



G5X – CNC Machine Simulation

- Integrated with Mastercam
- Works with any Mill post-processor (3X, 4X, 5X)
- Reads native CNC code (Fanuc, Heidenhain, Siemens, Haas, ...)
- Very accurate collision detection (0.02mm)
- Machine types: H/H, T/T, H/T
- Supports non-standard components:
 - Angle Head
 - GunDrill
 - external 6th axis

To get the full version contact: comercial@grandesoft.pt
Download G5X Simulation Viewer:

<https://drive.google.com/drive/folders/1QQ1CPtgr4GOeJVUEGqJyviAHBbRyRK7?usp=sharing>

ZOOM = mouse wheel
ROTATE = left click + move up/down and left/right
PAN = right click + move

FANUC/HAAS G0/Rapid dog-leg collision simulation

Use mouse wheel to Continue after Pause

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	1.741	1.741	1.741	-350	200	<input checked="" type="checkbox"/> Collision
Y	8.09202	-65.496	8.09202	-275	175	<input type="checkbox"/> Machine Limits
Z	-1.283	-1.283	330.126	-380	750	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-5	110	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	0	0	0	-900000	900000	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="checkbox"/> Find Text

Tool Part
Collision: 0.3-0.5
Collision >= 0.02
Clear Collisions

RTCP Units = mm
 Ignore Chamfer and Tap tool collision
For End Users a License is required. **NOT FOR RESALE**

Visible Mach. Base
 Oper. Clear Backplot
 Shading
 Wireframe
 Backplot

G5X - Converter - v1.3b www.grandesoft.pt
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G5X - Converter - v1.3b www.grandesoft.pt
Control Axis V/H
FANUC B/C V FANUC



Angle Head

G5 G5XCNC Simulator

Angle Head simulation

Load Machine Load .NC View G5XCNC Simulator - v1.3c
www.grandesoft.pt 2023

cms-ares3618-fanuc-5eixos-bc-2023 NL start

Start Step by step 1 mm

118 | PAUSE: Step by step 1 mm

1 | OP1 | drill |

T229 | angular-d4x25 | D4.0 x R0.0 | BT 0 - ID 0

Top | PLANO Top - RODADO B0. C0. GRAUS

N94 G01 X-184.833 Y-28.631 Z9.873 F10000
N95 G01 X-188.391 Y-37.976 F10000
N96 G1 X-195.308 Y-56.667 F250
N97 G01 X-184.833 Y-28.631 F10000

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-194.404	-184.833	1361.67	0	3600	<input checked="" type="checkbox"/> Collision
Y	-53.7667	-28.631	324.884	-370	1430	<input type="checkbox"/> Machine Limits
Z	9.873	9.873	549.373	30	1230	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-120	120	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	249.156	249.156	249.156	-270	270	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="checkbox"/> Find Text

X: 1500 Y: 400 Z: 275 A/B - Tilt: C - Rotate

Move Tool Move Part Move Fixture Clear Collisions

RTCP Units = mm Visible Mach. Base

Ignore Chamfer and Tap tool collision Oper. Clear Backplot

For End Users a License is required. **NOT FOR RESALE** Shading Wireframe Backplot

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CMS-ARES3618-FANUC-SEIXOS-BC-2023

Control Axis V/H FANUC B/C V

G5 G5XCNC Simulator

Angle Head simulation

Load Machine Load .NC View G5XCNC Simulator - v1.3c
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cms-ares3618-fanuc-5eixos-bc-2023 NL start

Start Run

204

2 | OP2 | drill |

T229 | angular-d4x25 | D4.0 x R0.0 | BT 0 - ID 0

Top | PLANO Top - RODADO B-90. C249.156 GRAUS

N170 G28 G91 Z0
N171 G28 Y0
N172 G90
N173 M99

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	500	500	2000	0	3600	<input checked="" type="checkbox"/> Collision
Y	400	400	860	-370	1430	<input type="checkbox"/> Machine Limits
Z	425	425	845	30	1230	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-120	120	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	0	0	0	-270	270	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="checkbox"/> Find Text

X: 1500 Y: 400 Z: 275 A/B - Tilt: C - Rotate

Move Tool Move Part Move Fixture Clear Collisions

RTCP Units = mm Visible Mach. Base

Ignore Chamfer and Tap tool collision Oper. Clear Backplot

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CMS-ARES3618-FANUC-SEIXOS-BC-2023

Control Axis V/H FANUC B/C V



Angle Head

G5 G5XCNC Simulator

Angle Head collision with Part

PAUSE: Collision

Tool Part
Collision: > 1.0 mm

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-220.434	-220.434	1335.64	0	3600	<input checked="" type="checkbox"/> Collision
Y	-15.076	-15.076	363.575	-370	1430	<input type="checkbox"/> Machine Limits
Z	-17.839	-17.839	521.661	30	1230	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-120	120	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	249.156	249.156	249.156	-270	270	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="checkbox"/> Find Text

Tool Part
Collision: >= 0.02

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CMS-ARES3618-FANUC-SEIXOS-BC-2023

Control Axis V/H

FANUC

G5 G5XCNC Simulator

Angle Head collision with Fixture

PAUSE: Collision

Tool Fixture
Collision

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-249.805	-256.348	1256.34	0	3600	<input checked="" type="checkbox"/> Collision
Y	172.177	166.704	665.014	-370	1430	<input type="checkbox"/> Machine Limits
Z	-43.6639	-46.656	489.615	30	1230	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	-10	-10	-10	-120	120	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	-53.633	-53.633	-53.633	-270	270	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="checkbox"/> Find Text

Tool Fixture
Collision

Collision >= 0.02

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CMS-ARES3618-FANUC-SEIXOS-BC-2023

Control Axis V/H

FANUC



5 Axis

G5 G5XCNC Simulator

hermie-c650-h530-5eixos-ac-2023

Load Machine Load .NC View G5XCNC Simulator - v1.3c
www.grandesoft.pt 2023

NL start

Start Stop Run

1484 PAUSE

1 | OP1 | hmm |

T1 | FD20X0.5 | D20.0 x R0.5 | B5C4-0032

Top |

378 CC X+10.6184 Y-7.7849
379 C X+17.6405 Y-42.8043 DR-
380 CC X-0.2504 Y+45.8606

381 C X+3.2062 Y-44.5252 DR-

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	29.2481	9.01167	29.2481	-500	500	<input type="checkbox"/> Collision
Y	-38.2579	-44.1159	-38.2579	-400	400	<input type="checkbox"/> Machine Limits
Z	-2	-2	392.393	0	1000	<input checked="" type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-115	115	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	0	0	0	-900000	900000	<input type="checkbox"/> Operation
6th Axis	0	0				<input type="button" value="Find Text"/>

X: 0 Y: 0 Z: 246.27 A/B - Tilt: C - Rotate

Collision >= 0.02

Move Tool Move Part Move Fixture

RTCP Units = mm

Ignore Chamfer and Tap tool collision

Visible Mach. Base
 Oper. Clear Backplot
 Shading
 Wireframe
 Backplot
 Check Collisions
 Disp. Collisoes
 Verify
 Holder Collisao
 export NC

T.Len

G5 G5XCNC Simulator

hermie-c650-h530-5eixos-ac-2023

Load Machine Load .NC View G5XCNC Simulator - v1.3c
www.grandesoft.pt 2023

NL start

Start Stop Run

26677

18 | OP19 | unified5ax | T4 | 6 Spherical / Ball-Nosed Endmill | D6.0 x R3.0 | Top |

T4 | 6 Spherical / Ball-Nosed Endmill | D6.0 x R3.0 | B5C4-0016

Top |

7104 L X-15.4566 Y-5.832 Z-3.0951 A-26.1833 C+7.0258
7105 L X-15.5731 Y-5.8721 Z-3.0828 A-26.1285 C+7.5627
7106 L X-15.7412 Y-5.9451 Z-3.0589 A-26.0216 C+8.3511

7106 L X-15.7412 Y-5.9451 Z-3.0589 A-26.0216 C+8.3511

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-15.7412	-15.7412	-16.4377	-500	500	<input checked="" type="checkbox"/> Collision
Y	-5.9451	-5.9451	-66.0595	-400	400	<input type="checkbox"/> Machine Limits
Z	-3.0589	-3.0589	372.722	0	1000	<input checked="" type="checkbox"/> Rapid/Feed
A/B - Tilt	-26.0216	-26.0216	-26.0216	-115	115	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	8.3511	8.3511	8.3511	-900000	900000	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="button" value="Find Text"/>

X: 0 Y: 0 Z: 246.27 A/B - Tilt: C - Rotate

Collision >= 0.02

Move Tool Move Part Move Fixture

RTCP Units = mm

Ignore Chamfer and Tap tool collision

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Visible Mach. Base
 Oper. Clear Backplot
 Shading
 Wireframe
 Backplot
 Check Collisions

Tool Part
Collision: 0.05-0.1

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HERMLE-C650-H530-SEIXOS-AC-2023

Control Axis V/H

HEIDENHAIN



Tilted Planes

Load Machine Load .NC View G5XCNC Simulator - v1.3c
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hermlie-c650-h530-5eixos-ac-2023 NL start

Start Stop Simulation Speed

22526

3 | OP4 | facing | plano inclinado - facing

T1 | FD20X0.5 | D20.0 x R0.5 | B5C4-0032

Top | PLANO V9 - RODADO A-90. C45. GRAU

6160 L X-29.6777
6161 CC X-29.6777 Y+75.5664
6162 C X-29.6777 Y+82.066 DR-

6163 L X+46.7487

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-29.4348	-13.0801	23.6197	-500	500	<input checked="" type="checkbox"/> Collision
Y	62.838	79.1927	-64.204	-400	400	<input type="checkbox"/> Machine Limits
Z	-82.066	-82.066	313.37	0	1000	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	-90	-90	-90	-115	115	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	45	45	45	-900000	900000	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="text" value="Find Text"/>

Tool Fixture
Collision
Collision >=

RTCP Units = mm
 Ignore Chamfer and Tap tool collision
For End Users a License is required. **NOT FOR RESALE**

Visible Mach. Base
 Oper. Clear Backplot
 Shading
 Wireframe
 Backplot

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HERMLE-C650-H530-5EIXOS-AC-2023

Control HEIDENHAIN Axis A/C V/H HEIDENHAIN

Tool collision with Fixture

Load Machine Load .NC View G5XCNC Simulator - v1.3c
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hermlie-c650-h530-5eixos-ac-2023 NL start

Start Stop Run

22526

3 | OP4 | facing | plano inclinado - facing

T1 | FD20X0.5 | D20.0 x R0.5 | B5C4-0032

Top | PLANO V9 - RODADO A-90. C45. GRAU

6160 L X-29.6777
6161 CC X-29.6777 Y+75.5664
6162 C X-29.6777 Y+82.066 DR-

6163 L X+46.7487

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-54.3224	-13.0801	-11.5767	-500	500	<input checked="" type="checkbox"/> Collision
Y	37.9504	79.1927	-64.204	-400	400	<input type="checkbox"/> Machine Limits
Z	-82.066	-82.066	313.37	0	1000	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	-90	-90	-90	-115	115	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	45	45	45	-900000	900000	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="text" value="Find Text"/>

Tool Fixture
Collision
Collision >=

RTCP Units = mm
 Ignore Chamfer and Tap tool collision
For End Users a License is required. **NOT FOR RESALE**

Visible Mach. Base
 Oper. Clear Backplot
 Shading
 Wireframe
 Backplot

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HERMLE-C650-H530-5EIXOS-AC-2023

Control HEIDENHAIN Axis A/C V/H HEIDENHAIN



Dual Head – Gun Drill

Milling Head

Gun Drill Head

Load Machine Load .NC View G5XCNC Simulator - v1.3c
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imsa-mf1250-2fl-h530-5eixos-ab-2023 NL start

Start Step by step 1 Line

3307 PAUSE: Step by step 1 Line

1 | OP1 | contour | Caixa

T4 | TR21R0.8 | D21.0 x R0.8 | Default Holder

Top | PLANO Lad-Esq - RODADO A+0. B+342. C+0. GRAUS

278 CC X-161.6796 Y+0.
279 CP IPA+180. Z+48.1044 DR+
280 CC X-161.6796 Y+0.
281 CP IPA+180. Z+48.0294 DR+

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-168.632	-168.632	-84.4255	-1001	1001	<input type="checkbox"/> Collision
Y	-4.5	-4.5	443.5	-1002	1002	<input type="checkbox"/> Machine Limits
Z	-4.21174	-4.21174	460.868	-1501	1502	<input checked="" type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-105	120	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	342	342	342	-360	360	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="checkbox"/> Find Text

X Y Z A/B - Tilt C - Rotate

Collision >=

Move Tool

RTCP Units = mm Visible Mach. Base

Ignore Chamfer and Tap tool collision Oper. Clear Backplot

For End Users a License is required. **NOT FOR RESALE**

Shading Wireframe Backplot

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imsa-mf1250-2fl-h530-5eixos-ab-2023

Control Axis V/H HEIDENHAIN A/B H HEIDENHAIN

Gun Drill "Z" axis

Gun Drill "V" axis

Load Machine Load .NC View G5XCNC Simulator - v1.3c
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imsa-mf1250-2fl-h530-5eixos-ab-2023 NL start

Start Step by step 1 mm

3637 PAUSE: Step by step 1 mm

2 | OP2 | drill | Furacao Longa

T0 | B12 | D12.0 x R0.0 | Default Holder

Top | PLANO Lad-Esq - RODADO A+0. B+342. C+0. GRAUS

50 L V-5 F5
51 L V-10 F8
52 L V-15 F10
53 L V-20 F15

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-171.567	-171.567	-84.4255	-1001	1001	<input type="checkbox"/> Collision
Y	0	0	448	-1002	1002	<input type="checkbox"/> Machine Limits
Z	4.8233	4.8233	296.368	-1501	1502	<input checked="" type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-105	120	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	342	342	342	-360	360	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="checkbox"/> Find Text

X Y Z A/B - Tilt C - Rotate

Collision >=

Move Tool

RTCP Units = mm Visible Mach. Base

Ignore Chamfer and Tap tool collision Oper. Clear Backplot

For End Users a License is required. **NOT FOR RESALE**

Shading Wireframe Backplot

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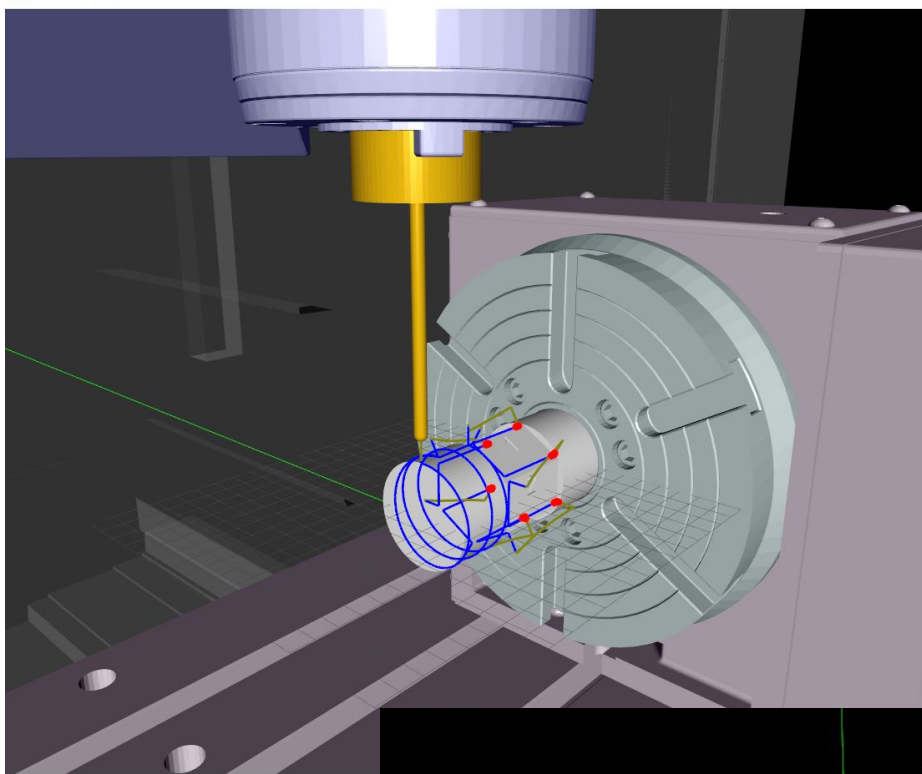
imsa-mf1250-2fl-h530-5eixos-ab-2023

Control Axis V/H HEIDENHAIN A/B H HEIDENHAIN



4 Axis

G5 G5XCNC Simulator



doosan-dnm-h530-4xisimult-v-x-a-2019

Start Stop Run 200

7 | OP7 | contour |

T1 | teste | D6.0 x R3.0 | Default Holder

Top |

67 L Z35. R0 F MAX
68 STOP M30
69 END PGM PST4X-horizl MM

68 END PGM PST4X-horizl MM

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	0	0	100	1001	-1001	<input type="checkbox"/> Collision
Y	0	0	-0	1002	-1002	<input type="checkbox"/> Machine Limits
Z	35	35	160	-1003	1003	<input checked="" type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-105	120	<input type="checkbox"/> Part Rotation
C - Rot.	-720	-720	-720	-360000	360000	<input type="checkbox"/> Operation
Part Rot.	0	0				<input type="checkbox"/> Find Text

X Y Z A/B - Tilt C - Rotate

-100

Move Tool Move Part Move Fixture

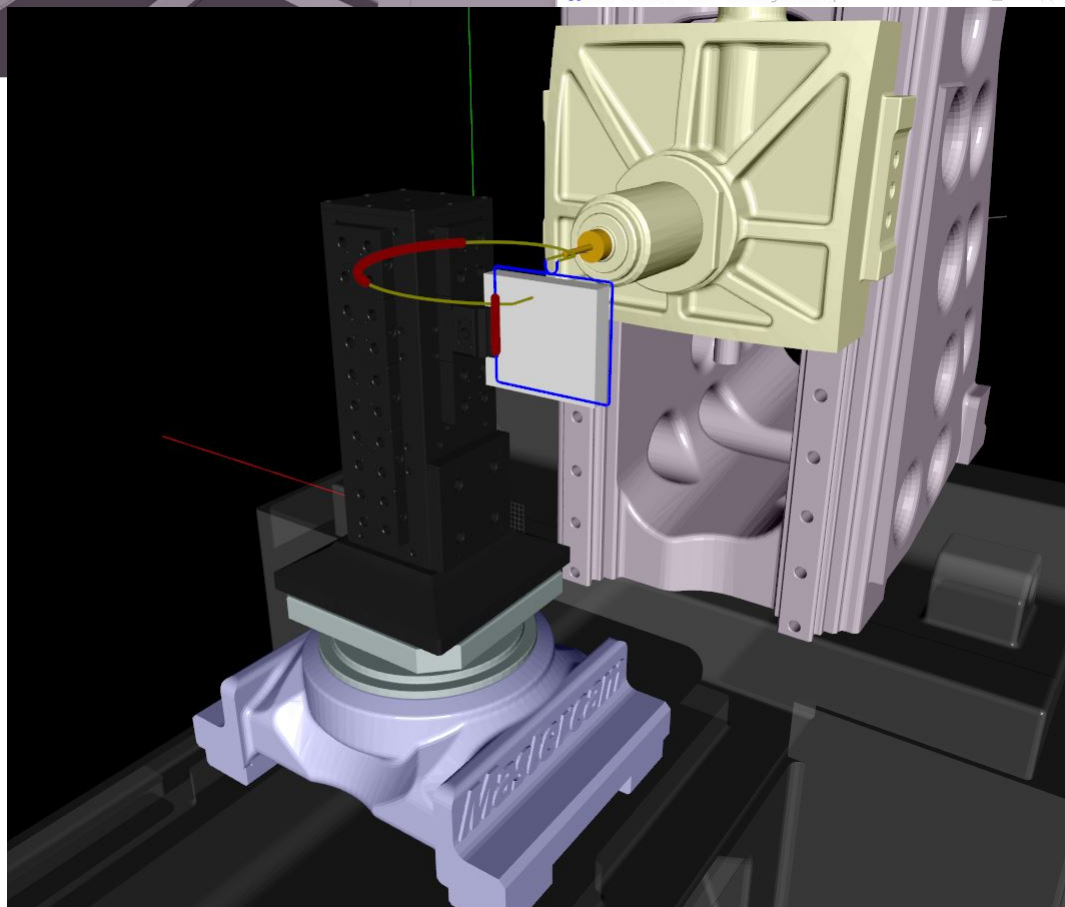
RTCP
 Ignore Chamfer and Tap tool collision

Collision >= 0.02

Clear Collisions

Visible Mach. Base
 Oper. Clear Backplot
 Shading
 Wireframe
 Backplot
 Check Collisions

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6 axis – A/B + C

G5 G5XCNC Simulator

Control Panel:

- Load Machine: Load .NC: View:
- Program: soraluce-fp8000-h530-5eixos-cycl19-ba-c-2022
- Buttons: Start, Stop, Step by step 1 Line

Machine Limits Table:

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	6.913	6.913	-491.579	-2000	6000	<input checked="" type="checkbox"/> Collision
Y	248.22	248.22	592.721	0	1500	<input type="checkbox"/> Machine Limits
Z	938.042	949.5	1864.31	0	2000	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	180	180	180	-180	180	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	0	0	0	-360	360	<input checked="" type="checkbox"/> Operation
6th Axis	60	60				<input type="checkbox"/> Find Text

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SORALUCE-FP8000-H530-5EIXOS-CYCL19-BA-C-2022

Control: HEIDENHAIN Axis: A/B V/H: HEIDENHAIN

G5 G5XCNC Simulator

Control Panel:

- Load Machine: Load .NC: View:
- Program: soraluce-fp8000-h530-5eixos-cycl19-ba-c-2022
- Buttons: Start, Stop, Step by step 1 Line

Machine Limits Table:

Program	Actual	End Position	Machine Limits	min	max	PAUSE Options
X	-16.306	-16.306	-518.156	-2000	6000	<input type="checkbox"/> Collision
Y	155.145	155.145	354.624	0	1500	<input type="checkbox"/> Machine Limits
Z	1154	1200	2185.29	0	2000	<input type="checkbox"/> Rapid/Feed
A/B - Tilt	0	0	0	-180	180	<input checked="" type="checkbox"/> 6th axis rot.
C - Rot.	0	0	0	-360	360	<input checked="" type="checkbox"/> Operation
6th Axis	0	0				<input type="checkbox"/> Find Text

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SORALUCE-FP8000-H530-5EIXOS-CYCL19-BA-C-2022

Control: HEIDENHAIN Axis: A/B V/H: HEIDENHAIN