

Medical technology and its applications



IN MEDICAL TECHNOLOGY ARE QUALITY AND PRECISION A VITAL FACTOR

Material

Regarding the material used in medical technology some features are important: purity, durability and biocompatibility. For this reason mainly stainless steels, titanium or chrome-cobalt alloys are used in this field, each with its own features.

Mikron Tool is familiar with difficult-to-machine materials, because we have been developing tools for many years for machining these materials (see also Chapter 13: Inox & Co.).

Requirements

When machining medical parts, special care must be taken to ensure burr-free, high surface quality and precision on machining.

Due to the complexity to change the process and production conditions as well as the high requirements for a certification in medical field, the production of a new part requires from the beginning the best process with the right tools.

Mikron Tool not only offers the right tools, but also the technical know-how for an optimal solution. In addition, we can define the optimal tools, develop prototypes, test and prove new processes in our technology center.

Segments

Where are tools of Mikron Tool used? More or less everywhere where machining takes place, be it from a machine center, an automatic lathes or based on 3D printing; be it for single part, for small or large series or for mass production.

Some of our experiences so far:

- **Ortho - Prothesis:** Bone plates for various parts of the body, hip and shoulder implants, bone screws.
- **Surgical instruments:** Surgical needles, catheters, phaco tips, endoscopes, arthroscopy devices.
- **Dental:** Dental implants, crowns, bridges.

Ortho - Prothesis



Shoulder base plate



Operations

Milling, drilling and chamfering

Tools

CrazyMill Cool P&S - Z3



CrazyMill Cool Square / Corner radius - Z4



CrazyDrill Pilot SST-Inox



Customized multifunctional tool



Advantages

- Minimal cutting forces hence less vibrations, improved accuracy and stability
- Perfect chip control thanks to the milling strategy
- Burr-free part

Material

Stainless steel

Bone plate



Operations

Milling, drilling, deburring and threading

Tools

CrazyMill Cool Ball - Z4



CrazyMill Cool Square / Corner radius - Z2



CrazyMill Cool Ball - Z2



CrazyMill Cool P&S - Z3



CrazyMill Frontchamfer



Advantages

- Excellent surface quality
- Reduction of the cycle time due the improvements in the machining strategy and the performance of tools

Material

Titanium

CrazyDrill Crosspilot



CrazyDrill Flexpilot Titanium



CrazyDrill customized for titanium



Customized threadig tool



Bone screws

THE NEW CONCEPT FOR MACHINING YOUR "TORX®" SOCKET



Hexalobular sockets



Operations

Drilling, Chamfering, Milling and Deburring

Material

Stainless steel, Titanium

Tools

CrazyDrill Hexalobe



CrazyMill Hexalobe



Advantages

- Shorter milling process
- Highest profile precision
- Excellent surface quality
- Minimal burr

For product details see page 196 / 528

Surgical instruments

Hemostatic clamp



Operations

Milling and deburring

Material

Stainless steel

Tools

CrazyMill Cool P&S - Z3



CrazyMill Cool Square / Corner radius - Z4



CrazyMill Cool Ball - Z4



CrazyMill Radiuschamfer



Advantages

- Excellent surface quality
- Reduction of the cycle time
- Burr-free part

Phaco tip



Operations

Milling, short drilling and deep hole drilling

Material

Titanium

Tools

CrazyMill Cool Square / Corner radius - Z4



CrazyMill Cool Ball - Z4



CrazyDrill Crosspilot



CrazyDrill Flexpilot Titanium



CrazyDrill Flex Titanium



Advantages

- Deep hole drilling in small diameters
- Excellent straightness of the hole
- Reduction of the cycle time

Surgical instruments



Nailing system



Operation

Deep hole drilling

Material

Stainless steel

Tools

CrazyDrill Coolpilot



CrazyDrill Cool SST-Inox



Advantages

- High surface quality $R_z = 3\mu\text{m}$
- Small chips dimension with perfect evacuation on lathe
- Higher performance compared to conventional deep hole drills

Endoscopic forceps



Operations

Drilling and milling

Material

Stainless steel

Tool

CrazyMill Cool P&S - Z3



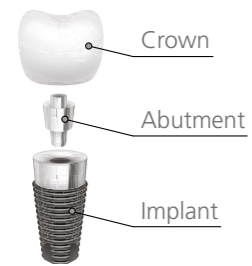
Advantages

- Excellent surface quality
- Reduction of the cycle time due the performance of tool

Dental



Abutment



Operations

Drilling and deburring

Tools

CrazyDrill customized for drilling



CrazyMill customized for deburring



Advantages

- Excellent surface quality
- Burr-free part

Material

Stainless steel, Titanium, Cobalt-Chrome

Crown



Operations

Milling: Roughing and finishing

Material

Stainless steel, Titanium, Cobalt-Chrome

Tools

CrazyMill Cool Corner radius - Z4



CrazyMill Cool Ball - Z4



Advantages

- Excellent surface quality
- Reduction of the cycle time due the performance of tool