

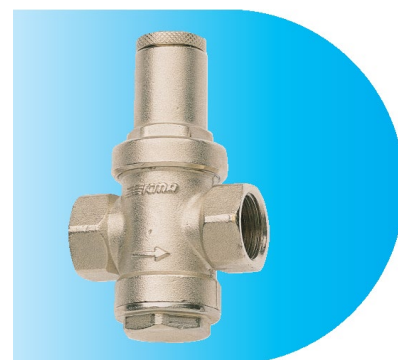
## FUNCTION

ICMA pressure regulators are devices that reduce and stabilize the incoming pressure from the public network. Installed on the private water network, they allow a correct use on domestic systems, reducing malfunctions due to external pressure which is generally high and variable.

Characterized by reduced overall dimensions and noisiness, the 247 - 248 models are used in small users, mainly in apartments and as a protection device for the boiler.



Art.247



Art.248

## TECHNICAL FEATURES

Body:	Brass CW617N UNI EN 12165 nickel-plated
Internal components:	Brass CW614N UNI EN 12164
Seals:	NBR
Spring:	AISI 302 stainless steel
Closing caps:	NYLON PA 66

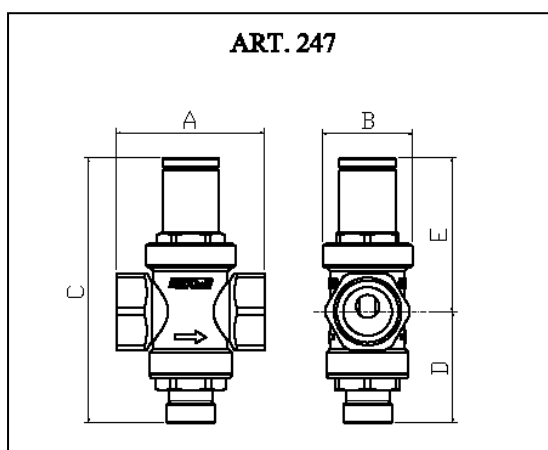
### Performance

Max upstream pressure:	16 bar
Downstream pressure calibration range:	1 ÷ 4 bar
Factory setting:	3 bar
Max working temperature:	90 ° C
Working fluids:	water

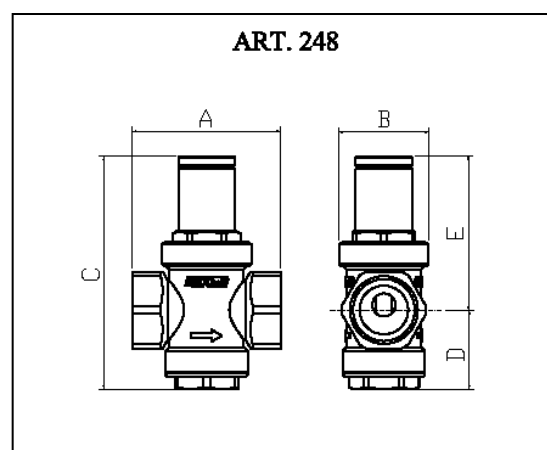
### Connections

Measure:	½ " - ¾"
Pressure gauge connection:	¼ "F

## DIMENSIONS



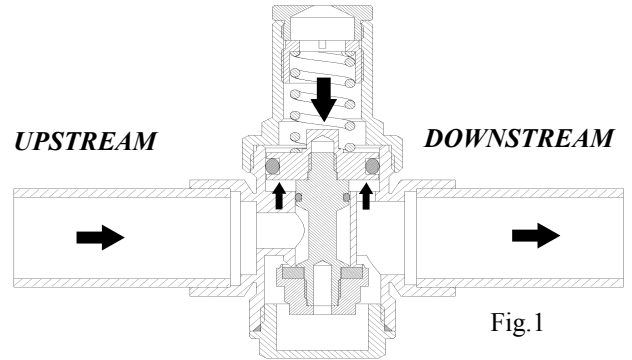
	A	B	C	D	E	Weight (kg)
G ½"	56	35	104	60	44	0,34
G ¾"	58	35	104	60	44	0,36



	A	B	C	D	E	Weight (kg)
G ½"	56	35	91	60	31	0,33
G ¾"	58	35	91	60	31	0,35

**OPERATING PRINCIPLE**

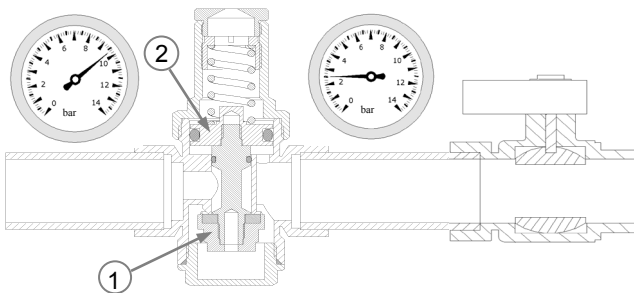
The gearbox operation is based on the balance of two opposing forces that develop inside it. The spring produces a thrust towards the opening of the fluid passage section as opposed to the spring which produces a thrust towards closing (Fig.1).



**SUPPLY OPERATING**

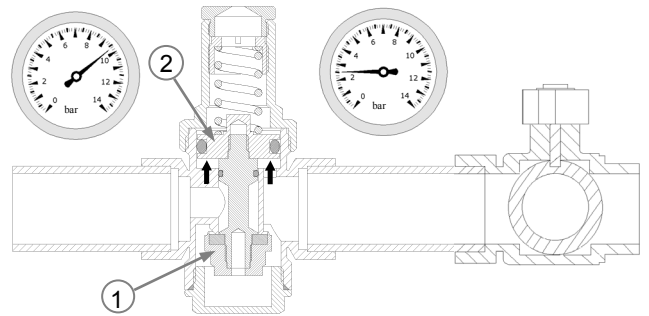
When opening a water utility, the valve (1) moves downwards, opening the passage of water, this is due to the force exerted by the spring which, in these conditions, becomes prevalent with respect to the force exerted by the water.

Increasing the demand for water causes an increase in the passage of the fluid through the passage section caused by the decrease in pressure to which the valve is normally subjected. The opening of several users causes a pressure drop ( $\Delta p$ ) downstream and a consequent increase in the flow rate (Q) as shown in graph N ° 2.

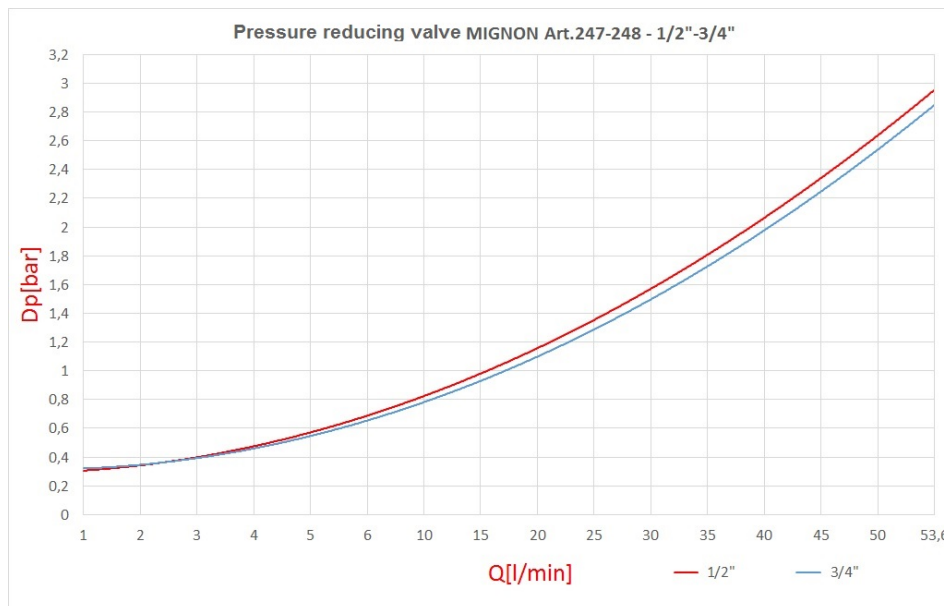


**NO-SUPPLY OPERATING**

When the loads are closed, the downstream pressure increases until it reaches the value set during the calibration phase.



**HYDRAULICAL FEATURES**



## INSTALLATION

For a correct installation open all the supply valves to facilitate the cleaning of the system and expel the air possibly remaining in the pipes.

The gearbox can be installed in any position. We recommend the installation of shut-off valves upstream and downstream to facilitate any future maintenance operations.

After closing the downstream shut-off valve it is possible to carry out the calibration by unscrewing the plastic cap and acting on the screw placed on the top of the screw (Fig.2) Screw in a proper size screw clockwise to increase the calibration pressure and counter-clockwise to decrease it.

Through a pressure gauge it is possible to display the set value.

Models 247 - 248 have a factory setting of 3 bar.

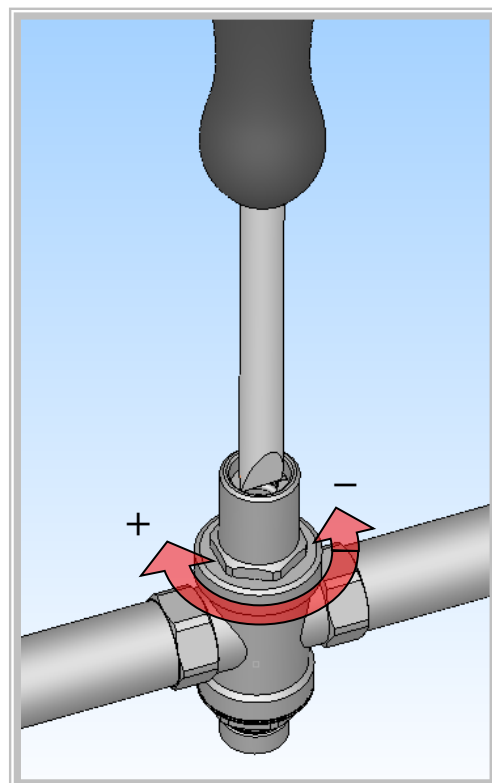


Fig.2

## REDUCED DIMENSIONING

The limited dimensions of the pressure regulators allow an easy installation especially in domestic systems.

## NOISELESS

The decrease in the passage that occurs during the pressure reduction produces a noise factor.

This problem can be solved by the presence of a large chamber located in the valve outlet which gives rise to a low fluid velocity zone.

## FUNCTIONAL ANOMALIES AND INSTALLATION TIPS

Some of the anomalies that are normally attributed to pressure regulators are often caused by the lack of appropriate measures at the plant level. The most frequent cases are as follows:

### The gear unit does not maintain the set calibration value

In most cases, the problem derives from the presence of impurities which, interposing on the seal seat, causes leakage and possible downstream pressure increases. To avoid this malfunction, we recommend installing a filter upstream of the gear unit. In the figure the model ICMA Art 50 oblique filter impurity collector (Fig.3)



Fig.3

### In the presence of a boiler there is an increase in pressure downstream of the regulator

The problem is due to the fact that the boiler causes overheating of the water and hence a subsequent increase in pressure due to the fact that in this case the gearbox is in the closed position.

To absorb the pressure increase, the solution provides for the installation of an expansion vessel between the regulator and the boiler.

It is recommended to install the pressure regulators inside wells or in technical rooms, the main reasons are due to the risk that the frost may cause breakage, facilitate the reading of the pressure gauge, facilitate inspection and maintenance operations.

## RAM KICK

To avoid the breakage of pressure regulators installed in plants at risk, it is advisable to use specific components in order to absorb the so-called "water hammer" thus avoiding possible damage.

## SAFETY

### Safety Advice



Read the installation and commissioning instructions carefully before operating the appliance in order to prevent accidents and system failures caused by improper use of the product. Please note that the right to the warranty is void in case of unauthorized modifications or tampering during the assembly and construction phase.

## OPERATING CONDITION

The limit values shown must in no way be exceeded. Operational safety is therefore ensured by respecting the general conditions and operating limit values described in this sheet.

## SAFETY RULES FOR MOUNTING AND INSPECTION

Assembly and inspection must absolutely be carried out by qualified, authorized personnel, who are familiar with the instructions given here. Before any work on the equipment is necessary to make sure that they are in rest conditions.

## MAINTENANCE

Maintenance operations must absolutely be carried out by qualified, authorized personnel, who are familiar with the instructions given here. Before any work on the equipment is necessary to make sure that they are in rest conditions.