

Magnetic Filtration



Sub-micron filtration for injection moulding applications

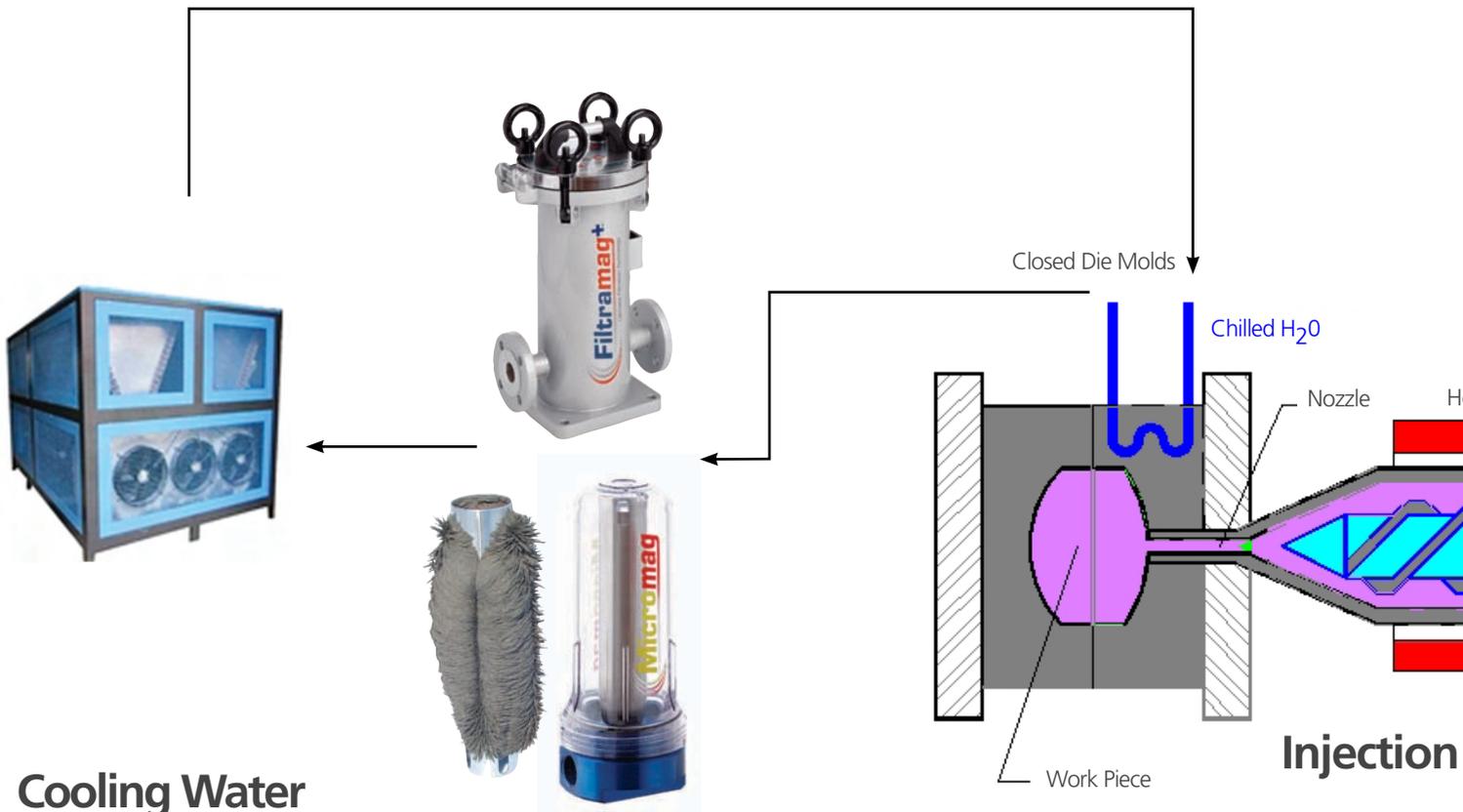


High Performance Magnetic Filtration Systems

Improving efficiency in plastics moulding applications

Our magnetic filtration systems remove potentially damaging sub-micron ferrous contamination from cooling water.

Available in a range of options, the easy clean units solve many of the problems associated with cooling water remaining in moulds between usgaes.



Cooling Water

General Plastic Moulding Machines.

All moulding machines operate on a similar process the main factors is the temperature of the cooling water.

Moulding machines, whether blow moulding or injection moulding, use cooling water to control the tool temperature.

This cooling water is normally heated and then chilled to control the temperature of the tool.

During the process the water circulates around cavities in the mould, flushing them clean.

When the mould tool is changed it goes into storage often with the water remaining in the cooling channels. Over time this causes internal rusting of the moulds.

When the mould is re-used rust is then flushed out into the cooling system. It can then settle in heat exchangers causing blockages and making them ineffective.

This results in high running and maintenance costs and also quality issues with the end product, as the temperature is more difficult to control.

Blow moulders have an injection nozzle which enters the mould and plastic, this forces high pressure water into the mould forcing the plastic against the side of the mould. (high volume bottles etc.)

The nozzle becomes blocked and deformed bottles are produced, generally 1,000's of bottles are scrapped before issues have been identified.

Centralised systems

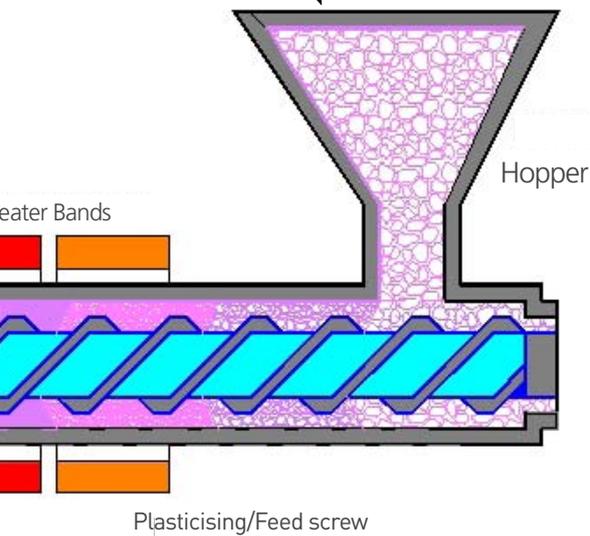
Many moulding operations have centralised systems for supplying the various machines.

We recommend the Filtrimag+ unit, either on the main line or on bypass.

Easy-clean double row grid magnet



Single row grid magnet



Molding

Granular Feed

For removing ferrous contamination from granular feed systems we recommend one of our high intensity magnetic separators. Our magnetic grids are ideal for removing fine ferrous and para-magnetic contaminants from gravity or pneumatically fed granular feed systems.

Individual machines

The temperature that the machine runs at is directly related to the material being moulded, so some machines will operate at 40 °C and others at 70 °C.

If the operation is at the lower temp of 40 °C a standard Micromag is ideal.

Filters

Compact magnetic filter for standard machine filtration, for injection blow moulding systems.

Micromag

- Patented design
- High collection capacity relative to size
- Non block design
- Minimal pressure drop
- Easy clean
- 3 sizes, versions available
- Maximum temperature 50°C



Filtramag+ (includes details above plus)

- For larger systems
- Large flow capacity up to 500 litres/mins
- High pressure (20 bar)
- High temperature 100°C



For higher temperature we recommend the MM/HP/50, on smaller standard machines the MM5 is suitable for flow rates up to 100 ltrs/mins.

Initially on a previous unfiltered system the filter will require cleaning frequently. Once the rust (iron oxide) legacy in the system is lowered. The frequency of cleaning the filter will slow. For example, if you use the MM5 filter it will remove 1kg of particulate prior to cleaning. Once the system is cleaned the filter maintains a good level of cleanliness. Which will ensure higher efficiency, uniform temperatures in the moulding machine, improving quality and reducing waste.

Chiller & Cooler Repair/Service

- ⤴ Rapid Call Out
- ⤴ Routine Preventative Maintenance Plans
- ⤴ Installation and Commissioning
- ⤴ Operator Training
- ⤴ All makes and models

We can offer expert technical advice and assistance in the event of a breakdown. Highly qualified engineers operate throughout the UK ensuring an efficient and effective repair and after sales service.



Maintenance & Spares

We can provide Maintenance Contracts tailored to the specific needs of individual customers. Good preventative maintenance will reduce running costs and the likelihood of breakdown. We also provide spare parts for most makes of equipment.

The product range comprises of:

Air Cooled Chillers, Air Blast Coolers, Free Coolers (retrofit energy saving for chillers), Adiabatic Coolers (The Cooling Tower alternative), Cooling Towers, Temperature Control Units, Pump Sets, Enclosure Cabinet Coolers and more...

Call us on **01827 213 401**
or email sales@summitprocesscooling.co.uk



Fig. [BchU65aa] Y
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T " #* \$) S#%& #
sales@summitprocesscooling.co.uk www.summitprocesscooling.co.uk

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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Micromag

High Intensity - Rare Earth

The patented, compact Micromag magnetic filter can benefit many different industries.

Contaminated fluid enters the inlet port where it is dispersed by the unique tapered radial flow channels. Fluid passes down the outside of the centrally mounted rare earth magnetic core which captures contamination particles along its length, resulting in excellent filtration efficiency.

The geometry of the magnetic flux circuit means that contamination builds up in a controlled way, ensuring that the filter can never block, irrespective of how much contamination is held. Channels remain open allowing fluid too continue to flow freely.

The filtered fluid flows through the return slots located in the upper section of the magnetic core, down through the centre and exits through the outlet port.

Cleaning

Using the supplied cleaning tool, a fully contaminated core can be cleaned in under 30 seconds. Only metallic particles are removed from the filter and these can be easily disposed. There are no dirty cartridges!



Suitable Products

Neat and soluble oils.

Installation Location

Pre- or post-pump, delivery line or pre-membrane cartridge.

Benefits

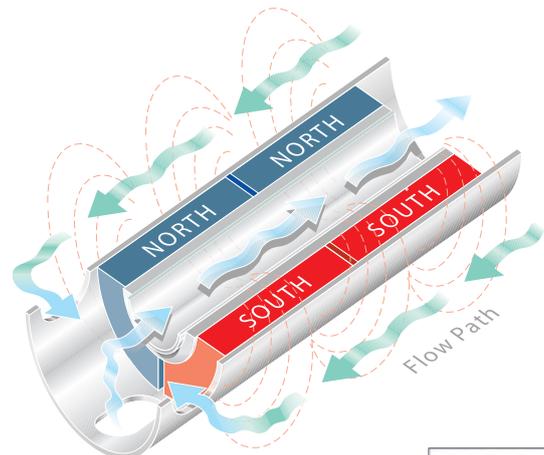
- Sub-micron filtration
- Large holding capacity
- High intensity rare earth magnetic material
- Clear bowl
- Suitable for all machining applications
- Environmentally responsible
- No consumables

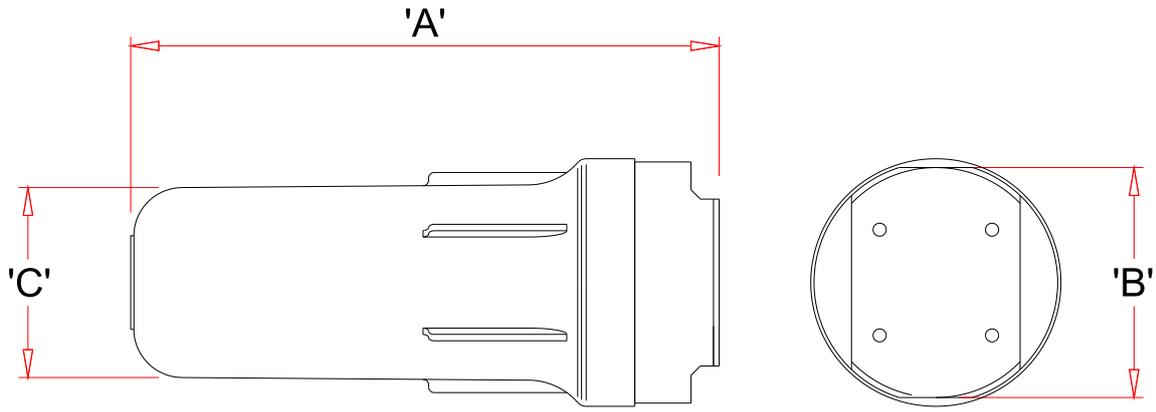
Category

Medium pressure.



Magnetic circuit & fluid flow path.





Product Information

Product number	Flow rate ltrs/min.	Contamination capacity kgs	Max. operating pressure bar	Connection " BSP	Temperature range °C	Weight kgs	Construction	Dimensions mm		
								A	B	C
MM5	70	0.9	12	1	5 – 50	3.15	SAN housing, Aluminum lid	190	105	95
MM10	100	2	12	1	5 – 50	5.2		315	125	100
MM20	150	4	12	1½	5 – 50	9.7		605	135	100

Performance

Maximum Pressure	12 Bar
Magnetic Performance	High intensity
Circuit Design	Open
Magnetic Material	rare earth neodymium iron boron
Magnet Grade	N45 – Inspected & confirmed via hystergaph prior to use
Temperature	5°– 50°C

Materials

Housing	Styrene Acrylo Nitrile (SAN)
Lid	Marine grade aluminum, anodised blue
Magnetic Core	304 Grade stainless steel
Sealing	Nitrile O-ring

Options

Viton O-ring
Bowl spanner
Core cleaning post
Mounting bracket

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

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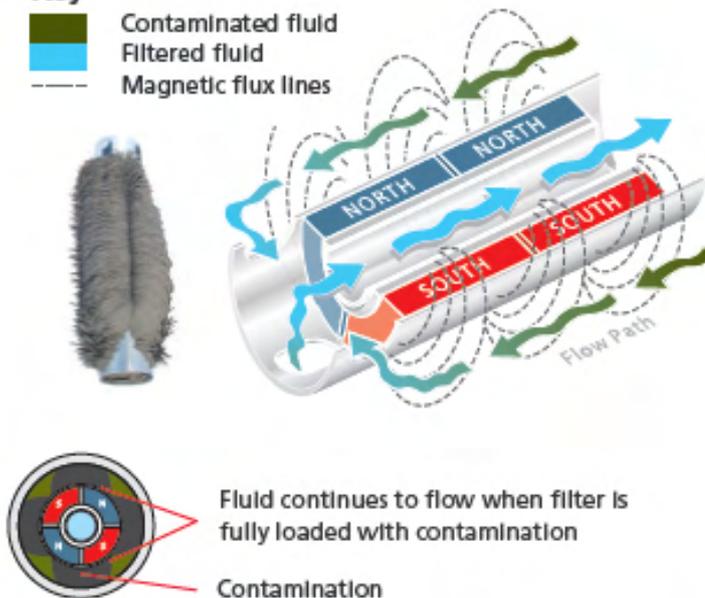
Micromag



Compact magnetic filter, easy to clean and install,
high collection capacity relative to size.

Key

-  Contaminated fluid
-  Filtered fluid
-  Magnetic flux lines



How Micromag works

Contaminated fluid enters the Inlet port where flow is equally split via tapered radial flow channels which lowers the flow velocity ready for the fluid to be filtered.

It then passes up the outside of the centrally mounted 'Rare Earth' magnetic core where contamination particles are attracted and retained.

The magnetic flux circuit geometry ensures a controlled build up of contamination so the filter can never block.

Filtered fluid then flows through slots at the top of the core then down and through the centre of the core, exiting through the outlet port.

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 20 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

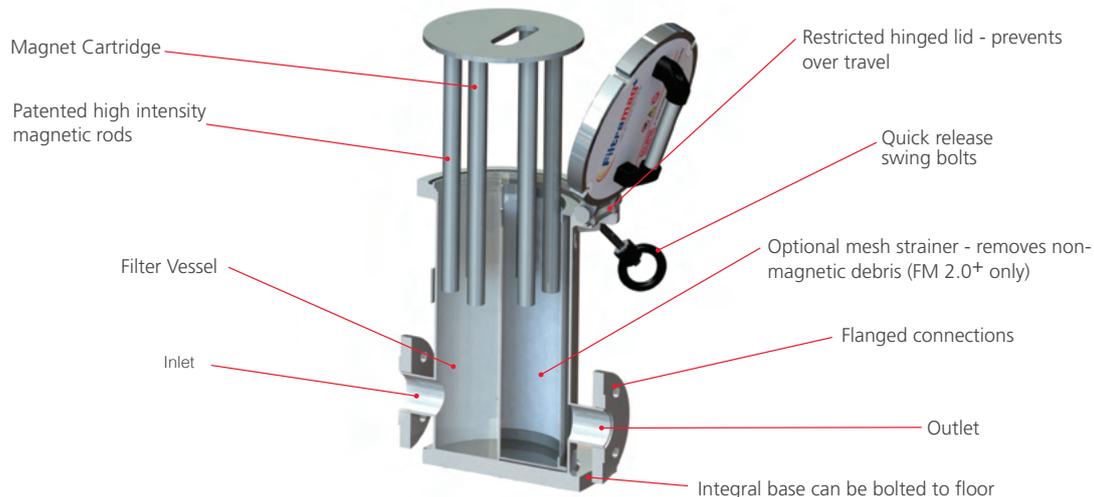
High intensity magnetic cores ensure particle filtration down to sub-micron size. For standard machining or wash system applications a 4,000 gauss magnetic core pack is available. For applications which involve lower magnetically permeable materials e.g. Cast Iron and Carbide or require an ultra-precise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

Filtramag+ Components



Suitable fluids

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

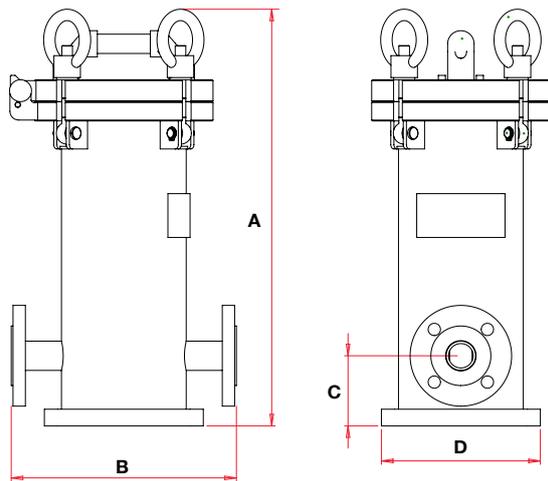
Suitable locations

Pre & Post fluid holding tank, machine or process

Typical applications

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

Technical Data



Product number	Max. flow rate litres/min	Contamination capacity kgs	Max. operating pressure bar	Connection PN16 flange	Weight* Kg	Dimensions mm			
						A	B	C	D
FM1.5 ⁺	250	3	20	1½"	30.5	475	255	100	180
FM2.0 ⁺	500	6	20	2"	54	522	330	100	250

*Weight includes vessel & cartridge

Part Numbers (including spares)

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

Magnetic Performance

Maximum Pressure 20 bar
Magnetic Performance Standard option 4,000 gauss,
high intensity option 11,000 gauss

Magnet material Rare earth neodymium iron boron
NdFeB

Magnet grade N35 (Standard option)
N45 (High intensity option)

Temperature -5°C to 80°C

Materials

Housing

Lid

Tube

Surface finish

Sealing

304 Grade Stainless Steel
 304 Grade Stainless Steel
 316 Grade Stainless Steel
 External-powder coated
 Viton O-ring

Mesh strainer

Swing bolts

Cleaning Tool

Mesh strainer

options (FM2.0⁺ only)

304 Grade Stainless Steel
 High tensile steel
 Stainless steel
 0.5mm and 1mm aperture size

Summit Process Cooling

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