

Magnetically Coupled Filter

MCF

824-Series

Mechanically Cleaned
Permanent Media



Simplified design uses only 25 total parts

Up to 200 GPM throughput with virtually no downtime with the MCF 824-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 spare parts stocking needs
- 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 or FPM (Viton®)
- Advanced programmable microprocessors
- ASME code and CRN design units
- Automatic pressure transmitters
- Purge welding, internal and external polishing
- Multi-station configurations
- Air bleed capability

TYPICAL APPLICATIONS

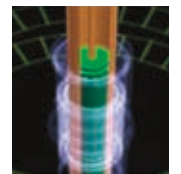
- paper coatings • pcc/gcc slurries • phenolic resins • petroleum based greases • ethanol processing
- cip fluids (sodium hydroxide) • hot fry oils • starch • lime slurries • curtain coaters • nutricosmetics
- machining coolants • adhesives • paint • ink • chocolate • edible oils • detergents • tallow

The MCF, from Eaton, draws upon our rich history of self-cleaning filtration. The innovative, magnetically coupled drive technology that moves the cleaning disc—without the need for shaft or drive external 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 toward 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 downward, where they are concentrated in the purging chamber for easy expulsion. A hollow shaft at the center 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.



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MCF 824-Series Magnetically Coupled Filter



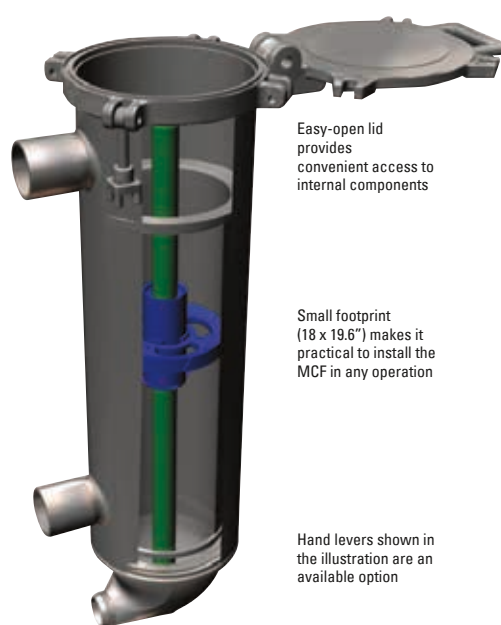
The MCF purge chamber was engineered without horizontal surfaces to facilitate flow dynamics for an extremely thorough purging process



Choice of stainless steel filters include wedge wire, rated from 15 – 1125 microns or perforated screens for complete removal of large solids



Quartered spring loaded cleaning disc combines maximum wear characteristics with optimized cleaning ability



Easy-open lid provides convenient access to internal components

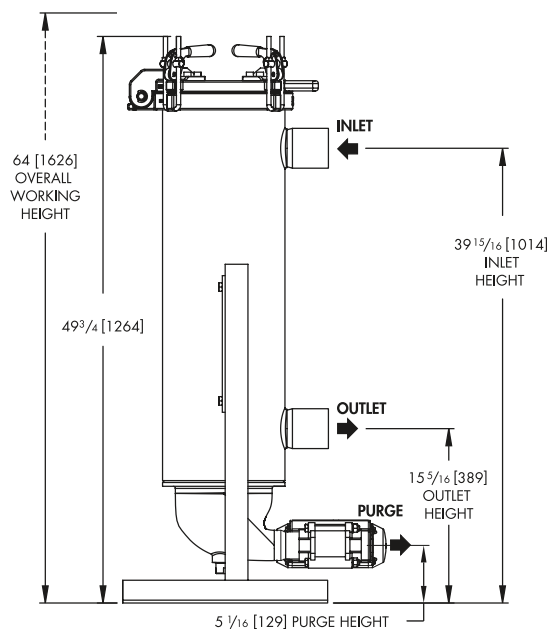
Small footprint (18 x 19.6") makes it practical to install the MCF in any operation

Hand levers shown in the illustration are an available option

MCF-824 STANDARD SPECIFICATIONS

Single Unit Weight	200 lbs (91 kg)
Service Height	64 in (1,626 mm)
Footprint	19.6 in (498 mm) x 18 in (457 mm)
Volumetric Capacity	11 gal (41.6 l) total
Purge Chamber	1.3 gal (5 l) capacity
Connections: Standard	3 in (75 mm) I/O NPTE thread, 2 in (50 mm) NPTI purge
Connections: Optional	150# RFSO flanged, Sanitary, DIN (PM16) flanged, or BSPT—and purge valve options and more
Filtration Surface Area	601 in ² (3,935 cm ²)
Media	Wedge wire: 15–1,125 μm, or defined pore: 25–100 μm
Screen	Diameter: 8 in (203 mm), Length: 24 in (610 mm), Area: 610 in ² (3,935 cm ²)
Flow Rate Range	30–180 gpm (6.8–45.4 m ³ /h)
Temperature, maximum*	180 °F (82 °C)
Operating pressure	30–150 psi (2–10.5 bar)
Elastomer Seal	Optional: EPT/EPDM or FPM (Viton®)
Cleaning Disc	Standard: Delrin® - optional: High-Density Polyethylene
Housing/Wetted Parts Materials	Standard: 316 stainless steel
Controllers	Standard: continuous cleaning valve (CCV)
Controller Options	Push button, semi-automatic electric, electric timer, PLC
Air for Actuator Drive (clean, dry, non lubricated air)	80 psi (5.5 bar) at 5 cfm (140 m ³ /m)
Electrical for Controllers	(if equipped with optional electric automatic control timer): 110 or 220 Volt, 50 or 60 Hz, single-phase

* Dependent on elastomer seal and cleaning disc material selection.



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