

## Magnetically Coupled Filter

# MCF

Mechanically Cleaned  
Permanent Media



## Simplified design uses only 25 total parts

*Up to 45.4 m<sup>3</sup>/h throughput with virtually no downtime with the MCF series magnetically coupled self-cleaning filter. This technology allows for quick and easy access for maintenance, reduces potential leaks and requires few moving parts while providing a long service life.*

### FEATURES

- Permanent media retains valuable product otherwise lost by media changeout
- Simple design with very few wear parts - for reduced stocking of spare parts
- No external shaft or drive seals – eliminates all associated leakage
- Cleanable permanent media eliminates downtime and disposal requirements
- Easy no-tools access for routine maintenance and service
- Continuous operation – even during cleaning cycles

### OPTIONS

- EPT/EPDM (Nordel™) or Viton® seal material
- Advanced programmable microprocessors
- DIN/ASME design units
- Automatic pressure transmitters
- Purge welding, internal and external polishing
- Multi-station configurations
- Air bleed capability

### TYPICAL APPLICATIONS

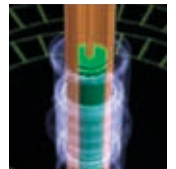
- Paper coatings • PCC/GCC slurries • Phenolic resins • Petroleum-based greases • Ethanol processing • CIP fluids (sodium hydroxide) • Hot fry oils • Starch • Lime slurries • Curtain coaters • Nutra-ceuticals • Machining coolants • Adhesives • Paint • Ink • Chocolate • Edible oils • Detergents • Tallow

Eaton's MCF, draws upon our rich history of self-cleaning filtration. The innovative, magnetically coupled drive technology, which moves the cleaning disc without the need for external shaft or drive seals, makes the MCF unique. The MCF, a cost effective solution, is designed for a wide range of industrial liquid filtration applications. It also addresses the challenges of environmental concerns, loss of valuable product and demand for greater operator safety.

### How the MCF works

Filtrate flows from the top down and from the inside of the media towards the outside to increase retention of contaminants. The unique design uses a spring-loaded cleaning disc that travels top to bottom inside the filter media, removing collected contaminants. The cleaning disc and flow continually drive undesirable solids downwards, where they are concentrated in the purging chamber for easy expulsion. A hollow shaft at the centre of the system contains a piston with powerful rare earth magnets. These internal magnets are coupled to external magnets housed in a carrier connected to the cleaning disc.

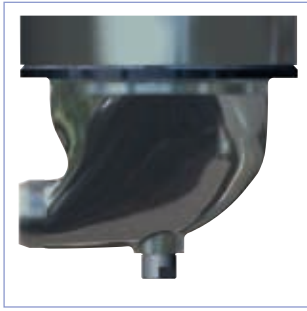
Pneumatic actuation moves the inner magnet up and down the shaft, with the outer magnet on the cleaning disc following. The result is powerful actuation, without the need for a physical linkage passing through the vessel.



# EATON

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# MCF Series Magnetically Coupled Filter



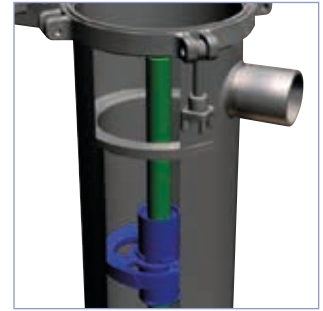
The MCF purge chamber was engineered without horizontal surfaces to facilitate flow dynamics for an extremely thorough purging process.



Choice of stainless steel filters includes wedge wire, rated from 15 – 1,125 microns, or perforated screens for complete removal of large solids.



Quartered spring-loaded cleaning disc combines maximum wear characteristics with optimised cleaning ability.

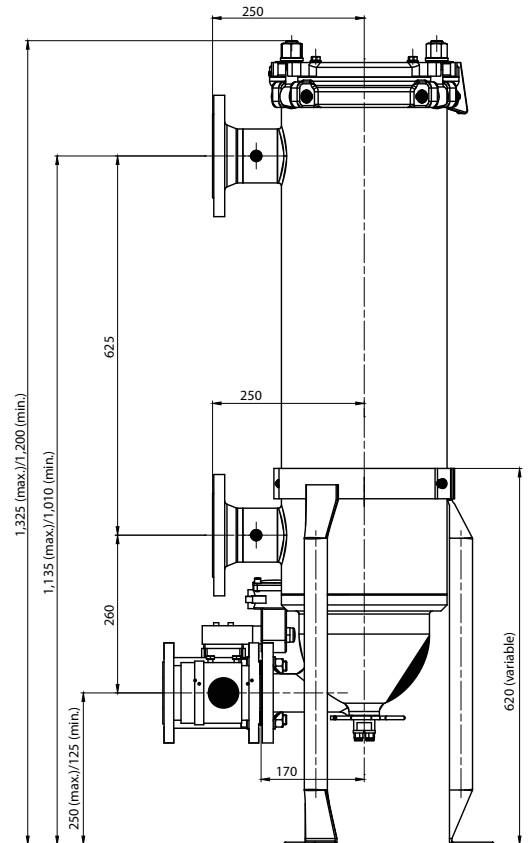


Easy-open lid provides convenient access to internal components. Small footprint (460 x 500 mm) makes it practical to install the MCF in any operation.

## MCF STANDARD: SPECIFICATIONS

Single unit weight	91 kg
Service height	1,875 mm
Footprint	498 mm x 457 mm
Volumetric capacity	41.6 litres total
Purge chamber	5 litres capacity
Connections: standard	DN 80 DIN flange DN 50 DIN flange purge
Connections: optional	150# RFSO flange, sanitary, or BSPT – and purge valve options and more
Filtration surface area	3935 cm <sup>2</sup>
Media	Wedge wire: 15 – 1,125 µm, or defined pore: 25 – 100 µm
Screen	Diameter: 203 mm, length: 610 mm, area: 3,935 cm <sup>2</sup>
Flow rate range	6.8 – 45.4 m <sup>3</sup> /h
Temperature, maximum	82 °C
Operating pressure	2 – 10 bar
Elastomer seal	Optional: EPT/EPDM (Nordel™) or Viton®
Cleaning disc	Standard: Delrin Optional: high-density polyethylene
Housing/wetted parts material	Standard: 316 stainless steel
Controllers	Standard: Siemens LOGO control
Controller options	Semi-automatic electric, PLC
Air for actuator drive (clean, dry, non-lubricated air)	5.5 bar @ 142 l/min.
Electrical for controllers	220 volts, 50 single-phase

\* Dependent on elastomer seal and cleaning disc material selection.



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