



Rev. 04/2024

## **MG COMPACT**

Compact self-cleaning magnetic dirt separator-filter for boiler rooms.

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Compact self-cleaning magnetic dirt separator-filter for boiler rooms.

**+** Removes any impurity

Self-cleaning

Maintains optimum system efficiency

Application in industrial, commercial and medium and large-scale civil systems

Reinforced stainless steel filtering mesh with 100 micron filtering degree

Fitted with a dosage point to add treatment fluids, easily accessible

Limited overall dimensions (in relation to the product category)

Reversible connections

Optional in-line installation on boiler rooms



Reduced maintenance costs:

- Magnets protected from contact with water, easy to clean
- The large removable basket with check valve prevents impurities from falling into the filter
- The large water content extends maintenance intervals
- The possibility of cleaning the filter without emptying completely reduces the amount of chemical additives to be replenished after each maintenance operation

Anti-condensation insulation casing upon request (code 3611.00.02)



## PRODUCTION RANGE

Figure	Code	Size	Connections
	3602.04.00	1/2"	Threaded UNI-EN-ISO 228
	3602.05.00	3/4"	Threaded UNI-EN-ISO 228
	3602.06.00	1"	Threaded UNI-EN-ISO 228
	3602.07.00	1"1/4	Threaded UNI-EN-ISO 228
	3602.08.00	1"1/2	Threaded UNI-EN-ISO 228
	3602.09.00	2"	Threaded UNI-EN-ISO 228
	3611.00.02	Universal	-

## DESCRIPTION

**MG Compact, multifunction compact self-cleaning magnetic dirt separator-filter for boiler rooms**, solves plant problems due to pollution resulting from particles of **sand and rust that form due to corrosion and incrustations** during the normal operation of a system.

### OPERATING PRINCIPLE

Through its effective and constant action, the filter collects all the impurities present in the system, preventing them from circulating within it, thus avoiding wear and damage of all the components that form the system.

The impurities blocked by the filter are accumulated inside the basket. You can start cleaning by opening the designated discharge valve.

### USE

**MG Compact** is used to protect heating systems.

**Thanks to its powerful magnetic capacity, its size and the threaded connections, it is used in industrial, commercial and medium and large-scale civil systems.**

### CAUTIONS

In order to function properly, the filter must be installed in a **vertical position**, with the impurity drain valve facing downwards.

### WARNINGS

This filter contains a powerful magnet and strong magnetic fields are present inside it.

We recommend the holders of pacemaker devices to keep a safe distance during filter operation and/or maintenance. Pay attention when using electronic devices near the magnets, to avoid affecting their operation.

## CONSTRUCTION FEATURES

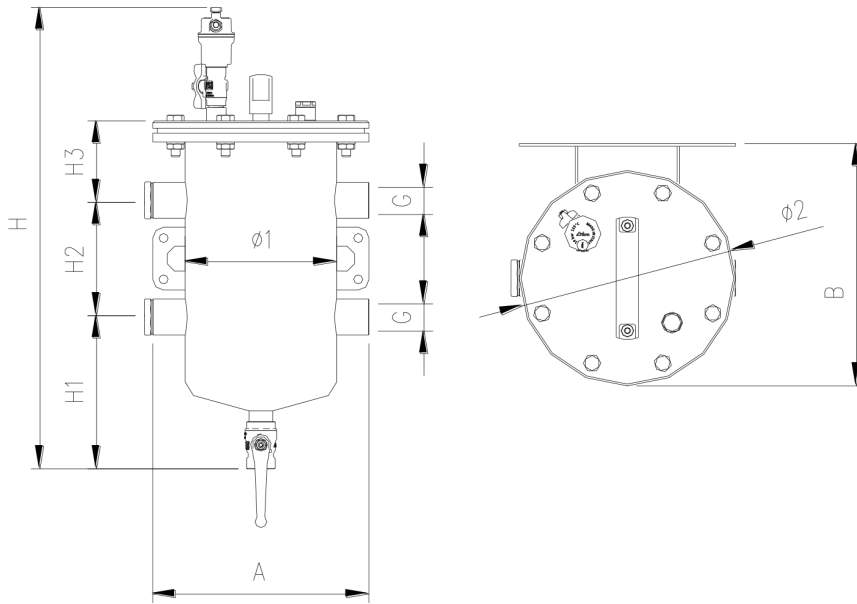
<b>Main body</b>	Steel painted on the outside (*)
<b>Cover</b>	Steel painted on the outside (*)
<b>Ball valve body and air vent valve</b>	Brass
<b>Seals</b>	EPDM PEROX
<b>Filtering basket</b>	AISI stainless steel
<b>Neodymium magnet</b>	B = 12,000 Gauss
<b>Number of magnets:</b>	1
<b>Connections</b>	Threaded UNI-EN-ISO 228
<b>Dosing point connection (to add treatment fluids)</b>	G 1/2" (plugged when supplied)

(\*) should be regularly washed with warm water and mild liquid detergent, followed by a fresh water rinse to maintain the attractive appearance of the powder cured film. The use of abrasive cleaners is not recommended, nor is the use of active organic solvents.

## TECHNICAL FEATURES

<b>Usable fluid</b>	Water Water + Glycol 30%
<b>Maximum fluid temperature</b>	95 °C
<b>Maximum operating pressure</b>	10 bar (1000 kPa)
<b>Degree of filtration</b>	100 micron

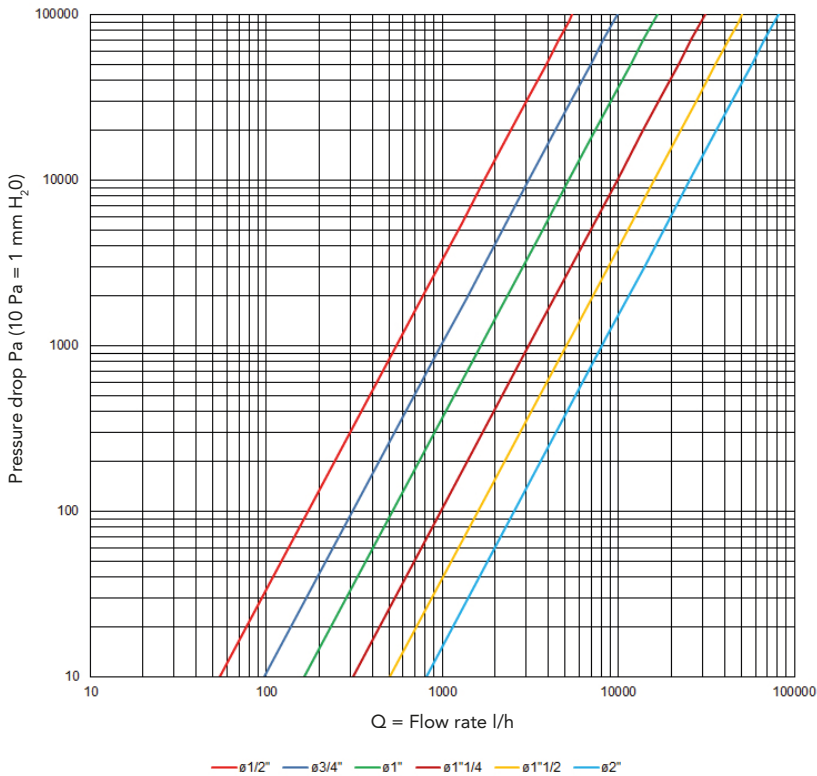
## DIMENSIONAL FEATURES



Code	Size	A [mm]	B [mm]	Ø 1 [mm]	Ø 2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	H [mm]
3602.04.00	1/2"	240	270	168	240	169	130	89	514
3602.05.00	3/4"	240	270	168	240	169	130	89	514
3602.06.00	1"	240	270	168	240	169	130	89	514
3602.07.00	1"1/4	240	270	168	240	169	130	89	514
3602.08.00	1"1/2	240	270	168	240	169	130	89	514
3602.09.00	2"	240	270	168	240	169	130	89	514

## FLUID DYNAMICS FEATURES

Flow rate diagram - pressure drop



Code	Size	Kv [m <sup>3</sup> /h]
3602.04.00	1/2"	5,50
3602.05.00	3/4"	9,87
3602.06.00	1"	16,59
3602.07.00	1"1/4	31,10
3602.08.00	1"1/2	50,60
3602.09.00	2"	81,00

## OPERATING PRINCIPLE

By going through a set course, the fluid is forced to enter the filtering chamber where, through the simultaneous action of:

- filtering cartridge
- magnet
- specific dimensioning of the filtering chamber section

the water full of debris is suitably filtered.

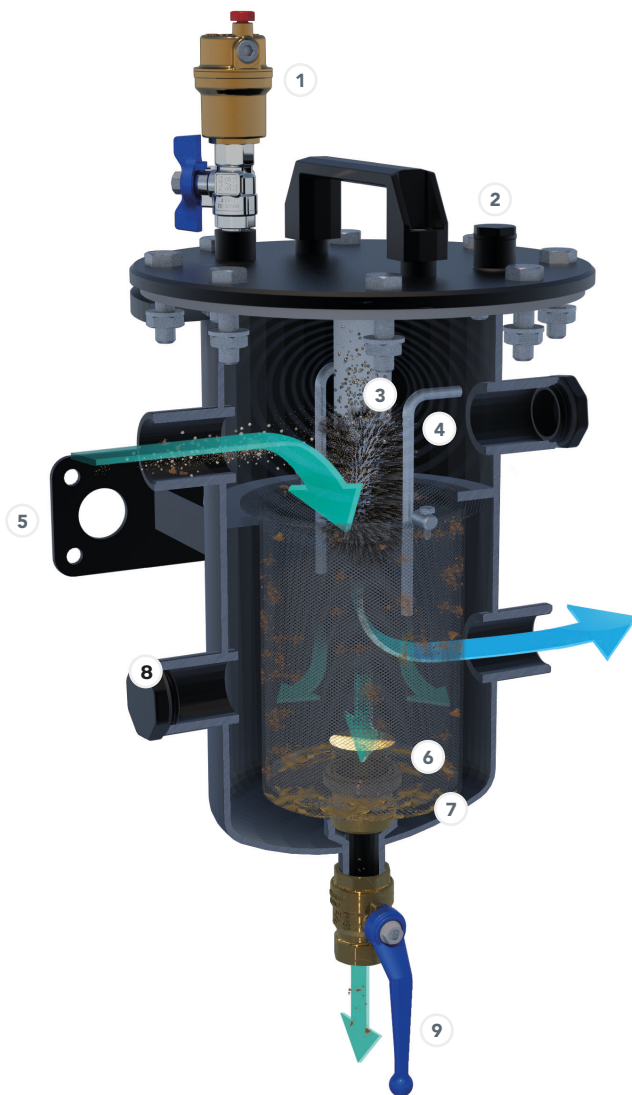
The first action that promotes correct filtration is the sudden cross-section variation (the filtering chamber has a much greater diameter than the conduit), which slows down the fluid motion and, consequently, the entrainment rate of the particles suspended in it.

The heavier particles fall downwards due to gravity, which prevails over the drag force, giving this filter the typical properties of common dirt separators.

However, lighter particles (larger than 100 microns) are retained inside the basket thanks to a direct filtration effect.

The magnet, positioned at the top end of the filter itself, blocks all impurities with magnetic characteristics (ferrous residues, metallic sludge).

**This way, all the magnetic (ferrous residues) and non-magnetic (sludge, sand, etc.) contaminants in the system are removed.**



- 1 AUTOMATIC AIR VENT VALVE**  
to eliminate air at the filling stage, complete with the ball shut-off valve.
- 2 DOSAGE POINT**  
to add treatment fluids. Easily accessible. Plugged when supplied. G1/2" plug.
- 3 MAGNETIC FILTERING UNIT**  
Powerful neodymium magnet to capture ferrous particles such as rust that form due to corrosion during normal operation of a system, metal debris, processing residues, etc.  
The magnet is protected from direct contact with water by a removable conduit that facilitates cleaning the filter.  
For further details, see the "Maintenance guide" section of this data sheet.
- 4 SUDDEN SECTION INCREASE**  
It causes the fluid to slow down.  
The settling of particles due to the effect of gravity is favoured.
- 5 WALL FIXING BRACKET**
- 6 FILTERING MESH**  
Stainless steel stretched mesh (100 micron filtration degree) contained in a basket that can be easily pulled out from above. This is equipped with an automatic closing shutter, located at the bottom, to prevent impurities from leaking during maintenance.
- 7 ACCUMULATION ZONE**  
Large and very far from the flow passage, resulting in less frequent maintenance work.
- 8 CONNECTION CLOSURE CAP NOT USED**
- 9 DRAIN BALL VALVE**  
Size 3/4".

- dirty water
- clean water

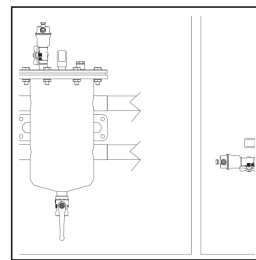
## INSTALLATION GUIDE

- It is recommended to install **MG Compact** on the primary circuit return (**generator inlet**) and in any case upstream of the devices that it must protect (circulators, exchangers, etc.). To allow for subsequent maintenance, make sure there is enough space around **MG Compact**;
- Drain the system and locate the delivery piping;
- Install the **shut-off valves** upstream and downstream of the filter, in

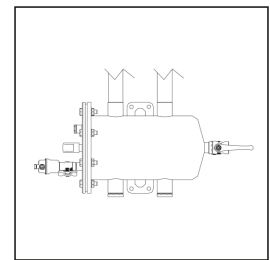
- order to allow scheduled maintenance work and filter cleaning to be performed;
- It is advisable to provide for a by-pass to avoid interrupting the service of the generator during filter cleaning operations;
- Install **MG Compact** making sure that all fittings are aligned properly;
- Install **MG Compact** according to one of the following configurations:



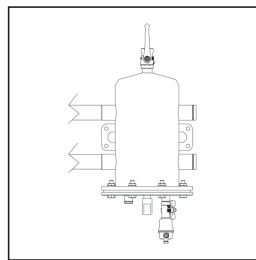
- Screw all the components supplied disassembled from the filter (impurity drain valve at the bottom of the filter, air vent valve and relative shut-off device and pressure gauges);
- In order to function properly, the filter must be installed in a vertical position, with the impurity drain valve facing downwards;
- After completing the installation, make sure that there are no water leaks or other leakage with the shut-off valves fully open.



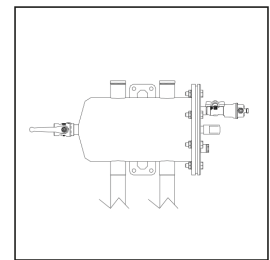
OK



NO

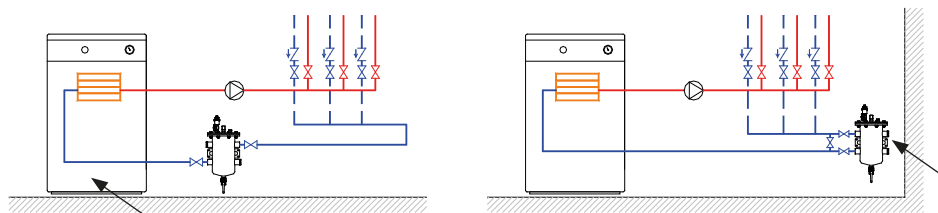


NO



NO

## APPLICATION DIAGRAMS



Layout 1:

MG Compact installed on the primary circuit return, at the generator inlet.

## MAINTENANCE GUIDE

It is important to **perform cleaning** at least **once a year**. In case of first application, perform the first inspection after a month.

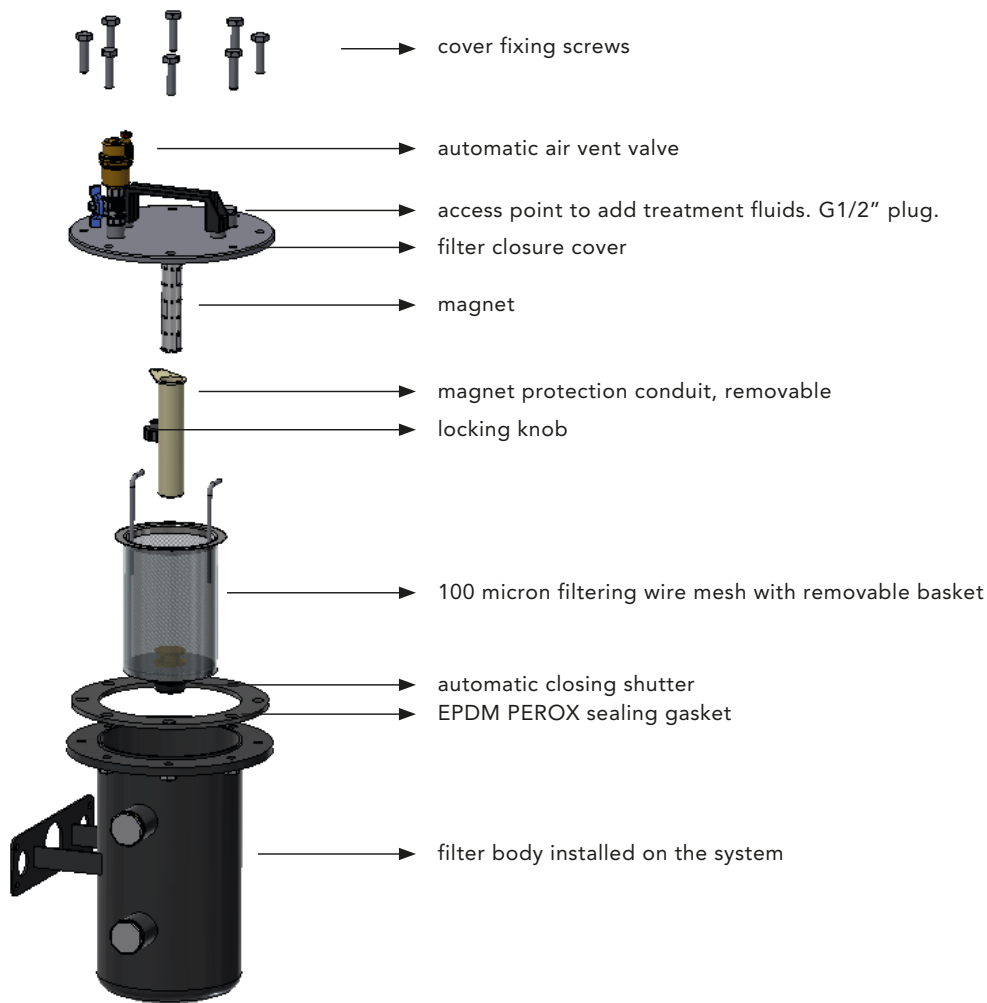
Before cleaning **MG Compact**, ensure the working environment is safe.

If the filter has not been installed with a by-pass, RBM recommends ensuring the generator is off and the system is allowed to cool at a room temperature before carrying out any maintenance intervention, in order to avoid damage and burns. If a filter is installed with a by-pass, simply wait until the water contained in it has cooled down sufficiently.

To properly clean and service **MG Compact**, follow the steps described below:

- Intercept the filter through the valves located upstream and downstream of the filter itself;
- Drain a small amount of water in the filter via the lower drain valve to lower the pressure in the filter;
- Unscrew the nuts and remove the screws securing the upper filter cover to the body;
- Remove the closure cover from the filter by ensuring you do not damage the magnet attached to it;

- Unscrew the locking knob of the magnet protection conduit;
- Remove the magnet protection conduit to easily remove the ferrous impurities caught by the magnets. Wash with water and thoroughly rinse to completely remove any impurities;
- Take out the filter wire mesh by using the designated basket and clean it or replace it. The automatic closing shutter on the bottom prevents impurities from entering inside the basket. Wash with water and thoroughly rinse to completely remove any impurities;
- Ensure the sealing gasket is not damaged; if necessary, replace it with code 9095-005.
- Place back the filter wire mesh;
- Place back the magnet production conduit and tighten the fastening knob. Tighten by hand; during this step, the use of tools is not required;
- Place back the top cover of the filter, the screws and tighten the fastening nuts;
- Open the shut-off valves again to open the hydraulic system;
- Ensure there are no leaks prior to recommissioning;
- Restore the correct amount of conditioning chemicals according to the amounts required by the designer.



## SPECIFICATIONS ITEMS

### 3602 SERIES

Multifunctional compact self-cleaning magnetic filter-dirt separator for boiler rooms, model **RBM MG Compact**, with the magnetic and non-magnetic dirt separation function, air separation and activation point, as well as system conditioning dosage. Complete with automatic air vent valve with shut-off device and ball valve to discharge impurities. Main body in painted steel on the outside. Closing cover in painted steel on the outside. EPDM PEROX hydraulic seals. Large-capacity filtration basket with filtering mesh with a 100 micron filtration degree extended across the whole surface with double stainless steel reinforcement mesh (external and internal). Automatic closing shutter at the bottom, to prevent dirt from leaking during maintenance. Permanent neodymium magnet, with dry assembly, externally protected by a removable conduit for easy maintenance and cleaning of the filter. Magnetic field B=12,000 gauss. Number of magnets: 1. UNI-EN-ISO 228 threaded connections. Usable fluid water and water with glycol 30%. Maximum operating pressure 10 bar. Maximum fluid temperature 95°C. Degree of filtration 100 micron. Available sizes 1/2" ÷ 2".

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