

Solenoid Control Valve



- Fast Acting Solenoid Control
- Reliable Drip Tight Shut-off
- Simple Design, Proven Reliable
- Optional Check Feature
- Easy Installation & Maintenance

The Cla-Val Model 136-01/636-01 Solenoid Control Valve is an on-off control valve which either opens or closes upon receiving an electrical signal to the solenoid pilot control. This valve consists of a Hytrol main valve and a three-way solenoid valve which alternately applies pressure to or relieves pressure from the diaphragm chamber of the main valve. It is furnished either normally open (de-energize solenoid to open) or normally closed (energize solenoid to open).

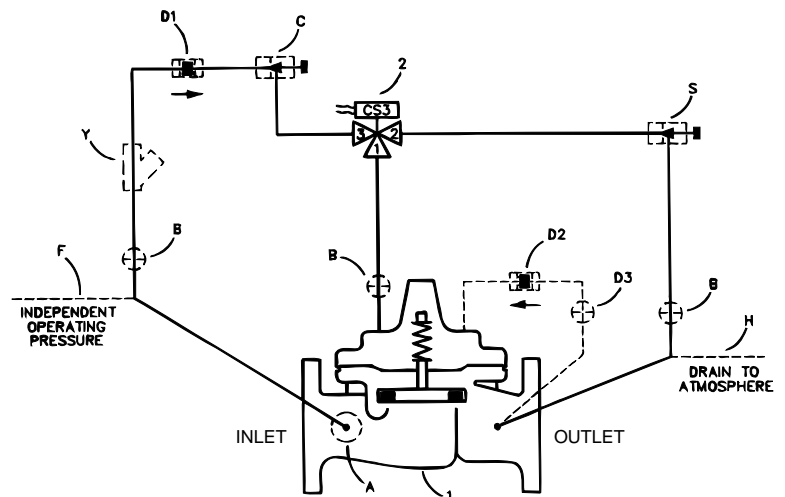
If the check feature option is added and a pressure reversal occurs, the downstream pressure is admitted into the main valve cover chamber and the valve closes to prevent return flow.

Schematic Diagram

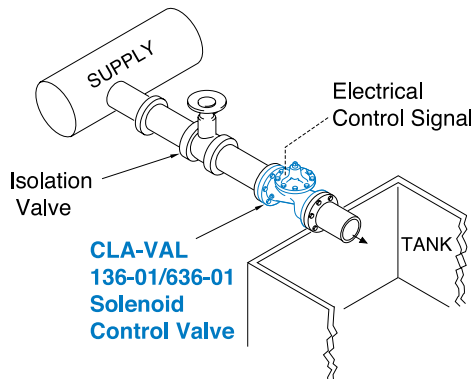
Item	Description
1	Hytrol (Main Valve)
2	CS3 Solenoid Control

Optional Features

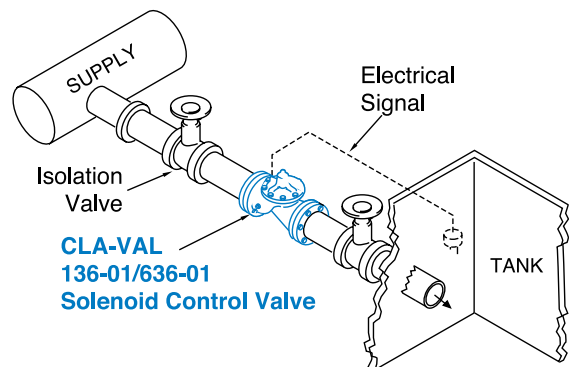
Item	Description
A	X46A Flow Clean Strainer
B	CK2 Cock (Isolation Valve)
C	CNA Closing Speed Control
D	Check Valves with Cock
S	CNA Needle Valve
Y	X43 "Y" Strainer



Typical Applications



Industrial uses for the solenoid control valve are many and include accurate control of process water for batching, mixing, washing, blending or other on-off type uses.



Liquid level control can be provided by using a float switch or electrode probe which sends an electrical signal to open or close the valve as needed.

Model 136-01 (Uses Basic Valve Model 100-01)

Pressure Ratings (Recommended Maximum Pressure - psi)

Valve Body & Cover		Pressure Class			
		Flanged			Screwed
Grade	Material	ANSI Standards*	150 lb.	300 lb.	End** Details
ASTM A536	Ductile Iron	B16.42	250	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400
ASTM B62	Bronze	B16.24	225	400	400
ASTM A743	Stainless Steel	B16.5	285	400	400
356-T6	Aluminum	B16.1	275	—	—

Note: *ANSI standards are for flange dimensions only.
Flanged valves are available faced but not drilled.
** End Details machined to ANSI B2.1 specifications.

Cover Capacity

Liquid Volume Displaced from Diaphragm Chamber When Valve Opens			
Valve Size	Displacement	Valve Size	Displacement
1/2"	0.34 fl oz	2"	.032 gal
3/4"	0.34 fl. oz	2 - 1/2"	.043 gal
1 - 1/4"	.020 gal	3"	.080 gal
1 - 1/2"	.020 gal	4"	.169 gal

Materials

Component	Material Options						
Body & Cover	Ductile Iron	Cast Steel	Bronze	Stainless Steel	Aluminum		
Available Sizes	½" - 4"	½" - 4"	½" - 4"	½" - 4"	½" - 4"		
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze	Stainless Steel	Aluminum		
Trim: Disc Guide, Seat & Cover Bearing	Bronze is standard. Stainless Steel is optional.			Stainless Steel is standard.			
Disc	Buna-N® Rubber						
Diaphragm	Nylon Reinforced Buna-N® Rubber						
Stem, Nut & Spring	Stainless Steel						

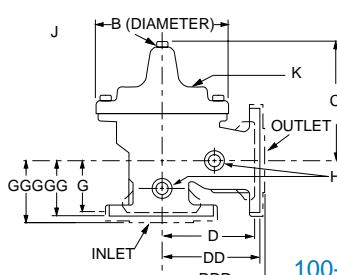
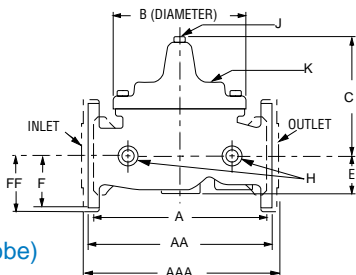


2" Globe, Screwed



4" Angle, Flanged

100-01 (Globe)



100-01 (Angle)

Model 136-01 Dimensions (In inches)

VALVE SIZE (Inches)	1/2-3/4	1	1 1/4-1 1/2	2	2 1/2	3	4
A Screwed	3.50	5.12	7.25	9.38	11.00	12.50	—
AA 150 ANSI	—	—	8.50*	9.38	11.00	12.00	15.00
AAA 300 ANSI	—	—	9.00*	10.00	11.62	13.25	15.62
B DIA.	3.15	4.38	5.62	6.62	8.00	9.12	11.50
C Max.	3.00	2.75	5.50	6.50	7.56	8.19	10.62
D Screwed	—	—	3.25	4.75	5.50	6.25	—
DD 150 ANSI	—	—	4.00*	4.75	5.50	6.00	7.50
DDD 300 ANSI	—	—	4.25*	5.00	5.81	6.63	7.81
E	0.88	1.63	1.12	1.50	1.69	2.06	3.19
F 150 ANSI	—	—	2.50	3.00	3.50	3.75	4.50
FF 300 ANSI	—	—	3.06	3.25	3.75	4.13	5.00
G Screwed	—	—	1.88	3.25	4.00	4.50	—
GG 150 ANSI	—	—	4.00*	3.25	4.00	4.00	5.00
GGG 300 ANSI	—	—	4.25*	3.50	4.31	4.38	5.31
H NPT Body Tapping	1/8	1/4	3/8	1/2	3/4	1	1 1/4
J NPT Cover Center Plug	1/8	1/4	3/8	1/2	3/4	1	1 1/4
K NPT Cover Tapping	1/8	1/4	3/8	1/2	3/4	1	1 1/4
Valve Stem Internal Thread UNF	—	—	10-32	10-32	10-32	1/4-28	1/4-28
Stem Travel	—	—	0.4	0.6	0.7	0.8	1.1
Approx. Ship Wt. Lbs.	3	8	15	35	50	70	140

*1 1/2" Size Only

Model 636-01 (Uses Basic Valve Model 100-20)

Pressure Ratings (Recommended Maximum Pressure - psi)

Valve Body & Cover		Pressure Class		
		Flanged		
Grade	Material	ANSI Standards*	150 lb.	300 lb.
ASTM A536	Ductile Iron	B16.42	250	400
ASTM A216-WCB	Cast Steel	B16.5	285	400
ASTM B62	Bronze	B16.24	225	400
ASTM A743	Stainless Steel	B16.5	285	400
356-T6	Aluminum	B16.1	275	—

Note: *ANSI standards are for flange dimensions only.
Flanged valves are available faced but not drilled.

Cover Capacity

Liquid Volume Displaced from Diaphragm Chamber When Valve Opens	
Valve Size	Displacement
3"	.032 gal
4"	.080 gal
6"	.169 gal

Materials

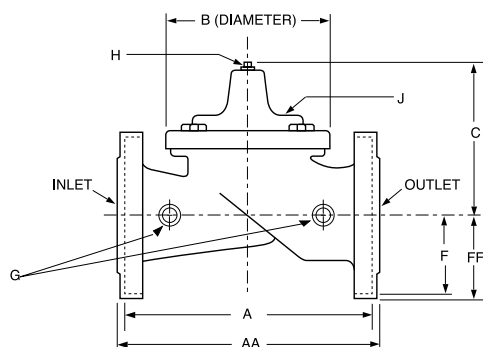
Component	Material Options						
Body & Cover	Ductile Iron	Cast Steel	Bronze	Stainless Steel	Aluminum		
Available Sizes	3"-6"	3"-6"	3"-6"	3"-6"	3"-6"		
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze	Stainless Steel	Aluminum		
Trim: Disc Guide, Seat & Cover Bearing	Bronze is standard. Stainless Steel is optional.			Stainless Steel is standard.			
Disc	Buna-N® Rubber						
Diaphragm	Nylon Reinforced Buna-N® Rubber						
Stem, Nut & Spring	Stainless Steel						



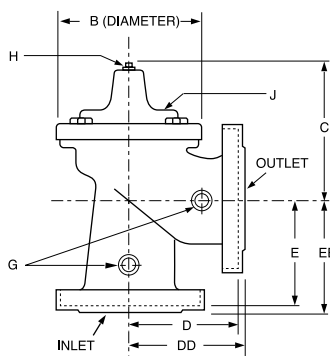
3" Globe, Flanged



6" Angle, Flanged



100-20 Globe























100-20 Angle

Model 636-01 Dimensions (In inches)

VALVE SIZE (Inches)	3	4	6
A 150 ANSI	10.25	13.88	17.75
AA 300 ANSI	11.00	14.50	18.62
B DIA.	6.62	9.12	11.50
C Max.	7.00	8.62	11.62
D 150 ANSI	—	6.94	8.88
DD 300 ANSI	—	7.25	9.38
E 150 ANSI	—	5.50	6.75
EE 300 ANSI	—	5.81	7.25
F 150 ANSI	3.75	4.50	5.50
FF 300 ANSI	4.12	5.00	6.25
G NPT Body Tapping	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
H NPT Cover Center Plug	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$
J NPT Cover Tapping	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$
Valve Stem Internal Thread UNF	10-32	$\frac{1}{4}$ -28	$\frac{1}{4}$ -28
Stem Travel	0.6	0.8	1.1
Approximate Shipping Weight Lbs.	45	85	195

Valve Selection

These Symbols  and  Indicate Available Sizes											
Inches		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	6
mm		15	20	25	32	40	50	65	80	100	150
End Detail		Screwed				Screwed & Flanged				Flanged	
Model 136-01	Basic Valve 100-01	Globe									
		Angle									
	Suggested Flow (GPM)	Max. Continuous	19	33	55	93	125	210	300	460	800
		Max. Intermittent	24	42	68	120	160	260	370	580	990
	Suggested Flow (Liters/sec)	Max. Continuous	1.2	2.1	3.5	5.9	8	13	19	29	50
		Max. Intermittent	1.5	2.6	4.3	7.6	10.1	16.4	23	37	62
Model 636-01	Basic Valve 100-20	Globe									
		Angle									
	Suggested Flow (GPM)	Max. Continuous							260	580	1025
	Suggested Flow (Liters/sec)	Max. Continuous							16	37	65

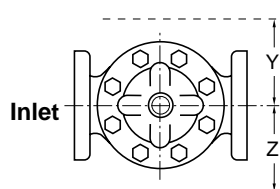
* **636-01 is the reduced internal port size version of the 136-01.**

For 100-01 basic valves suggested flow calculations were based on flow through Schedule 40 Pipe. Maximum continuous flow is approx. 20 ft/sec (6.1 meters/sec) & maximum intermittent is approx. 25ft/sec (7.6 meters/sec). For 100-20 basic valves suggested flow calculations were based on flow through the valve seat. Approx. 26 ft/sec (7.9 meters/sec) is used for maximum continuous flow.

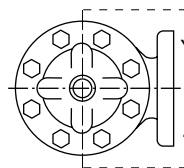
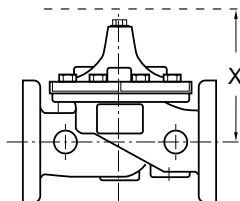
Pilot System Dimensions (In Inches)

We recommend providing adequate space around valve for maintenance work

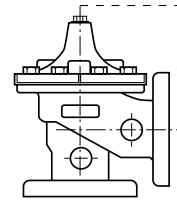
VALVE SIZE		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"
X	Max.	3.50	3.50	7.00	8.50	8.50	9.50	11.00	12.00	15.00	16.00
Y	Max.	2.00	2.00	3.00	4.00	4.00	4.00	4.50	5.00	6.00	8.00
Z	Max.	5.00	5.00	6.00	6.00	6.00	6.50	7.00	7.50	8.50	9.00



GLOBE



ANGLE



Inlet

Pilot System Specifications

Temperature Range

Water: to 180°F

Fluids

Air, water, light oils

Rubber Parts:

Buna-N® Rubber Synthetic Rubber

Solenoid Control

Body:

Brass ASTM B283

Enclosure:

NEMA Type 1,2,3,3S,4,4X general purpose watertight*

NEMA Type 6,6P,7,9 watertight Explosion Proof available at extra cost

Voltages:

110, 220 -50Hz AC

24, 120, 240, 480 - 60Hz AC

6, 12, 24, 120, 240 - DC

Others available at extra cost

Max. operating pressure differential:

200 psi

Coil:

Insulation molded Class F

Watts AC 6

AC Volt Amps Inrush 30

AC Volt Amps Holding 16

Watts DC 10.6

Manual operator available at extra cost.

When Ordering, Please Specify

1. Catalog No. 136-01 or No. 636-01
2. Valve Size
3. Pattern - Globe or Angle
4. Pressure Class
5. Screwed or Flanged
6. Materials Desired
7. Energized or de-energized to open Main Valve
8. Solenoid Enclosure, Voltage & Hertz, Coil Insulation, and Max. Operating Pressure Differential
9. Desired Options
10. When Vertically Installed



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