Cutting tools

MEDTECH

Available From GenSwiss!
## KNEE REPLACEMENT COMPONENTS

### Bearing insert
Material: UHMWPE

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<tbody>
<tr>
<td><strong>Tools</strong></td>
<td><strong>Form cutter</strong></td>
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</tbody>
</table>
| **Tool features** | • High precision profile  
  • Steady cutting edges  
  • Cutting geometry customised for polymers  
  • Deep chip groove for enhanced chip evacuation  
  • Sharp cutting edges |
| **Operation** | • Form milling of the condyle surface  
  • Rough and finish milling |
| **Result / Customer’s feedback** | • Superior finish of the condyle surface  
  • High chip rate  
  • Minimal burrs |
## HIP REPLACEMENT COMPONENTS

### Stem
- Material: cobalt chrome

### Liner
- Material: polyethylene

#### Tools
- **1**: Conical end mill
- **2**: Ref. 3100
- **3**: Custom turning insert

#### Tool features
- **1**: Precision of the cone on the tool: ±0.05°
- Specific solid carbide with higher wear resistance
- **2**: Specific EXPERT end mill for titanium
- Helix angle allowing a constant pressure on the machined material
- **3**: Special clearance on the insert and on the tool holder, allowing the machining of the whole inner shape

#### Operation
- **1**: Interpolation milling of the conical support
- **2**: Rough and finish milling
- **3**: Finishing of the internal sphere

#### Result / Customer’s feedback
- **1**: Excellent surface quality
- **2**: «Using the cutting parameters recommended by Louis Bélet, we greatly enhanced our productivity.»
- **3**: Geometry adapted for turning without interruptions
# Medical Instrument Parts

**Transmission shaft for a chirurgical robot**
- Material: Stainless steel

**Quick coupling**
- Material: Titanium

**Shaver blades**
- Material: Stainless steel 410

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<thead>
<tr>
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<tbody>
<tr>
<td><strong>Tools</strong></td>
<td><strong>Tool features</strong></td>
<td><strong>Operation</strong></td>
</tr>
<tr>
<td>Profiled insert</td>
<td>- Flank clearance on several angles to avoid any friction</td>
<td>- Machining of circular teeth by turning with a profiled insert</td>
</tr>
<tr>
<td>Custom drill with flat tip</td>
<td>- Optimised central cutting tip</td>
<td>- Drilling of flat bottom holes</td>
</tr>
<tr>
<td>Ref. 370 - Series EXPERT drill</td>
<td>- Large clearance to avoid contact with the machined part</td>
<td>- Flatness &lt; 1 µm</td>
</tr>
<tr>
<td></td>
<td>- Variable helix angle</td>
<td>- Drilling of shaver blades for arthroscopic surgery</td>
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<tr>
<td></td>
<td>- Integrated chip breaker</td>
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**Result / Customer’s feedback**
- Perfect profile in one single pass
- «The Louis Bélet solution was the simplest and the fastest to set up!»
- 4 times more parts machined per tool!
- Machining time divided by two

«I was getting around 5,000 pieces per drill using a competitor’s tool. With the Louis Bélet drill, I have been able to drill 65,000 holes! Just amazing!»
### SPINAL AND TRAUMA COMPONENTS

1. Spinal implant
   - Material: PEEK

2. Plate
   - Material: Titanium

#### Tools

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<tr>
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<tbody>
<tr>
<td>Tools</td>
<td>Cutting tool in PCD, Z2</td>
<td>Ref. 300 - EXPERT drill for composite materials</td>
<td>Custom form milling cutter</td>
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#### Tool features

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</table>
| Tool features | • Laser sharpening  
• Tool can be resharpened | • Drill with a diamond type coating  
• Optimised geometry for composite materials | • Special solid carbide grade  
• with material conformity certificate |

#### Operation

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<tr>
<td>Operation</td>
<td>• Machining of pyramid shapes by crossed movements</td>
<td>• Direct drilling without centering</td>
<td>• Milling of the concave surface</td>
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#### Result / Customer’s feedback

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</table>
| Result / Customer’s feedback | • Good stability over time  
• Constant machining quality | • Very clean holes  
• No fibre tear out, no delamination | «The special profiles of the machined areas are always perfect» |
## Heads & Bone Screws

**Bone Screw**  
Material: Titanium / Stainless steel  
Machining options: milling or broaching

**Head**  
Material: Titanium

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<tr>
<td><strong>Tools</strong></td>
<td>Ref. 1430 - End mill for Torx screw</td>
<td>Broaching tool</td>
<td>Offset whirl thread cutter</td>
</tr>
</tbody>
</table>
| **Tool features** | • Long neck for deep milling  
• Central cutting tip for axial penetration | • Marked concave shape on tool tip  
• Polishing of the whole useful zone  
• Very tight tolerances on the profile | • Tool in line with the thread axis, no inclination needed  
• Tool profile calculated to compensate the deformation of the profile | • Staggered teeth to balance constraints |
| **Operation** | • Milling of a hexalobe imprint on a screw head | • Finishing of the hexalobe imprint by broaching | • Thread milling of complex threads | • Milling of the groove and of the lateral radii |
| **Result / Customer's feedback** | • No burrs  
• Perfect surface quality  
• «Phenomenally better!» | «We sometimes ask for impossible tolerances that are always achieved by Louis Bélet!» | «Louis Bélet saved us!»  
• The thread profile was impossible to machine with alternative techniques | • High milling speed  
• Long tool life |
## DENTAL IMPLANTS

### Abutment
**Material:** Titanium

![Abutment Image]

### Bridge
**Material:** Cobalt Chrome

![Bridge Image]

### Tools

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<tr>
<td><strong>Ref. 353 - Twist drill Z3</strong></td>
<td><strong>Custom thread milling cutter</strong></td>
<td><strong>Ref. 3320</strong></td>
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### Tool features

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<tr>
<td>• 3 flute drill</td>
<td>• Optimized according to the machined part</td>
<td>• Strong cutting edge</td>
</tr>
<tr>
<td>• Helix 34°</td>
<td>• Staggered profile</td>
<td>• Large range of dimensions available</td>
</tr>
<tr>
<td>• Optimized geometry</td>
<td>• M1.20</td>
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### Operation

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<td>• Direct drilling</td>
<td>• Interpolation threading in one pass</td>
<td>• Milling by scanning the whole part</td>
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### Result / Customer’s feedback

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<td>• Hole tolerances ± 1 µm</td>
<td>• «Incredible!»</td>
<td>«Whatever the bridge material, we always find the right tool within Louis Bélet’s assortment!»</td>
</tr>
<tr>
<td></td>
<td>• &gt; 60,000 threads machined without replacing or resharpening the tool!</td>
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«Incredible!»

> 60,000 threads machined without replacing or resharpening the tool!