Models

50B-4KG1 (Globe)
2050B-4KG1 (Angle)

Fire Protection Pressure Relief Valve



2050B-4KG1 (Angle)

Description

The Cla-Val Model 50B-4KG1 (Globe) / 2050B-4KG1 (Angle) Pressure Relief Valve is designed specifically to automatically relieve excess pressure in fire protection systems. This pilot controlled relief valve maintains constant system pressure at the pump discharge within very close limits as demands change.

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

Main Valve Features

- Dual Guided Stem Internal for Consistent Linear Seating
- Tapered Metal Seat for Drip Tight Shut-off
- Replaceable 316 Stainless Steel Seat
- Single Internal Guided Assembly
- Proven Repeat Functionality in Harsh Conditions
- In-Line Maintenance

Listings and Approvals

c UL us LISTED

FM APPROVED

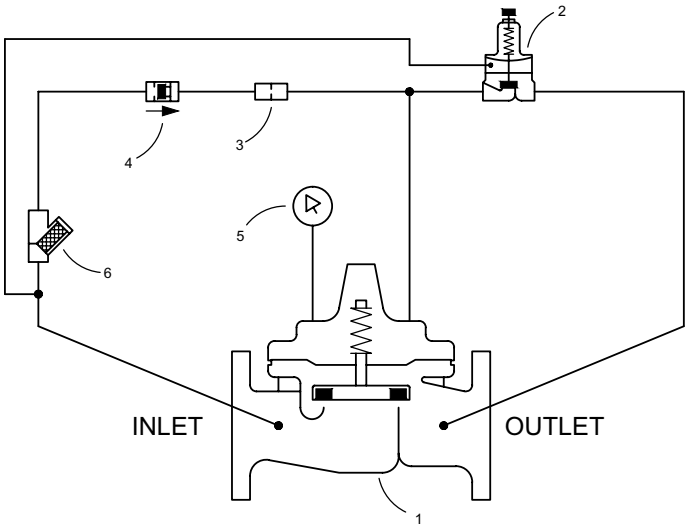
DESIGN ABS ASSESSED

Typical Applications

- Fire Pump Regulation
- System Pressure Regulation
- Foam Applications

Model **50B-4KG1/2050B-4KG1**

Fire Protection Pressure Relief Valve



Schematic Diagram

Item	Description
1	Hytrol Main Valve
2	CRL Pressure Relief Control
3	X58C Restriction Assembly
4	Check Valve
5	Pressure Gauge
6	X43 “Y” Strainer

The Cla-Val Model 50B-4KG1/2050B-4KG1 Pressure Relief Valve pilot control system is a normally closed pilot operated valve that will open to relieve excess pressure with accurate precision. The CRL (Item 2) pilot can be easily adjusted to a wide range of pressure settings. While monitoring the pressure gauge (Item 5), the CRL adjustment screw can be turned clockwise to INCREASE pressure or counterclockwise to DECREASE pressure. The CRL adjustment screw is protected by a screw-on cover, which can be sealed to discourage tampering.

Main Valve Specifications

APPROVED SIZES

Flanged: 1.5" - 8"
Grooved: 1.5" - 8" (1.5" - 6" Angle)
Threaded: 1.5" - 3"

PRESSURE RATINGS

150 class, 250 psi maximum (Ductile Iron)
150 class, 285 psi maximum (All other materials)
300 class, 300 psi maximum (All materials)

TEMPERATURE RANGE

Water: to 180° F. Max

FLUIDS

Water

Materials

Main Valve Body & Cover:
Standard Epoxy Coated Ductile Iron ASTM A-536*

Main Valve Trim:
Stainless Steel

Pilot Control System:
Cast Bronze

Rubber Parts:
Buna-N® Synthetic Rubber

Optional Materials for Seawater and Severe Service Applications:

- **Nickel Aluminum Bronze (NAB)** *ASTM B148 Alloy C95800*
- **Monel - QQ-N-288 Comp B** *ASTM A494 Grade M30H*
- **Cast Steel** *ASTM A216 Grade WCB*
- **316 Stainless Steel** *ASTM A743 Grades CF3M and CF8M*
- **Super Austenitic Stainless Steel** *ASTM A351 Grade CK3MCuN (SMO 254)*
- **Super Duplex Stainless Steel** *ASTM A890 Grade 5A (CE3MN)*

Selection Guidelines

NFPA 20 Guidelines (GPM)	
Valve Size	**Maximum**
1.5"	100
2"	250
2.5"	300
3"	500
4"	1000
6"	2500
8"	5000

Functional Data

Valve Size	Inches	1.5	2	2.5	3	4	6	8
	mm	40	50	65	80	100	150	200
Globe Pattern	Cv	32	50	85	115	200	440	770
	Kv	28	43	73	99	173	380	665
Angle Pattern	Cv	29	61	101	139	240	541	990
	Kv	25	53	87	120	207	467	855
Max Flow Rate	Gal./Min. (gpm)	110	196	306	441	783	1763	3133

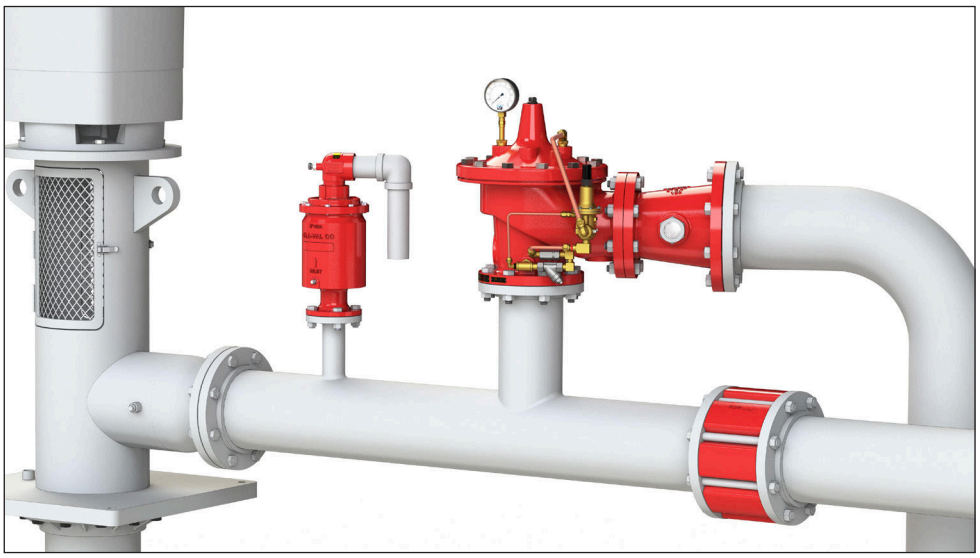
Pressure Adjustment Ranges

Flange Rating	Spring Range
150 Class	10-75
150 Class	20-200
300 Class	100-300

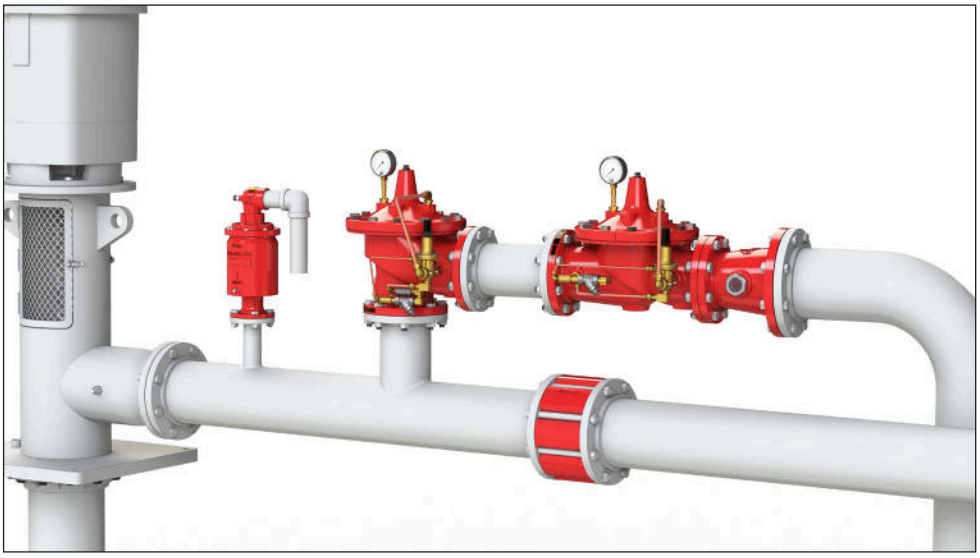
System Parameters

- Cla-Val's Model 33ATD Combination Air and Vacuum Valve is recommended for use with fire pump pressure relief valves
- Cla-Val's Model WC-1 Waste Cone is recommended for installation on the outlet of our fire pump relief valves for visual indication of water flow

Single Stage



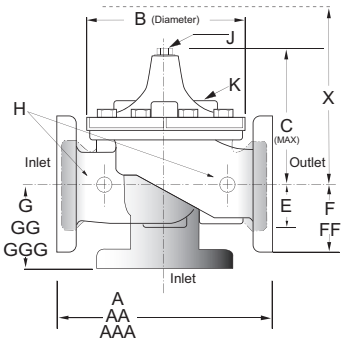
Dual Stage

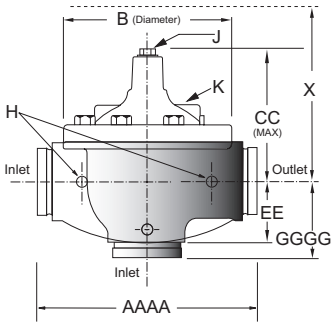


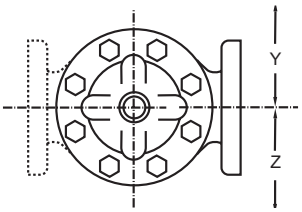
Model **50B-4KG1/2050B-4KG1**

Fire Protection Pressure Relief Valve

Dimensions







Valve Size	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
	1½	40	2	50	2½	65	3	80	4	100	6	150	8	200
A Threaded	7.25	184	9.38	238	11.00	279	12.50	318	—	—	—	—	—	—
AA 150 ANSI	8.50	216	9.38	238	11.00	279	12.00	305	15.00	381	20.00	508	25.38	645
AAA 300 ANSI	9.00	229	10.00	254	11.62	295	13.25	337	15.62	397	21.00	533	26.38	670
AAAA Grooved End	8.50	216	9.00	228	11.00	279	12.50	318	15.00	381	20.00	508	25.38	645
B Diameter	5.62	143	6.62	168	8.00	203	9.12	232	11.50	292	15.75	400	20.00	508
C Maximum	5.50	140	6.50	165	7.56	192	8.19	208	10.62	270	13.38	340	16.00	406
CC Maximum Grooved End	4.75	120	5.75	146	6.88	175	7.25	184	9.31	236	12.12	308	14.62	371
E	1.12	29	1.50	38	1.69	43	2.06	52	3.19	81	4.31	110	5.31	135
EE Grooved End	2.00	52	2.50	64	2.88	73	3.12	79	4.25	108	6.00	152	7.56	192
F 150 ANSI	2.50	64	3.00	76	3.50	89	3.75	95	4.50	114	5.50	140	6.75	171
FF 300 ANSI	3.06	78	3.25	83	3.75	95	4.13	105	5.00	127	6.25	159	7.50	191
G Threaded	1.88	48	3.25	83	4.00	102	4.50	114	—	—	—	—	—	—
GG 150 ANSI	4.00	102	3.25	83	4.00	102	4.00	102	5.00	127	6.00	152	8.00	203
GGG 300 ANSI	4.25	102	3.50	89	4.31	110	4.38	111	5.31	135	6.50	165	8.50	216
GGGG Grooved End	3.00	76	3.25	83	4.31	110	4.25	108	5.00	127	—	—	—	—
H NPT Body Tapping	0.375	0.375	0.375	0.375	0.50	0.50	0.50	0.50	0.75	0.75	0.75	0.75	1.00	1.00
J NPT Cover Center Plug	0.25	0.25	0.50	0.50	0.50	0.50	0.50	0.50	0.75	0.75	0.75	0.75	1.00	1.00
K NPT Cover Tapping	0.375	0.375	0.375	0.375	0.50	0.50	0.50	0.50	0.75	0.75	0.75	0.75	1.00	1.00
Stem Travel	0.40	10	0.60	15	0.70	18	0.80	20	1.10	28	1.70	43	2.30	58
Approx. Ship Weight (lbs)	15	7	35	16	50	23	70	32	140	64	285	129	500	227
Approx. **X** Pilot System	11	280	13	331	14	356	15	381	17	432	29	737	31	788
Approx. **Y** Pilot System	9	229	9	229	10	254	11	280	12	305	20	508	22	559
Approx. **Z** Pilot System	9	229	9	229	10	254	11	280	12	305	20	508	22	559

Model Number Codes

[ ] — [ ] **B-4KG1** [ ] — [ ]

Size
1.5"
2"
2.5"
3"
4"
6"
8"

Main Valve	
50	Globe
2050	Angle

Options	
C	Closing Speed Control
S	Opening Speed Control
P	Pressure Gauges
KOL	Anti-Cavitation Seat
V	X101 Valve Position Indicator

Orientation	
H	Horizontal
V	Vertical

[ ] — [ ] — [ ] — [ ] — [ ] — [ ] — [ ]

Body	
D	Ductile Iron
C	Cast Steel
T	316 SS
N	N.A.B.
U	Super Duplex
X	Other

Trim	
S	Stainless Steel
T	316 SS (F)
M	Bronze/Monel
U	Super Duplex
X	Other

Pilots	
B	Bronze w/SST
BM	Bronze with Monel Internals
T	316 SS (F)
M	Monel
U	Super Duplex
X	Other

Tubing & Fittings	
B	Copper with Brass Fittings
T	316 SS (F)
M	Monel
U	2507
X	Other

Elastomer	
B	Buna
E	EPDM
V	Viton

Flange
ANSI 150#
ANSI 300#
ISO PN10
ISO PN16
ISO PN25
V Grooved 300#

Face	
RF	
FF	
X	Other

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