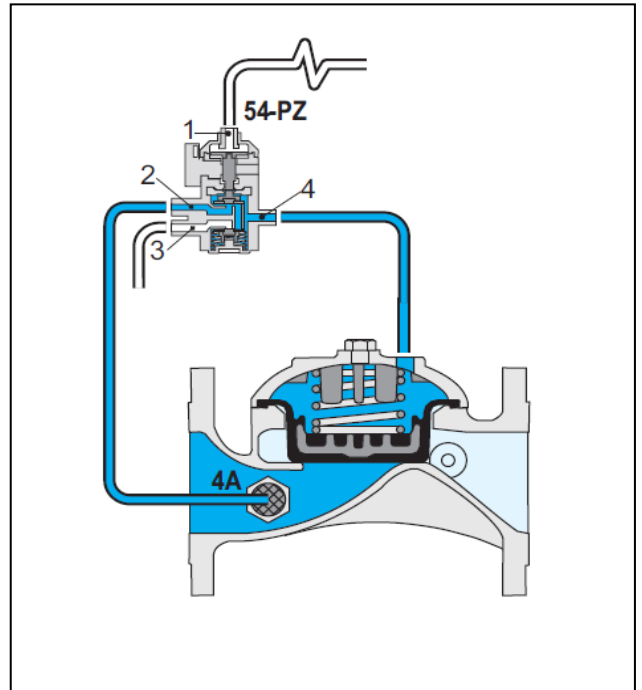


## Hydraulic Control Valve Normally Closed with Hydraulic Control

(Sizes 1.5"- 4"; DN40-100)

### Description:

The BERMAD Normally Closed Control Valve with Hydraulic Control is a hydraulically operated, diaphragm actuated control valve. The BERMAD Model IR-405-54-KX is a Normally Closed Control Valve which opens in response to a pressure rise command and shuts in the absence of that command.



### 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. For best performance, it is recommended to install the valve horizontally and upright.
6. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.
7. Connect the hydraulic relay to the controller.

### Commissioning & Calibration:

1. Confirm that the In-line filter arrow [4A] direction is in the valve flow direction.
2. Allow the valve to open by using the hydraulic relay manual override, or by hydraulic pressure command to the relay (54-PZ).
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.

## Trouble-Shooting:

Symptoms	Cause	Remedy
<b>Valve fails to open</b>	1. Hydraulic control command 2. Not sufficient inlet pressure 3. Not sufficient flow	1. Check existence of hydraulic command in the relay. 2. Check for sufficient inlet pressure- 3. Create demand/flow, confirm pilot setting-
<b>Valve fails to close</b>	1. Hydraulic control command. 2. Control circuit is clogged. 3. Debris- 4. Diaphragm-	1. Check no existence of hydraulic command in the relay. 2. Check for any debris trapped in the valve control circuit. 3. Check for any debris trapped in the valve body. 4. Check diaphragm is not leaking-

## 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.

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