

ADVANCED MATERIAL SOLUTIONS

C O M P A N Y P R O F I L E

AMS

- Durable metallic membrane from high-value alloys
- Metal Injection Moulded Components for complex shapes and excellent value





*Industrial Automated Crossflow
Filtration System*

THE COMPANY

Advanced Material Solutions (AMS) is a wholly Australian-owned and operated company specializing in quality products made from high value alloys using advanced manufacturing technologies. Advanced manufacturing allows AMS to produce complex parts with high consistency, high strength, tight tolerances and almost no waste.

AMS make the smallest diameter, longest single length metallic microfiltration membrane in the world and are the only producers of Metal Injection Moulded (MIM) components in Australia. All AMS products are produced and controlled using our Quality Management System, developed according to ISO 9001:2008.

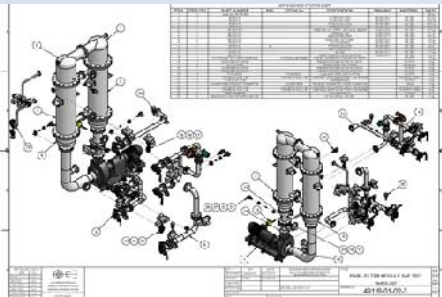
FACILITIES

AMS is located in Lonsdale, SA. It has a 2,500 m² manufacturing area incorporating metallic feedstock production, Metal Injection Moulding, sintering and testing facilities. A 1,200 m² machine shop, fabrication and electrical workshop, as well as an offsite workshop for mild steel support the manufacturing facilities complete custom filtration systems according to clients' needs and specifications.

CAPABILITIES

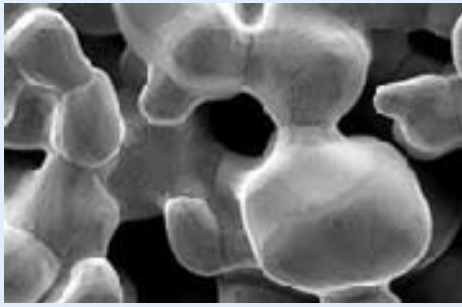
AMS has the in-house capability to take a variety of projects from concept to completion. Our capabilities include:

- ◆ Development, engineering, design, drafting, 3D modelling, fabrication, commissioning, FAT, SAT and documentation in the process, mechanical, electrical, instrumentation and automation disciplines.
- ◆ In-house and on-site training
- ◆ In-house and on-site filtration trials
- ◆ New membrane development and component prototyping in conjunction with Australian Universities



Fabrication Drawing





*Scanning Electron Micrograph of Filtration
Membrane Surface*

METALLIC MEMBRANE FILTRATION

Tangential or crossflow filtration is the preferred technology for many industrial and commercial applications, as higher flow rates and longer filtration runs have process and economic benefits for the end user. Metallic membrane offers advantages over plastic and ceramic in that it is resistant to high pressure and temperature as well as rapid changes (mechanical and thermal shock), it is long lasting and can be cleaned with aggressive chemicals or live steam. The disadvantages **have** been higher initial investment, relatively large filter footprint and higher power demand. These disadvantages are directly related to the industry standard membrane manufacturing process, which results in large diameter, thick-walled membrane tubes. AMS membrane does not have these disadvantages.

The patented AMS advanced membrane manufacturing process results in membrane diameters comparable to membranes made of other materials, membranes with high porosity, and as a result lower initial investment, smaller filter footprints, and lower power demand.

AMS offer microfiltration membranes in a variety of alloys, micron ratings, diameters, lengths and configurations from small single modules to multi-train, fully automated systems.

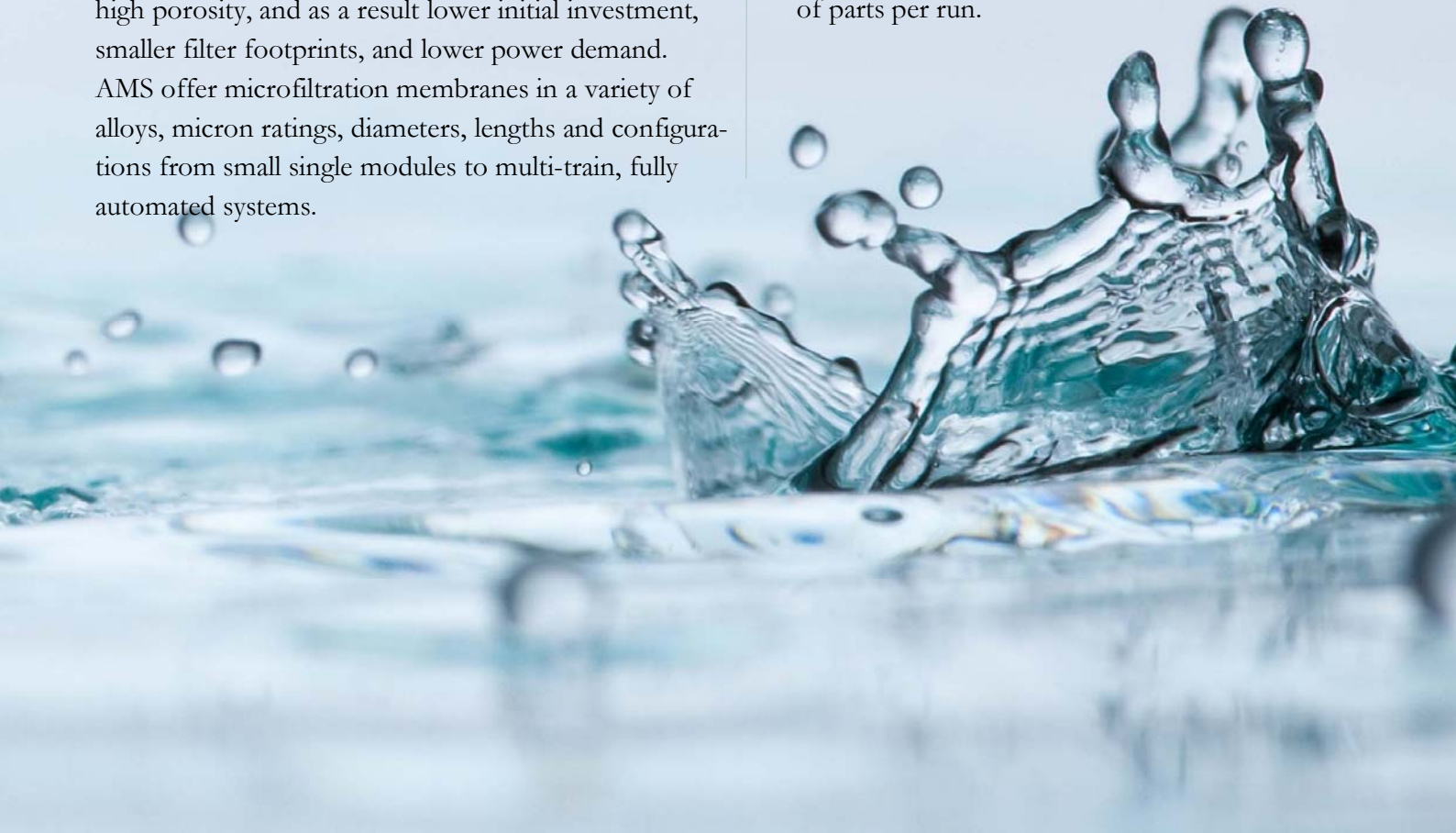


[Metal Injection Moulded Components]

METAL INJECTION MOULDING

The MIM process starts with metal powder and binders that are blended together. The resulting feedstock is liquefied and injected into a mould using conventional injection moulding machines. The green part that comes out of the injection moulding machine is then chemically or thermally treated to remove the bulk of the binders and then sintered in a high temperature vacuum furnace to form the finished part. Threads, grooves, holes, protrusions, embossing and dating can all be incorporated into the mould, making it possible to produce complex parts with little to no secondary operations, such as machining, polishing, or tapping.

AMS offer MIM in high grade alloys as a cost-effective, high-quality alternative to machining or 3D printing for volumes from fifty to thousands of parts per run.





*AMS Vacuum/Hydrogen Sintering
Furnace*

INDUSTRIES SERVED

- Water and wastewater
- Defense
- General manufacturers
- Chemical production
- Food and beverage
- Pharmaceutical
- Mineral processing
- Biofuels
- Pulp and paper



FOR MORE INFORMATION PLEASE CONTACT

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