

Pressure reducers art. RDP 30-RDP 40



A pressure reducing valve is a device which reduces and stabilises the upstream pressure to a set downstream pressure. Pressure reducers are widely used in domestic installations to separate from a hydraulic viewpoint the private facility and the water mains, where water pressure is too high and variable for a direct supply. The device allows not only to decrease pressure to a value that is compatible with domestic facility, but also to keep it constant at the inlet of the facility itself, which therefore works in better conditions, thanks to the compensated seat. Piston pressure reducers RDP 30 and RDP 40 feature the possibility of manual regulation, allowing the operator to adjust outlet pressure to the desired value.

■ TECHNICAL FEATURES

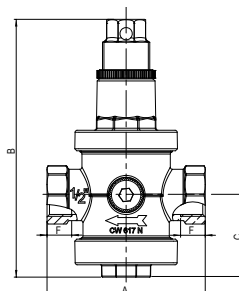
Min operating temperature: 0 °C
 Max operating temperature: 80 °C
 Max inlet pressure: 25 bar
 Outlet pressure regulation: 1 ÷ 6 bar
 Pre-setting: 3 bar
 Min pressure drop for a correct operation: 1 bar

■ MATERIALS

Body: CW617N brass (sizes 1/2" ÷ 1"); CB753S brass (sizes 1 1/4" ÷ 4")
 Internal component and diaphragm: CW614N brass
 Cover: CW617N brass
 Plug: PA
 Seals: NBR
 Seat: stainless steel AISI 303

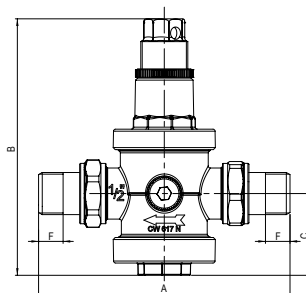
■ DIMENSIONS

RDP 30. Piston pressure reducer with steel seat, manometer connections and female connections



ART.	COD.	SIZE	DN	A	B	C	F
RDP 30	509010	2×1/2" F	1/2"	77	125.5	40	12
RDP 30	509011	2×3/4" F	3/4"	85	125.5	40	12
RDP 30	509012	2×1" F	1"	91	159.0	59	13
RDP 30	509013	2×1 1/4" F	1 1/4"	118	218.0	69.5	18
RDP 30	509014	2×1 1/2" F	1 1/2"	126	225.0	126	18
RDP 30	509015	2×2" F	2"	142	250.0	87	20
RDP 30	509016	2×2 1/2" F	2 1/2"	147	270.0	88	20
RDP 30	509017	2×3" F	3"	189	290.0	97.5	22
RDP 30	509018	2×4" F	4"	188	330.0	104.5	23.5

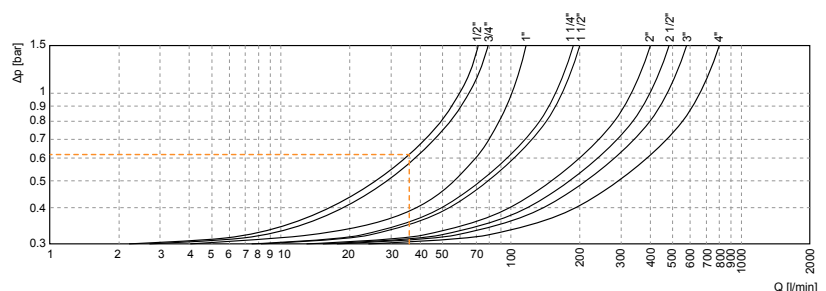
RDP 40. Piston pressure reducer with steel seat, manometer connections and pipe union fitting connections



ART.	COD.	SIZE	DN	A	B	C	F
RDP 40	509020	2×1/2" M	1/2"	123	125.5	40	12
RDP 40	509021	2×3/4" M	3/4"	135	125.5	40	12
RDP 40	509022	2×1" M	1"	156	159	59	14
RDP 40	509023	2×1 1/4" M	1 1/4"	177	218	69.5	16
RDP 40	509024	2×1 1/2" M	1 1/2"	188	225	126	16
RDP 40	509025	2×2" M	2"	213	250	87	17

HYDRAULIC FEATURES

The diagram represents the pressure loss generated by the pressure reducer into the circuit as a function of flow rate. The value of pressure drop that can be read on the graph should be added to the pressure reduction imposed by the device setting. The diagram has been obtained with a 8 bar inlet pressure and 3 bar pre-setting pressure.



Example. Assumption: device RDP 30, size 1/2", 35 l/min flow rate → on the graph a ~0.6 bar pressure drop can be read. With 8 bar inlet pressure and 3 bar pre-set outlet pressure, one can measure the downstream pressure through a manometer and read (3 - 0.6) = 2.4 bar.

OPERATING INSTRUCTIONS

Preliminar notes

The place of installation for pressure reducer has to be protected from frost and easily inspectable. It is advisable to install cut-off valves upstream and downstream the pressure reducer to facilitate maintenance operations. In order to protect pressure reducer from overpressure, install a check valve immediately downstream the device. In case of water heater downstream the pressure reducing

valve, install an expansion vessel.

A typical installation outline for a pressure reducer is reported in Fig.1: this arrangement is strongly recommended since it optimises the operation of the device and all downstream plant, besides making maintenance work easier. In Fig.1 the following components can

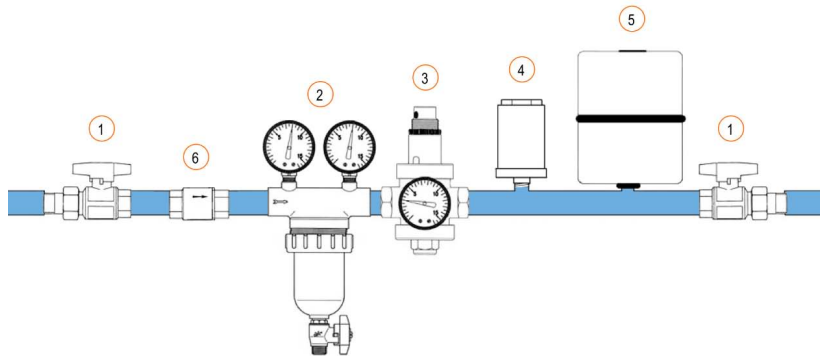


Fig. 1: Installation outline with pressure reducer and accessories.

be found:

1. Cut-off valves: to be fitted upstream and downstream of the reducer in order to isolate the system from the public mains upstream and the private utilities downstream during maintenance work;
2. Self-cleaning filter art. FI 00: this device blocks impurities from the water mains; it is fundamentally important to fit this device since it prevents the accumulation of impurities in various devices installed along the domestic circuit. The presence of dirt in the pressure reducer, particularly around the seal, may compromise performances by causing seeping and consequent increases in downstream pressure;
3. Pressure reducer art. RDP xx;
4. Water-hammer shock absorber art. ACA 00: one of the most frequent phenomena causing even serious damages in the plant is the so called water hammer. The water hammer is provoked by abrupt flow interruptions, for instance caused by valve closures or pump stops, which generate a sequence of overpressure waves propagating through the pipe. To prevent the occurrence of a water hammer, it is possible to use this mechanical spring stop-shock device, which protects the most critical components by absorbing plant overpressures;
5. Expansion vessel: in plants featuring system for hot water production and storage, pressure can rise due to fluid thermal expansion even if pressure reduce valve works properly. Using a membrane expansion vessel allows to absorb this overpressure;
6. Check valve art. VR 00: prevent backflows through the plant; it is therefore used to avoid pollution of the public mains by private users.

Installation

Before installing the device, it is advisable that air and dirt trapped within the piping system are expelled.

The pressure reducer can be installed both on vertical and horizontal piping segments, provided that the direction indication is fulfilled: in order to check the flow direction, refer to the arrow impressed on the device body (Fig.2).

Regulation

All the pressure reducing valves are pre-set on a 3 bar outlet pressure. However, it is possible to change the downstream pressure by means of the adjusting device. The final adjustment of the pressure reducer has to be performed out with filled water system and with all the outlets closed.

The upstream pressure has to be at least 1 bar higher than the set pressure.

In order to adjust the pressure reduction valve to a pressure value different from the default, proceed as follows.

1. Close the downstream shut-off valve;

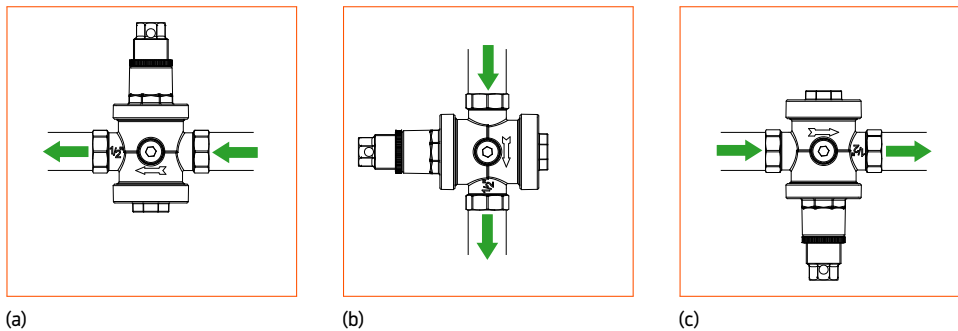


Fig. 2: Possible orientations of pressure reducer.

2. Unscrew the PA nut (Fig.3a);
3. Adjustment is carried out by means of a tool or a screwdriver on the upper part of the device (Fig.3b); turn it clockwise to increase the downstream pressure, or anticlockwise to reduce the downstream pressure;
4. Open outlets in the private water system, in order to check the stability of the adjustment;
5. Adjust the downstream pressure with outlets totally shut-off and with water at room temperature only;
6. Screw the PA nut back (Fig.3c).

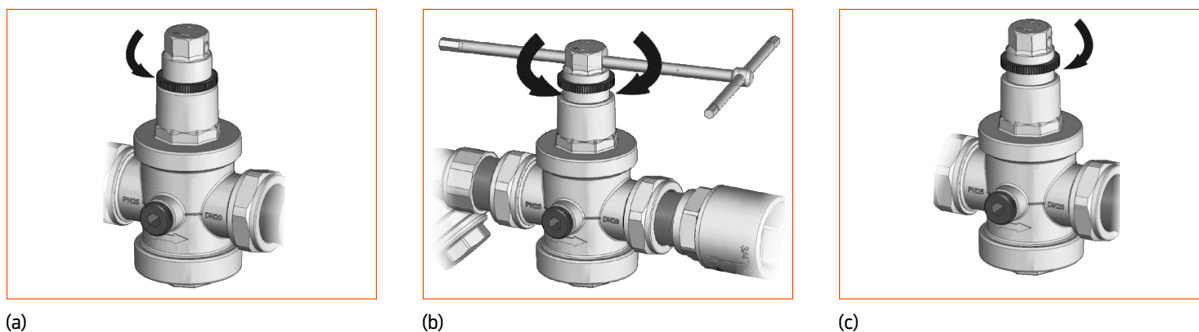


Fig. 3: Adjustment instructions for pressure reducer.

■ NOTES

In order to avoid the occurrence of noise or cavitation phenomena, it is advisable to keep the inlet/outlet pressure reduction factor below 2.5. For instance, for a desired 4 bar outlet pressure, inlet pressure should not be higher than 10 bar. If required, consider to install more pressure reducer valves connected in series.

■ CERTIFICATIONS

Pressure reducing valves **RDP 30-40** are suitable for domestic water services, heating and air-conditioning plants, compressed air systems¹. They can be used with water, compressed air¹ and non-aggressive fluids. I.V.A.R. pressure reducing valves comply with the requirements of Council Directive 2014/68/EU (PED) and the CE marking is not requested according to art. 4 clause 3.

¹In the type-testing according to PED Council Directive, it is necessary that pressure reducing valves were approved as a part of the installation

■ ACCESSORIES



FI 00. Self-cleaning filter with 2 manometers, removable cartridge and discharge tap.



ACA 00. Water-hammer shock absorber.



VR 00. Check valve.

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