Magnetic Filtration
Sub-micron filtration for industrial fluids in precision applications
Driving competitive edge into precision processes
Reduce downtime, costs and protect the environment

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 Magnetic filters are based on their ability to remove almost 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.

Ideal for high precision manufacturing
Magnetic filtration enables a cleaner cut or grind, improves surface finish and reduces reject rates.

Significantly lower operating costs

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

24/7 operation
Fully automated magnetic filtration systems are ideal for continuous manufacturing lines.

Rapid return on investment
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.
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 almost 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.

Reduced environmental impact
### 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%.
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
- “Mirror” finish plastic cutters

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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

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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

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**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.

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**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%.

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**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%. 
Give your business the edge...
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.”
Give your business the edge…

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.”
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.
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

<table>
<thead>
<tr>
<th>Product number</th>
<th>Flow rate ltrs/min.</th>
<th>Contamination capacity kgs</th>
<th>Max. operating pressure bar</th>
<th>Connection ° BSP</th>
<th>Temperature range °C</th>
<th>Construction</th>
<th>Dimensions mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>MM5</td>
<td>70</td>
<td>1</td>
<td>12</td>
<td>1</td>
<td>5 – 50</td>
<td>SAN housing, aluminium lid</td>
<td>A 190  B 105  C 95</td>
</tr>
<tr>
<td>MM10</td>
<td>100</td>
<td>2</td>
<td>12</td>
<td>1</td>
<td>5 – 50</td>
<td>Aluminium housing and lid</td>
<td>A 247  B 138  C 116</td>
</tr>
<tr>
<td>MM20</td>
<td>150</td>
<td>4</td>
<td>12</td>
<td>1½</td>
<td>5 – 140</td>
<td>Full stainless steel construction</td>
<td>A 215  B 137  C 100</td>
</tr>
<tr>
<td>MM5/HP/50</td>
<td>70</td>
<td>1</td>
<td>50</td>
<td>1</td>
<td>5 – 140</td>
<td>Aluminium housing and lid</td>
<td>A 247  B 138  C 116</td>
</tr>
<tr>
<td>MM10/HP/50</td>
<td>100</td>
<td>2</td>
<td>50</td>
<td>1</td>
<td>5 – 140</td>
<td>Full stainless steel construction</td>
<td>A 215  B 137  C 100</td>
</tr>
<tr>
<td>MM20/HP/50</td>
<td>150</td>
<td>4</td>
<td>50</td>
<td>1½</td>
<td>5 – 140</td>
<td>Full stainless steel construction</td>
<td>A 215  B 137  C 100</td>
</tr>
<tr>
<td>MM5/HP</td>
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<td>1</td>
<td>80</td>
<td>1</td>
<td>5 – 70</td>
<td>Full stainless steel construction</td>
<td>A 215  B 137  C 100</td>
</tr>
<tr>
<td>MM10/HP</td>
<td>100</td>
<td>2</td>
<td>80</td>
<td>1</td>
<td>5 – 70</td>
<td>Full stainless steel construction</td>
<td>A 215  B 137  C 100</td>
</tr>
<tr>
<td>MM20/HP</td>
<td>150</td>
<td>4</td>
<td>80</td>
<td>1½</td>
<td>5 – 70</td>
<td>Full stainless steel construction</td>
<td>A 215  B 137  C 100</td>
</tr>
</tbody>
</table>
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

How Automag works

Contamination is attracted to the tube of the cores. Cleared 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.

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

**Inline operation**

**Technical Data**

<table>
<thead>
<tr>
<th>Product number</th>
<th>Max. flow rate</th>
<th>Contamination capacity</th>
<th>Max. operating pressure</th>
<th>Connection</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>litres/min</td>
<td>kgs</td>
<td>bar</td>
<td>1½” PN16 flange</td>
<td>mm</td>
</tr>
<tr>
<td>AMC</td>
<td>200</td>
<td>2.5</td>
<td>10</td>
<td>740</td>
<td>290</td>
</tr>
<tr>
<td>AM6</td>
<td>450</td>
<td>7</td>
<td>10</td>
<td>1065</td>
<td>395</td>
</tr>
<tr>
<td>AM12</td>
<td>900</td>
<td>14</td>
<td>10</td>
<td>1145</td>
<td>565</td>
</tr>
</tbody>
</table>
A cost effective solution for small/medium sized applications where fluids are fed from a dedicated self-contained tank.

Self contained filtration and fluid recovery system for higher flow, higher contamination applications. 24/7 automated operation.

- No user intervention required
- No consumables used
- No block design
- Recovers all fluid
- Very low operational costs
- Onboard PLC (run lights out)
- Small footprint size
- Minimal installation
- Plug in and use design
- Full tank system (optional)

**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 reclaim system

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

**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
### Technical Data

| Product number | Number of cores | Maximum flow rate Litres/min. | m³/hour | Contamination capacity kgs | Max. operating pressure bar | Dimensions mm
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AMCS1</td>
<td>8</td>
<td>200</td>
<td></td>
<td>12</td>
<td>2.5</td>
<td>A 970, B 950, C 1350/1700, D1 50 (2&quot;) D2 38 (1½&quot;) D3 38 (1½&quot;) PN16</td>
</tr>
</tbody>
</table>

![Diagram](image-url)
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 Skid**

24/7 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**
## Options

<table>
<thead>
<tr>
<th>Skid</th>
<th>PLC</th>
<th>Purge Valves</th>
<th>Reclaim Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM6 Skid</td>
<td></td>
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</tr>
<tr>
<td>AM6S1</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>AM6S1/P</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>AM6S2</td>
<td>✔</td>
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<td>✔</td>
</tr>
<tr>
<td>AM6S2/P</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skid</th>
<th>PLC</th>
<th>Purge Valves</th>
<th>Reclaim Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM12 Skid</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>AM12S1</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>AM12S1/P</td>
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<td>✔</td>
<td>✔</td>
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<td>AM12S2</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>AM12S2/P</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

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

## Technical Data

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of cores</th>
<th>Maximum flow rate</th>
<th>Contamination capacity</th>
<th>Max. operating pressure</th>
<th>Dimensions</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Litres/min. m³/hour</td>
<td>kgs</td>
<td>bar</td>
<td>A</td>
</tr>
<tr>
<td>AM6 Skid Single</td>
<td>6</td>
<td>450</td>
<td>27</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>AM6 Skid Double</td>
<td>12</td>
<td>900</td>
<td>54</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>AM12 Skid Single</td>
<td>12</td>
<td>900</td>
<td>54</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>AM12 Skid Double</td>
<td>24</td>
<td>1800</td>
<td>108</td>
<td>28</td>
<td>10</td>
</tr>
</tbody>
</table>

On board PLC

Diagram shows inline unit without integral pump.
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.

<table>
<thead>
<tr>
<th>Costs</th>
<th>Automated clean magnet</th>
<th>Manual clean magnet</th>
<th>Magnetic rollers</th>
<th>Hydrocyclone/centrifugal</th>
<th>Barrier (cartridges, paper)</th>
<th>Candle, powder</th>
<th>Settlement tanks</th>
<th>Vacuum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital investment</td>
<td>medium</td>
<td>low</td>
<td>medium</td>
<td>very high</td>
<td>low</td>
<td>very high</td>
<td>high</td>
<td>high</td>
</tr>
<tr>
<td>Running costs</td>
<td>zero</td>
<td>zero</td>
<td>low</td>
<td>low</td>
<td>high</td>
<td>high</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>Return on investment (years)</td>
<td>&lt; 1</td>
<td>&lt; 1/2</td>
<td>2-5</td>
<td>5</td>
<td>never</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

Performance

| 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

<table>
<thead>
<tr>
<th>Part No</th>
<th>Flow rates (ltrs/min.)</th>
<th>Fluid Type</th>
<th>Material Type</th>
<th>Material Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coolant</td>
<td>Thin oil</td>
<td>Medium oil</td>
<td>Thick oil</td>
</tr>
<tr>
<td>Micromag</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MM5</td>
<td>70</td>
<td>0</td>
<td>20</td>
<td>n/a</td>
</tr>
<tr>
<td>MM10</td>
<td>100</td>
<td>0</td>
<td>20</td>
<td>n/a</td>
</tr>
<tr>
<td>MM20</td>
<td>150</td>
<td>0</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>Filtramag</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FM1.5</td>
<td>250</td>
<td>0</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>FM2.5</td>
<td>500</td>
<td>0</td>
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<td>20</td>
</tr>
<tr>
<td>Automag</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>AMC</td>
<td>200</td>
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<td>10</td>
<td>20</td>
</tr>
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<td>AM6</td>
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<td>0</td>
<td>10</td>
<td>20</td>
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<td>0</td>
<td>10</td>
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<td>0</td>
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</tr>
</tbody>
</table>

**Example:**

Filter: **FM2.5**  
Flow: **500 ltrs/min.**  
Material: **Cast iron**  
Fluid: **Medium oil**  

500 ltrs/min.: **Medium oil (20%) = 400 ltrs/min.**  
400 ltrs/min.: **Cast iron (20%) = 320 ltrs/min.**  
Suggested flow rate = **320 ltrs/min.**

### Centipoise

- **Thin oil**: 20–300  
- **Medium oil**: 300–700  
- **Thick oil**: 700+