

Compact automatic charging unit assembly with BA type backflow preventer



01161/08 GB

574 series



Function

The charging unit assembly is composed of a shut-off valve with an inspectable strainer, a BA type controllable reduced pressure zone backflow preventer and a pre-adjustable filling unit. It is installed on the water inlet pipe in sealed heating systems and its main function is to maintain the pressure of the system stable at a set value, providing automatically a re-fill of the missing water. This product has the peculiarity of being pre-adjustable. That means it can be adjusted at a desired pressure value before the system filling stage. The backflow preventer is inserted to prevent the contaminated water of the closed heating circuit from flowing back into the domestic water supply network, in compliance with EN 1717 standard prescriptions.

The device is proposed complete with pre-formed shell insulation and with a compact dimension design to make its hydraulic installation easier.



Reference Documentation

- Tech. brochure 01022. Controllable reduced pressure zone backflow preventer (BA type). 574-575-570 series.

Product range

Code 574011 Compact automatic charging unit assembly with BA type backflow preventer size 1/2"

Technical specifications

Materials

Backflow preventer

Body and cover: dezincification-resistant alloy **CR** EN 12165 CW602N
 Check valves: PSU-POM
 Springs: stainless steel
 Diaphragm and seals: EPDM

Filling unit

Body: brass EN 12165 CW617N
 Cover: PA66G30
 Obturator stem and moving parts: brass EN 12164 CW614N
 Strainer: stainless steel
 Diaphragm and seals: NBR

Shut-off ball valve

Body: dezincification-resistant alloy **CR** EN 12165 CW602N
 Ball: brass EN 12164 CW614N
 Seals: EPDM
 Lever handle: PA66G30

Insulation

Material: EPS
 Density: 33 kg/m³

Performance

Medium: drinking water
 Maximum working pressure: 10 bar
 Maximum working temperature: 65°C
 Acoustic group: II

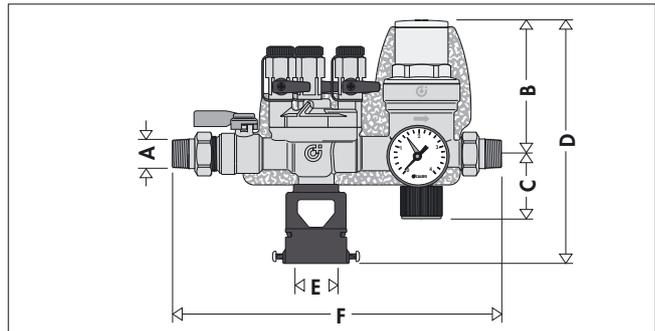
Backflow preventer

Designation: Family B, Type A
 Certification: EN 12729
 Pressure ports: upstream, intermediate, downstream
 Upstream filter mesh Ø: 0,4 mm

Filling unit

Set pressure range: 0,2–4 bar
 Factory set: 1,5 bar
 Indicator accuracy: ± 0,15 bar
 Pressure gauge range: 0–4 bar
 Internal filter mesh Ø: 0,28 mm
 Connections: 1/2" M with union

Dimensions

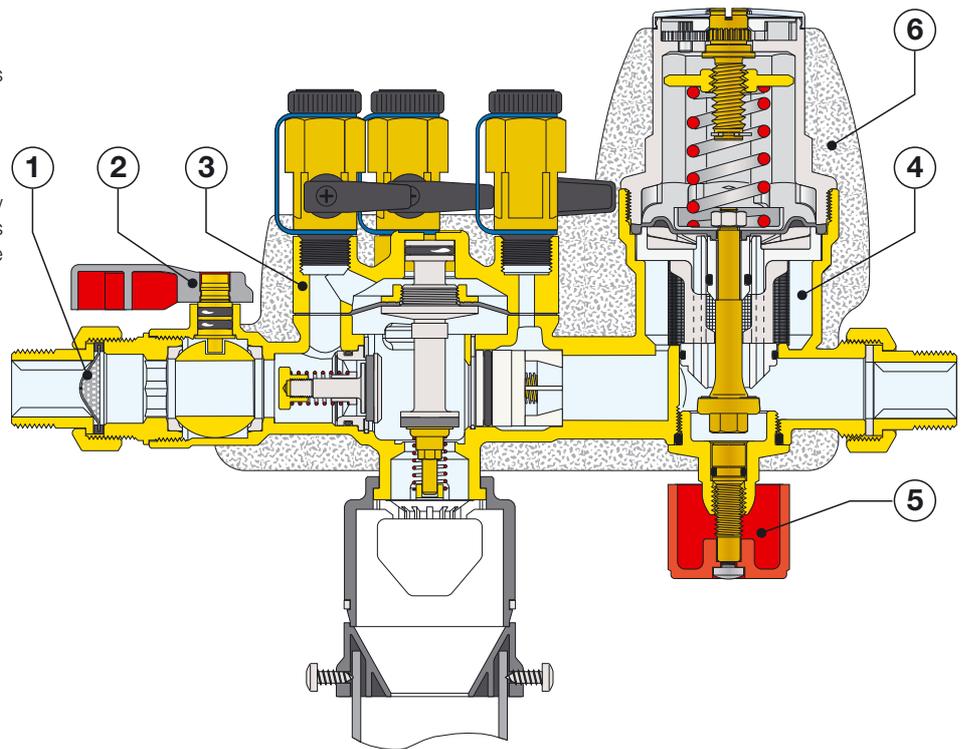


Code	A	B	C	D	E	F	Weight (kg)
574011	1/2"	101,5	50	182	Ø40-60	250	1,6

Characteristic components

The charging unit assembly 574 series is complete with:

- 1) Inspectable strainer
- 2) Ball shut-off valve
- 3) BA type controllable backflow preventer with reduced pressure zones
- 4) Pre-adjustable filling unit with pressure gauge
- 5) Shut-off cock
- 6) Pre-formed shell insulation

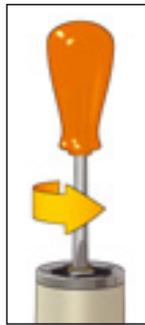


Construction details

Automatic filling unit

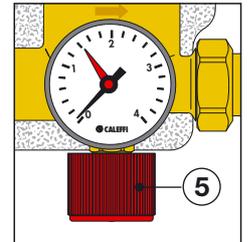
Pre-adjustment

This model is provided with a pressure regulation indicator, which facilitates setting operations. The system charging pressure may be set, turning the regulating screw, even before the system charging phase begins.



Manual/automatic opening and pressure gauge

The assembly is provided with a manual shut-off cock (5) in the lower part that offers the possibility of closing the water supply to the system after the filling is completed. The pressure in the system can be checked using the gauge supplied in order to re-open the cock whenever necessary to restore the automatic charging, which will gradually bring the pressure up to the set value.

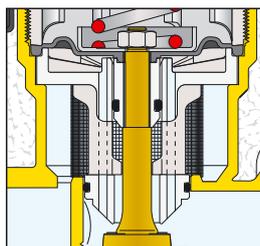


Anti-stick materials

The components inside the assembly are made of plastic having a low adherence coefficient. This solution reduces to a minimum the chance of scale forming, the major cause of any malfunctions.

Removable cartridge and filter

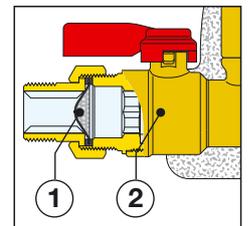
The cartridge containing the operation mechanisms, protected by a strainer having a large surface area, is removable. This peculiarity makes it possible to perform inspections, internal cleaning operations and, if necessary, cartridge replacement in an extremely simple and functional manner.



Shut-off valve and inspectable strainer upstream

The shut-off valve upstream (2) of the assembly, together with the cock (5), makes it possible to shut off the backflow preventer for cleaning, checking and, if necessary, replacing internal components.

The purpose of the inspectable strainer (1) located upstream is to protect the backflow preventer from any impurities of the supply network that could jeopardize its operation.



Insulation

The assembly is supplied complete with insulation, sized to limit thermal losses and to prevent condensation forming on the surface.

Compact assembly

The assembly is designed compact and with reduced overall dimensions in order to make hydraulic installation easier, above all if space is limited. This condition is typical of small and medium-size systems this product is designed for.

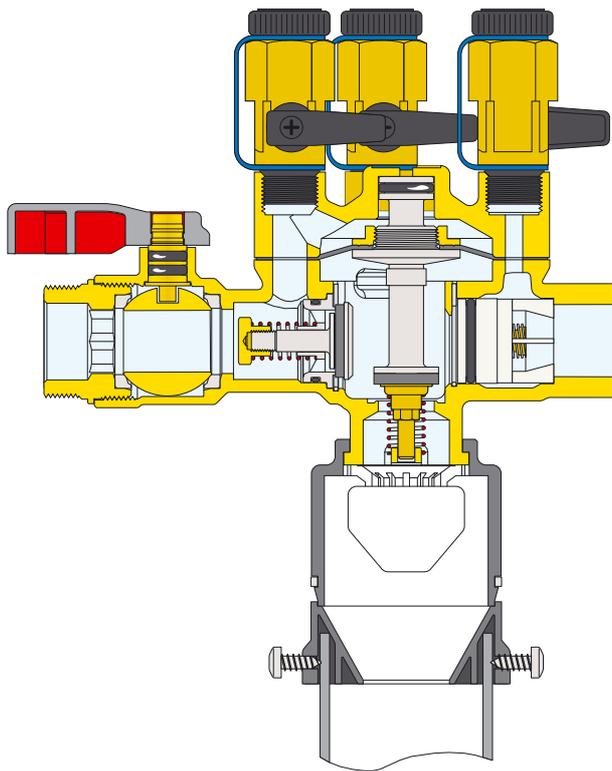
BA type controllable backflow preventer with reduced pressure zones

Corrosion-proof materials

The materials used to manufacture the backflow preventers must be insensitive to corrosion caused by the contact with drinking water. This is why they are made using **CR** dezincification-resistant alloy and stainless steel, as they are a guarantee to keep best performance over time.

Simplified maintenance

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.



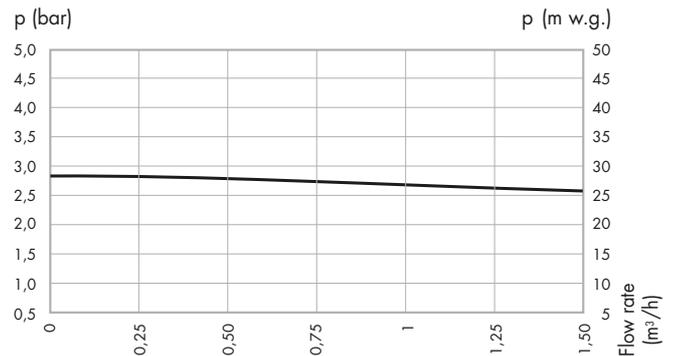
Use of backflow preventer according to European standards

To avoid backflows of water from the heating system, which is potentially polluted and dangerous for human health, it is indispensable to install a preassembled charging unit with a backflow preventer.

The correct use of hydraulic backflow preventers is governed by the European reference standard EN 1717: 2000 *“Protection against pollution of potable water in water installation and general requirements of devices to prevent pollution by backflow”*.

The controllable backflow preventer with reduced pressure zones is a BA type, certified according to European standard EN 12729 - *“Devices to prevent pollution by backflow of potable water. Controllable backflow preventer with reduced pressure zones. Family B - Type A”*. It may be used to protect against the risk of contamination by waters classified up to **Category 4** (heating systems with reference to European standard EN 1717): *“Fluid that presents a significant health hazard due to the presence of one or more toxic or highly toxic substances or one or more radioactive, mutagenic or carcinogenic substances”*.

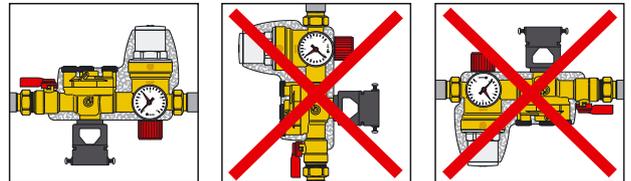
Hydraulic characteristics



Charging flow rate 2,65 m³/h • Δp 1,5 bar • Ref. EN 1567

Installation

1. The backflow prevention valve unit must be installed horizontally, respecting the direction of flow shown with an arrow on the valve body. The discharge tundish to EN1717 standard must be connected to the piping leading to the sewerage system.



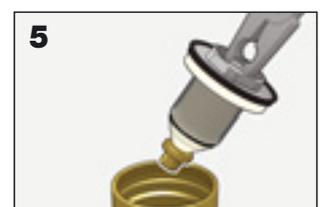
2. The special mechanical preregulation system with pressure indicator allows the assembly to be set to the desired system value before the charging stage starts.
3. The valve is normally set to a pressure no lower than the value obtained by adding the hydrostatic pressure and 0,3 bar.
4. During the charging stage, the internal mechanism will automatically adjust the pressure by closing the supply when the set value is reached, without having to watch the lengthy filling operation.
5. In view of the preregulation function, a pressure gauge downstream of the equipment is not crucial.
6. Once the system is filled, the shut-off valve of the assembly can be closed. To reinstate the automatic charging conditions, the valve just has to be re-opened. The system pressure value will gradually go back to the set value.

Inspection and maintenance

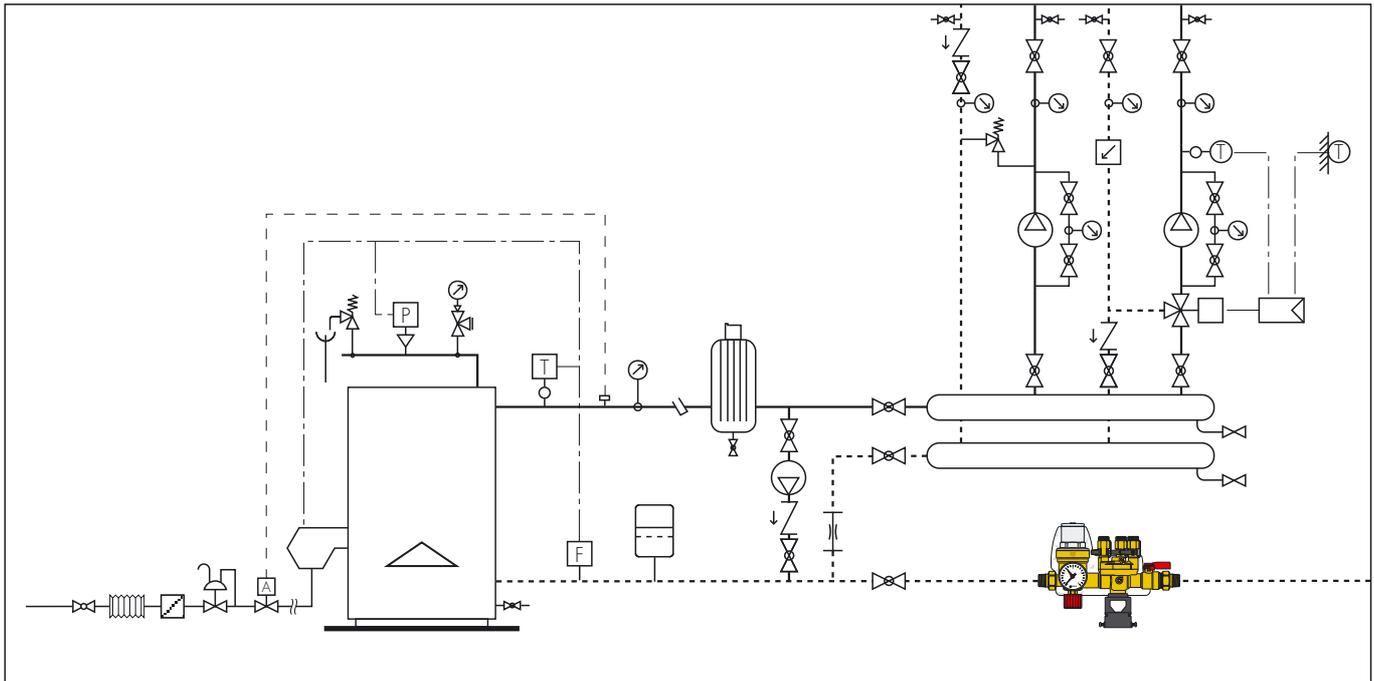
Charging unit assembly

For the periodical cleaning, control or replacement of the whole cartridge you must:

- 1) Shut off the valve with the valve upstream and by using a valve downstream.
- 2) Open the bottom handle.
- 3) Fully undo the setting screw.
- 4) Remove the upper cap.
- 5) Take out the cartridge with some pliers.
- 6) After inspection and eventual cleaning of the body, the whole unit can be reassembled or replaced by a spare cartridge.
- 7) Reset the unit.



Application diagram



	Shut-off valve		Pump		3-way cock		Fuel shut-off valve
	Ball valve		Autoflow		Pressure switch		Anti-vibration joint
	Ballstop		Flow metering device		Inspection pocket		Pocket
	Temperature gauge		Temperature probe		Gas strainer		Safety relief valve
	Differential by-pass valve		Safety thermostat		Gas controller		
	Flow switch		Controller		Deaerator		
	Zone valve		Expansion vessel				

SPECIFICATION SUMMARIES

Code 574011

Compact automatic charging unit assembly with BA type backflow preventer. Connections 1/2" M with union. Maximum working temperature 65°C. Maximum working pressure 10 bar. Medium water.

Complete with:

- Controllable backflow preventer with reduced pressure zones, BA type, compliant with EN 12729. Dezincification-resistant alloy body, EPDM diaphragm and seals. Stainless steel spring. Complete with discharge tundish with collar for fixing to the drain pipe;
- Pre-adjustable filling unit. Brass body, control stem and moving parts. Glass nylon cover. NBR seals. Adjustment range 0,2–4 bar. Complete with cock, stainless steel strainer with mesh size \varnothing 0,28 mm and check valve. Pressure gauge with 0–4 bar scale;
- Dezincification-resistant alloy shut-off ball valve. Brass ball. EPDM seals. Glass nylon handle;
- Strainer upstream with mesh size \varnothing 0,4 mm;
- EPS insulation, density 33 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.



CALEFFI S.P.A. · I · 28010 FONTANETO D'AGOGNA (NO) · S.R. 229, N.25 · TEL. +39 0322 8491 R.A. · FAX +39 0322 863723

· www.caleffi.com · info@caleffi.com ·

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