



PLASTIC INJECTION
MOULDING



CNC TURNING
& GRINDING



HPDC &
CNC MACHINING



ELECTROPLATING

ISKRA
ISD
TECHNOFUSION.

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Tradition & Milestones

Tradition since 1946



Basic information

65+

Mil. EUR turnover

9

Core technologies

75

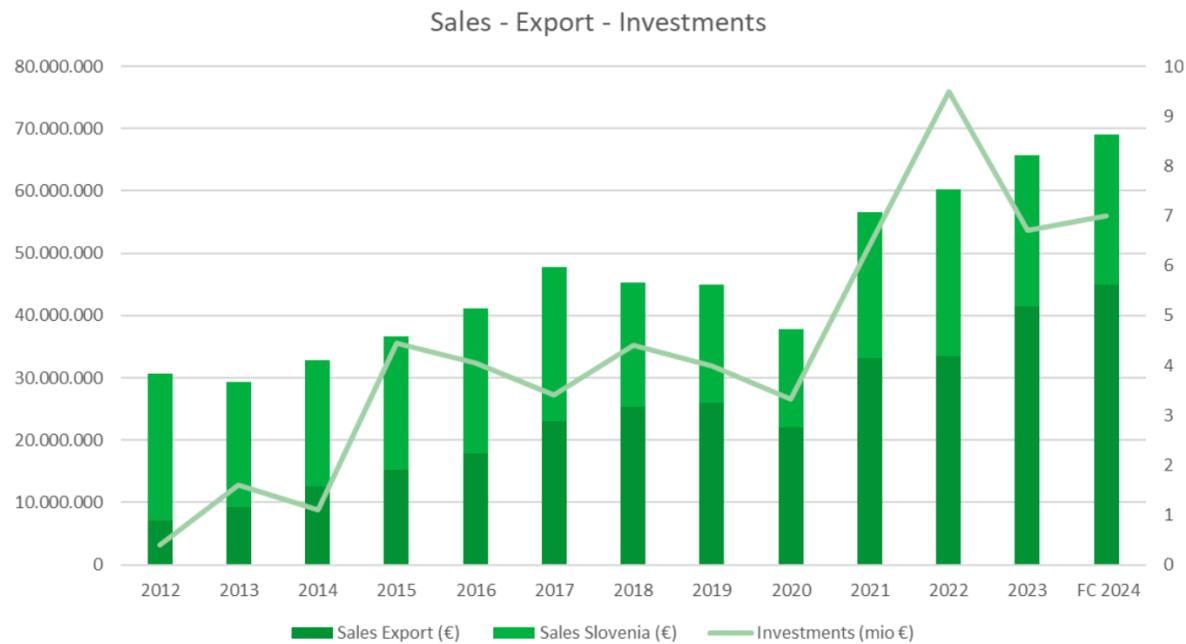
Years of tradition

27.000

m² production space

500+

Employees



ISO 9001:2015
Quality Management System.

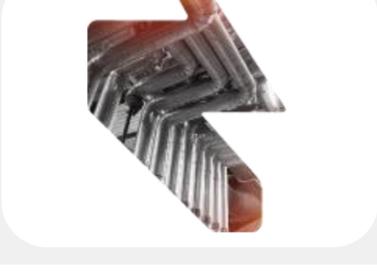


ISO 14001:2015
Environmental Management System.



IATF 16949
Quality Management System.

Industries & Customers

<p>Automotive</p> 	<p>Commercial vehicles</p> 	<p>e-Mobility</p> 
<p>Electronics</p> 	<p>Home appliances</p> 	<p>Fluid & Hydraulics</p> 
<p>Industrial applications</p> 	<p>Transportation</p> 	<p>Medicine</p> 

Vision & Values

Iskra ISD is a global development supplier of innovative components and assemblies.



To achieve the constant excellence of our products and services, we integrated 4 core company values into every step of our workflow.

Satisfied customers



Collaboration



Entrepreneurship



Innovation

9 core in-house technologies

Tool
manufacturing



Plastic injection
moulding



Aluminium CNC
machining



Grinding



Assembly



Process automation



Aluminium HPDC



CNC turning



Electroplating

Tool design & Manufacturing

Since 2020 we are purposefully growing internal competences to design and manufacture tools for thermoplastic and thermoset injection moulding.

Prototype tools & Serial tools

3-axis milling

OKK VB53
DOOSAN 750II

1050 x 530 x 510
1630 x 762 x 650

5-axis milling

OKK VC-X500
MATSUURA MAM72-63V

750 x 850 x 610
760 x 845 x 610

Wire cutting

MITSUBISHI MV2400S

600 x 400 x 310

High performance Die-sinker EDM

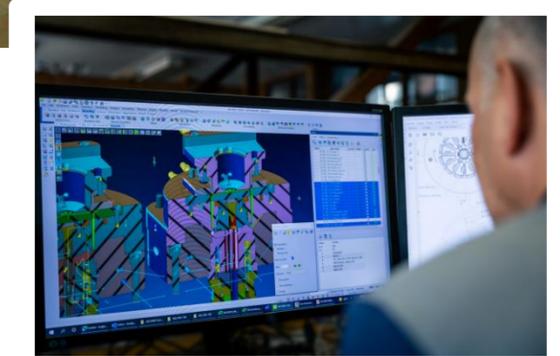
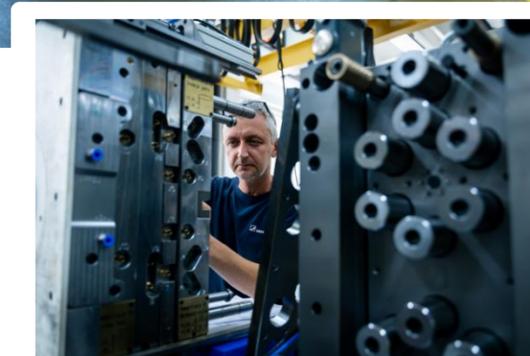
MITSUBISHI EA28VM

1000 x 470 x 450

Grinding

ZIERSCH Z510
JUNG JE630

1000 x 600 x 400
600 x 250 x 400



Process development & Automation



Custom Production & Process automation
Custom Assembly systems
Inspection devices (EOL, leakage, vision, ...)

REFERENCES:



Idea &
Solution



P/O
& Plans



Construction
& Simulation



Production
& Assembly



Testing
& Validating



Installation
& Service

Plastic injection moulding

63 injection moulding machines – vertical & horizontal

- 55x Thermoplast processing
- 8x Thermoset (Duroplast) processing

Laser marking
Leakage testing
Ultrasonic welding
Visual inspection
ESD
EOL control

68 process automation robots

- ABB 5D
- Wittmann 3D
- Scara Epson

Materials

- Thermoplastic – PA6, PA66, PA46, PPS, PBT, PP (GF up to 50%)
- Thermoset (Duroplast) – Epoxy, PF, UP, MF
- Thermoplastic elastomer – TPE & TPV



Aluminium HPDC & CNC machining

Casting

- 9 HPDC cells 450–950 t
- Deburring processes - Sandblasting and tumbling
- Automated visual control (porosity)
- Leakage testing

CNC machining

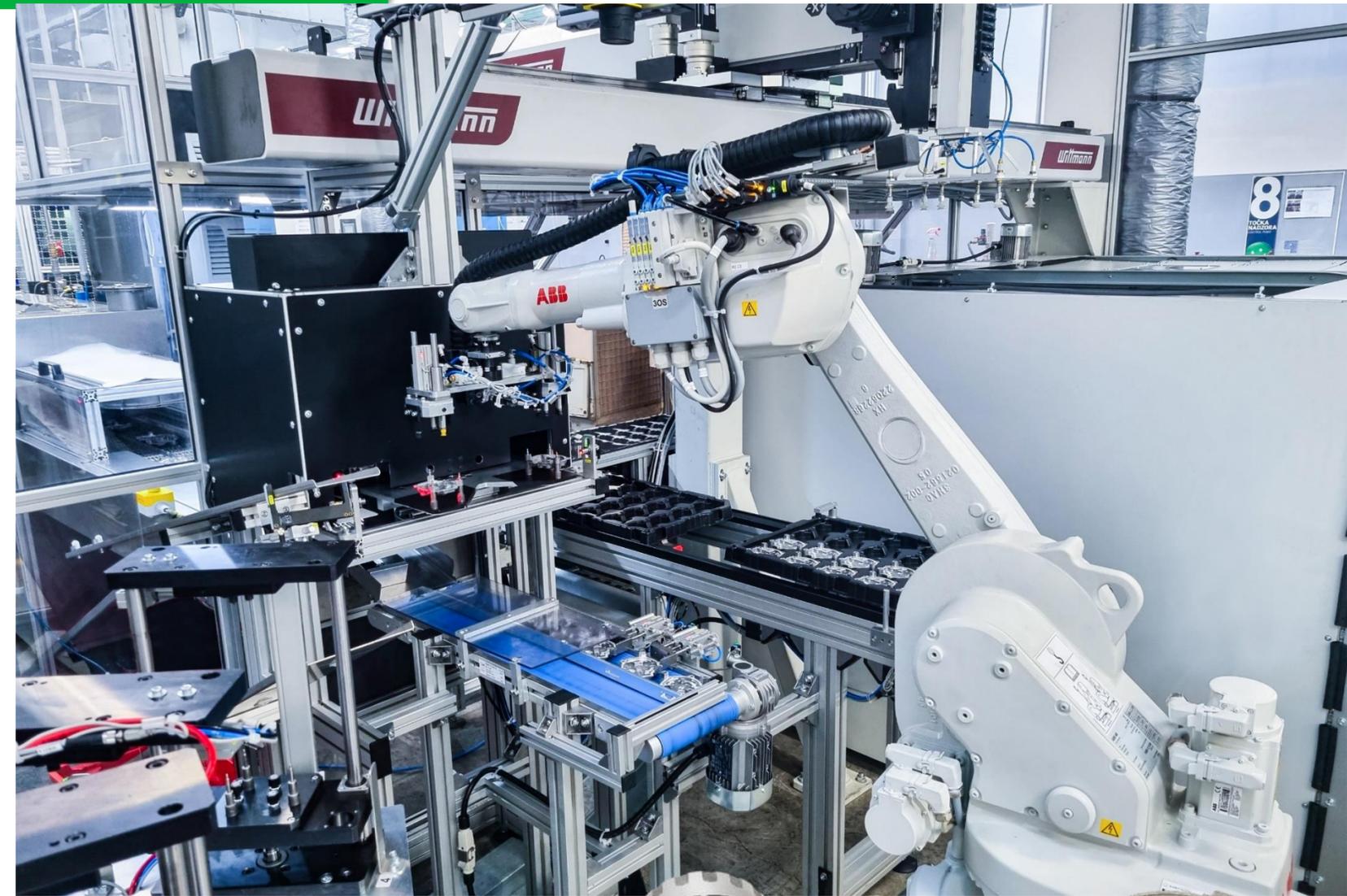
- 8 CNC milling centers
- 14 CNC turning leathes

Materials

- | | | |
|---------------|--------|---------------|
| • EN AC-46000 | DIN226 | AlSi9Cu3(Fe) |
| • EN AC-44300 | DIN230 | AlSi12(Fe) |
| • EN AC-47100 | DIN231 | AlSi12Cu1(Fe) |
| • EN AC-43400 | DIN239 | AlSi10Mg(Fe) |

Surface treatment

- Anodization
- KTL
- Impregnation
- In-house heat treatment T5



CNC Turning & Grinding

In-house technologies

- 63x turning machines
- 8x grinding machines

Deep drilling
Knurling
Straightening
Gear hobbing
Skiving

Broaching
Degreasing
Heat treatment
Induction hardening

Materials

- Free-cutting steel
- Stainless steel
- Brass & Eco Brass
- Inconel
- Copper
- Aluminium
- Titanium

Control and measuring

- Automated 100% dimensional sorting
- Automated surface visual control
- Roughness measurement
- Roundness measurement



Electroplating

Rack technology

- Zn, ZnNi (+KTL – external partner), ZnPh
- Capacity: 1.000sqm / 24h
- Dimension: 2,5m x 1,5m x 0,4m



Barrel technology

- Zn, ZnNi, ZnPh, Ni, Sn, SnPb
- Capacity: 6t / 24h
- Barrel filling: 20-100kg



Passivations

- Thick
- Transparent
- Blue
- Black

Main advantages

- Rack design
- Production & delivery flexibility (24h / 48h / 72h)
- High quality assurance through state of art process control equipment



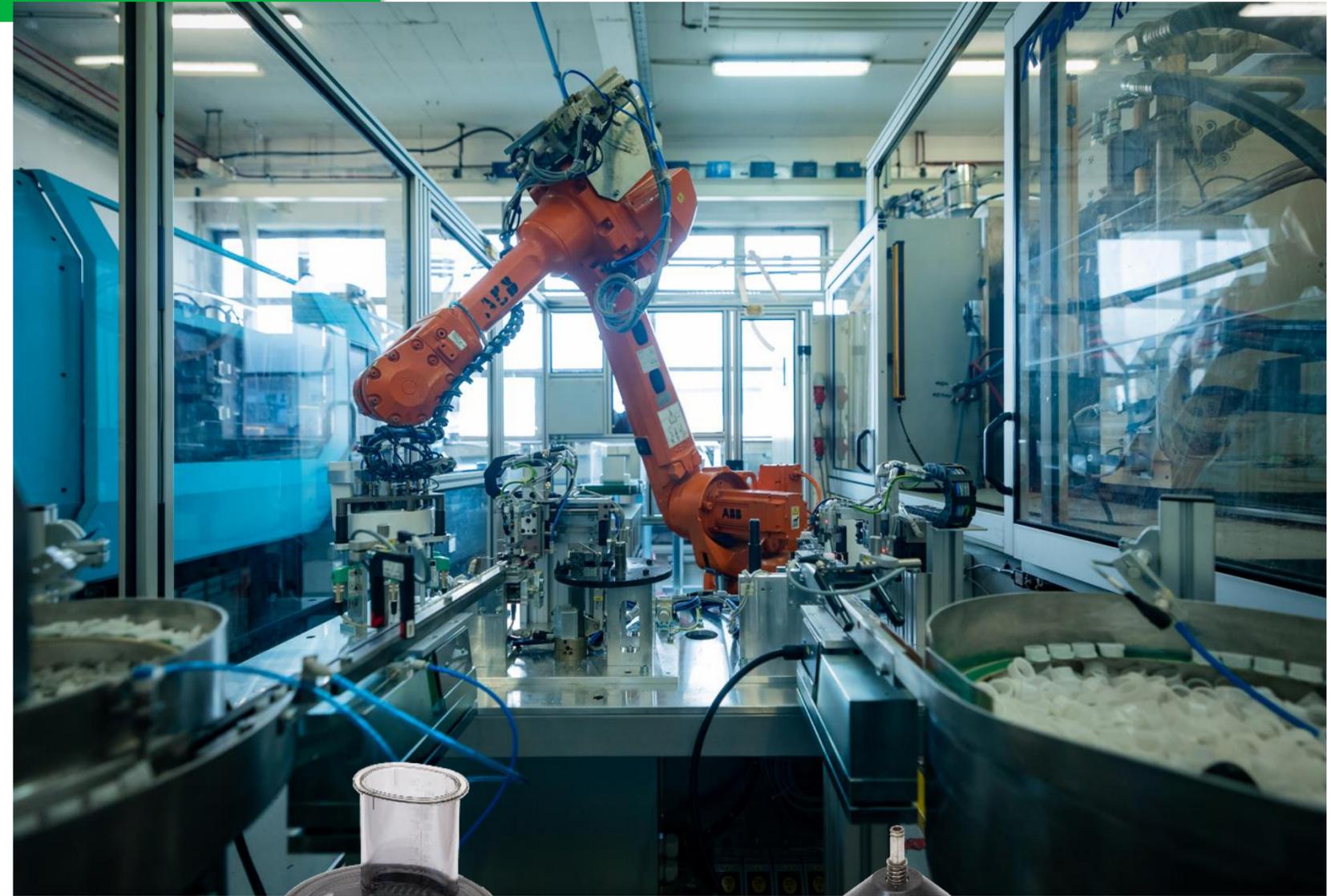
Assembly

Iskra ISD also handles assembly and continuous components processing which reduces our customer's lead times and provides the advantages of our broad internal technology availability along the entire process chain for the customer's benefit.

We design and build manual or semi-automated assembly stations and fully automated assembly production lines that include:

- screwing,
- press-fitting,
- ultrasonic welding,
- printing, etc.

... with intermediate and final EOL inspections or product testing. Our devices are supplemented by comprehensive monitoring sensors.



Single and Multi-material components

Grinding



Injection moulded thermosets



Injection moulded thermoplastics



CNC turning



Single-material PRECISION components

Assembly



Surface treatment



Aluminium casting



Multi-material HYBRID components

<p>Aluminium + Plastic</p> 	<p>Zinc + Plastic</p> 	<p>Shafts + Plastic</p> 
<p>CNC machining + Plastic</p> 	<p>Ball bearing + Plastic</p> 	<p>Stamping + Plastic</p> 
<p>Fine stamping + Plastic</p> 	<p>PCBA or Sensor + Plastic</p> 	<p>Stator or Rotor + Plastic</p> 

TechnoFusion. – Reference solutions



Fusion of our technologies for your multi-material HYBRID solutions.

OVERMOULDING – axis

Services and technologies used in manufacturing:

- Sourcing of magnets
- CNC turning
- Heat treatment
- Straightening
- Grinding
- Injection moulding PA GF30
- Magnets insertion



Oil mist separator - trucks

OVERMOULDING – rotor & magnets & shaft

Services and technologies used in manufacturing:

- Sourcing magnets and rotor stacks
- CNC turning
- Heat treatment
- Straightening
- Grinding
- Shaft insertion
- Injection moulding PPS



Water pump - trucks

OVERMOULDING – stampings & ball-bearing

Services and technologies used in manufacturing:

- Sourcing of ball-bearings and stamping element
- ZnNi electroplating of metal stamped element
- Automated insertion of ball-bearings
- Injection moulding PA GF30
- Visual inspection



Oil mist separator - trucks

TechnoFusion. – Reference solutions

OVERMOULDING – aluminium & plastic & rubber

Services and technologies used in manufacturing:

- HPDC
- Tumbling
- Injection moulding PA
- Injection moulding TPV
- Visual inspection
- Packaging in trays

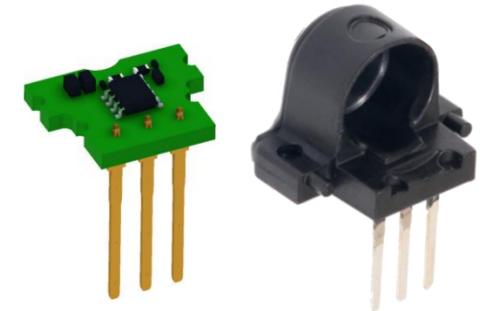


Belt tensioner – hybrid EV

OVERMOULDING – PCBA & connecting pins

Services and technologies used in manufacturing:

- Sourcing of PCBA with hall sensor and EloPin
- On-line EloPins stamping and insertion into PCBA
- ESD injection moulding EPOXY (Duroplast)
- Visual check
- EOL functional check
- Packaging in trays



Valve for battery cooling – BEV

HPDC OVERMOULDING – sleeve

Services and technologies used in manufacturing:

- CNC turning
- Knurling
- Aluminium HPDC
- Sandblasting
- CNC milling



Electric motor – garden power tools

OVERMOULDING – metal components

Services and technologies used in manufacturing:

- Sourcing of fine stamped metal elements
- CNC turning
- NiSn electroplating
- Injection moulding



Gas or oil ignition unit - industry

Project management

At Iskra ISD, project management is the key link between customer support, sales, product development, purchasing and quality assurance from the beginning up to the serial production in order to fulfil customer specific requirements.

Project management processes are implemented according to ISO standard IATF 16949.



The CAQ system was introduced in 2021 to support our quality assurance and project management process.

The system ensures the consistent and modular implementation of all project and quality management related process phases from planning to documentation and enables process monitoring.

Measuring lab



From initial samplings up to series measurements, process analyses are carried out with very modern optical and tactile 3D measurement equipment in climate-controlled measurement laboratories on machines such as:

CMM

DEA Global Silver 7
DEA GLOBAL Silver 9
Tesa Micro-Hite DCC (2x)

3D Scanner

Aicon 3D Neostereo scan

Computertomograf (CT)

Zeiss Metrotom 1500 G2

Testing & Calibration lab



Our lab performs an analysis of technical cleanliness according to the **ISO 16232** and **VDA 19** standard for Iskra ISD products or even external customers.

Salt spray testing according to the **SIST EN ISO 9227** standard to check corrosion resistance of our electroplating services or even from external customers.

The laboratory is accredited by Slovenian Accreditation according to the **ISO / IEC 17025: 2017 standard** with accreditation number LP-126.

- Length & angle & diameter gauges
- Length instruments
- Thread quantities
- Torque wrenches

Research fields & Academic partners

Our mission: With a research and development approach and combining technologies, we are changing the customer's process from idea to product manufacturing.

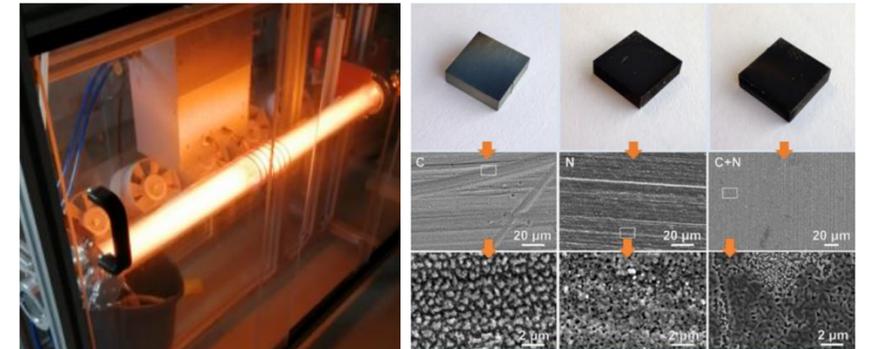
Fusion of materials with
no chemical adhesion



Development of new materials



Development of new coatings

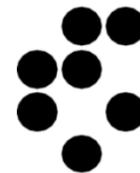


FS

UNIVERZA V LJUBLJANI
Fakulteta za strojništvo



Fakulteta za
tehnologijo
polimerov



Jožef Stefan Institute



NTF

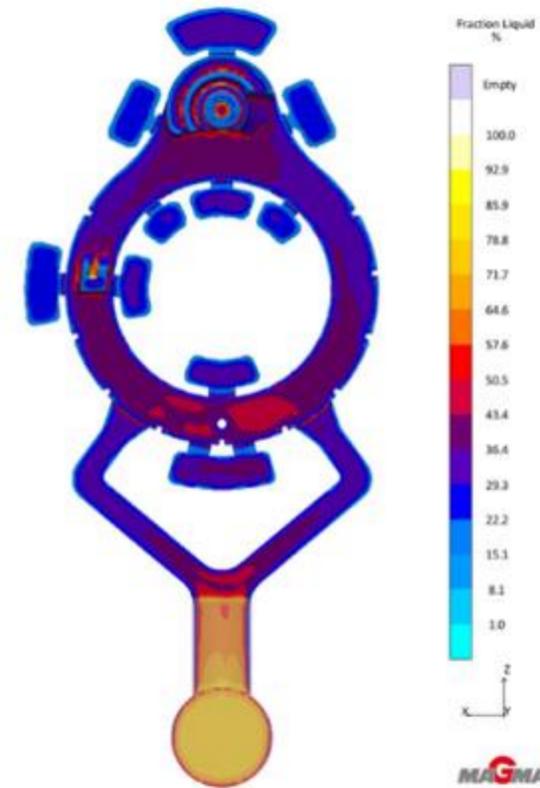
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Naravoslovnotehniška fakulteta

Product development & Optimization

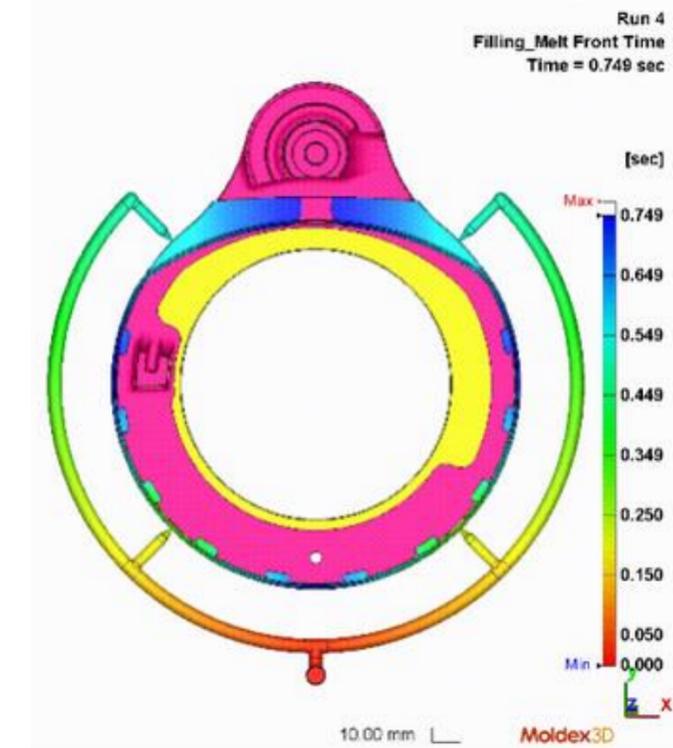
IATF 16949 certified to design plastic and die-casted products



Magma software simulation



Moldex3D software simulation



Moldex3D

MAGMA

creo®

PolyWorks®

Ansys

Innovative technologies

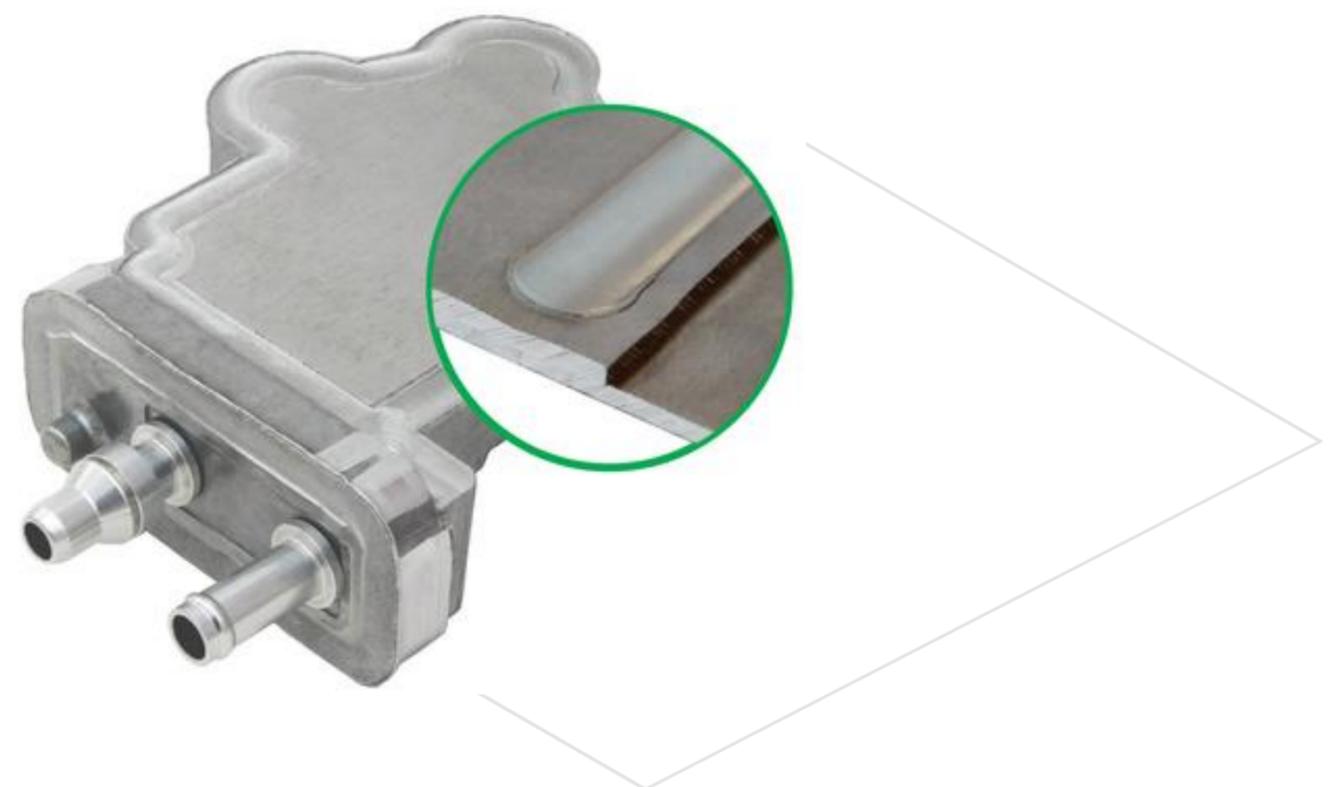
LaserFusion

Permanent bonding of metals and plastic or rubber



AluFusion

Bonding aluminium components with friction stir welding technology



Lightweight solutions & New materials

Transformation



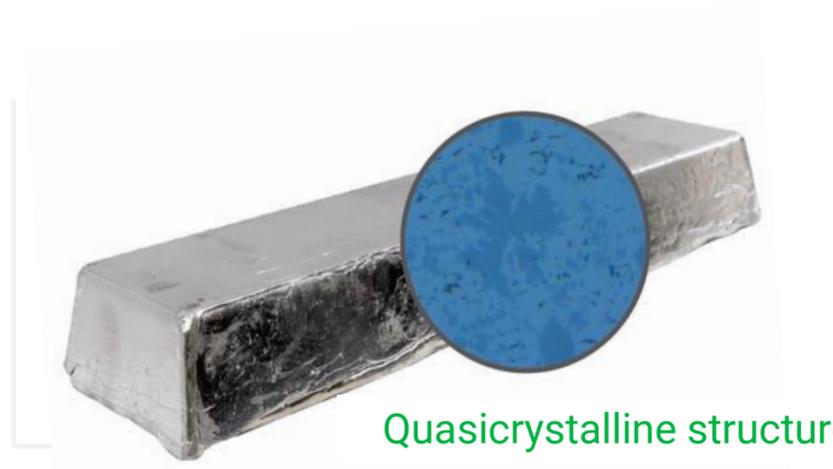
Aluminium to plastics transformation with comparable dynamic characteristics



QC Alloy



Innovative new aluminium alloy with mechanical properties comparable to steel



Quasicrystalline structures

Passive cooling



Media tight encapsulation with heat sink integration to cool down electronics



Sustainability

At Iskra ISD, we believe that sustainability is not just a responsibility but a commitment that drives our every endeavor.

Constantly striving to uphold the highest standards of integrity and to operate honestly and equitably throughout the supply chain.

„As a developer and manufacturer of precision and HYBRID components we recognize the importance of minimizing our environmental footprint while maximizing the value we bring to our clients and partners.“



Our Sustainability fields:



Innovative Materials
and Technologies



Energy
Efficiency



Renewable
Energy Adoption



Waste
Reduction



Supply Chain
Collaboration



Start-up collaboration: Helping co-develop and manufacturing your idea.



Do you want to work with us?

Individual

- Scientist
- Researcher
- Professional / Entrepreneur
- Hobbyist

Organisation

- Start-up
- Research institute
- School / College / University
- Small / medium size company

What stage are you at?

Idea	Proof of concept	Prototype	Product
<p>Idea</p> <p>You came up with a great idea that just can't get out of your head. So the idea of a product or an improved technology is just the start, but we are here to help you move forward and solve in the designing phase. Let's review it together so you can realize it.</p>	<p>Proof of concept</p> <p>Proof of concept (PoC) is in the second phase beyond the basic idea, but there is a lot of details that need to be figured out. In most cases, this stage is the hardest to overcome and we are here to help you. Need help?</p>	<p>Prototype</p> <p>You put in the work, but it needs polishing. Once you are in the working prototype phase, there can be major or minor adjustments that can take a lot of time and knowledge. Need help push it to the realization phase?</p>	<p>Product</p> <p>Hooray, you have a validated product! Perhaps you are looking to perfect it in the next iterations. We help you with the sourcing, legal, funding, manufacturing, project coordination and shipping, marketing or sales.</p>



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