



IOM ULTRAF 6P73

Ultrasonic Hydrometer with Flow Limit Pressure
Reducing Valve 2" - 4" (10 bar)

RAPHAEL VALVES INDUSTRIES

Sep-24

DESCRIPTION

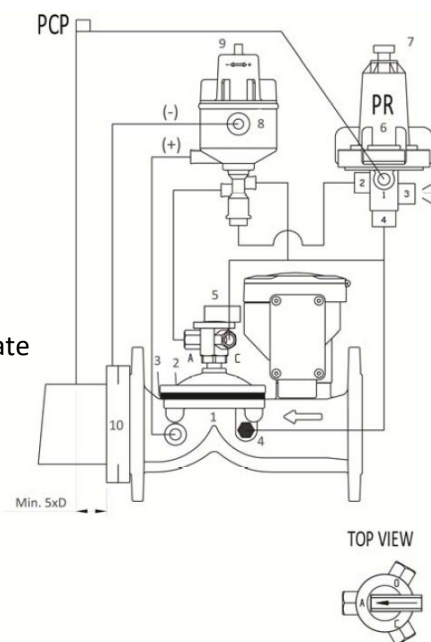
This water meter and flow limiting / pressure reducing valve is an automatic control valve designed to perform two functions: To limit maximum flow rate to a preset value and not allow greater flow past the valve. To reduce a higher upstream pressure into a preset lower downstream pressure, and to maintain this pressure constantly 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. Place the orifice plate 10 as indicated by the flow arrow, making sure the (-) port is facing the downstream and connect both tubs from the pilot 8 respectively. **Note: In some application the (+) port is pre- assembled in Raphael as part of the valve trim.**
- Connect sensor port #1 of pilot 6 to the downstream pipeline as indicated (5x pipe diameter from orifice plate 10).
- It is recommended to install isolation valves upstream and downstream the control valve.
- Turn the 3-way selector 5 to the "Close" position and turn on the water supply to the valve.
- Check for leaks; tighten bolts & fittings if necessary.

PARTS LIST

1. Body
2. Cover
3. Diaphragm
4. Self-flushing "finger" filter
5. 3-way selector
6. 3-way "reducing" pilot model PR
7. Pressure adjusting screw
8. 3-way "flow control" pilot model FC
9. Pressure adjusting screw
10. Factory pre- calibrated orifice plate to given flow rate



OPERATING INSTRUCTIONS

1. Make sure that there is a downstream flow demand.
2. Turn adjusting screw 7 counterclockwise all the way.
3. Turn the 3-way selector 5 to the "Auto" position.
4. Turn adjusting screw 7 clockwise, until water will be discharged from the vent port (3) of pilot 6. The Ultraf will start to open.
5. To increase downstream set pressure, turn adjusting screw 7 clockwise one turn at a time, allowing some time between turns for the valve to respond. Check downstream pressure until required pressure is achieved.
6. To decrease downstream pressure, turn adjusting screw 7 counterclockwise one turn at a time, allowing some time between turns, for the valve to respond. Check downstream pressure until required pressure is achieved.
7. To increase maximum set flow rate, turn adjusting screw 9 counterclockwise (+) one turn at a time, allowing some time. Note: It may only be increased by approximately 10% from originally pre-designed.

To open the Ultraf completely, turn 3-way selector 5 to the "Open" position. Please note that by so doing the pressure downstream will be as high as the pressure upstream.

To close the Ultraf, turn 3-way selector 5 to the "Close" position.

To maintain downstream set pressure & limit flow, turn 3-way selector to the "Auto" position.

MAINTENANCE

- No maintenance is required. However, from time to time it is recommended to rotate the 3-way selector 360° to prevent sticking by sediments.
- Check pressure. Adjust if required.
- It is recommended that the valve will be easily accessible as well as clearly marked to prevent damage.
- In freezing climates, the valve should be dismantled, and water drained during the winter months

TROUBLESHOOTING ULTRAF-6P73

PROBLEM	CAUSE	CHECK	SOLUTION
The Ultraf does not open.	1. The 3-W selector 5 is in the "Close" position.	1. Check state of selector.	1. Turn the override selector to "Auto" position.
	2. The 3-W selector 5 is clogged or damaged.	2. Turn selector to "Open" position. No water is vented.	2. Turn off water supply to the valve. Dismantle the 3-way selector, clean or replace if required. Reassemble and activate.
	3. One or both pilots are clogged or damaged.	3. Check manual opening using 3-way selector.	3. Turn off water supply to the valve. Clean drain ports in pilots and in valve/pipeline intakes. Check membranes. If needed - Replace damaged pilot(s).
The Ultraf does not close.	1. The 3-W selector 5 is in the "Open" position.	1. Disconnect control tube from hydraulic relay pressure command.	1. De-pressurize hydraulic relay 5
	2. Blocked self-flushing filter.		2. Turn off water supply to the valve. Remove filter 4. Clean or replace if needed. Reassemble and activate.
	3. Foreign object on sealing seat or damaged diaphragm 3.	3. Poor water flow downstream.	3. Turn off water supply to the valve. Dismantle cover 2 and diaphragm 3 and remove the foreign object. Check that diaphragm body and cover are not damaged. Replace if needed. Reassemble and activate.
Unstable pressure/ excessive flow rate	1. Blocked or damaged pilots 6/8	1. Set pressure is not met when flow or inlet pressure changes. Excessive flowrate is permitted.	1. Turn off water supply to the valve. Dismantle and clean drains in pilots and in all intake ports. Check membranes. In case of internal parts wear, change pilot(s). Reassemble and activate.