

Portable Pressure Reducer

PPR

The portable pressure reducers of the PPR series, manufactured by Raphael, are essential safety devices recommended for installation in every fire truck.

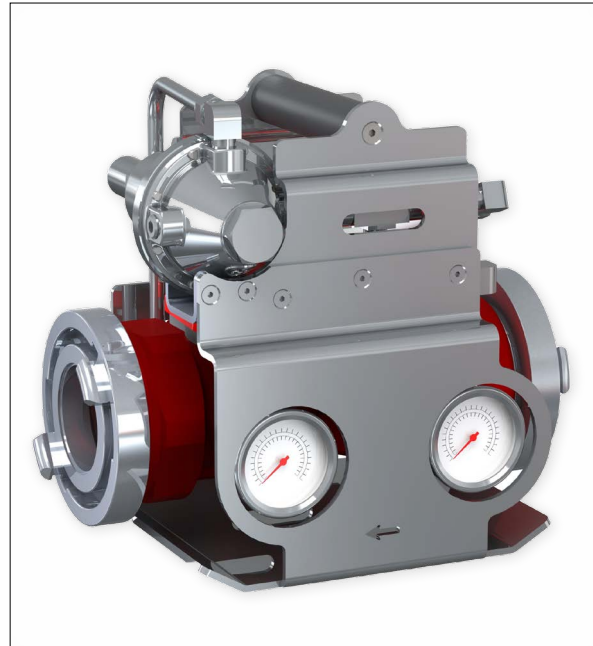
During firefighting operations, personnel are often required to connect to ad-hoc or unfamiliar water sources, where the pressure level is not known in advance. When connecting to such a source, firefighters may encounter unexpectedly high pressure in the hose, which in severe cases can cause loss of balance or even knock the operator down due to the nozzle's recoil force.

The portable pressure reducer can be connected directly to the water source - such as hydrants - or via a fire hose. In the latter configuration, the firefighter can easily drag the unit along the ground, as it smoothly slides on its dedicated sled.

Once connected, the pressure reducer automatically maintains the outlet pressure within a range suitable for hand-held firefighting nozzles, thereby preventing potential physical injury to the firefighter.

When pressure reduction is unnecessary, the device allows the full flow rate to pass directly through to the fire hose.

The handle of the device is ergonomically designed to accommodate the firefighter's grip, even when wearing exceptionally thick protective gloves.



MARKETS



Commercial



Industry



Residential

TECHNICAL DATA

FLUID:

Water, Brackish water, Foam

SIZE RANGE:

50mm to 80mm (2" to 3")

AVAILABLE CONNECTIONS

ENDS:

Stortz

PRESSURE NOMINAL:

250 psi (17.2 bar)

REGULATION RATIO:

5:1

SENSITIVITY:

1.45 psi (0.1 bar)

ADVANTAGES

Certified as a pressure-reducing device in compliance with UL and FM standards.

Equipped with an ergonomically designed carrying handle that accommodates operation while wearing exceptionally thick protective gloves.

Incorporates a sled base that enables the unit to be easily dragged along the ground when positioned between hoses, allowing unobstructed firefighter movement during operation.

Fitted with a lightweight yet durable aluminium guard that protects internal components from potential damage caused by impact or abrasion.

Supplied with dual pressure gauges for monitoring both inlet and reduced outlet pressure.

Requires minimal maintenance beyond the initial outlet pressure calibration—routine servicing is recommended only once every five years.

CHARACTERISTICS

- Hydro-dynamic pattern design ensures high flowrates with minimum head loss.
- Robust and reliable design.
- Quick respond to upstream pressure changes.
- Pressure reducing to a predetermined set of outlet pressure.

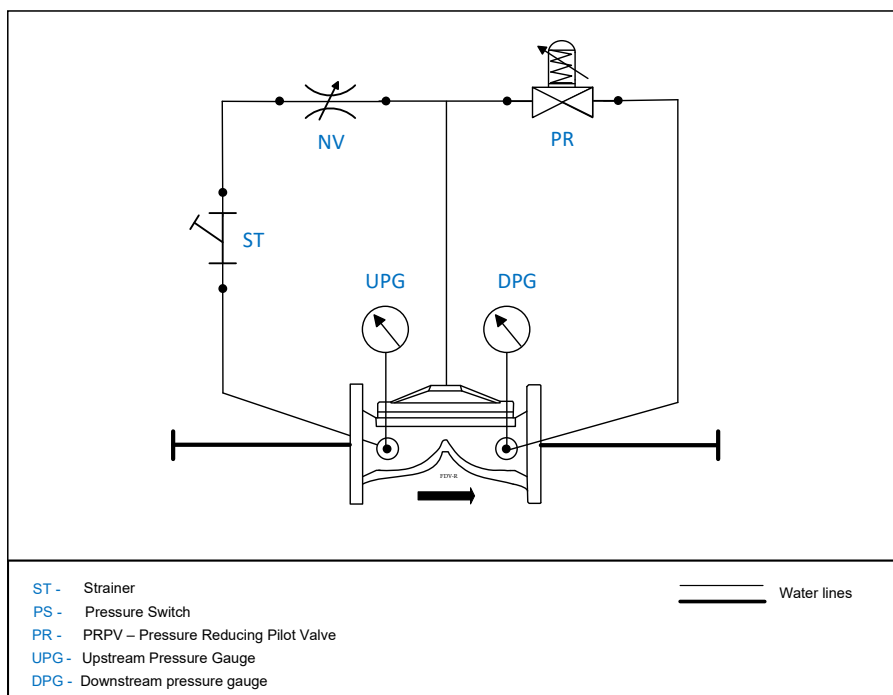
APPROVALS



Schematic drawing:

PPR

Set position



Operation

When water flows through the PPR main valve, a portion of the flow is diverted through a needle valve (NV) into the valve's control chamber.

At the same time, the control chamber is vented downstream through a pressure-reducing PRPV pilot valve (PR).

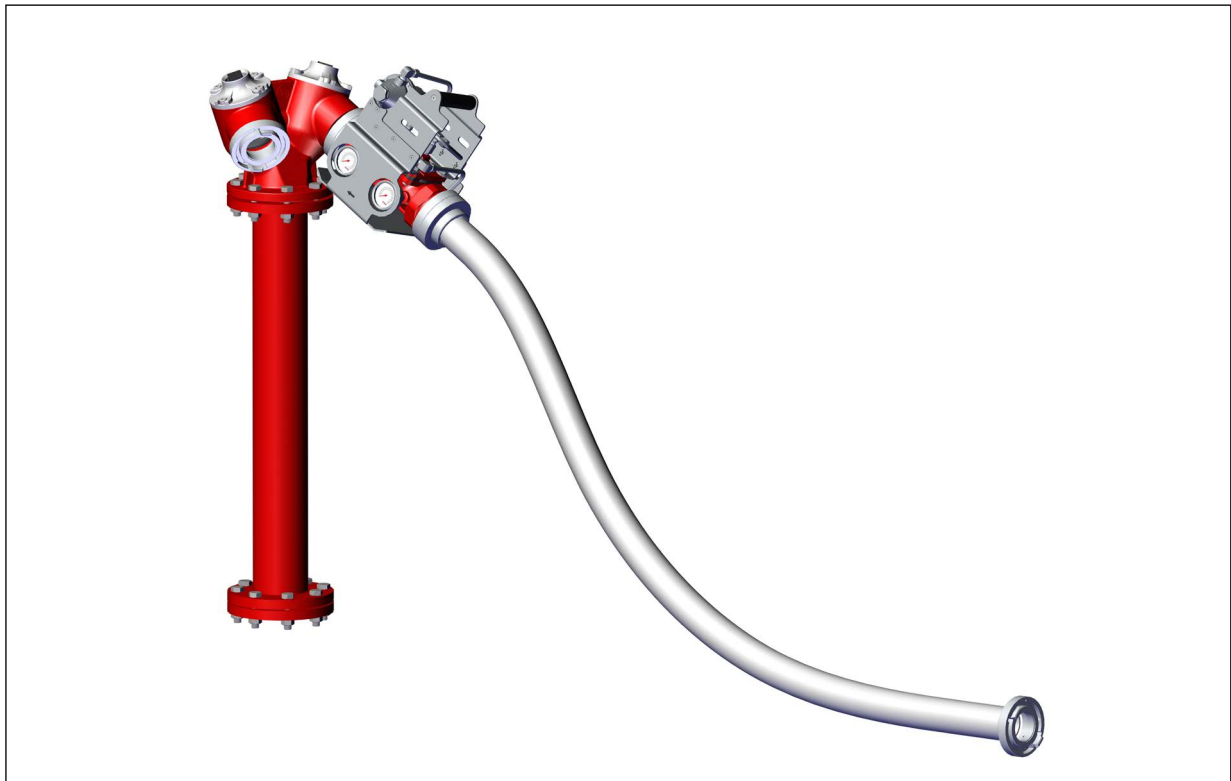
The pressure established in the control chamber is the result of the balance between the inlet flow through the needle valve and the discharge through the pilot. The pilot is adjusted so that when the control chamber pressure reaches its set point, the pilot restricts gradually the discharge flow. This action increases the pressure in the control chamber.

As the control chamber pressure rises, the diaphragm is forced against the valve seat, reducing gradually the flow through the main valve. In this manner, the downstream pressure is automatically maintained at the pilot's SET pressure.

Typical installation

PPR

Directo Installation

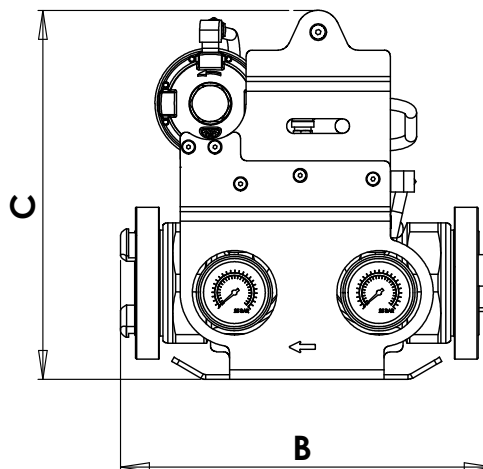
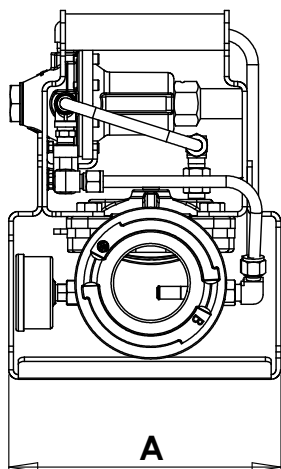


Installation between hoses



Parametric drawing:

PPR



Dimensions Table

Size	2"		3"	
	mm	inch	mm	inch
A	228	8.9	226	8.9
B	253	9.9	253	9.9
C	250	9.8	306	12
Kg/lb	7.6	16.7	11	24.2

Factory Standard

MAIN VALVE

BODY & COVER

- Ductile iron

ELASTOMERS:

- NR, fabric reinforced Natural Rubber

COATING:

- Base layer – high built Epoxy FBE
Top layer – electrostatic Polyester powder RAL 3000

TRIM

PIPING & TUBING:

- Stainless Steel 316

FITTINGS:

- Stainless Steel 316

PLEASE SPECIFY

- Stotz connection size (default – valves size)
- Downstream set pressure

For more detailed technical information, please refer to chapter Engineering Data.