

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)
- first automotive products
- first personal care products
- fi-relays, respirators
- robot-assistant moulding

2K moulding
insert moulding



2001-2005



2006-2010

- ISO 13485 (2008)
- first floorcare products
- first premium products

- first skin care products
 - first mother&childcare products
 - sub-assembly
- infrared welding**
3D printing



2011-2016



2017-2024

- 80 PIM machines
- improving and rejuvenation of PIM machines
- on-line data collection system
- medical plastics

RAW MATERIALS

PPA **PPS** **PSU** **PMMA** **PES**

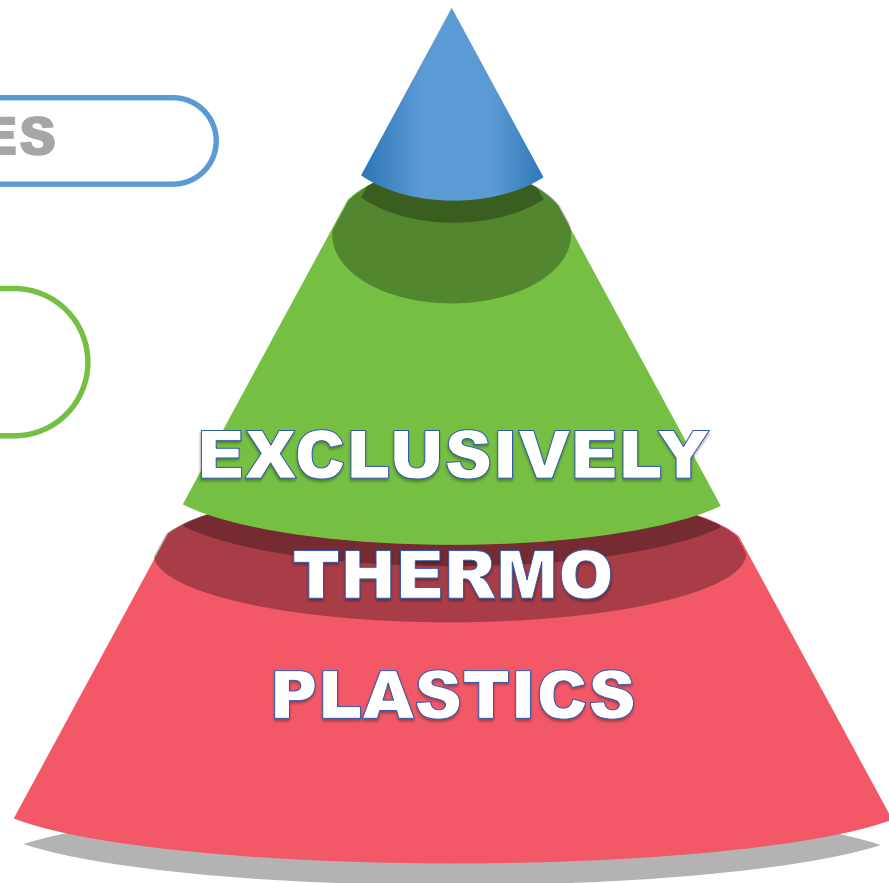
Top quality plastics

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

Sumitomo
SHI DEMAG

VIDEOTON



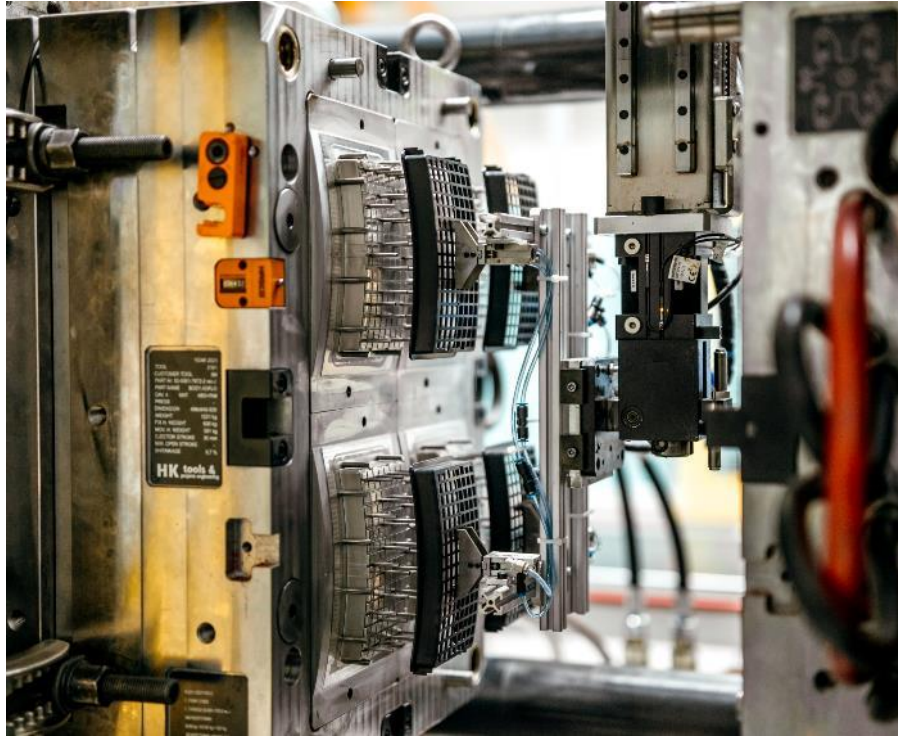
INJECTION MOULDING



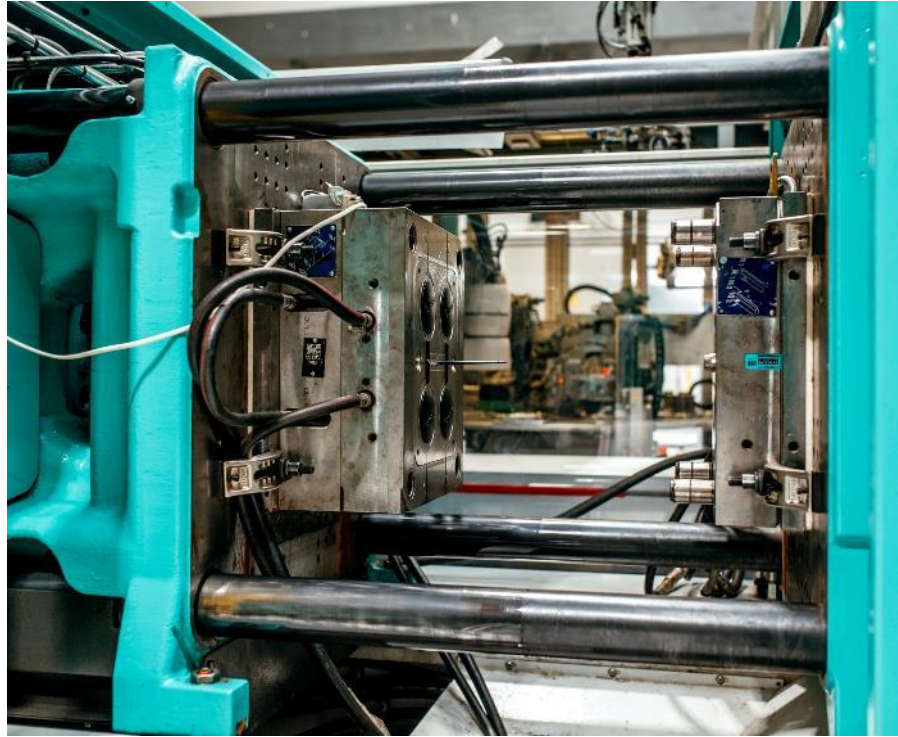
Max capacity:

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

1 COMPONENT INJECTION MOULDING I.

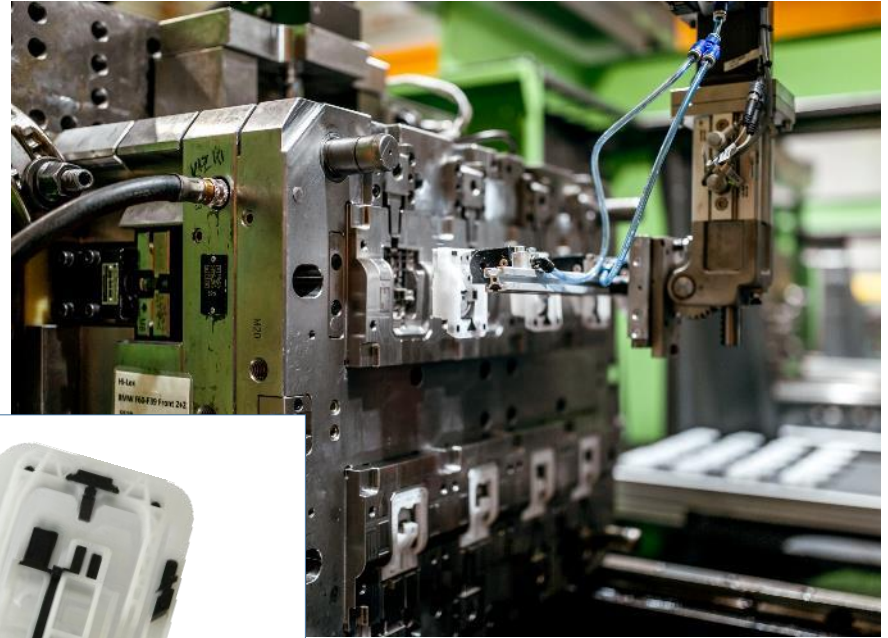


1 COMPONENT INJECTION MOULDING II.



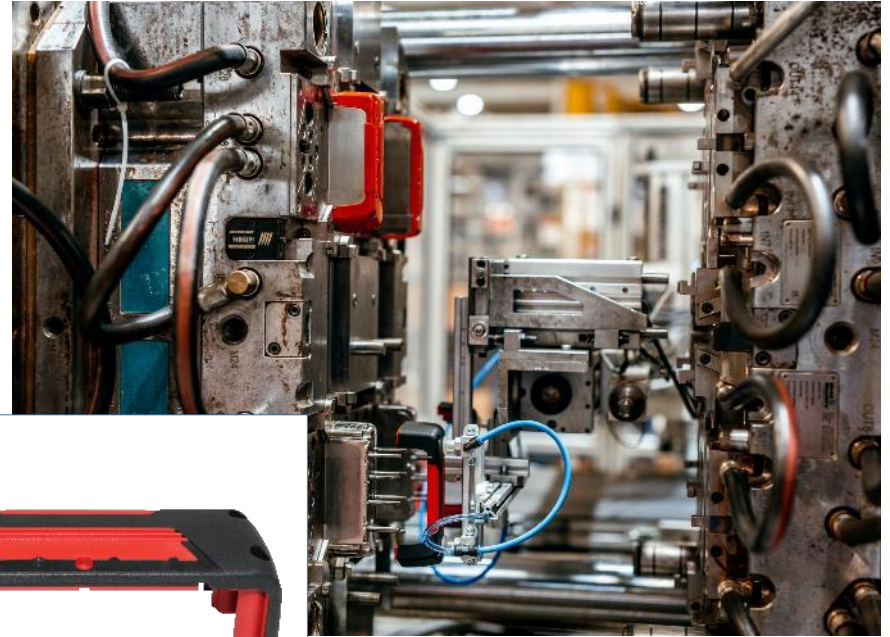
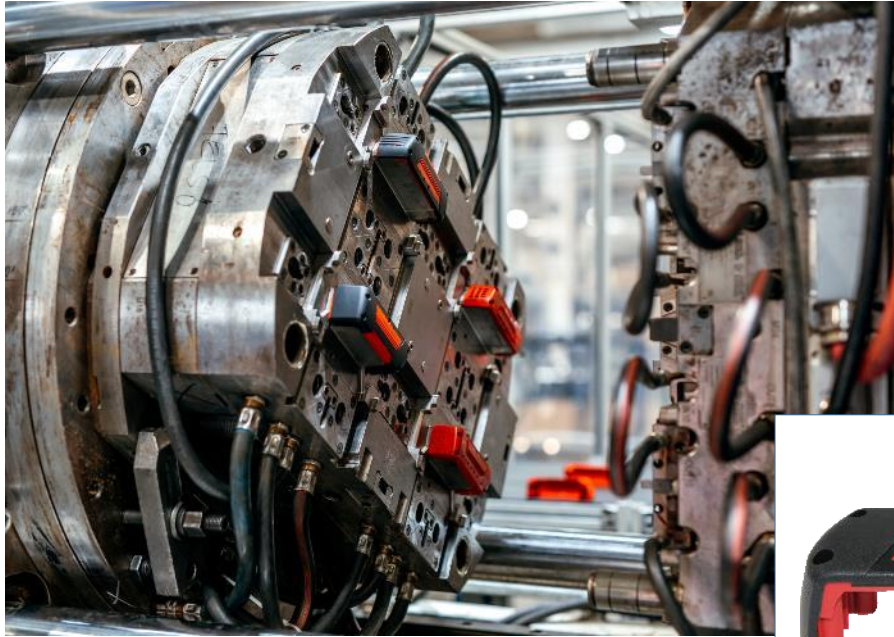
2 COMPONENT INJECTION MOULDING I.

- index plate moulding



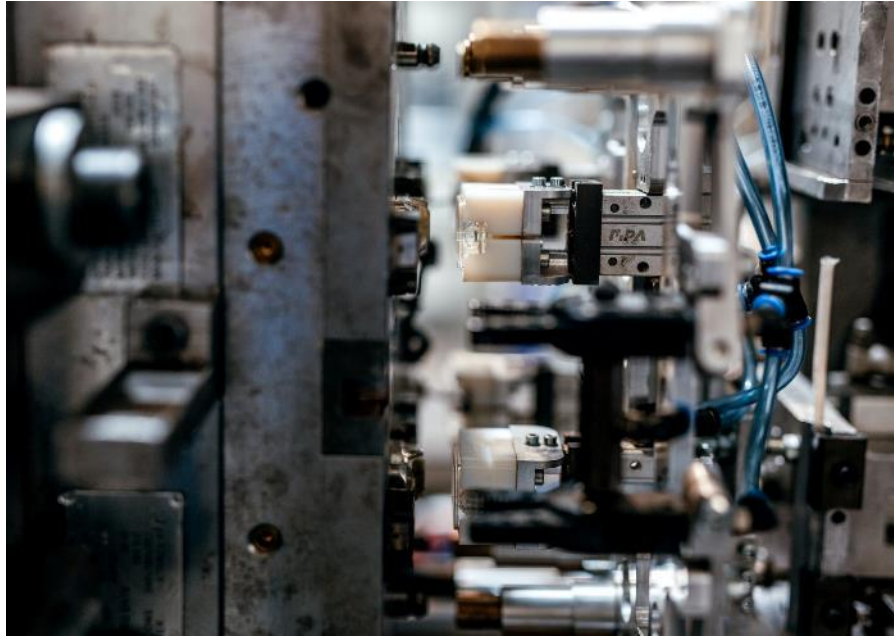
2 COMPONENT INJECTION MOULDING II.

- 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.

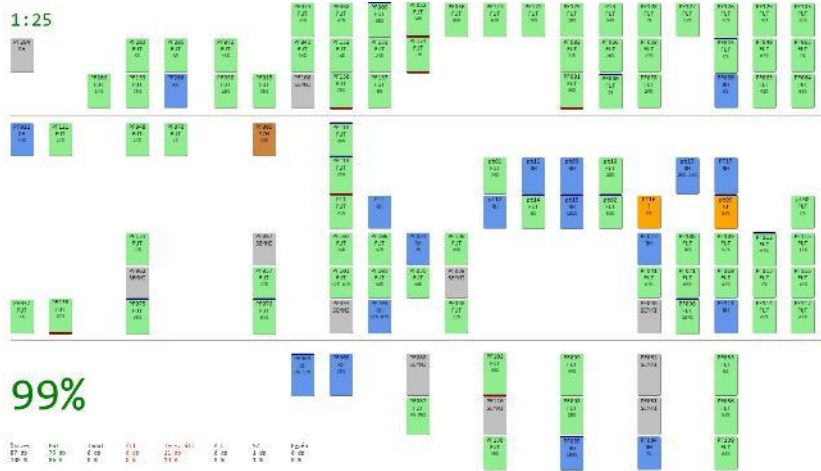
- metal parts



INDUSTRY 4.0 – OUR DEVELOPMENTS I.

On-line terminals

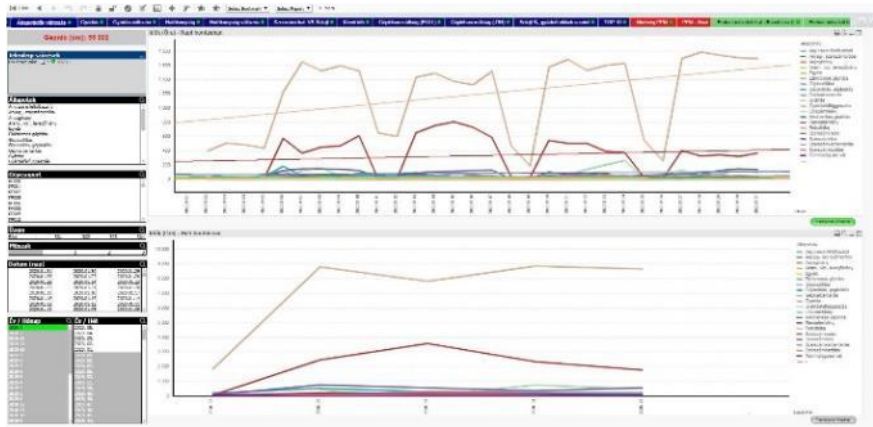
- work instruction / training materials
- technologies
- reporting number of products
- status code updates of injection moulding machines



INDUSTRY 4.0 – OUR DEVELOPMENTS II.

Data evaluation system

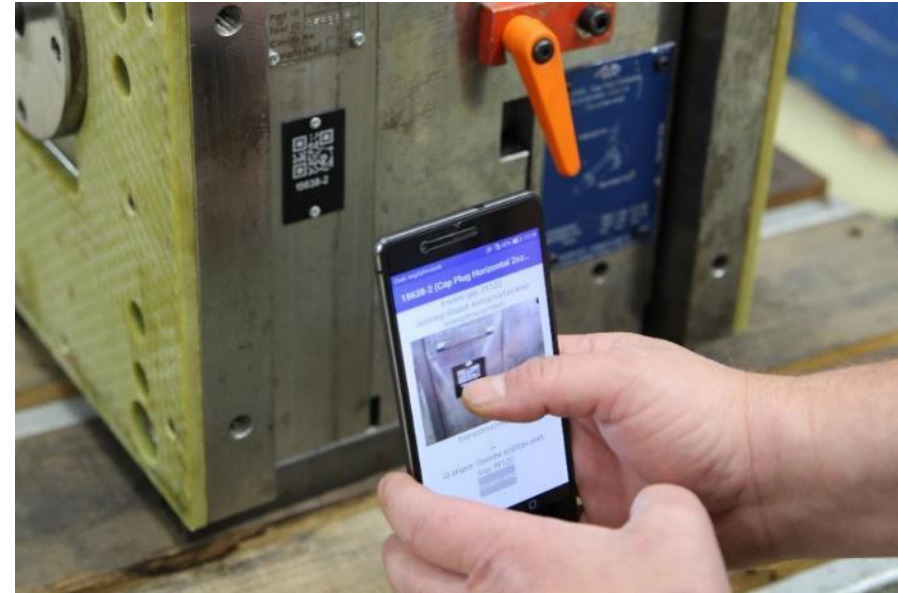
- complex information about existing data of production
- comparisons, data analysis, optimization of efficiency, downtime etc.
- production featured KPIs based on extracted data



INDUSTRY 4.0 – OUR DEVELOPMENTS III.

Tool positioning tracking system

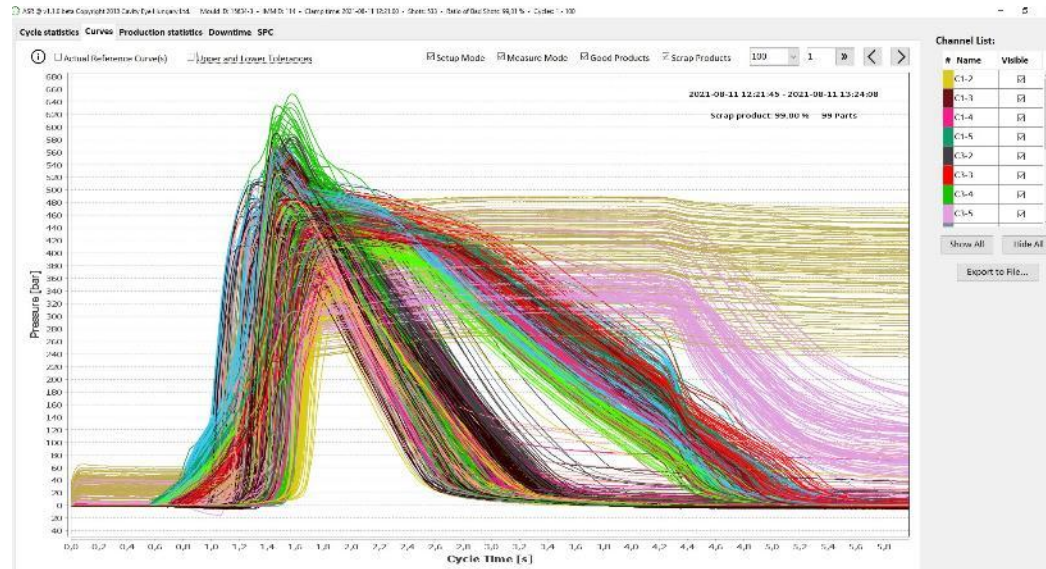
- mobile application
- proper on-line information about the state and the physical place of tools
- barcode identification of tool
- tool repair / maintenance prioritization
- options evaluation system (efficiency improvement)
- downtime optimization



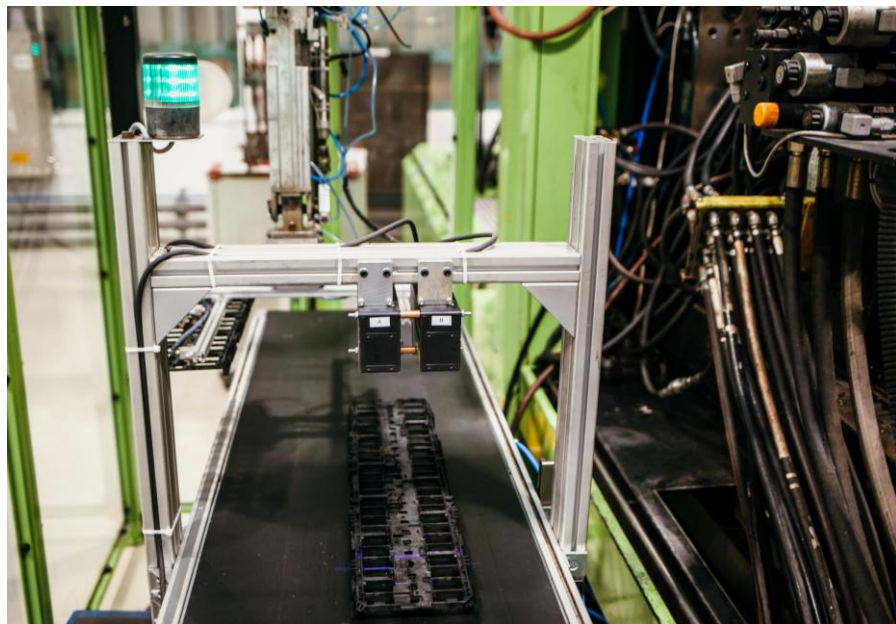
INDUSTRY 4.0 – CAVITY EYE

Collection of data in real-time

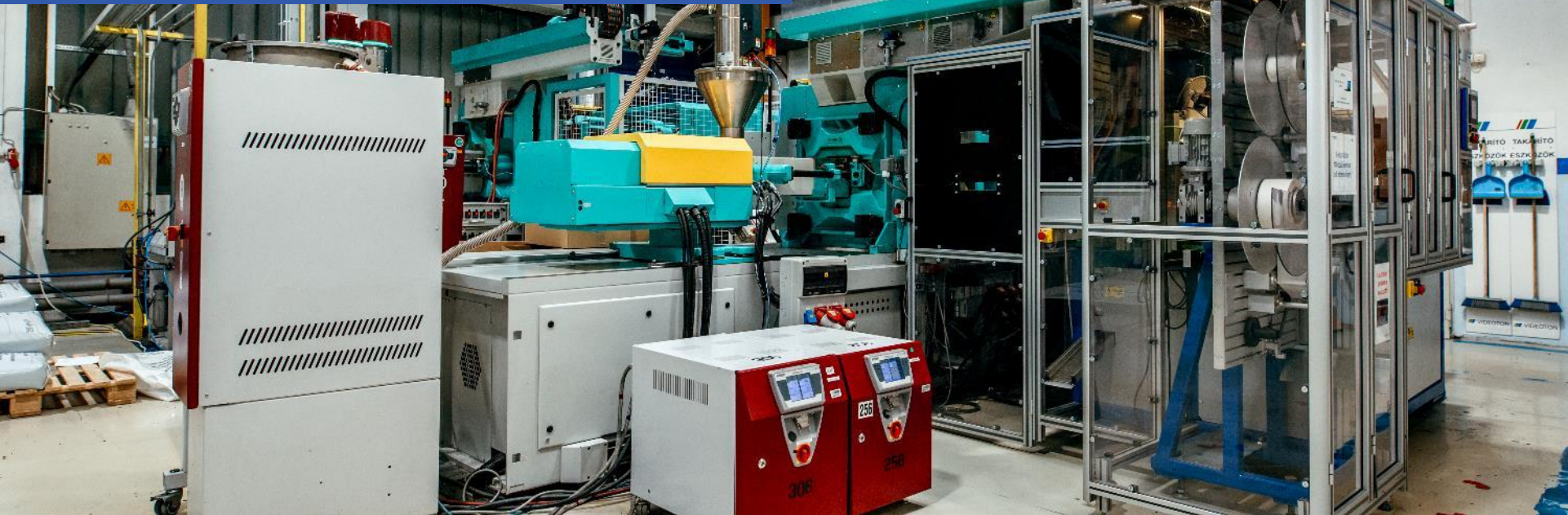
- direct (real-time) data from injection moulding machines, tools and peripherals
- monitoring parameter changes
- on-line tracking of run status of moulding machines
- quick and efficient warning system
- immediate response
- optimized material flow



AUTOMATIC SCRAP DETECTION

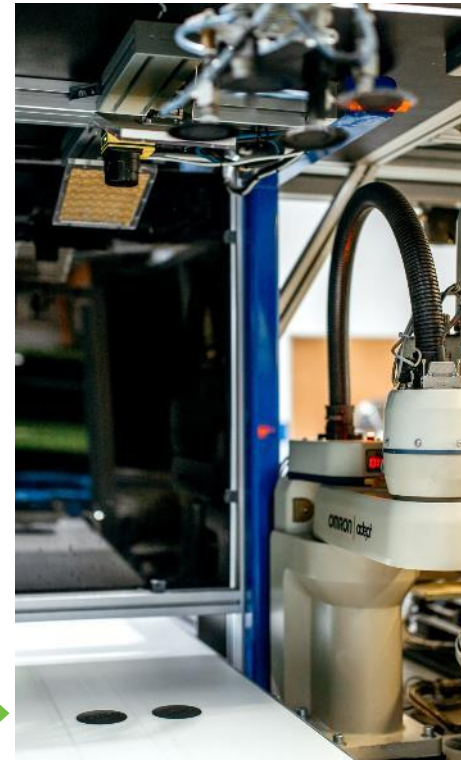


MANUFACTURING CELL



- design and manufacturing
 - PIM
- ➔
- tampo printing
 - labelling
- ➔
- camera quality control
 - automatic scrap selection

MANUFACTURING CELL PROCESS



MOULDING + AUTOMATED ASSEMBLY



TESTS, MEASUREMENTS

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



QUALITY ASSURANCE

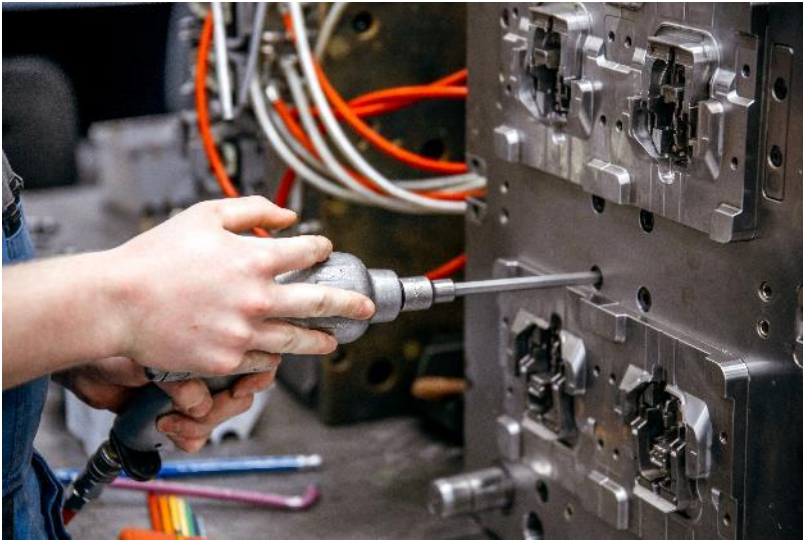
- analyzing root causes, corrective actions
- preparing, maintaining, improving quality documentation (PPAP, checking instruction, work instruction, measuring instructions, failure card)
- tool and raw material trials, first sample tests
- machine capacity and process capacity tests
- R&R tests
- mid-production 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
- GF Mill E 1200
- **Max processing range:** 470 x 500 mm



EDM

Block EDM

- AgieCharmilles Form 20
- **Max processing range:** 350 x 450 mm



Wire EDM

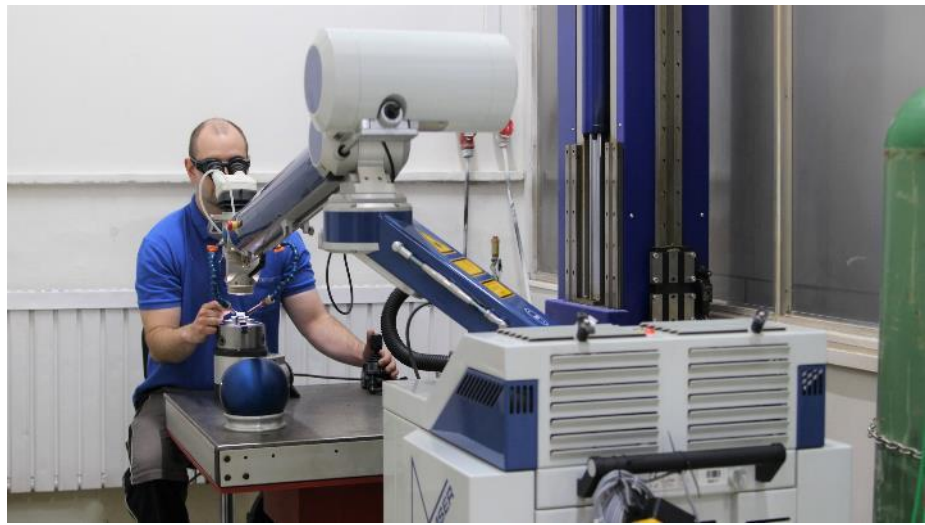
- AgieCharmilles cut 350
- **Max processing range:** 250 x 350 mm



LASER WELDING

Laser welding machine

- Alpha laser ALM 300



GRINDIG

Cylindrical grinding

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

Surface grinding

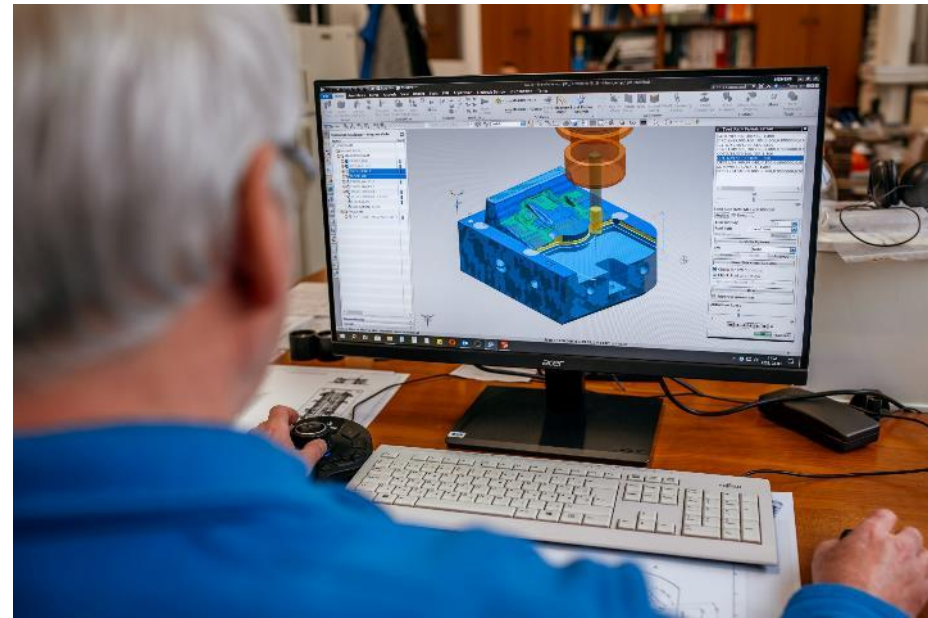
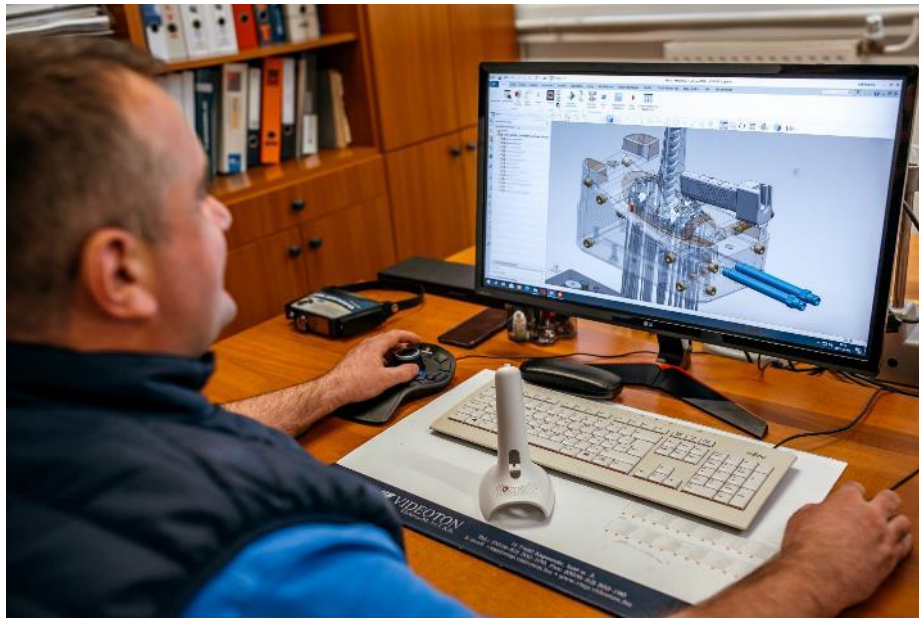
- SEEDTEC 618 / SEEDTEC 1636
- Okamoto
- **Max processing range:** 800 x 400 mm



CAD-CAM DESIGN

Software

- Siemens NX 10



REFERENCES



Amphenol



HI-LEX



metabo



PHILIPS



THANK YOU!

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