



COMPANY PRESENTATION



Company profile



Established: **1996**

Seat: **Banská Bystrica**

Plant: **Vlkanová**

Turnover: **28,6 mil. Euro**

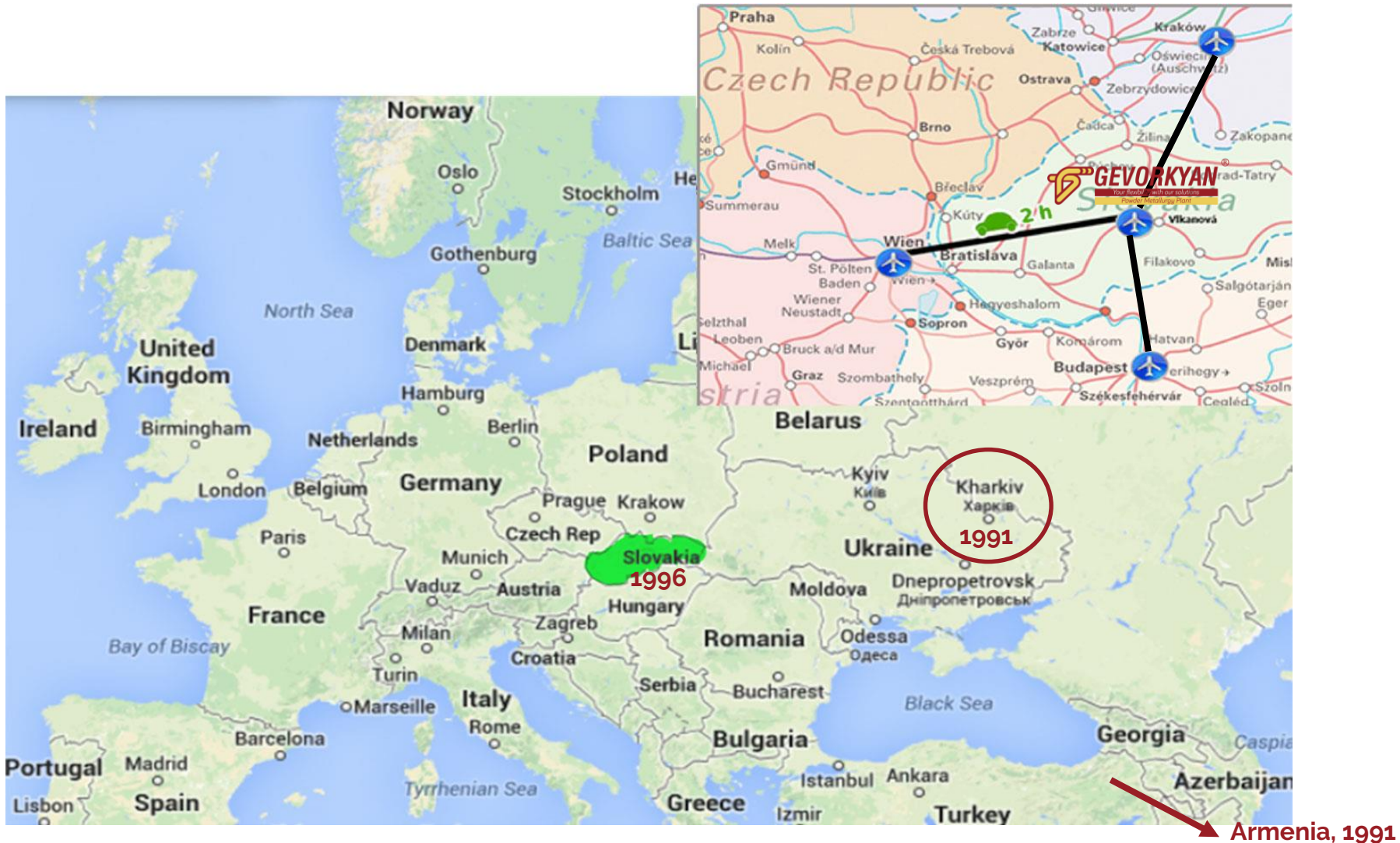
Number of employees: **160**

Plant area: **production 7000 m2, tool production 600 m2, purchased land 11 000 m2**

Majoritarian owner: **Dipl. Ing. Artur Gevorkyan**

Products: **Metal parts made by PM and MIM technology**

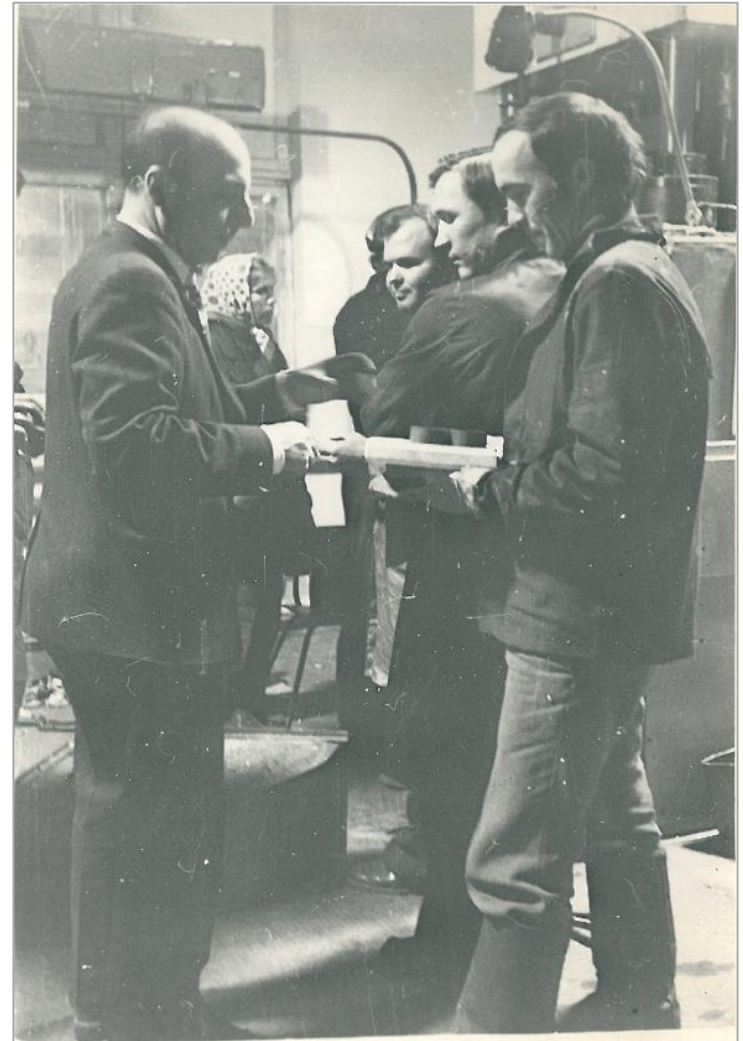
Perfect location



Experience of generations

GEVORKYAN company learns from experience of two generations of Gevorkyans in the powder metallurgy field.

**50 years of
experience in
powder
metallurgy**



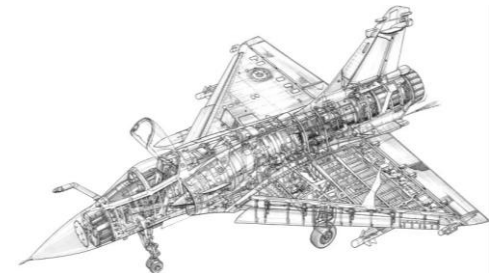
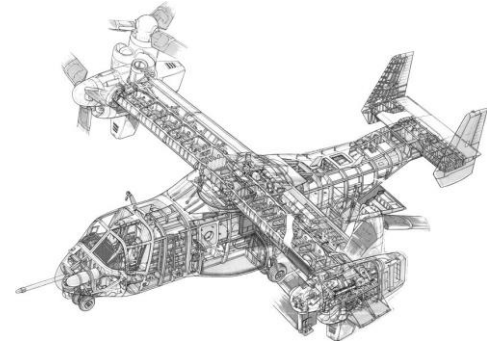
Robert Gevorkyan senior (on the left) is establishing the PM plant, 1977, Ural.

1996

The company was established in Slovakia

GEVORKYAN was established as a family company in Banská Bystrica.

The founder of the company and its present majoritarian owner is an aircraft engineer Dipl. Ing. Artur Gevorkyan, originally from Armenia, who built the company on a „green field“.



Artur Gevorkyan
(on the left)

Starting from "o"



1997 – 2000

Problems we had to solve:

1. new company with no background (no parent company or well-known personalities from the sector),
2. financing of the production (factoring, bank overdrafts,...) and looking for investments for new machines.

Main advantage 😊 : We could not refuse “crazy” projects. It was the only chance how to succeed abroad.

Growth came from these „crazy“ projects.

2001 - 2008

- continuous growth of the company during which 80% of revenues came from testing and pilot series of own development,
- about 150 new projects/products per year,
- the company has been well-known among many multinational corporations as a reliable partner for development.

Since 2000, the company has been co-operating with R&D centers of big multinational corporations in Sweden, Germany or the USA; after the completion of development projects have been transferred to their plants all over the world and work on another projects started.

Crisis!!! Thank you...

2009 – 2012

- finally, the world was hit by the crisis, which forced managers to look for alternative technologies like powder metallurgy, as well as to search for suppliers from best cost countries,
- all of the projects which were postponed during previous years started to move,
- we received orders from countries where it was hard to be on the market (e.g.: Spain, Italy, Sweden...)
- many machine manufacturers remained with their machines in warehouses because of unusual cancelation of orders. They offered these machines to GEVORKYAN on a direct loan.

Company milestones



establishment
of the company

1996



first furnace

1997

first press



general reparation
of machines

1998



first
injection
press

1999



Company milestones



heat treatment
sector

2003



own tool production

2005



CNC
machining
sector

2007

Company milestones



own production hall

2010



launching
of MIM
technology

2011

enlargement
of production
capacities



2012

development
of MIM
technology,
significant
progress
of R&D
department



2013



Great employer,
Via Bona Slovakia

2014

2014

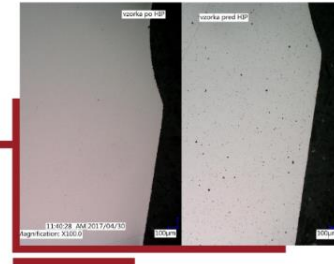
Company milestones



department
of robotic
automatization
and informatization

2015

launching of HIP
technology, enlargement
of production capacities
and warehouse facilities



2016

European Business
Awards victories



2017

EPMA
Component
Awards 2018



**2018
WINNER**

PM STRUCTURAL PARTS CATEGORY

2018

Workshop view

2019

1996



Rented premises **180m²**.
Thereof built up **120m²**.



Premises **7000m²**.
Thereof build up **5000m²**.
Our own space since 2010.

Memberships and certifications

IATF 16949

ISO 9001:2015

ISO 14001:2016



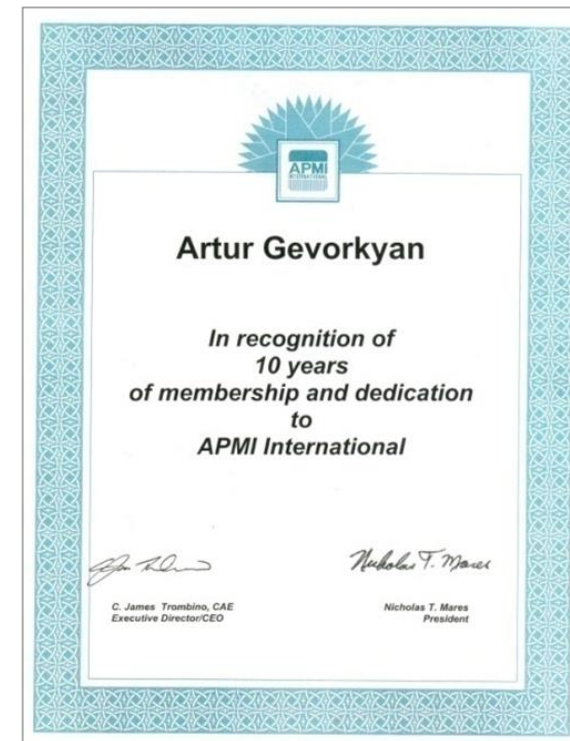
International Automotive Task Force
TRANSITION STRATEGY
ISO/TS 16949 to IATF 16949

▷ EPMA

European Powder Metallurgy Association

▷ APMI (USA)

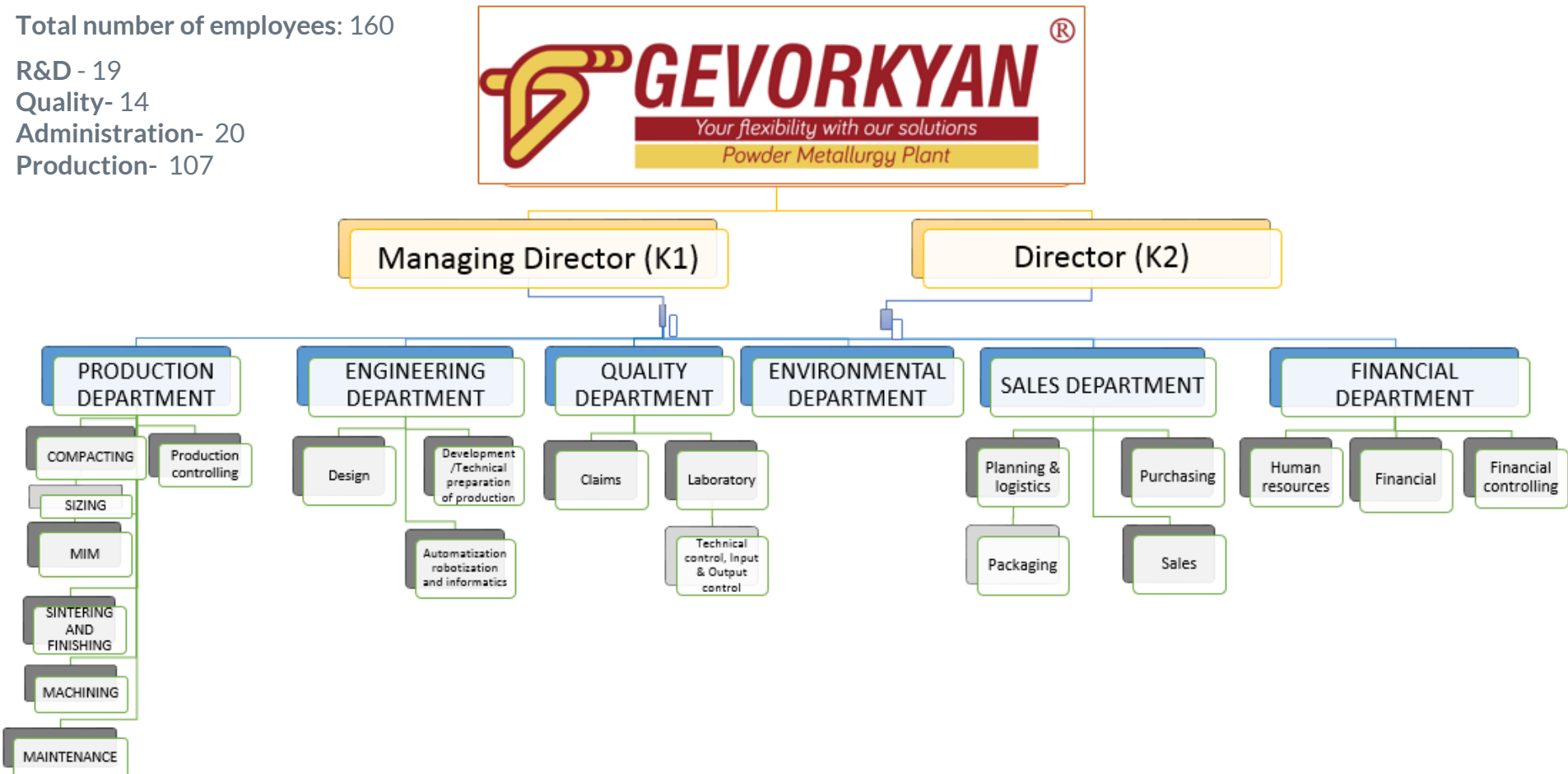
Association of Powder Metallurgy International



Organizational structure

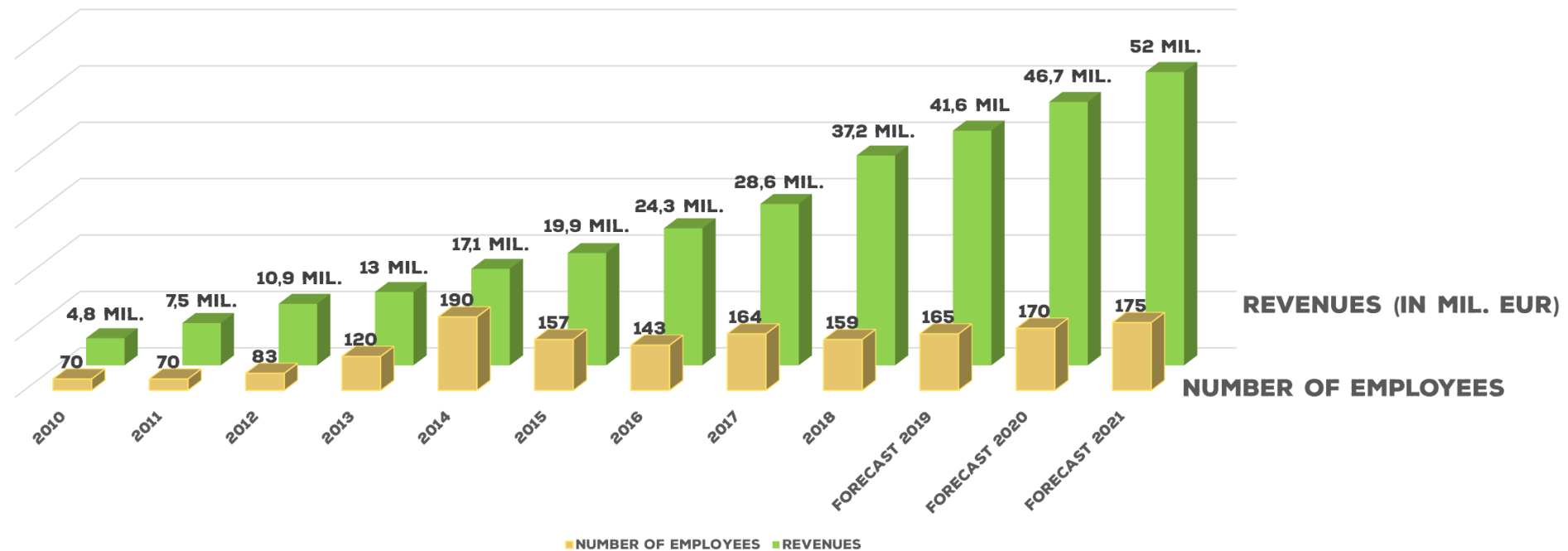
Total number of employees: 160

R&D - 19
Quality- 14
Administration- 20
Production- 107



- the company runs its production 24/7, including Christmas, New Year, etc. 😊
- it is using the TimeLine (Germany) IT system implemented in 2016.

Development of the number of employees and revenues



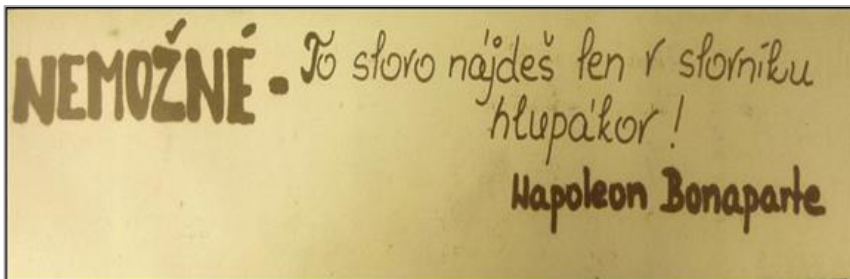
We do it with the right people

The assistant of the CEO tired of answers of experienced men such as "it isn't possible", "we can't succeed", "we can't manage...". She brought an "ELEPHANT money box" to internal meetings. Every "it isn't possible" was penalized with a **10 SKK coin, which was inserted into the money box**. From that time the experienced colleagues were quiet and the young ones received enough space for problem solving.



At the beginning of the crisis, the head of production wrote and put on her desk the following MOTTO:

**"IMPOSSIBLE.
Only fools say it is impossible."
Napoleon Bonaparte.**



We behave like a family

When a **new member** of our team joined us we want him to be with us **until** his /her **retirement**.



We always try to identify our next "family members" during the interview.



**We behave like a family.
We fight like an army.**

If you were not with us, maybe you are lucky?

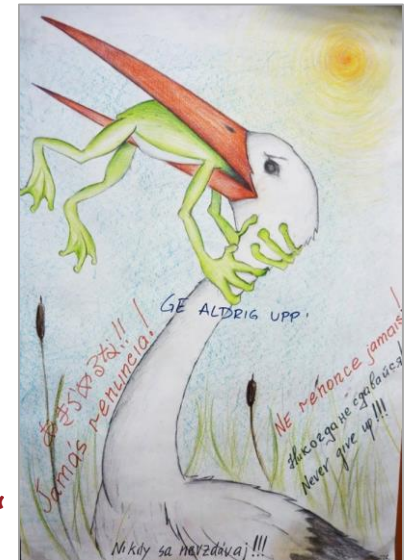
If you were with us, you have memories!

If you are with us - be proud!!!



**Symbol
of our
team**

“Never give up”



Fascinated customers added their comments in their native language.

Conferences and technical days

Participants of regularly organized conferences and technical days are engineers from customers as well. They spend few days with our team. Their main goal is to get through an intensive training focused on our technologies and to master their knowledge.



Company portfolio

1) POWDER METALLURGY (PM) - Sintering

2) METAL INJECTION MOULDING - MIM

We produce about **2,000** different types of parts.









We develop more than **150** new products per year.









We manufacture **5 million** parts per month.



Materials:

- Iron,
- Stainless steel,
- Bronze,
- Copper,
- Silver,
- Brass material.

	Previous technology	Present technology	Application
	 machining	 PM	 automotive, industrial parts, locks
	 casting	 PM	 locks, automotive

	Previous technology	Present technology	Application
	 casting	 MIM	 electro-automobiles, locks
	 machining	 PM	 automotive

Products size

Weight:
0,2g – 1000g

Surface:
up to 50cm²

AUTOMOTIVE INDUSTRY



GARDEN TECHNIQUE

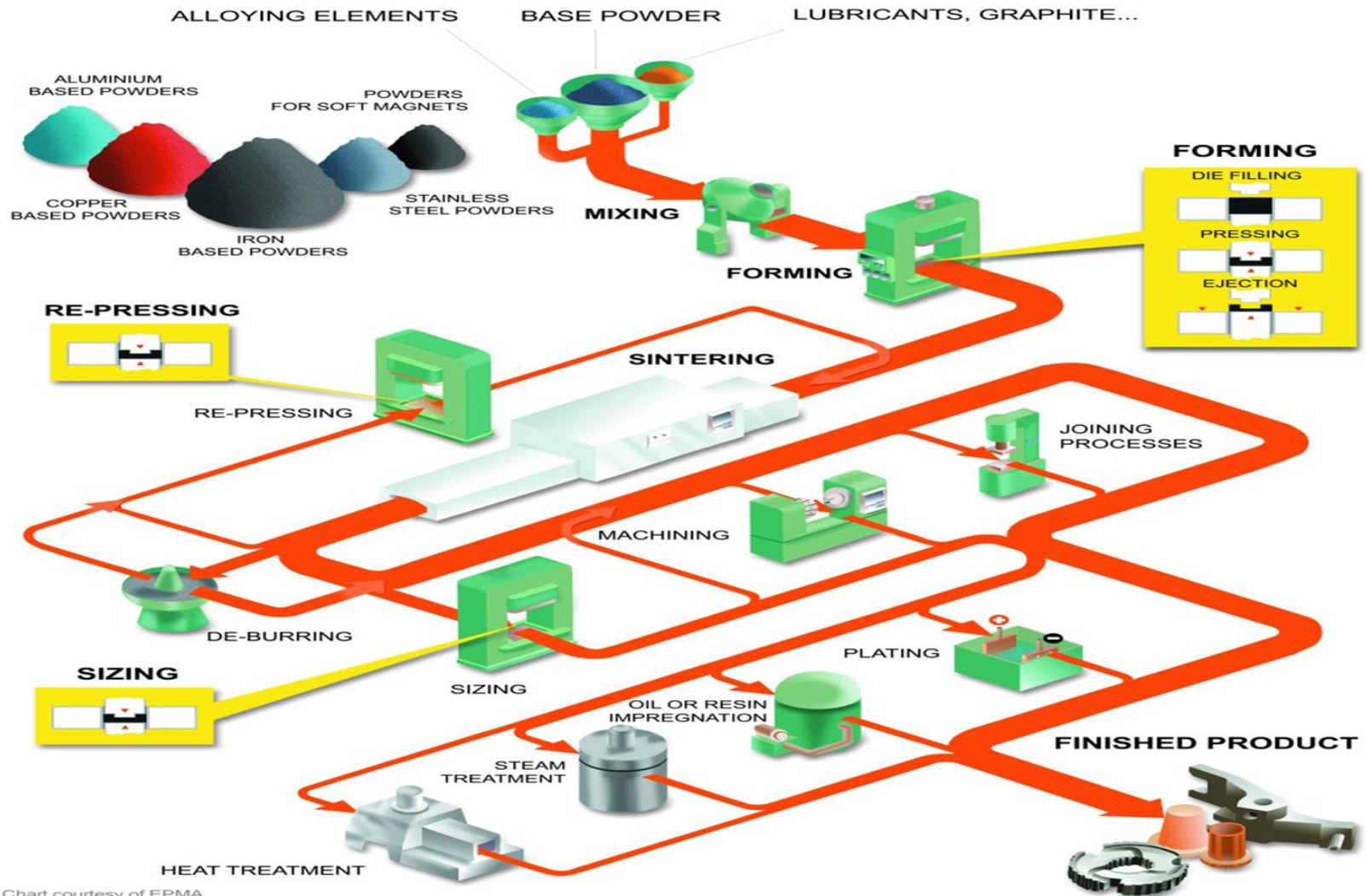
GPS (Global Positioning System)

PROTECTION SYSTEMS

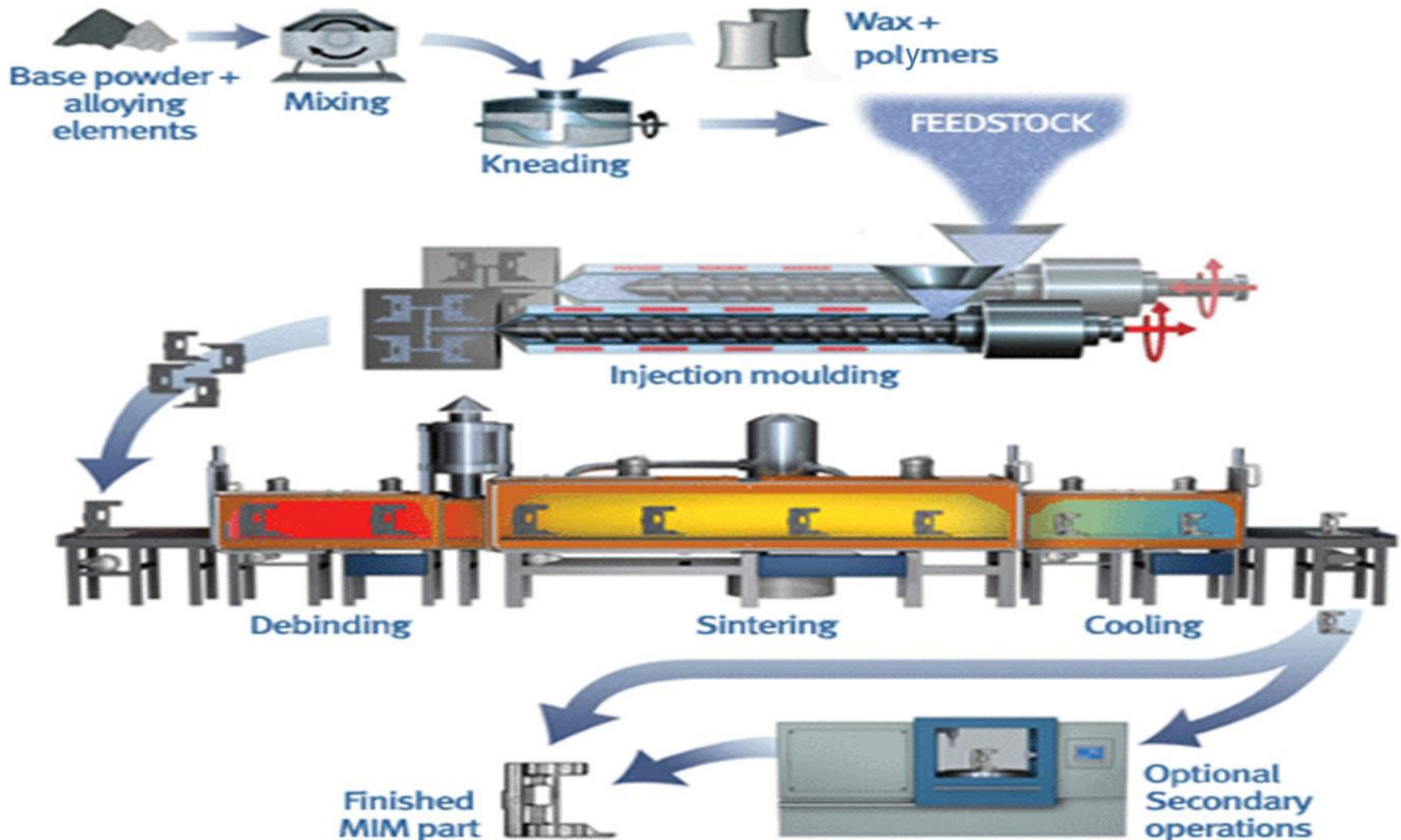


AIR CONDITIONING

Process of SINTERING production



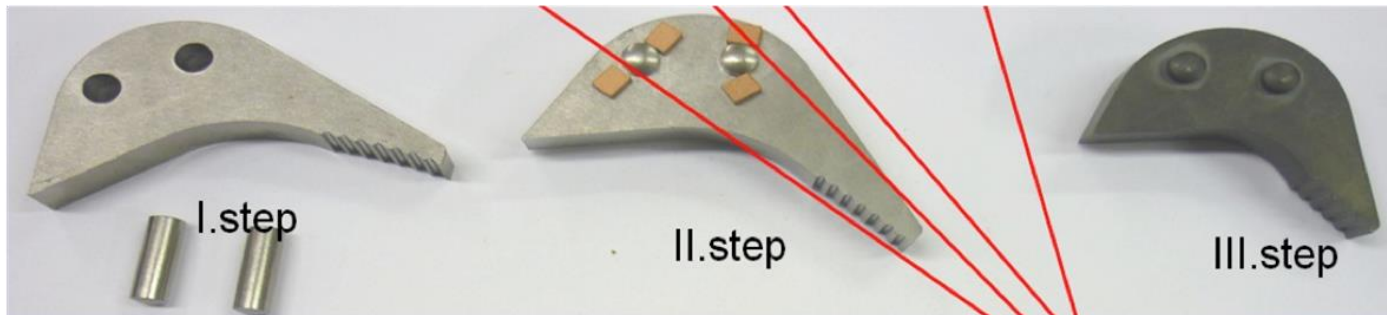
Process of MIM production



Brazing technology in GEVORKYAN



It means to braze several different products into one without any additional cost!



Important facts

Our own development, design and know-how (10% of employees traditionally work at R&D).

Our own production of compacting and injection tools.

50% of our products have NEVER been produced by the powder metallurgy before.

80% of our export goes to customers from more than 30 countries of the world (e.g. Europe, China, India, Mexico, Brazil, Izrael, the USA ...).

The company does not use subcontractors. It has a **100% responsibility** for its **products** from design up to the packaging.

All types of **mechanical machining** in the company (CNC lathe-turning, milling, etc.).

All types of **heat treatment** processes in the company (hardening, carburizing, carbonitriding, steam blackening, etc.).

Soft magnets production.

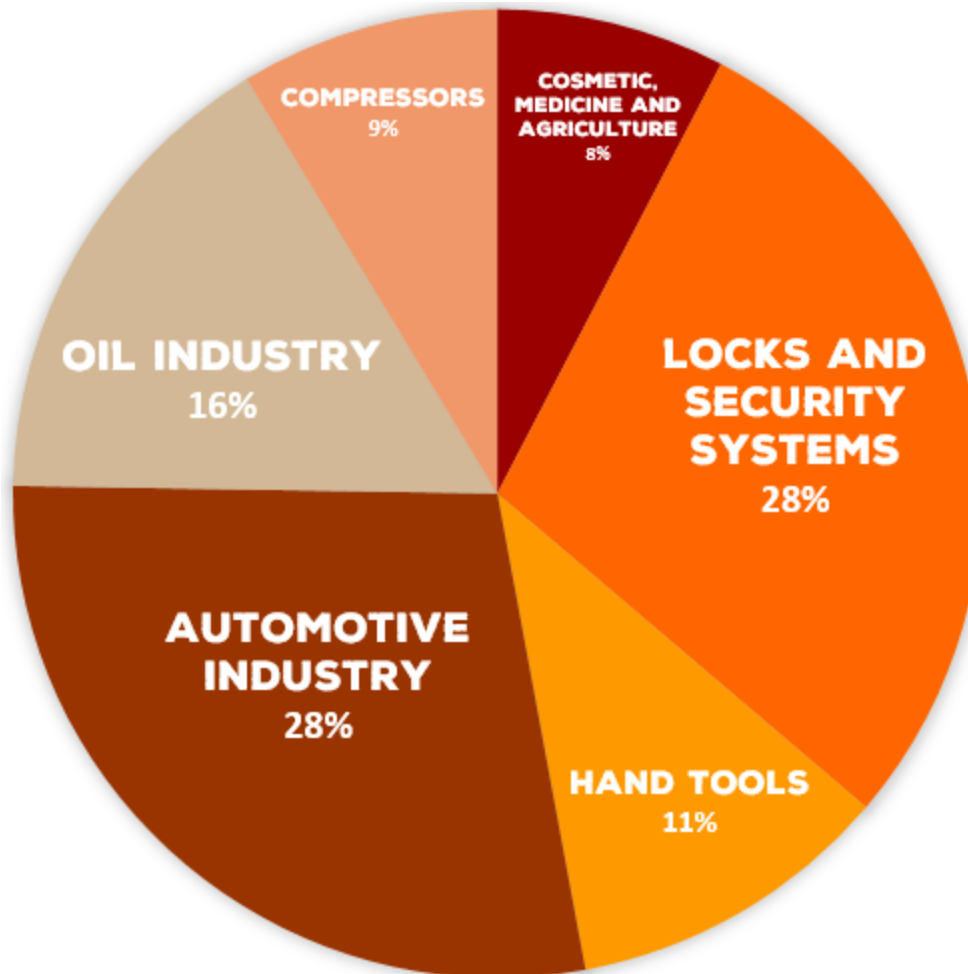
Warm compacting to density 7,3 – 7,5 g/cm³.

Sinter-hardening.

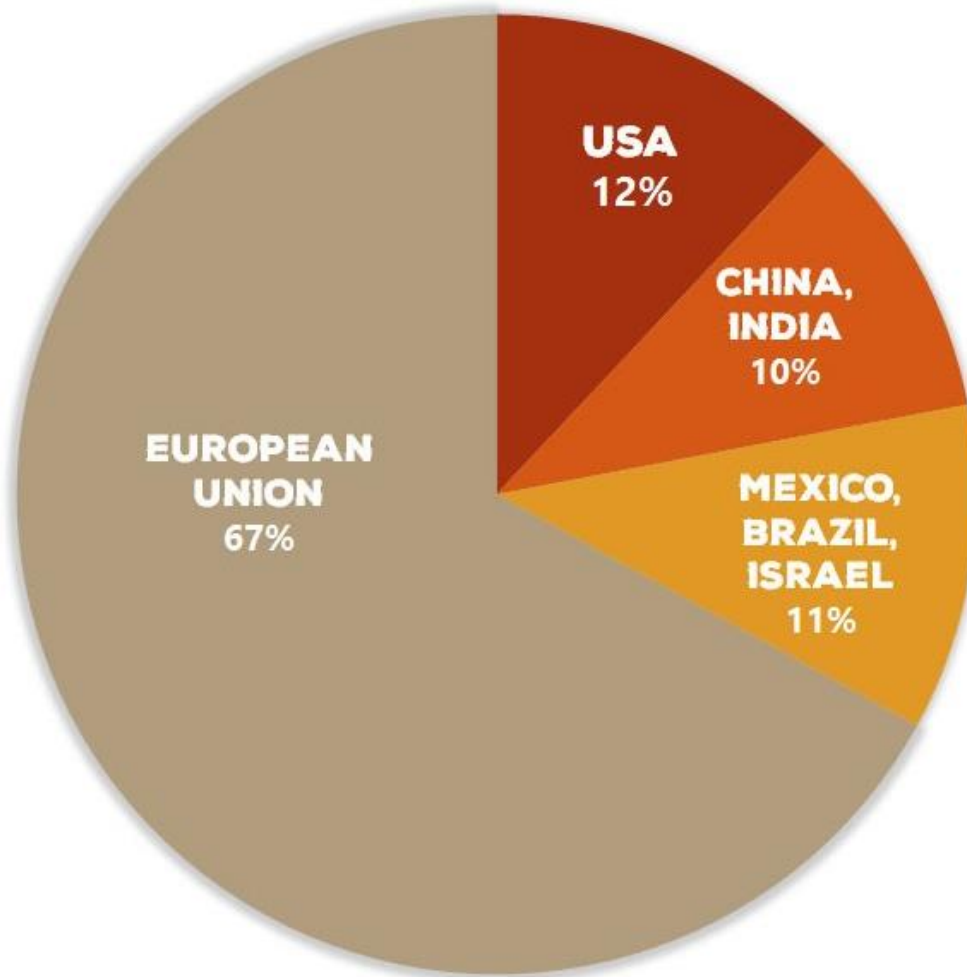
“Sintering”, MIM and HIP technologies under one roof – **UNIQUE IN EUROPE.**

SWOT (strengths, weaknesses, opportunities, threads) and **FMEA** (Failure Mode and Effects Analysis) analyses.

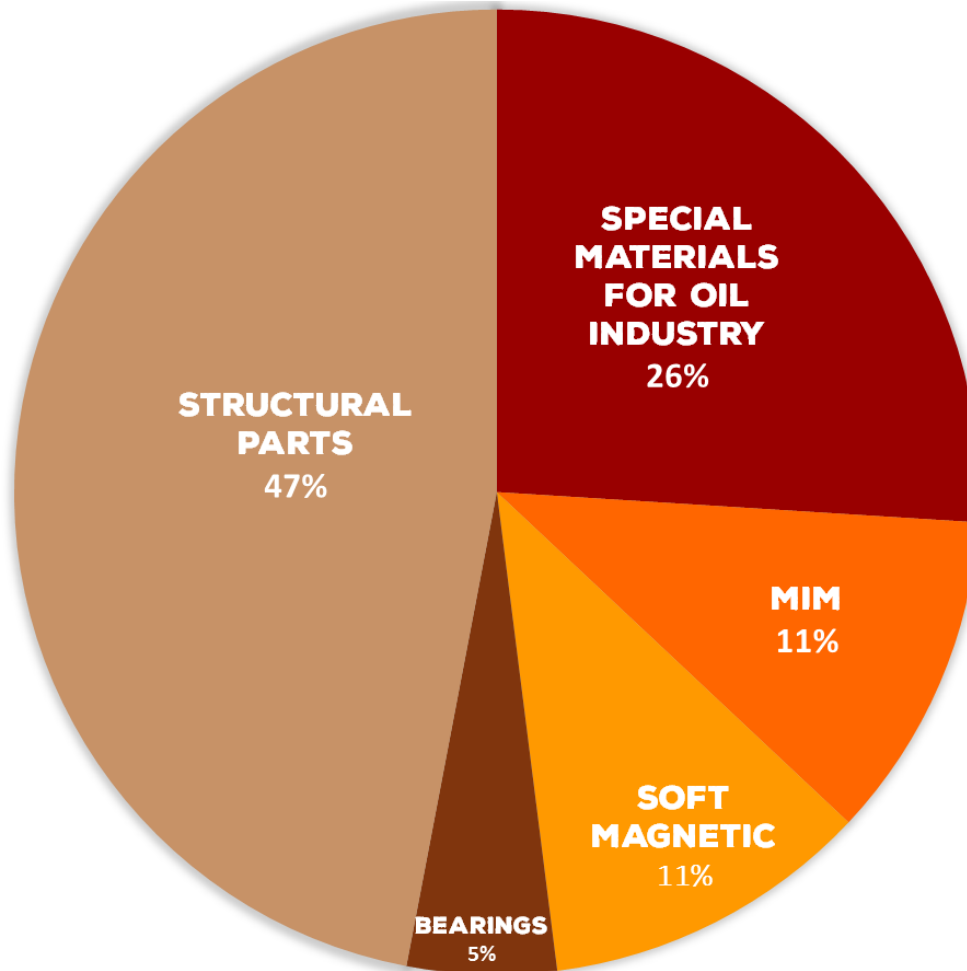
Revenues according sectors



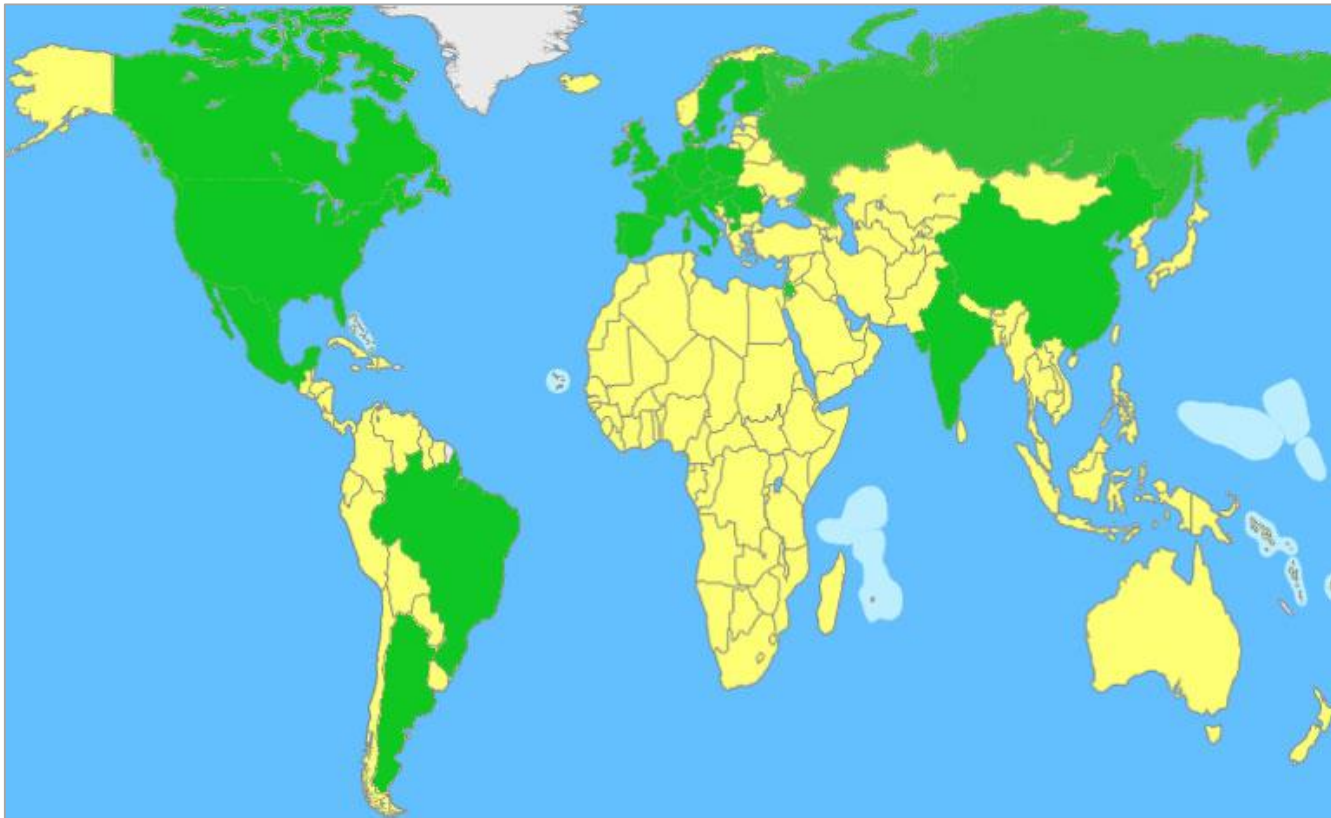
Revenues according countries



Revenues according technology



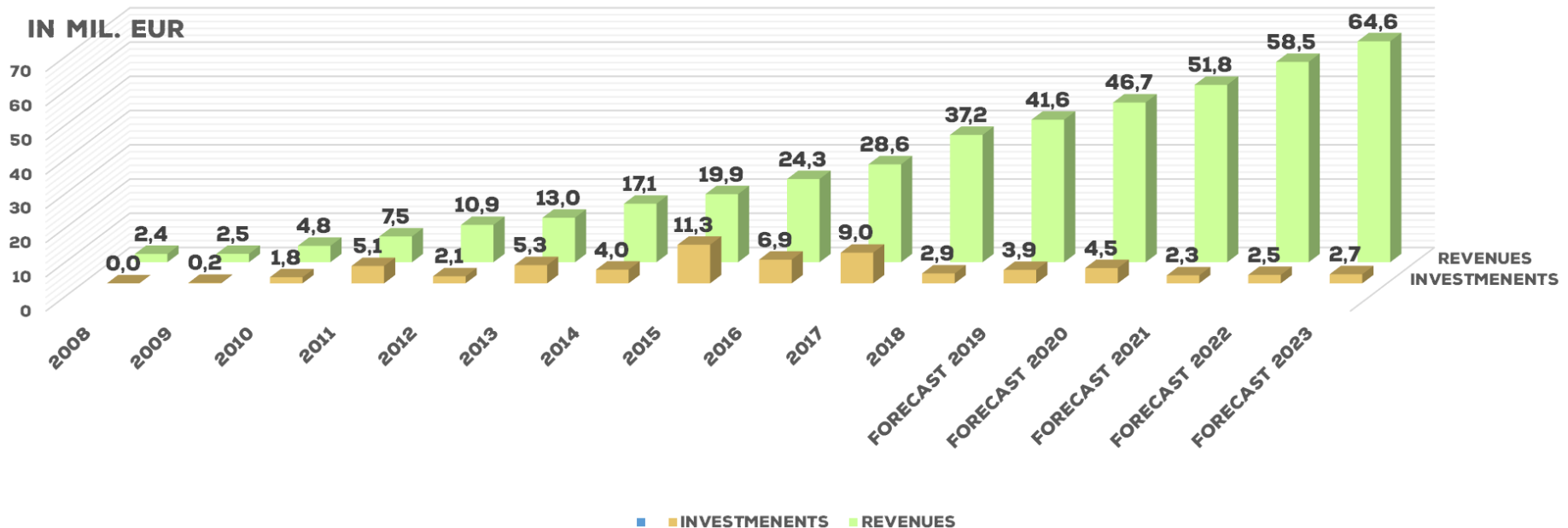
GEVORKYAN
Your flexibility with our solutions
Powder Metallurgy Plant



product



Revenues and investments in (mil. Euro)



During 22 years of the company functioning, **no profit** was withdrawn by owners from the company. **All finances** were invested back to the company.

GEVORKYAN, s.r.o. was the first Slovak production company, which issued public bonds on Bratislava stock market in the amount of 10 mil. Eur.

Unique laboratory



The company unique laboratory for testing mechanical properties, chemical composition and all kinds of dimensional measurements.



**ROUNDNESS
TESTER**
Mitutoyo



3D TOUCH PROBE
Zeiss



**TENSILE TEST
MACHINE**
Tinius



**PROFIL
PROJECTOR**



**2D LIGHT
TOUCH PROBE,**
Keyence



SPECTROMETER



**CAMERA
CONTROL
DIRECTLY
IN THE
PRODUCTION**



NDT CONTROL



**CARBON
ANALYSIS**



Tool production



5-AXIS CNC
MILLING
Hermle



SURFACE AND ROUNDNESS
GRINDING



EROSION CUTTING AND
SPARKING MACHINES

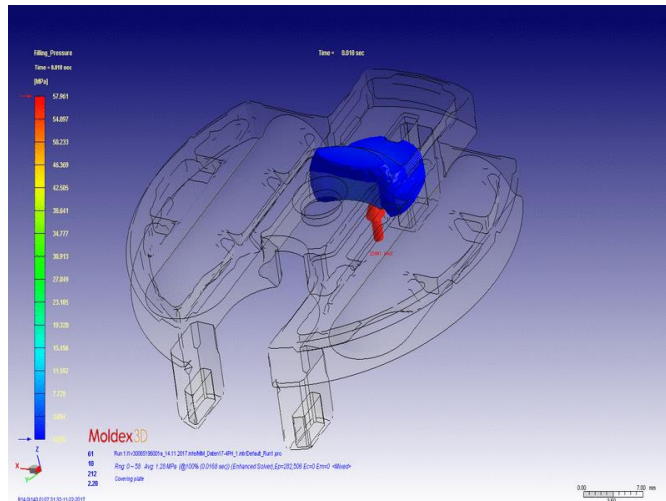
R&D department

The company has its own R&D department where 14 engineers and designers work by using the *SolidWorks* and softwares for ejection and compaction simulation (*Moldex 3D*, *CAM systems*).



SOLIDWORKS

Moldex3D
MOLDING INNOVATION

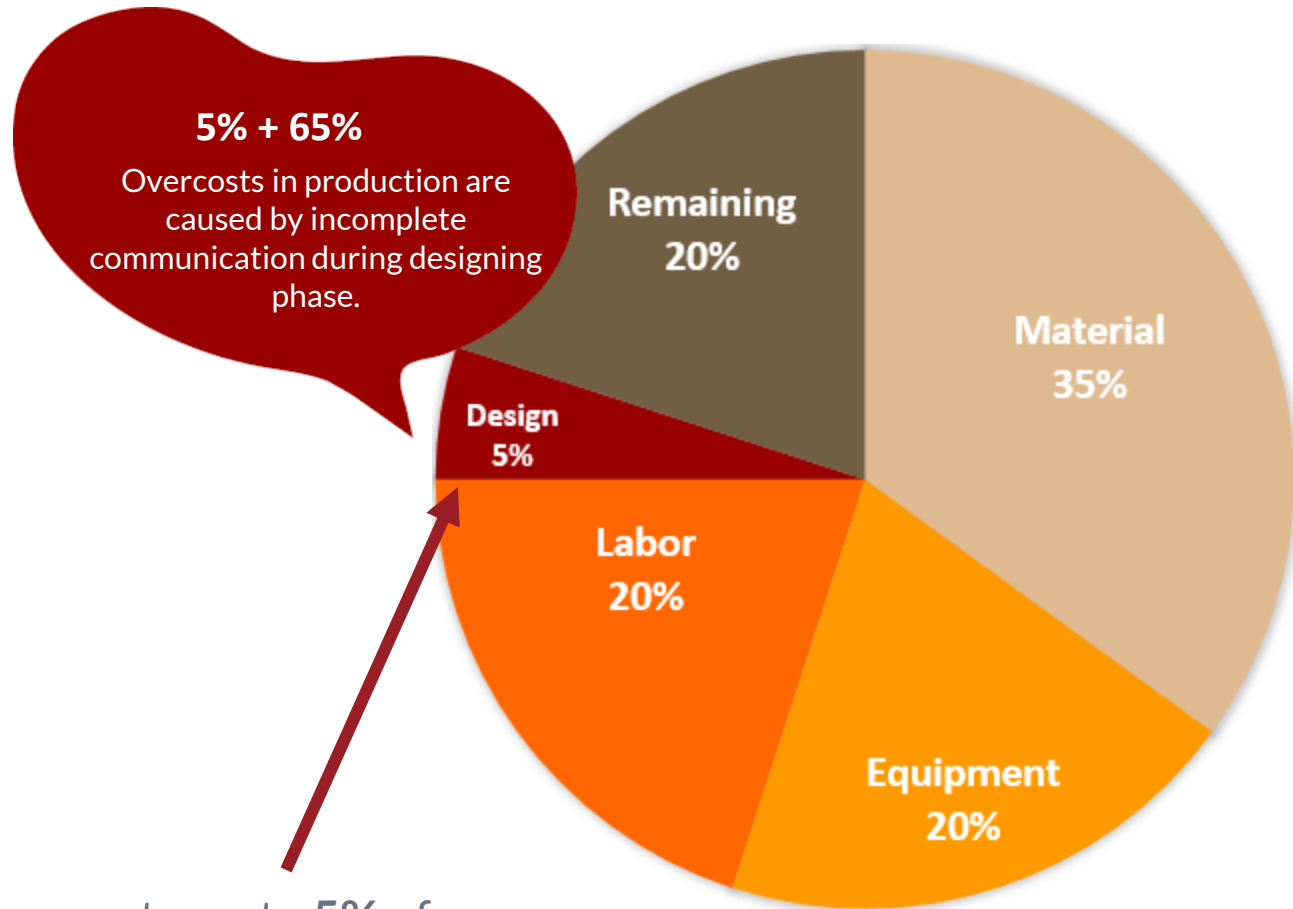


TeamViewer software allows computers screen sharing. We save our customer's time for travelling.



Message of our designers to new customers

Let's make the best product design together !!!



Design represents up to 5% of
the final product cost.

You can find our products also here:



SWOT analysis

STRENGTHS	WEAKNESSES
HIGH LEVEL OF CUSTOMER DIVERSIFICATION ACCORDING VARIOUS COUNTRIES AND SECTORS.	HIGH PERCENTAGE OF NOK PART IS MIM TECHNOLOGY DURING THE DEVELOPMENT STAGE.
STRONG AND FLEXIBLE SUPPLIERS.	PRESENCE OF MANUAL WORK IN THE PRODUCTION (MAINLY FOR LOW-SERIES ORDERS).
OWN PRODUCTION PREMISES WITH POSSIBILITY OF 300% INCREASE.	
MODERN TECHNOLOGICAL EQUIPMENT.	
HIGH LEVEL OF EDUCATION AND EXPERTNESS OF EMPLOYEES.	
HIGH POTENTIAL OF A BUSINESS RAISE WITH NEW CUSTOMERS AND PROJECTS.	
THE POSSIBILITY TO INCREASE THE VOLUME OF PRODUCTION.	
PRODUCTION AUTOMATIZATION AND ROBOTIZATION.	
STRONG R&D DEPARTMENT.	
UNIQUE COMBINATION OF ALL ALTERNATIVE TECHNOLOGIES OF POWDER METALLURGY (SINER, MIM AND HIP).	
BACK-UP MACHINES, IN CASE OF ANY MACHINE BREAKAGE.	
OWN TOOL PRODUCTION.	
RAPID ADAPTATION TO NEW CONDITIONS.	
FREE CAPACITIES IN THE PRODUCTION.	
FAST AND EFFECTIVE PROBLEM SOLVING TEAM.	

SWOT analysis

OPPORTUNITIES	THREATS
DECREASING OF PRODUCTION COSTS DURING INDIVIDUAL STEPS.	POSSIBILITY OF CUSTOMER ASSEMBLING LINE STOPPAGE BECAUSE GEVORKYAN IS A 100% SUPPLIER FOR THE WHOLE PROJECTS.
EFFECTIVE USAGE OF RETRAINED EMPLOYEES IN SPECIALIZED AREAS.	QUALIFIED LABOR SHORTAGE ON THE MARKET.
THE FLEXIBILITY OF OWN TOOL PRODUCTION.	ONLY ONE SUPPLIER OF SOME VERY SPECIFIC MATERIALS.
THE USAGE OF THE TOP-MODERN TECHNOLOGIES.	
UNIQUE COMPANY KNOW-HOW.	
HIGH SAVINGS AT THE SIDE OF A CUSTOMER IN CASE OF PROJECTS, WHERE GEVORKYAN SWITCHED THE USUAL TECHNOLOGIES (E.G. CASTING, MACHINING, ETC.) TO POWDER METALLURGY.	
WORLDWIDE UNIQUENESS IN THE OPPORTUNITY TO COMBINE 3 DIFFERENT TECHNOLOGIES (SINTER, MIM, HIP) IN ONE COMPANY WITHIN VARIOUS PRODUCTION STEPS FOR THE SAME PROJECT.	
HIGH POTENTIAL OF THE COMPANY FOR GROWTH AT THE MARKET CAUSED BY THE GENERAL MARKET GROWTH AND ALMOST NO COMPETITORS IN THE CENTRAL EUROPE.	

Realized

2015 – new storage warehouse of **360 m²** with automatic movable shelves.

2016 – new hall for tool production of **600 m²**.

2017 – additional land purchased of app. **11 000 m²**.



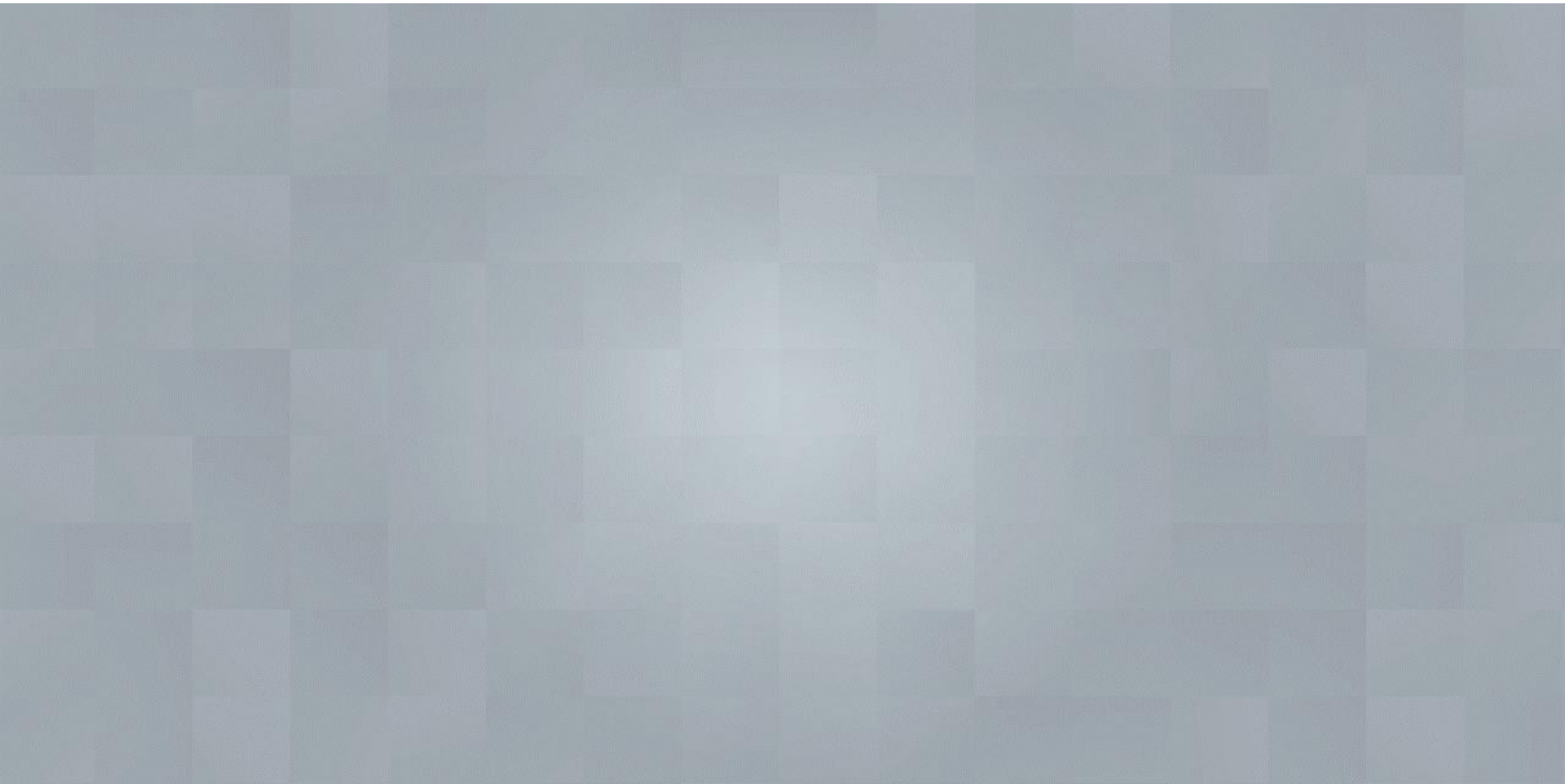
GEVORKYAN has been increasing its production and plans to invest more than 10 million Euro during years 2013-2017.



Company technological video



EPMA Component Awards 2018





TECHNICAL PRESENTATION



Technologies introduction

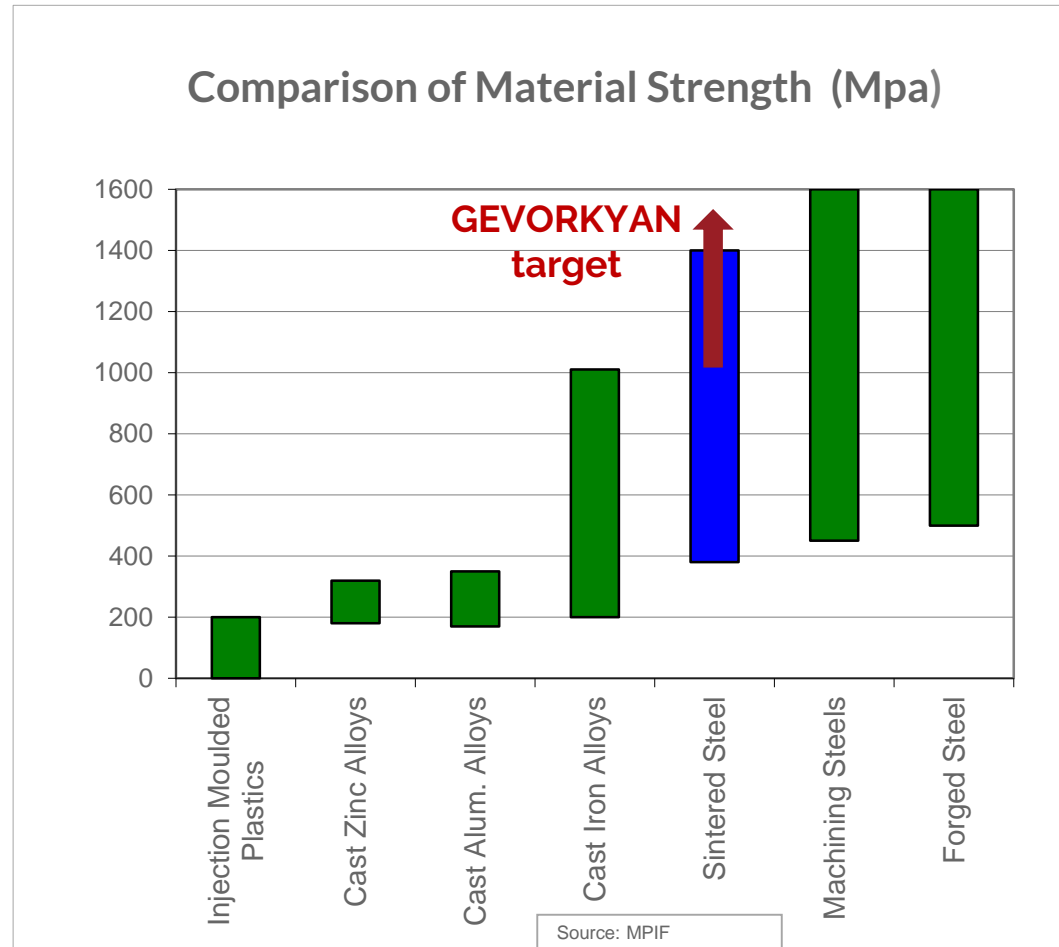
- The company is a leader in powder metallurgy and it belongs to the most innovative PM companies in the world.
- The company is a producer of different types of components made by **powder metallurgy technology (PM)** and **metal injection molding (MIM)**. These components are used in automotive, oil and cosmetic industry, for hand tools, locks, security systems, air conditioning and in medicine.
- The company also offers **HIP (Hot Isostatic Pressing)** technology as a secondary operation to densify casted and sintered parts in furnace at high pressure (1500 bars) and high temperature (1500°C).
- In 2019 it plans to launch the **Additive Manufacturing (AM)**.



Why to manufacture with sintering (PM)?

Sintered components have opened up new possibilities for creative and cost effective structural solutions. Large production series have reduced costs effectively. More than 40 million sintered components are produced in the world per day. Combinations of material that cannot be combined in classical technologies has brought significant and additional advantage.

STRENGTH



Why to manufacture with sintering (PM)?

PRECISION

Typical tolerance rangers (IT) for various materials and manufactorig processes



ZERO-WASTE

Raw material utilisation	Manufacturing Process	Energy requiments per kg of finished part
90	Casting	30-38
95	Sintering	29
85	Extrusion	41
75-80	Forging	46-49
40-50	Machining	66-82

(%) 75 50 25 0 0 25 50 75 (MJ)

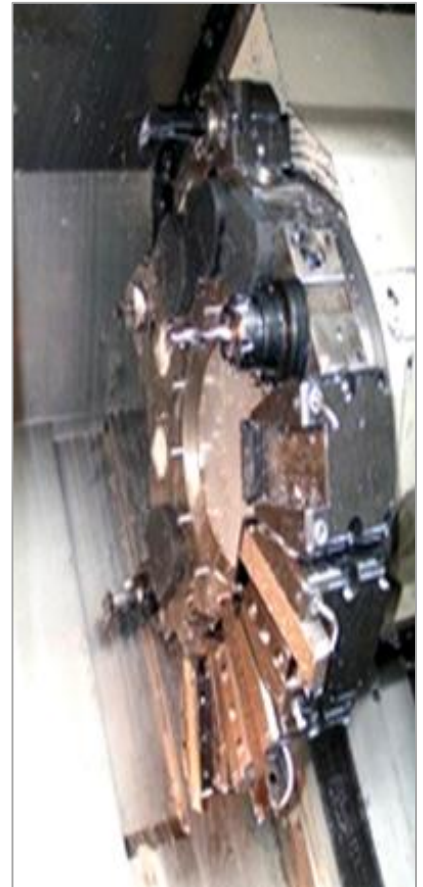
Sintered components show the best raw material utilisation and the lowest energy consumption.

Source: EPMA

Secondary machining in GEVORKYAN

If it is not possible to get specific shape by pressing in vertical direction (holes, etc.) it is possible to complete the product with conventional technologies:

- lathe turning,
- milling,
- drilling of side holes,
- cutting of threads.



Secondary heat treatment

in GEVORKYAN

Sintered components can be treated with all types of heat treatment similarly to conventional materials.



GEVORKYAN company has modern Swiss lines for hardening, carbonitriding and nitridation of its products.



Secondary coating in GEVORKYAN

All types of surface finish can be applied on sintered components but at first it is necessary to close all pores with special resin.

AUTOMOTIVE



HAND TOOLS



Mercedes



Advantages of powder metallurgy



SECURITY SYSTEMS



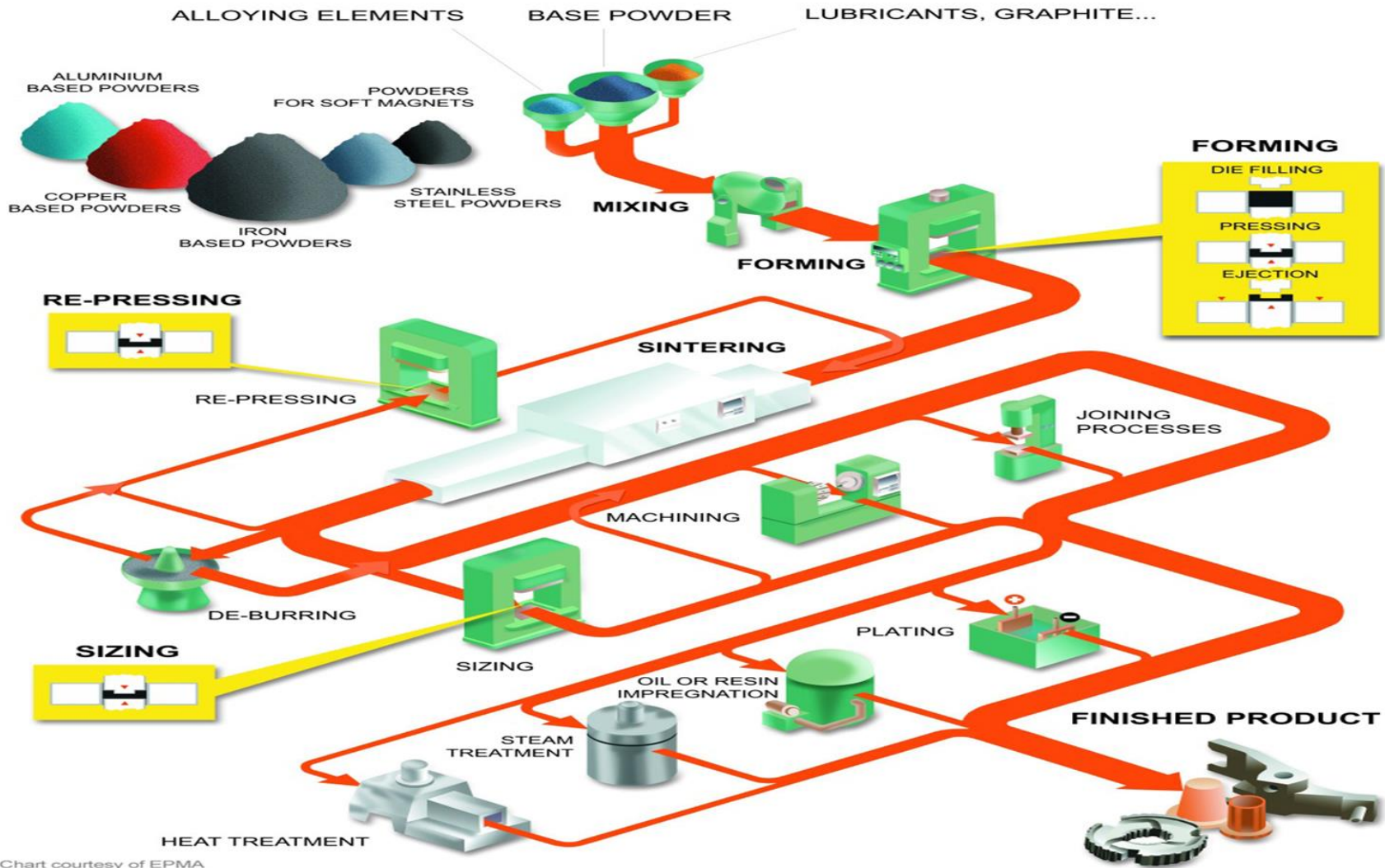
AUTOMOTIVE

Powder metallurgy allows to produce complex components (as for the shape) by the use of press dies without subsequent machining (lathe-turning, milling, etc.). The product accuracy is the same as with mechanical treatment.

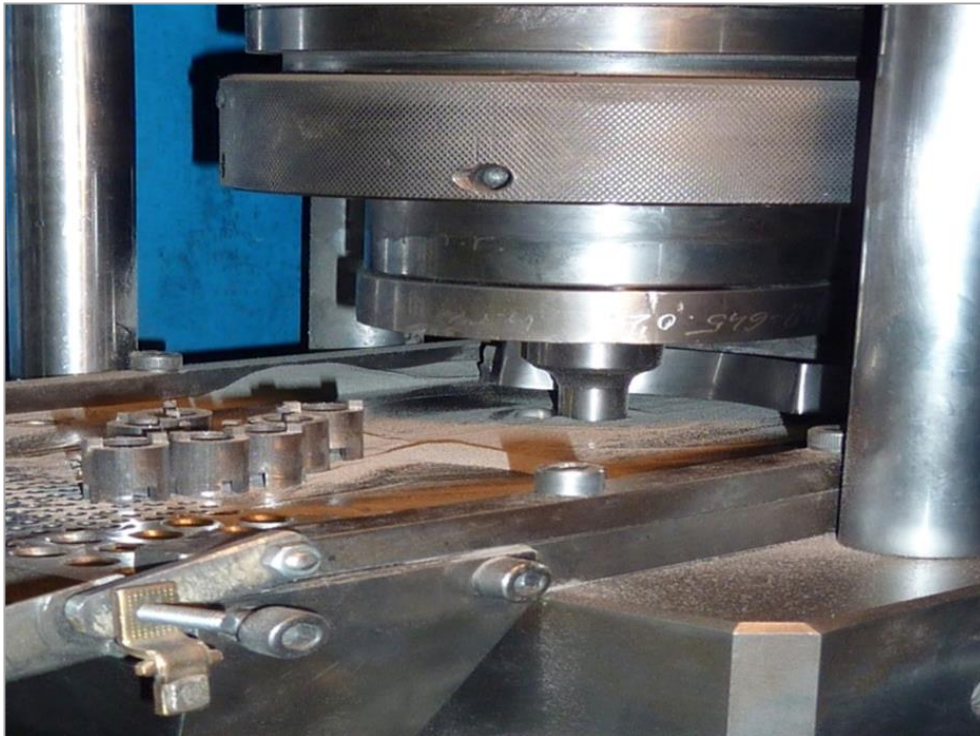
GARDEN
MACHINERY



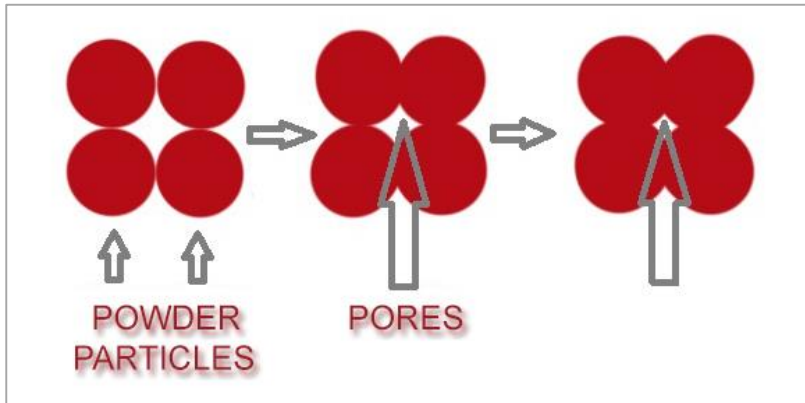
Process of SINTERING production



Pressing – shaping of product from metal powder



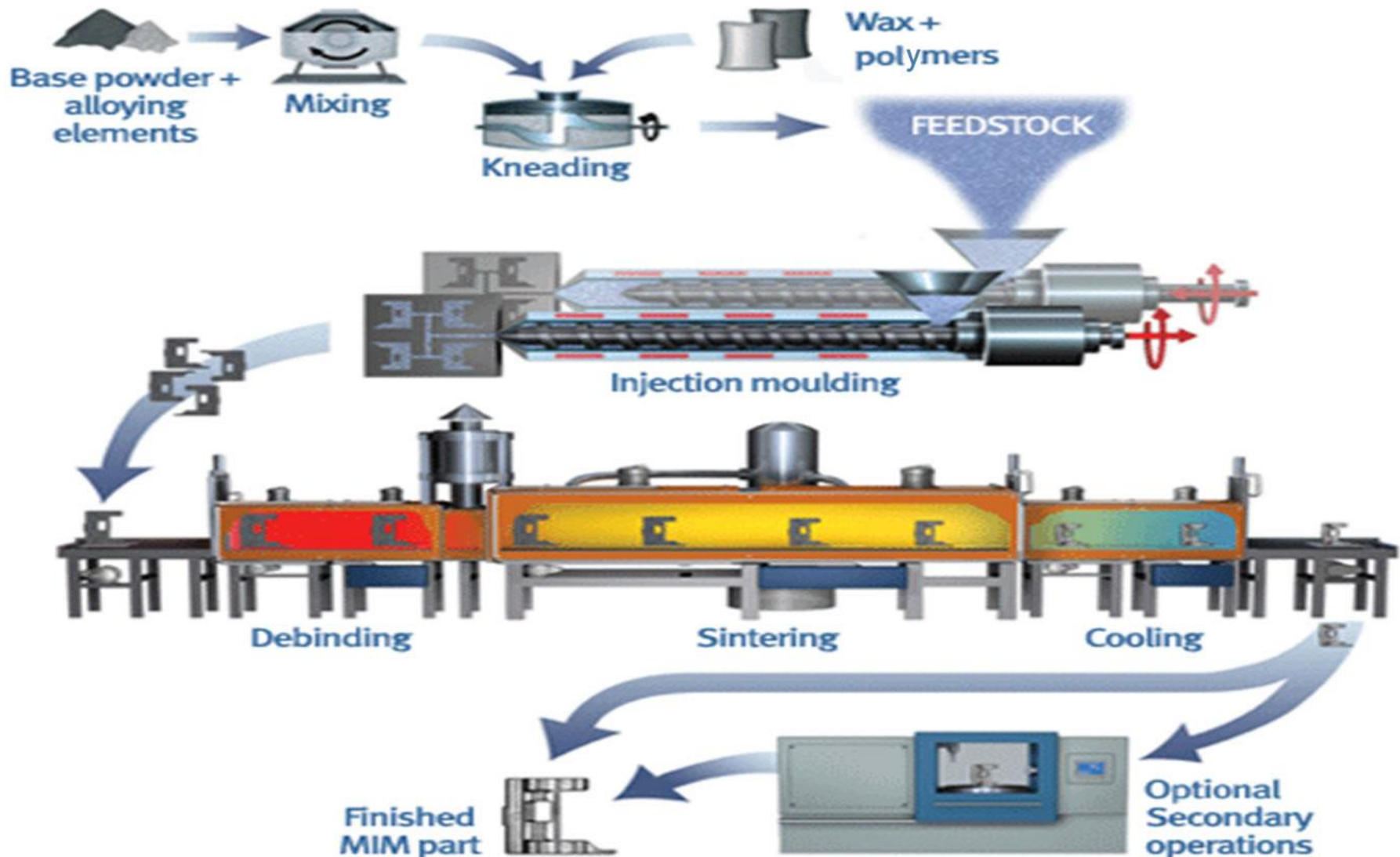
Sintering



Sintering is a process during which small particles of powder are heated almost to the melting point temperature. This process bonds them together, similarly as during welding.



Process of MIM production



Process of MIM production



Awards



- Winner 2018 in “**EPMA 2018 – PM – Component Awards**”, *Structural Parts category*,
- “**National Champion**”, “**National Public Champion**” and “**Ruban d’Honneur**” in **European Business Awards 2016/2017**,
- “**Inspirational project**”, **Via Bona Slovakia 2014**, category of the Great employer,
- “**Fachmetall QM Context Award**” in 2012, *Quality category*,
- “**Diamonds of Slovak Business**”, 1st place in 2012 and 3rd place in 2011 from **Enterprise Investors** and **Profit** magazine,
- “**Entrepreneur of the Year 2011**” and “**Entrepreneur of the Year 2012**” from **Ernst & Young**,
- “**Plant of the year 2011**” from **Fraunhofer Institute** and **EXIM Bank Slovakia** for a progressive business model,
- enlistment to the **10 fastest growing companies** in Slovakia for 2011.

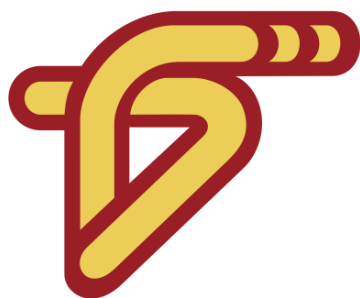


Thank you for your attention!



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GEVORKYAN[®]

Your flexibility with our solutions

Powder Metallurgy Plant