

FERROUS PARTICULATE REMOVAL USING MAGNETIC SEPARATION

In the processing of ferrous metal working, water, water-based fluids or oils become contaminated with ferrous particles. These contaminants in high enough concentrations result in increased product defects, decreased tool life and fluid life. The Filtertech Model MMS "Mini Mag" Magnetic Separator utilizes a vertical bar design in which several magnetic bars are placed in an enclosure through which the dirty liquid travels. As the dirty liquid passes by the magnetic bars, the ferrous particles are attracted to the magnetic bars which are then removed from the bars by an efficient wiping system.

Unique to the concept is an independent purge feature which allows the accumulated solids to be discharged "free" of loose liquid in a separate collection drum or hopper.

EQUIPMENT FEATURES

Standard

- Heavy-duty construction.
- Compact design minimizes floor space requirements.
- Magnet bar design with high-strength permanent magnets for efficient ferrous particulate removal.
- Pneumatically-actuated bar wiping assembly for efficient removal of accumulated solids.
- Pneumatically-actuated solids discharge port for fully-automatic cleaning with independent purge connection.
- Automatic Actuated inlet port.
- Solids discharge 'free' of loose liquid.
- 110V Control panel with NEMA 12 enclosure.

Options

- 304 Stainless steel wetted construction.
- 316 Stainless steel wetted construction.
- Support, free standing or wall mount.
- Bypass circuit with automatic valves.



Model MMS-16-480 'Mini Mag' Magnetic Separator

TYPICAL APPLICATIONS

- **Strip Cleaning**
- **Steel Rolling**
- **Grinding**
- **Machining**
- **Continuous Cast**

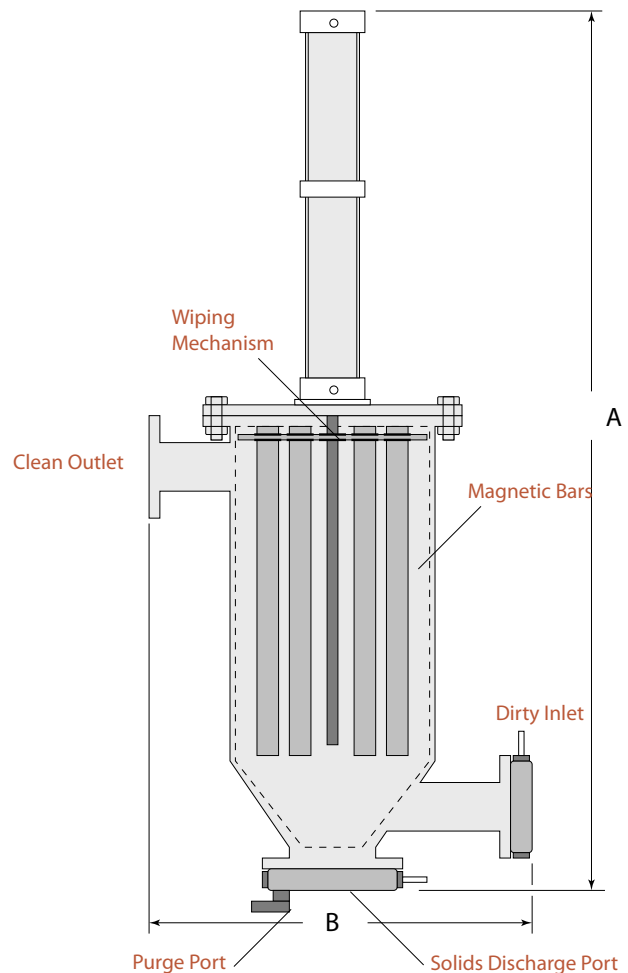
MODE OF OPERATION

The dirty liquid enters the Mini Mag Separator through the lower inlet port. The liquid travels up the interior of the vessel at low velocity where it must pass by several magnetic bars which contain permanent high-strength magnets. As the liquid passes the bars, the ferrous particles are attracted to the bars where they accumulate on the surface. The clean liquid continues up the chamber and exits through the upper discharge port and out of the unit.

The accumulated ferrous particles form a thick layer on the surface of the magnetic bars and must be removed. An adjustable timer is used to set the frequency at which the bars are cleaned. During the cleaning cycle, flow to the Mini Mag Separator is stopped by closing the inlet port with an automatic actuated valve. The automatic purge valve opens and drains the unit of liquid. The pneumatically-controlled wiping mechanism cleans and removes the accumulated solids from the surface of the magnetic bars. The efficient wiping mechanism removes solids a full 360 degrees around the entire surface of each magnetic bar. When the solids are removed from the bars, the bottom solids discharge port is opened by a pneumatically-actuated valve, and the solids are discharged “free” of loose liquid into a collection drum or hopper for disposal.

Once the short cleaning cycle is complete, the solids discharge port is closed, and the liquid inlet port is opened and flow resumes through the unit. An optional bypass circuit is available with automatic outlet and bypass valves if flow to the process must be continuous, or the unit is installed inline to a pressurized system.

FIGURE 1
MODEL MMS



SPECIFICATIONS

Model†	Dimensions ft-in (cm)		Volume gal. (ltrs)	Power Requirements	Est. Weight lbs. (kg)
	A	B			
MMS-6-180	5'-10" (178)	1'-10" (56)	57 (215)	110V	300 (135)
MMS-8-240	5'-10" (178)	2'-2" (66)	61 (230)	110V	330 (150)
MMS-16-480	5'-10" (178)	2'-6" (76)	64 (242)	110V	465 (211)

† Other models are available on a custom basis.

Specifications subject to change without notice.

MINI MAG MAGNETIC SEPARATOR (MMS)