EN

3100N

PRESSURE REDUCING VALVES - PN 15

WITH COMPENSATED SEAT

DESCRIPTION

Pressure reducing valves are mainly used in the private water network, in order to reduce and maintain the pressure of the water coming from the public distribution network at a constant value.
This is how pressure changes are prevented. In fact, they could damage the components of the domestic system or lead to incorrect water distribution.

The compensated seat, a construction feature that characterizes Tiemme pressure reducing valves, ensures the maintenance of the set value when the upstream pressure changes (for more information refer to "TIEMME INFORMS" section of this technical data sheet).

Tiemme pressure reducing valves meet the parameters set by the EN 1567 standard.

ADVANTAGES/STRENGTHS

- Equipped with compensated seat
- Compliant with EN 1567 Standard
- Can be installed in all positions
- Compact size

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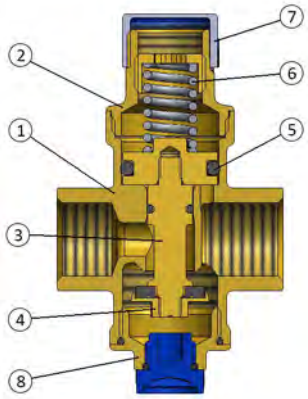
PRODUCTION RANGE

Art.	Description	Code	Connection attacks	Adjustment range
3100N 	Pressure reducing valves - female threaded connections.	318 0057	G 1/2" F (ISO 228)	1 ÷ 4 bar
		318 0058	G 3/4" F (ISO 228)	

IN-BUILD FEATURES

- **(1)** Body: CW617N nickel-plated brass
- **(2) (8)** Cap: CW617N nickel-plated brass
- **(3)** Shutter: CW617N brass
- **(4)** Sealing: CW617N brass
- **(5)** O-ring seal: EPDM
- **(6)** Spring: Galvanized steel
- **(7)** Plastic components: POM
- Threads: ISO 228
- Pressure gauge connection: 1/4" F ISO 228



TECHNICAL CHARACTERISTICS

- Maximum working temperature: + 80 °C
- Minimum operating temperature: -20 °C (provided that the fluid remain liquid)
- Maximum inlet pressure: 15 bar
- Maximum operating pressure: see cavitation diagram
- Downstream regulation range: 1 ÷ 4 bar
- Factory setting: 3 bar
- Fluid compatibility: Drinking water, water and glycol solutions (maximum glycol percentage 30%)
- Compliant: EN 1567

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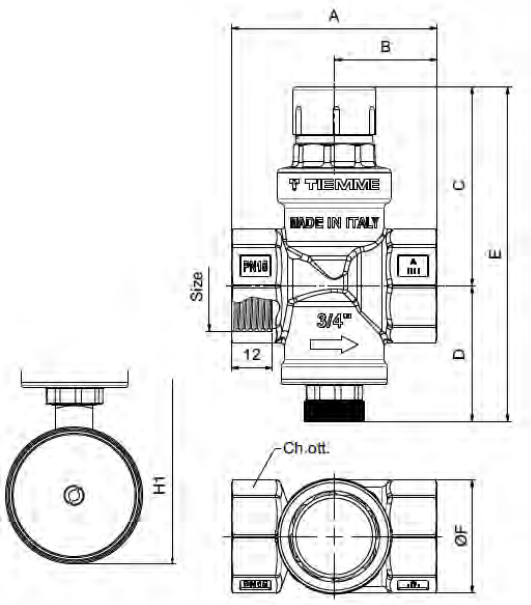
DIMENSIONAL SPECIFICATIONS



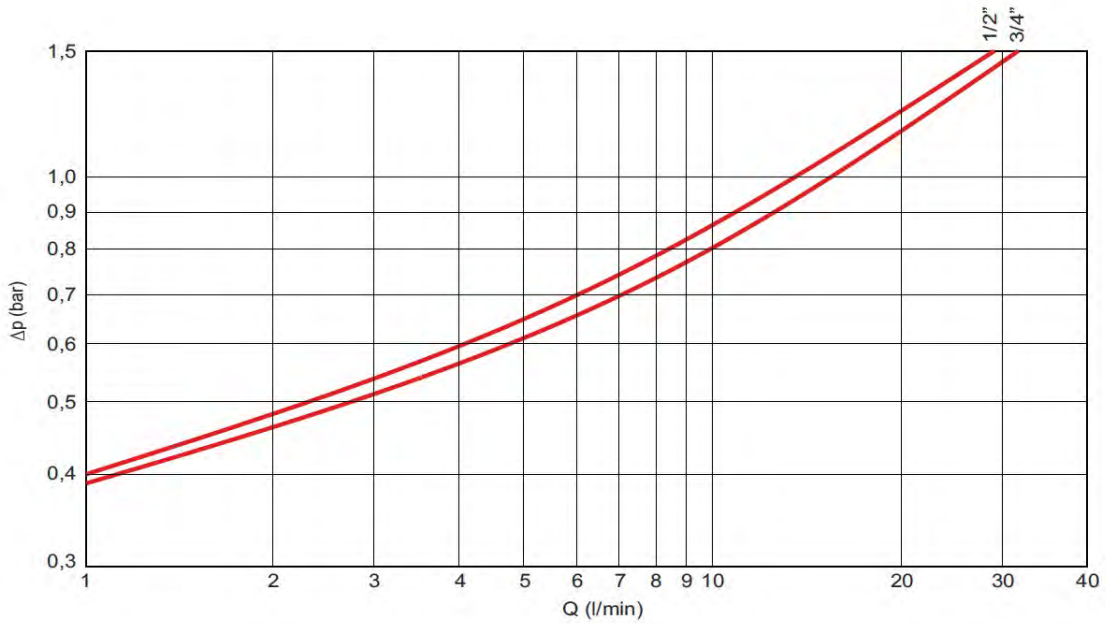
Pressure reducing valves - female threaded connections										
Art	Code	Size	A	B	C	D	E	ØF	H1	Ch.ott.
3100N	318 0057	G 1/2"	58,0	29,0	58,0	39,5	97,5	33	150	25
	318 0058	G 3/4"	60,0	30,0	58,0	39,5	97,5	33	150	31

Dimensions in mm.

FLOW RATE / PRESSURE DROP DIAGRAM:

The pressure drop diagram of the reducing valves represents the pressure drop as a function of the flow rate at the user's outlet.

Test conditions: - Upstream pressure 8 bar
- Downstream pressure 3 bar



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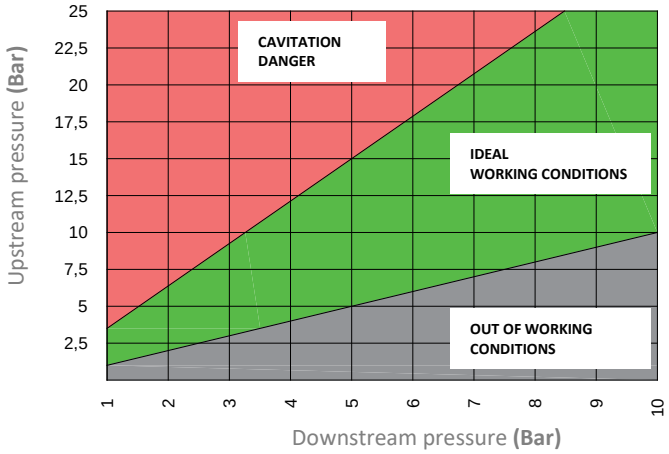
USEFUL ADVICE - DETERMINING THE CORRECT PRESSURE REDUCTION RATIO

The correct calibration pressure value must be determined in a way so to avoid dangerous cavitation phenomena.
The cavitation could in fact cause malfunctions, damage the gearbox and produce annoying noises.

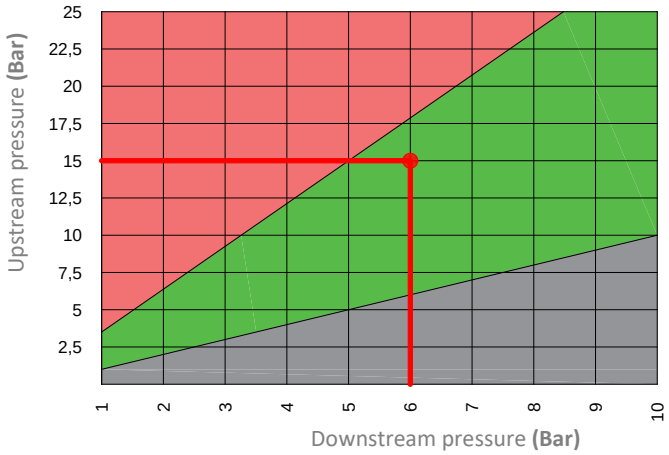
Thus, it is recommended to respect some precautions related to the ratio between the upstream pressure and the desired downstream pressure.
The general rule is that the ideal ratio between the upstream pressure (to be reduced) and the downstream pressure (desired in the circuit) is 2:1. At most this ratio can reach the value of 3:1

CAVITATION DIAGRAM:

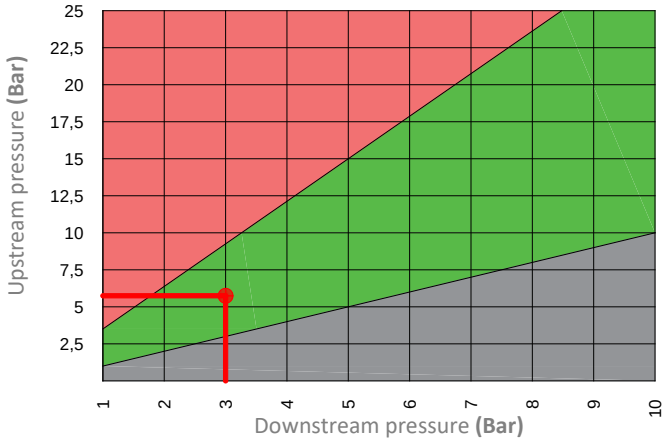


When the ratio between the upstream pressure and the downstream pressure exceeds the 3:1, cavitation of the component occurs. It is then necessary to provide two pressure reducing valves installed one after the other, in order to perform a FIRST LEVEL REDUCTION and then a SECOND LEVEL REDUCTION.

EXAMPLE: I have to reduce the pressure from 15 bar to 3 bar. The ratio 15: 3 = 5 exceeds the limit ratio of 3: 1. it is necessary to provide two pressure reducing valves. With the first reducing valves the pressure will be lowered from 15 bar to 6 bar, with the ideal ratio 15: 6 = 2.5 (FIRST LEVEL REDUCTION).



By means of the second reducing valve the pressure will be lowered from 6 bar to 3 bar, with the ideal ratio 6: 3 = 2 (SECOND LEVEL REDUCTION).



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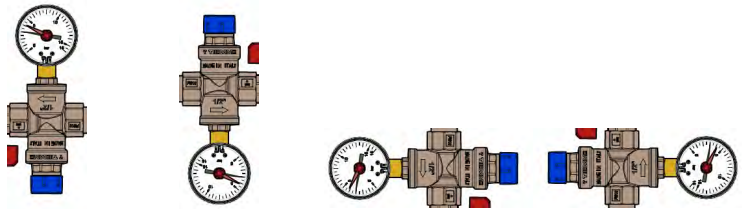
INSTALLATION

- Remove any dirt due to the assembling of the system (hemp, shavings, etc.) before proceeding with the installation of the pressure reducing valves.
- **Install a Y or self-cleaning filter upstream of the pressure reducing valves** in order to eliminate all impurities in the water that could deposit on the reducing valves, causing it to malfunction.
- To facilitate any maintenance operations, it is recommended to install shut-off valves upstream and downstream of the reducing valves.
- Respect the flow direction indicated by the arrow printed on the reducing valves body.
- The pressure reducing valves can be installed equally in a **horizontal** and **vertical position.**



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- Install the pressure reducing valves in an accessible position, in order to easily carry out periodic inspections.
- Before installing the reducing valves, it is best to make sure that there is no air in the network by opening all the delivery valves in the system.
- The system must be designed and built in a way so to avoid stresses that could damage the pressure reducing valves and prevent its correct sealing and good operation. It is recommended to insert a water hammer device in the system in order to avoid sagging in the internal components of the pressure reducing valves due to violent pressure returns.

Calibration at the desired pressure value:

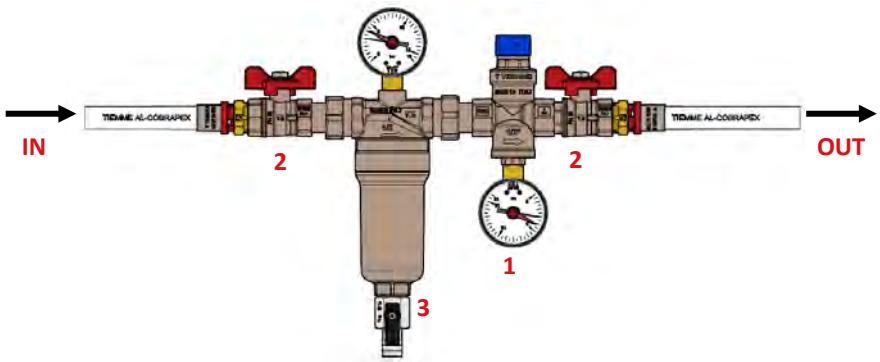
Before being packaged, all pressure reducing valves are tested and calibrated at the outlet at a pressure of 3 bar. The outlet pressure can be easily changed once the unit is installed on the system.

To change the outlet pressure:

Close the shut-off valve installed downstream of the pressure reducing valve, remove the blue plastic cap, using a hexagonal wrench, turn the brass spring-press.

NB. Turning clockwise the outlet pressure increases, turning anticlockwise the outlet pressure decreases.
The calibration operation is completed when the pressure gauge indicates the desired pressure.
The correct pressure regulation must be performed with the hydraulic circuit full and with all users closed.

INSTALLATION EXAMPLE



KEY:

IN	Inlet from the public distribution network
OUT	Output to private users
1	Pressure reducing valves
2	Shut-off valves
3	Self-cleaning filter

NB. In case of use at a boiler inlet, it is necessary to provide for the installation of an expansion tank placed between the reducing valves and the boiler.

MAINTENANCE

In normal operating conditions the pressure reducing valves does not require any maintenance.

We recommend a parodical check (at least once a year) that the system function correctly, in particular:

- Inspect and clean the filters installed upstream of the system.

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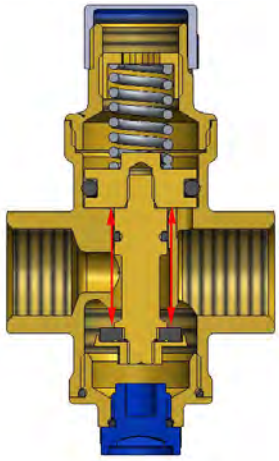

TIEMME INFORMS

WHAT IS THE COMPENSATED SEAT:

The compensated seat, a **construction feature that characterizes the Tiemme pressure reducing valves, allows to avoid that changes in the upstream pressure could interfere with the constant maintenance of the downstream calibration pressure**.

This is possible because the upward thrust (closing of the reducing valve) and the downward thrust (opening of the reducing valve) that are generated inside the reducing valves, are exerted on two equal surfaces, and so to balance:
equal and opposite forces cancel each other out.

RESOLUTION TO ANY MALFUNCTIONING

THE PRESSURE REDUCING VALVE DOES NOT MAINTAIN THE CALIBRATION PRESSURE:
The presence of suspended impurities in the water can cause deposits on the sealing and sliding areas of the reducing valves. This can affect the proper functioning of the pressure reducing valves, **causing unwanted increases in the system pressure**.

The solution is installing a Y or self-cleaning filter upstream of the pressure reducing valves.

ACCESSORIES

Art. 2080
Pressure gauge with radial connection.

Explore the product catalog for codes/further details.

ITEM SPECIFICATIONS

Art. 3100N

Piston pressure reducing valve PN15 with compensated seat obturator, female threaded connections, made of: CW617N nickel-plated brass body, CW617N nickel-plated brass cover, CW617N brass obturator, sealing in brass, sealing O-ring in EPDM, galvanized steel spring, plastic components in POM, ISO 228 threads, reversible front pressure 1/4" F ISO 228. Maximum operating temperature +80 ° C, minimum operating temperature -20 °C (as long as the fluid remains in the liquid phase), maximum inlet pressure: 15 bar, downstream regulation range 1 ÷ 4 bar, factory setting 3 bar, compatibility of drinking water, water and glycol solutions (maximum glycol percentage 30%). Compliant with EN 1567 Standard. Available sizes G 1/2" F ÷ G 3/4" F.

CERTIFICATIONS

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