FILTER AND MAGNETIC DIRT SEPARATOR

V73.P

V73.D

V73D32010
1 1/4”

Description

The Barberi DR-4 filters and magnetic dirt separators restrain the impurities contained in the system water through the combined action of their four inner components: cyclonic filtration, decantation in the dirt separator, removal of ferromagnetic particles by means of an extractable magnet, filtration by cartridge. Moreover, a manual air vent is installed on the top cover. They are used in air conditioning systems and central heating systems with wall-mounted boilers, solid fuel generators, heat pumps. In this way the system is protected, in particular the devices such as heat exchangers and high efficiency pumps contained in the generators. Thanks to the versatility of the connections, they can be installed vertically, horizontally and in 45° position.
They are complete with 500 μm filtering mesh for system first cleaning and 800 μm cartridge for continuous operation.

Range of articles

Series V72.P Filter and magnetic dirt separator with technopolymer body. Complete with cyclonic action filter, interchangeable cartridge, adjustable tee for horizontal, vertical and 45° installation, shut-off valves.

Series V73.D Filter and magnetic dirt separator. Technopolymer body, brass tee-fitting. Complete with cyclonic action filter, interchangeable cartridge and adjustable tee for horizontal, vertical and 45° installation.

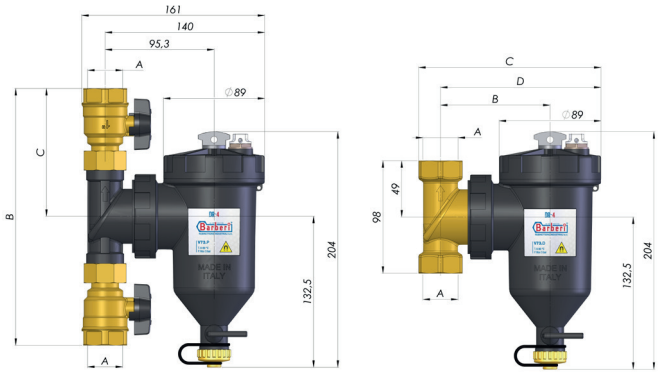
Features

Working temperature range: **0–90 °C**
Max. working pressure: **3 bar**
Magnetic induction: **1,4 T**
Max. suggested flow rate: **2,13 m³/h (2,5 m³/h with by-pass closed for the 1 1/4” version)**
Suitable fluids: **water, glycol solutions (max 50%)**
Threaded connections: **ISO 228-1**
Tightening torque of the top cover and the locking ring of the adjustable T-fitting (2): **10–15 N·m**
Tightening torque of the ball shut-off valves (4): **10 N·m**

Materials

Body, top cover, cyclonic filter, adjustable T-fitting (V73.P), by-pass (1 1/4“): **PA66 GF30**
Adjustable T-fitting (V73.D): **brass EN 1982 CB753S**
Ball shut-off valves (V73.P):
Body: **brass EN12165 CW617N**
Ball: **brass EN12165 CW617N, chrome plated**
Filtering cartridges (500 and 800 μm): **stainless steel AISI 304**
Magnet: **neodymium**
Drain plug: **brass EN12165 CW617N**
Gaskets: **EPDM**

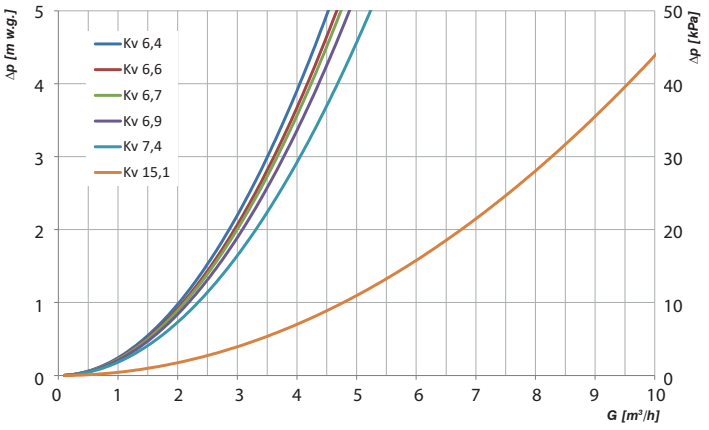
Dimensions



Series	Code	A	B [mm]	C [mm]	D [mm]	Kv [m³/h]	Mesh size [mm]	Weight [kg]	N. P/B	N. P/C
V73.D	**V73**D20010	G 3/4 F	95	159	140	6,6	0,5+0,8	1,1	1	6
	V73D25010	G 1 F	95	159	140	6,9	0,5+0,8	1,2	1	6
	V73D32010	G 1 1 /4 F	101	165	145	7,4-15,1	0,5+0,8	1,3	1	6
V73.P	**V73**P20020	G 3 /4 F	235	118	140	6,4	0,5+0,8	1,4	1	6
	V73P25020	G 1 F	225	113	140	6,7	0,5+0,8	1,2	1	6

N. P/B: number of pieces in box - N. P/C: number of pieces in carton

Diagrams



Working way

The filter and magnetic dirt separator Barberi DR-4 is composed of: dirt separator body (1), adjustable T-fitting (2), top cover (3), magnet (4), manual air vent (5), cyclonic filter cap (6), cyclonic filter body (7), filtering cartridge (8), drain valve (9), drain plug (10), ball shut-off valves (11, supplied as standard in V73.P), sealing cable (12), double wrench (13), locking ring (14) (fig. A).

The filter and magnetic dirt separator Barberi DR-4 cleans the water of thermal systems through the combined action of its components: cyclonic filter (6+7), dirt separator (1), magnet (4) and filter (8).The cleaning phase are:
- **cyclonic filtration:** water enters the adjustable Tee (2) which conveys it towards the external surface of the cyclonic filter (7). A swirling motion is given to the water current. Dirt particles begin to separate thanks to centrifugal force (fig. B1);
- **impurity decantation in the dirt separator**: then water enters the dirt separator (1), slows down and particles begin to fall towards the device bottom under the effect of gravity (fig. B1);
- **magnetic action**: ferromagnetic particles are hold by the magnet (4) (fig. B2).
- **mechanical filtration**: the particles not yet fallen are hold by the filter mesh (8) (fig. B3);

Thanks to this sequence of passage through the devices, a large amount of particles begins to fall down to the dirt separator bottom, leaving to the filter a less difficult cleaning deal: in this way the filter gets clogged more slowly. Moreover, after few passages, a high degree of fluid cleaning is reached.
The devices eliminates impurities, sludges, ferromagnetic residues originated from the system corrosion. This helps to prevent clogging of delicate devices such as heat exchangers and blockage of high efficiency pumps with permanent magnet wet rotor. The device can be easily opened for periodic cleaning.

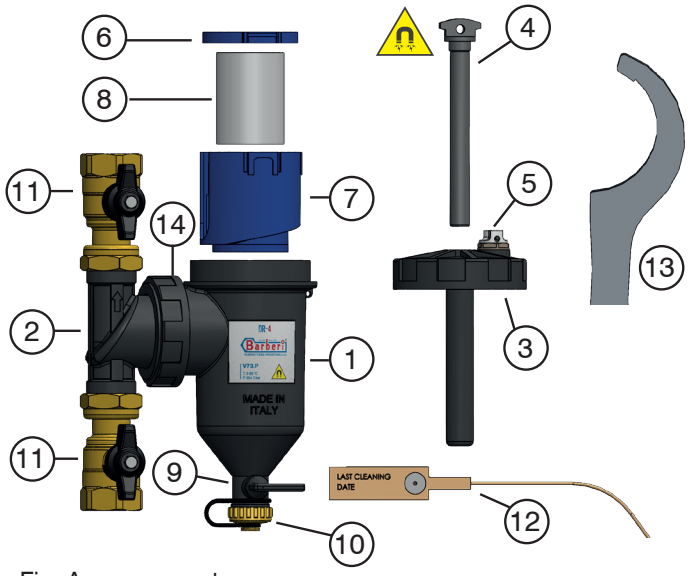
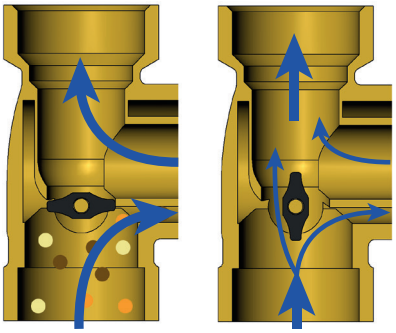


Fig. A: components

By-pass. The version with 1 1/4" connections is equipped with by-pass. To allow a complete fluid cleaning, we suggest to keep the by-pass fully closed during the initial working period of the system (all the fluid enters the dirt separator body). Once the cleaning is completed, the by-pass can be opened to reduce the device head losses (only part of the fluid enters the dirt separator body).



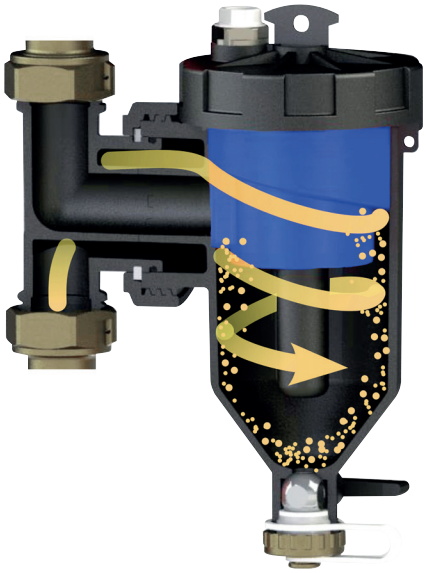


Fig. B1: cyclonic filtration + decantation in the dirt separator

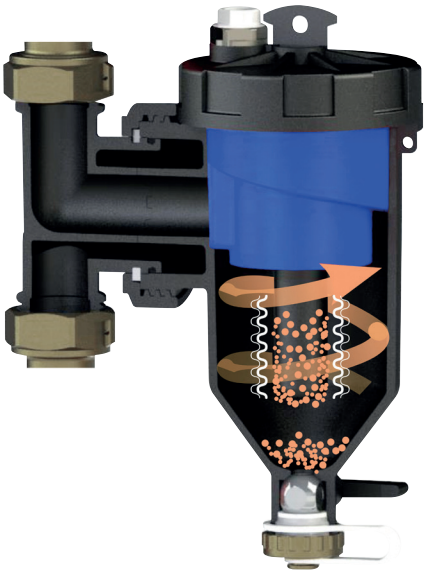


Fig. B2: magnetic action

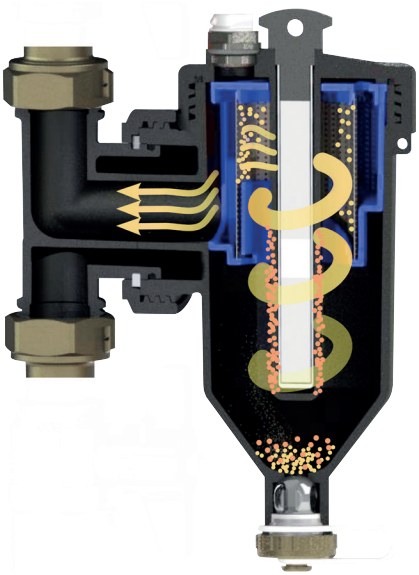


Fig. B3: mechanical filtration

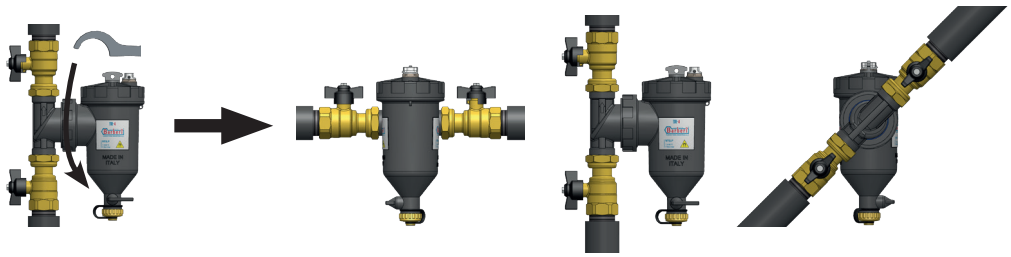
Features

Advantages
Cyclonic filter + dirt separator + magnet + filter
The fluid cleaning is maximized thanks to the four devices incorporated in a single product.
Double filtering cartridge
The device is supplied with a cartridge with a pre-assembled 500 μm mesh, to be used for the first cleaning of the system. An 800 μm mesh cartridge is supplied in the package for continuous operation, to be used after an initial period of operation (approximately one month).
Self cleaning
It's possible to perform a fast cleaning, through flushing, by opening the drain plug. For a deeper cleaning it's possible to completely unassemble the device by means of the provided wrench.
Adjustable T-fitting
Allows to adapt the filter and dirt separator to horizontal, vertical, 45° oblique pipes.
Double shut-off valve
The version with plastic Tee-fitting (V73.P) is complete with ball shut-off valves, with running nut, for the connection to the system.
High performance magnet
The magnet features a high induction of 1,4 Tesla to maximize the separation of ferromagnetic particles. In addition, a specific coating prevents oxidation and makes the magnet maintenance-free.
Air vent
Located on the upper cover, it can be used to release the air accumulated during the installation or maintenance phase.
Sealing
In the package there is a sealing zip tie to fix the magnet to the body to avoid losing it or removing it accidentally. You can also indicate the maintenance date on it.

Installation

The filter and magnetic dirt separator must be installed on the return pipe to clean the fluid before returning into the generator, always with the drain valve pointing downward.
The device is equipped with an adjustable T-fitting (2): unscrewing the locking ring (14) it's possible to orient the locking ring at 45° steps to adapt it to horizontal, vertical and 45° oblique pipes.
Respect the flow direction indicated by the arrows on the adjustable T-fitting: the flow can enter from the left or right, from the top or bottom, always by respecting the inlet port as shown by the arrow. In this way the fluid runs through the cyclonic filter first, through the dirt separator, then it touches the magnet and eventually it runs through the filter, thus limiting the problem of filter clogging.

ATTENTION: MAGNETIC FIELD! The symbol on the device indicates the presence of a strong magnetic field. Do not put the magnet close to electronic or electro-medical devices such as pacemakers, magnetic cards, etc. as it could cause damage or malfunction.



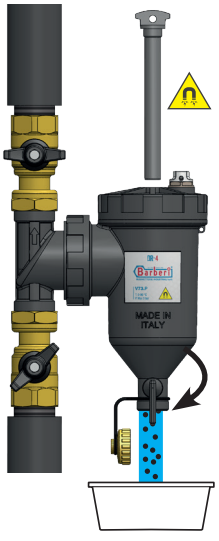
Maintenance

The amount of sludge and impurities that are deposited in the device depend on the system conditions.
Despite the large decantation chamber, we suggest to perform the cleaning with the boiler off and the system cold to prevent ferromagnetic particles from returning into circulation after removing the magnet.

Filtering cartridges. The 500 μm filtering cartiridge, factory installed, allows a deep first cleaning of the system. After an initial period of operation (approximately one month), it is suggested to perform the following check:
1) in-depth cleaning
2) evaluate to keep the 500 μm cartridge or install the 800 μm cartridge with larger mesh.
No maintenance is needed for the magnet since it is protected by a specific coating.

Next cleanings can be performed every three months (basic cleaning) or once a year (in-depth cleaning).

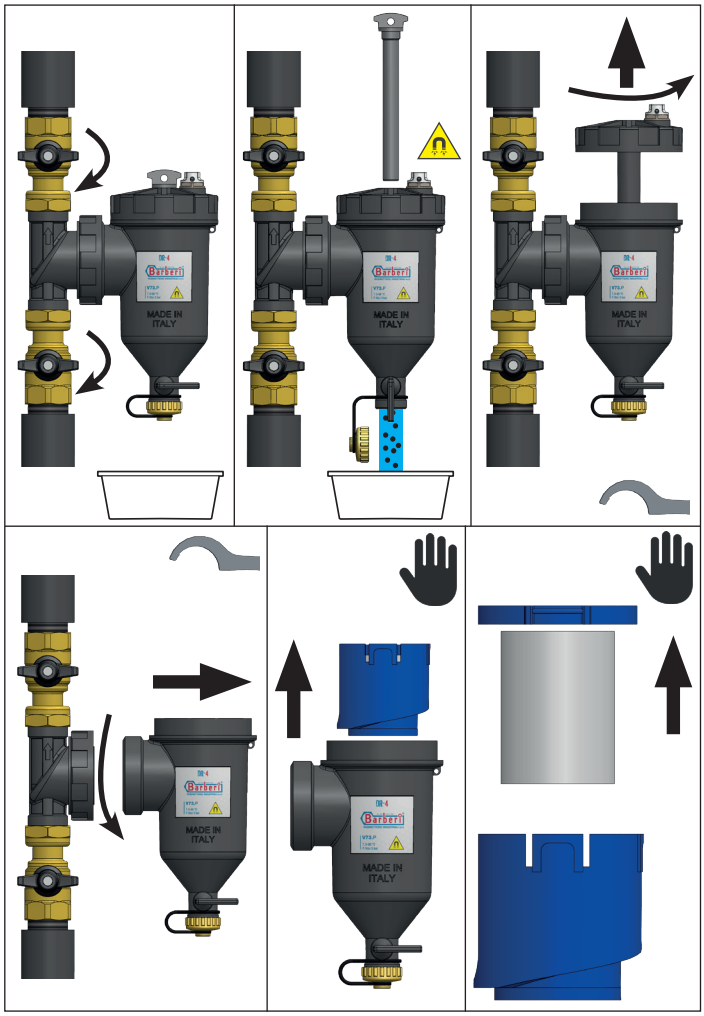
Basic cleaning: after closing the downstream shut-off valve and extracting the magnet, flush the device by opening the drain valve.



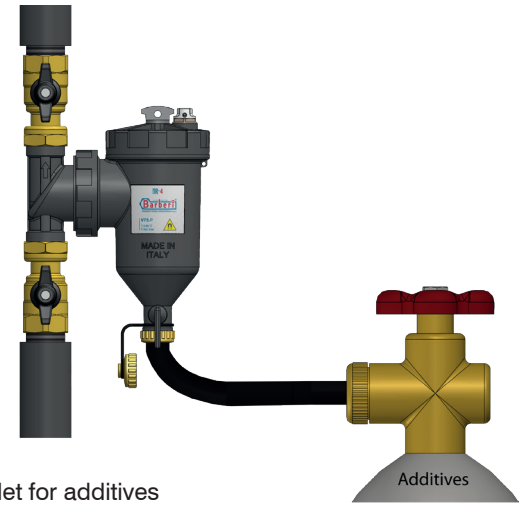
Basic cleaning

In-depth cleaning: close both the shut-off valves, extract the magnet to make the ferromagnetic particles to fall down to the bottom, disassemble the body from the adjustable T-fitting and extract all the components. Clean with water and reassemble everything. Cleaning is described in detail in the instructions for use and maintenance.

The drain valve can be used as injection point for chemical additives.

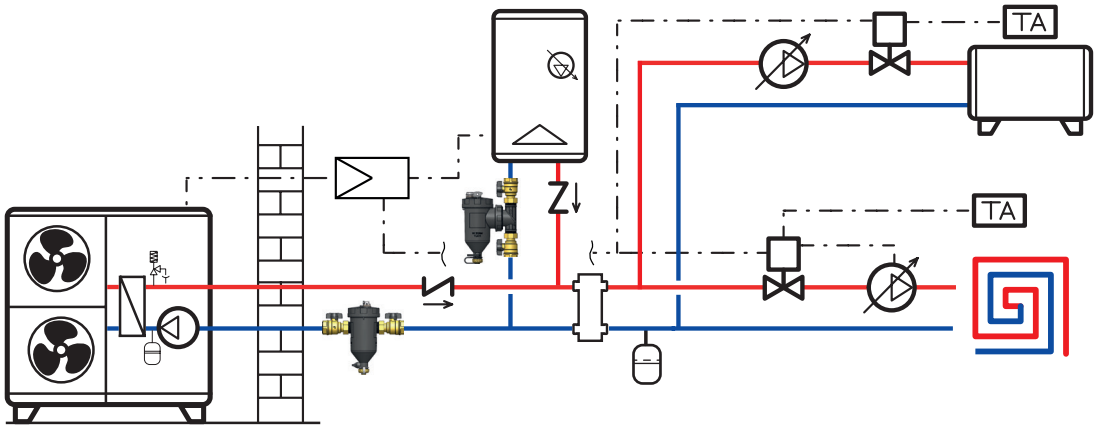


In-depth cleaning



Inlet for additives

System diagrams



Specifications

Series V73.P
Filter and magnetic dirt separator. Complete with upstream and downstream shut-off valves. G 3/4 F (and G 1 F) connections. Technopolymer body and adjustable T-fitting. Air vent and drain plug in brass. Upstream and downstream valves with brass body and ball. Filtering cartridges in stainless steel: 500 μm mesh (initial cleaning) and 800 μm mesh (continuous operation). Neodymium magnet, magnetic induction 1,4 T. EPDM gaskets. Working temperature range 0–90 °C. Maximum working pressure 3 bar. Suitable fluids water, glycol solutions (max 50%).

Series V73.D
Filter and magnetic dirt separator. Complete with adjustable T-fitting in brass. G 3/4 F (from G 3/4 F to G 1 1/4 F) connections. Technopolymer body. Air vent and drain plug in brass. Filtering cartridges in stainless steel: 500 μm mesh (initial cleaning) and 800 μm mesh (continuous operation). Neodymium magnet, magnetic induction 1,4 T. EPDM gaskets. Working temperature range 0–90 °C. Maximum working pressure 3 bar. Suitable fluids water, glycol solutions (max 50%).

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