FRIESS
FLUID CLEANING
Made in Germany

Self-Cleaning Magnetic Filter

Model SMF

The Friess magnetic filter SMF removes particles easily, quickly and reliably from emulsions, cutting oils, grinding oils, etc.

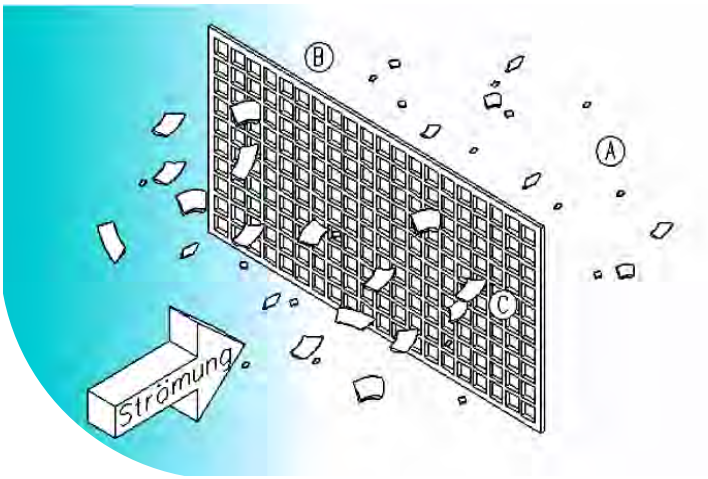
Advantages

- Significantly reduced operating costs due to longer service life of the fluid used
- No consumables required
- Reduced wear of machines, as particles of all sizes down to 1 µm are removed
- Longer service life of tools used and self-cleaning through flushing
- Improved surface quality due to clean cooling lubricant

Technical data	SMF 3	SMF 5
Max. flow rate (water)	150 l /min	300 l /min
Max. flow rate (oil)	75 l /min	150 l /min
Max. operating pressure	10 bar	10 bar
Connector	1" BSP	1 1/2" BSP
Dirt holding capacity	2 kg	5 kg
Number of magnetic rods	3	5
Dimensions L x B x H	510 x 430 x 1300 mm	510 x 430 x 1300 mm
Air pressure	min. 6 bar max. 7 bar	
Operatung temperature	5 °C - 60 °C	

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 SMF magnetic filter removes ferritic particles of all sizes down to less than 1 µm. 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

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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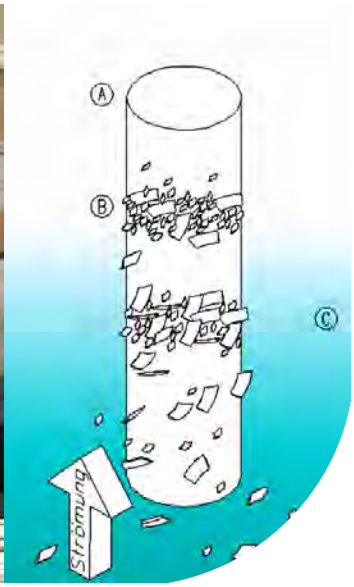


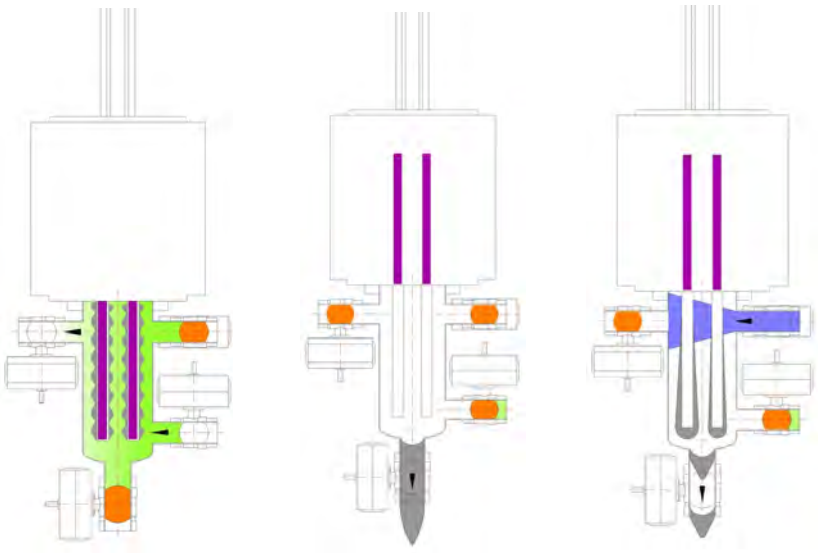
1) Contaminated magnetic bars 2) Operating principle magnetic filter rod

3. Magnetic Filter

A. All magnetizable 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 Friess Magnetic Filter SMF

The liquid enters the magnetic filter through the inlet opening. Then it flows along the outer surfaces of the magnetic filter rods. The dirt particles are attracted by the magnetic filter rods and adhere to the surface of them. The cleaned liquid then flows to the outlet opening and leaves the magnetic filter. Due to the special flow guidance and the high field strength of the magnets used, a high separation efficiency is achieved, especially for small particles down to less than 1 µm.



1. Filtration process

2. Cleaning of magnetic filter

3. Flushing with additional fluid

5. Cleaning the Magnetic Filter SMF

The inlet and outlet valves are closed for cleaning the magnet bars. Then the high-performance magnets are pulled out of the cladding tubes by the compressed air cylinder. When the sludge drain valve is opened, the dirt particles are flushed out of the filter. Residual dirt is removed by briefly opening the flushing valve. In contrast to the ASMF model, the valves must be opened and closed manually.

6. Applications

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

7. Variants

- High temperature version above 60 °C

For more information, consultation and ordering:

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