360 MINIPRESS pressure reducing valve

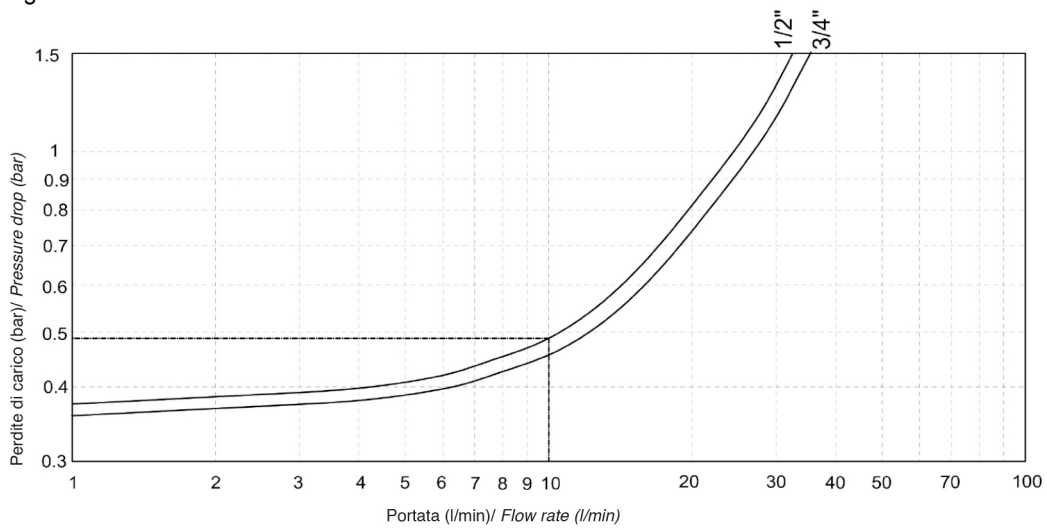
INSTRUCTIONS ON INSTALLATION, USE AND MAINTENANCE

1. FUNCTION

Pressure reducing valve is a device which reduces and stabilizes the upstream pressure to an adjusted downstream pressure. When the entering pressure from the public mains is too high and variable, pressure reducing valve stabilizes the downstream pressure to the adjusted one. Possible variations of the upstream pressure do not influence the adjusted downstream pressure. This range of pressure reducing valves allows the operator to adjust the downstream pressure to a set figure.

2. HYDRAULIC CHARACTERISTICS

Pressure drop diagram



Here mentioned figures refer to: upstream pressure 8 bar downstream pressure 3 bar

2.1 USE OF DIAGRAM

Pressure drop diagram includes the loss of pressure proportional to a specific flow rate. According to the requested flow rate, it is possible to measure the water system and the pressure reducing valve correctly (it would be better to have a flow speed between 1 m/s and 2 m/s in the piping).

INSTANCE.

In case of 1/2” pressure reducing valve with an adjusted downstream pressure of 3 bar and a flow rate of 10 l/min, the pressure drop diagram states a loss of pressure of 0.49 bar. It means that the pressure gauge installed on the outlet way of pressure reducing valve shows a figure of 2.51 bar (= 3 bar – 0.49 bar).

3. USE

Pressure reducing valves are suitable for domestic water services, heating and air-conditioning plants, compressed air systems*. They can be used with water, compressed air and no-aggressive fluids. ITAP Pressure reducing valves comply with the requirements of Council Directive 97/23/EC (PED) and the CE marking is not requested according to art. 3 clause 3 of DL 25/02/2000 n. 93. (* In the type-testing according to PED Council Directive, it is necessary that pressure reducing valves were approved as a part of the installation).

4. RECOMMENDATIONS ON RIGHT INSTALLATION

4.1 INSTALLATION

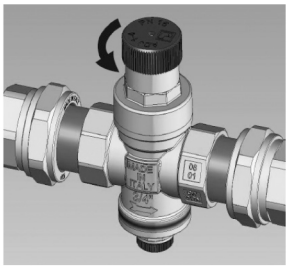
For the best use and duration of the system, it is necessary to comply with the following instructions on installation, with the national regulations and with relevant local requirements.

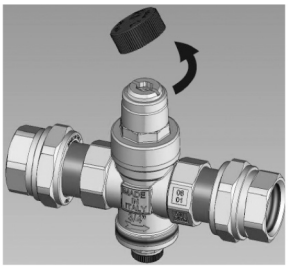
- Place of installation has to be protected from frost and has to be easily inspectable.
- It would be better to install shut-off valves upstream and downstream of the pressure reducing valve, to facilitate the maintenance operations.
- In order to protect pressure reducing valve from overpressure, install a check valve immediately downstream of the pressure reducing valve.
- In case of water heater downstream of the pressure reducing valve, install an expansion vessel between the valve and the

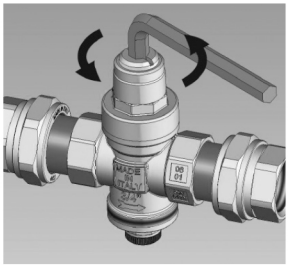
water heater.
- In order to avoid cavitation and therefore excessive noiseness, it is strongly recommended that the ratio between maximum upstream pressure and regulating downstream pressure does not exceed the value of 2,5.
Pressure reducing valve is not a safety device. It would be better to install all the necessary safety relief valves.
Please, duly note the downstream pressure of the reducing valve has not to be higher than the maximum working pressure of the devices installed in the private water system, in order to avoid possible damages or malfunctions.

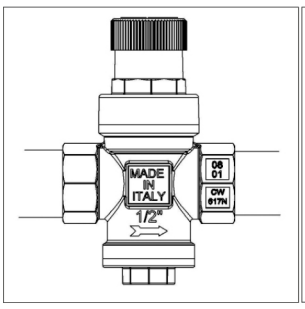
4.2 INSTRUCTION ON INSTALLATION
1. Before installing the pressure reducing valve, open all the outlets to flush the system and expel any air left in piping.
2. Install shut-off valves upstream and downstream to facilitate maintenance operations.

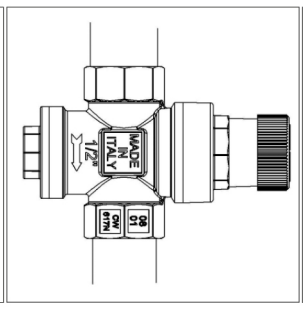
3. For a right flow direction, use the arrow stamped on the body.
4. ITAP pressure reducing valve can be installed in either vertical or horizontal piping. It can be installed also upside down.
5. Art. 361 is equipped with a threaded connection suitable for a pressure gauge. It is possible to unscrew the plug made by Nylon PA6 in order to install a pressure gauge in the size of ¼". In such a position, the pressure gauge shows the downstream pressure of the reducing valve.
6. The whole range of ITAP pressure reducing valves are tested and adjusted with a downstream pressure of 3 bar. It is possible to change the downstream pressure by means of the adjusting device.
7. The final adjustment of the pressure reducing valve has to be carried out with a filled private water system and with all the outlets shut-off. The upstream pressure has to be at least 1 bar higher than the adjusted pressure. Adjustment of the pressure reducing valve to a downstream pressure different from the pre-adjusted one (3 bar): - Close the downstream shut-off valve; - Unscrew the plug (Fig. 4.1); - Adjustment is carried out by means of an hexagonal key on the upper part of the device ; turn in clockwise way in order to increase the downstream pressure, turn in anticlockwise way in order to reduce the downstream pressure (Fig. 4.3); - Open outlets in the private water system, in order to check the stability of the adjustment; - Adjust the downstream pressure with outlets totally shut-off and with water at room temperature only; - Screw the plug.

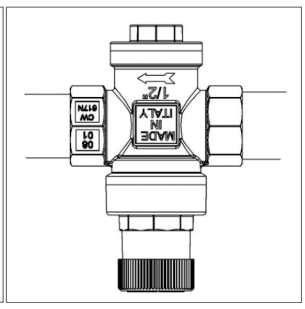

4.1


4.2


4.3







5 TROUBLESHOOTING
A. Increase in pressure downstream on the pressure reducing valve with a water heater in-line. This problem is due to heating of the water, caused by the water heater. The pressure downstream increases, due to water expansion, as the pressure reducing valve is correctly closed. It is necessary to install an expansion vessel between the pressure reducing valve and the water heater to absorb the pressure increase (Fig. 5.1).
B. The pressure reducing valve does not maintain the adjusted figure. In most cases, this problem is due to the presence of impurities on the valve seat, causing blow-by and consequent increase in the downstream pressure. Install an Y-strainer upstream of the pressure reducing valve. Carry-out the maintenance of the Y-strainer. Flush the water system before installing the pressure reducing valve.

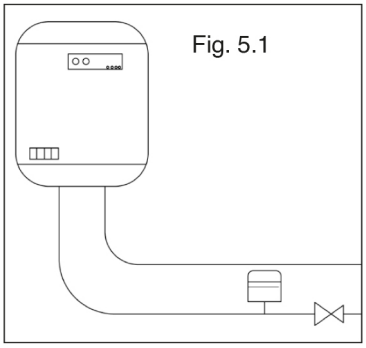


Fig. 5.1