



Unit Magnetic/Bag Filters

1-100 mikron/7-210 m³/h

HiFlux Magnetic/Bag Filter Units are used where there is a need for a complete solution for removal of magnetic particles and combine the advantages of magnetic and bag filtration.

HiFlux Units are used for partial flow filtration in district heating and cooling installations, as both magnetic and non-magnetic particles of less than 1 micron can be retained in the filter.

Partial flow filtration is used where there is a requirement for continuous flow, also during filter cleaning. Efficient removal of dirt and magnetic particles from the liquid reduces the number of breakdowns in the system and increases the life of measuring equipment, heat exchangers, pumps, valves and other components significantly.

In partial flow filtration 5-15% of the total flow is led out of the system and pumped through the magnetic/bag filter, and is then led back to the system – cleaned of sludge and magnetite. As the partial flow filter is not located in the main circuit, the flow through the filter can be interrupted and the filter cleaned without interrupting the main flow.

Continuous reduction of the sludge content reduces sedimentation in heat exchangers, pipes and other components, helping to keep heat transmission performance at a maximum and reducing corrosion in the system. Error indication in mechanical measuring equipment and errors in connection with inductive measuring are also minimised, which is why it is possible to achieve more reliable energy consumption measurements.

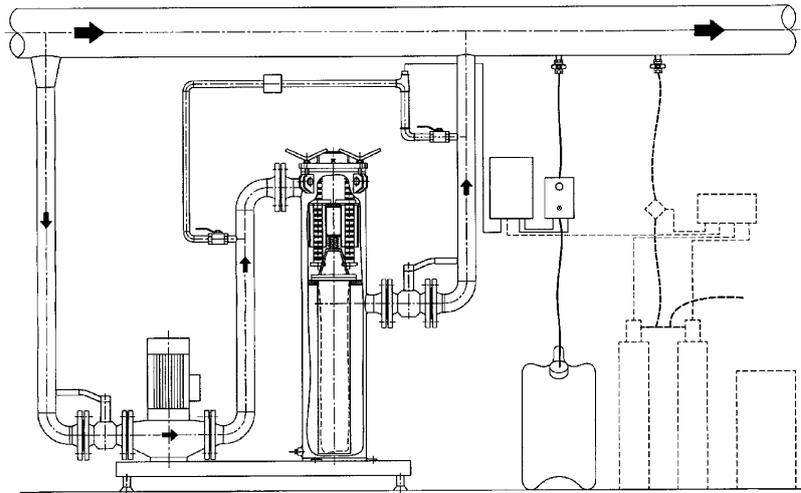
The magnetic bars in the filter are located in conducting pipes which lead the liquid through a magnetic field generated by magnets with changing polarity. This induces a field around even the smallest particles and so provides efficient retention of particles of less than 1 micron. The filter will actively retain ferromagnetic particles and some iron oxides of the Fe₃O₄, γ-Fe₂O₄, δ-Fe₂O₃ type and other mixed oxides of Fe₃O₄, where the spinel structure FeO is substituted by other oxides, e.g. CoO, MnO, NiO, ZnO, Cr₂O₃.

Non-magnetic particles are retained efficiently in the filter bag. (See also data sheet for filter bags).





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How much should be filtered:

Normally 5-15% of the flow through the main line should be filtered. In transmission systems which are characterised by a limited amount of circulating liquid and a relatively high liquid flow rate filtration of 3-5% of the main flow will be sufficient. Transmission systems are mostly isolated circuits where contamination is relatively limited.

In distribution networks filtration of around 5-10% will be sufficient to protect the system if it is of more recent date and the filter is installed when the system is started up. If partial flow filtration is installed in an older system where partial flow filtration has not previously been used 10-15% should be filtered to achieve a satisfactory result.

Where should the partial flow filter be installed:

The partial flow filter should preferably be installed in the return pipe. This is where the temperature is lowest which increases the efficiency of the magnets. Magnets loose approximately 0.2% of their efficiency with each temperature increase of one degree Celsius.

The filter unit should be placed in the lower part of the system as particles precipitate and accumulate here. Dirt has a tendency to move in the system during start-up and when the flow is changed as a result of regulation or pressure surges. It should therefore be expected that the filter will fill with dirt faster on these occasions.

When connecting the partial flow unit to the main line it is vital that the connection to the inlet side of the unit is fitted at the bottom of the main line. This is because the dirt particles move along the bottom of the pipe. The connection should also be installed where the flow of liquid in the main line can be expected to be laminar. This means that the outlet from the main line to the unit should be located at least 8 to 10 times the pipe diameter of the main line from either a bend, valve or other

Design and production:

HiFlux Units are manufactured in a number of different versions of which the standardised units are shown on the following pages. All units accommodate current standards and norms for pressure vessels, conform to the EMC Directive and are CE-labelled. Approval in accordance with the Danish Working Environment Service, TÜV, UDT etc. is possible. Filters of pressure class PN16 are manufactured in container steel with full traceability and continuous process control has been carried out. EN 10204 3.1.B material certificates, NDT report from welding test and check books are supplied in accordance with the official requirements of the place of use or as agreed.

Special versions can be made in co-operation with our design department.



HiFlux Micro-line Wall Unit 1 and 2 are designed as complete units for part-stream filtration in smaller heating and cooling systems with a flow of 10 - 75 m³/h in the main line - or with a total system flow of up to 80 m³/h.

The filter unit accommodates current standards and norms for pressure vessels, and is CE-marked. The unit is supplied complete with pump and filter with a magnetic bag insert fitted compactly on a galvanised base frame as well as bracket for wall mounting.

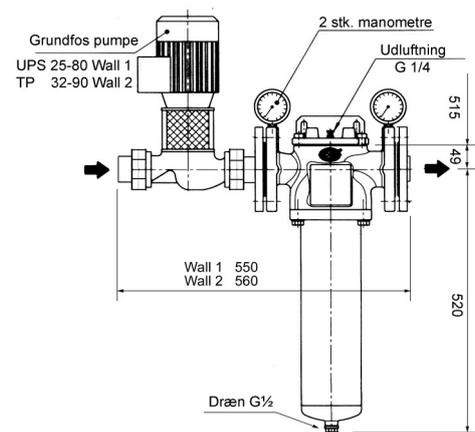
Design pressure:	10 bar
Test pressure:	15 bar
Max. differential pressure:	1,0 bar
Max. working temperature:	110 °C
Filter Volumen:	5 liter
Unit weight:	35 kg
Power supply:	230 VAC/50 Hz
Connection:	Micro-line Wall Unit 1: Rp 1" Micro-line Wall Unit 1: Rp 1 ¼" Micro-line Wall Unit 2: Rp 1 ¼"
Filtration:	See also data sheet for filter bags
Filter bag (PA):	10-50 micron (max. 120 °C)
Filter bag (PP):	1-5-10-25-50-100 micron (max. 90 °C)

Capacity at 1 cSt and 10 micron filtration

Micro-line Wall Unit 0:	2,4 m ³ /h at 4,6 mVs (design flow)
Micro-line Wall Unit 1:	4,0 m ³ /h at 5,2 mVs (design flow)
Micro-line Wall Unit 2:	7,5 m ³ /h at 5,0 mVs (design flow)

The integrated unit is fully tested and is quick and easy to install.

A differential pressure indicator can be fitted as an optional extra (see data sheet for differential pressure indicator). The unit may also be equipped with secondary bypass circuit for pH-electrode for automatic dosing systems.





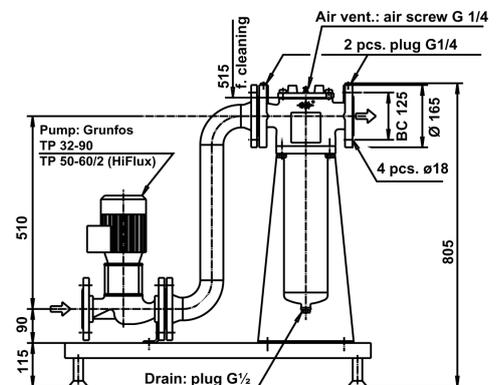
The HiFlux Micro-line Unit is designed as a complete unit for partial flow filtration in heating and cooling systems with a flow of 50 - 200 m³/h in the main line.

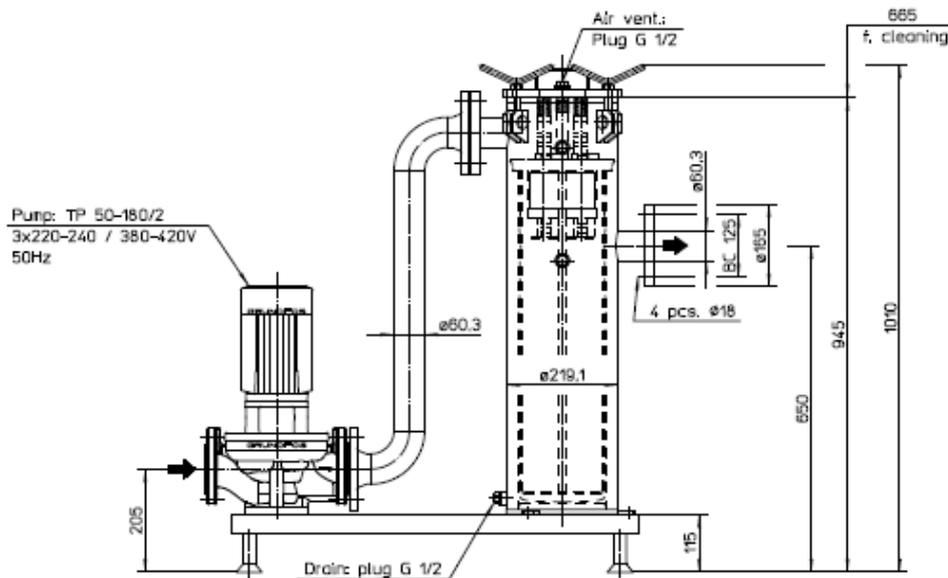
The filter unit accommodates current standards and norms for pressure vessels, and is CE-marked. The unit is supplied complete with pump and filter with a magnetic bag insert fitted compactly on a galvanised base frame.

Design pressure:	10 bar or 16 bar
Test pressure:	15 bar and 24 bar respectively
Max. differential pressure:	1.0 bar
Filter area:	1050 cm ²
Max working temperature:	110 °C
Filter volume:	5 litres
Unit weight:	50 kg
Power supply:	230 VAC/50 Hz or 3 x 230 VAC/50 Hz
Flange connection:	DN 50 EN 1092-1
Filtration:	See also data sheet for filter bags
Filterbag (PA):	10-50 micron (max. 120 °C)
Filterbag (PP):	1-5-10-25-50-100 micron (max. 90 °C)
Capacity at 1 cSt and 10 micron filtration	
Micro-line Unit:	7.5 m ³ /h at 5.0 mVs (design flow)
Micro-line HiFlux Unit:	10 m ³ /h at 6.5 mVs (design flow)

The integrated unit is fully tested and is quick and easy to install.

A differential pressure indicator can be fitted as an optional extra (see separate datasheet for differential pressure indicator). The filter has also been prepared for installation of a trickle circuit for connection of a pH-electrode for an automatic chemical dosage system.





The HiFlux TM4-P4250 HiFlux Unit is designed as a complete unit for partial flow filtration in heating and cooling systems with a flow of 150-480 m³/h in the main line.

The filter unit accommodates current standards and norms for pressure vessels, complies with the EMC directive and is CE-labelled. The unit is supplied complete with pump and filter with a magnetic bag insert fitted compactly on a galvanised base frame.

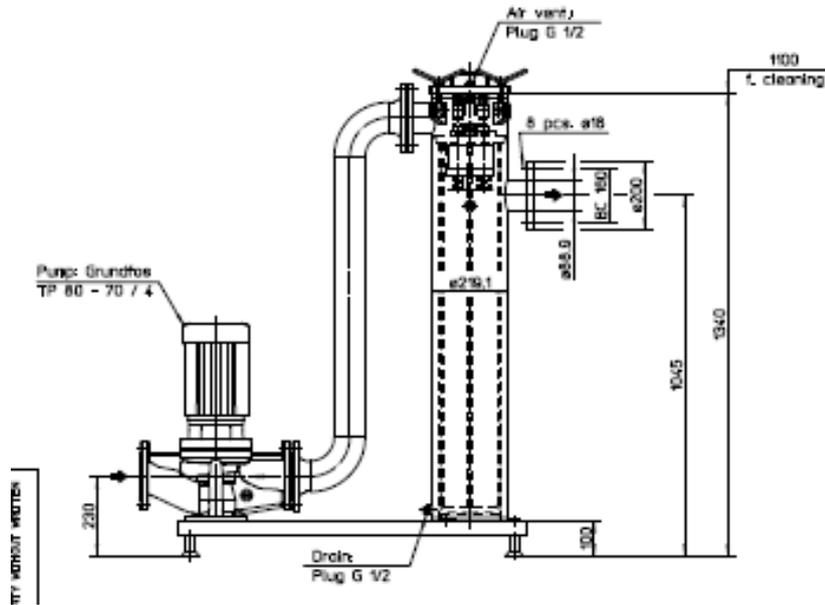
Design Pressure:	10 bar or 16 bar
Test Pressure:	According to EN13445
Max. Differential Pressure:	1,0 bar
Filter area:	4250 cm ²
Max. Working Temperature:	110°C (water) or according to customer requirements.
Filter volume:	30 liter
Unit weight:	90 kg
Power Supply:	240 VAC/50 Hz or 3x240 VAC/50 Hz
Flange Connection:	DN50 PN16 EN1092-1
Filtration:	See also datasheet for filter bags.
Polypropylene:	1-5-10-25-50-100-200 micron (max 90°C)
Polyester:	1-5-10-50-75-100-150-200-300 micron (max. 150°C)

Capacity at 1 cSt and 10µm filtration:

TM4-P4250 HiFlux Unit: 24m³/h at 7,5 mVs (design flow)

The integral unit is fully tested and is quick and easy to install.

A differential pressure indicator can be fitted as an optional extra. The filter has also been prepared for installation of a trickle circuit for connection of a pH electrode for an automatic chemical dosage system.



The HiFlux TM4-P6300 HiFlux Unit is designed as a complete unit for partial flow filtration in heating and cooling systems with a flow of 200-800 m³/h in the main line.

The filter unit accommodates current standards and norms for pressure vessels, complies with the EMC directive and is CE-labelled. The unit is supplied complete with pump and filter with a magnetic bag insert fitted compactly on a galvanised base frame.

Design Pressure:	10 bar or 16 bar
Test Pressure:	According to EN13445
Max. Differential Pressure:	1,0 bar
Filter area:	6300 cm ²
Max. Working Temperature:	110°C (water) or according to customer requirements.
Filter volume:	44 liter
Unit weight:	100 kg
Power Supply:	240 VAC/50 Hz or 3x240 VAC/50 Hz
Flange Connection:	DN80 PN16 EN1092-1
Filtration:	See also datasheet for filter bags.
Polypropylene:	1-5-10-25-50-100-200 micron (max 90°C)
Polyester:	1-5-10-50-75-100-150-200-300 micron (max. 150°C)

Capacity at 1 cSt og 10µm filtration::

TM4-P6300 HiFlux Unit: 40m³/h at 8,0 mVs (design flow)

The integral unit is fully tested and is quick and easy to install.

A differential pressure indicator can be fitted as an optional extra. The filter has also been prepared for installation of a trickle circuit for connection of a pH electrode for an automatic chemical dosage system.

