MAGYARMET™

FINOMÖNTÖDE • FEINGUSS • INVESTMENT CASTING

Creative Investment Casting

Company

MAGYARMET is a well-known European supplier of ready-machined castings, which find their application in various engineering branches. The company has been producing high value alloy steel products since its foundation in 1981 and is nowadays the leading Hungarian investment foundry.

During the past decades the technology has been steadily improved and automated, the castings and components are produced mainly in small and medium sized series. MAGYARMET unites the accurate lost wax technology with a wide variety of materials: low- and high-alloy steels, corrosion- and heat-resistant steels, wear-resistant alloys, nickel- and cobalt-based alloys, bronze.

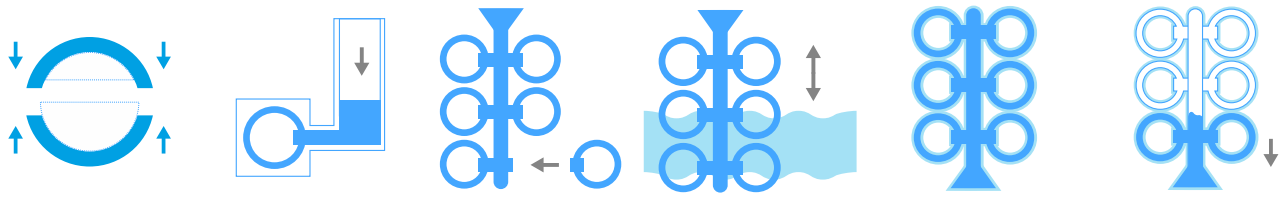
We are always devoted to find the right solution for meeting the customer's expectations

The company combines creative ideas with innovative solutions in metal casting to meet different customer requirements. Rapid prototyping joins together the high experience of the past decades in investment casting and the additive technology.
Due to saving the time for tooling production, this process makes it possible for the customer to get the required parts ready machined within 10-15 working days.

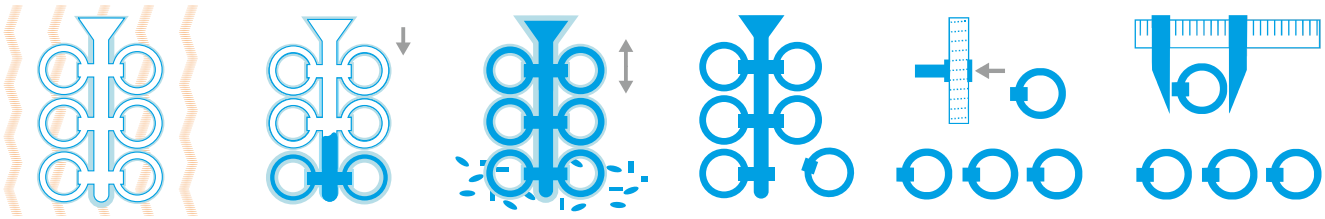
MAGYARMET offers full service up to ready-to-assemble parts. The company has started a modern mechanical machining shop at the headquarters in 2008.

Lost Wax Process

MAGYARMET has been keeping pace with market requirements and international innovations concerning the industrialised lost wax process, which enables the production of parts of ever increasing complexity. In addition, MAGYARMET is making use of ceramic and soluble wax cores to produce parts with intricate cavities and undercuts.



1. Tool designing and manufacturing
2. Injection of wax patterns
3. Assembly of the casting unit (free)
4. Shelling
5. Ceramic shell
6. Dewaxing



7. Burning of shells
8. Pouring of metal
9. Removing of ceramic shell
10. Cut-off
11. Grinding
12. Tests

Investment casting users throughout the world benefit from the rich experience, technical expertise and tangible advantages of the technology:

- Complex geometries
- High dimensional accuracy
- High surface quality
- Wide range of alloys
- Efficient production of small series
- Full service – ready-to-assemble parts
- Felxibility

Rapid Prototyping

The perfect combination of an innovative production method with different manufacturing technologies results in the main client's advantages: speed, precision, flexibility

The continuous development and the aim to satisfy the demands of various markets led MAGYARMET to start rapid prototyping. This technology, based on 3D printing, makes it possible for customers to get the required part, depending on complexity and quantity, machined and ready for assembly - within 10-15 working days.

This process starts with the **printing of a 3D model** directly from the CAD data.

During the further processing the 3D printed model is used the same way as the wax pattern of traditional investment casting.

Ready-to-assemble parts within 2-3 weeks
Advantages of Rapid Prototyping:

- Faster introductiob of new products
- Production of prototype parts
- Effective design, fitting and function check
- Rapid production of spare parts
- Cost-effective production of small batch quantities

Alloys

The reliable and precise technology of investment casting becomes more attractive with the wide range of alloys at MAGYARMET:

- Low-alloy steels
- High-alloy steels (corrosion- and heat-resistant, duplex alloys)
- Wear-resistant alloys
- Nickel- and cobalt-based alloys
- Bronze

Quality

MAGYARMET's quality policy is not just oriented to meet the customers' quality expectations, but to ensure continuous improvement of quality levels and convince the partners with higher added value. An important aspect of the company's strategy is to comply with respective international standards.

- ISO 9001
- ISO 14001
- AS 9100
- PED 2014/68/EU
- ISO 3834-2

The production process at MAGYARMET integrates a considerable number of controls and tests:

- Chemical composition test
- Mechanical tests
- Metallographic test
- Radioscopic test
- 3D coordinates measuring
- Crack detection
  (magnetic particle, dye penetrant inspection)

Full Range of Services

From design to a ready-to-assemble product

Besides the continuous development of the technical and quality level of the products, the further expansion of the scale of services to a complete range is another strategic aim of the company.

MAGYARMET experts advise their partners on castable designs already in the developing stage of new products by using 3D modelling and simulation techniques and propose alloys to match the related requirements.

Quick reaction and short delivery time are competitive advantages of very high importance. MAGYARMET maintains a CAD-CAM system, which includes the whole process from the raw cast design to the programming of the machined product. Combining it with additive manufacturing helps shortening the development process and production lead times.

As a result of continuous investments and development there are several CNC turning and milling machines, an NC controlled key seating machine, a thread-cutting machine and conventional turning, milling and grinding machines at service.

MAGYARMET Full Service:

- Design consulting (3D modelling)
- Alloy selection support
- Simulation
- Rapid prototyping
- Tooling design and manufacture
- Heat treatment
- Mechanical machining
- Surface treatments
- Various quality tests
- Sub-Assembly
- Logistic services

Applications

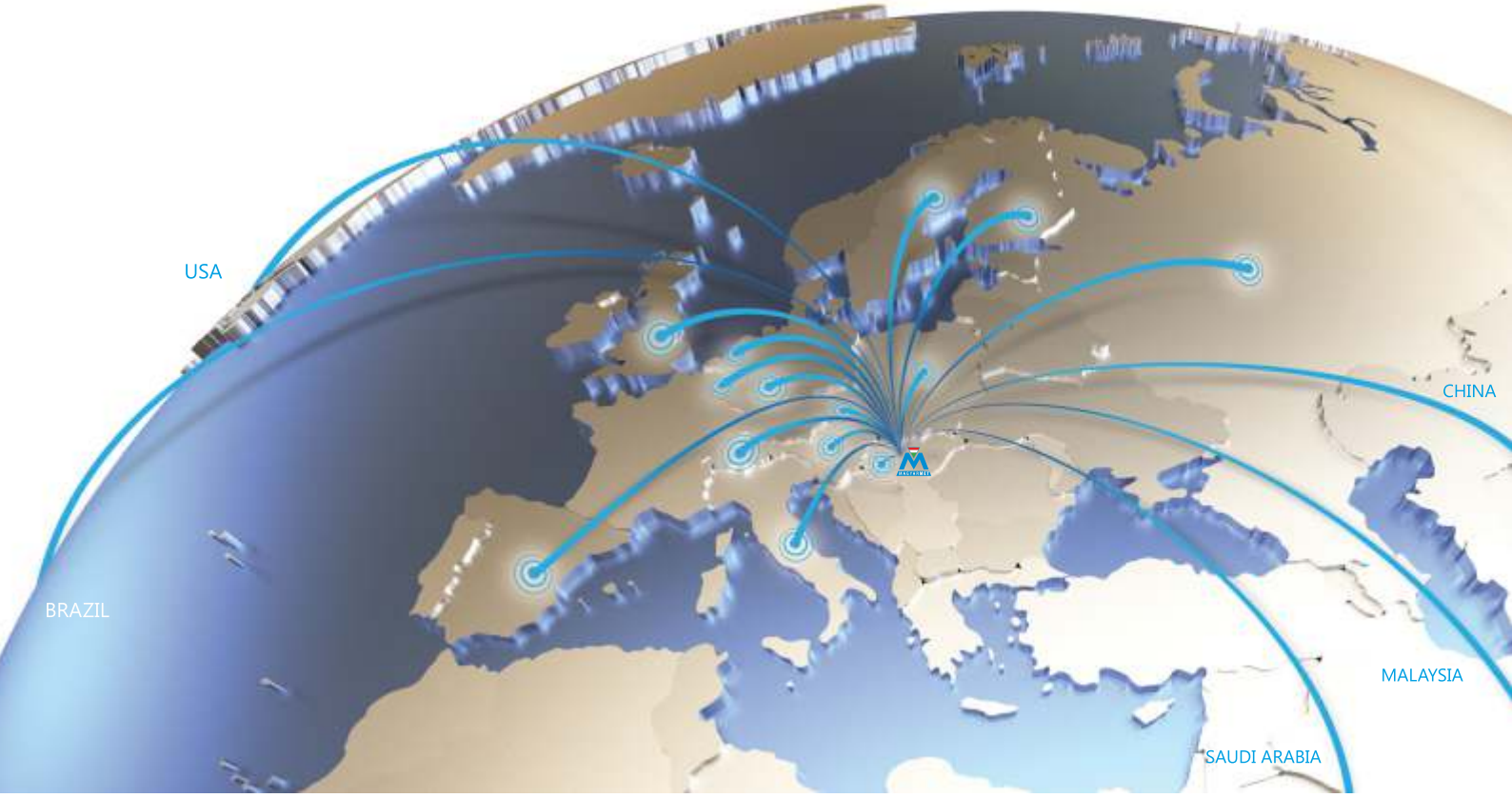
The production range of the foundry covers parts with weight of several grams to 45 kilograms. In exceptional cases single precision castings weighing up to 120 kilograms could be realised. The versatile properties of the alloys supplied by MAGYARMET cover a wide range of application options:

- Mechanical engineering
- Pumps and valves
- Food processing
- Chemical and petrochemical industry
- Instrumentation and flow control
- Power engineering
- Automotive
- Other vehicles
- Medical equipment and implants
- Aerospace industry, etc.

Art Casting

Sculptures made of various metals have been exceptional pieces of the world's art since centuries. The lost wax precision investment casting is a remarkably precise technology, which allows casting of complex and detailed shapes. In exceptional cases MAGYARMET makes use of this advantage to process special orders for steel and bronze sculptures.

www.magyarmet.com



Production: Hungary

Representations: Germany, Finland, Italy, France

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