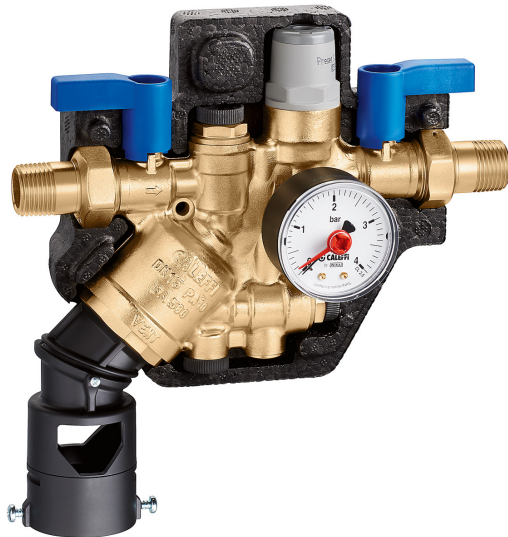


Automatic compact charging unit with BA-type backflow prevention valve

580 series



Function

The compact automatic charging unit is composed of a shut-off valve with an inspectable strainer, a BA-type controllable reduced pressure zone backflow preventer and an automatic filling unit. It is installed on the water inlet piping in closed circuit heating systems. It maintains the pressure of the system stable at a set value, automatically topping up with water as required. The backflow preventer prevents the contaminated water of the closed heating circuit from flowing back into the domestic water supply, in accordance with the provisions of EN 1717. The device is supplied complete with preformed shell insulation and features a compact design to facilitate installation.

Reference documentation

- Brochure 01322 Backflow preventer 580 series

Product range

Code 580011 Automatic compact charging unit with BA-type backflow prevention valve _____ size DN 15 (1/2")

Technical specifications

Materials

Backflow preventer

Body: brass EN 12165 CW617N
Check valves: POM-EPDM
Springs: stainless steel EN 10270-3 (AISI 302)
Diaphragm and seals: EPDM

Filling unit

Body: brass EN 12165 CW617N
Cover: PA6G30
Obturator control stem: dezincification resistant alloy **CR** EN 12164 CW724R
Diaphragm and seals: EPDM

Ball shut-off valve

Body: brass EN 12165 CW617N
Ball: dezincification-resistant alloy **CR** EN 12164 CW724R
Hydraulic seals: EPDM
Lever handle: PA6G30

Strainer

Body: stainless steel EN 10088-2 (AISI 304L)
Strainer mesh size: 0.4 mm

Insulation

Material: EPP
Density: 30 kg/m³

Performance

Medium: potable water
Max. working pressure: 10 bar
Max. working temperature: 65 °C

Backflow preventer

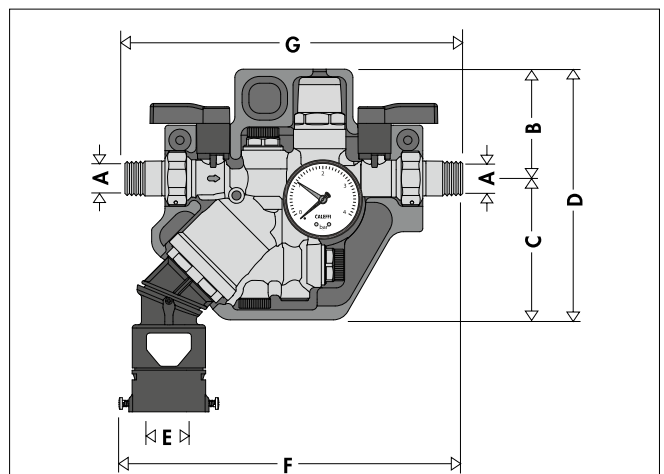
Designation: Family B, Type A
Certification: EN 12729
Pressure test ports: upstream, intermediate, downstream

Filling unit

Adjustment range: 0,8–4 bar
Factory setting: 1,5 bar
Indicator accuracy: ± 0,15 bar
Pressure gauge range: 0–4 bar

Connections: 1/2" M (EN 10226-1) with union

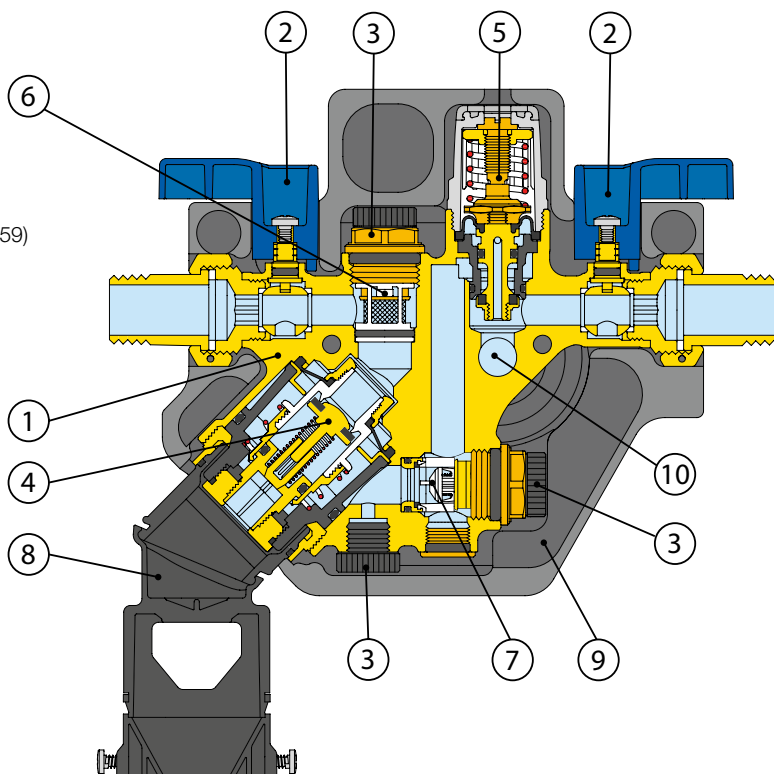
Dimensions



Code	A	B	C	D	E	F	G	Mass (kg)
580011	1/2"	66	85	151	Ø40	207	203	1,35

Characteristic components

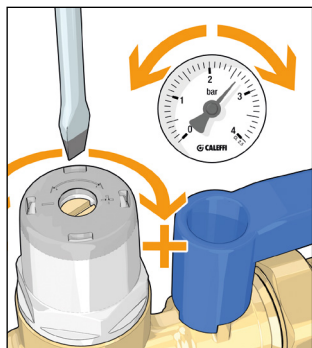
1. Compact, self-contained body
2. Two shut-off valves
3. Three pressure test ports
4. Type BA backflow preventer cartridge (EN 12729)
5. Filling unit cartridge (pressure reducing valve) (EN 1567 - W570-3)
6. Inspectable/removable upstream strainer
7. Inspectable/removable downstream check valve (EN 13959)
8. Discharge tundish (EN 1717)
9. Insulation
10. Pressure gauge connection on two sides



Construction details

Automatic filling unit

The system filling pressure may be set, turning the regulating screw, during the system filling phase. The effective pressure is read on the pressure gauge. The cartridge containing the diaphragm, seat, obturator and compensation piston is a pre-assembled unit with a cover, and can be removed to facilitate inspection and maintenance procedures.

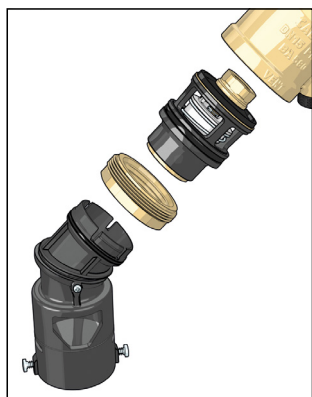


Non-sticking materials

The components inside the assembly are made of plastic having a low adherence coefficient. This solution minimises the chance of lime scale formation, the main cause of malfunctions.

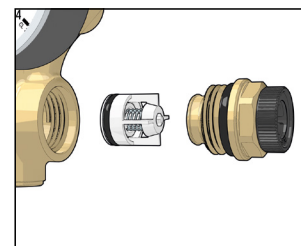
Self-contained cartridge and membrane of the backflow preventer

The self-contained cartridge comprises, all in one piece, the membrane, the upstream check valve, the discharge valve and the whole activation system. In case of maintenance, it can be easily extracted from the body without the aid of further seal elements. The membrane, integrated with the cartridge, separates the upstream zone from the intermediate zone. It also acts as a hydraulic seal between the two zones. For this reason, there are no O-rings between the two zones.



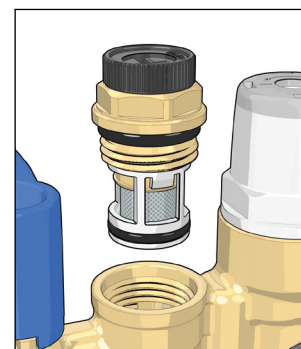
Downstream check valve

The downstream check valve is positioned before the filling unit and is held in place by a locking nut. For maintenance, simply remove the locking nut.



Shut-off valve, pressure test ports and inspectable strainer upstream

The shut-off valves and the three pressure test ports (to EN 12729) allow periodic operation checks of the backflow preventer and the reducing valve in accordance with EN 806-5. The inspectable upstream strainer protects the backflow preventer from any impurities in the mains water supply that could impair its operation.



Insulation

The assembly is supplied complete with insulation dimensioned to limit thermal losses.

Compact design and versatility

The unit has been designed with compact dimensions to facilitate installation in confined spaces, this being a common situation for the small and medium size systems at which this product is aimed. Thanks to the adjustable discharge tundish, the charging unit can be installed on both horizontal and vertical pipes with an upward flow.

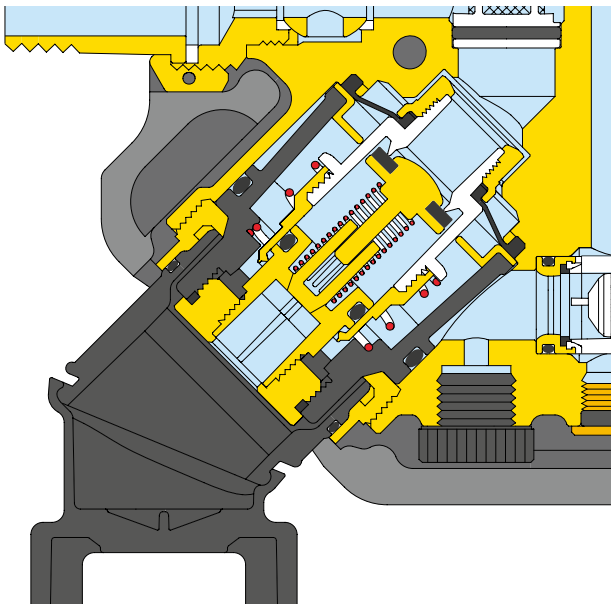
Controllable reduced pressure zone backflow preventer type BA

Corrosion-proof materials

The materials used to manufacture the backflow preventers must be insensitive to corrosion caused by contact with drinking water. They are therefore constructed using a dezincification resistant alloy, plastic materials and stainless steel to ensure high performance over time.

Easy maintenance

The backflow preventer is a device that must undergo periodic checking of its operating status during its normal working life, as required by regulation EN 806-5. When needed, any disassembly and maintenance work is easier to perform thanks to the use of components easy to verify and replace without having to disassemble the valve body from the pipe.



Using the backflow preventer in reference to European standards

The use of the BA type backflow preventer is regulated by the European regulations about the prevention of pollution from backflow. The reference standard is **EN 1717:2000** "Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow".

This standard classifies the water in the systems according to the level of risk it represents for human health.

Category 1: Water to be used for human consumption coming directly from a potable water distribution system.

Category 2: Fluid presenting no human health hazard, as per 1, the quality of which can have undergone a change in taste, odour, colour or temperature.

Category 3: Fluid representing some human health hazard due to the presence of one or more harmful substances.

Category 4: Fluid presenting a human health hazard due to the presence of one or more "toxic" or "very toxic" substances or one or more radioactive, mutagenic or carcinogenic substances.

Category 5: Fluid presenting a human health hazard due to the presence of microbiological or viral elements.

According to this classification, suitable backflow prevention devices must be fitted in water distribution circuits.

BA type backflow preventers can be used to protect against the risk of pollution from backflow for types of water up to category 4. For category 5 types of water an air gap separation must be used.

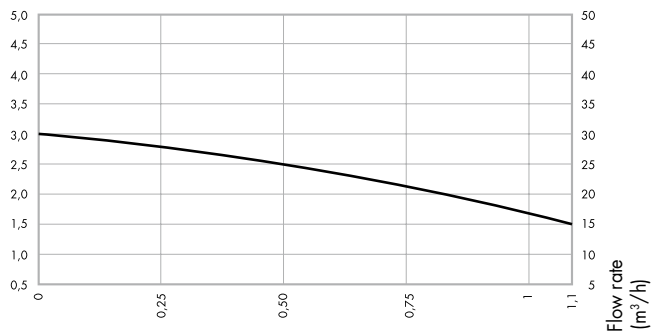
The table entitled "Protection matrix" lists a series of systems with category 4 medium based on the indications provided in the European regulation.

European regulation **EN 12729** "Devices to prevent pollution by backflow of potable water". Controllable backflow preventer with reduced pressure zone. Family B - Type A" defines the functional, dimensional and mechanical requirements of controllable reduced pressure zone backflow preventers of type BA.

Hydraulic characteristics

* Δp (bar)

* Δp (m w.g.)

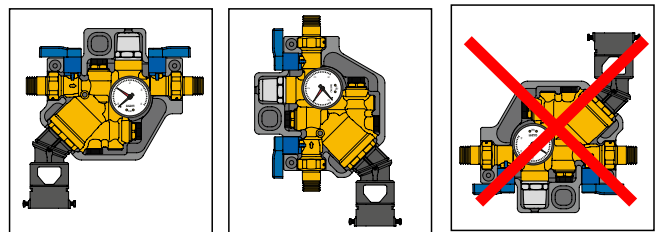


Charging flow rate 1,1 m³/h • Δp 1,5 bar • Ref. EN 1567

* Charging pressure of system downstream the unit.

Installation

1. The charging unit must be installed horizontally or vertically, respecting the direction of flow shown by the arrow on the valve body. The discharge tundish must comply with standard EN 1717 and be connected to the sewage piping.



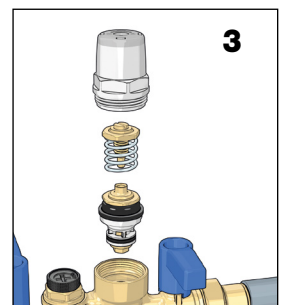
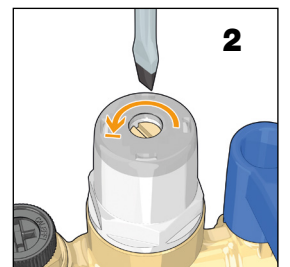
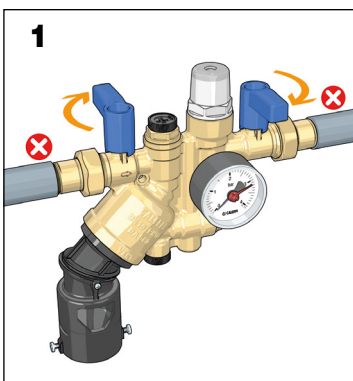
2. The unit is normally set to a pressure no lower than the value obtained by adding 0,3 bar to the hydrostatic pressure.
3. During charging, the internal mechanism will automatically adjust the pressure by closing the supply when the set value is reached, without having to watch the lengthy charging operation.
4. Once the system is charged, the shut-off valve can be closed. To reinstate the automatic filling conditions, the valve just has to be re-opened. The system pressure value will gradually go back to the set value.

Inspection and maintenance

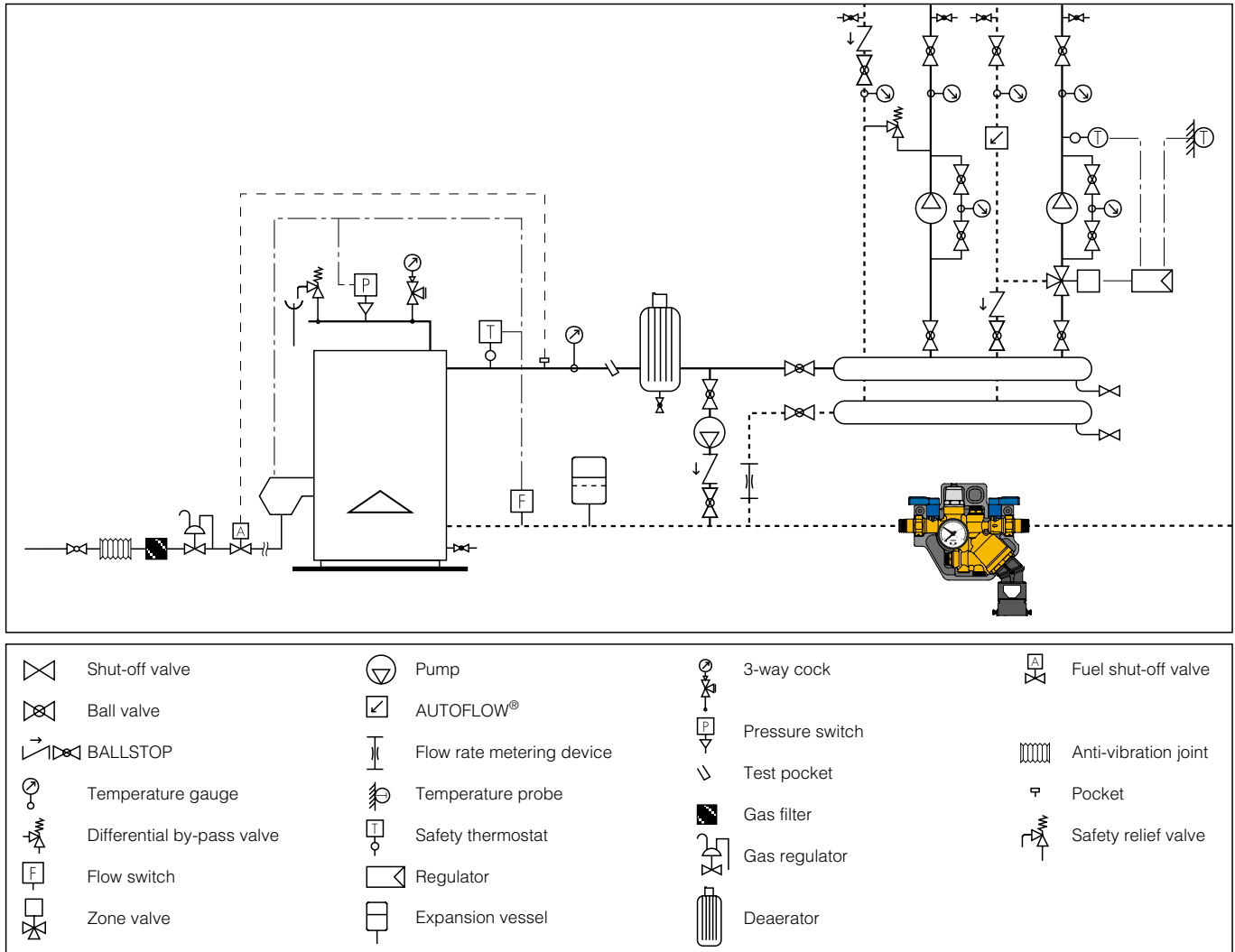
Loading group

The following are necessary for periodic cleaning, inspection and replacement of the entire cartridge:

- 1) Shut off the assembly with the valve upstream and downstream.
- 2) Loosen the adjustment screw all the way.
- 3) Remove the cartridge.
- 4) After inspection and any necessary cleaning of the body, the entire assembly can be reassembled or replaced using the spare cartridge.
- 5) Re-calibrate the appliance.



Application diagram



SPECIFICATION SUMMARY

Code 580011

Automatic compact charging unit with BA-type backflow prevention valve. 1/2" M connections (EN 10226-1) with union. Maximum working temperature 65 °C. Maximum working pressure 10 bar. Medium drinking water.

Consisting of:

- Controllable reduced pressure zone backflow preventer, BA-type, compliant with EN 12729. Brass body, POM-EPDM sealing gaskets. Stainless steel springs. Complete with discharge tundish with collar for fixing to the drain pipe;
- Pre-adjustable charging unit. Brass body, dezincification resistant alloy control stem. PA6G30 cover. EPDM diaphragm and sealing gaskets. Adjustment range 0,8–4 bar. Pressure gauge with 0–4 bar scale;
- Brass ball shut-off valve. Dezincification resistant alloy ball. EPDM hydraulic seals. PA6G30 lever handle;
- Upstream strainer with mesh size Ø 0,4 mm;
- EPP insulation, density 30 kg/m³.

We reserve the right to make changes and improvements to the products and related data in this publication, at any time and without prior notice.