CALEFFI XS® under-boiler magnetic filter

5459 series

01357/25 EN
replaces 01357/23 EN

Function

The CALEFFI XS under-boiler magnetic filter mechanically separates the impurities in heating and cooling systems by means of a mesh filter, a neodymium magnet and a collection chamber for the heaviest particles. The chamber has transparent windows, allowing the user to check if the internal elements need to be cleaned. Its very small dimensions make it suitable for all generator types.

PATENT PENDING

Product range

Code 545900	Under-boiler magnetic filter with angled threaded connections	size DN 20 (3/4")
Code 545910	Under-boiler magnetic filter with in-line threaded connections	size DN 20 (3/4")
Code 545912	Under-boiler magnetic filter with in-line fittings for copper pipe	size DN 20 (Ø 22)

Technical specifications

Materials

Body:
- code 545900 brass EN 12165 CW617N, chrome plated
- code 545910 brass EN 12165 CW617N, nickel plated
- code 545912 brass EN 12165 CW617N

Fitting:
- code 545900 and 545910 brass EN 12165 CW617N, chrome plated
- code 545912 brass EN 12165 CW617N

Hydraulic seals:	EPDM
Filter container:	PA 12
Magnet holder cap:	PA6G30
Filter:	stainless steel EN 10088-2 (AISI 304)
Ball:	brass EN 12165 CW617N, chrome plated
Ball valve lever:	PA6G30

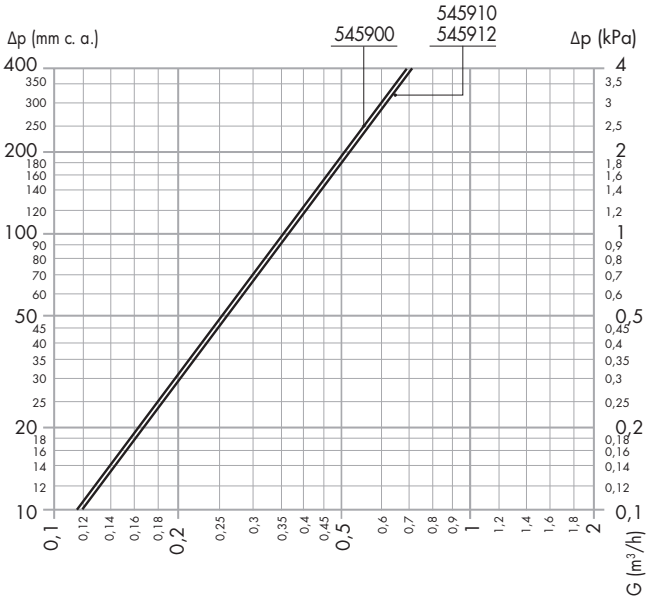
Performance

Medium:		water, non-hazardous glycol solutions
Max. percentage of glycol:		30 %
Maximum working pressure:		3 bar
Working temperature range:		0–90 °C
Filter mesh size:	- code 545900, 545910:	400 µm
	- code 545912:	800 µm
Magnetic induction of magnet:		0,475 T
Kv:	- code 545900:	3,55 m^3/h
	- code 545910, 545912:	3,66 m^3/h

Connections

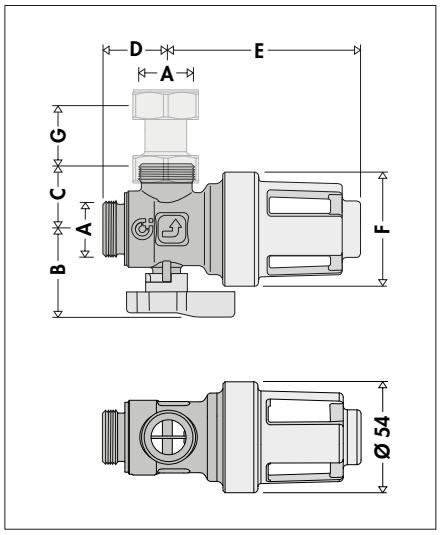
- boiler side: 3/4" M (ISO 228-1) Ø 22 mm for copper pipe
- system return side: 3/4" M (ISO 228-1) Ø 22 mm for copper pipe
- dual captive nut fitting for code 545900 and 545910 (supplied): 3/4" F (ISO 228-1) - 3/4" F (ISO 228-1)

Hydraulic characteristics

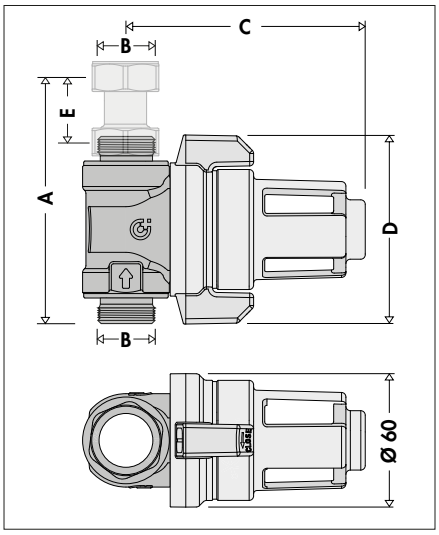


Angled version Kv (with clean filter): 3,55 m^3/h
In-line version Kv (with clean filter): 3,66 m^3/h

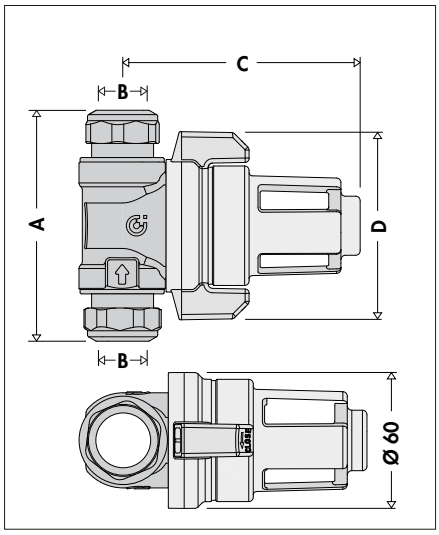
Dimensions



Code	A	B	C	D	E	F	G	Mass (kg)
545900	3/4"	41,5	30	32,2	94	54	27	0,53



Code	A	B	C	D	E	Mass (kg)
545910	112,6	3/4"	107,6	Ø 85	27	0,77

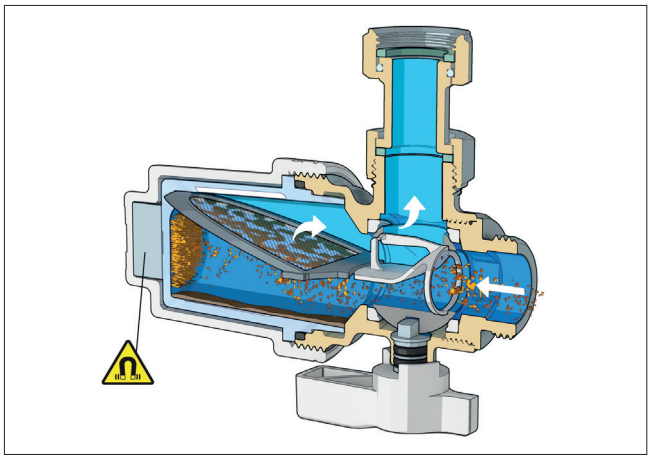


Code	A	B	C	D	Mass (kg)
545912	104,4	Ø 22	107,6	Ø 85	0,75

Operating principle

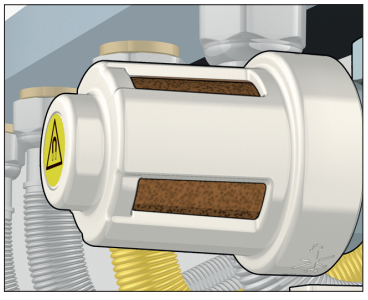
Magnetic filter operation is based on three principles:
- the mechanical filtration provided by the steel mesh captures the impurities;
- the magnetic field, which separates ferrous particles;
- the large chamber housing a calm zone allows dirt to settle.

The deflector profile directs impurities in the water and makes them precipitate in the separating chamber, where they are collected. The magnet, which is positioned so that the flow hits it head-on, effectively separates the ferrous particles. The 800 µm filter mesh captures the remaining impurities.



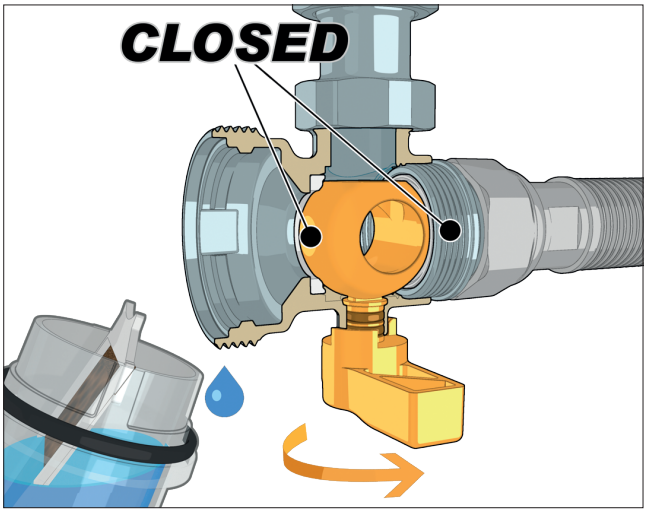
Construction details

The chamber has transparent windows, so it is easy to check if the internal elements need to be cleaned at any time, and clean them only when strictly necessary.

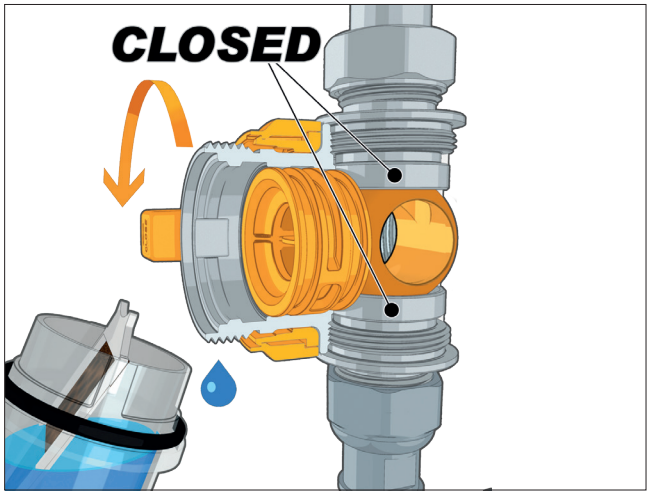


The shut-off valve has been designed so that only the water contained in the dirt separator needs to be drained before cleaning the internal elements. To cut off the filters with in-line connections code 545910 and 545912, the closing lever must be turned counter-clockwise. **Caution! Do not force valve closure in the wrong direction.**

Code 545900

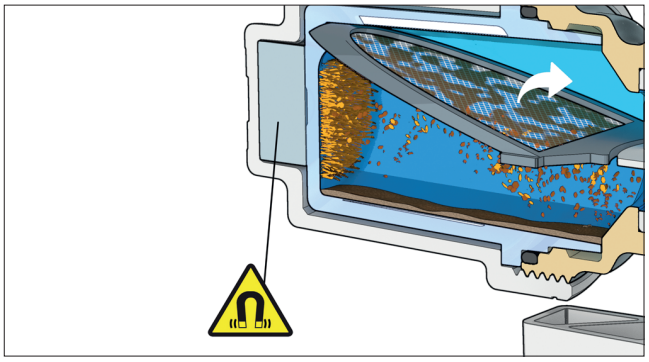


Code 545910 and 545912

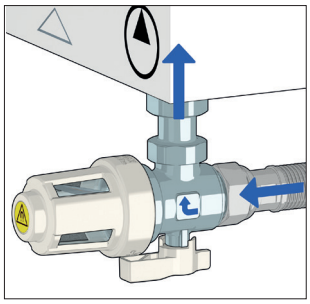


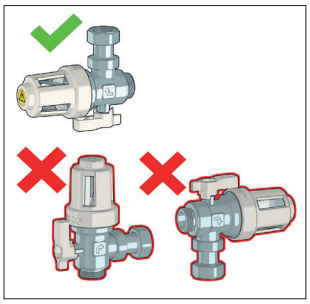
Neodymium magnet

The neodymium magnet is positioned so that the metal particles are very effectively attracted. As it is not in direct contact with the medium, cleaning procedures are more straightforward.



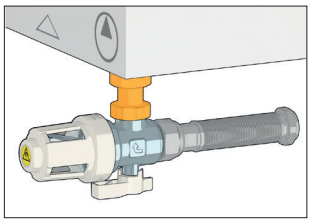
Installing code 545900



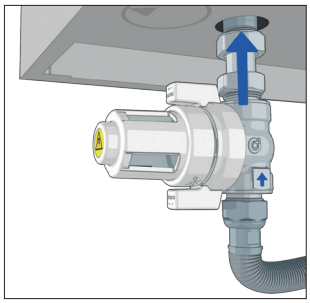


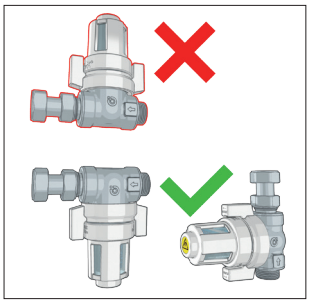
The dirt separator should always be installed horizontally.

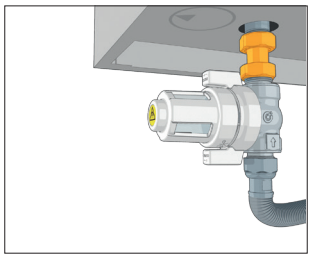
The tailpiece with captive nut means it is possible to connect directly to the boiler or to the wall connection, depending on the specific needs of the installation.

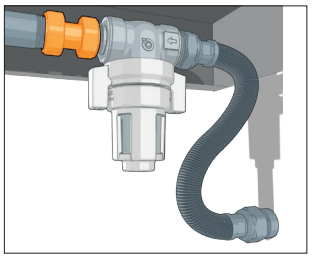


Installing code 545910 and 545912



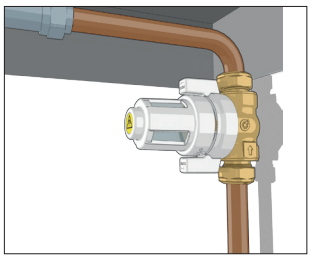






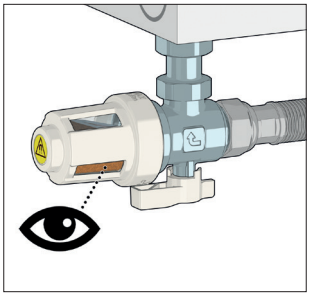
Connecting the filter code 545910 directly to the boiler can take place in both vertical and horizontal configuration. Tailpiece with captive nut supplied.

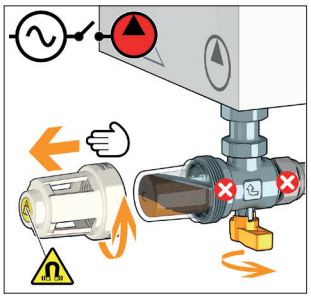
Filter code 545912 for connection with copper pipes.

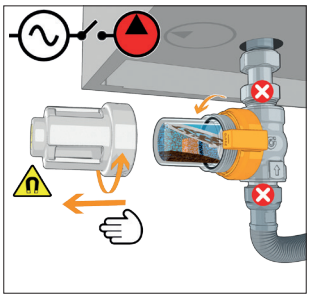


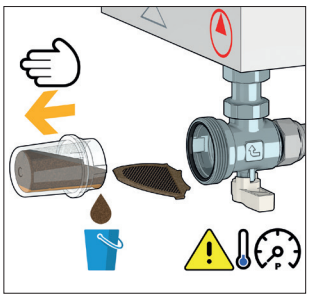
Maintenance

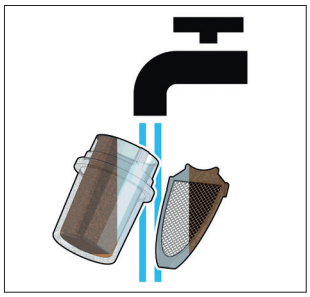
After checking how clogged the dirt separator is, it can be cleaned with a few simple steps after isolating it with the dedicated ball valve. The filtering cartridge can be washed with running water.





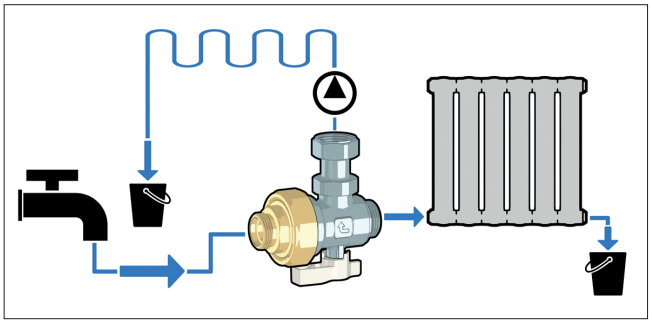


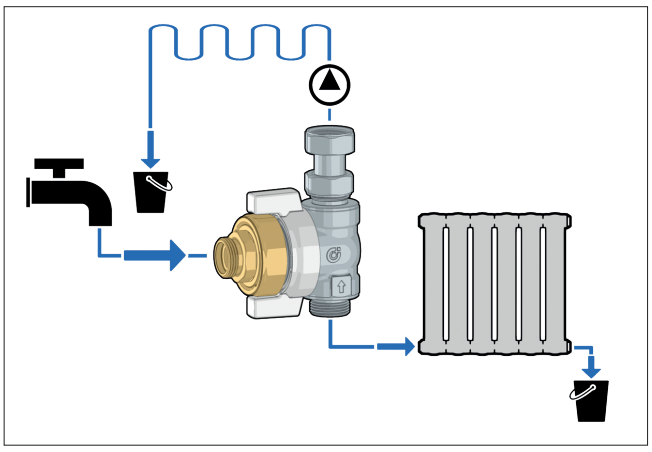




Flushing with kit F0001037 (optional)

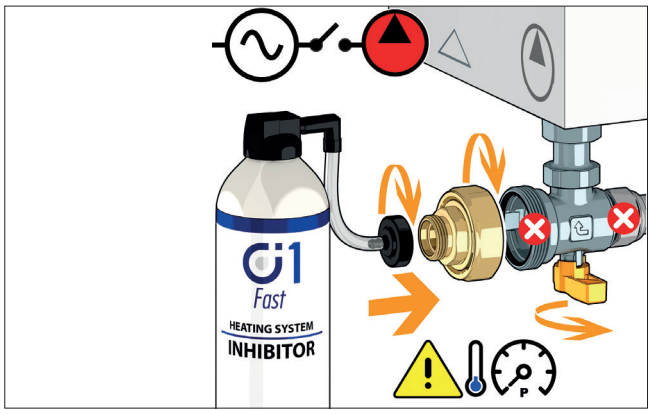
The dirt separator can also be used to flush the system, using the hose connection supplied with the kit.

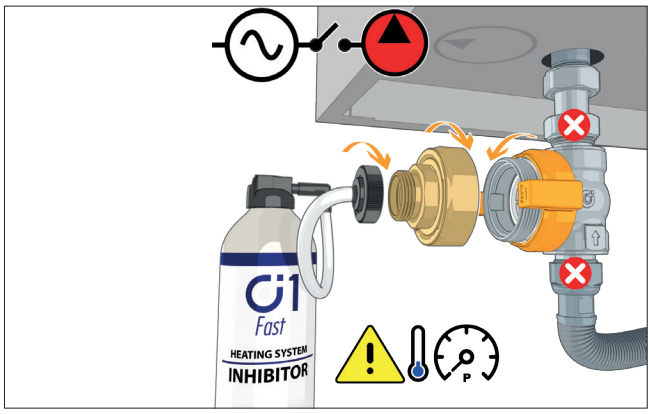


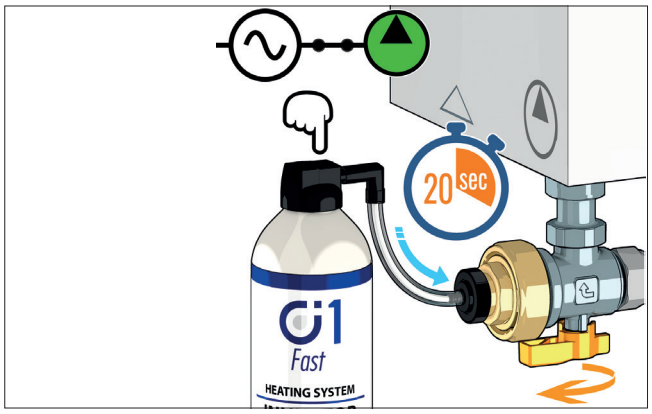


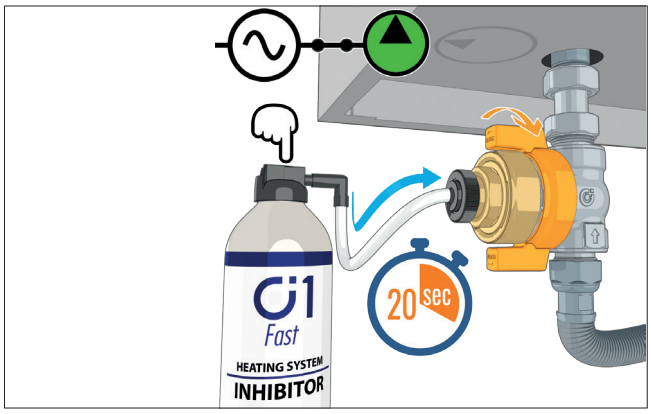
Using additives with kit F0001037 (optional)

The dirt separator can be used as an access point for injecting the circuit with chemical additives designed to wash and protect the system, by means of the special kit.









SPECIFICATION SUMMARY

Code 545900

CALEFFI XS® under-boiler magnetic filter with angledthreaded connections. Body made of chrome-plated brass EN 12165 CW617N, fitting made of chrome-plated brass EN 12165 CW617N. 3/4" M ISO 228-1 boiler side connections, 3/4" M ISO 228-1 system return side fittings, 3/4" F - 3/4" F fitting with dual captive nut (supplied). EPDM hydraulic seals. Filter container made of PA 12. Magnet holder cap made of PA6G30. Filter made of stainless steel EN 10088-2 (AISI 304). Ball made of chrome plated brass EN 12165 CW617N. Ball valve lever made of PA6G30. Medium can be water and glycol solutions, max. percentage of glycol 30 %. Maximum working pressure 3 bar. Working temperature range 0–90 °C. Filter mesh size 400 µm. Magnetic induction of the magnet 0,475 T.

Code 545910

CALEFFI XS® under-boiler magnetic filter with in-line threaded connections. Body made of nickel plated brass EN 12165 CW617N; fitting made of chrome plated brass EN 12165 CW617N. 3/4" M ISO 228-1 boiler side connections, 3/4" M ISO 228-1 system return side fittings, 3/4" F - 3/4" F fitting with dual captive nut (supplied). EPDM hydraulic seals. Filter container made of PA 12. Magnet holder cap made of PA6G30. Filter made of stainless steel EN 10088-2 (AISI 304). Ball made of chrome plated brass EN 12165 CW617N. Ball valve lever made of PA6G30. Medium can be water and glycol solutions, max. percentage of glycol 30 %. Maximum working pressure 3 bar. Working temperature range 0–90 °C. Filter mesh size 400 µm. Magnetic induction of of the magnet 0,475 T.

Code 545912

CALEFFI XS® under-boiler magnetic filter with in-line connections for copper pipe. Brass body EN 12165 CW617N; brass fitting EN 12165 CW617N. Boiler side connections with olive fittings for copper pipe Ø 22 mm, system return side with olive fittings for copper pipe Ø 22 mm. EPDM hydraulic seals. Filter container made of PA 12. Magnet holder cap made of PA6G30. Filter made of stainless steel EN 10088-2 (AISI 304). Ball made of chrome plated brass EN 12165 CW617N. Ball valve lever made of PA6G30. Medium can be water and glycol solutions, max. percentage of glycol 30 %. Maximum working pressure 3 bar. Working temperature range 0–90 °C. Filter mesh size 800 µm. Magnetic induction of of the magnet 0,475 T.

CALEFFI Hydronic Solutions

Caleffi S.p.A.
S.R. 229 n. 25 · 28010 Fontaneto d'Agogna (NO) · Italy
Tel. +39 0322 8491 · Fax +39 0322 863305
info@caleffi.com · www.caleffi.com