



# MODEL 136-03

# Solenoid Control Valve



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

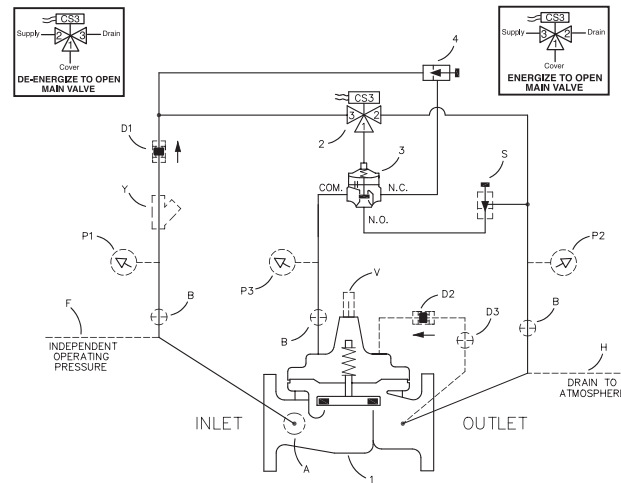
The Cla-Val Model 136-03 Solenoid Control Valve is an on-off control valve which either opens fully or closes drip-tight upon receiving an electrical signal to the solenoid pilot control. This valve consists of a Hytrol main valve, a three way solenoid and a high capacity three-way pilot valve. The solenoid control operates the three-way 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	100-01 Hytrol Main Valve
2	CS3 Solenoid Control
3	102C-3H Three-Way Valve
4	CNA Needle Valve (Closing)

Closing Speed Control

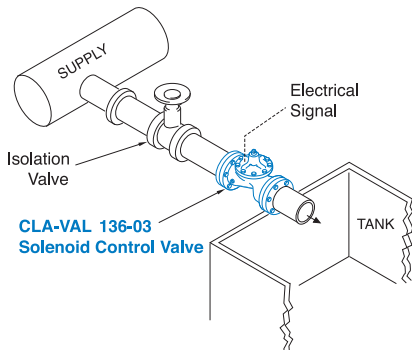


## Optional Features

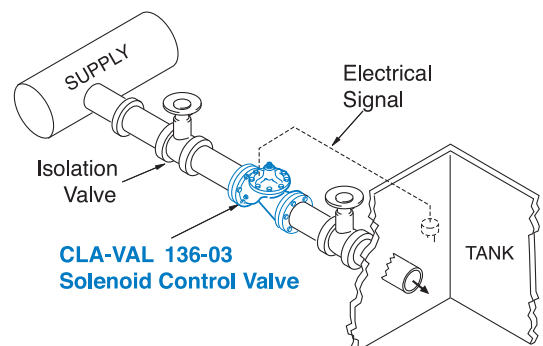
Item	Description
A	X46 Flow Clean Strainer
B	CK2 (Isolation Valve)
D	Check Valves With Isolation Valve
F	Independent Operating Pressure
H	Atmospheric Drain
P	X141 Pressure Gauge
S	CNA Needle Valve (Opening)
V	X101 Valve Position Indicator
Y	X43 "Y" Strainer
KC	Epoxy Coated

Valves 6" and larger with a "D" check feature must be installed with the main valve stem in a vertical position

## 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 136-03 (Uses Hytrol Main Valve Model 100-01)

### Pressure Ratings (Recommended Maximum Pressure - psi)

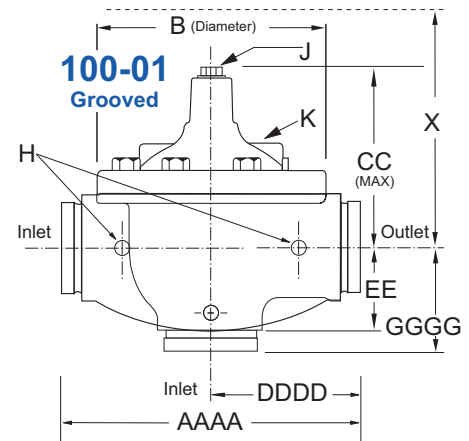
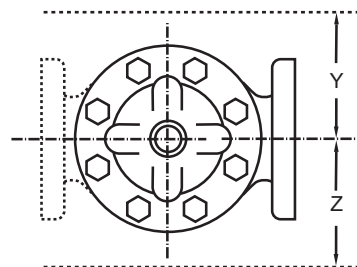
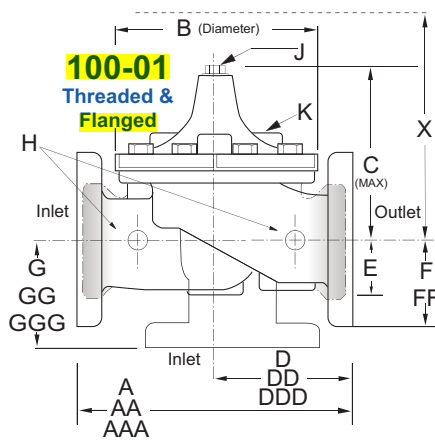
Valve Body & Cover		Pressure Class				
		Flanged			Grooved	Threaded
Grade	Material	ANSI Standards*	150 Class	300 Class	300 Class	End† Details
<b>ASTM A536</b>	<b>Ductile Iron</b>	<b>B16.42</b>	<b>250</b>	400	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400	400
UNS 87850	Bronze	B16.24	225	400	400	400

Note: \* ANSI standards are for flange dimensions only.  
 Flanged valves are available faced but not drilled.  
 † End Details machined to ANSI B2.1 specifications.  
**Valves for higher pressure are available; consult factory for details**

### Materials

Component	Standard Material Combinations		
Body & Cover	<b>Ductile Iron</b>	Cast Steel	Bronze
Available Sizes	<b>1/2" - 4"</b> <b>15 - 100mm</b>	1/2" - 4" 15 - 100mm	1/2" - 4" 15 - 100mm
Disc Retainer & Diaphragm Washer	<b>Cast Iron</b>	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Bronze is Standard <b>Stainless Steel is Optional</b>		
Disc	<b>Buna-N® Rubber</b>		
Diaphragm	<b>Nylon Reinforced Buna-N® Rubber</b>		
Stem, Nut & Spring	<b>Stainless Steel</b>		

For material options not listed, consult factory.  
 Cla-Val manufactures valves in more than 50 different alloys.



### Model 136-03 Dimensions (inches)

Valve Size (Inches)	1/2*	3/4*	1*	1	1 1/4	1 1/2	2	2 1/2	<b>3</b>	4
A Threaded	3.50	3.50	5.12	7.25	7.25	7.25	9.38	11.00	<b>12.50</b>	—
AA 150 ANSI	—	—	—	—	—	8.50	9.38	11.00	<b>12.00</b>	15.00
AAA 300 ANSI	—	—	—	—	—	9.00	10.00	11.62	<b>13.25</b>	15.62
AAAA Grooved End	—	—	—	—	—	8.50	9.00	11.00	<b>12.50</b>	15.00
B Diameter	3.12	3.12	4.38	5.62	5.62	5.62	6.62	8.00	<b>9.12</b>	11.50
C Maximum	5.88	5.88	6.25	5.50	5.50	5.50	6.50	7.56	<b>8.19</b>	10.62
CC Maximum Grooved End	—	—	—	—	—	4.75	5.75	6.88	<b>7.25</b>	9.31
D Threaded	—	—	—	3.25	3.25	3.25	4.75	5.50	<b>6.25</b>	—
DD 150 ANSI	—	—	—	—	—	4.00	4.75	5.50	<b>6.00</b>	7.50
DDD 300 ANSI	—	—	—	—	—	4.25	5.00	5.88	<b>6.38</b>	7.88
DDDD Grooved End	—	—	—	—	—	—	4.75	—	<b>6.00</b>	7.50
E	0.88	0.88	1.63	1.12	1.12	1.12	1.50	1.69	<b>2.06</b>	3.19
EE Grooved End	—	—	—	—	—	2.00	2.50	2.88	<b>3.12</b>	4.25
F 150 ANSI	—	—	—	—	—	2.50	3.00	3.50	<b>3.75</b>	4.50
FF 300 ANSI	—	—	—	—	—	3.06	3.25	3.75	<b>4.13</b>	5.00
G Threaded	—	—	—	1.88	1.88	1.88	3.25	4.00	<b>4.50</b>	—
GG 150 ANSI	—	—	—	—	—	4.00	3.25	4.00	<b>4.00</b>	5.00
GGG 300 ANSI	—	—	—	—	—	4.25	3.50	4.31	<b>4.38</b>	5.31
GGGG Grooved End	—	—	—	—	—	—	3.25	—	<b>4.25</b>	5.00
H NPT Body Tapping	0.125	0.125	0.25	0.375	0.375	0.375	0.375	0.50	<b>0.50</b>	0.75
J NPT Cover Center Plug	0.125	0.125	0.25	0.25	0.25	0.25	0.50	0.50	<b>0.50</b>	0.75
K NPT Cover Tapping	0.125	0.125	0.25	0.375	0.375	0.375	0.375	0.50	<b>0.50</b>	0.75
Stem Travel	—	—	—	0.40	0.40	0.40	0.60	0.70	<b>0.80</b>	1.10
Approx. Ship Weight (lbs)	3	8	8	15	15	15	35	50	<b>70</b>	140
Approx. X Pilot System	—	—	—	11	11	11	13	14	<b>15</b>	17
Approx. Y Pilot System	—	—	—	9	9	9	9	10	<b>11</b>	12
Approx. Z Pilot System	—	—	—	9	9	9	9	10	<b>11</b>	12

\* Non Guided Stem Auxillary Hytrol Controls

136-03 Valve Selection	100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes									
	Inches	½	¾	1	1¼	1½	2	2½	3	4
	mm	15	20	25	32	40	50	65	80	100
Main Valve 100-01	Pattern	G	G	G, A	G, A	G, A	G, A	G, A	G, A	G, A
	End Detail	T	T	T	T	T, F, Gr*	T, F, Gr	T, F, Gr*	T, F, Gr	F, Gr
Suggested Flow (gpm)	Maximum	19	33	55	93	125	210	300	460	800
	Maximum Intermittent	24	42	68	120	160	260	370	580	990
Suggested Flow (Liters/Sec)	Maximum	1.2	2.1	3.5	6	8	13	19	29	50
	Maximum Intermittent	1.5	2.6	4.3	7.6	10	16	23	37	62

100-01 Series is the full internal port Hytrol.

\*Globe Grooved Only

## Pilot System Specifications

### Temperature Range

Water: to 180°F/82°C

### Fluids

Air, water, light oils

### Solenoid Control

Body:

Brass ASTM B283

Rubber Parts:

Buna-N® Rubber Synthetic Rubber

Enclosure:

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

NEMA Type 6,6P,7,9 Watertight Explosion Proof available.

Voltages:

110, 220 -50Hz AC

24, 120, 240, 480 - 60Hz AC

6, 12, 24, 120, 240 - DC

Others available at additional 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 additional cost.

\*Supplied unless otherwise specified

Note: Flowing Pressure Differential: 5 psi minimum

### When Ordering, Specify

1. Catalog No. 136-01
2. Valve Size
3. Pattern - **Globe** or Angle
4. Pressure Class
5. Threaded 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

### Valve Options

X141 Pressure Gauge



X101AR Valve Position Indicator with Air Release



X101 Valve Position Indicator



X144 e-FlowMeter



X43H Strainer



Stainless Steel Pilot