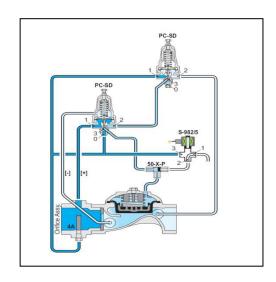
Flow Control & Pressure Reducing Valve

with Solenoid Control

(Sizes 1.5"- 4"; DN40-DN100)

Description:

The BERMAD Model IR-472-55-bKU is a hydraulically Operated, diaphragm actuated control valve that limits Demand and reduces downstream pressure to constant Preset maximum values. It either opens or shuts in response to an electric signal.



Installation:

- 1. Ensure enough space around the valve assembly for future maintenance and adjustments.
- 2. Prior to valve installation, flush the pipeline to insure flow of clean fluid through the valve.
- 3. For future maintenance, install Isolation gate valves upstream and downstream from Bermad control valve.
- 4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction.
- 5. The orifice assembly should be attached to the valve inlet flange, with a resilient gasket between them. Determine tightening bolts length according to flanges, gaskets and orifice assembly thickness.
- **Note:** if the valve end connections are Thread, then the orifice assembly is already connected to the valve.
- 6. Install the orifice assembly with the flow-arrow in the designed flow direction and confirm connection of the sensing ports, marked [+] and [-], according to control drawing below.
- 7. For best performance, it is recommended to install the valve horizontally and upright.
- 8. Cross-Check solenoid specifications with design requirements and solenoid/coil label.
- 9. Ensure approved cable protection. Confirm that the wires data meet solenoid specifications.
 - Note: Energizing the solenoid coil when it is not fixed in its place, is dangerous and might burn the coil.
- 10. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.

Commissioning & Calibration:

- 1. Confirm that the In-line filter (4A) arrow direction is in the valve flow direction.
- 2. Allow the valve to start regulation by using the solenoid manual override or by: Operating the solenoid.
- 3. Open fully the upstream isolating valve and slowly open the downstream isolating valve, to fill-up, carefully, the consumers' line downstream from the Valve.
- 4. Vent air from the valve's control loop by loosening cover tube fitting at the highest point, allowing all air to bleed. Then Retighten the tube fitting.
- 5. The IR-472-55-KUb is factory set according to the design. The set pressure is marked on each of the pilot's label.
 - 5.1. The set flow on the Flow Control Pilot [FCP] (PC-SD) label.
 - 5.2. The set downstream pressure on the Pressure Reducing Pilot [PRP] (PC-S) label.
- 6. If the set flow and/or pressure are either different from the design or the requirements have been changed, change settings according to the following:
 - 6.1. Unlock the PRP locking nut and slowly turn the pilot adjusting screw Clock-Wise [CW] to increase set pressure and Counter -Clock-Wise [CCW] to decrease it. Allow the 472-55-KUb to react and the downstream pressure to stabilize, lock the PRP locking nut and open fully the downstream isolating valve.
 - 6.2. Confirm/create demand higher than the required new set point
 - 6.3. Unlock the FCP locking nut and slowly turn the pilot adjusting screw CW to increase set flow and CCW to decrease it. Allow the 472-55-KUb to react and the flow to stabilize, lock the FCP locking nut.
- 7. Check valve solenoid control feature by De-Energizing & Energizing the solenoid to close & open the valve.

Trouble-Shooting:

Symptoms	Cause	Remedy
	Not sufficient inlet pressure.	Check for sufficient inlet pressure-
Valve fails to	2. Not sufficient flow.	2. Create demand/flow, confirm pilot setting-
open	3. Adjusting screws.	3. Check that the Pilot adjusting screw is not loose.
	Solenoid functioning.	4. Check solenoid power supply, coil & Manual Override Handle position.
	Control circuit is clogged.	Check for any debris trapped in the valve control circuit.
	2. Solenoid functioning.	2. Check solenoid power supply, coil & Manual Override Handle
Valve fails to	3. Debris-	position
close	4. Diaphragm-	3. Check for any debris trapped in the valve body.
		4. Check diaphragm is not leaking-
	Not sufficient inlet pressure	Check for sufficient inlet pressure
Valve fails to	2. Not sufficient flow	2. Create demand/flow, confirm pilot setting
	3. Pilots setting.	3. Check Pilot setting-
regulate	4. Air trapped in the control chamber-	4. Release air trapped in the control chamber by loosening cover tube fitting at the highest point.
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Preventive maintenance:

- 1. System operating conditions that effect on the valve should be checked periodically to determent the required preventative maintenance schedule.
- 2. Maintenance instructions:
 - 2.1. Tools required:
 - 2.1.1. Metric and imperial wrenches
 - 2.1.2. Anti-seize grease
 - 2.1.3. Visual inspection to locate leaks and external damages
 - 2.2. Functional inspection including: closing, opening and regulation.
 - 2.3. Close upstream and downstream isolating valves (and external operating pressure when used)
 - 2.4. Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
 - 2.5. Open the screw nuts and remove the cover unit from the valve body. Disassemble necessary control tubs.
 - 2.6. It is highly recommended to stock a reserve parts assembly for each size. This allows minimum system field work. And system down time.
 - 2.7. Disassemble the cover and examine the inside parts carefully for signs of wear, corrosion, or any other abnormal conditions.
 - 2.8. Replace worn parts and all the Elastomers. Lubricate the bolts and screws threads with Anti seize grease.
 - 2.9. Winterizing /freezing prevention: drain the valve & the valve accessories (pilot, solenoid) on time.

Spare Parts

Bermad has a convenient and easy to use ordering guide for valve spare-parts and control system components. For solenoid valves refer to model and S/N on solenoid tags.

