IOM ULTRAF 70

Flow Rate Control Valve 2-Way
2”-8” (16 bar)

RAPHAEL VALVES INDUSTRIES

Sep-24

DESCRIPTION

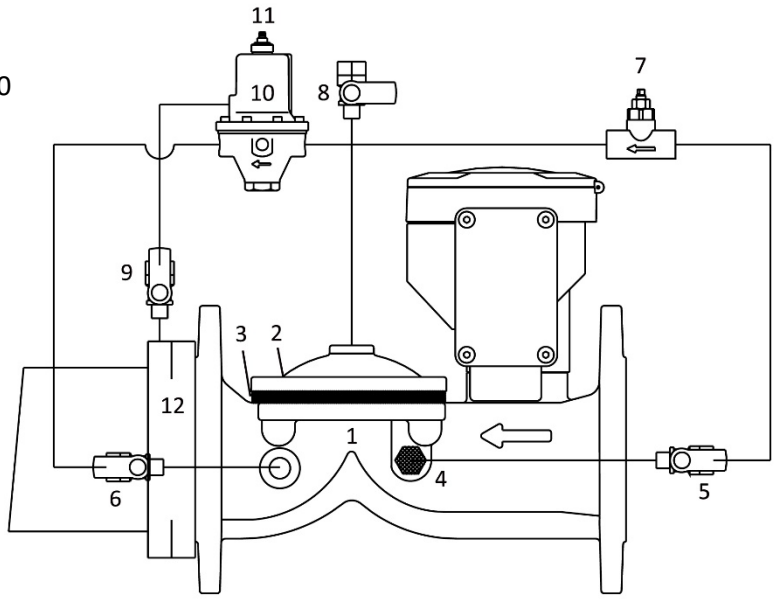
This water meter and flow limiting valve is an automatic control valve designed to limit maximum flow rate to a pre-set value and not allow greater flow past the valve, regardless of flow-rate demand or upstream pressure fluctuations.

INSTALLATION

- Before installing the Ultraf, flush the pipeline to remove scale, dirt and other particles that might affect the valve's performance.
- Install the Ultraf as indicated by the arrow on the valve's body, showing flow direction.
- It is recommended to install isolation valves upstream and downstream the control valve.
- Close 2-way valves 6 and 8. Open 2-way valve 5 and turn on the water supply to the Ultraf.
- Check for leaks; tighten bolts & fittings if necessary.

PARTS LIST

1. Body
2. Cover
3. Diaphragm
4. Self-flushing "finger" filter
5. 2-way cock valve
6. 2-way cock valve
7. Needle valve
8. 2-way cock valve
9. 2-way cock valve
10. 2-way flow limiting pilot P-100
11. Pressure adjusting screw
12. Factory pre- calibrated orifice plate to a given flow rate



OPERATING INSTRUCTIONS

1. Make sure that there is a downstream flow demand.
2. Close needle valve 7 all the way and then reopen it for 1-2 turns. The needle valve adjusts the hydraulic reaction speed.
3. Loosen security nut and turn adjusting screw 11 counterclockwise, so that there is almost no pressure on the pilot's spring.
4. Open 2-way valve 6 and make sure 2-way valve 9 is open. Gradually increase flowrate demand downstream the Ultraf to the limited flowrate as designed. As you try to increase demand further, the Ultraf will start throttling the flow and maintain it at the maximum set flowrate.
5. To increase maximum set flow rate, turn adjusting screw 11 clockwise (+) one turn at a time, allowing some time. Note: It may only be increased by approximately 20% from originally pre-designed.

To open the Ultraf completely, close the 2-way valves 5 & 6 and open 2-way valve 8. Please note that by so doing the pressure downstream will be as high as the pressure upstream.

To close the Ultraf, close 2-way valves 6 & 8, and open 2-way valve 5.

To maintain preset pressure, open 2-way valves 5 & 6 and close 2-way valve 8.

MAINTENANCE

- No maintenance is required.
- Check maximum flowrate. Adjust if required.
- It is recommended that the Ultraf be easily accessible as well as clearly marked to prevent damage.
- In freezing climates, the Ultraf should be dismantled, and water drained during the winter months.

TROUBLSHOOTING ULTRAF 70

PROBLEM	CAUSE	CHECK	SOLUTION
The Ultraf does not open.	1. Valve 6 is turned off. 2. Blocked water connections.	1. Check state of valve. 2. Open valve 8. **WARNING: Maximum high pressure will pass through the Ultraf.**	1. Open valve 6. 2. Turn off water supply to the valve. Dismantle and clean connections in the valve. Reassemble and activate.
The Ultraf does not close.	1. Valve 5 is turned off. 2. Valve 8 is open. 3. Clogged or stuck needle valve 7. 4. Blocked self-flushing finger filter 4. 5. Foreign object on seal.	1. Check state of valve. 2. Check state of valve. 3. Check state of valve. 5. Poor water flow downstream.	1. Open valve 5. 2. Turn off valve 8. 3. Repeat adjustment and operating instructions 1-2. 4. Turn off water supply to the valve. Remove filter and clean or replace it if needed. Reassemble and activate. 5. Turn off water supply to valve. Remove cover 2, and take away foreign object. Check that diaphragm 3, body and cover are not damaged. Reassemble and activate.
Unstable flowrate / Ultraf not reacting to excessive flow rate demand.	1. Needle valve 7 is improperly adjusted. 2. Blocked or damaged pilot 10. 3. Blocked water connections in Ultraf or orifice plate intake 12.	1. Irregular flow. 2. Irregular flow. 3. Irregular flow.	1. Repeat adjustment and operation instructions 1-2. 2. Turn off water supply to the valve. Dismantle and clean drain connections in pilot 10. Check that membrane and lower seal are not damaged. Reassemble and activate. 3. Turn off water supply to the valve. Dismantle and clean connection ports in Ultraf & orifice plate. Reassemble and activate. .

RAPHAEL, founded in 1949, is the first Israeli manufacturer of water control valves. RAPHAEL´s research department constantly strives to introduce new and innovative products and solutions for water control systems including water works, fire-protection and irrigation systems.

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