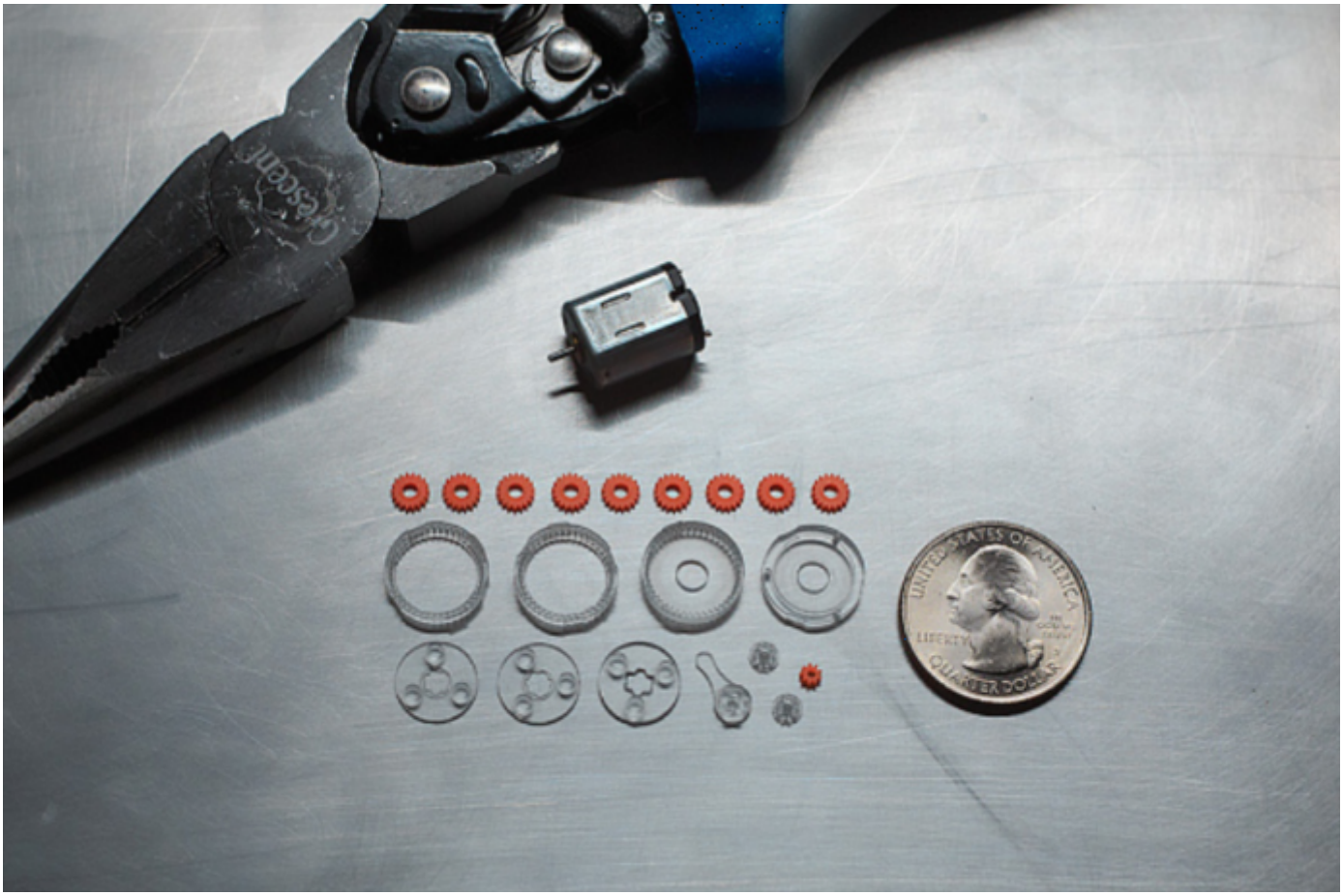
local class

guerilla guide to CNC machining



https://lcamtuf.coredump.cx/gcnc/

https://player.vimeo.com/video/707650918?badge=0autopause=0&player_id=0&app_id=58479

https://thenounproject.com (not free anymore □□)

How to a make Crystal Clear Ice Sphere

https://www.smooth-on.com/product-line/mold-max/?quicksearch

https://fabacademy.org/2021/labs/kamplintfort/students/mattissen-gerhard/assignments/week15/

https://fabacademy.org/2021/labs/kamplintfort/students/mattissen-gerhard/assignments/week18/

https://fabacademy.org/archives/2015/eu/students/postma.ronald/02_progress/week_09.html

https://fabacademy.org/2020/labs/leon/students/adrian-torres/week15.html

ferris File-A-Wax 148x88x37mm

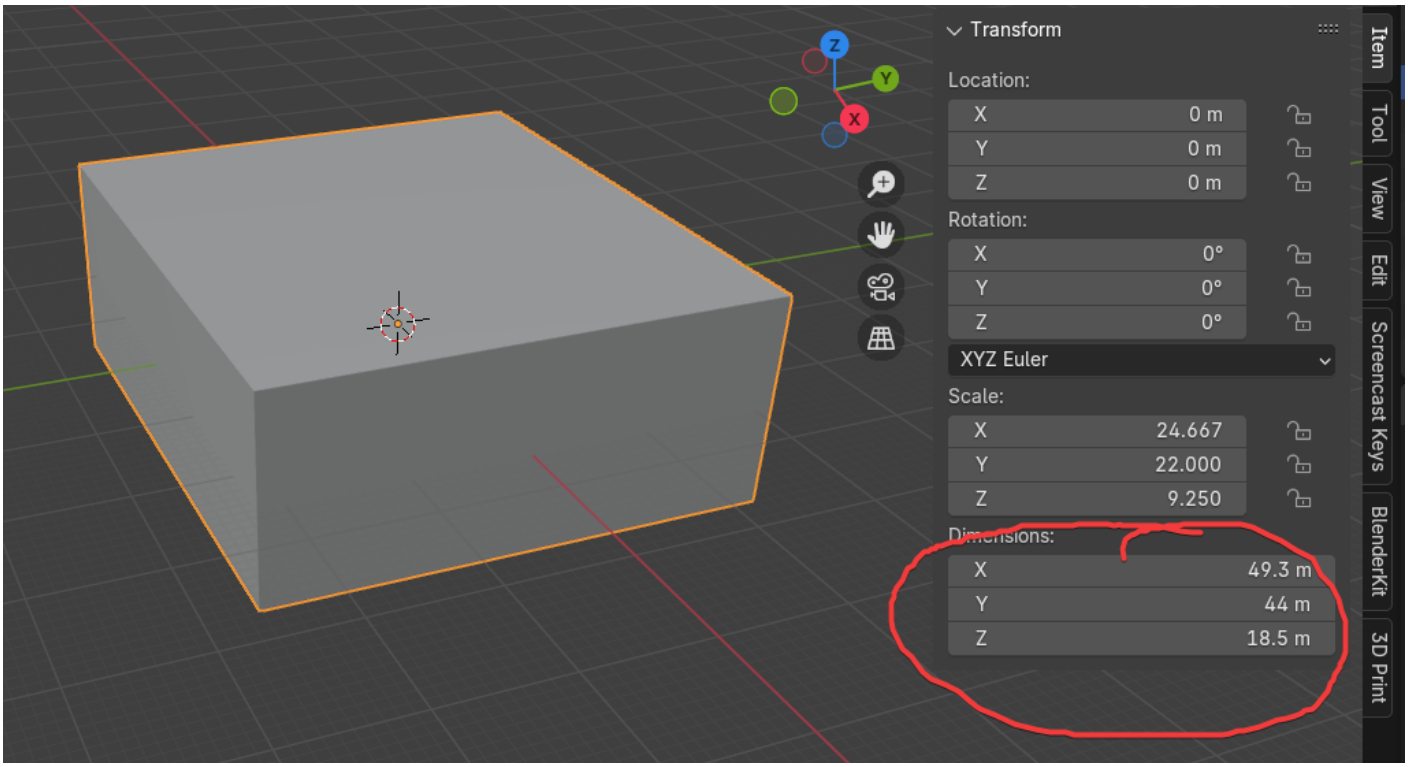
https://youtu.be/wMRSPXt48CI?si=QapaiAiej4CBpQQa

3D Printed Injection Molds - The Crafsman Steady Craftin

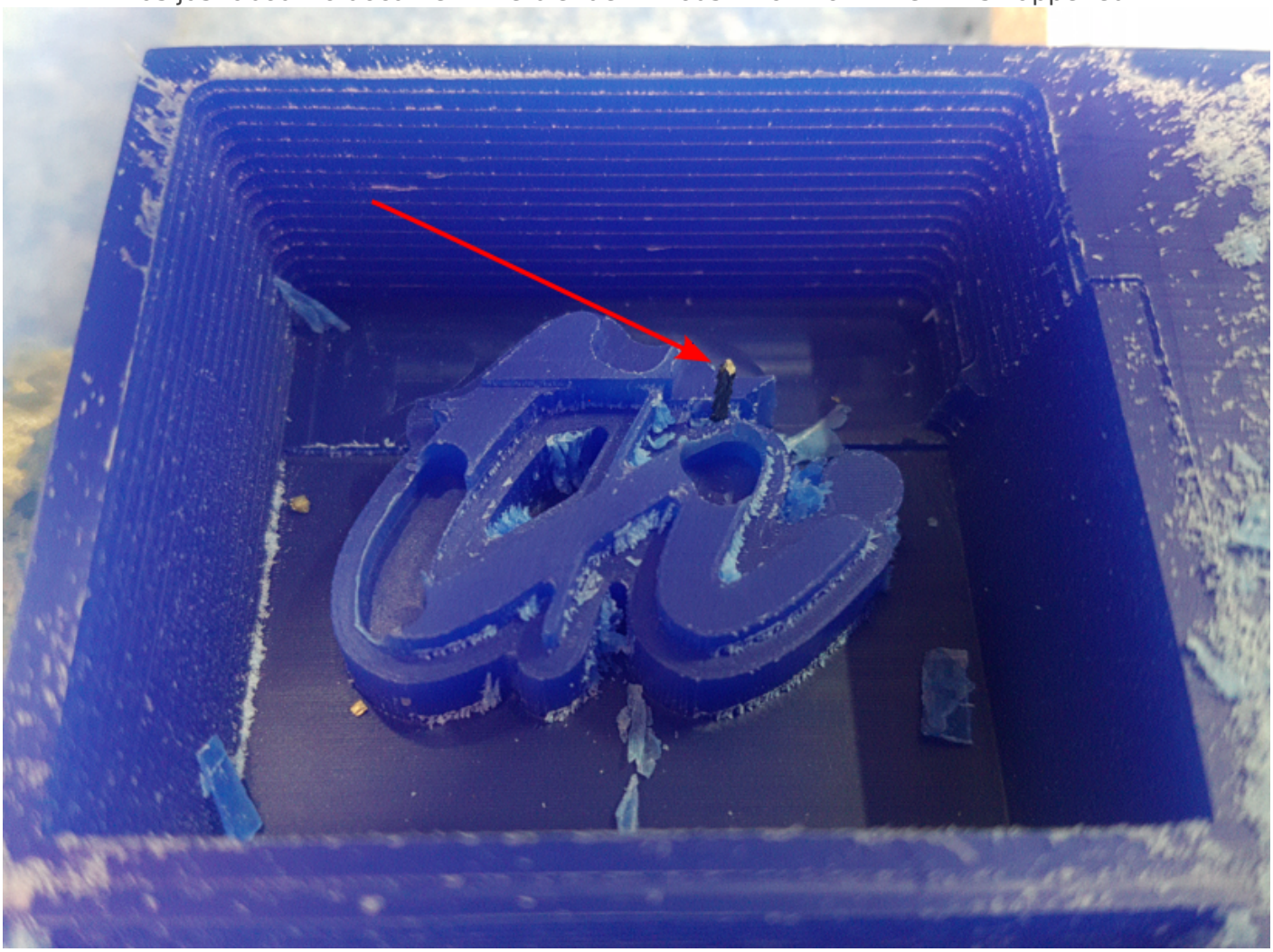
Lifecasting:

Blender - mods

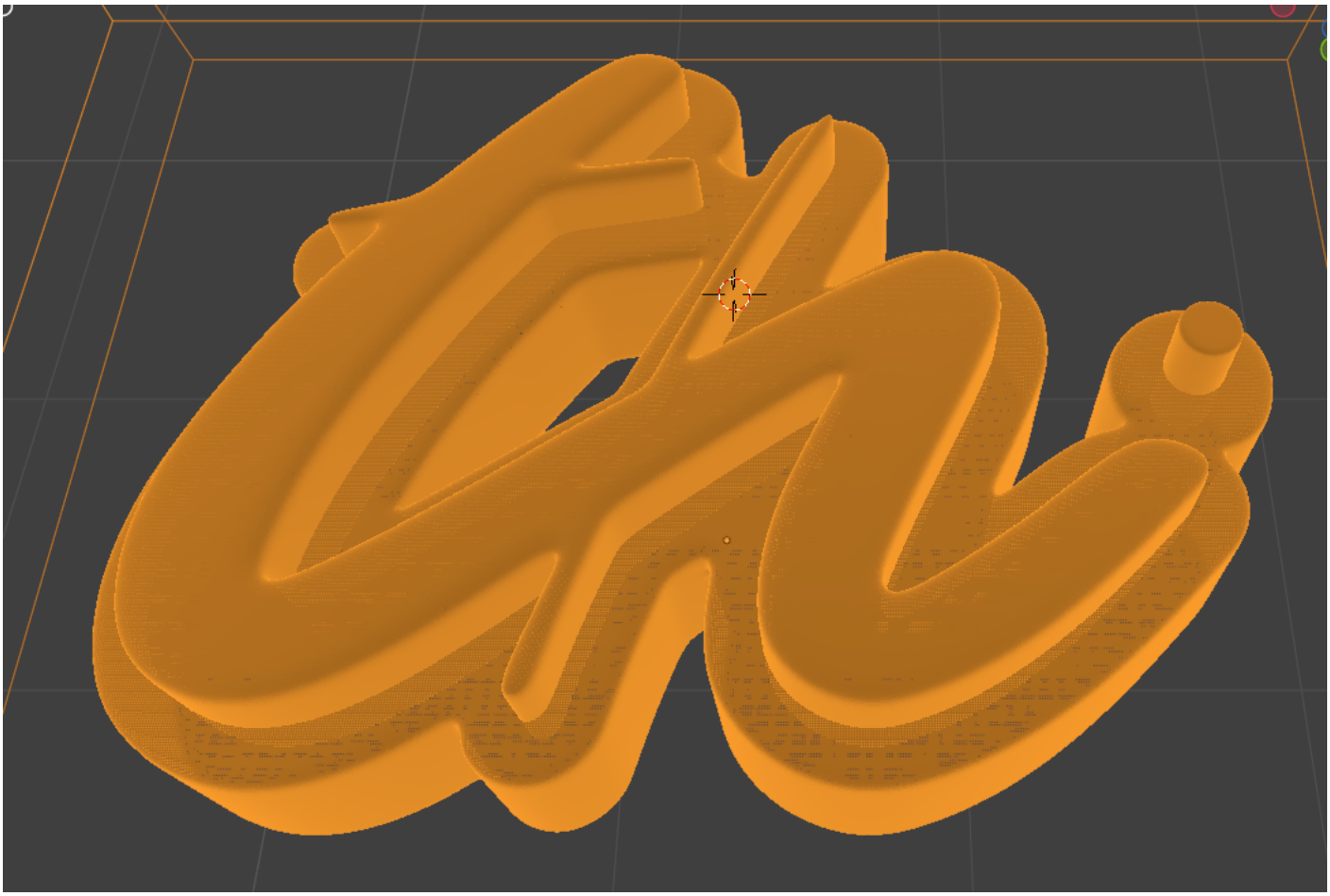
If you model your part in blender, you should start with a cube 49.3333 m x 44 m x 18.5 m in size.



Hmm....I was just about to document the blender - mods - workflow when this happened:



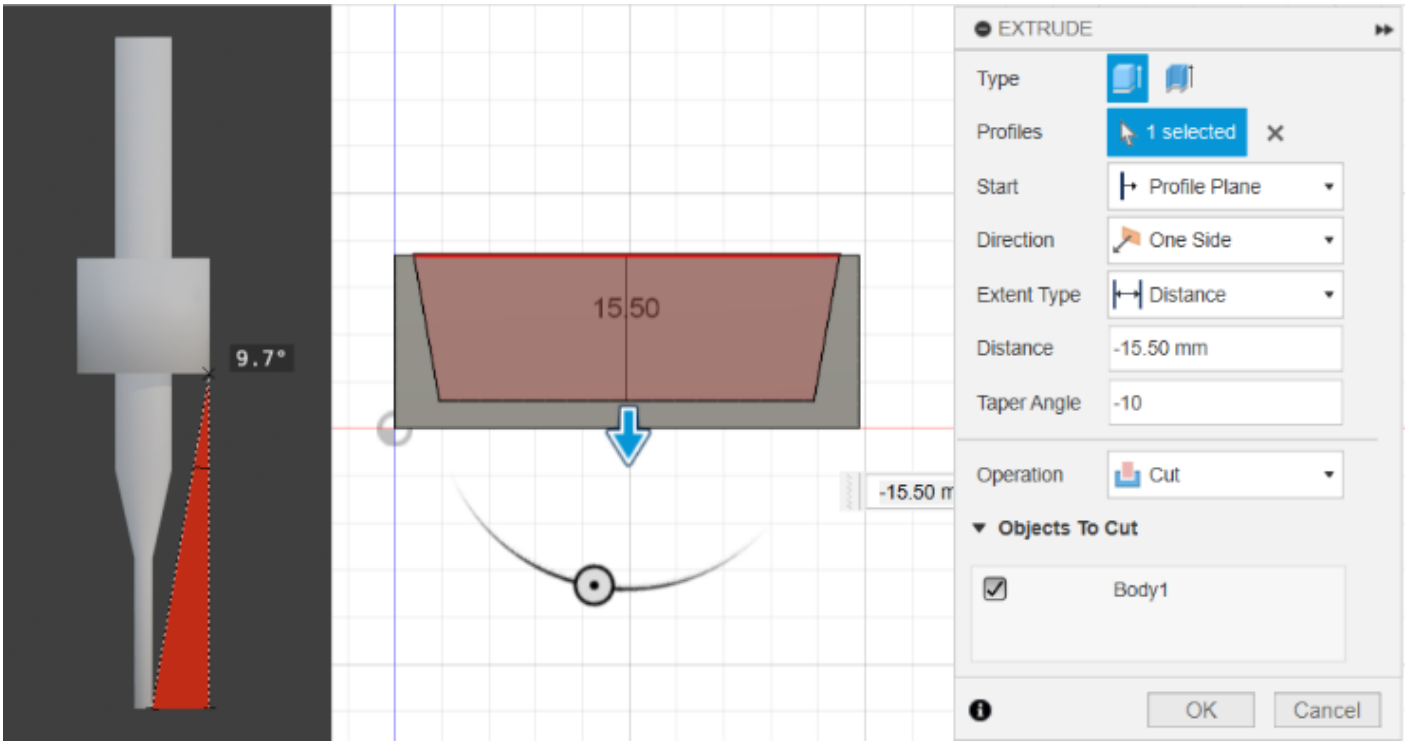
If the roughing doesn't enter in a hole and the finishing is 5 mm deeper, the tool breaks.



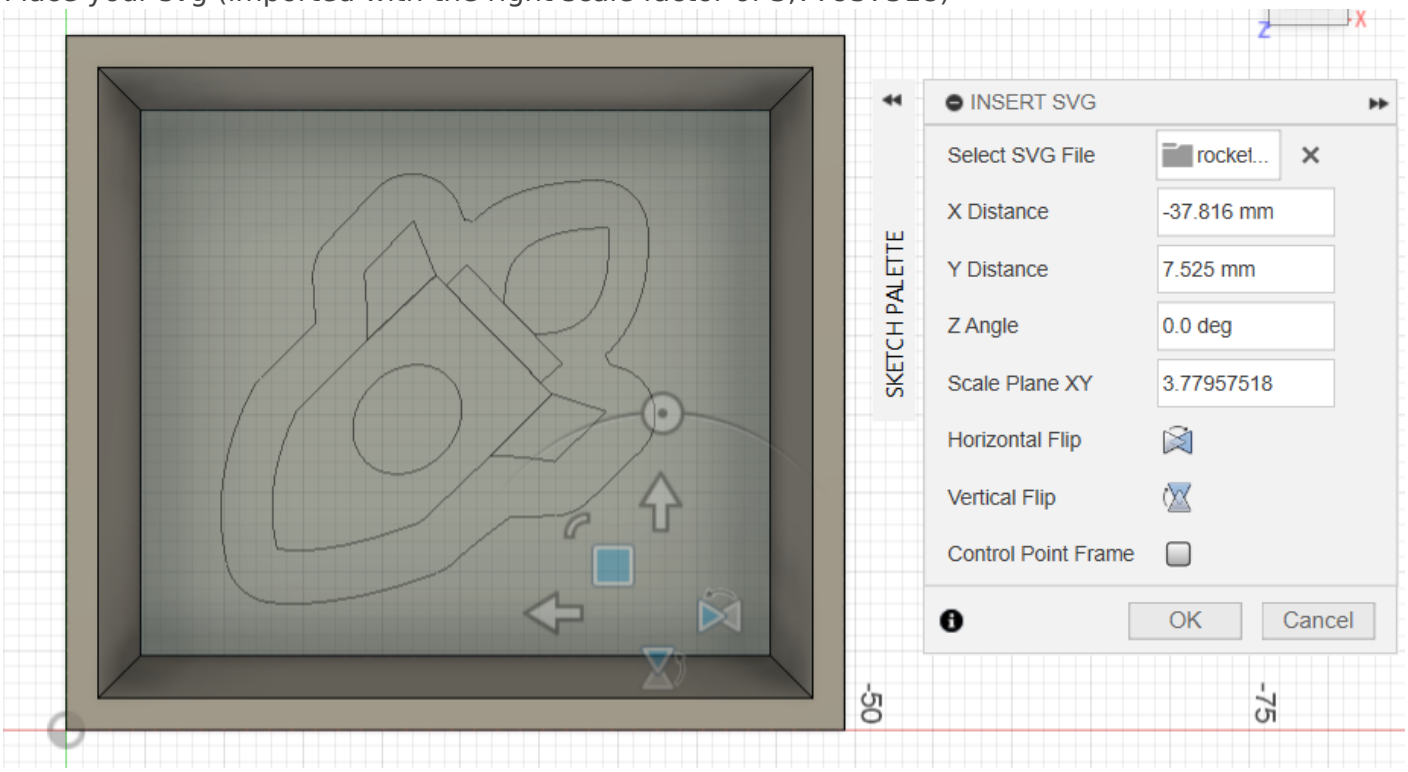
Let's use Fusion □□

Fusion

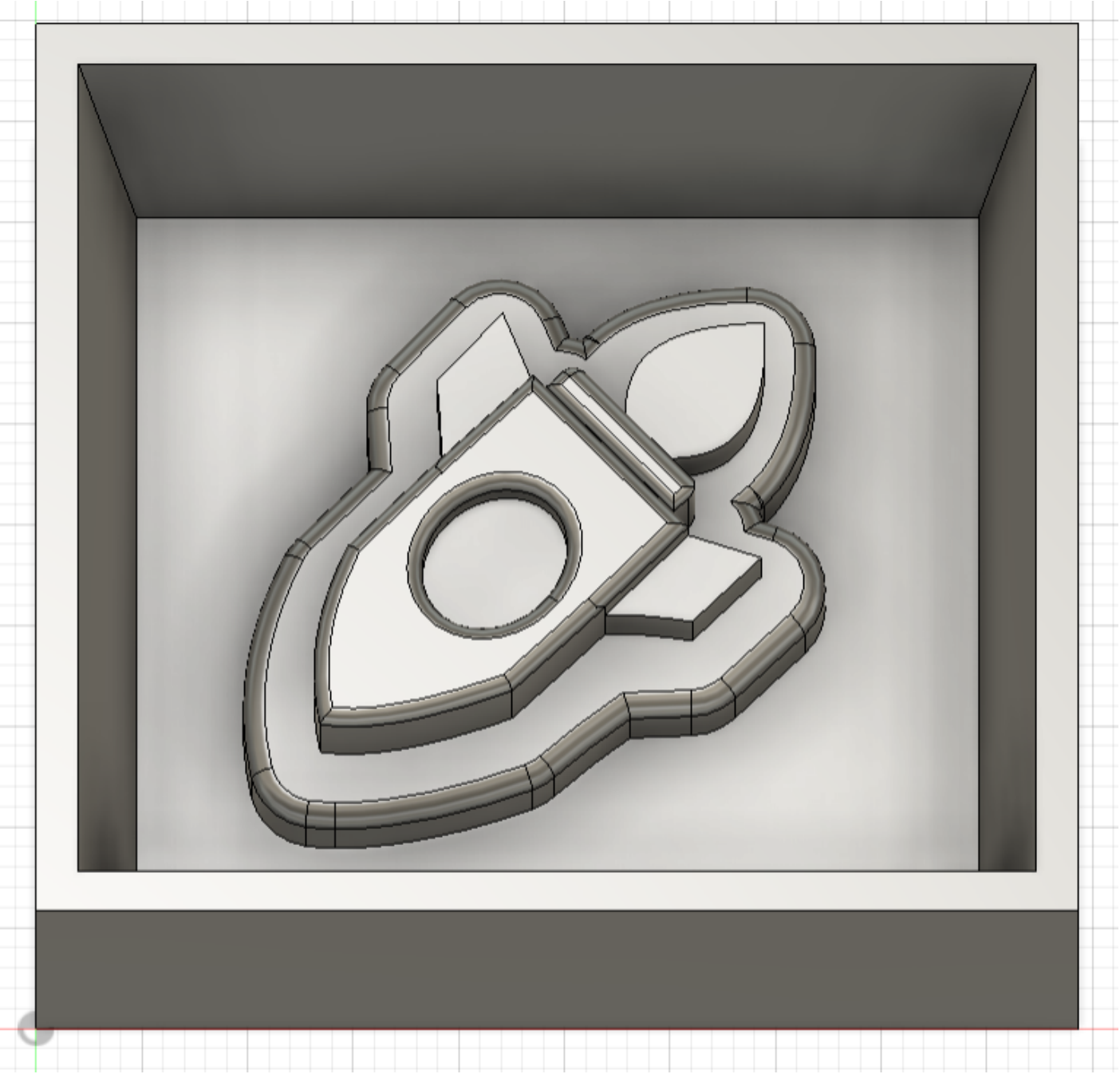
Extrude a box 49,3333 mm x 44 mm x 18,5 mm Create a cavity 2mm from the edge, 15,5 mm deep. If you give the sidewalls a 10° draft angle, you won't be able to hit it with the 1mm mill.



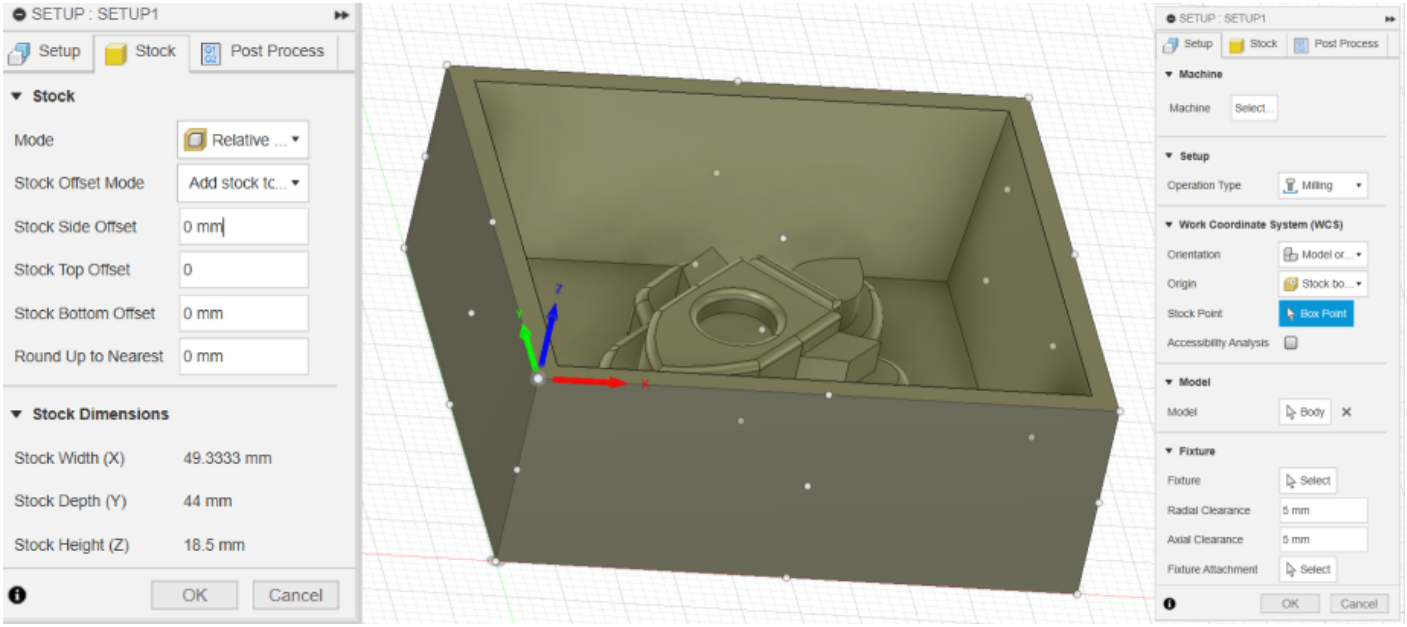
Place your svg (imported with the right scale factor of 3,77957518)



and extrude it.



In the Manufacturing workbench we create a setup, with a stock of 0-offset and the origin bottom-left at the upper corner:



For the roughing I use "Adaptive Clearing" with the following settings:

ADAPTIVE : ADAPTIVE1

Tool

Tool	Select...
	#5 - Ø3.175mm...
Coolant	Flood

Feed & Speed

Preset	Default pres...
Spindle Speed	5000 rpm
Surface Speed	49.8728 m/min
Ramp Spindle Speed	5000 rpm
Cutting Feedrate	1000 mm/min
Feed per Tooth	0.2 mm
Lead-In Feedrate	1000 mm/min
Lead-Out Feedrate	1000 mm/min
Transition Feedrate	1000 mm/min
Ramp Feedrate	333.333 mm/min
Plunge Feedrate	333.333 mm/min
Plunge Feed per Re...	0.0666667 mm

Shaft & Holder

OK Cancel

ADAPTIVE : ADAPTIVE1

Geometry

Machining Boundary	None

Stock Definition

Define Stock By	Stock bo...

Model

Avoid/Machine Surfaces

View Absolute Values	
Surface Groups	Group

Name	Radial	Axial
Model	0 mm	0 mm

Total Radial Stock To...	0.5 mm
Total Axial Stock To l...	0.5 mm

OK Cancel

ADAPTIVE : ADAPTIVE1

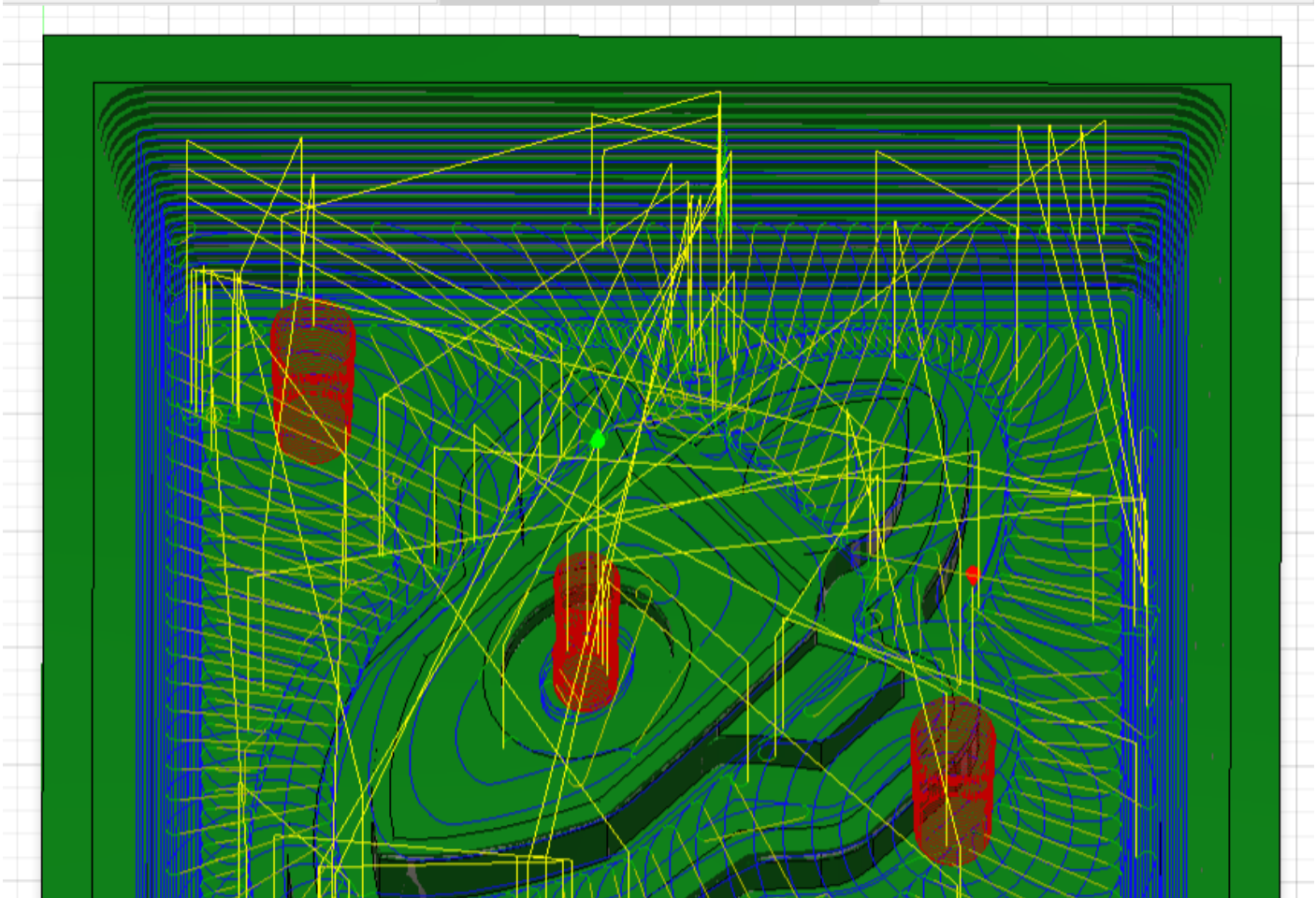
Passes

Tolerance	0.1 mm
Machine Shallow Areas	
Optimal Load	1.27 mm
Both Ways	
Minimum Cutting Radi...	0.3175 mm
Machine Cavities	☑
Use Slot Clearing	
Direction	Climb
Maximum Roughing S...	7.9375 mm
Fine Stepdown	0.79375 mm
Flat Area Detection	☑
Minimum Stepdown	0.0001 mm
Minimum Axial Engage...	0 mm
Order by Depth	
Order By Area	

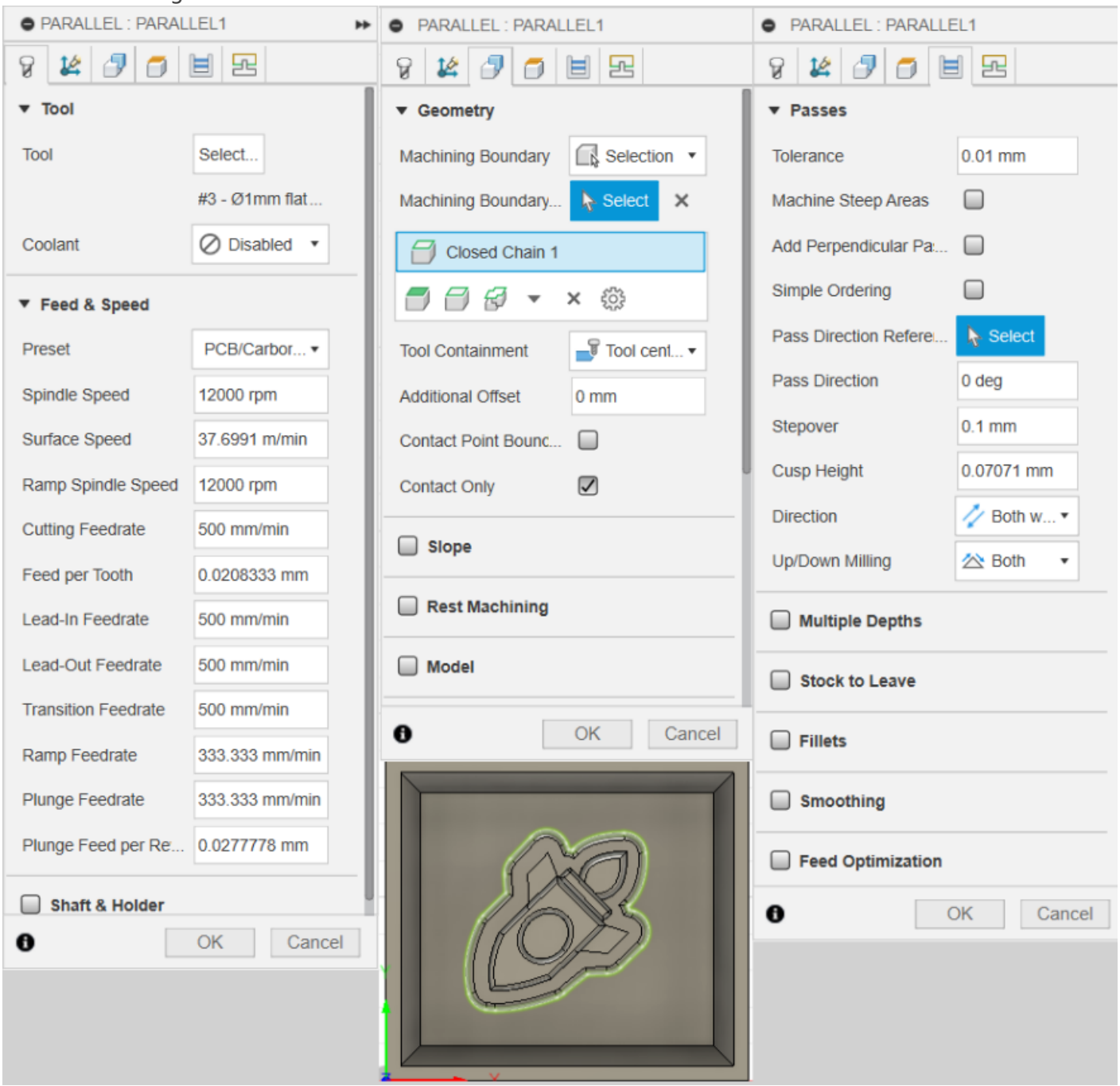
Stock to Leave

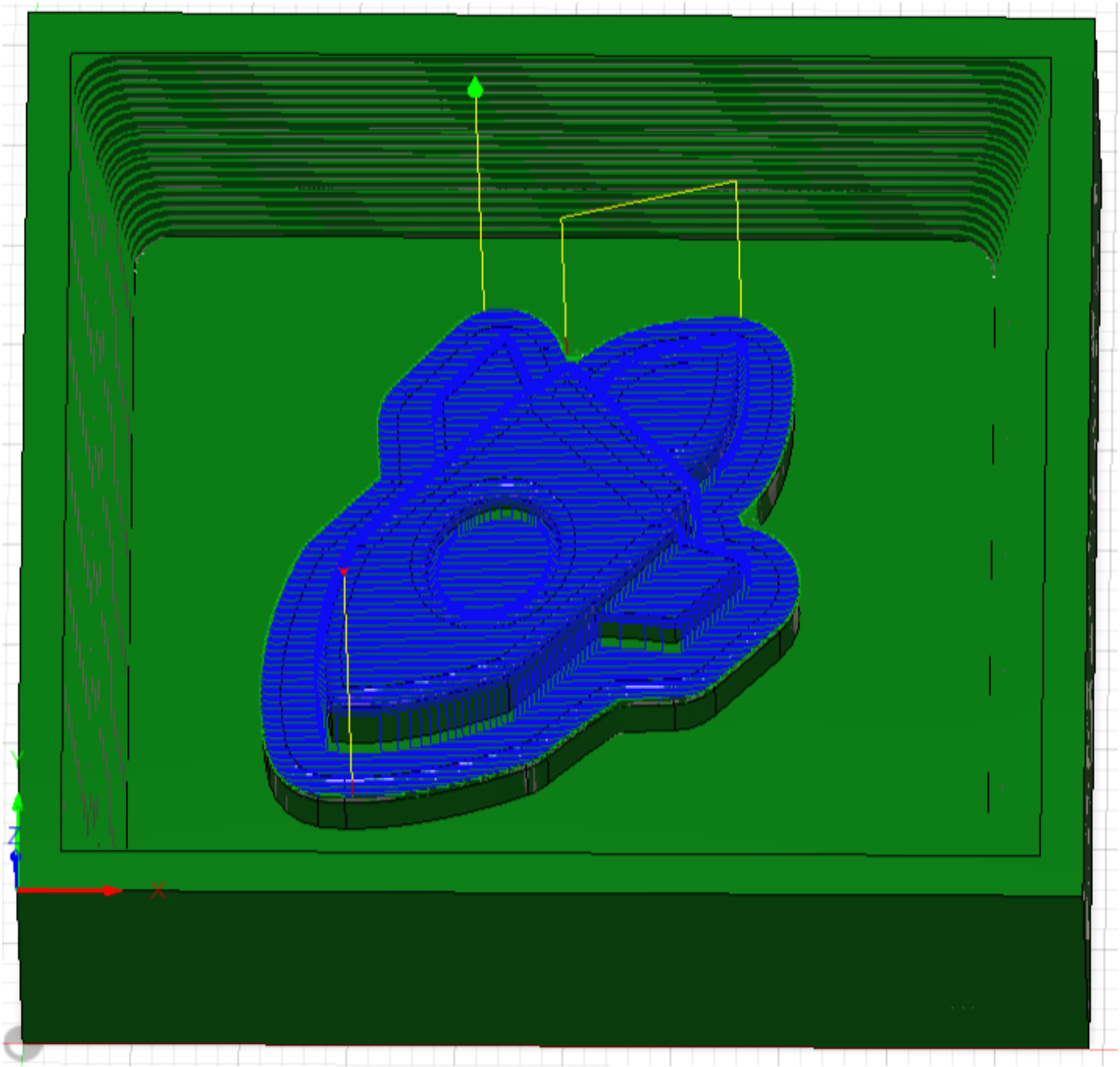
Fillets

OK Cancel



For the finishing I use Parallel:





Total time is 23:27

Revision #16
Created 2025-04-23 15:35:57 UTC by Ferdi
Updated 2025-06-11 12:02:35 UTC by Ferdi