

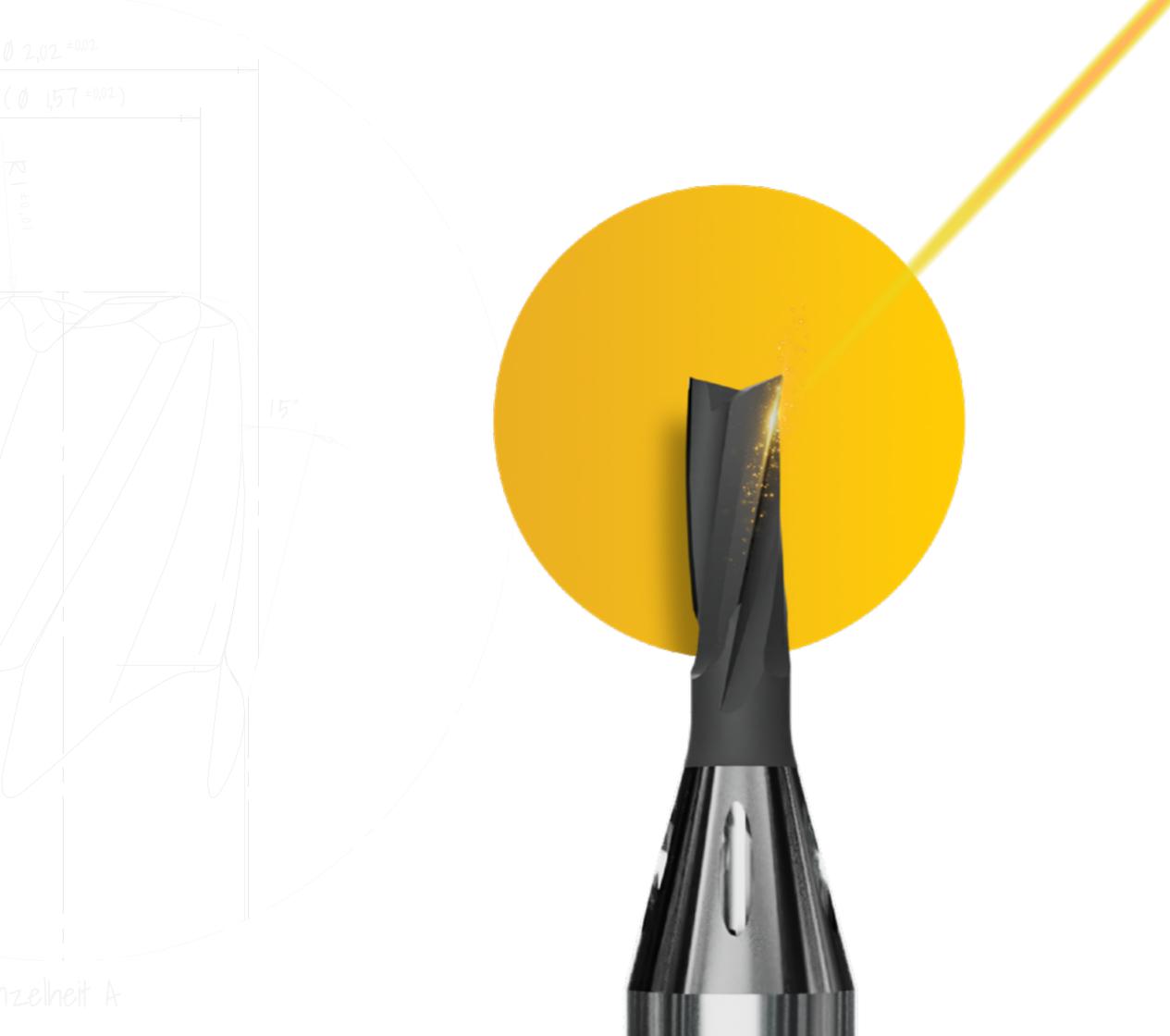


*Application Example*

**IGUANA LASER SERIES**



$R\ 0,3 \pm 0,01$



## IGUANA LASER SERIES

### PIONEERING PRECISION AND PERFORMANCE

Welcome to the future of micro-tools with the groundbreaking IGUANA LASER SERIES by ZECHA. This innovative family of diamond-coated tools is designed to excel in machining highly abrasive materials, non-ferrous metals, and copper.

What sets the IGUANA LASER SERIES apart is its world-first laser-sharpening technology that ensures each diamond-coated cutting edge is honed to perfection with an accuracy of less than 1  $\mu\text{m}$ .

IGUANA LASER SERIES APPLICATION EXAMPLE





533N.F3 SERIES

931.T3 SERIES

931.T3 SERIES

935.B2 SERIES

935.B2 SERIES



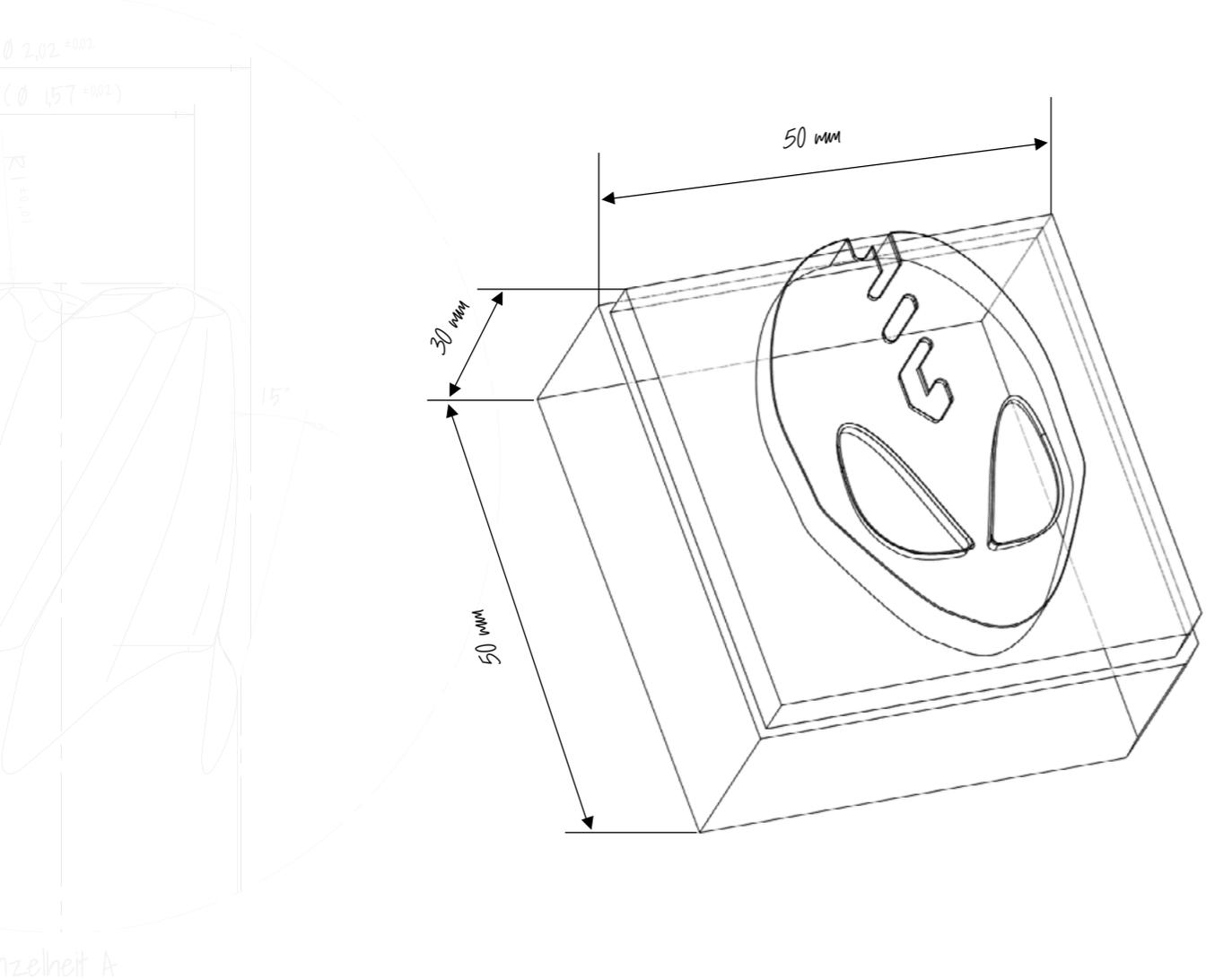
## THE TOOLS

In this case study, we begin with roughing using ZECHA's robust 533N series before transitioning to precision milling with the IGUANA 931.T3 and 935.B2 series. The 533N series handles the initial heavy material removal efficiently, setting the stage for detailed work. Known for its strength and durability, it ensures reliable performance under strenuous conditions.

Next, the 931.T3 series, with its two- and three-flute end mills with corner radius, takes over for

intermediate milling. These tools are designed for high-precision applications, delivering exceptional surface quality. The process concludes with the 935.B2 series ball nose end mills, perfect for creating the finest surfaces with their laser-sharpened edges and unique diamond coating.

This combination of tools demonstrates ZECHA's capability to handle complex machining tasks, ensuring optimal results and maximum efficiency.



## THE WORKPIECE

For this case study, we're showcasing the capabilities of our tooling solutions by milling a 50x50x30mm copper electrode featuring the AlienTools logo.

This demo piece highlights the precision and finesse of ZECHA's tools, particularly in handling intricate designs and maintaining high-quality surface finishes.

533N.F3.0400.000.120



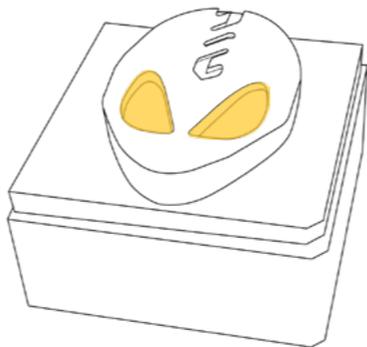
### 01. ROUGHING TOP SURFACE

Tool: 533N.F3.0400.000.120  
RPM: 35,810  
Feed rate: 3,223 mm/min  
Vc: 450 m/min  
fpt: 0.030 mm/t  
WOC: 1.500 mm  
DOC: 5.000 mm  
R-angle: 1°  
Offset: 0.500 mm  
Cooling: Oil  
Runtime: 00:00:36 h



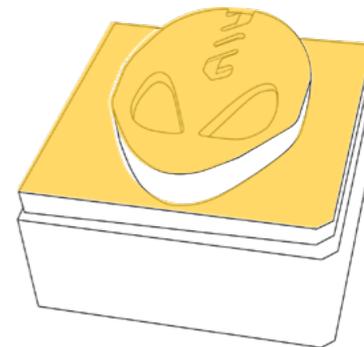
### 02. ROUGHING OF EYES

Tool: 533N.F3.0400.000.120  
RPM: 35,810  
Feed rate: 3,223 mm/min  
Vc: 450 m/min  
fpt: 0.030 mm/t  
WOC: 0.600 mm  
DOC: 3.000 mm  
R-angle: 1°  
Offset: 0.100 mm  
Cooling: Oil  
Runtime: 00:00:25 h



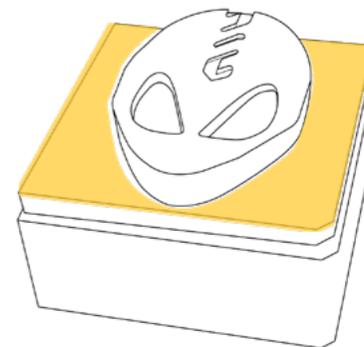
### 03. ROUGHING OUTSIDE SHAPE

Tool: 533N.F3.0400.000.120  
RPM: 35,810  
Feed rate: 3,223 mm/min  
Vc: 450 m/min  
fpt: 0.030 mm/t  
WOC: 0.600 mm  
DOC: 7.000 mm  
R-angle: 1°  
Offset: 0.300 mm  
Cooling: Oil  
Runtime: 00:02:05 h



### 04. PRE-FINISHING (OUT&BOTTOM SIDE)

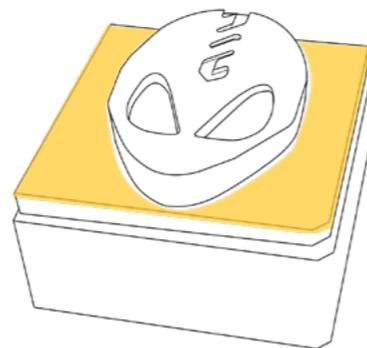
Tool: 533N.F3.0400.000.120  
RPM: 35,810  
Feed rate: 3,223 mm/min  
Vc: 450 m/min  
fpt: 0.030 mm/t  
WOC: 0.800 mm  
DOC: 7.000 mm  
R-angle: 1°  
Offset: 0.300 mm  
Cooling: Oil  
Runtime: 00:00:45 h





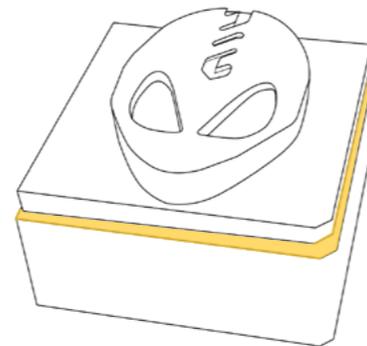
### 05. FINISHING OUTSIDE/BOTTOM SIDE

Tool: 533N.F3.0400.000.120  
RPM: 35,810  
Feed rate: 2,200 mm/min  
Vc: 450 m/min  
fpt: 0.030 mm/t  
WOC: 0.400 mm  
DOC: 7.000 mm  
R-angle: 1°  
Offset: 0.100 mm  
Cooling: Oil  
Runtime: 00:02:15 h



### 06. ROUGHING/FINISHING BLOCK

Tool: 533N.F3.0400.000.120  
RPM: 35,810  
Feed rate: 2,200 mm/min  
Vc: 450 m/min  
fpt: 0.030 mm/t  
WOC: 0.600 mm  
DOC: 10.000 mm  
R-angle: 1°  
Offset: 0.100 mm  
Cooling: Oil  
Runtime: 00:00:45 h

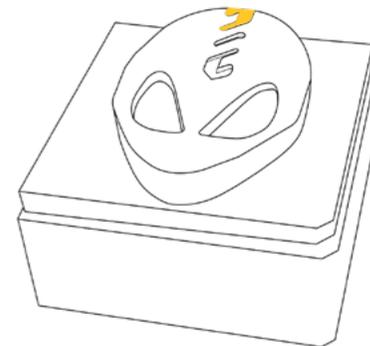


931.T3.0080.003.016



### 07. ROUGHING ALIEN LOGO DESIGN I

Tool: 931.T3.0080.003.016  
RPM: 39,789  
Feed rate: 1,910 mm/min  
Vc: 100 m/min  
fpt: 0.016 mm/t  
WOC: 0.016 mm  
DOC: 2.000 mm  
R-angle: 1°  
Offset: 0.030 mm  
Cooling: Oil  
Runtime: 00:01:25 h

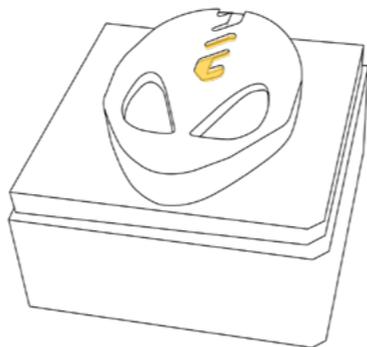


931.T3.0100.003.020



### 08. ROUGHING ALIEN LOGO DESIGN 2

Tool: 931.T3.0100.003.020  
RPM: 39,789  
Feed rate: 2,101 mm/min  
Vc: 110 m/min  
fpt: 0.020 mm/t  
WOC: 0.016 mm  
DOC: 2.000 mm  
R-angle: 1°  
Offset: 0.030 mm  
Cooling: Oil  
Runtime: 00:00:35 h



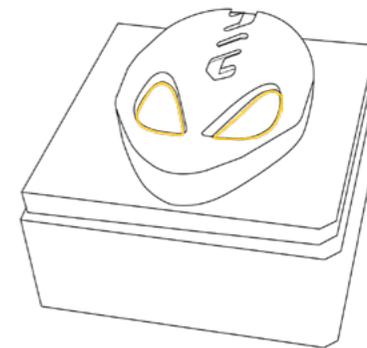
### 09. FINISHING LOGO DESIGN

Tool: 931.T3.0100.003.020  
RPM: 35,014  
Feed rate: 2,101 mm/min  
Vc: 110 m/min  
fpt: 0.020 mm/t  
WOC: 0.030 mm  
DOC: 0.040 mm  
R-angle: 1°  
Offset: 0.000 mm  
Cooling: Oil  
Runtime: 00:00:35 h



### 10. ROUGHING EYE SMALL CORNERS

Tool: 931.T3.0100.003.020  
RPM: 35,014  
Feed rate: 2,101 mm/min  
Vc: 110 m/min  
fpt: 0.020 mm/t  
WOC: 0.020 mm  
DOC: 3.000 mm  
R-angle: 1°  
Offset: 0.100 mm  
Cooling: Oil  
Runtime: 00:00:55 h



### 11. FINISHING EYES

Tool: 931.T3.0100.003.020  
RPM: 35,014  
Feed rate: 2,101 mm/min  
Vc: 110 m/min  
fpt: 0.020 mm/t  
WOC: 0.200 mm  
DOC: 0.050 mm  
R-angle: 1°  
Offset: 0.000 mm  
Cooling: Oil  
Runtime: 00:01:50 h



935.B2.0300.150.060



## 12. PRE-FINISHING CURVED SURFACE

Tool: 935.B2.0300.150.060  
RPM: 38,728  
Feed rate: 3,873 mm/min  
Vc: 365 m/min  
fpt: 0.050 mm/t  
WOC: 0.025 mm  
DOC: 0.000 mm  
R-angle: 1°  
Offset: 0.010 mm  
Cooling: Oil  
Runtime: 00:14:50 h



## 13. FINISHING CURVED SURFACE

Tool: 935.B2.0300.150.060  
RPM: 38,728  
Feed rate: 1,000 mm/min  
Vc: 365 m/min  
fpt: 0.013 mm/t  
WOC: 0.015 mm  
DOC: 0.000 mm  
R-angle: 1°  
Offset: 0.000 mm  
Cooling: Oil  
Runtime: 01:33:15 h

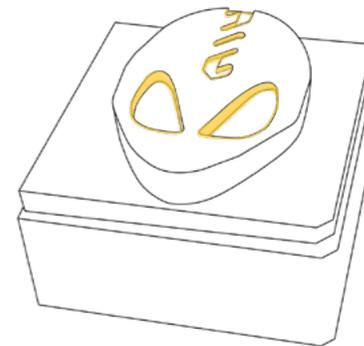


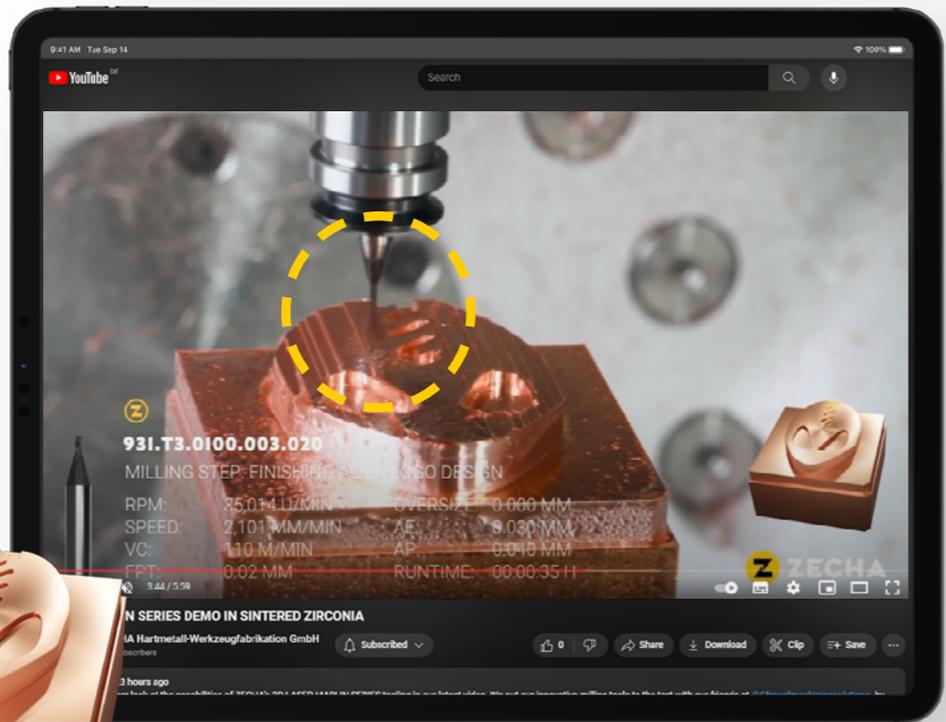
935.B2.0100.050.015



## 14. FINISHING EYES RADIUS

Tool: 935.B2.0100.050.015  
RPM: 39,789  
Feed rate: 3,183 mm/min  
Vc: 125 m/min  
fpt: 0.040 mm/t  
WOC: 0.000 mm  
DOC: 0.010 mm  
R-angle: 1°  
Offset: 0.000 mm  
Cooling: Oil  
Runtime: 00:02:50 h





## SEE IT IN ACTION

Experience the tools and strategies in action by scanning the QR code below. This will direct you to a video of the milling example on ZECHA's YouTube page, where you can see our precision and performance firsthand.





# DON'T MISS A THING

Scan the QR codes below to access ZECHA's various social media accounts where you can stay up to date on new tools, new videos, live events and much more.

Subscribe and stay up to date.



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Einzelheit A