

AutoFill™ automatic filling valve

5350 series



01085/23 NA

Replaces 01085/16 NA



Function

The 5350 series AutoFill™ automatic filling valve is a pressure reducing valve which when installed on the water inlet piping in closed hydronic systems will maintain system pressure at a set value, automatically filling up with water as required. It fast fills the system to set pressure then automatically shuts off the water feed. This product is factory pre-set to 15 psi system pressure. To adjust the set pressure, simply turn the adjustment knob while observing the integral downstream pressure gauge. This product has the characteristic of being pre-adjustable, which means that it can be adjusted at the right pressure value before the system charging phase. After installation, the system pressure will automatically adjust itself to the set value and the water feed will stop when the set pressure is reached. The internal cartridge containing all the controlling components is pre-assembled as a self-contained unit, to facilitate inspection and maintenance procedures.

The 5350 series is available with conventional union NPT and union sweat connections and the Presscon™ press copper tail-piece with union nut makes installation and maintenance fast, easy and efficient. Special slots in the EPDM O-ring allows fluid to leak during system testing if unpressed and provide a perfect leak proof seal when completely pressed.

Product range

5350 series	AutoFill™ automatic filling valve.....	connections 3/4" NPT male, sweat union; 3/4" and 1" press union
Code NA10273	Replacement pressure gauge, 2 inch dial, 0 - 100 psi range.....	connection 1/8" NPT male
Code 535004	Replacement cartridge	

Technical specifications

Materials	- body:	brass
	- cover:	glass fiber reinforced nylon PA66G30
	- control spindle:	stainless steel
	- moving parts:	brass
	- diaphragm and seals:	NBR
	- filter:	stainless steel

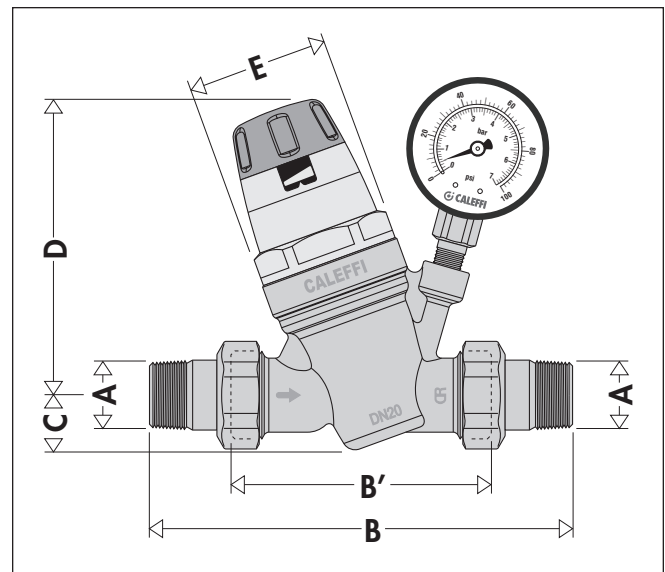
Performance

Suitable fluids:	water
Max. working pressure:	365 psi (25 bar)
Downstream pressure setting range:	6-90 psi (0.5-6 bar)
Factory setting:	15 psi (1.035 bar)
Max. working temperature:	140°F (60°C)
Max. flow rate:	24 gpm at 21 psid pressure drop
Pressure gauge scale:	0-100 psi (0-7 bar)
Filter mesh size:	0.51 mm (35 mesh)
Environmental:	indoor only

Connections:

Main connections:	3/4" NPT male union
	3/4" sweat union
Lay length (press connection):	3/4" and 1" press size 3/4": 4 7/16" size 1": 4 3/4"
Pressure gauge:	1/8" NPT female

Dimensions

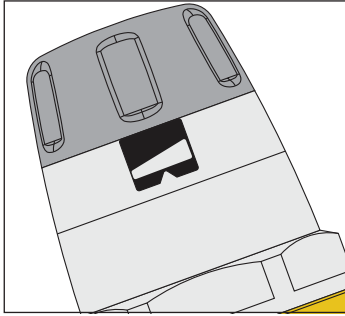


Code	A	B	B'	C	D	E	Wt. (lb.)
535051A	3/4" NPT	5 1/2"	3 1/2"	1 3/16"	4 7/16"	2 1/8"	2.3
535056A	3/4" press	6 1/4"	3 1/2"	1 3/16"	4 7/16"	2 1/8"	2.3
535059A	3/4" SWT	5 1/2"	3 1/2"	1 3/16"	4 7/16"	2 1/8"	2.3
535066A	1" press	6 1/2"	3 1/2"	1 3/16"	4 7/16"	2 1/8"	2.4

System pressure setting

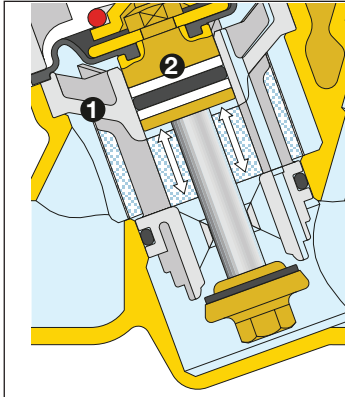
Pre-adjustment

AutoFill™ automatic filling valves in the 5350 series come standard with an operating adjustment knob and an integral downstream outlet pressure gauge. This adjustment knob features rotational operation. The pressure can be adjusted continuously, resulting in 7 psi per revolution, with the value displayed on the outlet gauge.



Compensated seat

The Caleffi AutoFill™ 5350 series automatic filling valve is designed with compensated seats. This means the set pressure value remains constant, regardless of variations in inlet pressure. In the figure, the thrust towards the opening is counterbalanced by the force created by the closing pressure acting on the compensating piston. Since the piston surface area is equal to the valve opening, the two forces cancel out each other.



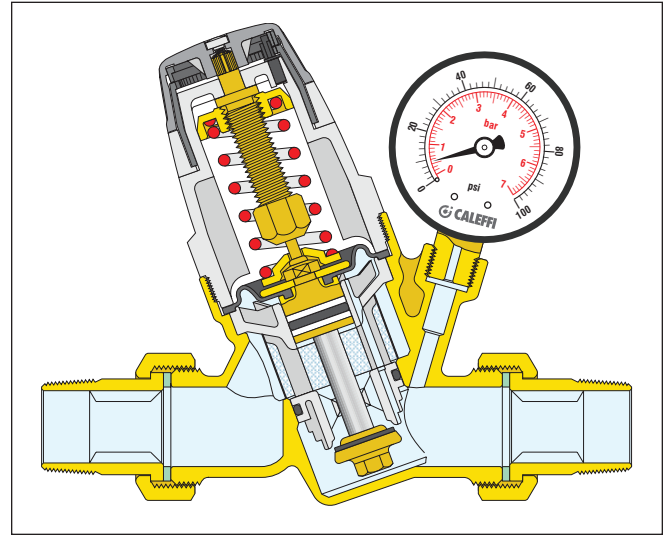
High flow fast filling

The Caleffi AutoFill™ 5350 series automatic filling valve has large internal fluid passages allowing high flow filling with minimum pressure drop through the valve body. The table below shows flow rates with the corresponding pressure drop at different flow rates.

Velocity (f/s)	4	6	8	10
Flow (gpm)	8	14	20	24
Pressure drop (psi)	8	13	17	21

Non-sticking materials

The central support assembly (1), containing the moving parts, is made of plastic material with a low adherence coefficient. This solution reduces lime scale formation which is the main cause of failure.



Low head loss

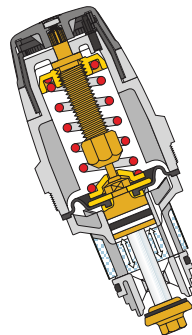
The internal fluid-dynamic shape of the automatic filling valve results in low pressure losses.

High pressures

The zone exposed to inlet pressure is constructed to operate under high pressure. The PTFE anti-extrusion rings (2) on the compensating piston allow it to be used continuously at 365 psi (25 bar) maximum inlet pressure.

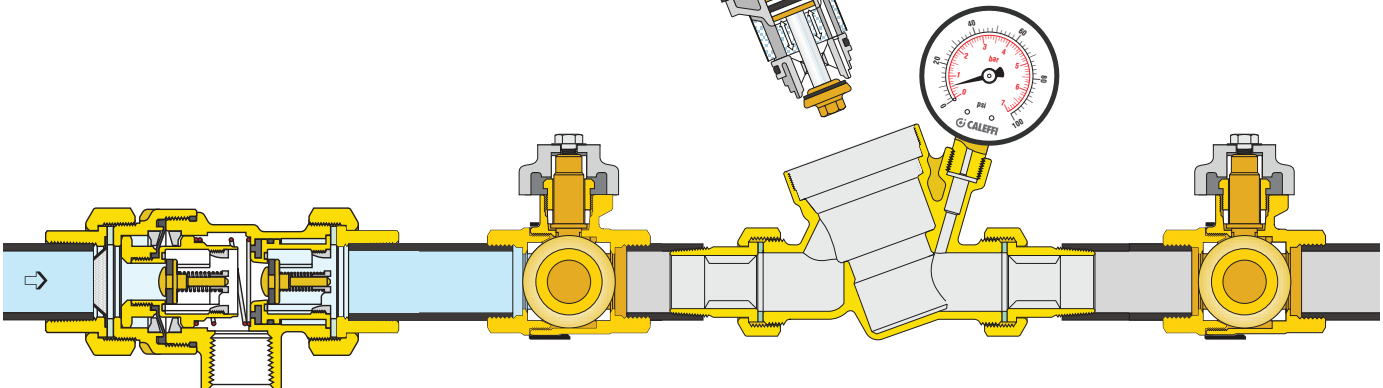
Removable self-contained cartridge

The cartridge, replacement code 535004, containing the diaphragm, strainer, seat, valve port and compensating piston, is pre-assembled as a "self-contained unit" with a cover and can be easily removed for inspection and maintenance procedures, or replacement if necessary.



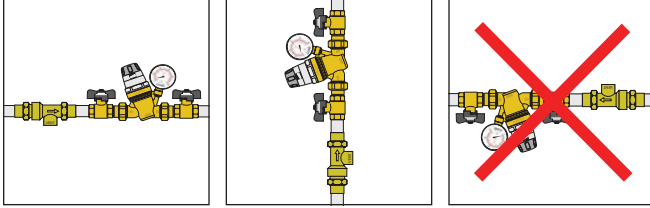
Pressure gauge

The pressure gauge, replacement code NA10273, comes standard in the AutoFill™ 5350 series automatic filling valve and has a 1/8" NPT male connection with a 2" dial and 0–100 psi (0–7 bar) pressure range.



Installation

1. Filling valve can be installed in either horizontal or vertical position. Do not install upside down. Do not install outdoors.



2. Caleffi recommends the AutoFill™ 5350 series filling valve be installed with separately-purchased shut-off ball valves, code NA39589, upstream and downstream.
3. The AutoFill™ 5350 series filling valve does not have an internal check valve to prevent reverse flow of water. For this reason, a backflow preventer installed upstream is recommended. Use a Caleffi code 573503A, or other brand that complies with applicable codes.

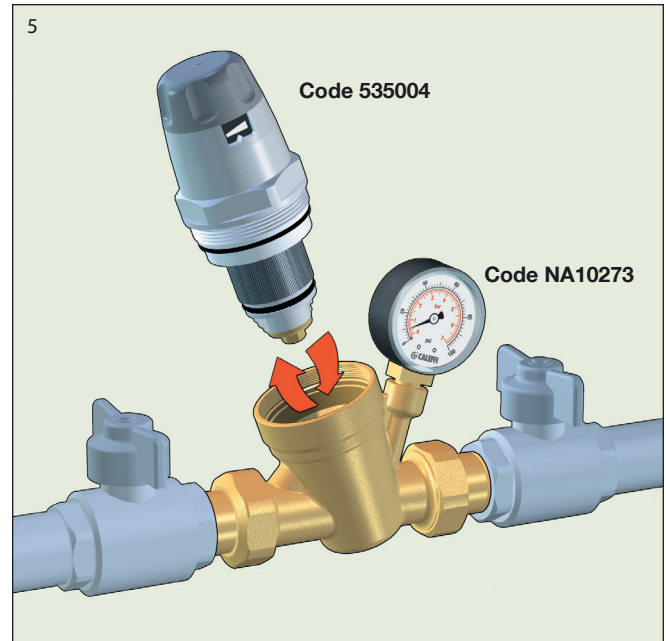
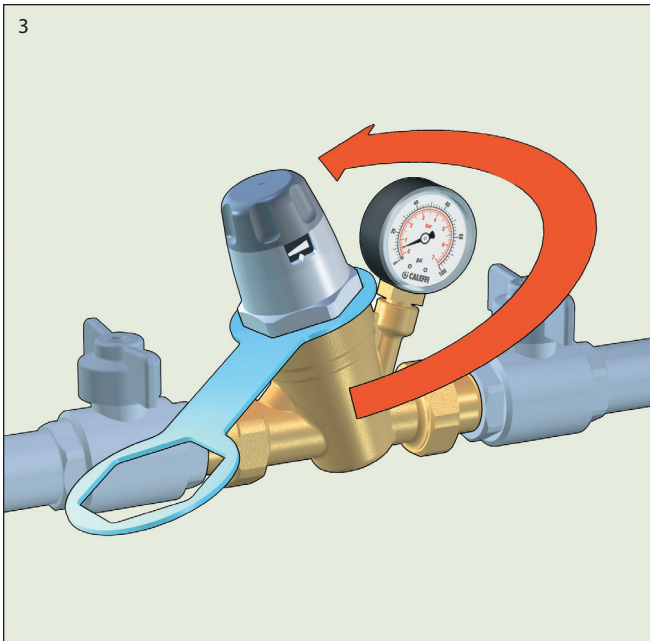
4. The system pressure is factory pre-set to 15 psi (1.035 bar).
 - a. To properly reset to a higher desired system pressure (greater than 15 psi), start by opening the inlet shut-off valve while keeping the outlet shut-off valve closed. Adjust the operating knob clockwise (+) to increase the system pressure to the desired value as indicated on the outlet gauge, approximately 7 psi per revolution.
 - b. To reset to a lower system (lower than 15 psi), turn the operating knob counterclockwise (-) until it stops turning, 0 psi. Then, open the inlet shut-off valve while keeping the outlet shut-off valve closed. Adjust the operating knob clockwise (+) to increase the system pressure to the desired value as indicated on the outlet gauge, approximately 7 psi per revolution.
5. When the desired system pressure is indicated on the gauge, open the outlet shut-off valve, filling the system.
6. The system will begin filling in fast-fill mode, then automatically stop filling when system pressure reaches the setting value. Thereafter, the internal mechanism will automatically control system pressure to the desired value.

Maintenance

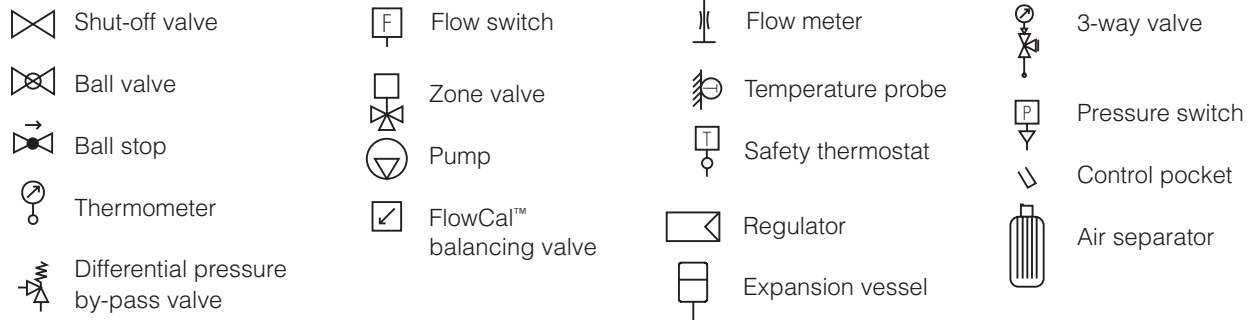
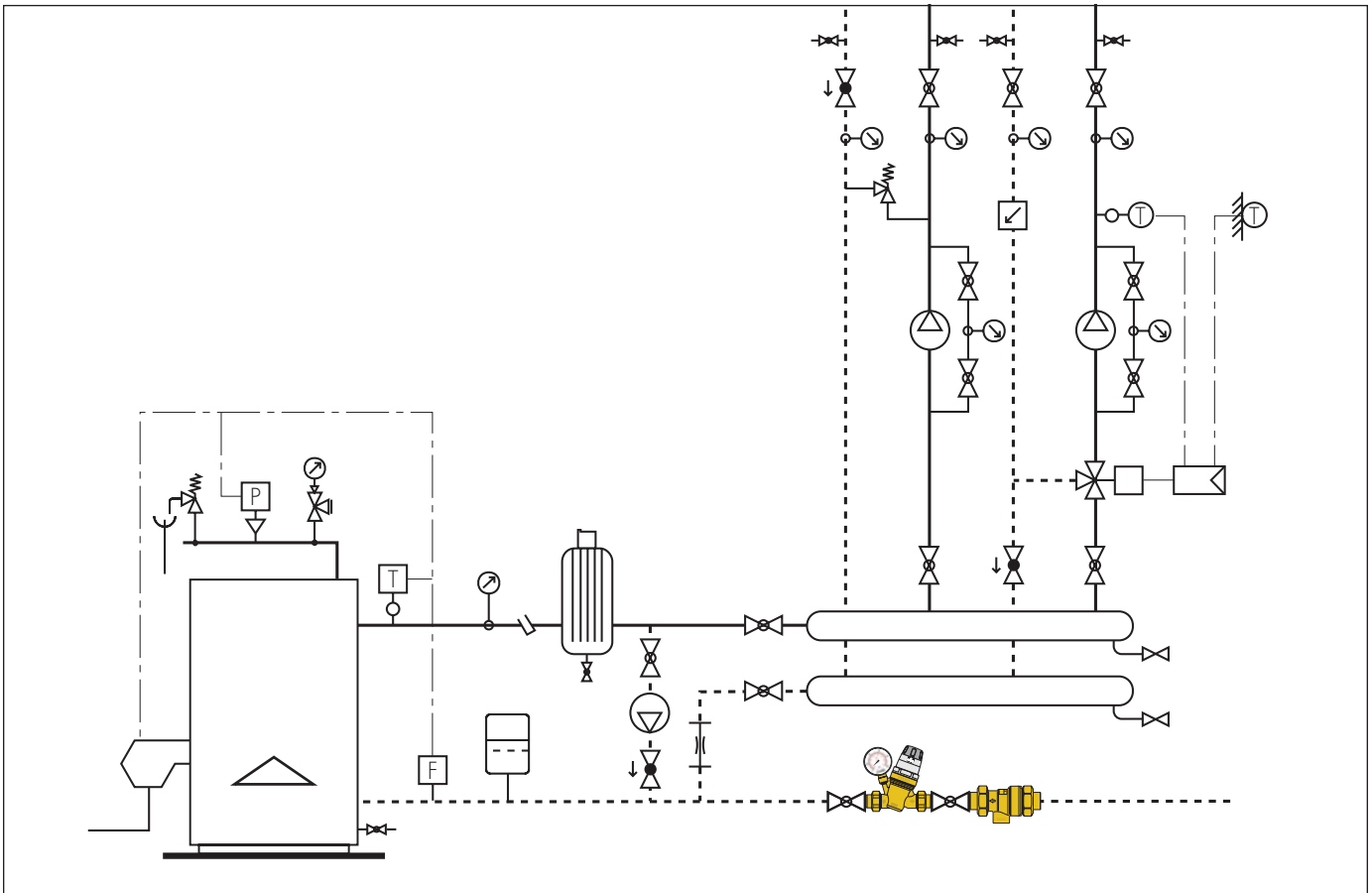
When checking, cleaning or replacing the complete regulating cartridge:

1. Isolate the filling valve.
2. The special construction of the filling unit does not require any adjustment of the system pressure, which can be left at the set value.
3. Remove the upper cover. The upper cover is integral with the internal regulating cartridge.

4. Check and clean the filter.
5. When the cartridge is screwed back into the body, the pressure setting will return to the original value.
6. Reopen the shut-off valves. The pressure will return to the original set value.



Application diagram



SPECIFICATION SUMMARIES

AutoFill™ 5350 series

Automatic filling valve with compensated seat and self-contained cartridge. Connections 3/4" NPT male, 3/4" sweat; 3/4" and 1" press with unions. Brass body and internal moving parts. Glass fiber reinforced nylon PA66G30 cover. Stainless steel filter, mesh size 0.51 mm (35 mesh). NBR diaphragm and seals. Maximum working temperature 140°F (60°C). Maximum upstream pressure 365 psi (25 bar). Downstream pressure setting range from 6–90 psi (0.5–6 bar). Self-contained cartridge can be removed for maintenance purposes, replacement code 535004. Environmental: indoor installation only. Complete with: adjustment knob with downstream pressure regulating indicator showing increasing or decreasing pressure direction for manual setting, pressure gauge with 2" dial, scale 0–100 psi (0–7 bar), connections 1/8" NPT male, replacement code NA10273. Valve pressure gauge connection 1/8" NPT female.

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



Caleffi North America, Inc.
3883 W. Milwaukee Road
Milwaukee, WI 53208
Tel: 414-238-2360 · Fax: 414-238-2366
sales@caleffi.com · www.caleffi.com/usa/en-us
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