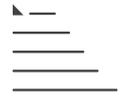


# R146C



Energy  
Management

## Adjustable magnetic dirt separator

Datasheet  
0840EN 09/2019



R146CX004



R146CX005

The R146C adjustable magnetic dirt separator separates and removes debris inside hydraulic circuits of modern heating and cooling systems. Impurities are separated by the combined action of water centrifugal force, a magnet and a metal filter. They can be then discarded by the drain cock. The special adjustable fitting enables to install the dirt separator under-boiler, on horizontal, vertical, angled and also 90°-angled pipes.



© VIDEO

Point the QR-Code with your smartphone or tablet to view the video tutorial.

### ➤ Versions and product codes

PRODUCT CODE	CONNECTIONS
R146CX004	G 3/4" M
R146CX005	G 1" M

#### Components included with the R146C dirt separator

- Cap for the inlet that is not used in the inlet/outlet fitting (G 3/4" F or G 1" F depending on the codes)
- G 1/2" M x G 3/4" F adjustable drain cock
- Magnet with brass housing

#### Optional accessories for R146CX004

- R254PY034: shut-off ball valve, G 3/4" F flat seat nut x G 3/4" M
- R176PY008: tail piece, G 3/4" F flat seat nut x G 3/4" F
- R176PY018: adjustable tail piece, G 3/4" F flat seat nut x G 3/4" F

#### Optional accessories for R146CX005

- P15FY005: pair of two tail pieces, G 1" F flat seat nut x Rp 1"

## Technical data

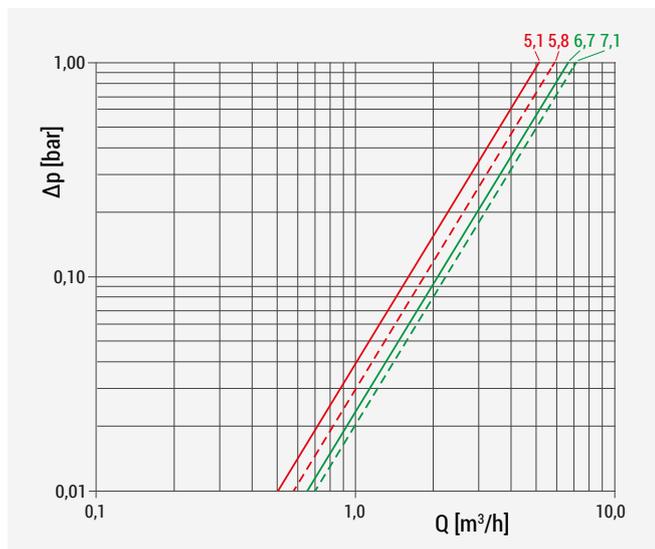
- Fluid: water, glycol-based solutions (max. 50 % of glycol)
- Temperature range: 5+90 °C
- Max. inlet pressure: 10 bar
- Filter: 300 µm
- Magnetic capacity: 13000 Gauss for 3/4" dirt separator (red magnet)  
12100 Gauss for 1" dirt separator (brass magnet)

**NOTE.** For use with higher temperatures and/or pressures, replace the drain cock with a brass plug (code R92X003).

### Materials

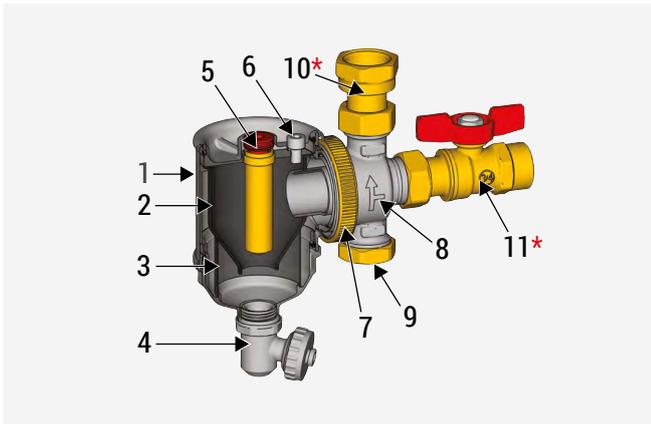
- Body and inlet/outlet fitting: brass CW617N - UNI EN 12165 nickel plated
- Cyclonic chamber: nylon 66 glass-filled 30 % (PA66GF30)
- Filter: AISI 304 stainless steel
- Gaskets: EPDM
- Magnet: neodymium (N42H) for 3/4" dirt separator (red magnet)  
neodymium (N35H) for 1" dirt separator (brass magnet)

### Losses of pressure



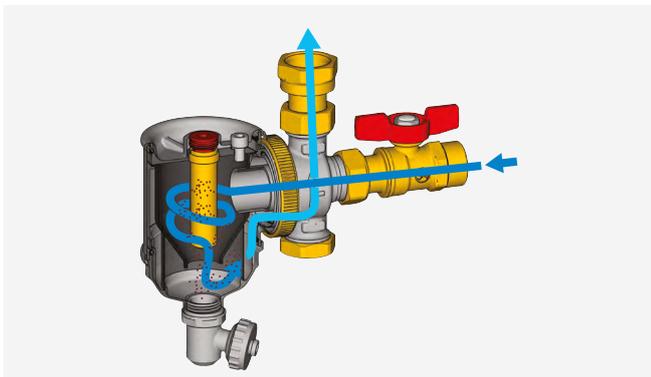
CONFIGURATION	CURVE ON THE GRAPH	Kv
<b>In-line pipes</b>		
	R146CX004 (3/4")	5,1
	R146CX005 (1")	6,7
<b>90°-angled pipes</b>		
	R146CX004 (3/4")	5,8
	R146CX005 (1")	7,1

## Components

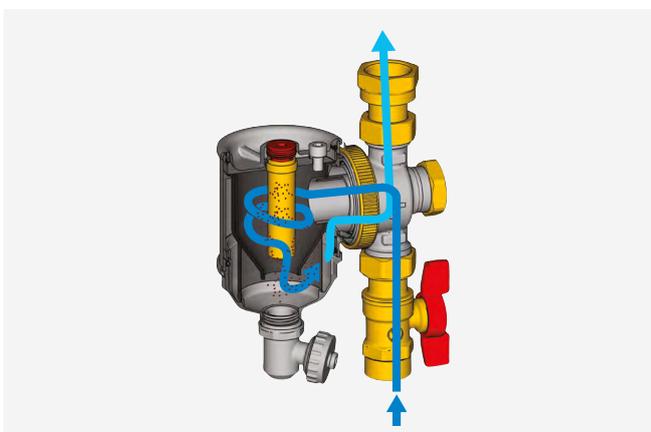


- |    |                                            |
|----|--------------------------------------------|
| 1  | Dirt separator body                        |
| 2  | Cyclonic chamber                           |
| 3  | Filter                                     |
| 4  | Adjustable drain cock                      |
| 5  | Magnet housing and magnet                  |
| 6  | Air vent screw                             |
| 7  | Fitting lock nut                           |
| 8  | Adjustable inlet/outlet fitting            |
| 9  | Cap                                        |
| 10 | Flat seat tail piece <b>*(Optional)</b>    |
| 11 | Interception ball valve <b>*(Optional)</b> |

## Operation



- |  |                                                         |
|--|---------------------------------------------------------|
|  | Impure water flowing into the dirt separator            |
|  | Impurity-free water flowing out from the dirt separator |



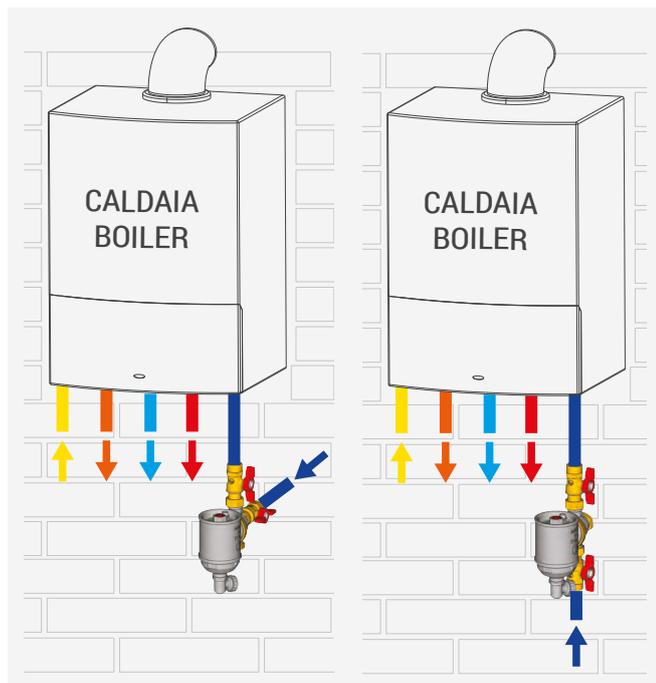
The water flows into the dirt separator and is then channeled into the cyclonic chamber where a vortical motion enhances particle separation; this area also features a magnet that retains metal impurities.

A metal filter below the cyclonic chamber holds the impurities decanting from the chamber itself on the bottom of the separator.

The dirt separator features a screw on top which releases air upon initial operation (see "Installation" paragraph).

The separator can be cleaned without being disassembled and/or switching off the system by opening the drain cock on the bottom of the separator - after pulling out the magnet from its housing from the top (see "Maintenance" paragraph).

## Installation



- Heating system return
- Heating system delivery
- Domestic cold water
- Domestic hot water
- Gas supply

In order to protect the boiler from the impurities in the heating system, the R146C dirt separator must be installed on the heating return circuit.

Its compact size enables to install it right under a wall-mount boiler.

Leave a free space on the upper side of the separator, at least 50 mm, to easily remove the magnet.

**NOTE.** To facilitate maintenance operations, it is recommended to install a shut-off valve upstream and downstream of the R146C dirt separator.



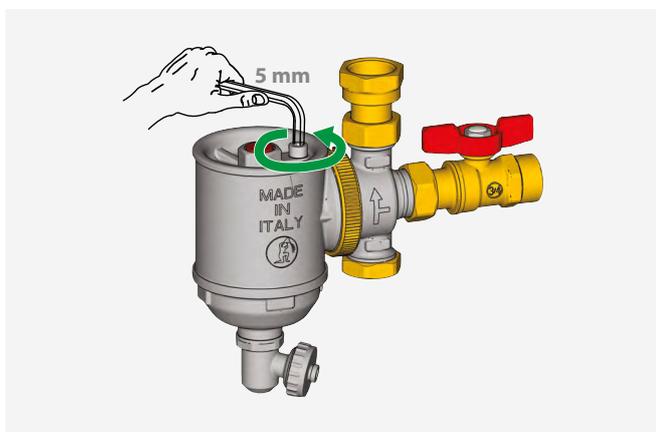
Loosen the ring nut (ref. 7 - Components) to adjust the orientation of the water outlet/inlet fitting (ref. 8 - Components), place the fitting in the desired position and tight the ring nut. Connect one inlet and the outlet of the inlet/outlet fitting to the heating system and screw the cap included with the dirt separator, on the unused inlet.

The main body should always be in vertical position with the drain facing down.

To drain the impurities decanted on the bottom of the separator it is possible to open the adjustable drain cock (ref. 4 - Components).

**WARNING.** The dirt separator is equipped with a magnet that causes magnetic fields  $\text{U}$ , which may damage electronic devices (pacemakers included  $\text{H}$ ) near the circuit.

### Air vent screw



On top of the dirt separator is a screw to vent air from the system during first operation (ref. 6 - Components).

Release the air by turning the screw in counter-clockwise direction with a 5 mm Allen spanner.

Tighten the screw clockwise once the air has been removed.

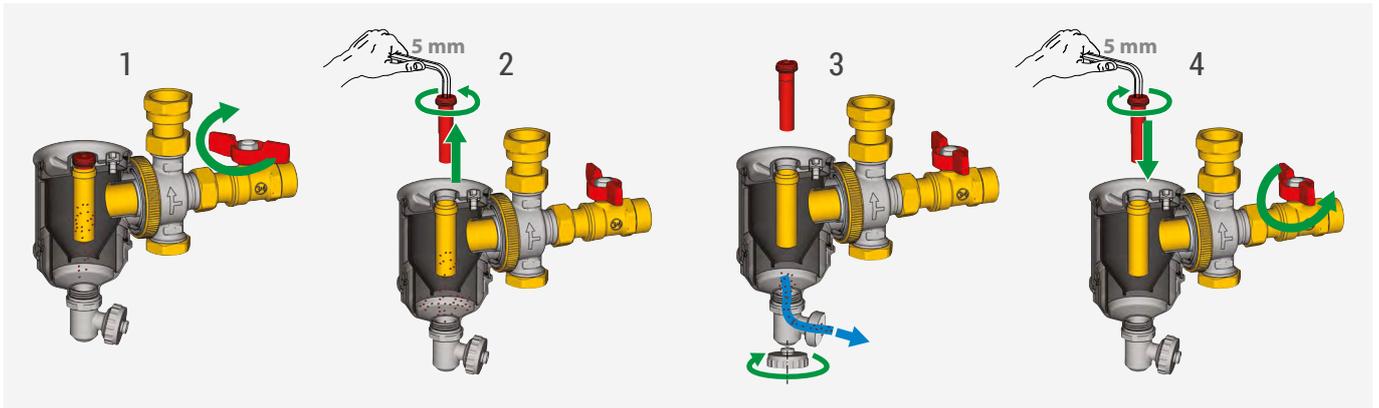
## ➤ Maintenance

### How to clean the dirt separator

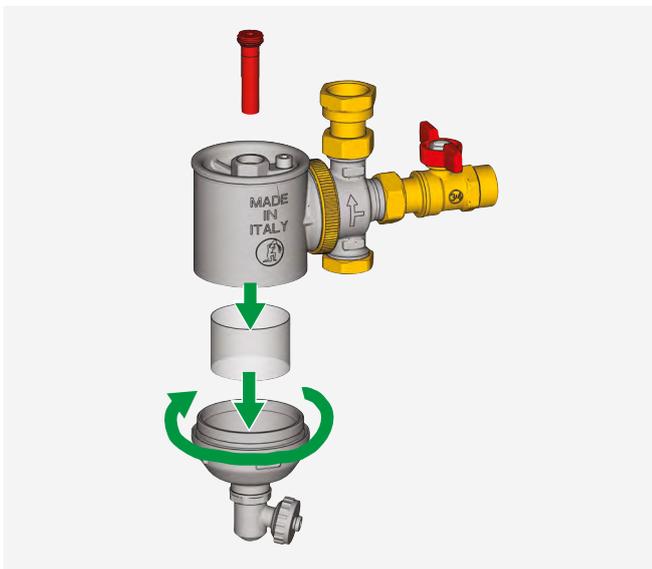
During system operation, impurities collect on the surface of the magnet housing and on the bottom of the dirt separator. The dirt separator requires no shutting off and disassembling to be cleaned; however we recommend carrying out these operations with no flow inside the dirt separator (by closing the interception ball valves).

To clean the separator and remove impurities, follow the steps below:

- 1) Shut off the interception ball valves;
- 2) Pull out the magnet from its housing by unscrewing it in counter-clockwise direction with a 5 mm Allen spanner. The impurities collected on the housing surface will deposit on the bottom of the separator;
- 3) After a few minutes, take the cap from the drain cock, and place it on the bottom of the cock, then rotate counter-clockwise to open the drain cock and discharge the impurities in the dirt separator;
- 4) Once the impurities have been removed, close the drain cock and reinsert the magnet in its housing, screwing it in clockwise direction. The separator will start working normally.



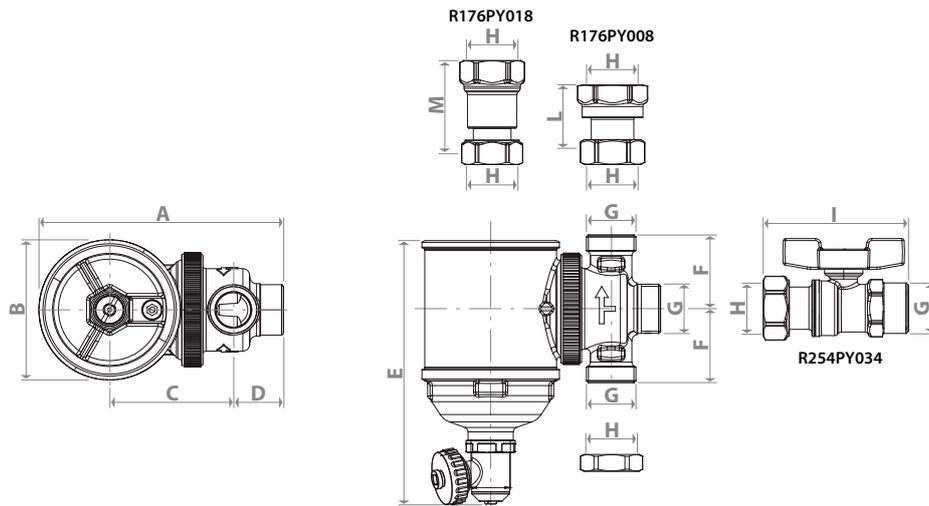
### Removing the filter (ref. 3 - Components)



For a more thorough cleansing, proceed as follows:

- 1) Turn off the system and intercept the fluid with ball valves, upstream and downstream of the separator to prevent water from flowing inside the dirt separator;
- 2) Unscrew the dirt separator base in counter-clockwise direction;
- 3) Remove the filter from the dirt separator to clean it;
- 4) Fit the filter back in and screw the separator back on its base.

## ➤ Dimensions



PRODUCT CODE	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	L [mm]	M [mm]
R146CX004	126,5	73	64	26	141	39,5	G 3/4"M	G 3/4"F	75	33	49÷62
R146CX005	139	73	70	33	186	43	G 1"M	G 1"F	-	-	-

## ➤ Product specifications

### R146C

Adjustable magnetic dirt-separator, equipped with inlet/outlet fitting with G 3/4"M or G 1"M connections, G 3/4"F or G 1"F cap, adjustable drain cock and brass magnet housing. Nickel plated brass body CW617N - UNI EN 12165. Cyclonic chamber made of synthetic material. Filter 300 µm. Neodymium magnet. Magnetic capacity: 13000 Gauss for 3/4" dirt separator (red magnet); 12100 Gauss for 1" dirt separator (brass magnet). EPDM gaskets. Temperature range 5÷90 °C. Max. working pressure 10 bar. Fluid: water, glycol-based solutions (max. 50 % of glycol).

**⚠ Safety Warning.** Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

**♻ Package Disposal.** Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

**ℹ Additional information.** For more information, go to [giacomini.com](http://giacomini.com) or contact our technical assistance service. This document provides only general indications. Giacomini S.p.A. may change at any time, without notice and for technical or commercial reasons, the items included herewith. The information included in this technical sheet do not exempt the user from strictly complying with the rules and good practice standards in force.

**♻ Product Disposal.** Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.