IOM 1.26
Issue A

Pressure Relief Valve
Model 50B-4KG1/2050B-4KG1

Product Description

The Model 50B-4KG1 Globe / 2050B-4KG1 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 installe, pipe line 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. The 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.

Maintenance

1. The 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 Tech Manual. It can be downloaded from our web site (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.**

Manufactured by CLA-VAL who hold UL Listing and FM Approval.

Operation and Startup

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-60 then loosen adjusting screw counterclockwise. 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-60 while watching the gauge between the valve and the pump until you reach the desired set-point. Tighten the jam nut on the CRL-60 and replace the cap. **Do not use the gauge provided on the alve to set the valve. it is only there to indicate pressure in the cover**

Troubleshooting

Symptom	Probable Cause	Remedy
Main Valve is not opening	Inlet pressure is below setting of pilot valve	Reset pilot valve. If change is from tam-pering, seal cap with wire lead seal
	Pilot valve is stuck closed: Mineral deposit of foreign material between disc retainer and stem	Disassemble control and clean
Water is coming out of vent hole in cover	Pilot valve diaphragm is ruptured or diaphragm nut is loose	Disassemble and replace diaphragm. Tighten nut
Main valve is stuck closed	Mineral build-up on stem. Stem damaged	Disassemble main valve, clean parts and/or replace damaged part
Main valve is not closing	Inlet pressure is above setting of pilot valve	Reset pilot valve
	Clogged orifice or strainer	Disassemble and clean
	Pilot valve is stuck in open: Foreign mate-rial or mineral deposit under disc retainer or diaphragm assembly	Disassemble and clean
Main valve is stuck open	Foreign material or mineral deposit between seat and disc assembly	Disassemble and clean
	Main valve diaphragm worn out	Disassemble and replace
Valve leaks continiously	Pilot valve disc worn out. Main valve disc worn or damaged	Disassemble and replace
	Set point to close to inlet pressure	Reset pilot valve

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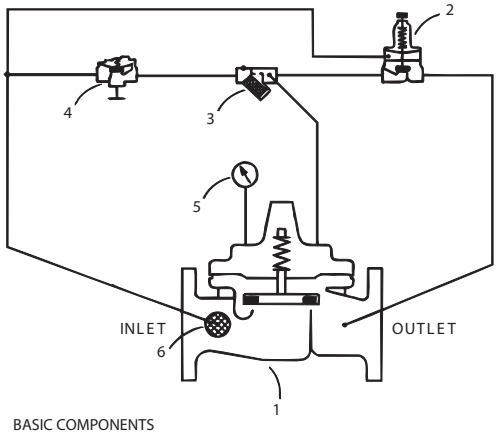
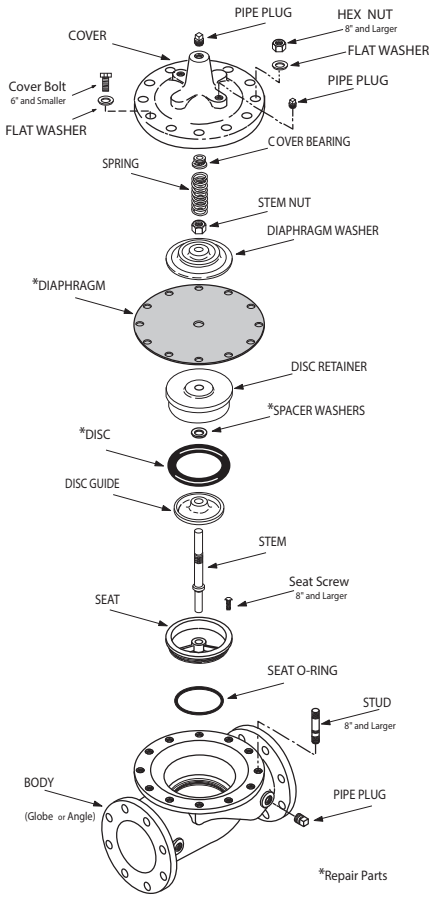
Pressure Relief Valve
Model 50B-4KG1/2050B-4KG1

50B-4KG1 SHEMATIC

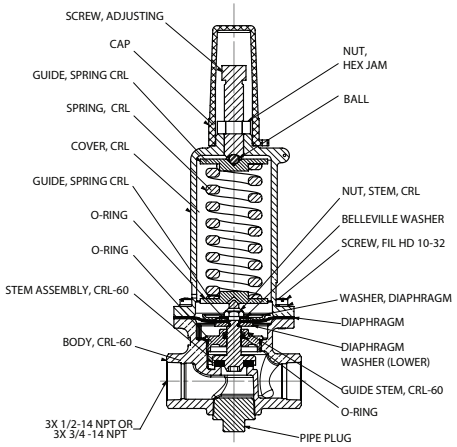


BASIC COMPONENTS
1. 100-06 Hytrol (Main Valve)
2. CRL-60 Pressure Relief Pilot Valve
3. X44A Strainer & Orifice Strainer
4. 81-01 Check Valve
5. Pressure Gauge
6. X46A Flow CLean Strainer

1. HYTROL MAIN VALVE



2. CRL-60 PILOT VALVE



CRL-60 Adjustment Range (psi)	Spring Color	Change per turn* (psi)
0 - 75	Red	8.5
20 - 105	Silver	12
20 - 200	Green	28
100 - 300	Yellow	18

*Approximate, use gauge at valve inlet to set

CRL-60 Pilot Valve

X44A Strainer & Orifice Strainer

81-01 Check Valve

Pressure Gauge

X46A Flow Clean Strainer

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