

Note: Read this operations manual thoroughly before using this equipment.



MSC Filtration Technologies MS MudSucker Machine Tool Sump Cleaner Owners and Operations Manual

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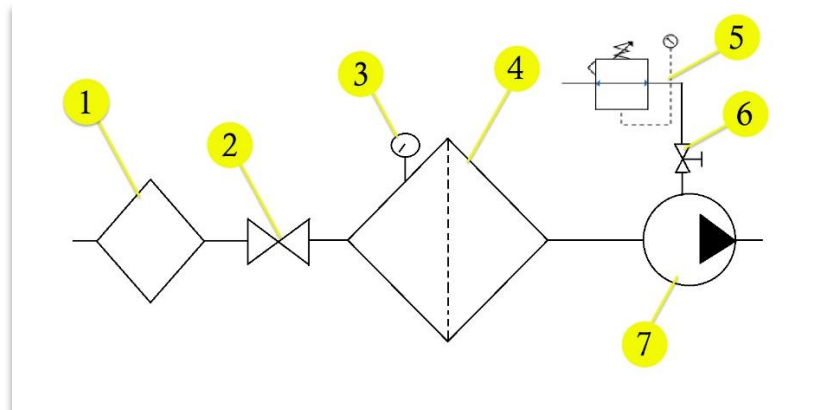
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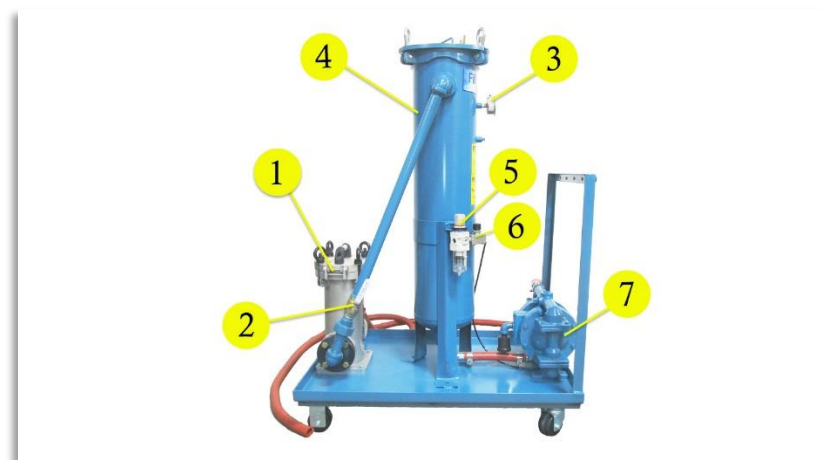
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Section 1: FilClean DMS Component Description



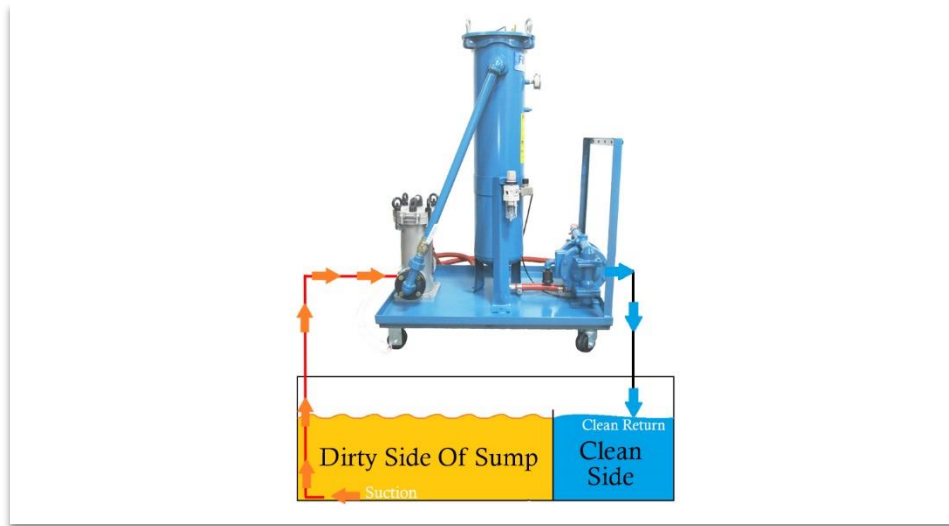
(Figure 1)



(Figure 2)

Item	Description
1	Optional – Inline Cleanable Magnet. Options Models -FM1.5+/ANSI, FM1.5+/ANSI/11K, FM2.0+/ANSI, FM2.0+/ANSI/11K
2	Block Valve – Only supplied with item 1 option above
3	Upstream Pressure Gauge
4	Size 12 Bag Filter Housing
5	Air Filter/Pressure Regulator
6	Coolant Pump Flow Control Valve
7	0-25 gpm Variable Flow Air Diaphragm Pump

Section 2: FilClean MS Set up and Start UP

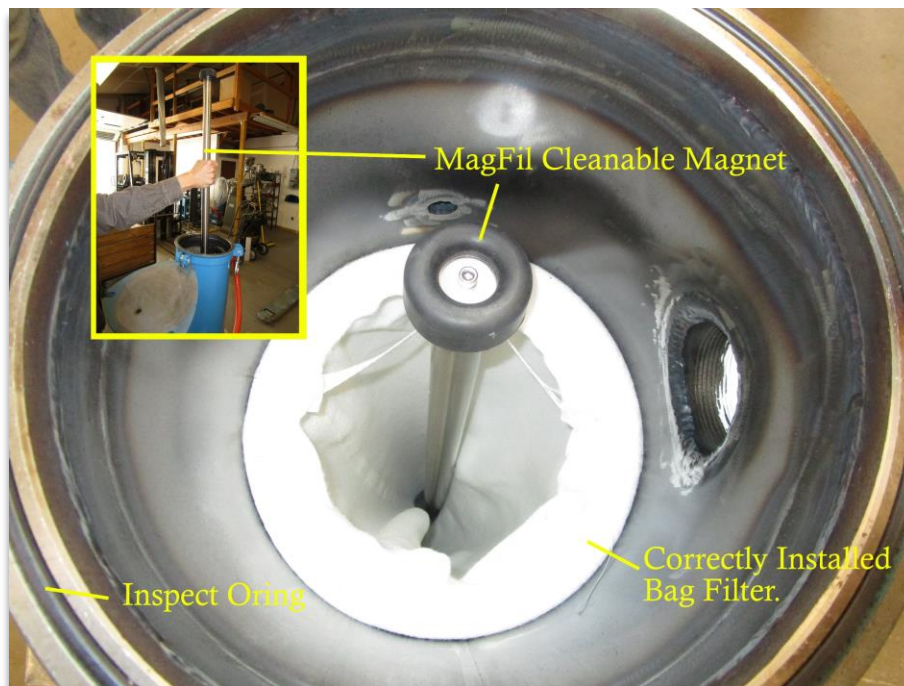


(Figure 3)

1. The FilClean MS should be set up on a steady flat surface next to the machine tool coolant sump. 8 ft Inlet and outlet hoses supplied with the FilClean should be placed at the bottom of the dirty side of the coolant sump in order to suck out sludge and other contaminant while the suction hose is returned to the clean side. **Do not restrict or kink inlet or outlet hoses in any way and make sure to only use MSC approved or supplied hoses with the unit.**
2. Make sure a minimum 25-micron bag filter (MSCF part number DE25D12C is installed in the bag housing item 4 in figure 2.
3. Connect compressed air of a minimum 50-100 psig & 3 cfm to the inlet of the air regulator item 5 in figure 2.
4. Set regulator to between 50 & 100 psig.
5. To start pump open flow control valve Item 6 – figure 2 until desired flow has been reached. Pump can be run either dry or deadheaded and can flow up to 25 gpm.
6. Ensure continuous flow of coolant is coming out of return hose back to clean side of sump.

Section 3. Bag Filter Changeout Procedure

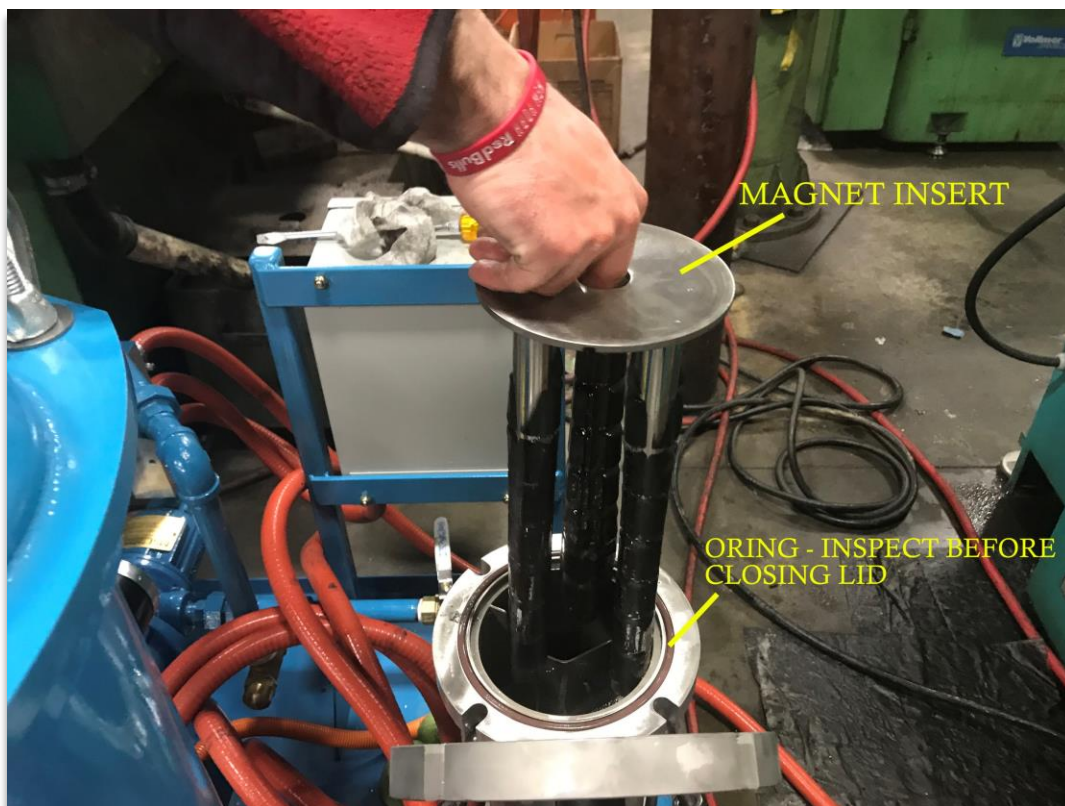
1. Run the unit until the mudsucker air pump Figure 2 – item 7 becomes sluggish or stops completely.
2. Shut off air supply to pump.
3. Open the ¼" vent connection located on the lid of the bag filter housing and vent the housing to atmospheric pressure.
4. Loosen all three of the swing bolts closures on the bag housing lid and swing the lid to the side of the vessel.
5. (See Figure 3 Below) - Remove the filter bag and replace with a new bag. Make sure the bag is sealed properly in the basket. If using an optional MagFil cleanable magnet then remove the MaGFil to a bin and pull apart in order to allow collected ferric debris to drop off into bin. Reassemble MagFil and install back into bag filter as shown.
6. Before closing bag housing lid, inspect oring for tears (see figure 4) and clean off any sharp chips that may hinder sealing of the lid or cut oring upon closing. Replace oring if worn or broken.
7. Replace lid, tighten swing bolts, close vent valve and start pump.



(Figure 4)

Section 4. Cleaning Optional Inline Cleanable Magnet (figure 2 item 1)

1. If your FilClean MS Mudsucker was supplied with an inline cleanable magnet that magnet should be cleaned on occasion. Cleaning frequencies depend on service and how much contaminant is pulled through the magnet. The magnet should be cleaned every time the bag filter is changed.
2. To clean shut off air to unit.
3. Close block valve – item 2 figure 2.
4. Open loosen swing bolts on top of inline magnet and swing lid to the side.
5. Remove magnetic insert and place on a staple surface
6. Use supplied cleaning tool to scrape ferric contaminant off of each magnet.
7. Before reinstalling inspect oring on magnet bowl for breaks and remove and clean any chips that may hinder lid closing. Replace oring if worn or broken.
8. Open block valve – item 2 figure 2 before starting pump.



(Figure 5)

Section 5: Spare Parts List

OPTIONAL BAG FILTER REPLACEMENTS

PART NUMBER	DESCRIPTION
DE1D12C	1 MICRON POLYESTER BAG
DE5D12C	5 MICRON POLYESTER BAG
DE25D12C	25 MICRON (STANDARD) POLYESTER BAG

DIAPHRAGM PUMP SPARE PARTS

PART NUMBER	DESCRIPTION	QTY REQUIRED
WLD02-1010-58	Diaphragm	2
WLD02-1085-58	Ball Check	4
WLD02-1205-55	Oring	4
WLD02-1125-01	Valve Seat	4
WLD02-2620-52	Gasket Air Valve	1
MSC-FCMSKIT	Complete Pump Rebuild Kit Includes all of above	1

OPTIONAL INLINE CLEANABLE MAGNETIC FILTER SPARE PARTS/ORINGS

PART NUMBER	DESCRIPTION
FM1.5+/VS	VITON ORING FM1.5 MAGNET HOUSING
FM2+/VS	VITON ORING FM2 MAGNET HOUSING
FM/CT	SPARE CLEANING TOOL BOTH MODELS
FM1.5+/MC	SPARE 4500 GAUSS MAGNET FM 1.5
FM1.5+/MC11K	SPARE 11K GAUSS MAGNET FM 1.5
FM2+/MC	SPARE 4500 GAUSS MAGNET FM 2.0
FM2+/MC11K	SPARE 11K GAUSS MAGNET FM 2.0



FilClean™ MS (Mudsucker)

High Solids Loading Portable
Fluid Filtering and Transfer Skid

PORTABLE HIGH SOLIDS CONTENT FILTERING AND FLUID TRANSFER CART.

The FilClean MS (Mudsucker) filter cart is designed to perform exactly as the name entails. It is used to suck out settled contaminant and sludge from the bottom of dirty fluid sumps or spill containment berms. For further flexibility it can also be used as a portable kidney loop filtration system.

- * Machine Tool Coolant Sumps.
- * Aqueous Based Wash Solution Sumps
- * Straight Cutting Oil Sumps
- * Hydraulic and Lube Oil Containment Spill Berms

SIMPLICITY, RELIABILITY AND FLEXIBILITY

The FilClean MS is simple, durable and designed to filter high solids content fluids such as machine tool coolants and cutting oils. The FilClean MS will vacuum dirty fluids and contaminants directly from the bottoms of fluid sumps and return them cleaned back to the machine or a waiting transfer tote or drum for use somewhere else.

The high quality air diaphragm pump is protected by the large filter housing which can be supplied with a variety of bag filter choices or even a magnet filter for prefiltration. The air diaphragm pump is not damaged if it is run fully dry which makes it an ideal choice for fluid sump cleanings.

The FilClean MS reduces the requirement for machine tool operators and maintenance personnel to rake or shovel chips or sludge from machine tool coolant and other fluid sumps!



Model FC-MS-ND-25



Model FC-MS-ND-25-M1.511
(With Inline cleanable Magnet Prefilter)

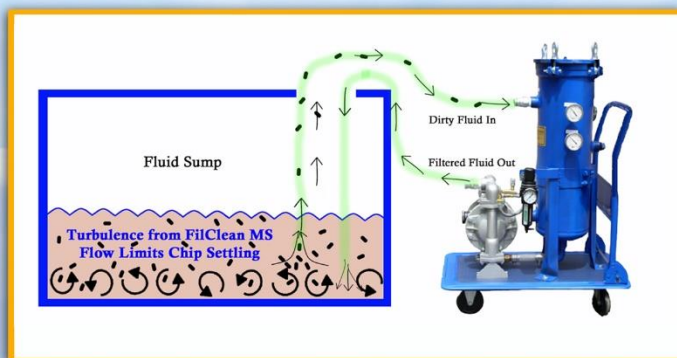


Figure 1: FilClean MS Typical Operation and Use

POTENTIAL APPLICATIONS:

- Machine Tool Coolant and Cutting Oil Recycle and Reclaim.
- Injection Molding Hydraulic Oil Reclaim
- Lube and Hydraulic Oil Spillage Prefiltration Reclaim and Recycle.
- Quench Water Filtration.
- Metal Working Aqueous Based Rinse Water.

Note: Figure 1 is descriptive only - FilClean MS shown is different than current available models. See back of data sheet for photos!



Table 4: MAG Adder Drop In Cleanable Magnetic Prefilter Adder
C - Ceramic Strong A - Alinco - Stronger N - Neodymium - Strongest



Table 4: Inline Magnet Adder

FCMS-

TABLE 1
DUTY

 -

TABLE 2
FLOW

 -

TABLE 3
FILTER

 -

TABLE 4
ADDER

Table 1: Filter Housing

ND	Normal Duty
AS	Aggressive Service (Straght Water/Corrosive)

ND - Normal Duty used for most applications non aggressive/non corrosive liquids. System includes Carbon Steel Painted Filter Housing, Painted Carbon Steel Cart, Aluminum Air Diaphragm Pump.

AS - Aggressive Service for aggressive corrosive environments and liquids. System includes Stainless Bag Filter Housing, Powder Coated Cart, Stainless Steel Air Diaphragm Pump.

Contact MSC for help specifying Duty.

Table 2: Flow

25	0-25 GPM Variable Flow
SF	SPECIAL FLOW (Consult with MSC)

Table 3: Filter Size 12

PE	Polyester Felt (25Micron Standard)
PP	Polypropylene Felt (specify micron)
SF	Special Filter (Contact MSC)

Specify filter material either PE or PF then add micron rating 1, 5, 10, 20, 50, 75, 100. See part number example for further information.

SF : Designates Special Filter - options available are but not limited to pleated bag filters for higher solids loading, oil absorbent filters or metal mesh strainers. Contact MSC for further information and pricing.

Table 4: Optional Adders

BLANK	No Adders
M1.54	6.6 LB Inline Magnet 4K Gauss
M1.511	6.6 LB Inline Magnet 11K Gauss
M24	13.2 LB Inline Magnet 4K Gauss
M211	13.2 LB Inline Magnet 11K Gauss
MAGC	Drop In Magnetic Prefilter Ceramic
MAGA	Drop In Magnetic Prefilter Alinco
MAGN	Drop In Magnetic Prefilter Neodymium
SA	Special Adder (Consult with MSC)

SPECIFICATIONS:

Dimensions : 25 GPM - 19"W X 29"L X 54"H

Air Requirements: 50-100 psig @ 3 CFM

MSC FILTRATION TECHNOLOGIES

Corporate Offices & Distribution Center

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Fax: (860) 745-7477
Email: sales@mscfiltrtech.com
Web: www.mscfiltrtech.com



MaGFiL™

**Magnetic Reusable and Cleanable Insert
For Bag Filter Prefiltration of Ferrous Particles**

Filter Bag Magnets:

- Removes ferrous particles from liquid flow increasing filter bag life.
- All 304 stainless construction resists wear and damage.
- Fit a variety of Bag Filter Vessels
- EPDM (Ethylene Propylene Diene M) rubber bumpers to protect fabric bags
- Less than 5 seconds to clean. Remove magnet from stripper sleeve. Magnetic particles drop off into waste pan.
- Never loses power.
- Can reduce bag filter usage by 15 to 1. Contaminant and cleaning interval dependent.
- Typical savings of 6:1 to 12:1 are common.
- Multiple magnetic types available - Ceramic, Neodymium Alnico depending on application, removal strength and dirt holding requirements.



See next page for ordering information



Also Check Out MSC'S Selection Of:

- Single Round and Multi Round Bag Housings
- Nylon Monofilament Bags - 10 to 1000 Microns
- Polyester Felt Bags - 1 to 200 Microns
- Polyester Multifilament Bags - 150 to 800 Microns
- Polypropylene Felt Bags - 1 - 200 Microns
- Oil Absorbent Bags - 25 Microns

MSC FILTRATION TECHNOLOGIES

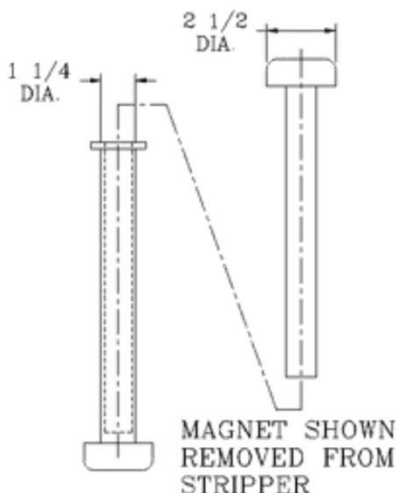
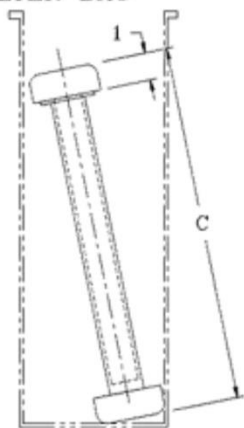
Simple

Safe

Reliable

Efficient

MAGNET/STRIPPER
ASSY SHOWN IN
FILTER BAG



PART NUMBER BUILD:

MFL- TABLE 1 - TABLE 2

TABLE 1	BAG FILTER SIZE	BAG FILTER DIMENSIONS	MAGNET LENGTH C	TABLE 2	MAGNET TYPE	STRENGTH
8282-08-15	1	7" X 16-12"	15"	Blank A N	Ceramic Alnico Neodymium	Strong Stronger Strongest
8282-08-30	2	7" X 32"	30"			
8282-08-8	3	4" X 8"	8"			
8282-08-14	4	4" X 14"	14"			
8282-08-20	8	5.6" X 21"	20"			
8282-08-29	9	5.6" X 32"	29"			
8282-08-34	12	8.2" X 32"	34"			

	CERAMIC	ALNICO	NEODYMIUM
Gauss on Magnet Tube Surface	1200 Gauss	1350 Gauss	5500 Gauss
Capacity (steel chips) per 4" of magnetic length	1LB	1.55 LBS	2.45 LBS
Pull Force (for comparison purposes)	25 LBS	35 LBS	125 LBS



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Web: www.mscfiltrtech.com

High intensity magnetic filter

Filtramag+ is a high performance magnetic filter with full stainless steel construction which makes it suitable for use in a variety of industry sectors and applications.

- Patented design
- Easy installation
- Unique dual flow technology™ – maximises collection capability
- Operates at up to 290psi bar
- Removes both magnetic and non-magnetic contamination
- Minimal pressure drop
- In-line connections
- Ideal for use in harsh chemical environments

Dual flow technology™

Filtramag+ is the most efficient filter of its type. The dual chambered design means that fluid is exposed to the high intensity magnets for the maximum time thus ensuring almost 100% of contamination is removed on first pass through the filter. The patented magnetic circuit on the 4,000 gauss version design ensures that the filter can never block even in high contamination applications.

Magnetic core options

High intensity magnetic cores ensure particle filtration down to sub-micron size. For standard machining or wash system applications a 4,000 gauss magnetic core pack is available. For applications which involve lower magnetically permeable materials e.g. Cast Iron and Carbide or require an ultra-precise surface finish an 11,000 gauss magnetic core pack is available.

Benefits

Using fully filtered fluids, free from ferrous particles provides:-

- Improved surface finish
- Cost savings on disposable filtration media
- Extended fluid lifespan
- Reductions in waste disposal
- Longer lasting tools and machinery



Suitable fluids

Oil, coolants, fuel, ink, paint, chemicals.

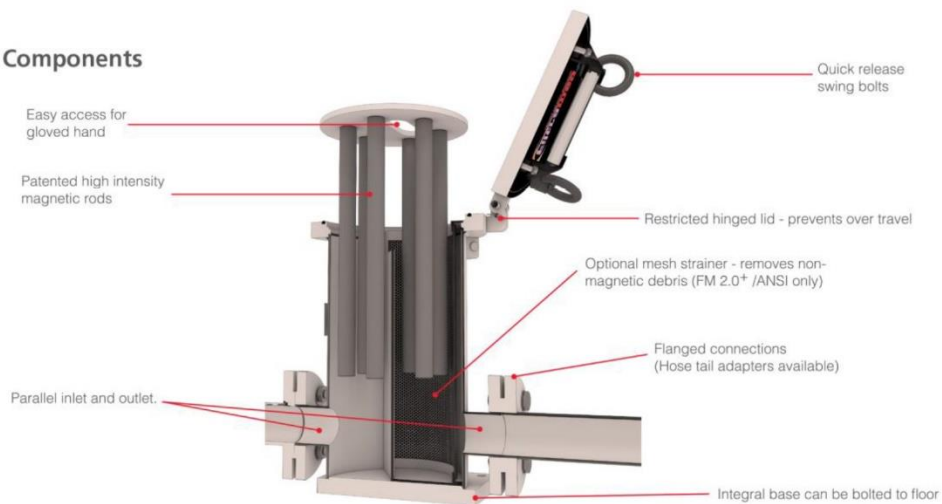
Suitable locations

Pre & Post fluid holding tank, machine or process

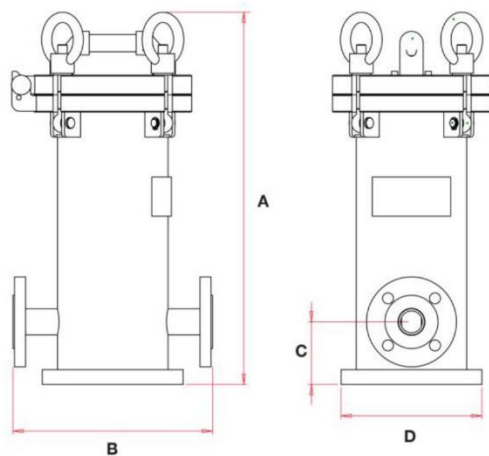
Typical applications

- With carbide or cast iron materials
- General machining operations
- Inks/paints
- Wash systems
- Diesel/gasoline
- Slurry/glazes

Filtramag+ Components



Technical Data



Product number	Max. flow rate Gallons/mins	Contamination capacity lbs	Max. operating pressure PSI	Connection ANSI *	Dimensions inches			
					A	B	C	D
FM1.5 ⁺ /ANSI	66	6.6	290	1½	15.5	10	3.9	7.1
FM2.0 ⁺ /ANSI	132	13.2	290	2	17.4	13	3.9	9.8

Part Numbers (including spares)

Part Number	Description
FM1.5 ⁺ /ANSI	FM1.5 ⁺ unit with 4,000 magnet cartridge, cleaning tool & cleaning tray
FM2.0 ⁺ /ANSI	FM2.0 ⁺ /ANSI unit with 4,000 magnet cartridge, cleaning tool & cleaning tray
FM1.5 ⁺ /ANSI /11K	FM1.5 ⁺ /ANSI unit with 11,000 magnet cartridge, cleaning tool & cleaning tray
FM2.0 ⁺ /ANSI /11K	FM2.0 ⁺ /ANSI unit with 11,000 magnet cartridge, cleaning tool & cleaning tray
FM1.5 ⁺ /ANSI/MC	4,000 magnet cartridge for FM1.5 ⁺ /ANSI units
FM2.0 ⁺ /ANSI/MC	4,000 magnet cartridge for FM2.0 ⁺ /ANSI units
FM1.5 ⁺ /ANSI /MC11K	11,000 magnet cartridge for FM1.5 ⁺ /ANSI units
FM2.0 ⁺ /ANSI /MC11K	11,000 magnet cartridge for FM2.0 ⁺ /ANSI units
FM2.0 ⁺ /ANSI /MB0.5	Optional 0.5mm mesh basket for FM2.0 ⁺ /ANSI units
FM2.0 ⁺ /ANSI/MB1.0	Optional 1.0mm mesh basket for FM2.0 ⁺ /ANSI units
FM1.5 ⁺ /ANSI /VS	Spare Viton seal for FM1.5 ⁺ /ANSI units
FM2.0 ⁺ /ANSI /VS	Spare Viton seal for FM2.0 ⁺ /ANSI units

Magnetic Performance

Maximum Pressure	290psi
Magnetic Performance	Standard option 4,000 gauss, high intensity option 11,000 gauss

Magnet material	Rare earth neodymium iron boron NdFeB
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Magnet grade	N35 (Standard option) N45 (High intensity option)
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Temperature	23 to 176F
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Materials

Housing	304 Grade Stainless Steel
Lid	304 Grade Stainless Steel
Tube	316 Grade Stainless Steel
Surface finish	External-powder coated
Sealing	Viton O-ring

Mesh strainer	304 Grade Stainless Steel
Swing bolts	High tensile steel
Cleaning Tool	Stainless steel
Mesh strainer options (FM2.0 ⁺ /ANSI only)	0.02inches and 0.04inches aperture size

If you have any more questions, require technical assistance or would like a quotation, please contact us.



Providing Machine Tool Coolant Filtration
and Handling Solutions Since 1962 !

While every effort has been made to ensure the accuracy of the information in this publication please note that specifications may change without notice.

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