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COMPANY INFORMATION

History - Targets – Objectives

Our company was established in the year 1992 like toolshed and manufacturing plant for metal products. In the year 1993 we have broadened our enginery about proper moulding plant of thermoplastics. We have longtime experience with manufacturing of more exacting and precise tools and moulds, other technological equipment and experience with processing of plastic materials - applying state of the art technological procedures guarantee to our partners high quality of our products developed and manufactured accurately in accordance with their needs.

We are specialized mainly on technological accessories. Our products find use almost in all significant areas of automotive and engineering industry, electrotechnics, furniture, energy, building industries, aircraft manufacturing,...

Experience and goodwill of our employees makes it possible to arise all needs of our business partners. Our machinery perform 7 days a week, what guarantees very prompt response on requirements of our Customers – including possibilities of continuous technical consultancy.



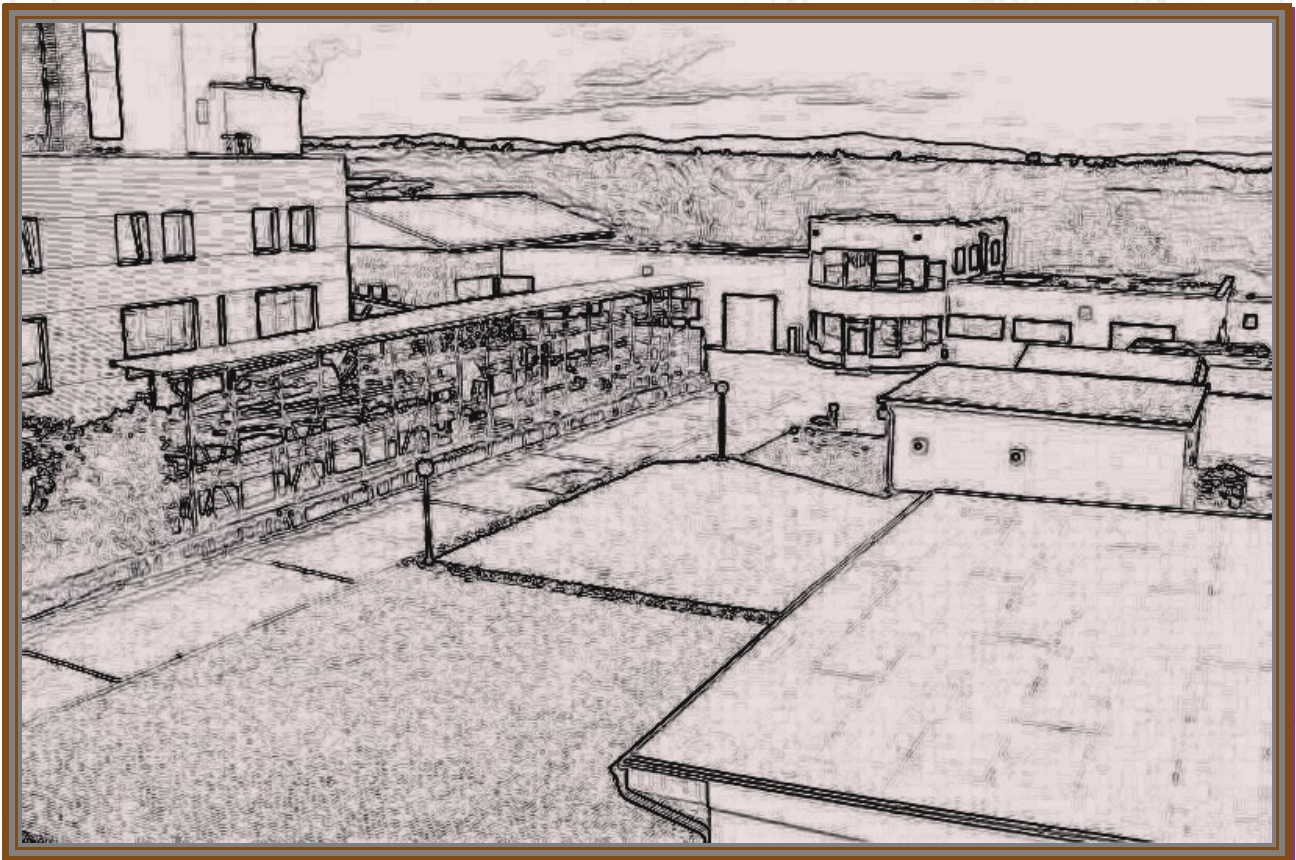
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Executive right of way service of our company is engineering design and manufacturing of products in the way starting and testing procedures of new system projects (new products/goods) – so called start up project (development trends) management.

Company goals to the future are to cover as much as possible large part of supplier production cycle for automotive and electronical industry – from design in accordance with ideas of our Customers, through manufacturing and testing of hand-tooled prototypes to serial production and assembly of moulded pieces and their components – supplied to our partners „Just in Time“.

Our staff will absorb your product's specifications and in return give you the right information you need to enable you to make the right decision about your product feasibility, tooling, material selection, finish and packaging. The company offers complex production solution for Customer, from contract letting to testing and finding the best solution of problems.

We have the technical team and manufacturing facilities that you need to get your new project moving. Our team of skilled designers and programmers will meet your needs and solve any problems you may have in an efficient and professional manner.



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COMPANY ACTIVITIES

Design and Engineering

As a part of our tolshed and manufacturing division we have in-house designing room with 3D CAD/CAM workplace connected via local area network to CNC machinery, quality division and manufacturing control. Our equipment makes possible processing and data transmission of file formats IGES, STP, STL, X_T, DXF, DWG.

To the equipment of company designing room belongs feasibility of accurate 3D scanning of various models using our piezo-scanner with accuracy of 10^{-5} m. We can scan soft materials as well as e.g. plasticine, wax, fruit, fabrics, etc...

At moulds and other products design we actively cooperate with our partners. We are capable to design and manufacture moulds (tools, mouldings) from rough description, roughcast, rough drawing, or after consumer's ideas. We can manufacture according to the printed drawing, or exact documentation delivered to us on electronical data carrier.

Modelling

Company's in-house 3D tool designroom can manage the construction of all types of tooling.

Within the scope of modelling, using third party companies, we are able to provide 3D printing of models/artifacts – for the purpose of their testing procedure and/or other marketing activities.

Consultancy

We provide continual advisory service for our consumers - in the field of design, application of materials, selection and utilization of moulds and tools, processing and utilization of plastic material,... Our Customers can contact us in relation to construction and installation of moulds and tools, as well as other questions in connection with their new projects.

With our experience in plastics we are able to offer advise on polymer selection for new products and welcome being involved in the early component designs stages in order to achieve the best cost effect design for tool manufacture. We have also developed many metal replacements helping our Customers change from steel to plastic components thus making savings on product cost, transportation and having the added bonus of recycling benefits.

Pilot Model Manufacturing

According to needs of our Customers we design and manufacture prototype aluminium moulds appropriate not only for prototype production, but also for small-lot production of plastic goods.

Using prototype tools is possible to examine procedures of different technologies, so to optimize parameters for series production of tools (other articles).

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COMPANY ACTIVITIES

Manufacturing of tools and injection moulds

We work in consultation with the customer to develop and design mould/tool concepts and prototypes including pre-production testing and sampling services, through to the manufacture of the single and multi-cavity production tooling.

From initial concept to final delivery our attention to detail will provide for a trouble free mold order. Our dedication to our customer needs and requirements is our the most important priority.

Manufacturing Programme

- steel and aluminium pressing moulds
- steel and aluminium glueing moulds
- steel and aluminium prototype moulds
- steel and aluminium plastic-foam-filled moulds
- steel and aluminium vacuum moulds
- steel and aluminium blow extruder heads / moulds
- steel and aluminium moulds for rubber vulcanization
- moulds for recycling
- prototype tools from different materials
- processing tools from different materials

We manufacture yearly over 100 pieces of tools, moulds and other devices. Moulds and tools are manufactured on the basis of company design. We can supply tooling for small complicated components to large tools weighing 1000 kg and having size 1000 x 350 mm for one component of a mould (tool).

All manufactured moulds and tools are tested by our company – therefore we supply completely technologically trimmed mould (tool), whereon we produce products by Customers' request. Expeditious, efficient and high quality toolmaking is imperative to the manufacture of all moulded components.

With the added advantage of an in-house moulding facility the tooling manufacture, sampling, modification and final production runs can be done under one roof, with the effect of reduced lead times minimal downtimes on repairs and maintenance whilst providing a cost effective service.

Due to modern computerised design stations are we able to react very fast to all additional modifications arisen during tool manufacturing.

Toolwork References

- Automotive and motorbike industry (BMW, MAN, VW, PSA, VOLVO, JAWA-Moto,...)
- Furniture industry and household articles (Aj OZAP, FILIUS,...)
- Nuclear power station industry and household device technology (VÚJE a.s., Elektrovod, Whirlpool,...)
- Weaponry

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COMPANY ACTIVITIES

Moulding of Thermoplastics

We produce various mouldings using modern injection moulding machines - from all of available materials, especially POM, PA4.6, PA6, PA6.6, PBT, PET, PA, PC, PP, PS, PUR, ABS, PPO, TPE (inclusive polymers filled with glass and carbon fibers). Production is focused on technical mouldings - particularly for automotive, electrical, armament industries.

We can also produce mouldings with inset panning into moulds (metallic inserts/liners/armours, cables, cords, hubs,...) - to produce by using vertical injection moulding machine.

Moulding plant is fitted with continuous drying and additional purification equipment of polymers, likewise with waste recycling unit.

For some consumers are mouldings preassembled to the larger units, where we fit them with supplemental (micro)electronic components.

Mouldings produced by our company are possible to finish using 3D+2D FOBA Laser, to surface them with assorted types of - multicoloured, bitumen coating, metallic, labeled - layers.

The ultimate quality of any injection moulding is very much dependent not only on the design of the component, but also on the design, accuracy and construction of the mould tool.

To examine new products and technologies, likewise for marketing purposes - we do also small-lot production under 100 pcs. of mouldings.

References of Moulding Plant

- *Automotive industry*
 - BMW, VW, Volvo, MAN
 - Peugeot (Faurecia)
 - JAWA-Moto
 - Fiat (Delphi), PSA
 - Rolls - Royce
- *Electronic industry*
 - Applied Precision, Applied Meters
 - Elektrovod
 - Minolta
- *Various plastic mouldings* (Diners Club International, furniture industry Aj OZAP, Whirlpool, household articles,...)
- *Armament industry*
Ministry of Defence and Ministry of Internal Affairs of Slovak Republic
 - Cartridge cases (cal. 44/83, cal. 12) with rubber, tear gas, UV tagging-ink projectiles, and grenade shells (smoke, tear-gas grenades)
 - Plastic components of small arms and other weapons
 - Other unpublished armament products in short supply
 - Commemorative coins and plaques for Department of Defense

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COMPANY ACTIVITIES

3D Laser Tooling and Engraving

At laser workroom we provide a variety of metal cutting services and products, offering complete program for all your moulding tooling needs.

- 3D cutting of mould/tool cavities (grain, micro shapes, pattern of facets/cavities)
- engraving of insets, daters, marking of cavities
- production of electrodes for electroerosion machining
- engraving and cliché manufacturing
- marking of plastic and other components
- marking and engraving of all hardened tool steels and ceramics

As an illustration of this manufacturing technology – go to the page 12 to download and take a look at

- demo video of laser engraving (made by FOBA Laser)
- description of FOBA Laser equipment
- steel cutwork sample

References of Laser Workroom

- Tools for qualitative testing procedure of rubber vulcanization (OKT)
- Marking of moulds and tools (Bosh, Contitech, Danfoss, Leoni, SAM, Tesla,...)
- Engraving of tools insets (ART, Ferrari, Leoni, MTK, Swarovski,...)
- Manufacturing of electrodes for electroerosion machining (Elektrovod, Pellenc, VÚB-Bank,...)
- Marking of different materials (EDF, Siemens, SKODA, TV-Markiza,...)

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COMPANY ACTIVITIES

Other manufacturing

Our company is manufacturer of different single-purpose devices and technological equipment by customized design of our partners.

The largest part of this manufacturing is focused on different equipment used in radioactive waste separation and its treatment in nuclear power station Jaslovské Bohunice (Slovakia) and nuclear power plant Paks (Hungary) .

We carry out one hundred percent inspection on every part that we produce and we are happy to take on large or small batch runs at very competitive prices, we are also used to work on a "Just in Time" delivery basis.

Within Company inspection department, man and machine work simultaneously examining every stage of the manufacturing, what guarantee accuracy and perfection of our production.

References of Other Production

- manipulator for cleaning of radioactively contaminated floor area and treatment of contaminated wallcovering
- containers for radioactive deposit waste
- vibratory separation of radioactively contaminated concrete
- cutter of radioactively contaminated tubing
- dehydrating and pressing device for radioactive sludge disposal
- tools for mass production in food processing industry
- functional and visual parts for interior and exterior jalousies
- various moulds for production of interlocking pavement

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TECHNOLOGICAL EQUIPMENT

Software and Design

- 3D CAD/CAM workplace is interconnected via local area network to CNC devices, inspection and manufacturing control department
- Transmission and data processing in formats IGES, STP, STL, X_T, DXF, DWG
- 3D piezo-scanner with accuracy of scanning 10-5 m. It enables to scan soft materials (e.g plasticine, wax, fruit, fabrics, etc...)

Machine Fleet

- CNC machining centre
- CNC milling cutter
- EDM electroerosion machining device with epicyclic gear set head (hollow and cavity)
- wire electroerosive cutting machine
- FOBA Laser centre G5
- ultrasonic welder of plastic materials
- welding machine facilities - TIG, MIG, AL, CO2, spot welding machine
- ultrasonic and vibratory glazing apparatus
- tool maker milling cutter
- universal milling cutter
- universal engine lathe
- flat-surface grinding machine
- universal circular centre grinding machine
- tool maker grinding machine
- swing radial drilling machine
- columned drilling machine
- moulding press machinery
 - the lockup force to 350 tons
 - the weight of mouldings to 800 grams
 - with possibility of vertical injection moulding
- paintshop and surface finish treatment equipment

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QUALITY OF PRODUCTION

All moulds and tools are before implementation to the production cycle completely tested. We take pride in liaison with our Customers and constant scheduled project meetings means our technical team can monitor every stage of the tool's development to ensure correctness against the Customer specifications.

Once the tool is completed our team will deliver it to our Moulding facility to run stringent trials to assess the tool for any defects and to monitor its manufacturing capabilities to ensure it will perform maximum production efficiency. Focusing to satisfaction of our customers we place the quality of products and delivery schedules on equal level.

PROTECTION OF THE ENVIRONMENT

Whole industrial process of our company is adapted to needs of environmental protection – i. e. health protection of our employees and preservation of healthy environment for our children and future generations (according to standard ISO 14001).

We give increased attention to:

- observe valid law and regulations
- continual regeneration and prevention of environment pollution
- use easily decomposable organic materials and therethrough environmentally friendly agents in our manufacturing methods
- motivate employees, business partners and public to follow antipollution measures

Protection of the environment is not only the company owners obligation, but also of all employees.



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TOPICAL SUBJECTS AND INTERESTINGNESS

Illustration of laser cutting possibility



Description of FOBA Laser facilities
(in format *.pdf)



Demo video of FOBA Laser lasing action



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ADDRESS AND CONTACTS

postal address: *B & D INTEGRAL*
Vajanského 22
903 01 Senec
SLOVAK REPUBLIC

manufactory: *PLAST-FORM s.r.o.*
IČO: 36 288 870 – reg.Okr. súd BA I, odd. Sro, vložka č. 39997/B
Boldocká 3A
903 01 Senec
SLOVAK REPUBLIC

GPS: 48°13'25,80'' N
17°24'25,90'' E

phone: +421 – 2 – 4592 6827

fax: +421 – 2 – 4564 6834

cell phone: +421 – 905 – 298 794

+421 – 905 – 610 955

foreign language +421 – 907 – 451 147

inquiry line: office@bdintegral.sk

e-mail: office@bdintegral.sk

www: www.bdintegral.sk

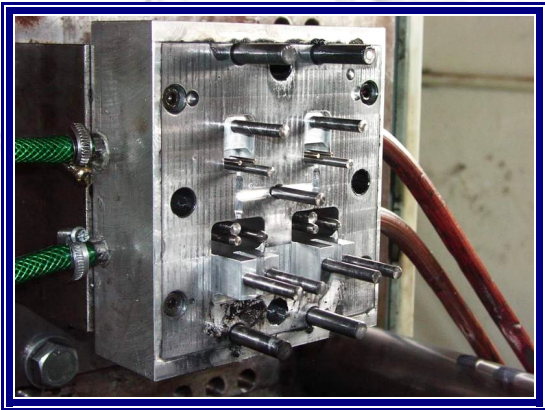
map:



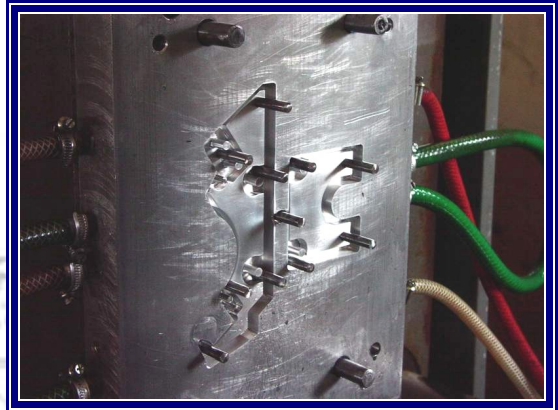
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REFERENCES OF TOOLWORK

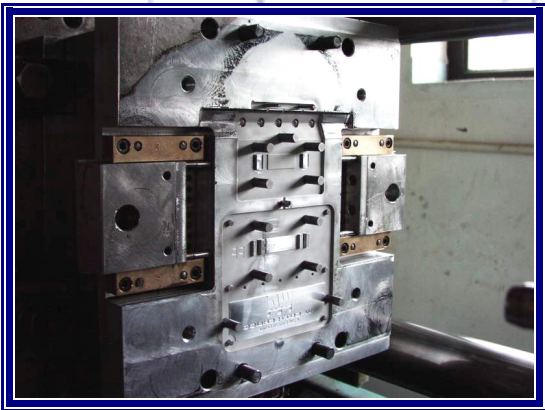
Automotive industry



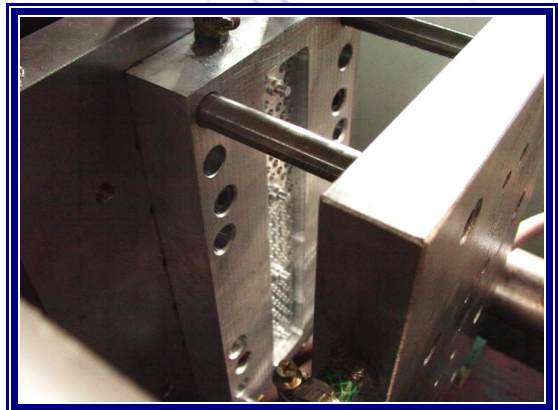
**BMW – Steering Servo Unit – 6601
- injection mould**



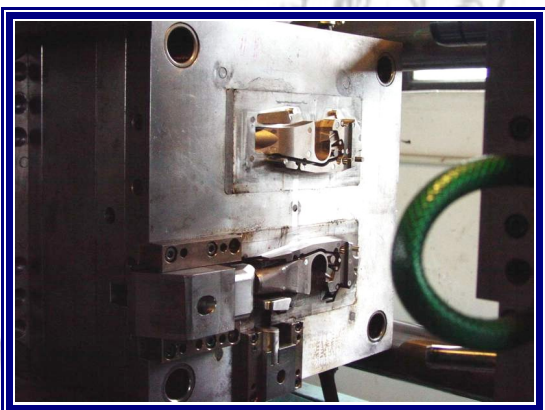
**BMW – Steering Servo Unit – 6602
- injection mould**



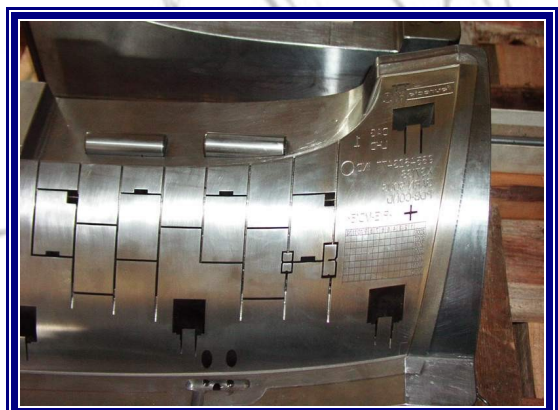
**BMW, MAN – Documents Clip
injection mould**



**BMW – Thrust Bristles
injection mould**



**BMW, VW, VOLVO – Exhaust Box
injection mould**

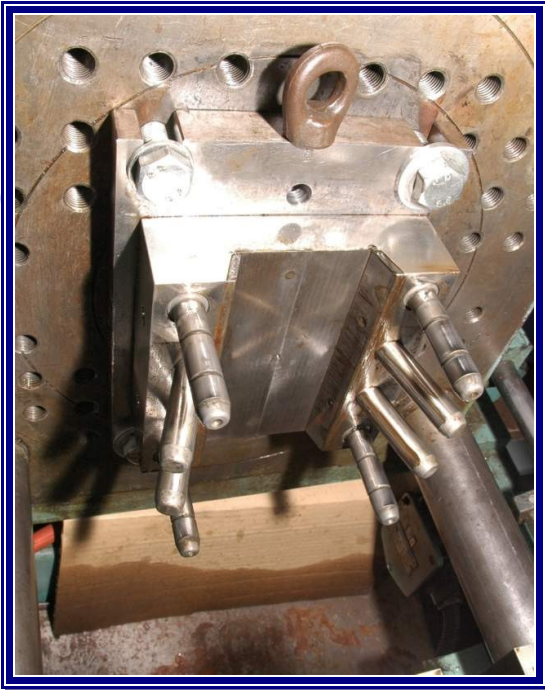


**PEUGEOT (Faurecia) – Car Interior
injection mould**

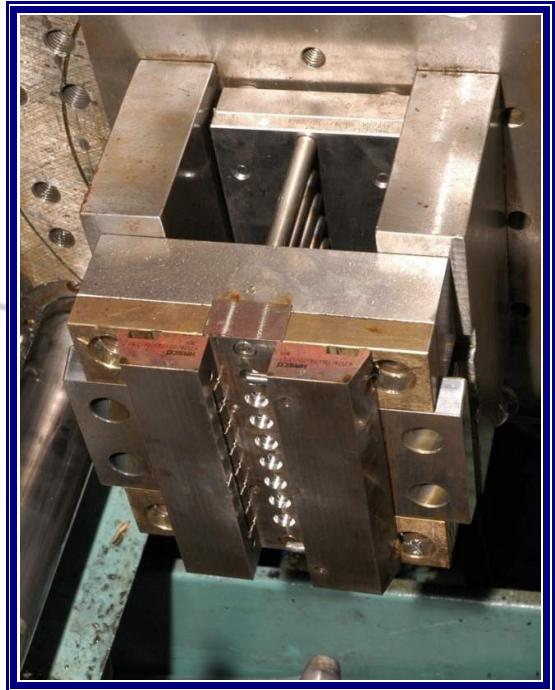
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REFERENCES OF TOOLWORK

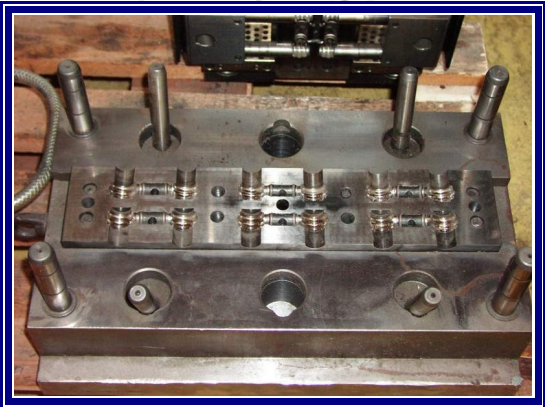
Furniture industry and Household articles



**Aj OZAP – Door Stop
injection mould**



**Aj OZAP – Door Stop
injection mould**



**FILIUS – Phial Holder
injection mould**



**FILIUS – Phial Holder
injection mould**

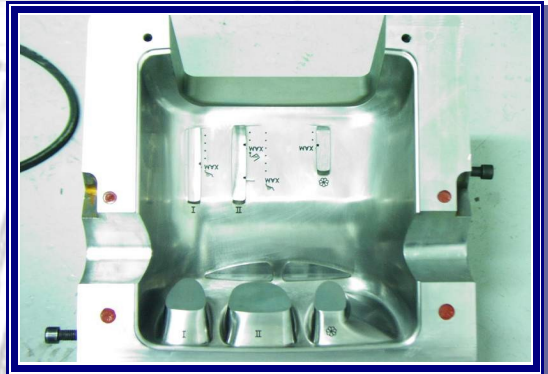
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REFERENCES OF TOOLWORK

Power industry and Household equipment



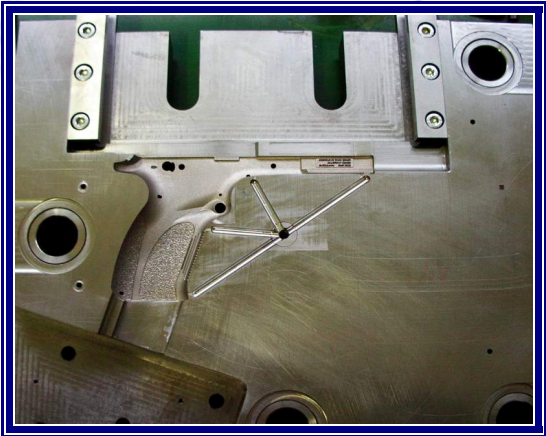
**ELEKTROVOD – Power transmission
Pole Top - injection mould**



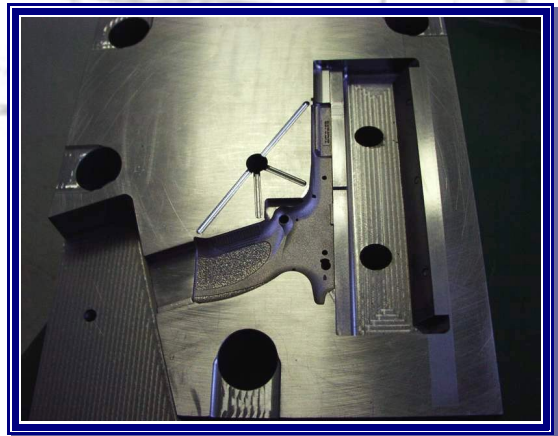
**WHIRLPOOL – Filler
injection mould**

REFERENCES OF TOOLWORK

Armament engineering



**Gunstock
injection mould**



**Gunstock
injection mould**

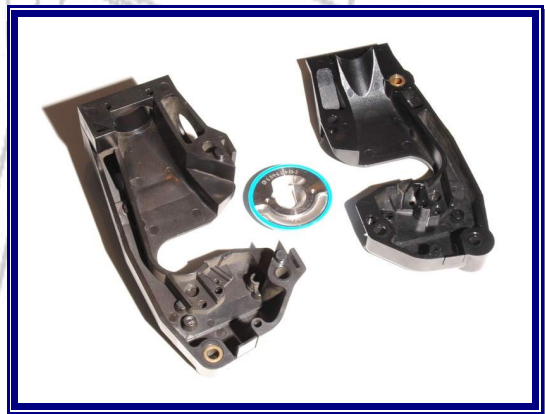
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REFERENCES OF MOULDING PLANT

Automotive industry



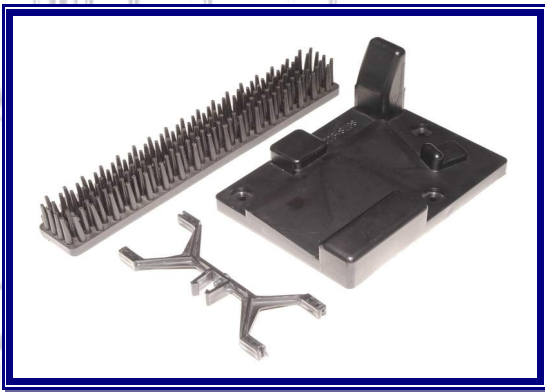
BMW – Air Condition Components



BMV, VW, VOLVO – Welding Unit Exhaust Box



BMW – Hinge Brace Transport System Component



BMW, ROLLS ROYCE Assembly Components



PEUGEOT (Faurecia) - Car Interior



PEUGEOT (Faurecia) - Car Interior

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REFERENCES OF MOULDING PLANT

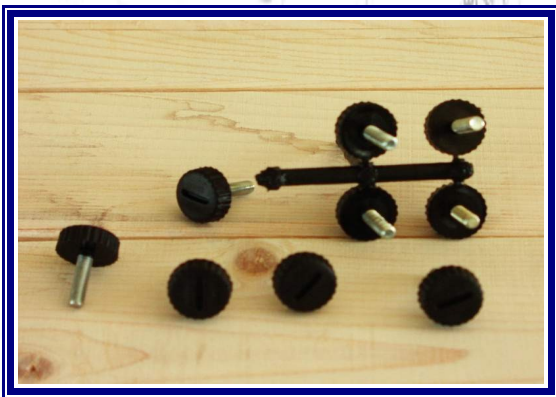
Automotive industry and motorbike industry



JAWA Moto – Motorbike Seat



JAWA Moto – Motorbike Seat



JAWA Moto – Decorative Screws



**FIAT – USB port (Blue&Me Technology)
TOYOTA, PEUGEOT – Interior Components**



**ROLLS ROYCE – Suspension Strut
Transport Systems**

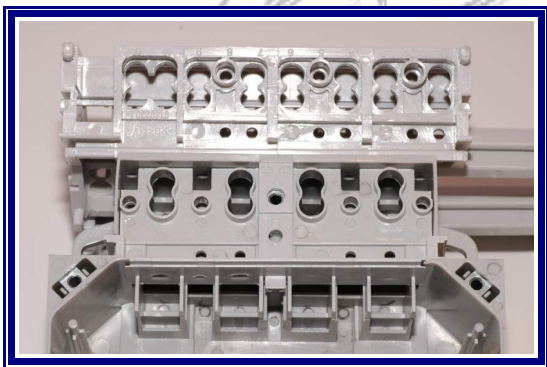


**ROLLS ROYCE – Suspension Strut
Transport Systems**

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REFERENCES OF MOULDING PLANT

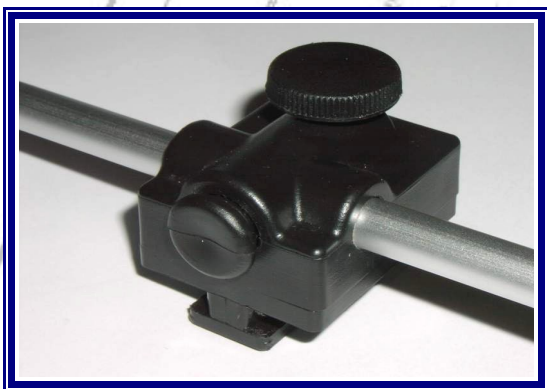
Electronic industry



APPLIED METERS
Terminal Blocks



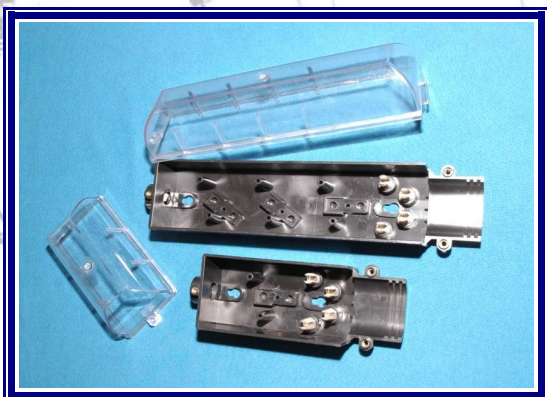
APPLIED METERS
Terminal Blocks



APPLIED PRECISSION
OPS Local Evaluation Unit



APPLIED PRECISSION
OPS Local Evaluation Unit



ELEKTROVOD – Lamp Pole Fuse Box

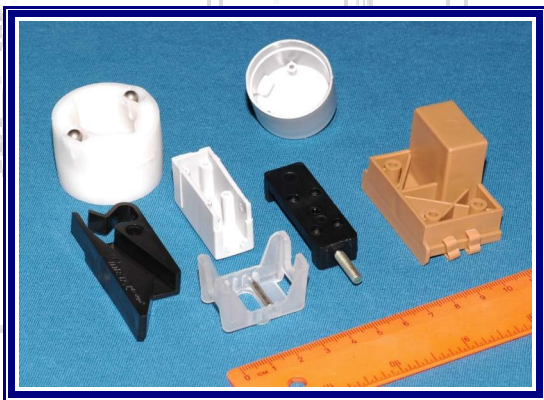


Extension Flex - Connector Boxes

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REFERENCES OF MOULDING PLANT

Various plastic mouldings



Aj OZAP – Industrial Components



WHIRLPOOL – Filler



Domestics



MINOLTA – Toner Cover



Diners Club International – Coin Holder

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REFERENCES OF MOULDING PLANT

Arms' coomponents manufacturing
Ministry of Defense and Min. of Interior of SR



Gunstock



Gunstock



**Commemorative coins and plaques for
Department of Defense**

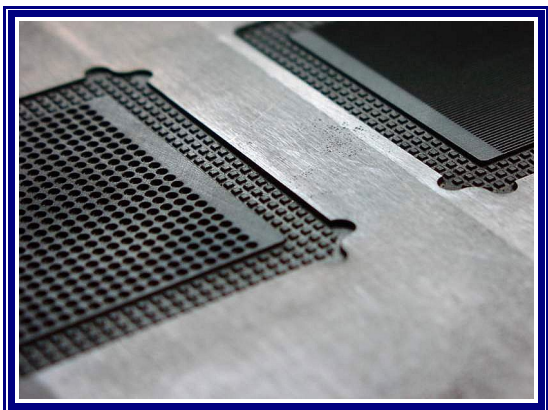


**Cartridge cases (cal. 44/83, cal. 12) with
rubber, tear gas, UV tagging-ink projectiles
and
grenade shells (smoke, tear-gas grenades)**

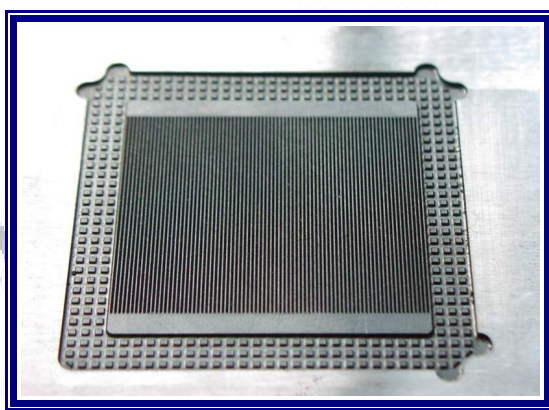
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REFERENCES OF LASER WORKROOM

Marking of moulds and tools



OKT – Tool for testing procedure of rubber vulcanization - size 55 x 55 mm



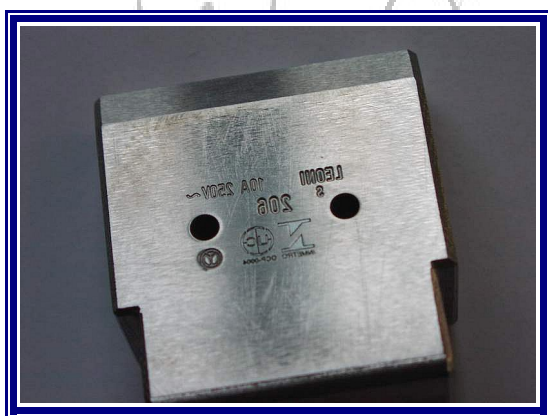
OKT – Tool for testing procedure of rubber vulcanization - size 55 x 55 mm



DANFOSS
Marking and surface of mould



CONTITECH – Mould marking



LEONI – Marking of mould insets



SAM – Marking and surface of mould

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REFERENCES OF LASER WORKROOM

Engraving of tools insets and electrodes



FERRARI – Press Punch



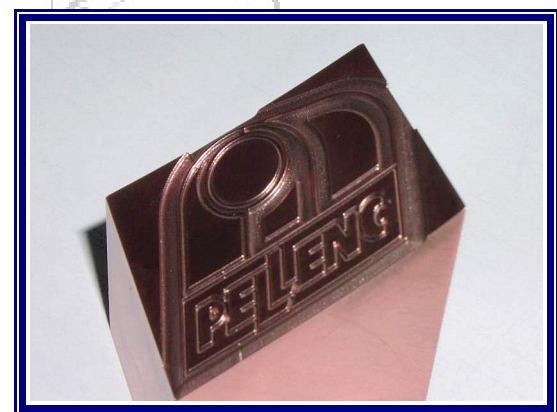
MTK – Marking Press Punch



RYBÁRSKY ZVÄZ – Branding Iron



Marking inset



PELENC – Electrode for EDM



VÚB BANKA – Electrode for EDM

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REFERENCES OF LASER WORKROOM

Marking of different materials



EDF – Handout



SIEMENS – Handout Ashtray



TV MARKÍZA – Handout Piece



ŠKODA AUTO – Roomster Advertising



SWAROVSKI - Punch

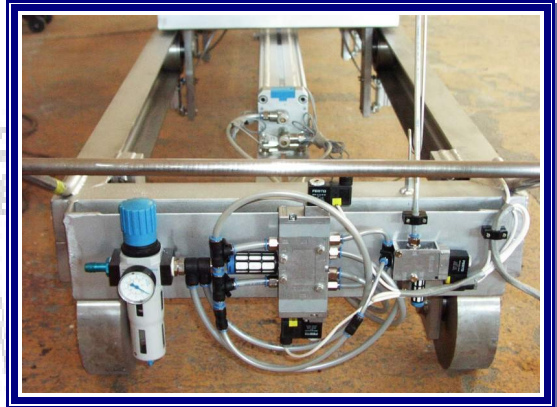
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REFERENCES OF OTHER PRODUCTION

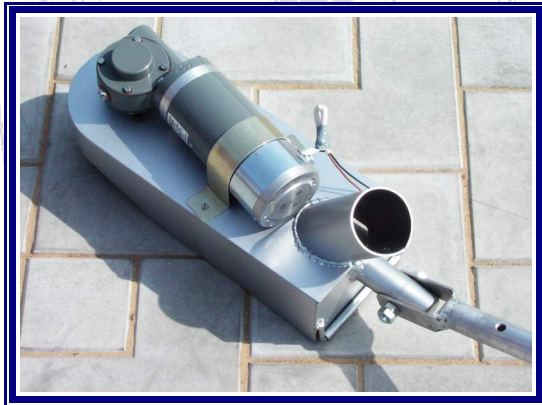
nuclear power plant - 01



**VÚJE a.s. – Manipulator for cleaning of
radioactively contaminated floor area**



**VÚJE a.s. – Manipulator for cleaning of
radioactively contaminated floor area**



VÚJE a.s. - Scrabler



VÚJE a.s. – Wallcovering tear off



**VÚJE a.s.
Container for radioactive deposit waste**

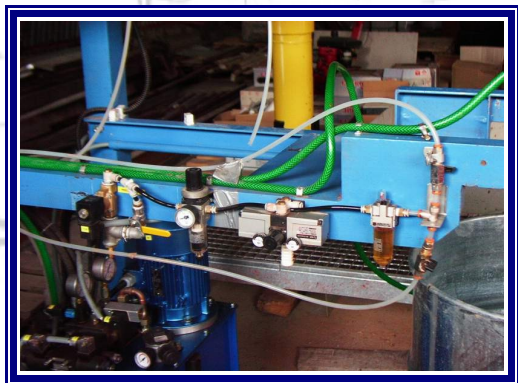


**VÚJE a.s.
Container for radioactive deposit waste**

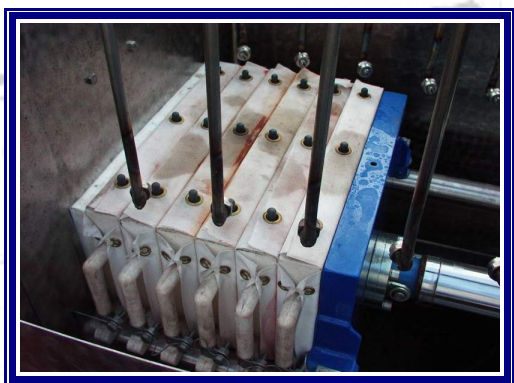
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REFERENCES OF OTHER PRODUCTION

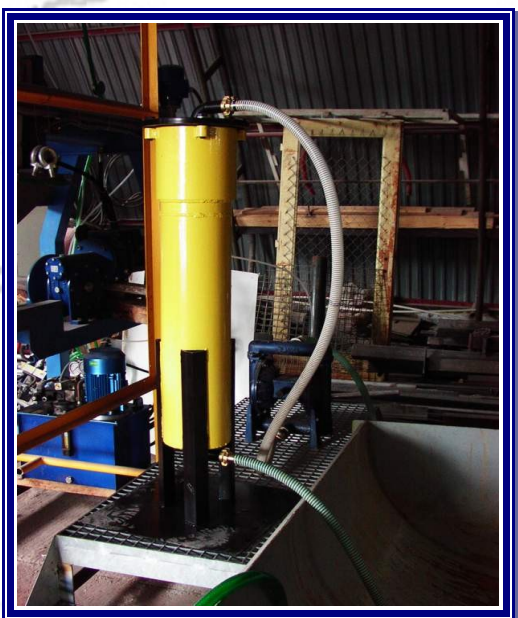
nuclear power plant - 02



VÚJE a.s. – Dehydrating device for radioactive sludge disposal



VÚJE a.s. – Pressing device for radioactive sludge disposal



**VÚJE a.s.
Filter for radioactive sludge disposal**



VÚJE a.s. – Pressing device for radioactive sludge disposal



VÚJE a.s. – Vibratory Separator of radioactively contaminated concrete



VÚJE a.s. - Cutter of radioactively contaminated tubing

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REFERENCES OF OTHER PRODUCTION

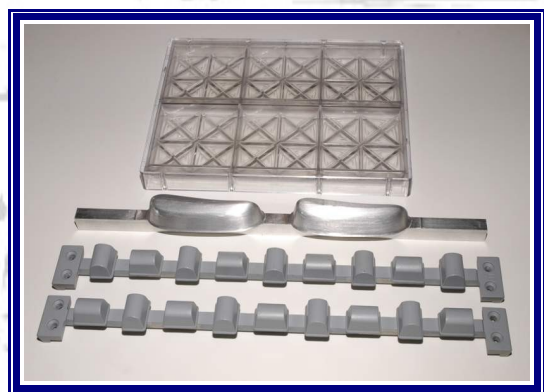
food processing and building industries



IDC Holding, Figaro – Force, Shape



IDC Holding, Figaro – Force, Shape



IDC Holding, Figaro – Force Modules



Various Forms for Interlocking pavement

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