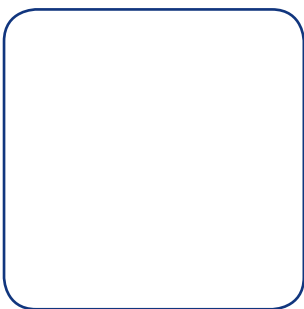


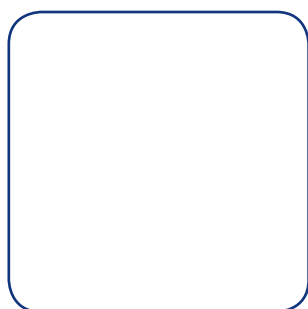


Pressure
Independent
Control
Valve



Frese OPTIMA Compact

Training, Commissioning
& Trouble shooting



Overview

| | |
|-------------------|---|
| Size Range | DN10 to DN32 |
| Max Flow | 4001 l/h (1.111 l/s) |
| Max DP | 800kPa |
| Actuator | 24V/230V modulating or 3 POS thermic or motoric, normally closed |

Applications

Heating and cooling systems that require modulating control for fan coil units, active chilled beams, VAV units and over door heaters

Backward Flushing (preferred method)

1. OPTIMA Compact PICV is supplied with plastic cap, which can be used to manually close the valve. If the cap is removed, the valve will be in the normally open position (See fig. 1)
2. Back flush through the terminal unit and through the OPTIMA Compact PICV.
3. Back flushing must be done at a Δp of max 100 kPa. If the Δp is above 100 kPa, the stem will be pulled down and close the valve.
4. The OPTIMA Compact PICV is then ready for setting the flow and mounting the actuator



1



2



3

Commissioning

1. Once the OPTIMA Compact PICV has been flushed the valve can now be set to limit the design flow.
 2. From the OPTIMA Compact pre-setting table and graphs in the Technote or instruction manual, select the size of the valves installed and look up the required design flow rate from the graph.
 3. Read across from the flow rate to the flow curve and down to the pre-setting scale, or use of the Frese APP This shows the setting and minimum Δp for the OPTIMA Compact PICV.
 4. Remove the plastic cap from the top of the OPTIMA Compact PICV, unscrew the retaining nut slightly, set the flow using the pre-setting scale and retighten the retaining nut (See fig. 2).
 5. The OPTIMA Compact PICV will now limit your flow to design at all times irrespective of pressure fluctuations in the system whilst providing a full 2.5mm, 5.0mm or 5.5mm stroke of modulating control.
 6. Due to the OPTIMA Compact PICV working on a minimum Δp , typically 14kPa, as long as the critical valve on the index circuit has a minimum Δp of 14kPa of pressure available, the OPTIMA Compact PICVs closer to the pumps will be in balance.
 7. The differential pressure can be measured using the integral PT plugs on the OPTIMA Compact PICV.
 8. Flow tolerance of a OPTIMA Compact is +/- 10%. For nominal flow below 0.06 l/s the flow rate is accurate to +/- 0.003
- Once the Optima Compact PICV has been set, mount the actuator to the valve housing and connect the cable. (See fig. 3)

Trouble shooting on site

Problem: Flow is not according to design flow.

1. Check the flow range and the pre-setting of the valve.
2. Check that the valve stem has a free movement up and down.
3. Check by use of a manometer, connected to the PT plugs (See fig. 4) that Δp is above the minimum required Δp for the valve pre-setting.
4. **Please note:**
 - The accuracy of a portable manometer is +/- 10% or minimum 1-2 kPa.
 - Flow verified by a DRV or a metering station in combination with a portable manometer, has a tolerance of +/- 15-25%.
 - Flow verified by a ultra sonic meter built into the water flow, has a tolerance of +/- 5%



Problem: The stem is locked in closed position.

1. Check by use of a manometer, connected to the PT plugs, that Δp is positive. If a negative value is measured the water flows in the wrong direction.

Please note:

- The stem can create a hammering noise if the water flows in the wrong direction.
- The stem can also jump up when the stem is touched. (See fig. 5)

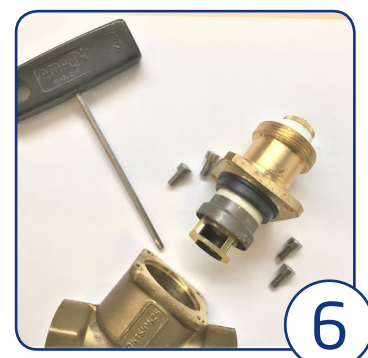


Problem: The stem cannot move up and down.

1. Open the valve by removing the 4 screws using a 3mm hexagonal key. (See fig. 6)
2. Check that the valve is not blocked by dirt and debris or a layer of sediments on the stem.

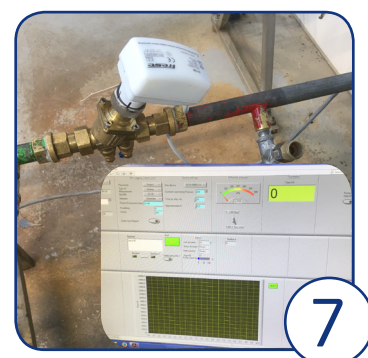
Please note:

- Water treatment is essential for valves and other equipment to function according to specification.
- The use of untreated tap water can cause growth of bacteria and other damage to the system.



The problem cannot be detected following the instructions above.

1. The valve can be sent back to the Frese QA department for inspection in the laboratory. (See fig. 7)
2. If a fault on the valve is detected in the laboratory, the Frese QA department will handle it as a claim, according to the General Conditions of Sale and Delivery.
3. If no fault can be detected on the valve, it will be returned to the customer after agreement with the sales manager.





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