

# Friess Magnetic filter system FMF 420



The FRIESS Magnetic filter system FMF 420 removes particles from coolant, cutting oil, grinding oil and other process fluids.

## Operation principle:

Particles, which are smaller than the pore size of the filter media, will pass the filter media together with the fluid. The number of small particles in the fluid will grow continuously.

The Friess magnetic filter series FMF removes ferromagnetic particles of all sizes down to 1 µm.

The Friess magnetic filter series FMF removes steel particles and iron particles. In addition to that the magnetic filter removes paramagnetic particles like stainless steel, hard metal and other..

In order to clean the magnetic filter system the particles, collected on the magnetic rod, have to be scraped off with a special designed tool.

## Your advantages:

- Drastically reduced operation cost due to longer lifetime of fluid
- Does not need any consumables
- No cost for waste disposal because the collected sludge can be recycled.
- Less waste because no consumables have to be disposed
- Less wear at pumps and valves because particles down to 1 µm will be removed.
- No additional energy necessary
- Improved surface quality because of clean coolant
- Longer lifetime of tools

## Technical data

### max. flow (water based liquid):

FMF 420/3: 250 l/min  
FMF 420/6: 500 l/min

### max. flow (oil based liquid):

FMF 420/3: 125 l/min  
FMF 420/6: 250 l/min

### max. pressure:

FMF 420/3: 15 bar  
FMF 420/6: 10 bar

### connection:

FMF 420/3: 1 1/2" BSP  
FMF 420/6: 2 1/2" BSP

### dirt holding capacity:

FMF 420/3: 3.0 kg  
FMF 420/6: 6.0 kg

### number of magnetic rods:

FMF 420/3: 3  
FMF 420/6: 6

### weight:

FMF 420/3: 13.2 kg  
FMF 420/6: 19.6 kg

### dimensions:

#### height

FMF 420/3: 511 mm  
FMF 420/6: 511 mm

#### bottom plate

FMF 420/3: 170 x 170 mm  
FMF 420/6: 200 x 200 mm

### Standard filter

- Ⓐ Particles, which are smaller than the pore size of the filter, remain in the liquid and will reduce the efficiency of the liquid. The small particles will cause wear at machines, pumps and cutting tools.
- Ⓑ Bigger particles will block the filter pores and the system pressure will rise.
- Ⓒ More pores will be blocked by dirt particles and filter has to be changed.

### Magnetic filtration

- Ⓐ The magnetic rod will collect all ferritic particles in the liquid.
- Ⓑ Even particles down to 1 µm will be attracted by the strong magnets and will be removed from the liquid.
- Ⓒ The flow path of the Friess magnetic filter FMF will not be blocked even if the filter is completely saturated with particles. This guarantees full flow of liquid.

### Function of Friess magnetic filter FMF

The liquid is guided through the inlet into the magnetic filter housing. The liquid flows along the outside of the magnetic rod. Ferritic dirt particles will be attracted by the magnetic filter rods and will stick on the surface of the magnetic filter rod. The clean liquid flows to the outlet into the main tank.

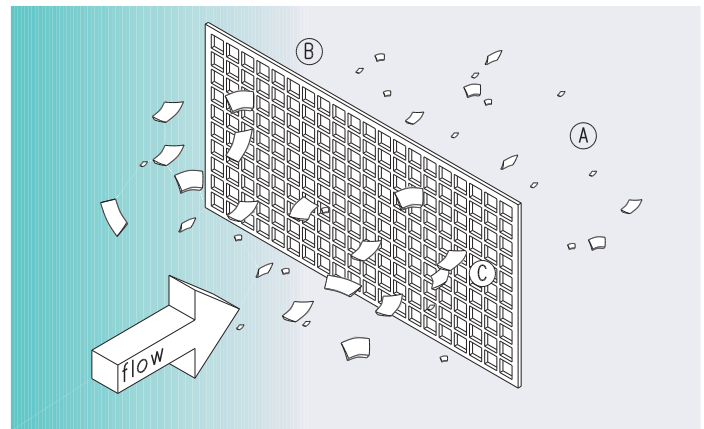
The special designed flow and the extreme high field force of the used magnets guarantees a high efficiency especially in the filtration of small particles down to 1 µm.

### Cleaning of the magnetic rod

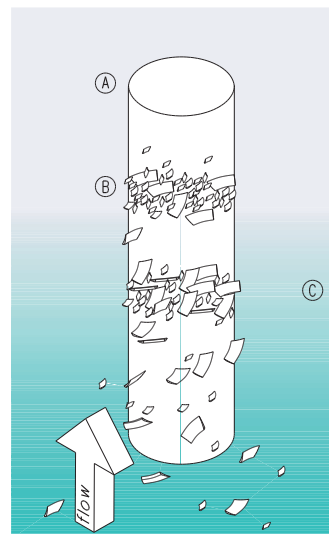
In order to clean the magnetic rod the filter will be supplied with a special designed tool. With this tool it is easy to scrape off the collected sludge. The particles can be recycled because it is ferritic material only.

### Typical application

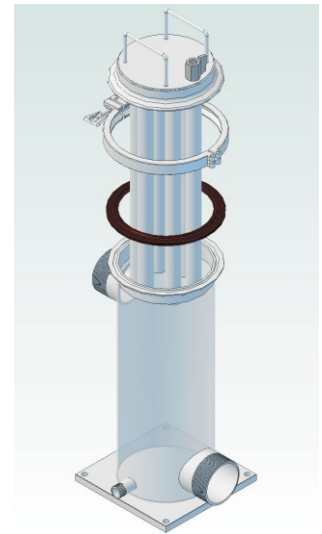
Coolant	Drawing oil
Grinding oil	Honing oil
Washing water	Fuel



Working principle filtration



Working principle magnetic filter rod



Magnetic filter FMF 420/6



Finest debris collected on magnetic filter rod



Ferritic particles on magnetic filter rods

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