

## TECHNOLOGY ARSENAL FOR YOUR PRECISION MECHANICS

### LASER FINE CUTTING

- Material thicknesses from 0.05 mm - 3.00 mm
- Reproducible fine cuts with 0.03 mm gap width and smaller
- Maximum dimensions 1250 x 1250 mm
- Perfect for all metallic materials
- Minimal thermal impact through pulsed Nd-YAG, fiber laser sources
- Spot diameter < 25 µm
- From 80 W - 3.000 W of average power
- Perfect for quantities from 1 - 1.000.000

Possible tolerances on sheet thickness t

- t < 0.5 mm ± 0.005 mm
- t > 0,5 mm ± 0.02 mm
- t > 1.25 mm ± 0.05 mm



### ULTRASHORT PULSE LASER PROCESSING

#### Ablation, microstructuring, black marking and laser micro-cutting

- Cold ablation, without any process force
- Ideal for filigree, µm-precise 3D shapes
- Perfect for carbide, diamond, glass/sapphire, ceramics, etc.
- Surface qualities up to Ra 0.1 µm possible
- Ideal for embossing dies and chipbreakers



### MICRO-WATERJET CUTTING

- No material limitation, sandwich composite possible
- Travel paths 750 x 600 mm
- Material thicknesses from 0.1 mm-10 mm
- Tolerances of +/-0.03 mm possible
- Cold cut: no microstructure changes
- Beam diameter from 0.3 mm
- Biocompatible for medical technology



### PRECISION FORMING TECHNOLOGY PUNCHING TECHNOLOGY

- CNC precision swing bending up to 500 mm
- Toggle presses up to 2.2 t
- Pneumatic presses up to 20
- Hydraulic presses up to 40 t
- Tolerances according to DIN ISO 2768-mK, finer upon request
- 40 t press
- Servo feed
- Construction space 500 x 400 x 300 mm
- Sheet thicknesses up to 2.5 mm



### FINISHING

- Electropolishing
- Slide grinding and polishing in centrifugal systems
- Tumbling in vibration systems
- Satining / Scotching Satinieren / Scotchen
- Ultrasonic cleaning
- Micro- and polish blasting

### LASER MARKING

- Annealing marking
- Black marking
- Engraving marking



## TECHNOLOGY ARSENAL FOR YOUR PRECISION MECHANICS

### TOOL MAKING & DESIGN

#### CAD/CAM

- In-house design
- Solidworks
- SolidCAM / PEPS / DCAM / ...
- DXF, STEP, IGES, Parasolid, ...

#### WIRE EDM

- Travel paths 400 x 300 x 220 mm
- Starting hole EDM machine

#### SURFACE GRINDING

- Dimensions up to 600 x 350 mm



### CNC PRECISION MANUFACTURING

#### HSC 5-AXIS MILLING

- Travel path X=705 mm, Y=425 mm, Z=610 mm
- Spindle speed up to 24,000 rpm
- 3-axis and 5-axis parts
- Automated loading

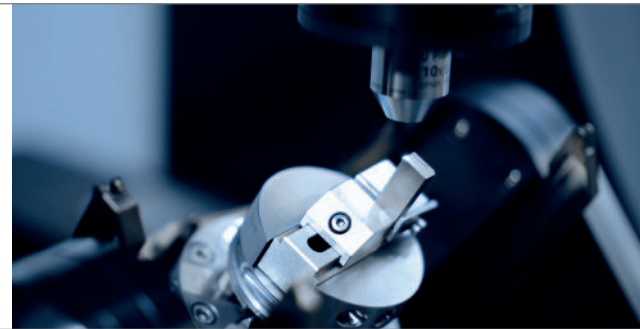
#### CNC TURNING

- Tornos DT13 sliding headstock automatic lathe
- Max. diameter 13 mm
- Bar feeder
- Tolerance +/- 0.002 mm
- Driven tools



### MEASURING TECHNOLOGY

- Alicona µCMM optical 3D measuring machine
- Optical and tactile coordinate measuring machine
- Keyence digital measuring projectors
- Measuring and profile projector



### ISO 7 CLEANROOM AND CLEANING

- Washing system with direct feed to ISO-7 cleanroom
- Cleaning including passivation, packaging and labeling



### Precise, inventive and honest:

When will you test our unique technology arsenal?

We look forward to your challenging parts.

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