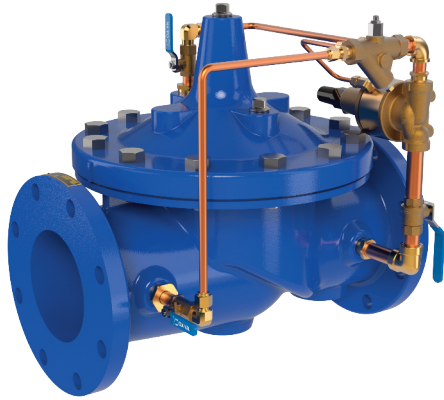




MODEL — 50-AW

High Pressure Relief & Pressure Sustaining Valve



- Accurate Pressure Control
- Optional Check Feature
- Fast Opening to Maintain Line Pressure
- Slow Closing to Prevents Surges
- Completely Automatic Operation

The Cla-Val Model 50-AW High Pressure Relief 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. This valve can be used for pressure relief, pressure sustaining, back pressure, or unloading functions in a bypass system.

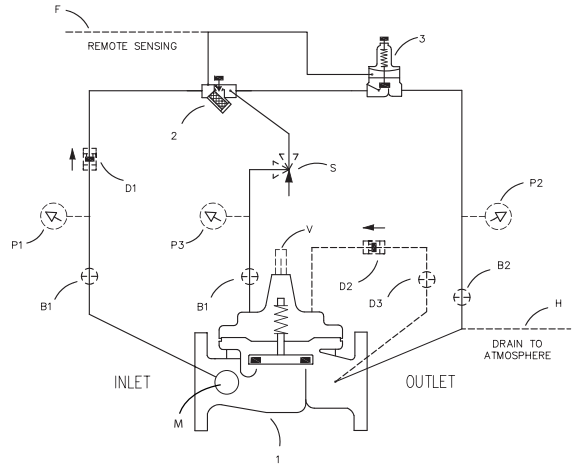
If a check feature is added, and a pressure reversal occurs, the downstream pressure is admitted into the main valve cover chamber, closing the valve to prevent return flow.

Schematic Diagram

Item	Description
1	100-01KX Hytrol Main Valve
2	X42N-2 Strainer & Needle Valve
3	CRL18 Pressure Relief Control

Optional Features

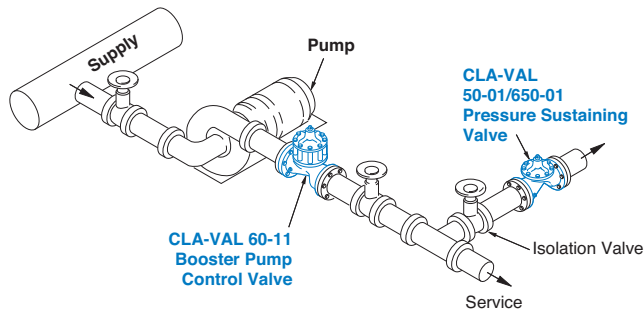
Item	Description
B	CK2 Isolation Valve
D	Check Valves with Isolation Valve
F	Remote Pilot Sensing
H	Drain to Atmosphere
M	X144 e-FlowMeter
P	X141 Pressure Gauge
S	CV Speed Control (Opening)
V	X101 Valve Position Indicator



Typical Applications

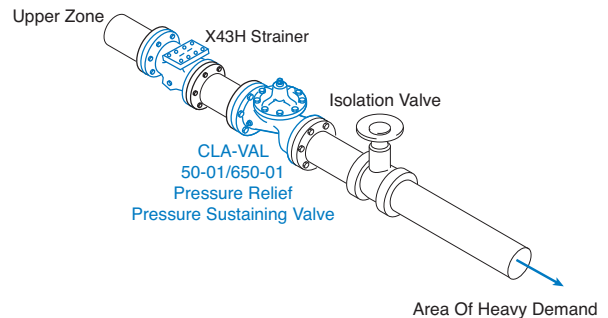
Pressure Relief Service

This fast opening, slow closing relief valve provides system protection against high pressure surges on pump start up and pump shut down by dissipating the excess pressure to a safe location.



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 is allowed to flow to an area of heavy demand, control is smooth, and pressure regulation is positive.



Model 50-AW (Uses 100-01KX Hytrol Main Valve)

Pressure Ratings (Recommended Maximum Pressure - psi)

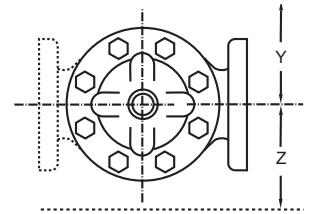
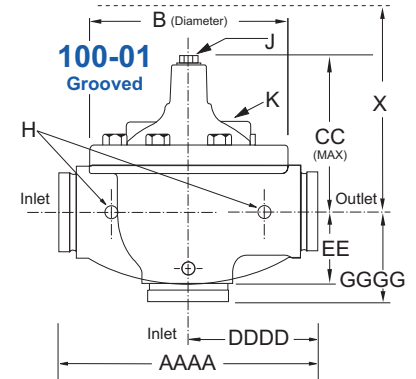
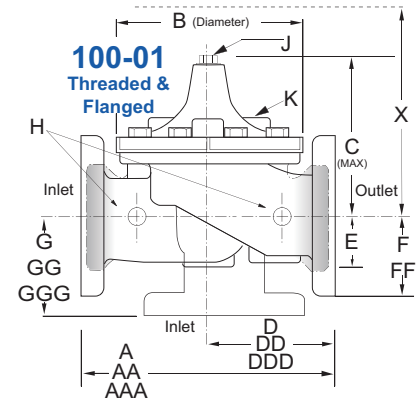
Valve Body & Cover		Pressure Class				
		Flanged		Grooved	Threaded	
Grade	Material	ANSI Standards*	150 Class	300 Class	300 Class	End‡ Details
ASTM A536	Ductile Iron	B16.42	250	640	400	400
ASTM A216-WCB	Cast Steel	B16.5	285	720	400	400
UNS 87850	Bronze	B16.24	225	500	400	400

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.
Cla-Val does not recommend exceeding pressure differentials of 400 psi.

Materials

Component	Standard Material Combinations		
Body & Cover	Ductile Iron	Cast Steel	Bronze
Available Sizes	1" - 36" 25 - 900mm	1" - 16" 25 - 400mm	1" - 16" 25 - 400mm
Disc Retainer & Diaphragm Washer	Cast Iron	Cast Steel	Bronze
Trim: Disc Guide, Seat & Cover Bearing	Stainless Steel is Standard		
Disc	Ultra-High Molecular Weight Polyethylene		
Diaphragm	Nylon Reinforced Buna-N® Rubber		
Stem, Nut & Spring	Stainless Steel		

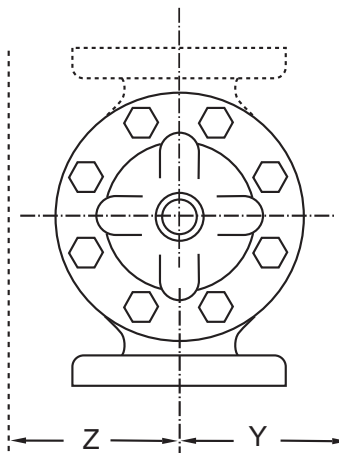
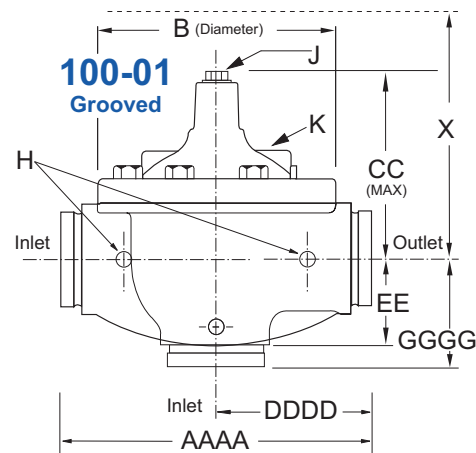
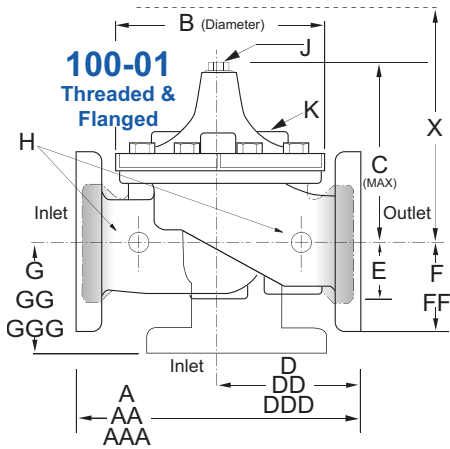
For material options not listed, consult factory.
 Cla-Val manufactures valves in more than 50 different alloys.



Model 50-AW Dimensions (In Inches)

Valve Size (Inches)	1	1¼	1½	2	2½	3	4	6	8	10	12
A Threaded	7.25	7.25	7.25	9.38	11.00	12.50	—	—	—	—	—
AA 150 ANSI	—	—	8.50	9.38	11.00	12.00	15.00	20.00	25.38	29.75	34.00
AAA 300 ANSI	—	—	9.00	10.00	11.62	13.25	15.62	21.00	26.38	31.12	35.50
AAAA Grooved End	—	—	8.50	9.00	11.00	12.50	15.00	20.00	25.38	—	—
B Diameter	5.62	5.62	5.62	6.62	8.00	9.12	11.50	15.75	20.00	23.62	28.00
C Maximum	5.50	5.50	5.50	6.50	7.56	8.19	10.62	13.38	16.00	17.12	20.88
CC Maximum Grooved End	—	—	4.75	5.75	6.88	7.25	9.31	12.12	14.62	—	—
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	7.50	10.00	12.69	14.88	17.00
DDD 300 ANSI	—	—	4.25	5.00	5.88	6.38	7.88	10.50	13.25	15.56	17.75
DDDD Grooved End	—	—	—	4.75	—	6.00	7.50	—	—	—	—
E	1.12	1.12	1.12	1.50	1.69	2.06	3.19	4.31	5.31	9.25	10.75
EE Grooved End	—	—	2.00	2.50	2.88	3.12	4.25	6.00	7.56	—	—
F 150 ANSI	—	—	2.50	3.00	3.50	3.75	4.50	5.50	6.75	8.00	9.50
FF 300 ANSI	—	—	3.06	3.25	3.75	4.13	5.00	6.25	7.50	8.75	10.25
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	5.00	6.00	8.00	8.62	13.75
GGG 300 ANSI	—	—	4.25	3.50	4.31	4.38	5.31	6.50	8.50	9.31	14.50
GGGG Grooved End	—	—	—	3.25	—	4.25	5.00	—	—	—	—
H NPT Body Tapping	0.375	0.375	0.375	0.375	0.50	0.50	0.75	0.75	1.00	1.00	1.00
J NPT Cover Center Plug	0.25	0.25	0.25	0.50	0.50	0.50	0.75	0.75	1.00	1.00	1.25
K NPT Cover Tapping	0.375	0.375	0.375	0.375	0.50	0.50	0.75	0.75	1.00	1.00	1.00
Stem Travel	0.40	0.40	0.40	0.60	0.70	0.80	1.10	1.70	2.30	2.80	3.40
Approx. Ship Weight (lbs)	15	15	15	35	50	70	140	285	500	780	1165
Approx. X Pilot System	11	11	11	13	14	15	17	29	31	33	36
Approx. Y Pilot System	9	9	9	9	10	11	12	20	22	24	26
Approx. Z Pilot System	9	9	9	9	10	11	12	20	22	24	26

Model 50-AW Metric Dimensions (Uses 100-01KX Hytrol Main Valve)



Valve & Pilot Approvals

NSF/ANSI 372: National Lead Free Mandate "Reduction of Lead in Drinking Water Act"

NSF International recognizes Cla-Val as complying with NSF/ANSI 61 and all applicable requirements.

Cla-Val fulfills the requirements described in the American Water Works Association's (AWWA) Standard for Pilot-Operated Control Valves: C530:12



Model 50-AW Dimensions (in mm)

Valve Size (mm)	25	32	40	50	65	80	100	150	200	250	300
A Threaded	184	184	184	238	279	318	—	—	—	—	—
AA 150 ANSI	—	—	216	238	279	305	381	508	645	756	864
AAA 300 ANSI	—	—	229	254	295	337	397	533	670	790	902
AAAA Grooved End	—	—	216	228	279	318	381	508	645	—	—
B Diameter	143	143	143	168	203	232	292	400	508	600	711
C Maximum	140	140	140	165	192	208	270	340	406	435	530
CC Maximum Grooved End	—	—	120	146	175	184	236	308	371	—	—
D Threaded	83	83	83	121	140	159	—	—	—	—	—
DD 150 ANSI	—	—	102	121	140	152	191	254	322	378	432
DDD 300 ANSI	—	—	108	127	149	162	200	267	337	395	451
DDDD Grooved End	—	—	—	121	—	152	191	—	—	—	—
E	29	29	29	38	43	52	81	110	135	235	273
EE Grooved End	—	—	52	64	73	79	108	152	192	—	—
F 150 ANSI	—	—	64	76	89	95	114	140	171	203	241
FF 300 ANSI	—	—	78	83	95	105	127	159	191	222	260
G Threaded	48	48	48	83	102	114	—	—	—	—	—
GG 150 ANSI	—	—	102	83	102	102	127	152	203	219	349
GGG 300 ANSI	—	—	102	89	110	111	135	165	216	236	368
GGGG Grooved End	—	—	—	83	—	108	127	—	—	—	—
H NPT Body Tapping	0.375	0.375	0.375	0.375	0.50	0.50	0.75	0.75	1.00	1.00	1.00
J NPT Cover Center Plug	0.25	0.25	0.25	0.50	0.50	0.50	0.75	0.75	1.00	1.00	1.25
K NPT Cover Tapping	0.375	0.375	0.375	0.375	0.50	0.50	0.75	0.75	1.00	1.00	1.00
Stem Travel	10	10	10	15	18	20	28	43	58	71	86
Approx. Ship Weight (kgs)	7	7	7	16	23	32	64	129	227	354	528
Approx. X Pilot System	280	280	280	331	356	381	432	737	788	839	915
Approx. Y Pilot System	229	229	229	229	254	280	305	508	559	610	661
Approx. Z Pilot System	229	229	229	229	254	280	305	508	559	610	661

50-AW Valve Selection	100-01 Pattern: Globe (G), Angle (A), End Connections: Threaded (T), Grooved (GR), Flanged (F) Indicate Available Sizes											
	Inches	1	1¼	1½	2	2½	3	4	6	8	10	12
	mm	25	32	40	50	65	80	100	150	200	250	300
Basic Valve 100-01	Pattern	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A	G, A
	End Detail	T	T	T, F, Gr*	T, F, Gr	T, F, Gr*	T, F, Gr	F, Gr	F, Gr*	F, Gr*	F	F
Suggested Flow (gpm)	Maximum	55	93	125	210	300	460	800	1800	3100	4500	7000
	Maximum Surge	120	210	280	470	670	1000	1800	4000	7000	11000	16000
Suggested Flow (Liters/Sec)	Maximum	3.5	6	8	13	19	29	50	113	195	309	442
	Maximum Surge	7.6	13	18	30	42	63	113	252	441	693	1008

100-01 Series is the full internal port Hytrol. *Globe Grooved Only

Notes:

- Many factors should be considered in sizing pressure relief valves including inlet pressure, outlet pressure and flow rates.
- For sizing questions or cavitation analysis, consult Cla-Val with system details.

Pilot System Specifications



Adjustment Ranges

250 to 600 psi max.

Temperature Range

Water: to 180°F

When Ordering, Specify:

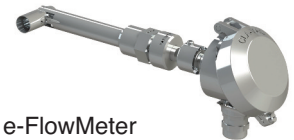
1. Catalog No. 50-AW for High Pressure Applications
2. Valve Size
3. Pattern - Globe or Angle
4. Pressure Class
5. Threaded, Flanged, Grooved
6. Trim Material
7. Adjustment Range
8. Desired Options
9. When Vertically Installed

Valve Options

X141 Pressure Gauge



X144 e-FlowMeter



Materials

Standard Pilot System Materials

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

Optional Pilot System Materials

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

Main Valve Options

Epoxy Coating - suffix KC

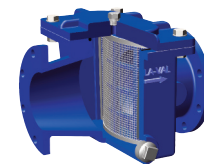
NSF 61 Listed and FDA approved, fusion bonded epoxy coating

Dura-Kleen® Stem - suffix KD

Fluted design prevents dissolved minerals build-up on the stem

LFS Trim

Designed to regulate precisely and smoothly at typical flow rates as well as lower than the industry standard of 1 fps, without decreasing the valve's capacity



X43H Strainer

Stainless Steel Pilot



Pilot Approvals



NSF/ANSI 372: National Lead Free Mandate
"Reduction of Lead in Drinking Water Act"