

# Magnetic Filtration

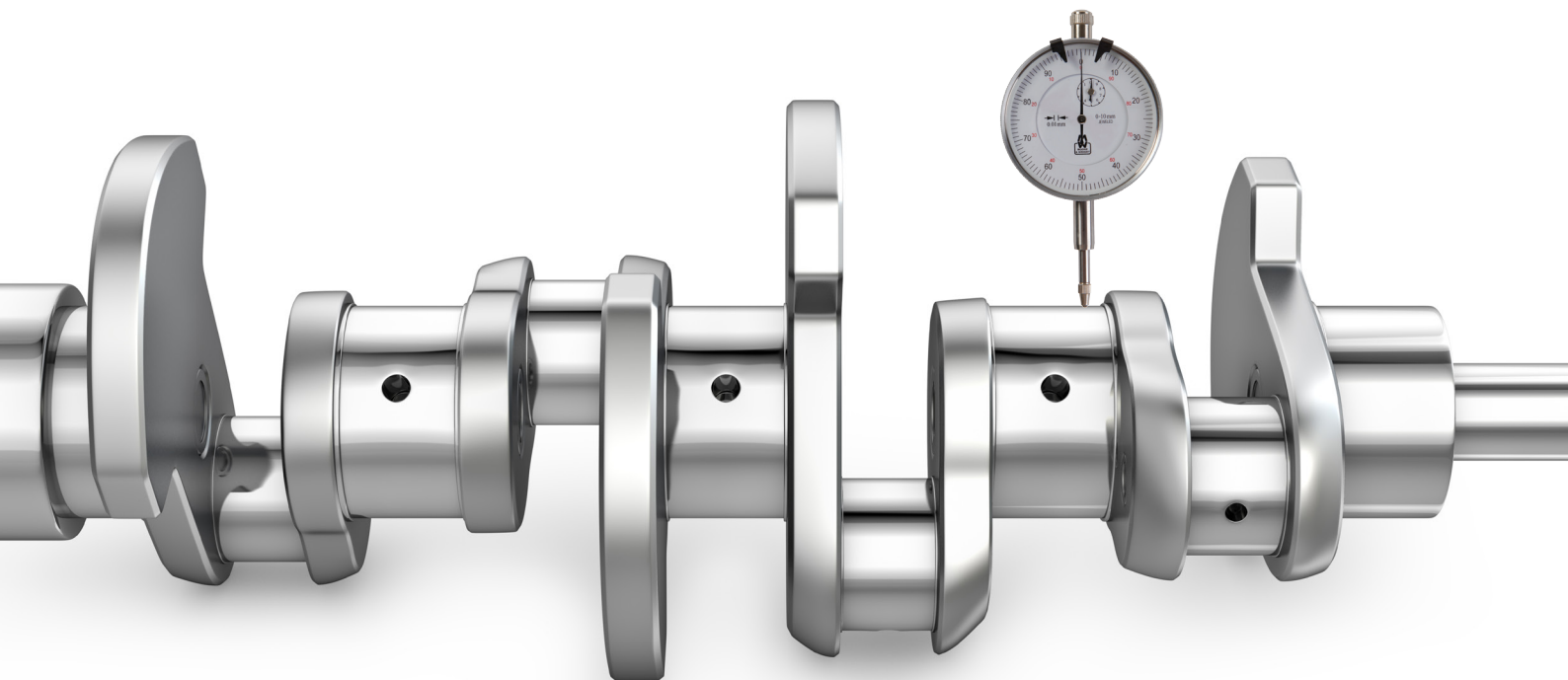
AVS<sup>®</sup>

Sub-micron filtration for industrial fluids in precision applications





When precision counts,  
**Eclipse delivers...**





# Eclipse Magnetics

100 years of manufacturing excellence



Serving some of the leading names in industry

**BMW**

**Ford**

**Bosch**

**Honda**

**Bombardier**

**JCB**

**Caterpillar**

**NSK**

**Denso**

**Perkins**

## A world leader in magnetic technology

With 100 years experience in the design and manufacture of high performance magnetic systems, we supply critical equipment to some of the leading names in the most demanding industries. Our magnetic technology is widely used at leading worldwide companies and in major development projects, all requiring a guarantee of equipment performance.

## Designing excellence

We have a track record of producing high quality products backed by a commitment to total customer service. Our technical application teams have a wealth of experience, thus ensuring many of our products are market leading innovations. All manufacturing is carried out under an ISO 9001 certified quality management system.

## Unrivalled product range

We serve worldwide markets with an extensive product range including filtration systems, foreign body removal systems, magnet assemblies and complex magnetic industrial equipment used in industries such as automotive, aerospace and nuclear. Many of our products are unique and are covered by global patents.

## Worldwide support

We offer worldwide support through our offices in the UK, Canada and China. We also have numerous employees in various territories and a network of technically trained partners to provide local product support.



# Driving competitive edge into precision processes

**Removes 100% of ferrous contamination\***

## Magnetic filtration operating principle

Magnetic filtration is the most effective means of removing problem ferrous particles from industrial fluids such as coolants, lubricants and wash solutions.

All the benefits of Eclipse Magnetic filters are based on their ability to remove 100%\* of ferrous particles including sub-micron particles from the process. Traditional filtration systems typically leave particles smaller than 5-10 microns circulating in fluid causing damage to process equipment and finished products.

Magnetic filtration systems are ideal for either new build projects or they can be fitted to enhance existing filtration systems.

### **Reduces reject rates to zero\***

Magnetic filtration enables a cleaner cut or grind, improves surface finish and reduces reject rates.

## Significantly lower operating costs

### **Longer lasting fluids - Extends fluid life by x10\***

Magnetic filters remove particles smaller than one micron in size. Traditional barrier filters typically leave particles smaller than 5-10 microns circulating in the fluid. These particles significantly affect the performance of fluids and also act as a focus for bacterial build up.

### **NO consumables - Cuts filter costs by up to 100%\***

Unlike other types of filtration, once magnetic filtration is installed there is nothing else you need to buy to ensure effective filtration over the filter's lifetime, which can be typically greater than 20 years.

### **Minimal fluid loss**

Contamination is removed from the filter as a semi-dry 'cake'. Fluid loss is considerably less than that of traditional filter media.

### **NO disposal costs\***

The cake itself can be recycled, eliminating expensive specialist disposal costs.

### **Minimal running costs - virtually zero**

Manually cleaned magnetic filters require no additional power. Magnetic self-cleaning filters only require a small amount of power for the cleaning process.

### **Ideal for 24/7 operation**

Fully automated magnetic filtration systems are ideal for continuous manufacturing lines.

### **Rapid return on investment - payback in 3 months\***

Magnetic filtration is perfect for cost reduction and continuous improvement programmes providing a rapid return on investment through:

## Increased productivity

### **Maintain flow rates**

High flow rates can be maintained without affecting filtration efficiency. Fluid does not flow through filter media, so flow is uninterrupted. Flow rates are determined by your process requirements, not by your filter.

### **NO back pressure**

Even when the filter is 'full' there is no blinding or risk of burst filters, reducing downtime.

### **Reduced wear / precision finish**

Particles that pass through traditional filters act as an abrasive, wearing parts, machinery and product. Magnetic filters remove these damaging particles.

### **Fine filtration**

Conventional filtration media, at 5 microns and below, can strip oils of anti-foaming, anti-bacteria and other additives. Magnetic filtration enables sub-micron filtration without affecting the oil's properties, and can actually aid the effective control of bacteria.



\* Subject to operating conditions.



# Reduced environmental impact

A major consideration for any business is its responsibility to the environment. Magnetic filtration is a positive contribution to companies' environmental policies and ISO14001 accreditation.

## Reduced waste

Magnetic filtration requires no consumable or disposable products. It extracts 100%\* of ferrous contamination, drastically reducing the use of disposable filter media. Less fluid is used as its effectiveness is maintained for longer.

## Recycled waste

Ferrous particles are separated from fluid and filtration media so can be recycled rather than disposed of.

## Driving competitive edge in demanding applications

### Automotive



Magnetic filtration is widely used in the automotive industry within OEMs and tier 1 and 2 suppliers for the manufacture of powertrain and engine components.

#### ADVANTAGES

- High precision finish
- Reduced downtime
- 100% effective with cast iron particles
- Ideal for 24/7 operation
- Flow rates up to 5000 litres: multi-use to increase flow capacity.
- Can be retrofitted on existing systems
- Rapid return on investment
- Reduced waste – ISO14001

#### TYPICAL APPLICATIONS

- Ring & pinion gear lapping
- Turbocharger balancing machines
- Crank shaft gun drilling
- Valve face grinding
- Cam shaft grinding
- Cylinder liner honing
- Engine liner grinding
- Gear cutting and finishing
- Valve seal ring lapping
- Wash systems
- Fuel injector drilling and grinding
- Brake pad grinding
- Cast iron piston bushing milling

### Case study

#### Company

Bombardier (Austria)

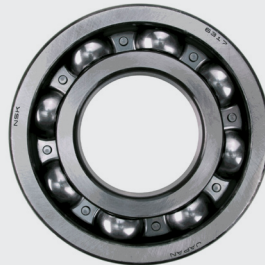
#### Application

Cast iron piston bushings

#### Process

Milling and gun drilling  
Filtramag removed sub-micron particles reducing abrasive wear on tools and parts. Tool changes and product reject rates were reduced to virtually zero.

### Bearings



Magnetic filtration is used by some of the world's largest bearing manufacturers to ensure sub-micron accuracy in the production of bearing components.

#### ADVANTAGES

- High precision product finish, concentricity and consistency
- Reduced downtime
- Sub-micron filtration
- Ideal for high volume processes
- Can be retrofitted to existing lines
- Rapid return on investment
- Reduced waste – ISO14001

#### TYPICAL APPLICATIONS

- Hub honing
- Ball grinding
- Super-finish/polishing
- Ring grinding
- Raceway grinding
- Wash systems

### Case study

#### Company

Tsubaki-Hoover (Poland)

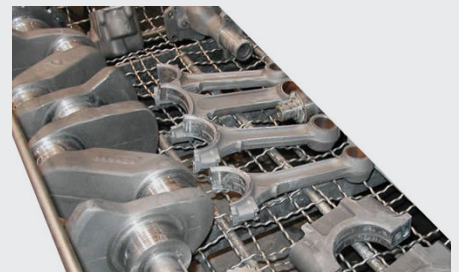
#### Application

Steel ball and rollers

#### Process

Super-finishing  
Micromag improved on 20 micron paper filters by extracting sub-micron ferrous particles. Surface finish was improved and reject rates fell dramatically.

### Wash systems



It is vital that wash solutions are kept free from ferrous particles. Many wash systems have benefitted from installation of magnetic filtration which ensures the finished product is clean and complies with quality inspection.

#### ADVANTAGES

- Flow rates up to 5000 litres per minute
- Filters do not degrade in wash solutions
- Removes ferrous deposits from finished product
- Reduces reject rates

#### TYPICAL APPLICATIONS

- Rotary wash systems
- Transfer wash stations
- Degreasing equipment
- Multi-stage washers
- Spray wash stations

### Case Study

#### Company

Permoid (UK)

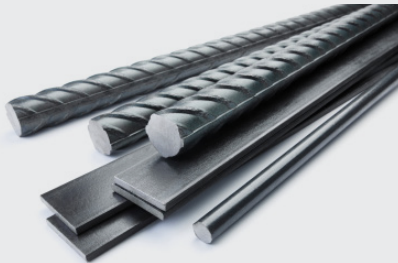
#### Application

Automotive fuel tanks

#### Process

Flushing rig  
Reduced product reject rates to zero, reduced disposal and purchase of barrier filters by 95%.

## Steel processing



Magnetic filtration can improve efficiency in most steel processing operations such as steel production, both hot and cold.

### ADVANTAGES

- Automated cleaning ideal for heavy contamination
- Improved surface finish
- Reduced downtime
- Suitable for arduous environments
- 24/7 operation

### TYPICAL APPLICATIONS

- Steel rolling mills
- Sawing machines
- Steel pipe cutting
- Tube threading equipment
- Steel quenching tanks
- Surface treatment processes
- Spray bars
- Roller lubrication
- Final wash process
- Deep hole drilling

## Machine tool OEMs



Magnetic filtration enhances performance on a variety of machine tools. It offers a competitive edge to machine tool manufacturers particularly when servicing high precision applications.

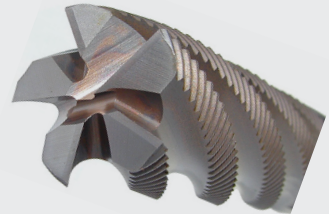
### ADVANTAGES

- Can be retrofitted to enhance existing filtration systems
- Reduces machine maintenance/ downtime
- Ideal for 24/7 operation
- Flow rates 70 to 5000 litres per minute
- 100% effective with low magnetic materials e.g. cast iron and tungsten carbide
- Increases the equipment, value provides a solution for the customer.

### TYPICAL APPLICATIONS

- VMC, HMC, and CNC machines.
- Multi-axis vertical turning centres
- Grinding
- Honing
- Lapping
- Deep hole/gun drilling
- EDM machines
- Laser cutters

## Tool cutting



High intensity magnetic filtration is the only option available to guarantee a high precision finish on tool cutting operations. It is widely used in the manufacture and refurbishment of high speed steel and tungsten carbide cutting tools. High intensity magnets ensure outstanding performance even with particles which have only 20% magnetic permeability.

### ADVANTAGES

- Enables tolerances of < 1 micron
- Enables manufacture of "mirror" finish tools
- Can increase the value of tools by 300%
- 100% effective with low magnetic materials e.g. tungsten carbide materials
- Reduces wear on grinding wheels
- Ensures clear grinding contact
- Ideal for 24/7 or unmanned operations
- Significantly extends fluid life

### TYPICAL APPLICATIONS

- Multi axes CNC machines
- Tungsten carbide drills and endmills
- Radius grinding
- Wood working tool superfinish
- "Mirror" finish plastic cutters

## Case Study

**Company**  
Steelscape (USA)

**Application**  
Steel rolling and pickling

**Process**  
Surface spray system  
Heavy contamination blocked barrier filters within hours. Automag extracts 12000 Kg contamination / month – reject rates have fallen to zero.

## Case study

**Company**  
Schaudt Mikrosa (Germany)

**Application**  
CNC Manufacture

**Process**  
Camshaft Grinding  
Reduced downtime by 50% and increased the life of grinding wheels by 30%.

## Case study

**Company**  
Pro-Cut Tooling (UK)

**Application**  
Carbide cutting tools manufacture/repair

**Process**  
Super-finish/grinding  
Enabled manufacture of "mirror" finish cutting tools, reduced machine cleaning downtime by 75% and extended fluid life by 250%.



## A few of our many satisfied customers...



### **Borg Warner Turbocharger Balancing Machines**

#### **Product: Micromag / Filtramag**

**Maintenance Engineer** "Before fitting Micromag we were changing filters every few days. We invested about £1200 in 4 MM5s we estimate this saves us around £28,000 annually in cartridge filter costs, not to mention the resultant downtime. Following the success we have now fitted Filtramags to our grinding machines which have cut our product reject rates to virtually zero."



### **Milacron Machines Sub-Contract Machining**

#### **Product: Double AM12 Skid**

**Facilities Manager** "The Double AM12 Skid has increased our efficiency. We work 24 hours a day and our 18" heads cut some big pieces of steel. Magnetic filtration has dramatically cleaned up our fluids and improved the surface finish we can offer. It extracts around 50Kg per day of ferrous waste and easily handles the flow and contamination generated by the multi-machine cell."



### **Collison Goll Steel Stock Deep Hole Drilling**

#### **Product: Micromag**

**Plant Manager** "Micromag has paid back in just a few weeks, previously we could only take out particles of 50 micron or over, which caused the fluid channels to get plugged and drills to crash. Now I have fitted Micromag, my purchase of drill bodies has fallen by 100%. I am planning to fit Micromag to all my machines."



### **Leitz Group Grinding & Polishing of Cutting Tools**

#### **Product: Filtramag**

**Chief Maintenance Engineer** "Filtramag has increased our fluid life by 20%, reduced our downtime and our product reject rates have fallen dramatically. Filtramag extracts approximately 12Kg of ferrous particles every week and has dramatically cut our costs in replacement paper filters and damaged pumps."





## Scania Grinding and Honing Automotive Gears

### Product: Filtramag

**Engineering Manager** "Magnetic filtration has been a great positive for our production. With the sub-micron filtration Filtramag offers, we have minimised our product reject rates and tool changes. In addition I estimate our oil lifespan has increased by about 30%."



## Cascade Heat Treatment of Fork Lift Parts

### Product: Automag AM12

**Plant Engineer** "We had a real problem with downtime as our quenching tank regularly filled up with ferrous contamination – we had to halt production and clean out the tank. Automag has been a smart investment. The automated cleaning frees up my maintenance team and we will get rapid payback through reduced process downtime."



## NSK Super-finishing of Bearing Hubs

### Product: Micromag

**Operations Manager** "When we used only barrier filtration we had a constant problem with 'blinding' of the honing stone due to a build-up of ferrous particles. Fitting Micromag has been a real positive step, we can now guarantee a uniform high quality finish and our reject rates are minimal."



## Honda Engine Valve Machining (UK)

### Product: Micromag

**Engineering Manager** "Micromag's outstanding filtration capability and short investment payback period exactly matched our needs. Since incorporating Micromag into our process our machine downtime has fallen dramatically compared to our previous filtration system and our filtration effectiveness is much better as we can extract the smallest particles."



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# Micromag

Compact magnetic filter for standard machine filtration, smaller wash stations.

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

## Unmatched capacity

Micromag is compact in size but has massive holding capacity. Units hold 1kg, 2kg and 4kg of contamination respectively, resulting in less downtime and increased productivity.



**MM/HP/50**  
50 bar version



**MM/HP/80**  
80 bar version

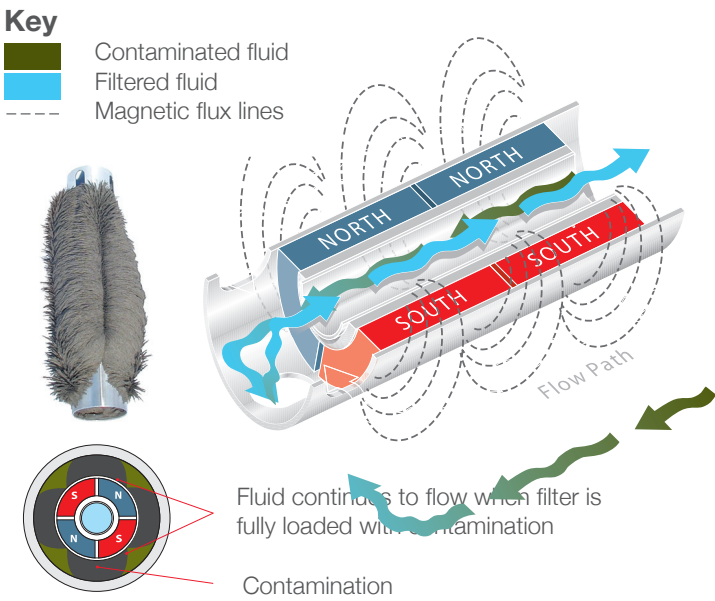
# How Micromag works

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

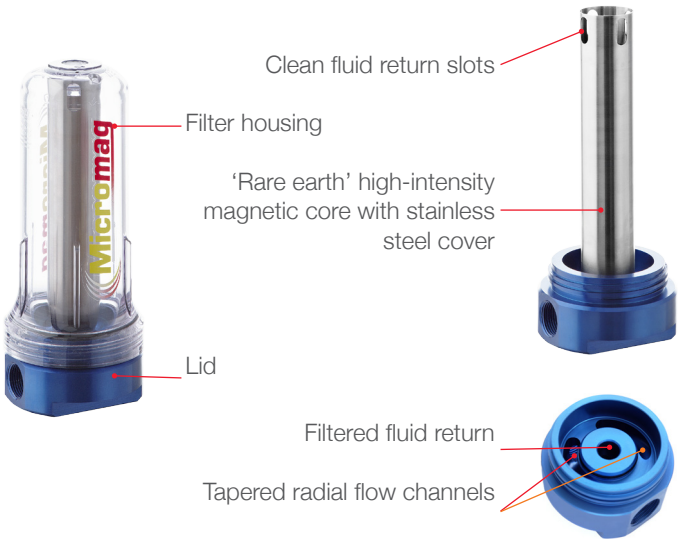
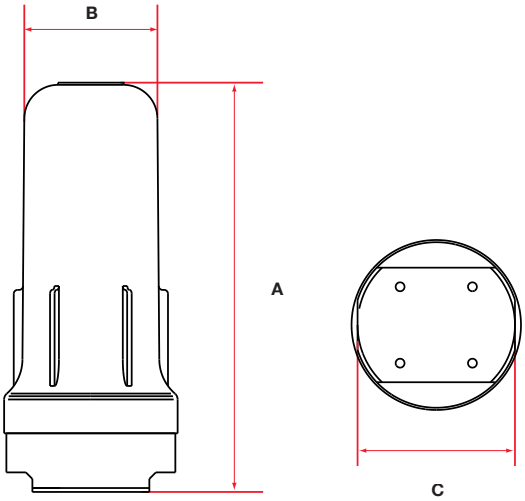
It then passes up the outside of the centrally mounted 'rare earth' magnetic core where contamination particles are attracted and retained.

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.



## Technical Data



| Product number | Flow rate<br>ltrs/min. | Contamination capacity<br>kgs | Max. operating pressure<br>bar | Connection<br>BSP | Temperature range<br>°C | Construction                      | Dimensions<br>mm |     |     |
|----------------|------------------------|-------------------------------|--------------------------------|-------------------|-------------------------|-----------------------------------|------------------|-----|-----|
|                |                        |                               |                                |                   |                         |                                   | A                | B   | C   |
| MM5            | 70                     | 1                             | 12                             | 1                 | 5 – 50                  | SAN housing,<br>Aluminum lid      | 190              | 95  | 103 |
| MM10           | 100                    | 2                             | 12                             | 1                 | 5 – 50                  |                                   | 315              | 100 | 124 |
| MM20           | 150                    | 4                             | 12                             | 1½                | 5 – 50                  |                                   | 605              | 100 | 137 |
| MM5/HP/50      | 70                     | 1                             | 50                             | 1                 | 0 – 140                 | Full aluminum construction        | 247              | 116 | 125 |
| MM10/HP/50     | 100                    | 2                             | 50                             | 1                 | 0 – 140                 |                                   | 365              | 116 | 125 |
| MM20/HP/50     | 150                    | 4                             | 50                             | 1½                | 0 – 140                 |                                   | 625              | 116 | 125 |
| MM5/HP/80      | 70                     | 1                             | 80                             | 1                 | 0 – 140                 | Full stainless steel construction | 247              | 116 | 125 |
| MM10/HP/80     | 100                    | 2                             | 80                             | 1                 | 0 – 140                 |                                   | 365              | 116 | 125 |
| MM20/HP/80     | 150                    | 4                             | 80                             | 1½                | 0 – 140                 |                                   | 625              | 116 | 125 |



High performance magnetic filter for higher flow, higher contamination applications.

- Patented design
- Easy installation
- Unique Dual Flow Technology™ - maximises collection capability
- High flow capability
- Operates at up to 20 bar
- Removes both magnetic and non-magnetic contamination - optional mesh strainer
- Non block design
- Minimal pressure drop
- In-line connections
- Ideal for use in harsh chemical environments
- Full stainless steel construction



FM1.5<sup>+</sup>

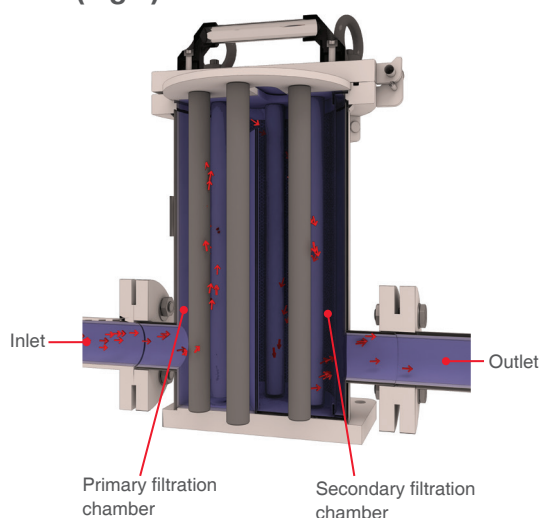
FM2.0<sup>+</sup>

## How Filtramag<sup>+</sup> works

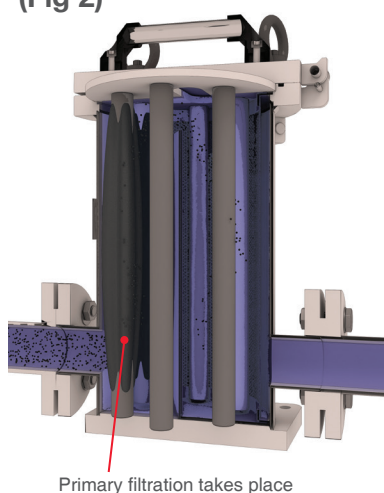
With a unique “Dual Flow Technology™” design **(Fig 1)** Filtramag<sup>+</sup> is the most efficient filter of its type available. The dual flow design ensures that fluid is exposed to the high intensity magnets for the maximum time, thus ensuring almost 100% of ferrous contamination is removed on the first pass. Fluid enters through the inlet and flows up through the primary filtration chamber, **(Fig 2)** it then flows down through the secondary filtration chamber **(Fig 3)**.

Fluid then passes through an optional mesh screen which removes non-magnetic debris. The patented magnetic circuit design ensures that the filter can never block even in high contamination applications. The magnetic cores can be removed easily by hand and cleaned with the tool supplied. As an option a spare magnetic cartridge can be supplied to ensure production continuity.

**(Fig 1)**

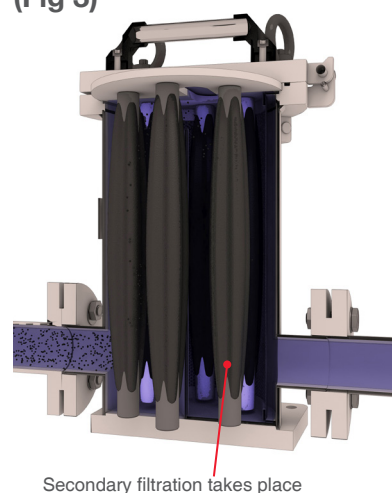


**(Fig 2)**

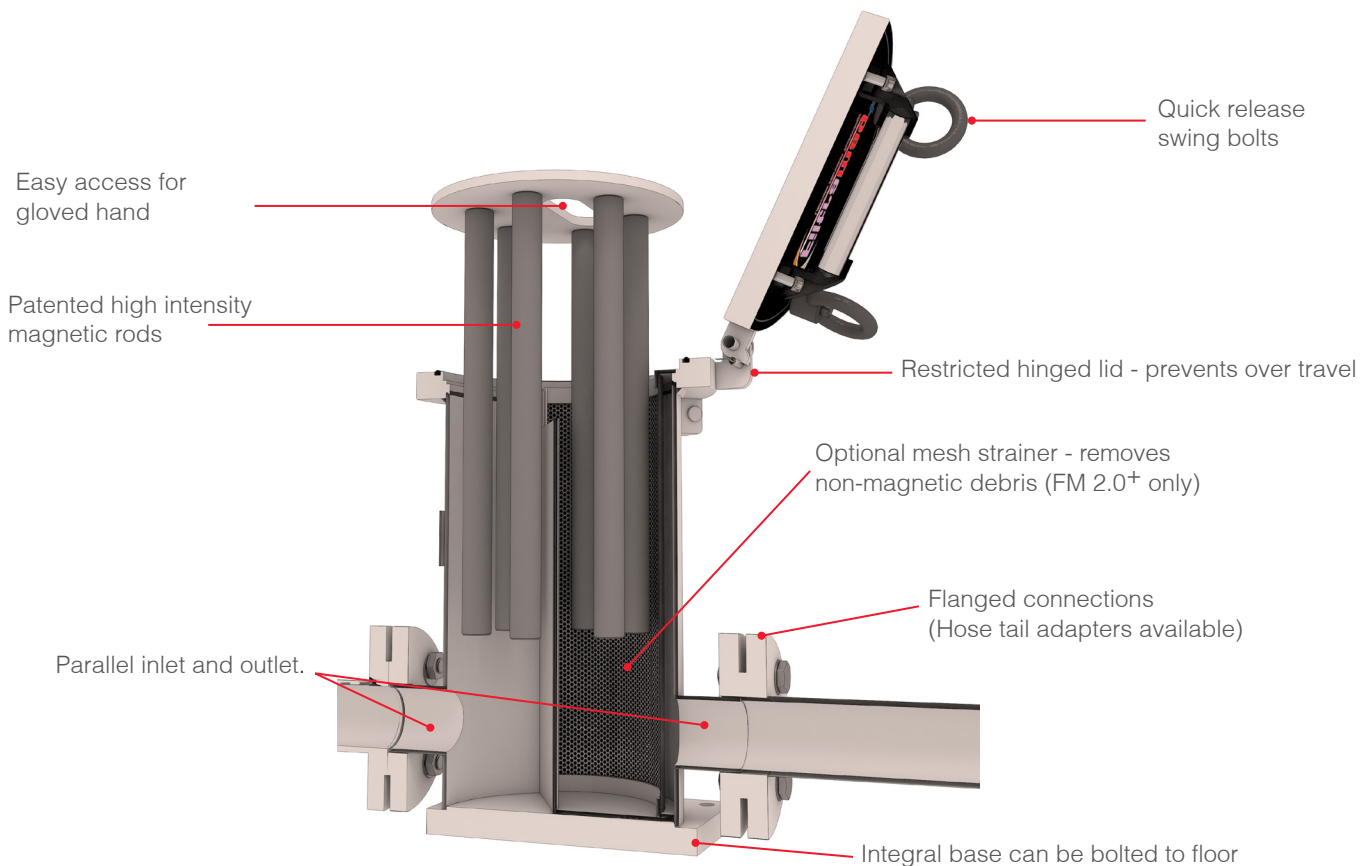


Primary filtration takes place

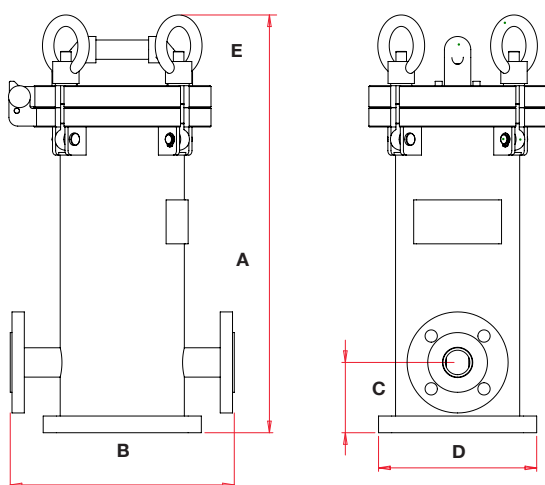
**(Fig 3)**



Secondary filtration takes place



## Technical Data



### Special Applications

For processes with high levels of contamination, high fluid flow rates, high viscosity fluids or that operate continuously, multiple Filtrimag+ filters can be installed in parallel using a manifold. Each Filtrimag+ can be isolated, using a manual valve and cleaned without stopping the process.

| Product number | Max. flow rate<br>litres/min | Contamination capacity<br>kgs | Max. operating pressure<br>bar | Connection<br>PN16 flange | Dimensions<br>mm |     |     |     |      |
|----------------|------------------------------|-------------------------------|--------------------------------|---------------------------|------------------|-----|-----|-----|------|
|                |                              |                               |                                |                           | A                | B   | C   | D   | E    |
| FM1.5+         | 250                          | 3                             | 20                             | 1½"                       | 395              | 255 | 100 | 180 | 80.5 |
| FM2.0+         | 500                          | 6                             | 20                             | 2"                        | 442              | 330 | 100 | 250 | 80.5 |

**PATENTED**

# Automag

## 24/7 Operation

Fully automated for non-stop 24/7 operation. High flow and high contamination capacity. Automag is ideal for harsh chemical environments.

- Patented design
- No user intervention required
- PLC compatible
- No consumables used
- No block design
- Very low operational costs
- 3 sizes available
- Ultra fast cleaning

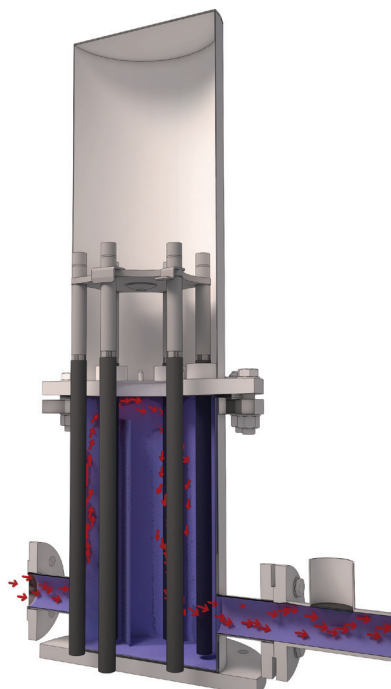


AM6

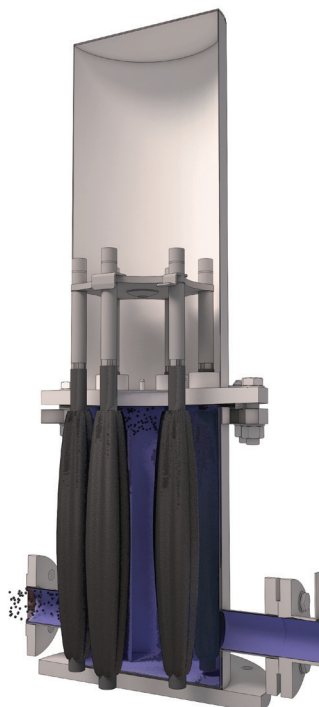
AM12

AMC

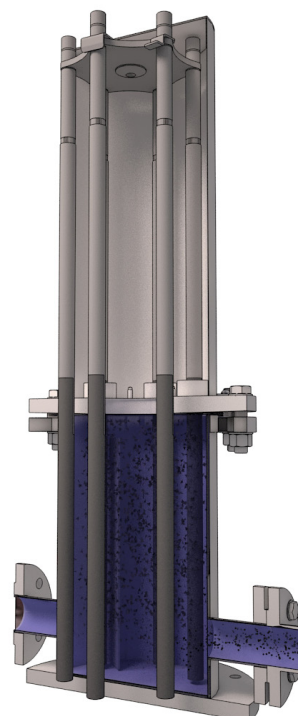
## How Automag works



Dual flow technology™ ensures that fluid is exposed to the high intensity magnets for the maximum time, thus ensuring almost 100% of ferrous contamination is removed on the first pass.



Contamination is attracted to the tube of the cores. Cleaned fluid is re-circulated.

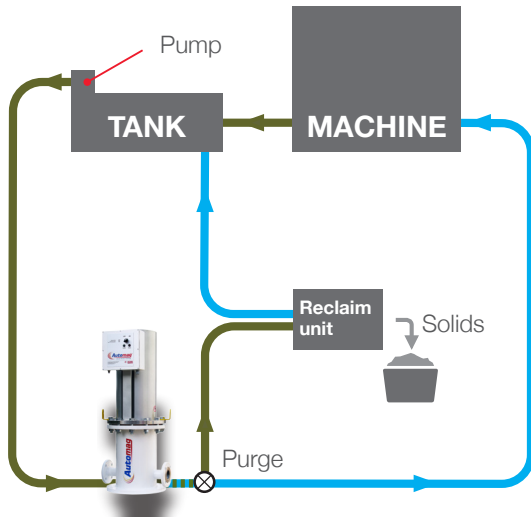


Compressed air lifts the cores from the tubes and the purge valve is opened. Contamination is released and washed away for collection.

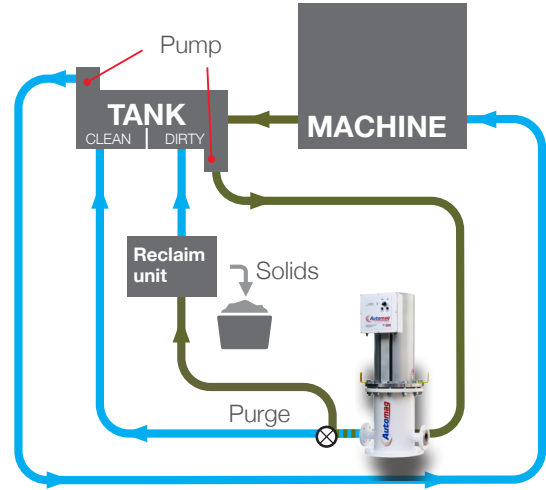


Automag can be installed inline/in process or offline/off process

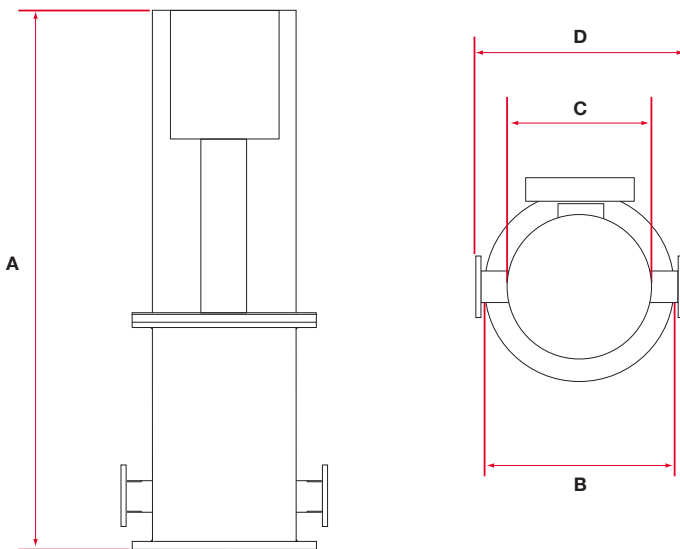
### Inline operation



### Offline operation



## Technical Data

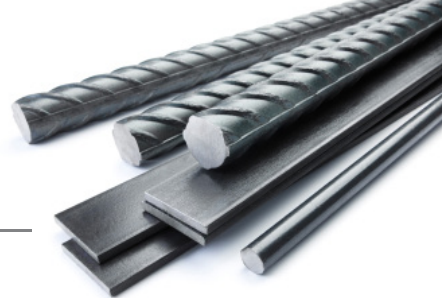


| Product number | Max. flow rate<br>litres/min | Contamination<br>capacity<br>kgs | Max. operating<br>pressure<br>bar | Connection<br>PN16 flange | Dimensions |     |     |     |
|----------------|------------------------------|----------------------------------|-----------------------------------|---------------------------|------------|-----|-----|-----|
|                |                              |                                  |                                   |                           | mm         |     |     |     |
|                |                              |                                  |                                   |                           | A          | B   | C   | D   |
| AMC            | 200                          | 2.5                              | 10                                | 1½"                       | 729        | 229 | 200 | 300 |
| AM6            | 450                          | 7                                | 10                                | 2"                        | 1065       | 395 | 275 | 450 |
| AM12           | 900                          | 14                               | 10                                | 3"                        | 1145       | 565 | 405 | 620 |



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# Automag Skid 24/7 Operation

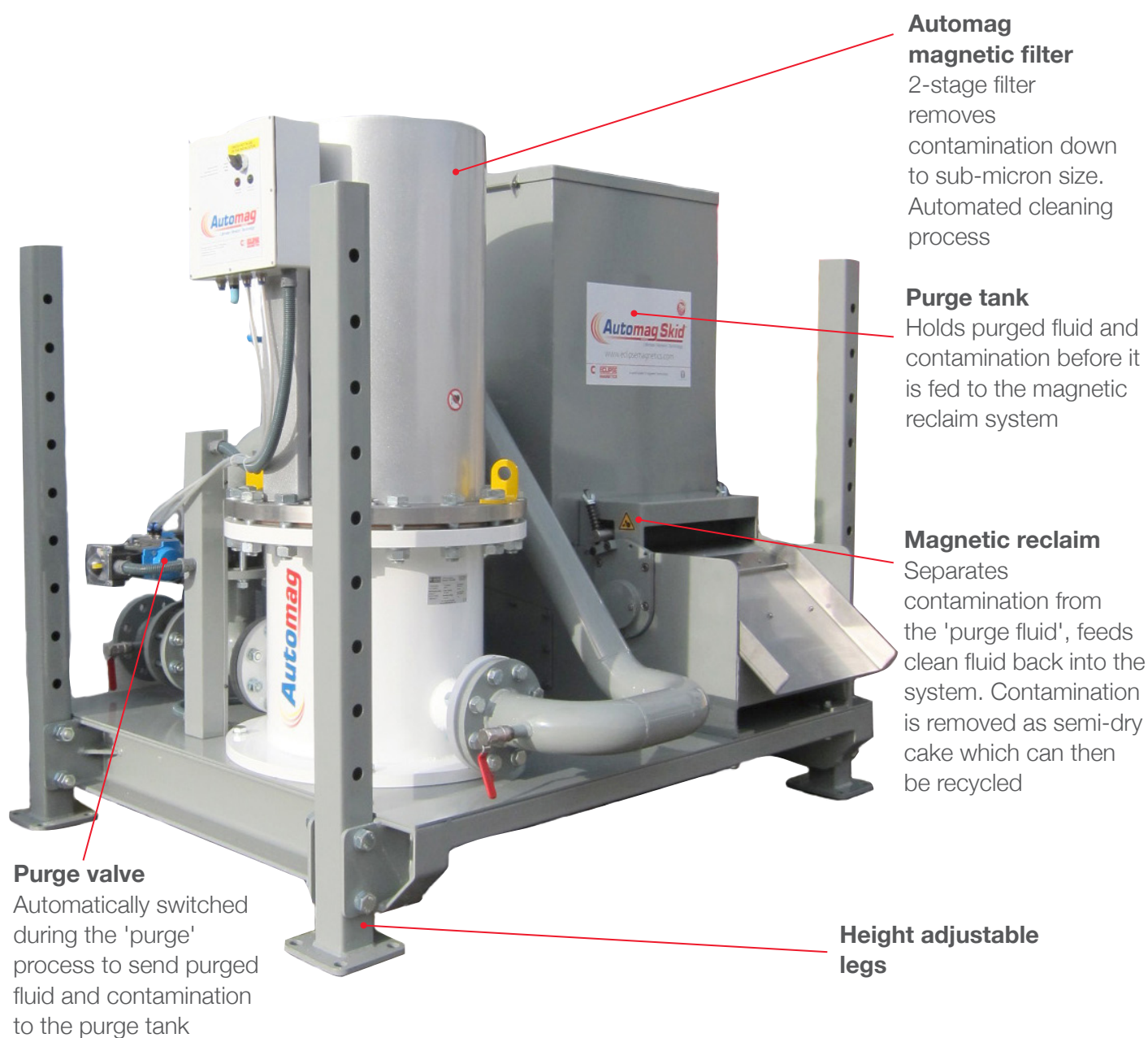


Self-contained, free-standing magnetic filtration system providing uninterrupted 24/7 magnetic filtration. Can be used in-line or, with the optional integral pump, off-line.

An Automag magnetic filter removes magnetic and para-magnetic contamination and holds it until it is released during the automated 'purge' process. Then, the filter's output is briefly diverted so that fluid carries the contamination to the purge tank.

The purge tank then feeds the contaminated fluid to the magnetic reclaim which removes the contamination, putting clean fluid back into circulation. The contamination is extracted in a form ready for disposal or recycling.

Units can be supplied with a single filter or double filters for duplex operation.



## **Automag magnetic filter**

2-stage filter removes contamination down to sub-micron size. Automated cleaning process

## **Purge tank**

Holds purged fluid and contamination before it is fed to the magnetic reclaim system

## **Magnetic reclaim**

Separates contamination from the 'purge fluid', feeds clean fluid back into the system. Contamination is removed as semi-dry cake which can then be recycled

## **Purge valve**

Automatically switched during the 'purge' process to send purged fluid and contamination to the purge tank

## **Height adjustable legs**

| AM6 Skid       |                           | Skid | PLC | Purge Valves | Reclaim Recovery |
|----------------|---------------------------|------|-----|--------------|------------------|
| <b>AM6S1</b>   | Single AM6 Skid           | ✓    |     | ✓            | ✓                |
| <b>AM6S1/P</b> | Single AM6 Skid inc. pump | ✓    | ✓   | ✓            | ✓                |
| <b>AM6S2</b>   | Double AM6 Skid           | ✓    |     | ✓            | ✓                |
| <b>AM6S2/P</b> | Double AM6 Skid inc. pump | ✓    | ✓   | ✓            | ✓                |

| AM12 Skid       |                            | Skid | PLC | Purge Valves | Reclaim Recovery |
|-----------------|----------------------------|------|-----|--------------|------------------|
| <b>AM12S1</b>   | Single AM12 Skid           | ✓    |     | ✓            | ✓                |
| <b>AM12S1/P</b> | Single AM12 Skid inc. pump | ✓    | ✓   | ✓            | ✓                |
| <b>AM12S2</b>   | Double AM12 Skid           | ✓    |     | ✓            | ✓                |
| <b>AM12S2/P</b> | Double AM12 inc. pump      | ✓    | ✓   | ✓            | ✓                |

Double Automag Skid units are available for large flow rate/heavy contamination applications



## Technical Data

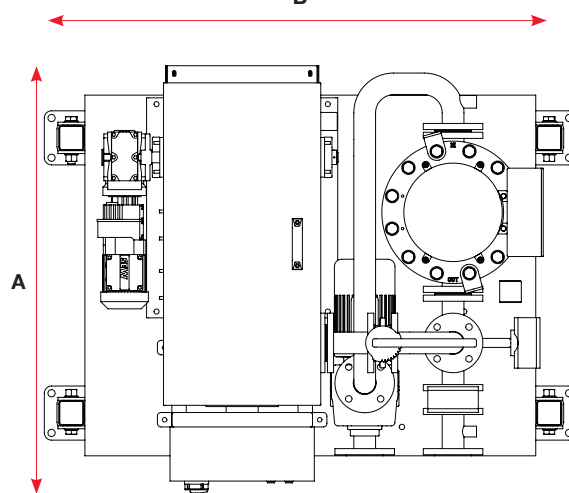
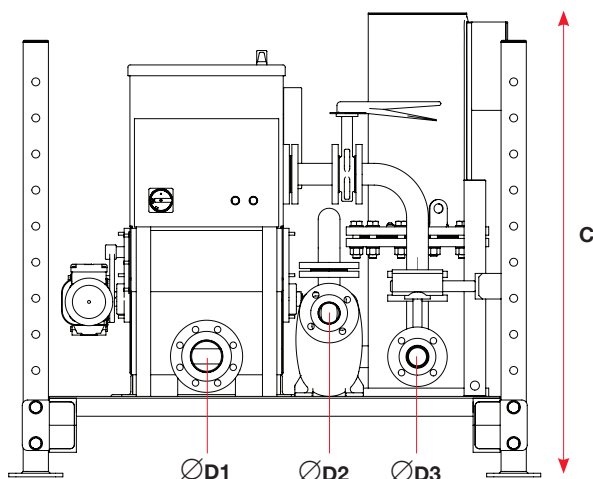


Diagram shows inline unit without integral pump

| Model                   | Number of cores | Maximum flow rate |         | Contamination capacity | Max. operating pressure | Dimensions |      |           |         |          |          |         |
|-------------------------|-----------------|-------------------|---------|------------------------|-------------------------|------------|------|-----------|---------|----------|----------|---------|
|                         |                 | Litres/min.       | m³/hour |                        |                         | mm         |      |           |         |          |          |         |
|                         |                 |                   |         | kgs                    | bar                     | A          | B    | C         | D1      | D2       | D3       | Flanges |
| <b>AMC Skid Single</b>  | 8               | 200               | 12      | 2.5                    | 10                      | 970        | 950  | 1350/1700 | 50 (2") | 38 (1½") | 38 (1½") | PN16    |
| <b>AM6 Skid Single</b>  | 6               | 450               | 27      | 7                      | 10                      | 1000       | 1250 | 1300      | 75 (3") | 50 (2")  | 50 (2")  | PN16    |
| <b>AM6 Skid Double</b>  | 12              | 900               | 54      | 14                     | 10                      | 1000       | 1630 | 1300      | 75 (3") | 50 (2")  | 50 (2")  | PN16    |
| <b>AM12 Skid Single</b> | 12              | 900               | 54      | 14                     | 10                      | 1200       | 1400 | 1450      | 75 (3") | 75 (3")  | 75 (3")  | PN16    |
| <b>AM12 Skid Double</b> | 24              | 1800              | 108     | 28                     | 10                      | 1350       | 2000 | 1644      | 75 (3") | 75 (3")  | 75 (3")  | PN16    |





# Outperforms other filters

**Magnetic filtration can be used as a replacement for, or in conjunction with, other forms of filtration to optimise filtration efficiency.** There are many types of filtration media, Eclipse magnetic systems are the most efficient.

The table below shows how magnetic filtration compares to other forms of filtration in key performance criteria.

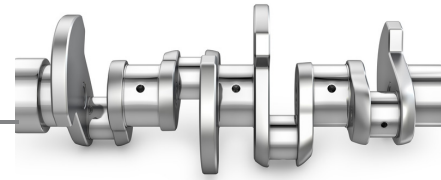
|                                | Filter Type            |                     |                  |                          |                             |                |                  |        |
|--------------------------------|------------------------|---------------------|------------------|--------------------------|-----------------------------|----------------|------------------|--------|
|                                | Automated clean magnet | Manual clean magnet | Magnetic rollers | Hydrocyclone/centrifugal | Barrier (cartridges, paper) | Candle, powder | Settlement tanks | Vacuum |
| <b>Costs</b>                   |                        |                     |                  |                          |                             |                |                  |        |
| Capital investment             | medium                 | low                 | medium           | very high                | low                         | very high      | high             | high   |
| Running costs                  | zero                   | zero                | low              | low                      | high                        | high           | low              | low    |
| Return on investment (years)   | < 1                    | < 1/2               | 2-5              | 5                        | never                       | 10             | 5                | 10     |
| <b>Performance</b>             |                        |                     |                  |                          |                             |                |                  |        |
| Filtration capability (micron) | < 1                    | < 1                 | > 20             | > 10                     | > 20                        | > 10           | > 100            | >20    |
| Process accuracy               | very high              | very high           | low              | medium                   | medium                      | high           | low              | medium |
| Flow rates (ltrs/min.)         | very high              | very high           | medium           | low/medium               | low                         | low            | medium           | medium |

Note. This is general information for guidance purposes only. Please consult Eclipse Magnetics for application specific information.





# Application data selector



Percentage reduction required from stated maximum flow rate to obtain good filtration results

| Part No                | Flow rates<br><i>(ltrs/min.)</i> | Fluid Type |          |            |           | Material Type |            |           |                 |                  |                  | Material Loading |        |       |      |  |
|------------------------|----------------------------------|------------|----------|------------|-----------|---------------|------------|-----------|-----------------|------------------|------------------|------------------|--------|-------|------|--|
|                        |                                  | Coolant    | Thin oil | Medium oil | Thick oil | Mild steel    | Hard steel | Cast iron | Stainless steel | High speed steel | Tungsten carbide | Heavy            | Medium | Light | Wear |  |
| Micromag               |                                  |            |          |            |           |               |            |           |                 |                  |                  |                  |        |       |      |  |
| MM5                    | 70                               | 0          | 20       | n/a        | n/a       | 0             | n/a        | 20        | n/a             | n/a              | n/a              | n/a              | n/a    | n/a   | ✓    |  |
| MM10                   | 100                              | 0          | 20       | n/a        | n/a       | 0             | 30         | 20        | n/a             | n/a              | n/a              | n/a              | n/a    | ✓     | ✓    |  |
| MM20                   | 150                              | 0          | 20       | 30         | 60        | 0             | 30         | 20        | 70              | n/a              | n/a              | n/a              | ✓      | ✓     | ✓    |  |
| Filtramag <sup>+</sup> |                                  |            |          |            |           |               |            |           |                 |                  |                  |                  |        |       |      |  |
| FM1.5 <sup>+</sup>     | 250                              | 0          | 10       | 20         | 40        | 0             | 20         | 20        | 50              | 60               | 70               | n/a              | ✓      | ✓     | ✓    |  |
| FM2.0 <sup>+</sup>     | 500                              | 0          | 10       | 20         | 40        | 0             | 20         | 20        | 50              | 60               | 70               | ✓                | ✓      | ✓     | ✓    |  |
| Automag                |                                  |            |          |            |           |               |            |           |                 |                  |                  |                  |        |       |      |  |
| AMC                    | 200                              | 0          | 10       | 20         | 30        | 0             | 20         | 20        | 40              | 50               | 60               | ✓                | ✓      | ✓     | n/a  |  |
| AM6                    | 450                              | 0          | 10       | 20         | 30        | 0             | 20         | 20        | 40              | 50               | 60               | ✓                | ✓      | ✓     | n/a  |  |
| AM12                   | 900                              | 0          | 10       | 20         | 30        | 0             | 20         | 20        | 40              | 50               | 60               | ✓                | ✓      | ✓     | n/a  |  |
| Automag Skid           |                                  |            |          |            |           |               |            |           |                 |                  |                  |                  |        |       |      |  |
| AMCS1                  | 200                              | 0          | 10       | 20         | 30        | 0             | 20         | 20        | 40              | 50               | 60               | ✓                | ✓      | ✓     | n/a  |  |
| AM6S1                  | 450                              | 0          | 10       | 20         | 30        | 0             | 20         | 20        | 40              | 50               | 60               | ✓                | ✓      | ✓     | n/a  |  |
| AM12S1                 | 900                              | 0          | 10       | 20         | 30        | 0             | 20         | 20        | 40              | 50               | 60               | ✓                | ✓      | ✓     | n/a  |  |
| AM6S2                  | 900                              | 0          | 10       | 20         | 30        | 0             | 20         | 20        | 40              | 50               | 60               | ✓                | ✓      | ✓     | n/a  |  |
| AM12S2                 | 1800                             | 0          | 10       | 20         | 30        | 0             | 20         | 20        | 40              | 50               | 60               | ✓                | ✓      | ✓     | n/a  |  |

## Example:

Filter **FM2.0<sup>+</sup>**  
 Flow **500 ltrs/min.**  
 Material **Cast iron**  
 Fluid **Medium oil**  
 $500 \text{ ltrs/min} \times \text{Medium oil (20\%)} = 400 \text{ ltrs/min.}$   
 $400 \text{ ltrs/min} \times \text{Cast iron (20\%)} = 320 \text{ ltrs/min.}$   
**Suggested flow rate = 320 ltrs/min.**

## Centipoise

Thin oil 20–300  
 Medium oil 300–700  
 Thick oil 700+

## Includes Full Tank System

Why install new filters on an old system?

This version enables you to install a full new tank arrangement.

This system is capable of 'polishing' the stored onboard fluid even when the machine tool is stopped!

**Easily connect additional equipment e.g. chiller etc.**



- Full turnkey design
- Onboard adjustable PLC
- Modular tank design
- Tank capacity 800 - 8000L
- High pressure version available

We offer a full design and consultation service to design and build customised solutions

## Additional equipment

As part of our full turnkey service we are able to incorporate the following:

- Chillers
- Membrane technology
- Fluid monitoring equipment
- Fluid storage solutions
- Centrifuge & hydrocyclone







# Services

## Experience

With over 100 years' experience of supplying high volume component manufacturers, Eclipse Magnetics is uniquely positioned to offer an in-depth service.

## Knowledge

We not only understand our own business very well, we pride ourselves in understanding the business of our customers, the risks they face and changing market requirements.

## Flexibility

We offer a reflexive and responsive solution, with short lead times, to reactive requirements, ensuring process efficiency is never compromised.

## Advancement

From simple manually cleaned units to fully automated touch-screen PLC controlled systems, Eclipse Magnetics strive for continual improvement, offering our customers the latest technology available.

## Service contracts

Why not benefit from the security and convenience of one of our service contract packages? Different packages are available to suit a variety of requirements. Take the opportunity to protect your investment. Please contact us to discuss your needs.



In addition to our magnetic filtration products for industrial fluids we also manufacture high performance filters for domestic, commercial and industrial heating and cooling systems.



The BoilerMag range of filters removes black iron oxide from heating and cooling systems, improving efficiency, reducing CO2 emission and protecting boilers from the damage that black iron oxide can cause.

## Benefits of BoilermagXT

- Guaranteed protection from black iron oxide
- Easy installation and maintenance
- Maintains peak performance of systems
- Improves energy efficiency
- Extends system life
- No running costs, minimal maintenance costs
- Reduces the sludge that builds up in boilers
- 3 year warranty

To find out how you could improve your heating and cooling system efficiency visit [www.boilermag.com](http://www.boilermag.com) or contact [info@eclipsemagnetics.com](mailto:info@eclipsemagnetics.com)





## Ultimate Filtration Technology

## Other Products

In addition to our filtration range, Eclipse Magnetics manufacture a wide range of high performance magnetic products for diverse applications.



Workholding systems



Lifting and handling systems



Magnetic aids for workshop & general engineering applications



Magnetic materials & assemblies



Foreign body removal - separation & detection systems



Heating system filters