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Magnetic dirt separator ADS HP for heat pumps

NOTE!

The product may only be used if you have fully read and understood these operating instructions. The manual is also available on the AFRISO websites in the Internet.

WARNING!

Dirt separators ADS HP must only be installed, commissioned and dismantled by trained and qualified personnel.

Changes and modifications carried out by unauthorised persons may cause danger and are prohibited for safety reasons.

Dirt separators are fitted with a magnetic component. People with pacemakers are advised to keep a safe distance from the unit. You should also be mindful of any electronic equipment installed near the unit. The separator's magnetic component may cause interference.

Risk of scalding from hot liquids – see the MAINTENANCE section.

APPLICATION

Used in heating and cooling systems where the medium circulates continuously. Installed on the return line from the system to the heat/cooling source. They protect the system against dirt that could cause damage or malfunction.

PREDICTABLE INCORRECT APPLICATION

The ADS HP dirt separator is not intended for use in the following cases and with the following media:

- mixtures of water and glycol with a glycol concentration of more than 50%, steam, oil, petrol, drinking water;
- for safety-related purposes;
- under conditions exceeding the maximum permissible pressure and temperature limits for the medium.

OPERATING PRINCIPLE

The medium returning from the system flows into the separator and is directed into the filter mesh. In the first stage, metallic dirt (e.g. rust particles, metal filings) is attracted by a magnet (Fig. 1). Meanwhile, the remaining dirt settles on the filter mesh (Fig. 2). The purified medium then reaches the heat/cooling source.

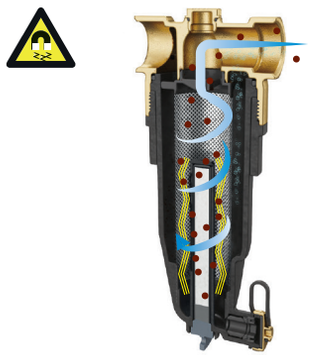


Fig. 1. Attraction of dirt by a magnet

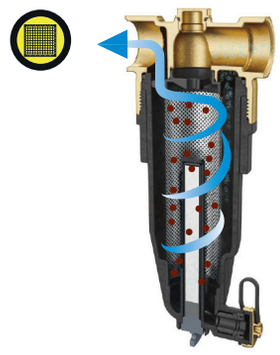


Fig. 2. Accumulation of dirt on the mesh filter

CONSTRUCTION AND COMPONENTS

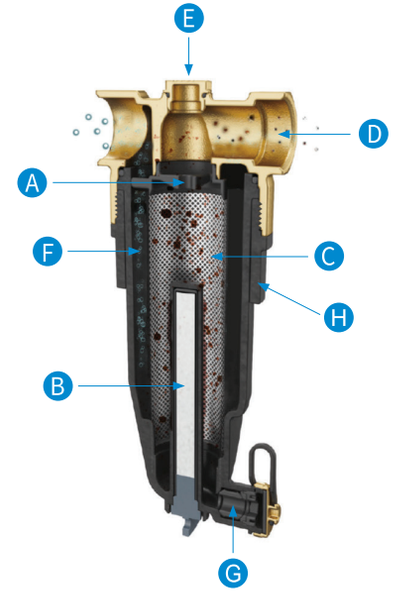
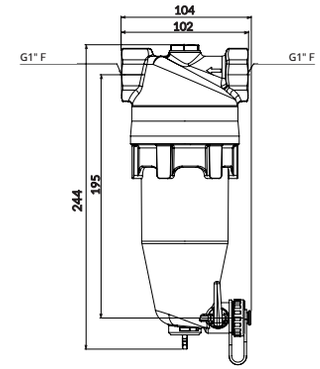


Fig. 3. Construction of the ADS HP magnetic dirt separator

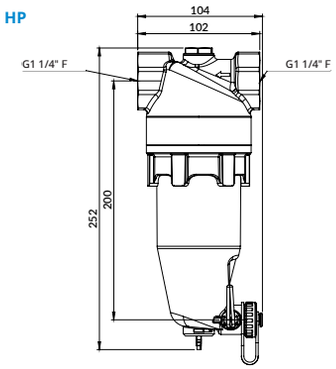
A. Mesh filter holder
B. Neodymium magnet
C. Stainless steel mesh filter
D. Housing
E. G½" plug (can be replaced with an automatic air vent with a stop valve, e.g. Art. No. 77 735 10)
F. Sediment trap
G. Drain valve with plug
H. Sediment trap nut

DIMENSIONS [mm]

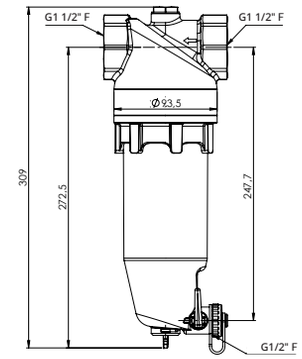
ADS 180 HP



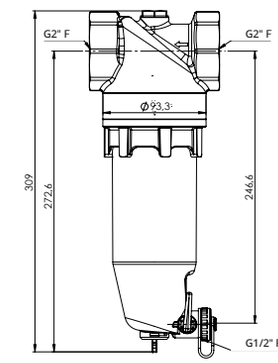
ADS 181 HP



ADS 182 HP



ADS 183 HP



MOUNTING

The ADS HP dirt separator should be installed on the return pipe to the heat/cooling source. It traps solid dirt that could cause damage to the heat/cooling source, circulation pumps and malfunction of mixing valves (particularly thermostatic ones). The separator may only be installed on horizontal pipes. The separator's drain valve should always face downwards (Fig. 4). The arrow on the housing indicates the direction of medium flow from the system to the source (Fig. 5). To facilitate maintenance work, it is recommended to install shut-off valves before and after the separator.

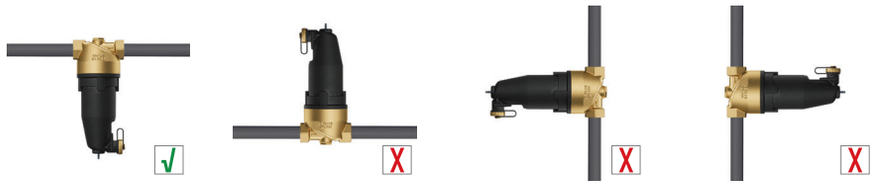


Fig. 4. Permissible installation position of the ADS HP separator

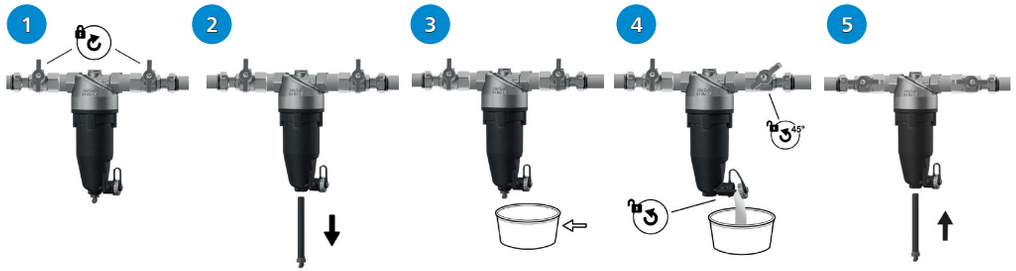
Fig. 5. Flow direction arrow in ADS HP separators

MAINTENANCE

Caution! Maintenance work must only be carried out once the system has cooled down completely. Otherwise, there is a risk of scalding from the hot medium.

The frequency of routine cleaning of the separator depends on the degree of dirt in the medium. However, we recommend that the separator be thoroughly cleaned and its connections checked for leaks at least once a year.

Routine removal of dirt



1. Switch off the heat/cooling source, then close the shut-off valves before and after the separator.
2. Remove the magnet. At this point, the dirt will settle at the bottom of the separator.
3. Prepare a container to catch the draining medium, open the drain valve cap and then the separator's drain valve itself.
4. Slowly open the shut-off valve on the system side and flush the separator.
5. Close the drain valve and screw the cap back on. Insert the magnet, open the shut-off valves and check the pressure in the system. If necessary, fill the system with water and switch on the heating/cooling source.

Complete cleaning of the separator

Follow steps 1 to 4 of the routine separator cleaning procedure, then:

1. Close the shut-off valve, unscrew the nut on the sediment trap and remove the filter mesh inside.

2. Rinse the sediment trap and the mesh filter thoroughly under running water.
3. Reassemble the separator: insert the mesh, screw the sediment trap into place, insert the magnet, and tighten the sediment trap's drain valve and the cap. Open the shut-off valves before and after the separator, check the system pressure, and start the heat/cooling source.

After each cleaning of the separator, ensure that there is no air trapped inside it.

To remove air, you can use the plug located at the top of the separator.

To remove air automatically, the plug can be replaced with an automatic air vent fitted with a stop valve (Art.-Nr **77 735 10**).

TECHNICAL DATA

Parameter	Value / description
Medium temperature	max. 90°C
Operating pressure	max. 3 bar
Glycol concentration in the system	max. 50%
Kvs (depending on the version selected)	17,1 m^3/h for ADS 180 HP 17,9 m^3/h for ADS 181 HP 28,6 m^3/h for ADS 182 HP 30,5 m^3/h for ADS 183 HP
Recommended flow rate (depending on the version selected)	max. 6,9 m^3/h for ADS 180 HP max. 7,3 m^3/h for ADS 181 HP max. 11,4 m^3/h for ADS 182 HP max. 12,2 m^3/h for ADS 183 HP
Magnet power	14 000 Gs
Connections (depending on the version selected)	G1" F for ADS 180 HP G1¼" F for ADS 181 HP G1½" F for ADS 182 HP G2" F for ADS 183 HP
Housing material	glass-fibre-reinforced polyamide PA66 + GF 30%, brass CW614N
Filter mesh material	AISI 304 stainless steel
Mesh size of the filter mesh	800 µm
Sealing material	EPDM

APPROVALS, CERTIFICATES

This product is subject to the Pressure Equipment Directive 2014/68/EU and is not CE marked in accordance with Article 4.3 (recognised engineering practice).

DECOMMISSIONING, DISPOSAL

1. Dismount the device.
2. Dispose of the product in accordance with applicable regulations, standards and safety guidelines.

This product is made from recyclable materials. If you have any questions or problems with disposal, please contact the proper distributor or manufacturer.

WARRANTY

Product guarantee in accordance with the general conditions of sale and delivery.

CUSTOMER SATISFACTION

For AFRISO customer satisfaction is paramount. If you have any questions, suggestions or product problems, please contact us.