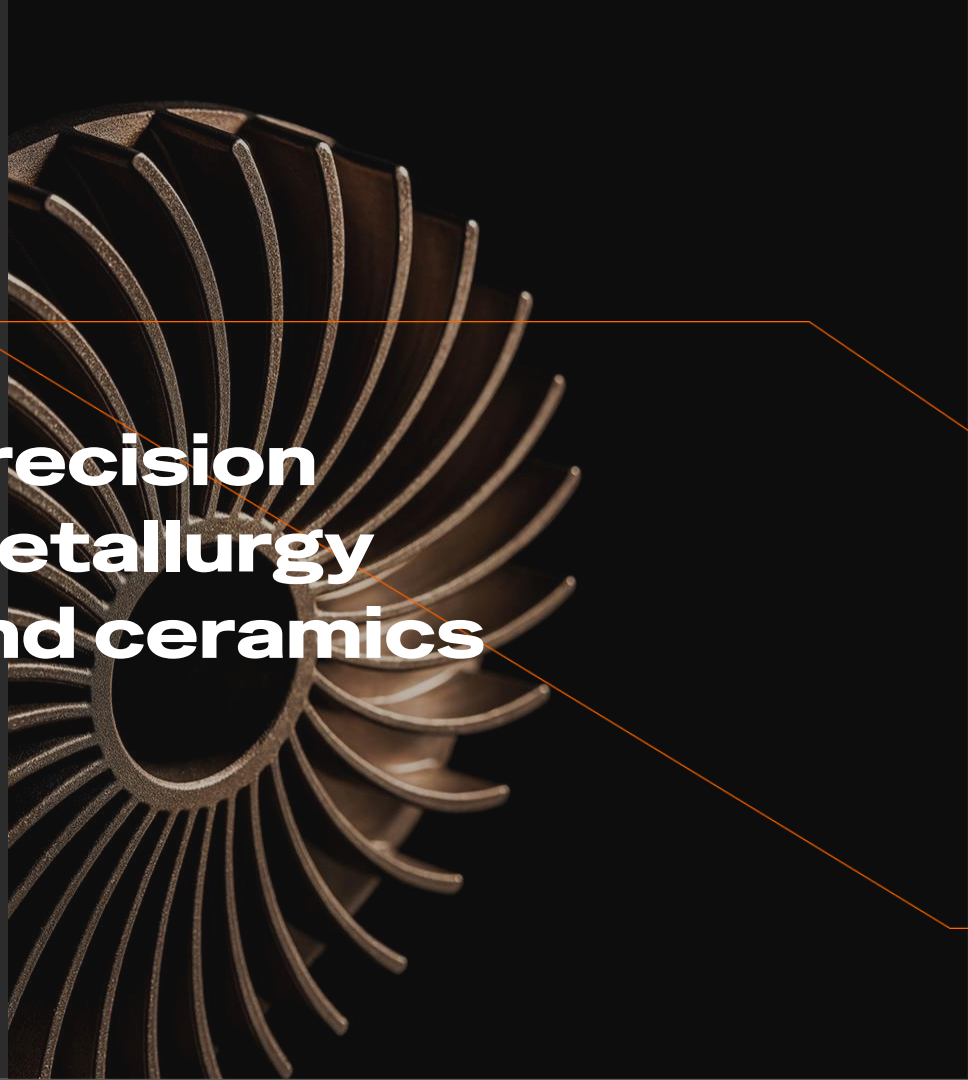
VIBROM

Precision metallurgy and ceramics



VIBROM

Family company with tradition since 1993

1993 — Company formation
- Vibrating Mills for powder production
- Ceramic precision casting

2003 — Opening of the first production plant
- Třebechovice pod Orebem (1 700 m²)

2015 — Expanding MIM production
- New 1000 m2 production hall

2018 — New shareholder
- Colt CZ Group

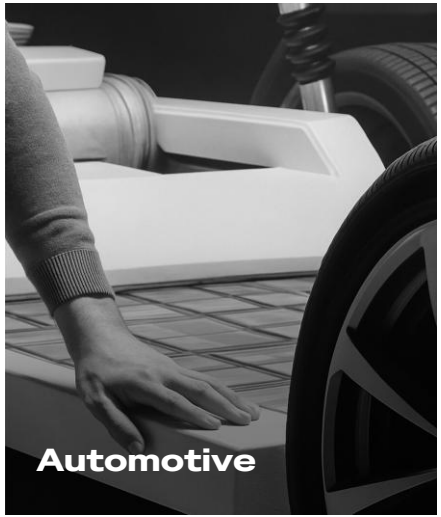
2022 — Expanding MIM capacity
- Jeníkovice (1 000 m²)
- inhouse feedstock production
- HIP technology

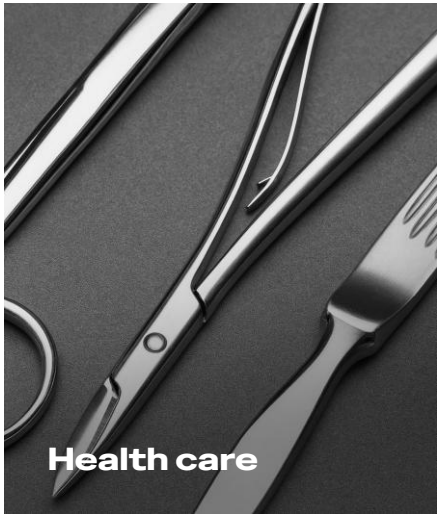
2025 — Cooperation agreement
- In the field of research and development of materials and innovative technologies with the Academy of Sciences of the Czech Republic

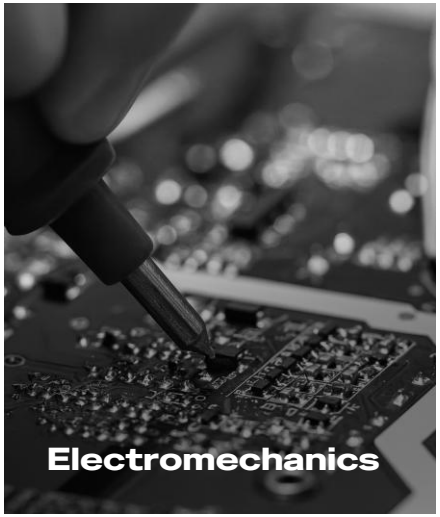
Unique technological solutions for each industry

7 mil. euro
Turnover in 2024

3,2 mil. PCS
Parts produced in 2024







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Optimization of production costs

High durability and product lifetime

Reliability, high quality and productivity

Custom process "Design to cost"

A strategy that sets cost targets early in the product development process. It involves a comprehensive approach that ensures that parts are developed to meet the required performance, functionality, quality and, most importantly, cost parameters. Cost is emphasized from the very beginning of product development to ensure that the final product meets its target price and to avoid costly changes in later stages of development.

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Development and design of parts
We create an initial design of the parts concept with the customer, with an emphasis on the required functionality and price.

Mold development and production
Design and production of molds with the required service life and productivity.

Development and production, Feedstock
In-house development and production of feedstock with the required properties.

Production technologies (MIM, CIM, HIP)
Design and development of technological production process for selected technologies.

Debinding and sintering
Design and development for effective binder removal and optimal sintering parameters

Post processing
Design and development of heat and surface treatment to ensure functionality

Quality Control, Testing
Providing metrology, metallography and testing according to ISO 9001

Production technologies

METAL PARTS

MIM
Metal Injection Moulding

CERAMIC PARTS

CIM
Ceramic Injection Moulding

POST-PROCESSING

HIP (Hot Isostatic Pressing)
Increasing part density and eliminating internal defects

Heat Treatment
Optimizing the Strength and Toughness of a Part

Machining
Achieving the maximum required accuracy

Surface Treatments
Increased wear and corrosion resistance

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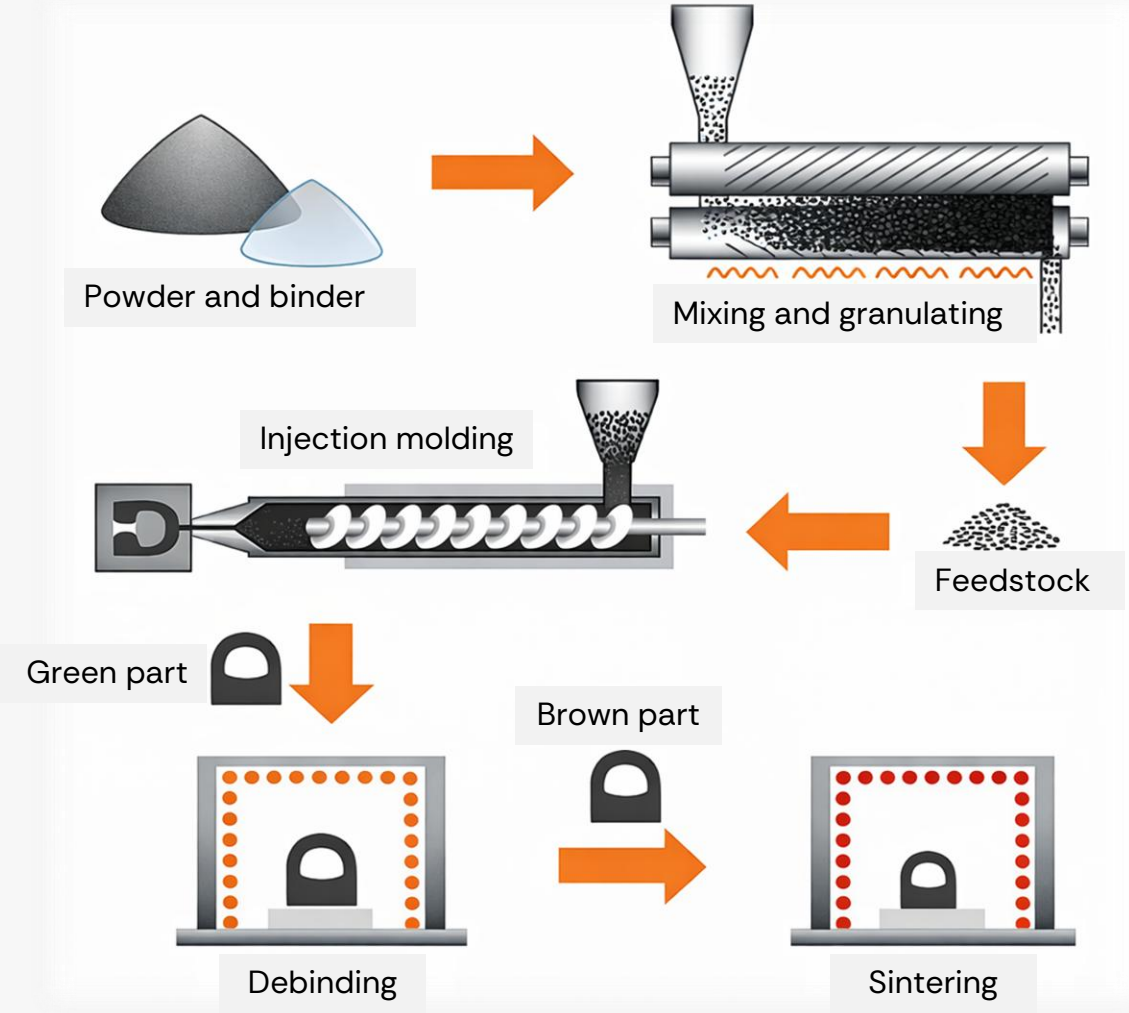
PIM proces



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MIM Technology

Combines the principles of powder metallurgy and plastic injection molding.

Enables the production of precise metal parts with complex geometry.

Results in components with high strength and durability.

Ideal for mass production of small and technically demanding parts.

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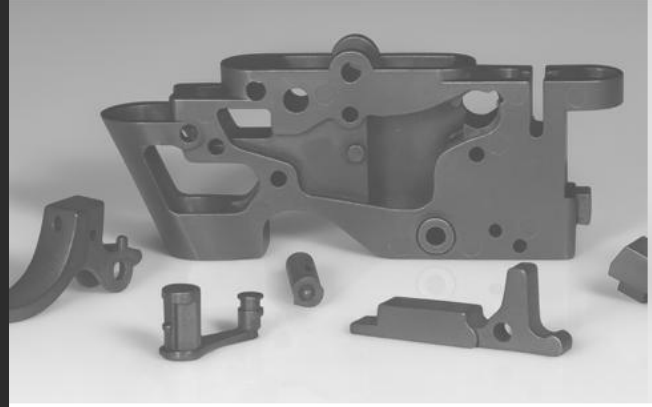

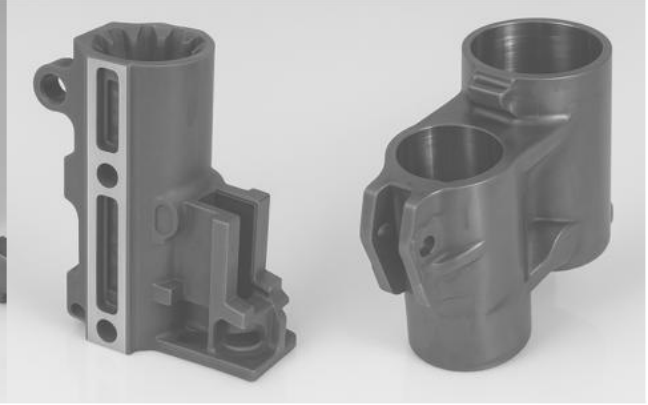

MIM strengths

Low product price and high reproducibility

High durability and reliability of components

Manufacturing accuracy up to ±0.3% of nominal without the need for machining

Complex geometries with high surface quality (Ra2)

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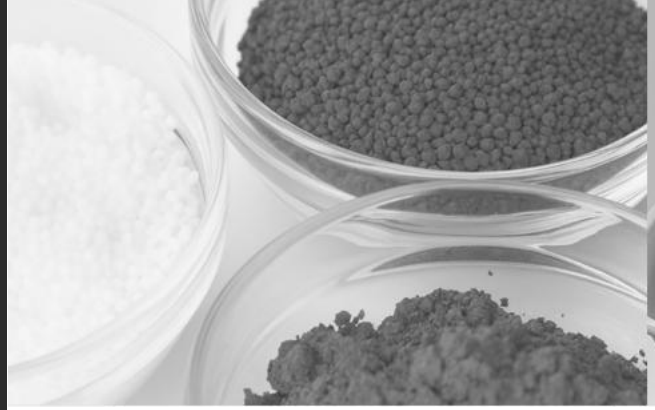

Materials

Cooperation with the Academy of Science of the Czech Republic on unique solutions for material properties, research and development of materials for customers according to the final application.

Low alloy steel (e.g. DIN 1.7225 / AISI 4140 / ČSN 15 142)
Stainless steel (e.g. DIN 1.4542 / AISI 17-4PH)
Tool steel (e.g. DIN 1.3343 / AISI M2 / ČSN 19 830)
Nickel based alloys, titanium and its alloys, tungsten based alloys

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MIM
sample parts

SPORT

MEDICAL

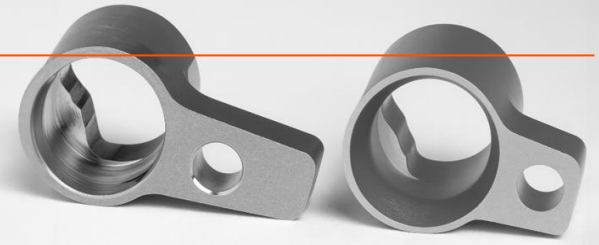
VIBROM

MIM
sample parts

VIBROM

CASE STUDY

Savings on annual production



OEZ

Customer: OEZ s.r.o

Target: Reducing the cost of mass production of the "blocking element" component from machining to MIM technology.

Solution: Design of the manufacturing process including selection of suitable material. Thanks to the precision of MIM technology, no additional machining is required. Preservation of complex product geometry and physical properties.

Savings: **90 %** of the cost per piece

PICTURE: On the left, a machined part, on the right, a part manufactured using MIM technology with a smoother surface.

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CASE STUDY

Transferring a polymer part to MIM

OEZ

Customer: OEZ s.r.o

Target: Increasing durability and improving properties of the "toothed tube" part, which was produced by polymer injection molding.

Solution: Change of material from machined aluminium to chrome-molybdenum steel and MIM technology. Design of a manufacturing process that will improve the durability and toughness of the part. Comparison of the cost of the part with machining technology:

Costs:

CNC machined	340 CZK / pc.
MIM produced	34 CZK / pc.
Savings	**90 %**

Improving physical properties has a decisive added value despite the price increase.

PICTURE: From left: plastic part, machined part, and part manufactured using MIM technology.

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Our main partners