

Pressure Relief/Sustaining Valve

Model: 1030 (Sizes 1.5" - 6"; DN40-150)

Description

The BERMAD 1030 Pressure Relief/Sustaining Valve is a hydraulically operated, diaphragm actuated control valve that can fulfill either of two separate functions:

- When installed in-line, it sustains minimum pre-set, upstream (back) pressure regardless of fluctuating demand or varying downstream pressure.
- When installed as a circulation valve, it relieves excessive line-pressure that is above maximum pre-set.

Installation

1. Ensure enough space around the valve assembly for future maintenance and adjustments.
2. Prior to valve installation, flush the pipeline to ensure a flow of clean fluid through the valve.
3. For future maintenance, install Isolation Valves upstream and downstream of the BERMAD control valve
4. Install the valve in the pipeline with the valve flow direction arrows (visible around the side port) in the actual flow direction.
5. For best performance, it is recommended to install the valve horizontally and upright.
6. Install a pressure gauge upstream of the valve or on the pilot.
7. It is highly recommended to install a Bermad strainer (model 70F) upstream of the control valve, to prevent debris from damaging the valve's operation.
8. For Remote Sensing Pressure Relief/Sustaining Valve model 1030-R:
Prepare a 1/2" female threaded sensing port, including a cock-valve, at the point where pressure sustaining is required & pull a 3/8" or 1/2" sensing tube to the valve. Ensure tube protection by a sleeve or by a covered cable-canal. Apply a fixed effective tube route.
9. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.

Commissioning & Calibration

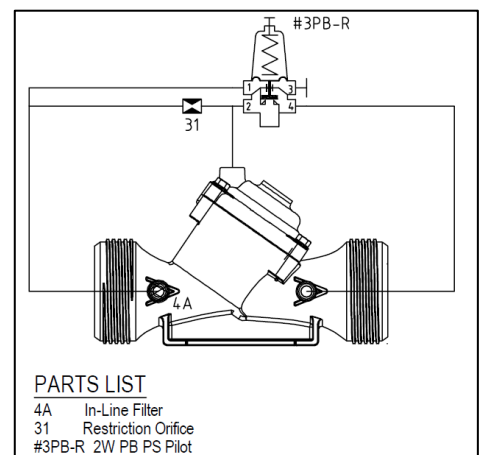
1. Confirm that the In-line filter arrow [4A] direction is in the valve flow direction.
2. Open fully the upstream isolating valve and partially the downstream isolating valve, to fill-up, in a slow and controlled manner, the consumers line downstream from the pressure sustaining valve.
Note: When upstream pressure is below the 1030 setting, the valve is closed.
3. Confirm that the supply pressure and the flow through the system are typical.
4. Vent air from the valve's control loop by loosening cover tube fitting at the highest point, allowing all air to bleed. Retighten the tube fitting.
5. The Model 1030 is factory set according to design definitions. The set pressure is marked on the pilot's label.
6. If the set pressure is either different from the design or the requirements have been changed follow the steps described below:

6.1. 1030 @ In-Line Installation:

- 6.1.1. Close the upstream isolating valve to reduce 1030 inlet pressure. Ensure that the 1030 sustains the upstream pressure, preventing it from decreasing below setting, even when the upstream isolating valve is almost closed.
- 6.1.2. Unlock the pilot locking nut and slowly turn the pilot adjusting screw Clock-Wise to increase set pressure and Counter-Clock-Wise to decrease it.
- 6.1.3. After the pressure is stabilized, lock the pilot locking nut and open fully the upstream isolating valve.

6.2. 1030 @ Off-Line (Circulation) Installation:

- 6.2.1. Confirm that the line pressure is the designed dynamic operating pressure.
Note: When setting is below the designed dynamic operating pressure, the valve is partially/fully open.
 - 6.2.2. Unlock pilot locking nut & slowly turn the adjusting screw Clock-Wise until the valve close & seal.
 - 6.2.3. Slowly turn the pilot adjusting screw Counter-Clock-Wise until the valve starts leaking, re-tighten the setting screw until the 1030 seals again plus 1/4 – 1/2 turn and lock the locking nut
7. The Restriction [31] enables the 2-Way control & reduces valve closing speed.



Trouble-Shooting

1. **Valve fails to Open:** Check for sufficient inlet pressure, create demand/flow, confirm pilot setting.
2. **Valve fails to Close:** Create demand/flow, confirm pilot setting.
Close both isolation valves, clean control filter [4A] & detect for clogged ports or fittings, check for debris trapped in the main valve, and confirm that the diaphragm is not leaking.
3. **Valve fails or Regulates Erratically:** Confirm pilot setting.
Release air trapped in the valves control chamber, Close both isolation valves, clean control filter [4A], check for debris caught in the valve passage.

Preventative Maintenance

1. System operating conditions and water quality will affect the valve and should be checked periodically to determine the required interval for preventative maintenance. The schedule below assumes good conditions and should be considered a minimum requirement.
2. Maintenance instructions:
 - 2.1. Tools required:
 - 2.1.1. Metric and imperial wrenches
 - 2.1.2. Anti seize grease
 - 2.2. Weekly:
 - 2.2.1. Visual inspection to locate leaks and external damages
 - 2.2.2. Check pressure gauge read correct pressures
 - 2.3. Yearly:
 - 2.3.1. Close isolating valves and clean line strainer and control loop In-line filter [4A].
 - 2.3.2. Perform a functional test including a closing test to verify valve sealing.
 - 2.4. 3 – 5 Yearly:
 - 2.4.1. Inspect the internal condition of the valve:
 - 2.4.1.1. Close upstream and downstream isolating valves (and external operating pressure when used).
 - 2.4.1.2. Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
 - 2.4.1.3. Unscrew cover fastening bolts and remove cover. Disassemble control tubs.
 - 2.4.2. Inspect the diaphragm and the sealing area on the valve body.
 - 2.4.3. Replace worn parts and all the Elastomers. Lubricate the bolts and screws threads with Anti seize grease.
 - 2.5. It is highly recommended to stock a reserve parts assembly for each size. This allows minimum system field work. And system down time.
 - 2.6. 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 at

<https://www.bermad.com/waterworks-downloads/>

For solenoid valves refer to model and S/N on solenoid tags.

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