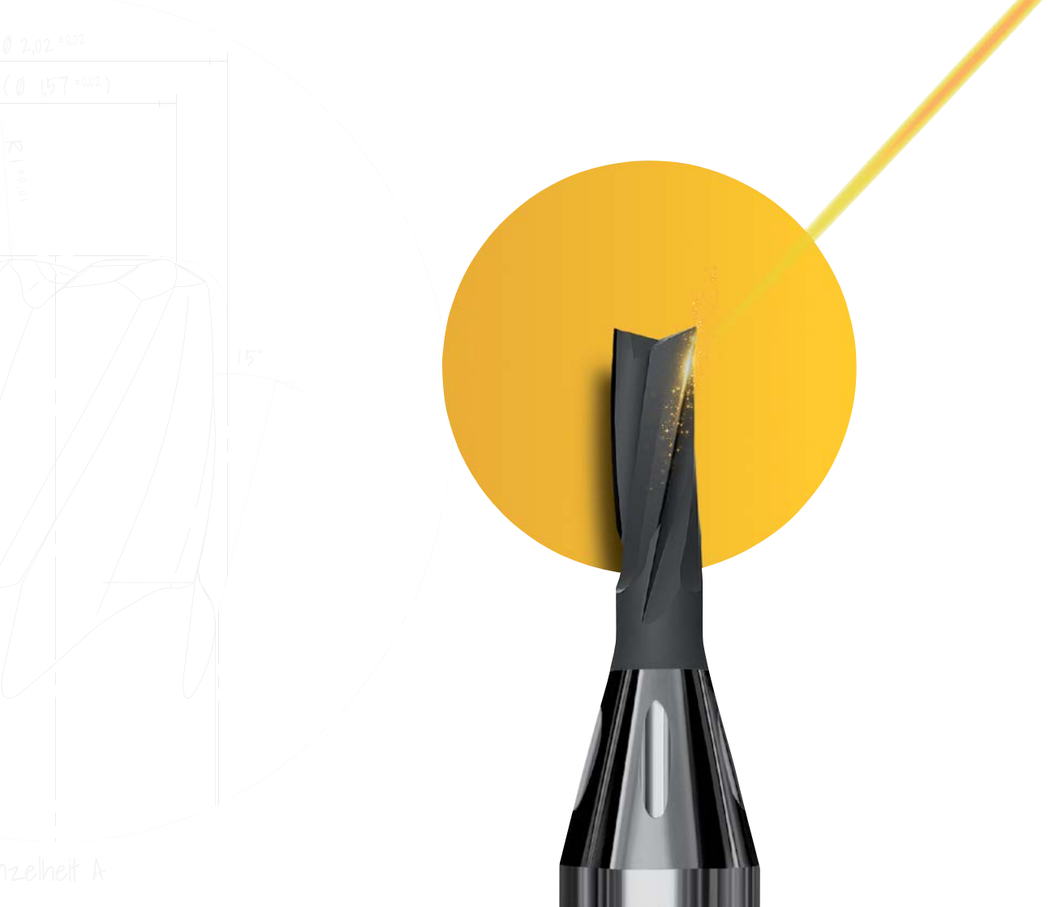
Application Example

IGUANA LASER SERIES

ZECHA



IGUANA LASER SERIES

PIONEERING PRECISION AND PERFORMANCE

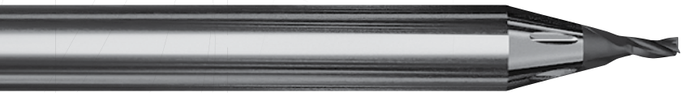
Welcome to the future of micro-tools with the groundbreaking IGUANA LASER SERIES by ZECHA. This innovative family of diamond-coated tools is designed to excel in machining highly abrasive materials, non-ferrous metals, and copper.

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 µm.

IGUANA LASER SERIES APPLICATION EXAMPLE ZECHA

533N.F3 SERIES

931.T3 SERIES



931.T3 SERIES

935.B2 SERIES

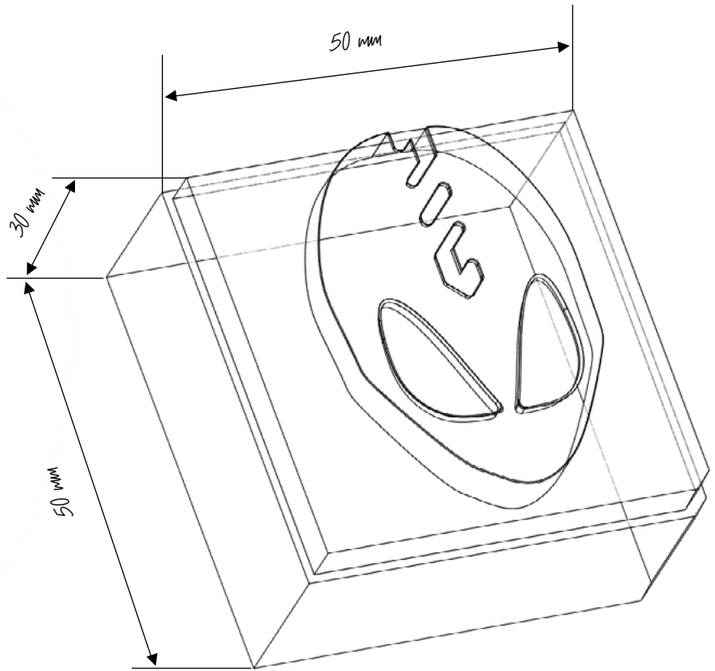
935.B2 SERIES

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 50 x 50 x 30 mm 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

0I. 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
Coolant:	Oil
Runtime:	00:00:36 h

02. ROUGHING OF EYES

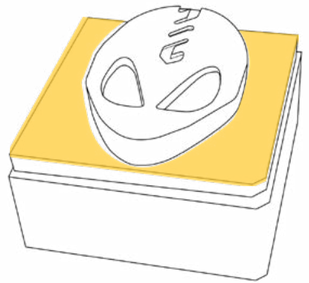
Tool:	533N.F3.0400.000.120
RPM:	35,810
Feed rate:	3,223 mm/min
Vc:	450 m/min
fpt:	0.030 mm/t
WOC:	0.600 mm
DOC:	3.000 mm
R-angle:	1°
Offset:	0.100 mm
Coolant:	Oil
Runtime:	00:00:25 h

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
Coolant:	Oil
Runtime:	00:02:05 h

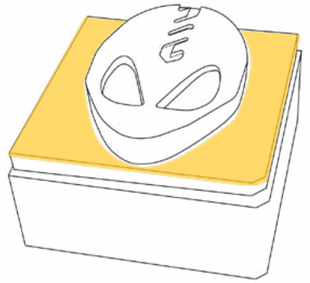
04. PRE-FINISHING (OUT&BOTTOM SIDE)

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
Coolant:	Oil
Runtime:	00:00:45 h



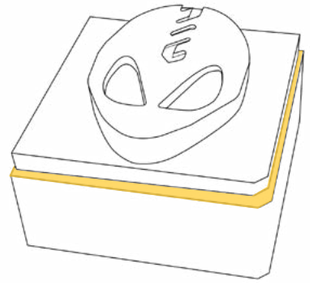
05. FINISHING OUTSIDE/BOTTOM SIDE

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
Coolant:	Oil
Runtime:	00:02:15 h



06. ROUGHINGH/FINISHING BLOCK

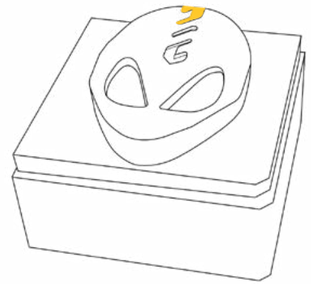
Tool:	533N.F3.0400.000.120
RPM:	35,810
Feed rate:	2,200 mm/min
Vc:	450 m/min
fpt:	0.030 mm/t
WOC:	0.600 mm
DOC:	10.000 mm
R-angle:	1°
Offset:	0.100 mm
Coolant:	Oil
Runtime:	00:00:45 h



931.T3.0080.003.016

07. ROUGHING ALIEN LOGO DESIGN I

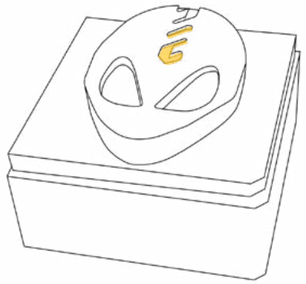
Tool:	931.T3.0080.003.016
RPM:	39,789
Feed rate:	1,910 mm/min
Vc:	100 m/min
fpt:	0.016 mm/t
WOC:	0.016 mm
DOC:	2.000 mm
R-angle:	1°
Offset:	0.030 mm
Coolant:	Oil
Runtime:	00:01:25 h



931.T3.0100.003.020

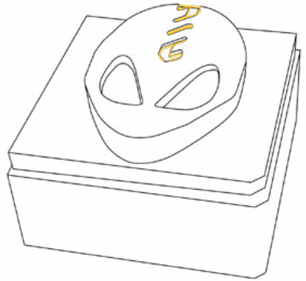
08. ROUGHING ALIEN LOGO DESIGN 2

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
Coolant:	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
Coolant:	Oil
Runtime:	00:00:35 h

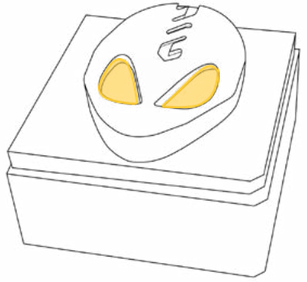


10. ROUGHING EYE SMALL CORNERS

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
Coolant:	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
Coolant:	Oil
Runtime:	00:01:50 h



935.B2.0300.150.060

I2. 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
Coolant:	Oil
Runtime:	00:14:50 h

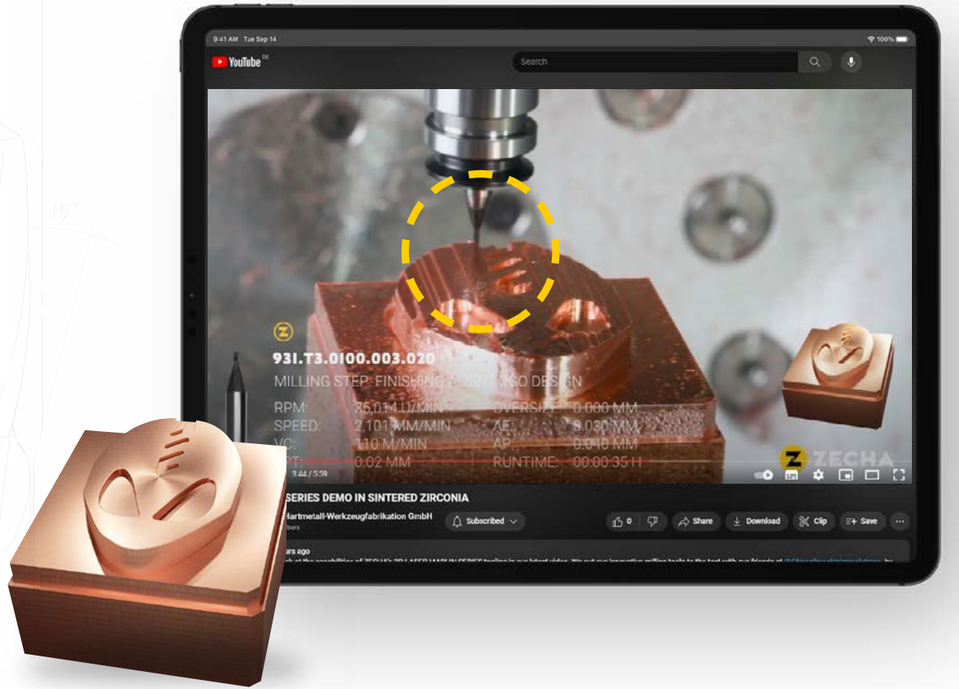
I3. FINISHING CURVED SURFACE

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
Coolant:	Oil
Runtime:	01:33:15 h

935.B2.0100.050.015

I4. 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
Coolant:	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.

@zechatools

@zechatools

@zechatools

@zechatools

ZECHA Hartmetall-Werkzeugfabrikation GmbH
Benzstraße 2, D-75203 Königsbach-Stein
+49 7232 3022 0
www.zecha.de, info@zecha.de

Top-Innovator
2023

STAND 04/2025 | 121999