



# ABOUT

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Investment Casting • Mechanical Machining • Rapid Prototyping



Founded in 1981



100 % family owned



Turnover: > 12 Mio €



Export worldwide



> 235 employees



# HISTORY

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**1981:** MMG Automation Works starts a new investment foundry in Bicske with modern equipment and know

**1993:** Schmidt + Clemens acquires the foundry under the name MAGYARMET

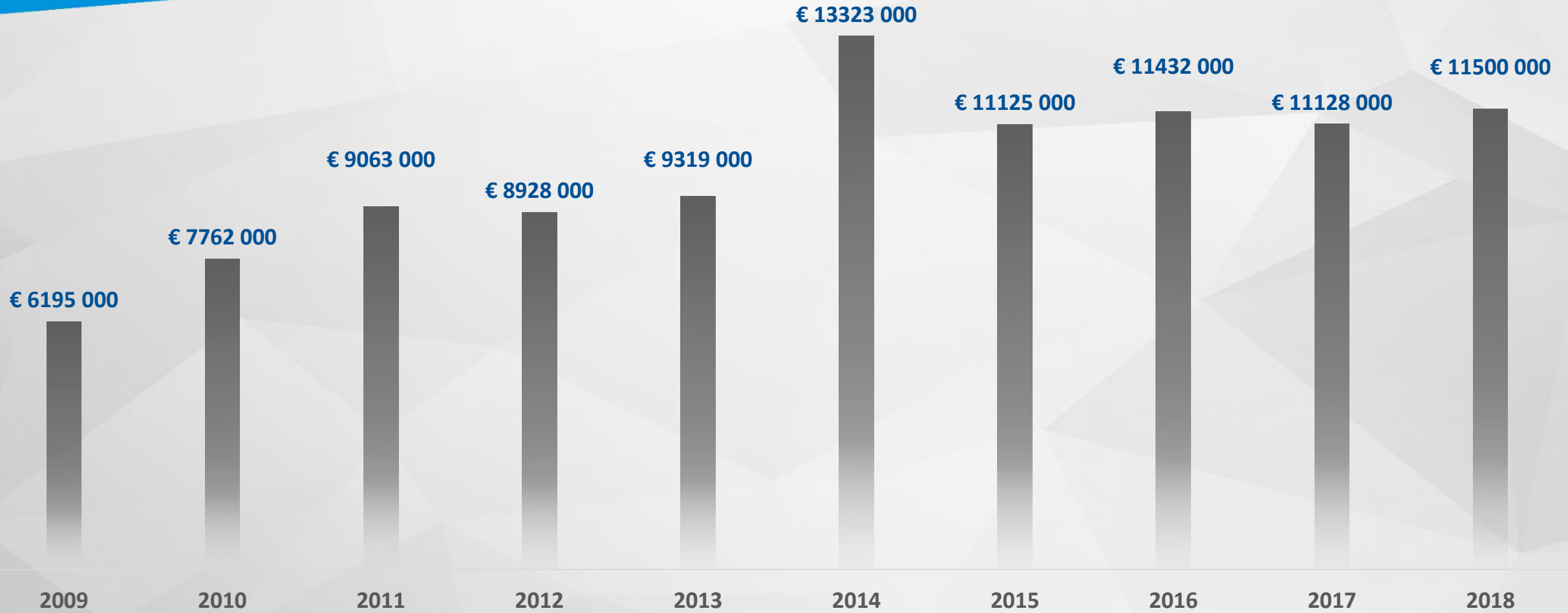
**2003:** Schmidt + Clemens sells MAGYARMET to the Hungarian management

**2008:** MAGYARMET starts own machining shop

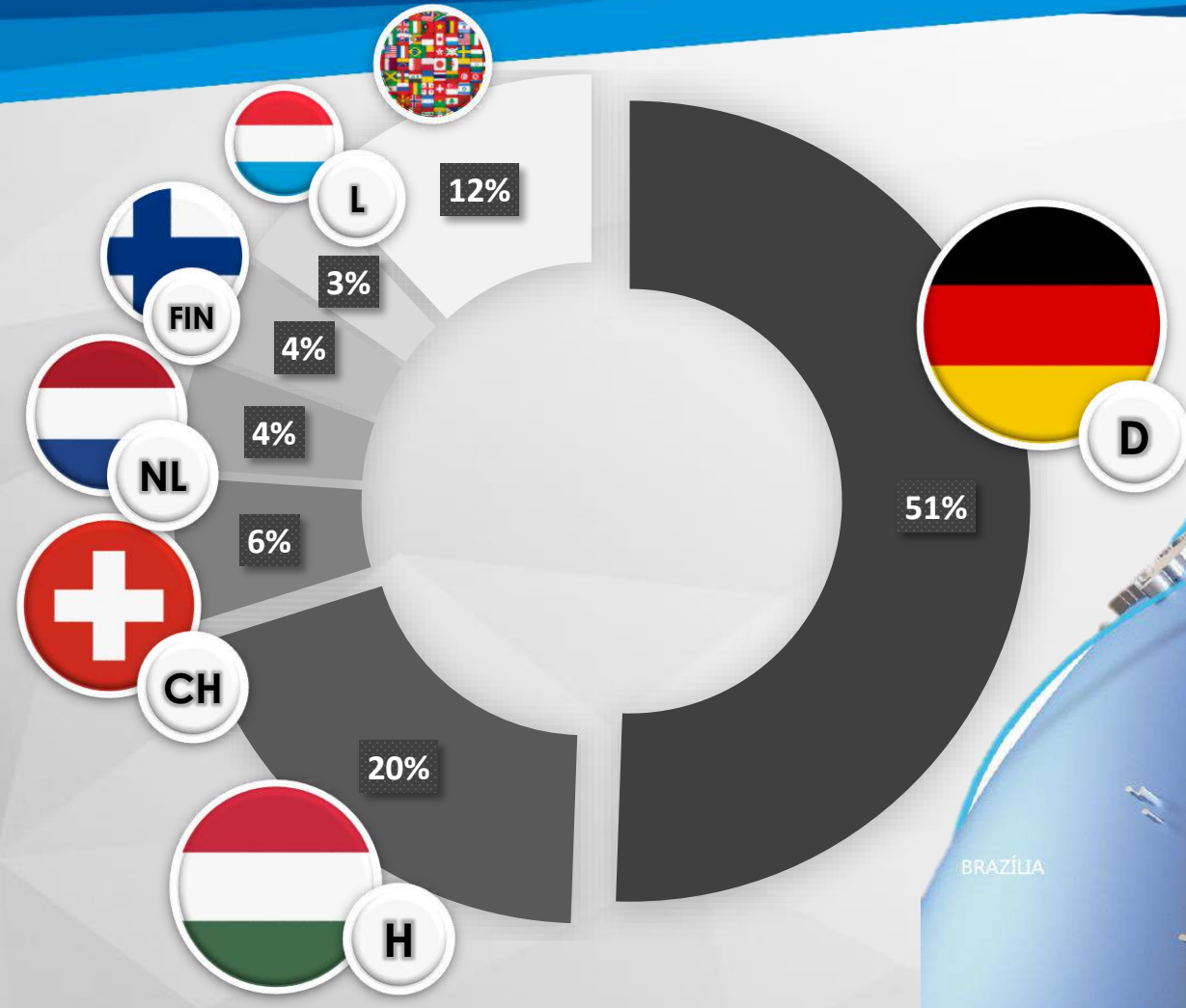
**2014:** Rapid Prototyping



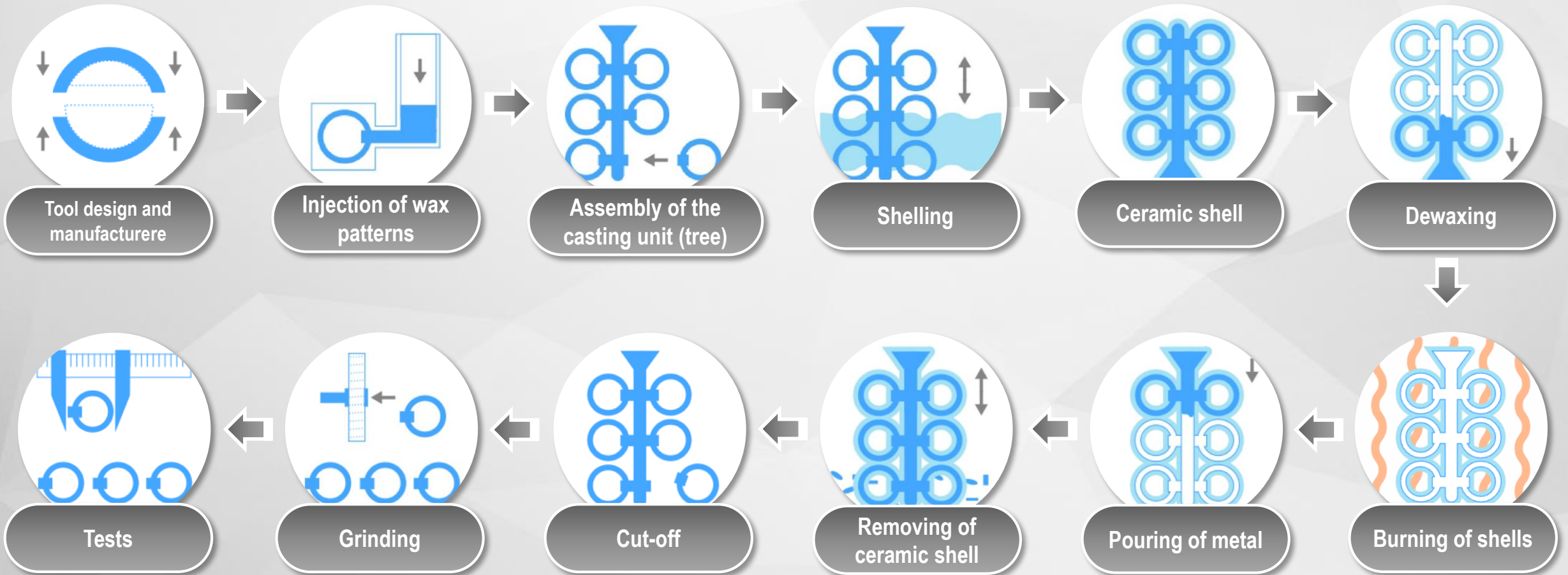
# TURNOVER



# MARKETS



# LOST WAX PROCESS

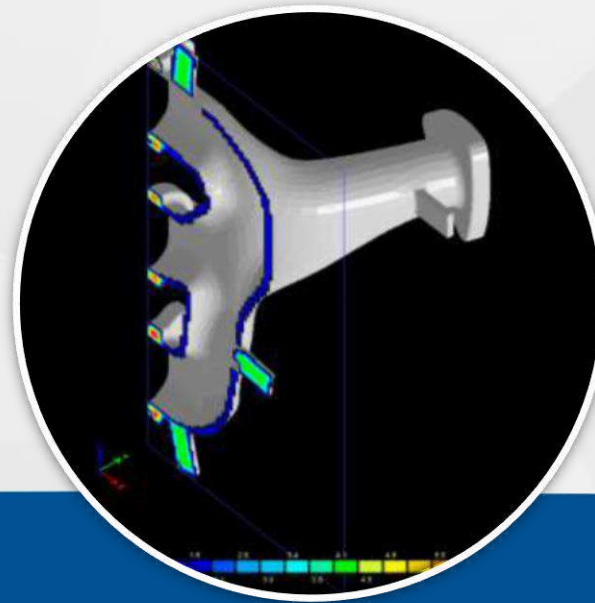


# 1. DESIGN AND SIMULATION

3D modell design (Creo R 5.0)

Solidification simulation

Hotspot analysis, calculation of heat transfer and radiation



# 2. WAX PROCESS

Injection on automatic and semi-automatic wax injection presses

Control of patterns and assembly to trees

Soluble wax and ceramic cores for intricate cavities and undercuts





# 3. SHELLING

Dipping with robots

Controlled slurry viscosity

Controlled humidity, temperature and air flow



# 4. DEWAXING

Computer controlled dewaxing

Controlled time

Controlled pressure

Controlled temperature

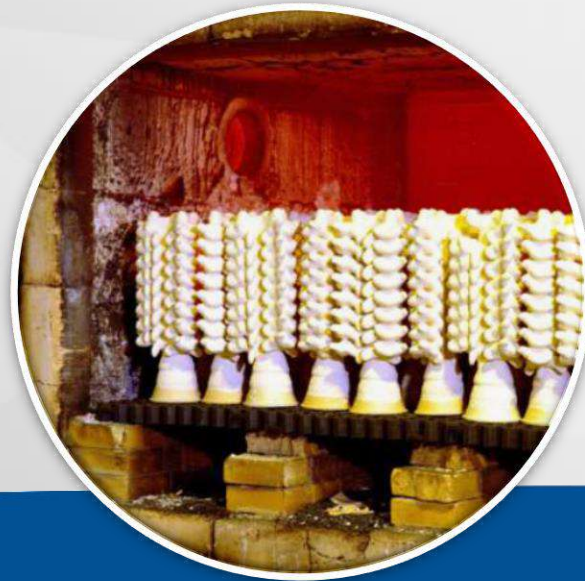


# 5. BURNING OF SHELLS

Burn out of the remaining wax

Evaporation of water content

Sintering of the shells



# 6. POURING OF METAL

Induction furnaces: 2 x 160 kg • 2 x 60 kg • 1 x 200 kg

Molten metal blanketing by argon gas

Continuous temperature check

Quality approved materials (every melted portion)



# 7. REMOVING OF CERAMIC SHELL

Removing of ceramic shell

Blasting

Cut off

Grinding



# 8. HEAT TREATMENT

Several heat treatment procedures (soft-annealing, hardening and tempering, solution heat treatment, normalizing, nitro-cementation, ageing)

Small and medium sized charges

Adjustable C-potential

Registered data



# 9. MACHINING

Wide machining range: More than 20 CNC turning and milling machines, NC controlled key seating machine and other conventional machine

High flexibility

Over 60 % of parts machined



# QUALITY

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Chemical composition test

Mechanical tests

Crack detection

3D coordinates measuring

Radioscopic test

Metallographic test

TESTS

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

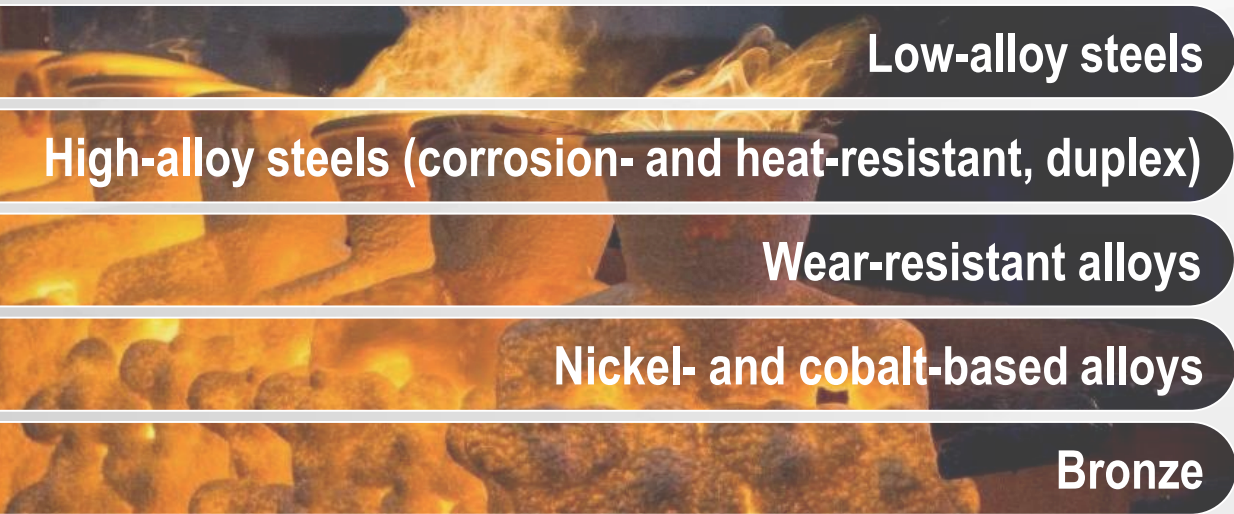


COOPERATIONS:



[www.magyarmet.com](http://www.magyarmet.com)





Low-alloy steels

High-alloy steels (corrosion- and heat-resistant, duplex)

Wear-resistant alloys

Nickel- and cobalt-based alloys

Bronze



Ready-to-assemble parts

Weight per piece: 0,005 – 45 kg

Max dimensions: 500 x 500 x 400 mm



# APPLICATIONS

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REFERENCES:



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# RAPID PROTOTYPING

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SLS

EOS

Polystyrene models with 3D laser printing technology

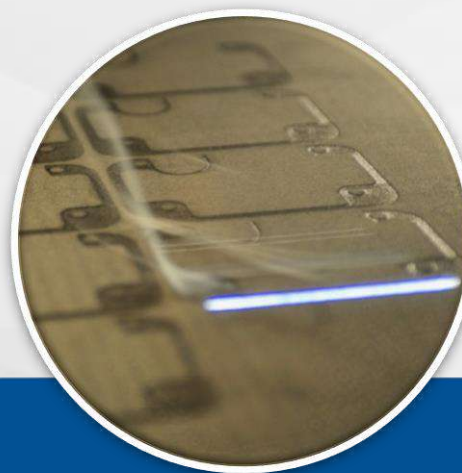
Design and production with additive technology

Prototype parts

Spare parts

Small batch quantities

Design, fitting and function check



# RAPID PROTOTYPING

Material: polystyrene powder

Layer thickness: 0,15 mm

Dimensions: 360 x 360 x 670 mm

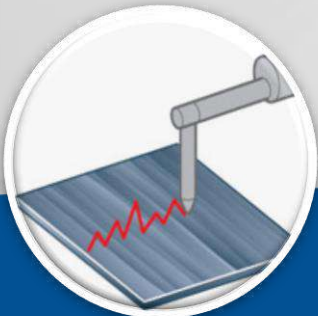
Printing time: 1-2 days

Ready-to-assemble parts within 15-20 working days

Ra 3.2 – 6.3

CNC 5 - Axis

15-20 days





 **MAGYARMET**<sup>TM</sup>  
FINOMÖNTÖDE • FEINGUSS • INVESTMENT CASTING

[www.magyarmet.com](http://www.magyarmet.com)