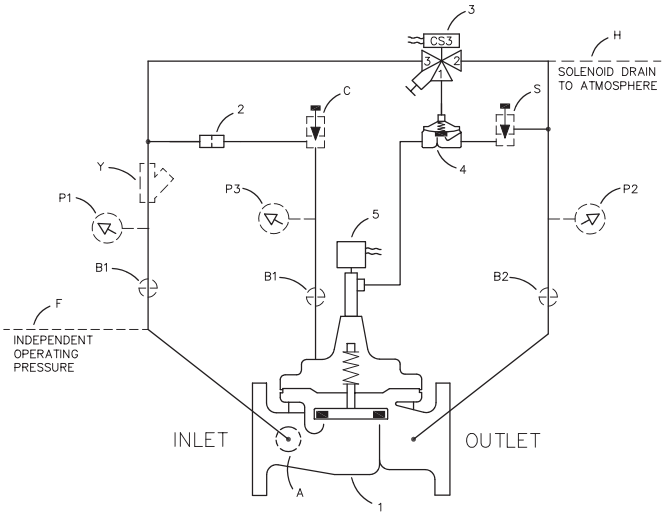
Model 138-01/638-01

(Full Internal Port) Sizes 3" - 12"

(Reduced Internal Port) Sizes 4" - 16"

Electronic Actuated Positioning Control Valve



Schematic Diagram

Item	Description
1	Hytrol (Main Valve)
2	X58A Restriction Fitting
3	CS3 Solenoid Control
4	100-01 Auxiliary Hytrol (Reverse Flow)
5	CPC Electronic Actuator Positioning Control

Optional Features

Item	Description
A	X46A Flow Clean Strainer
B	CK2 (Isolation Valve)
C	CNA Needle Valve (Closing)
F	Independent Operating Pressure
H	Solenoid Drain to Atmosphere
P	X141 Pressure Gauge
S	CNB Needle Valve (Opening)
Y	X43 "Y" Strainer

Product Features and Benefits

- Precise Valve Position Control
- Completely Self-contained
- High Energy Efficiency with Low Operation Friction
- Direct Control of Valve Opening and Closing
- Combines with Pressure, Flow or Level Control
- Ideal for SCADA Control
- Easy adjustment and maintenance
- Fully Supported Frictionless Diaphragm for trouble-free service and low maintenance

Product Enhancements

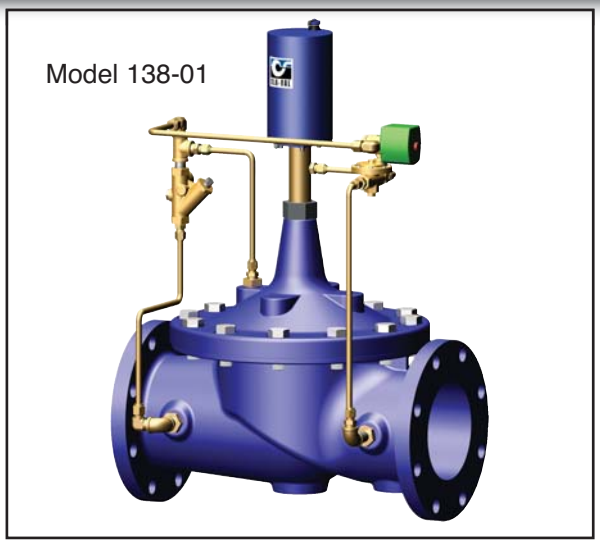
Get more from your valve by adding any of the following optional features.

- KO Anti-Cavitation Trim
- Epoxy Coating
- X141 Pressure Gauge
- Stainless Steel Tubing and Fittings
- X43H-Style Strainer
- Stem Upgrade to Delrin® or Dura-Kleen®

How It Works

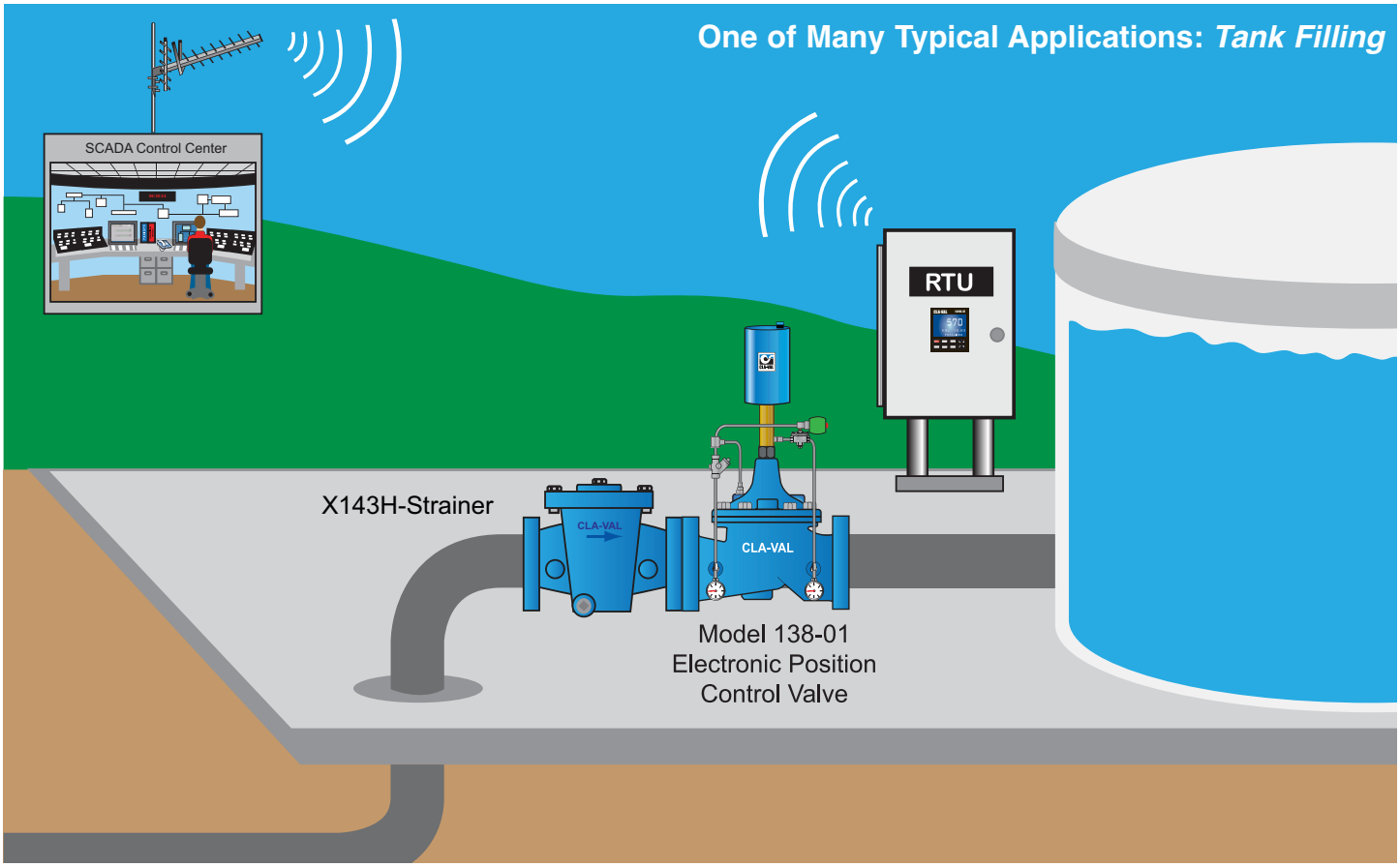
The Cla-Val Model 138-01/638-01 Electronic Actuated Positioning Control Valve regulates flow or pressure or other system parameter by changing valve position from full open to shut-off. Exact valve position for large-scale waterworks or industrial applications is achieved with CPC pilot control that consists of electronic actuator and hydraulic pilot sub-assembly. The CPC controls valve position by limiting valve opening using hydraulically-assisted technology. The pilot sub-assembly has two calibrated orifices that are positioned proportional to valve position to vary main valve control chamber operating pressure. The CPC actuator creates slight changes in orifice position and in turn operating pressure hydraulically changes valve position. The pilot sub-assembly requires very little torque and is virtually frictionless for long service life. The actuator features high repeatable-accuracy brush-less motor technology and low energy consumption. Precision, no-contact hall-effect internal position sensor assures accuracy and durability. The CPC has factory pre-configured parameters of full valve stroke, preset rotation speed, and default setting on loss of set point. Actuator parameters can be changed using free downloadable software and special USB cable. Valve fully-closed position is assured by signaling solenoid to lock control pressure in main valve operating chamber when valve is very close to seat (adjustable). Operating on 24 VDC and with customer supplied battery backup, the 138-01/638-01 valve can eliminate downtime due to power failures.

Positioning Level Control



Cla-Val Model 138-01 Electronic Position Control Valves provide superior controllability

- Can be used for any application requiring position control
- One valve can be used to control several parameters
- Easy integration with SCADA communications systems
- Operating parameters can be adjusted using free down-loadable software from www.cla-val.com
- Provides greater and more precise control than actuated ball or butterfly valves
- Use our ComparFlow software to see the superior performance the Model 138-01 Electronic Position Control Valve can provide
- Consult factory for larger sizes



138-01/638-01 Purchase Specifications

The Electronic Positioning Control Valve shall have a CPC Positioning Control with an integral hydraulic pilot and electronic controller contained in an IP-68 rated submersible enclosure to provide interface between remote telemetry and valve position set-point control. It will compare a remote analog command signal with an internal position sensor signal and adjust the hydraulic pilot control mechanism to a new valve set-point position. Remote analog signal input shall be isolated and reverse polarity protected by a resettable fuse. 4 - 20 mA actuator position feedback output shall be supplied standard. The valve assembly and all components shall be rated for continuous duty. If power fails, the pilot control valve shall continue main valve control to last position set-point command. If remote position signal is lost actuator shall be programmable to go to either the 4 mA, Last, or 20 mA command positions. No mechanical adjustments shall be necessary to the actuator. The low and high position range adjustment shall be accomplished only with valve manufacturer's components and instructions.

The Electronic Actuated Positioning Control Valve shall be Cla-Val Model 138-01/638-01 as manufactured by Cla-Val, Newport Beach, CA.

Pressure Ratings (Recommended Maximum Pressure - psi)

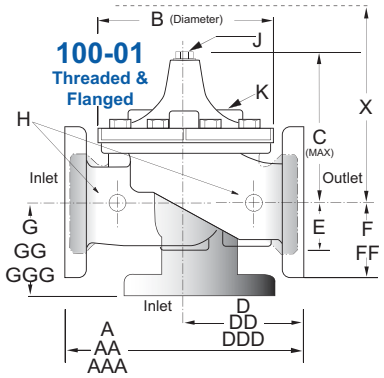
Valve Body & Cover		Pressure Class				
		Flanged			Grooved	Threaded
Grade	Material	ANSI Standards*	150 Class	300 Class	300 Class	End‡ Details
ASTM A536	Ductile Iron	B16.42	250	400	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400	400
ASTM B62	Bronze	B16.24	225	400	400	400

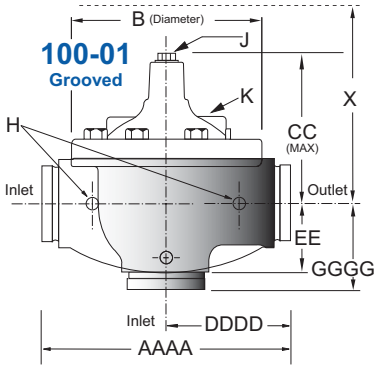
Note: * ANSI standards are for flange dimensions only.
Flanged valves are available faced but not drilled.
‡ End Details machined to ANSI B2.1 specifications.
Valves for higher pressure are available; consult factory for details

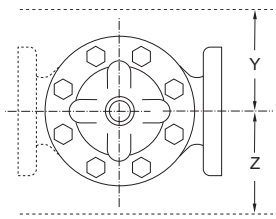
Materials

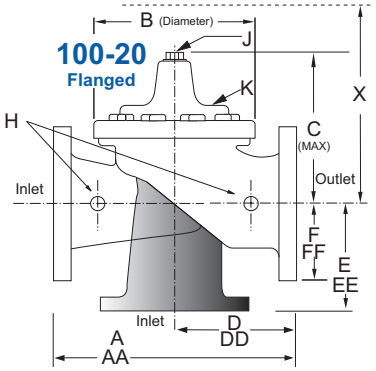
Component	Standard Material Combinations		
Body & Cover	Ductile Iron	Cast Steel	Bronze
100-01 Available Sizes	3" - 12"	3" - 12"	3" - 12"
100-20 Available Sizes	4" - 16"	4" - 16"	4" - 16"
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Bronze is Standard Stainless Steel is Optional		
Disc	Buna-N® Rubber		
Diaphragm	Nylon Reinforced Buna-N® Rubber		
Stem, Nut & Spring	Stainless Steel		

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









Model 100-01 Dimensions (Full Internal Port) (In Inches)

Valve Size (Inches)	3	4	6	8	10	12
A Threaded	12.50	—	—	—	—	—
AA 150 ANSI	12.00	15.00	20.00	25.38	29.75	34.00
AAA 300 ANSI	13.25	15.62	21.00	26.38	31.12	35.50
AAAA Grooved End	12.50	15.00	20.00	25.38	—	—
B Dia.	9.12	11.50	15.75	20.00	23.62	28.00
C Max.	8.19	10.62	13.38	16.00	17.12	20.88
CC Max. Grooved End	7.25	9.31	12.12	14.62	—	—
D Threaded	6.25	—	—	—	—	—
DD 150 ANSI	6.00	7.50	10.00	12.69	14.88	17.00
DDD 300 ANSI	6.38	7.88	10.50	13.25	15.56	17.75
DDDD Grooved End	6.00	7.50	—	—	—	—
E	2.06	3.19	4.31	5.31	9.25	10.75
EE Grooved End	3.12	4.25	6.00	7.56	—	—
F 150 ANSI	3.75	4.50	5.50	6.75	8.00	9.50
FF 300 ANSI	4.13	5.00	6.25	7.50	8.75	10.25
G Threaded	4.50	—	—	—	—	—
GG 150 ANSI	4.00	5.00	6.00	8.00	8.62	13.75
GGG 300 ANSI	4.38	5.31	6.50	8.50	9.31	14.50
GGGG Grooved End	4.25	5.00	—	—	—	—
H NPT Body Tapping	.50	.75	.75	1	1	1
J NPT Cover Center Plug	.50	.75	.75	1	1	1.25
K NPT Cover Tapping	.50	.75	.75	1	1	1
Stem Travel	0.8	1.1	1.7	2.3	2.8	3.4
Approx. Ship Wt. Lbs.	70	140	285	500	780	1165
X Pilot System	15	17	29	31	33	36
Y Pilot System	11	12	20	22	24	26
Z Pilot System	11	12	20	22	24	26

Model 100-20 Dimensions (Reduced Internal Port) (In Inches)

*Consult Factory

Valve Size (Inches)	4	6	8	10	12	14	16
A 150 ANSI	13.88	17.75	21.38	26.00	30.00	34.25	35.00
AA 300 ANSI	14.50	18.62	22.38	27.38	31.50	35.75	36.62
B Dia.	9.12	11.50	15.75	20.00	23.62	27.47	28.00
C Max.	8.62	11.62	15.00	17.88	21.00	20.88	25.75
D 150 ANSI	6.94	8.88	10.69	CF*	CF*	CF*	CF*
DD 300 ANSI	7.25	9.38	11.19	CF*	CF*	CF*	CF*
E 150 ANSI	5.50	6.75	7.25	CF*	CF*	CF*	CF*
EE 300 ANSI	5.81	7.25	7.75	CF*	CF*	CF*	CF*
F 150 ANSI	4.50	5.50	6.75	8.00	9.50	11.00	11.75
FF 300 ANSI	5.00	6.25	7.50	8.75	10.25	11.50	12.75
H NPT Body Tapping	.50	.75	.75	1	1	1	1
J NPT Cover Center Plug	.50	.75	.75	1	1	1.25	1.25
K NPT Cover Tapping	.50	.75	.75	1	1	1	1
Stem Travel	0.8	1.1	1.7	2.3	2.8	3.4	3.4
Approx. Ship Wt. Lbs.	85	195	330	625	900	1250	1380
X Pilot System	15	27	30	33	36	36	41
Y Pilot System	11	18	20	22	24	26	26
Z Pilot System	11	18	20	22	24	26	26

138-01 Valve Selection	100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes						
	Inches	3	4	6	8	10	12
	mm	80	100	150	200	250	300
Basic Valve 100-01	Pattern	G, A	G, A	G, A	G, A	G, A	G, A
	End Detail	T, F, Gr	F, Gr	F, Gr*	F, Gr*	F	F
Suggested Flow (gpm)	Maximum	460	800	1800	3100	4900	7000
	Maximum Intermittent	580	990	2250	3900	6150	8720
	Minimum	2	4	10	15	35	50
Suggested Flow (Liters/Sec)	Maximum	29	50	113	195	309	442
	Maximum Intermittent	37	62	142	246	387	549
	Minimum	0.13	0.25	0.63	0.95	2.2	3.2

100-01 Series is the full internal port Hytrol. **For Lower Flows Consult Factory** *Globe Grooved Only

638-01 Valve Selection	100-20 Pattern: Globe (G), Angle (A), End Connections: Flanged (F) Indicate Available Sizes						
	Inches	4	6	8	10	12	14	16
	mm	100	150	200	250	300	350	400
Basic Valve 100-20	Pattern	G, A	G, A	G, A	G	G	G	G
	End Detail	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	580	1025	2300	4100	6400	9230	9230
	Minimum	2	4	10	15	35	50	50
Suggested Flow (Liters/Sec)	Maximum	37	65	145	258	403	581	581
	Minimum	.13	.25	.63	.95	2.2	3.2	3.2

100-20 Series is the reduced internal port size version of the 100-01 Series. **For Lower Flows Consult Factory**

CPC Mechanical Specifications

Pressure Connection 3/8" NPT

Valve Connections: Positioning Pilot mounting thread to match valve cover center port.

Temperature Range
Water: to 180°F

Materials
Pilot Control:
Housing Stainless Steel Type 316
Trim:Stainless Steel Type 316
Rubber:Buna-N® Synthetic Rubber

Available with optional materials.
Consult factory for details

When Ordering, Please Specify

1. Catalog No. 138-01 or 638-01
2. Valve Size
3. Pattern - Globe or Angle
4. Pressure Class
5. Threaded or Flanged
6. Trim Material
7. Desired Options
8. When Vertically Installed

CPC Electronic Actuator Specifications

Operation: Continuous duty
Supply Power Input: 24V DC, Stand by 80mA, Service 800 mA
Remote Set point Input: 4-20mA, analog signal (isolated and reverse-polarity protected with resettable fuse)
Alarm Output: Dry-contact closure (High/Low)
Position Feedback Signal: 4-20 mA Output
Speed of Rotation: Adjustable On/Off time, max 6 rpm
Diagnostic: LED Indicating operating program and fault mode using green and red light
Loss of Power Position: Actuator will remain in last commanded position.
Loss of Signal Position: Programmable - 4 mA, Last, or 20 mA
Electrical Connections: Single, permanently attached 10 m cable with color-coded power and signal wires
Two permanently attached 10 m cables for limit switch output
Parameter Changing Interface: Plug & Play / NT / 2000 / XP / Vista
Enclosure Specifications:
Environmental Protection: IP-68 (Temporary submersible)
Ambient Temperature: 15° to 150° F (-10° to 80° C)
Materials
Enclosure: Anodized Aluminum
Coupling Assembly: Stainless Steel
Gear Train: Stainless Steel, permanently lubricated

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