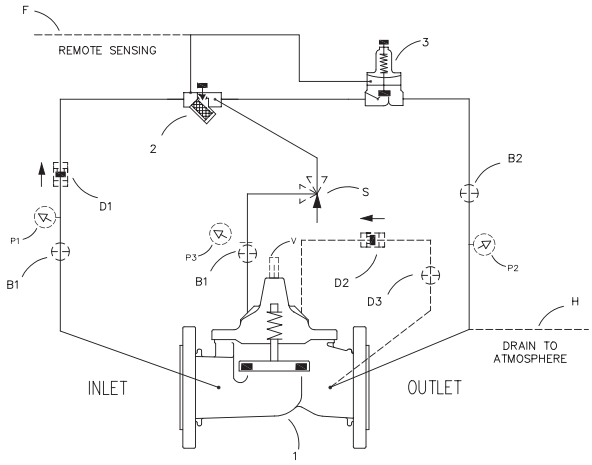
Model 550-01
PRESSURE RELIEF & PRESSURE SUSTAINING VALVE

ENGINEERING DATA SHEET





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

- 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.

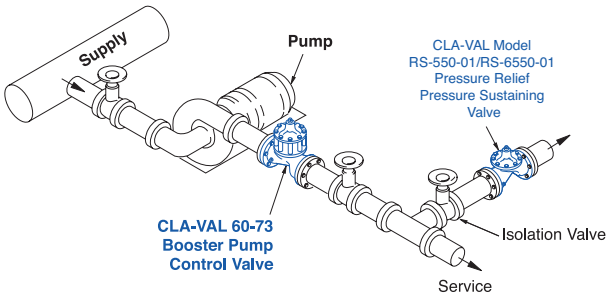
Schematic Diagram	
Item	**Description**
1	100-46 Main Hytrol Valve
2	X42N-2 Strainer & Needle Valve
3	CRL Pressure Relief Control

Optional Features	
Item	**Description**
B	CK2 Isolation Valve
D	Check Valves with Isolation Valve
F	Remote Pilot Sensing
P	X141 Pressure Gauge
S	CV Flow Control (Opening)
V	X101D Valve Position Indicator

Typical Applications

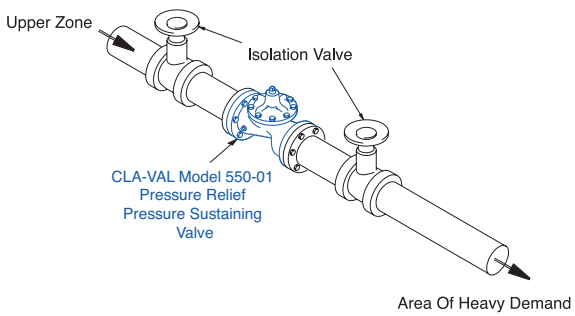
Pressure Relief Service

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.



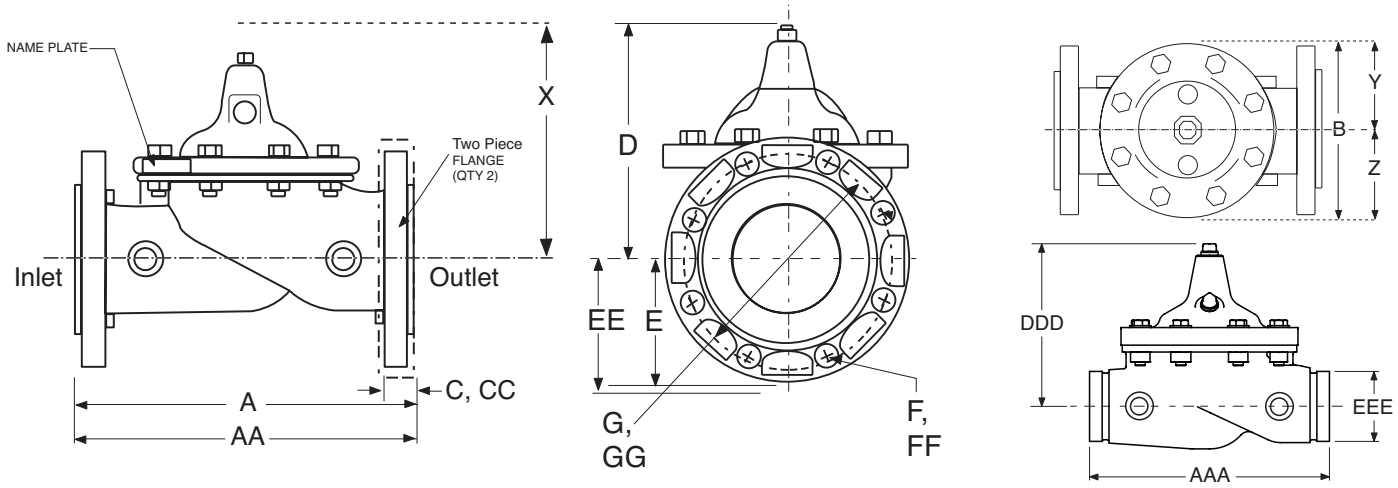
Pressure Sustaining Service

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.



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Model 550-01 (Uses Main Valve Model 100-46)

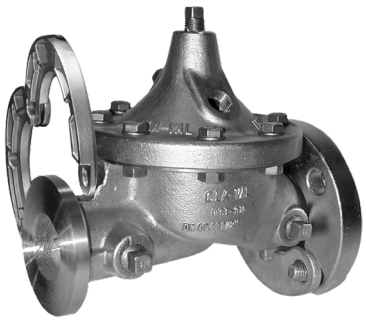


In Inches

Model 550-01 Dimensions

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

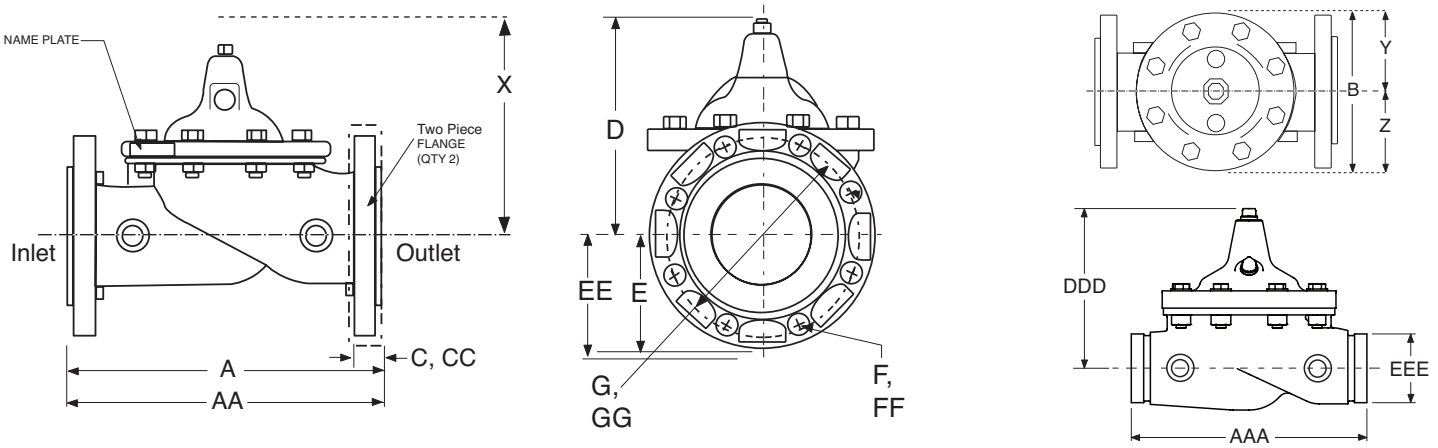


Size (Inches)	Cv (gpm)*	Cv (l/s)**
1½	32	8
2	54	13
2½	85	20
3	115	27
4	200	48
6	440	105
8	770	185
10	1245	299
12	1725	414

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

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Model 550-01 Metric Dimensions (Uses Main Valve Model 100-46)



In mm

Model 550-01 Dimensions

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

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550-01 Valve Selection	100-46 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes									
	Inches	1 ½	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.										

Specifications

Sizes
Globe (inch): 1½", 2", 2½", 3", 4", 6", 8", 10", 12"
Globe (mm): 40, 50, 65, 80, 100, 150, 200, 250, 300
Grooved End (inch): 1½" - 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**

Pilot System Specifications



Adjustment Range
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.

Valve Options



Model X141
Pressure Gauge



Model X101AR
Valve Position Indicator with Air Release



Model X101D
Valve Position Indicator



Model X43H
Strainer



Stainless Steel Pilot

When Ordering, Please 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

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