



— MODEL —

# 50B-4KG1/2050B-4KG1

## Pressure Relief Valve

The Cla-Val Model 50B4KG-1 Globe /2050B-4KG Angle Pressure Relief Valve is designed specifically to automatically relieve excess pressure in fire protection pumping systems. Pilot controlled, it maintains constant system pressure at the pump discharge within very close limits as demands change.

The Fire Pump Pressure Relief Valve shall modulate to relieve excess pressure in a fire protection system. It shall maintain constant pressure in the system regardless of demand changes. It shall be pilot controlled and back pressure shall not affect its set point. It shall be actuated by line pressure through a pilot control system and open fast in order to maintain steady system pressure as system demand decreases. It shall close gradually to control surges and shall re-seat drip-tight within 5% of its pressure setting.

### INSTALLATION

1. Allow sufficient room around the valve assembly to make adjustments and for servicing.

2. It is recommended that gate or block valves be installed to facilitate isolating valve for preventative maintenance. When used as a surge control or pressure relief valve where valve outlet discharge is to atmosphere, then a gate or block valve is needed at valve inlet. When used as a back pressure sustaining control valve where valve outlet is connected to pressurized downstream system, then gate or block valves are needed at valve inlet and outlet.

**NOTE: BEFORE THE VALVE IS INSTALLED, PIPE LINES SHOULD BE FLUSHED OF ALL FOREIGN MATTER.**

3. Place valve in line with flow through valve in direction indicated on inlet plate or flow arrows. Check all fittings and hardware for proper makeup and verify that no apparent damage is evident.

4. Cla-Val Valves operate with maximum efficiency when mounted in horizontal piping with the cover UP; however, other positions are acceptable. Due to size and weight of cover and internal components on six inch and larger valves, installation with the cover up is advisable. This makes periodic inspection of internal parts readily accessible.

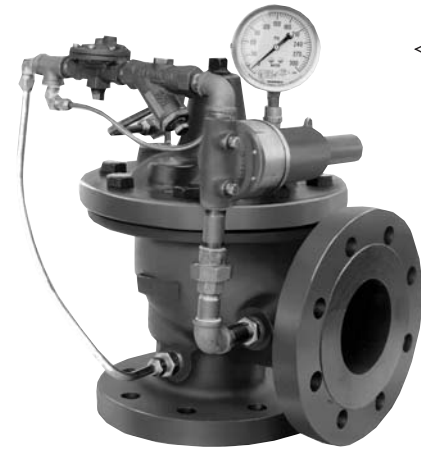
5. Caution must be taken in the installation of this valve to insure that galvanic and/or electrolytic action does not take place. The proper use of dielectric fittings and gaskets are required in all systems using dissimilar metals.

### OPERATION AND START-UP

1. Prior to pressurizing the valve assembly make sure the necessary gauges to measure pressure in the system, are installed as required by the system engineer.

**CAUTION:** During start-up and test a large volume of water may be discharged downstream. Check that the downstream venting is adequate to prevent damage to personnel and equipment. **All pilot adjustments should be made slowly in small increments.** If the main valve closes too rapidly it may cause surging in upstream piping.

2. Remove cap from CRL then loosen adjusting screw counter-clockwise. This will allow the valve to open at low pressure relieving the full flow of the fire pump. Bleed all air from the valve at this time by carefully loosening the cover plug and tube fittings at the high points. Slowly turn the adjusting screw clockwise on the CRL while watching the gauge between the valve and the pump until you reach the desired set-point. Tighten the jam nut on the CRL and replace the cap. **DO NOT USE THE GAUGE PROVIDED ON THE VALVE TO SET THE VALVE. IT IS ONLY THERE TO INDICATE PRESSURE IN THE COVER.**



### MAINTENANCE

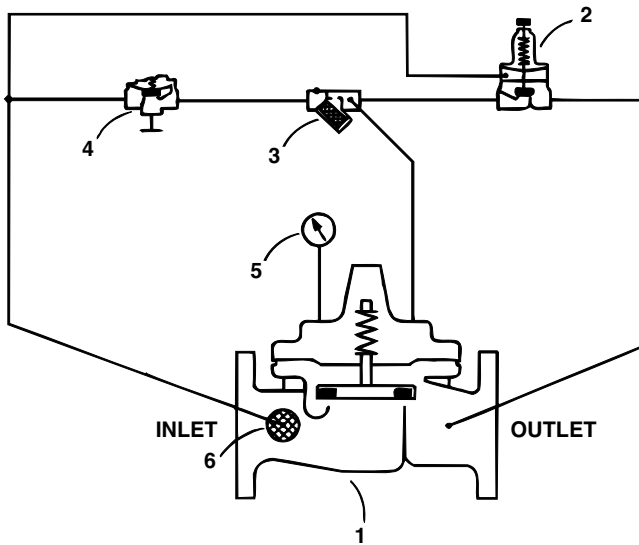
1. Cla-Val Valves and Controls require no lubrication or packing and a minimum of maintenance. However, a periodic inspection schedule should be established to determine how the fluid is affecting the efficiency of the valve assembly. Minimum of once per year.

2. Repair and maintenance procedures of the Hytrol Main Valve and control components are included in a more detailed IOM manual. It can be downloaded from our web site ([www.cla-val.com](http://www.cla-val.com)) or obtained by contacting a Cla-Val Regional Sales Office.

3. **When ordering parts always refer to the catalog number and stock number on the valve nameplate.**

SYMPTOM	PROBABLE CAUSE	REMEDY
Main valve won't open	Inlet pressure below setting of pilot valve	Reset pilot valve. If change in setting is from tampering, seal cap with wire and lead seal
	Pilot valve stuck closed Mineral deposit or foreign material between disc retainer and power unit body	Disassemble control and clean
	Pilot valve diaphragm ruptured or diaphragm nut loose. Water coming out of the vent hole in cover	Disassemble and replace diaphragm Tighten nut
	Main valve stuck closed	Disassemble main valve,
clean	Mineral buildup on stem Stem damaged	parts and/or replace damaged part. Check downstream
Main valve won't close	Inlet pressure above setting of pilot valve	Reset pilot valve
	Clogged needle valve or strainer	Disassemble and clean
	Pilot valve stuck open. Mineral deposit or foreign material under disc retainer or under diaphragm assembly	Disassemble and clean
	Main valve stuck open. Mineral buildup on stem. Foreign material between seat and disc assembly	Disassemble and clean
	Main valve diaphragm worn	Disassemble and replace
Valve leaks Continuously	Pilot valve disc worn out	Disassemble and replace
	Main valve disc worn or small pin hole in main valve diaphragm	Disassemble and replace
	Set point too close to inlet pressure	Reset CRL Pilot

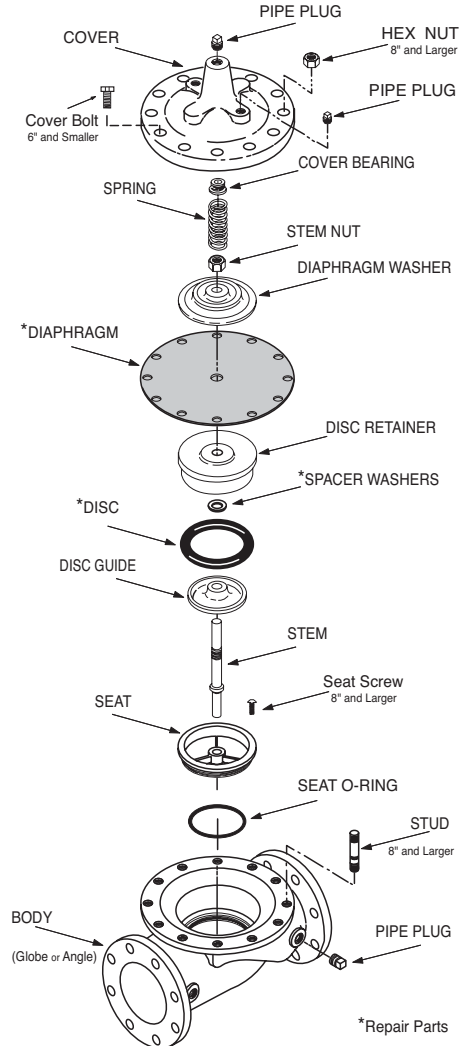
# 50B-4KG-1 SCHEMATIC



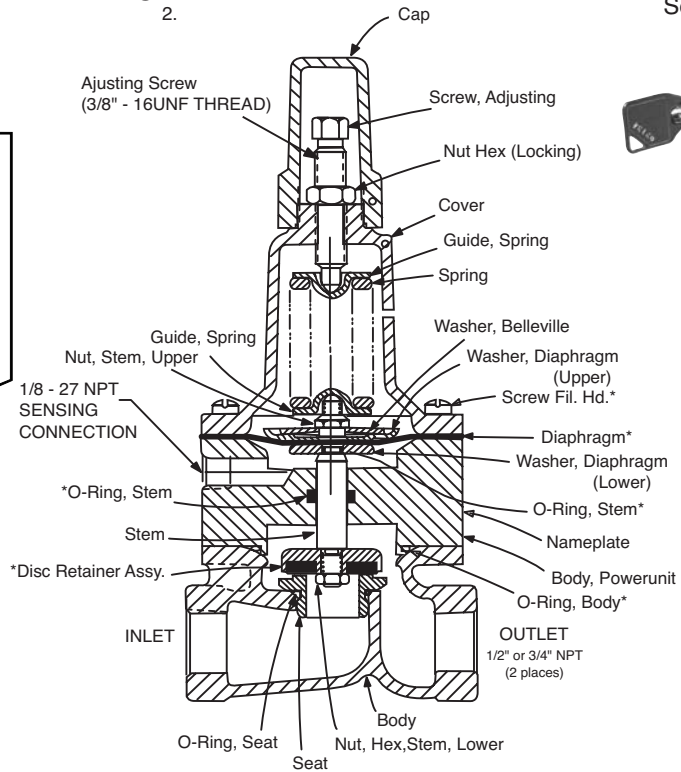
### BASIC COMPONENTS

- 1 100-06 Hytrol (Main Valve)
- 2 CRL Pressure Relief Control
- 3 X44A Strainer & Orifice Strainer
- 4 81-01 Check Valve
- 5 Pressure Gauge
- 6 X46A Flow Clean Strainer

### 1. HYTROL MAIN VALVE



### CRL



### X140-1 Security Cap Option



CRL adjust range (psi)	Spring Color	psi change per turn*
0 - 75	Red	9
20 - 200	Green	27

\* approximate. Use gauge at valve inlet to set

### CRL

2.



### X44A

3.



### Pressure Gauge

5.



### X46A

6.



For a more detailed IOM Manual go to [www.cla-val.com](http://www.cla-val.com) or contact a Cla-Val Regional Sales Office.