

Velcon[®]



VCA-CV
Fuel Quality Assurance System



**2008 ENERGY INSTITUTE
INNOVATION AWARD FINALIST**

Final Protection from Contaminated Fuel

DESCRIPTION

The VCA[®] uses laser sensing technology to act as a final stage quality check downstream of the last filtration, to insure that the fuel being loaded onto commercial airliners or military jets is clean and dry. In the event of dirty or wet fuel (or both), the system will shut down the fueling operation and alert the user with a minimal amount of contaminated fuel reaching the aircraft.

For the VCA-CV, the VCA[®] instrument is integrated into the outlet side of the Cla-Val flow control valve body. Due to the unique features of the Cla-Val flow control valve, the VCA[®] can be automated to begin function when the flow control valve is actuated (when flow starts). If the concentration of either free water or solid particles exceeds quality limitations, the VCA[®] can automatically stop flow at the control valve. The VCA[®] has been extensively field tested, and the Cla-Val control valve is an industry standard. The combination of these two products into one will extend the versatility and flexibility of the VCA[®] to give quality control and reliability to any type of fuel system.

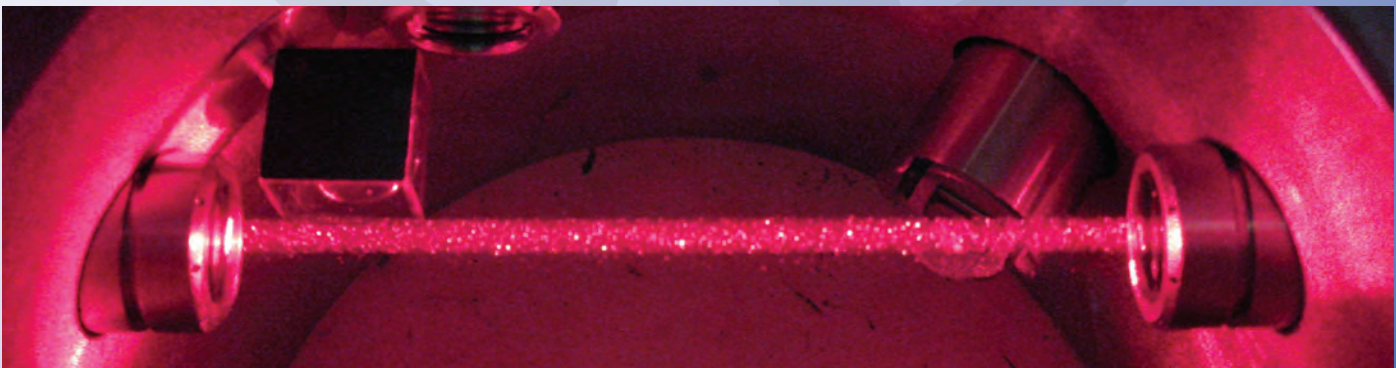
BENEFITS

- Automatic shutdown will stop flow as soon as wet or dirty fuel is sensed
- Ability to differentiate between water and solid particulates allows for a greater diagnostic accuracy of contamination sources
- Completely transparent & contained operation:
 - » Initiation of operation by the Cla-Val unit
 - » "In-situ" calibration that does not require removal for service



FEATURES

- Differentiates between free water and dirt in fuel
 - » Detects both independently and simultaneously
- Modular control box (LCD Display optional)
- Full flow analysis – no sampling errors
- Minimal Pressure Loss
- Fouling Resistant Windows
- Cla-Val limit switch operates VCA[®] only during fueling (US Patent # 7,518,719)
- Visual alarm and deadman cutoff switch in case of dirty or wet fuel (includes a key operated system bypass.)
- Automatic calibration (US Patent # 7,518,719)
- Real-time PC-Based Graphical User Interface for data viewing/capturing
- Real-time RS-232 Data Stream to tie into data management Systems (optional)
- GPRS Data Telemetry (optional)
- Easy installation cable/wiring





Cla-Val Model 100-34 Hytrol Valve

- **Accurate Repeatable High Level Shut-off**
- **“Fail-Safe” Construction**
- **No Packing Glands Assure Leak-Proof Service**
- **Serviced Without Removing From Line**

The Cla-Val Model 100-34 Hytrol Valve is used as the basic unit in almost all Cla-Val automatic control valves for petroleum applications. The 100-34 is a hydraulically-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 of dependable, trouble-free operation. Should the diaphragm become damaged the valve will close tight, providing “fail safe” operation. The 100-34 Hytrol Valve is used in many types of piping systems requiring remote control, pressure regulation, solenoid operation, rate of flow control, liquid level control, or check valve operation.



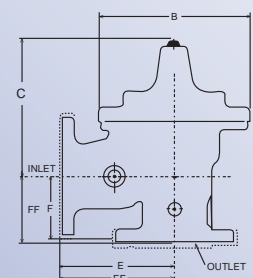
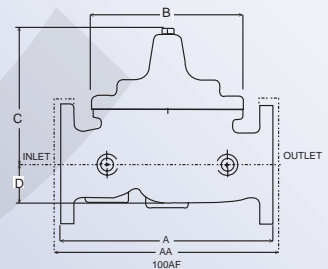
PURCHASE SPECIFICATIONS

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 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. If the diaphragm becomes damaged the valve shall close tight. 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 100-34 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

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



Cy 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					

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

VCA[®] Specifications

Cla-Val Specifications

ORDERING INFORMATION

Velcon Part Number: VCA-CV04

STANDARD FEATURES

- PC Based GUI
- HAZ LOC Cert
- AC-DC Voltage Converter
- 15 Feet (4.5m) Cable Length

ELECTRICAL SPECS

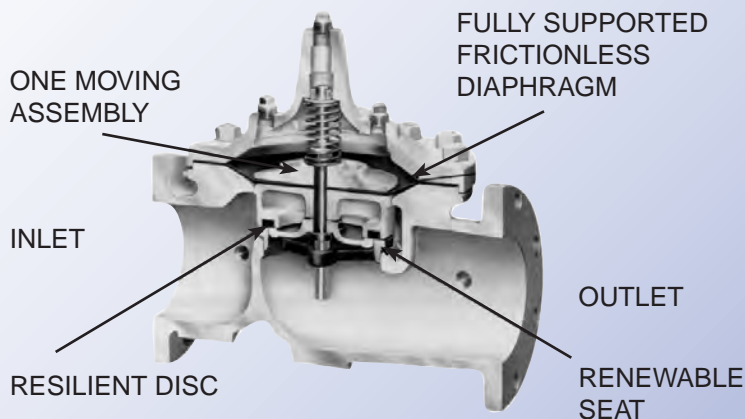
- 9-36 V-DC, 21W
- Screw connect sealed hazardous location cabling
- Standard switch or key switch

OUTPUTS

- Alarm with off signal
 - » 12V-DC, 0.8-1.2A output
 - » Visual Alarm
- Real-time RS-232 (8N1) Data Stream (optional)
- Data Telemetry
- LCD Display (optional)

OPTIONS

- Third Party RS-232 Data Stream
- GPRS Telemetry
- Real Time Web-based Data Viewing & Storage
- Solar Panel Charging System
- LCD Readout



SIZES

- Globe: 1 1/2" - 16" flanged (38.1 mm - 406.4 mm)
- Angle: 2" - 16" flanged (50.8 mm - 406.4 mm)

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 +180°F. (-40° to 82° C)

PRESSURE RATINGS

- 150 class 175-PSI Max. (12 bar)
- 150 class 275-PSI Max. (19 bar)
- 250 class 300-PSI Max. (20 bar)
- 300 class 400-PSI Max. (27 bar)

MATERIALS

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



COMPANY HEADQUARTERS:
Velcon Filters, LLC
1210 Garden of the Gods Road
Colorado Springs, CO 80907-3410
Phone: 1.800.531.0180 / 1.719.531.5855
Fax: 719.531.5690
e-mail: vfsales@velcon.com
www.velcon.com

MANUFACTURING PLANTS LOCATED AT:
Colorado Springs, Colorado

OVERSEAS AFFILIATES:
Germany, Singapore, Spain, & Canada



CLA-VAL
PO Box 1325
Newport Beach CA 92659-0325
Phone: 949-722-4800
Fax: 949-548-5441
www.cla-val.com