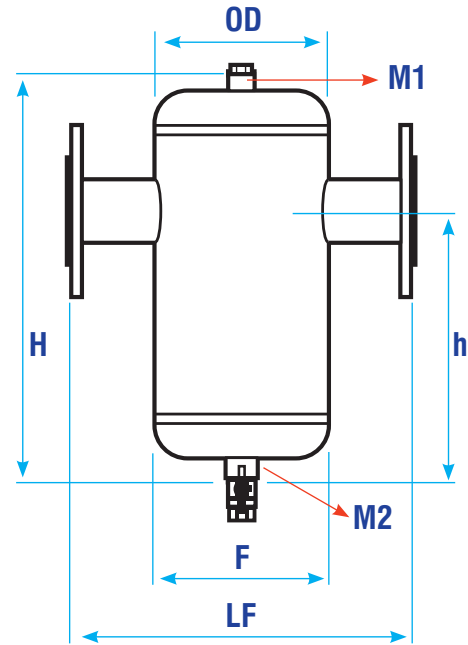
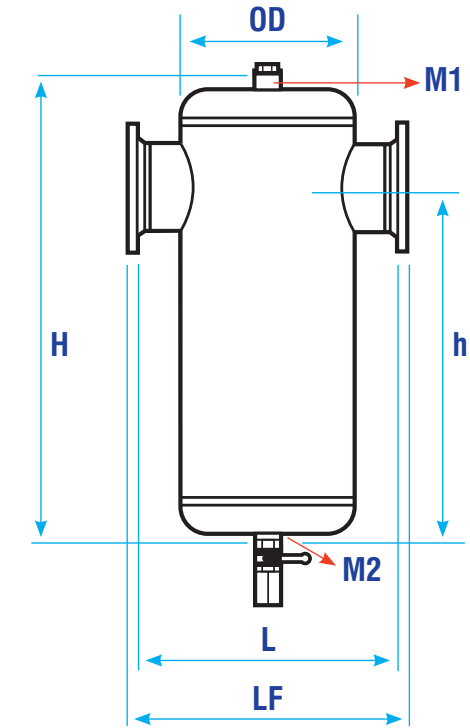


8. Product dimensions

Fernox CF1 Magnetic Dirt Separator – Standard Flow



Fernox CF1 Magnetic Dirt Separator – High Flow



Connection DN	OD mm	L mm	LF mm	Standard flow: Nom. 1.5 m/s Nom. = 1.5 m/s			High flow: Nom. 3 m/s Max = 3 m/s			M1	M2				
				H mm	h mm	Max Flow L/s	Max Flow m3/h	Max Flow kPa	H mm			h mm	Max Flow L/s	Max Flow m3/h	Max Flow kPa
50	168.3	330	350	398	261	3.3	12	3	565	417	5.8	2.1	11.8	1/2"	1"
65	168.3	330	350	398	261	6.3	22.5	2.7	565	417	10.0	36	11.6	1/2"	1"
80	219.1	450	470	522	347	8.3	30	2.9	645	447	15.0	54	12.4	1/2"	1"
100	219.1	455	475	522	347	12.5	45	3.7	645	447	23.3	84	14.6	1/2"	1"
125	323.9	615	635	712	447	20.8	75	4.2	982	734	36.7	132	16.8	1/2"	1"
150	323.9	615	635	712	447	31.3	11.5	4.9	982	734	52.8	190	19.4	1/2"	1"

Operating pressure: 0-10 bar

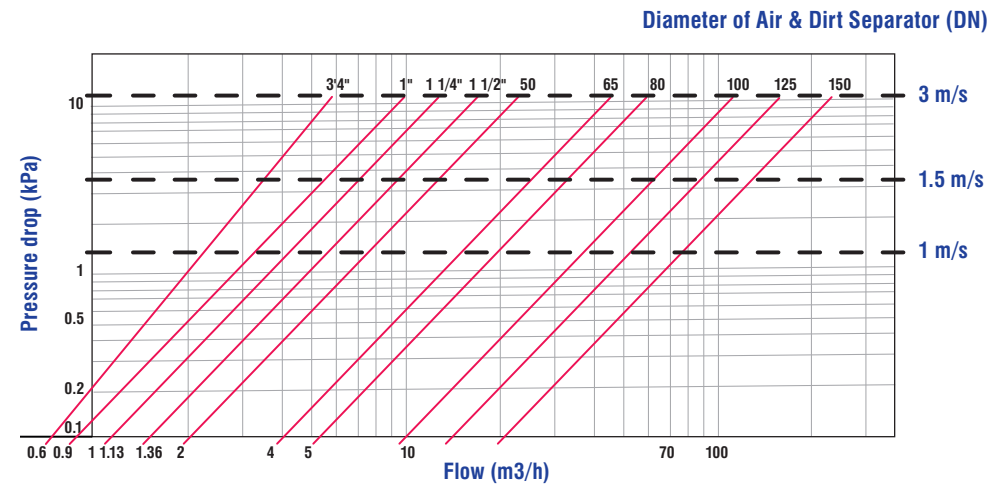
Fluid Temperature : 0-110 °C

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9. Pressure drop chart



Example:

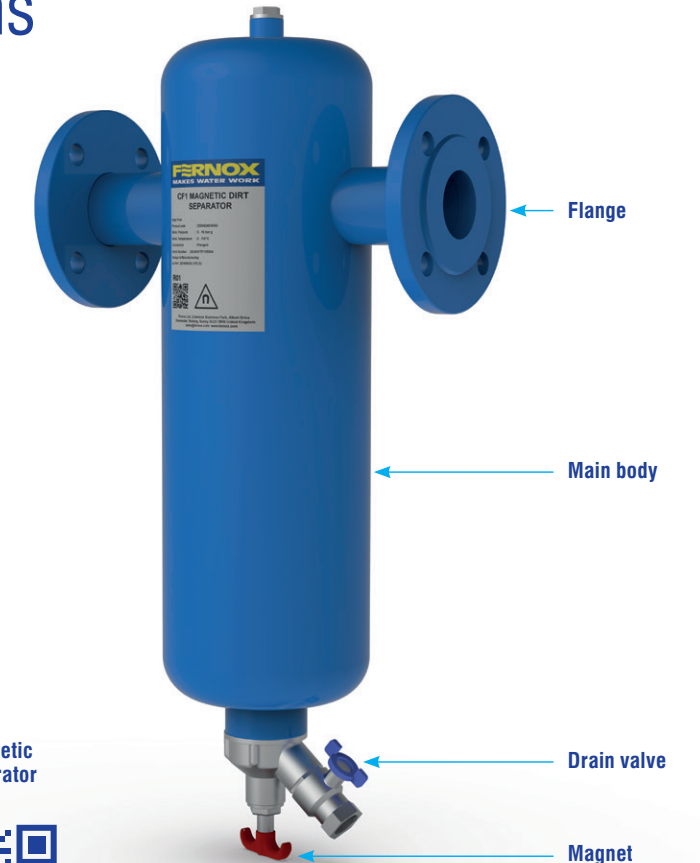
When the water flow is 70 m3/h pressure drop for the DN 150 CF1 Magnetic Dirt Separator:

- From the 'Flow' axis at 70 m3/h at the point A, move vertically to the CF1 Magnetic Dirt Separator dimension DN 150 curve at point B. When the water flow is 70 m3/h pressure drop for the CF1 Magnetic Dirt Separator:
- Move left from point B to meet the 'Pressure drop' axis at point C, for this example pressure drop will be 1 kPa.

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CF1 Magnetic Dirt Separator

Instructions



CF1 Magnetic Dirt Separator
Standard Flow



CF1 Magnetic Dirt Separator
High Flow



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1. Introduction

1.1 About the device

The **Fernox CF1 Magnetic Dirt Separator** improves the quality of your heating installation.

- For an overview of the product, refer to section 2.1.

- For the intended use, refer to section 2.3.

CF1 Magnetic Dirt Separator is designed and manufactured according to the Sound Engineering Practice as stated in the Pressure Equipment Directive (2014/68/EU). This manual applies to all product variations listed below.

Product Code	Connection size (DN) code
CF1 Magnetic Dirt Separator Standard Flow	
33006239/0050	050: DN50
33006239/0065	065: DN65
33006239/0080	080: DN80
33006239/0100	100: DN100
33006239/0125	125: DN125
33006239/0150	150: DN150
CF1 Magnetic Dirt Separator High Flow	
33006240/0050	050: DN50
33006240/0065	065: DN65
33006240/0080	080: DN80
33006240/0100	100: DN100
33006240/0125	125: DN125
33006240/0150	150: DN150

1.2. Symbols

Throughout the instructions the following symbols are used:



Warning risk of injury or caution risk of damage



Caution risk of burns

2. Overview of the unit

2.1. Intended use

The **CF1 Magnetic Dirt Separator** (fully) automatically removes (magnetic) dirt from the system fluid (water and water/glycol mixtures).

2.2. Operating conditions

The **CF1 Magnetic Dirt Separator** is suitable for use in systems filled with water or mixtures of water and glycol up to 50%. The **CF1 Magnetic Dirt Separator** can be used in combination with Fernox chemicals/inhibitors. Please check that the materials in the **CF1 Magnetic Dirt Separator** are compatible with the materials and fluid used in your system. For more information contact your supplier. Operation in combination with other fluids may result in irreparable damage.



Warning

The **CF1 Magnetic Dirt Separator** cannot be used for drinking water, and dangerous or flammable substances. The unit should be used within the limits of the technical specifications as given in chapter 3. In case of doubt, always contact the supplier. The unit is not suited for outdoor use. If demineralised water is used to fill the system, a quality inhibitor such as **Fernox Protector F1** or **F9** must be used.

2.3. Scope of delivery

- 1 x **CF1 Magnetic Dirt Separator**
- Quick start guide
- Each Quick reference guide has a QR-scan code with a direct link to this user manual

3. Technical specifications

3.1. Operating Characteristics

Item	All types
Working pressure (bar-g)	0-10
Working temperature (°C)	0-110
Nominal flow velocity (m/s)	1.5
Maximal flow velocity of high flow speed units (m/s)	3.0
Flange type of flanged units	PN16 (DIN 2633) (EN1092)

3.2. Quality control specifications

3.2.1. Leak test specifications
These are the specifications of the quality control at Fernox.

Item	All types
Test pressure (bar-g)	>15
Test medium	Water and air
Test time (sec.)	240
Approval criterion	No leakage

3.2.2. Standards

Item	All types
Construction	Pressure Equipment Directive 2014/68/EU – Sound Engineering Practice
Quality, safety and environmental aspects	EN-ISO 9001 EN-ISO 14001 EN-ISO 45001

4. Safety

4.1. Safety Instructions

- Warning** Installation and maintenance may only be carried out by a qualified installer.
- Warning** When working on the unit, always ensure there is no pressure in the unit, let it cool down and remove the water from the unit. This is not applicable when draining dirt from the unit.
- Warning** Do not touch the unit or the pipework when the system is in operation. The surfaces may be hot and cause burns.
- Caution** Always install the unit body vertically, with the automatic air vent (if available) on top and drain valve at the bottom.

5. Installation and commissioning

5.1. Installation conditions

- Install the unit in a frost-free, well-ventilated area.
- Install the unit in accordance with the local guidelines and rules.
- Install the unit stress free and with the body in vertical position.
- Do not use the unit as a support for pipe work
- It is not allowed to weld the unit to the pipework or other external items unless the unit is specifically designed to be welded into the pipework.
- It is not allowed to modify the unit.
- Apply the separately supplied product labels if the labels on the product are not visible; for instance after the unit has been insulated.
- The unit operates independent of the flow direction.
- If a drain pipe is fitted, make sure that this pipe is fitted stress and vibration free to the drain valve. Preferably, a flexible pipe or pipe parts should be used (e.g. a hose).

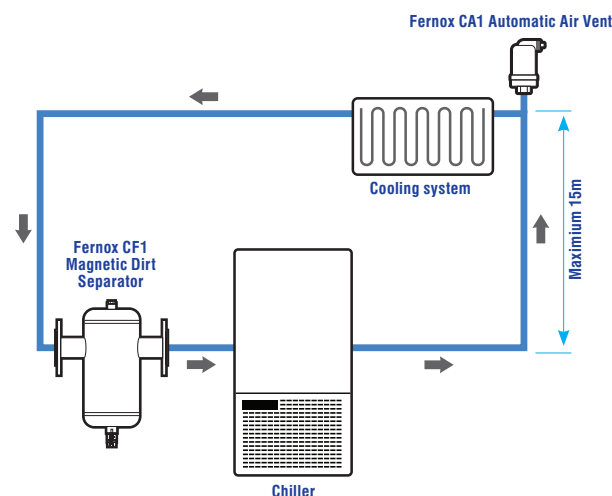
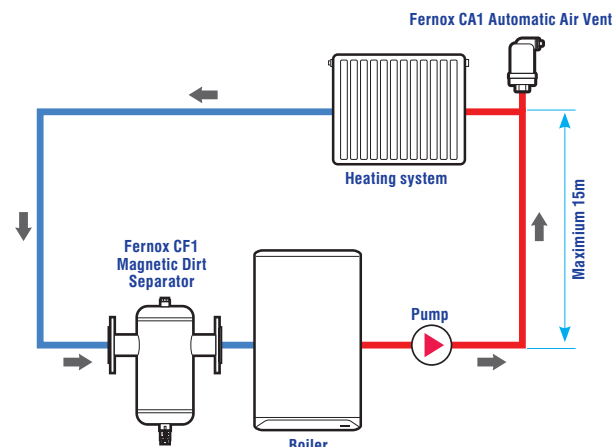
5.2. Installing the unit

5.2.1 Mounting the unit

- Attach the pipework to the to the unit. Make sure that the unit is installed stress free.
- Tighten the fasteners to the correct torque value of the pipework.



The **Fernox CF1 Magnetic Dirt Separator** should always be installed on the return pipework close to the equipment that requires protection. In heating systems this should be on the return to the boiler. In chilled water systems the unit must be located on the return close to the chiller.



Caution

5.3. Commissioning

Gradually fill the system and pressurise according to the system design parameters.

Once the system is running, check for leaks (in 3.2.1), correct flow direction, and confirm that the unit is installed in accordance with the design flow rate (in 3.1).

Carefully pull down the magnet to see if the it can be pulled down and returns to its correct position.

6. Preventative maintenance

6.1 Maintenance schedule for the Fernox CF1 Magnetic Dirt Separator

Task
Drain the dirt from the unit.

Interval
The first month after installation and after that on a regular basis, dependent on the amount of dirt in the system.

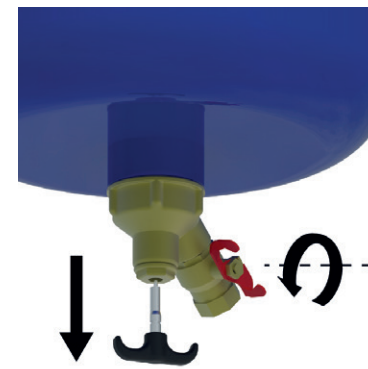
6.2. Drain the dirt from the unit



Warning

- The main body and the piping may be hot.
- Hot water or steam may escape during the procedure.

- Remove the safety plug.
- Pull down the magnet using the handle.
- Connect a hose to the drain valve. Make sure that the hose is connected to a drain.
- Move the magnet through the unit.
 - Gradually pull down the magnet.



Caution

- Caution – Do not use force.**
- Gradually let the handle return to the original position.
- Repeat the steps one or two times for the best result.

- Gradually open the drain valve for a short period.

Note: Restrict the amount of water that gets drained off.

- Close the drain valve.
- Disconnect the hose from the drain valve.
- Install the safety plug.
- Check the system pressure. If it is necessary, refill the system.

6.3. Clean or replace the CF1 Magnetic Dirt Separator Standard and High Flow



Caution

- Make sure that there is no pressure in the unit.
- Make sure that the unit has cooled down.
- Make sure that the unit is drained prior to opening the unit.
- Do not use corrosive chemicals.
- Make sure that the unit is correctly supported at the base of the separator. Be aware that the **CF1 Magnetic Dirt Separator** may be considerably heavier due to captured debris.

6.3.1. Prepare the unit for cleaning or replacement

- Remove the pressure from the unit.
- Let the unit cool down.
- Support the bottom and **CF1 Magnetic Dirt Separator** with appropriate supports, hoisting or lifting devices.

7. Warranty

Fernox covers the product for a warranty period of 2 years as long as it is used in the correct manner and under the terms indicated in the technical specifications listed.

To activate your warranty, please register your product by scanning the QR code.

