

Replenishment water treatment filling unit



01268/16 NA

NA573



Function

The replenishment water treatment filling unit is an assembly consisting of a backflow preventer, isolation valves, filter housing unit with replaceable resin cartridge and AutoFill™ pre-adjustable fill valve. This unit is installed on the water inlet piping in sealed hydronic heating or cooling systems. Three important functions are provided in this single filling unit assembly: maintaining the pressure of the system stable at a set value and automatically filling up with water as required; protecting drinking water systems from return flow, caused by back-siphoning or back pressure of contaminated fluids; and producing from site-sourced water, demineralized water of an ideal grade for use in closed hydronic heating and cooling systems. Minerals causing hardness are almost entirely eliminated. This prevents premature equipment malfunction including reduced efficiency or component failure due to lime scale formation – a common affliction of heat exchangers. Demineralized water is low in electrical conductivity to minimize corrosion due to galvanic attack. Demineralized water eliminates the variability of mineral content found in untreated site water which provides more reliable dosing when chemical additives are used – such as glycol.

Product range

NA573022	Replenishment water treatment filling unit, includes backflow preventer, isolation valves and AutoFill™connections 1/2" NPT female inlet and outlet
NA573100	Filter housing complete with color changing resin demineralization cartridge.....connections 1/2" NPT female inlet and outlet
NA573102	10" color changing demineralizing filter housing

Technical specifications

Materials

Body:	plastic
Ball:	plastic
Seals:	rubber

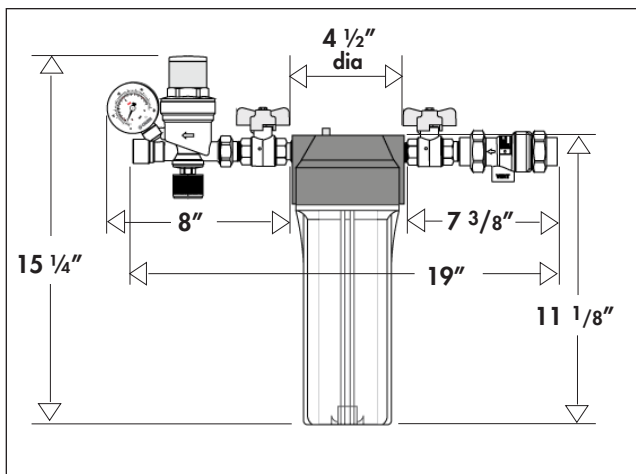
Performance

Suitable fluids:	tap water
Max inlet pressure:	125 psi (8.5 bar)
Max. working temperature:	100° F (38° C)
Max flow rate:	1 gpm (0.6 l/s)
TDS of water after treatment:	< 30 ppm
Resin exchange:	
-Anion:	60%
-Cation:	40%

Connections

Main connections:	1/2" NPT female inlet and outlet
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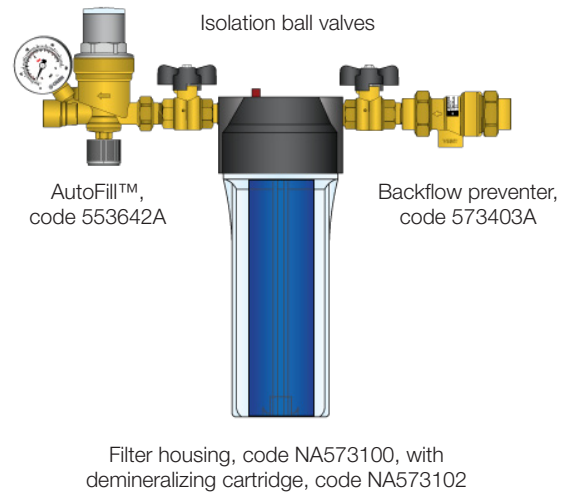
Dimensions



Characteristic components

Most closed-loop hydronic systems lose small amounts of water and air over time. These losses come from automatic air vented purging of dirt separators, weepage at air vents, valve packings or circulator flange gaskets. Fluid loss also occurs when a component such as a circulator is replaced. Over time, a standard make-up water assembly would allow untreated water to enter a system as demineralized water is lost. If the system was filled with treated demineralized when commissioned, untreated make-up water could bring undesirable compounds, such as calcium carbonate, back into the system. To prevent this, Caleffi offers an enhanced assembly, code NA573022, that includes a demineralizer cartridge. This is a replenishment water treatment assembly consisting of a backflow preventer and a pre-adjustable automatic filling valve with pressure gauge used to automatically feed small quantities of demineralized water into the system. This assembly is shown above. This unit would be installed, of course, after initially filling the system with the Caleffi NA570 series HYDROFILL™ portable water treatment filling unit.

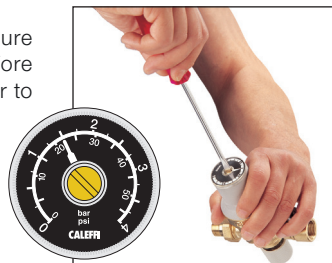
This assembly uses a special 10-inch cartridge insert, code NA573102, containing the color changing resin beads necessary to demineralize water passing through it at relatively low flow rates. The cartridge assembly can be isolated by closing the two ball valves. The clear housing can then be unscrewed to remove and replace the cartridge. The Caleffi cartridge will appear blue color when new. Its internal color will change to amber as the resin beads approach a spent condition. Each cartridge can demineralize approximately 30 gallons of water. This should provide several years of normal make-up water supply, assuming only minor water losses from the system occur.



AutoFill™ filling unit

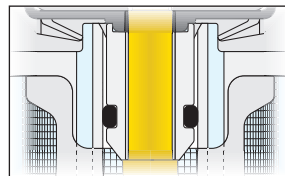
Pre-calibration

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



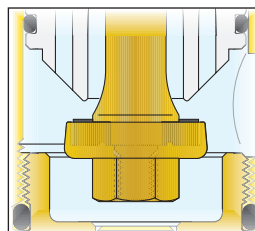
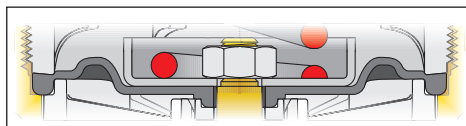
Anti-scale materials

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.

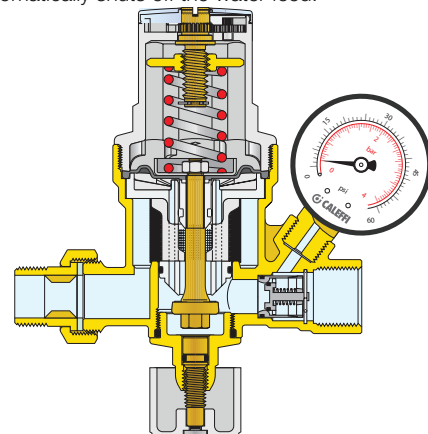


Removable filter cartridge

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.

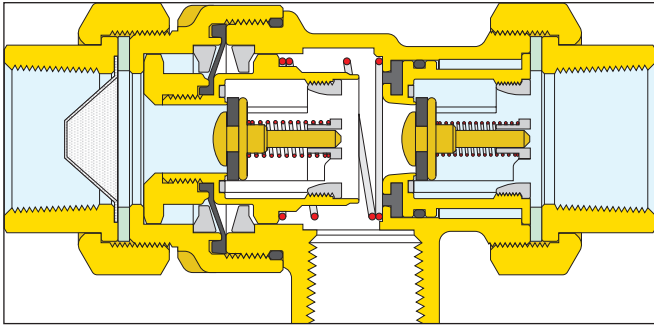
Fast filling

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



Backflow preventer

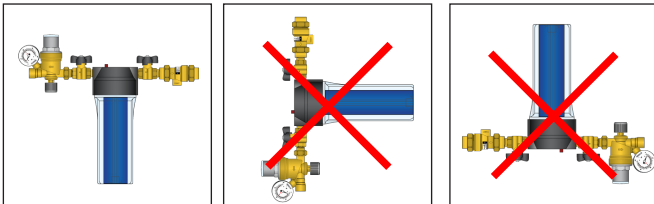
The backflow preventer with atmospheric vent is designed to protect drinking water systems from the return, caused by backsiphonage or backpressure, of contaminated fluids. The Caleffi 573 series has been specifically certified to standards CSA B64.3 and ASSE 1012.



Installation

1. The replacement water treatment filling unit must be horizontally installed following the direction of flow as indicated by the arrow on the AutoFill™ or 573 backflow preventer body.

2. The replacement water treatment filling unit is factory pre-assembled. Fittings may have loosened during shipping and handle. Check the fittings and tighten accordingly.



Replacement of demineralization cartridge

The 10-inch cartridge insert, code NA573102, containing the color changing resin beads that demineralizes water passing through it, will appear blue color when new. The internal color will change to amber as the resin beads approach a spent condition. Each cartridge can demineralize approximately 30 gallons of water. This should provide several years of normal make-up water supply, assuming only minor water losses from the system occur.



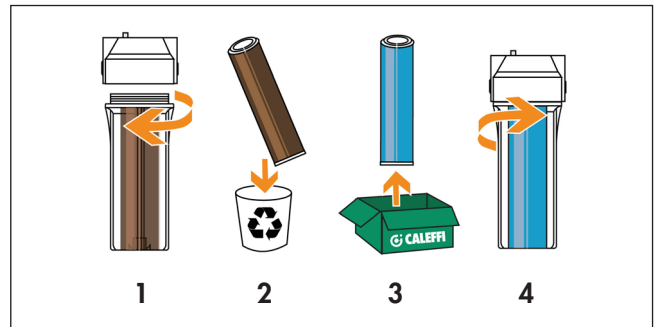
New



Spent

Cartridge change

1. Close the isolation ball valves. 2. Turn the cartridge with white plastic wrench included with unit. 3. Remove the used cartridge and discard them. 4. Insert the new cartridge. 5. Turn the cartridge and tighten in place with the white plastic wrench. 6. Re-open the isolation ball valves to return to normal operation.



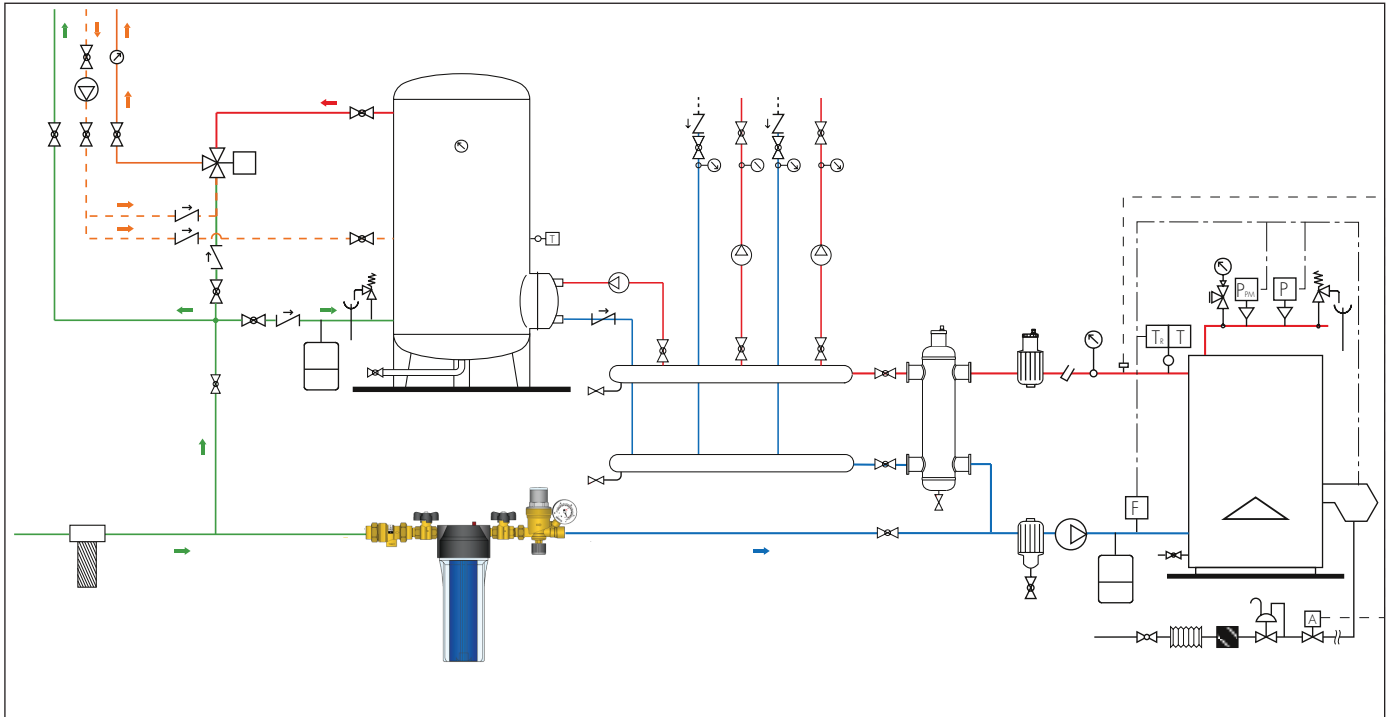
White plastic wrench, included in package, required to remove filter housing to replace spent color changing demineralization filter. Please do not dispose and keep in handy location for future use.



Note: The replacement water treatment filling unit is not designed for initial filling. Caleffi's HYDROFILL™ water treatment filling unit, code NA5709 series, is recommended for that purpose.

The capacity depends on various factors including the temperature of the water, the chemical composition of the water and pressure. For an exact determination is a water analysis of the raw water. The values specified here are always related to the optimal case and are not binding.

Application Diagram



SPECIFICATION SUMMARY

Replacement water treatment filling unit code NA573 series

Replacement water treatment filling unit complete with backflow preventer, inlet and outlet isolation valves, filter housing unit with replaceable resin cartridge and AutoFill™ pre-adjustable fill valve with outlet pressure gauge. 1/2" NPT female inlet x 1/2" NPT female outlet (573403A and 553642A) Plastic body and cover. Rubber seals. Clear filter housing, code NA573100, complete with 10 inch replaceable color changing resin demineralization cartridge, code NA573102. Suitable fluids: tap water. Maximum working temperature 100 degrees F (38 degrees C). Maximum inlet pressure 125 psi (8.5 bar). Maximum flow rate: 1 gallon per minute (0.6 liters per second). TDS of water after treatment: < 30 parts per million. Demineralization capacity: approximately 30 gallons. Demineralization resin exchange: Anion 60 per cent; Cation 40 per cent. AutoFill™ pressure setting range 3–60 psi (0.2–4 bar). Pressure indicator for pre-adjustment of device, accuracy ± 2 psi (± 0.15 bar). Brass body, PA 66 GF 30 cover and NBR seals. Complete with isolating valve, filter and check valve and integral downstream pressure gauge (0–60 psi / 0–4 bar). Dual check continuous pressure backflow preventer with atmospheric vent. Certified to CSA B64.3 and ASSE 1012. 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).

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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