SprutCAM X

Multipurpose CAD/CAM solutions

cost-effective and powerful solution for CNC programming and industrial robots

About us

SprutCAM Tech

SprutCAM Tech team has been working on CAM software development since 1987

We have acquired extensive experience and expertise in the CAD/CAM domain. Our team consists of experts with hands on experience in the technologies, which make CNC programming easier, faster, and more effective for our customers

19 841
SprutCAM users around the world

100
Dealers in 54 countries

35 years
of software development for CNC and industrial robots

About SprutCAM X

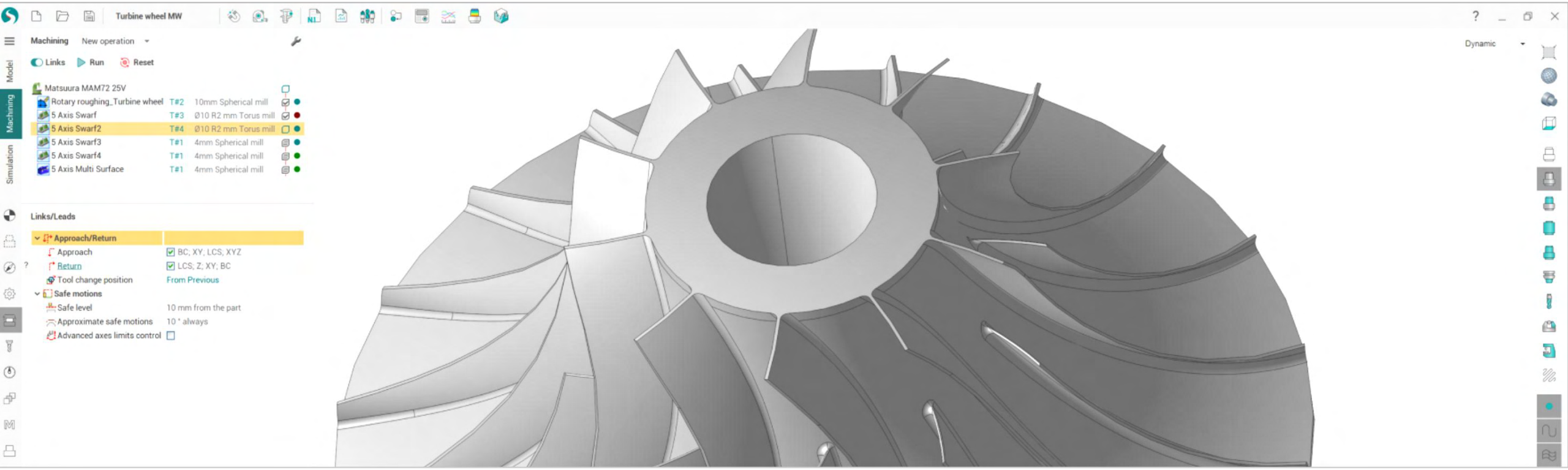
SprutCAM is a CAD/CAM system for streamlined CNC machines and industrial robots programming

Proprietary code

The software kernel and all algorithms of toolpath calculation and simulation are proprietary

TOP-5 worldwide

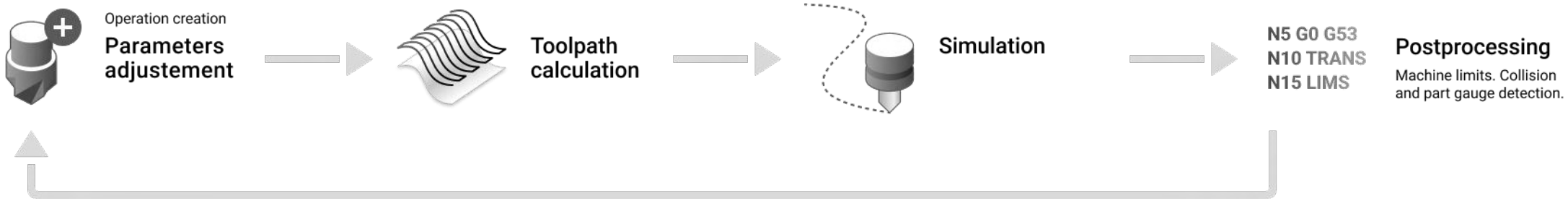
in the global CAD/CAM



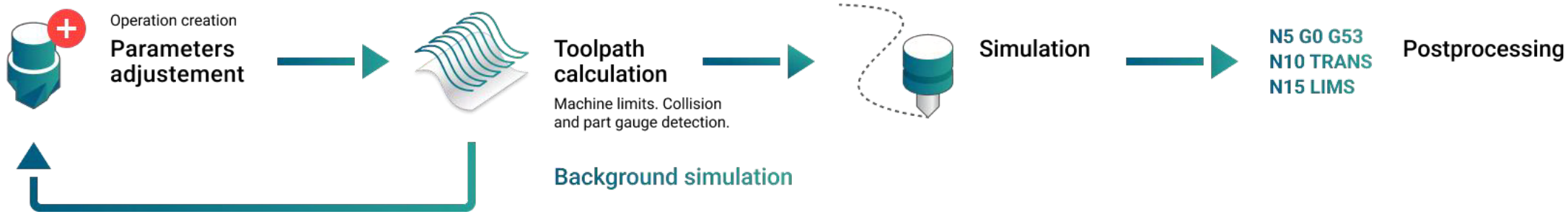
Unique workflow

SprutCAM X

Other CAD/CAM



SprutCAM X

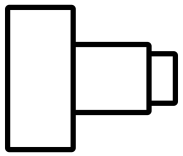


Unique selling points

SprutCAM X

Toolpath calculation taking into account machine kinematics realtime

Unlike other CAM systems, SprutCAM allows visualization of collisions and air-cutting immediately after the toolpath calculation



Workpiece updated live

Workpiece for the subsequent operation is the result of all the previous operations. SprutCAM always keeps the workpiece updated live and visible to the user.

N5 G0 G53
N10 TRANS
N15 LIMS

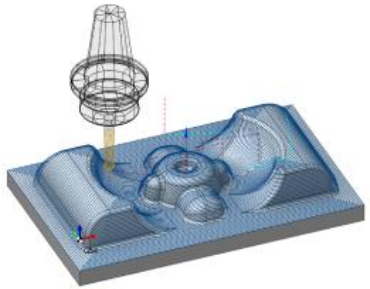
Simulation by G-code

SprutCAM users don't need separate applications for G-code verification. G-code verification is supported by numerical controllers with embedded cycles from Fanuc, Heidenhain, Siemens

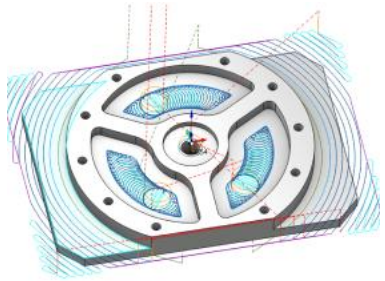
Streamlined production

70% reduction of time necessary to obtain ready-to-use G-code for CNC machines

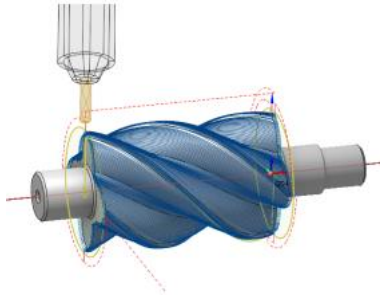
Solutions for any type of CNC machine



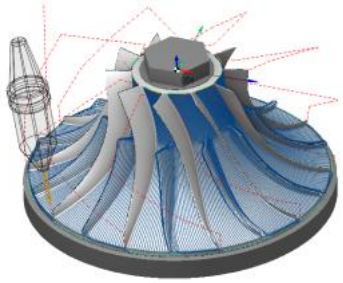
2.5x and 3x mill



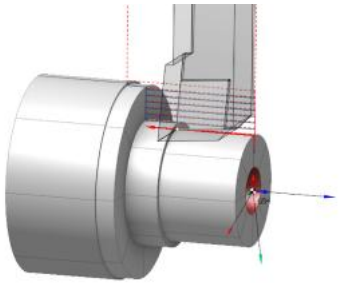
HSM and adaptive



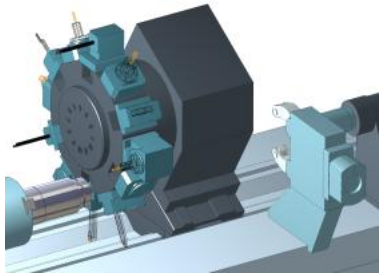
Rotary



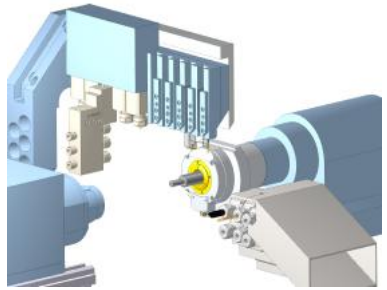
Multiaxis



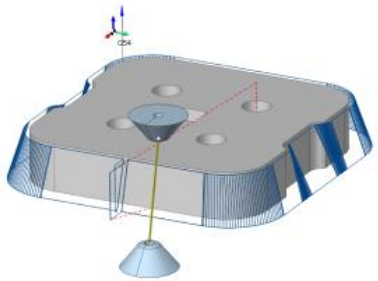
Lathe



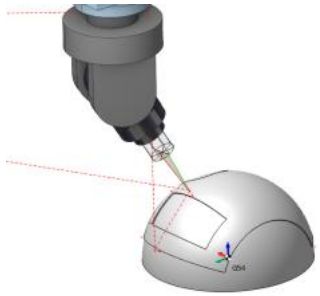
Turn-mill



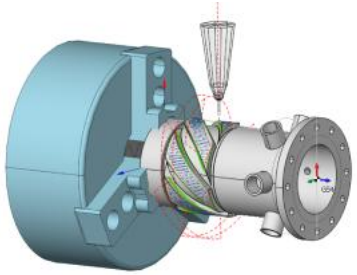
Swiss and MTM



2x and 4x axis EDM



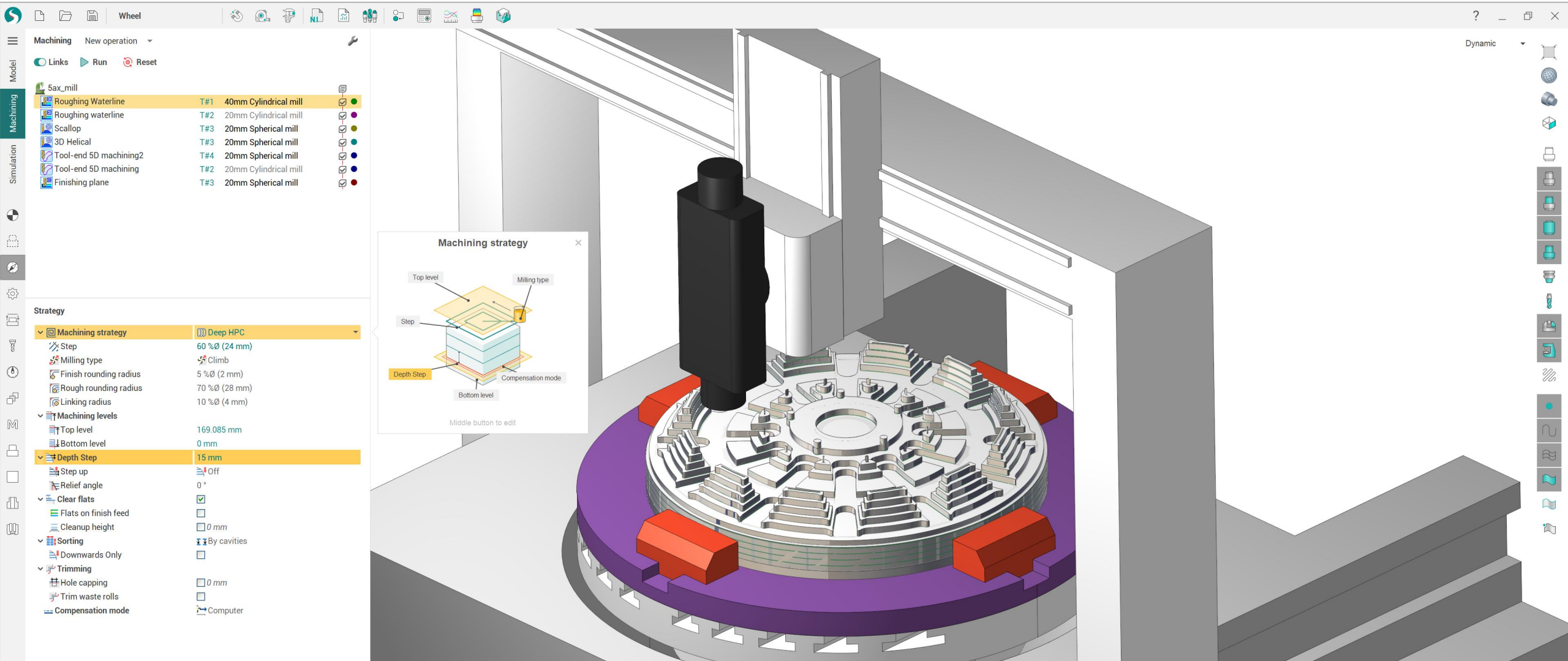
5-6D cutting



Additive and hybrid

Easy and intuitive user interface

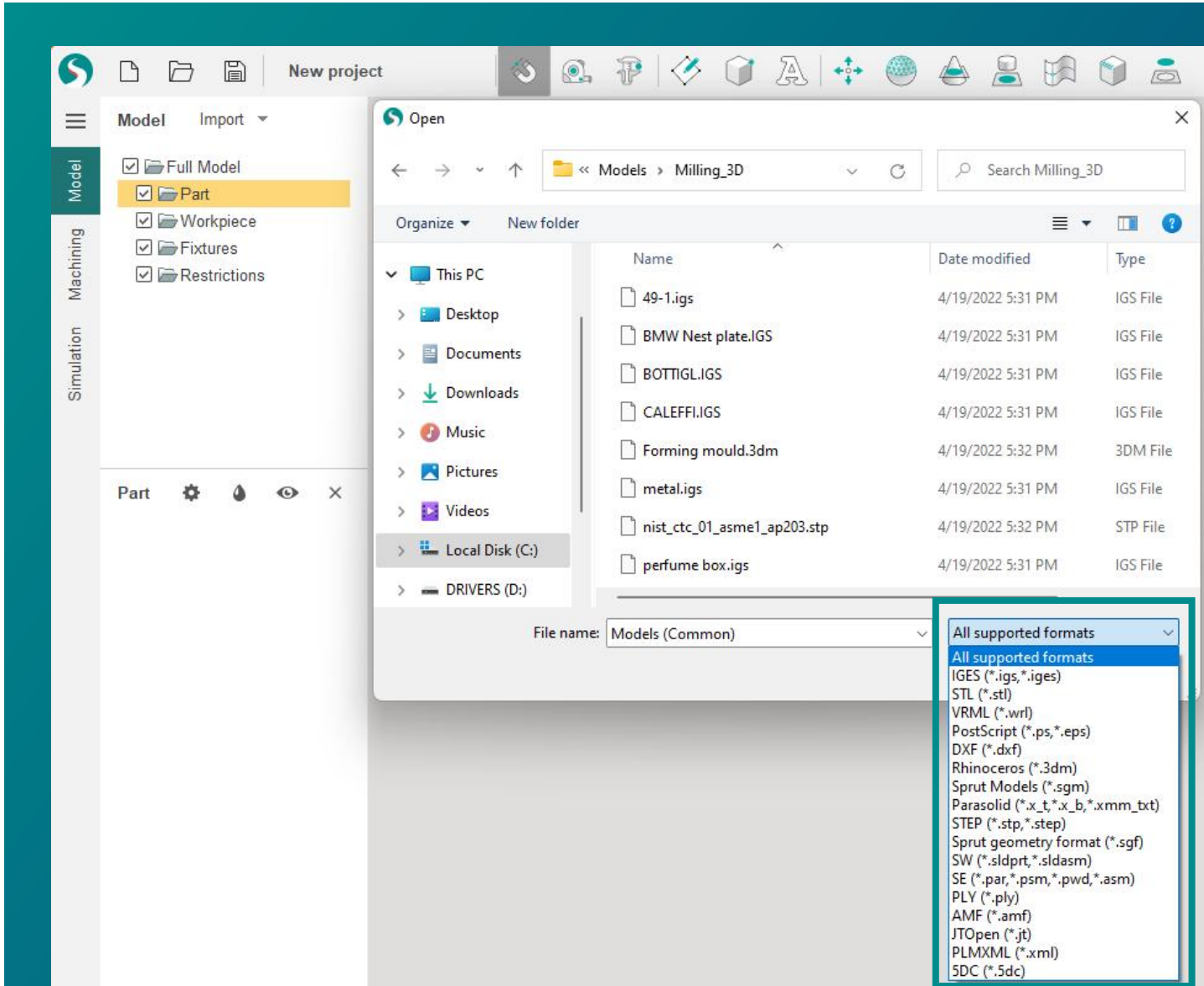
Entire workflow in one window



CAD/CAM

Import from CAD systems

SprutCAM supports import of 3D models in various formats, for instance: IGES, STEP, Parasolid, STL and DXF.



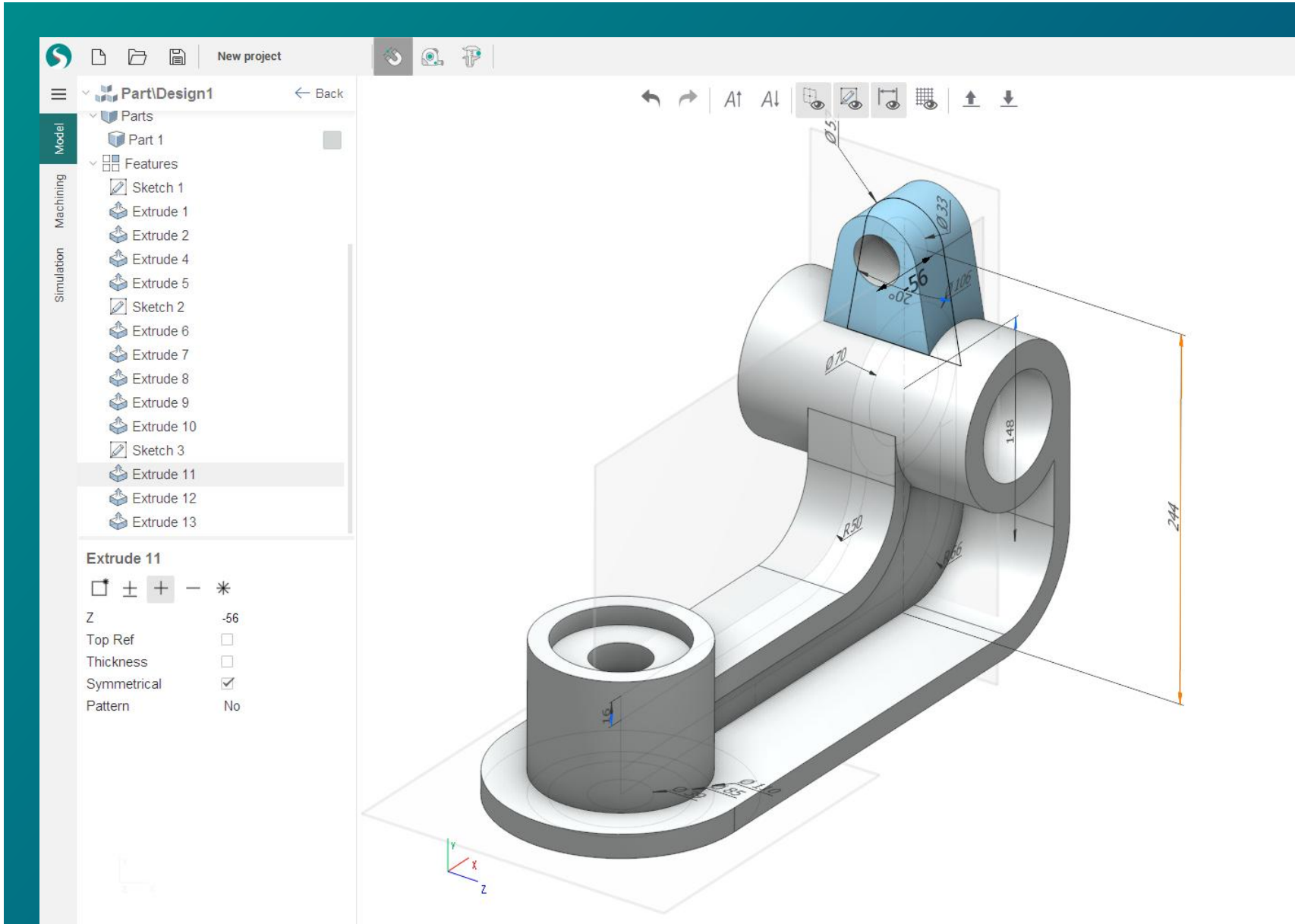
3D CAD

Integrated solution.
Model designing and machining programming
without leaving SprutCAM

Easy-to-use and “learn as you go” user interface

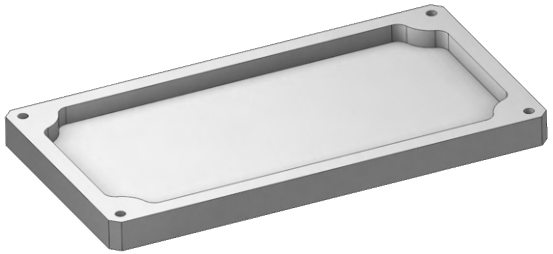
System suggests the next suitable step at any given point

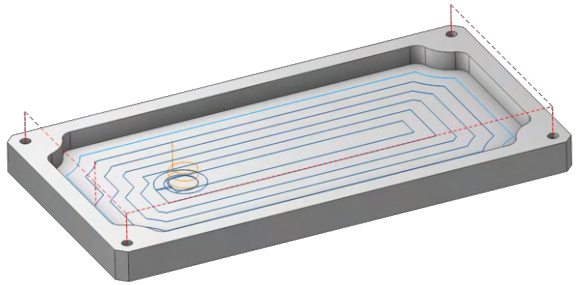
Dynamic snaps. Automatic snapping of limits and dimensions



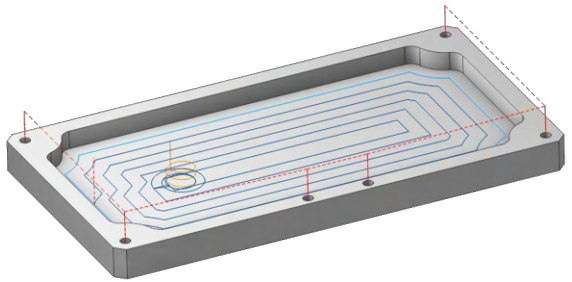
Associative links with the imported 3D models

Version 1

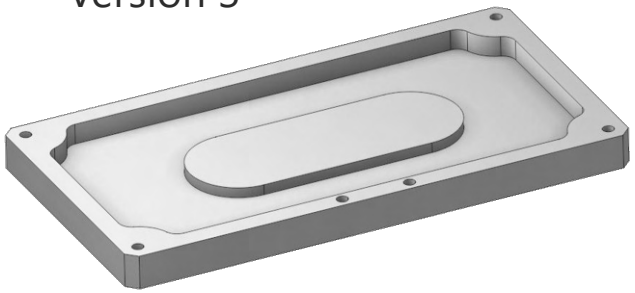


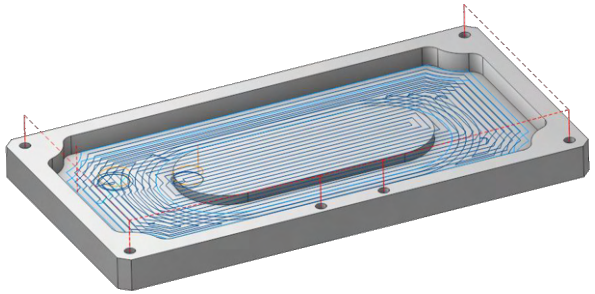


Version 2

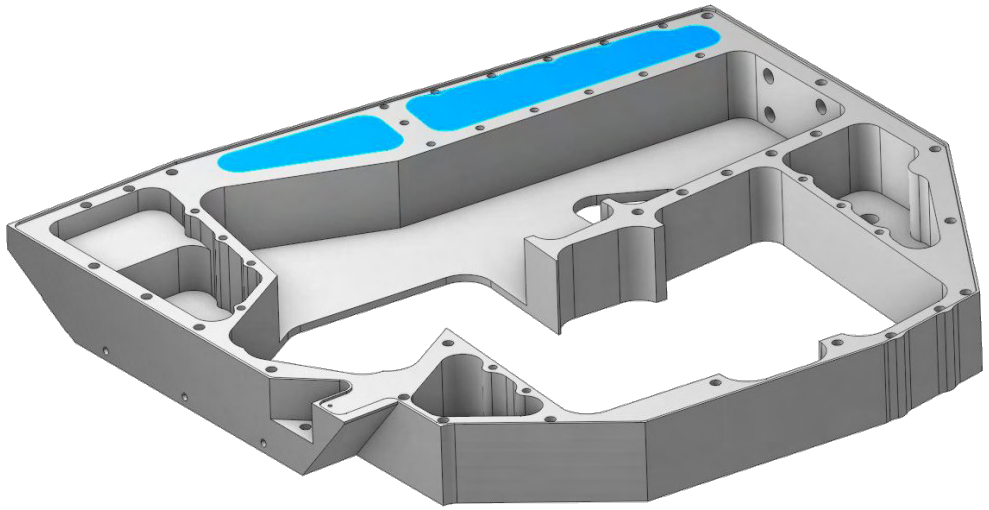


Version 3

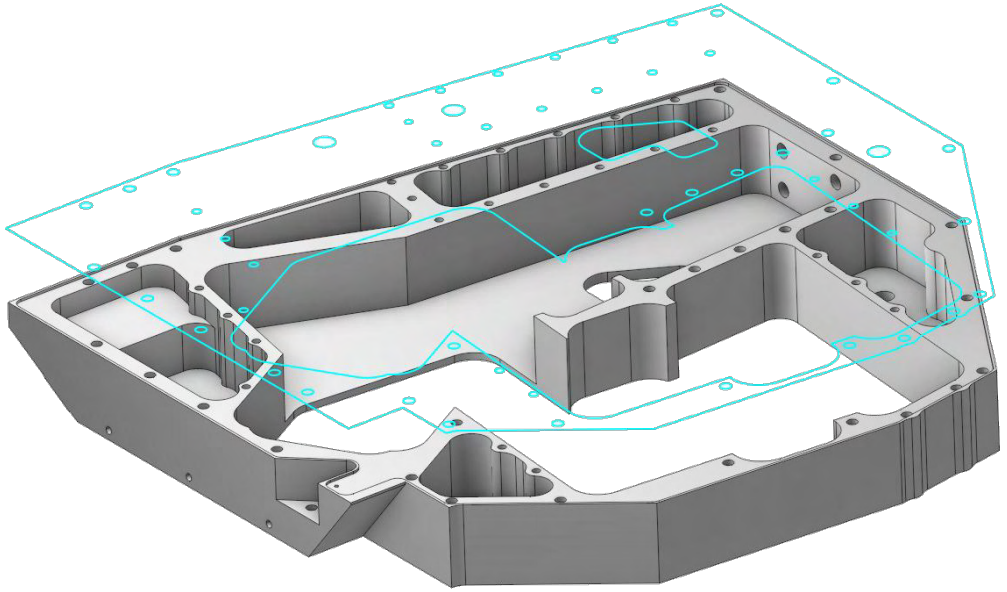




3D geometry

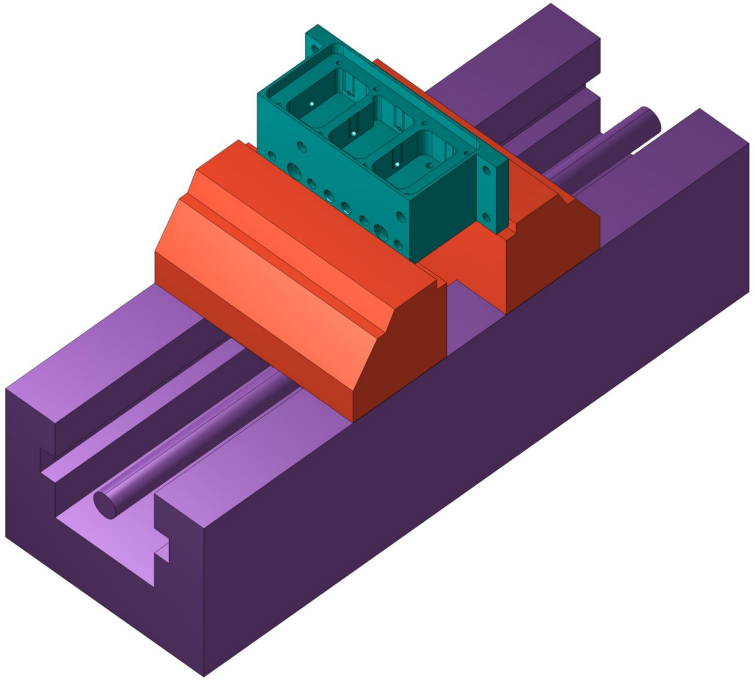


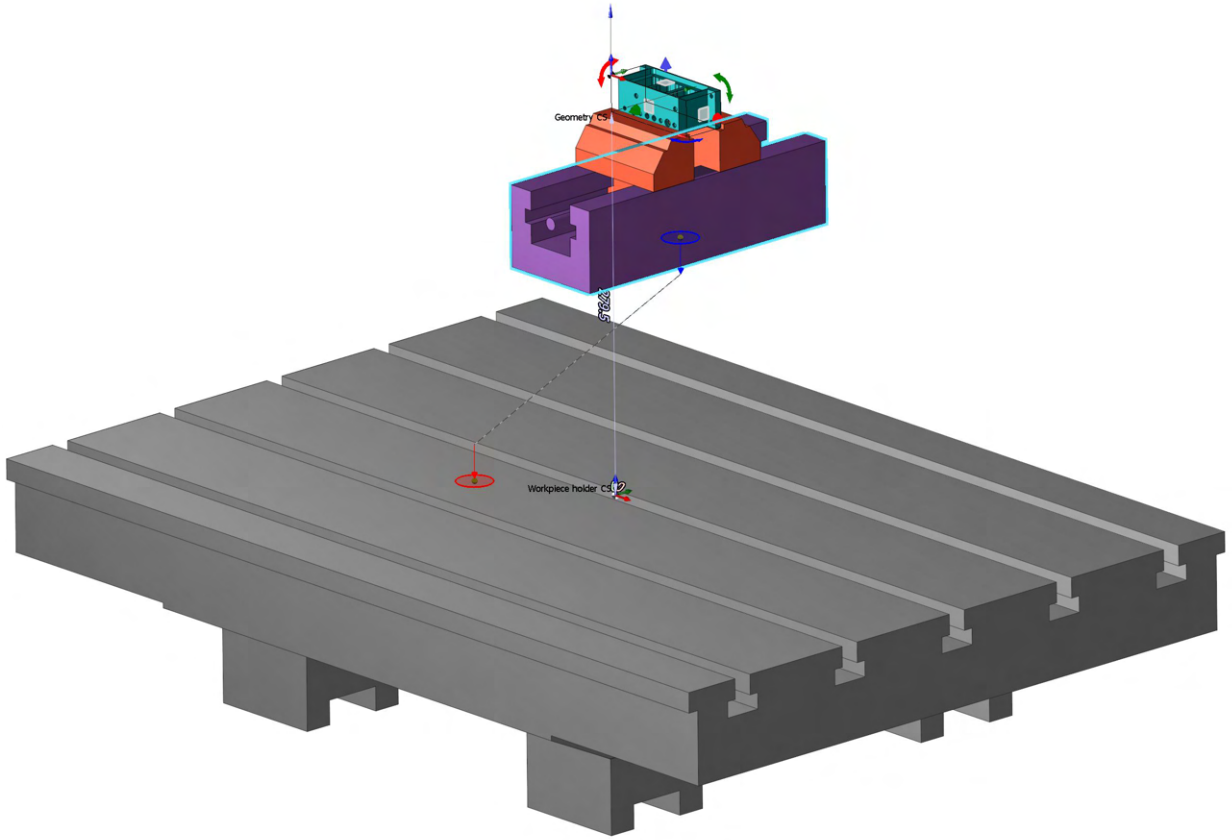
Patch hole function



Surfaces boundary projection

Fixture with smart snaps





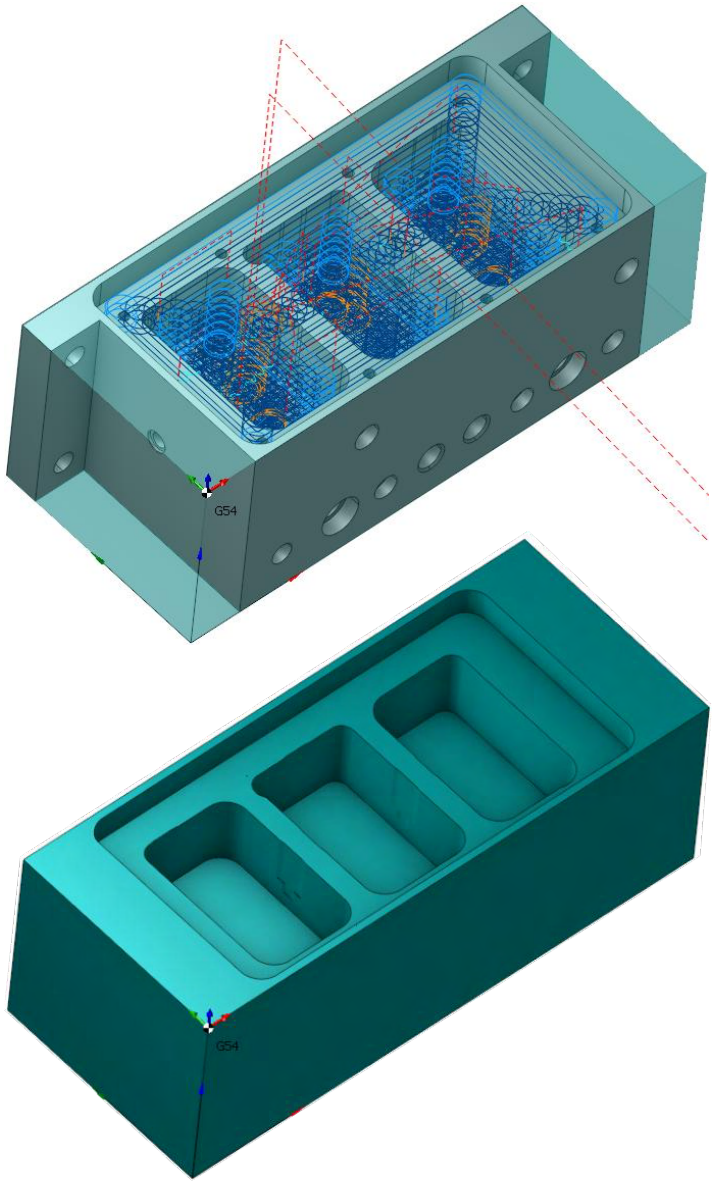
SprutCAM X

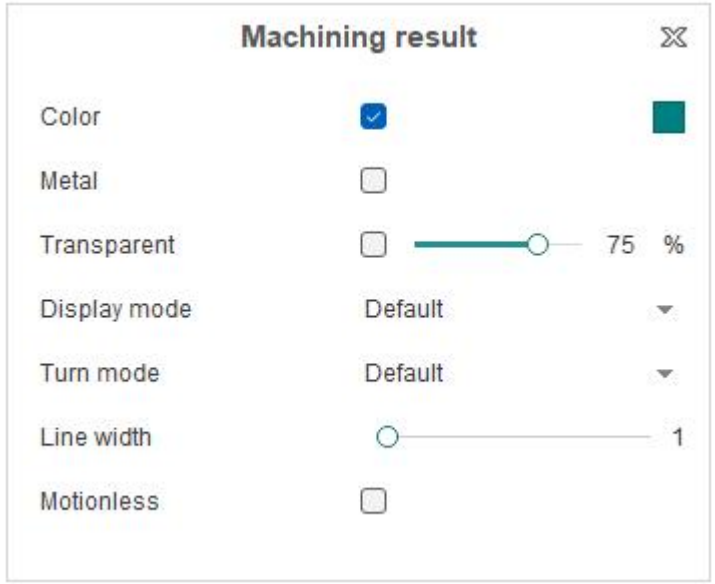
Capabilities and functions for the
3 - 4 - 5 axis machining

Machining result

Machining result is visible immediately after the calculation is complete

When calculating the toolpath, SprutCAM takes into account machining result of the previous operation

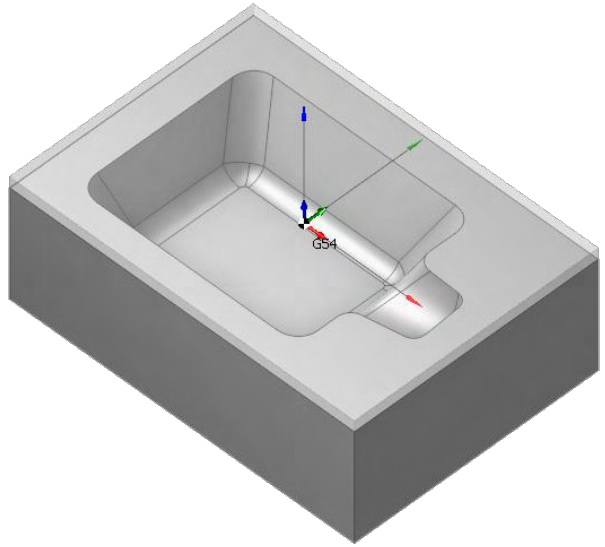


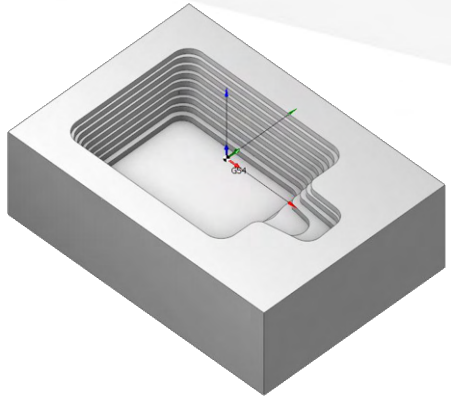


Workpiece update

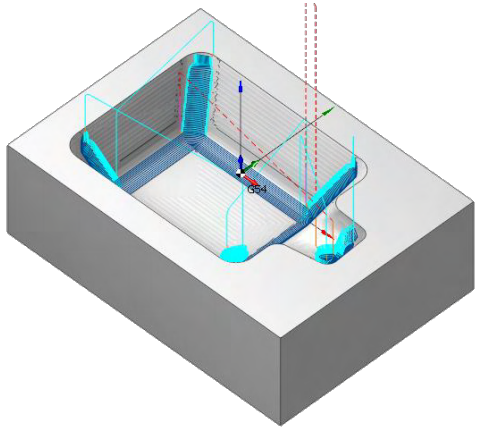
Rest material is considered for automatic calculation
of additional operations

Rest material control is precise and highlighted in color

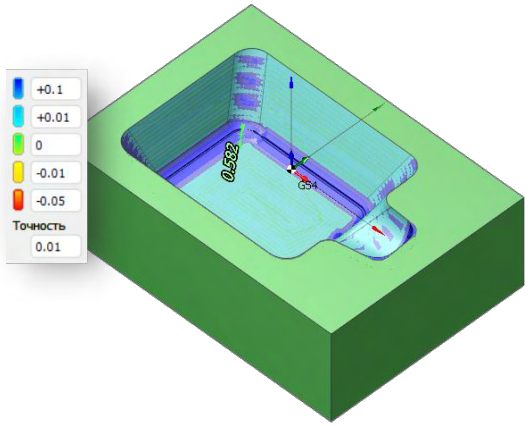




Stock after roughing



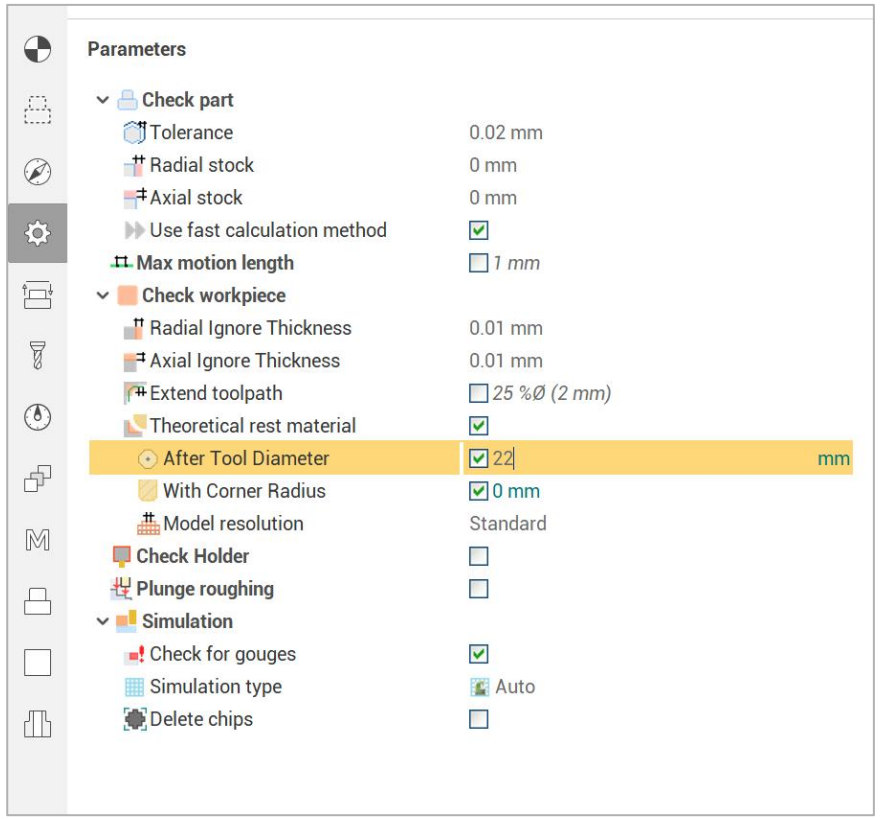
Automatic additional operation

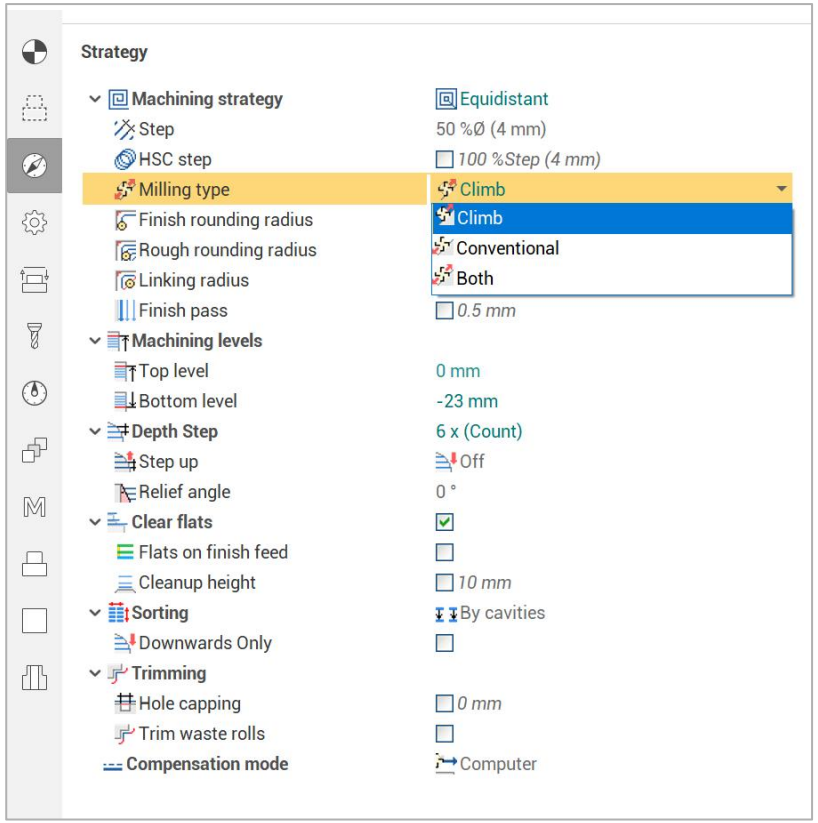


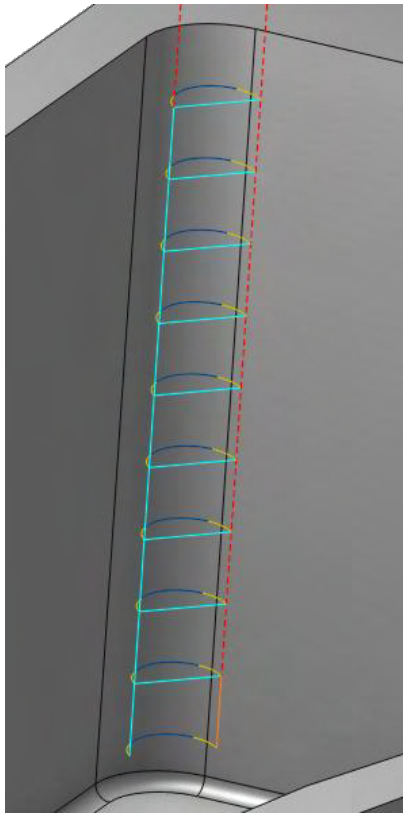
Visual and precise control of the stock

Workpiece update

Toolpath calculation based on approximate rest material
for 2.5D axial additional machining operations

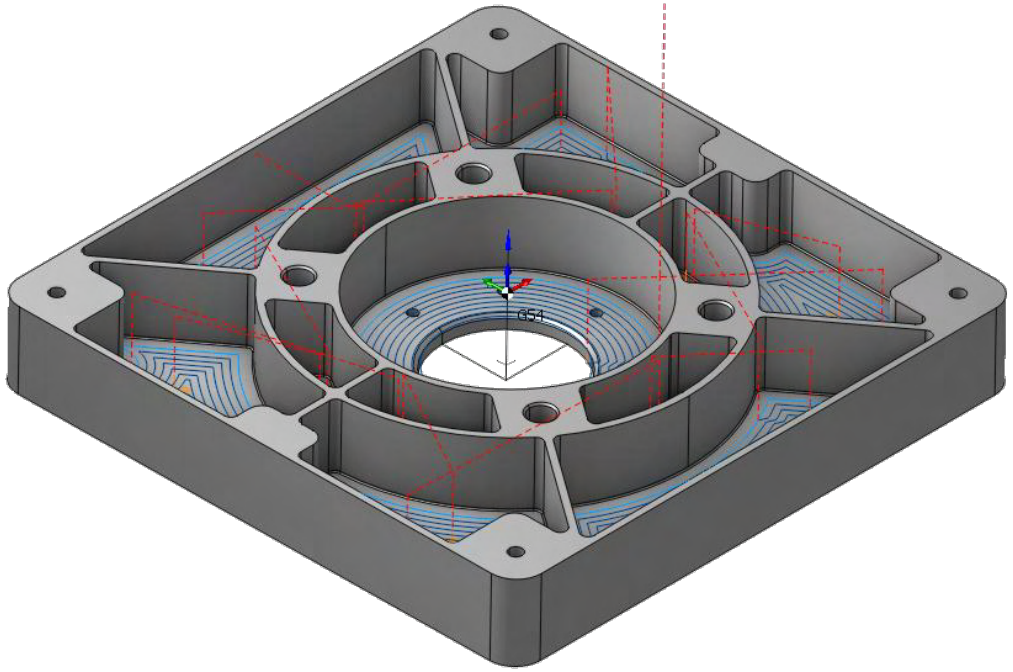


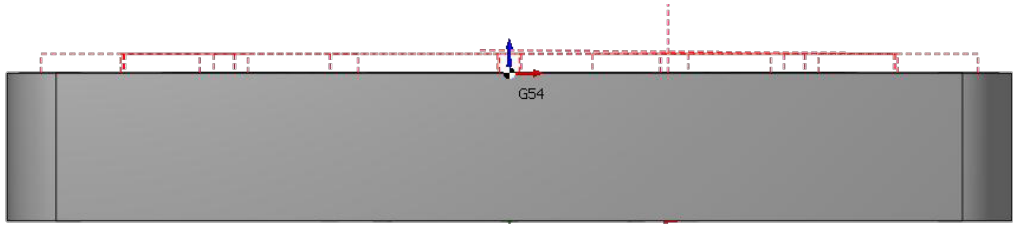




Control of safe motions

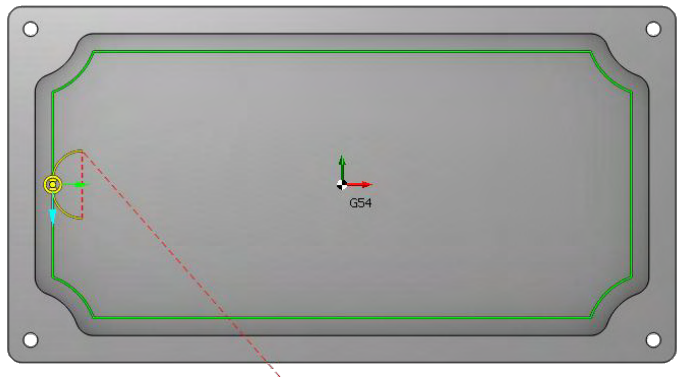
Automatic calculation of short and long links on different machining levels taking into account the safe level



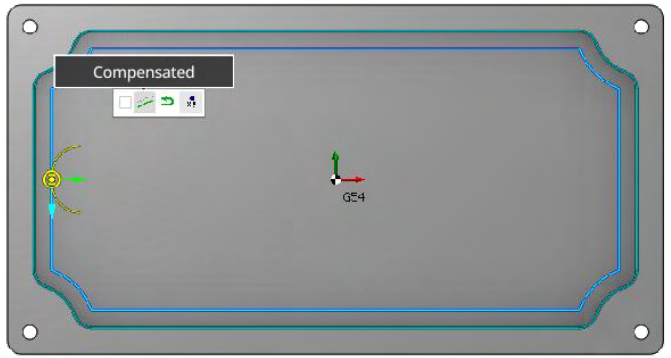


Interactive settings of contouring operations

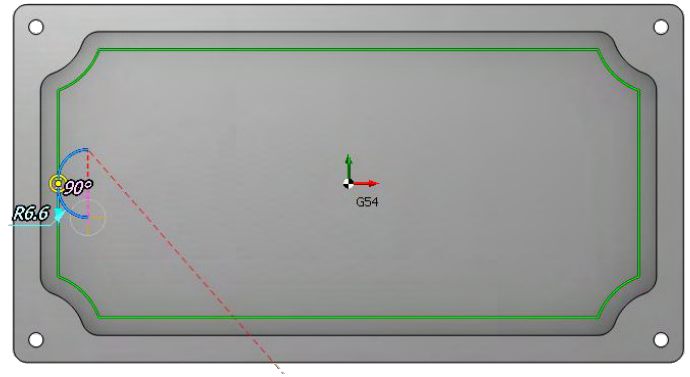
Control of contouring, start point, machining direction and radius compensation



Start point control



Approach by tangent

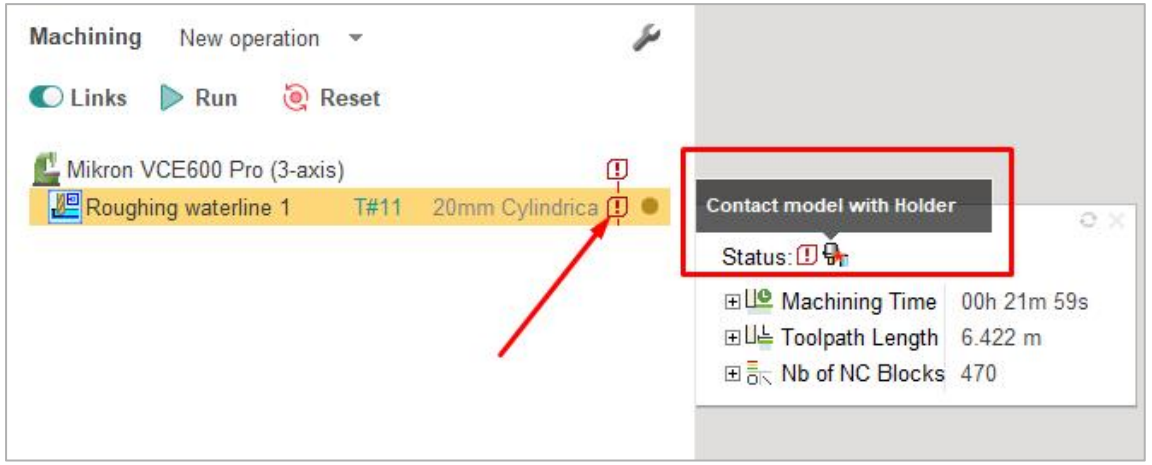


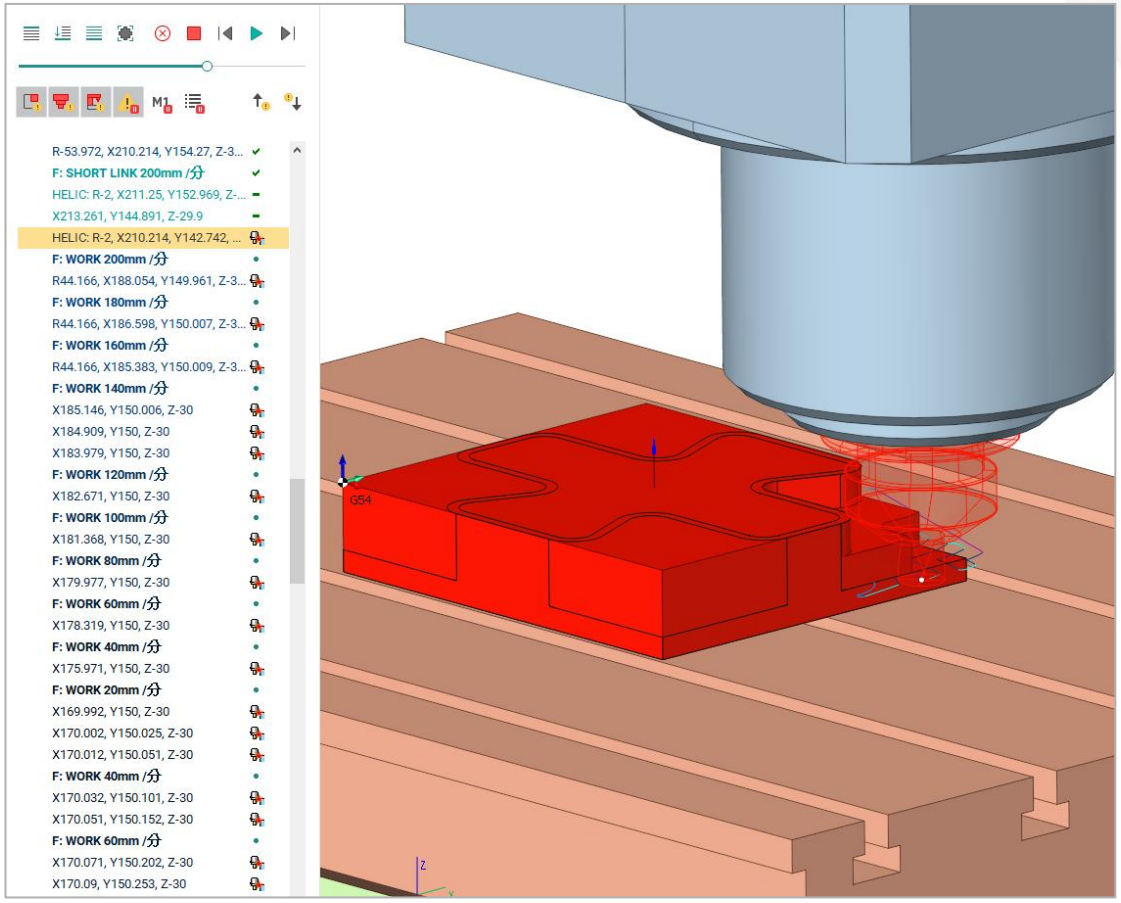
Approach by arc

Collision control

SprutCAM shows errors immediately after toolpath calculation and before the simulation stage

In simulation mode, frames with errors are marked red

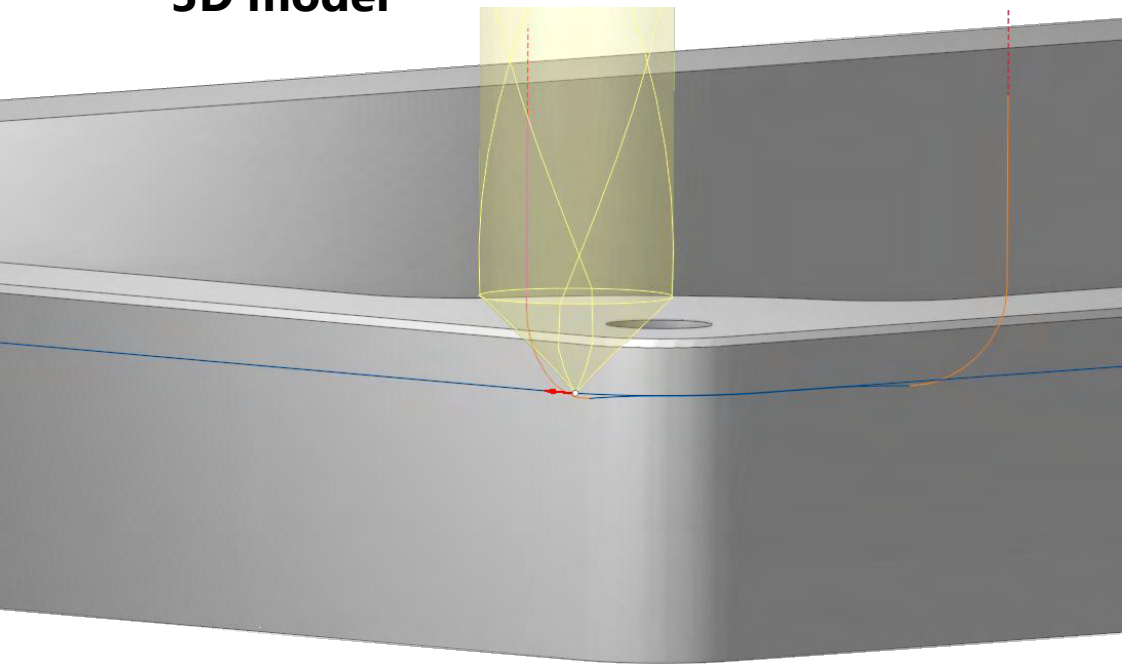


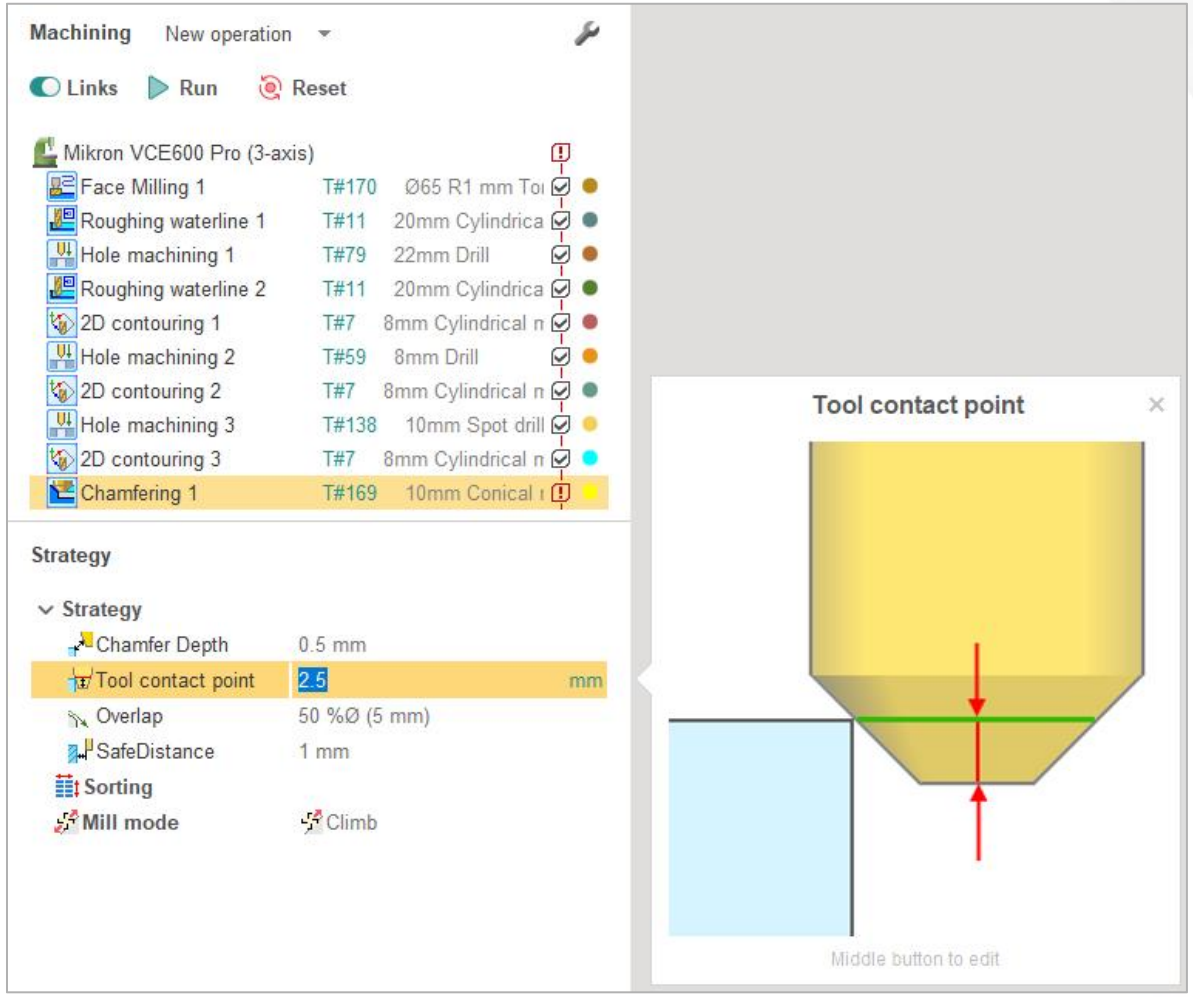


Chamfering

Automatic and manual detection of sharp edges.
Adjustable chamfer depth and Tool contact point

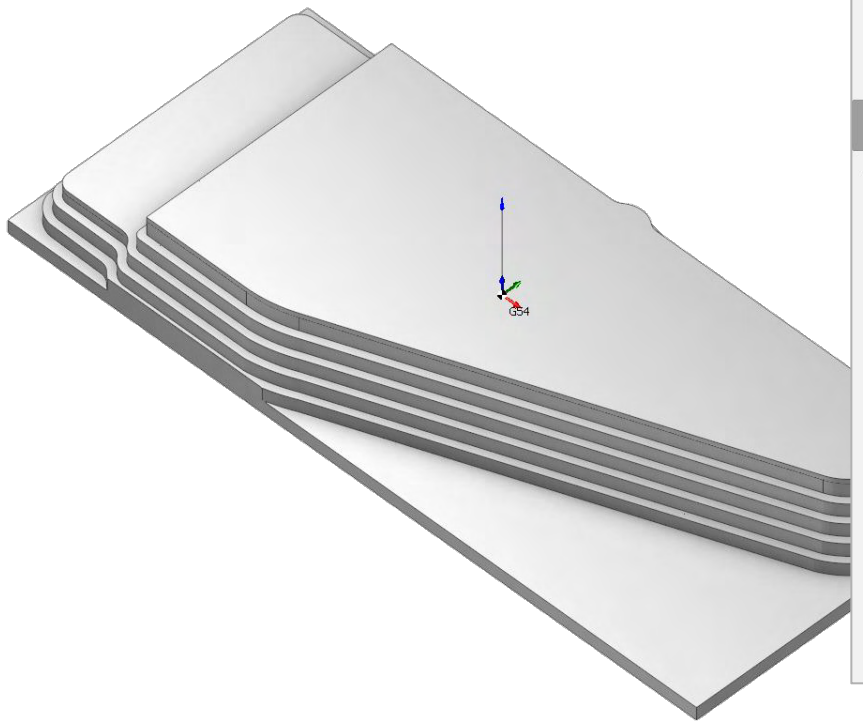
You don’t need to draw the chamfer on the 3D model

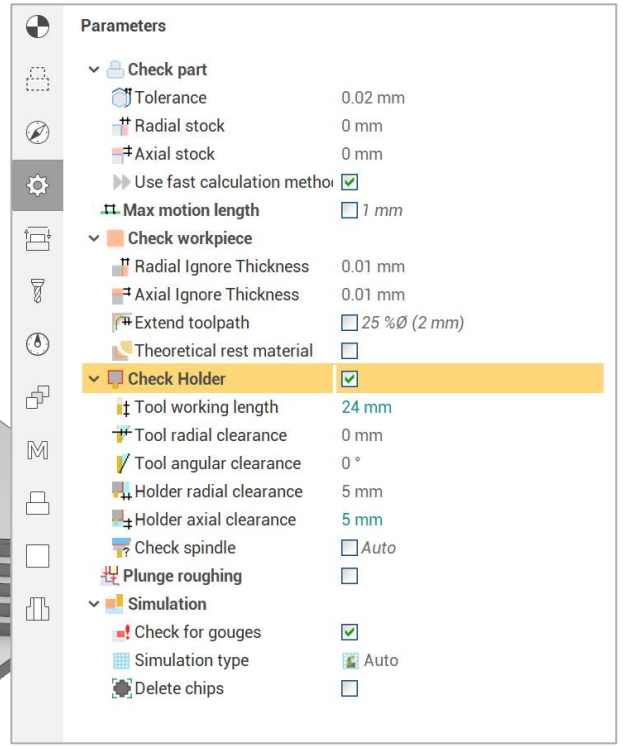


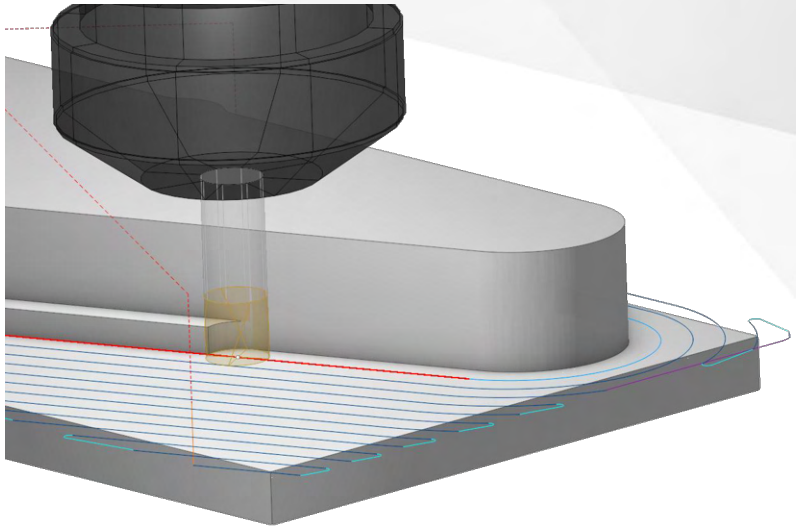


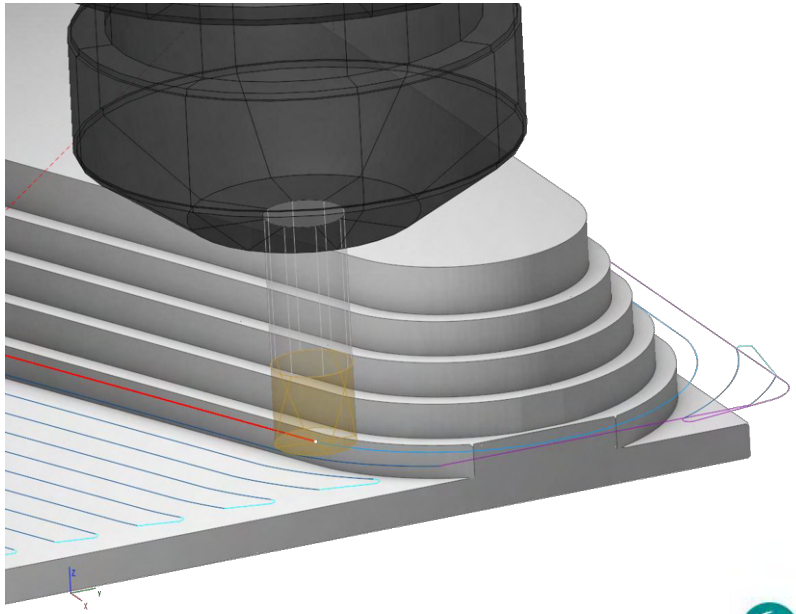
Holder control

Holder geometry control for collisions with the part
Automatic correction of the toolpath taking into account holder geometry

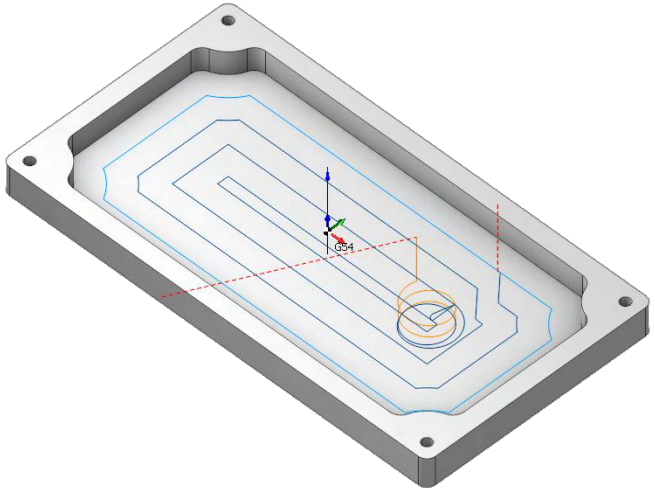




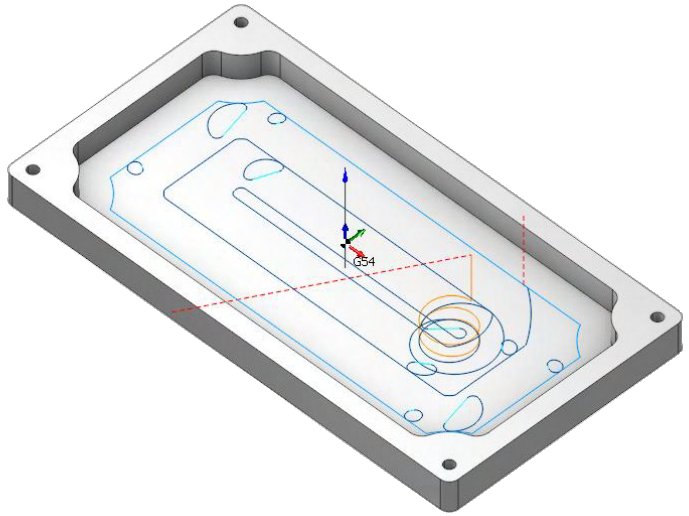




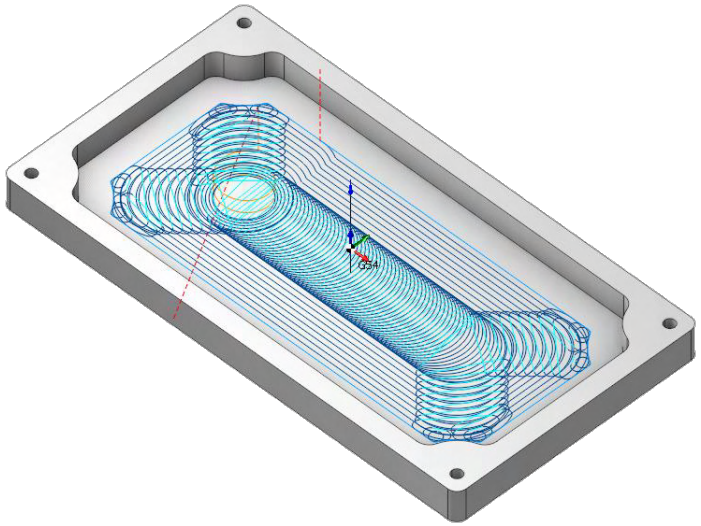
High Speed Cutting strategies



Equidistant strategy
Classic milling strategy



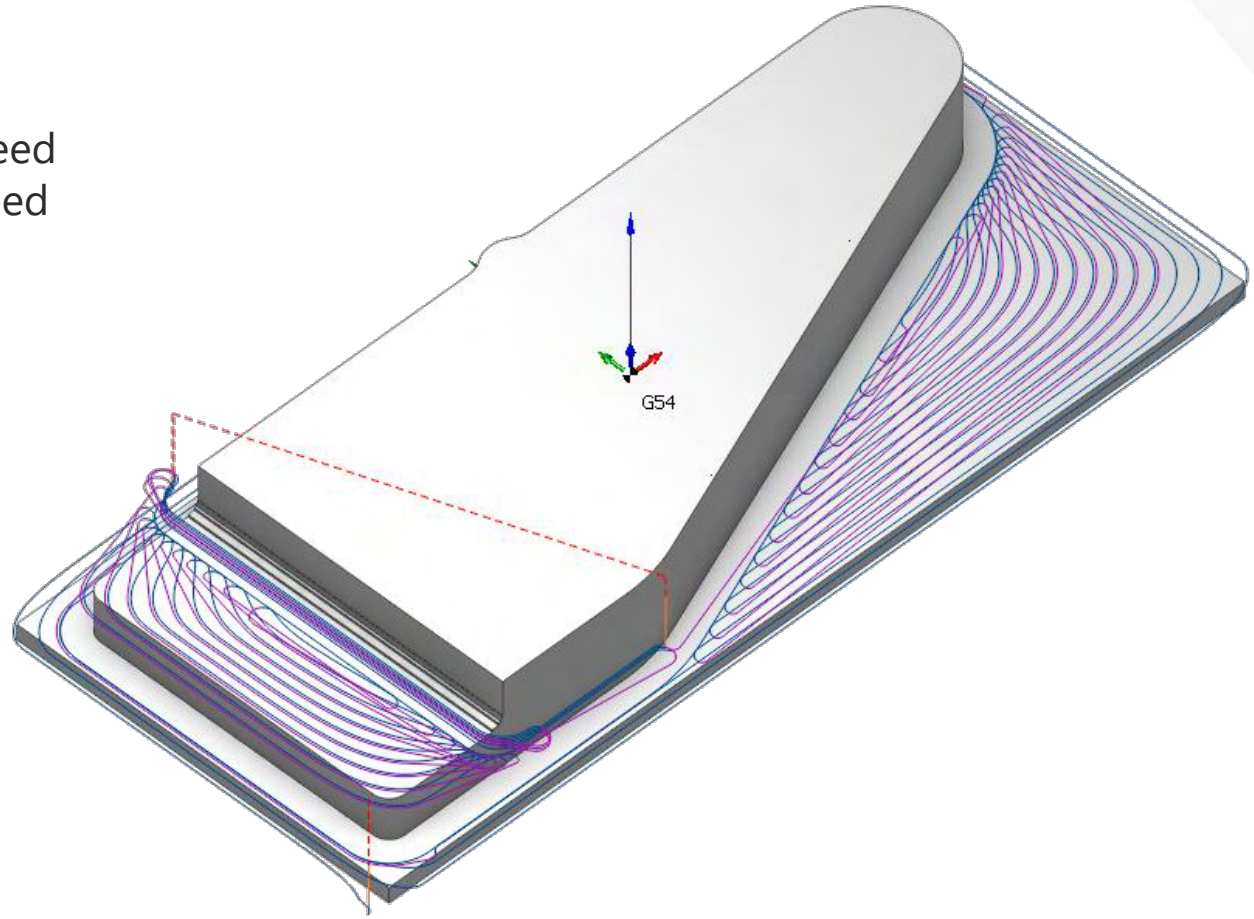
High Speed Machining (HSM)
Contains special arcs for machining of unmachined pockets



Deep High Speed Cutting (HPC)
Even load on the tool

Adaptive Speed Cutting

Adaptive Speed Cutting strategy is used for maximal cutting depth and material removal due to the high speed tool feed and relatively low cutting width with lateral feed ranging from 5 to 30% of the tool diameter



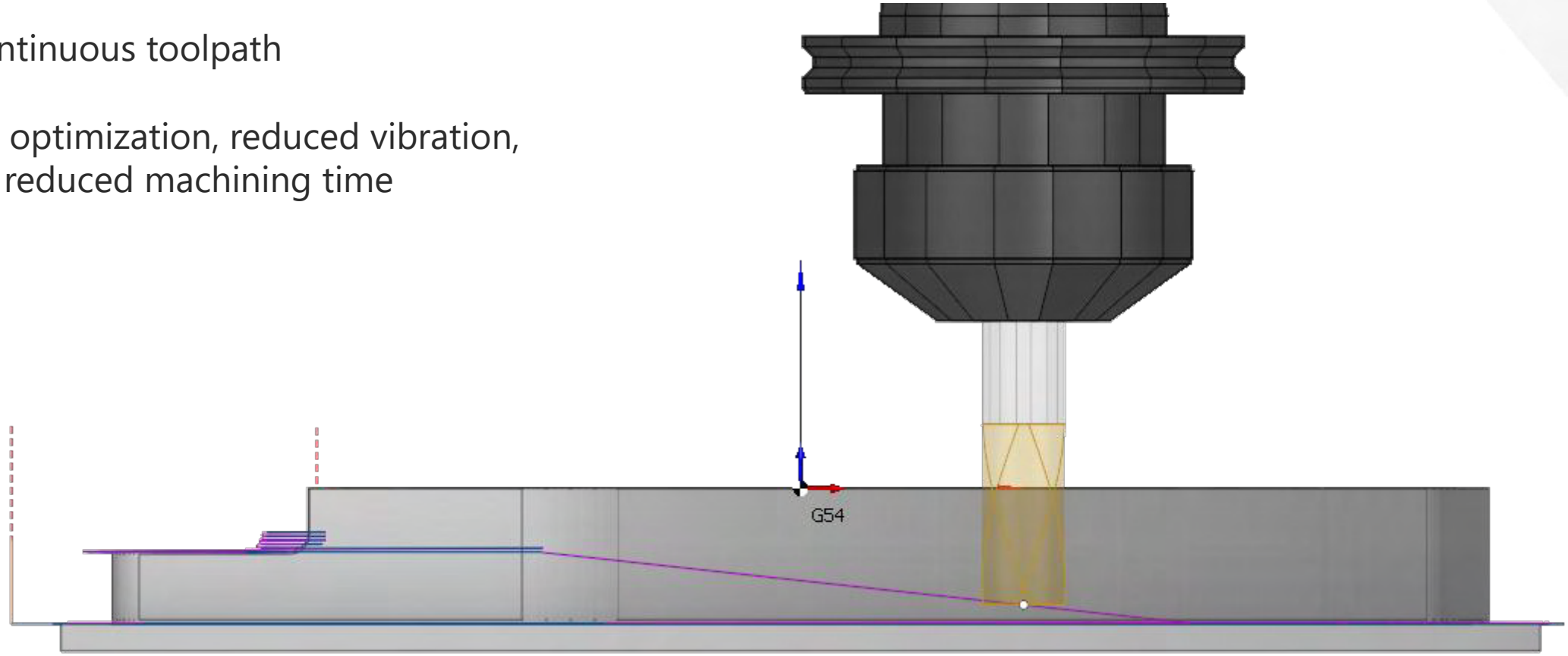
Even load on the tool

Roughing time reduced by 70%

Adaptive Speed Cutting strategies

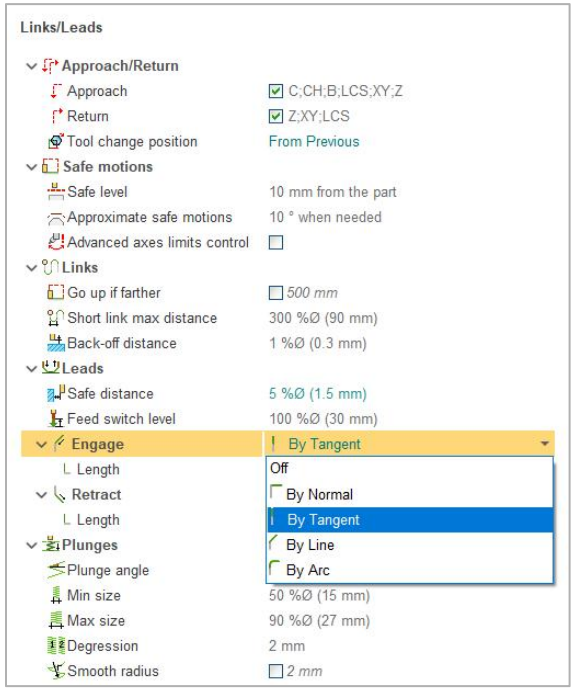
Smooth and continuous toolpath

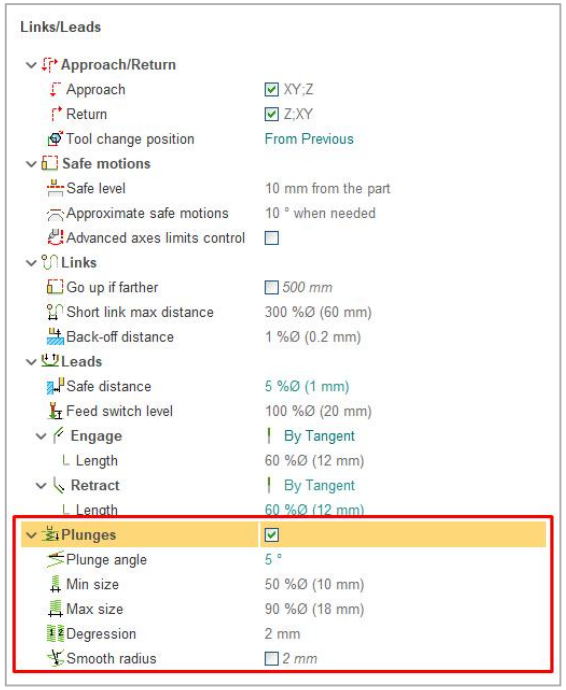
Tool movement optimization, reduced vibration, longer tool life, reduced machining time

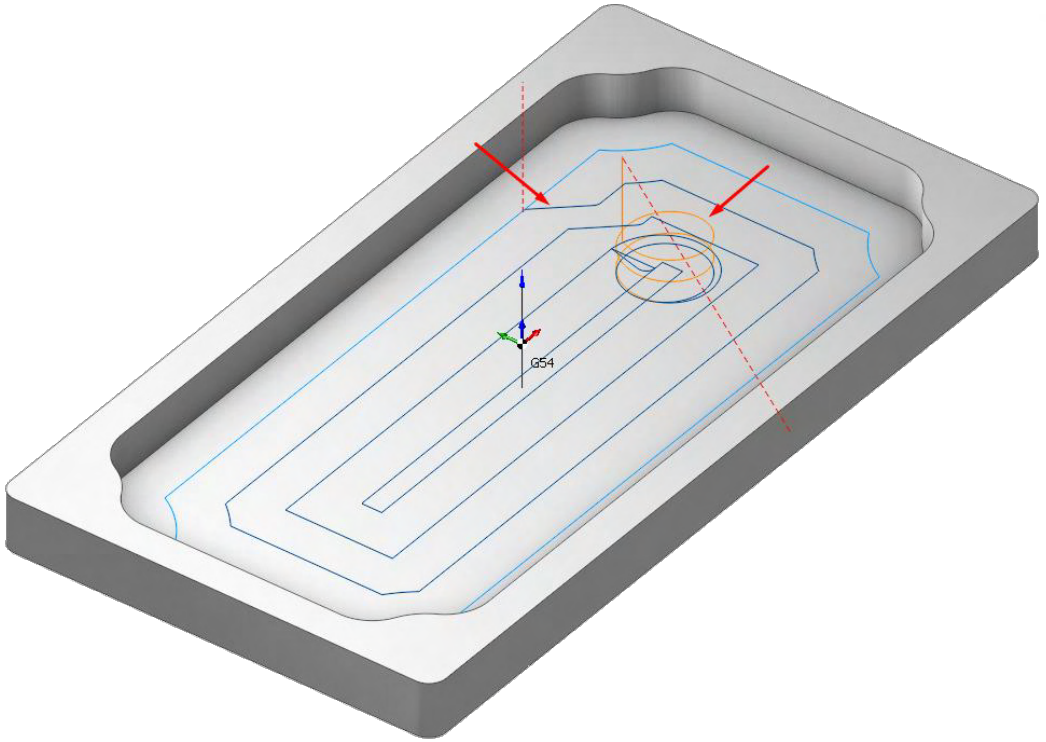


Tool Engage and Retract strategies

Different cutting and tool Engage and Retract strategies





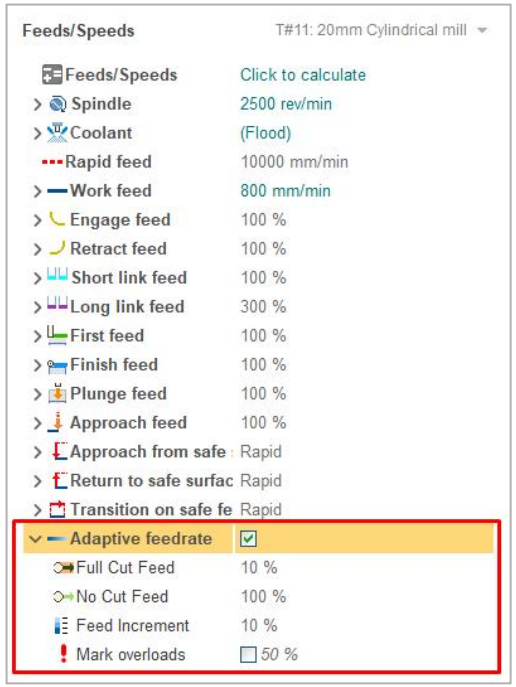


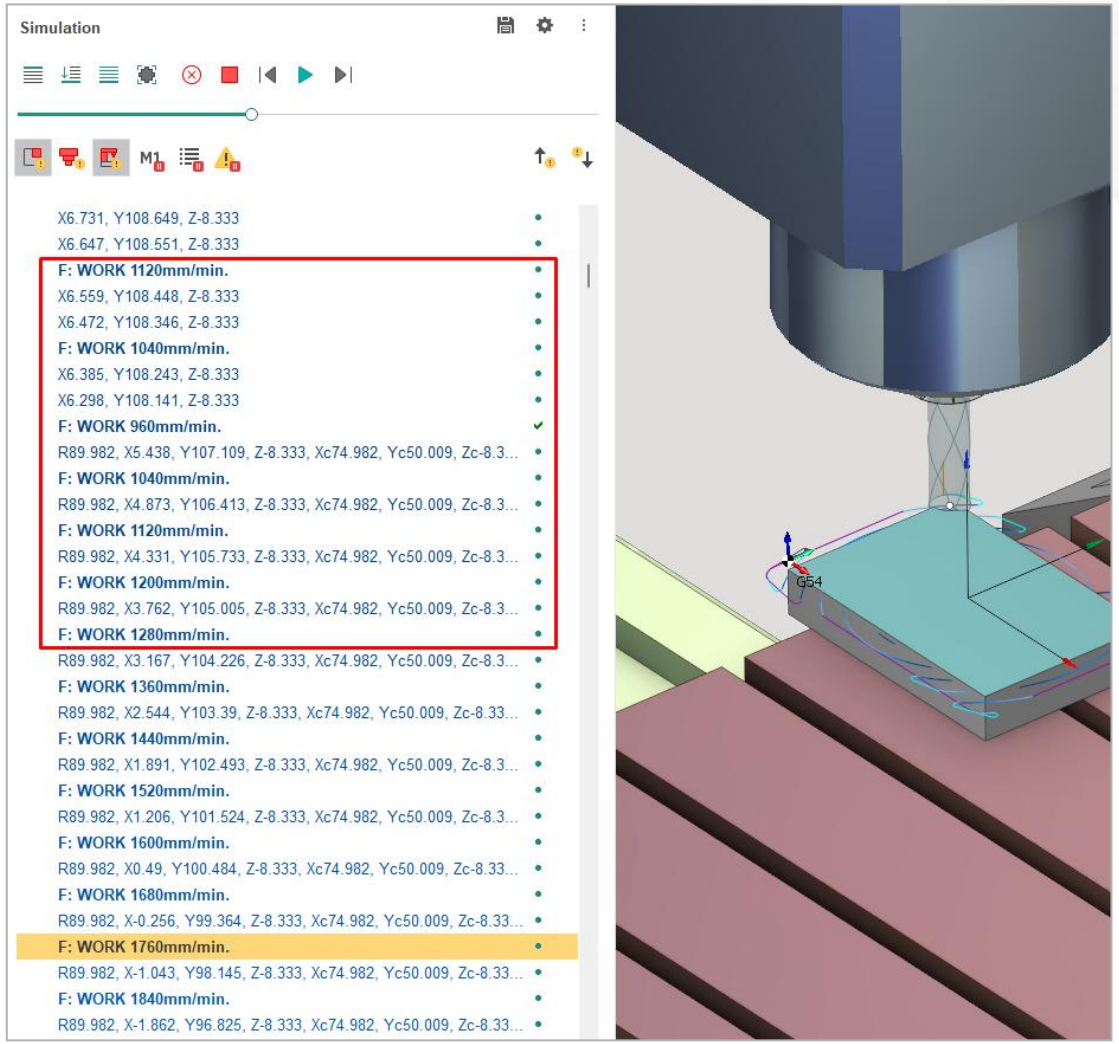
Adaptive feed

Reduces Full Cut Feed

Feed change control

Reduces tool runout





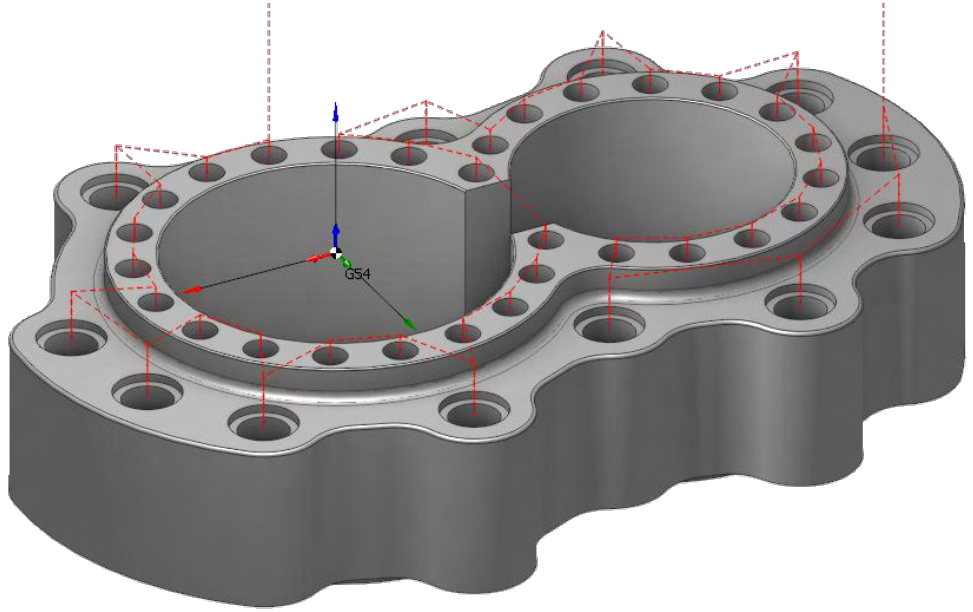
Holes machining

Automatic hole detection

Automatic tool selection

Safe tool approaches

All possible machining cycles available



Holes recognition

Search options

Through holes

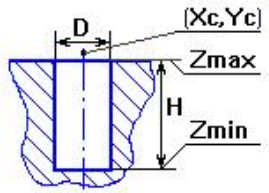
Blind holes

Others

Dmin 4

Dmax 20

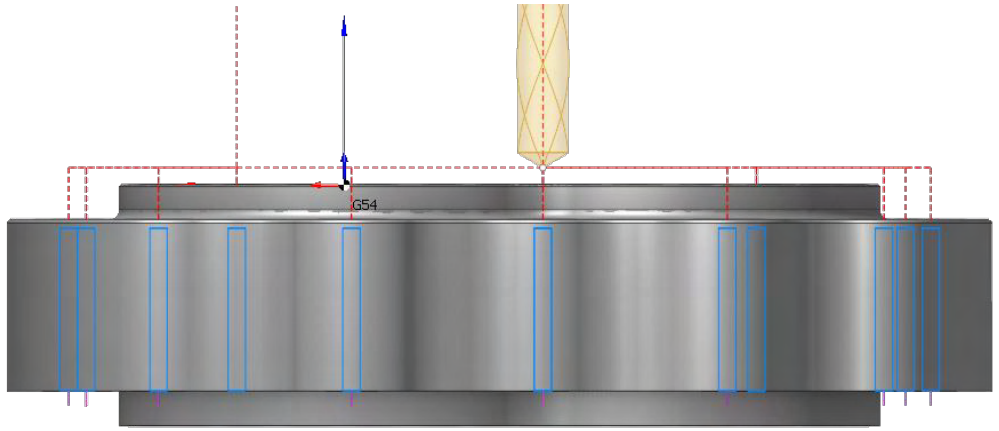
Tolerance 0.02



29 Holes found

	Xc	Yc	Zc	D	H	Zmax	Zmin	Plane
☑	-110.915	41.863	-138.902	20.000	138.902	138.902	0.000	X0.000, Y0.000, Z1
☑	114.976	2.352	-138.902	20.000	138.902	138.902	0.000	X0.000, Y0.000, Z1
☑	-139.280	73.062	-138.902	20.000	138.902	138.902	0.000	X0.000, Y0.000, Z1
☑	89.767	-71.881	-138.902	20.000	138.902	138.902	0.000	X0.000, Y0.000, Z1
☑	-174.445	91.498	-138.902	20.000	138.902	138.902	0.000	X0.000, Y0.000, Z1
☑	107.289	41.401	-138.902	20.000	138.902	138.902	0.000	X0.000, Y0.000, Z1
☑	-214.075	93.952	-138.902	20.000	138.902	138.902	0.000	X0.000, Y0.000, Z1
☑	59.891	-98.174	-138.902	20.000	138.902	138.902	0.000	X0.000, Y0.000, Z1

Ok Cancel Help

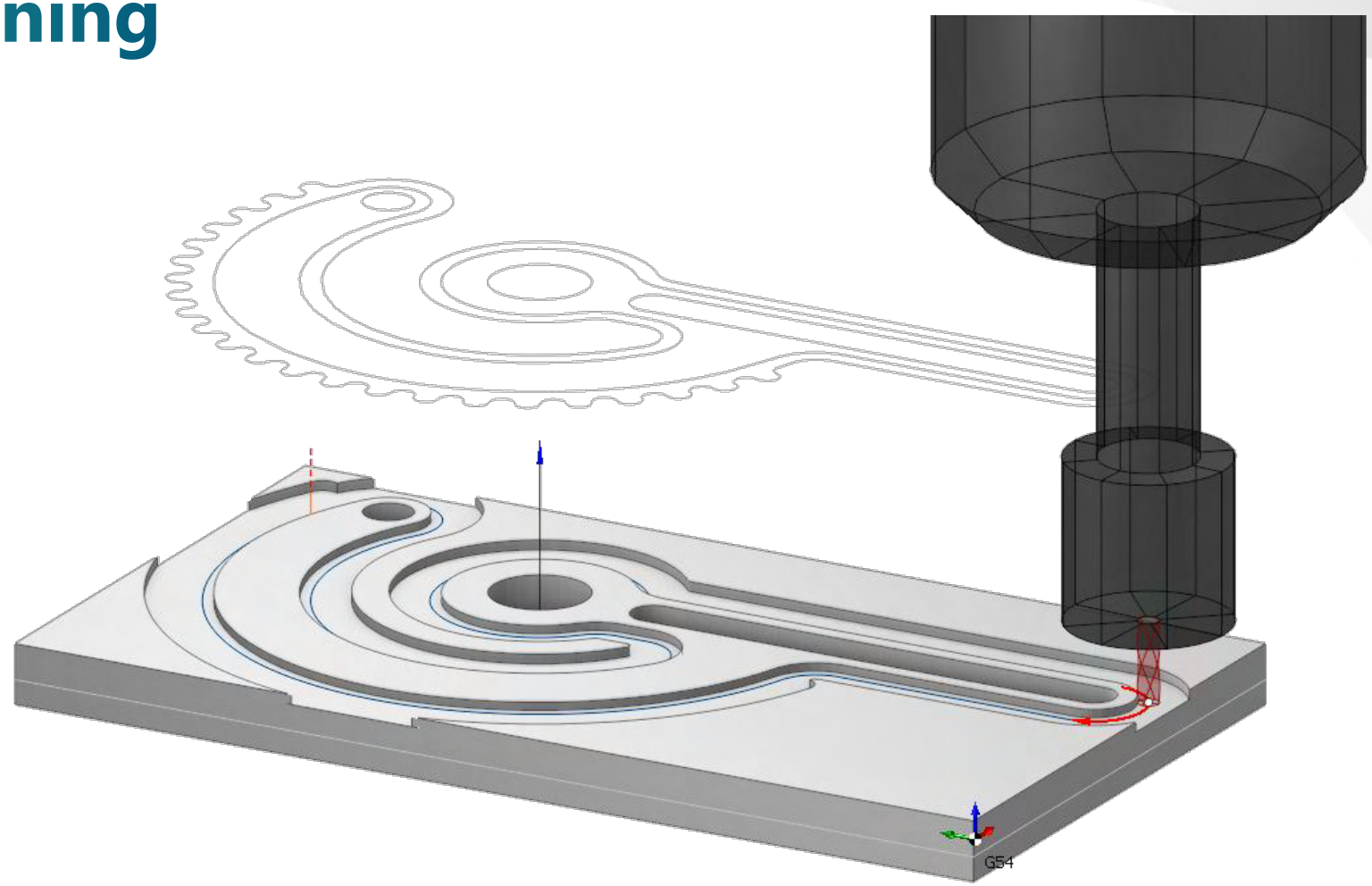


2D geometry machining

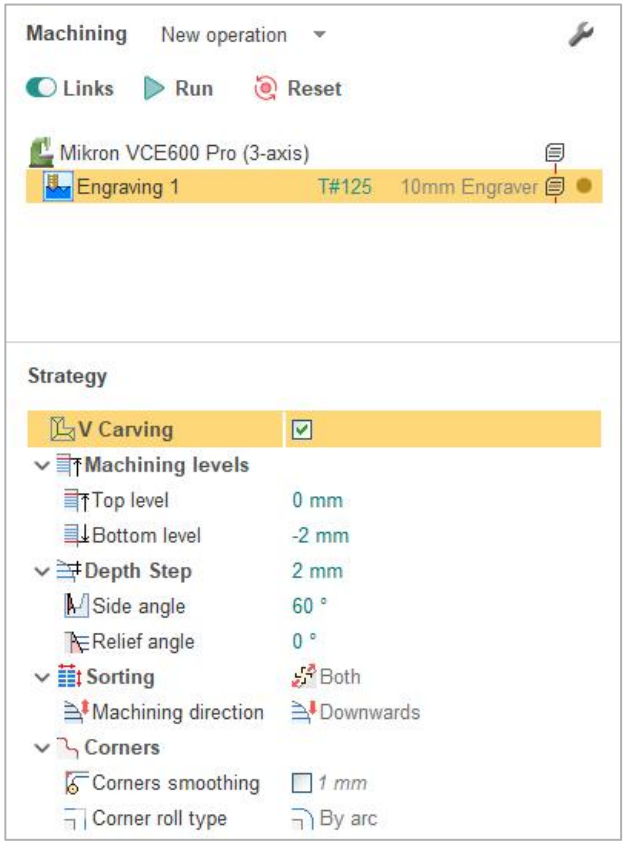
DXF file import

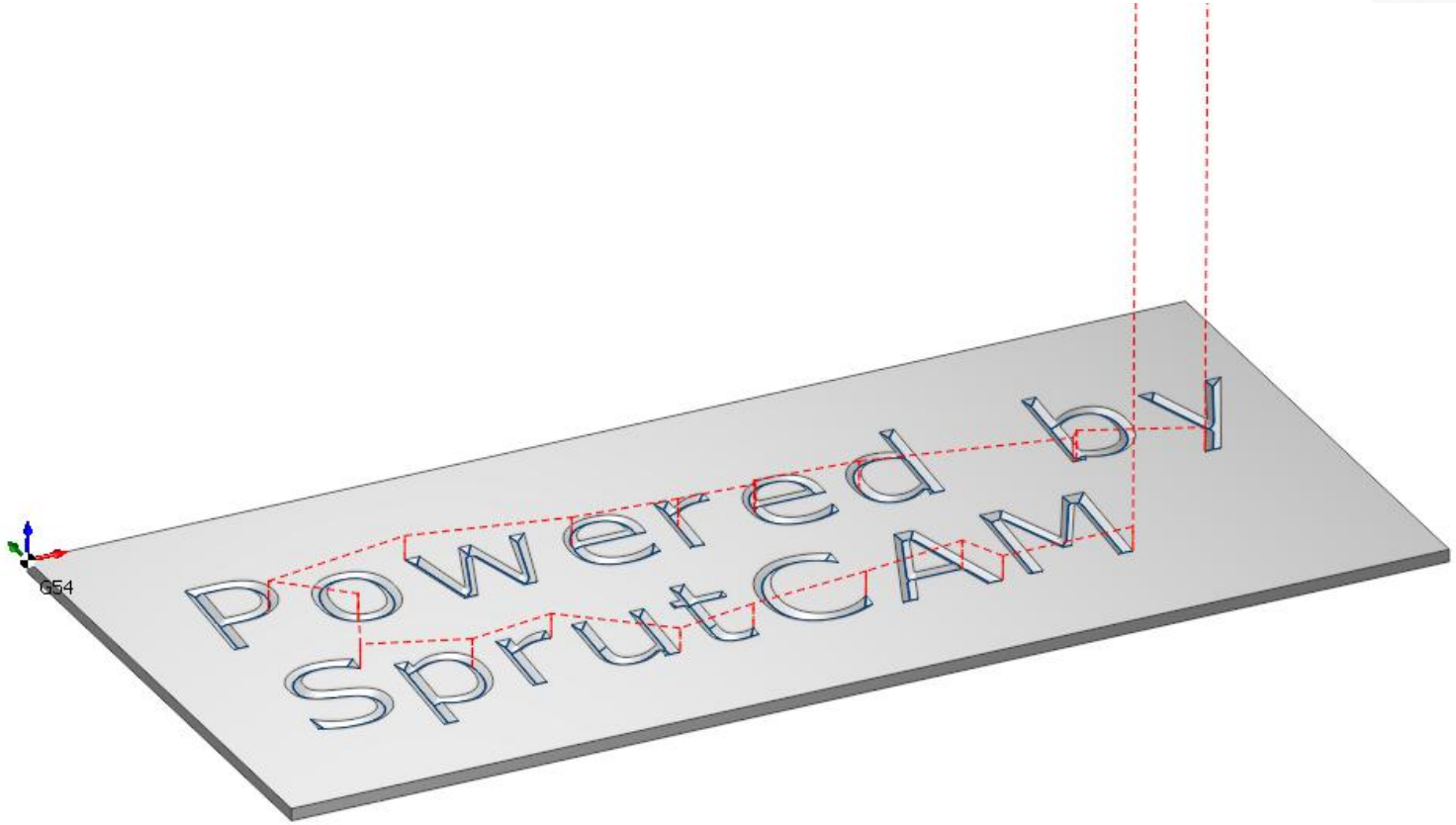
2D editor for geometry creation in SprutCAM

3D machining simulation taking into account the workpiece and part



Engraving

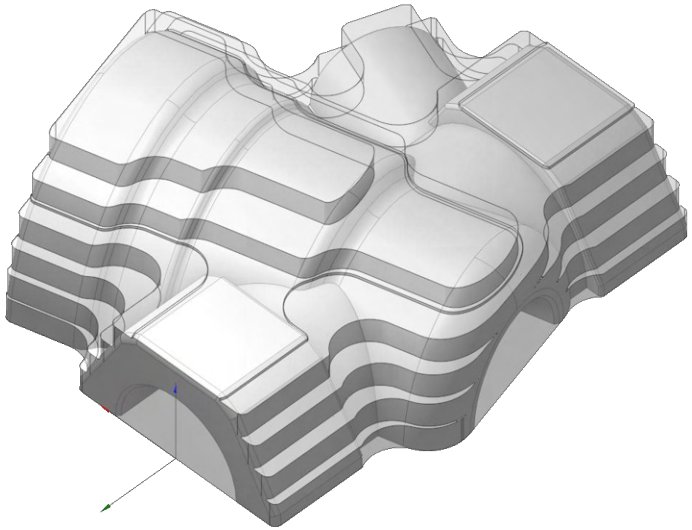

Machining
New operation
Links
Run
Reset
Mikron VCE600 Pro (3-axis)
Engraving 1
T#125
10mm Engraver
Strategy
V Carving
Machining levels
Top level
0 mm
Bottom level
-2 mm
Depth Step
2 mm
Side angle
60 °
Relief angle
0 °
Sorting
Both
Machining direction
Downwards
Corners
Corners smoothing
1 mm
Corner roll type
By arc


G54
Powered by
SprutCAM

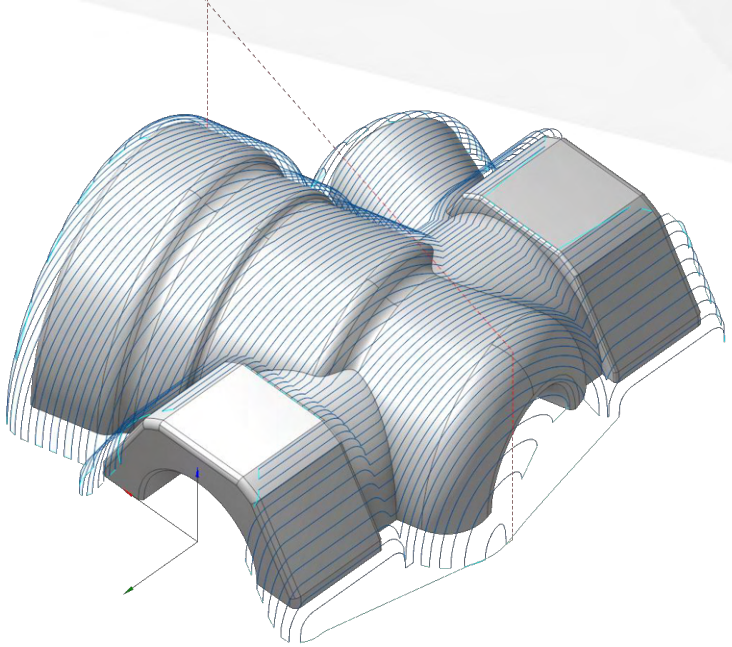
Finishing operations

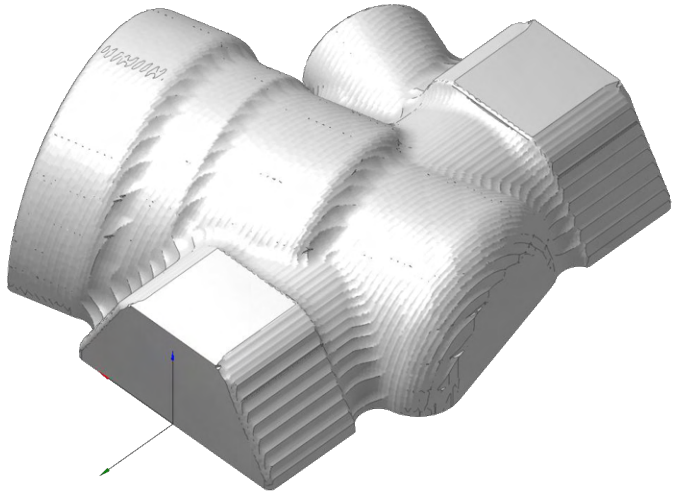
Rest material automatic detection

Toolpath calculated taking into account rest material



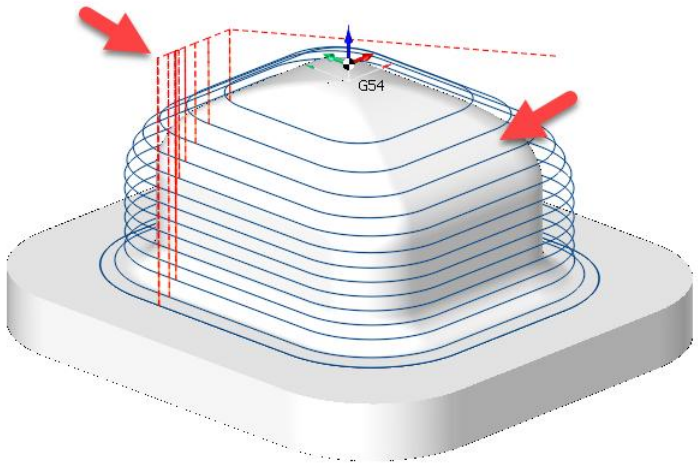
Roughing



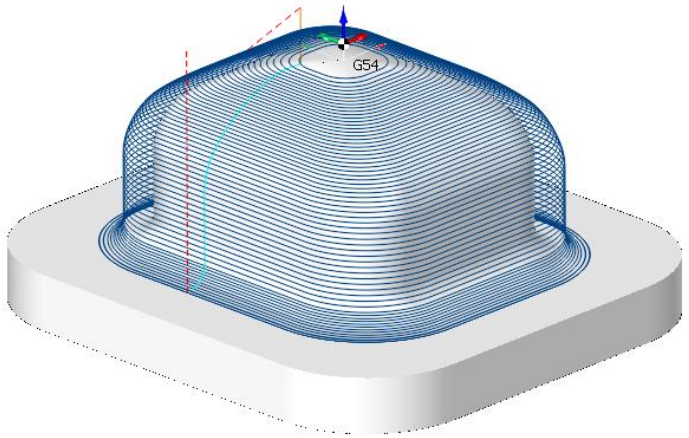


Finishing

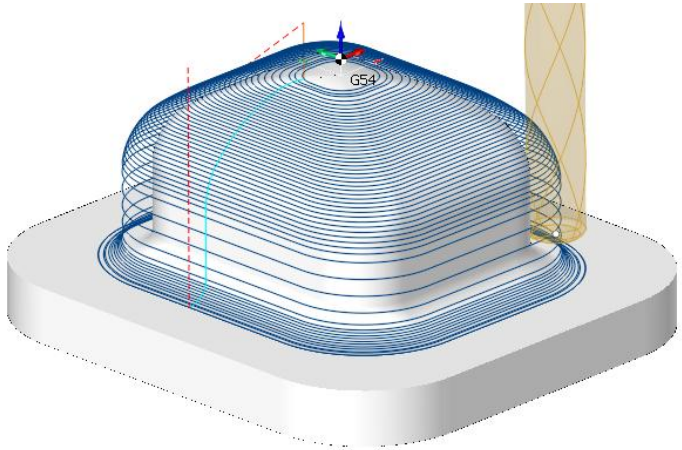
Optimized operation



Classic strategy



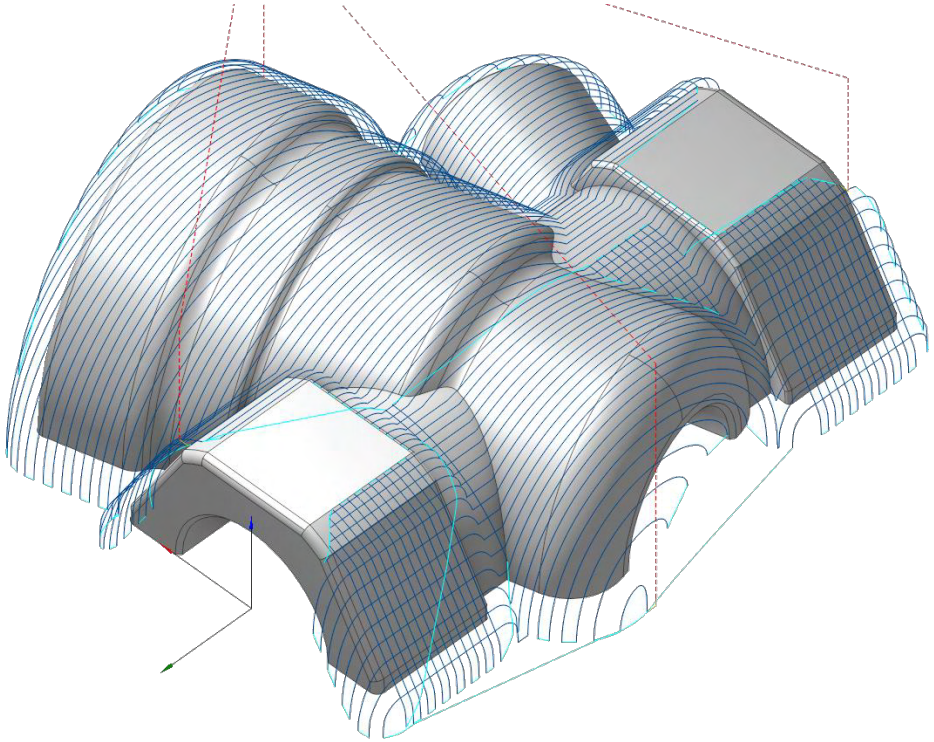
Continuous strategy

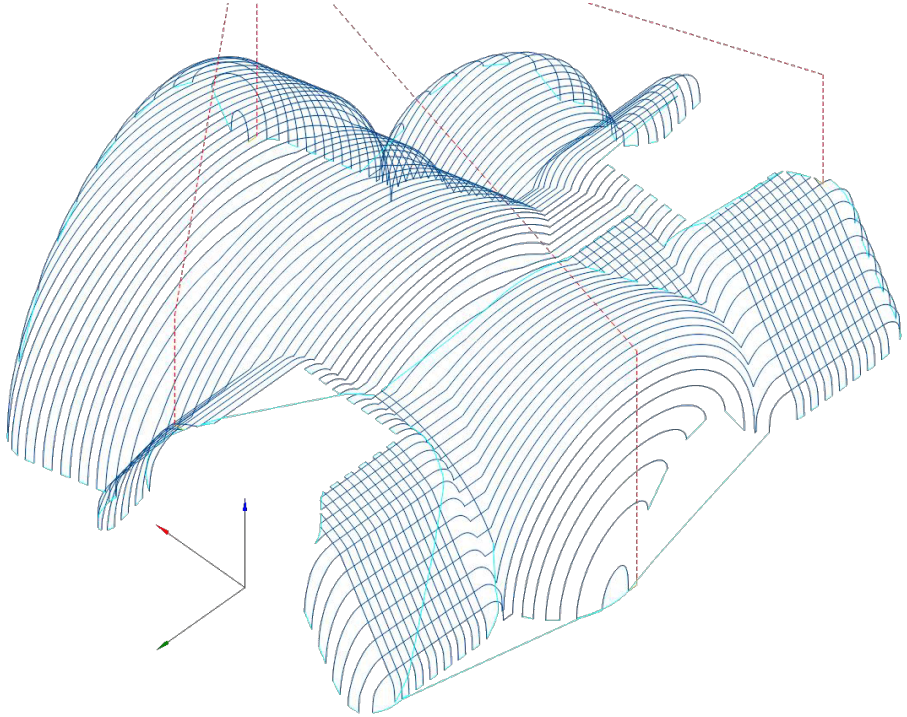


Optimized strategy

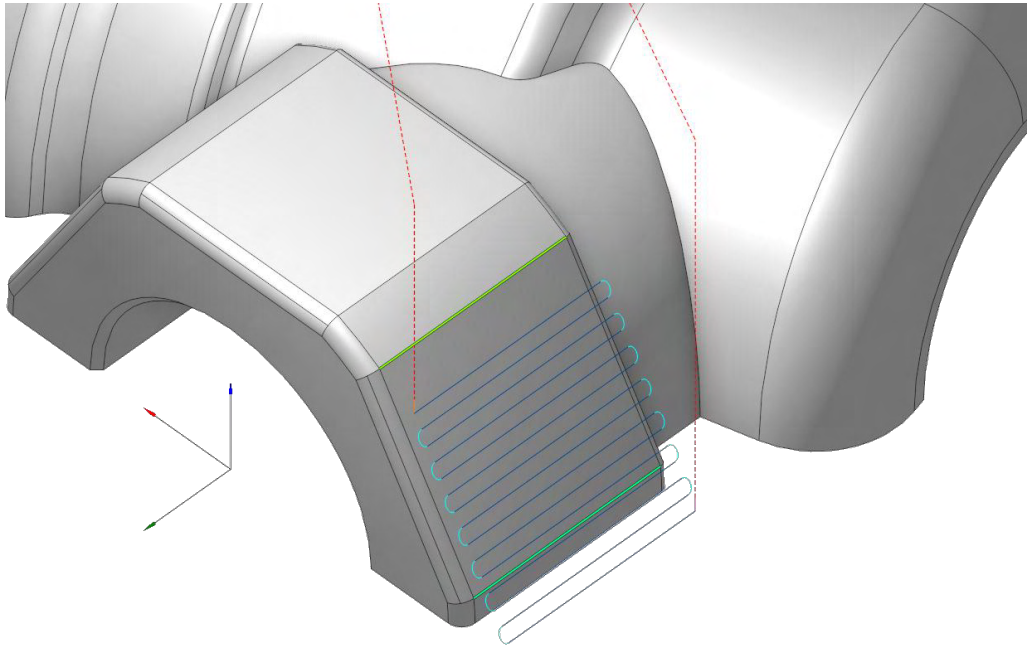
Complex operation

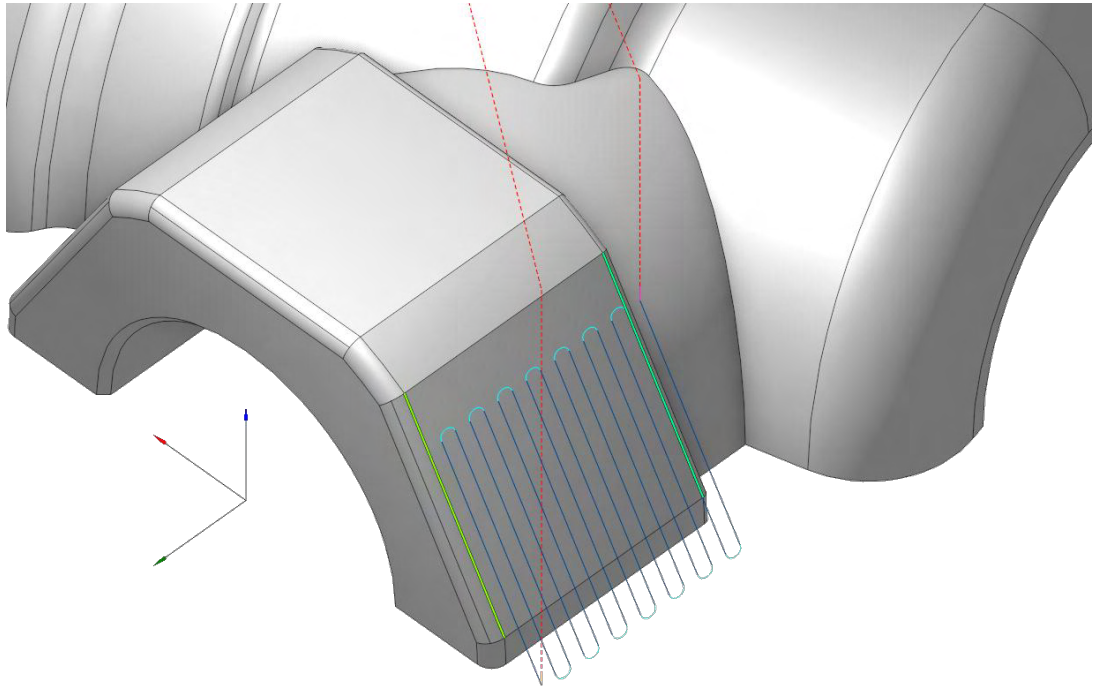
In one operation, toolpath direction varies depending on machining surface



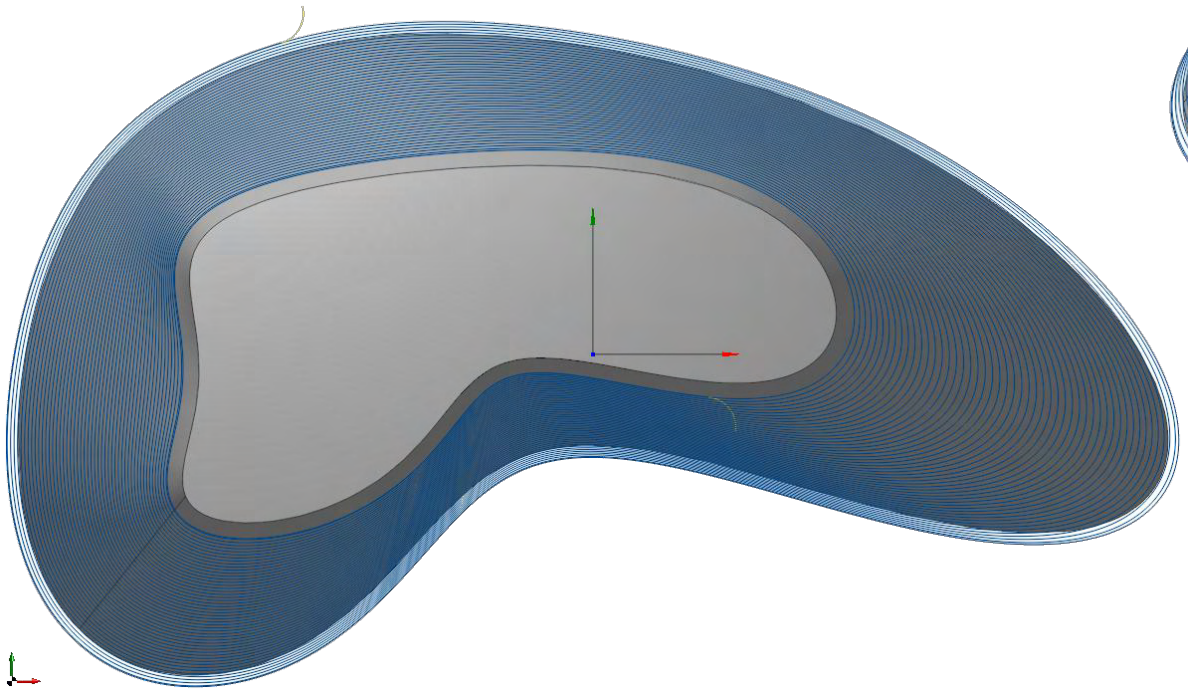


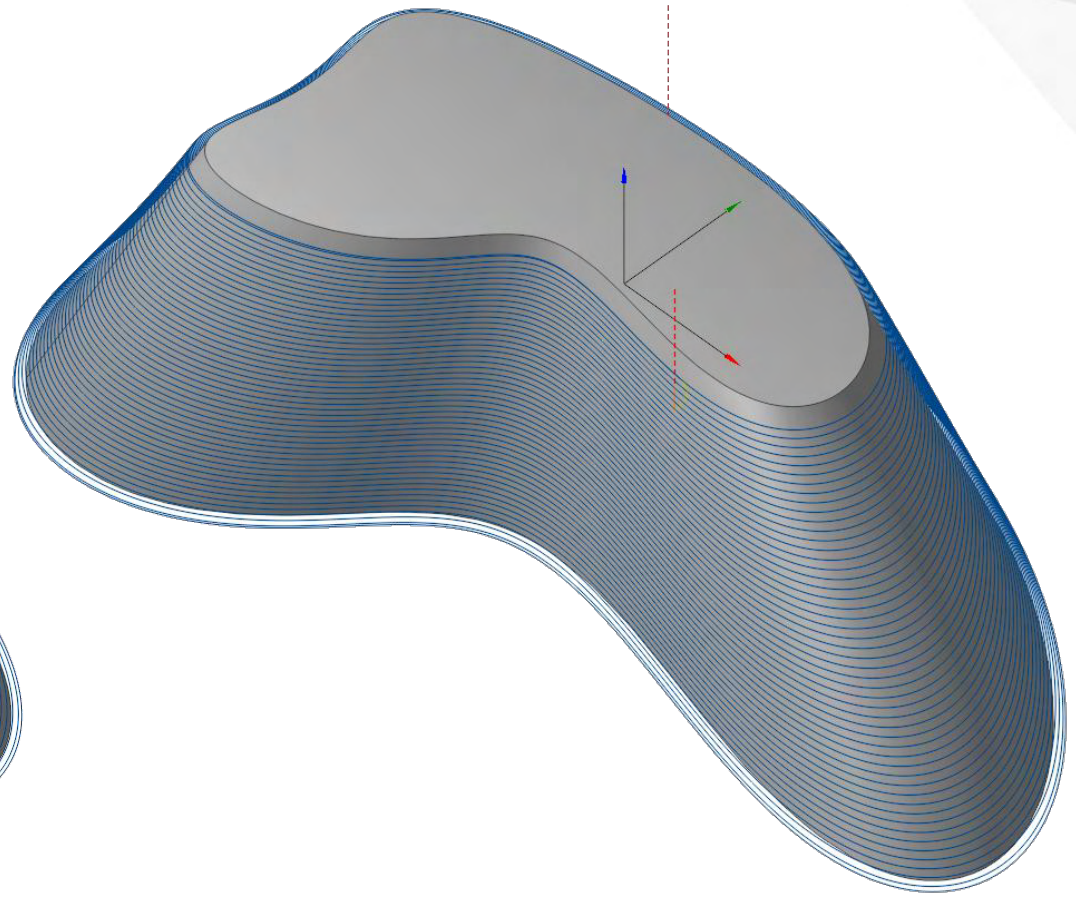
Morphing between 2 curves



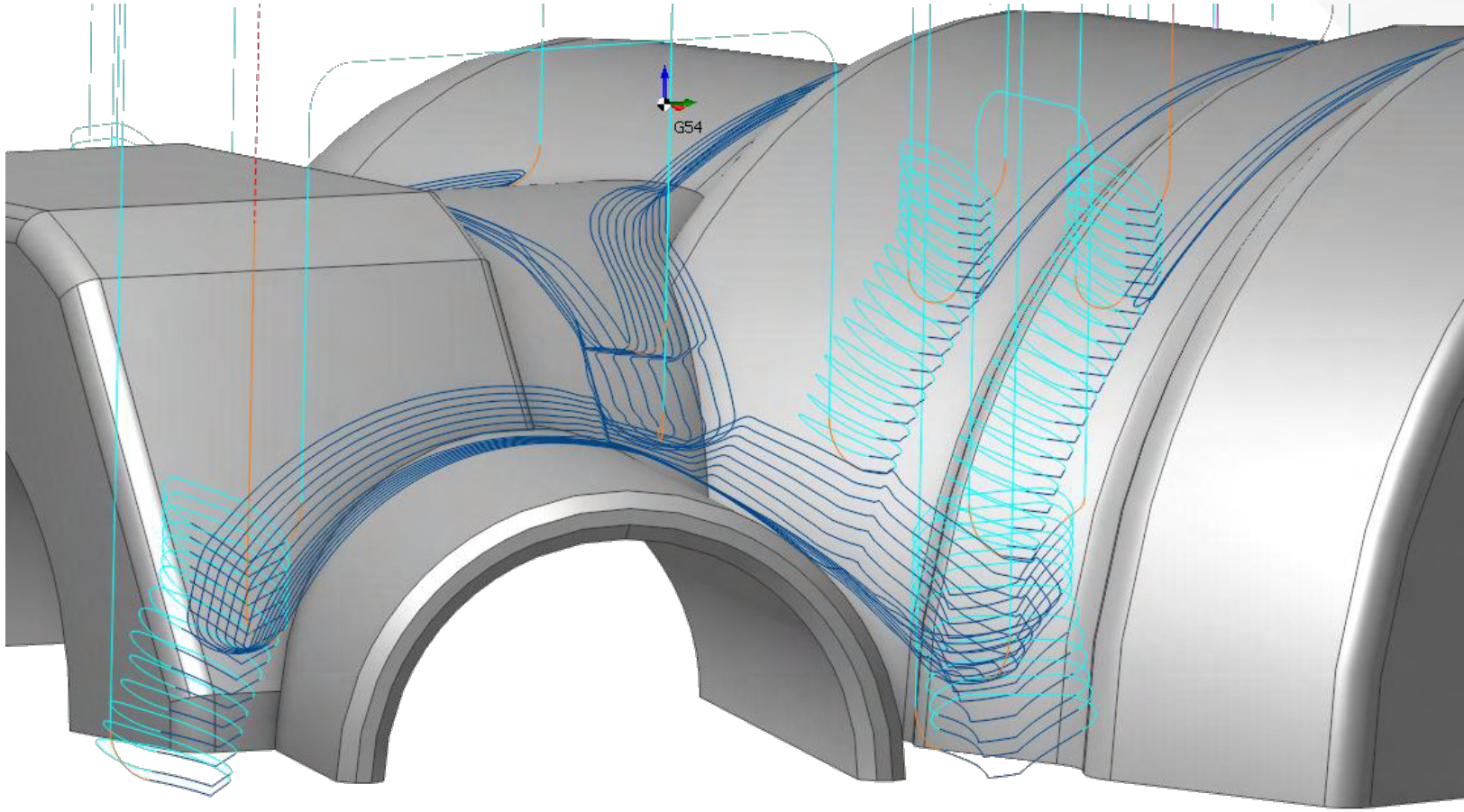


3D Helical





Corners cleanup

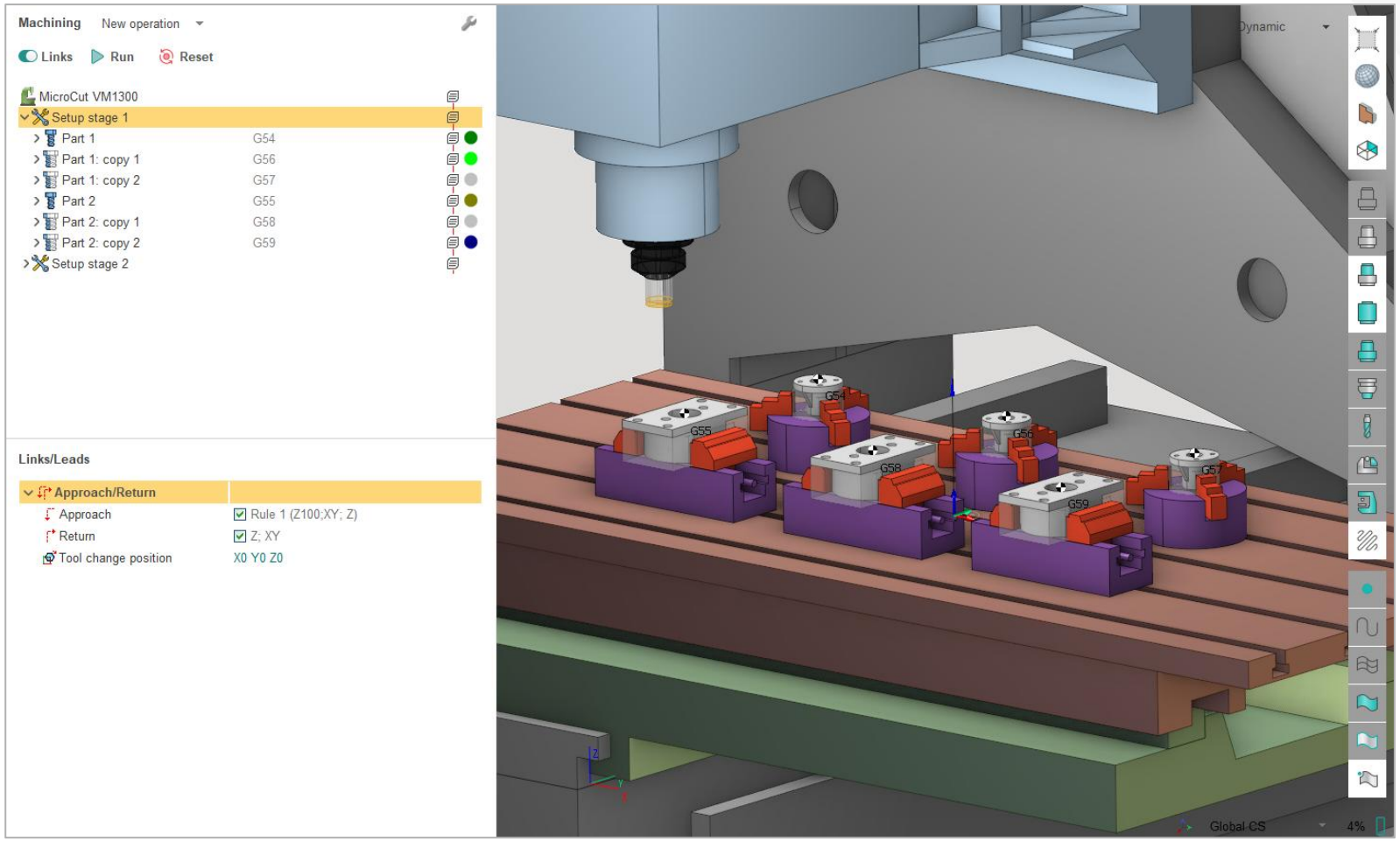


Multipart projects

Multiple part machining in one project

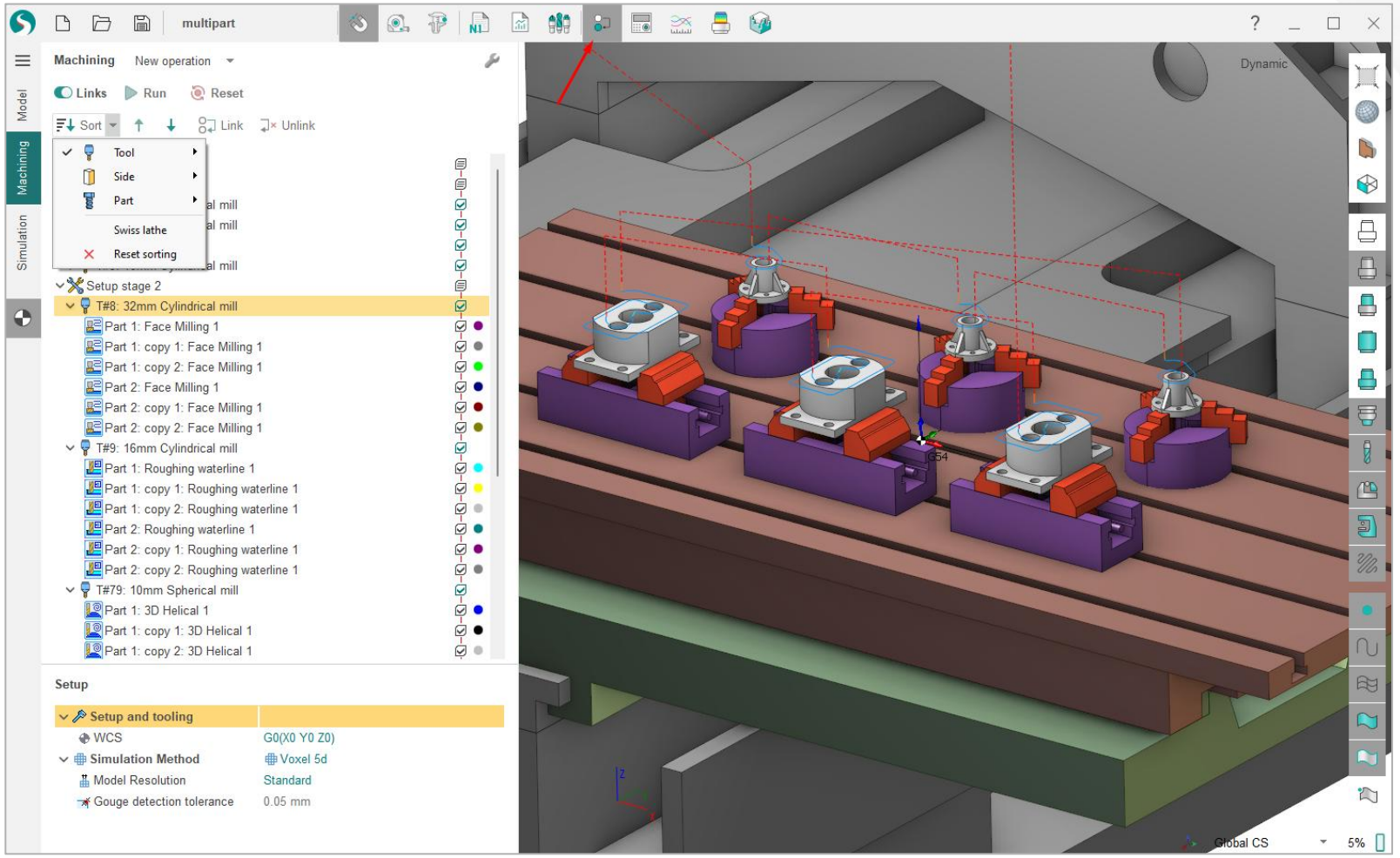
Every part has its own coordinate system

Copying of parts including operations

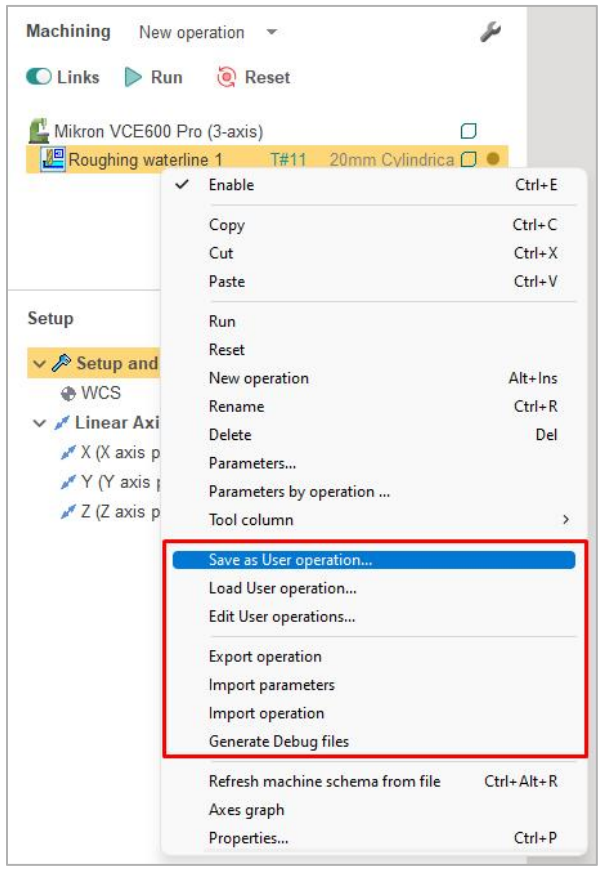


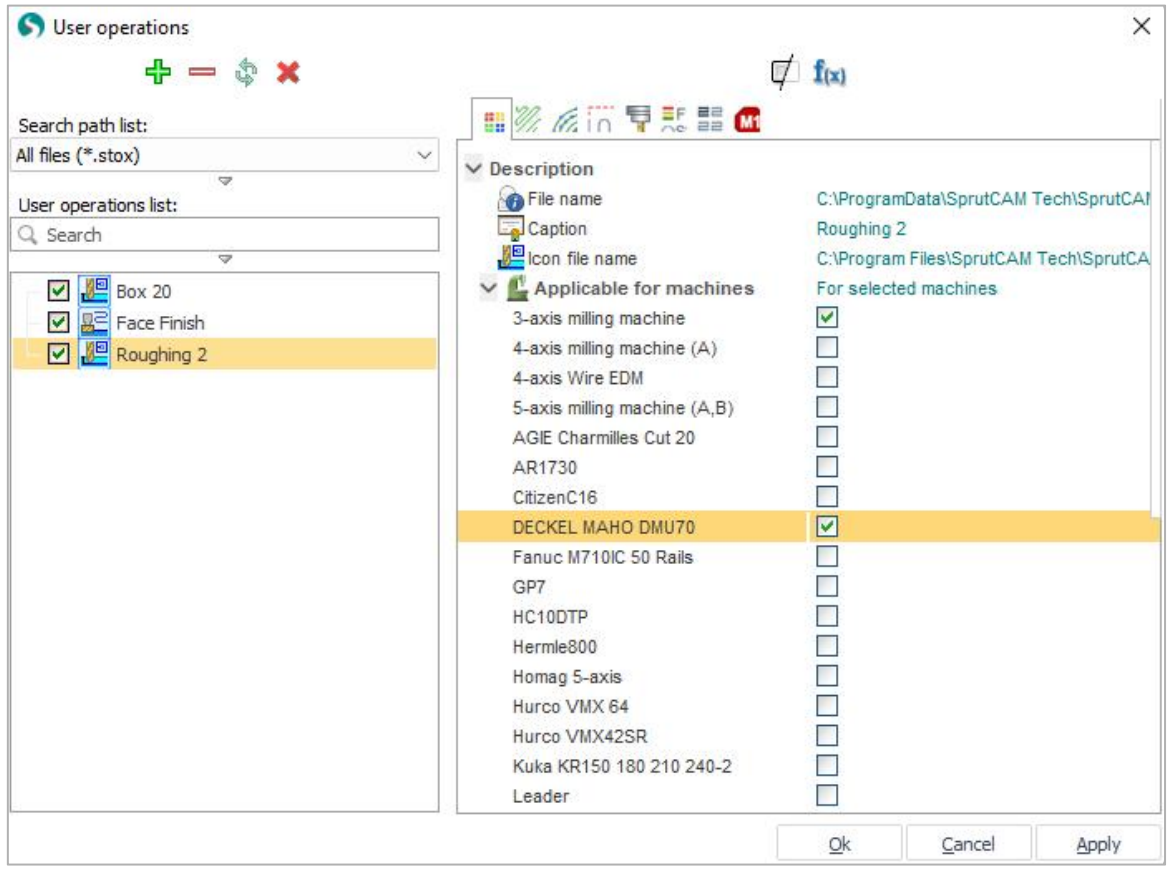
Sequencing and Links

Automatically sorting operations by Tool, Side, Part



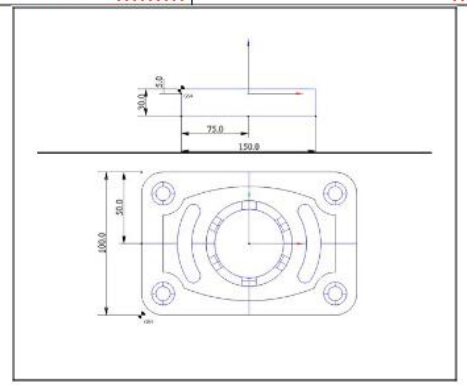
User operations library





Machining report templates

Mikron VCE600 Pro (3-axis)	Generated by SprutCAM X® version 16
NC name:C:\Users\sever\Documents\SprutCAM NB\Version 16\NC Programs\NoName.mpf	Project:C:\Users\Public\Documents\SprutCAM NB\Version 16\Projects\part2.stc

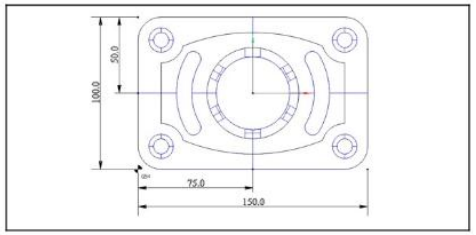


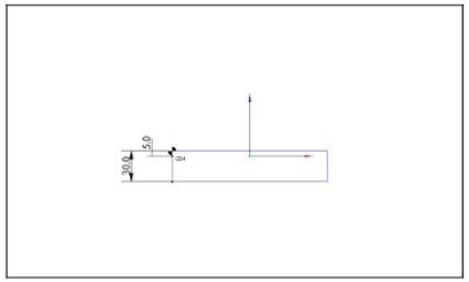
Job list

N	Operation name	Type	N Tool	NC Program	Time hh:mm:cc	Comment
1	Face Milling 1	FaceMilling	170		00:05:32	Overhang=172;
2	Roughing waterline 1	Roughing waterline	11		00:45:03	Overhang=70;
3	Hole machining 1	Hole machining	79		00:00:30	Overhang=100;
4	Roughing waterline 2	Roughing waterline	11		00:09:39	Overhang=70;
5	2D contouring 1	2D contouring	7		00:01:50	Overhang=50;
6	Hole machining 2	Hole machining	59		00:00:31	Overhang=136;
7	2D contouring 2	2D contouring	7		00:02:32	Overhang=50;
8	Hole machining 3	Hole machining	138		00:00:43	Overhang=70;
9	2D contouring 3	2D contouring	7		00:01:17	Overhang=50;
10	Chamfering 1	Chamfering	169		00:02:23	Overhang=60;
				Total time:	01:10:05	

Tools table

N	Type	Name	Prog. put.	Operations	The sketch
170	Torus mill (L72, D65, R c1)	Ø65 R1 mm Torus mill	end of tool	1	
11	Cylindrical mill (L70, D20)	20mm Cylindrical mill	end of tool	2, 4	
79	Drill (L100, D22, A118)	22mm Drill	end of tool	3	





Mill report

Detail	Case
Setup number	1
Path to NC program	
Fixtures	Collet

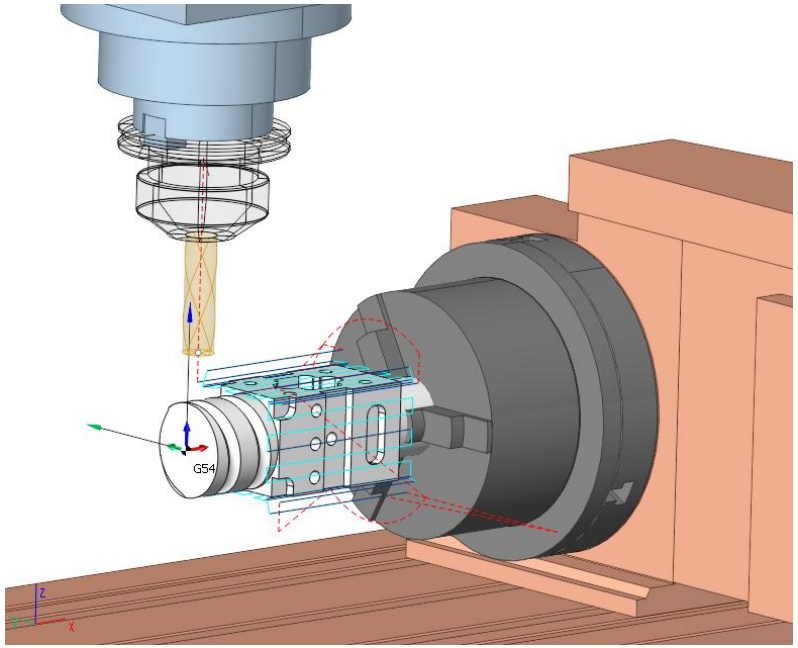
Machining time (min.)			Develop				
			Inspect.				
			Respons.				

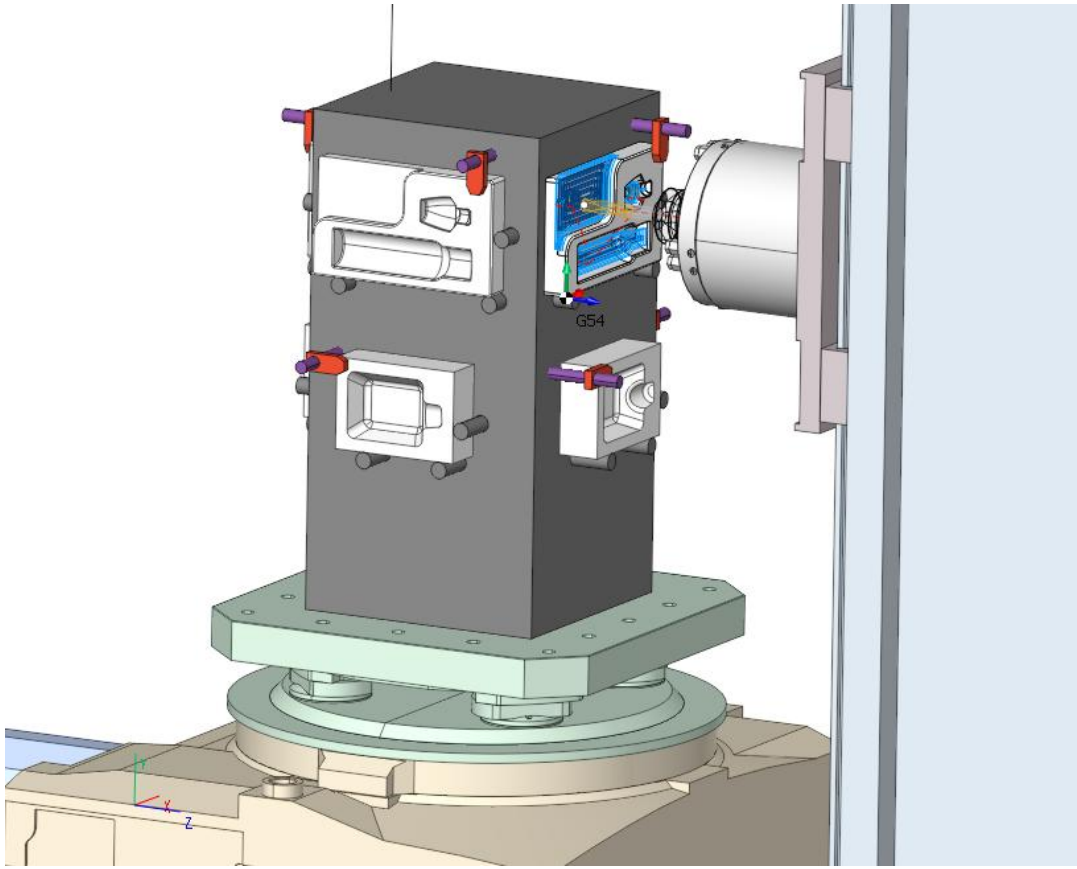
Tool N	Tool type	Diameter	NC program name	Operation description	№ operation	Time, min	Cutting length	Overhang	Cutting R	Cone angle	Tooth number	F, mm/min.	S, rev/min.
170	Ø65 R1 mm Torus mill	65		Face Milling 1	1	00:05:32	-	72	1	0	2	200	159
11	20mm Cylindrical mill	20		Roughing waterline 1	2	00:45:03	-	70	0	0	2	200	159
79	22mm Drill	22		Hole machining 1	3	00:00:30	-	100	0	118	2	200	145
11	20mm Cylindrical mill	20		Roughing waterline 2	4	00:09:39	-	70	0	0	2	200	159
7	8mm Cylindrical mill	8		2D contouring 1	5	00:01:50	-	50	0	0	2	200	398
59	8mm Drill	8		Hole machining 2	6	00:00:31	-	136	0	118	2	200	398
7	8mm Cylindrical mill	8		2D contouring 2	7	00:02:32	-	50	0	0	2	200	398
138	10mm Spot drill	10		Hole machining 3	8	00:00:43	-	70	0	90	2	200	796
7	8mm Cylindrical mill	8		2D contouring 3	9	00:01:17	-	50	0	0	2	200	398
169	10mm Conical mill	10		Chamfering 1	10	00:02:23	-	60	0	45	2	200	200

4-axis index machining

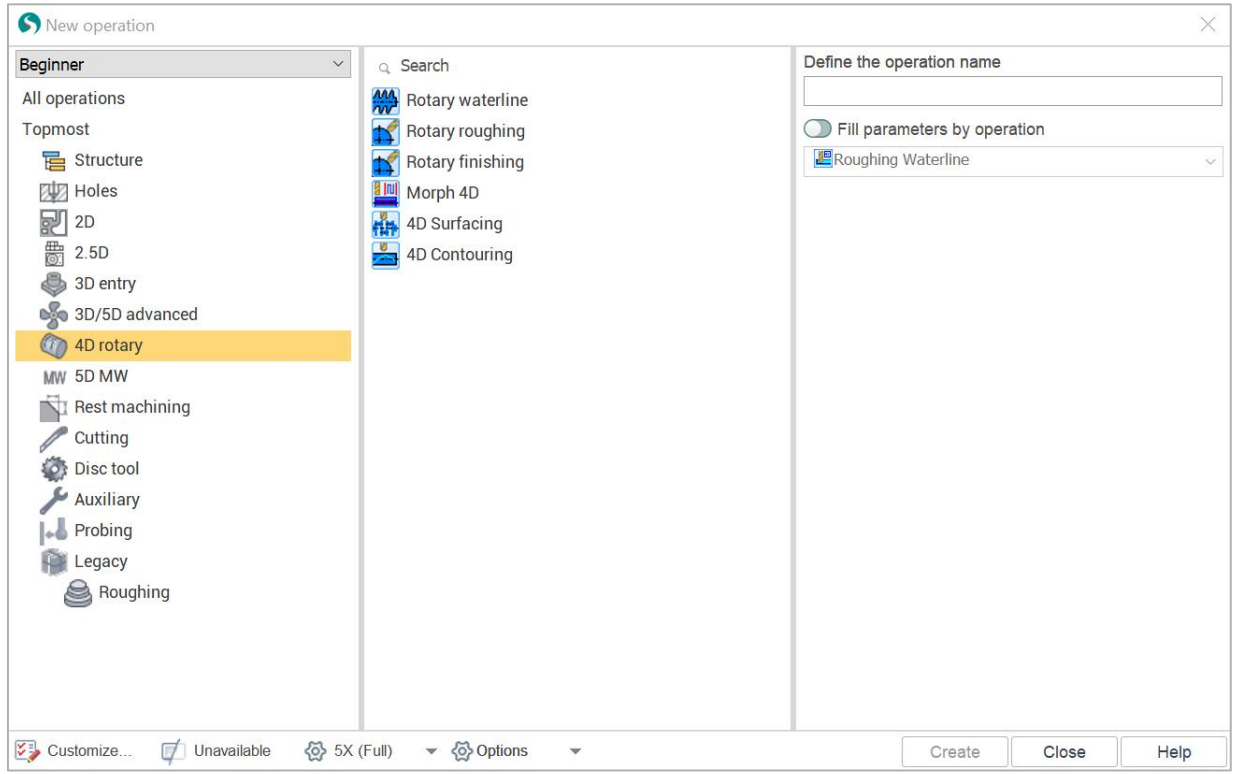
All possible operations for 3-axis machining available

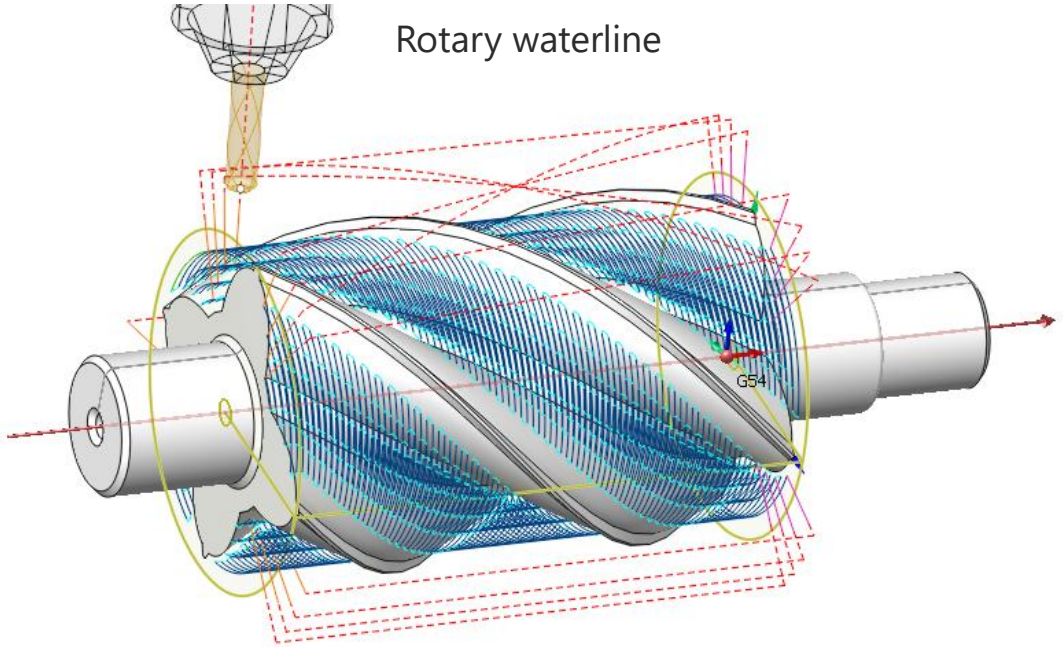
Rotary angle automatic calculation



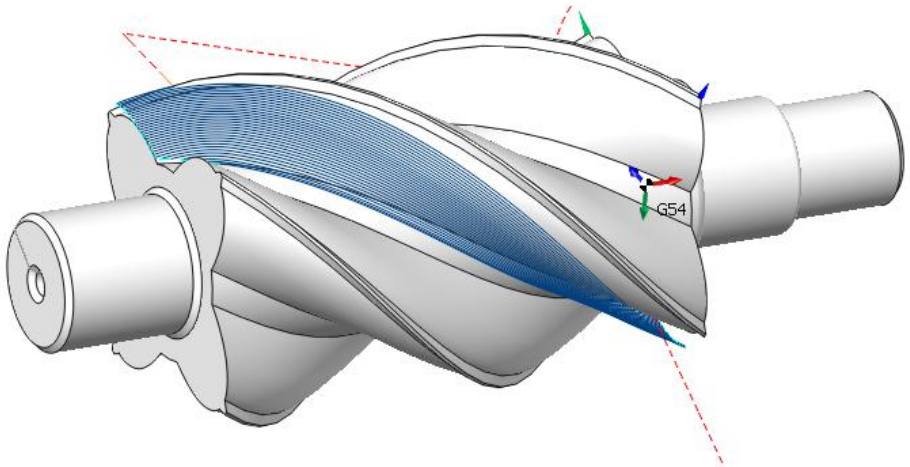


Rotary machining

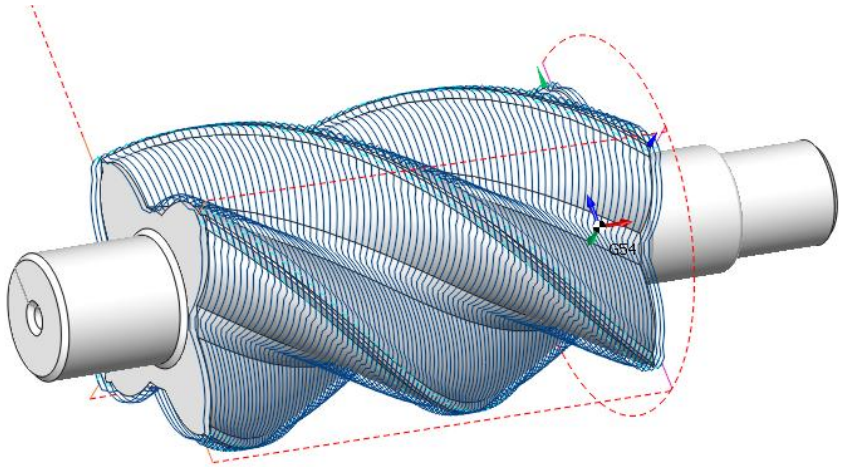




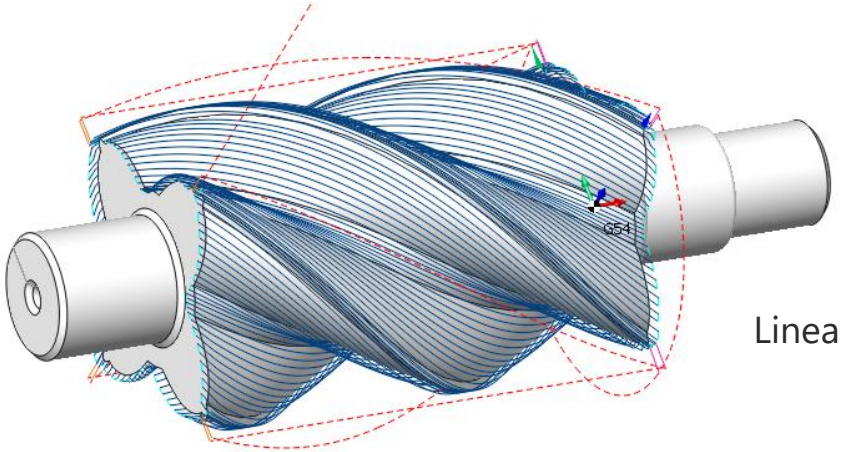
Rotary machining



Morph between two curves



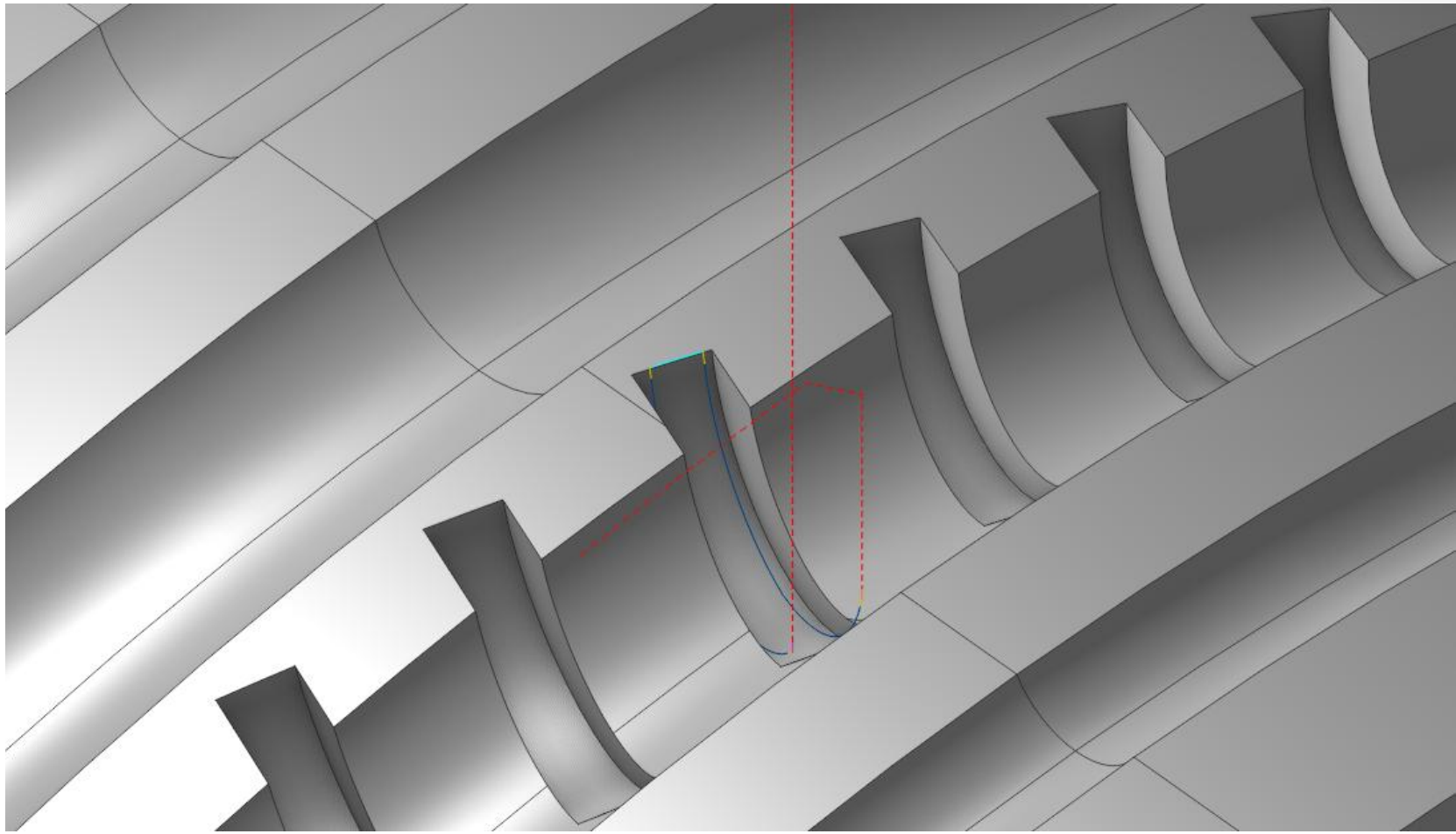
Spiral



Linear

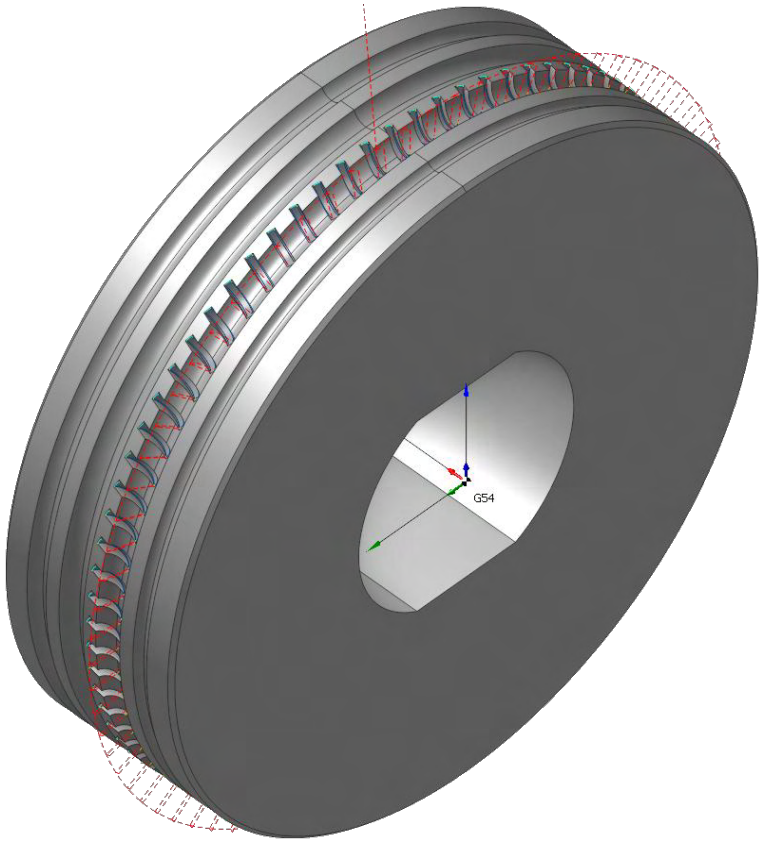
4D contouring

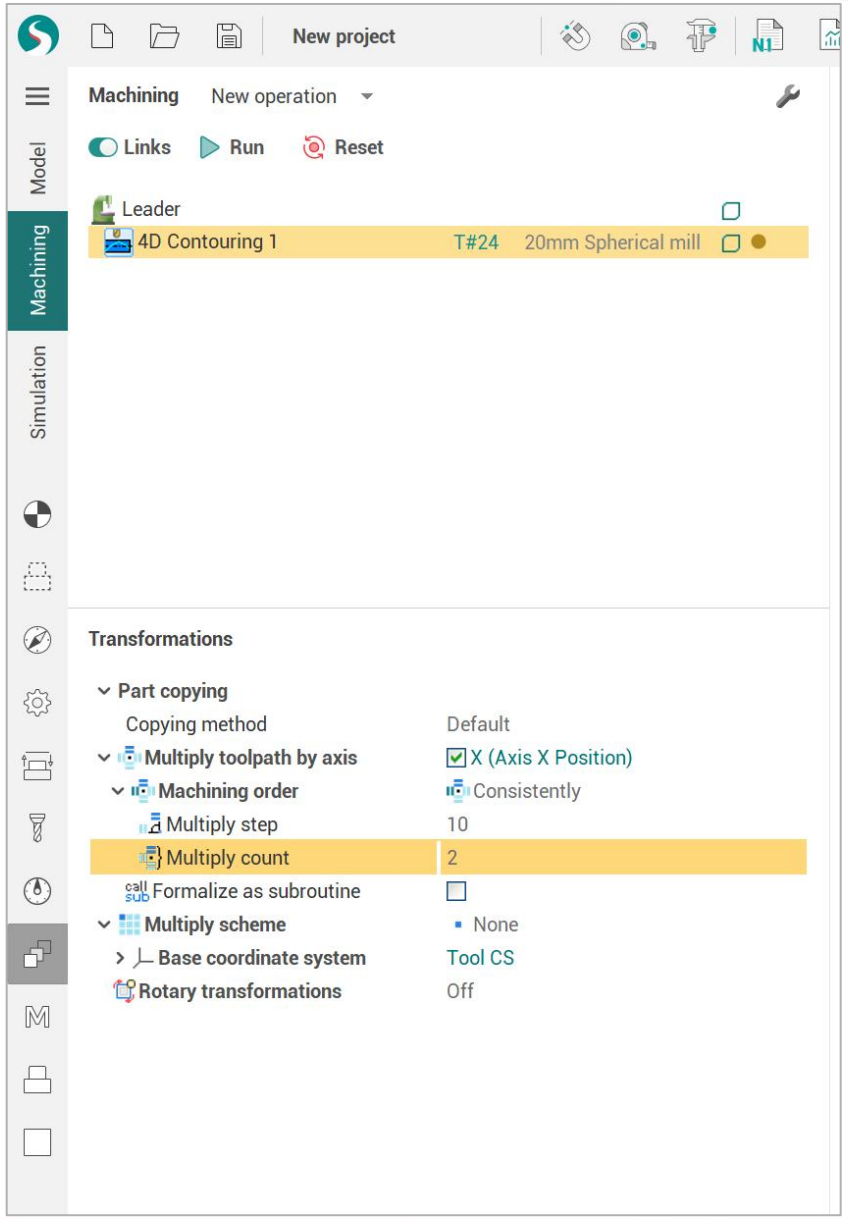
4 axis contour machining



Toolpath copying

Fast copying of toolpaths



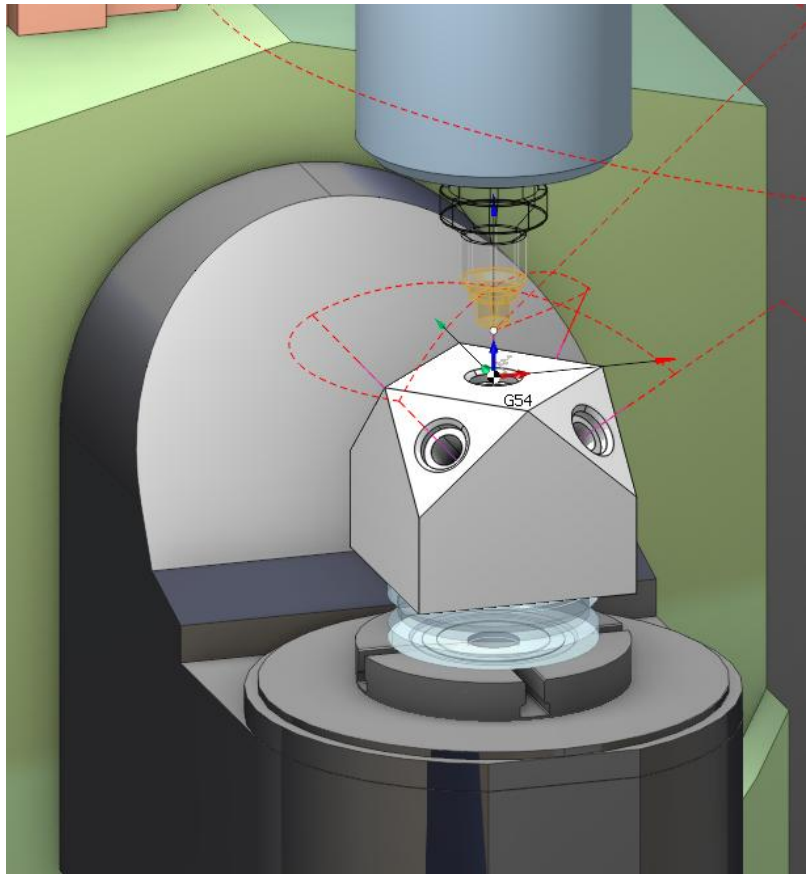


3 + 2 axis machining

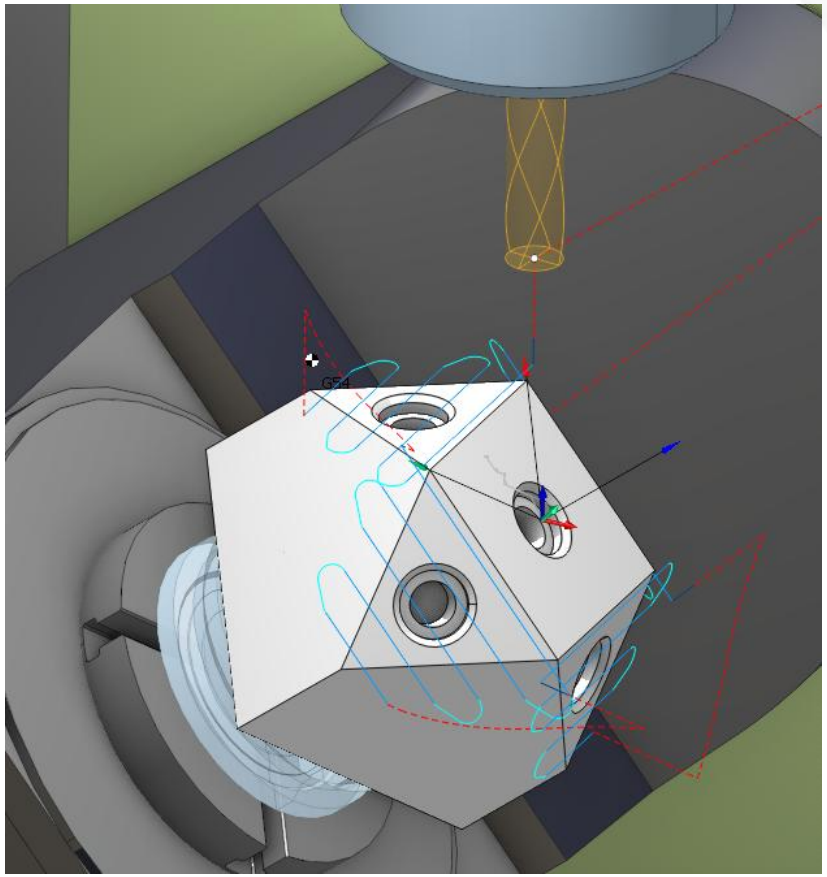
Automatic calculation of turning angles

Bulky parts machining

Interactive set up tools



Drilling



Milling

3 + 2 axis machining

Coordinate system transformation cycles

FANUC G68.2

SIEMENS CYCLE800

HEIDENHAIN; PLANE SPATIAL

```
%
5D_STAGE_DRILLING

( GENERATED BY SprutCAM )
( DATE: 17.05.2022 )
( TIME: 14:59:17 )

( TOOLS LIST )
( T1 CYLINDRICAL_MILL D25 )

G00G21G40G49G69G80G90G17
G53Z0.
G53B0.C0.
( FACE MILLING2 )
G53Z0.
G53X0.Y0.
T1M6 (25MM ENDMILL)
G54
S200M3
G00B-51.622C45.
G68.2X0.Y0.Z0.I-45.J51.622K90.
G53.1
G43H1X-35.028Y65.235Z89.35
X-35.027
Z51.303
G01G94Z38.803F200M8
Y-65.232
G02X-47.012Y-67.717I-6.25J0.
G01X-51.309Y-57.801
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G01Y55.322
G03X-63.853Y57.703I-6.25J0.
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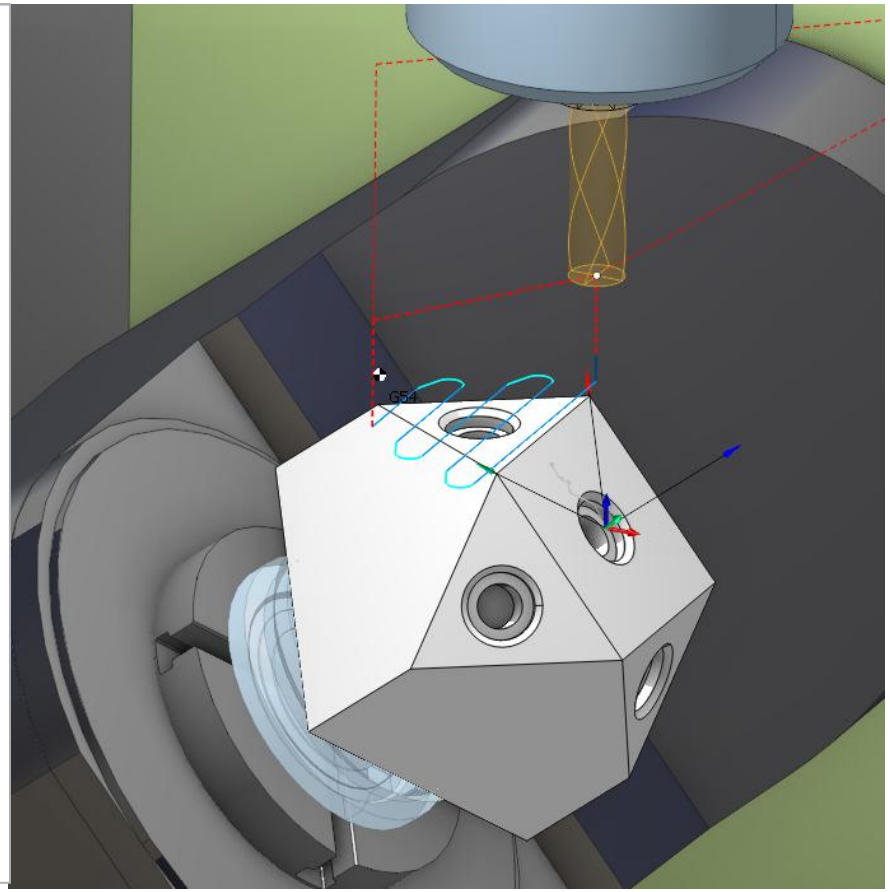

Continuous 5-axis machining

TCP support

FANUC G43.4

SIEMENS TRAORI

HEIDENHAIN M128

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%
NONAME01

( GENERATED BY SprutCAM )
( DATE: 17.05.2022 )
( TIME: 15:14:29 )

( TOOLS LIST )
( T8 CYLINDRICAL_MILL D10 )

G00G21G40G49G69G80G90G17
G53Z0.
G53A0.C0.
( 5D SURFACING 1 )
G53Z0.
G53X0.Y0.
T8M6 (10MM CYLINDRICAL MILL)
G54
S318M3
G00A0.C0.
Y-19.958
G43.4H8X-92.105Y-19.958Z10.
X-92.105Y-19.958Z-46.247
G01G94X-92.105Y-19.958Z-56.247F200M8
G03X-90.753Y-25.45Z-55.023I91.888J19.709
X-89.241Y-30.4Z-53.849I70.388J18.802
X-87.519Y-35.037Z-52.676I91.755J31.437
X-85.574Y-39.604Z-51.444I111.55J44.792
X-83.549Y-43.72Z-50.253I85.124J39.319
X-81.274Y-47.826Z-48.979I94.589J49.737
X-78.856Y-51.751Z-47.673I102.66J60.544
X-76.327Y-55.424Z-46.356I79.158J51.797
X-73.468Y-59.174Z-44.907I88.666J64.625
X-70.28Y-62.981Z-43.322I121.135J98.191
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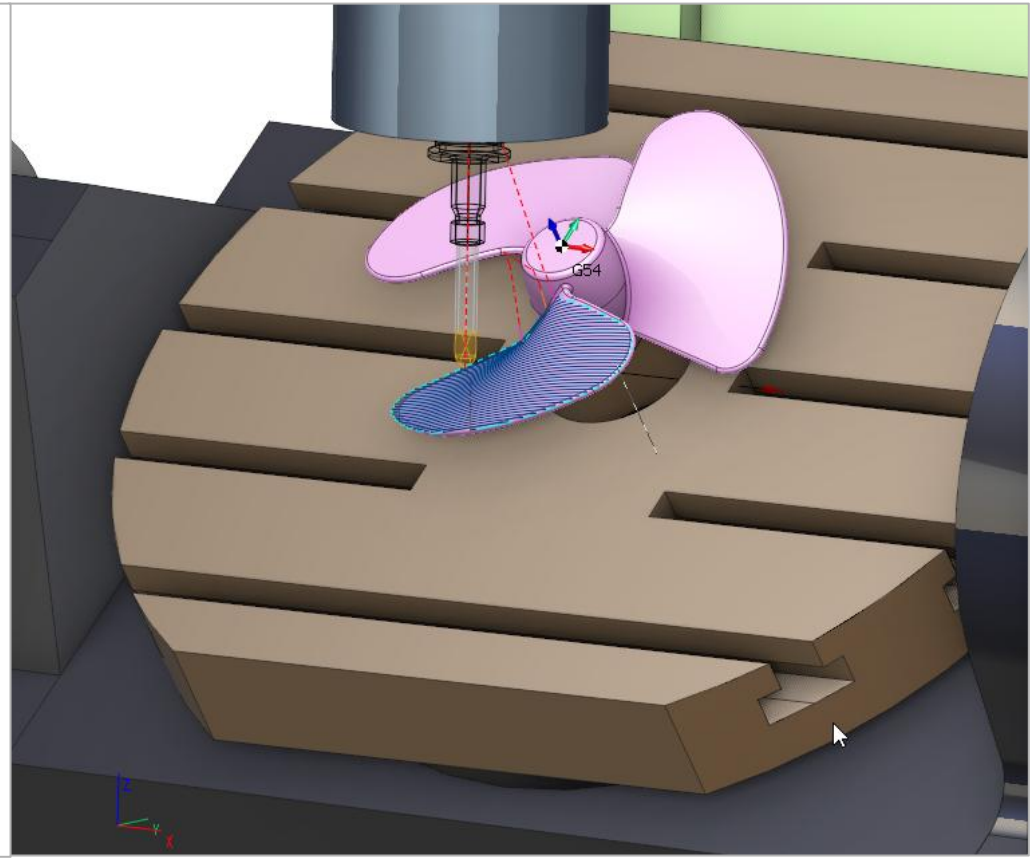
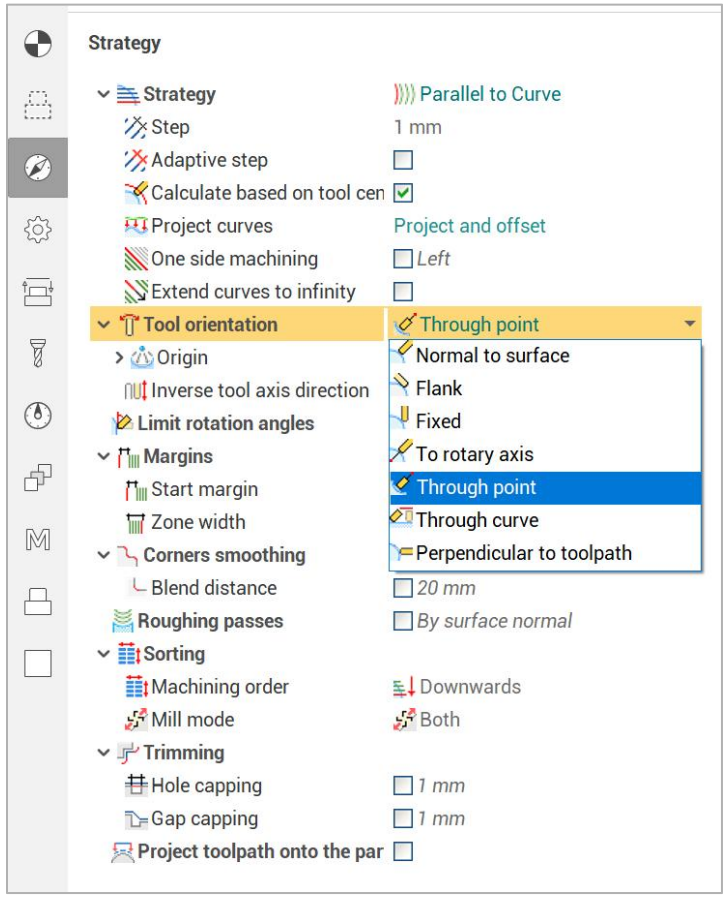
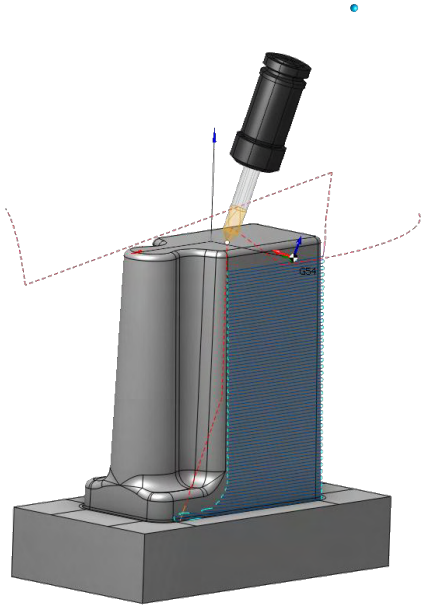
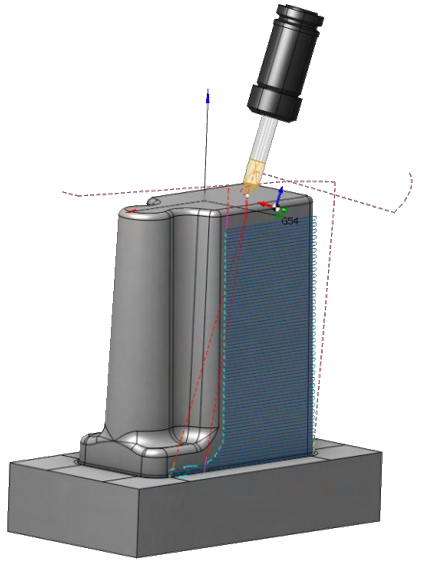


Continuous 5-axis machining

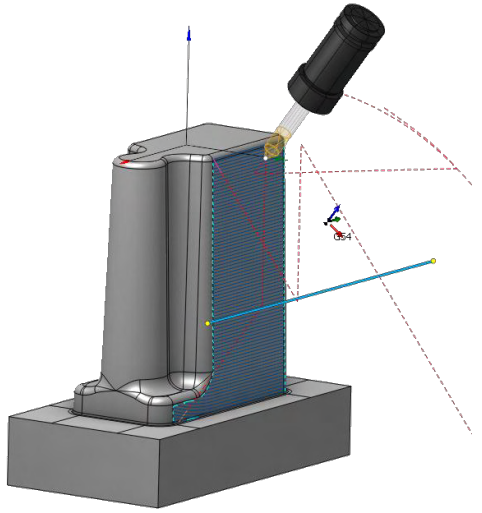




Through point



Perpendicular to toolpath



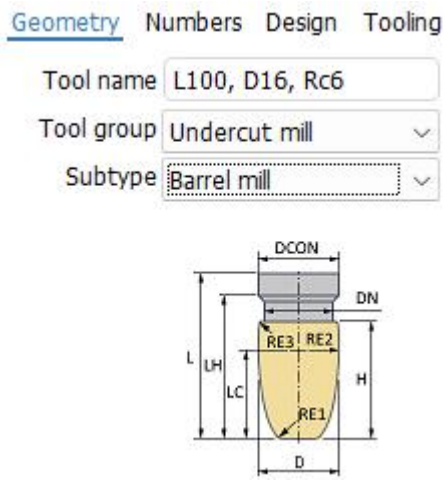
Through curve

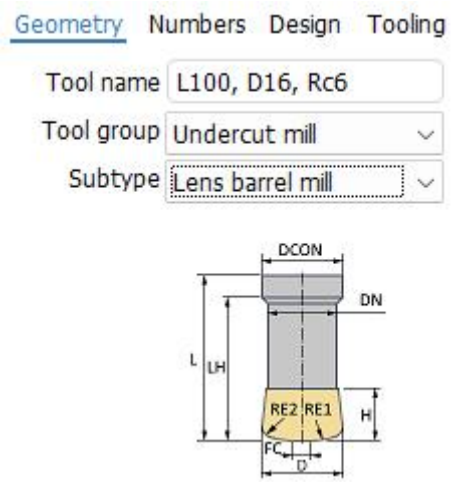
Barrel mill support

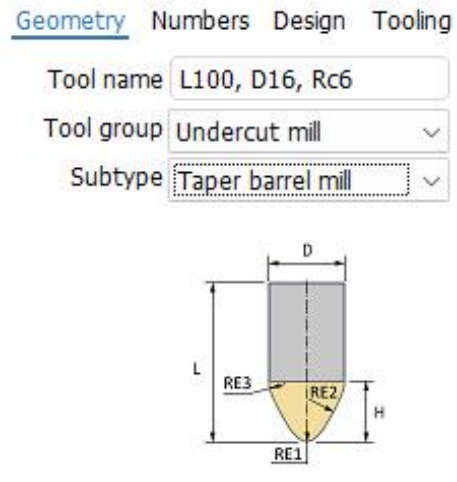
Reduces machining time

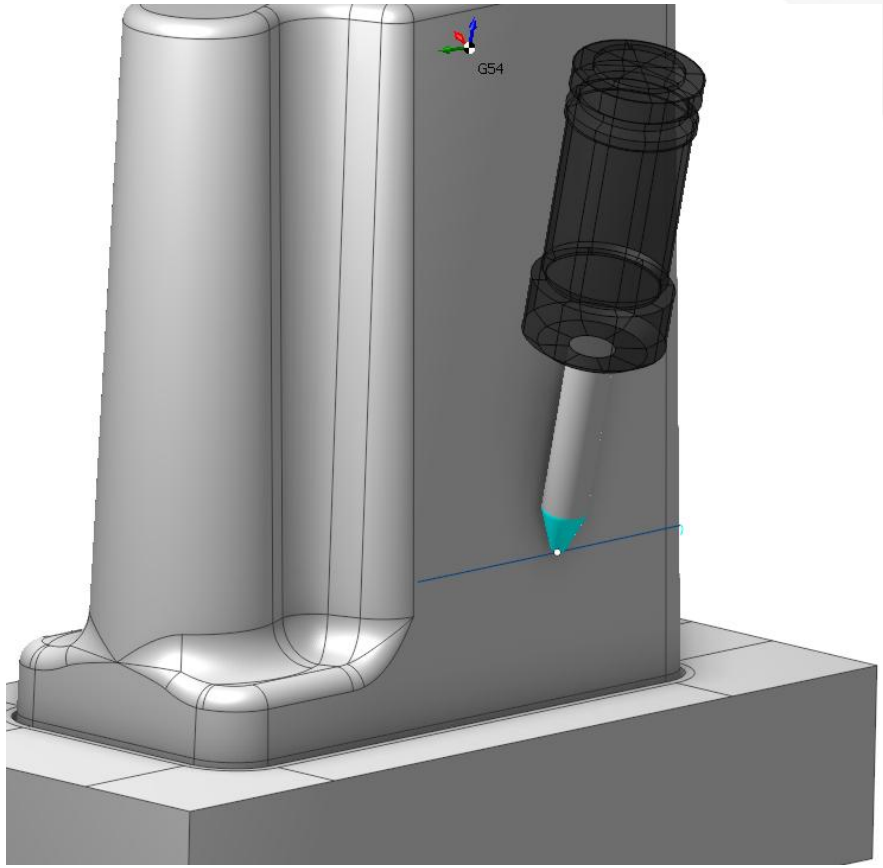
Safe toolpath

Superior quality of the machined surface



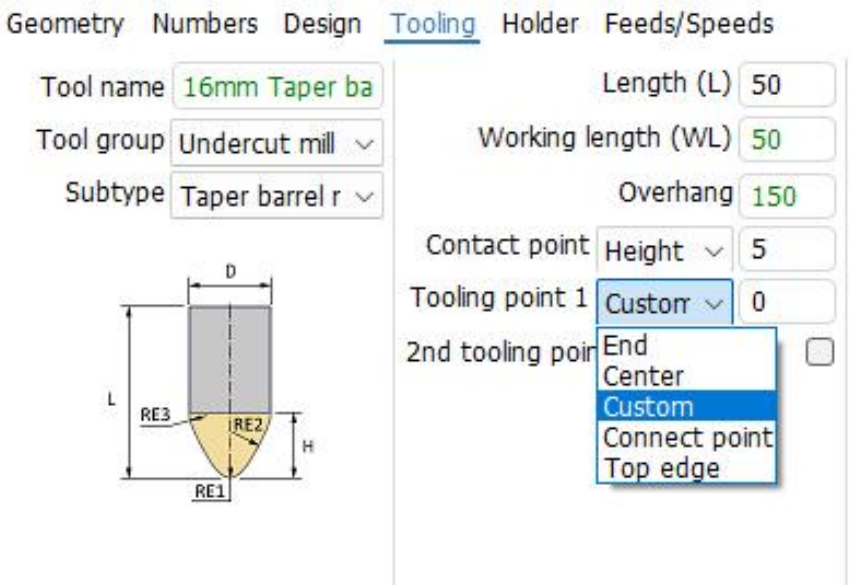


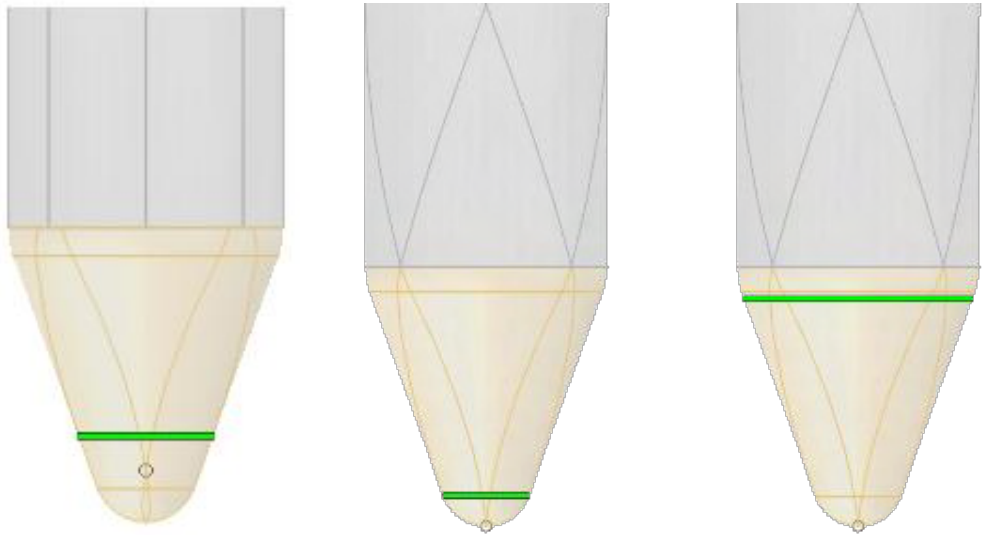




Barrel mill support

Tool contact adjustment



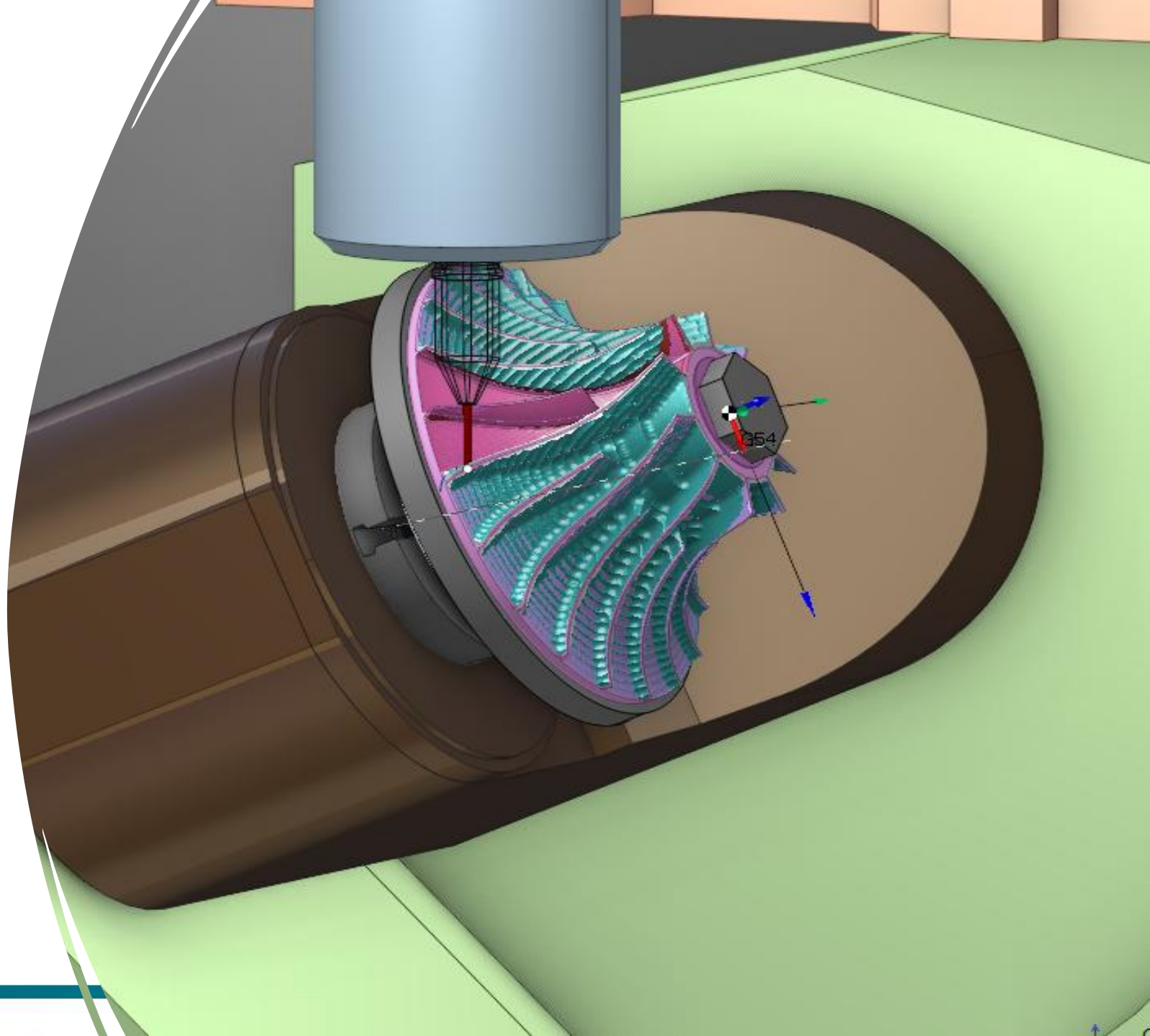


Tool contact adjustment

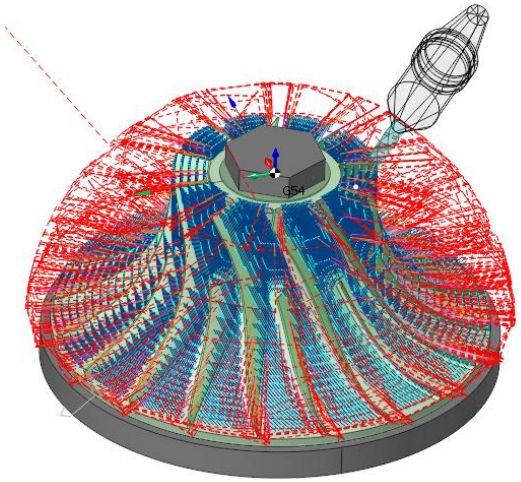
Turbine machining strategies

Intuitive set up

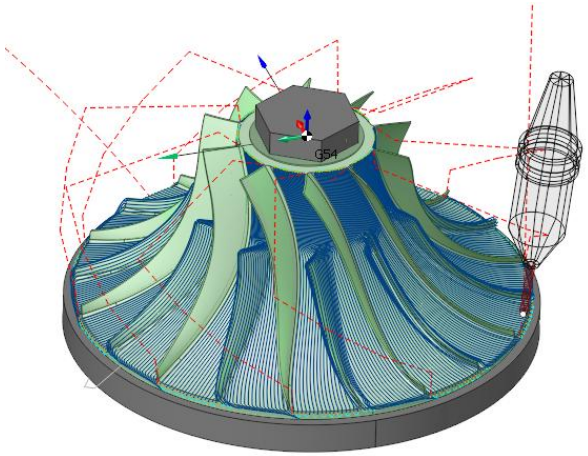
Predictable result



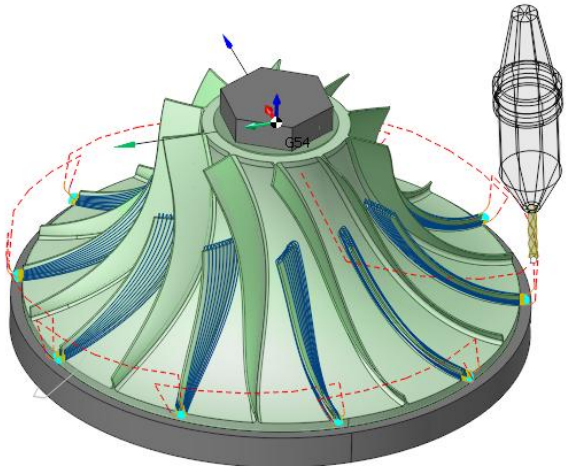
Turbine machining strategies



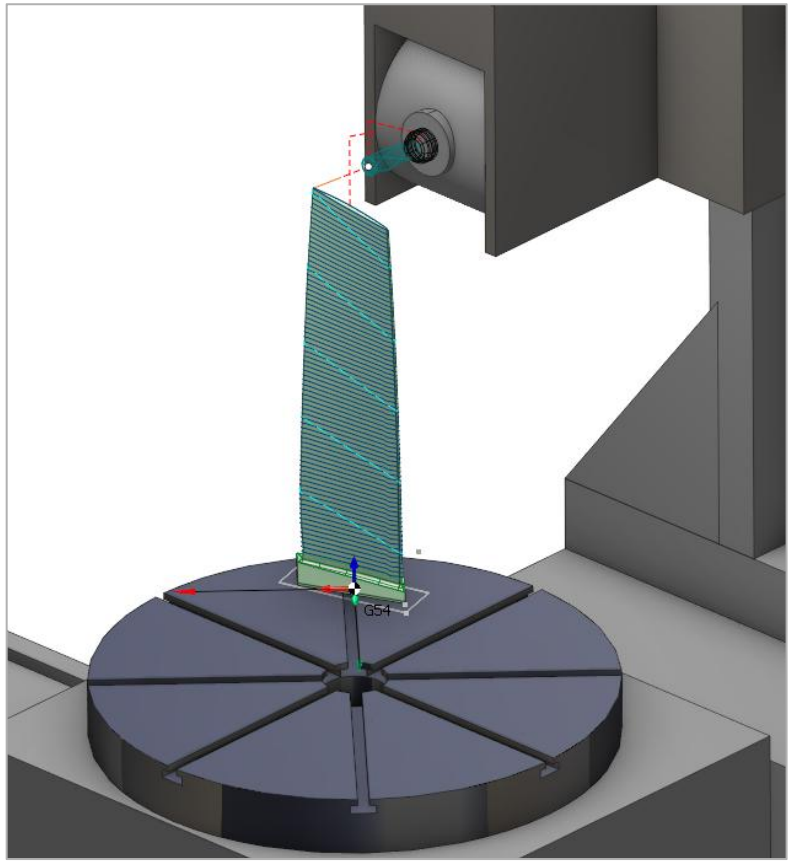
5-axis roughing

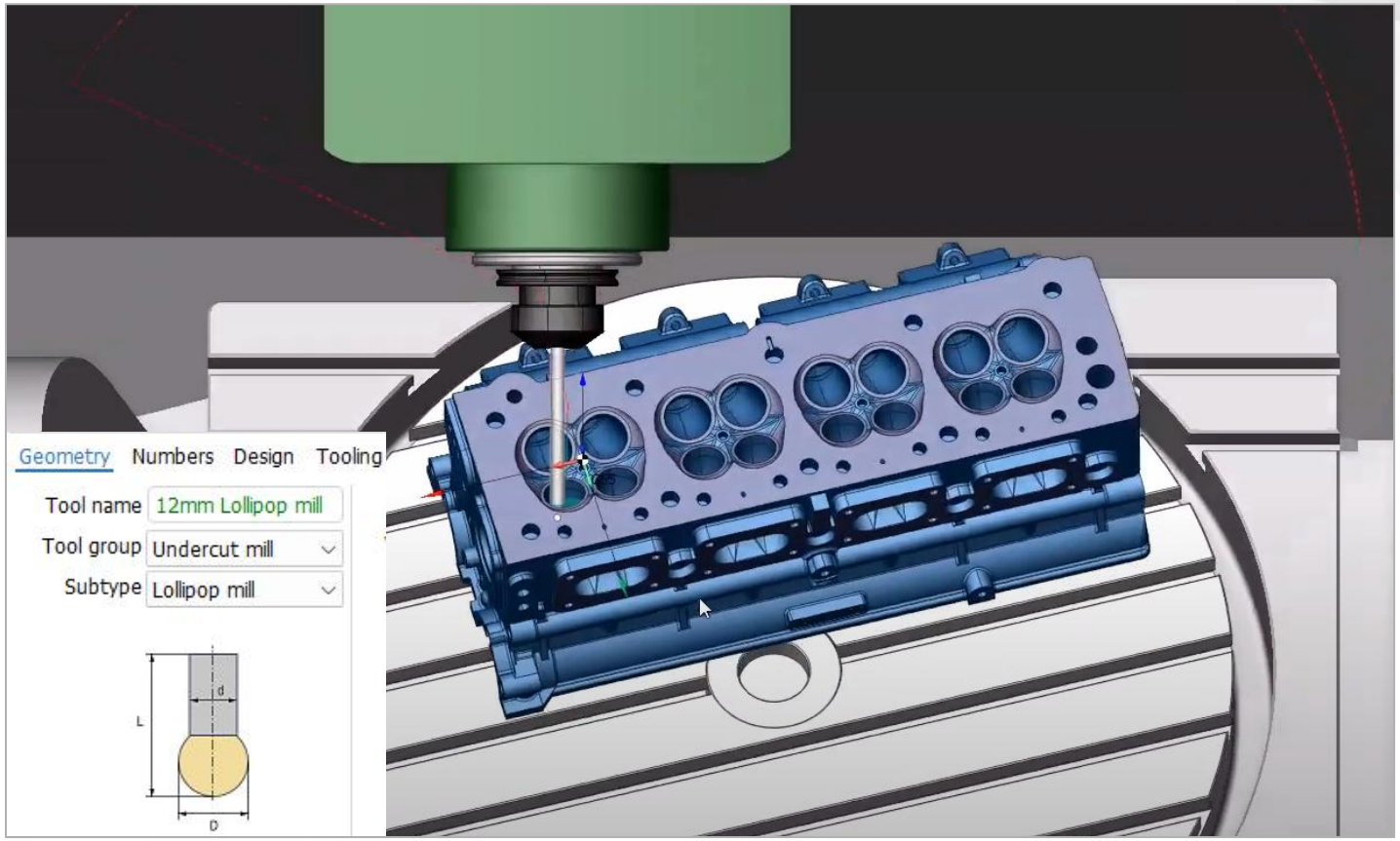


Bottom finishing



Blades finishing





5D machining perpendicular to the directing curves

Lollipop mill support

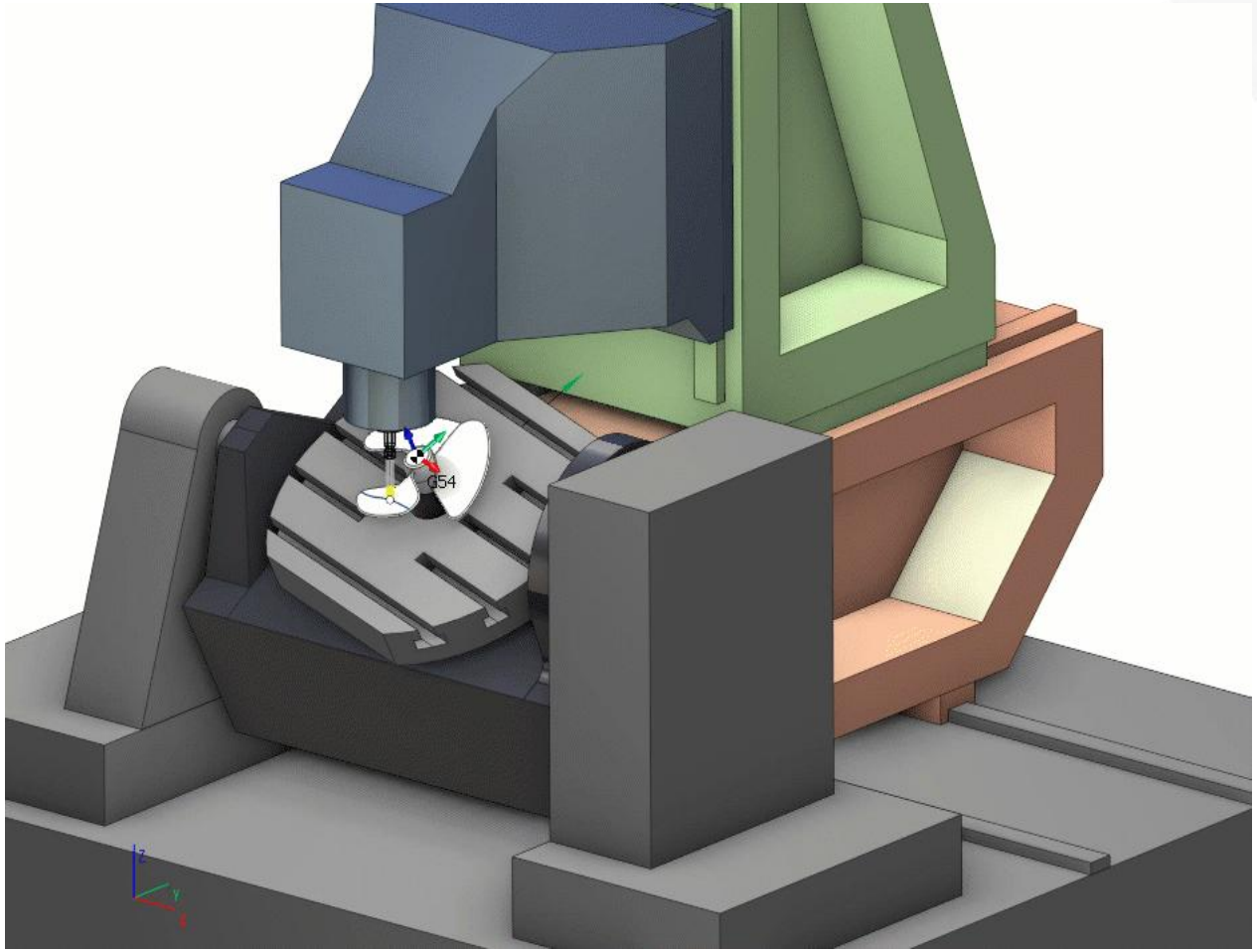
Machining simulation

When calculating the toolpath, SprutCAM takes into account machine kinematics and limitations

Once the toolpath calculated is started, in background SprutCAM checks for all possible collisions and machine area limitations

When setting up machining operations, you don’t need to switch to the Simulation mode to verify every operation

Considerably reduced time for programming of multiaxis type machines

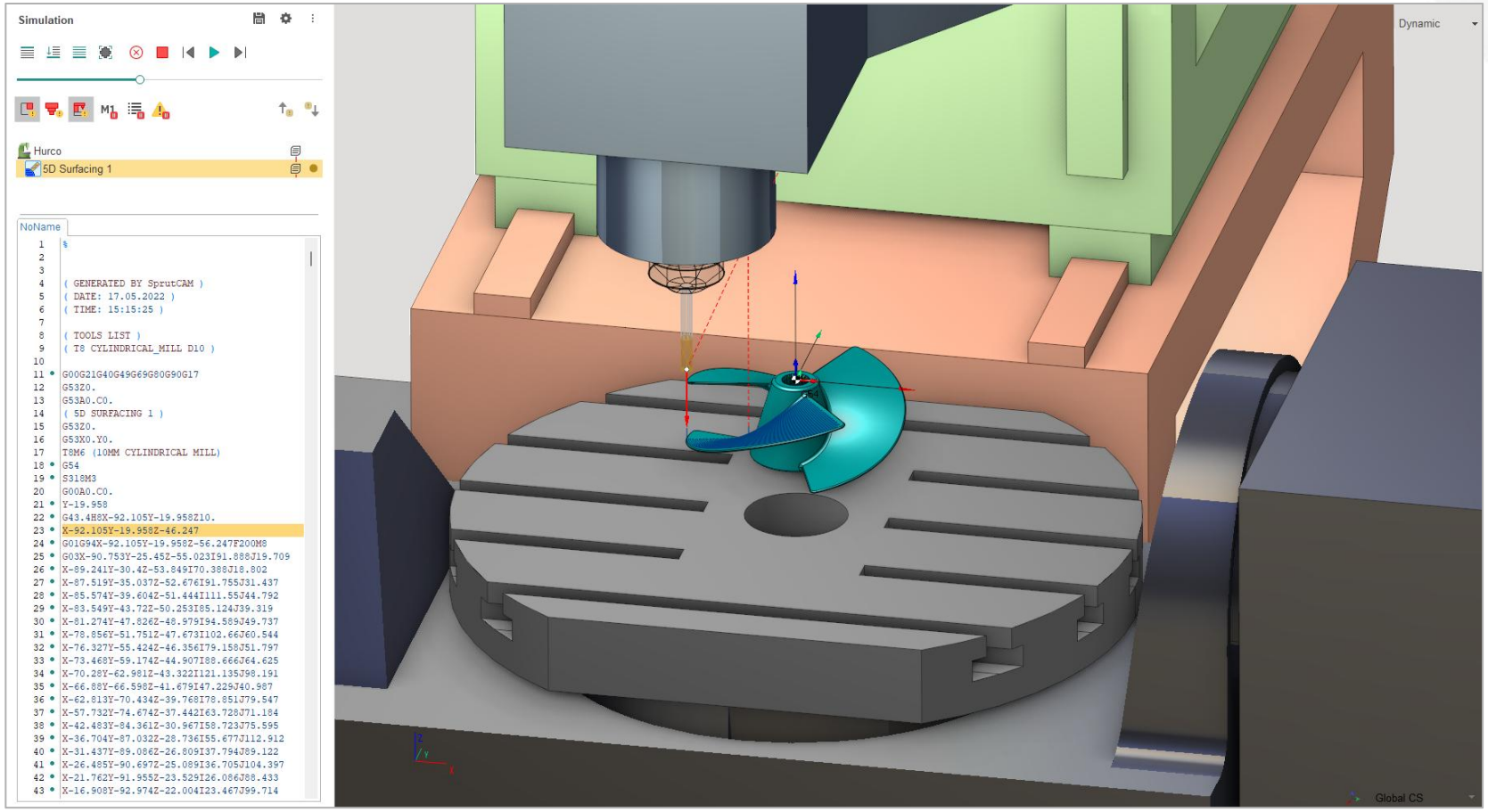


G-code based simulation

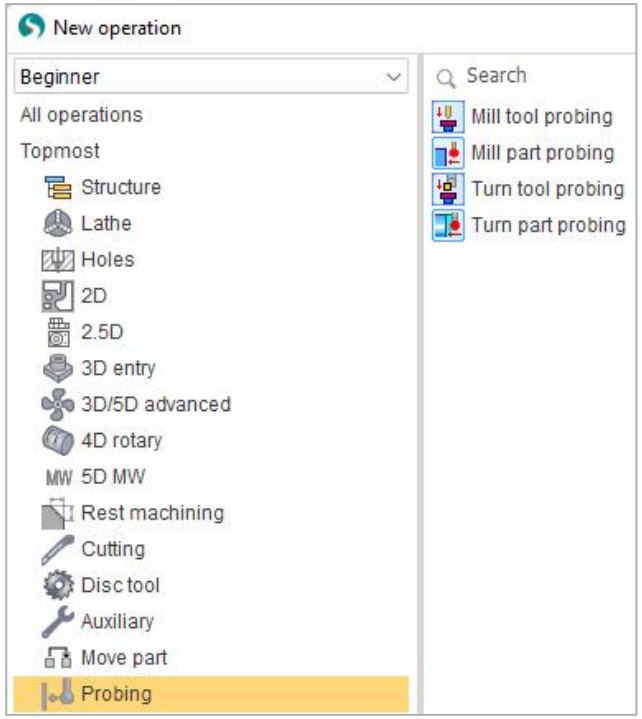
Toolpath verified using G-code during the simulation stage

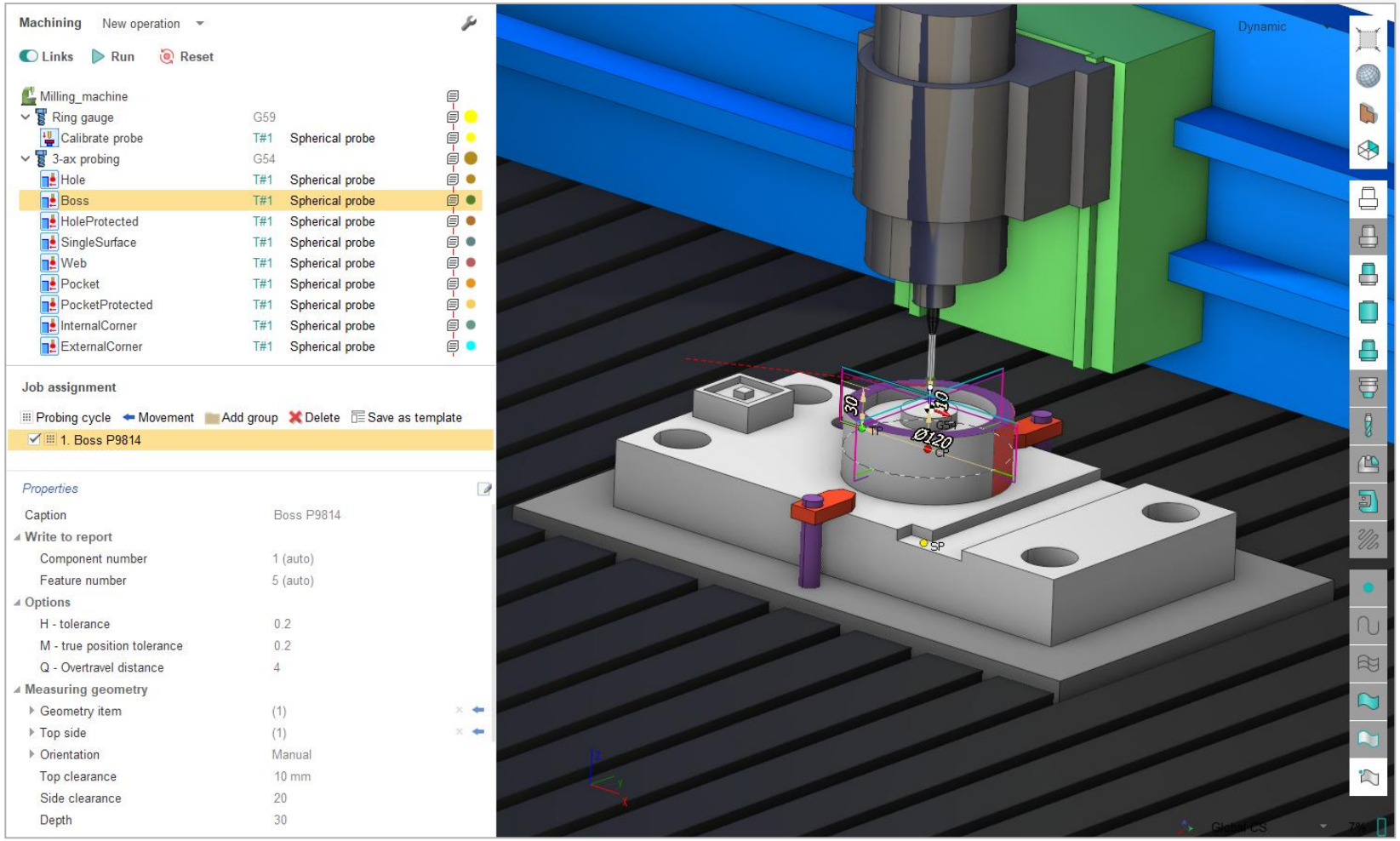
FANUC, HEIDENHEIN, SIEMENS systems is available

No separate software for verification needed



Probing


New operation
Beginner
All operations
Topmost
Structure
Lathe
Holes
2D
2.5D
3D entry
3D/5D advanced
4D rotary
5D MW
Rest machining
Cutting
Disc tool
Auxiliary
Move part
Probing
Search
Mill tool probing
Mill part probing
Turn tool probing
Turn part probing


Machining
New operation
Links
Run
Reset
Milling_machine
Ring gauge G59
Calibrate probe T#1 Spherical probe
3-ax probing G54
Hole T#1 Spherical probe
Boss T#1 Spherical probe
HoleProtected T#1 Spherical probe
SingleSurface T#1 Spherical probe
Web T#1 Spherical probe
Pocket T#1 Spherical probe
PocketProtected T#1 Spherical probe
InternalCorner T#1 Spherical probe
ExternalCorner T#1 Spherical probe
Job assignment
Probing cycle
Movement
Add group
Delete
Save as template
1. Boss P9814
Properties
Caption Boss P9814
Write to report
Component number 1 (auto)
Feature number 5 (auto)
Options
H - tolerance 0.2
M - true position tolerance 0.2
Q - Overtravel distance 4
Measuring geometry
Geometry item (1)
Top side (1)
Orientation Manual
Top clearance 10 mm
Side clearance 20
Depth 30
Dynamic
Ø120
SP

SprutCAM X

Capabilities and functions for the turn and turn-milling

Turn and turn-milling

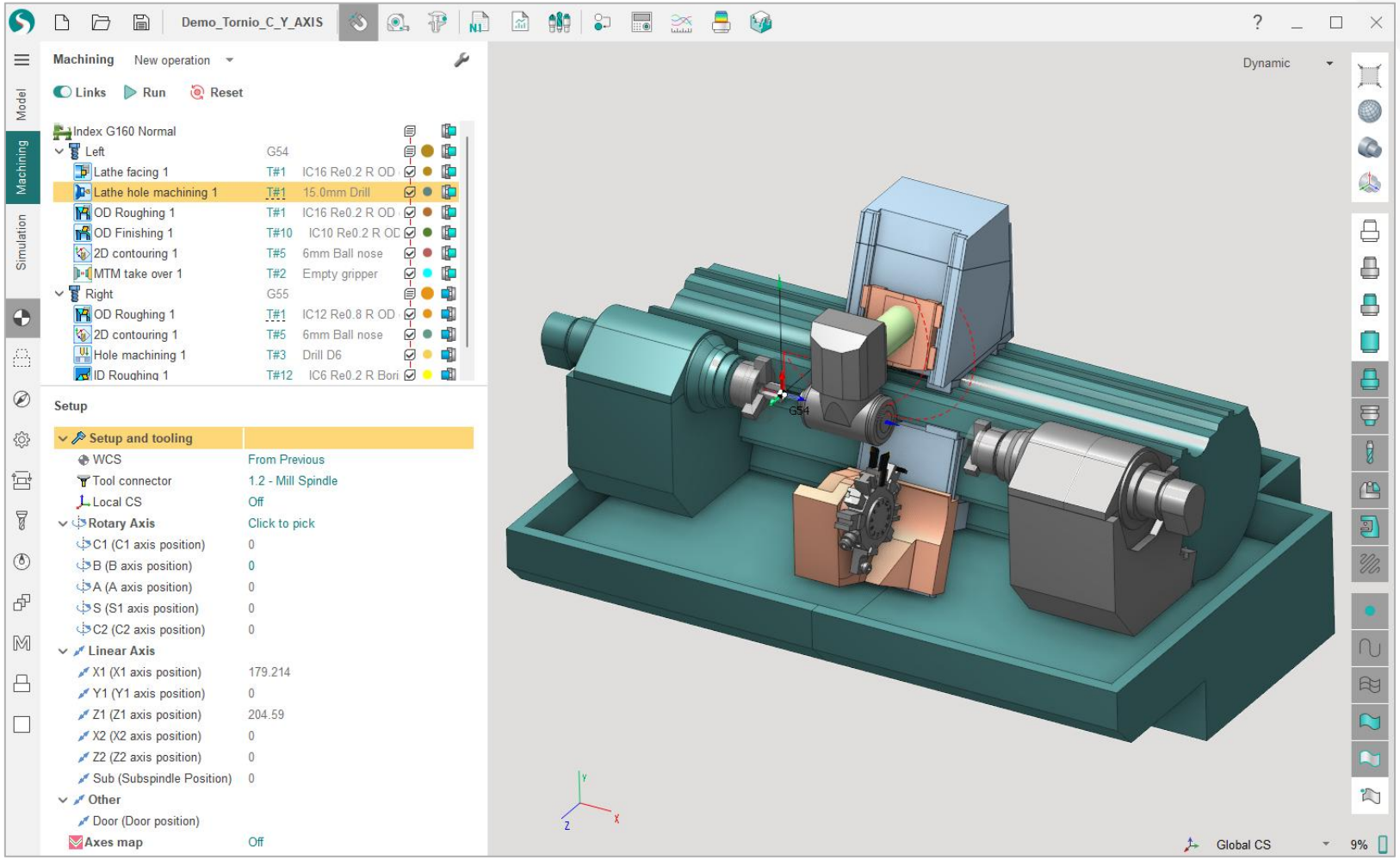
All types of turning operations

Toolpath preview, interactive approaches and retracts, drag & drop contour editing, threads database

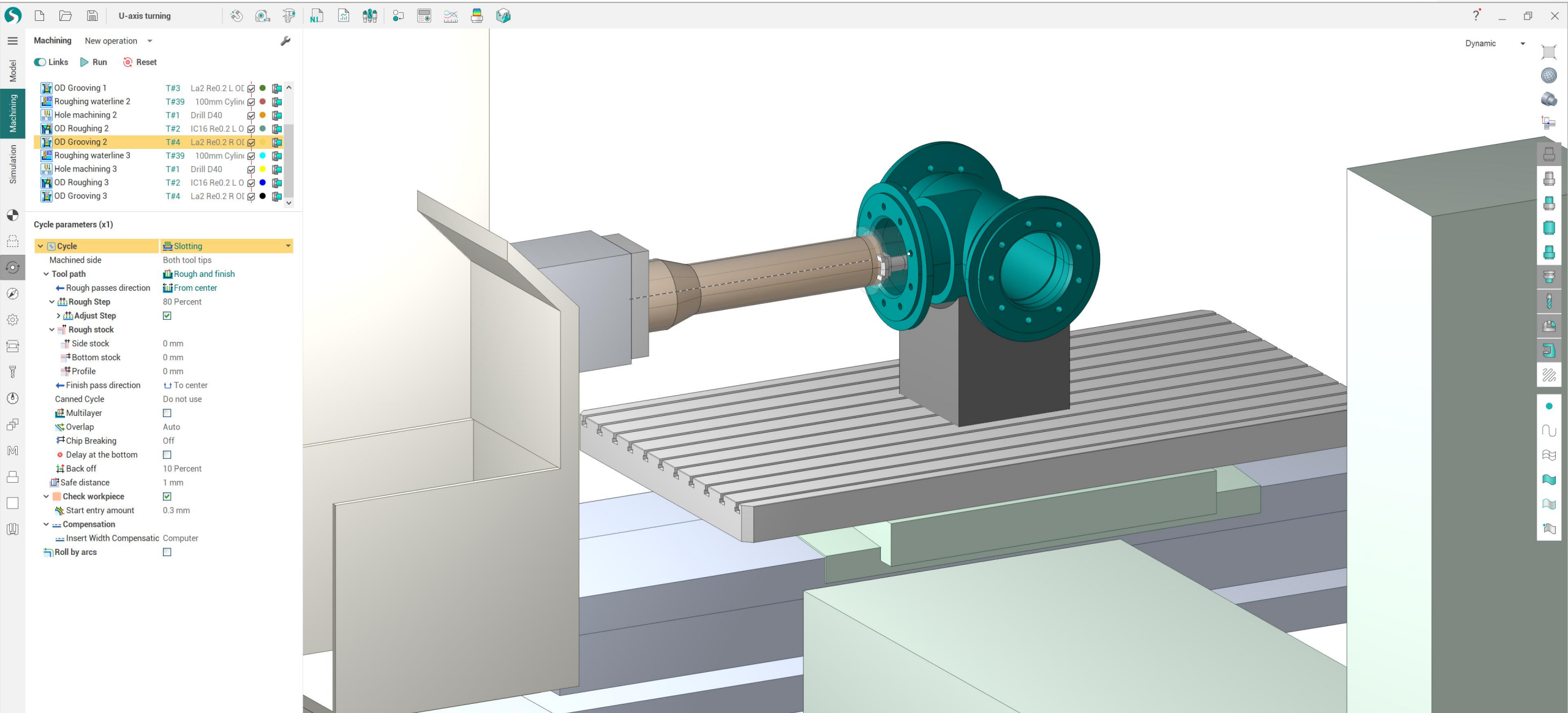
Use C and Y axes for machining in the main spindle or counter-spindle, on the part OD and on the part face.

Polar interpolation support

B-axis support

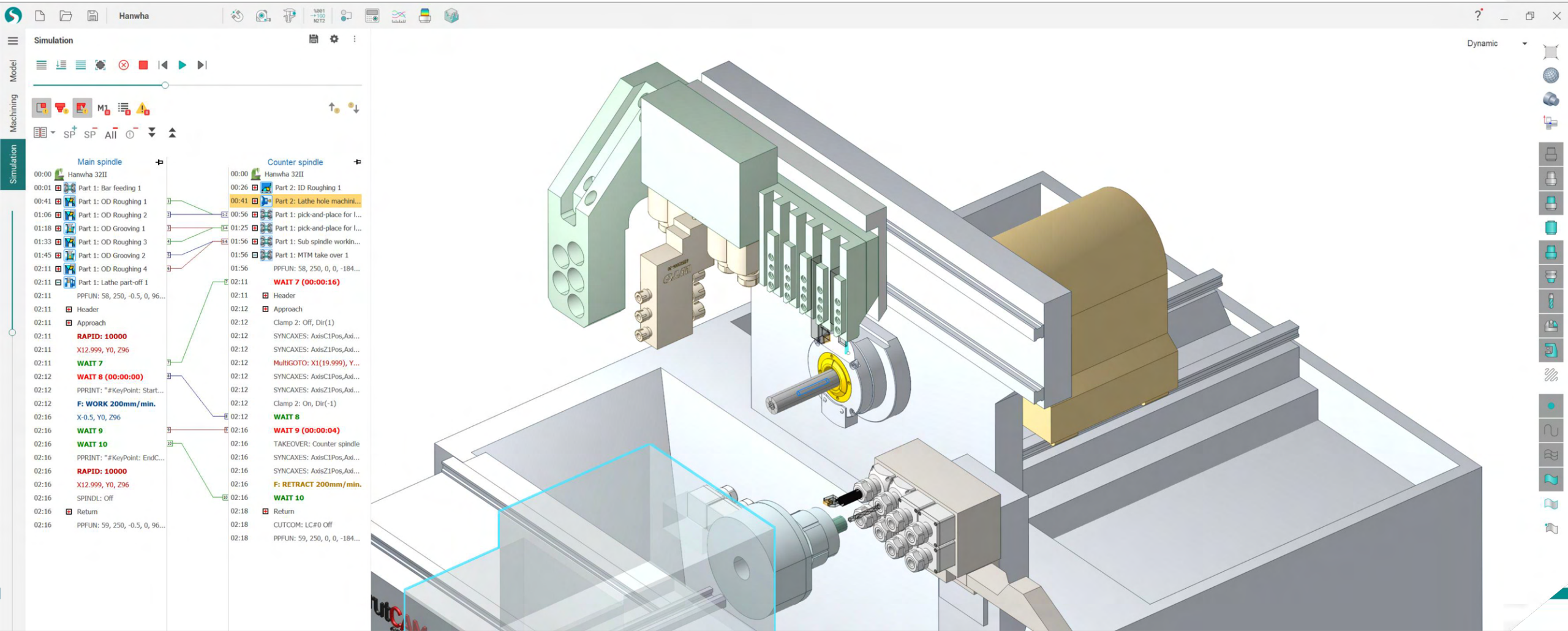


U-axis turning



Swiss type lathes

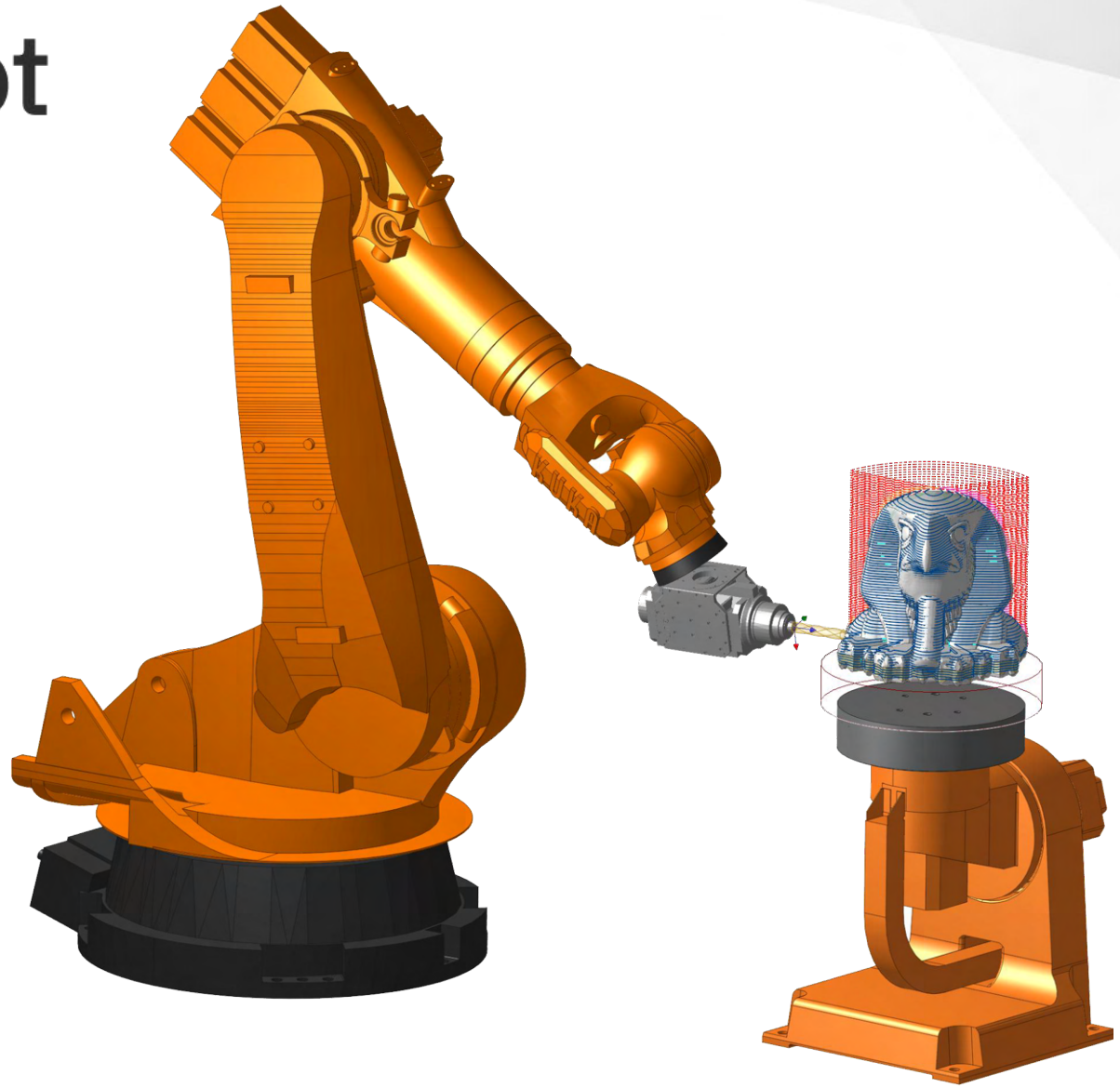
Automatic reordering and synchronization



SprutCAM X

Capabilities and functions for the industrial robots programming

SprutCAM X Robot

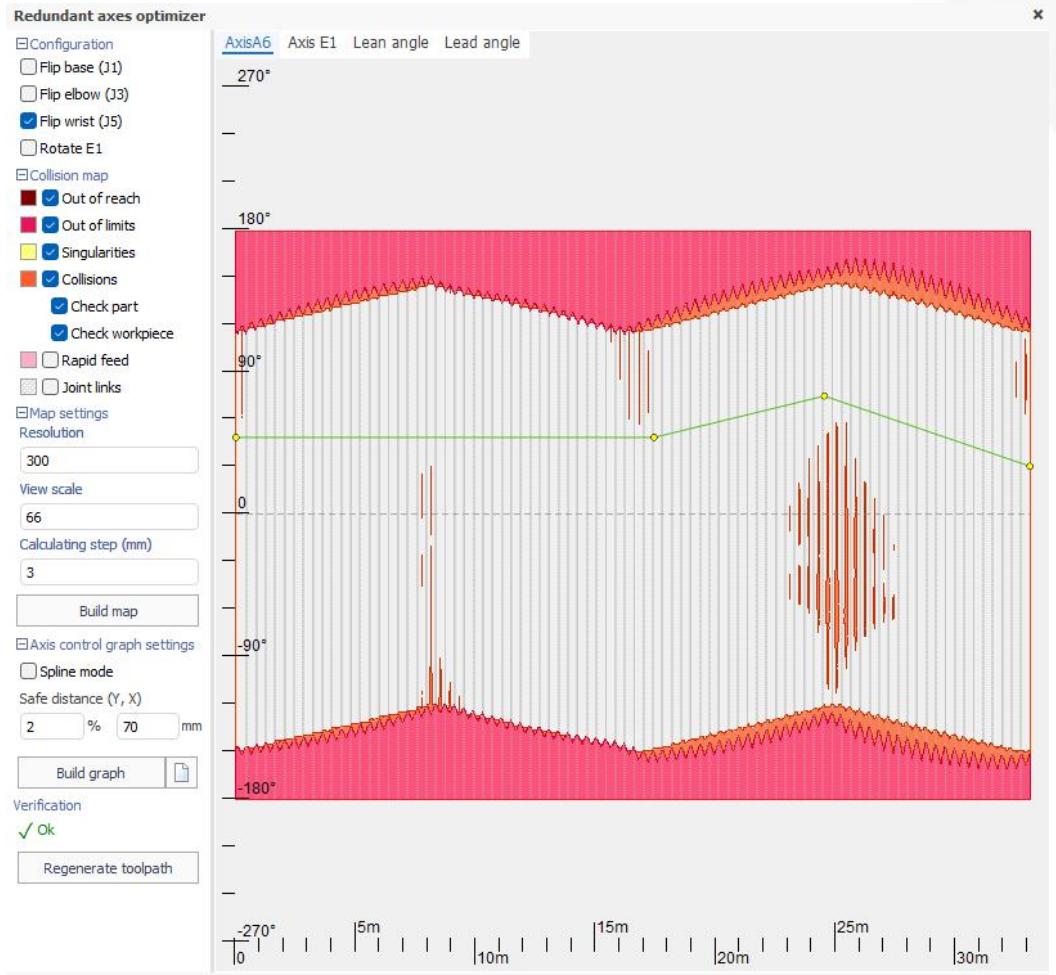


Universal environment for industrial robots programming

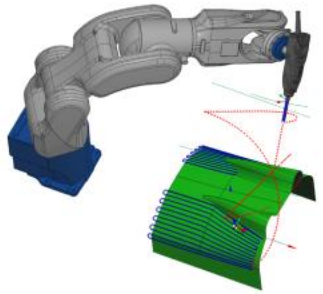
Intelligent industrial robots programming

Support of additional axes

6-axis control



Supported technologies

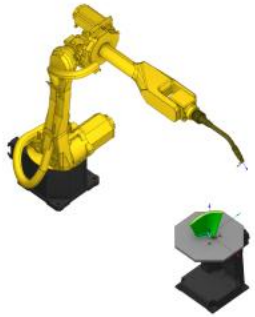


Milling

3—5D milling with redundant axes support

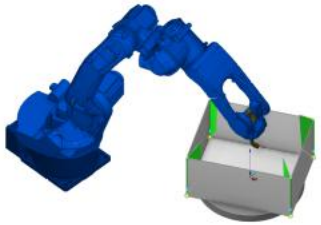
Cutting

Miltiaxis cutting with precise tool vector control



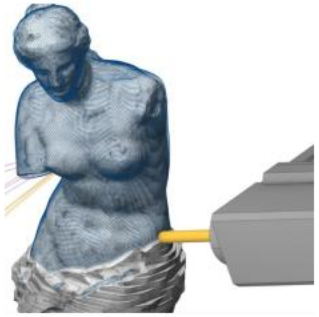
Additive

3—5D cladding with advanced layer thickness control



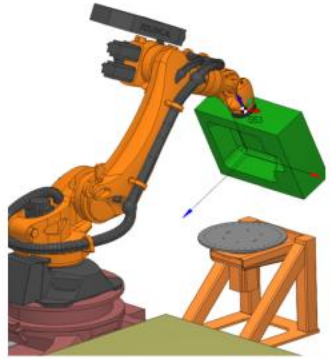
Welding

Simple easy-to-use solution for welding programming



Sculpture Stone

Stone roughing, disk tool, advanced 5D finishing for mesh models

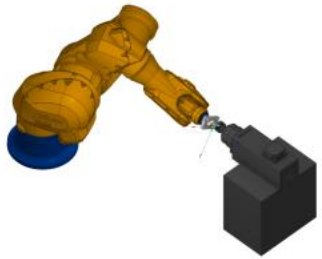


Pick and place

Collision-free automatic pick-and-place

Spray painting

Simulate and test your painting on your PC. SprutCAM Robot will give you all you need for it.



Polishing

Tool-to-part and part-to-tool supported

Supported every manufactures of robot

SprutCAM X

SprutCAM Tech Ltd.
9, Aiolou and Panagioti
Diomidous
3020 Limassol
Cyprus

http://sprutcam.com
email: info@sprutcamtech.io

Multipurpose CAD/CAM solutions

cost-effective and powerful solution for CNC programming and industrial robots