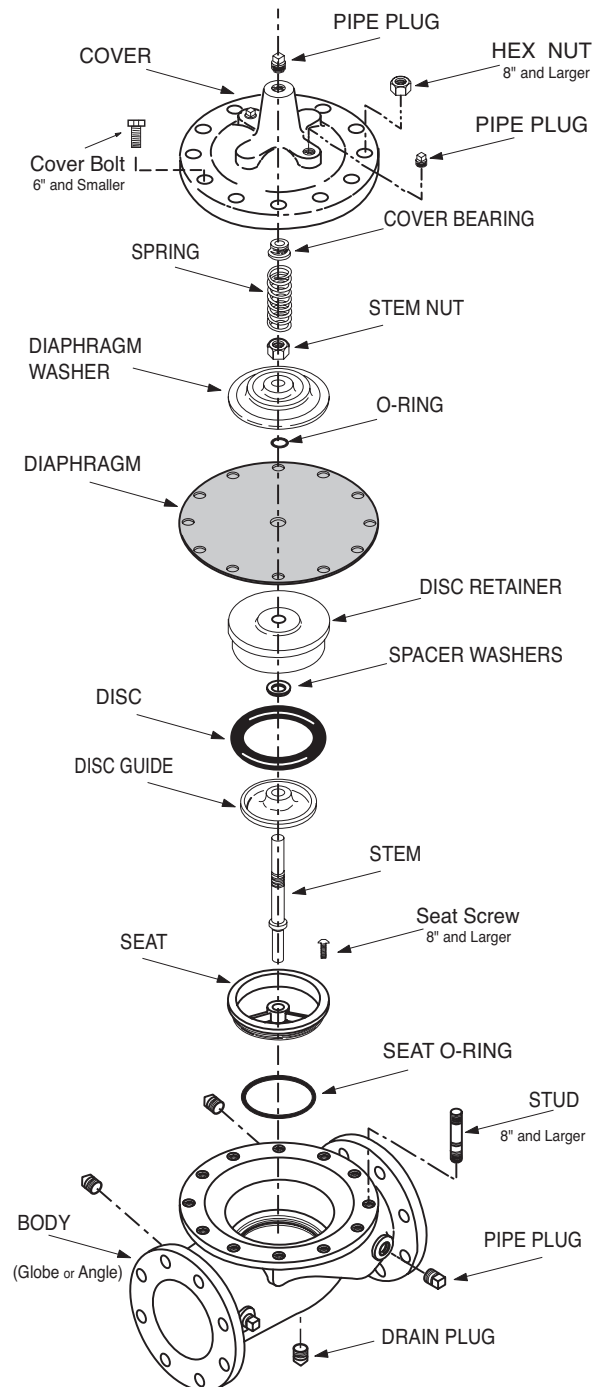
*Pressure rating are approximated. Actual Pressure ratings are determined by ASME B16.34, B16.42, or B16.5. Please consult factory for any application exceeding 400psi to ensure the external control trim is engineered to handle higher pressures.

MATERIALS

COMPONENT	STANDARD MATERIAL COMBINATIONS			
Body & Cover	*Ductile Iron	*Cast Steel	Stainless Steel	Aluminum
Available Sizes, NPS	3/8" - 20"	1-1/2" - 20"	1-1/2" - 20"	1-1/2" - 20"
Disc Retainer & Diaphragm Washer	*Ductile Iron	*Cast Steel	Stainless Steel	Aluminum
Cover Bearing, Spring, Disc Guide, Stem, & Seat	Stainless Steel			
Plugs, Bolts, Studs, Screws, Washers, & Nuts	Stainless Steel			
Diaphragm, Disc, & O-ring	Buna-N (-40 to 180° F) Viton™ (0 to 210° F) EPDM (0 to 210° F)			

Internal Materials may vary slightly and are based on standard configurations

*Ductile & Steel metals are offered with epoxy coating or Electroless Nickel Plating



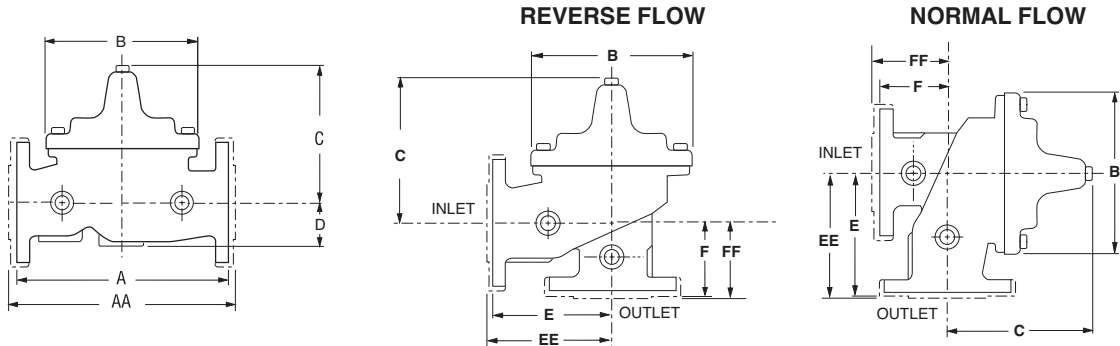
ENGINEERING SPECIFICATION

The valve shall be a 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 one-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 consists 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. This valve shall be a Model 100-34 (globe pattern or angle pattern) Hytrol Valve as manufactured by Cla-Val, Costa Mesa, California.



CLA-VAL 100-34

Hytrol Main Valve



DIMENSIONS

SIZE (INCH)	1-1/2	2	2-1/2	3	4	6	8	10	12	14	16	20
A 150 ANSI	8.50	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00	39.00	41.38	52.00
AA 300 ANSI	9.00	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50	40.50	43.50	53.62
B Diameter	5.62	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00	32.75	35.50	45.00
C Max.	5.50	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88	24.19	25.00	41.90
D	1.12	1.50	1.69	2.06	3.19	4.31	5.31	9.25	10.75	12.62	15.50	15.00
E 150 ANSI	4.00	4.75	5.50	6.00	7.50	10.00	12.69	14.88	17.00	19.50	20.81	-
EE 150 ANSI	4.25	5.00	5.88	6.38	7.88	10.50	13.25	15.56	17.75	20.25	21.62	-
F 150 ANSI	4.00	3.25	4.00	4.00	5.00	6.00	8.00	8.62	13.75	14.88	15.69	-
FF 300 ANSI	4.25	3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50	15.62	16.50	-

Angle Pattern: Installation dimensions vary based on flow direction through valve.

C_v FACTORS

SIZE (INCH)	1 1/2	2	2 1/2	3	4	6	8	10	12
Globe, *Reverse Flow	26	49	80	107	195	396	771	1151	1600
Angle, *Reverse Flow	30	62	100	137	-	-	-	-	-
Globe, †Normal Flow	31	54	81	119	196	437	775	1219	1816
Angle, †Normal Flow	29	61	101	139	240	541	990	1575	2500

*Reverse Flow Design: Typical for most fuel valves. †Normal Flow Design: Typical for Relief Valves.

C_v 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.

PRESSURE LOSS CHARTS

