

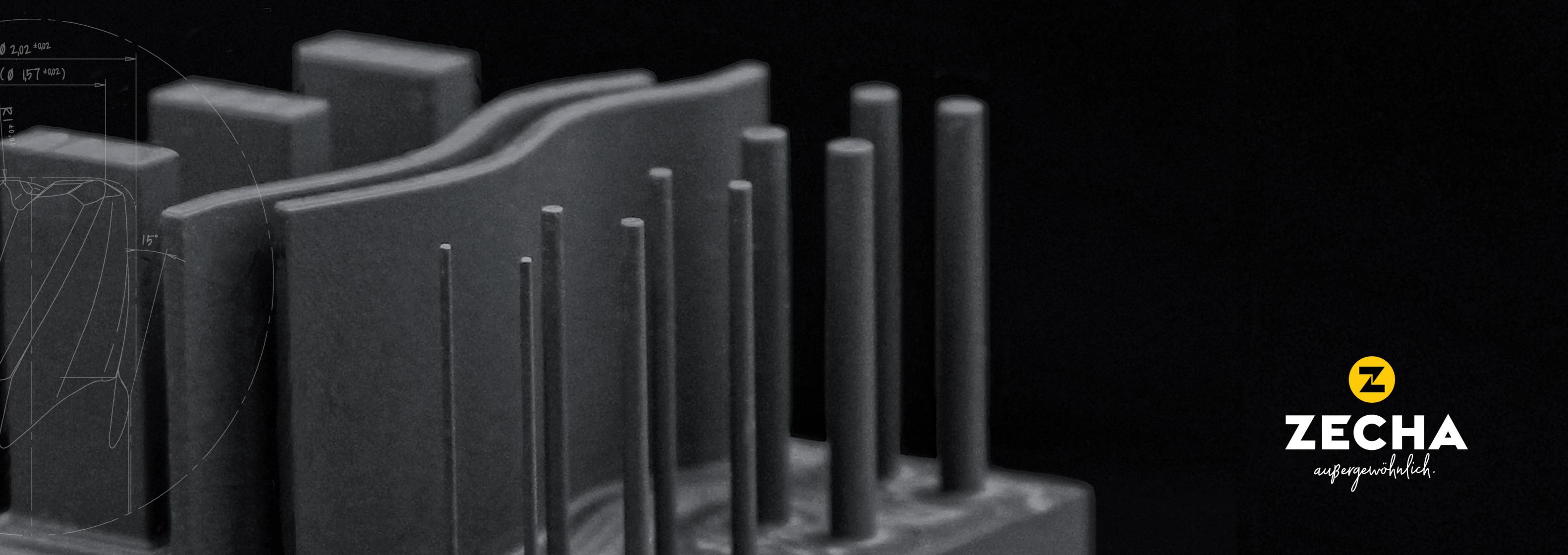


Application Example

SEAGULL® SERIES



$R_{0,3 \pm 0,01}$

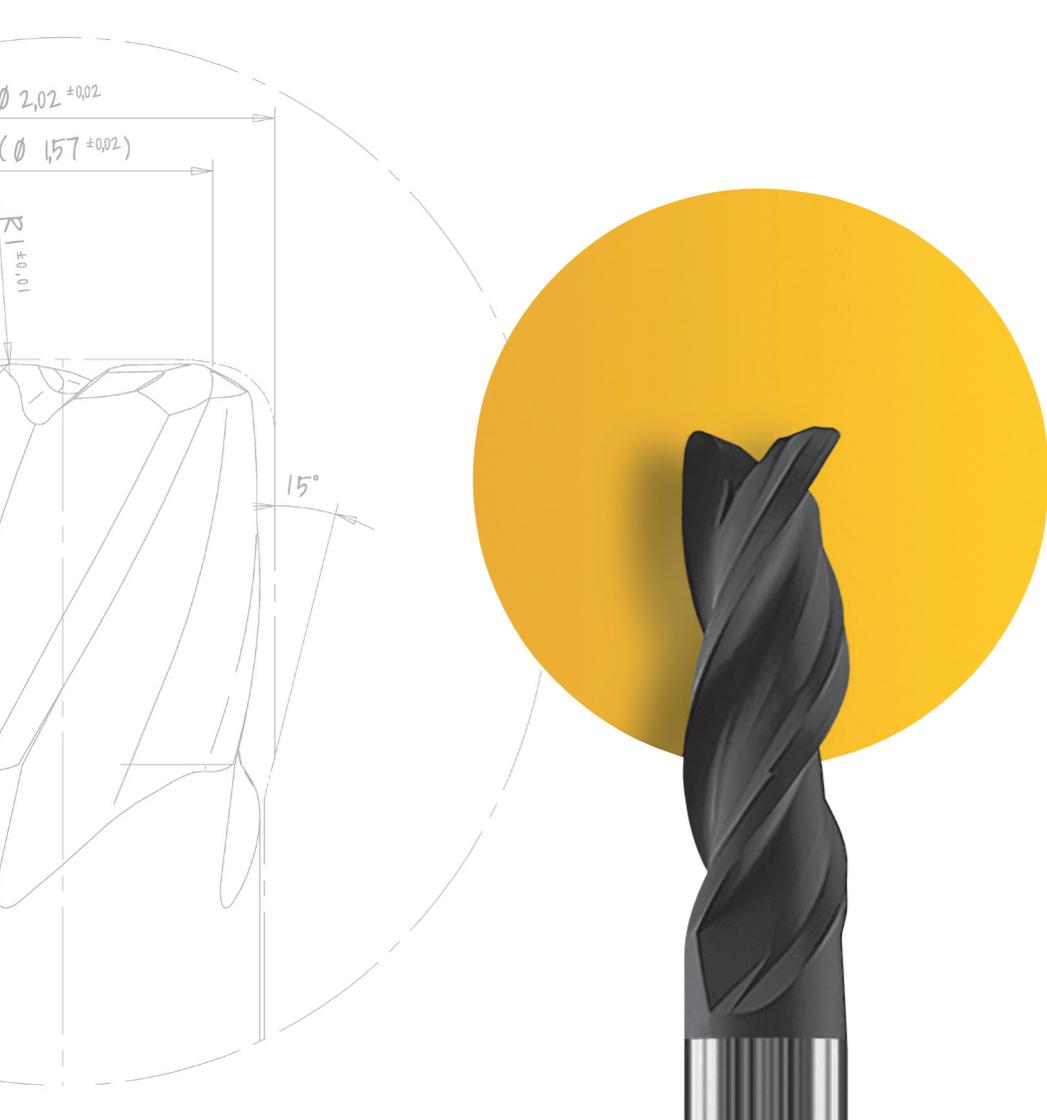


$\varnothing 2,02 \pm 0,02$
 $(\varnothing 1,57 \pm 0,02)$
 $R1 \pm 0,01$
 15°



ZECHA

außergewöhnlich.



SEAGULL® SERIES

PATENTED PRECISION IN GRAPHITE MILLING

Meet the SEAGULL® SERIES by ZECHA, a line of precision tools designed for exceptional performance in graphite electrode milling.

Featuring patented cutting geometries and a short, stable flute design, SEAGULL® SERIES tools significantly reduce deflection during milling.

This ensures precise, clean cuts and extended tool life, making the SEAGULL® SERIES the perfect choice for high-accuracy machining and reliable results in demanding applications.

Experience the cutting-edge technology and unmatched quality of the SEAGULL® SERIES.



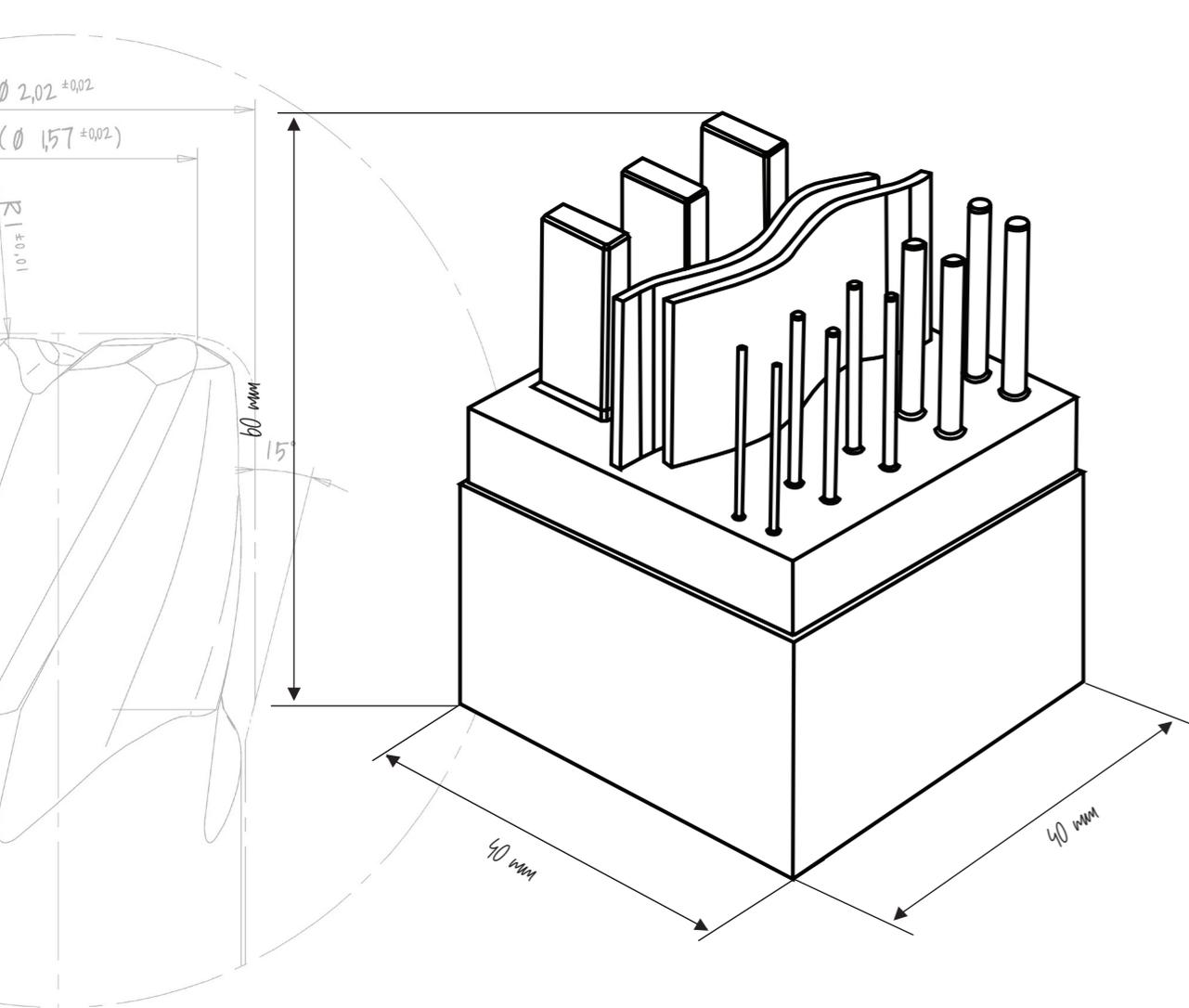
THE TOOLS

In this case study, we employ the exceptional tools from the SEAGULL® SERIES, specifically the 576. T3 series. In addition, we use tools from the Quality Line 575.

The 575 series tools are renowned for their precision and durability, making them ideal for detailed milling tasks. Complementing these are the 576.T3 SEAGULL® SERIES tools, which feature an innovative roughing/finishing flute design.

This unique design allows for efficient material removal and superior surface finishes, ensuring both speed and accuracy in graphite electrode milling.

Together, these tools demonstrate the SEAGULL® SERIES' capability to deliver top-tier performance and reliability.



THE WORKPIECE

In this case study, we will be milling a 40 x 40 x 60 mm graphite electrode featuring various design elements with different geometries and thicknesses.

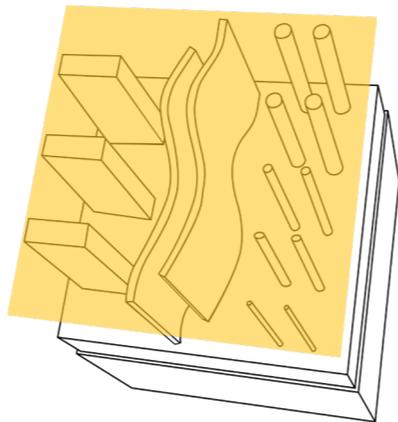
This demonstration showcases the SEAGULL® SERIES tools' ability to handle complex shapes with precision and deliver outstanding surface finishes.

The intricate details and varied thicknesses highlight the tools' superior performance in both accuracy and quality, emphasizing their reliability in demanding graphite milling applications.



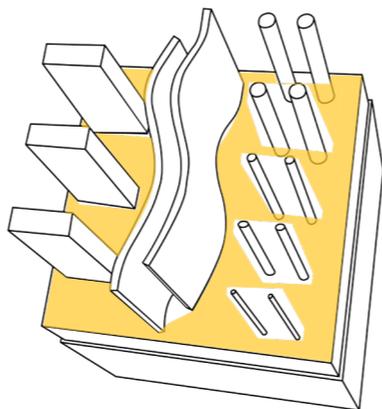
01. SURFACE ROUGHING

Tool: 576.T3.0500.050.200
 RPM: 22,282
 Feed Rate: 2,790 mm/min
 Vc: 350 m/min
 fpt: 0.042 mm/t
 WOC: 2.000 mm
 DOC: 0.500 mm
 R-angle: -
 Offset: 0.000 mm
 Coolant: Air
 Runtime: 00:01:00 h



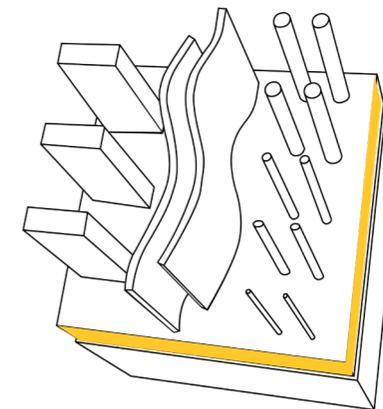
02. ROUGHING

Tool: 576.T3.0500.050.200
 RPM: 21,709
 Feed Rate: 2,000 mm/min
 Vc: 341 m/min
 fpt: 0.031 mm/t
 WOC: 3.500 mm
 DOC: 8.900 mm
 R-angle: 10°
 Offset: X-, Y- 0.450 mm
 Z- 0.200 mm
 Coolant: Air
 Runtime: 00:02:30 h



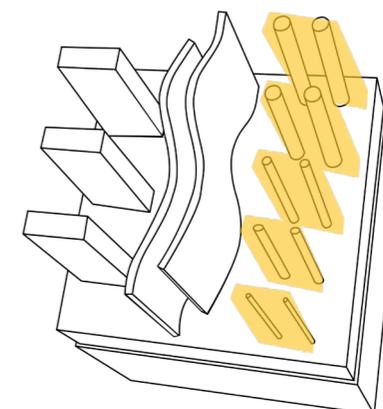
03. FINISHING (TOUCH FRAME)

Tool: 576.T3.0500.050.200
 RPM: 22,282
 Feed Rate: 2,790 mm/min
 Vc: 350 m/min
 fpt: 0.042 mm/t
 WOC: 0.400 mm
 DOC: 0.350 mm
 R-angle: 0.15°
 Offset: 0.000 mm
 Coolant: Air
 Runtime: 00:02:00 h



04. ROUGHING (PIN STRUCTURE)

Tool: 576.T3.0500.050.200
 RPM: 21,709
 Feed Rate: 2,000 mm/min
 Vc: 341 m/min
 fpt: 0.031 mm/t
 WOC: 5.000 mm
 DOC: 3.500 mm
 R-angle: 10°
 Offset: 0.000 mm
 Coolant: Air
 Runtime: 00:00:30 h



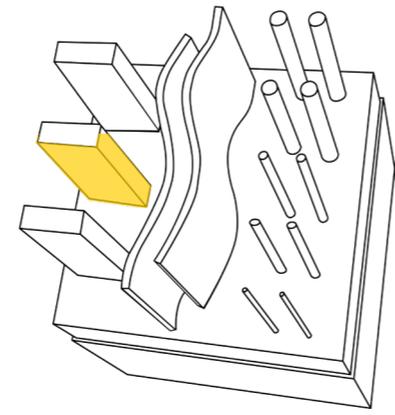
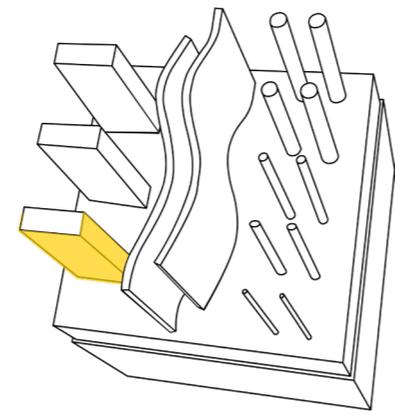


05. FINISHING (BLOCK 1)

Tool: 576.T3.0500.050.200
 RPM: 16,000
 Feed Rate: 2,000 mm/min
 Vc: 251 m/min
 fpt: 0.042 mm/t
 WOC: 0.400 mm
 DOC: 0.400 mm
 R-angle: -
 Offset: X- Y- 0.000 mm
 Z- 0.200 mm
 Coolant: Air
 Runtime: 00:03:30 h

06. FINISHING (BLOCK 2)

Tool: 576.T3.0500.050.200
 RPM: 16,000
 Feed Rate: 1,800 mm/min
 Vc: 251 m/min
 fpt: 0.038 mm/Z
 WOC: 0.400 mm
 DOC: 0.400 mm
 R-angle: -
 Offset: X- Y- 0.000 mm
 Z- 0.200 mm
 Coolant: Air
 Runtime: 00:01:45 h

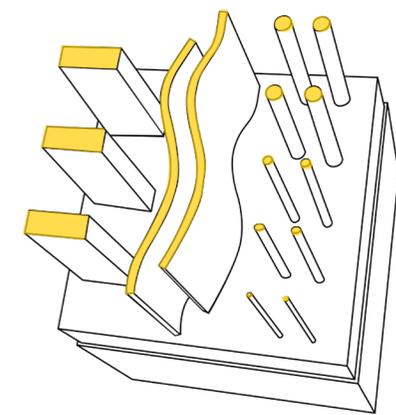


575.200.20.180



07. FINISHING (CHAMFERS OF PINS, WALLS AND BLOCKS)

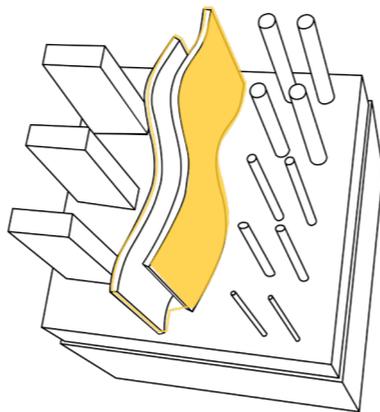
Tool: 575.200.20.180
 RPM: 19,500
 Feed Rate: 1,000 mm/min
 Vc: 122 m/min
 fpt: 0.036 mm/t
 WOC: 2.000 mm
 DOC: 0.100 mm
 R-angle: -
 Offset: 0.000 mm
 Coolant: Air
 Runtime: 00:04:30 h





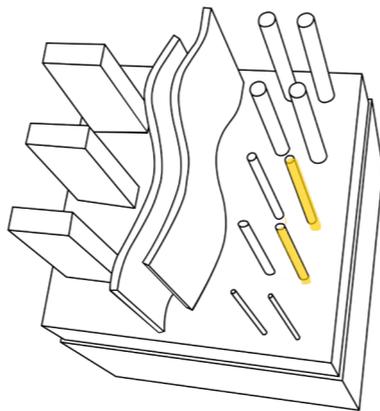
08. PRE-FINISHING (WALLS)

Tool: 575.300.30.180
 RPM: 19,500
 Feed Rate: 1,400 mm/min
 Vc: 183 m/min
 fpt: 0.036 mm/t
 WOC: 0.250 mm
 DOC: 0.090 mm
 R-angle: -
 Offset: X- Y- 0.200 mm
 Z- 0.200 mm
 Coolant: Air
 Runtime: 00:02:30 h



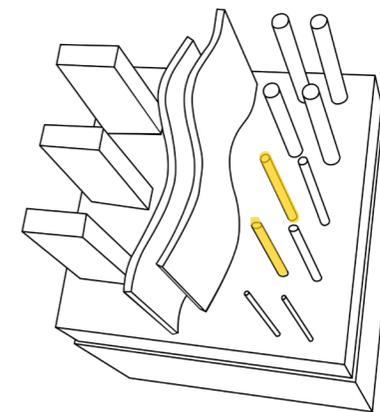
09. FINISHING (MEDIUM PINS)

Tool: 575.300.30.180
 RPM: 19,500
 Feed Rate: 1,000 mm/min
 Vc: 183 m/min
 fpt: 0.026 mm/t
 WOC: 3.000 mm
 DOC: 0.250 mm
 R-angle: -
 Offset: 0.000 mm
 Coolant: Air
 Runtime: 00:04:15 h



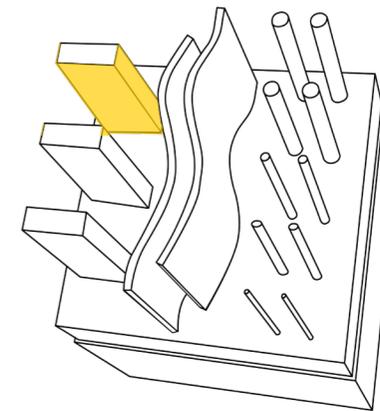
10. FINISHING (VERTICAL PINS)

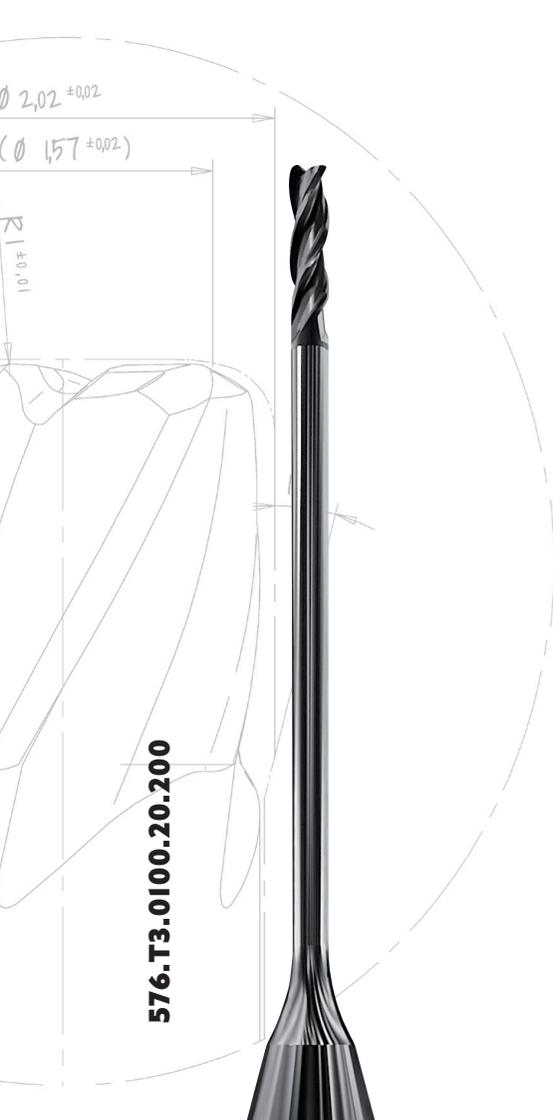
Tool: 575.300.20.180
 RPM: 19,500
 Feed Rate: 1,000 mm/min
 Vc: 183 m/min
 fpt: 0.026 mm/t
 WOC: 2.000 mm
 DOC: 0.250 mm
 R-angle: -
 Offset: 0.000 mm
 Coolant: Air
 Runtime: 00:03:20 h



II. FINISHING (BLOCK 3)

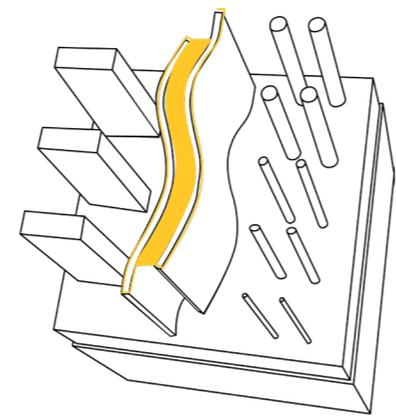
Tool: 575.300.30.180
 RPM: 22,000
 Feed Rate: 1,400 mm/min
 Vc: 207 m/min
 fpt: 0.032 mm/t
 WOC: 0.450 mm
 DOC: 0.900 mm
 R-angle: -
 Offset: 0.000 mm
 Coolant: Air
 Runtime: 00:05:30 h





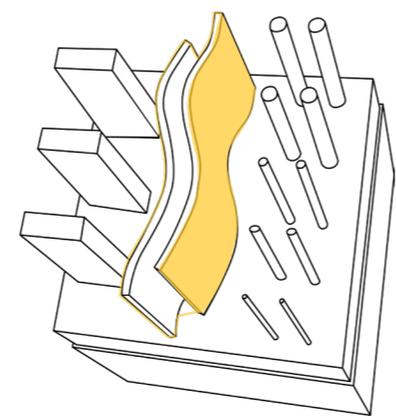
12. ROUGHING (BETWEEN WALLS)

Tool: 576.T3.0100.20.200
 RPM: 26,738
 Feed Rate: 63 mm/min
 Vc: 84 m/min
 ftp: 0.008 mm/t
 WOC: 1.000 mm
 DOC: 0.100 mm
 R-angle: 0.15°
 Offset: X-, Y- 0.300 mm
 Z- 0.200 mm
 Coolant: Air
 Runtime: 00:12:00 h



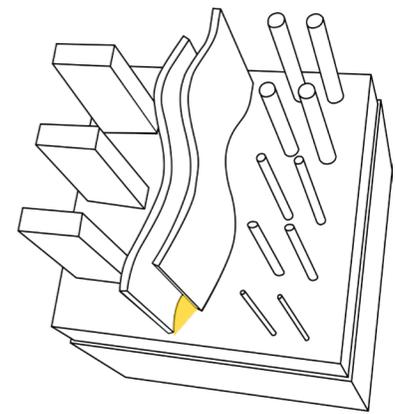
13. FINISHING (WALLS)

Tool: 576.T3.0100.20.200
 RPM: 25,000
 Feed Rate: 550 mm/min
 Vc: 78 m/min
 ftp: 0.007 mm/t
 WOC: 0.300 mm
 DOC: 0.125 mm
 R-angle: 0.15°
 Offset: X-, Y- 0.300 mm
 Z- 0.200 mm
 Coolant: Air
 Runtime: 00:45:00 h



14. FINISHING FLOOR

Tool: 576.T3.0100.20.200
 RPM: 25,000
 Feed Rate: 550 mm/min
 Vc: 78 m/min
 ftp: 0.007 mm/t
 WOC: 0.300 mm
 DOC: 0.200 mm
 R-angle: -
 Offset: X-, Y- 0.300 mm
 Coolant: Air
 Runtime: 00:00:10 h



∅ 2,02 ±0,02
(∅ 1,57 ±0,02)

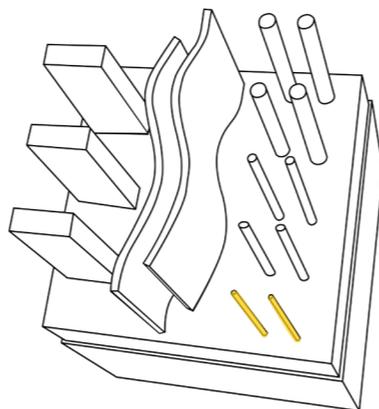
R1 ±0,01

575.200.20.180



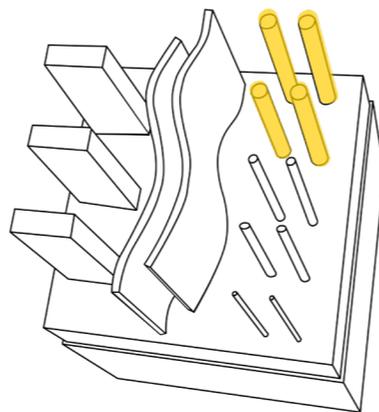
15. FINISHING (SMALL PINS)

Tool: 575.200.20.180
RPM: 19,500
Feed Rate: 1,000 mm/min
Vc: 122 m/min
fpt: 0.026 mm/t
WOC: 2.000 mm
DOC: 0.100 mm
R-angle: -
Offset: 0.000 mm
Coolant: Air
Runtime: 00:24:30 h



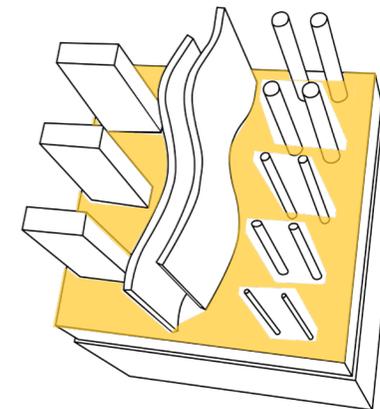
16. FINISHING (BIG PINS)

Tool: 575.200.20.180
RPM: 19,500
Feed Rate: 1,400 mm/min
Vc: 122 m/min
fpt: 0.036 mm/t
WOC: 2.000 mm
DOC: 0.400 mm
R-angle: -
Offset: X-, Y- 0.000 mm
Z- 0.200 mm
Coolant: Air
Runtime: 00:04:30 h



17. FINISHING FLOOR

Tool: 575.200.20.180
RPM: 19,500
Feed Rate: 1,200 mm/min
Vc: 122 m/min
fpt: 0.031 mm/t
WOC: 2.000 mm
DOC: 0.200 mm
R-angle: -
Offset: X-, Y- 0.100 mm
Coolant: Air
Runtime: 00:04:15 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.



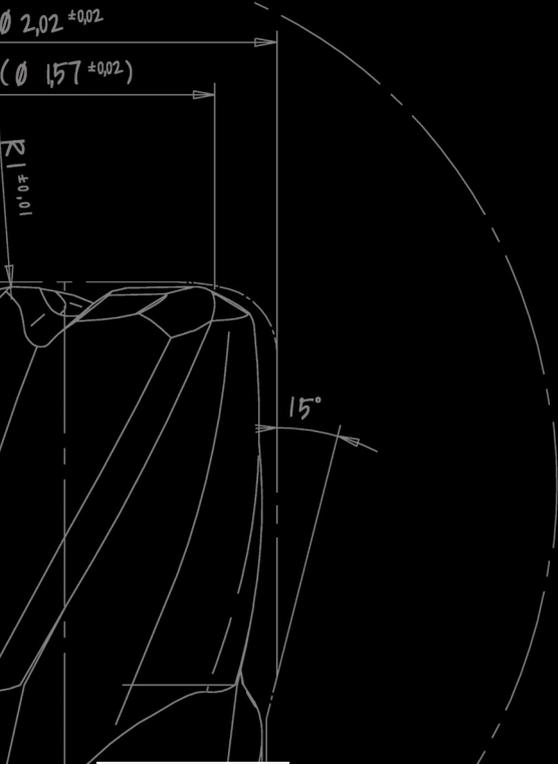


DON'T MISS A THING

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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