

**3154**

**“TM-MAG EVO”**

**UNDER-BOILER MAGNETIC DIRT SEPARATOR FILTER**

**WITH BY-PASS**



#### DESCRIPTION

Tiemme TM-MAG EVO under-boiler magnetic dirt separator filter ensures effective removal of impurities, mainly sand and rust, found in heating systems.

TM-MAG EVO collects all the impurities present in the system, preventing their circulation and thus avoiding the damage and/or inefficiency of the system's components, in particular, circulators and heat exchangers.

The continuous passage of fluid through the internal structures of the filter during normal operation, gradually leads to the complete removal of impurities.

This occurs thanks to the combined action of neodymium magnets, filter cartridge and settling chamber which separates the smallest impurities by sedimentation.

The compact dimensions that characterize TM-MAG EVO allow the installation of filters even in limited space, new or existing boilers (e.g. home boilers installed inside kitchen cabinets). The loose nut connection supplied allows the filter to be connected directly to the boiler.

The by-pass that TM-MAG EVO is equipped with allows to completely divert the fluid, excluding the passage inside the filtration chamber and therefore allowing the periodical cleaning operations when the system is running. TM-MAG EVO provides a constant protective action. For optimal operation of the filter, it is important to carry out cleaning on a regular basis, to eliminate the particles accumulated in the cup. For more details see the “MAINTENANCE” section of this technical data sheet.

#### ADVANTAGES / STRENGTHS

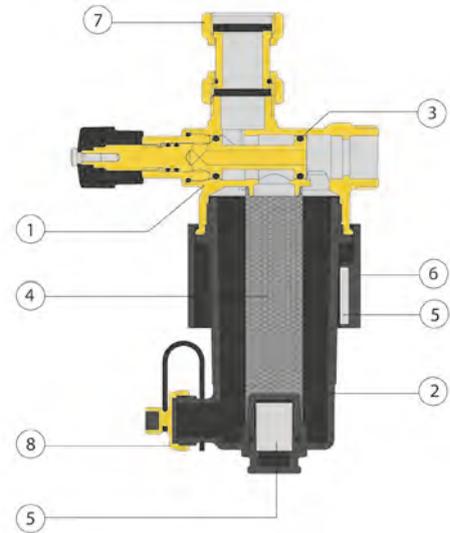
- Equipped with a by-pass that allows the filter to be cleaned when the system is running.
- Compact
- Can be installed under any boiler.
- Can be installed vertically and horizontally.
- Triple combined filtration action for complete removal of impurities:
  - magnetic filtration using powerful neodymium magnets (12,000 Gauss).
  - mechanical filtration via a filter cartridge (level of filtration 800 µm).
  - filtration by sedimentation thanks to the large settling chamber.
- Equipped with double magnet.
- Protects the components of the system, in particular circulators and exchangers, extending the life of the boiler.
- Efficient system and energy savings.
- Quick and easy maintenance.
- Expertly designed for applications in domestic settings.

**PRODUCT RANGE**

Art.	Code	Filter connection system side	Filter connection boiler side	Straight connection fitting with loose nut
3154	315 0071	G 3/4" M (ISO 228)	G 3/4" M (ISO 228)	G 3/4" FF (ISO 228)

**MANUFACTURING SPECIFICATIONS**

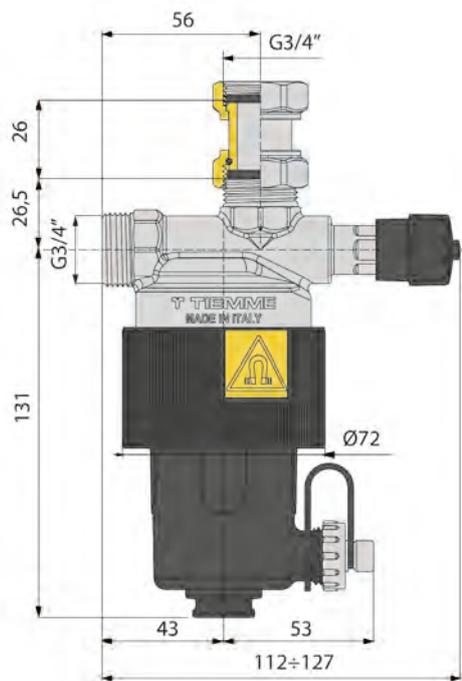
- (1) Body and by-pass: CW617N nickel plated brass
- (2) Filter cartridge holder cup: PA66 + 30% fiberglass
- (3) O-ring seal: EPDM
- (4) Filter cartridge: AISI 304 stainless steel
- (5) Magnets: Neodymium 12,000 Gauss
- (6) Magnet holder ring: PA 6
- (7) Fitting with loose nut: CW617N nickel plated brass
- (8) Drain cap: CW617N nickel plated brass
- Threads: ISO 228



**TECHNICAL SPECIFICATIONS**

- Maximum working temperature: + 90 °C
- Min. working temperature: 0 °C
- Maximum working pressure: 6 bar
- Level of filtration of filtering mesh: 800 µm
- Fluid compatibility: Drinking water, water and glycol solutions (maximum percentage of glycol 30%)

**DIMENSIONAL SPECIFICATIONS**



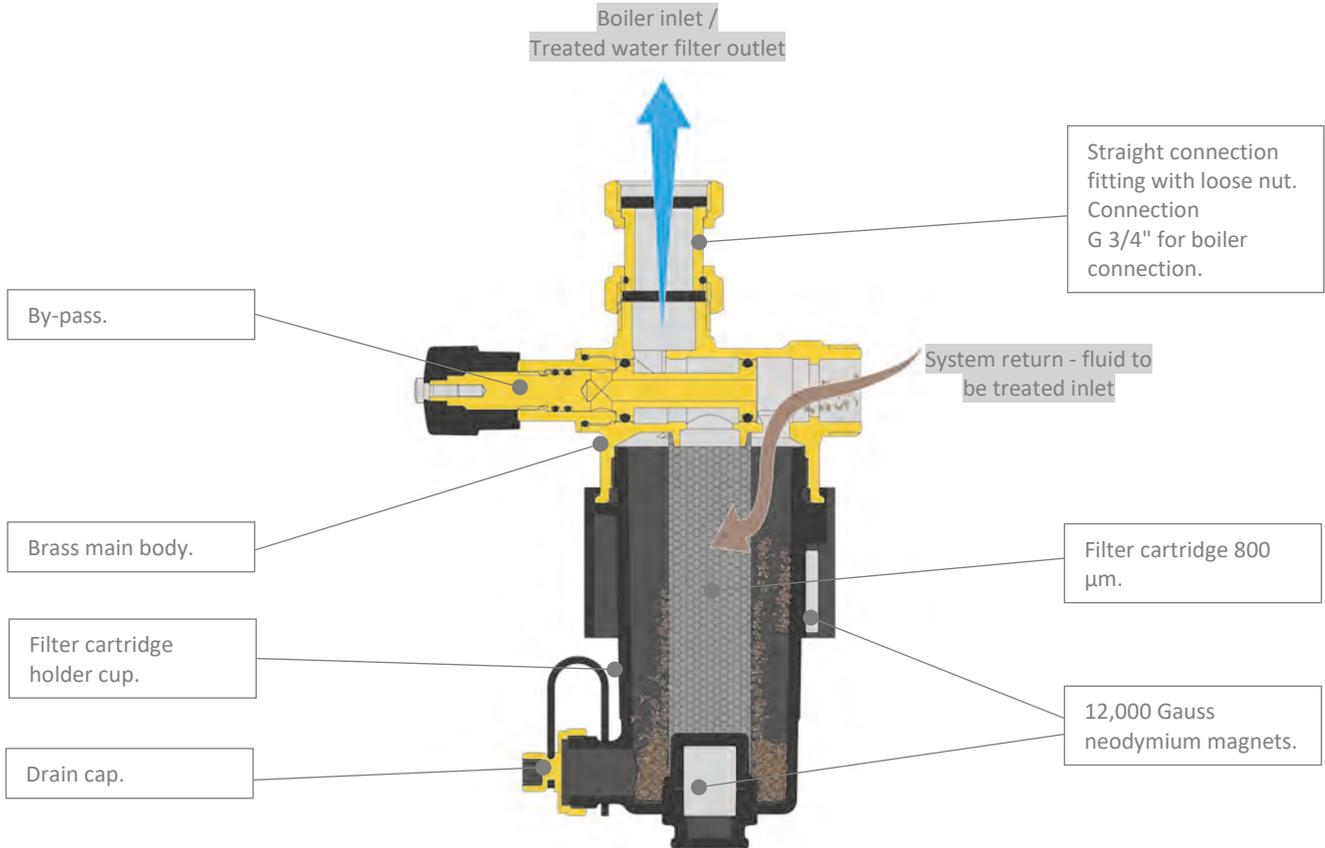
Dimensions in mm.

**OPERATION**

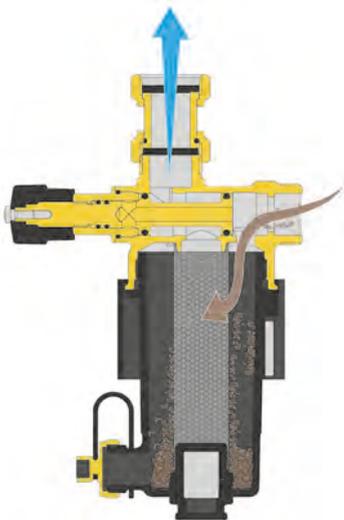
The TM-MAG EVO magnetic dirt separator filter ensures effective removal of impurities (mainly consisting of sand and rust present in the heating system), thanks to a combined triple action:

- of neodymium magnets which attract ferrous particles by the action of the magnetic field;
- of the filter cartridge which mechanically filters the impurities with a particle size of up to 800 µm;
- of the settling chamber which separates the smallest impurities by sedimentation.

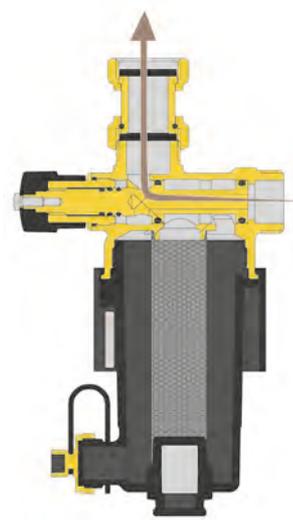
Installed on the return of the heating circuit, it protects the generator from impurities that may cause malfunctions and damage to exchangers/circulators.



The by-pass allows to completely isolate the filtration chamber to carry out periodic cleaning operations by emptying only the water contained in the filter holder; the dispersion of water treated with chemical additives is thus minimized, avoiding the need to replenish the system from the mains, with the possibility of re-trigger chemical/physical processes of corrosion of the system.



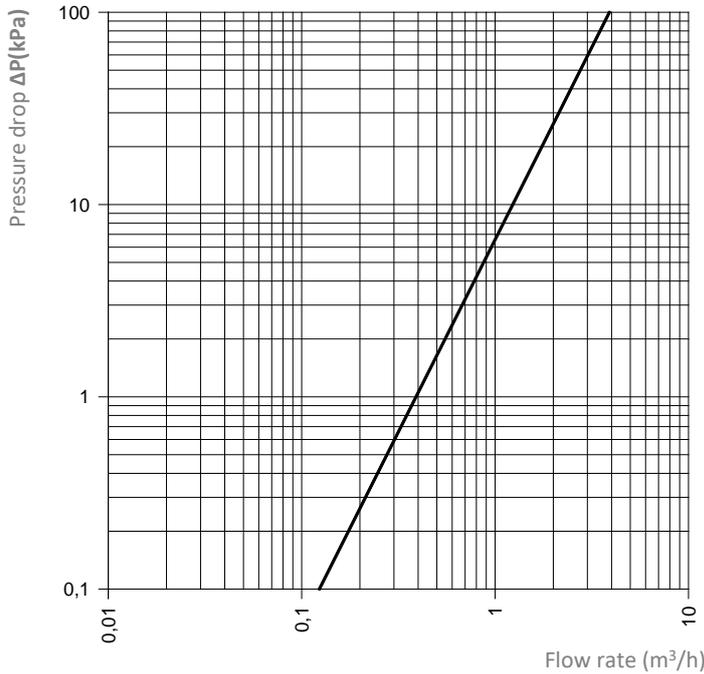
BY-PASS OPEN: Filter on



BY-PASS CLOSED: Filter off  
Maintenance operations are permitted.

**HYDRAULIC FEATURES**

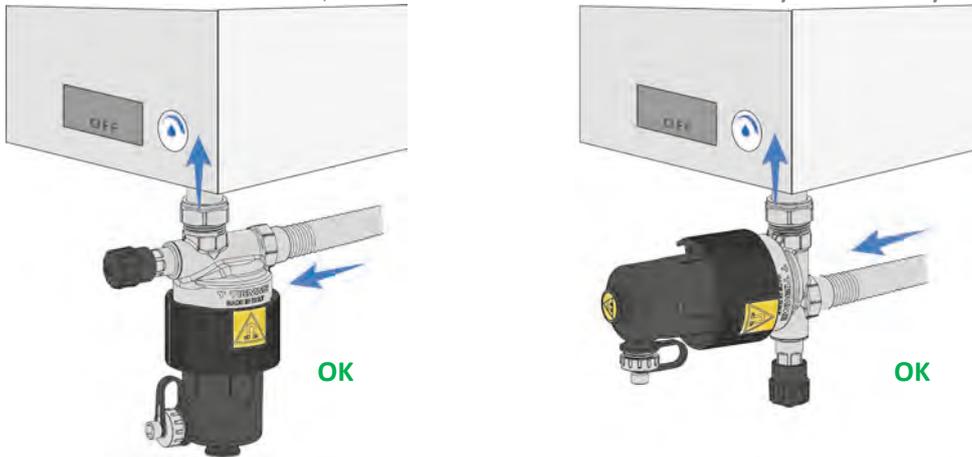
Diagram 1: Flow rate/pressure drop.



<b>Kv (m³/h)</b>
3.89

**INSTALLATION**

- Check that the boiler is switched off and the water inside the system is at room temperature.
- TM-MAG EVO must be installed on the return circuit, at the boiler inlet. **It can be installed vertically or horizontally.**



- it is recommended to install TM-MAG EVO so that it is visible and easily accessible for maintenance.
- in order to further facilitate cleaning and maintenance, the standard supplied drain and drain cap can be replaced with an accessory tap to be ordered separately (accessory **Art. 3154C - Cod. 313 0135**).
- The connection between TM-MAG EVO and the system connection fittings must be carried out using suitable tools. The tightening torque must be such as to guarantee correct sealing without damaging the filter or connections.
- Once the installation is complete, the seals must be checked in accordance with the technical regulations and/or the laws in force in your country.



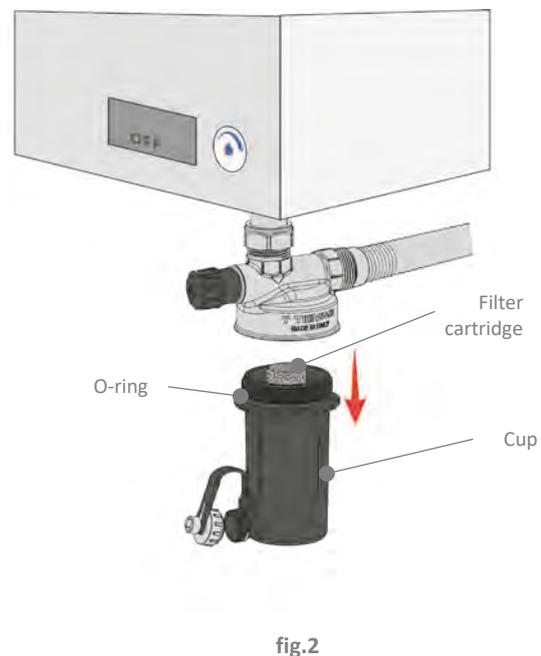
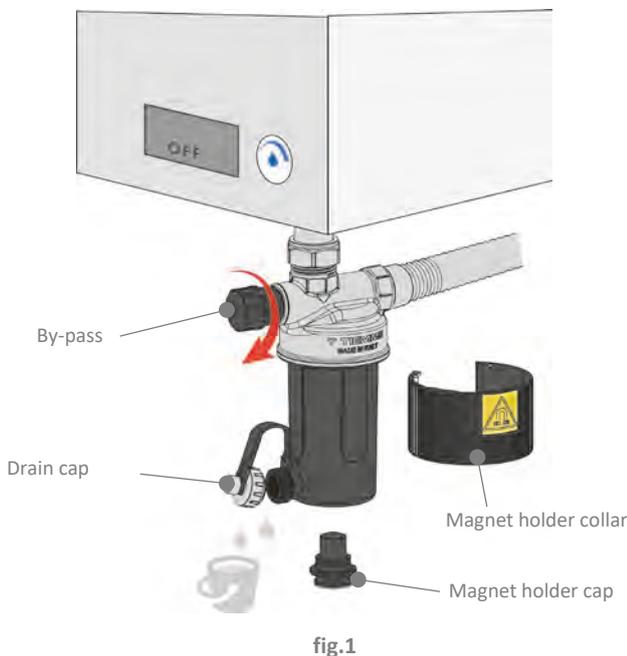
**WARNINGS:** Tiemme Raccorderie S.p.A. declines all responsibility in the event of breakdowns and/or accidents if installation has not been carried out in compliance with the technical and scientific standards in force and in compliance with manuals, catalogues and/or relative technical instructions indicated by Tiemme Raccorderie S.p.A.

## MAINTENANCE

The TM-MAG EVO design focused not only on creating a product that is efficient in its filtration function, but also easy and quick to clean. **With just a few simple steps, the filter's functionality is completely restored without the need for complicated and prolonged shutdowns.**

Periodically check the efficiency of the filter, especially after initial installation checking and cleaning is required 1 month after installation. The frequency of filter cleaning depends on the type of system. Perform scheduled filter cleaning at least once a year, before the boiler is turned on for the winter season.

- Close the filter by-pass (screw in fully clockwise) and remove the collar and the magnet-holder cap (fig. 1).
- Wait for the fluid in the filtration chamber to cool down\*.
- Open the drain cap located under the filter cup to allow the water contained in the filter to flow out (fig. 1).
- Unscrew the cup and remove the filter cartridge from inside (fig. 2).
- Rinse the cup and the filter cartridge until all the impurities have been removed. Do not use detergents containing solvents to clean the parts in synthetic material
- Check the O-ring seal for damage, replace it if damaged.
- Assemble the filter.
- Close the drain cap located under the cup.
- Open the by-pass.
- Pressurize the system.



**WARNINGS:** The symbol  shown on the outer ring indicates the presence of magnets generating a strong magnetic field which may cause damage to electronic equipment placed nearby.

It is recommended that holders of pacemaker devices keep away during filter operation and/or maintenance.

\* WATER TEMPERATURES ABOVE 50 °C MAY CAUSE SEVERE BURNS. WHEN THE DIRT SEPARATOR FILTER IS BEING INSTALLED AND MAINTAINED, TAKE THE NECESSARY MEASURES TO ENSURE THAT SUCH TEMPERATURES DO NOT REPRESENT A HAZARD FOR ANYONE. BEFORE ANY INSPECTION, CLEANING OR MAINTENANCE OPERATION, WAIT UNTIL THE FLUID IN THE FILTRATION CHAMBER HAS COOLED DOWN.

## TIEMME INFORMS

### GENERATOR WARRANTY:

If the impurities present in the thermal carrier fluid are not eliminated, they may compromise the operation of appliances or components, such as boilers or heat exchangers, especially during the system commissioning phase, already at the first passage.

**This is not to be underestimated as boiler manufacturers often invalidate the guarantee conditions if their product is not adequately protected with a filter, from the very first commissioning.**

For this reason Tiemme always recommends the installation of a filter upstream of the boiler or heat pump.

**ACCESSORIES**



Art. 3154C  
Code 313 0135  
Drain and drain cock.

**SPARE PARTS**



Art.  
Code 313 0131  
Cap with magnet.



Art.  
Code 313 0105  
Collar with magnets.



Art. 3154X  
Code 313 0133  
Cartridge.



Art. 3154TP  
Code 313 0132  
Plastic collecting cup.



Art. 3154OR  
Code 040 0266  
O-ring for collecting cup.



Art.  
Code 313 0134  
Drain cap kit (ring nut + strap + seal kit).



Art. 1524  
Code 150 0858  
F-F straight fitting with loose nut and flat seal.

**SPECIFICATIONS**

**Art. 3154**

TM-MAG EVO - under-boiler magnetic dirt separator filter with by-pass and connection to boiler. Threaded filter connections 3/4" M x 3/4" M. Connections connecting fitting with loose nut 3/4" F x 3/4" F. CW617N nickel plated brass body. Filter cartridge cup in PA66 + 30% fiberglass. O-ring seal in EPDM. AISI 304 stainless steel filter cartridge PVC filter cartridge cap. 12,000 Gauss neodymium magnets. CW617N nickel plated brass loose nut connector. Threaded connections M-F ISO 228. Drinking water, water and glycol solutions (maximum percentage of glycol 30%) Operating temperature range 0 ÷ +90 °C. Maximum working pressure 6 bar. Level of filtration of filtering mesh 800 µm Available size: 3/4"

**CERTIFICATIONS**

