H2P BOHEMIA

INDUSTRIAL 3D PRINT ⬢ METALWORK AND LOCKSMITHING ⬢ MACHINIG

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CUSTOMER'S WISH + OUR EXPERIENCE
= **SUCCESSFULL PROJECT**

CONSULTATION

SOLUTION CONCEPT

REALISATION

CRAFT AND TECHNOLOGIES

Quality and competency of our professionals, advanced modern technologies, proved and reliable suppliers, responsible and experienced management. We believe these aspects to be the key part in fulfilling of our mission – a satisfied customer. Customer that will return to his reliable partner with joy and full trust.

Each of these aspects plays extremely important part in our team. But can never achieve the goal on its own. We managed to combine these „gears" into perfect symbiosys to move in the right direction. We created very–well working mechanism that can re-make customer's wish and needs into high-quality and affordable reality in a real timetable.

High-quality of the craft and use of the latest modern technologies simply belong together.

And we at our company know the best!

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INDUSTRIAL
3D PRINT

METALWORK
AND LOCKSMITHING

MACHINIG

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INDUSTRIAL
3D PRINT

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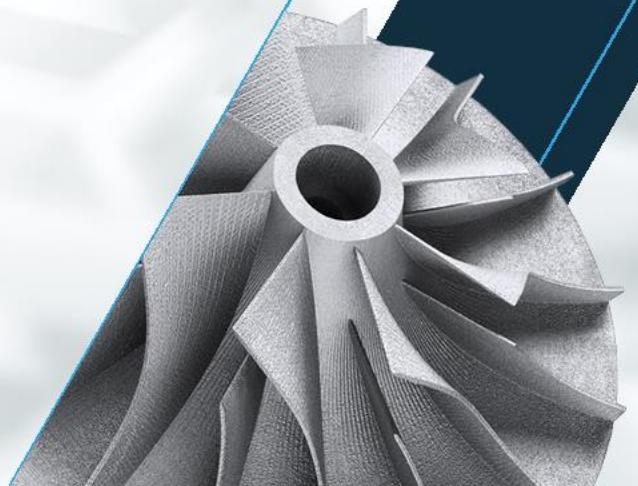
INDUSTRIAL 3D PRINT

BENEFITS

1. LOW COST
2. ALMOST UNLIMITED PRINT OPTIONS
3. LOW WEIGHT
4. PLASTIC AND METAL 3D PRINT
5. PRODUCTION SPEED
6. RESISTANCE TO BURNING
7. HIGH STRENGTH



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INDUSTRIAL 3D PRINT

PLASTIC COMPOSITE PRINT

we can increase the strength of the product with glass, carbon, or kevlar fibres

THERMOPLASTIC POLYMERS AND RESIN PRINT

no need for injection moulds, fast and clean series production

HEAT-RESISTANT PLASTIC POLYMERS PRINT

we can also print with UL94 V0 materials

UNIQUE METAL PRINT

use of tool steel, INCONEL 718 heat-resistant nickel alloy and AlSi 10Mg foundry aluminium alloy and stainless steel

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INDUSTRIAL 3D PRINT

CONSULTATION WITH CUSTOMER

We will discuss your requirements together and prepare a solution perfectly satisfying your needs, including used materials and technologies.

REPRINT OF COMPLICATED PARTS

We manufacture the base of the product on CNC or EDM machines, and complex parts are 3D printed. In the end, we complete all parts into final product.

INJECTION MOLDS

We print the complex parts of injection molds of metal, including ideal tracing of cooling circles.

Small molds can be printed whole.

STANDARD MOLDS

Prints of the moulds containing wax binding allow reliable moulding of smooth and detailed parts.

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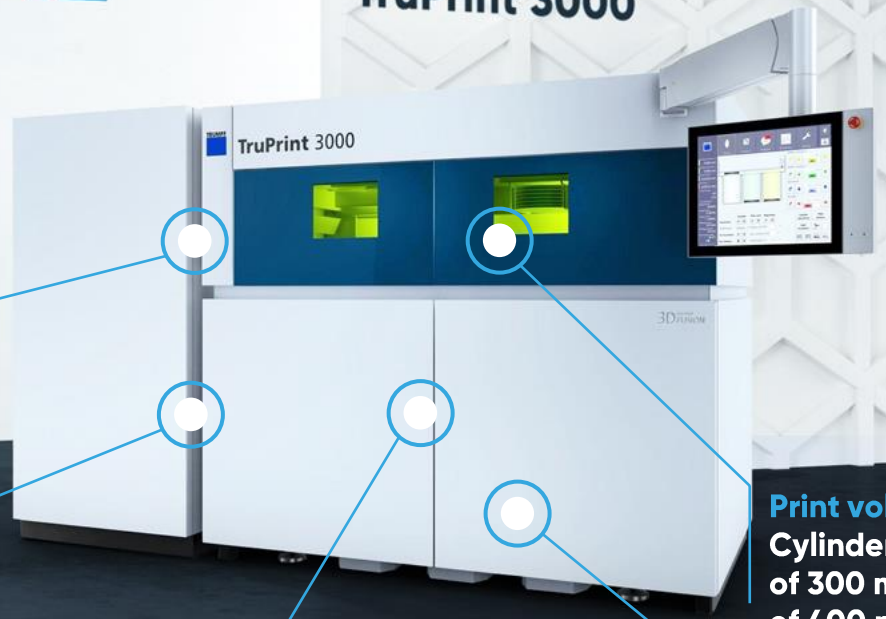
TECHNOLOGIES

INDUSTRIAL 3D PRINT

We print from metal

3D metal printer
TruPrint 3000



Print from weldable metals

Preheating
up to 200° C

Laser power
up to 500 W

Print volume:
Cylinder with a diameter of 300 mm and a height of 400 mm

Beam diameter
100 – 500 µm

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TECHNOLOGIES

INDUSTRIAL 3D PRINT

We print from plastic composites

Plastic composites
3D printer
Markforged X7

Reinforcement with carbon, kevlar, high-strength glass, or high-temperature glass fibre

Print volume
330 × 270 × 200 mm

Printout tensile strength
up to 800 MPa

Bending stiffness of the printout
up to 51 GPa

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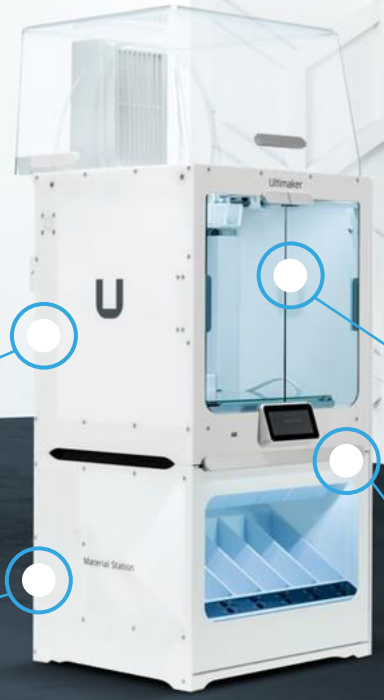
TECHNOLOGIES

INDUSTRIAL 3D PRINT

We print from thermoplasts

3D thermoplastic printer
Ultimaker S5 Pro Bundle



Print of technological systems FFF/FDM

Operating temperature up to 280 °C

Print volume 330 × 240 × 300 m

2 synchronous nozzles controlled by the latest software

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TECHNOLOGIES

INDUSTRIAL 3D PRINT

We print from resin

3D resin printer
Formlabs Form 3

LFS technology
(Low Force Stereolithography)

print volume
145 × 145 × 185 mm

Options of colour print
or easy colouring of printouts

A wide range of original materials tailored for different industries

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INDUSTRIAL 3D PRINT

PLASTICS

- ✓ PLASTIC PROTOTYPES
- ✓ SMALL SERIES OF PLASTIC PARTS
- ✓ FUNCTIONAL BLISTERS AND JAWS FOR AUTOMATED WORKPLACES
- ✓ SPARE PARTS FOR VARIOUS APPLICATIONS
- ✓ MOUNTING FIXTURES AND ACCESSORIES
- ✓ CAPS, COUPLINGS, REDUCERS

METALS

- ✓ COMPLEX INJECTION MOULDING PARTS WITH IDEAL COOLING CHANNEL PROFILING
- ✓ DIFFICULT-TO-MACHINE OR NON-MACHINABLE PARTS
- ✓ INJECTION MOULD PROTOTYPING
- ✓ SEMI-FINISHED PRODUCTS INTENDED FOR FINISHING

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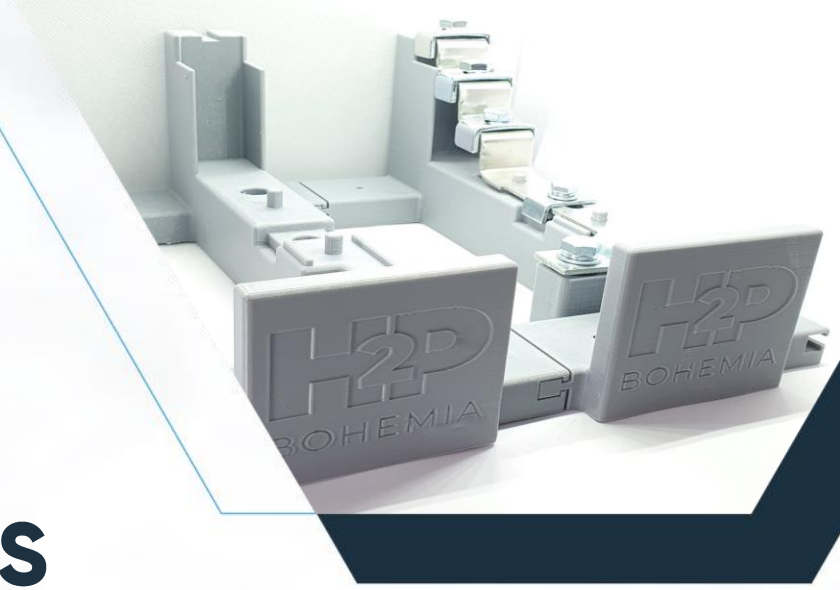

3D PRINT
ASSEMBLY FIXTURES

ASSIGNMENT

Assembly fixtures for hand-made assemblies. Substitutes for current metal fixtures.

Requirements:

- ✓ low weight
- ✓ no sharp edges (abrasions elimination)
- ✓ quickly widened or lowered workplace options
- ✓ low price

SOLUTION

Fixtures have no sharp edges eliminating the risk of minor injuries and are ready for easy connection/disconnection thanks to locks.

Prototype was ready in two days and by that time it was ready for full process testing.

BENEFITS

Tests led to a minor fixture optimization.

Fixtures were delivered in a very short time.

Following re-order of the same fixtures was as fast as the testing one.

Cost savings were 30 % compared to original fixture.

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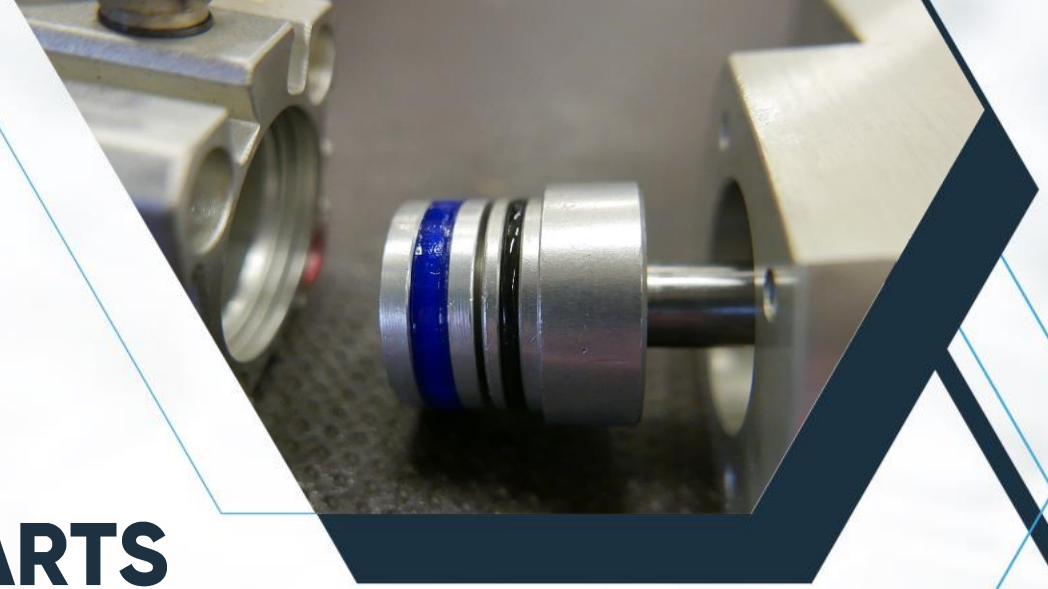
3D PRINT
MACHINE SPARE PARTS



ASSIGNMENT

Spare parts in our production cycle.

1. The long-turn automatic machine broken seal always means a long production stop.
2. Cracked screw at the hand bender's stop control is a potential risk as it could lead to cutting yourself.

SOLUTION

Printing the parts on our own printers.

1. We used TPU95 material for fast printing of the seal.
2. PETG material was used for printing of the metric screw case.

BENEFITS

Production stops elimination and following of the OSH protocol.

1. We would wait for 3 weeks for the delivery of the original spare parts from supplier. Our own seal was installed 3 hours after the failure was detected.
2. The screw case edges are smooth and strong. Cutting of the worker due to cracked screw is now impossible.

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METALWORK
AND LOCKSMITHING

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METALWORK AND LOCKSMITHING

LOCKSMITH PRODUCTION

Our experienced team can handle small parts as well as the entire constructions of gates, fences, walkways, and more.

METALWORK SINGLE-PIECE AND SERIAL

We can produce whole series, units, or prototype sets.

WELDING OF IRON, ALUMINIUM AND STAINLESS STEEL

Series production is handled by a robot, while single-piece production is handled by qualified welders.

Welding methods: MMA, TIG, MIG/MAG, flame cutting and welding, and brass brazing.

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METALWORK AND LOCKSMITHING

CONSULTATION

We will discuss your requirements together and prepare a solution perfectly satisfying your needs.

MODEL CREATION

We have modelling software that allows us to work with both simple and complex models.

COOPERATION

We have an extensive network of partners for any services we cannot perform ourselves, so you can get what you need under one roof

Thanks to our partners, we can deliver products both coloured and electroplated.

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TECHNOLOGIES

METALWORK AND LOCKSMITHING

Maximum precision
thanks to reliable equipment

AUTOMATED WELDING

INDUSTRIAL ROBOT
FANUC ARC MATE 100ID/8L +
WELDING EQUIPMENT
FRONIUS TPS 400I PULSE

Reproducible accuracy
+- 0.03 mm

Optimised communication
between the robot and the machine

Highly improved
welding properties

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TECHNOLOGIES

METALWORK AND LOCKSMITHING

Maximum precision
thanks to reliable equipment

PRESSES

Automated material feeding options

Nominal forming force
40 t and 100 t

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METALWORK AND LOCKSMITHING

OTHER **TECHNOLOGIES**

BENDER

FALLING SHEARS

WELDING MACHINES

SAWS

DRILLS

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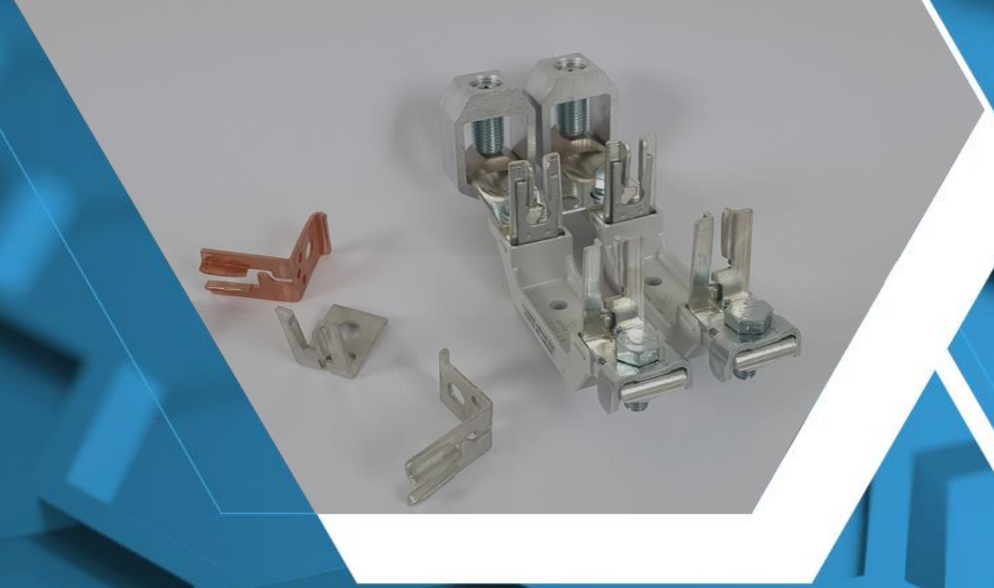
SERIAL **METALWORK**



PRODUCTION

Eccentric presses allow quick division, forming or perforation of sheet materials.

FIXTURES

We use mainly our own tools and fixtures for the metalwork.

ASSEMBLY

We are well-equipped for further assembly of the parts made by our workshop into functioning units.

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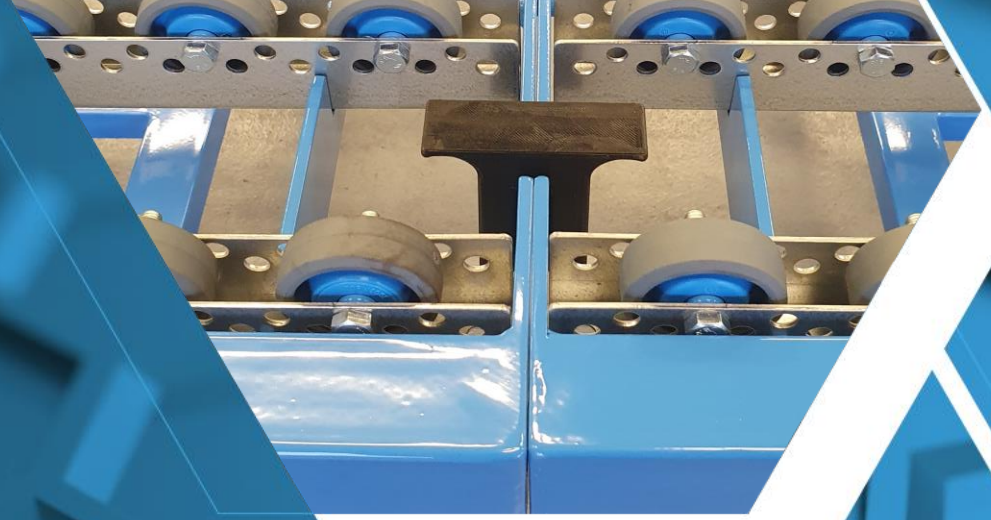
LOCKSMITHING
MANIPULATIVE TRACKS



ASSIGNMENT

Easier manipulation with products during the process.

Price and mobility are the key aspects.

SOLUTION

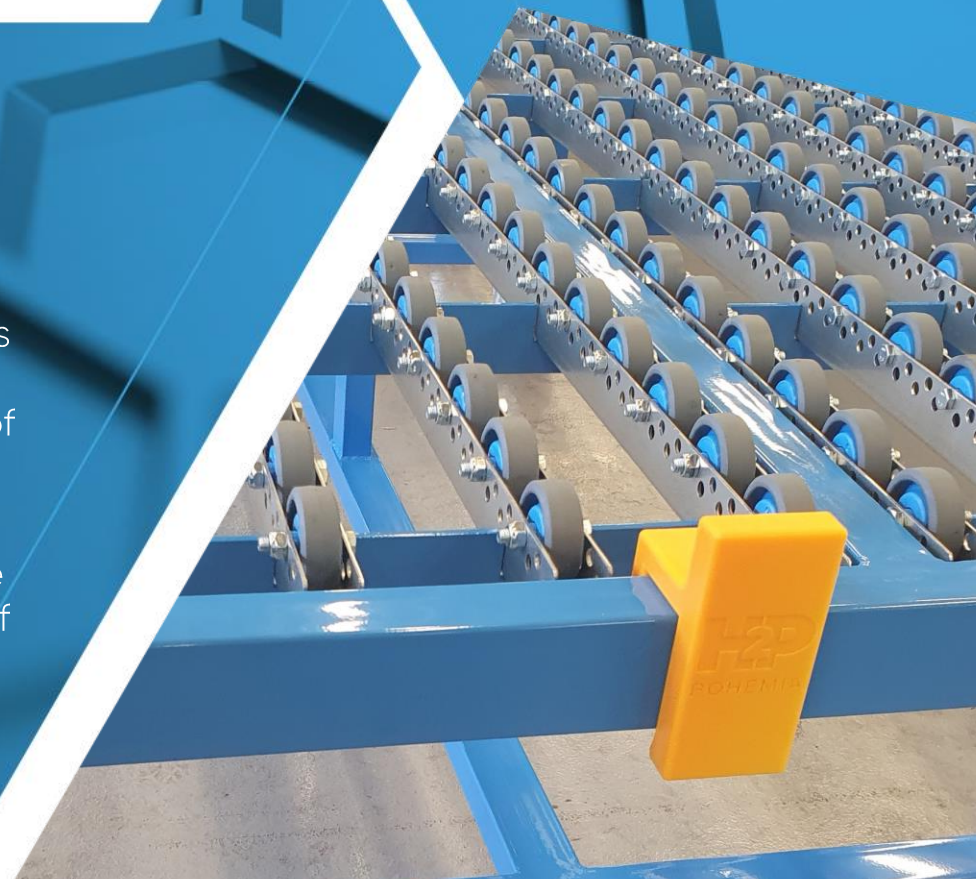
Metal construction is equipped with pulley bars. Mobility is ensured by the wheels with foot brake.

On the 3D printer, we printed final stops that prevent the object from falling down and junctions for easy connection and disconnection of the tracks.

BENEFITS

Pulley bars system allows very easy manipulation with the object. On top of that, the price is highly reasonable.

It is very easy to replace only one pulley in case of failure.



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MACHINING

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MACHINING

CNC AND EDM MACHINING

Maximum possible precision thanks to a combination of state-of-the-art machine tools and electroerosive technological procedures.

SINGLE-PIECE AND REPEATABLE PRODUCTION

Our machines can handle both single-piece production and series production.

SERIAL PRODUCTION

Our long-turn automatic machine can handle large batches of small workpieces.

REPAIRS

We can repair tools, moulds, and jigs, make punches, dies, etc..

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MACHINING

CONSULTATION

Your satisfaction is our goal, and that's why we are happy to provide expert advice and consult on the entire process, right from the design stage.

FAST DIGITIZATION

Thanks to our 3D scanner, we can very quickly digitize almost any object into a form that can be processed in other applications.

AUDITED METROLOGY

Our measuring devices are being taken care of by professional partner on regular basis.

These are being regularly checked and maintained by accredited specialist.

COOPERATION

We have an extensive network of partners for any services we cannot perform ourselves, so you can get what you need under one roof.

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NEW TECHNOLOGIES

3D SCANNING

Maximum precision
thanks to reliable equipment

3D SCANNER
ZEISS T-SCAN
hawk

Scanning of details and deep holes

Precision scanning
0.035 mm

A great mobile
3D scanning solution

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TECHNOLOGIES

CHIP MACHINING

Maximum precision
thanks to reliable equipment

CNC LATHE
KOVOSVIT MAS MASTURN I550 - 800

Spindle speed range
0–3 000 r./min^{-1}

Maximum table load 600 kg

Turning length
800 mm

Maximum machining diameter 500 mm

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TECHNOLOGIES

CHIP MACHINING

Maximum precision
thanks to reliable equipment

5-AXIS MACHINING CENTRE
KOVOSVIT MAS
MCV 1100

Tilt A-axis
+- 110 °

Infinitely variable spindle speed range 20–12 000 r./min^{-1}

Table clamping surface Ø 520 mm

X/Y/Z-axis travel
880/650/520 mm

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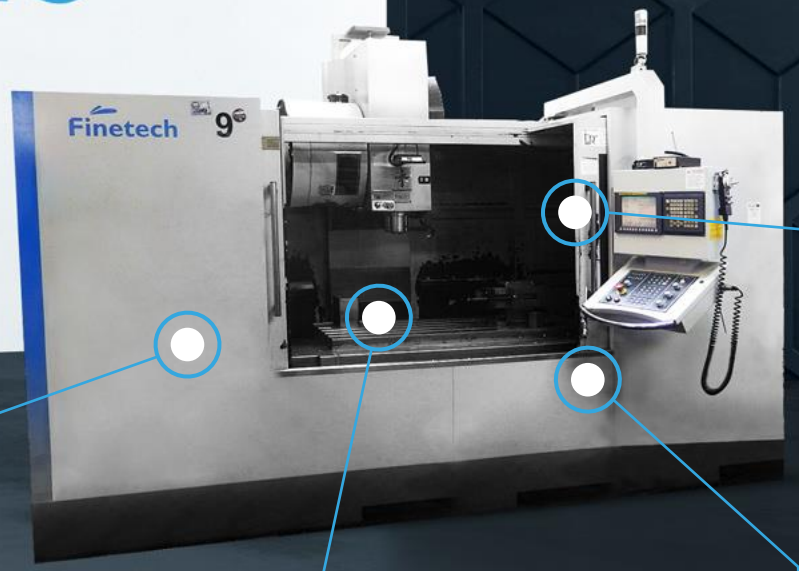
TECHNOLOGIES

CHIP MACHINING

Maximum precision
thanks to reliable equipment

MACHINING CENTRE FINETECH 1570-3L



Fourth axis
360 °

Infinitely variable spindle speed range 20–10 000 r./min^{-1}

X/Y/Z-axis travel
1570/700/650 mm

Workplace dimensions
1 650 × 700 mm

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TECHNOLOGIES

CHIP MACHINING

Maximum precision
thanks to reliable equipment

Long-turn automatic
machine **JSL-20A**

Workpiece diameter
up to 20 mm

Automatic washer
ELLEGELLE MRO 200

Volume of baskets
2 × 20 kg

Drying temperature
up to 80° C

Pump with a power
of 130 l/min.

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TECHNOLOGIES

EDM MACHINING

Maximum precision
thanks to reliable equipment

Wire cutters

FANUC Robocut alfa-C400iA
Mitsubishi FA 20
Mitsubishi DWC 110

Possibility of continuous **workpiece placement**

Maximum table **load 600 kg**

Workpiece size up to **730 × 630 × 250 mm**

Cutting angle **+- 30°**

Workpiece size up to **1050 × 800 × 295 mm**

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TECHNOLOGIES

EDM MACHINING

Maximum precision
thanks to reliable equipment

EDM drill
YOUNG TECH SY2030-A

Electrode diameter
0.2 mm – 3 mm

Maximum workpiece weight 500 kg

Maximum drilling depth 300 mm

Sinking machine
Penta CNC E46

Filling height
400 mm

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MACHINING

OTHER **TECHNOLOGIES**

FLAT GRINDERS

ROUND GRINDERS

TOOL GRINDER

MILLING CUTTERS

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SMALL SERIES MACHINING

EDM MACHINING

Electroerosive cutting of sharp forms into workpieces

CHIP MACHINING

Turning of small or larger parts.

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SERIAL MACHINING OF **SMALL WORKPIECES**

MACHINING

The production itself is processed by long-turn automatic machine with use of ecological emulsion.

Its supply is being taken care of by automated material feeder.

CLEANING

Completed workpieces are further cleaned in an automated washer of small parts using ecological liquids.

Thanks to this technology, delivered workpieces are always perfectly degreased, clean and dry.

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MACHINING OF **STEP-BY-STEP TOOL**

ASSIGNMENT

Yearly production of several hundred thousand contacts of fuse bases.

Customer provided us with the model of the product.

SOLUTION

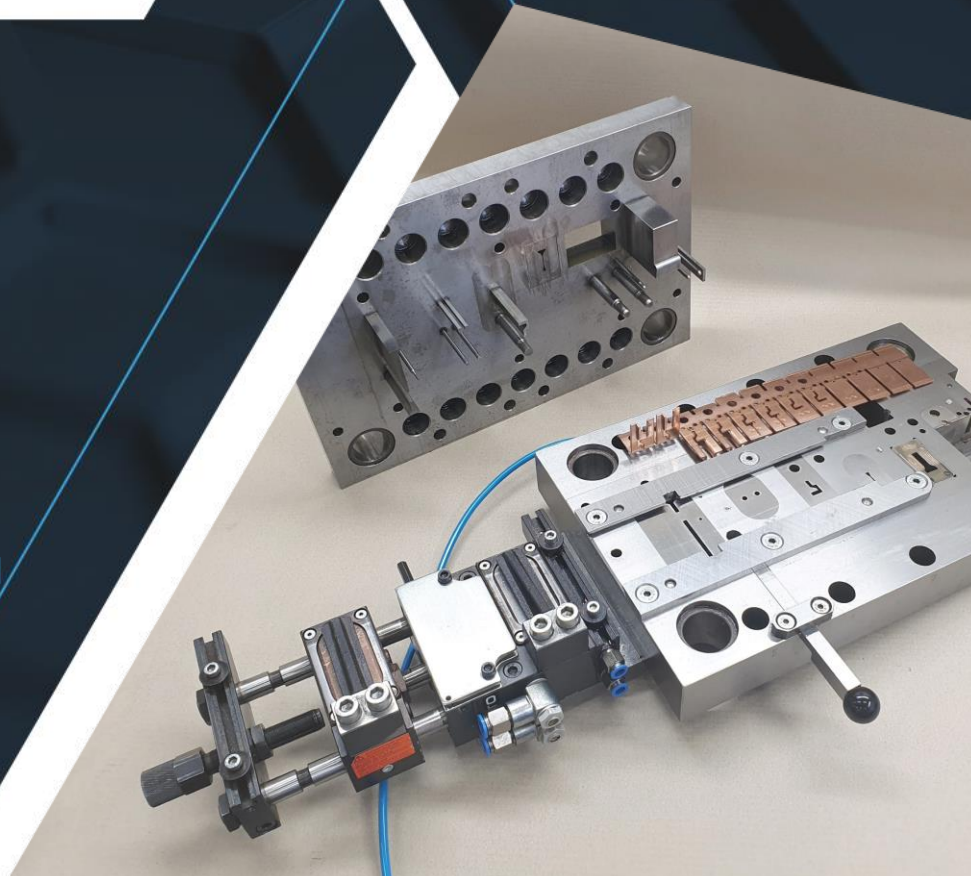
Construction and production of step-by-step tool with use of chip and EDM machining.

Connection with automated material feeder.

BENEFITS

One operation outcome provides the product ready for further surface finishing.

Process is fully automated thanks to feeder.



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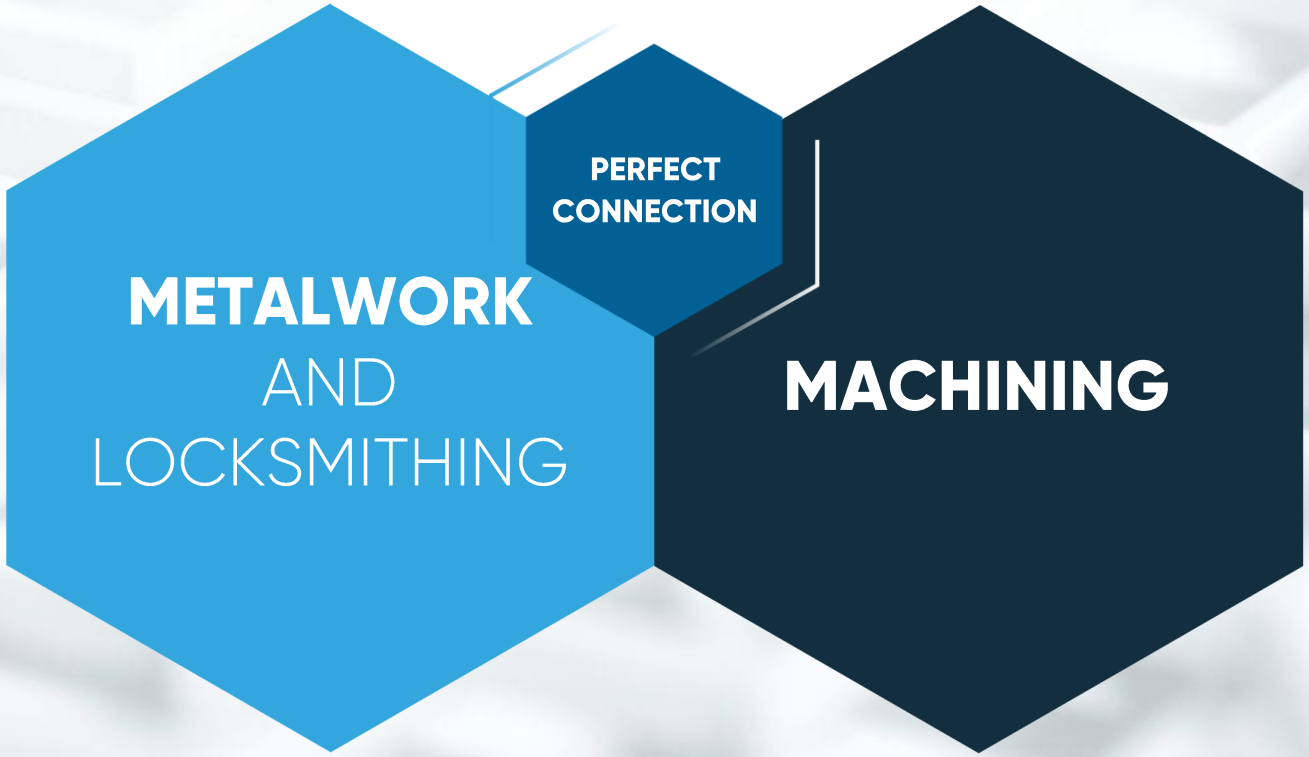
INDUSTRIAL
3D PRINT



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MODERN ENVIRONMENTALLY FRIENDLY PRODUCTION

HEAT PUMPS

innogy

AC HEATING absolutely clever heating

FVE

innogy

ENVO

LED LIGHTING

innogy

WATER-BASED PAINTS

viton

ECOLOGICAL EMULSIONS, LUBRICANTS AND CLEANERS

Kluthe

VEIDEC

WASTE RECYCLING

“The perfect combination of honest craft and cutting-edge technologies.“

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CONTACT

H2P Bohemia s. r. o.
Štítov 6, 338 43 Štítov

info@h2p-bohemia.cz

+420 374 446 022