

Rev. 10/2020

SERIES 3715 MG2

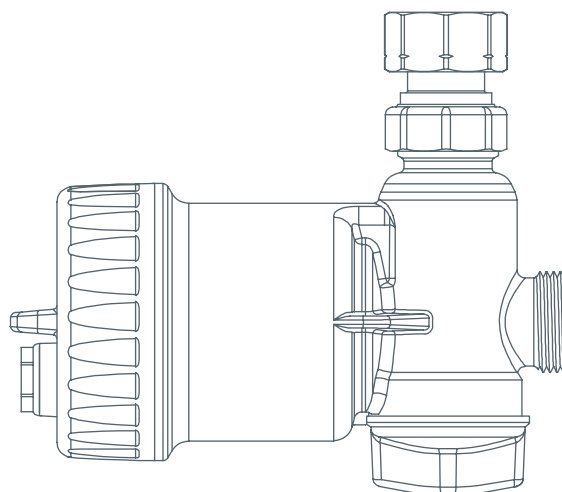
Under-boiler magnetic sludge remover filter.

SERIES 3715 MG2

Under-boiler magnetic sludge remover filter.

Patent pending




- +** Super compact
- Shut-off system included
- Triple filtration
- High efficiency
- Removes any impurity
- Fights corrosion
- Increases the lifespan of the boiler
- Maintains optimum system efficiency



PRODUCTION RANGE

Code	Size	Couplings
 3715.05.10	G 3/4"	M UNI-EN-ISO 228 / F UNI-EN-ISO 228 Flat seat connection to filter / swivel fitting

PRODUCTION RANGE - ACCESSORIES

Code	Description	Size	Connection on boiler side
 3174.05.00	Straight swivel fitting, for filter/boiler connection.	G 3/4"	F UNI-EN-ISO 228 (swivel fitting)
 3174.05.10	Curved swivel fitting, for filter/boiler connection.	G 3/4"	F UNI-EN-ISO 228 (swivel fitting)
 3174.05.30	Flexible extendible fitting, for filter connection.	G 3/4"	M UNI-EN-ISO 228

DESCRIPTION

OPERATING PRINCIPLE

Through its effective and constant action, the magnetic filter collects all the impurities present in the system, preventing them from circulating within it, thus avoiding wear and damage of the rest of the components making up the system, circulators and heat exchangers in particular.

MG2 performs a continuous protective action on the boiler.

USE

It is advised to install MG2 on the return circuit, at the inlet of the boiler, in order to protect it from any impurities in the system, especially during the start-up phase.

Thanks to its compact dimensions, it can be installed under the boiler, in systems for domestic use, where installation spaces are very limited and there is no room for a traditional dirt separator.

DEGREE OF FILTRATION

MG2 removes magnetic and non-magnetic particles that may cause damage to the system during the first day of operation. The continuous passage of the fluid through the filter during the normal operation of the system on which it is installed, gradually removes any dirt.

MAGNETIC EFFICIENCY

The magnetic filtration efficiency of MG2 in the indicated installation configurations is 80%, according to the test specification that simulates the amount of magnetite captured by the filter after 10 minutes of operation.



WARNINGS: This filter contains a series of magnets, therefore, 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

Cartridge body:	Polyamide PA66 +30% FV
Filter cap:	Polyamide PA66 +30% FV
Filtering cartridge:	AISI 304
Hydraulic seals:	EPDM PEROX
Magnets: B (MaxT) / B (RoomT)* < 1% (where MaxT = 130°C, RoomT = 21°C) Tested according to IEC 60404-5 & ASTM A977 regulations	Neodymium
Swivel fitting:	Brass

TECHNICAL FEATURES

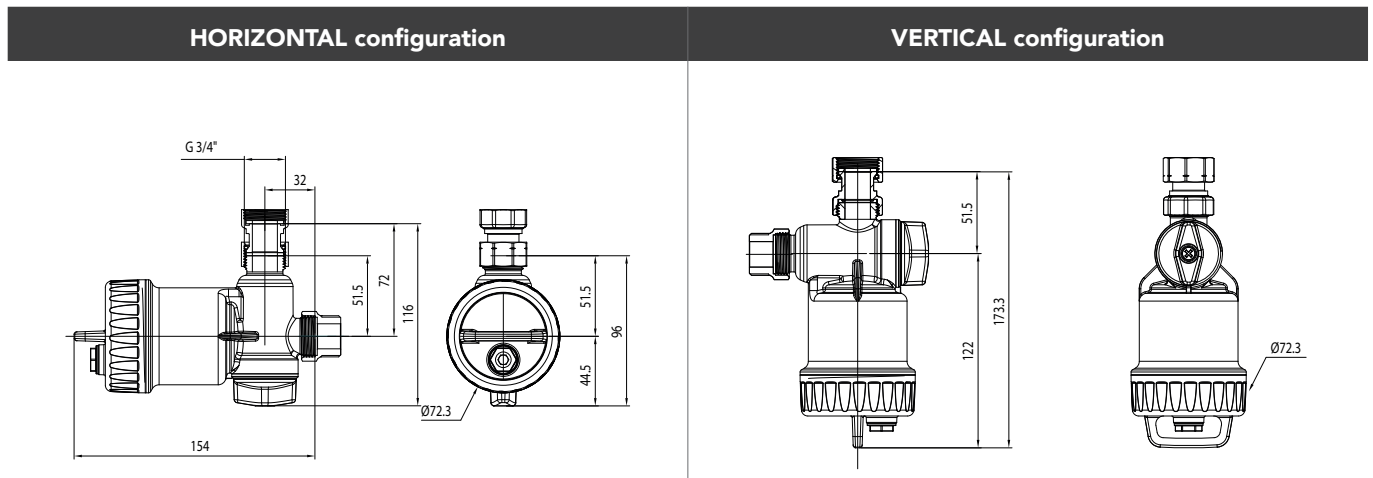
Compatible fluid:	Water, water + glycol
Max. operating pressure:	3 Bar
Operating temperature:	0÷90°C
Standard filter degree of filtration:	800 µm

Noise-induced (according to EN13443 and UNI 3822)

The noise induced by MG2 in the piping is 0 dB(A).

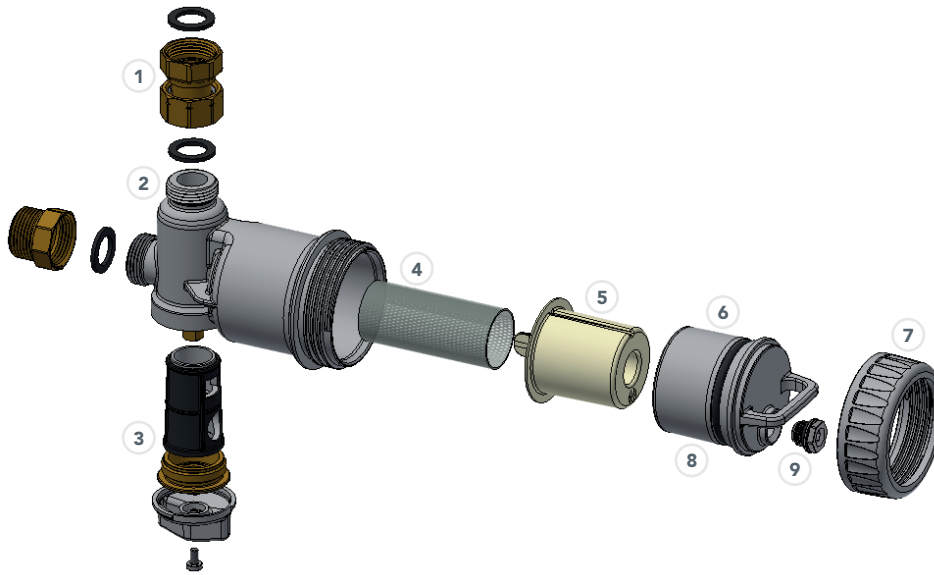
As specified in EN 13443 regulation, MG2 belongs to the I group, as well as all other products having noise levels < 20 dB(A).

DIMENSIONAL FEATURES



* Value with accessory ball valve installed code 3174.05.20

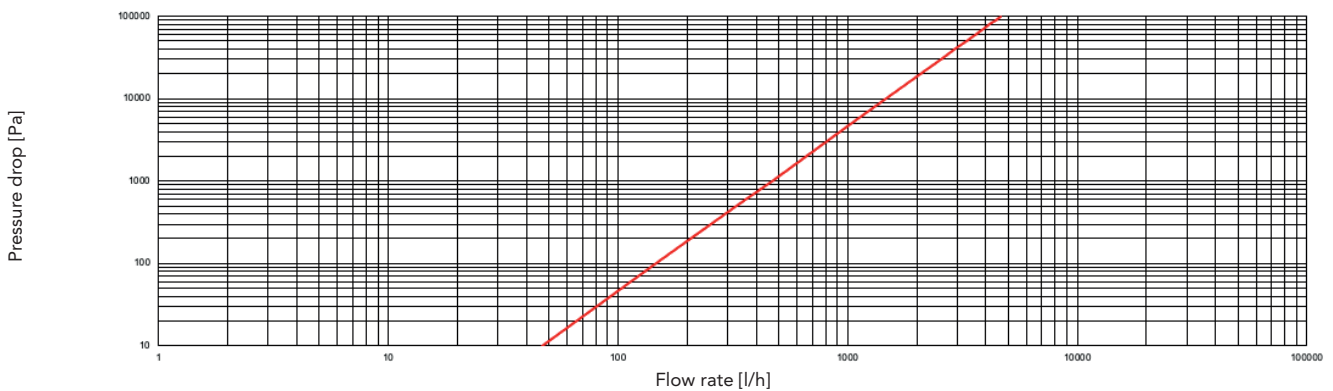
COMPONENTS DESCRIPTION



- 1 **Swivel connection:** It enables to easily connect the filter to connection G 3/4" M of the boiler.
- 2 **Threaded connections G 3/4":** The design choice to make all the threaded connections of the main body of the same dimensions, allows for extreme installation versatility. For further information, please see the "INSTALLATION" section on this technical data sheet.
- 3 **Shut-off system:** During maintenance, it allows to isolate the filter from the delivery and return circuit. THIS MINIMISES THE LEAKAGE OF ALREADY TREATED WATER PRESENT IN THE CLOSED CIRCUIT.
- 4 **Stainless steel filtering mesh.**
- 5 **Magnet protection conduit, removable.**
- 6 **Closure double filter cap.**
- 7 **Tightening ring nut.**
- 8 **Seal o-ring.**
- 9 **Safety drain plug:** By removing it, it is possible to drain the fluid from the main body of the filter and to perform programmed cleaning operations, after intercepting the filter. It can be used as a dosing point for system treatment chemical additives (aerosol system).

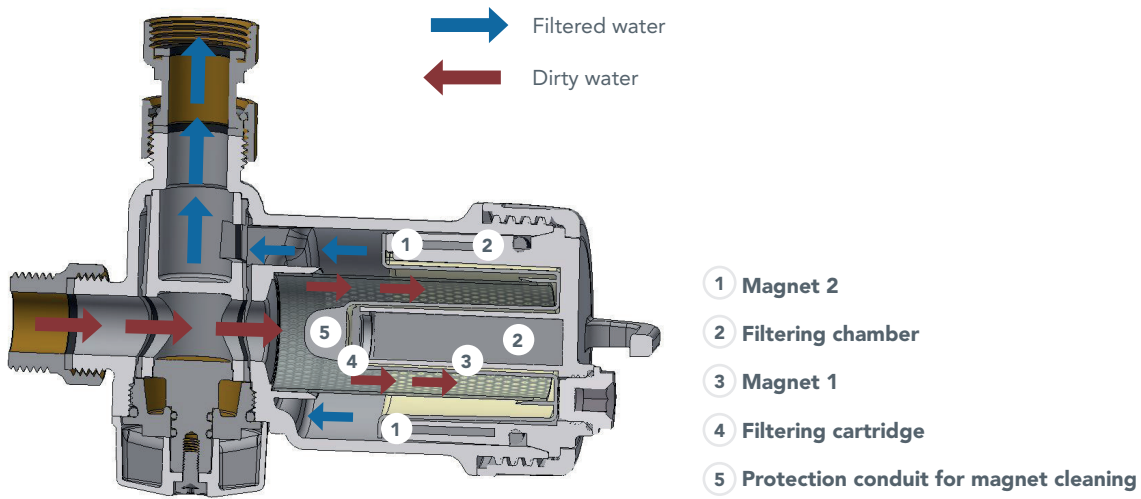
Note: It is advised that the boiler is off and the system is allowed to cool at room temperature before carrying out any maintenance intervention, in order to avoid burns.

FLUID DYNAMICS FEATURES



Size	Kv Angle (standard) [m³/h]	Kv Straight [m³/h]
G 3/4"	4.65	4.85

OPERATING PRINCIPLE



PRINCIPLE OF FILTRATION::

By going through a set course, the fluid is forced to cross the mesh of the cartridge and enter the filtering chamber.

The fluid inside the filtering chamber, regardless of the direction of installation, is subjected to the following filtration cycle:

- Magnetic (magnetic roughing filtration)
- Mechanical (filtration with stainless steel filter)
- Magnetic (finish filtration)

This, in addition to the direction of the fluid given by the specific internal geometry, ensures that the water, in the different phases, is filtered from ferrous sludge.

The filtering action is favoured by the sudden cross-section variation (the filtering chamber has a greater diameter than the conduit) which slows down the fluid motion and, consequently, the entrainment rate of the particles suspended in it, thus preventing them from avoiding the action exerted by the magnetic field.

The larger ferrous particles are filtered by the magnetic action of the first magnet, followed by direct mechanical filtration. The great innovation of MG2 is a third magnetic filtration which is able to capture

all the magnetic sludge that has passed the first two filtrations. The filtration cycle is always the same in both configurations:

- HORIZONTAL PACK.: magn-mech-magn
- VERTICAL PACK.: magn-mech-magn

The vertical filter installation also has the decanting effect, the heavier particles fall downwards due to gravity, which prevails over the drawing in force.

In this way, all magnetic (ferrous residues) and non-magnetic (algae, sludge, sand, etc.) contaminants in the system are retained in the filtering chamber.

The standard stainless steel cartridge was designed in order not to exert excessive resistance to the passage of fluid (low pressure drops) and acts by direct mechanical filtration without compromising the operation of the heating/cooling system.

The reduced filtration cartridge has a higher pressure drop and requires frequent maintenance, for this reason it is strongly recommended to use the reduced filtration cartridge only at start-up or upon first installation. After a few hours, clean and install the STANDARD cartridge.

THE SHUT-OFF SYSTEM:

To be used for maintenance with the boiler off, it allows to drain only the water in the filter, minimising the leakage of water already treated with chemical additives present in the closed heating/cooling circuit and avoiding continuous top-ups from the mains that can trigger chemical/physical processes again, that over time has reached the saturation stage.

Absolutely innovative and fully included in the filter, it performs the same function as two ball valves:

- One ball valve installed on the delivery
- One ball valve installed on the return

The passage of fluid is always total both on the delivery and return circuits, there are no section reductions to allow double shut-off with a single operation of the knob.

Turning the knob clockwise shuts off both the delivery and the return circuits and completely isolates the filtering chamber in which it will be possible to perform maintenance.

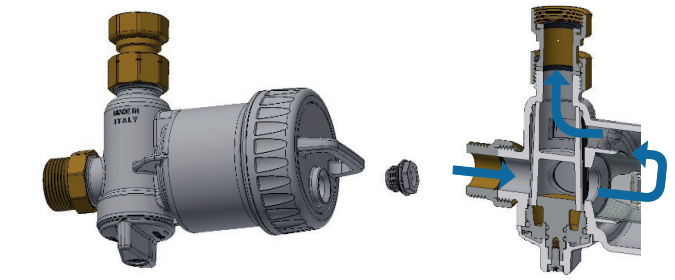
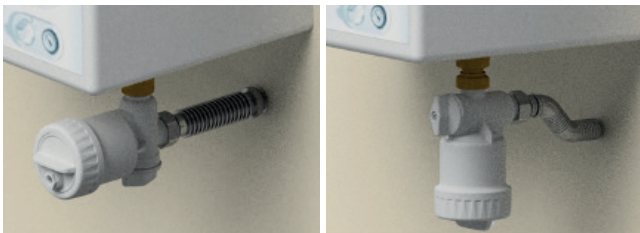
IMPORTANT: The MG2 shut-off system does not perform the tasks of the boiler shut-off ball valves. To be used only during maintenance operations with the boiler off. With the filter closed, the shut-off system must always be in the OPEN position.

DRAIN PLUG:

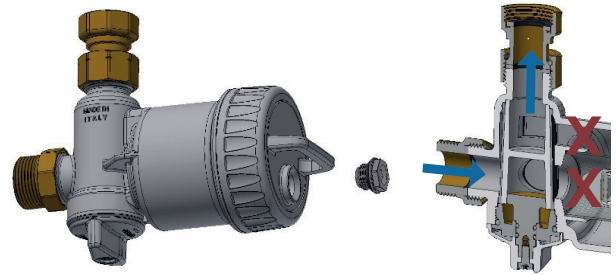
Plug to be opened with a 6mm hex socket spanner, to de-pressurise the filter before loosening the ring nut. This action makes a 3/8" threaded hole accessible that can be used to drain all the water present in the filtering chamber.

Using suitable adapters it is possible to use this access point to the system for the introduction of chemical additives into the circuit for the washing and protection of the system.

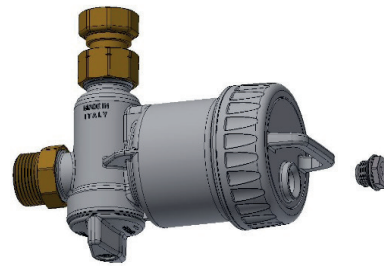
INSTALLATION:



MG2 OPEN position.
Guarantee of TOTAL passage



MG2 CLOSED position.
Filtering chamber completely isolated.



It is advised to install **MG2** on the return circuit, at the inlet of the boiler, in order to protect it from any impurities in the system, especially during the start-up phase.

MG2 can be installed horizontally or vertically, the shank with rotary nut included in the pack is used to connect the boiler and the connection on the circuit can be made with a flexible fitting (accessory **3174.05.30**).

MAINTENANCE INTERVENTIONS

FILTERING CARTRIDGE CLEANING::

It is possible to carry out periodical cleaning operations in 4 simple steps

Before cleaning MG1, ensure the working environment is safe. RBM recommends that the boiler 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.

1. Shut-off the filter by rotating the knob.
2. Loosen the plug using a 6 mm hex key. The little water in the filter gradually begins to flow out. Ensure that water is collected in a container of suitable dimensions.
3. Once the water flow is interrupted, completely remove the magnet holder lid by loosening the ring nut.
4. Extract the magnet protection conduit from the filter, so as to easily remove ferrous particles. Wash with water and thoroughly rinse under the tap to completely remove any impurities.

Ensure the O-ring seal is not damaged; otherwise replace it.

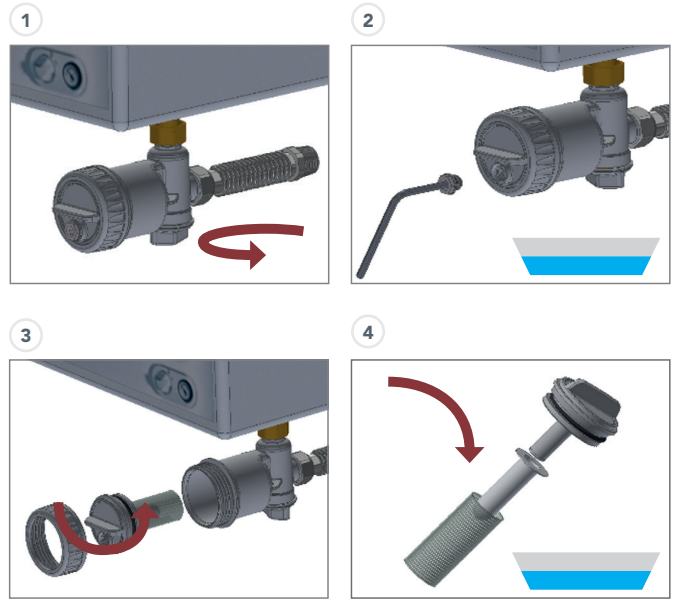
Reassemble in reverse order.

To guarantee a perfect hydraulic seal and at the same time avoid damaging the parts, when re-assembling the filter, comply with the following tightening torques:

- closure filter ring nut: torque 8-10 Nm
- drain plug: torque 4 Nm

Ensure there are no leaks prior to recommissioning.

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



SPECIFICATIONS

SERIES 3715

Under-boiler magnetic sludge remover filter, model MG2. Threaded fitting 3/4" M x 3/4" F. Polymer body. AISI 304 steel filtering cartridge. EPDM PEROX seals. Brass swivel fitting. Threaded connections MF UNI-EN-ISO 228. Max. operating pressure 3 bar. Operating temperature 0÷90 °C. Neodymium magnet. $B(T_{max}) / B(T_{room})^* < 1\%$ where $* T_{max} = 130\text{ °C} - T_{room} = 21\text{ °C}$. Reduced dimensions; double shut-off; Retains all impurities; Excellent hydraulic properties; Increases the lifespan of the boiler; Fights corrosion; Maintains optimum system efficiency; Total passage shut-off valves; Installation versatility.

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