



01061/10 GB

Pre-adjustable filling and charging units

553 - 573 - 574 series



Function

The automatic filling unit is a device consisting of a pressure reducing valve with compensated seat, an inlet strainer, a shut-off valve and a check valve.

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, automatically topping up with water as required.

This product has the characteristic of being pre-adjustable, which means that it can be adjusted at the required pressure value before the system filling phase.

After installation, during the filling or topping-up phase, feed will stop when the set pressure is reached.

Two pre-assembled versions are also available, complete with shut-off valves and different upstream backflow preventers, depending on the hazard level of the water inside the system.

Reference documentation

- Tech. Broch. 01008 Backflow preventer, 573 series
- Tech. Broch. 01022 Backflow preventer, 574 series

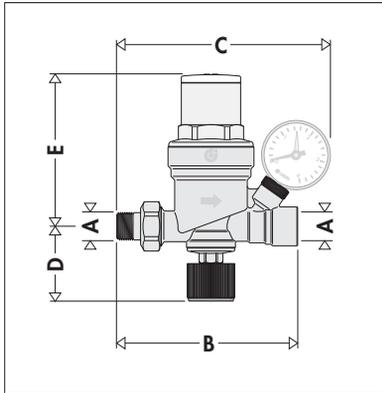
Product range

- Code **553540** Filling unit with pressure gauge connection and pressure setting indicator _____ size 1/2"
- Code **553640** Filling unit with pressure gauge and pressure setting indicator _____ size 1/2"
- Code **573001** Charging unit with pressure gauge, complete with 573 series CAa-BA type ckflow preventer and shut-off valves _____ size 1/2"
- Code **574000** Charging unit with pressure gauge, complete with 574 series BA-BA type ckflow preventer, strainer and shut-off valves _____ size 1/2"

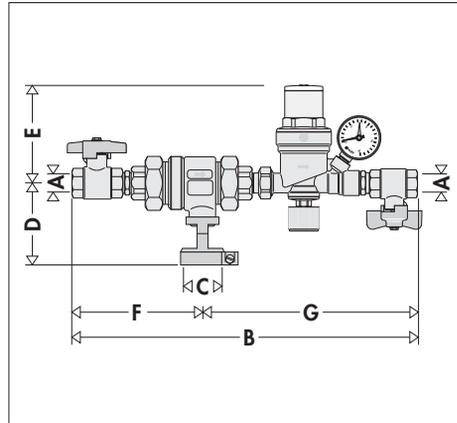
Technical specifications

Code	553540 553640	573001	574000
Materials (code 553540/640 only)			
Body:	brass EN 12165 CW617N	brass EN 12165 CW617N	brass EN 12165 CW617N
Cover:	PA66GF30	PA66GF30	PA66GF30
Control stem:	brass EN 12164 CW614N	brass EN 12164 CW614N	brass EN 12164 CW614N
Moving parts:	brass EN 12164 CW614N	brass EN 12164 CW614N	brass EN 12164 CW614N
Seals:	NBR	NBR	NBR
Strainer:	stainless steel	stainless steel	stainless steel
Shut-off valves:	-	brass EN 12165 CW617N	brass EN 12165 CW617N
Performance			
Max. inlet pressure:	16 bar	10 bar	10 bar
Setting range:	0,2-4 bar	0,2-4 bar	0,2-4 bar
Factory setting:	1,5 bar	1,5 bar	1,5 bar
Indicator accuracy:	±0,15 bar	±0,15 bar	±0,15 bar
Max. working temperature:	65°C	65°C	65°C
Pressure gauge range:	0-4 bar	0-4 bar	0-4 bar
Filter mesh size Ø:	0,28 mm	upstream strainer: 0,47 mm unit strainer: 0,28 mm	upstream strainer: 0,4 mm unit strainer: 0,28 mm
Medium:	water	water	water
Connections			
Inlet:	1/2" M with union	1/2" F	1/2" F
Outlet:	1/2" F	1/2" F	1/2" F
Pressure gauge:	1/4" F	-	-

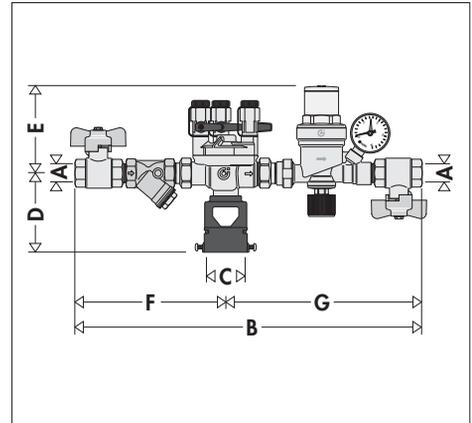
Dimensions



Code	A	B	C	D	E	Mass (kg)
553540	1/2"	122	-	50	101,5	0,62
553640	1/2"	122	152	50	101,5	0,70



Code	A	B	C	D	E	F	G	Mass (kg)
573001	1/2"	335	Ø 40	87	101,5	122	213	2,2



Code	A	B	C	D	E	F	G	Mass (kg)
574000	1/2"	382	Ø 40	80	101,5	164	218	1,9

Construction details

Code 553540 and 553640 (patent pending model)

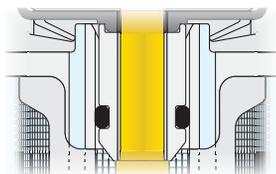
Pre-adjustment

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



Non-sticking materials

The central support containing moving parts and the internal sliding compensation piston is made using plastic with a low adhesion coefficient. This solution minimises the chance of scale forming, the major cause of malfunctions.

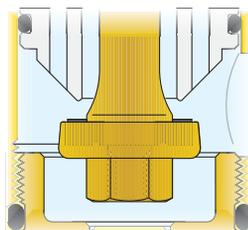
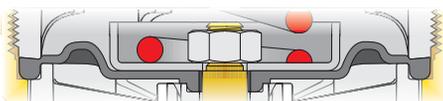


Diaphragm-seat seal

The useful working surface of the diaphragm is particularly large, in order to guarantee greater precision and sensitivity when working with minimum pressure differences. This feature is also useful for giving greater force to the sliding of the piston and overcoming friction.

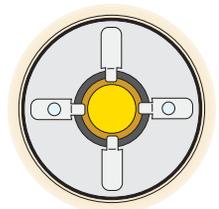
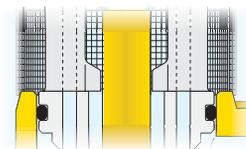
In view of the low flow rates involved, the filling unit seat has been designed with the smallest possible diameter.

This factor, combined with the extended surface of the diaphragm, creates an optimum dimensional ratio for a piece of equipment which must maintain its operating characteristics unchanged over time.



Obturator guide

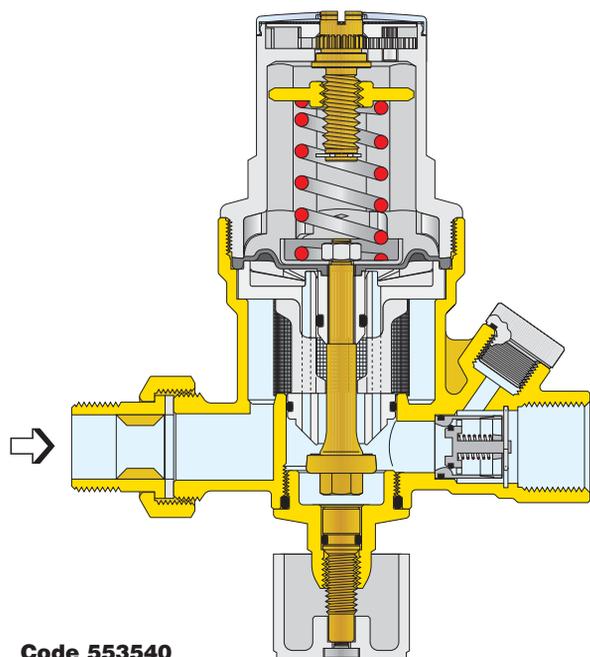
In order to reduce the frictional surfaces, the obturator stem guide has been



positioned in the upper part of the device. It consists of four spokes directly stamped on the plastic central support.

Removable cartridge and strainer

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



Code 553540

Backflow preventer and related use in reference to European standards

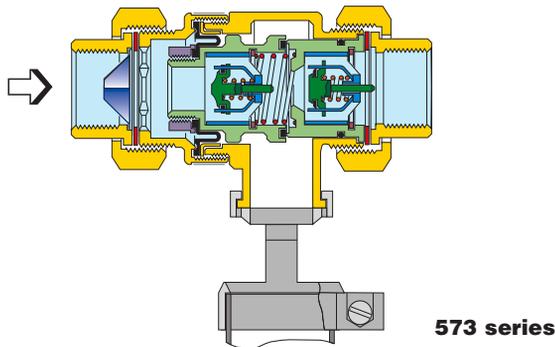
To avoid the backflow of water from the heating system, which is potentially polluted and dangerous for human health, it is always advisable to install a preassembled charging unit with a backflow preventer.

The correct use of water backflow preventers is regulated by European reference standard EN 1717: 2000 "Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow".

Code 573001

Charging unit code 573001 is composed of:

- Non-controllable backflow preventer with different pressure zones, type CAa, 573 series
- Filling unit, 553 series
- Ball shut-off valves



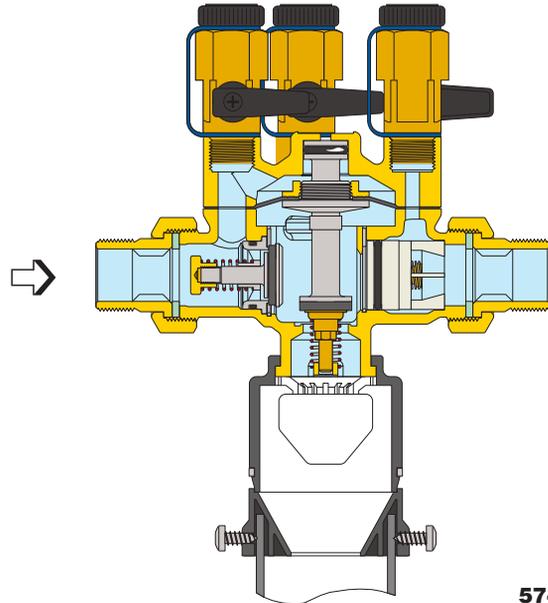
573 series

The 573 non-controllable backflow preventer with different pressure zones is of CA type, manufactured according to European standard EN 14367 – "Devices to prevent pollution by backflow of potable water. Non-controllable backflow preventer with different pressure zones. Family C – Type A". It may be used to protect against the risk of contamination by waters classified up to **Category 3** (with reference to European standard EN 1717): "Fluid that represents a slight health risk due to the presence of one or more harmful substances".

Code 574000

Charging unit code 574000 is composed of:

- Controllable reduced pressure zone backflow preventer, BA type, 574 series
- Filling unit, 553 series
- Ball shut-off valves
- Y-strainer, 577 series

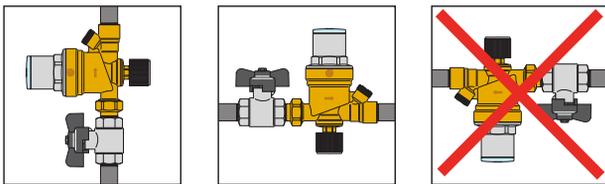


574 series

The 574 controllable reduced pressure zone backflow preventer is of BA type, manufactured according to European standard EN 12729 – "Devices to prevent pollution by backflow of potable water. Controllable reduced pressure zone backflow preventer. Family B – Type A". It may be used to protect against the risk of contamination by waters classified up to **Category 4** (with reference to European standard EN 1717): "Fluid that represents a significant health hazard due to the concentration of toxic substances".

Installation

1. The 553 series filling unit can be installed in either horizontal or vertical position. It is, however, vital that the unit is not installed upside down.

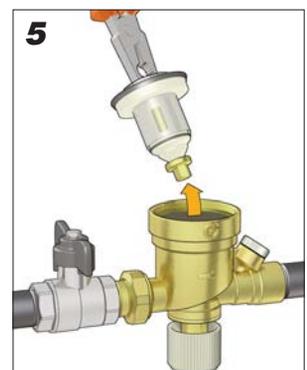
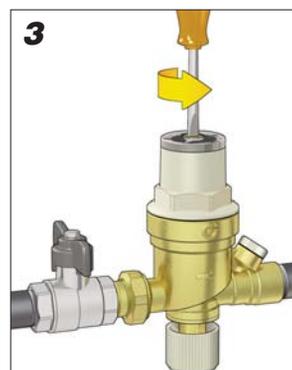
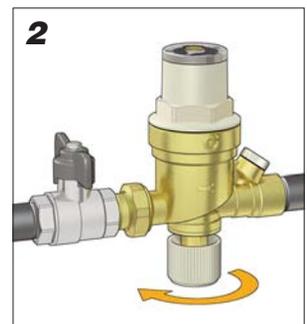


2. The special mechanical pre-adjustment system with pressure indicator allows the assembly to be set to the desired system value before the charging phase starts.
3. The assembly is normally set at a pressure no lower than that obtained by adding 0,3 bar to the hydrostatic pressure.
4. During charging, the internal mechanism will automatically adjust the pressure when the set value is reached, **without the need to oversee the lengthy filling operation**. This prevents the system being charged to a higher pressure value than required.
5. In view of the pre-adjustment function, a pressure gauge downstream of the fitting is not crucial.
6. Once the system is filled, 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.

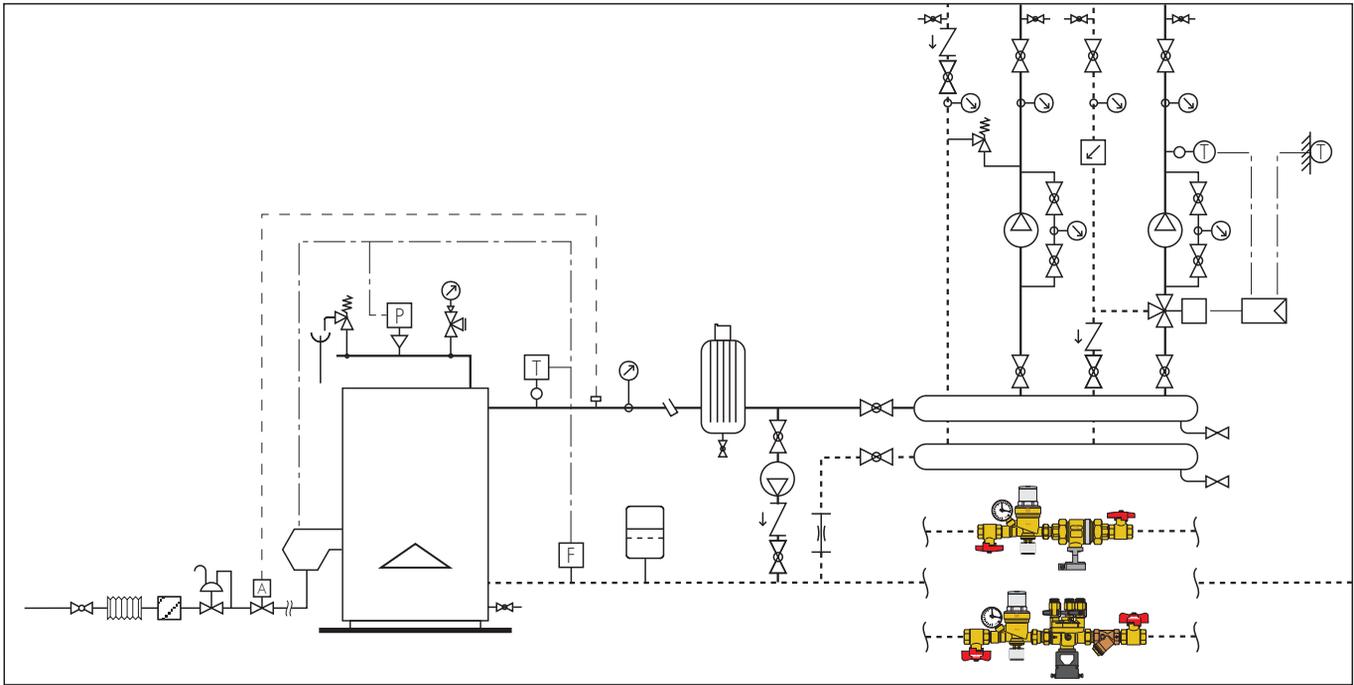
Maintenance

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

- 1) Shut off the unit.
- 2) Open the lower control knob.
- 3) Loosen the calibration screw all the way.
- 4) Remove the top cover.
- 5) Remove the cartridge with the aid of pliers.
- 6) After inspection and any necessary cleaning, the entire assembly can be reassembled or replaced using the spare cartridge.
- 7) Reset the equipment.



Application diagram



	Shut-off valve		Pump		3-way cock		Fuel shut-off valve
	Ball valve		AUTOFLOW®		Pressure switch		Anti-vibration joint
	BALLSTOP		Flow meter device		Control pocket		Pocket
	Temperature gauge		Temperature probe		Gas filter		Safety relief valve
	Differential by-pass valve		Safety thermostat		Gas regulator		
	Flow switch		Regulator		Air separator		
	Zone valve		Expansion vessel				

SPECIFICATION SUMMARY

Code 553540 and 553640

Pre-adjustable filling unit. Threaded connections 1/2" M with union x 1/2" F. Brass body and internal moving parts. Glass nylon cover. Sliding surfaces in anti-scale plastic. NBR diaphragm and seals. Cartridge removable for maintenance operations. Maximum working temperature 65°C. Maximum inlet pressure 16 bar. Adjustment range 0,2-4 bar. Pressure indicator for pre-adjustment of device, accuracy $\pm 0,15$ bar. Complete with pressure gauge, scale 0-4 bar (code 553640), pressure gauge connection 1/4" F (code 553540), shut-off valve, strainer and check valve.

Code 573001

Charging unit with backflow preventer. Connections 1/2" F. Maximum working temperature 65°C. Maximum working pressure 10 bar. Complete with: pre-adjustable filling unit, brass body, glass nylon cover, NBR seals, pressure adjustment range 0,2-4 bar, complete with shut-off valve, strainer and check valve; backflow preventer with non-controllable reduced pressure zones, CAa type, conforms to EN 14367, with DZR alloy body, NBR seals, complete with collar for fixing to discharge pipe, ball shut-off valves with brass body, downstream pressure gauge 0-4 bar.

Code 574000

Charging unit with backflow preventer. Connections 1/2" F. Maximum working temperature 65°C. Maximum working pressure 10 bar. Complete with: pre-adjustable filling unit, brass body, glass nylon cover, NBR seals, pressure adjustment range 0,2-4 bar, complete with shut-off valve, strainer and check valve; controllable reduced pressure zone backflow preventer, BA type, conforms to EN 12729, with DZR alloy body, NBR diaphragm and seals, complete with tundish with collar for fixing to discharge piping, ball shut-off valves with brass body, downstream pressure gauge 0-4 bar, Y-strainer for backflow preventers.

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice.



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