

# UNIVERSIDADE

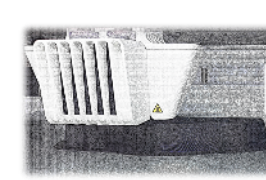
# DEPARTAMENTO DE E

# competências transferíveis

# Fabrico Aditivo e Impressão



Carlos Relvas  
crelvas@ua.pt  
(sala 22.4.5)



# AULA 4 – introdução ao FUSION 360

## sumário

Introdução ao FUSION 360

Interface e funcionalidades

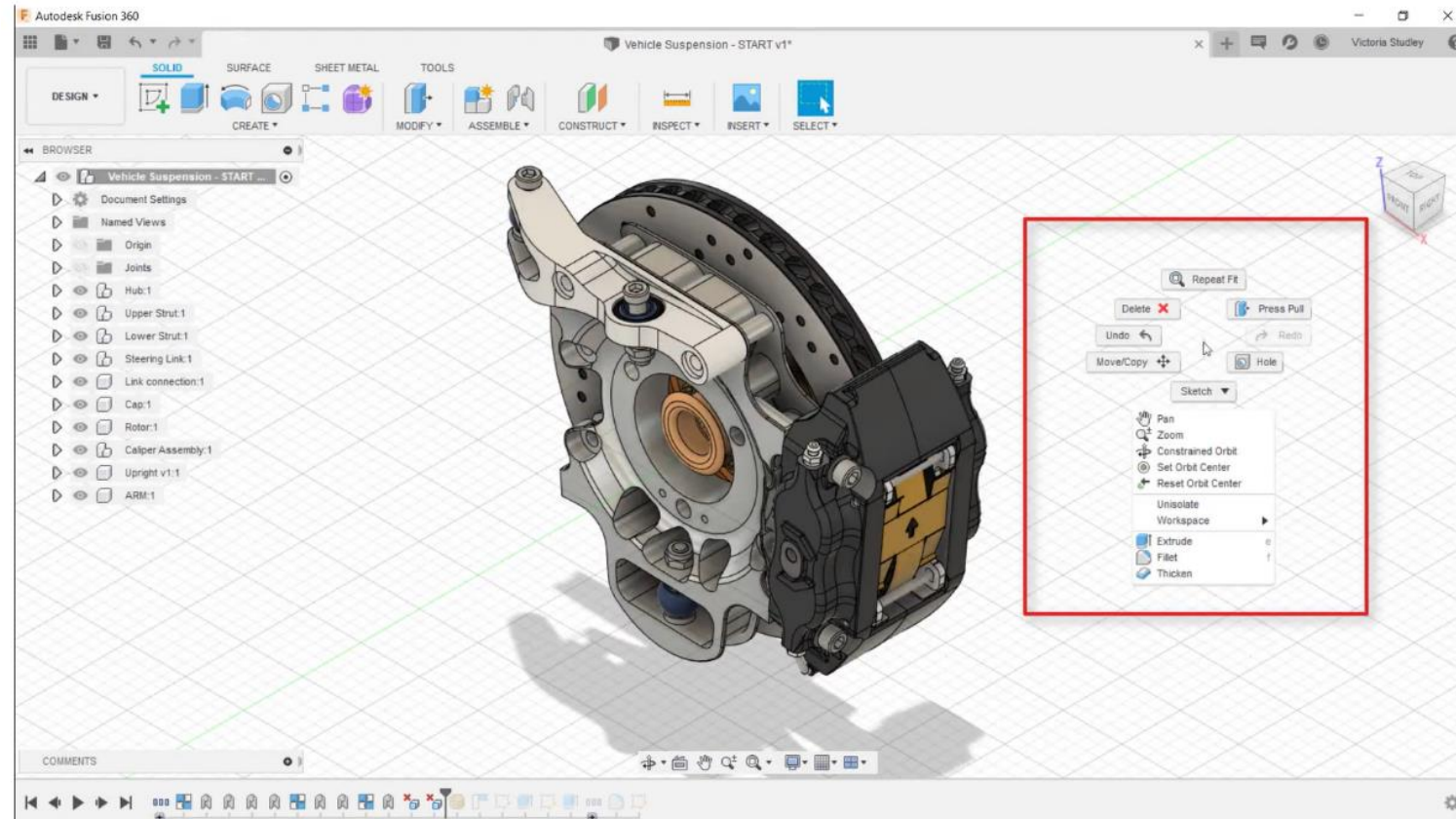
## objetivos

Demonstrar conhecimento dos princípios e fundamentos do funcionamento de uma ferramenta de modelação CAD 3D e do seu potencial de utilização.

## Fusion 360 fundamentals - Introduction to Fusion 360 - User interface overview

<https://help.autodesk.com/view/fusion360/ENU/courses/AP-USER-INTERFACE-OVERVIEW>

[Fusion 360 Help](#) | [Getting started in Fusion 360](#) | [User interface overview](#) | [Autodesk](#)



<https://help.autodesk.com/view/fusion360/ENU/courses/>

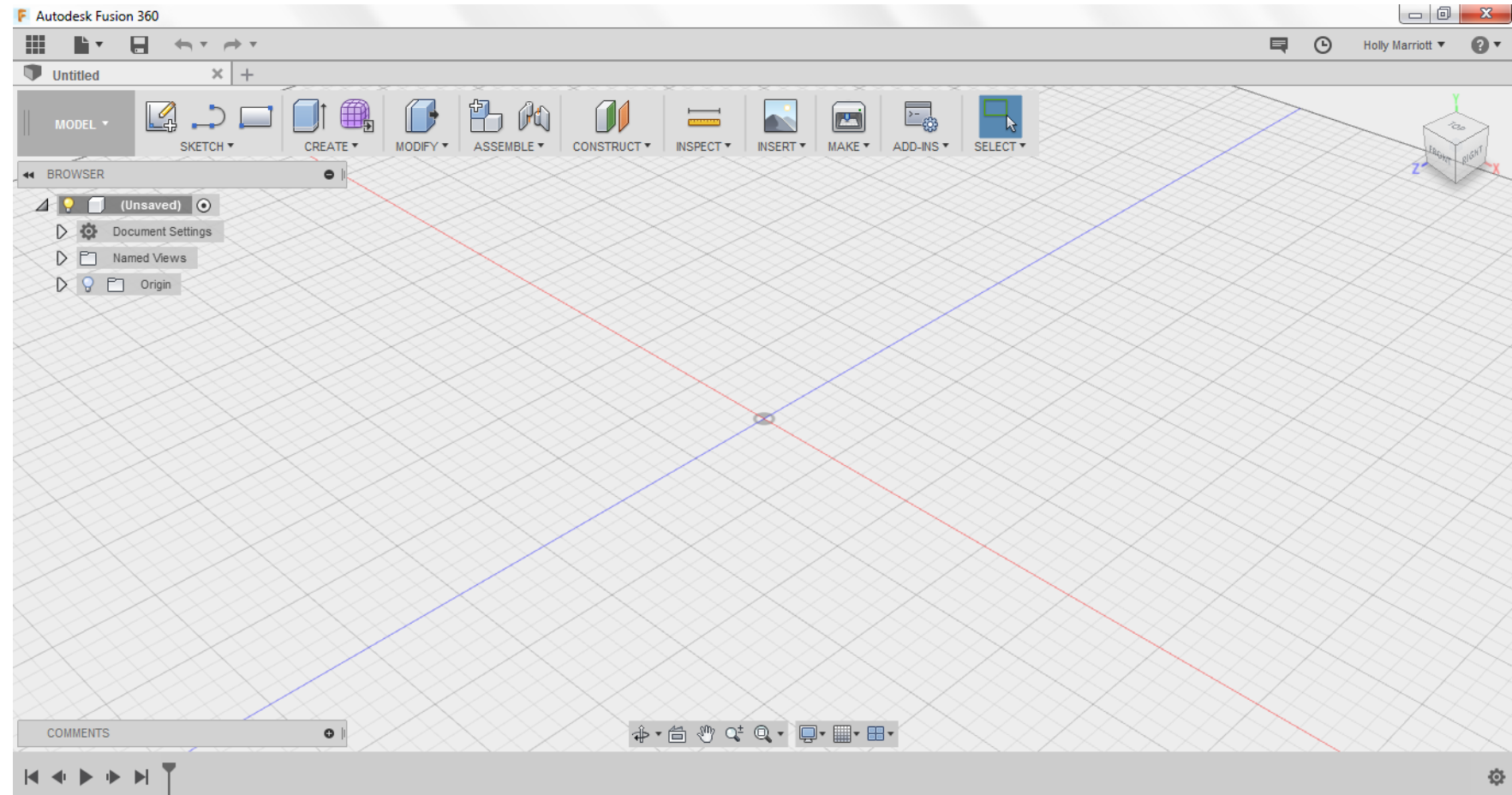
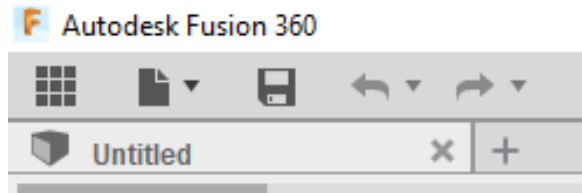


## Fusion 360

## INTERFACE

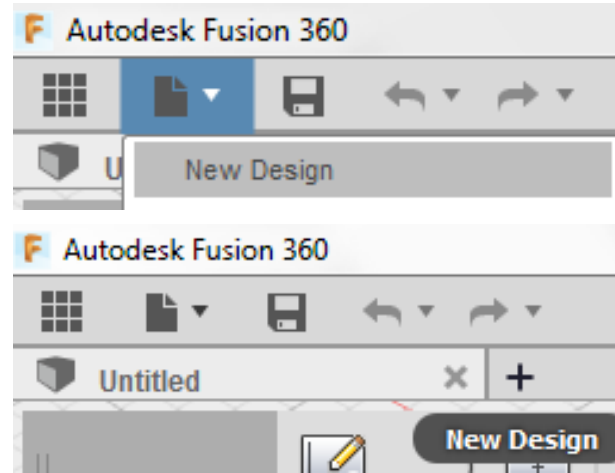
Top left are your general options, you can find any work you have saved previously under top left icon.

You can create a new document, save and when you're working on a model, undo/redo any steps.

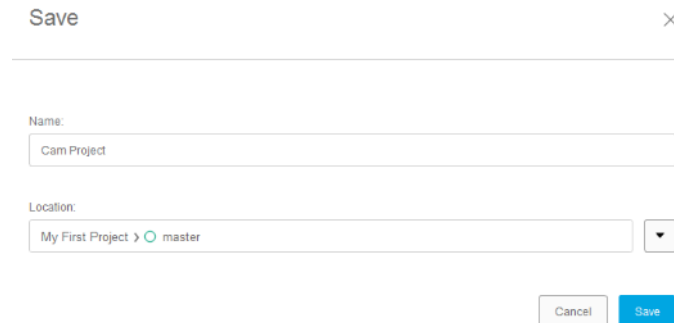




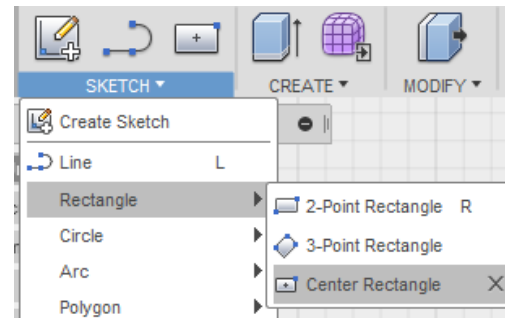
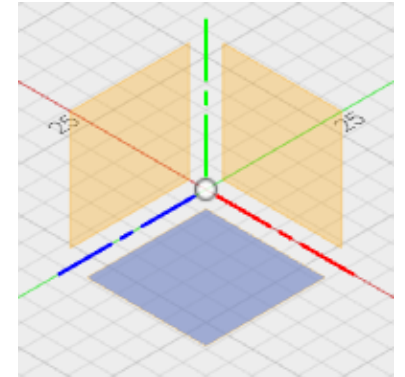
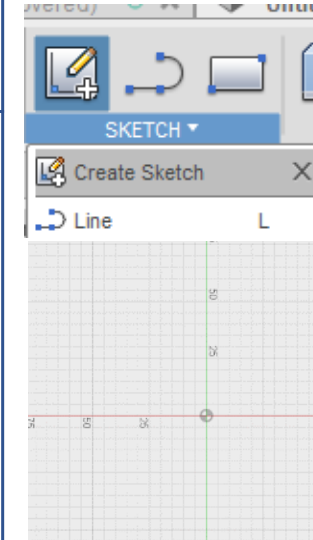
1. Lets get started, create a new design. You can do this either two ways. You can click on File and then New Design or you can click on the + symbol.



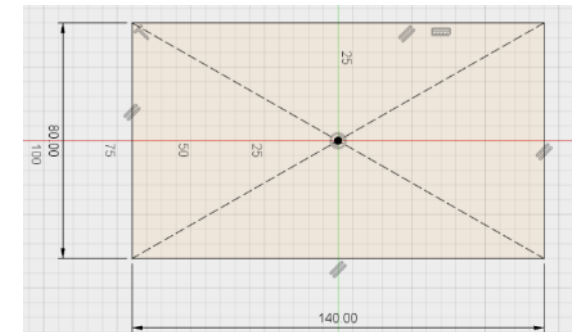
2. Save your new design straight away. Give it a suitable name and save it in a suitable location.



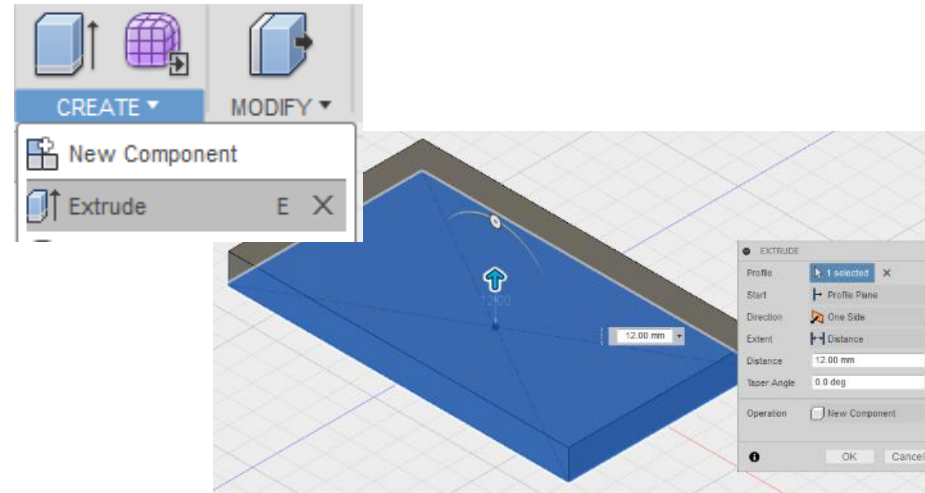
3. Click Sketch and then Create Sketch. 3 orange squares will appear, these are the planes that we can draw on. Click on the plane between the blue and red axis, it will turn grey when your mouse is over it. When you click on the plane, the view will change to a birds eye view of the work space.



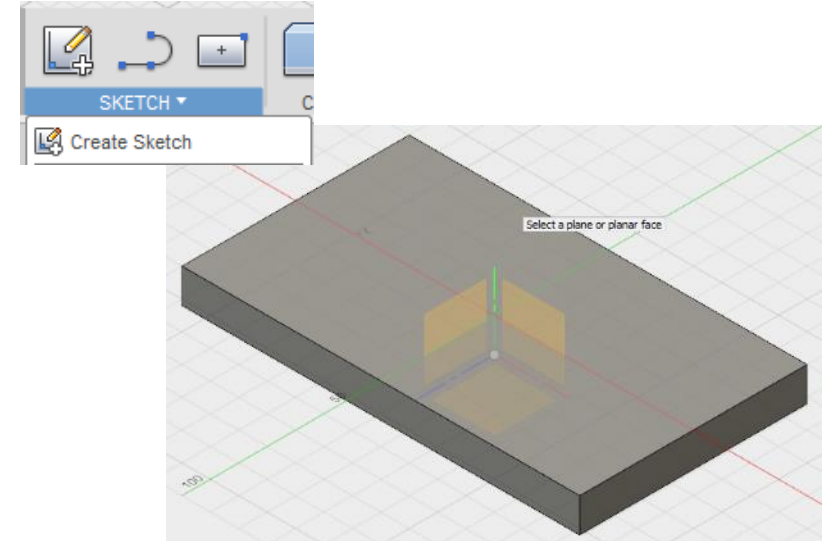
4. Click on Sketch, Rectangle and then Center Rectangle. From the origin point draw a rectangle measuring 140mm by 80mm.



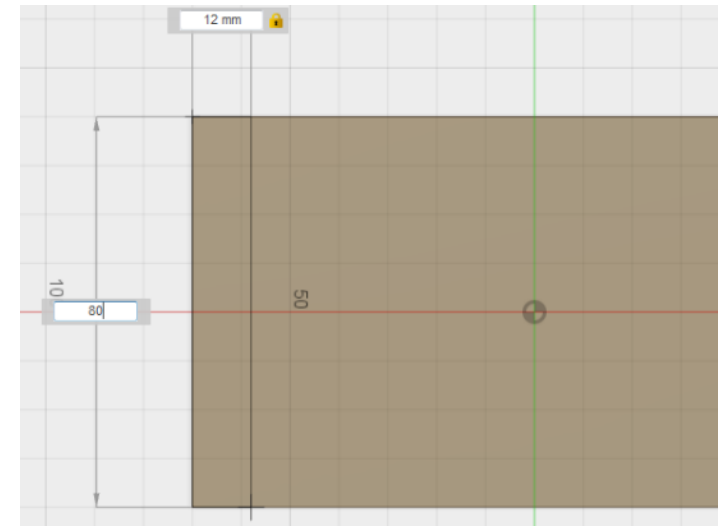
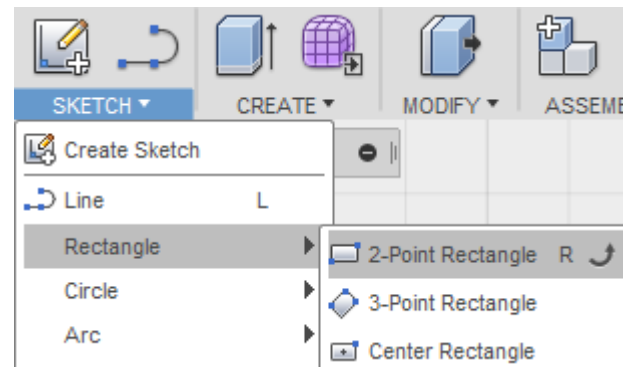
5. Click on Create and then Extrude or E on your keyboard. This will bring up the Extrude menu, click on the rectangle that you have just drawn and type in 12mm in the distance box and change the operation to New Component. Click ok.

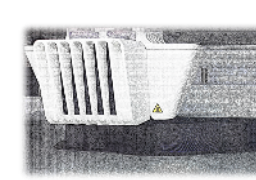


6. Click on sketch, then Create Sketch. Next click on the top face of the cuboid you have just extruded. It will go a lighter shade of grey when the mouse is hovering over the face.



7. Click on Create, Rectangle and 2-Point Rectangle. Start in the top left corner and drag out to the bottom. Ensure that your rectangle measures 12mm by 80mm.





# AULA 5 – modelação 3D (FUSION 360)

## sumário

Fundamentos da modelação 3D de uma peça

Gravação e exportação de ficheiros para impressão 3D (STL)

## objetivos

Demonstrar conhecimento da utilização de uma ferramenta de modelação CAD 3D para representação de um modelo digital.

Demonstrar conhecimento da utilização das funções de gravação e exportação de ficheiros para impressão 3D



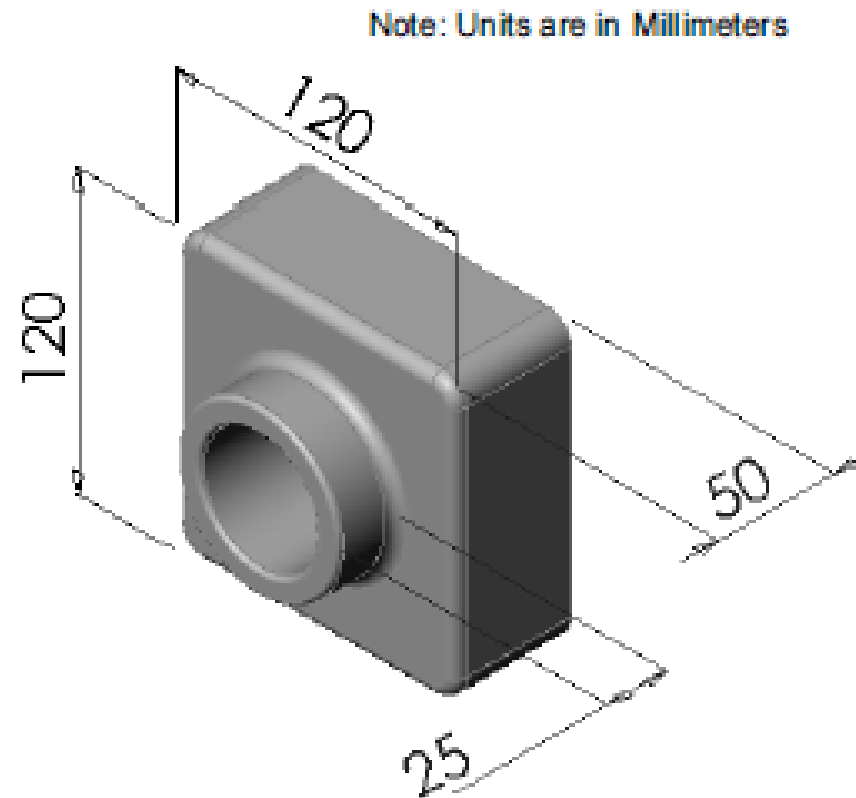
# EXERCÍCIO 1 - extrude

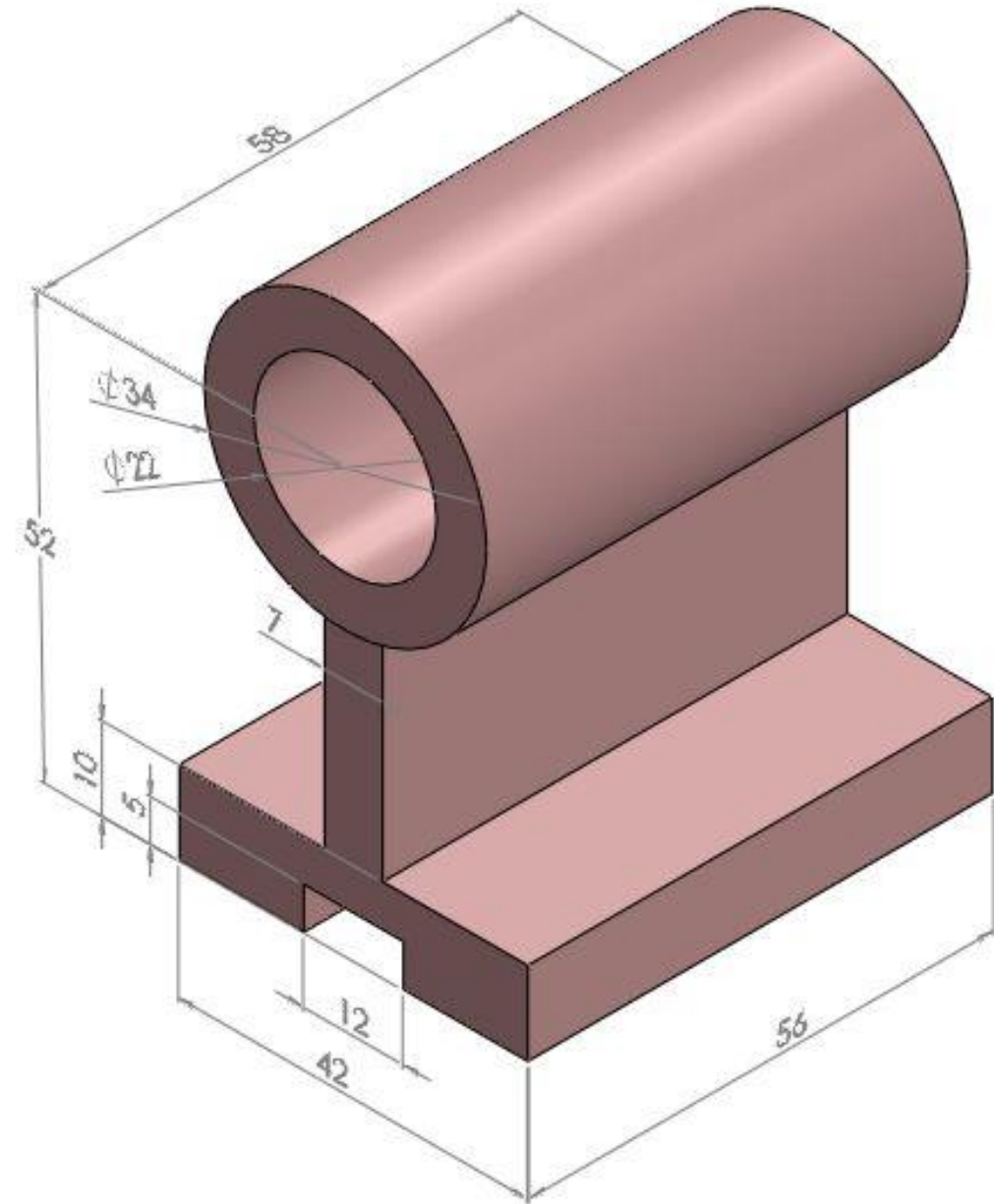
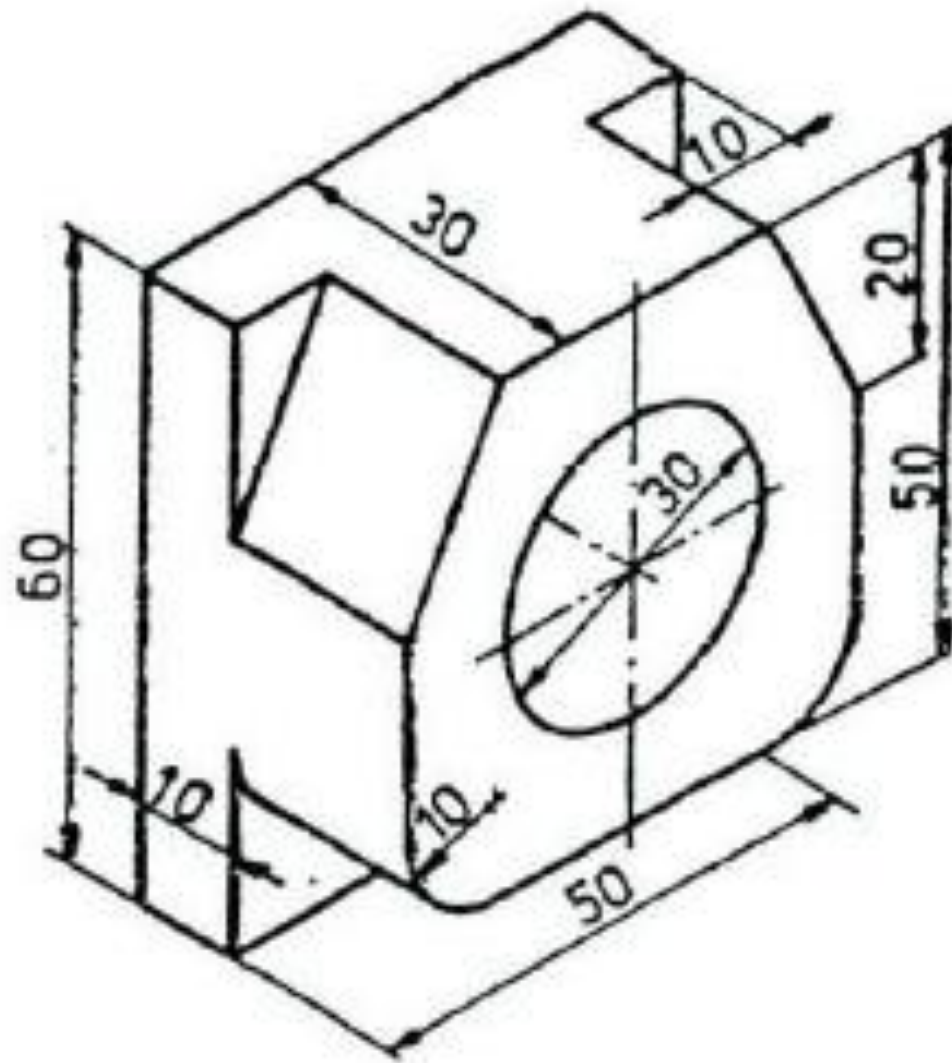
## Task 1

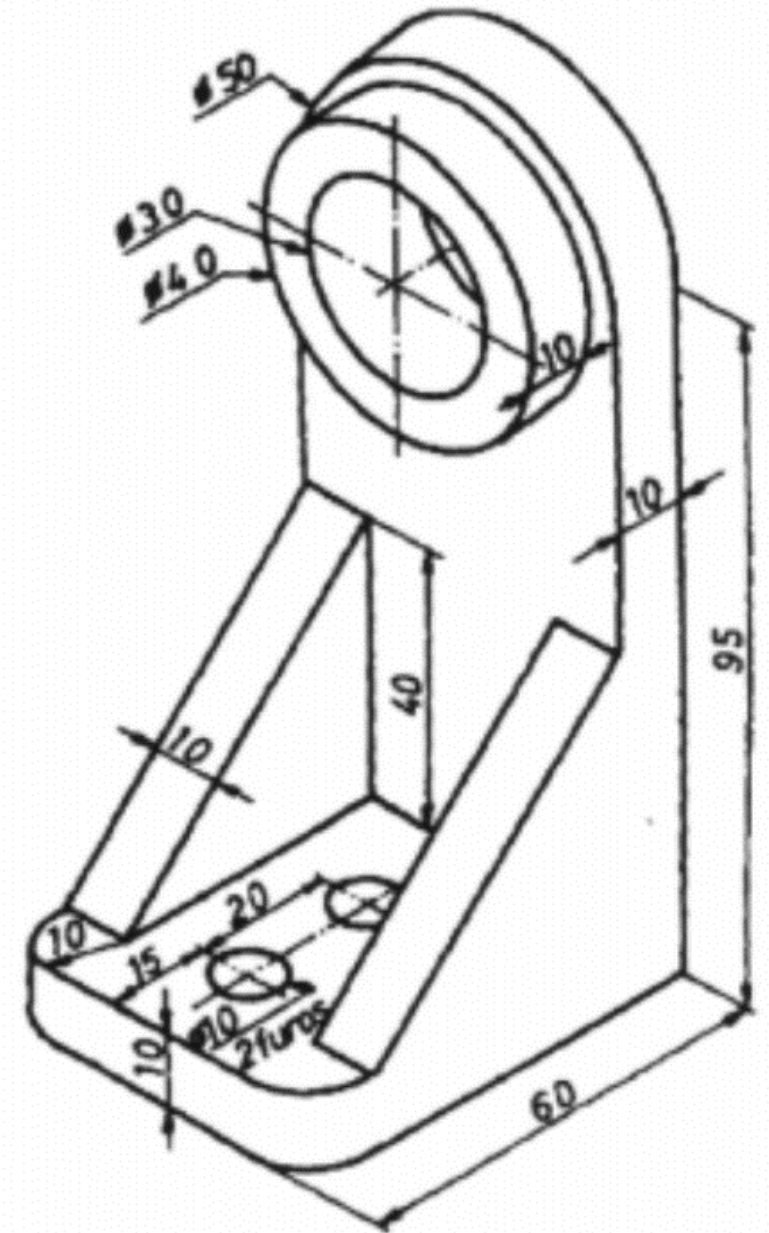
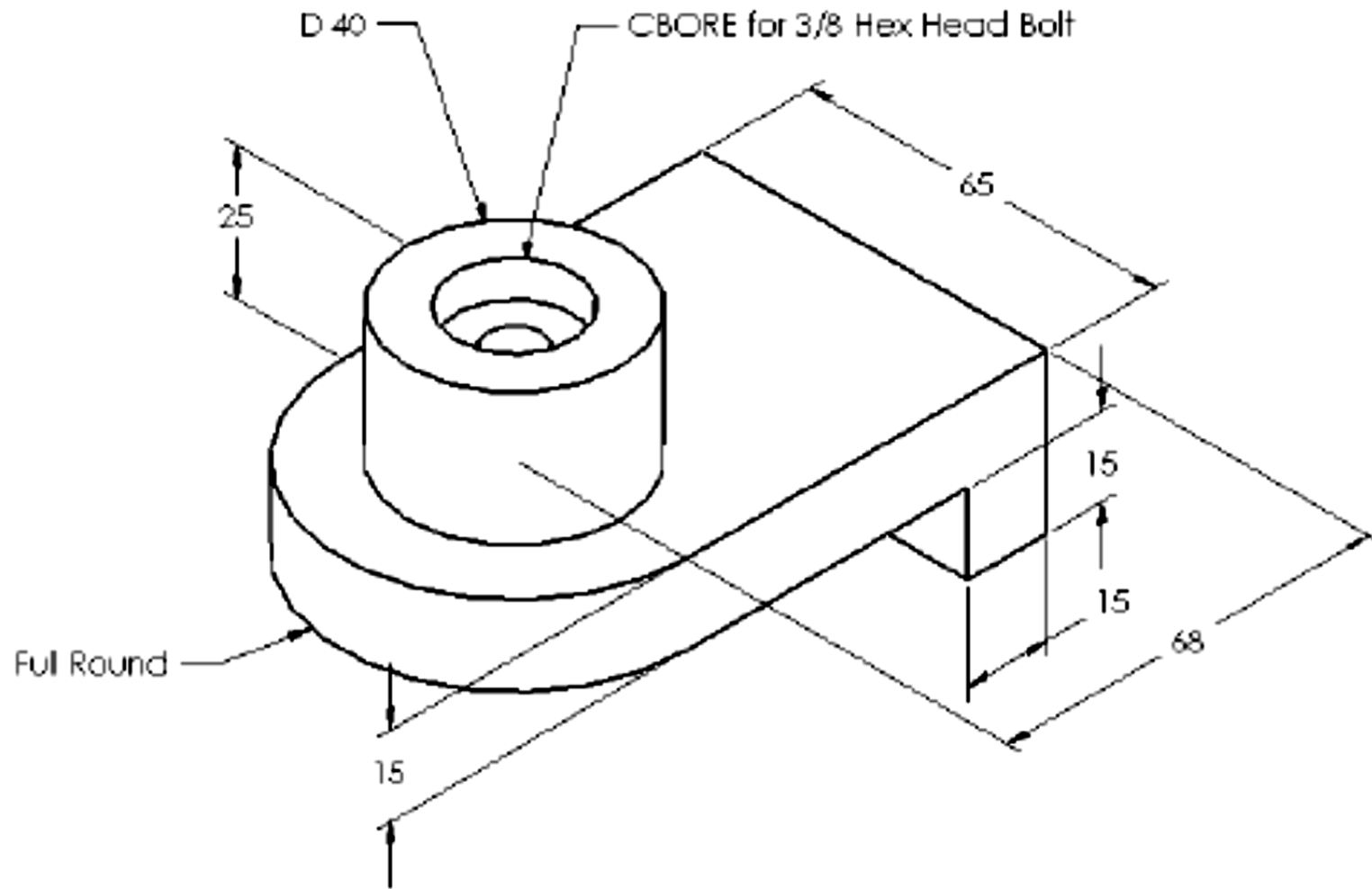
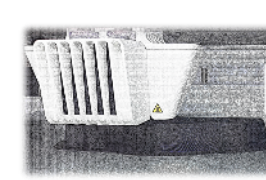
The design for Tutor1 was created in Europe. Tutor1 will be manufactured in the US. Convert the overall dimensions of Tutor1 from millimeters to inches.

### Given:

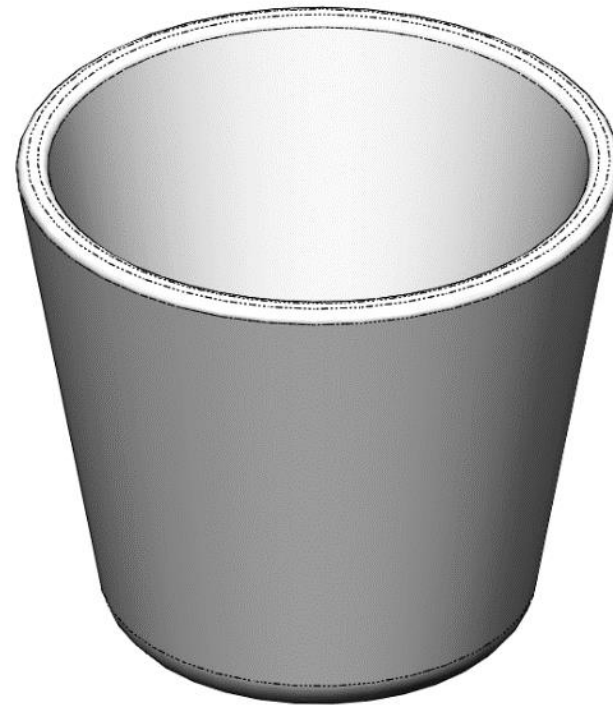
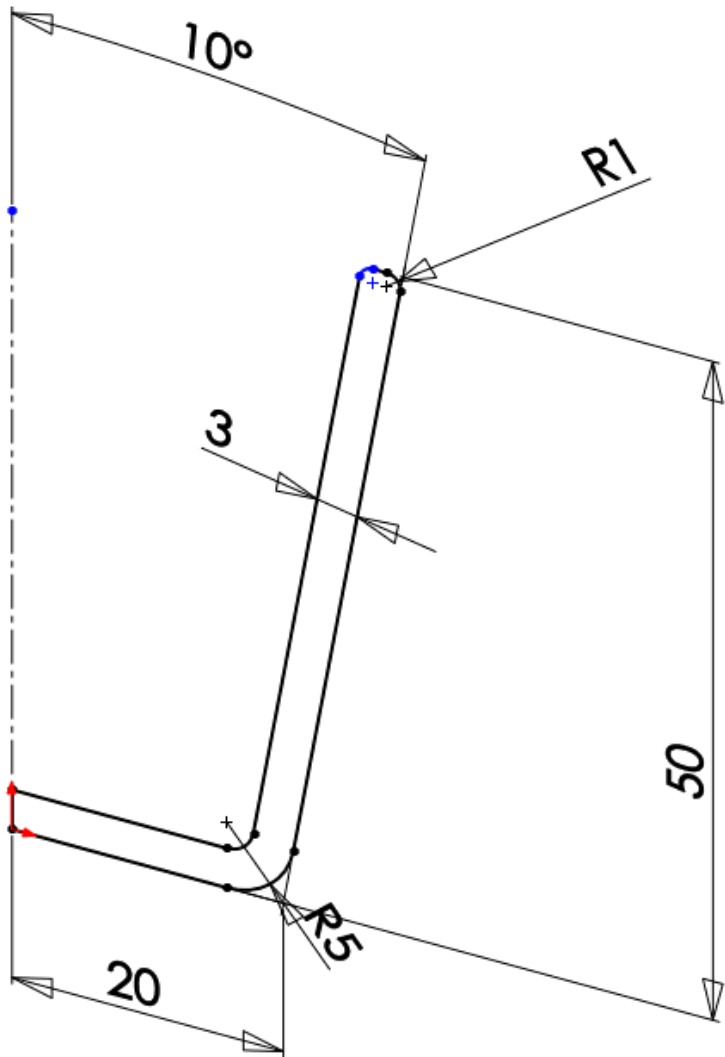
- ❑ Conversion: 25.4 mm = 1 inch
- ❑ Base-Extrude width = 120 mm
- ❑ Base-Extrude height = 120 mm
- ❑ Base-Extrude depth = 50 mm
- ❑ Boss-Extrude depth = 25 mm

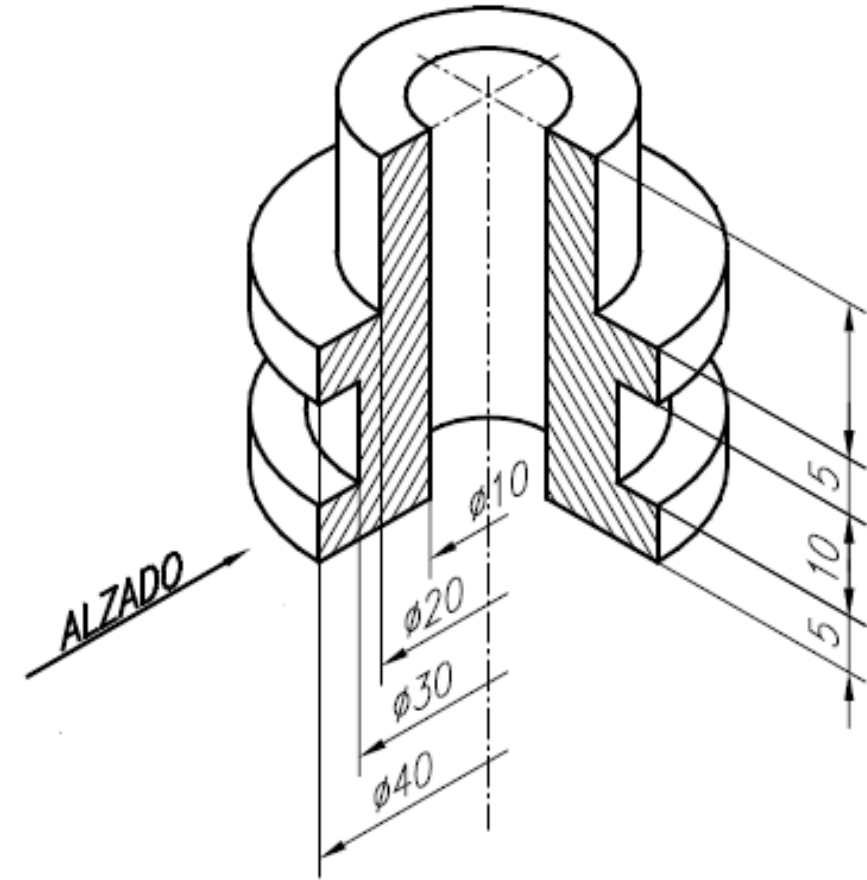
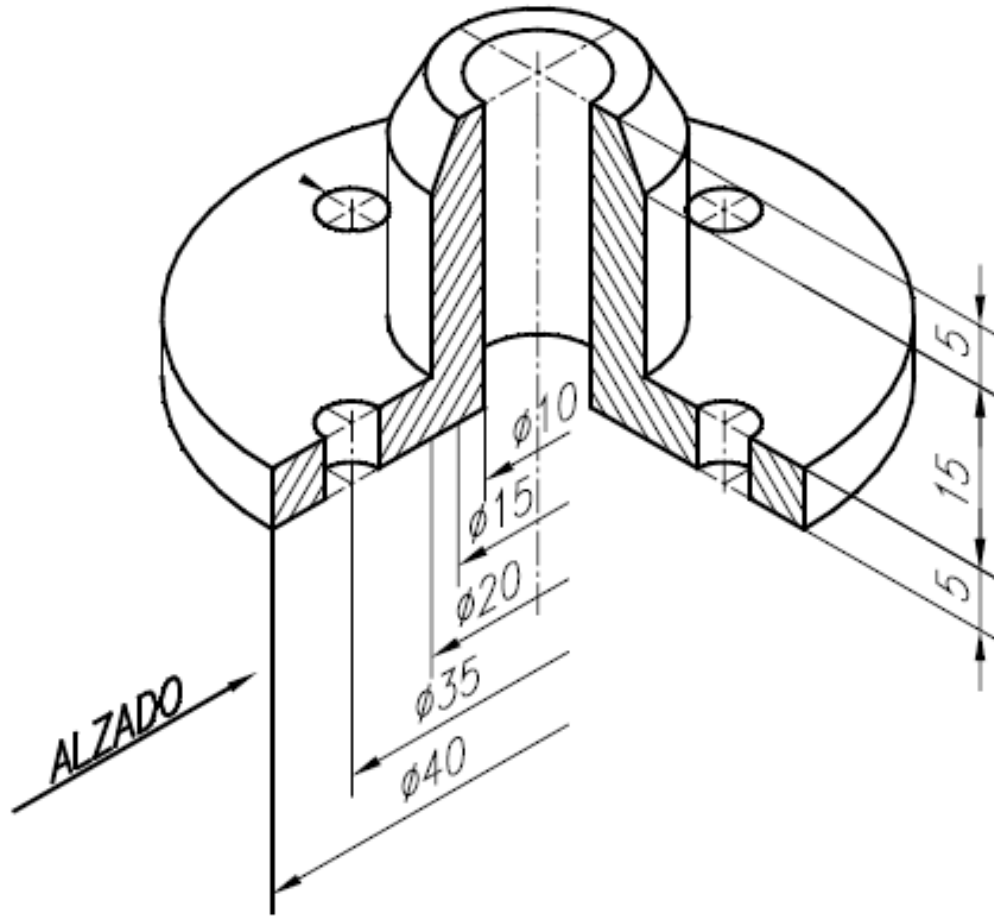




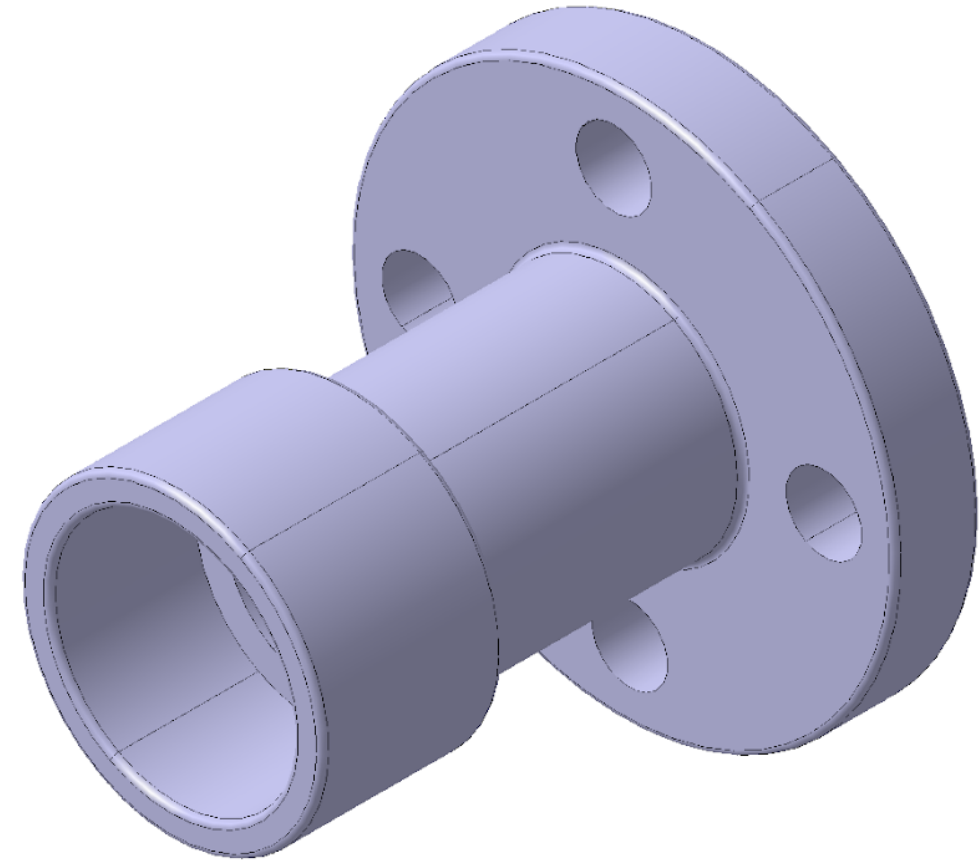
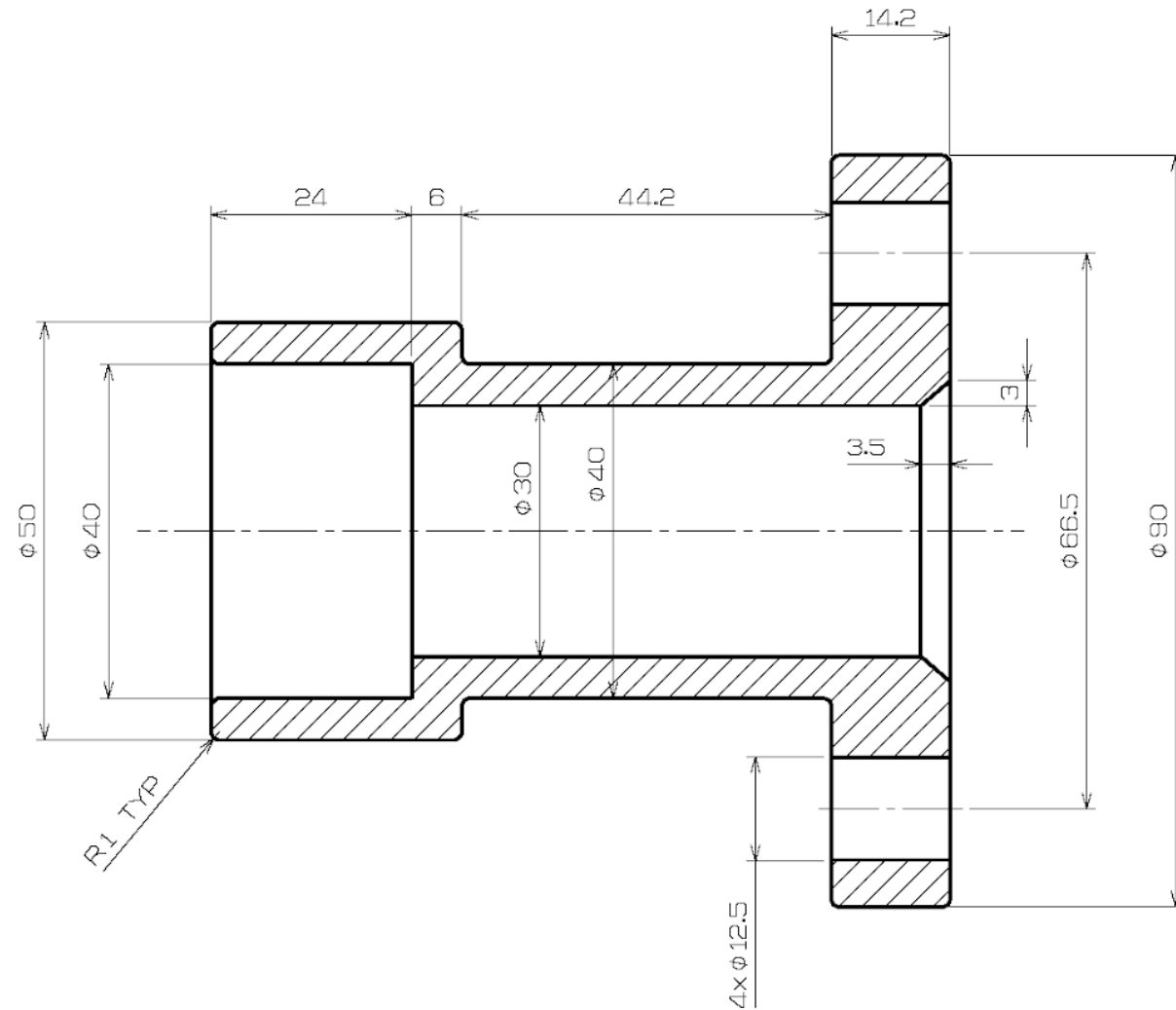


# EXERCÍCIO 2 - REVOLVE

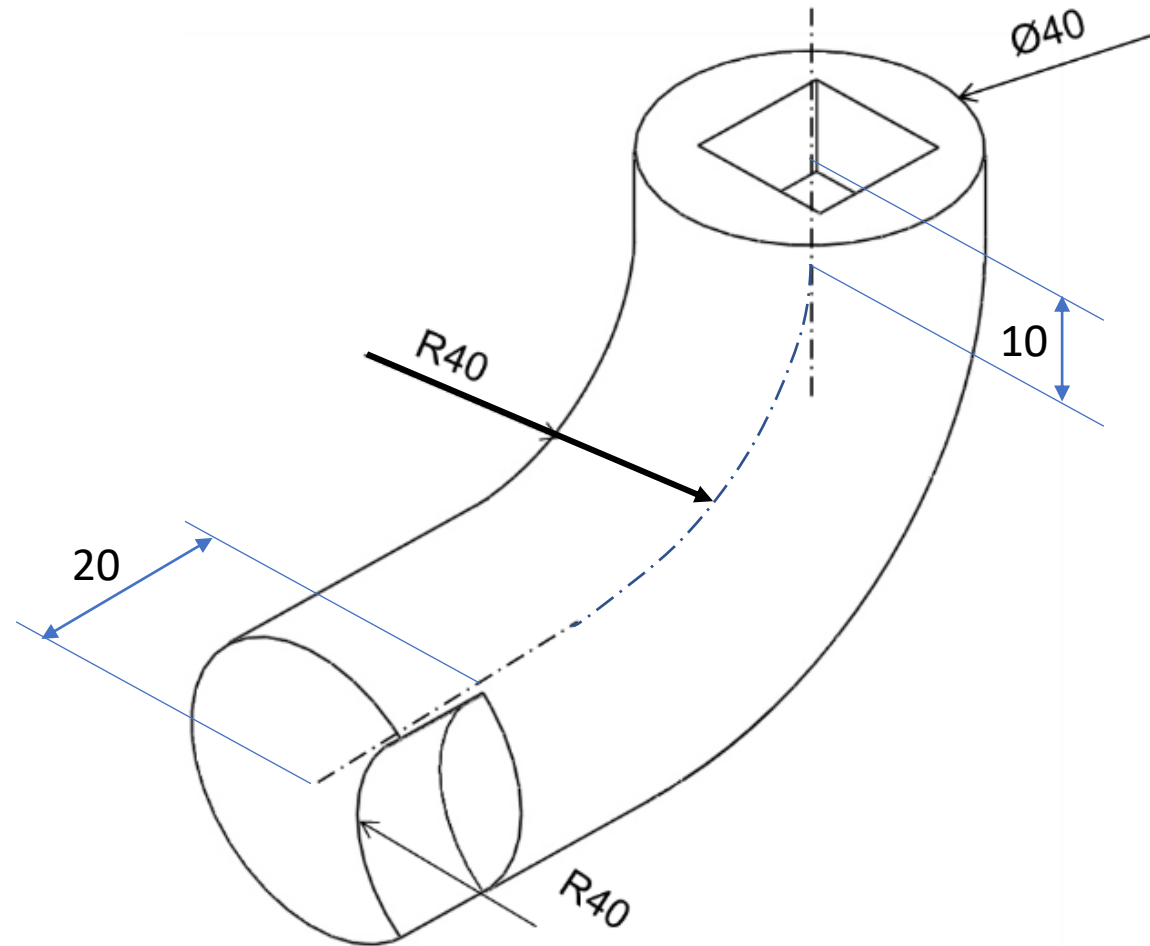


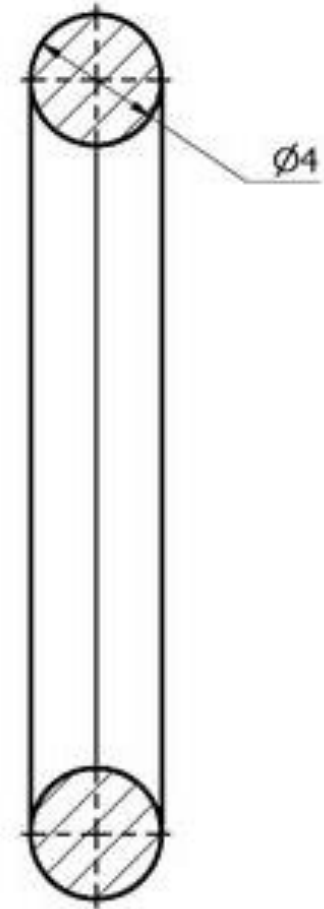
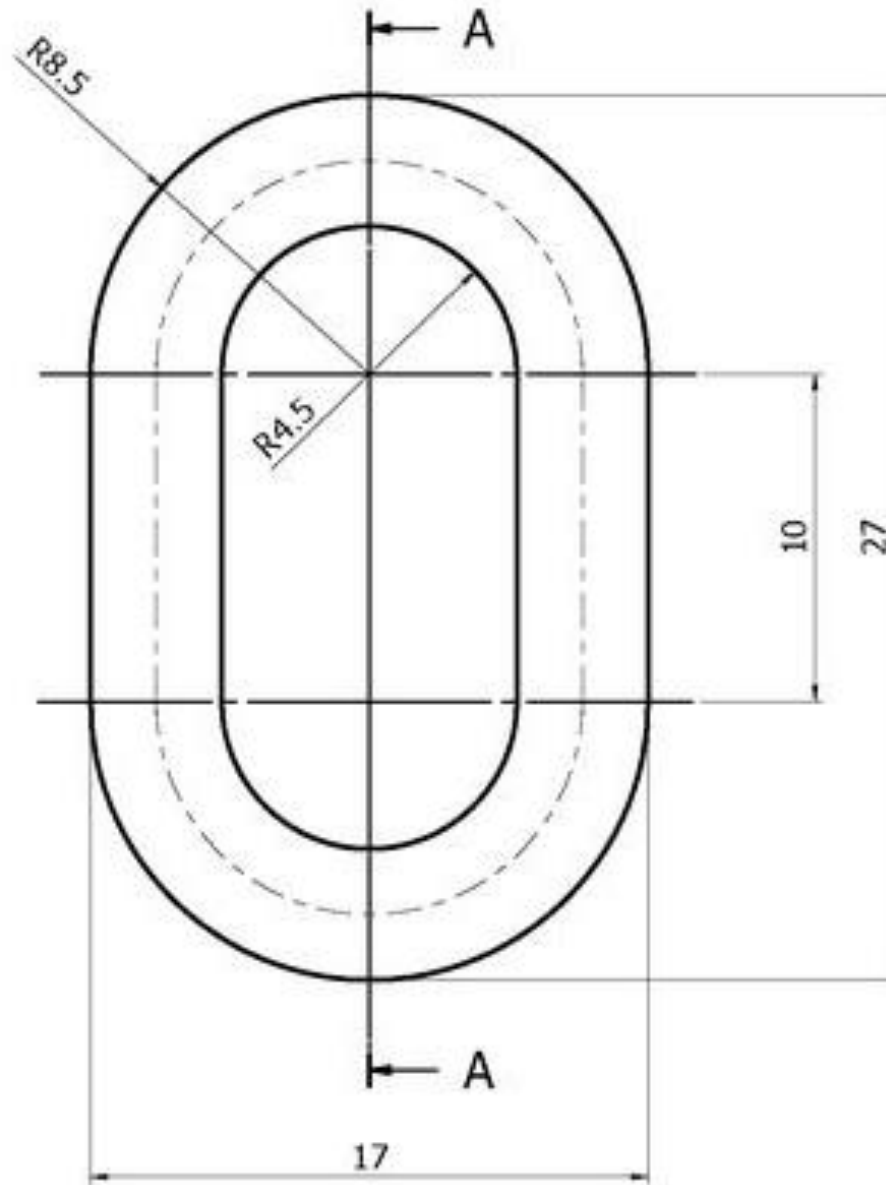
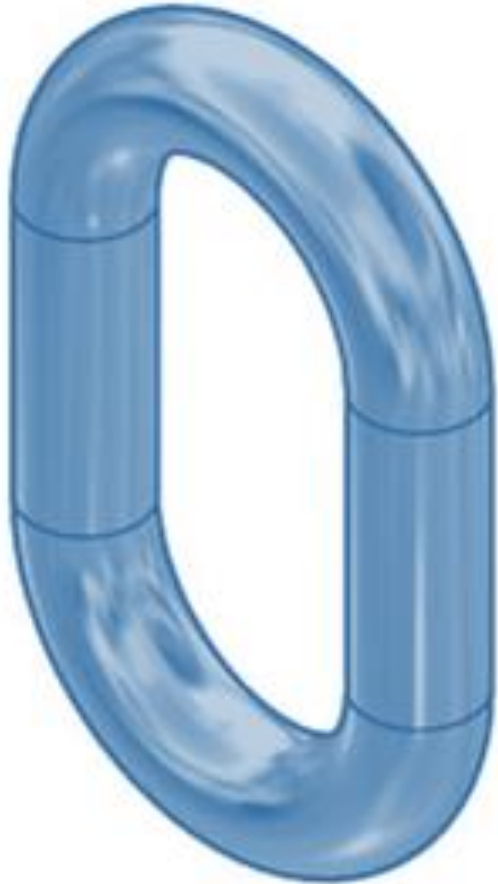




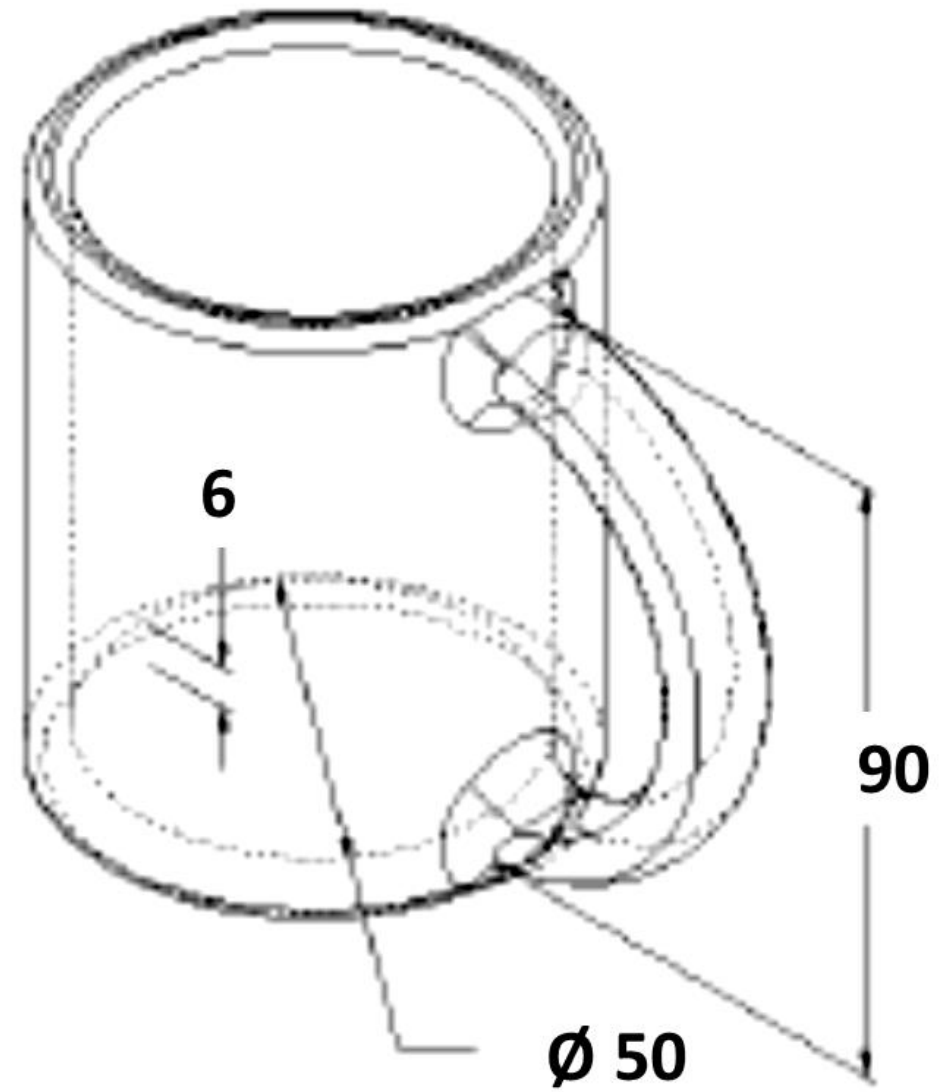


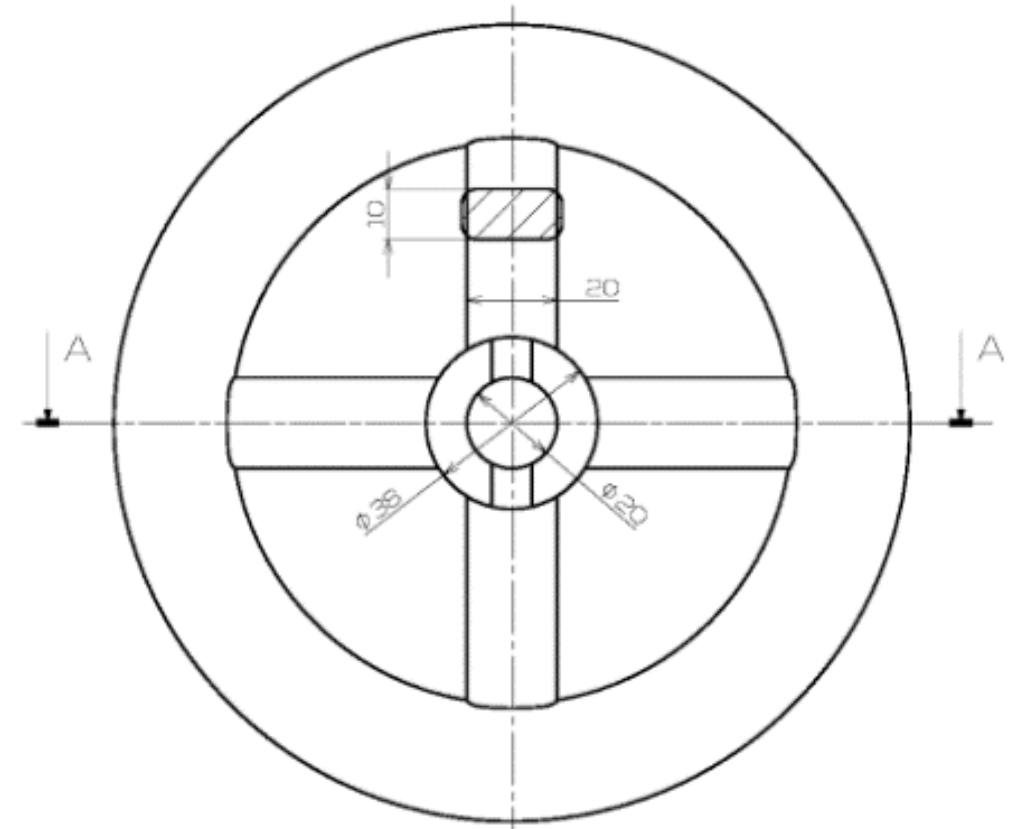
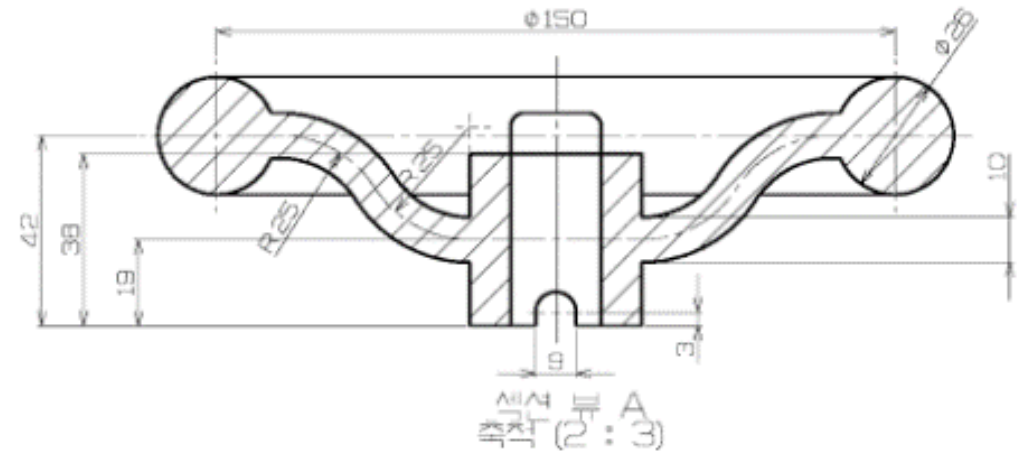
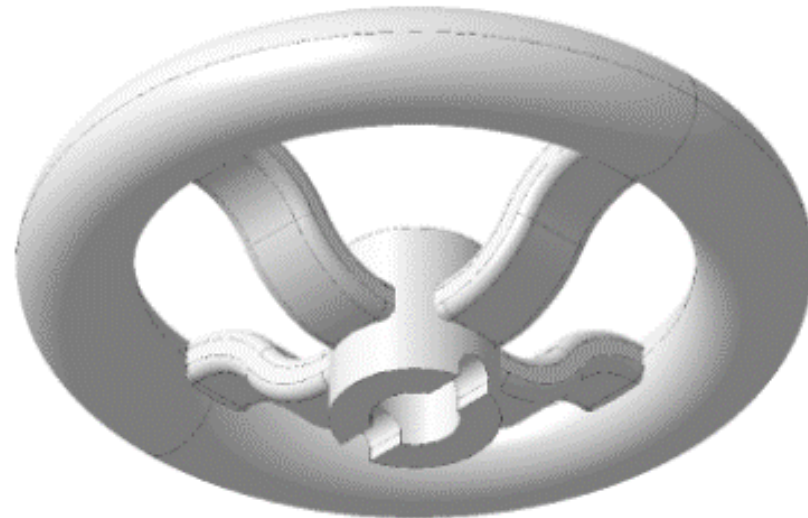
# EXERCÍCIO 3 - sweep



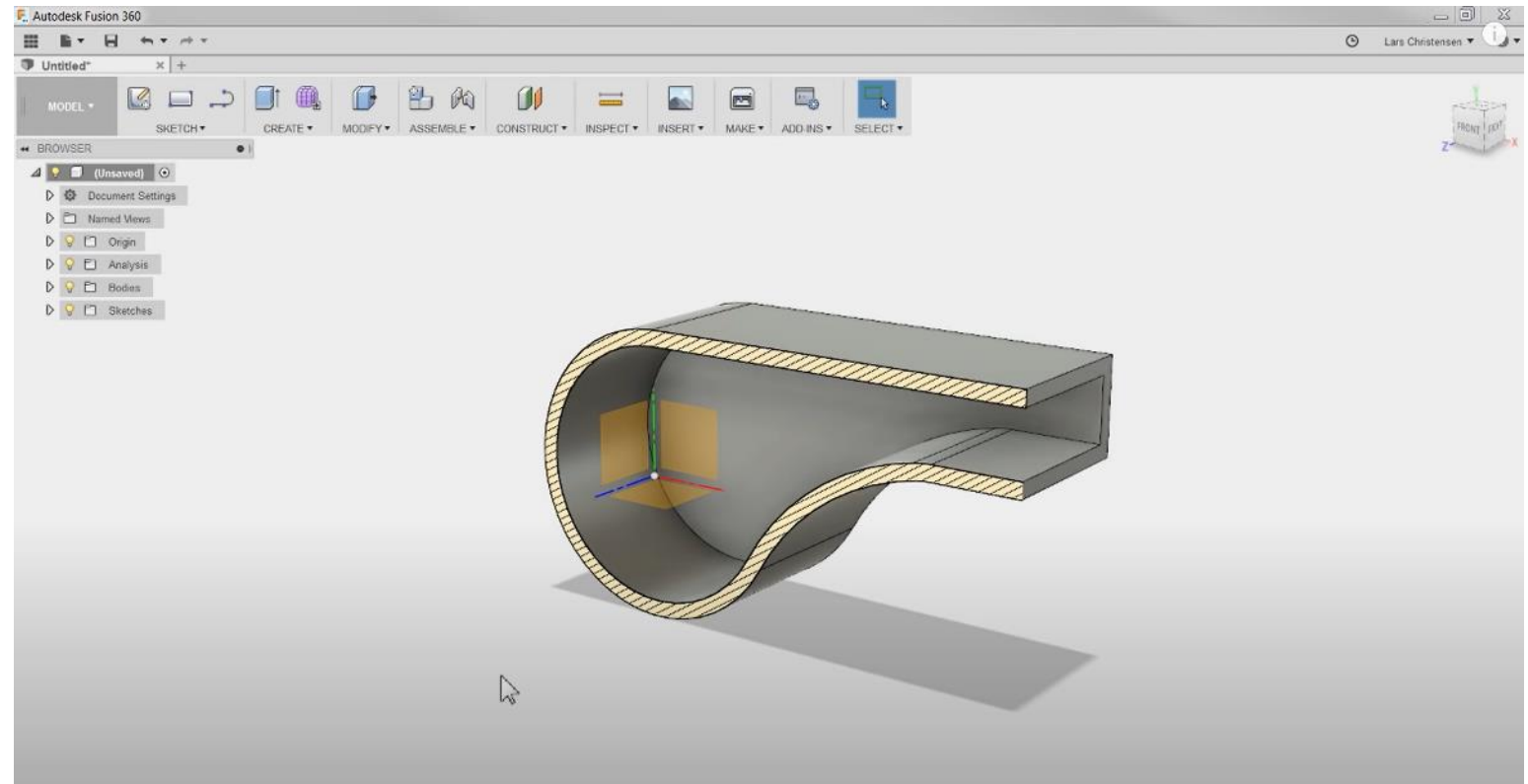
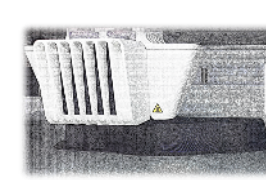


SECTION A-A





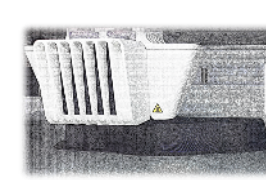




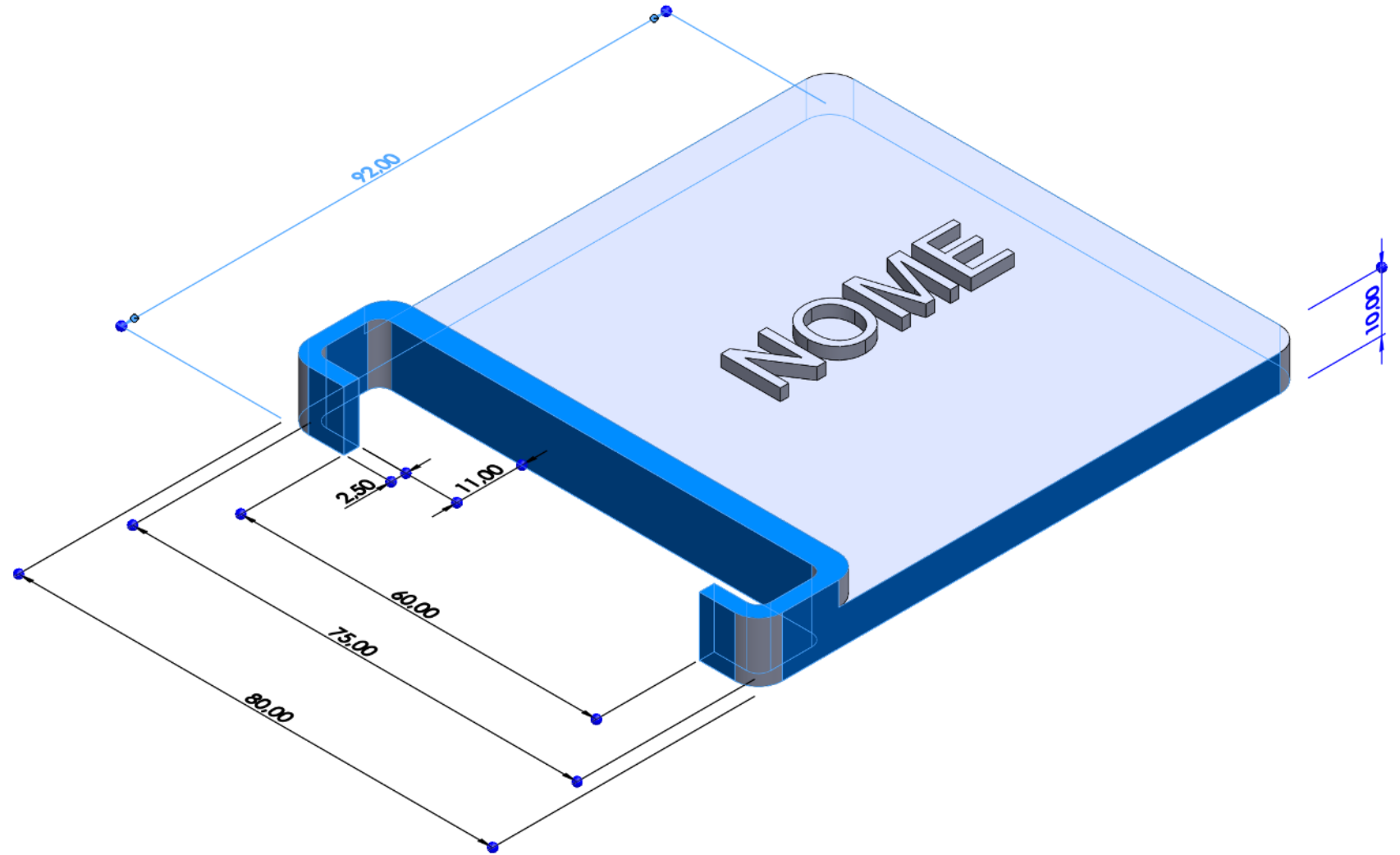
Apito:

<https://youtu.be/l8VVZlUU2rM>

[Fusion 360 Absolute Beginner - How To Model a Whistle - Last Nights Facebook Livestream - YouTube](#)



# suporte smartfone





Monoprice MP10



Generic PLA



Normal - 0.175mm



15%

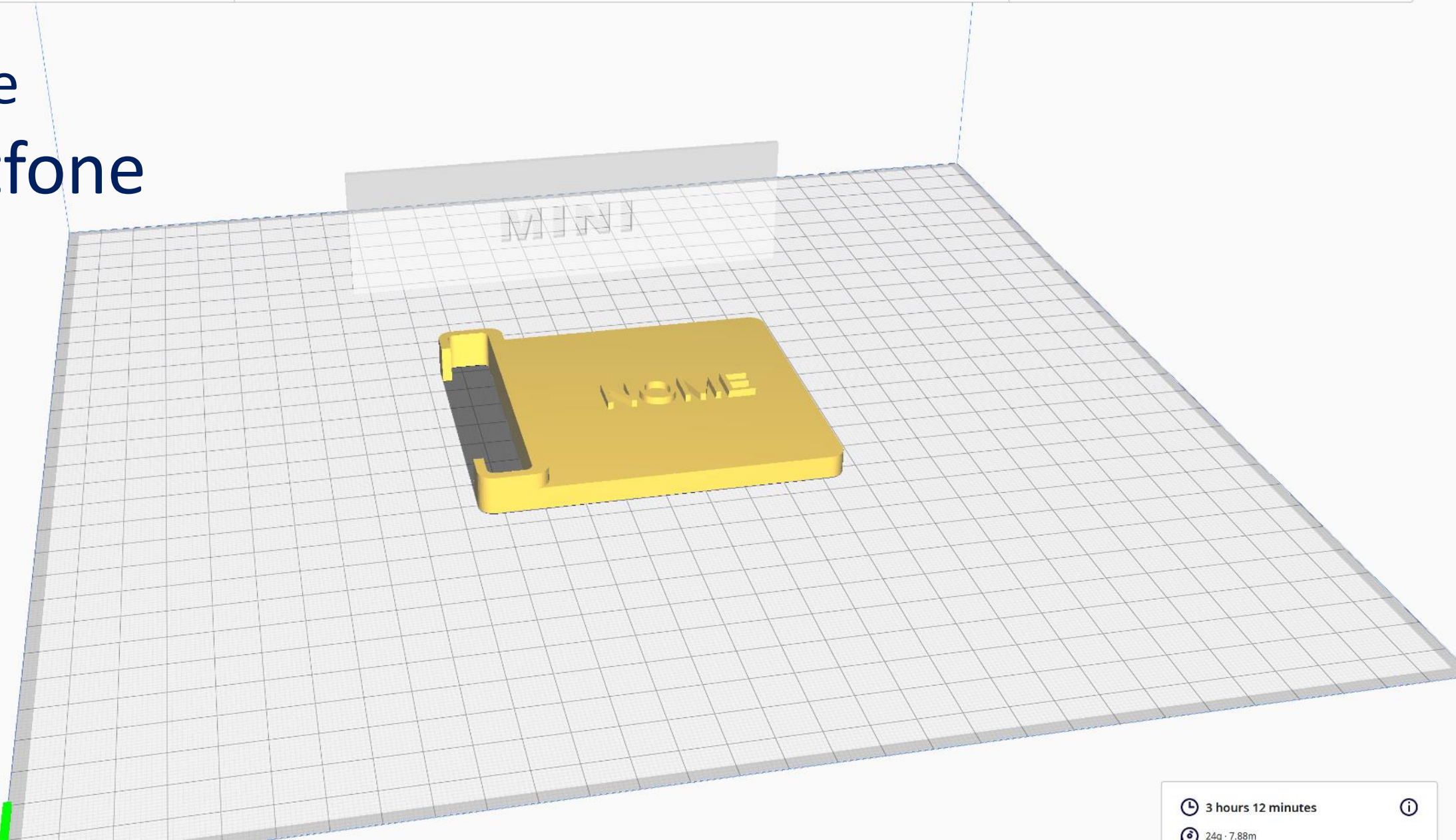


Off



On

suporte  
smartfone





View type Layer view

Color scheme Line Type

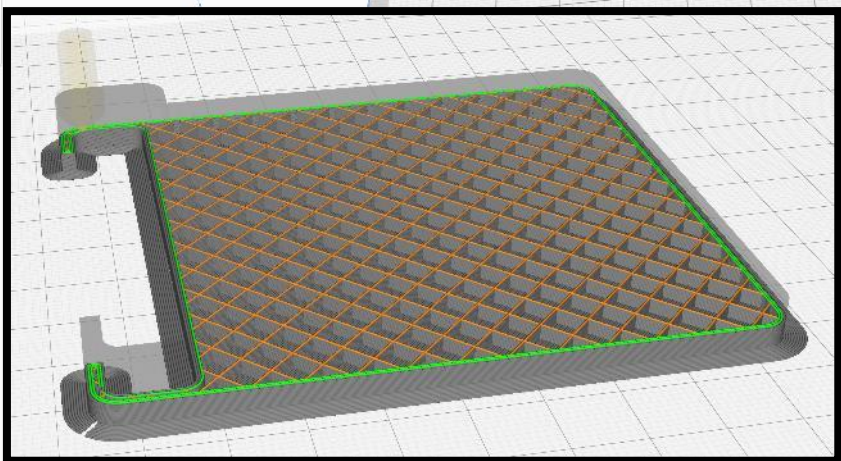
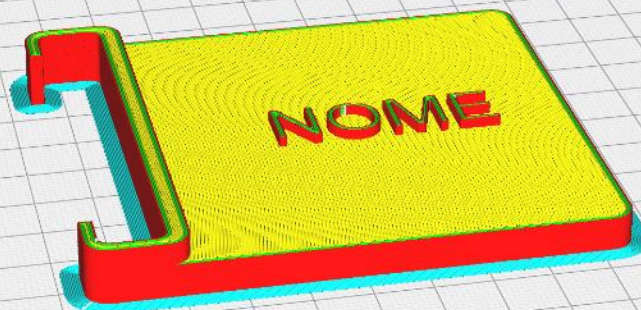
Normal - 0.175mm

15%

Off

On

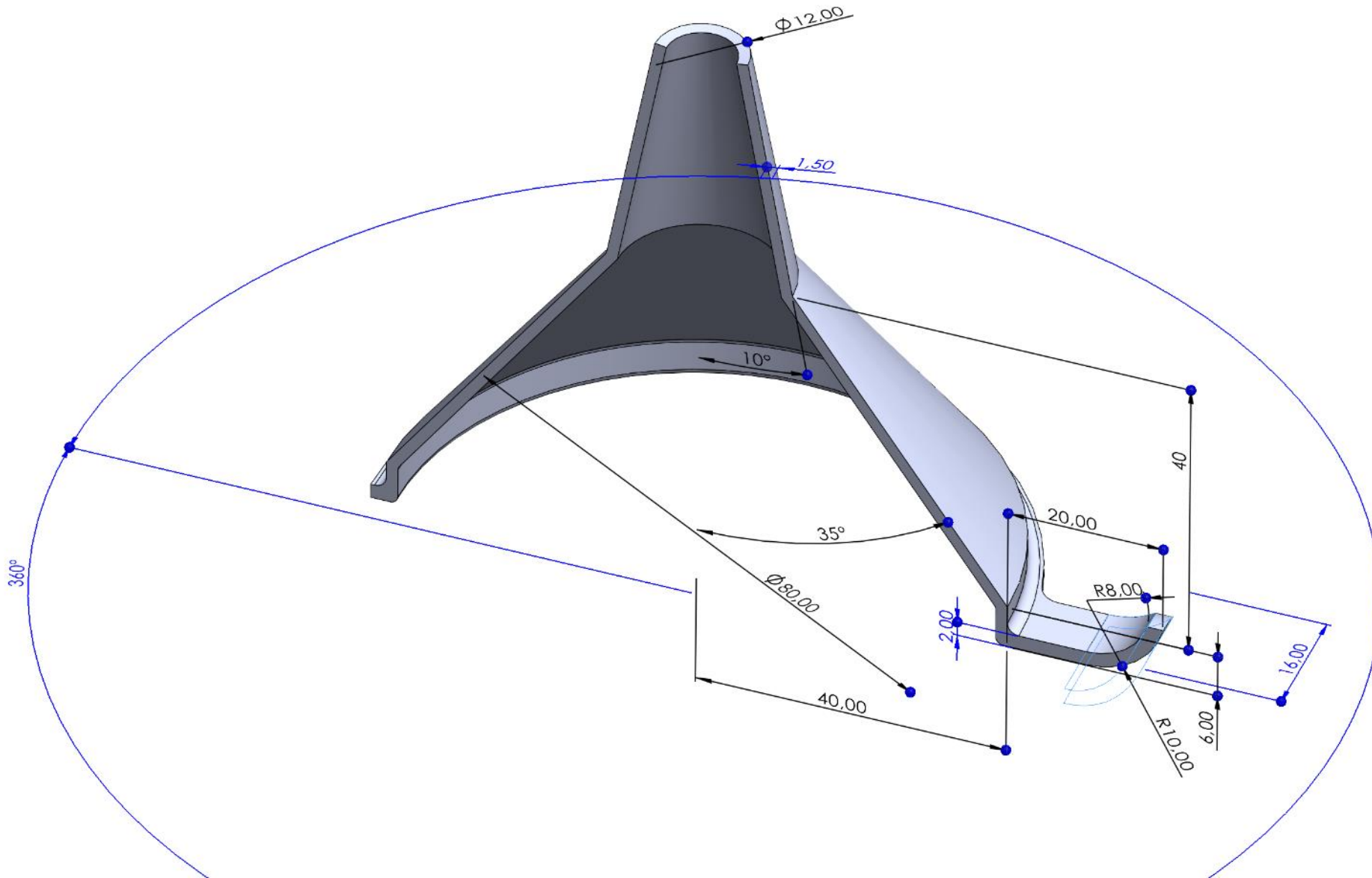
suporte  
smartfone



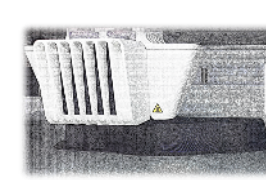
3 hours 12 minutes

24g - 7.88m

# FUNIL







# SITES COM MODELOS 3D (stl)

<https://all3dp.com/1/free-stl-files-3d-printer-models-3d-print-files-stl-download/>

<https://cults3d.com/en>

<https://free3d.com/3d-models/3d-printable?>

<https://grabcad.com/library>

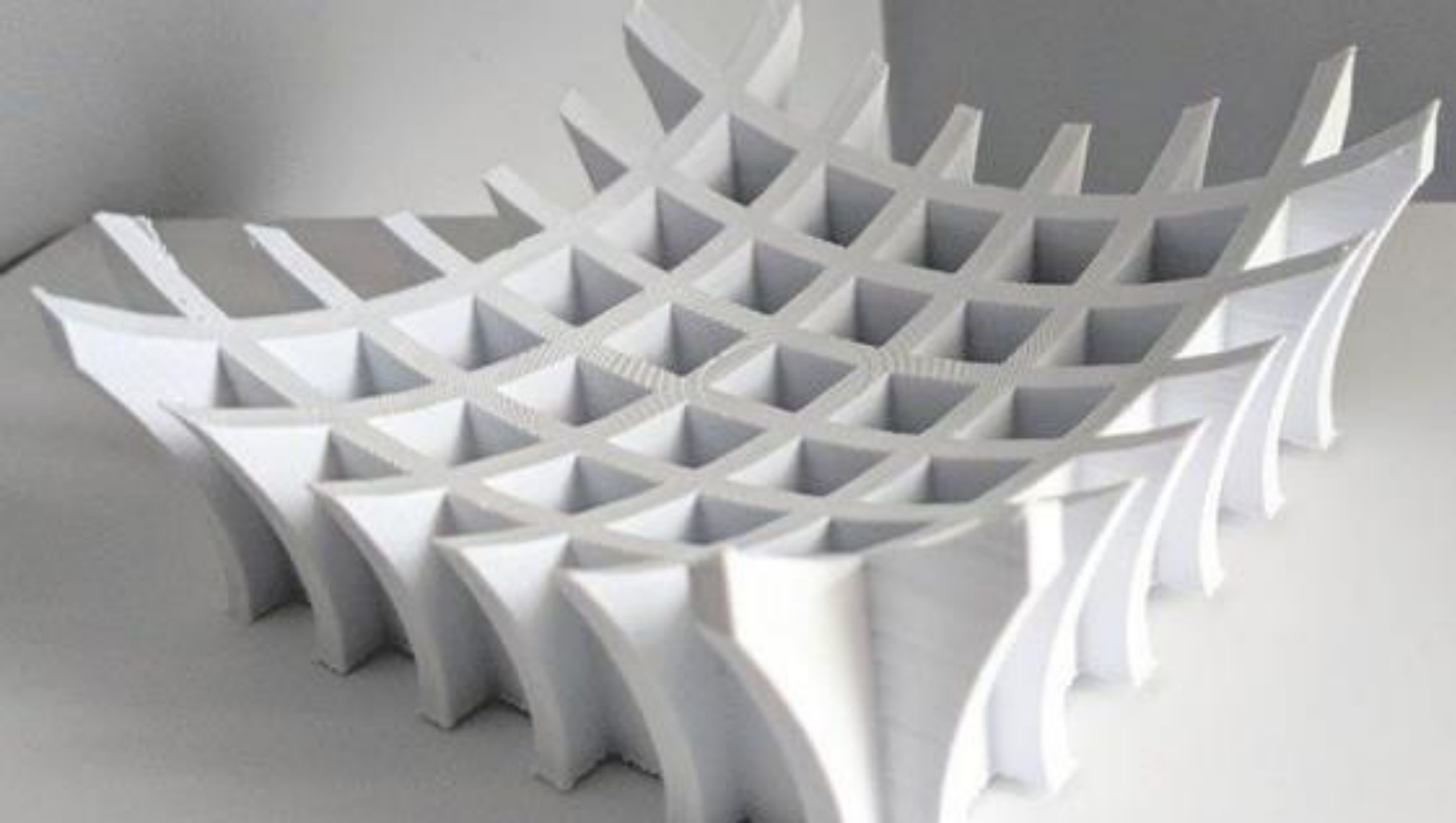
<https://www.cgtrader.com/3d-print-models>

<https://www.myminifactory.com/>

<https://www.thingiverse.com/>

<https://www.turbosquid.com/Search/3D-Models/free/stl>





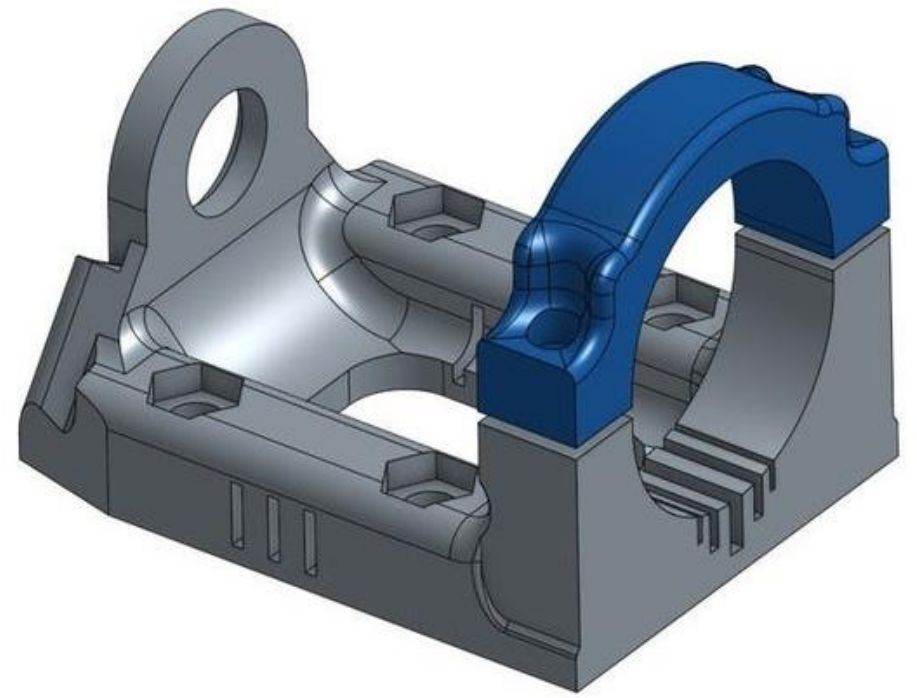
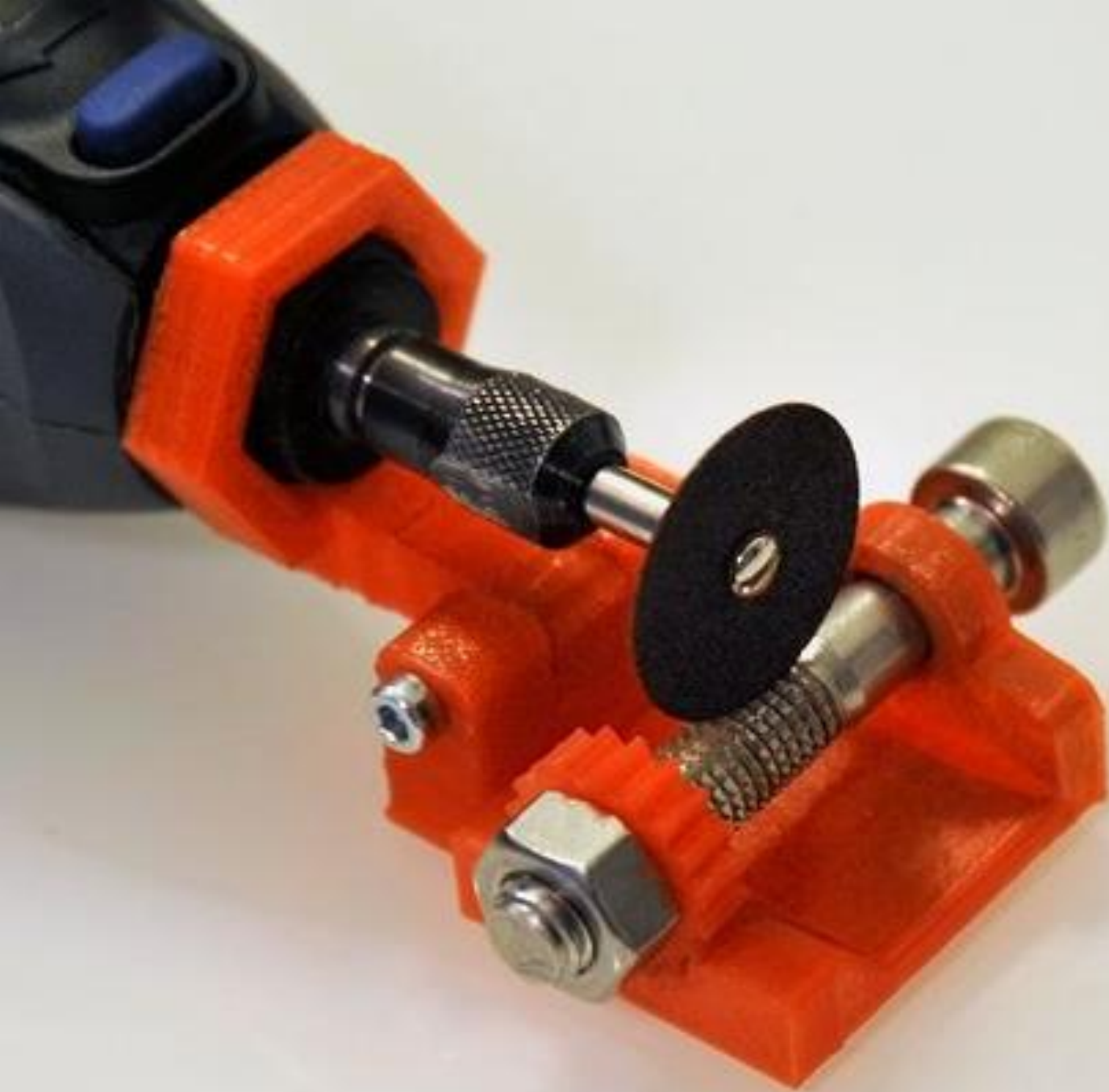


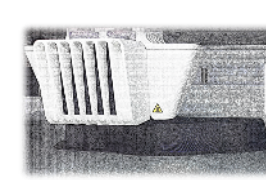




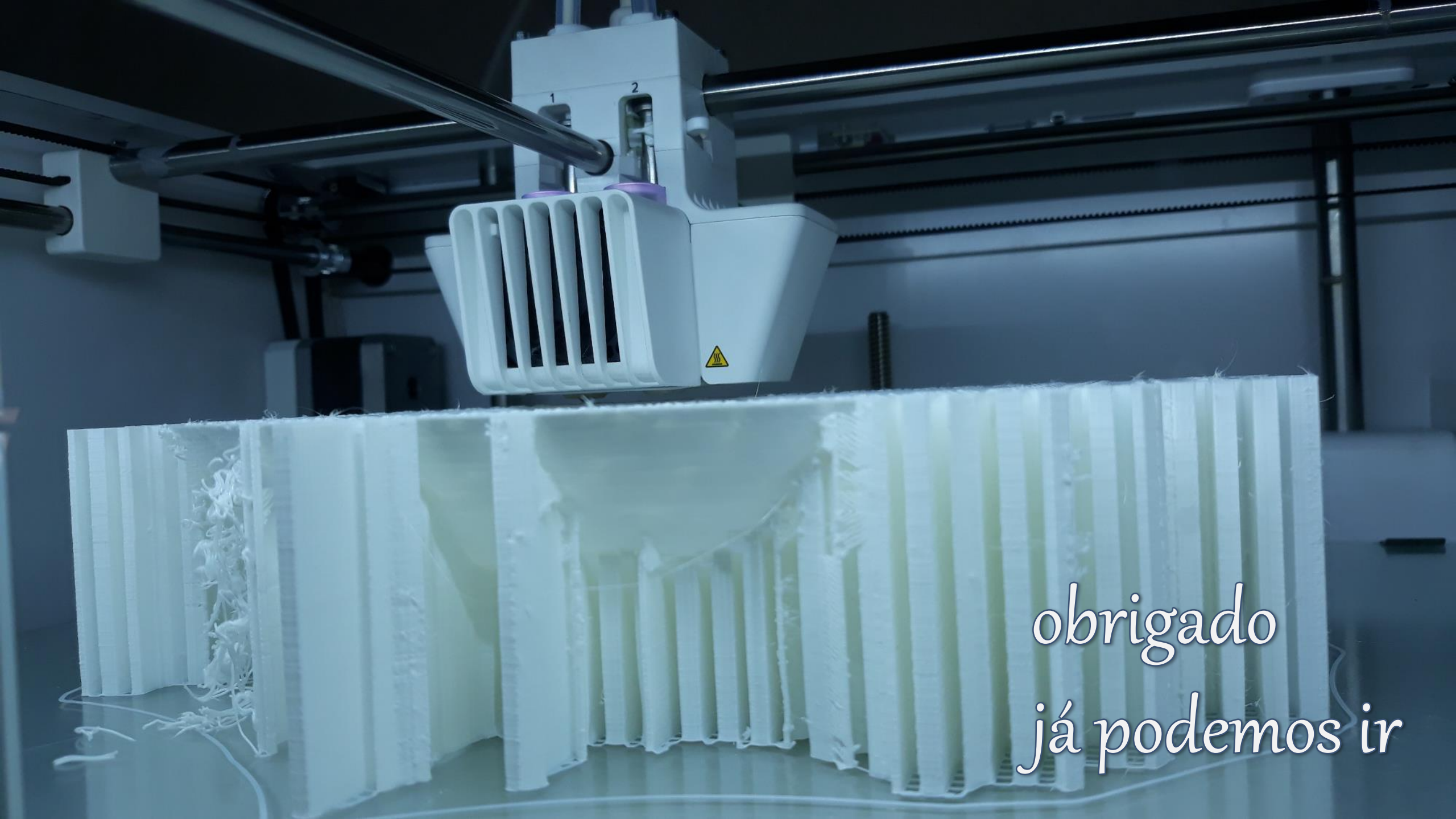












obrigado  
já podemos ir