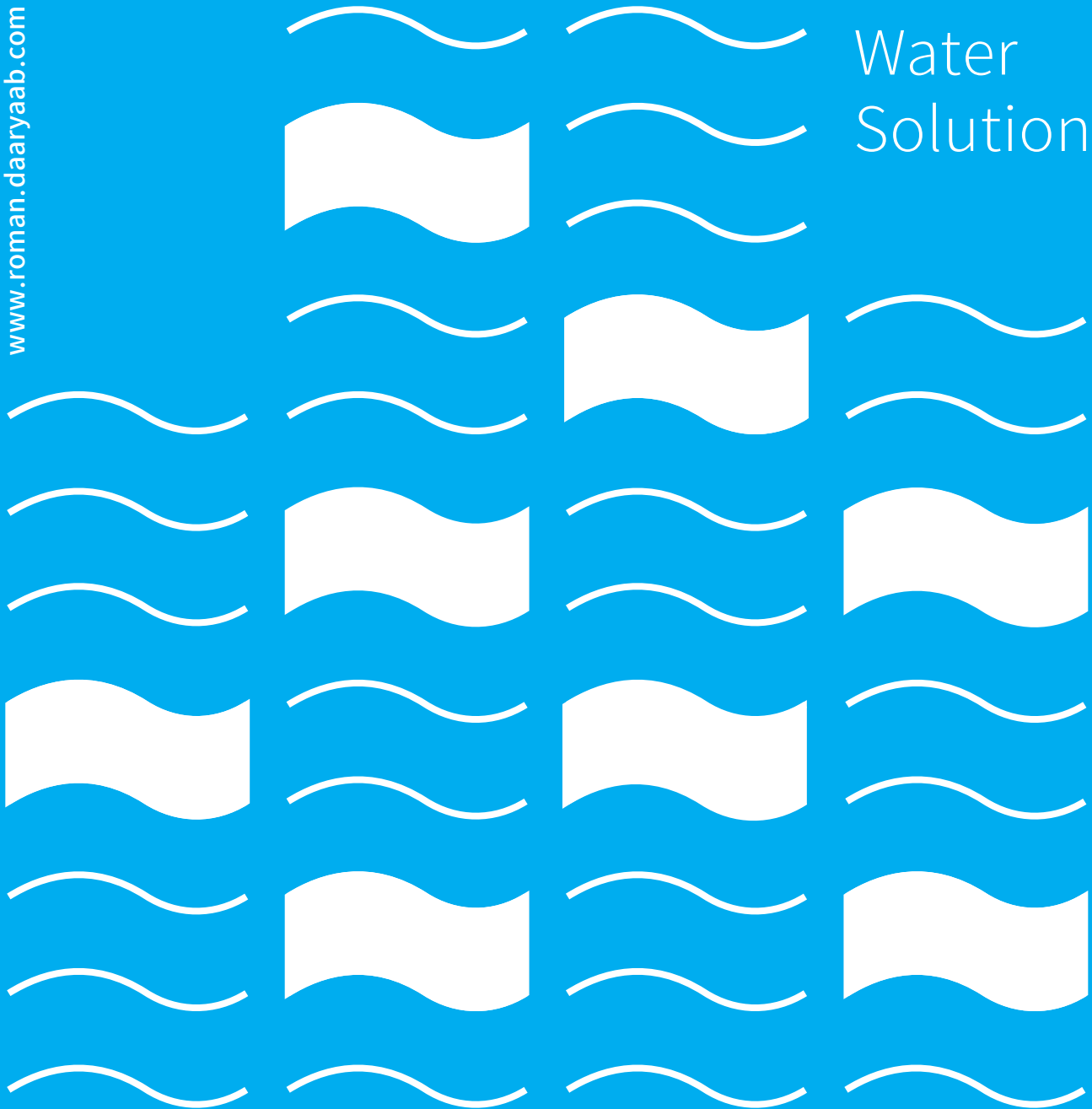


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Water  
Solution



**ROMAN**  
Water solution



Magnetic Filter  
powered by PACKMAN industrial group



# Magnetic Filter



## Product Description

The impurity water circulation in heating and air conditioning systems may cause corrosion and damage to equipment and system components such as control valves, pumps, as well as clogging of heat exchangers, pipes and radiators, etc. These blockages can damage the system or cause a significant decrease in its efficiency.

Filters remove these impurities and harmful particles from the system. Impurities usually have ferrous materials that can be removed from the system using a suitable magnetic field. This operation is done using suitable magnets in magnetic filters. Sometimes, filters need to stop the system to drain the impurities, which is a disadvantage for this type of filter. None of the filters presented in this catalog need to stop the system to drain the impurities. This is an important advantage for magnetic filters.

Technical specifications	
Inlet and outlet size	2 inches to 10 inches
Material	
Body	ASTMA106 steel
Body color	Static leather color
Magnet	Neodymium magnet
Magnet sheath	Stainless steel
Filter	Stainless steel
Operation	
Usable fluid	Water
Maximum working pressure	10 bar(150psi)
Connections	
Flange	ANSI 150 CLASS
Relief Valve	Water plug valve
Air vent valve	Automatic air vent valve



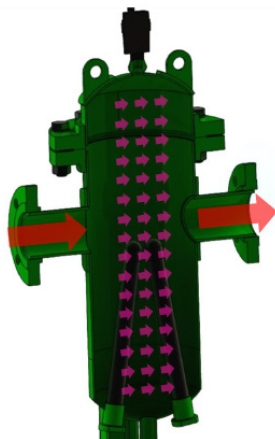
## Filter Function

The piece placed in the tank will create a lower pressure drop in the system in this type of filter; Because the tank is designed in such a way that the speed of the fluid inside the chamber is low and the fluid passes through the filter at a low speed, which causes the pressure to not drop much. Also, the impact of the particles with the filter element inside the chamber causes the kinetic energy of the particles to be lost and their sedimentation in the chamber, which can be attributed to the low speed of the fluid in this chamber. That is, in addition to the filtration of particles by passing through the filter element (what happens in normal filters), settled particles and smaller particles will not have a chance to pass due to the low speed of the fluid in the chamber. These particles are removed during the operation of the system by settling the particles on the bottom of the chamber and opening the relief valve under the chamber.

The presence of ferromagnetic particles in the system is another important point. Usually, magnetite particles in engine room systems can be deposited in converters, pipes or pumps and disrupt system performance.

Magnetic particles with very small sizes (so that they pass through normal filters) are caused by iron corrosion. In addition to using the filter element in the low-speed fluid chamber, some strong neodymium magnets are used to attract the magnetic particles in the fluid in the existing magnetic filters.

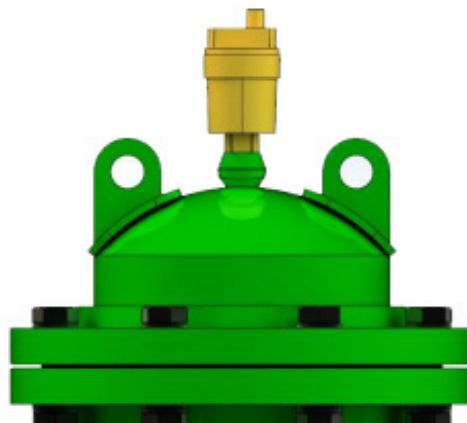
This magnet is not in direct contact with the fluid and is removed from the chamber when the system is drained without the need to shut down the system. The particle discharge operation is done by the relief valve and then the magnet is placed in the chamber.





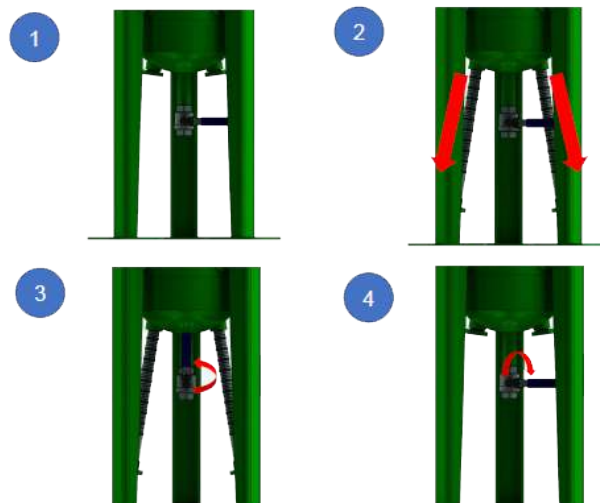
## Air vent Valve

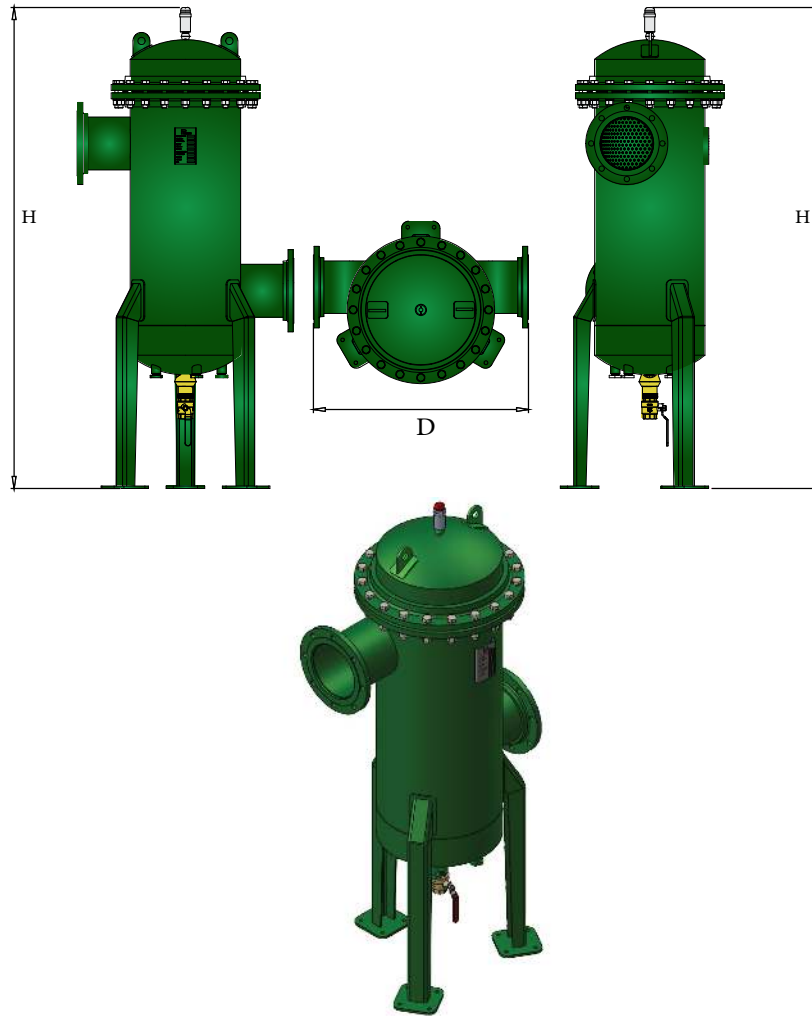
An automatic air valve is placed in the upper part of the filter, which can fully and automatically drain the air from the system when the system is started. Also, if there are bubbles in the system that can cause problems in the operation of the boiler by entering the boiler, this automatic valve can remove the bubbles from the system and prevent damage to the system in the short term as well as long-term corrosion caused by the bubbles.



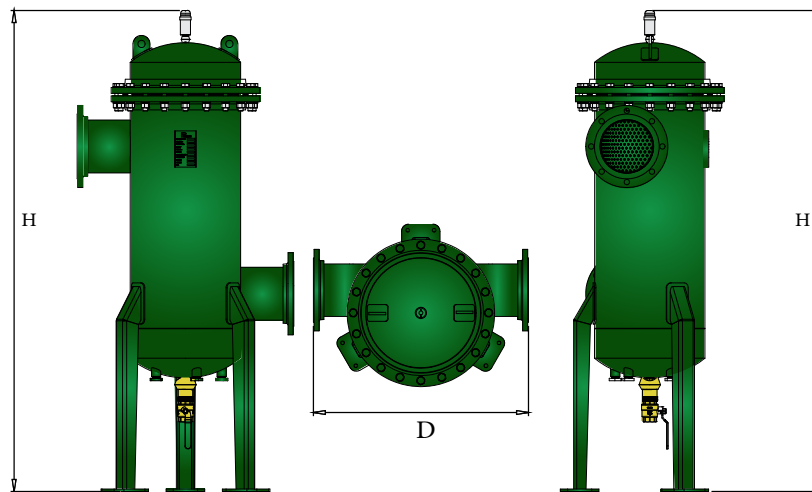
## Discharge Conditions

There is no need to stop the system to empty this filter. Remove the magnets from their housings as shown in the figure. By removing the magnetic field, the magnetite particles attached to the sheath wall settle. Then the relief valve of the system is opened to remove the settled particles (both magnetic and non-magnetic particles). Then the relief valve is closed and the magnets are also closed inside the sheath.

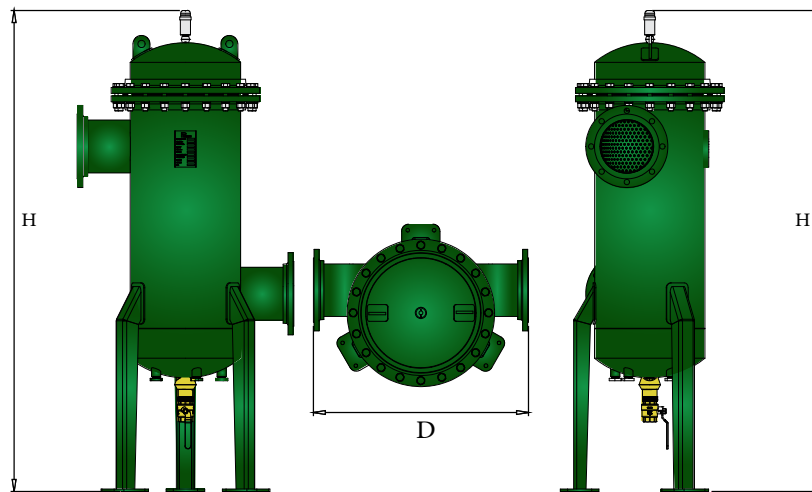




Model	Unit	PMF-2	PMF-3	PMF-4	PMF-5	PMF-6	PMF-8	PMF-10	PMF-12	PMF-14
Technical Specifications										
nozzle size	in	2	3	4	5	6	8	10	12	14
Body Size	in	8	10	12	16	18	18	20	24	28
The number of rows of magnets	-	2	2	4	4	4	6	6	6	6
Number of sets of 4 in each row	-	8	9	9	11	13	10	10	13	13
Total number of magnets	-	64	72	144	176	208	240	240	312	312
The distance between the nozzles	mm	200	230	260	330	380	430	500	600	700



Technical Specifications	
<b>2 inch Magnetic Filter</b>	
Inlet and outlet flange	2 inches - class 150
Maximum operating flow rate	100 gallons per minute
Weight	42 Kg
The number of magnets used	1 piece
<b>3 inch Magnetic Filter</b>	
Inlet and outlet flange	3 inches - class 150
Maximum operating flow rate	220 gallons per minute
Weight	70 Kg
The number of magnets used	2 piece
<b>4 inch Magnetic Filter</b>	
Inlet and outlet flange	4 inches - class 150
Maximum operating flow rate	400 gallons per minute
Weight	77 Kg
The number of magnets used	2 piece



Technical Specifications	
<b>5 inch Magnetic Filter</b>	
Inlet and outlet flange	5 inches - class 150
Maximum operating flow rate	615 gallons per minute
Weight	159 Kg
The number of magnets used	4 piece
<b>6 inch Magnetic Filter</b>	
Inlet and outlet flange	6 inches - class 150
Maximum operating flow rate	880 gallons per minute
Weight	165 Kg
The number of magnets used	4 piece
<b>8 inch Magnetic Filter</b>	
Inlet and outlet flange	8 inches - class 150
Maximum operating flow rate	1570 gallons per minute
Weight	435 Kg
The number of magnets used	4 piece



# PACKMAN GROUP

## History

The Packman Company was founded in February 1975, and was soon afterwards registered in companies Registration Office. In early years the Packman construction and service branch focused on building installations. Different mega power plants were built by cooperating with Brown Boveri and Asseck companies in 1976.

The company started its official activities in construction of High-Pressure Vessels such as Hot-Water Boilers, Steam Boilers , Storage Tanks, Softeners and Heat Exchangers from 1984.

Packman Company is one of the first companies which supplied the high quality and standard hot water boilers to the customers.

Packman has exported its products to countries such as Uzbekistan, United Arab Emirates and other countries in the Middle East. It is one of the largest producers of hot-water and steam boilers in the Middle East.

Now we are proud to announce that the Packman industrial group has five major sub-brands that have product titles in all field of HVAC equipment and engineering services, and we do not know this success except with the help and support of our customers.

1. Construction Services Industry Association
2. Industry Association
3. Construction Companies' Syndicate
4. Technical Department Association
5. Mechanical Engineering Association
6. Engineering Standard Association

### Departements:

#### Sales Deps:

- ∩ Power Plant & Petrochemical
- ∩ Industrial
- ∩ Hospitally Service
- ∩ Commercial & Residential
- ∩ Sport Complex & Pool

#### Technical Deps:

- ≡ Manufacturing R&D
- ≡ Innovation Center
- ≡ EPC Execute Unit
- ≡ Product Develop Unit
- ≡ Sales Engineering Dep.

#### Others:

- ≈ After Sales Service
- ≈ Project Control
- ≈ Financial Office
- ≈ Commercial Office
- ≈ Marketing Department



# PACKMAN GROUP Brands



**PACKMAN**  
Industrial Group

Designer & manufacturer of Condensing, Hot Water, Steam, Hot Oil & Waste Heat Boilers, Heat Exchangers, Autoclave Pressure & Storage Vessels & etc



**GREENMAN**  
Green mindset, green future

Engineering & Designing Commercial Greenhouse Plant, CO2 Dosing System, Flue gas Condenser & Special HVAC Systems, Sustainable Agriculture & etc



**ROMAN**  
Water solution

Designer & manufacturer Reverse Osmosis Plant & Package, Water Treatment, Softener & Filters and Chemical Dosing Systems & etc



**RAADMAN**  
a look to the future

Designer & manufacturer of Industrial Mono & Dual Block Gas, LPG, Light & Heavy Oil Burners, Premixed & Postmixed Burners, Watertube burners, Process burners, Special application burners & Combustion Solutions & etc



**CHILLMAN**  
Coolest hvac around

Designer & manufacturer of Air & Water Cooled Chillers, Air Handling Units, Fancoil, HVAC Equipment, Cold Storage Room & etc



1. Isfahan Factory



2. Vilashahr Factory



3. Parand Factory



4. Parand (2) Factory



5. Bonyad Factory

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