



MODEL — 550-01

Pressure Relief & Pressure Sustaining Valve



- **Accurate Pressure Control**
- **Optional Check Feature**
- **Fast Opening – maintains line pressure**
- **Slow Closing – prevents surges**
- **Completely Automatic Operation**

The Cla-Val Model 550-01 Pressure Relief Valve is a hydraulically operated, pilot-controlled, modulating valve designed to maintain constant upstream pressure within close limits. This valve can be used for pressure relief, pressure sustaining, back pressure, or unloading functions in a by-pass system.

In operation, the valve is actuated by line pressure through a pilot control system, opening fast to maintain steady line pressure but closing gradually to prevent surges. Operation is completely automatic and pressure settings may be easily changed.

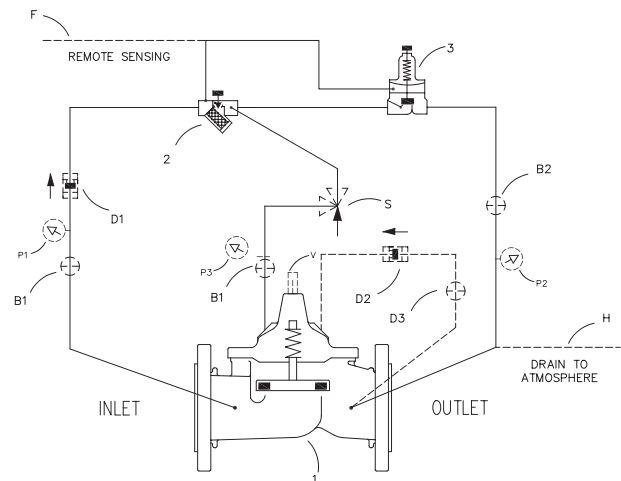
If the optional check feature "D" is added, and a pressure reversal occurs, the valve closes to prevent return flow.

Schematic Diagram

Item	Description
1	100-46 Main Hytrol Valve
2	X42N-2 Strainer & Needle Valve
3	CRL Pressure Relief Control

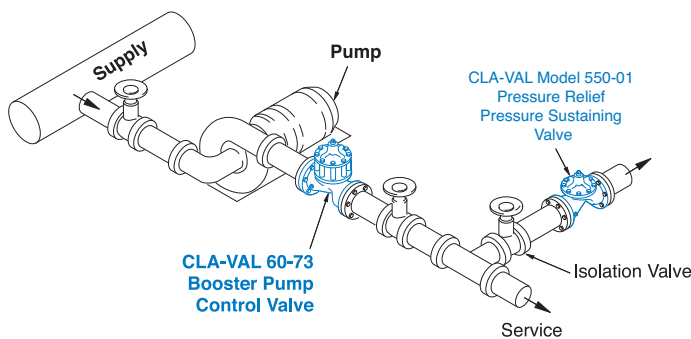
Optional Features

Item	Description
B	CK2 (Isolation Valve)
D	Check Valves with Isolation Valve
F	Remote Pilot Sensing
P	X141 Pressure Gauge
S	CV Speed Control (Opening)
V	X101 Valve Position Indicator



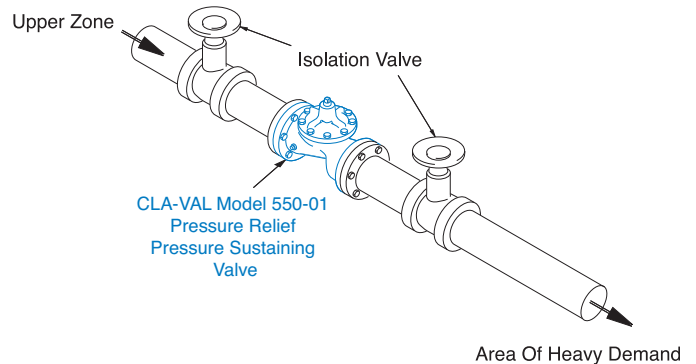
The "D" feature on a vertically installed 6" and larger valve must be horizontally oriented.

Typical Applications



Pressure Relief Service

To provide protection for the system against high pressure surges when pumps are shut down, this fast opening – slow closing relief valve dissipates the excess pressure.



Pressure Sustaining Service

When installed in a line between an upper zone and a lower area of heavy demand, the valve acts to maintain desired upstream pressure to prevent "robbing" of the upper zone. Water in excess of pressure setting flows to area of heavy demand; control is smooth, and pressure regulation is positive.

Specifications

Model 550-01

Sizes

Globe (inch):

1½", 2", 2-1/2", 3", 4", 6", 8", 10", 12"

Globe (mm):

40, 50, 65, 80, 100, 150, 200, 250, 300

Grooved End (inch): 1-1/2" - 6"

Grooved End (mm): 40 - 150 mm

End Detail

Slip-on Two Piece Flange
Dimensions Per ANSI B16.5

Grooved End AWWA/ANSI C-606

Pressure Rating

ANSI Class 150:

Maximum 285 psi

ANSI Class 300:

Maximum 400 psi

Higher Pressure Available
Please Contact Factory

Operating Temperature

Fluids Compatible with
Valve Materials

-40° to 180° F (-40° to 82° C)

Materials

Body, Cover, Trim,
Diaphragm Assembly,
Flanges, and Fasteners
316 Series
Stainless Steel
Electropolished

Disc:

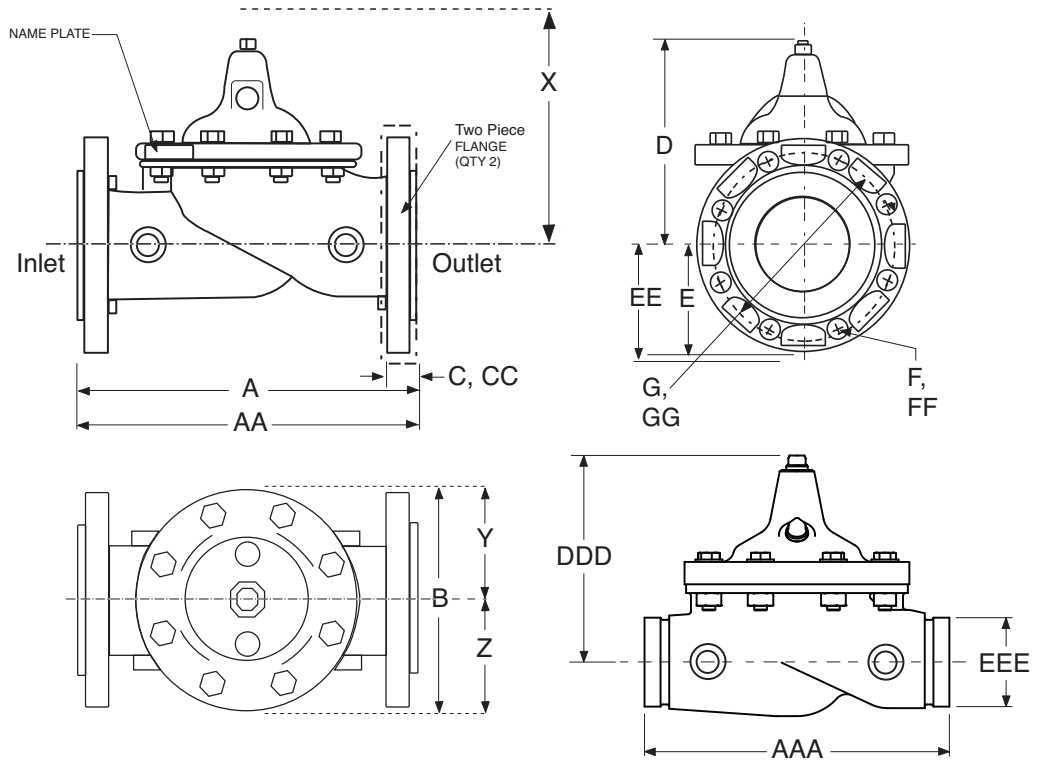
Buna-N® Rubber*

Diaphragm:

Nylon Fabric Reinforced
Synthetic Buna-N® Rubber*

* Contact Factory for Other

Disc or Diaphragm Materials



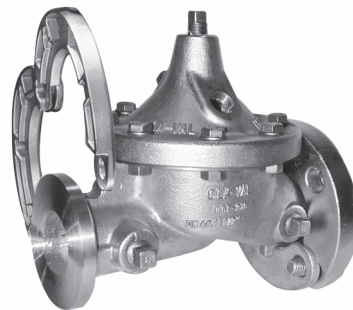
Model 550-01 Dimensions (Inches)

Valve Size (Inches)	1½	2	2½	3	4	6	8	10	12
A 150 ANSI	7.87	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00
AA 300 ANSI	7.87	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00
AAA Grooved End	8.50	11.00	11.00	12.00	15.00	20.00	—	—	—
B	5.62	6.61	8.00	9.13	11.50	15.75	20.00	23.62	28.00
C	0.56	0.62	0.69	0.75	0.94	1.00	1.12	1.19	1.25
CC 300 ANSI	0.81	0.88	1.00	1.12	1.25	1.44	1.62	1.88	2.00
D	5.90	6.25	7.25	8.20	10.21	13.32	16.38	21.00	25.38
DDD Grooved End	5.29	6.34	7.43	8.14	10.30	13.03	—	—	—
E	2.56	3.05	3.54	3.75	4.53	5.61	6.75	8.00	9.50
EE 300 ANSI	3.05	3.25	3.74	4.13	5.02	6.30	7.50	8.75	10.25
EEE Grooved End	1.13	1.50	1.88	2.13	2.68	3.86	—	—	—
F	0.62	0.75	0.75	0.75	0.75	0.88	0.88	1.00	1.00
FF 300 ANSI	0.88	0.75	0.88	0.88	0.88	0.88	1.00	1.12	1.25
G	3.88	4.75	5.50	6.00	7.50	9.50	11.75	14.25	17.00
GG 300 ANSI	4.50	5.00	5.88	6.62	7.88	10.62	13.00	15.25	17.75
Flange Bolts (150 Class)	4	4	4	4	8	8	8	12	12
Flange Bolts (300 Class)	4	8	8	8	8	12	12	12	16
Approx. Wt. (Lbs.)	25	35	55	75	160	290	340	600	1000
Approx. X Pilot System	11.00	13.00	14.00	15.00	17.00	29.00	31.00	33.00	36.00
Approx. Y Pilot System	9.00	9.00	10.00	11.00	12.00	20.00	22.00	24.00	26.00
Approx. Z Pilot System	9.00	9.00	10.00	11.00	12.00	20.00	22.00	24.00	26.00

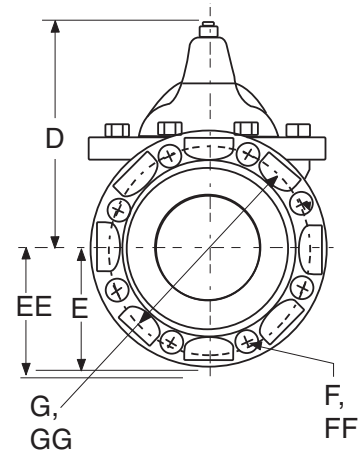
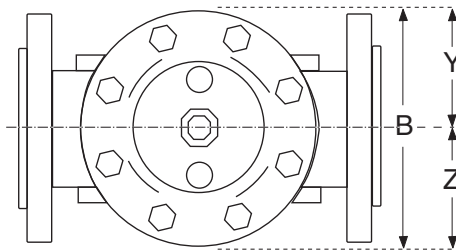
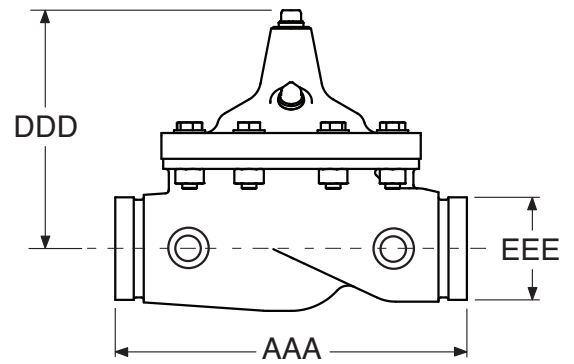
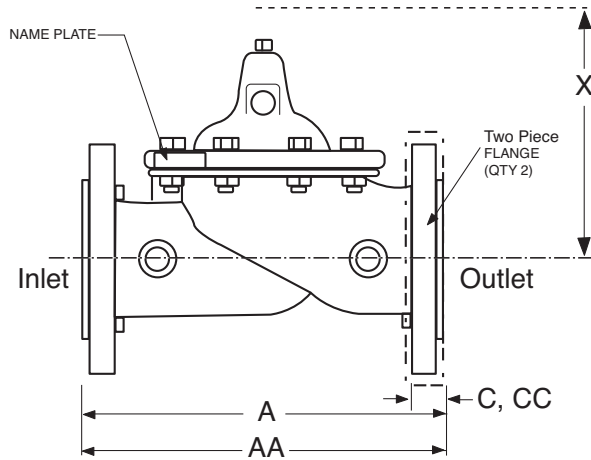
100-46 Full Port Functional Data

Size (Inches)	Cv (gpm)*	Cv (l/s)**
1½	32	8
2	54	13
2½	85	20
3	115	27
4	200	48
6	440	105
8	770	185
10	1245	299
12	1725	414

*Cv = gpm flow at 1 psi drop
**Cv = l/s flow at 1 bar drop



Model 550-01 Dimensions (mm)



Model 550-01 Dimensions (mm)

Valve Size (mm)	40	50	65	80	100	150	200	250	300
A 150 ANSI	200	238	279	305	381	508	645	756	864
AA 300 ANSI	200	238	279	305	381	508	645	756	864
AAA Grooved End	216	279	279	305	381	508	—	—	—
B	143	168	203	232	292	400	508	600	711
C	14	16	18	19	24	25	28	30	32
CC 300 ANSI	21	22	25	28	32	37	41	48	51
D	150	159	184	208	259	338	416	533	645
DDD Grooved End	134	161	189	207	262	331	—	—	—
E	65	78	90	95	115	143	172	203	241
EE 300 ANSI	78	83	95	105	128	160	190	222	260
EEE Grooved End	29	38	48	54	68	98	—	—	—
F	16	19	19	19	19	22	22	25	25
FF 300 ANSI	22	19	22	22	22	22	25	28	32
G	99	121	140	152	190	241	299	362	432
GG 300 ANSI	114	127	149	168	200	270	330	387	451
Flange Bolts (150 Class)	102	102	102	102	203	203	203	305	305
Flange Bolts (300 Class)	102	203	203	203	203	305	305	305	406
Approx. Wt. (Kgs.)	11	16	25	34	73	132	154	272	454
Approx. X Pilot System	279	330	356	381	432	737	787	838	914
Approx. Y Pilot System	229	229	254	279	305	508	559	610	660
Approx. Z Pilot System	229	229	254	279	305	508	559	610	660

550-01 Valve Selection	100-46 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes									
	Inches	1½	2	2½	3	4	6	8	10	12
	mm	40	50	65	80	100	150	200	250	300
Main Valve 100-46	Pattern	G	G	G	G	G	G	G	G	G
	End Detail	F	F	F	F	F	F	F	F	F
Suggested Flow (gpm)	Maximum	125	210	300	460	800	1800	3100	4900	7000
	Maximum Surge	280	470	670	1000	1800	4000	7000	11000	16000
Suggested Flow (Liters/Sec)	Maximum	8	13	19	29	50	114	196	309	442
	Maximum Surge	18	30	42	63	114	252	442	694	1009

100-46 Series is the full internal port Hytrol.

Pilot System Specifications

Adjustment Ranges

0	to	75 psi Max.
20	to	105 psi
20	to	200 psi*
100	to	300 psi

*Supplied unless otherwise specified
Other ranges available, please consult factory

Temperature Range

Water: to 180°F

Materials

Standard Pilot System Materials

Pilot Control: Stainless Steel Type 303
Trim: Stainless Steel Type 303
Rubber: Buna-N® Synthetic Rubber

Optional Pilot System Materials

Pilot Systems are available with optional
316 Stainless Steel or Monel materials.

Note: Available with remote sensing control.



When Ordering, Specify

1. Catalog No. 550-01
2. Valve Size
3. Pilot System Materials
4. End Detail (150/300)
5. Fluid to be Handled
6. Fluid Temperature
7. Inlet Pressure
8. Outlet Pressure
9. Adjustment Range
10. Desired Options

Valve Options

X141
Pressure
Gauge



X101AR Valve
Position Indicator
with Air Release



X101
Valve Position
Indicator



X144 e-FlowMeter



X43H
Strainer



Stainless
Steel Pilot



E-550-01 (R-03/2021)

CLA-VAL

1701 Placentia Avenue • Costa Mesa, CA 92627
800-942-6326 • Web Site: www.cla-val.com • E-mail: info@cla-val.com

CLA-VAL CANADA
4687 Christie Drive
Beamsville, Ontario
Canada L0R 1B4
Phone: 905-563-4963
www.cla-val.com
E-mail sales@cla-val.ca

CLA-VAL EUROPE
Chemin des Mésanges 1
CH-1032 Romanel/
Lausanne, Switzerland
Phone: 41-21-643-15-55
www.cla-val.ch
E-mail: info@cla-val.ch

CLA-VAL UK
Dainton House, Goods Station Road
Tunbridge Wells
Kent TN11 2 DH England
Phone: 44-1892-514-400
www.cla-val.ch
E-mail: info@cla-val.co.uk

CLA-VAL FRANCE
Porte du Grand Lyon 1
ZAC du Champ du Périer
France - 01700 Neyron
Phone: 33-4-72-25-92-93
www.cla-val.ch
E-mail: info@cla-val.ch

CLA-VAL ASIA PACIFIC
45 Kennaway Road
Woolston, Christchurch, 8023
New Zealand
Phone: 64-39644860
www.cla-valpacific.com
E-mail: info@cla-valpacific.com

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