



## ACCESSORIES FOR MANIFOLDS

### 471FL Flow meter

#### INSTRUCTIONS

Direct regulation, indication and isolation of flows from heating and cooling circuits in manifold flow pipe bars.

The flow meter offers an easy and accurate method of adjusting the flow rates in heating and cooling circuits.

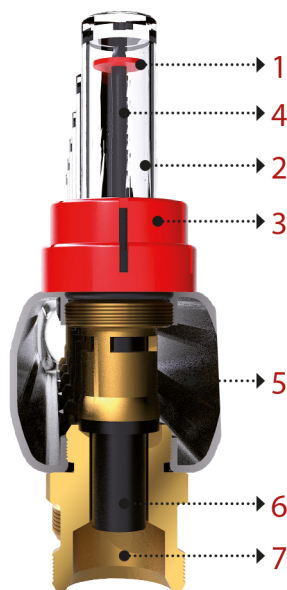
Thanks to intensive development work and new technologies, the flow meter can be integrated efficiently in the flow pipe bar to ensure reliable indicator values.

Correct balancing of hydraulic circuits ensures optimum energy distribution, resulting in more efficient and economical operation in accordance with the energy saving regulations provided for by legislation.

With the flow meter, any qualified fitter can set the appropriate flow rate on the premises in question, thus avoiding investments in training and expensive measuring devices.

#### INSTALLATION:

The flow meter is installed in the flow pipe bar of the manifold in a horizontal or vertical position.



- 1 - Indicator unit
- 2 - Sight glass with scale
- 3 - Cover cap
- 4 - Sliding bar
- 5 - Flow pipe manifold
- 6 - Measuring cylinder
- 7 - Male adapter

#### ADVANTAGES:

- Precise and quick balancing without diagrams, tables or measuring devices
- Flow rate displayed directly in l/min
- Regulating valve with isolating facility
- Sight glass available as a replacement part
- Removable sight glass (ease of maintenance)
- Can be installed in any position

#### TECHNICAL DATA:

Range: 0 - 6 l/m

Operating temperatures: Brass flow meter: -10 °C – +70 °C

Maximum working pressure: 6 bar

System test pressure max.: 10 bar (20 °C)



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Seals: EPDM

Male thread to ISO 228

Measuring accuracy:  $\pm 10\%$  of the highest nominal value (the change in viscosity must be taken into account with antifreeze additives)

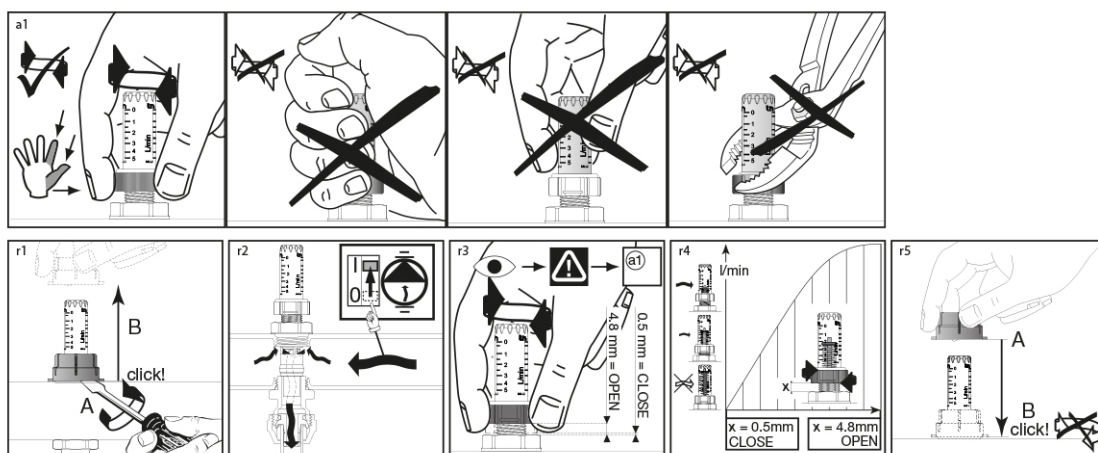
FLUIDS:

- Heating water (VDI 2035)
- Cold water
- Water and proprietary additives used against corrosion and freezing

ASSEMBLY:

When assembling the flow meter in the manifold, the starting torque must not exceed 20 Nm ( $\frac{1}{2}$ ").

### FLOWMETER ADJUSTMENT

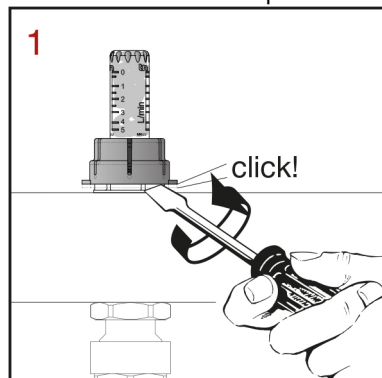


MAINTENANCE:

The sight glass can be removed if necessary for maintenance purposes and replaced. The relevant underfloor heating circuit must be separated in this case from the rest of the system.

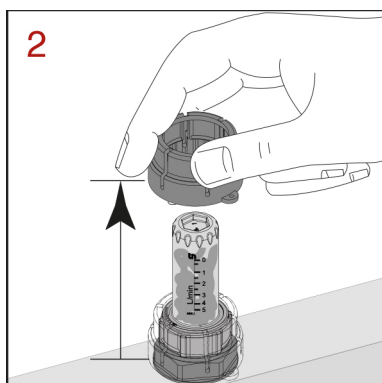
### HOW TO REPLACE THE SIGHT GLASS:

1 - 2 Remove the red cap.

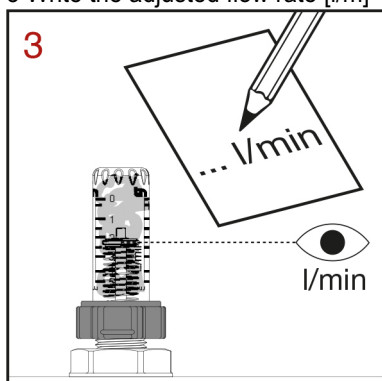




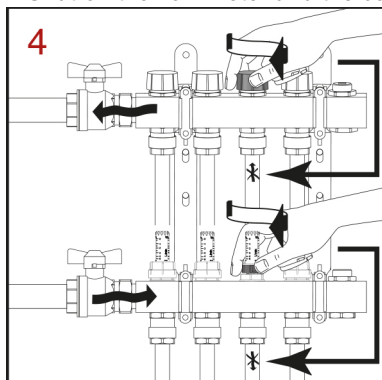
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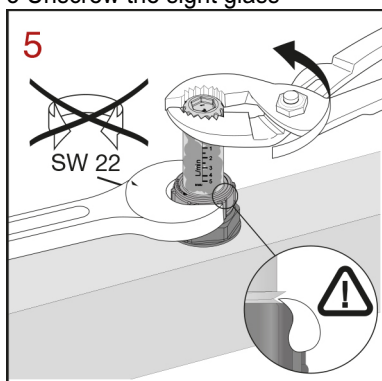
3 Write the adjusted flow rate [l/m]



4 Shut-off the flow meter and the convertible valve



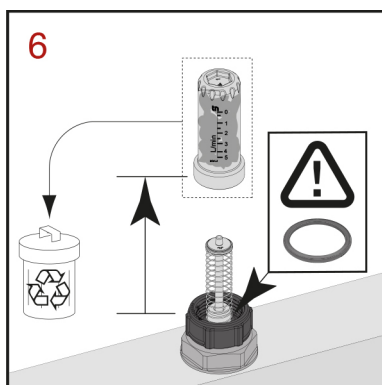
5 Unscrew the sight glass



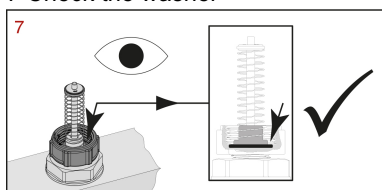
6 Remove the sight glass



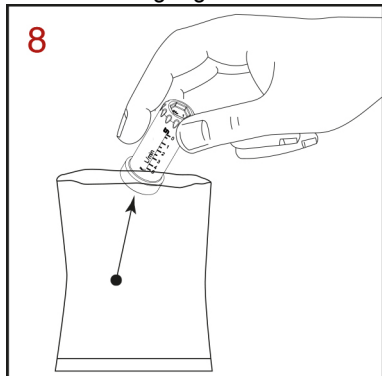
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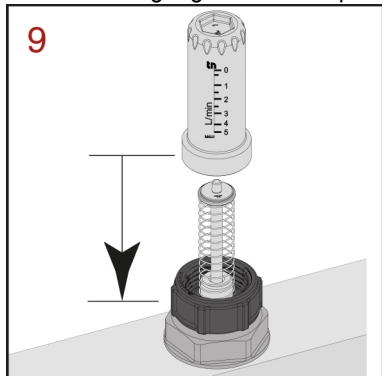
7 Check the washer



8 Clean the sight glass or take a new one



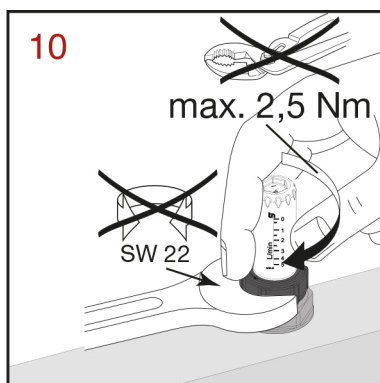
9 Place the sight glass into the plastic spindle



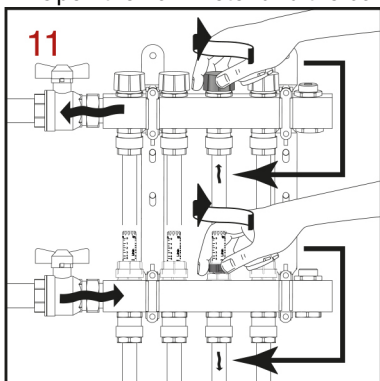
10 Screw the sight glass



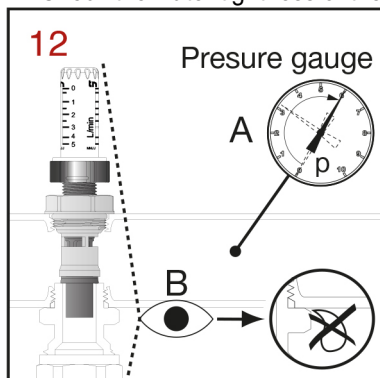
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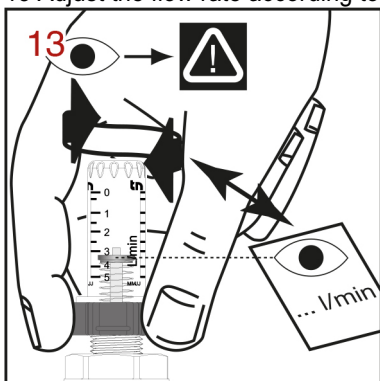
11 Open the flow meter and the convertible valve



12 Check the water tightness of the flow meter before turning on the heating or cooling system



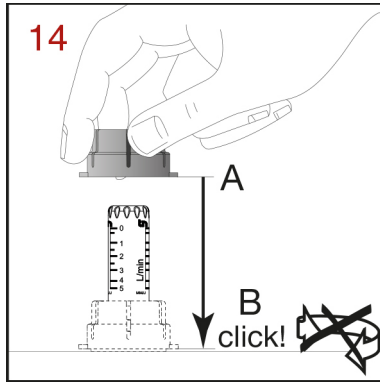
13 Adjust the flow rate according to the figure as per nr. 3



14 Place the cover cap on the plastic spindle



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### OPERATION:

The flow measurement is based on the displacement principle of a baffle disc, which is inserted in a measuring tube. The position is conveyed to the sight glass on the indicator unit by means of a sliding bar, which fixes the baffle disc to the indicator unit. The scale printed on the sight glass allows the flow rate to be read with ease.

Turning the black spindle changes the opening profile of the valve and allows the desired flow rate to be set.

The flow is isolated by turning the spindle fully.