

Quick Pressure Relief Valve

(Sizes 1.5" – 16" DN40 - 400)

Description

Hydraulically operated, diaphragm actuated quick pressure relief valve that relieves excessive system pressure when such pressure rises above a pre-set value.

It responds immediately, accurately, and with high repeatability to a rise in system pressure by opening fully. It also provides smooth drip tight closing.

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 control valve
4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction. When applicable use the lifting ring provided on the main valve cover for installing the valve
5. For best performance, it is recommended to install the valve horizontally and upright. For different valve positions – consult Bermad
6. 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

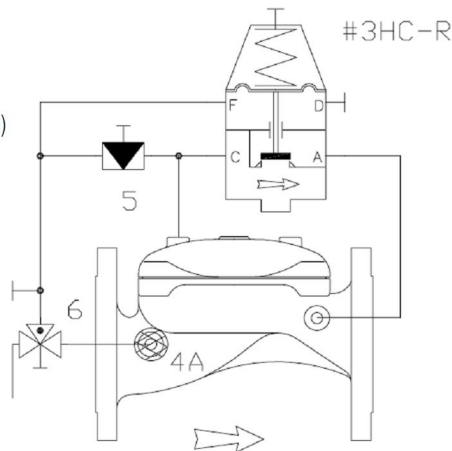
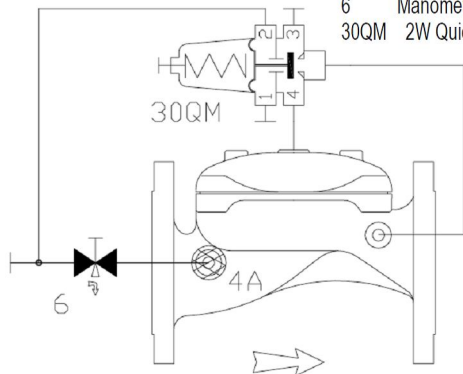
Commissioning & Calibration

1. Confirm that 3W cock valve [6] is connecting the upstream to the control (according to arrow on handle)
2. Open fully the upstream isolating valve
3. **Note:** When upstream pressure is above the setting, the valve is partially/fully open
4. Confirm that the supply pressure and the flow through the system are typical
5. Vent air from the valve's control loop by loosening a cover tube fitting eyebolt at the highest point, allowing all air to bleed. Retighten the tube fitting eyebolt
6. The valve is factory set according to the design pressure request. The set pressure is marked on the pilot's label
7. If the set pressure is either different from the design, or the requirements have been changed follow the steps described below:
 - o Confirm that the line pressure is the designed dynamic operating pressure
 - o **Note:** When setting is below the designed dynamic operating pressure, the valve is partially/fully open
 - o Unlock pilot locking nut & slowly turn the adjusting screw Clock-Wise until the valve closes & seals
 - o Slowly turn the pilot adjusting screw Counter-Clock-Wise until the valve starts to open, then re-tighten the pilot adjusting screw until the valve seals again, adding between a 1/4 and a 1/2 turn then lock the locking nut
8. The pilot's internal restriction or needle valve assists the 2-Way control & reduces valve closing speed

Control Drawing

PARTS LIST 1.5" – 4"

- 4A In-Line Filter
- 6 Manometer Cock Valve (w/vent)
- 30QM 2W Quick Relief Mini Pilot (Metal)



PARTS LIST 6" – 16"

- 4A In-Line Filter
- 5 Needle Valve
- 6 3W Cock Valve
- #3HC-R 2W P.S. High Capacity Pilot

Trouble-Shooting

1. **Valve fails to Open:** Check for sufficient inlet pressure, confirm pilot setting & check cock valve position
2. **Valve fails to Close:** Confirm pilot setting, check cock valve position, clean control filter & check for clogged ports or fittings, check if any debris trapped in the main valve, confirm that the diaphragm is not worn or damaged
3. **Valve fails to Regulate:** Confirm pilot setting, release air trapped in the control chamber & check cock valve position

Preventative Maintenance

1. System operating conditions that affect the valve should be checked periodically to determine 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
 - 2.2. Periodical maintenance
 - 2.2.1. Visual inspection to locate leaks and external damage
 - 2.2.2. Functional inspection including: closing, opening and regulation
 - 2.3. 5 yearly scheduled maintenance
 - 2.3.1. Close upstream and downstream isolating valves (also close any external sensing pressure when used)
 - 2.3.2. Once the valve is fully isolated, vent residual pressure by loosening a plug or fitting
 - 2.3.3. Disassemble necessary control hubs, unscrew the cover fastening bolts and remove the cover.
 - 2.3.4. Inspect the diaphragm and sealing area on the valve body
 - 2.3.5. Replace the diaphragm if worn or damaged
 - 2.3.6. Lubricate all threads with Anti seize grease and replace the cover

Spare parts

Bermad has a convenient and easy to use ordering guide for valve spare-parts and control system components at <http://www.bermad.com/downloads> For solenoid valves refer to model and S/N on solenoid tags.

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