



MODEL 81-01

Check Valve



- Simple Proven Design
- No-Slam Operation
- Drip-Tight Shut-Off
- No Packing Glands or Stuffing Boxes
- Easy to Install & Maintain

The Cla-Val Model 81-01 Check Valve is a hydraulically operated No-Slam Check Valve. This valve opens when the pressure at the inlet exceeds the discharge pressure. A gradual rate of opening prevents sudden opening surges. When a pressure reversal occurs the higher downstream pressure is applied to the cover chamber through the control tube lines, and the valve closes drip tight.

This valve is ideally suited for use where a positive shutoff is required. The rubber disc assures tight sealing even if the fluid contains grit or other small-size particles. The simple packless design insures reliable operation and freedom from leaks.

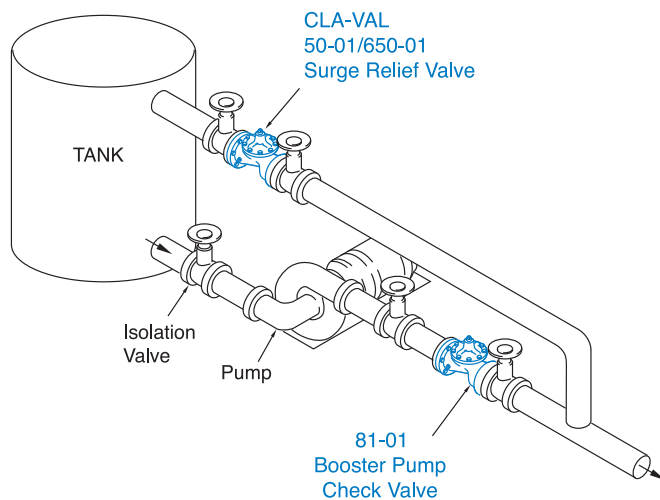
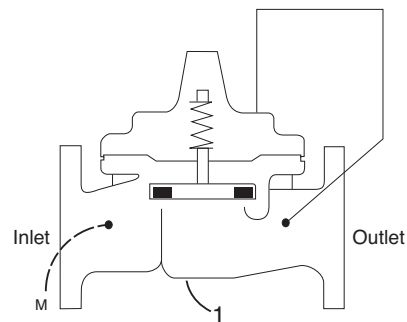
Note: The effectiveness of this valve is related to pipeline velocity. We recommend a maximum flow based on pipeline velocity of 6 feet per second. If pipeline velocities exceed 6 feet per second, consideration should be given to adding a Cla-Val Model 50-01 Pressure Relief Valve or a Cla-Val Model 52 Series Surge Control Valve to the system.

Schematic Diagram

Item	Description
1	100-10 Hytrol Main Valve

Optional Features

Item	Description
P	X141 Pressure Gauge
V	X101 Valve Position Indicator



Typical Applications

Smaller sizes of this valve are used in pilot control systems in Cla-Val Automatic Control valves. This valve can also be used in any piping system where one-way flow is desired.

Install on the discharge of booster pumps to prevent return flow into tank when pump is off. Relief valve as shown is good practice to minimize surges when pump stops.

For valve sizes larger than 3", use Model 81-02.

Model 81-01 (Uses 100-01 Hytrol Main Valve)

Pressure Ratings (Recommended Maximum Pressure - psi)

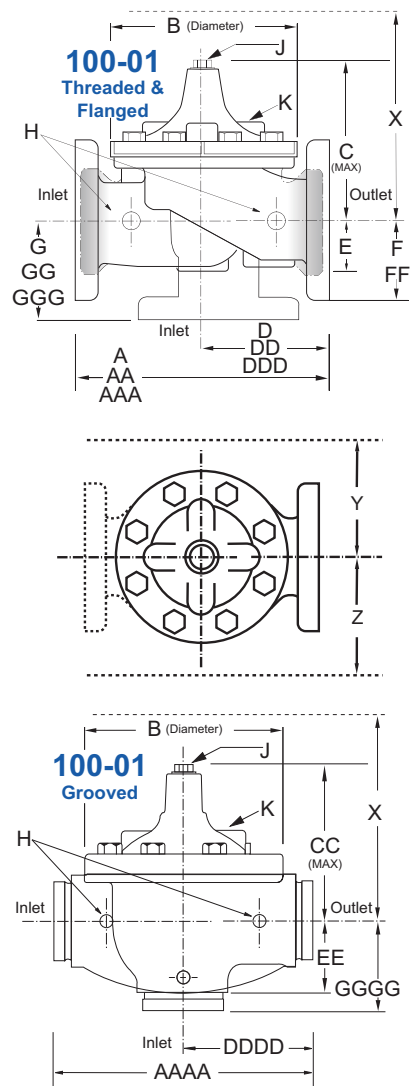
Valve Body & Cover		Pressure Class				
		Flanged		Grooved	Threaded	
Grade	Material	ANSI Standards*	150 Class	300 Class	300 Class	End† Details
ASTM A536	Ductile Iron	B16.42	250	400	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	400	400	400
UNS 87850	Bronze	B16.24	225	400	400	400

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

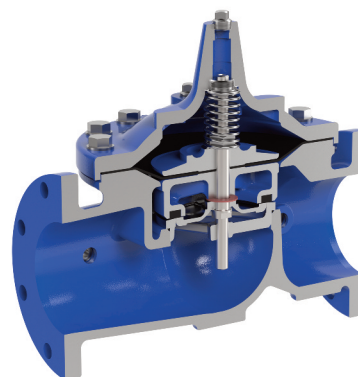
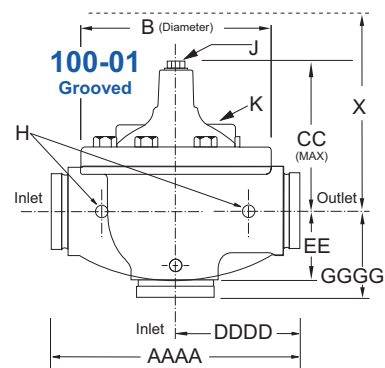
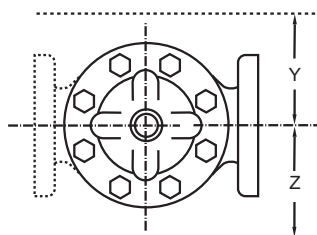
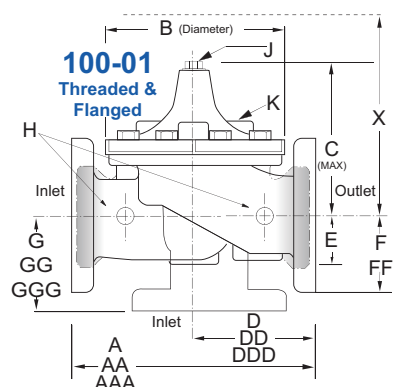
Component	Standard Material Combinations		
Body & Cover	Ductile Iron	Cast Steel	Bronze
Available Sizes(inches)	3/8" - 3"	3/8" - 3"	3/8" - 3"
Available Sizes (mm)	10 - 80 mm	10 - 80 mm	10 - 80 mm
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Bronze 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 81-01 Dimensions (In Inches)



Valve Size (Inches)	3/8*	1/2*	3/4*	1*	1	1 1/4	1 1/2	2	2 1/2	3
A Threaded	2.75	3.50	3.50	5.12	7.25	7.25	7.25	9.38	11.00	12.50
AA 150 ANSI	—	—	—	—	—	—	8.50	9.38	11.00	12.00
AAA 300 ANSI	—	—	—	—	—	—	9.00	10.00	11.62	13.25
AAAA Grooved End	—	—	—	—	—	—	8.50	9.00	11.00	12.50
B Diameter	2.50	3.12	3.12	4.38	5.62	5.62	5.62	6.62	8.00	9.12
C Maximum	2.33	5.88	5.88	6.25	5.50	5.50	5.50	6.50	7.56	8.19
CC Maximum Grooved End	—	—	—	—	—	—	4.75	5.75	6.88	7.25
D Threaded	—	—	—	—	3.25	3.25	3.25	4.75	5.50	6.25
DD 150 ANSI	—	—	—	—	—	—	4.00	4.75	5.50	6.00
DDD 300 ANSI	—	—	—	—	—	—	4.25	5.00	5.88	6.38
DDDD Grooved End	—	—	—	—	—	—	—	4.75	—	6.00
E	1.25	0.88	0.88	1.63	1.12	1.12	1.12	1.50	1.69	2.06
EE Grooved End	—	—	—	—	—	—	2.00	2.50	2.88	3.12
F 150 ANSI	—	—	—	—	—	—	2.50	3.00	3.50	3.75
FF 300 ANSI	—	—	—	—	—	—	3.06	3.25	3.75	4.13
G Threaded	—	—	—	—	1.88	1.88	1.88	3.25	4.00	4.50
GG 150 ANSI	—	—	—	—	—	—	4.00	3.25	4.00	4.00
GGG 300 ANSI	—	—	—	—	—	—	4.25	3.50	4.31	4.38
GGGG Grooved End	—	—	—	—	—	—	—	3.25	—	4.25
H NPT Body Tapping	—	0.125	0.125	0.25	0.375	0.375	0.375	0.375	0.50	0.50
J NPT Cover Center Plug	0.125	0.125	0.125	0.25	0.25	0.25	0.25	0.50	0.50	0.50
K NPT Cover Tapping	—	0.125	0.125	0.25	0.375	0.375	0.375	0.375	0.50	0.50
Stem Travel	—	—	—	—	0.40	0.40	0.40	0.60	0.70	0.80
Approx. Ship Weight (lbs)	3	3	8	8	15	15	15	35	50	70
Approx. X Pilot System	—	—	—	—	11	11	11	13	14	15
Approx. Y Pilot System	—	—	—	—	9	9	9	9	10	11
Approx. Z Pilot System	—	—	—	—	9	9	9	9	10	11

Model 81-01 Metric Dimensions - (Uses 100-01Hytrol Main Valve)



100-01 Hytrol Main Valve



Valve Size (mm)	10*	15*	20*	25*	25	32	40	50	65	80
A Threaded	70	89	89	130	184	184	184	238	279	318
AA 150 ANSI	—	—	—	—	—	—	216	238	279	305
AAA 300 ANSI	—	—	—	—	—	—	229	254	295	337
AAAA Grooved End	—	—	—	—	—	—	216	228	279	318
B Diameter	64	80	80	111	143	143	143	168	203	232
C Maximum	59	149	149	159	140	140	140	165	192	208
CC Maximum Grooved End	—	—	—	—	—	—	120	146	175	184
D Threaded	—	—	—	—	83	83	83	121	140	159
DD 150 ANSI	—	—	—	—	—	—	102	121	140	152
DDD 300 ANSI	—	—	—	—	—	—	108	127	149	162
DDDD Grooved End	—	—	—	—	—	—	—	121	—	152
E	32	23	23	42	29	29	29	38	43	52
EE Grooved End	—	—	—	—	—	—	52	64	73	79
F 150 ANSI	—	—	—	—	—	—	64	76	89	95
FF 300 ANSI	—	—	—	—	—	—	78	83	95	105
G Threaded	—	—	—	—	48	48	48	83	102	114
GG 150 ANSI	—	—	—	—	—	—	102	83	102	102
GGG 300 ANSI	—	—	—	—	—	—	102	89	110	111
GGGG Grooved End	—	—	—	—	—	—	—	83	—	108
H NPT Body Tapping	—	0.125	0.125	0.25	0.375	0.375	0.375	0.375	0.50	0.50
J NPT Cover Center Plug	0.125	0.125	0.125	0.25	0.25	0.25	0.25	0.50	0.50	0.50
K NPT Cover Tapping	—	0.125	0.125	0.25	0.375	0.375	0.375	0.375	0.50	0.50
Stem Travel	—	—	—	—	10	10	10	15	18	20
Approx. Ship Weight (kgs)	1.4	1.4	1.4	6	7	7	7	16	23	32
Approx. X Pilot System	—	—	—	—	280	280	280	331	356	381
Approx. Y Pilot System	—	—	—	—	229	229	229	229	254	280
Approx. Z Pilot System	—	—	—	—	229	229	229	229	254	280

81-01 Valve Selection	100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes									
	Inches	¾	½	¼	1	1¼	1½	2	2½	3
	mm	10	15	20	25	32	40	50	65	80
Main Valve 100-01	Pattern	G	G	G	G, A	G, A	G, A	G, A	G, A	G, A
	End Detail	T	T	T	T	T	T, F, Gr*	T, F, Gr	T, F, Gr*	T, F, Gr
Suggested Flow (gpm)	Maximum	4	6	10	16	28	38	63	90	138
Suggested Flow (Liters/Sec)	Maximum	0.3	0.4	0.6	1.0	1.8	2.4	4.0	5.7	8.7

100-01 Series is the full internal port Hytrol.

*Globe Grooved Only

Flowrates shown are for a velocity of 6 fps (1.8 m/s).

Velocities can be increased to 10 fps (3.05 m/s) if required, and the installation of a surge valve in the system is recommended in velocities above 6 ft/sec. (1.8 m/sec)

Pilot System Specifications

Temperature Rating

Water: to 180°F / 82°C Maximum

Speed Controls

For valves with opening and closing speed controls order Model 81-02

Materials

Standard Pilot System Materials

Fittings: Brass

Tubing: Copper

Optional Pilot System Materials

Pilot Systems are available with optional stainless steel or Monel materials.

When Ordering, Please Specify

1. Catalog No. 81-01
2. Valve Size
3. Pattern - Globe or Angle
4. Pressure Class
5. Threaded or Flanged
6. Desired Options
7. When Vertically Installed

Valve Options



X101 Valve
Position Indicator



X141 Pressure
Gauge



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