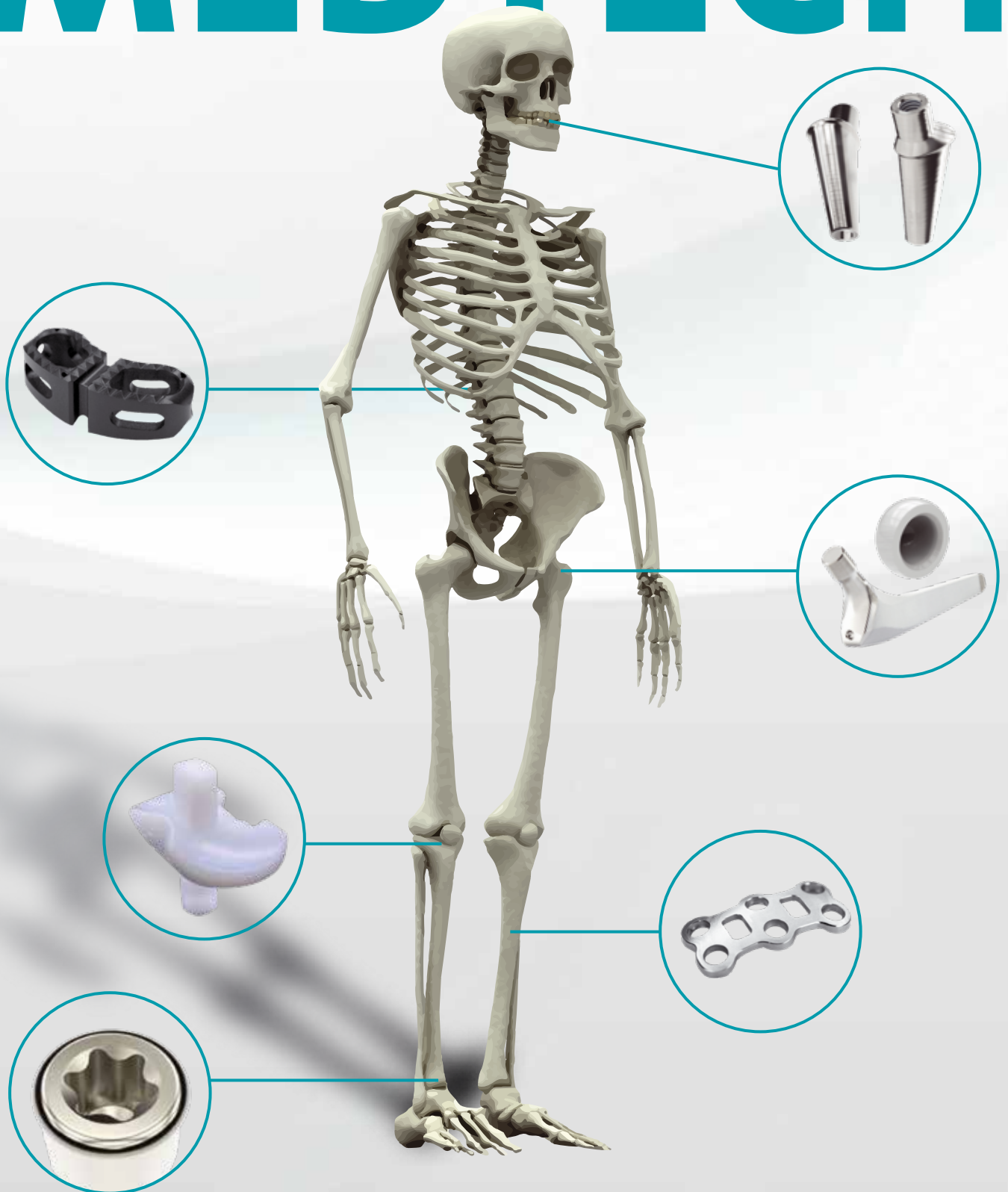


# Cutting tools

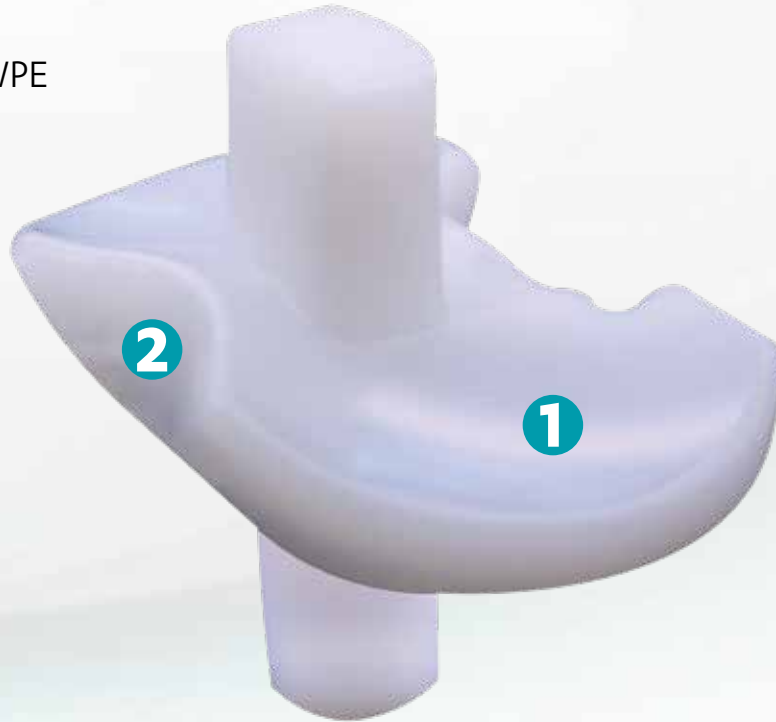
# MEDTECH







# KNEE REPLACEMENT COMPONENTS

## Bearing insert

Material: UHMWPE



|                              | 1  | 2  |
|------------------------------|--|--|
| Tools                        |  <p><b>Form cutter</b></p>  |  <p><b>Ref. 3200</b></p>  |
| Tool features                | <ul style="list-style-type: none"> <li>• High precision profile</li> <li>• Steady cutting edges</li> <li>• Cutting geometry customised for polymers</li> </ul>                 | <ul style="list-style-type: none"> <li>• Deep chip groove for enhanced chip evacuation</li> <li>• Sharp cutting edges</li> </ul>   |
| Operation                    | <ul style="list-style-type: none"> <li>• Form milling of the condyle surface</li> </ul>  | <ul style="list-style-type: none"> <li>• Rough and finish milling</li> </ul>   |
| Result / Customer's feedback |  <ul style="list-style-type: none"> <li>• Superior finish of the condyle surface</li> </ul> |  <ul style="list-style-type: none"> <li>• High chip rate</li> <li>• Minimal burrs</li> </ul> |

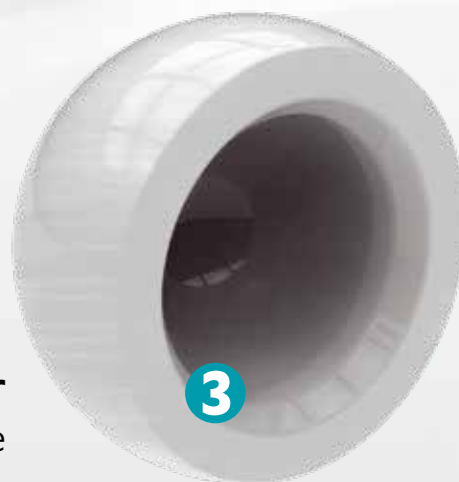
# HIP REPLACEMENT COMPONENTS

## Stem

Material: cobalt chrome









**2** Material: titanium



## Liner

Material: polyethylene

|                              | 1   | 2   | 3  |
|------------------------------|---|---|--|
| Tools                        | <br><b>Ref. 112 / 112-1</b>  | <br><b>Ref. 3100</b>  | <br><b>Custom turning insert</b>  |
| Tool features                | <ul style="list-style-type: none"> <li>• High precision of the cone</li> <li>• Specific solid carbide with higher wear resistance</li> </ul>                      | <ul style="list-style-type: none"> <li>• Specific EXPERT end mill for titanium</li> <li>• Helix angle allowing a constant pressure on the machined material</li> </ul>                      | <ul style="list-style-type: none"> <li>• Special clearance on the insert and on the tool holder, allowing the machining of the whole inner shape</li> </ul>                                  |
| Operation                    | <ul style="list-style-type: none"> <li>• Interpolation milling of the conical support</li> </ul>  | <ul style="list-style-type: none"> <li>• Rough and finish milling</li> </ul>  | <ul style="list-style-type: none"> <li>• Finishing of the internal sphere</li> </ul>   |
| Result / Customer's feedback |  <ul style="list-style-type: none"> <li>• Excellent surface quality</li> </ul> |  <p>«Using the cutting parameters recommended by Louis Bélet, we greatly enhanced our productivity.»</p> |  <ul style="list-style-type: none"> <li>• Geometry adapted for turning without interruptions</li> </ul> |

# MEDICAL INSTRUMENT PARTS

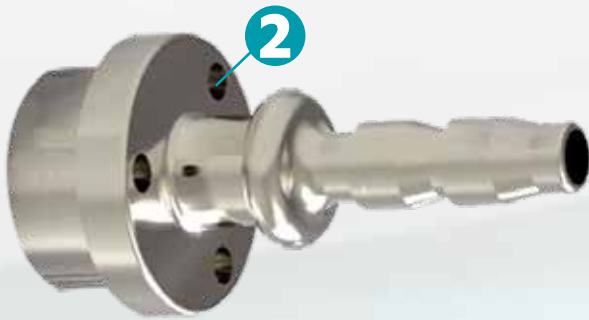
## Transmission shaft for a surgical robot

Material: Stainless steel



## Quick coupling







Material: Titanium



## Shaver blades

Material: Stainless steel 410



|                              | 1  | 2  | 3  |
|------------------------------|--|--|--|
| Tools                        |  <p><b>Profiled insert</b></p>  |  <p><b>Custom drill with flat tip</b></p>  |  <p><b>Ref. 370 - Series EXPERT drill</b></p>   |
| Tool features                | <ul style="list-style-type: none"> <li>• Flank clearance on several angles to avoid any friction</li> </ul>  | <ul style="list-style-type: none"> <li>• Optimised central cutting tip</li> <li>• Large clearance to avoid contact with the machined part</li> </ul>   | <ul style="list-style-type: none"> <li>• Variable helix angle</li> <li>• Integrated chip breaker</li> </ul>  |
| Operation                    | <ul style="list-style-type: none"> <li>• Machining of circular teeth by turning with a profiled insert</li> </ul>  | <ul style="list-style-type: none"> <li>• Drilling of flat bottom holes</li> <li>• Flatness &lt; 1 µm</li> </ul>  | <ul style="list-style-type: none"> <li>• Drilling of shaver blades for arthroscopic surgery</li> </ul>   |
| Result / Customer's feedback |  <ul style="list-style-type: none"> <li>• Perfect profile in one single pass</li> <li>• «The Louis Bélet solution was the simplest and the fastest to set up!»</li> </ul> |  <ul style="list-style-type: none"> <li>• 4 times more parts machined per tool!</li> <li>• Machining time divided by two</li> </ul> |  <p>«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»</p> |







# SPINAL AND TRAUMA COMPONENTS



**Spinal implant**  
Material: PEEK



**Plate**  
Material: Titanium

|                              | 1  | 2  | 3  |
|------------------------------|--|--|--|
| Tools                        |  <p><b>Cutting tool in PCD, Z2</b></p>  |  <p><b>Ref. 300 - EXPERT drill for composite materials</b></p>   |  <p><b>Custom form milling cutter</b></p>                               |
| Tool features                | <ul style="list-style-type: none"> <li>• Laser sharpening</li> <li>• Tool can be resharpened</li> </ul>  | <ul style="list-style-type: none"> <li>• Drill with a diamond type coating</li> <li>• Optimised geometry for composite materials</li> </ul>  | <ul style="list-style-type: none"> <li>• Special solid carbide grade</li> <li>• with material conformity certificate</li> </ul>                              |
| Operation                    | <ul style="list-style-type: none"> <li>• Machining of pyramid shapes by crossed movements</li> </ul>   | <ul style="list-style-type: none"> <li>• Direct drilling without centering</li> </ul>  | <ul style="list-style-type: none"> <li>• Milling of the concave surface</li> </ul>   |
| Result / Customer's feedback |  <ul style="list-style-type: none"> <li>• Good stability over time</li> <li>• Constant machining quality</li> </ul> |  <ul style="list-style-type: none"> <li>• Very clean holes</li> <li>• No fibre tear out, no delamination</li> </ul> |  <p>«The special profiles of the machined areas are always perfect»</p> |

# HEADS & BONE SCREWS



## Bone Screw









Material: Titanium / Stainless steel

Machining options: milling or broaching



## Head

Material: Titanium

|                              | 1  |  | 2   |  | 3 |
|------------------------------|--|--|---|--|---|
| Tools                        | <br><b>Ref. 1430/1450 - Micro end mill for deep machining</b>   | <br><b>Broaching tool</b>   | <br><b>Offset whirl thread cutter</b>   | <br><b>Set of circular saws</b>   |   |
| Tool features                | <ul style="list-style-type: none"> <li>• Long neck for deep milling</li> <li>• Central cutting tip for axial penetration</li> </ul>  | <ul style="list-style-type: none"> <li>• Marked concave shape on tool tip</li> <li>• Polishing of the whole useful zone</li> <li>• Very tight tolerances on the profile</li> </ul> | <ul style="list-style-type: none"> <li>• Tool in line with the thread axis, no inclination needed</li> <li>• Tool profile calculated to compensate the deformation of the profile</li> </ul>  | <ul style="list-style-type: none"> <li>• Staggered teeth to balance constraints</li> </ul>   |   |
| Operation                    | <ul style="list-style-type: none"> <li>• Milling of a hexalobe imprint on a screw head</li> </ul>  | <ul style="list-style-type: none"> <li>• Finishing of the hexalobe imprint by broaching</li> </ul>   | <ul style="list-style-type: none"> <li>• Thread milling of complex threads</li> </ul>   | <ul style="list-style-type: none"> <li>• Milling of the groove and of the lateral radii</li> </ul>   |   |
| Result / Customer's feedback |  <ul style="list-style-type: none"> <li>• No burrs</li> <li>• Perfect surface quality</li> <li>• «Phenomenally better !»</li> </ul> |  <p>«We sometimes ask for impossible tolerances that are always achieved by Louis Bélet !»</p>  |  <ul style="list-style-type: none"> <li>• «Louis Bélet saved us!»</li> <li>• The thread profile was impossible to machine with alternative techniques</li> </ul> |  <ul style="list-style-type: none"> <li>• High milling speed</li> <li>• Long tool life</li> </ul> |   |

# DENTAL IMPLANTS

## Abutment

Material: Titanium











## Bridge

Material: Cobalt Chrome



## Dental Screw

Material: Titanium /  
Stainless steel / Cobalt  
Chrome

|                              | 1  | 2   | 3  | 4  |
|------------------------------|--|---|--|--|
| Tools                        | <br><b>Ref. 353 - Twist drill Z3</b>  | <br><b>Custom thread milling cutter</b>  | <br><b>Ref. 3320</b>   | <br><b>Ref. 5000</b>  |
| Tool features                | <ul style="list-style-type: none"> <li>• 3 flute drill</li> <li>• Helix 34°</li> <li>• Optimized geometry</li> </ul>   | <ul style="list-style-type: none"> <li>• Optimized according to the machined part</li> <li>• Staggered profile</li> <li>• M1.20</li> </ul>  | <ul style="list-style-type: none"> <li>• Strong cutting edge</li> <li>• Large range of dimensions available</li> </ul>   | <ul style="list-style-type: none"> <li>• For NIHS screws or for other screw norms</li> <li>• Profiles calculated to compensate for deformation on threaded parts</li> <li>• Extremely short cycle times, in the order of a second</li> </ul> |
| Operation                    | <ul style="list-style-type: none"> <li>• Direct drilling</li> </ul>  | <ul style="list-style-type: none"> <li>• Interpolation threading in one pass</li> </ul>   | <ul style="list-style-type: none"> <li>• Milling by scanning the whole part</li> </ul>   | <ul style="list-style-type: none"> <li>• Thread whirling</li> </ul>  |
| Result / Customer's feedback |  <ul style="list-style-type: none"> <li>• Hole tolerances <math>\pm 1 \mu\text{m}</math></li> </ul> |  <ul style="list-style-type: none"> <li>• «Incredible !»</li> <li>• &gt;60,000 threads machined without replacing or resharpening the tool!</li> </ul> |  <p>«Whatever the bridge material, we always find the right tool within Louis Bélet's assortment»</p> |  <p>«The profile is perfect, even with the tightest tolerances... and this is confirmed over time»</p>  |



## Louis Bélet SA

Les Gasses 11  
CH- 2943 Vendlincourt  
Tel. +41 (0) 32 474 04 10  
Fax +41 (0) 32 474 45 42

[info@louisbelet.ch](mailto:info@louisbelet.ch)  
[www.louisbelet.ch](http://www.louisbelet.ch)