FRIESS
FLUID CLEANING
Made in Germany

Self-Cleaning Magnetic Filter System

ASMF

The self-cleaning Friess magnetic filter ASMF easily, quickly and reliably removes particles from emulsions, cutting oils, grinding oils, etc.

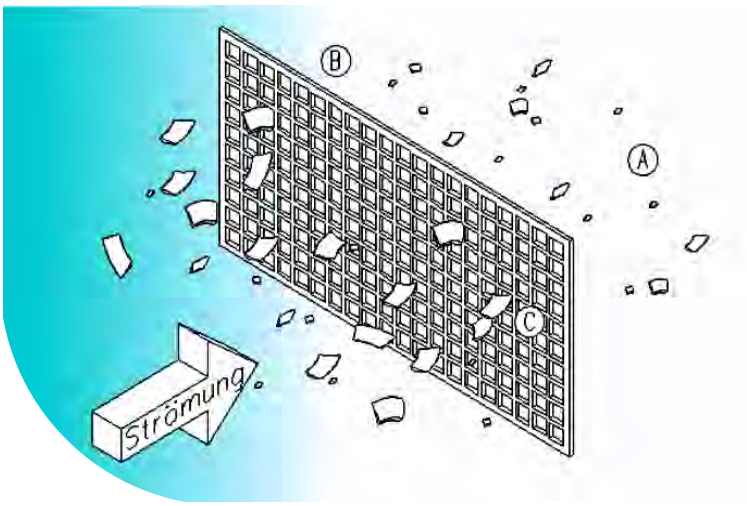
Advantages

- Self-cleaning due to flushing
- Does not need any consumables
- Less wear of pumps and valves as all particles down to 1 µm are removed
- Longer service life of the tools used
- Significantly reduced operating costs due to longer service life of the fluid

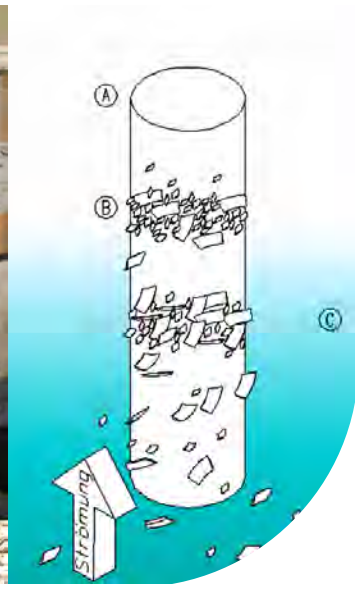
Technical Data	ASMF 3	ASMF 5	ASMF 8
Max. flow rate (water)	150 l /min	300 l /min	600 l /min
Max. flow rate (oil)	75 l /min	150 l /min	300 l /min
Operating temperature	5 - 60 °C	5 - 60 °C	5 - 60 °C
Max. operating pressure	10 bar	10 bar	10 bar
Connection inlet / outlet	1 "	1 1/2 "	2 "
Voltage	230 V	230 V	230 V
Dirt holding capacity	3 kg	5 kg	8 kg
Dimensions L x W x H	485 x 639 x 1358 mm		531 x 831 x 1508 mm
Compressed air (for all variations)	min. 6 bar - max. 7 bar		

1. Operation of the Magnetic Filter

With conventional filters, particles smaller than the specified pore size of the filter remain in the liquid and accumulate unhindered. The ASMF magnetic filter removes ferritic particles of all sizes down to less than 1µm. The magnetic filter removes iron and steel particles. In addition, paramagnetic particles made of stainless steel or hard metal are attracted by the magnetic filter rods and removed from the liquid.



Operating principle conventional filter



1) Contaminated magnetic bars 2) Operating principle magnetic filter rod

2. Conventional Filter

A. Particles that are smaller than the specified pore size of the filter remain in the fluid and thus reduce its efficiency. In addition, machines and cutting tools are subject to increased wear.
B. Individual filter pores become clogged and system pressure increases.
C. Further filter pores become clogged and the filter material must be changed.

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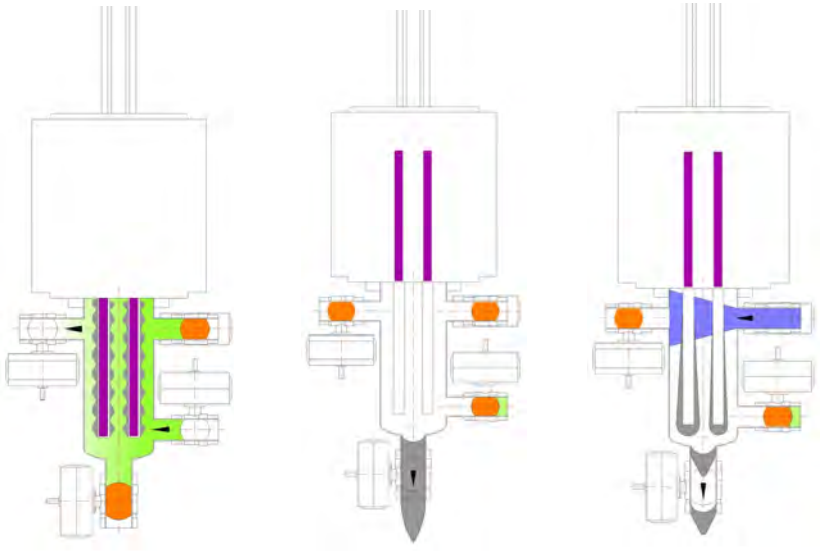
3. Magnetic Filter

A. All magnetisable particles are removed.
B. Even particles up to 1 µm are attracted by the magnetic rod and removed from the liquid.
C. With the Friess magnetic filter, the flow paths remain clear even when the filter is full. Blocking of the filter is not possible.

4. Operation of the Self-Cleaning Magnetic Filter ASMF

The liquid to be cleaned enters the housing of the magnetic filter through a pneumatic ball valve. Inside the filter housing are stainless steel cladding tubes around which the liquid to be cleaned flows. Highly efficient neodymium magnets with extremely high field forces are used inside the stainless steel cladding tubes. The magnets draw the dirt particles contained in the liquid to the outside of the stainless steel cladding tubes and they adhere to the surface. Due to the long residence time of the liquid in the magnetic field, even small particles down to about 1 µm are attracted and removed from the fluid. The cleaned liquid then flows on to the machine via a second pneumatic ball valve. Due to the special flow guidance and the extremely high field strength of the magnets used, a very high separation efficiency is achieved, especially for ultra-fine particles down to less than 1 µm.



1. Filtration process

2. Cleaning of filter

3. Flushing with additional fluid

5. Cleaning the Magnetic Filter ASMF

Cleaning is fully automatic and controlled by a PLC. Inlet and outlet are closed. The magnetic filter rods are then pulled out of the cladding tubes. Then the sludge discharge valve is opened and the dirt particles flow out of the filter housing with some liquid. The filtration process is then continued.

6. Applications

- Emulsion / coolant
- Drawing oil
- Washing water
- Grinding & honing oil
- Fuel

7. Variants

- High temperature version for fluids above 60 °C
- Additional treatment system for flushing liquid

For more information, consultation and ordering:

- Phone +49 21 73 / 520 11
- Internet at www.friess.eu
- E-Mail at post@friess.eu