

# AutoFill™ pre-adjustable filling units & backflow preventer

553–573 series



01061/25 NA

Replaces 01061/12 NA



## Function

The automatic filling valve is a device consisting of a pressure reducing valve with compensating seat, visual system pressure setting indicator, an inlet filter, anti-scale internal parts, a shut-off valve (round knob on bottom) and a check valve.

It is installed on the water inlet piping in sealed heating systems, and its main function is to maintain the pressure of the system at a set value, automatically filling up with water as required.

**The valve is pre-adjustable, meaning it can be set to the desired pressure value before the system charging phase.**

After installation, during the filling or topping-off phase, the water feed will stop when the set pressure is reached. This valve fills 50% faster than other valves. There are no levers to flip or valve to close.

Pre-assembled with the 573 series backflow preventer, the AutoFill™ Combo features an atmospheric vent which is designed to protect drinking water systems from return flow, caused by back-siphoning or back pressure, of contaminated fluids. The 573 series has been specifically certified to standards CSA B64.3 and ASSE 1012.



## Product range

- 5535 series AutoFill™ pre-adjustable automatic filling valve with pressure setting indicator ..... connections 1/2" NPT male x 1/2" NPT female; 1/2" sweat x 1/2" NPT female
- 5536 series AutoFill™ pre-adjustable automatic filling valve with pressure setting indicator and outlet pressure gauge..... connections 1/2" NPT male x 1/2" NPT female; 1/2" sweat x 1/2" NPT female
- 573 series Dual check continuous pressure backflow preventer with atmospheric vent .....connections 1/2" and 3/4" NPT female; 1/2" sweat
- 57300 series AutoFill™ Combo pre-adjustable automatic filling valve with backflow preventer.....connections 1/2" NPT female; 1/2" sweat
- 57301 series AutoFill™ Combo pre-adjustable automatic filling valve with backflow preventer and outlet pressure gauge....connections 1/2" NPT female; 1/2" sweat

## Technical specifications

### Filling unit

- Materials**
- body: brass
  - cover: PA 66 GF 30
  - internal seal: NBR
  - line seals EPDM

### Performance

- Suitable fluids: water, glycol solution
- Max. percentage of glycol: 50%
- Max. working pressure: 230 psi (16 bar)
- Pressure setting range: 3–60 psi (0.2–4 bar)
- Factory setting: 15 psi (1.035 bar)
- Indicator accuracy: ±2 psi (±0.15 bar)
- Max. working temperature: 150°F (65°C)
- Pressure gauge scale: 0-60 psi / 0-4 bar

- Connections**
- 553542A 1/2" NPT male inlet x 1/2" NPT female outlet
  - 553549A 1/2" sweat inlet x 1/2" NPT female outlet
  - 553642A 1/2" NPT male inlet x 1/2" NPT female outlet
  - 553649A 1/2" sweat inlet x 1/2" NPT female outlet
  - Pressure gauge 1/4" NPT

### Backflow preventer

- Material**
- body: brass
  - filter: stainless steel
  - check valve: PSU
  - check valve stem: brass
  - diaphragm: EPDM
  - seals: EPDM

### Performance

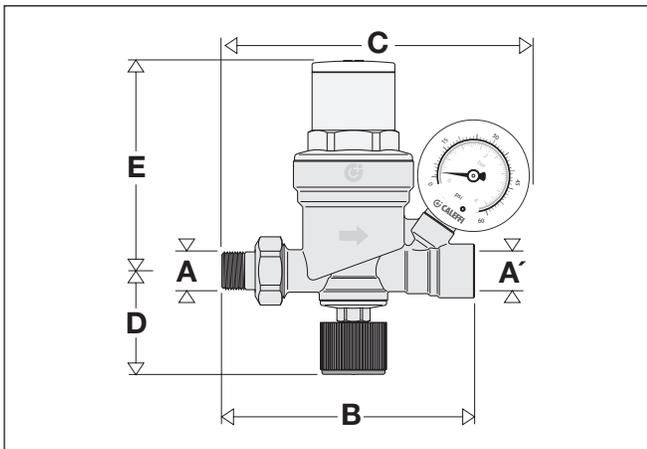
- Suitable fluids: water
- Max. working pressure: 175 psi (12 bar)
- Max. working temperature: 210°F (99°C)
- Filter screen mesh diameter: .474 mm (35 mesh)
- Emergency backpressure temperature: 250°F (120°C)

Certified to: CSA B64.3 and ASSE 1012

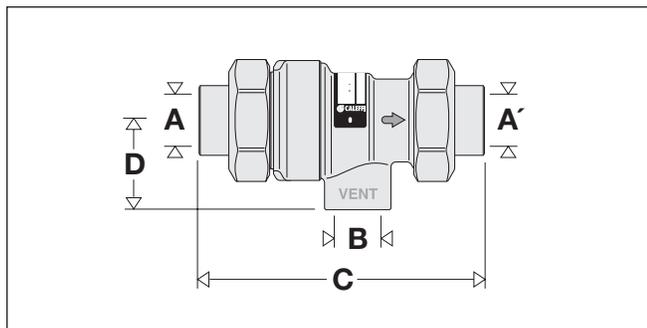
### Connections

- 1/2", 3/4" NPT female with union
- 1/2" sweat with union
- 1/2" sweat inlet x 1/2" NPT female outlet

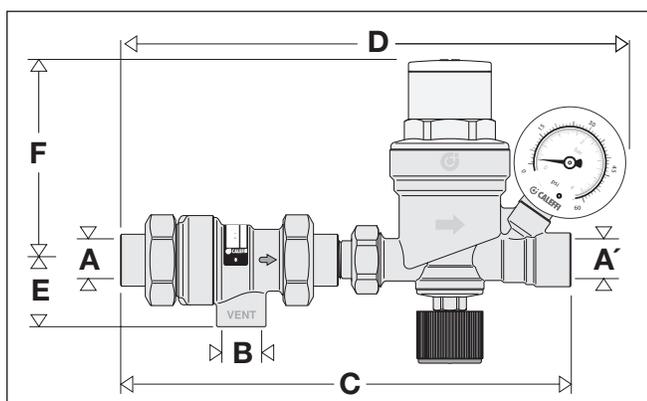
## Dimensions



Code	A	A'	B	C	D	E
553542A	1/2" NPT	1/2" NPT	4 3/4"	—	1 15/16"	4"
553549A	1/2" SWT	1/2" NPT	4 3/4"	—	1 15/16"	4"
553642A	1/2" NPT	1/2" NPT	4 3/4"	5 3/4"	1 15/16"	4"
553649A	1/2" SWT	1/2" NPT	4 3/4"	5 3/4"	1 15/16"	4"



Code	A	A'	B	C	D
573403A	1/2" NPT	1/2" NPT	1/2"	4 3/4"	1 1/8"
573503A	3/4" NPT	3/4" NPT	1/2"	4 5/8"	1 1/8"
573409A	1/2" SWT	1/2" SWT	1/2"	4 5/8"	1 1/8"
573493A	1/2" SWT	1/2" NPT	1/2"	4 11/16"	1 1/8"



Code	A	A'	B	C	D	E	F
573002A	1/2" NPT	1/2" NPT	1/2"	9 1/8"	—	1 1/8"	4"
573009A	1/2" SWT	1/2" NPT	1/2"	9 1/8"	—	1 1/8"	4"
573012A	1/2" NPT	1/2" NPT	1/2"	9 1/8"	10 1/4"	1 3/8"	4"
573019A	1/2" SWT	1/2" NPT	1/2"	9 1/8"	10 1/4"	1 3/8"	4"

## Construction details

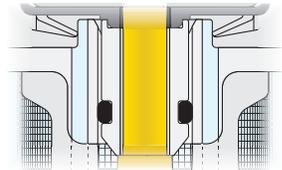
### Pre-calibration

The AutoFill™ features a pressure setting indicator as shown. Before filling the system, use a screwdriver to turn dial to the intended system pressure.



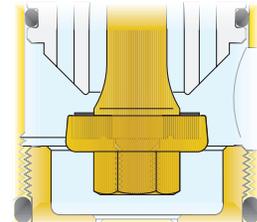
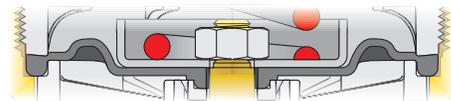
### Anti-scale materials

The central housing containing the moving parts and the internal compensating spindle are made of a low adhesion coefficient plastic. This material minimizes the risk of formation of scale deposits, the main cause of malfunctions.



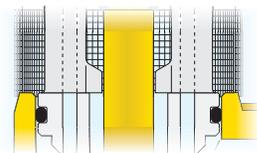
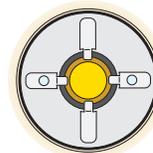
### Diaphragm-seat seal

The useful working surface of the diaphragm is particularly large, in order to maintain stable pressure in a system at a preset value regardless of inlet pressure variations. This feature is also useful in that it gives greater power to the sliding of the spindle and overcomes friction. Due to the low flow rates, the AutoFill™ seat has been designed with the smallest possible diameter. This guarantees greater precision and sensitivity to maintain its operating characteristics unchanged over time.



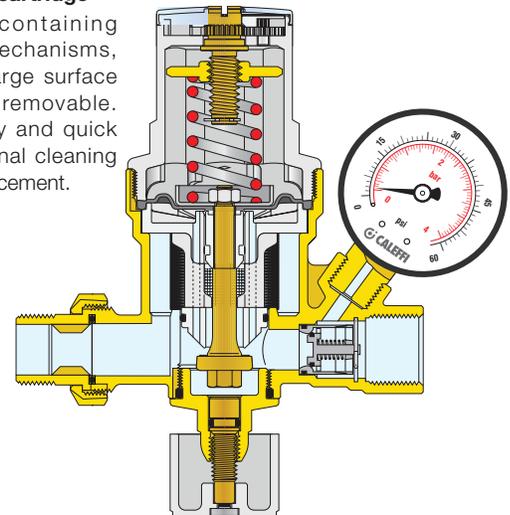
### Spindle guide

In order to reduce the frictional surfaces, the spindle unit guide has been positioned in the upper part of the device. It consists of four spokes formed directly on the plastic central support.



### Removable filter cartridge

The cartridge containing the operating mechanisms, protected by a large surface area strainer, is removable. This permits easy and quick inspections, internal cleaning and cartridge replacement.

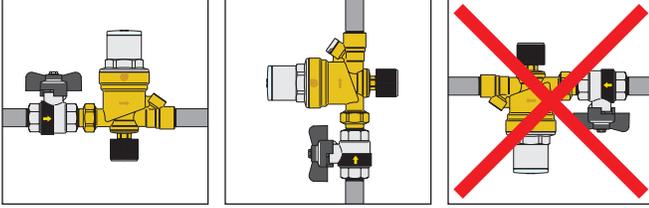


### Fast filling

The AutoFill™ fast fills the system to set pressure, up to 5-1/2 gpm filling rate, then automatically shuts off the water feed.

## Installation

1. The AutoFill™ valve can be installed in either horizontal or vertical position. Do not install the valve upside down.

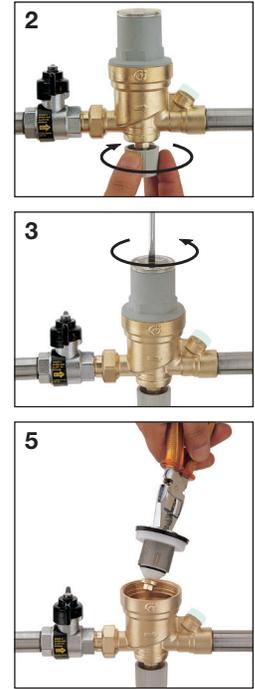


2. Before filling the system, use a screwdriver to turn dial to the intended system pressure. A downstream pressure gauge is not required.
3. During filling, the internal mechanism will automatically control the pressure until it reaches the required value, **without monitoring the filling operation itself**. This prevents the system being charged to a higher pressure than required.
4. When the system is filled, the shut-off valve (round knob on bottom) can be closed. In order to restore the automatic “topping-off function”, simply re-open the shut-off valve. The pressure in the system will gradually return to the set pressure.

## Maintenance

For cleaning, inspection or replacement of the entire cartridge, use the following procedure.

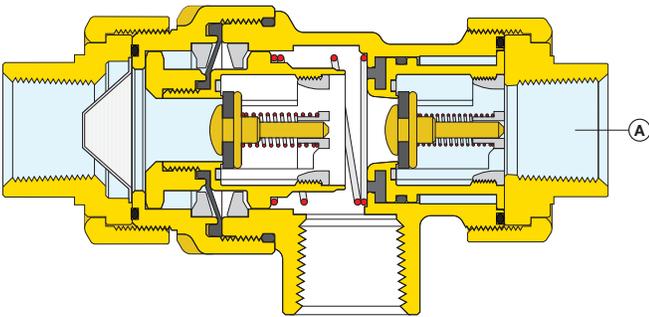
1. Isolate the unit.
2. Open the lower shut off valve.
3. Unscrew the adjusting screw until it stops.
4. Remove the upper cover.
5. Remove the cartridge using pliers.
6. The entire unit, after inspection, can be reassembled or replaced using a spare cartridge, code F59650.
7. Re-adjust following the steps listed in the installation section.



## Backflow preventer

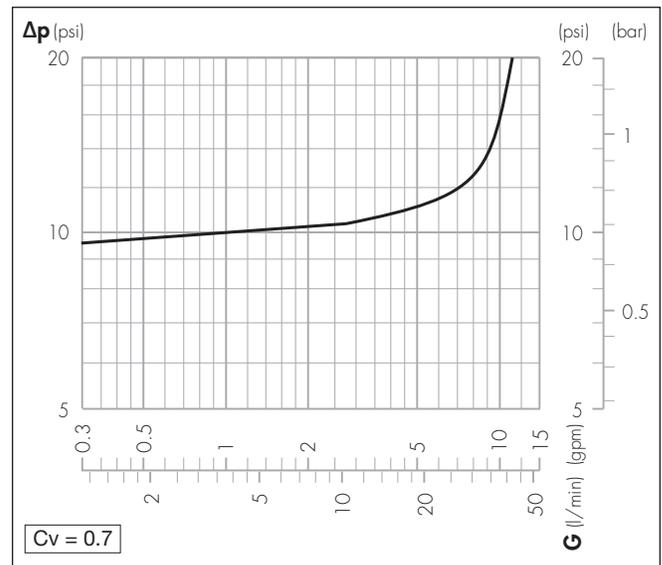
The backflow preventer with atmospheric vent is designed to protect drinking water systems from the return, caused by backsiphonage or backpressure, of contaminated fluids. The Caleffi 573 series has been specifically certified to standards CSA B64.3 and ASSE 1012.

## Installation



The backflow preventer 573 series must always be installed horizontal with the vent directing downward for natural flow of exhaust fluids, as shown in the above figure. The only exception is it can be installed vertical but 'nose down', that is with the outlet connection (A) pointing downward.

## Flow rate graph



## Replacement parts



**NA10363** Replacement gauge 0-60 psi/0-4 bar, 1/4" NPT

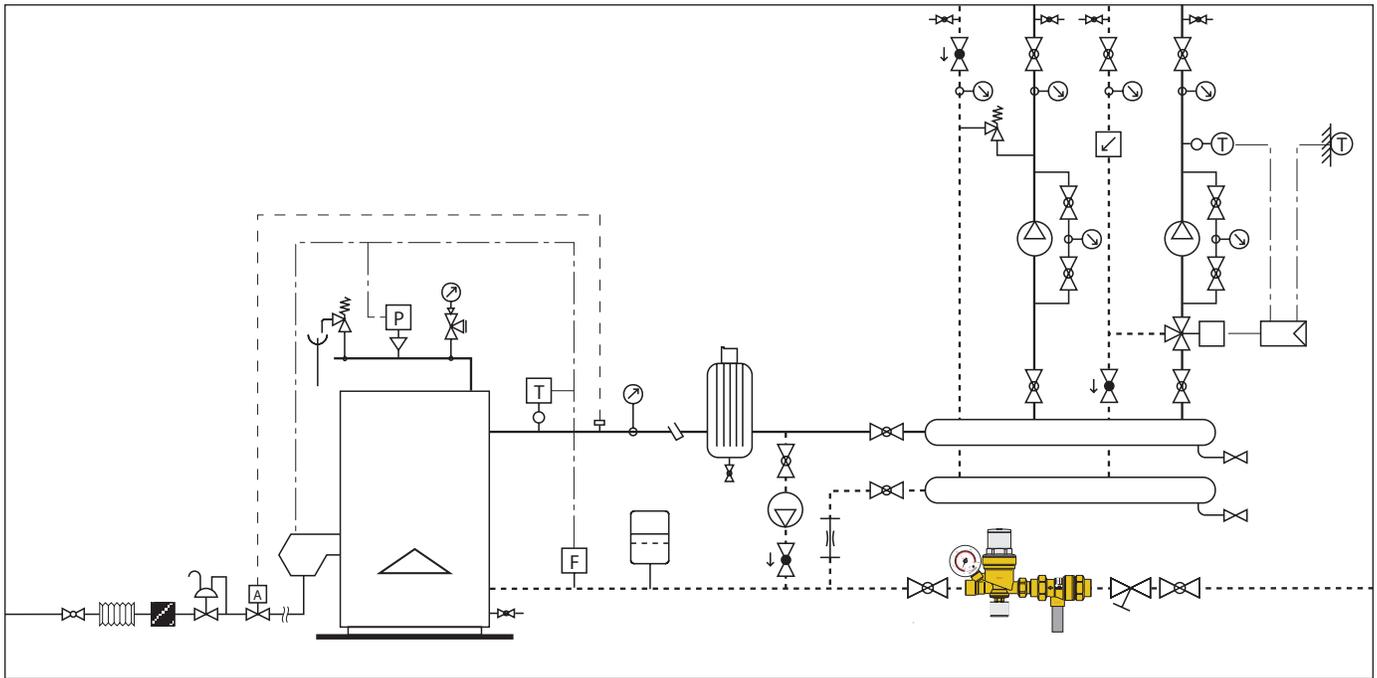


**F59650** AutoFill™ 553 series replacement cartridge



**NA10197** AutoFill™ clear plastic disc cover

## Application diagram



	Shut-off valve		Pump		3-way valve		Fuel shut-off valve
	Ball valve		FlowCal™		Pressure switch		Anti-vibration joint
	BALLSTOP		Flow meter		Control pocket		Sensor pocket
	Thermometer		Temperature probe		Gas filter		Safety valve
	Differential by-pass valve		Safety thermostat		Gas regulator		Y-strainer
	Flow switch		Regulator		Air separator		
	Zone valve		Expansion vessel				

## SPECIFICATION SUMMARIES

### AutoFill™ code 553 series

Pre-adjustable automatic filling valve with visual system pressure setting indicator. 1/2" NPT male union inlet x 1/2" NPT female outlet (553542A and 553642A) or 1/2" sweat inlet x 1/2" NPT female outlet (553549A and 553649A). Brass body. Nylon plastic cover. Sliding surfaces in anti-scale plastic. Diaphragm and seals in NBR. Cartridge removable for maintenance operations. Maximum working temperature 150°F (65°C). Maximum inlet pressure 230 psi (16 bar). Setting range 3–60 psi (0.2–4 bar). Pressure indicator for pre-adjustment of device, accuracy ±2 psi (±0.15 bar). Complete with isolating valve, filter and check valve and integral downstream pressure gauge (0-60 psi / 0-4 bar) for codes 553649A and 553649A.

### 573 series

Dual check continuous pressure backflow preventer with atmospheric vent. Certified to CSA B64.3 and ASSE 1012. 1/2" or 3/4" NPT female union inlet and outlet, or 1/2" union sweat inlet with 1/2" sweat union or 1/2" NPT female union outlet. Brass body, stainless steel filter, 35 mesh (0.474 mm), check valve in PSU, diaphragm and seals in EPDM. Maximum working pressure 175 psi (12 bar). Maximum working temperature 210°F (99°C). Emergency backpressure temperature 250°F (120°C).

### AutoFill™ Combo code 5730 series

Pre-adjustable automatic filling unit with backflow preventer 1/2" NPT female union or 1/2" sweat union inlet and 1/2" NPT female outlet. Maximum working temperature 150°F (65°C). Maximum inlet pressure 175 psi (12 bar). Complete with intergal downstream pressure gauge (0-60 psi / 0-4 bar) for codes 573012A and 573019A.

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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