

Cutting tools

MEDTECH



KNEE REPLACEMENT COMPONENTS

Bearing insert

Material: UHMWPE



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

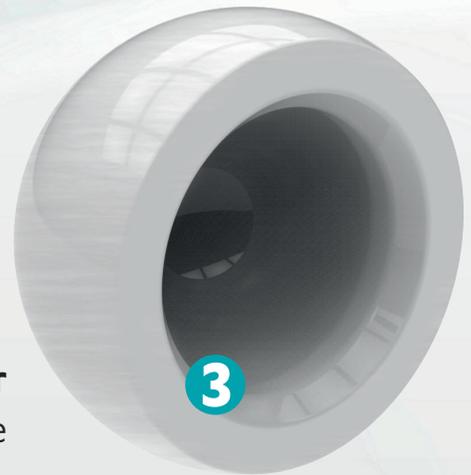
HIP REPLACEMENT COMPONENTS

Stem

Material: cobalt chrome



2 Material: titanium



Liner

Material: polyethylene

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

MEDICAL INSTRUMENT PARTS

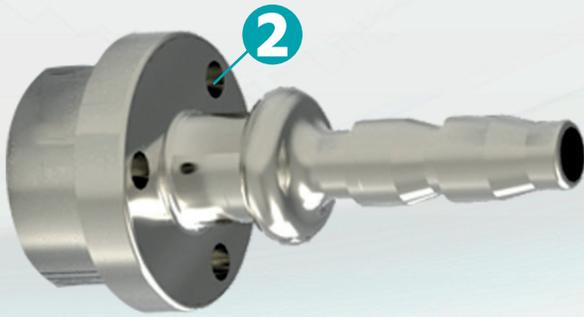
Transmission shaft for a surgical robot

Material: Stainless steel



Quick coupling

Material: Titanium



Shaver blades

Material: Stainless steel 410



	1	2	3
Tools	 <p>Profiled insert</p>	 <p>Custom drill with flat tip</p>	 <p>Ref. 370 - Series EXPERT drill</p>
Tool features	<ul style="list-style-type: none"> • Flank clearance on several angles to avoid any friction 	<ul style="list-style-type: none"> • Optimised central cutting tip • Large clearance to avoid contact with the machined part 	<ul style="list-style-type: none"> • Variable helix angle • Integrated chip breaker
Operation	<ul style="list-style-type: none"> • Machining of circular teeth by turning with a profiled insert 	<ul style="list-style-type: none"> • Drilling of flat bottom holes • Flatness <math>< 1 \mu\text{m}</math> 	<ul style="list-style-type: none"> • Drilling of shaver blades for arthroscopic surgery
Result / Customer's feedback	 <ul style="list-style-type: none"> • Perfect profile in one single pass • «The Louis Bélet solution was the simplest and the fastest to set up!» 	 <ul style="list-style-type: none"> • 4 times more parts machined per tool! • Machining time divided by two 	 <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>Cutting tool in PCD, Z2</p>	 <p>Ref. 300 - EXPERT drill for composite materials</p>	 <p>Custom form milling cutter</p>
Tool features	<ul style="list-style-type: none"> • Laser sharpening • Tool can be resharpened 	<ul style="list-style-type: none"> • Drill with a diamond type coating • Optimised geometry for composite materials 	<ul style="list-style-type: none"> • Special solid carbide grade • with material conformity certificate
Operation	<ul style="list-style-type: none"> • Machining of pyramid shapes by crossed movements 	<ul style="list-style-type: none"> • Direct drilling without centering 	<ul style="list-style-type: none"> • Milling of the concave surface
Result / Customer's feedback	 <ul style="list-style-type: none"> • Good stability over time • Constant machining quality 	 <ul style="list-style-type: none"> • Very clean holes • No fibre tear out, no delamination 	 <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	 <p>Ref. 1430/1450 - Micro end mill for deep machining</p>	 <p>Broaching tool</p>	 <p>Offset whirl thread cutter</p>	 <p>Set of circular saws</p>	
Tool features	<ul style="list-style-type: none"> • Long neck for deep milling • Central cutting tip for axial penetration 	<ul style="list-style-type: none"> • Marked concave shape on tool tip • Polishing of the whole useful zone • Very tight tolerances on the profile 	<ul style="list-style-type: none"> • Tool in line with the thread axis, no inclination needed • Tool profile calculated to compensate the deformation of the profile 	<ul style="list-style-type: none"> • Staggered teeth to balance constraints 	
Operation	<ul style="list-style-type: none"> • Milling of a hexalobe imprint on a screw head 	<ul style="list-style-type: none"> • Finishing of the hexalobe imprint by broaching 	<ul style="list-style-type: none"> • Thread milling of complex threads 	<ul style="list-style-type: none"> • Milling of the groove and of the lateral radii 	
Result / Customer's feedback	 <ul style="list-style-type: none"> • No burrs • Perfect surface quality • «Phenomenally better !» 	 <p>«We sometimes ask for impossible tolerances that are always achieved by Louis Bélet !»</p>	 <ul style="list-style-type: none"> • «Louis Bélet saved us!» • The thread profile was impossible to machine with alternative techniques 	 <ul style="list-style-type: none"> • High milling speed • Long tool life 	

DENTAL IMPLANTS

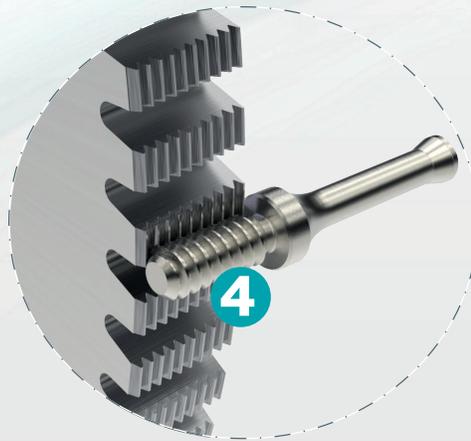
Abutment

Material: Titanium



Bridge

Material: Cobalt Chrome



Dental Screw

Material: Titanium /
Stainless steel / Cobalt
Chrome

	1	2	3	4
Tools	 Ref. 353 - Twist drill Z3	 Custom thread milling cutter	 Ref. 3320	 Ref. 5000
Tool features	<ul style="list-style-type: none"> • 3 flute drill • Helix 34° • Optimized geometry 	<ul style="list-style-type: none"> • Optimized according to the machined part • Staggered profile • M1.20 	<ul style="list-style-type: none"> • Strong cutting edge • Large range of dimensions available 	<ul style="list-style-type: none"> • For NIHS screws or for other screw norms • Profiles calculated to compensate for deformation on threaded parts • Extremely short cycle times, in the order of a second
Operation	<ul style="list-style-type: none"> • Direct drilling 	<ul style="list-style-type: none"> • Interpolation threading in one pass 	<ul style="list-style-type: none"> • Milling by scanning the whole part 	<ul style="list-style-type: none"> • Thread whirling
Result / Customer's feedback	 <ul style="list-style-type: none"> • Hole tolerances $\pm 1 \mu\text{m}$ 	 <ul style="list-style-type: none"> • «Incredible!» • >60,000 threads machined without replacing or resharpening the tool! 	 <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 BELET**[®]
Swiss Cutting tools



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