

crazy about medical applications

CRAZY TOOLS

HIGH PROCESS RELIABILITY AND
EFFICIENCY WHEN MACHINING

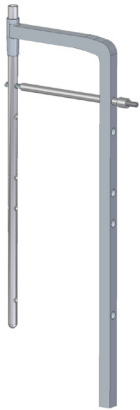
- STAINLESS STEELS
- TITANIUM ALLOYS



Instruments, implants and screws

DRILLING AND MILLING TITANIUM AND STAINLESS STEEL

1. INSTRUMENTS: NAILING SYSTEM - DEEP HOLE DRILLING ON JIG



Material

Stainless steel - X17CrNi16-2 / 1.4057 / AISI 431

Drills



Ø4 mm; depth = 13 mm; $v_c = 65$ m/min; $n = 5'173$ rpm;
 $f = 0.12$ mm/rev; $v_f = 1'242$ mm/min; $p = 60$ bar



Ø4 mm; depth = 120 mm; $v_c = 65$ m/min; $n = 5'173$ rpm;
 $f = 0.12$ mm/rev; $v_f = 1'242$ mm/min; $p = 60$ bar

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

2. IMPLANTS: JOINT REPLACEMENT - 4 HOLES ON ACETABU-



Material

Titanium - TiAl6V4 / 3.7165 / B348 (Grade 5)

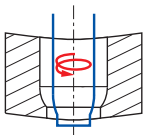
Endmill



Ø5 mm; $v_c = 100$ m/min; $n = 6'370$ rpm; $f_z = 0.02$ mm;
 $v_f = 382$ mm/min; $a_p = 5$ mm;

Advantages

- Minimal cutting forces hence less vibrations, best accuracy and stability
- Perfect chip control thanks to the milling strategy
- Only one set-up time: less cycle time and more accuracy
- Burr-free part on full contour due to full-shape milling approach



3. SCREWS: SOCKET WITH "TORX®" SHAPE T10



Material

Titanium - TiAl6V4 ELI / 3.7165 / B348 (Grade 5 ELI)

Step drill



Ø2.05 mm; $v_c = 25$ m/min; $n = 3'884$ rpm; $f = 0.02$ mm/rev;
 $v_f = 78$ mm/min; cycle time: 2 sec;

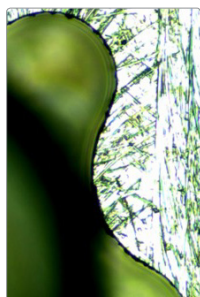
Micro endmill



Ø0.4 mm; $v_c = 50$ m/min; $n = 39'800$ rpm; $f_z = 0.0016$ mm;
 $v_f = 255$ mm/min; pitch = 0.16 mm; cycle time: 22 sec;

Advantages

- Nearly the perfect profile
- Nearly burr free
- Excellent surface quality: $R_a 0.2 \mu\text{m}$ / $R_z 0.8 \mu\text{m}$
- Chrome free coating to avoid cross contamination



YOUR CONTACT

Mikron Tool SA Agno
 Via Campagna 1
 6982 Agno / Switzerland
 Phone +41 91 610 40 00
 mto@mikron.com



www.youtube.com/mikrongroup
www.mikrontool.com

CRAZY TOOLS

CRAZYDRILL COOLPILOT

For stainless steel, superalloys, CrCo-alloys
 Diameter 1 - 6 mm, coated
 Drilling depth $3 \times d + 90^\circ$ countersink
 With internal helicoidal coolant ducts to the tip

CRAZYDRILL COOL SST-INOX

For stainless steel, superalloys, CrCo-alloys
 Diameter 1 - 6 mm, coated
 Drilling depth from $6 \times d$ up to $40 \times d$
 With internal helicoidal coolant ducts to the tip

CUSTOMIZED MULTIFUNCTIONAL ENDMILL

Special developed geometry for machining titanium alloys
 Plunging and lateral milling with a special shape

CRAZYDRILL HEXALOBE

Two cutting geometries for machining sockets in titanium and stainless steel
 Standard diameters for drilling pre-hole of T4 - T40
 Adding a 120° chamfer in the same operation

CRAZYMILL HEXALOBE

Two cutting geometries for machining sockets in titanium and stainless steel
 Diameters for machining T4 - T40
 Milling depth $3.5 \times d$ and $5 \times d$