

VT ElektroPlast

ONE COMPANY – INFINITE POSSIBILITIES

—
PIM

TECHNOLOGY

DYNAMISM

PROGRESS

STABILITY

HISTORY

- ISO 9001 (1992)
- 13 PIM machines
- start of plastic consumption
- lighting products



1990-1995



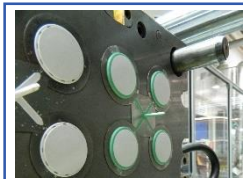
1996-2000

- 32 PIM machines
- first household appliances (1998)

tampo printing
hot stamping
laser welding
ultrasonic welding

- ISO 14001 (2001)
- ISO TS 16949 (2002)
- 61 PIM machines
- first automotive products
- first personal care products
- fi-relays, respirators
- automatized assembly lines

2K moulding
insert moulding



2001-2005



2006-2010

- ISO 13485 (2008)
- 87 PIM machines
- first floorcare products
- first premium products

- 91 PIM machines
- purchasing of new machines
- first skin care products
- first mother&childcare products
- sub-assembly

infrared welding
3D printing



2011-2016



2017-2023

- 100+ PIM machines
- improving and rejuvenation of PIM machines
- on-line data collection system₂

RAW MATERIALS

PPA PPS PSU PMMA PES

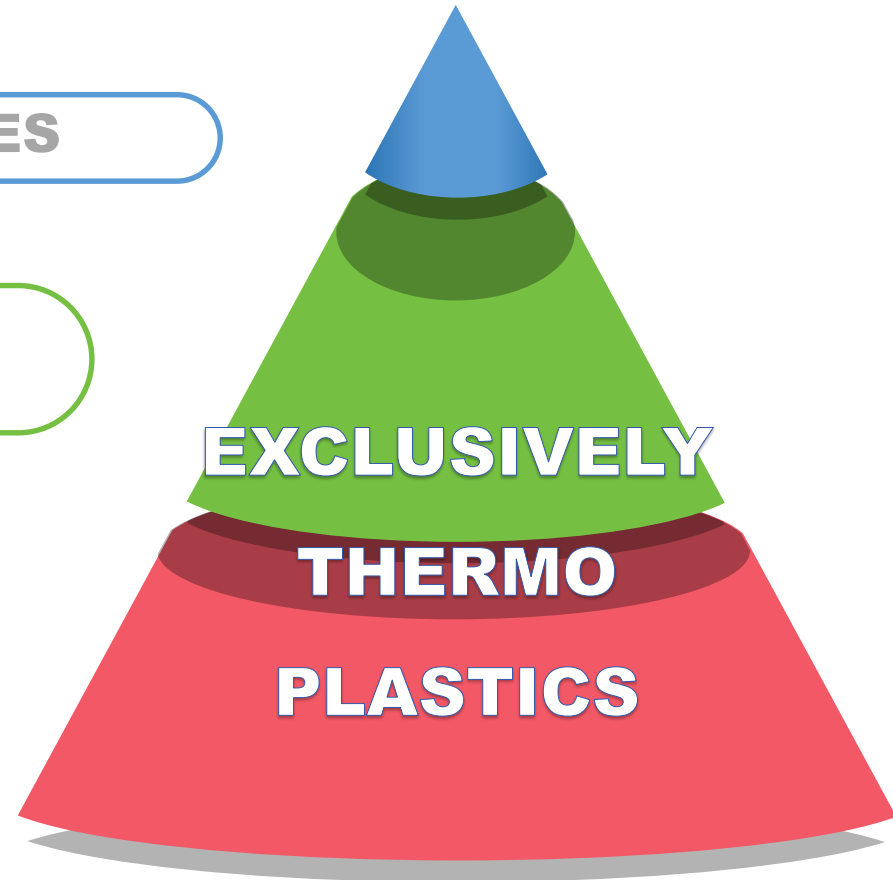
Top quality plastics

PC PA PBT POM PFA
PET TPE ASA+PC

Engineering plastics

ABS TPU PVC SAN PP
PPE + PS
HDPE LDPE

Industrial plastics



PIM MACHINES

Machines sizes according to their clamping force:

- 40-650t

ARBURG

ENGEL

Battenfeld
Injection Molding Technology

 **Chen Hsong**

 **VIDEOTON**



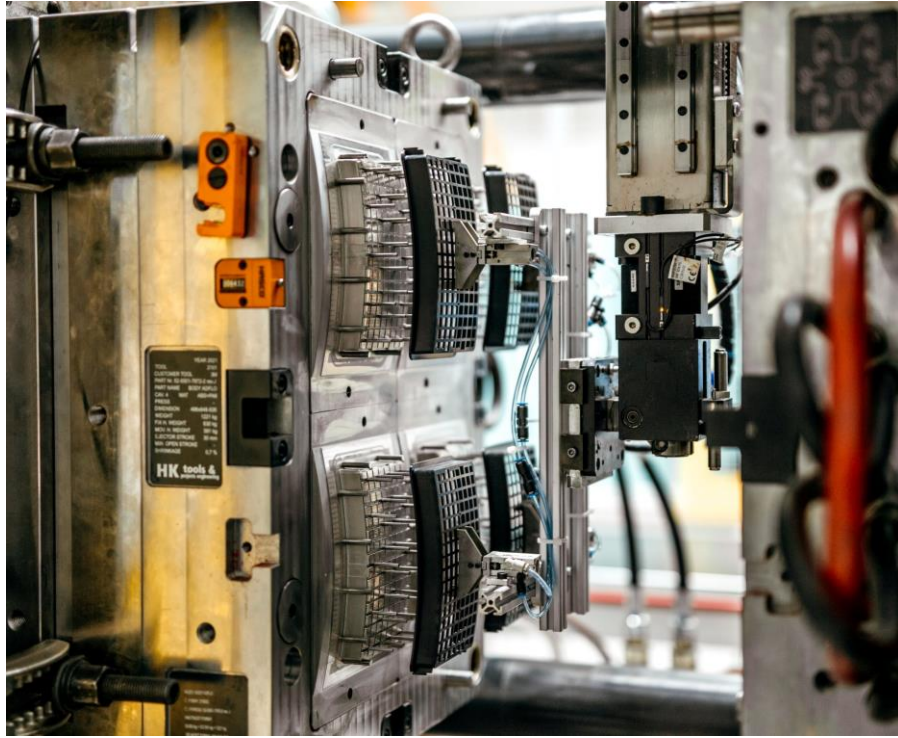
INJECTION MOULDING



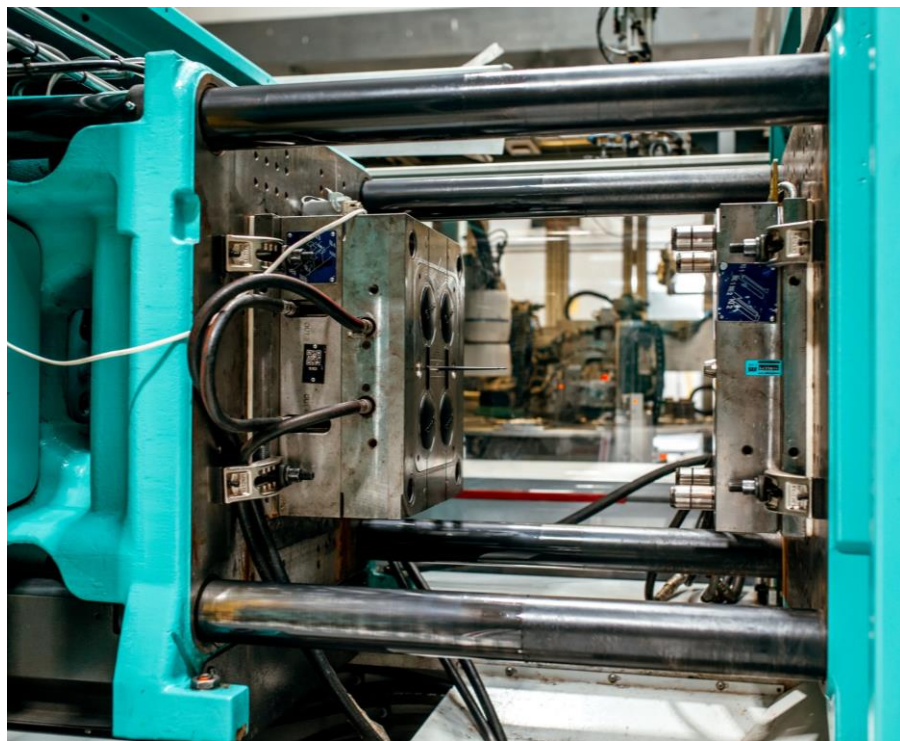
Max capacity:

- **270** sorts of resin and masterbatch, from **75** suppliers
- **2600** tons of resin processed per year
- **4,5 - 5** million plastic components per week
- **900** active tools

1 COMPONENT INJECTION MOULDING I.

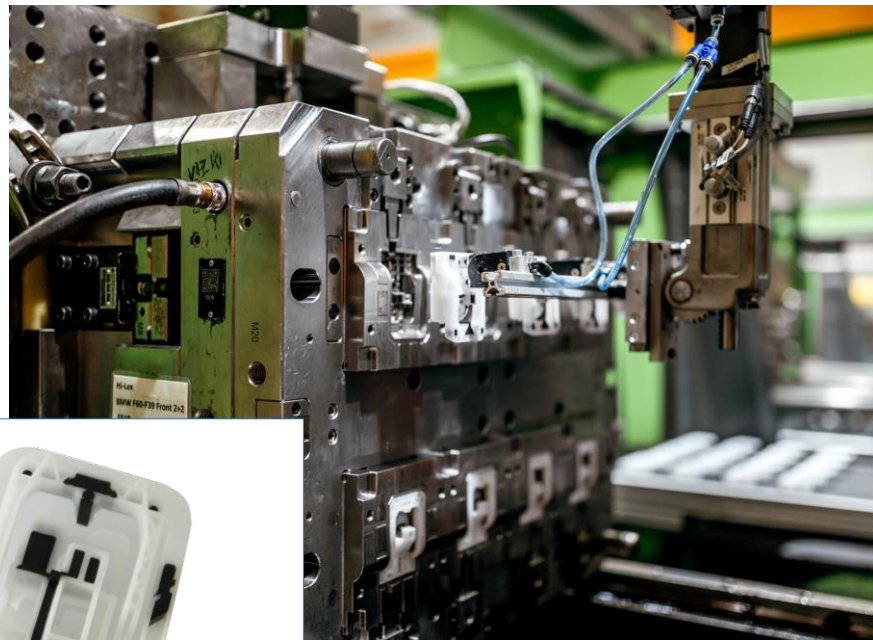


1 COMPONENT INJECTION MOULDING II.



2 COMPONENT INJECTION MOULDING I.

- index plate moulding



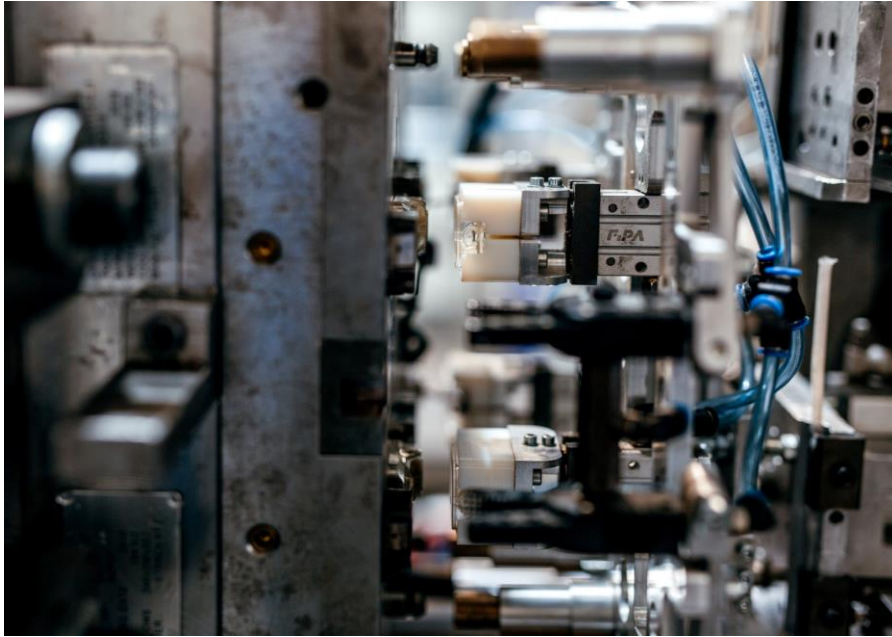
2 COMPONENT INJECTION MOULDING II.

- rotary plate moulding



2 COMPONENT INJECTION MOULDING III.

- robot-assisted moulding



OVERMOULDING I.

Moulding onto metal

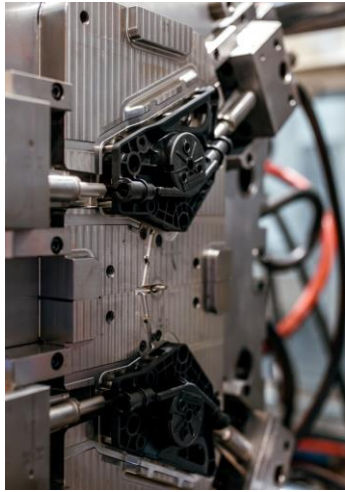
- rods
- nuts



OVERMOULDING II.

Moulding onto metal

- threaded pins, contact pins



TAMPON PRINTING I.

- complete tampon printing lines
- single and multicolour printing
- open and closed system
- on different raw materials (PP, ABS, PBT, SAN)
- on flat and curved surface
- pre-treatment – flaming, crowning
- JIG making



TAMPON PRINTING II.

- metal parts



INDUSTRY 4.0 – OUR DEVELOPMENTS I.

On-line terminals

- work instruction / training materials
- technologies
- reporting number of products
- status code updates of injection moulding machines

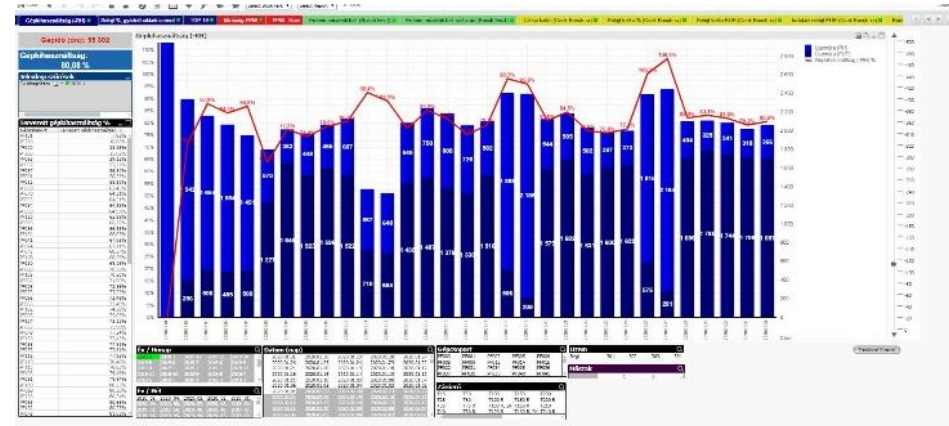
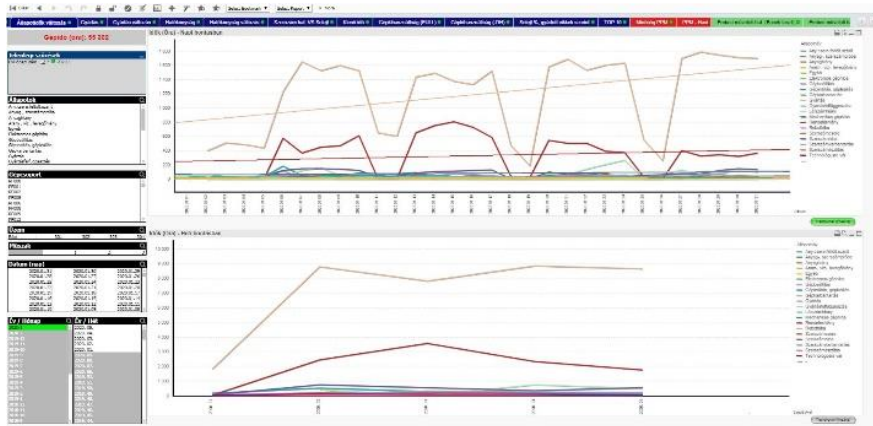


INDUSTRY 4.0 – OUR DEVELOPMENTS II.



Data evaluation system

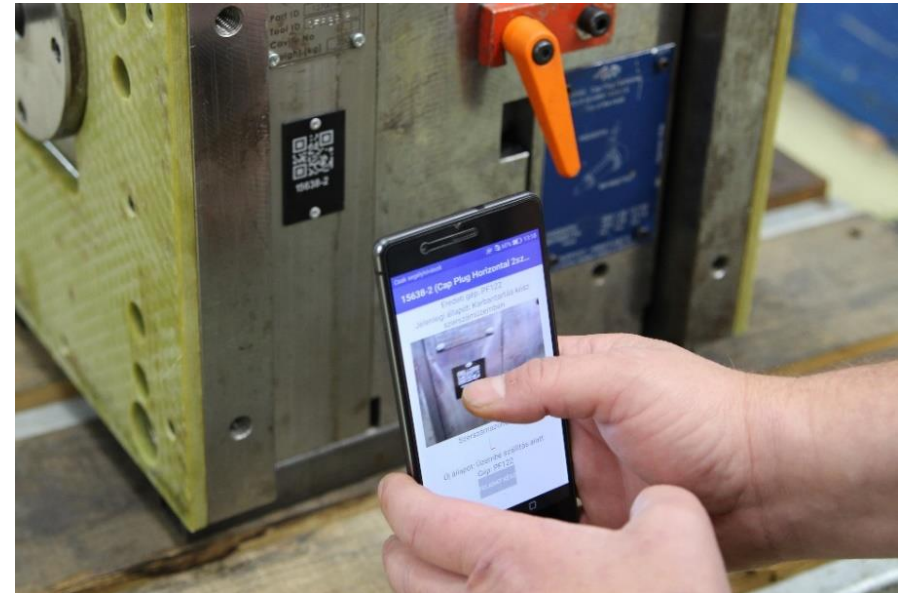
- complex information about existing data of production
- comparisons, data analysis, optimization of efficiency, downtime etc.
- production featured KPIs based on extracted data



INDUSTRY 4.0 – OUR DEVELOPMENTS III.

Tool positioning tracking system

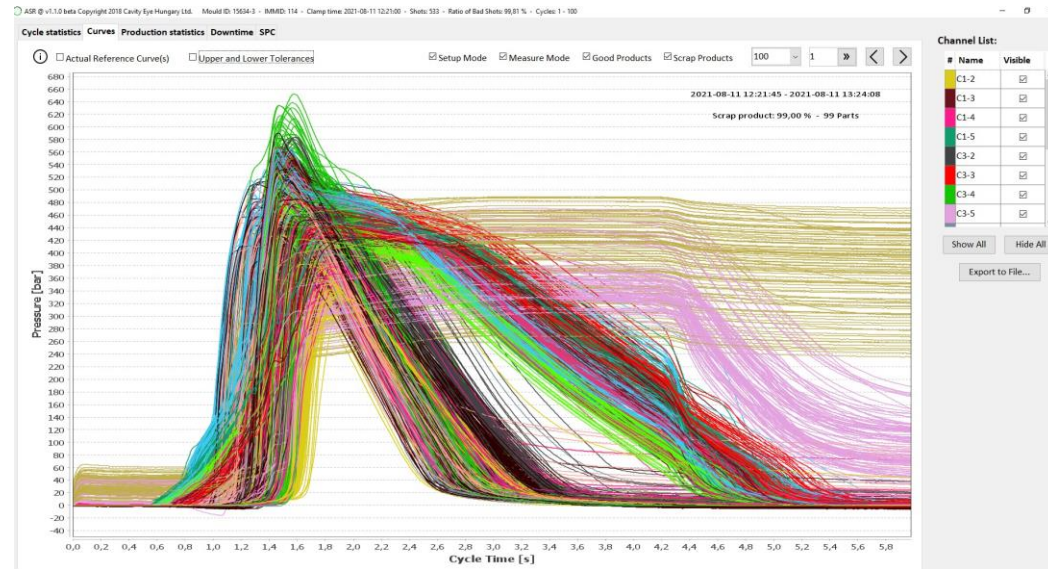
- mobile application
- proper on-line information about the state and the physical place of tools
- barcode identification of tool
- tool repair / maintenance prioritization
- options evaluation system (efficiency improvement)
- downtime optimization



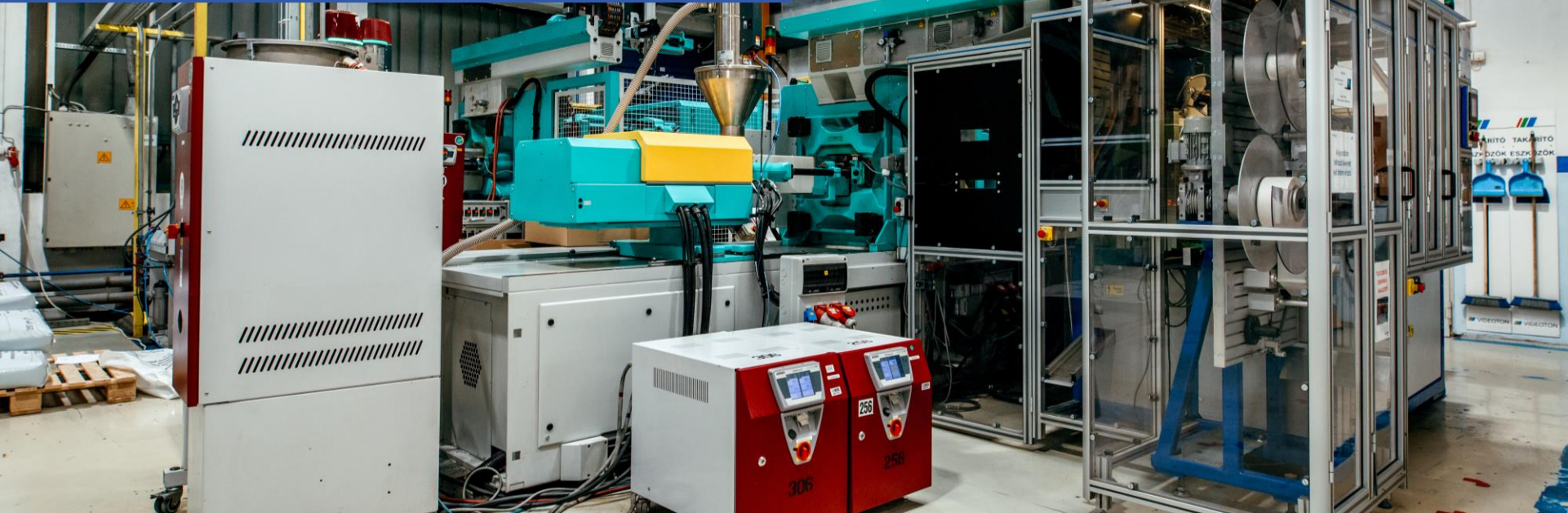
INDUSTRY 4.0 – CAVITY EYE

Collection of data in real-time

- direct (real-time) data from injection moulding machines, tools and peripheries
- monitoring parameter changes
- on-line tracking of run status of moulding machines
- quick and efficient warning system
- immediate response
- optimized material flow



MANUFACTURING CELL



- design and manufacturing
- PIM

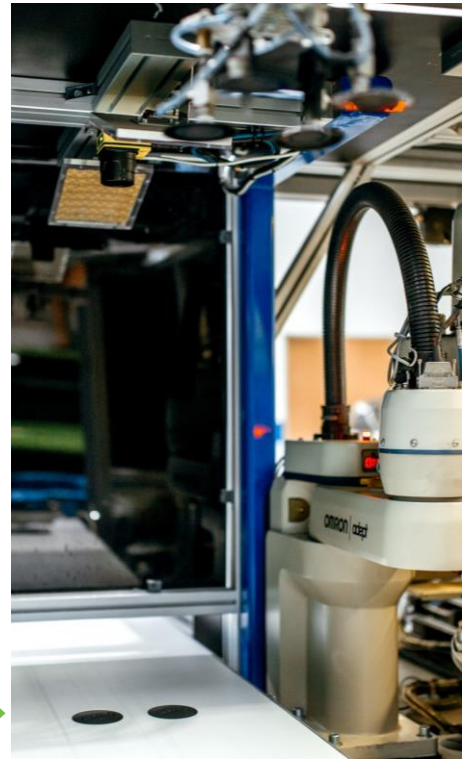


- tampro printing
- labelling



- camera quality control
- automatic scrap selection

MANUFACTURING CELL PROCESS



TESTS, MEASUREMENTS

- MFI tests
- 3D touch and optical
- colour
- hardness
- roughness
- torque
- dimensional accuracy
- solidity and material tests
- 3D scanner



QUALITY ASSURANCE

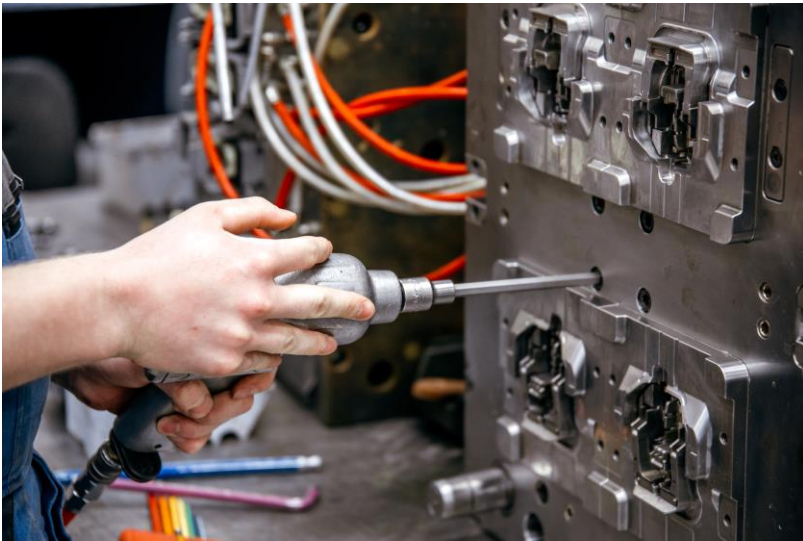
- analyzing root causes, corrective actions
- preparing, maintaining, improving quality documentation (PPAP, checking instruction, work instruction, measuring instructions, failure card)
- tool and raw material trials, first sample tests
- machine capacity and process capacity tests
- R&R tests
- mid-production controls in every two hours – measurements, assembly trials, function tests, SPC tests



TOOLS MAINTENANCE AND REPAIR

Internal tools

Maintenance, repair, modification and production of new inserts



External tools

Maintenance, repair, modification and production of new inserts



CNC TURNING

Turning machines

- DMG-Mori ecoTurn 310
- SZIM Hunor PNC 721
- **Max processing range: Ø200 x 500 mm**



CNC MILLING

Milling machines

- Mikron VCE 800 Pro
- Hartford VMC
- **Max processing range: 470 x 500 mm**



EDM

Block EDM

- AgieCharmiles Form 20
- Mold Master
- **Max processing range: 350 x 450 mm**



Wire EDM

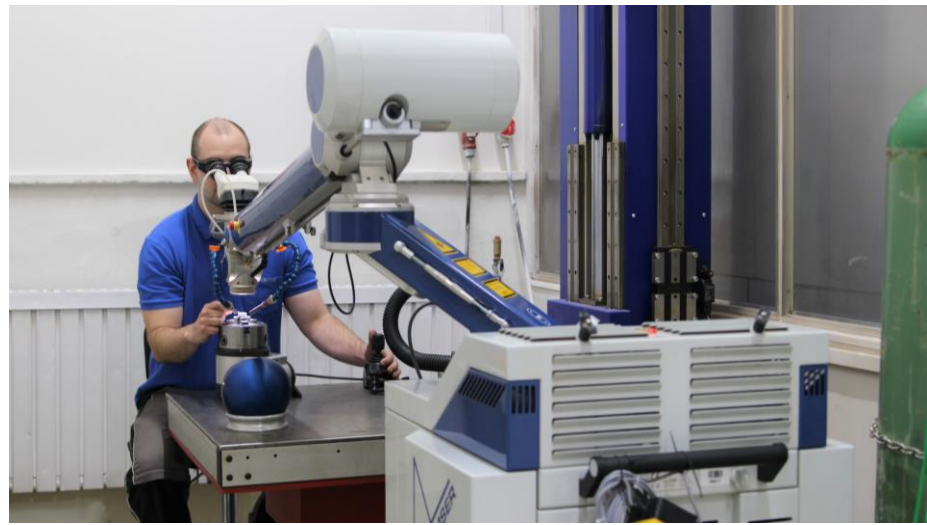
- AgieCharmiles cut 350
- **Max processing range: 250 x 350 mm**



LASER WELDING

Laser welding machine

- Alpha laser ALM 300



GRINDIG

Cylindrical grinding

- Cylindrical grinding KU
- Max processing range: Ø200 x 700 mm

Surface grinding

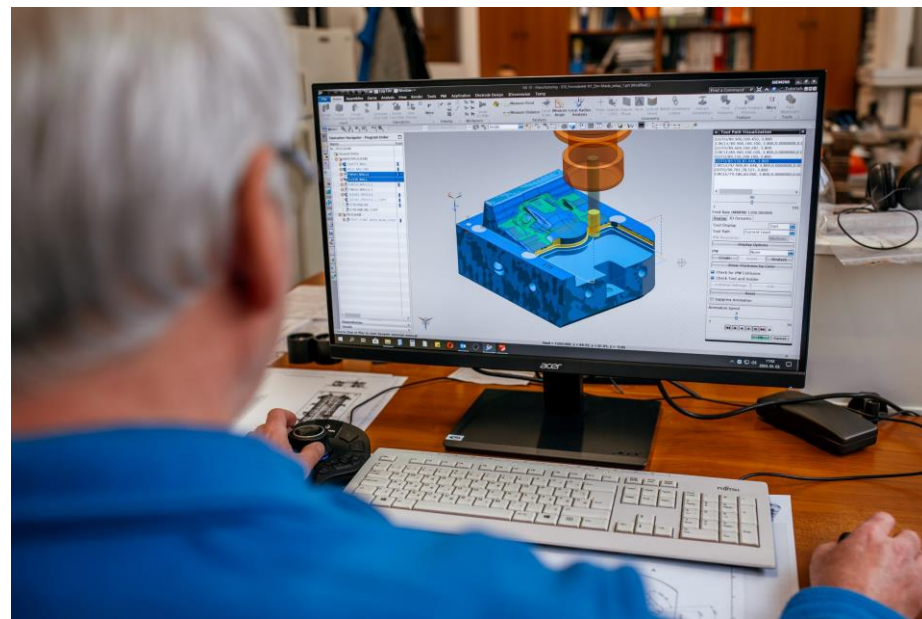
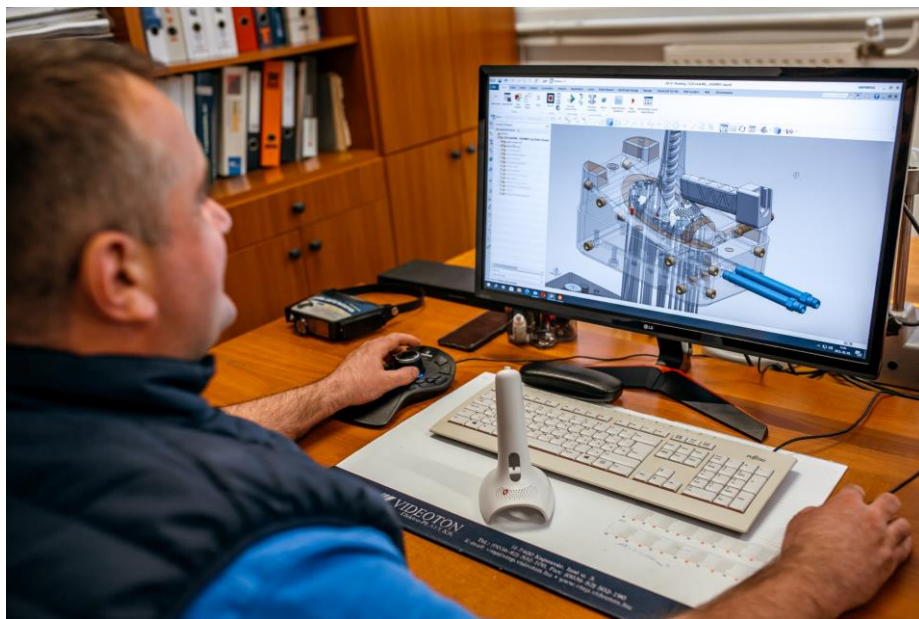
- SEEDTEC 618 / SEEDTEC 1636
- Okamoto
- Max processing range: 800 x 400 mm



CAD-CAM DESIGN

Software

- Siemens NX 10



THANK YOU!

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Highest creditworthiness