Cutting tools
MEDTECH
# 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

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<tr>
<td><strong>Tools</strong></td>
<td>Ref. 112 / 112-1</td>
<td>Ref. 3100</td>
<td>Custom turning insert</td>
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</tbody>
</table>
| **Tool features** | • High precision of the cone  
• Specific solid carbide with higher wear resistance | • Specific EXPERT end mill for titanium  
• Helix angle allowing a constant pressure on the machined material | • Special clearance on the insert and on the tool holder, allowing the machining of the whole inner shape |
| **Operation** | • Interpolation milling of the conical support | • Rough and finish milling | • Finishing of the internal sphere |
| **Result / Customer’s feedback** | • Excellent surface quality | «Using the cutting parameters recommended by Louis Bélet, we greatly enhanced our productivity.» | • Geometry adapted for turning without interruptions |
## MEDICAL INSTRUMENT PARTS

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<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 • Large clearance to avoid contact with the machined part</td>
<td>• Drilling of flat bottom holes • Flatness &lt; 1 µm</td>
</tr>
<tr>
<td>Ref. 370 - Series EXPERT drill</td>
<td>• Variable helix angle • Integrated chip breaker</td>
<td>• Drilling of shaver blades for arthroscopic surgery</td>
</tr>
</tbody>
</table>

### Result / Customer’s feedback

1. Perfect profile in one single pass • «The Louis Bélet solution was the simplest and the fastest to set up!»
2. 4 times more parts machined per tool! • Machining time divided by two
3. «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

## Spinal implant
Material: PEEK

## Plate
Material: Titanium

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<tr>
<td><strong>Tools</strong></td>
<td>Cutting tool in PCD, Z2</td>
<td>Ref. 300 - EXPERT drill for composite materials</td>
<td>Custom form milling cutter</td>
</tr>
</tbody>
</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** | • Machining of pyramid shapes by crossed movements | • Direct drilling without centering | • Milling of the concave surface |
| **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>
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<th>Tool features</th>
<th>Operation</th>
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</table>
| Ref. 1430/1450 - Micro end mill for deep machining | • Long neck for deep milling  
• Central cutting tip for axial penetration | • Milling of a hexalobe imprint on a screw head | • No burrs  
• Perfect surface quality  
«Phenomenally better!» |
| Broaching tool | • Marked concave shape on tool tip  
• Polishing of the whole useful zone  
• Very tight tolerances on the profile | • Finishing of the hexalobe imprint by broaching | «We sometimes ask for impossible tolerances that are always achieved by Louis Bélet!» |
| Offset whirl thread cutter | • Tool in line with the thread axis, no inclination needed  
• Tool profile calculated to compensate the deformation of the profile | • Thread milling of complex threads | «Louis Bélet saved us!» 
• The thread profile was impossible to machine with alternative techniques |
| Set of circular saws | • Staggered teeth to balance constraints | • Milling of the groove and of the lateral radii | • High milling speed  
• Long tool life |
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<th>4</th>
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<tbody>
<tr>
<td><strong>Tools</strong></td>
<td><strong>Ref. 353 - Twist drill Z3</strong></td>
<td><strong>Custom thread milling cutter</strong></td>
<td><strong>Ref. 3320</strong></td>
</tr>
<tr>
<td><strong>Tool features</strong></td>
<td>• 3 flute drill</td>
<td>• Optimized according to the machined part</td>
<td>• Strong cutting edge</td>
</tr>
<tr>
<td></td>
<td>• Helix 34°</td>
<td>• Staggered profile</td>
<td>• Large range of dimensions available</td>
</tr>
<tr>
<td></td>
<td>• Optimized geometry</td>
<td>• M1.20</td>
<td></td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>• Direct drilling</td>
<td>• Interpolation threading in one pass</td>
<td>• Milling by scanning the whole part</td>
</tr>
<tr>
<td><strong>Result / Customer’s feedback</strong></td>
<td>• Hole tolerances ± 1 µm</td>
<td>• «Incredible!» +60,000 threads machined without replacing or resharpening the tool!</td>
<td>• «Whatever the bridge material, we always find the right tool within Louis Bélet’s assortment»</td>
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</tbody>
</table>
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