

- Multi-function: Pressure reducing valve, check valve and shut-off valve incorporated;
- Equipped with inlet microfilter and shutter protection;
- PN 16;
- Diaphragm operated.

### PRODUCTION RANGE

#### AUTOMATIC DIAPHRAGM FILLING UNIT EQUIPPED WITH CALIBRATING KNOB MODEL *SmartFiller M*

Code	Size	Connection	P <sub>max</sub> upstream	P <sub>downstream</sub> adjustable	P <sub>precalibration</sub>
3856.04.00	G 1/2"	MF UNI-EN-ISO 228	16 Bar [1600 kPa]	0.5-4 Bar [50-400 kPa]	-
3856.05.00	G 3/4"				

### DESCRIPTION

*RBM SmartFiller M* is an **automatic** filling unit that reintegrates fluid into heating systems.

**It encloses, in a single product, of a pressure reducing valve, a check valve and a shut-off valve.**

The pressure reducing valve is a diaphragm type, equipped with a pressure gauge for the detection of the output pressure. The cartridge is pressure-compensated: upstream pressure variations do not affect the adjustment of the downstream pressure.

It is equipped with a graduated knob to carry out the calibration, without the aid of a pressure gauge and tools.

Furthermore, a new 300 micron filtering mesh has been added to protect the shutter area.

#### USE:

*SmartFiller M* is an **adjustment part and not for safety**. For this purpose, provide the system with the appropriate safety devices. They are particularly suited to be used in **heating systems** with the precise task of re-integrating the water that comes out from the system.

During the normal operation of a heating system, part of the fluid is lost through the deaerators, in the form of steam mixed with gases that develop continuously in the circuit. The space left free by the fluid, if it is not properly reinstated, will be occupied by the gases which, dissolved, would form acid solutions that can lead to corrosion.

#### THE CHOICE:

*SmartFiller M* is intended to be used in plumbing, heating and sanitary systems with upstream pressure not higher than 16 bar and the required downstream adjustment pressure within the range of 0.5 to 4 Bar.

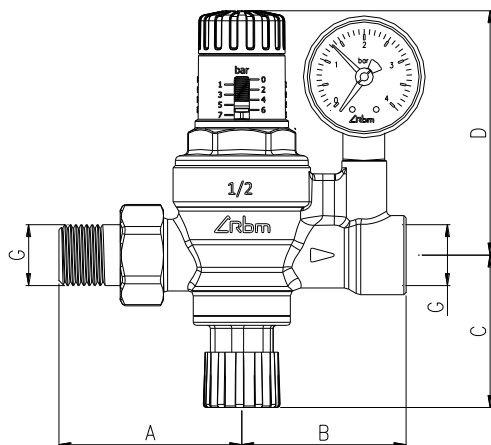
## CONSTRUCTION FEATURES

- Body: DZR Brass
- Metal internal components: DZR Brass
- Rod: DZR Brass
- Seals: Elastomer
- Sealing seats: Stainless steel
- Exterior plastic parts: Nylon 6 with 30% fibreglass
- Pressure gauge holder connection: F G 1/4"

## TECHNICAL FEATURES

- Compatible fluid: Water
- Nominal pressure: PN 16
- Maximum upstream pressure: 16 Bar (1600 kPa)
- Adjustable downstream pressure: 0.5-4 Bar (50-400 kPa)
- Thread: input: union M UNI-EN-ISO 228  
output: F UNI-EN-ISO 228
- Pressure gauge: Scale 0-4 Bar  
80°C
- Degree of filtration: 300 µm + 500 µm

## DIMENSIONAL FEATURES



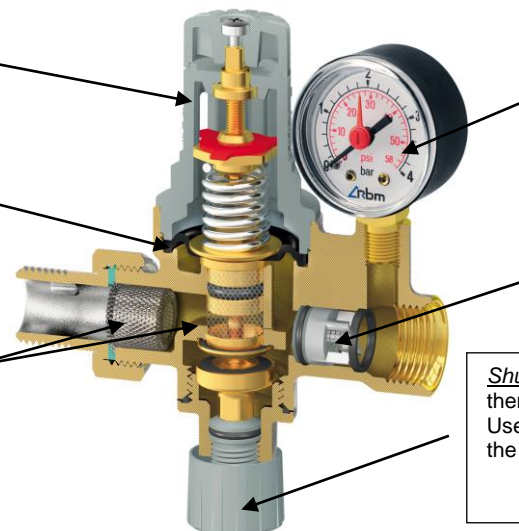
CODE	Size G	A [mm]	B [mm]	C [mm]	D [mm]
3856.04.00	1/2"	61.5	55	51	91.8
3856.05.00	3/4"	68	57.4	51	91.8

## CHARACTERISTIC COMPONENTS OF THE SMARTFILLER M FILLING UNIT

**Calibrating knob:** Enables immediate adjustment of the calibration value.

**Elastomer diaphragm**

**Filter:** the shutter area is protected by the addition of a new 300 micron filtering mesh, this filter is in addition to the 500 micron infeed filter. Effective protection against residues generated by installation operations (fragments of sealing material used by plumbers, residues found in new systems)



**Pressure gauge reading.** This displays the pressure downstream of the filling unit, namely the pressure in the circuit to be filled.

**Check valve (VNR):** Prevents the return of the liquid present in the system towards the aqueduct (upstream of the filling unit).

**Shut-off valve:** Stops the feeder and therefore stops the top-up function. Useful during system maintenance or the failure of any part of the circuit.

## PRESSURE REDUCING VALVE CALIBRATION



The final calibration of the pressure reducing valve must be carried out with the hydraulic circuit completely full and with all utilities closed, otherwise values would be affected by the fact that, during the possible supply, the downstream pressure decreases in relation to the amount of required flow.

The *SmartFillerM* filling unit is calibrated by acting on the knob, turning it clockwise to increase the value and anti-clockwise to decrease it.

### Calibration operations:

- Close the shut-off valve downstream of the pressure reducing valve.
- Calibrate the pressure reducing valve by acting with the appropriate spanner depending on the models.
- The calibration operation is to be considered complete when the pressure gauge shows the desired pressure.

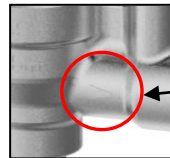
### Warnings:

- Perform some discharge operations to check the stability of the calibration.
- With the system operational, the pressure read on the pressure gauge may be distorted by the overpressure of the thermal system, a possible correction must always be carried out with the system shut down and at ambient temperature.

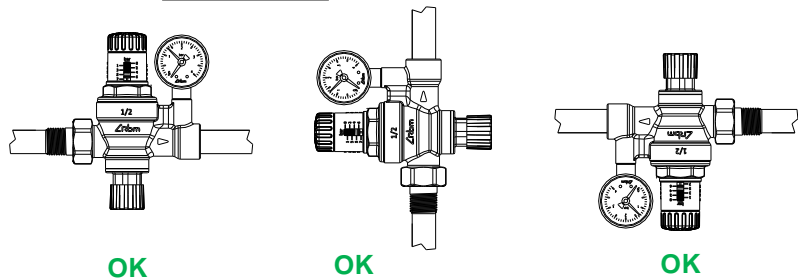
## ASSEMBLY

### Assembly precautions:

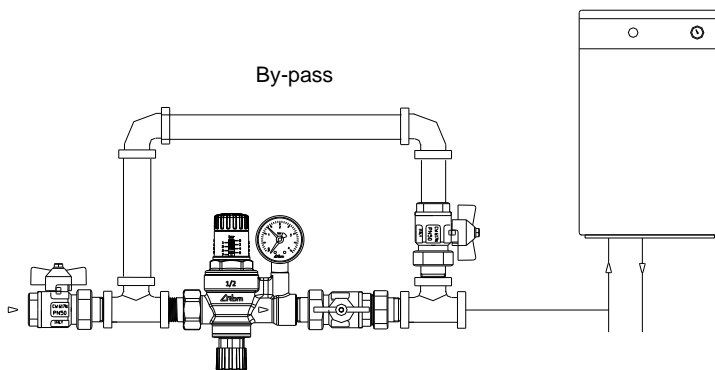
- Always install a filter upstream of the system.
- Carry out the routine maintenance of the filters.
- Follow the direction indicated by the flow direction arrow located on the body.
- Use shut-off valves to allow any maintenance work.
- Clean the pipes upstream and downstream of the pressure reducing valve to avoid damage.
- The filling unit can be mounted vertically, horizontally and upside down.



Directional arrow



## APPLICATION DIAGRAMS



### Diagram 1:

Automatic feeding directly to the thermal unit.

*SmartFiller M* is installed on the return circuit, at the boiler input.

The set-up of the *SmartFiller M* feeder with By-pass allows to significantly reduce the time required to fill the system. It is recommended to fill the system almost completely using the Bypass and only complete it through the feeder.

## SPECIFICATIONS

### SERIES 3856

Automatic adjustable feeder to top-up closed circuits, with calibrating knob, diaphragm operated, complete with cartridge micro-filter, built-in check valve and dial pressure gauge to view the downstream pressure, model *SmartFiller M*.

Nickel-plated brass body, stainless steel sealing seats, elastomer seals, max. upstream pressure 16 Bar, adjustable pressure downstream 0.5-4 Bar, max. operating temperature 80°C, pressure gauge scale 0-4 Bar, degree of filtration 500 µm at inlet plus 300 µm thanks to the filtering mesh protecting the shutter, threaded connections MF UNI-EN-ISO 228 with union. Available sizes 1/2" and 3/4".

RBM spa reserves the right to improve and change the products described and the relevant technical data at any moment without prior notice.

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