Direct Acting Pressure Reducing Valve

Description

The Model BC-CAP-P Direct Acting Pressure Reducing Valve (DPRV) maintains a constant downstream pressure regardless of varying upstream pressure. The valve senses downstream pressure and modulates to maintain the set point. When downstream pressure falls below the setting of the DPRV, it opens to increase pressure to the set point. When downstream pressure rises above the setting of the DPRV, it modulates toward the closed position to maintain the set point.

Installation

1. Allow enough room around the valve assembly for making adjustments and for future maintenance and disassembly work.
2. Thoroughly flush the pipeline to remove dirt, scale, and debris. Failure to perform this operation may render the valve inoperable.
3. It is recommended that isolation valves be installed upstream and downstream of the BERMAD pressure reducing system to allow for future maintenance operations.
4. Install the valve in the pipeline with the valve flow arrow on the body casting in the proper direction. The valve may be install one either vertical or horizontal pipes, however it must not be installed upside down.
5. It is recommended to install a pressure gauge on the open downstream port of the pressure reducing valve.
6. After installation carefully inspect/correct any damaged accessories or piping.

Commissioning & Calibration

1. Close the downstream isolation valve.
2. This mechanical pre-adjustment system, with the operating knob and pressure indicator visible from both sides, allows the pressure reducing valve to be set to the required value in the system prior to installation. The pressure indicator features incremental step movement, so that the pressure can be adjusted continuously and the value displayed at 15 psi increments.
3. Set using the operating knob on the upper part of the valve. The pressure reducing valves are factory set to a pressure of 45 psi. **NOTE:** Because the pre-adjustment dial displays in 15 psi increments, the optional downstream outlet pressure gauge can be used to show the exact outlet pressure, which is especially useful for applications requiring this precision.
4. Slowly open the downstream isolation valve.
5. Calibrating Pressure Reducing Systems that include parallel By-Pass PRVs, require calibrating each of the PRVs separately, while the parallel PRV system branches are closed. Calibration should refer to a shared pressure gauge, installed downstream from the system. For best & long-term performance, larger PRV set points should be 5-10 psi lower than smaller, low flow bypass, PRV set points.
6. A pressure relief valve, such as the BERMAD Model BC-73Q-P, is recommended downstream of all pressure reducing systems. Relief valve set points should be 10-15 psi higher than PRV set points.

Maintenance

The cartridge, containing the diaphragm, strainer, seat, valve plug and compensating piston, is pre-assembled as a self-contained unit with a cover and can be removed for inspection and maintenance. When checking, cleaning or replacing the cartridge:

1. Fully close the upstream and downstream isolation valves.
2. Remove the upper cover, it is integral with the cartridge.
3. Inspect and clean the filter
4. If needed, the self-contained cartridge can be completely replaced. When the cartridge is screwed back into the body, the pressure indicating window will return the value to the original position.
5. Reopen the isolation valves, and the pressure will return to the original set value.

Troubleshooting

Symptom	Possible Cause	Solution
Valve Fails to Open	• Insufficient inlet pressure. • No downstream demand. • Insufficient DPRV spring compression.	• Check/create inlet pressure. • Create demand/flow. • Readjust the set point. See steps 1-4 of the commissioning instructions.
Valve Fails to Close or Regulate	• Excessive DPRV spring compression. • Debris trapped in the filter or on the seat.	• Readjust the set point. See steps 1-4 of the commissioning instructions. • Remove the cartridge a clean according to the maintenance instructions.