Flow Control Valve, Constant Downstream Pressure

(Sizes 1½-14"; DN40-350)

Description

The Model 727-U Flow Control Valve for Constant Downstream Pressure is a hydraulically operated, diaphragm actuated, control valve that maintains pre-set maximum flow, regardless of fluctuating demand or varying system pressure. It especially suites applications where downstream pressure is constant & low (relief to reservoir).

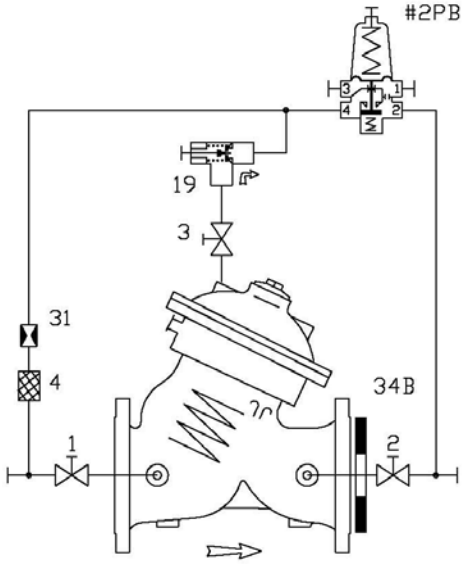
Installation

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 from Bermad control valve (downstream isolating valve is recommended only in cases valve downstream static pressure is above zero.
4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction. Use the lifting ring provided on the main valve cover for installing the valve.
5. The orifice should be attached to the valve outlet flange, with a resilient gasket between them. Determine tightening bolts length according to flanges, gaskets and orifice thickness.
6. Install the orifice with the chamfered side towards the designed flow direction.
7. For best performance, it is recommended to install the valve horizontally and upright. For different valve positions – consult Bermad.
8. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.
9. Install a pressure gauge (instead of the plastic plug on the pilot)
10. It is highly recommended to install a strainer Bermad model 70F upstream from the pressure reducing valve, to prevent debris from damaging valve operation.

Commissioning & Calibration

1. Confirm that cock valves [1], [2] & [3] are open (handle parallel to cock-valve body).
2. Open fully the upstream and the downstream isolating valve.
3. Confirm that the supply pressure and the flow through the system are typical. If necessary, create flow by opening a hydrant.
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 eyebolt.
5. The Model 727-U is factory set according to the design maximum flow request. The set flow is marked on the pilot's label. Allow the flow inspected in the system Water-meter to stabilize, meeting the marked set flow.
6. If the set flow is either different from the design or the requirements have been changed, unlock the pilots locking nut and slowly turn the pilot adjusting screw Clock-Wise to increase set flow and Counter-Clock-Wise to decrease it. Allow the 727-U to react and the flow to stabilize.
7. After the flow is stabilized, lock the pilot locking nut.
8. The Restriction [31] enables the 2-Way control & reduces valve closing speed.
9. The One Way Flow Control [19] is factory set fully open. To decrease opening speed or to stabilize the valve reaction, turn the needle valve CW.

Control Drawing



PARTS LIST

1	2W Cock Valve
2	2W Cock Valve
3	2W Cock Valve
4	Control Filter
31	Restriction Orifice
19	One Way Flow Contol MT Type
#2PB	2W PB PR Pilot
34B	Orifice Plate

Trouble-Shooting

1. **Valve fails to Open:** Check for sufficient inlet pressure, create demand/flow, confirm pilot setting & check cock valves status.
2. **Valve fails to Close:** Create demand/flow, confirm pilot setting, check needle & cock valves status, clean control filter & detect for clogged ports or fittings, check if any debris trapped in the main valve, confirm diaphragm is not leaking.
3. **Valve fails to Regulate:** Check needle valves setting, release air trapped in the control chamber & check cock valves status.

Preventative 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
   - 2.2. Visual inspection to locate leaks and external damages
   - 2.3. Functional inspection including: closing, opening and regulation.
   - 2.4. Close upstream and downstream isolating valves (and external operating pressure when used).
   - 2.5. Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
   - 2.6. Open the stud nuts and remove the actuator as one unit from the valve body. Disassemble necessary control tubs.
   - 2.7. It is highly recommended to stock a reserve actuator assembly for each size. This allows minimum system field work and system down time.
   - 2.8. Disassemble the actuator and examine its parts carefully for signs of wear, corrosion, or any other abnormal conditions.
   - 2.9. Replace worn parts and all the Elastomers. Lubricate the bolts and studs threads with Anti seize grease.

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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