

# 577 dirtmag XF

semi-automatic self cleaning  
magnetic dirt separator



# 577 semi-automatic self cleaning magnetic dirt separator



## Application

The Altecnic XF filter separates impurities in the system right from the first passage. Its large filtration surface and impurity separation upstream of the filter also minimises the problem of mesh clogging.

The water in the system is filtered in three distinct steps

- 1 a first separation mesh,
- 2 a central magnet
- 3 an outlet filter.

The Dirtmag XF provides continuous protection for valves and other fittings from impurities that form in the hydraulic circuit.

It can be oriented for installation in horizontal and vertical pipes.

Shut-off valves are not required for maintenance of the device as it is equipped with a brush cleaning mechanism.

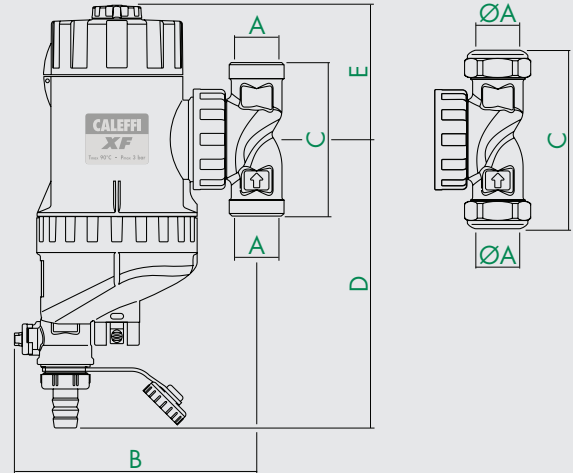
## Construction Details

Component	Material	Grade
Body	Polymer	PA66G30
Upper cap	Brass	BS EN 12164 CW617N
Air release valve	Brass	BS EN 12164 CW617N
Locking nut for 'T' fitting	Polymer	PPSG40
1½" & 2" sizes	Brass	BS EN 12420 CW617N
Tee fitting	Brass	BS EN 1982 CB735S
Seals	Elastomer	EPDM
Drain valve	Brass	BS EN12165 CW617N
Filter mesh	POM & St St	AISI 304
Internal bushes	Polymer	PA66G30

## Technical Specification

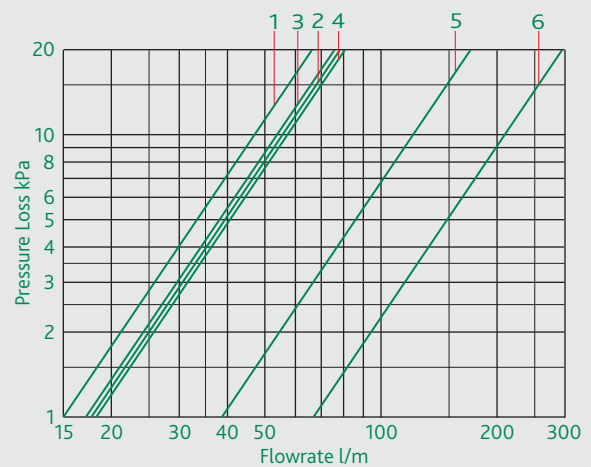
Medium:	water, glycol solution
Max. percentage of glycol:	30%
Max. working pressure:	3 bar
Working temperature range:	0 to 90°C
Internal volume:	0.53 litre
1½" & 2" sizes	0.6 litre
Filter mesh:	160 µm
Ring system magnetic induction:	3 x 0.475 T
Central magnetic induction:	4 x 0.485 T

## Dimensions



Ref No	A	B	C	D	E	kg
577200	Ø22	158	115	184	87	1.4
577300	Ø22	158	117	184	87	1.4
577500	¾"	158	96	184	87	1.3
577600	1"	158	110	184	87	1.4
577700	1¼"	158	131	184	87	1.6
577800	1½"	186	140	184	87	3.3
577900	2"	186	140	184	87	3.0

## Hydraulic Characteristic



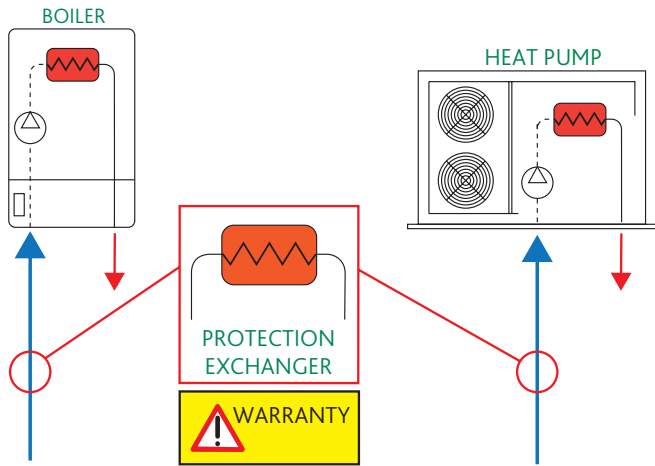
Ref No	Graph	Size	Kv (m3/h)
577500	3	¾"	10.3
577600	4	1"	10.7
577700	4	1¼"	10.7
577200	1	Ø22	9.0
577300	2	Ø28	10.5

Ref No	Size	Kv (m3/h) Filtering 100% Graph 5	Kv (m3/h) Filtering 50% Graph 6
577800	1½"	23	40
577900	2"	23	40

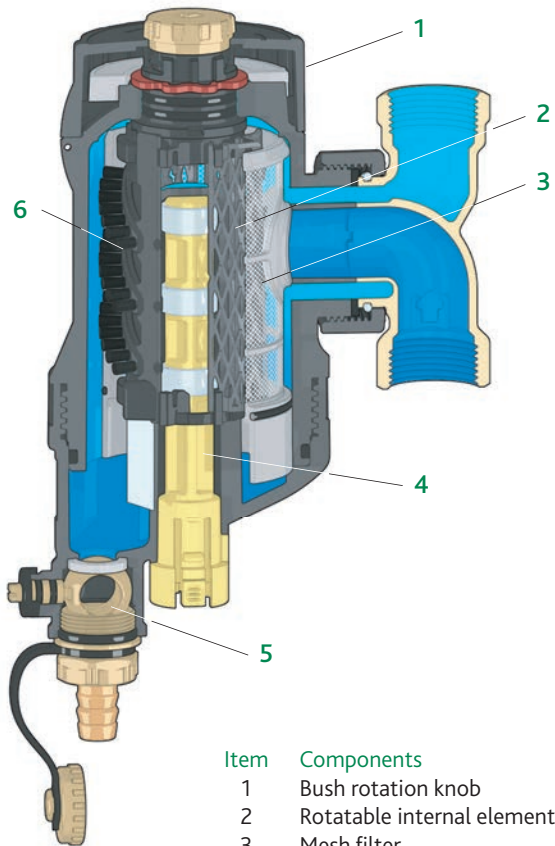
# 577 semi-automatic self cleaning magnetic dirt separator

## Problems caused by Debris in the System

The various components that make up an air conditioning system are exposed to the wearing action of debris that circulate in the heat transfer fluid. If they are not eliminated, they can compromise the operation of valves or other devices such as boilers or heat exchangers, especially during system commissioning. This last problem should not be underestimated since the warranty conditions of the boilers expire if they are not adequately protected with a filter, right from the moment of commissioning.



## Components



- | Item | Components                 |
|------|----------------------------|
| 1    | Bush rotation knob         |
| 2    | Rotatable internal element |
| 3    | Mesh filter                |
| 4    | Central magnet             |
| 5    | Drain valve                |
| 6    | Internal brushes           |

## Problems caused by Debris in the System Continued

Currently the dirt separators and filters on the market are unable to guarantee the protection of components in any phase of operation.

A device is required that eliminates particles of debris in any operating condition.

The elimination of particles even of small diameters (of the order of hundredths of a mm) is carried out by the dirt separator, by collision of the particles with the internal element and by decanting the sludge by gravity in the collection chamber. The latter result is obtainable after only a few fluid re-circulations and therefore with the system in full operation.

The total elimination of particles with diameters of the order of tenths of a millimetre is guaranteed by the mesh filter, which mechanically retains the particles of impurities transported by the heat transfer fluid up to 160  $\mu\text{m}$ , right from the first passage of the fluid (commissioning of the plant).

It is known that the action of the filter is effective against high loads and frequent cleaning of the filter meshes. The quick maintenance

# 577 semi-automatic self cleaning magnetic dirt separator

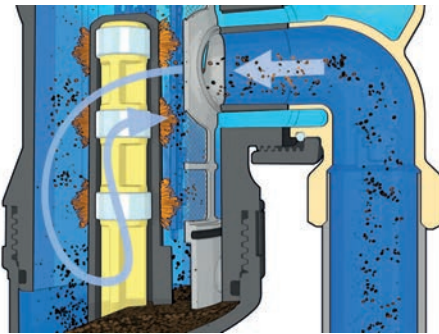
## Principle of Operation

The water treatment of the system takes place in 3 distinct phases:

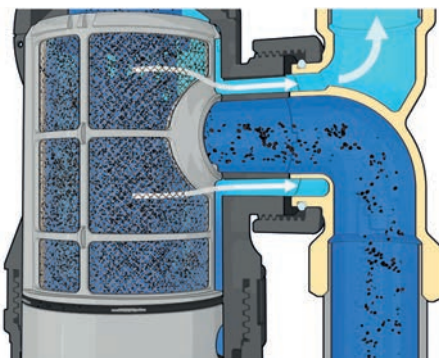
- 1 The water enters the device centrally and comes into contact with the rotatable internal element, consisting of a set of surfaces arranged in a radial pattern so that the impurities present in the water are separated, precipitating in the lower part of the body where they are collected.



- 2 A central magnet captures and holds ferrous impurities up to the smallest size.



- 3 At the outlet of the device, the water passes through a mesh filter that retains residual impurities by mechanical selection of the particles based on their size. The large surface of the filtering mesh, with 160 µm passage apertures, makes it liable to clogging.



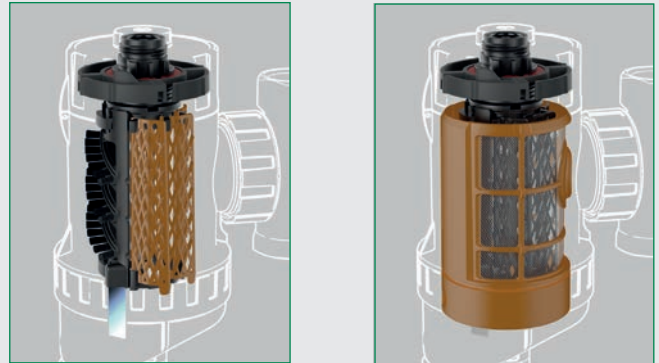
## Construction Details

### Double Filtering Effect

The water treatment of the system takes place in 3 distinct phases:

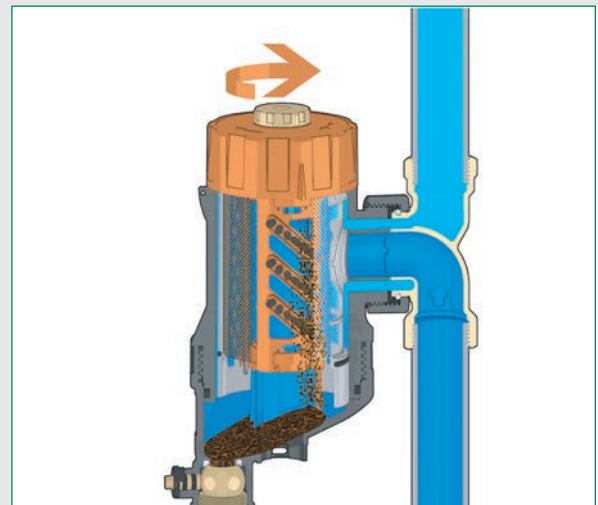
The Altecnic XF dirt separator filter is equipped with two filtering devices.

The first is an internal element, consisting of a set of surfaces arranged in a radial pattern. The impurities present in the water, colliding with these surfaces, are separated and precipitate in the lower part of the body where they are collected.



### Filter Mesh Cleaning

To clean the Altecnic XF dirt separator filter it is not necessary to disassemble the component as there is an internal mechanism with brushes for cleaning the filter mesh.

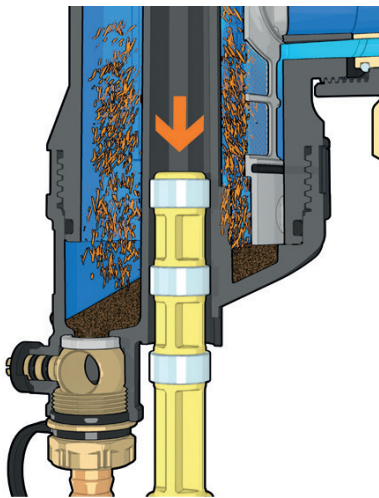


# 577 semi-automatic self cleaning magnetic dirt separator

## Separation of Ferrous Particles

The central magnet allows high efficiency in the separation and collection of ferrous particles. These are held in the central part of the body by the strong magnetic field created by the magnets inserted in the special probe.

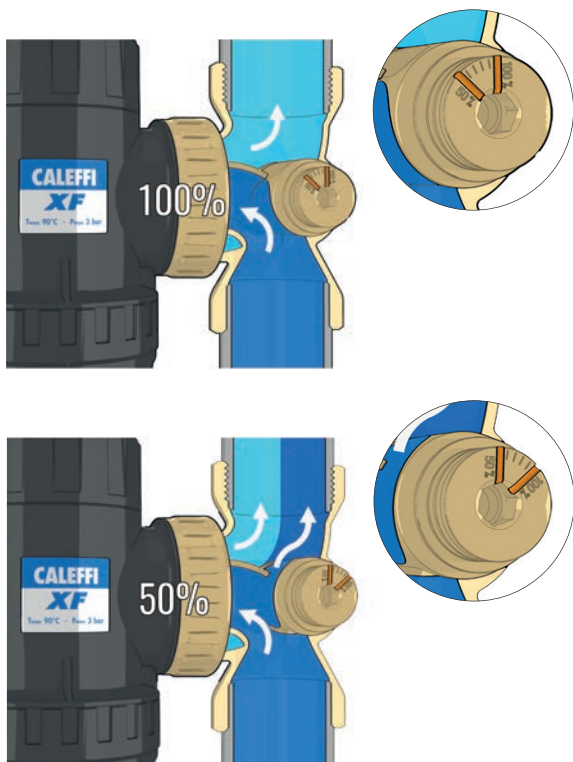
It is sufficient to extract the central magnet from the body to allow emptying and subsequent expulsion of particles without disassembling the dirt separator filter.



## Adjustable Bypass

The 577800 - 1 1/2" and 577900 - 2" are equipped with a by-pass that allows the flow to be reduced up to 50% and thus increase the Kv value.

100% filtration is recommended during filling and the first weeks of system operation. In the "maintenance" phase, the device can be adjusted in by-pass function to obtain a higher Kv.



## Technopolymer

The Altecnic XF dirt separator is made of a technopolymer, selected for heating and cooling system applications.

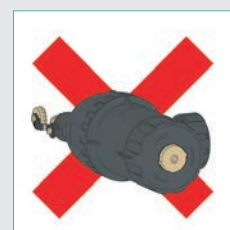
Its key features are;

- high resistance to plastic deformation, while maintaining a good elongation at break
- good resistance to crack propagation
- very low moisture absorption for constant mechanical behaviour
- high resistance to abrasion due to the continuous passage of fluid
- maintenance of performance as the temperature changes

These characteristics, together with the appropriate shaping of the most stressed areas, are comparable with the metals typically used in the construction of filters.

## Installation in horizontal or vertical pipework

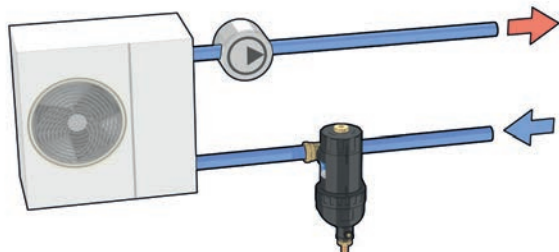
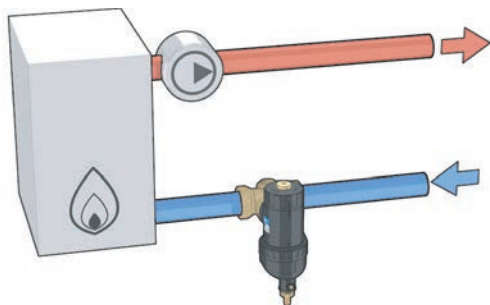
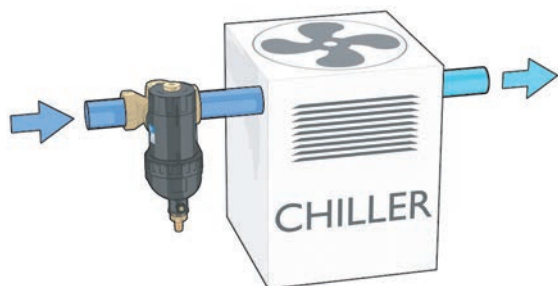
The Altecnic XF dirt separator filter is adjustable to allow installation in both vertical and horizontal pipes. In both configurations the functional and fluid dynamic characteristics remain unchanged.



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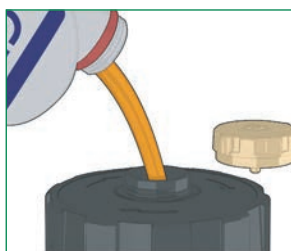
## Installation

The Altecnic XF dirt separator filter must be installed respecting the flow direction indicated by the arrow on the connecting tee. Installation upstream of the generator is preferable.



## Chemical Additives

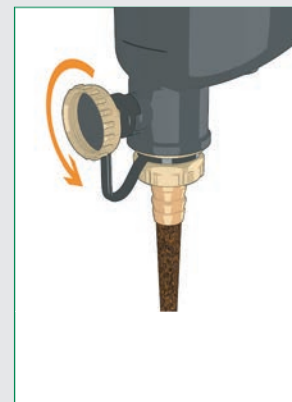
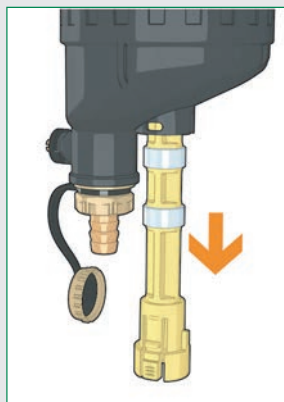
The Altecnic XF dirt separator filter can also be used as an access point to the circuit for the introduction of chemical additives to protect the system



## Maintenance and Sludge Discharge

Thanks to the cleaning mechanism of the filtering mesh by means of the special internal brushes, it is unnecessary to disassemble the device for maintenance, it is only necessary to keep the system filling system running.

- 1 Turn off the circulator and remove the central magnet.
- 2 Open the drain valve and flush away the debris and impurities



- 3 Turn the upper knob clockwise to clean the filtering mesh using the special internal brushes.
- 4 Align the indicator of the upper knob with the reference on the body of the device.



At the end of the operations, close the drain valve and restart the system.

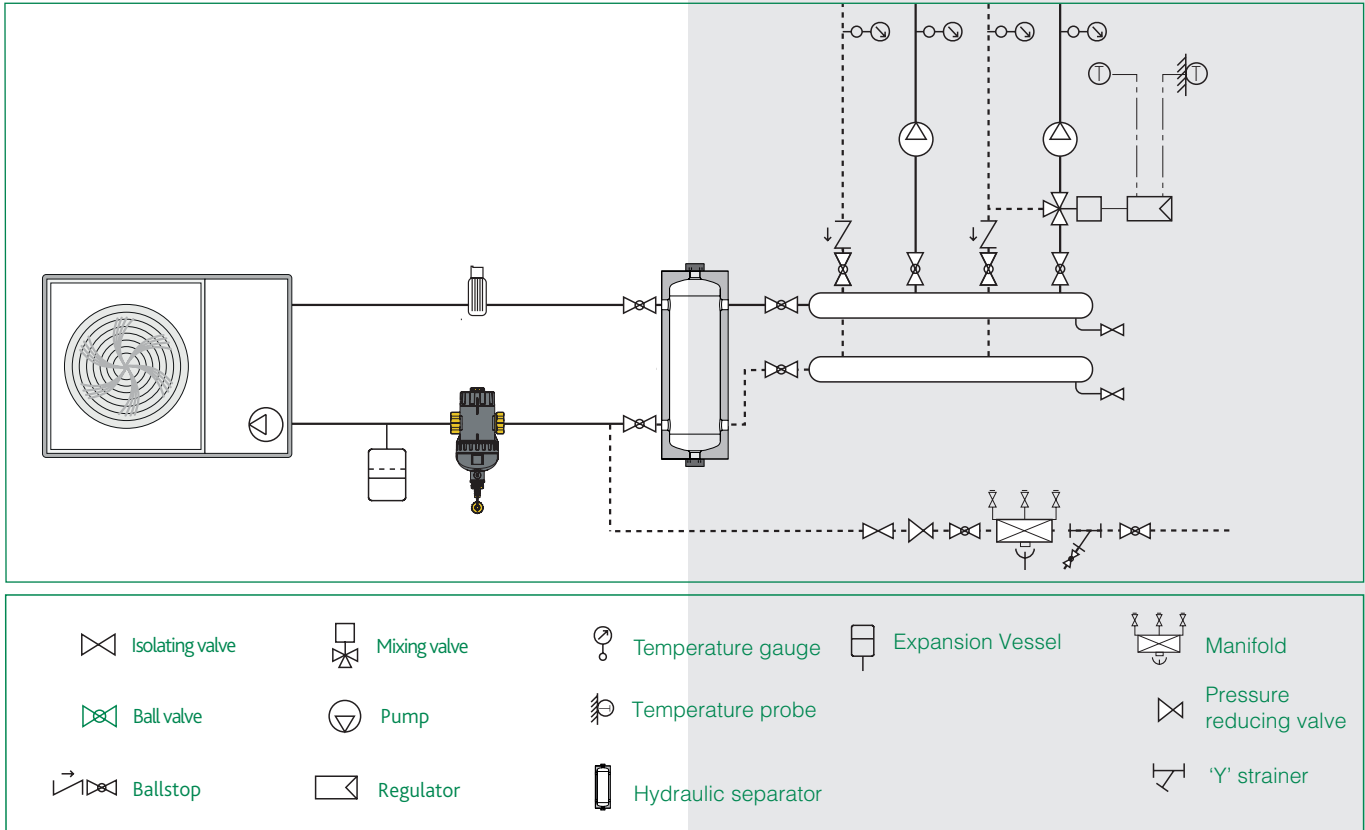
## Release Any Trapped Air

It is possible to evacuate the air that accumulates in the upper part of the body by unscrewing the top cap with a special screwdriver or with a butterfly wrench.



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## Typical Application



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