Mag-Nus2

MAGNETIC, SELF CLEANING, DIRT SEPARATOR

CT3548.0_00
EN
October 2017

- Retains all impurities
- Self-cleaning
- Excellent hydraulic properties
- Can be mounted on vertical, horizontal and diagonal piping
- Increases the lifespan of the boiler
- Fights corrosion
- Maintains optimum system efficiency
- Reduced overall dimensions

PRODUCTION RANGE

Code	Size	Connection	Kv [m^3/h]
3548.05.00	G 3/4"	FF UNI-EN-ISO 228	9,50
3548.06.00	G 1"		10,30
On request	Ø 22	Copper compression pipe	9,50
On request	Ø 28		10,30

ACCESSORIES

Code	Description	
37.03.60		Degasser automatic air venting valve with protective cap. G 3/8" connections
2343.05.00		Connector for cleaning/washing system.

DESCRIPTION

Mag-Nus2 represents the solution to solve plant problems due to particle presence, especially rust and sand that are formed due to corrosion and scale during the normal operation of a system.

OPERATING PRINCIPLE: Through its effective and constant action, the magnetic filter collects all impurities in the system and prevents them from circulating: therefore it avoids wear and damage of all components of the system.

The impurities blocked by the filter accumulate at the bottom of the filter, until they are expelled when the discharge valve opens.

USE: It is advised to install *Mag-Nus2* 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.
It is important to **follow the direction indicated by the arrow** on the body to ensure the maximum efficiency of the filtering action.
The jointed part allows installation on vertical, horizontal and diagonal piping.

DEGREE OF FILTRATION: *Mag-Nus2* removes any magnetic and non-magnetic particles that may cause damages 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.

WARNINGS: This filter contains powerful magnet, and strong magnetic fields are present within it.
We recommend the holders of pacemaker devices to keep at a safe distance during the filter operation and / or maintenance. Pay attention to the use of electronic equipment in the vicinity of the magnets, so as not to affect their operation.

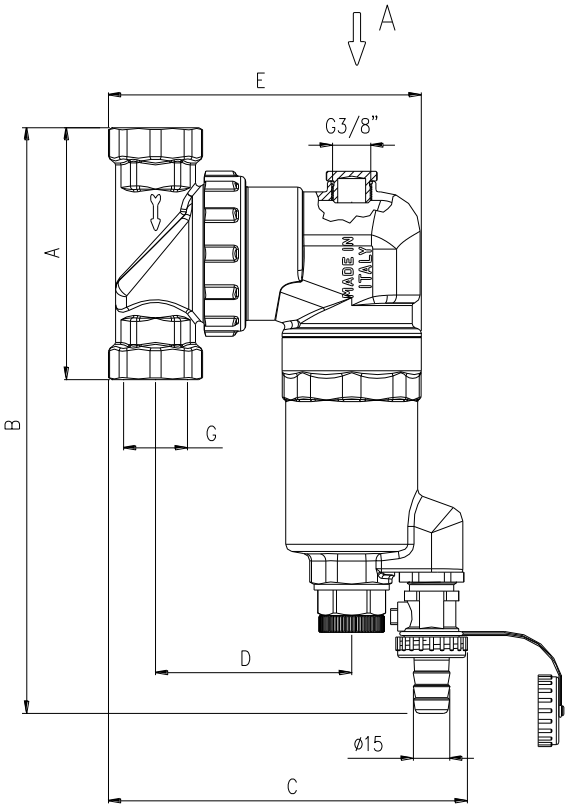
CONSTRUCTION FEATURES

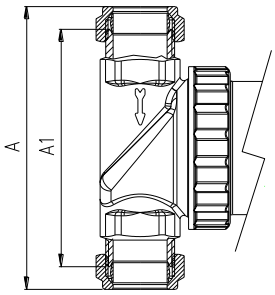
- Diverter body: Brass GCuZn38Pb2
- Filter element support body: Brass CW617N UNI EN 12165
- Fixing ring: Brass CW617N UNI EN 12165
- Spring ring: C85 Galvanized
- Filter cartridge: Stainless steel AISI 304
- Seals: EPDM PEROX
- Magnet: Neodymium REN35 B = 11.000 Gauss
  B (MaxT) / B (RoomT)* < 1% (where MaxT = 130°C, RoomT = 21°C)
  Tested according to IEC 60404-5 & ASTM A977
- Connection: FF UNI-EN-ISO-228 / Compression connection for copper pipe (depending on version)

TECHNICAL FEATURES

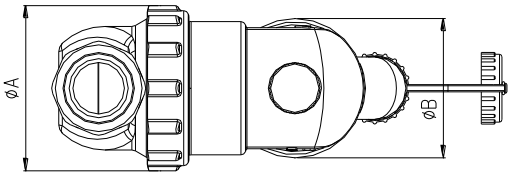
- Usable fluid: Water, Water + Glycol
- Max operating pressure: 10 bar
- Working temperature range: 0÷100 °C
- Max. temperature: 130 °C

DIMENSIONAL FEATURES





Detail of copper compression pipe version

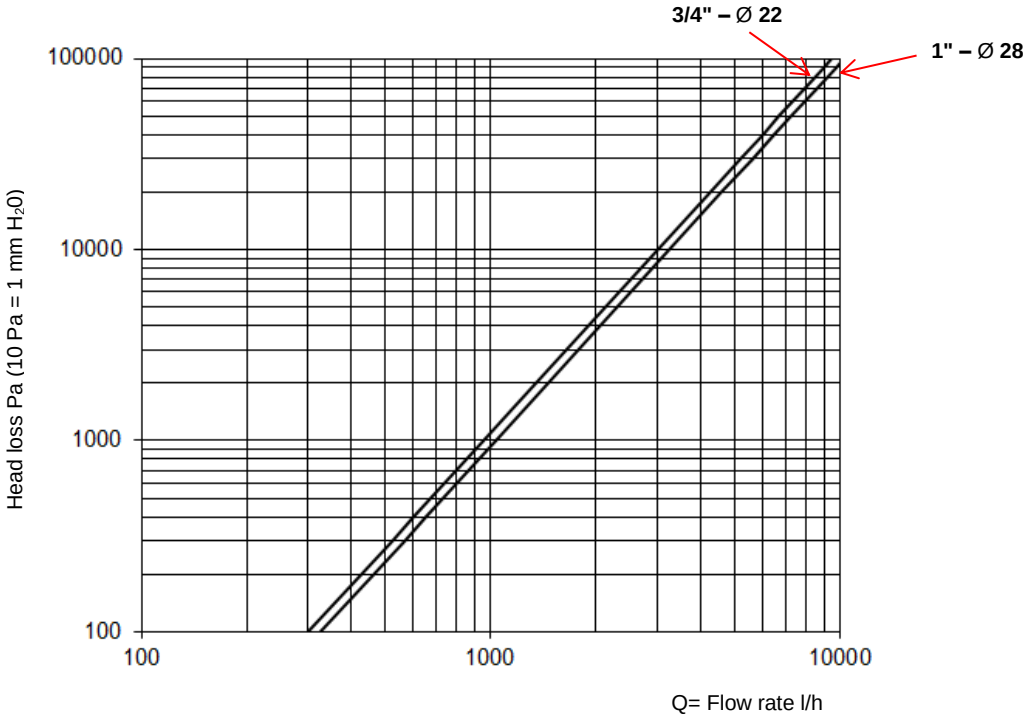


View A

Code	Size G	A [mm]	A1 [mm]	B [mm]	C [mm]	D [mm]	E [mm]	øA [mm]	øB [mm]
3548.05.00	3/4"	104	-	242	148	81	129	68	58
3548.06.00	1"	104	-	242	148	81	129	68	58
On request	Ø 22	117	98	242	148	81	129	68	58
On request	Ø 28	121	102	242	148	81	129	68	58

FLUID DYNAMICS FEATURES

Flow rate diagram - pressure drop



Size	Kv [m^3/h]
3/4" – Ø 22	9,50
1" – Ø 28	10,30

OPERATING PRINCIPLE

By going through a set course, the fluid is forced to cross the mesh of the cartridge and enter the filtration chamber.
In the filtration chamber, thanks to the simultaneous action of:

- filtering cartridge
- magnet
- direction of the fluid given by the specific internal geometry

in the different phases, water is filtered from ferrous sludge.

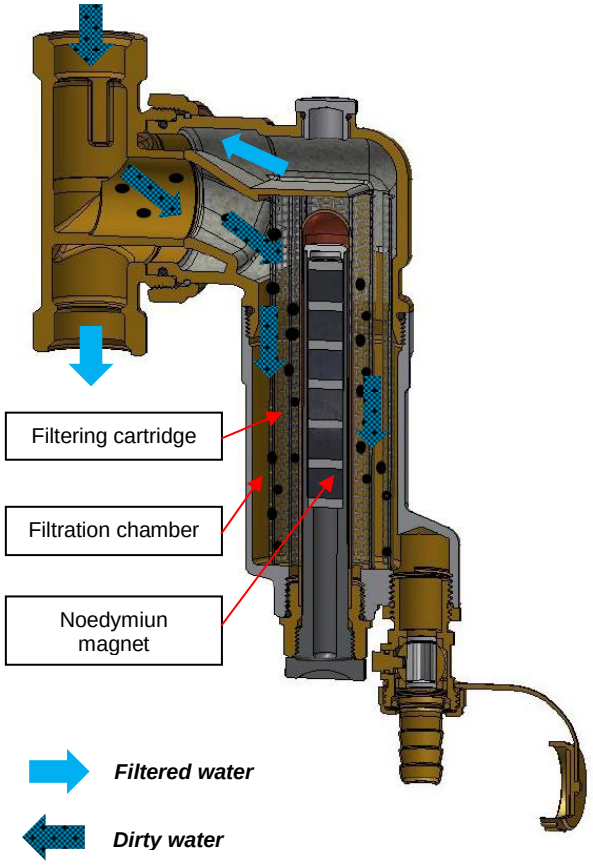
First of all, the sudden cross-section variation (the filtering chamber has a much greater diameter than the conduit) slows down the fluid motion and, consequently, the entrainment rate of the particles suspended in it.

The particles collide with the mesh of the filter cartridge and then slow down.

The heavier particles fall downwards due to gravity, which prevails over the drag force.
The magnet, placed inside a cylinder at the centre of the filtration chamber, attracts all the impurities having magnetic characteristics.

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

Due to its special helical shape and to its mesh with a very high filtration power, the stainless steel element does not oppose any resistance to the passage of fluid (low load loss) and favours a helical movement which helps bringing impurities to the bottom.



INSTALLATION GUIDE

- We advise installing the mud-removing filter on the boiler inlet circuit to protect the boiler from impurities present in the system, especially in the start-up phase.
  It is important to observe the **direction shown by the arrow** on the body to guarantee better filtering performance.

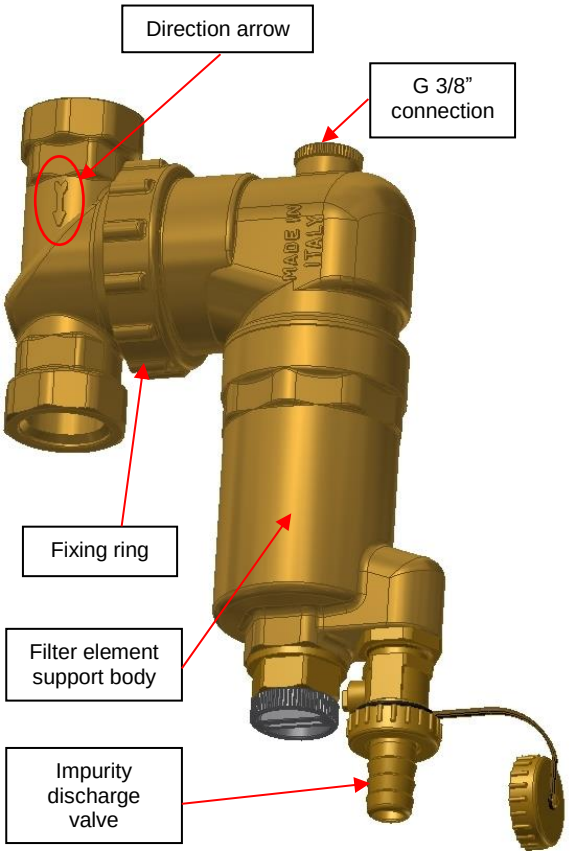
- *Mag-Nus2* must be installed with the impurity discharge valve facing downwards.

The swiveling part makes installation possible on pipes:

- Vertical
- Horizontal
- Diagonal

The seal between the swiveling part and the rest of the body is not influenced by the force with which the adjustment ring is tightened, because the seal is telescopic and not a head-type seal.

In the upper part of the filter there is a treaded connection G 3/8". This can be used to install of automatic air venting valve RBM code **37.03.60**
This valve is used **to continuously eliminate** the air which was not expelled in the filling phase or micro-bubbles which form while the system is operating normally.



MAINTENANCE GUIDE

BLEED THE FILTER (A) / FILTERING CARTRIDGE CLEANING (B):

The choice to build a large chamber for separating impurities and to use a large-mesh steel filter, avoid the clogging of the filter. However, in case of large impurities, it is possible to perform cartridge cleaning operations by extracting the magnet or, alternatively, by completely unscrewing the filter element support body.

Before cleaning *Mag-Nus2*, 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 burns.

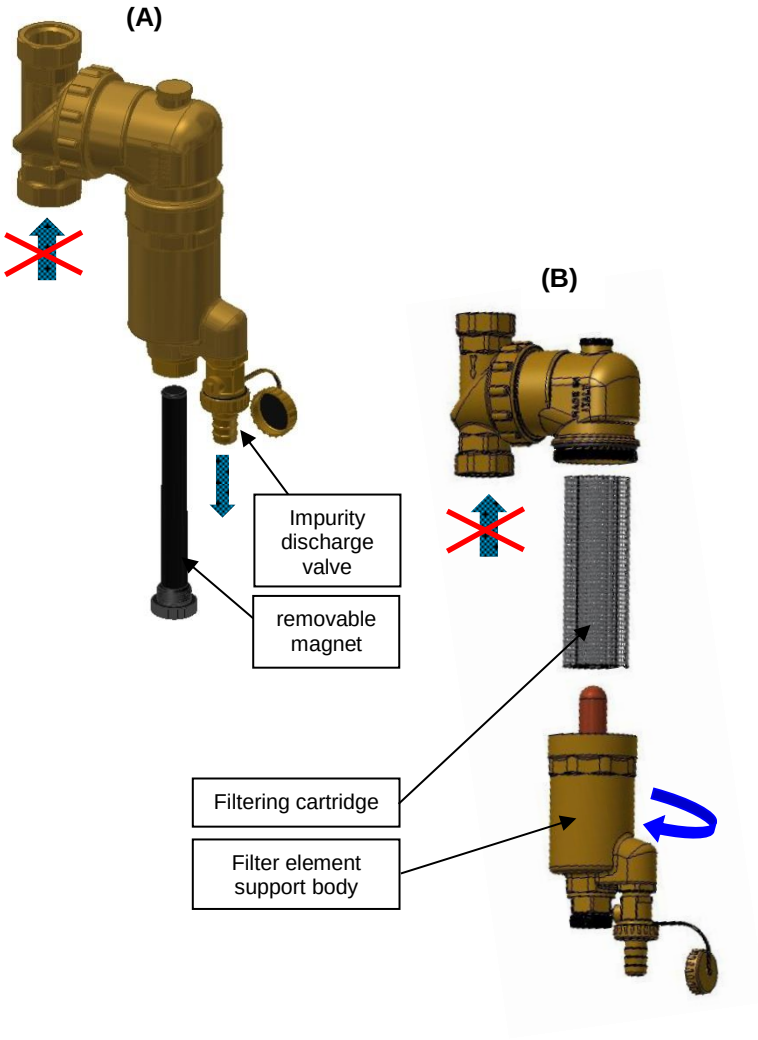
- Intercept the filter to be serviced by closing the ball valves (accessory valves - not supplied with the filter).
- Unscrew the magnet from the filter element support body and pull it out so as to easily eliminate ferrous particles.
- Open the impurity discharge valve: water will gradually drain, dragging out ferrous impurities and sediments captured by the filter.
Ensure that water is collected in a container of suitable dimensions.

Possibly, the filter element support body can be completely removed so as to extract the filtering mesh and allow for cleaning and replacement operations **(B)**.
Wash with water and thoroughly rinse under the tap to completely remove any impurities.
Ensure the O-ring seal is not damaged; if necessary, replace it.

Reassemble in reverse order.

Ensure there are no leaks prior to recommissioning.

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



SPECIFICATION ITEMS

SERIES 3548
Magnetic self cleaning, dirt separator, model *Mag-Nus2*. Brass body diverter. Brass filter element support body. AISI 304 steel filtering cartridge Seals in EPDM PEROX. Threaded connections FF UNI-EN-ISO 228 (or compression for copper pipe).
Max operating pressure 10 bar. Working temperature range 0÷100 °C. Max temperature 130 °C. Neodymium magnet B = 11.000 gauss. B(Max T) / B(Room T)* < 1% where * Max T = 130 °C - Room T = 21 °C. Retains all impurities, self-cleaning, excellent hydraulic properties, can be mounted on vertical, horizontal and diagonal piping, increases the lifespan of the boiler, fights corrosion, maintains optimum system efficiency, reduced overall dimensions. Available sizes 3/4" ÷ 1" (or compression for copper pipe Ø 22 and Ø 28).