

MM Precision Casting Process



Micro Metalsmiths

www.micrometalsmiths.com

Introducing Micro Metalsmiths

Micro Metalsmiths is held in high esteem after trading for over 40 years in precision castings and RF front end components and assemblies, within the most demanding industries.

Employing over 100 people in the towns of Pickering and Kirkbymoorside, North Yorkshire, Micro Metalsmiths is an independent company, trading globally.

A major advantage to all our customers is the provision of a full range of in-house facilities. As a result, customers' needs can be met with a greater degree of flexibility. Any customer who has a need for rapid prototyping will find that the latest techniques are available.

Micro Metalsmiths Precision Castings and Machining is able to offer its own:

- project management
- design department
- investment foundry
- machine shop
- assembly shop

Quality standards

Micro Metalsmiths was accredited to BS5750 in 1998 and currently holds the latest ISO9001 : 2000. The company is

audited twice a year by the British Standards Institute.

Micro Metalsmiths has also been audited by many major aerospace and defence organisations and is on the approved supplier list for many of these international organisations.

Our customers

- Honeywell
- Saab
- Molex
- Bentley Motors
- Thales
- Goodrich
- Andrews Corp
- Siemens

Why use the MM casting process?

- Reduce the overall costs of design and manufacture by simplifying assemblies, by combining parts, eliminating joining processes, reducing the part count while improving the integrity of the finished product.
- Reduce the time to market by using rapid prototyping technology and obtaining casting, machining, assembly and packaging from one source. Finished metal parts can be delivered from concept in less than four weeks.
- Design flexibility, with quick modifications to tooling which cost 90% less than for a pressure die casting, while maintaining economic batch quantities of up to 500,000 parts per annum.
- High quality finish, detail and specification.

Component Castings

For over forty years, Micro Metalsmiths has refined its techniques for excellence in the production of copper alloy and aluminium alloy investment castings.

The core technology is specialist investment casting, which gives Micro Metalsmiths the ability to take a customer's concept and achieve reality in a cost effective manner.

The process provides a fast and cost effective method for both small batches and quantities up to 500,000 a year. Parts with complex internal and external detail, superior finishes and thin wall capabilities can be produced, without the need for machining from solid.

The foundry specialises in copper and aluminium alloys is one of the largest of its type in the UK. Micro Metalsmiths has close associations with other foundries, allowing true global sourcing and supply of steel and other alloys. This combined with long relationships with paint, coating, polishing, finishing and sub contract testing allows the production from concept, to finished article assembly on components. All undertaken by Micro Metalsmiths to customer requirements.

The company has combined its impressive investment casting technology with best practice CNC machining to help overcome many of the constraints often placed on engineering design. This is all carried out within a BSI accredited ISO 9001 Quality System.

Machining

The company operates CNC machining centres. To ensure the utmost accuracy and repeatability, the machines are fitted with Renishaw probing and are regularly tested for positional accuracy, orthogonality and servo errors.

The machines are supported by highly skilled and committed personnel with the latest CAD software, ensuring efficient and effective running, 24 hours a day.

Sub Contract Handling

Micro Metalsmiths has a firm relationship with a vast array of skilled sub contractors to suit the demanding requirements enabling the supply of completely finished product.

With the demands of the market Micro Metalsmiths has gained experience in supplying completely finished product to the customer. Whether the requirement is steel castings, protective coats, testing, cosmetic finish or assembled components, Micro Metalsmiths has the reliable tried and proved supply lines to meet customer demands.

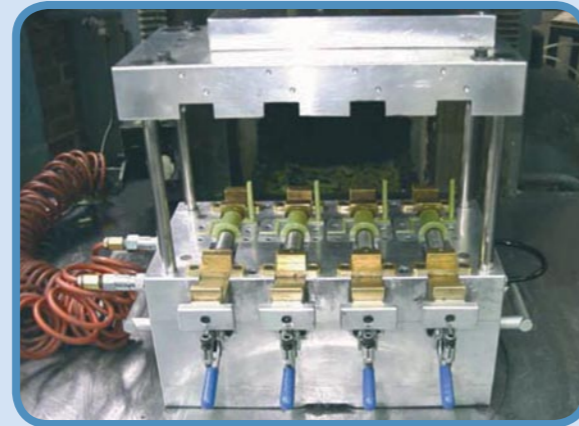


The MM Process is a 'block moulding' version of the 'Lost Wax' method'. A fine plaster investment is applied under a vacuum. The plaster penetrates all features and fills internal voids to ensure that, as the mould is formed, every detail of the wax pattern is faithfully reproduced.

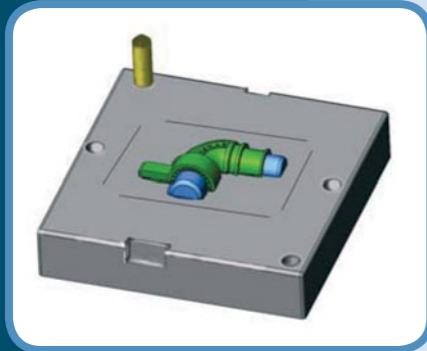
A vacuum assists the flow of metal. Thin sections, sharp edges and complex internal detail are all accurately cast.

The MM Casting Process

Low cost aluminium tooling



Wax Injection



Wax injection



If required, soluble cores are used to form difficult internal detail

- Temporary soluble core
- Wax pattern moulded around soluble core
- Wax pattern

Thin sections of 1mm are common. Small areas down to 0.2mm thick.

Investing



Firing of moulds

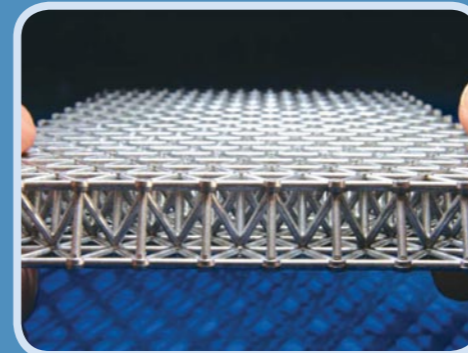


Finishing

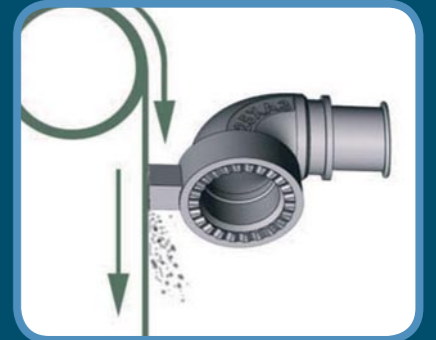


Machine

Complex internal shapes



De-gating



Saw

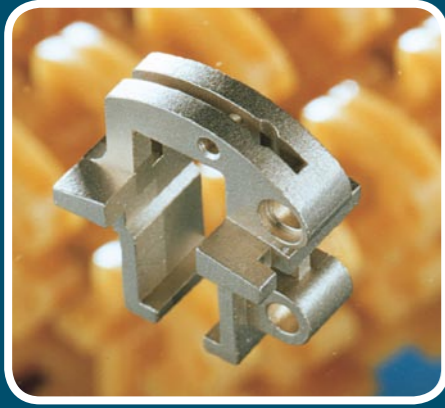


Pouring



Wash





Call Micro Metalsmiths today

This brochure will have given you an excellent overview of the world-class investment casting provided by Micro Metalsmiths.

We have the experience, the advanced technology, the highly qualified staff and an absolute commitment to customer satisfaction.

Our outstanding track record of successful projects for customers around the world speaks for itself.

Micro Metalsmiths continues to develop its processes to meet the ever more exacting challenges of the marketplace.

Whether you have a specific project in mind, are looking for technical advice, or require an initial assessment, contact us now.

If you have an issue not covered by this brochure, please contact our Liaison Engineers who will provide you with an update on our latest capabilities and discuss ways in which we can help in the design and production of your components.

Micro Metalsmiths Ltd,

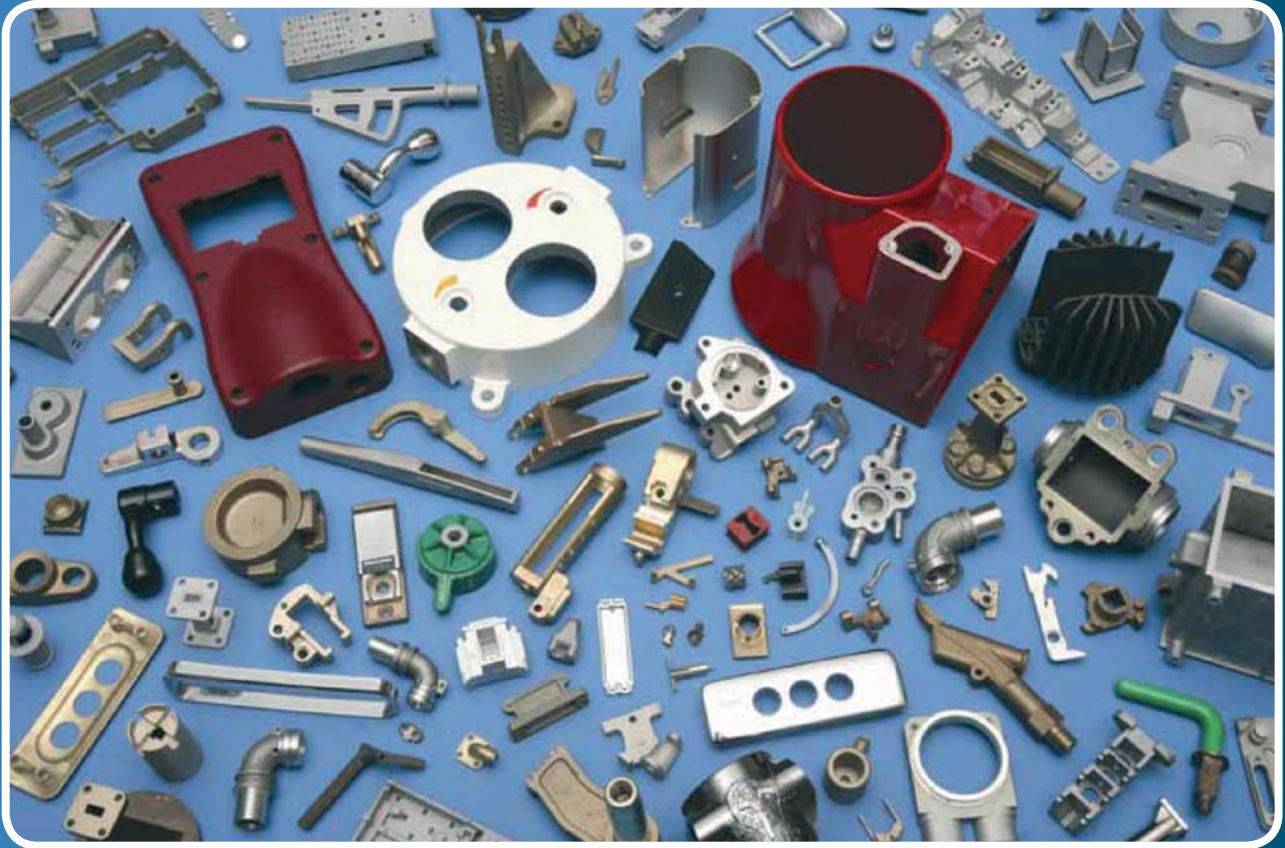
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