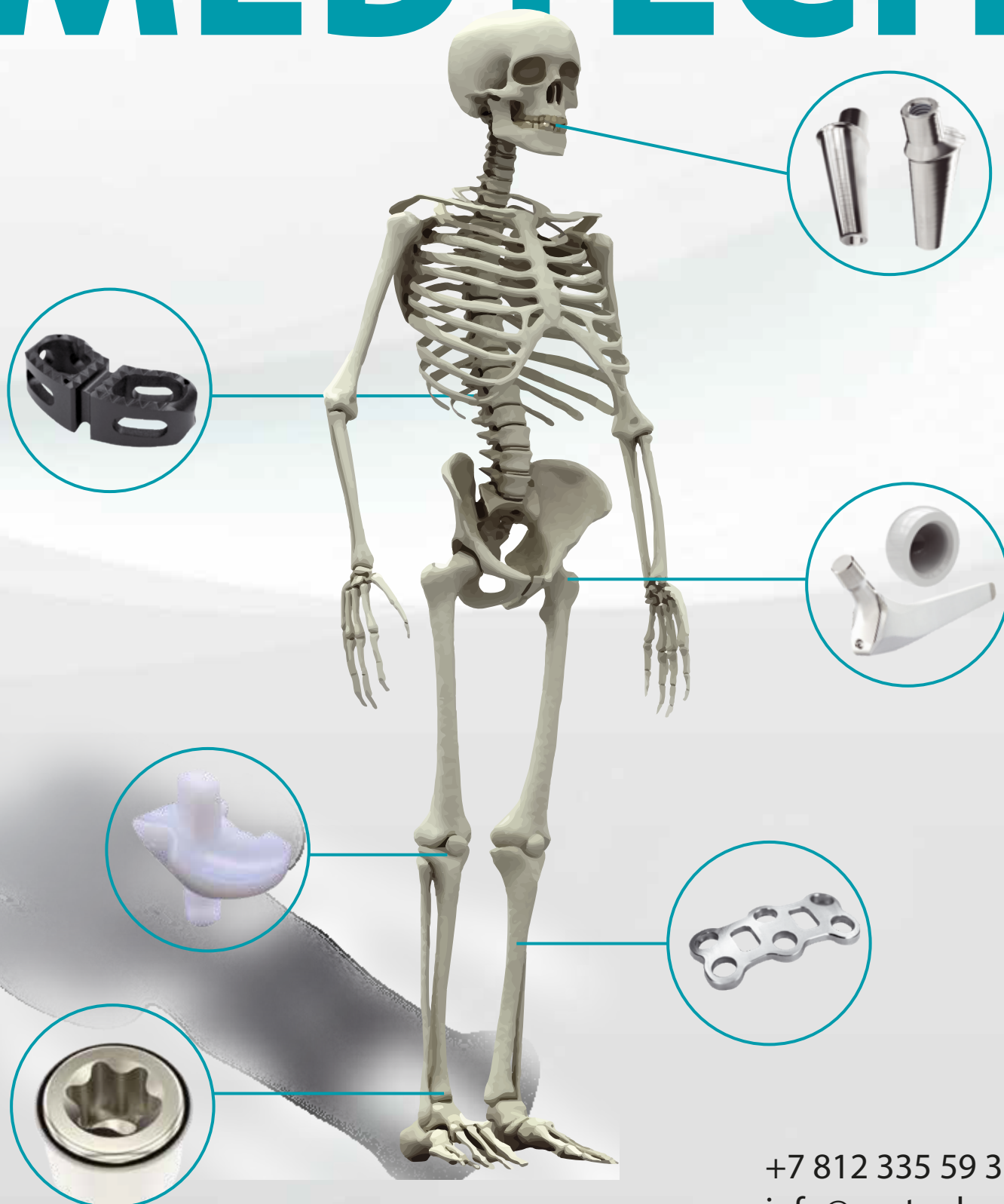


Cutting tools

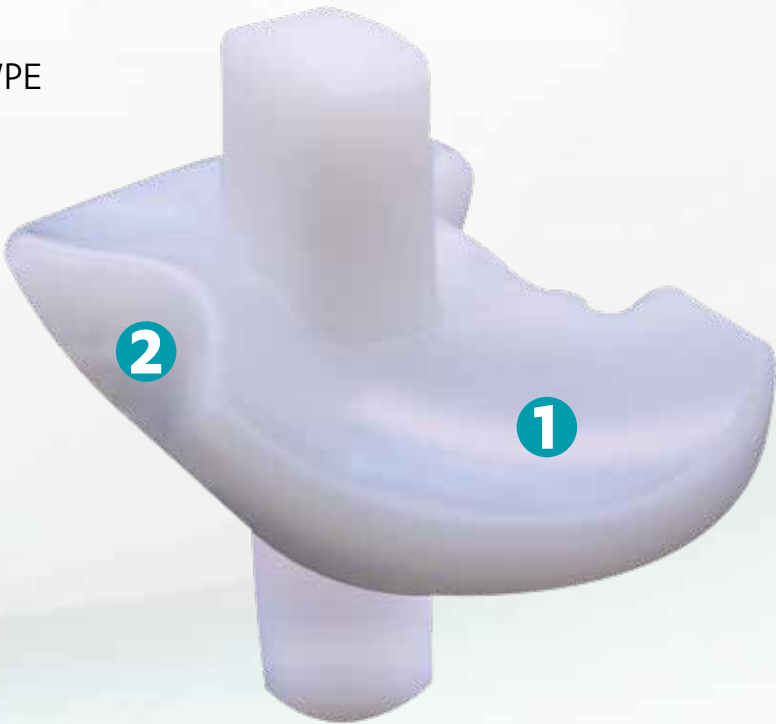
MEDTECH



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KNEE REPLACEMENT COMPONENTS

Bearing insert
Material: UHMWPE



	1	2
Tools	 Form cutter	 Ref. 3200
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



2 Material: titanium



Liner

Material: polyethylene

	1	2	3
Tools	 Ref. 112 / 112-1	 Ref. 3100	 Custom turning insert
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

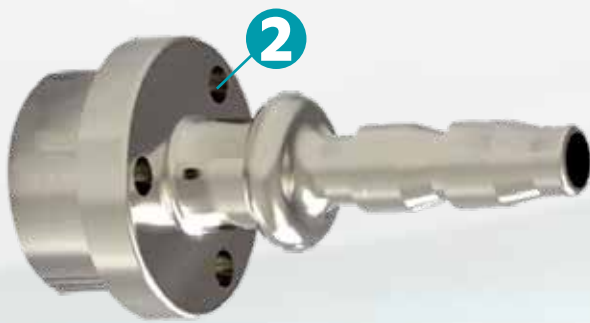
Transmission shaft for a chirurgical robot

Material: Stainless steel



Quick coupling

Material: Titanium



Shaver blades

Material: Stainless steel 410



	1	2	3
Tools	 Profiled insert	 Custom drill with flat tip	 Ref. 370 - Series EXPERT drill
Tool features	• Flank clearance on several angles to avoid any friction	• Optimised central cutting tip • Large clearance to avoid contact with the machined part	• Variable helix angle • Integrated chip breaker
Operation	• Machining of circular teeth by turning with a profiled insert	• Drilling of flat bottom holes • Flatness < 1 µm	• Drilling of shaver blades for arthroscopic surgery
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	2	3
Tools	 Cutting tool in PCD, Z2	 Ref. 300 - EXPERT drill for composite materials	 Custom form milling cutter
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

	1		2		3
Tools	 Ref. 1430/1450 - Micro end mill for deep machining	 Broaching tool	 Offset whirl thread cutter	 Set of circular saws	
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



Bridge

Material: Cobalt Chrome



Dental Screw

Material: Titanium /
Stainless steel / Cobalt
Chrome

	1	2	3	4
Tools	 Ref. 353 - Twist drill Z3	 Custom thread mil- ling cutter	 Ref. 3320	 Ref. 5000
Tool features	• 3 flute drill • Helix 34° • Optimized geometry	• Optimized according to the machined part • Staggered profile • M1.20	• Strong cutting edge • Large range of dimensions available	• 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	• Direct drilling	• Interpolation threading in one pass	• Milling by scanning the whole part	• Thread whirling
Result / Customer's feedback	 • Hole tolerances $\pm 1 \mu\text{m}$	 • «Incredible !» • >60,000 threads machined without replacing or sharpening the tool!	 «Whatever the bridge material, we always find the right tool within Louis Bélet's assortment»	 «The profile is perfect, even with the tightest tolerances... and this is confirmed over time»



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