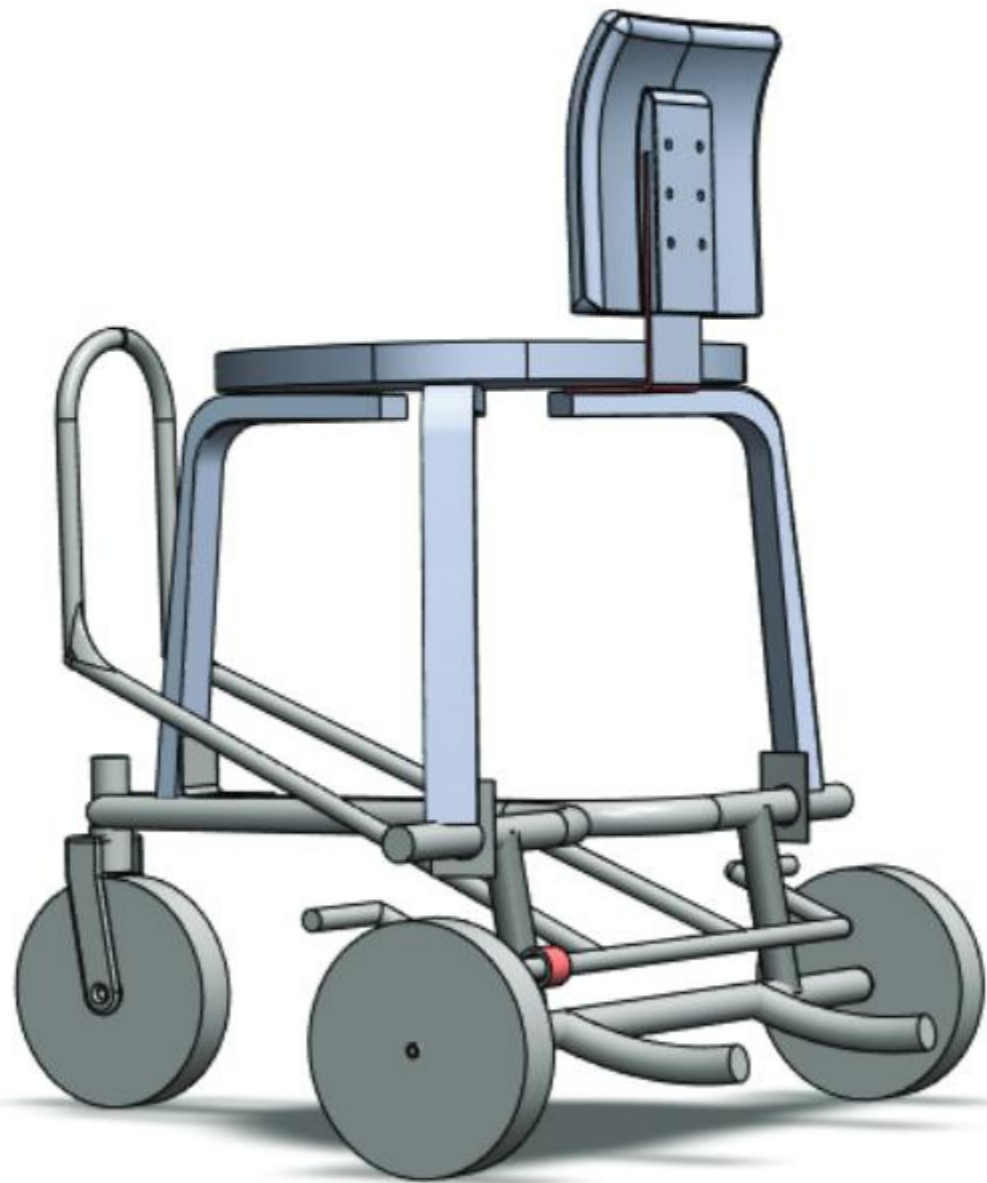
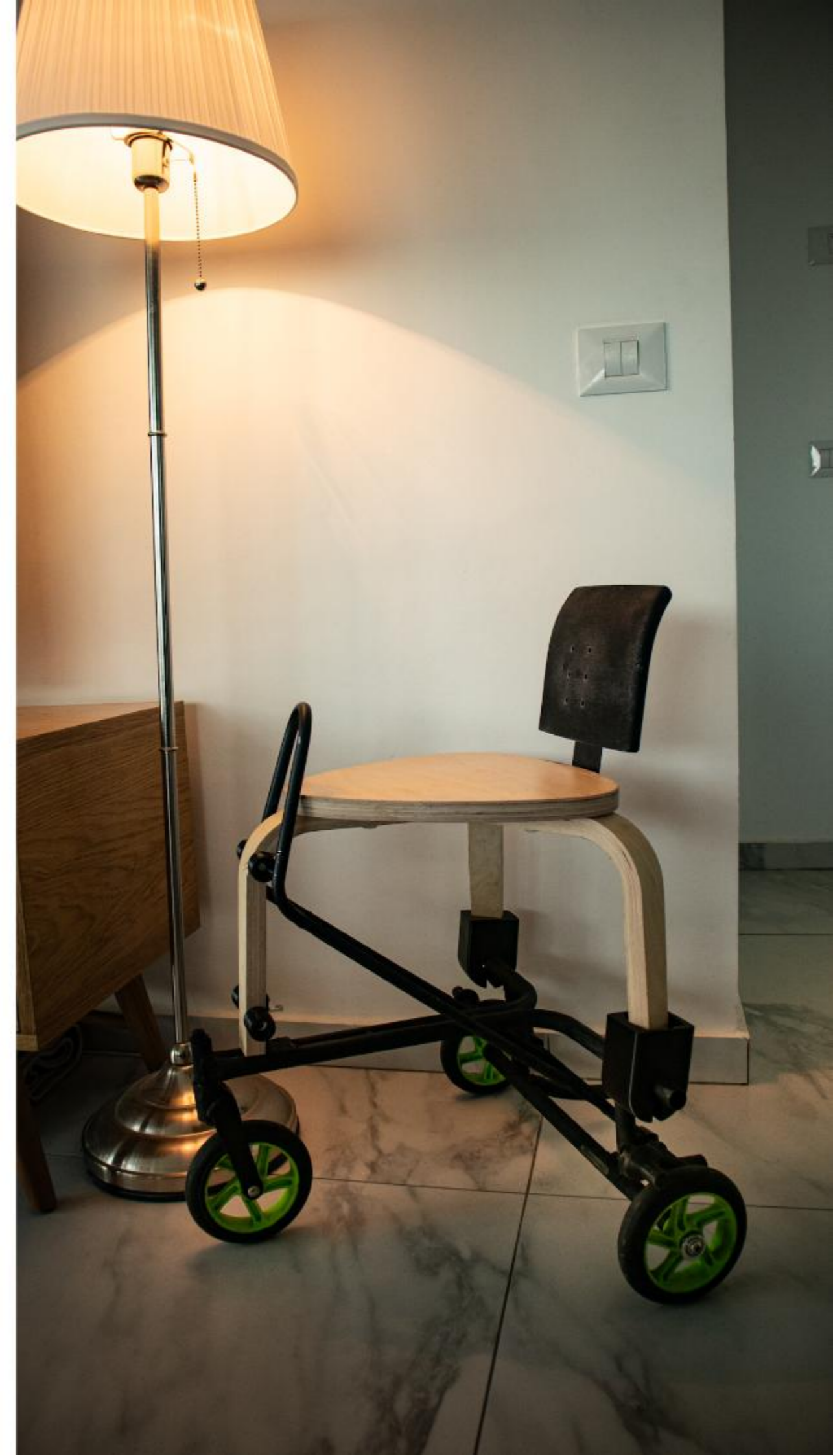


Manufacturing instructions



Ben Gavish
Aviv Haas



Introduction

In order to create this wheelchair you will need the following tools:

MIG welder

Circular saw for iron

Hand saw

A electric screwdriver with a Phillips bit

3D Printer - The files are prepared in advance, you just need to print

***Laser cutting machine** - if there is access

In addition, you will need to purchase the following products:

IKEA "KYRRE" STOOL

2 meters of metal pipe with a thickness of 22 mm

2 meters of 13 mm thick pipe

20 cm tube with a thickness of 28 mm

22mm standart bearings (ABEC)

TPU filament roll for FDM 3D printer

Disclaimer

Dear MAKER, This project was done as part of the FIXPERTS project in the studies for a bachelor's degree in industrial design by two students, Ben Gabish and Aviv Haas.

The project is still in the development process and more advanced versions will be released later.

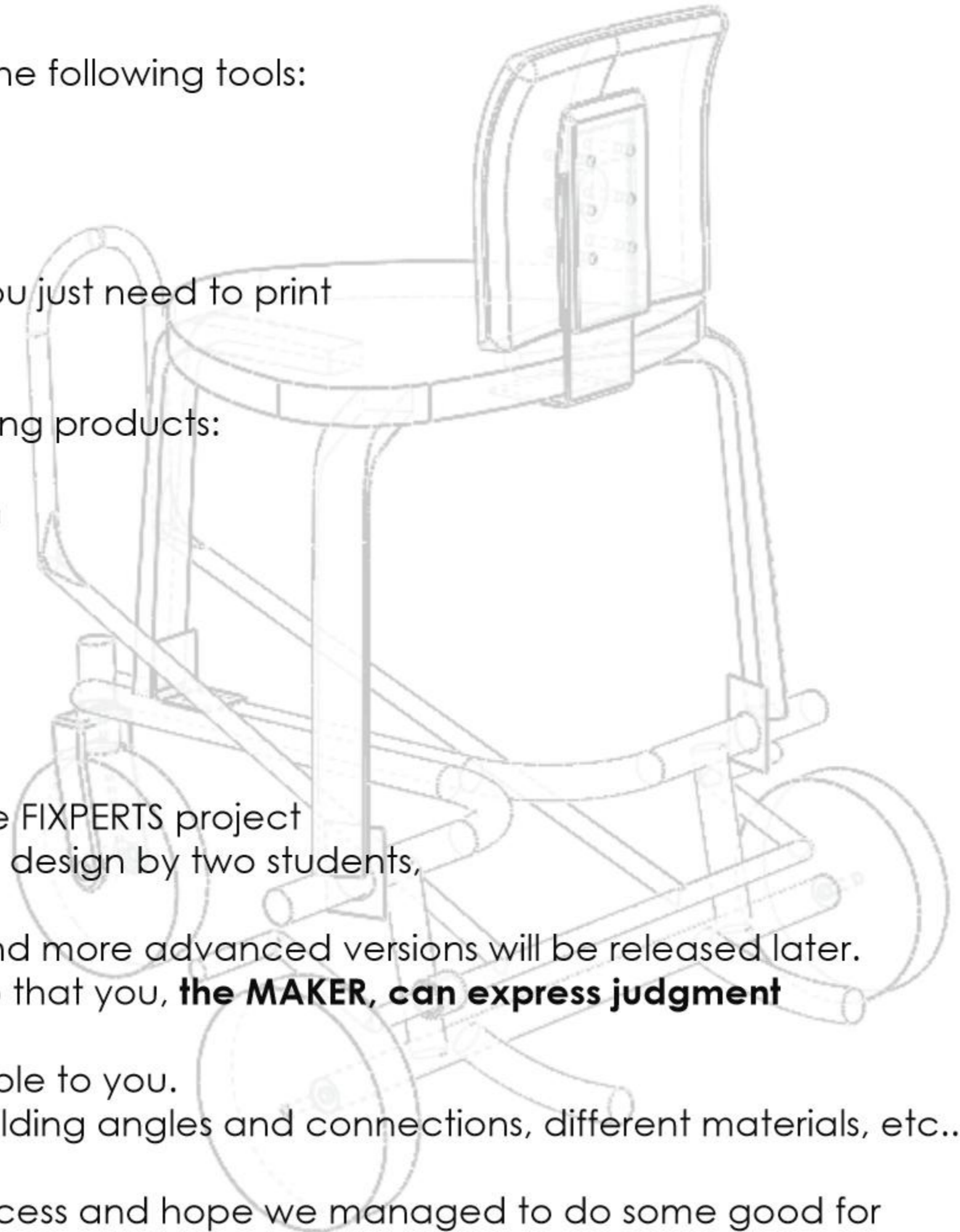
Our stool on wheels is built in the simplest way so that you, **the MAKER, can express judgment** when building the chair,

according to the conditions and sources available to you.

(For example, which screws to use, changing welding angles and connections, different materials, etc...)

All this so that you can reach the best result.

We wish you a fun and educational building process and hope we managed to do some good for someone somewhere in our world :)



B.O.M

Cutting list

ITEM NO.	PART NUMBER	QTY.
1	Iron pipe L 170mm D 22mm	2
3	Iron pipe L 620mm D 22mm	2
4	Iron pipe L 150mm D 22mm	1
5	Iron pipe L 470mm D22mm	1
6	90611A330_Screw-Mount Nut	2
7	Iron pipe L 160mm D 22mm B	1
8	Wheel 150MM	1
9	Iron pipe L 420mm D28mm	1
10	Front Wheel fork	1
11	Chair base plate	2
12	Front leg chair base plate	1
13	Iron pipe L 160mm D 22mm A	1
14	Iron pipe L 170mm D 22mm B	1
15	Iron pipe L 22mm D 22mm B	2
16	Iron pipe L 45mm D 22mm B	1
17	Iron pipe L 60 mm D 13mm B	4
18	metal segment 3 mm thick, 60 mm wide, 230 mm long	1
19	metal segment 3 mm thick, 40 mm wide, 70mm long	2
20	metal segment 3 mm thick, 80 mm wide, 70mm long	1

Screws & Nuts list

ITEM NO.	PART NUMBER	Sizes	QTY.
1	Phillips Flat Head Screws for Wood	M4	6
3	Button Head Hex Drive Screw	M4	1
4	Alloy Steel Socket Head Screw	M4	1
5	Zinc-Plated Steel Wing Nut	M4	1
6	Steel Nylon-Insert Locknut	M6	1
7	10MM Button Head Hex Drive Screws	M4	2

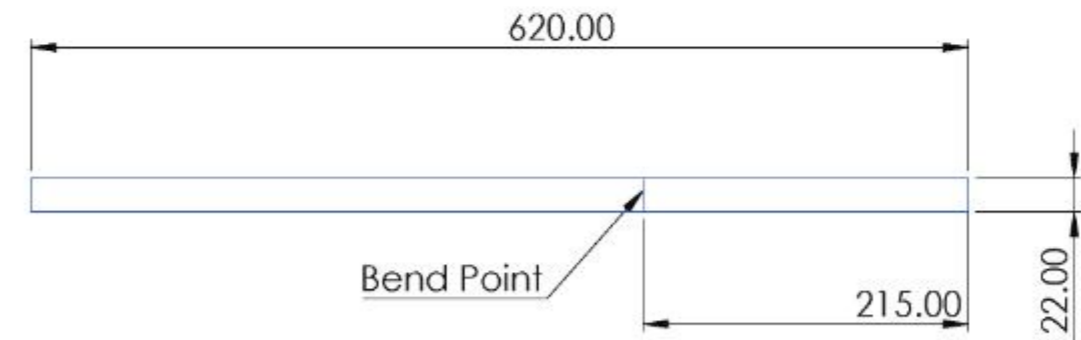
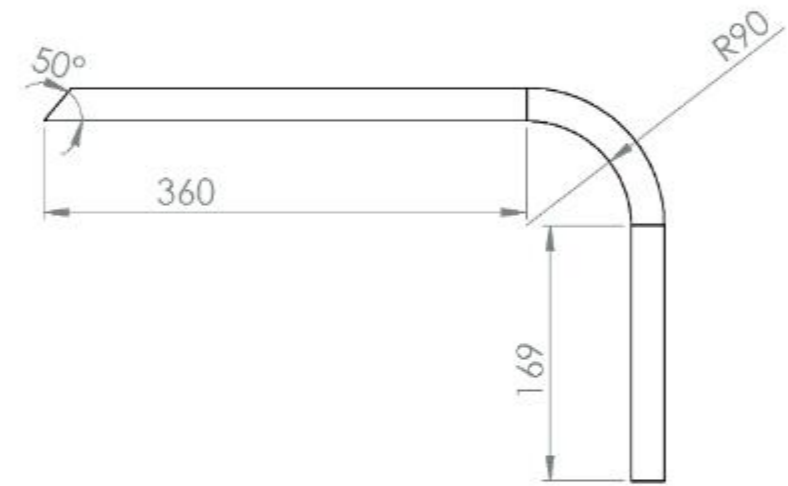
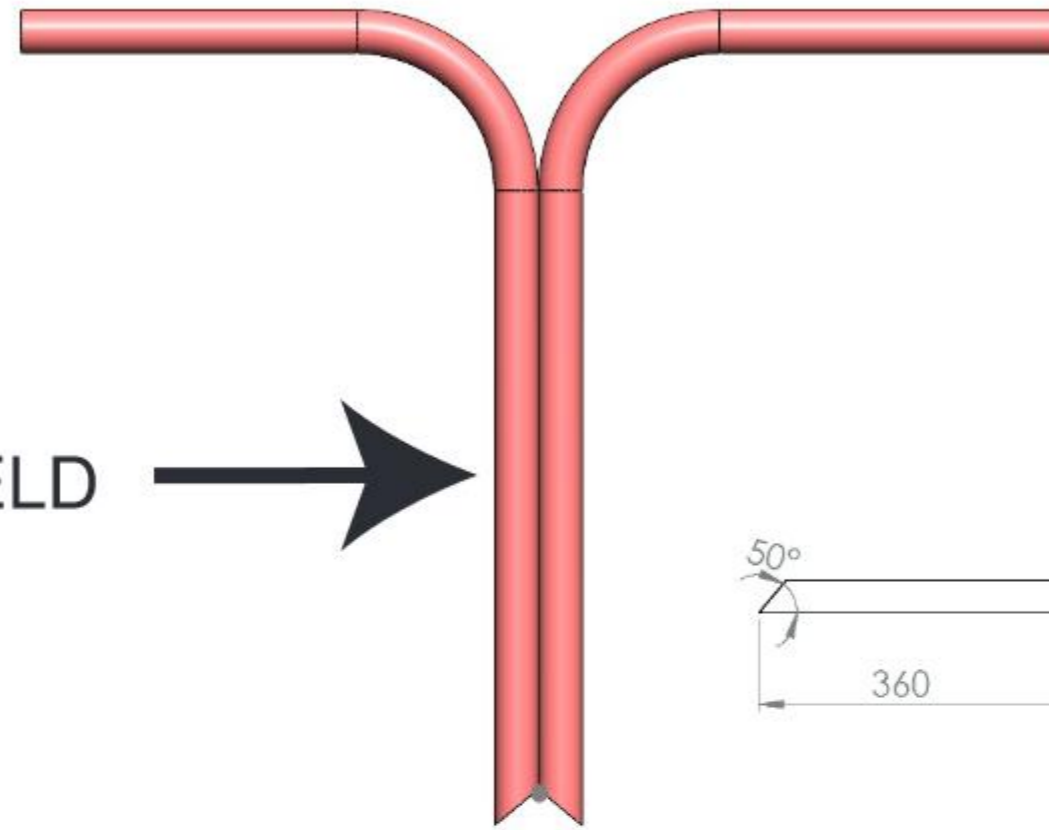


All the parts of the pipe should be cut first from a 28 mm thick pipe / 22mm thick / 13mm with a length of 2 meters

Step 1

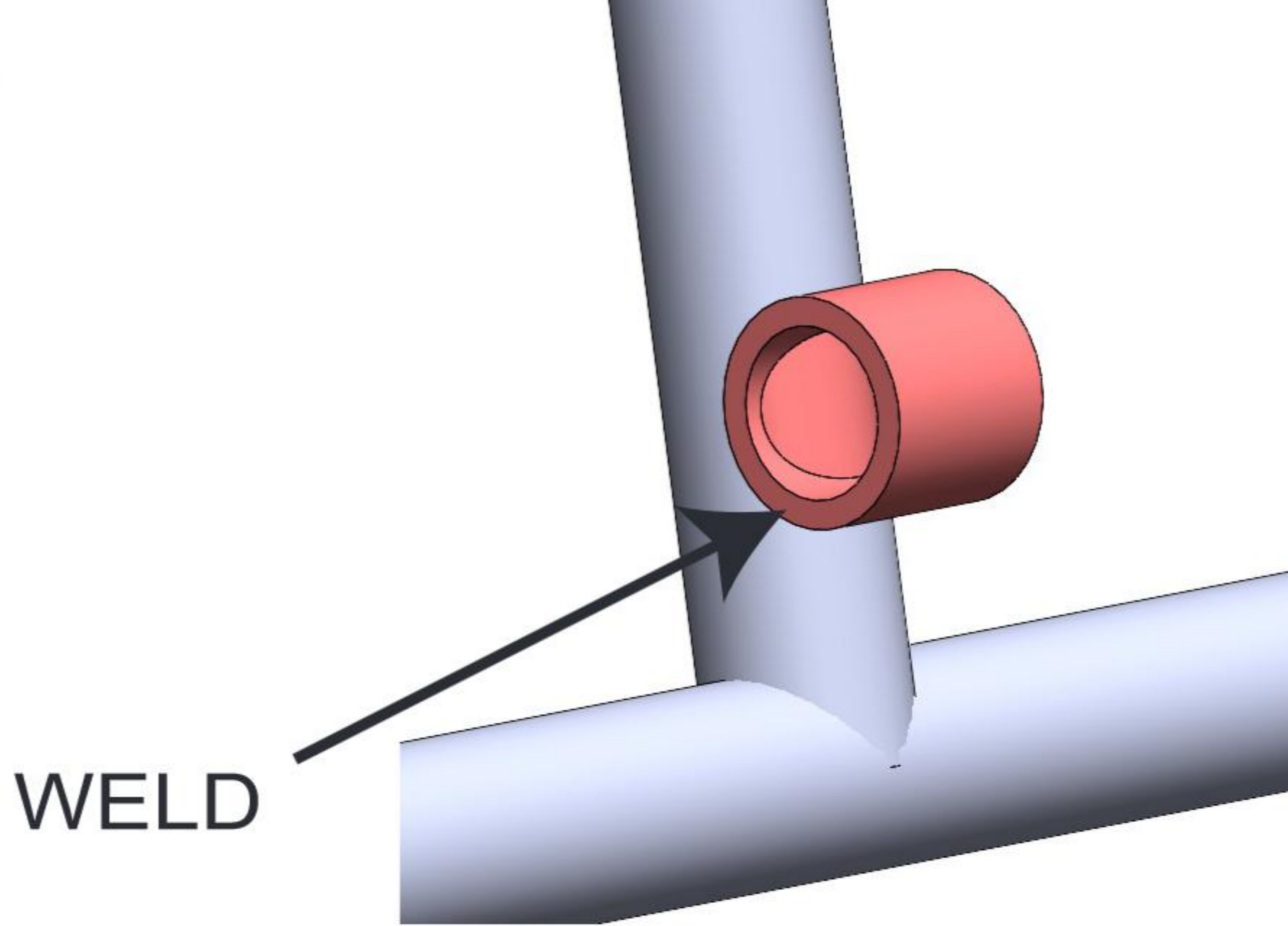


WELD



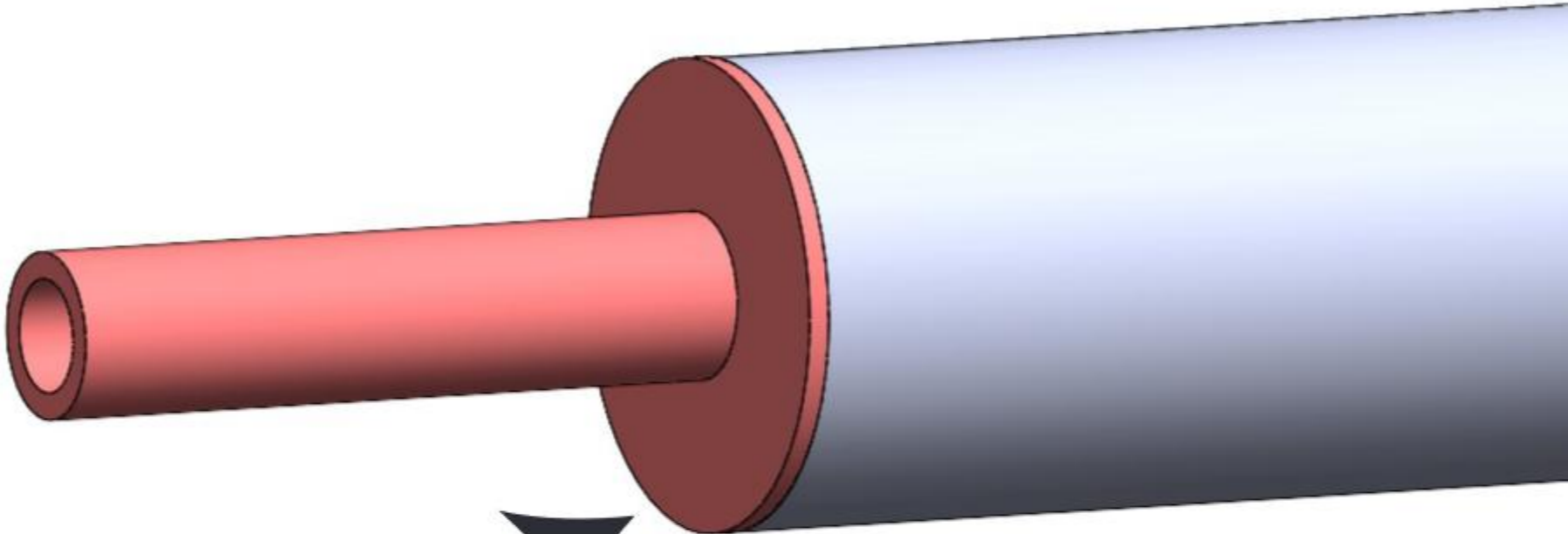
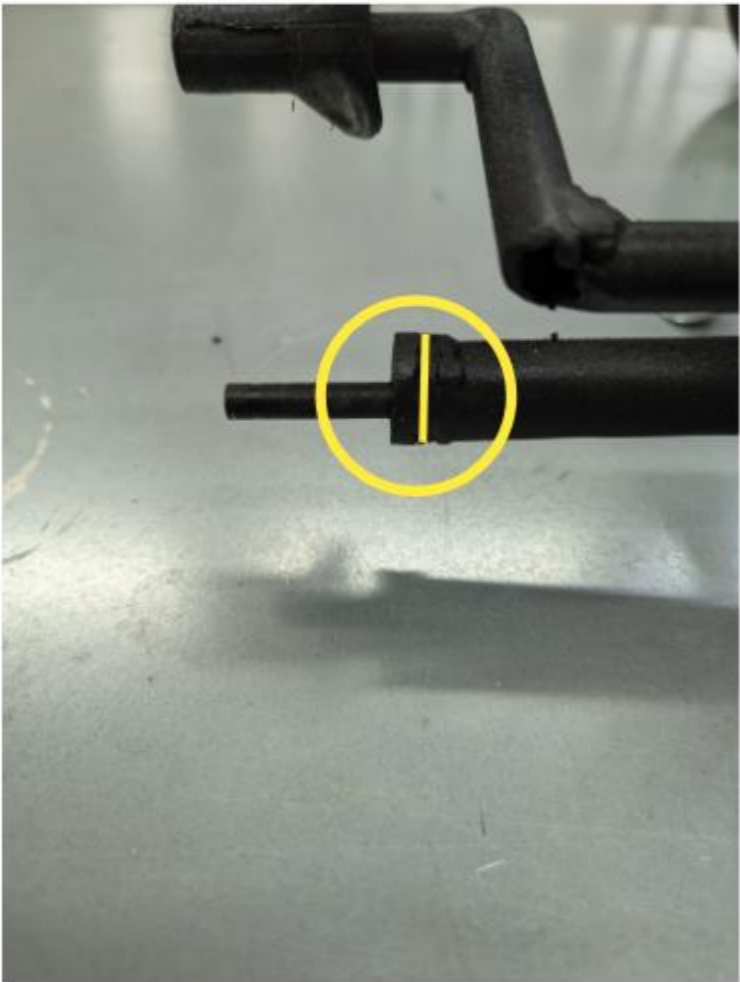
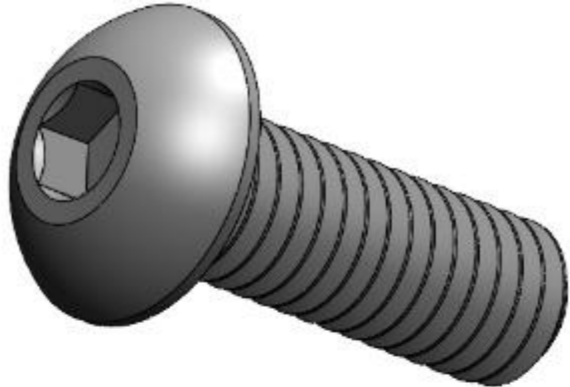
Bend the pipe to 90 degrees from the bend point
350mm from the bottom
Can also be connected
directly at 90 degrees

Step 2



Cut two 22 mm long pieces from the 22 mm thick pipe and WELD to the area shown

Step 3

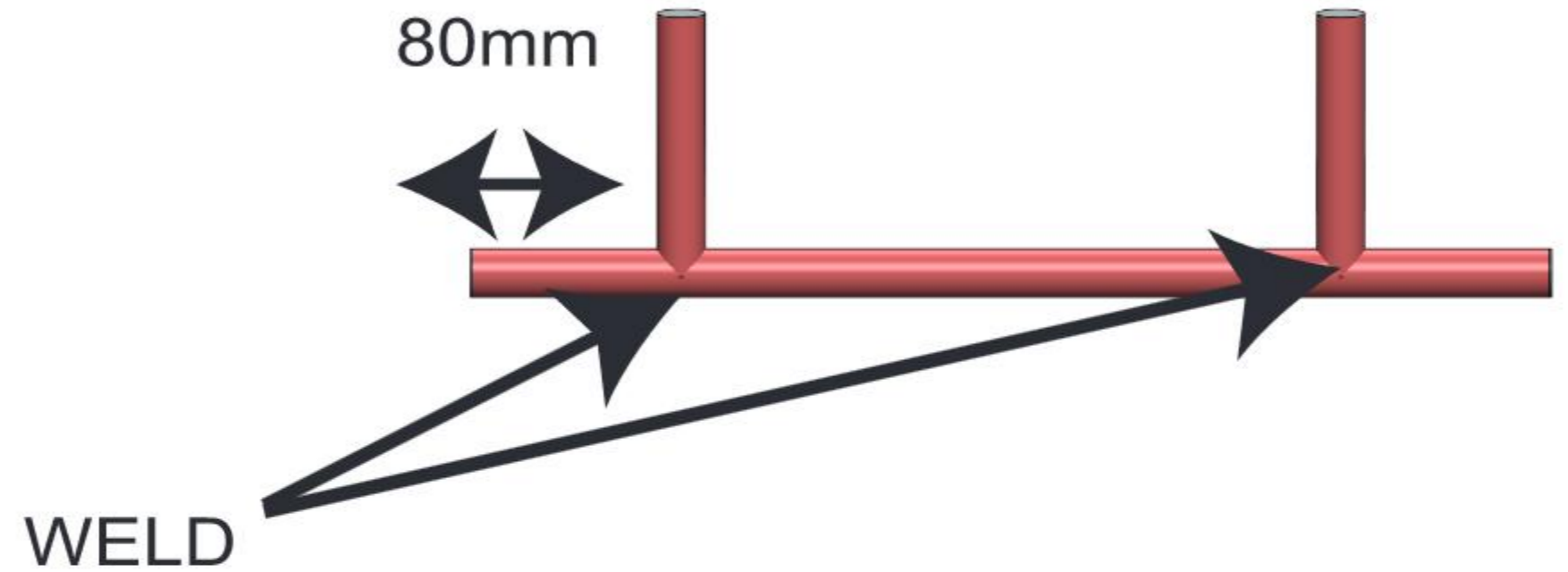


WELD



Make sure the shaft is concentrically connected

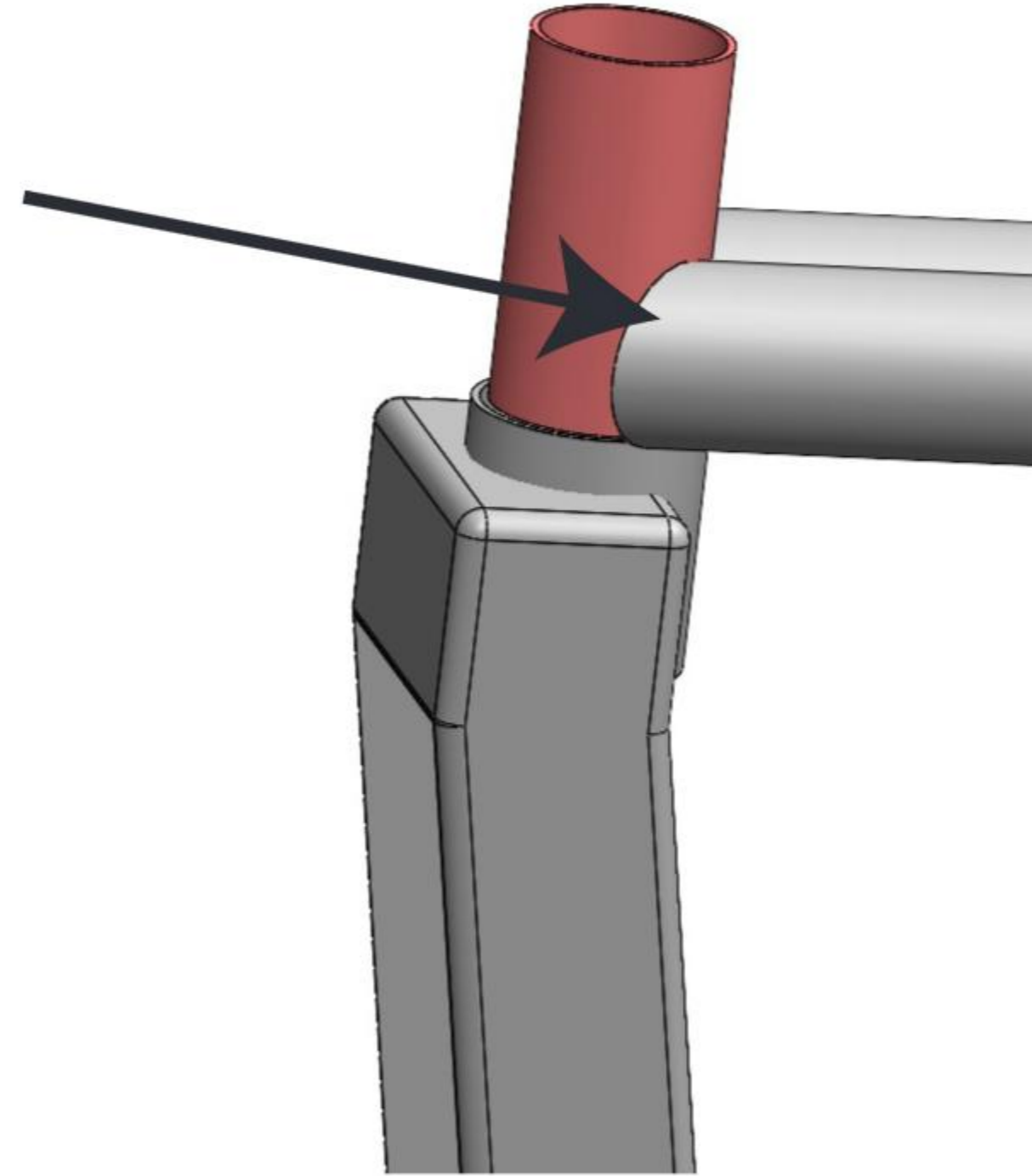
Step 4



Cut two pieces of pipe 170 mm long from the 22 mm thick pipe and WELD to the central axis which is 470 mm long
Make sure the pipes are connected at a distance of 80 mm from the end of the central axis

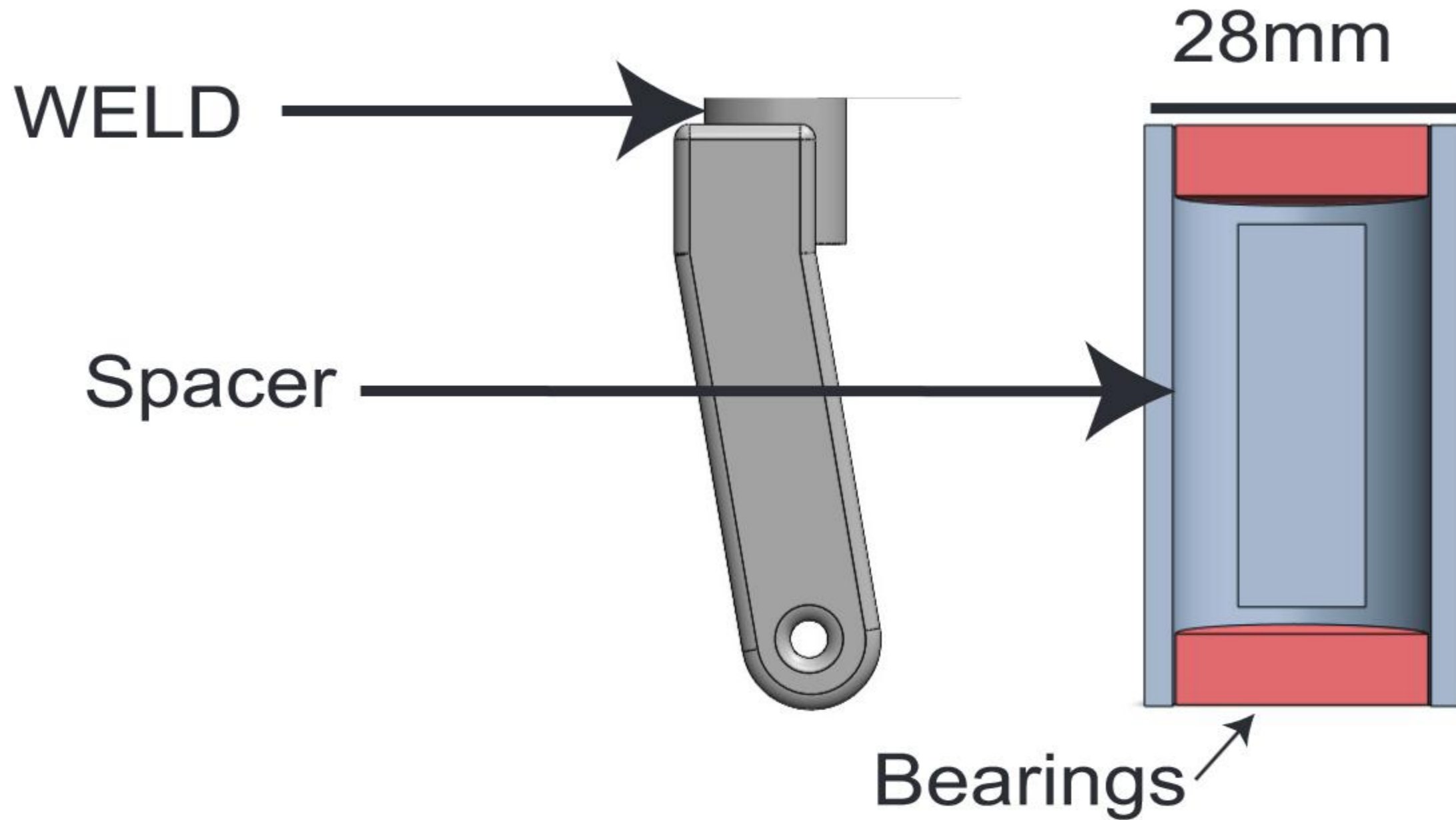
Step 5

WELD



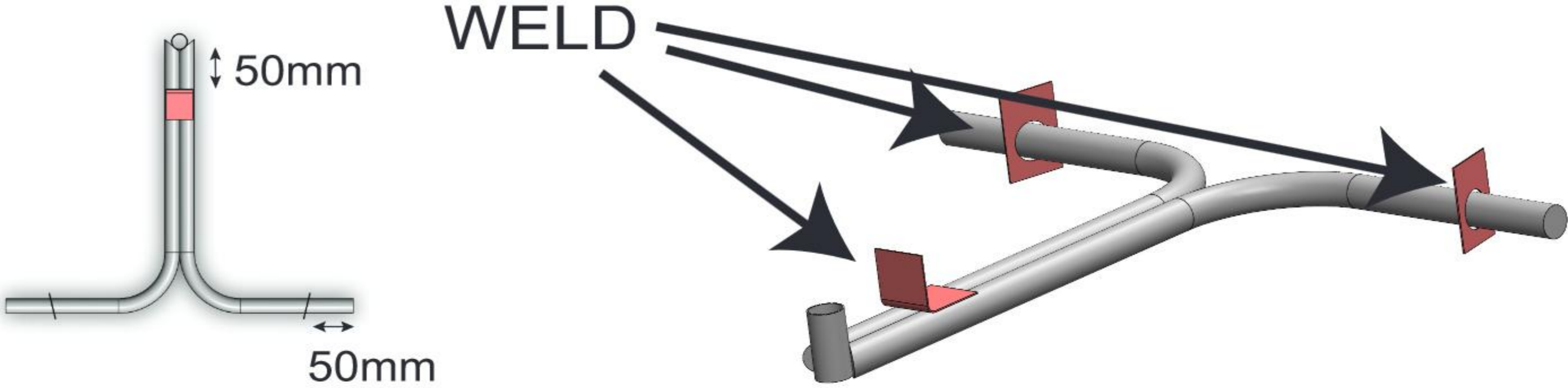
Take the 45 mm long pipe and connect it vertically to the area shown

Step 6



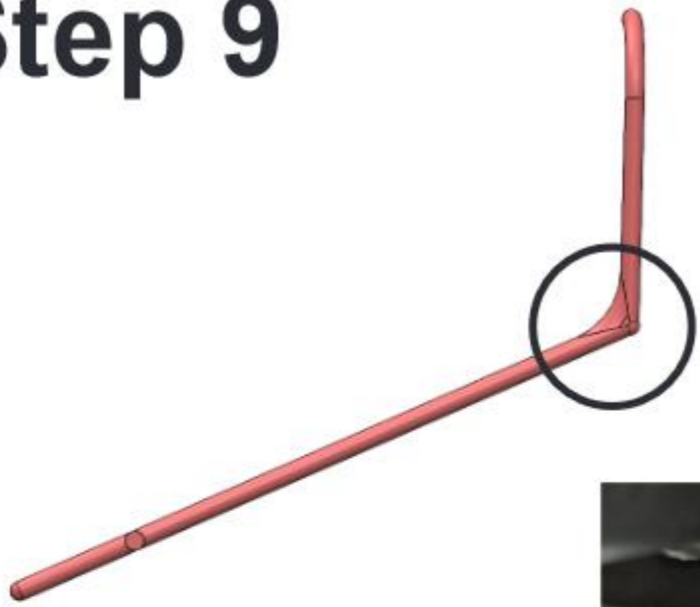
In order to connect the axis correctly, you need to take two stabilizers that can be found in X-size skateboards
In order to correctly place the bearings, you need to take a 28 mm thick pipe and a spacer 31 mm long and 9 mm thick in order to prevent the radiators from falling inside the pipe

Step 8

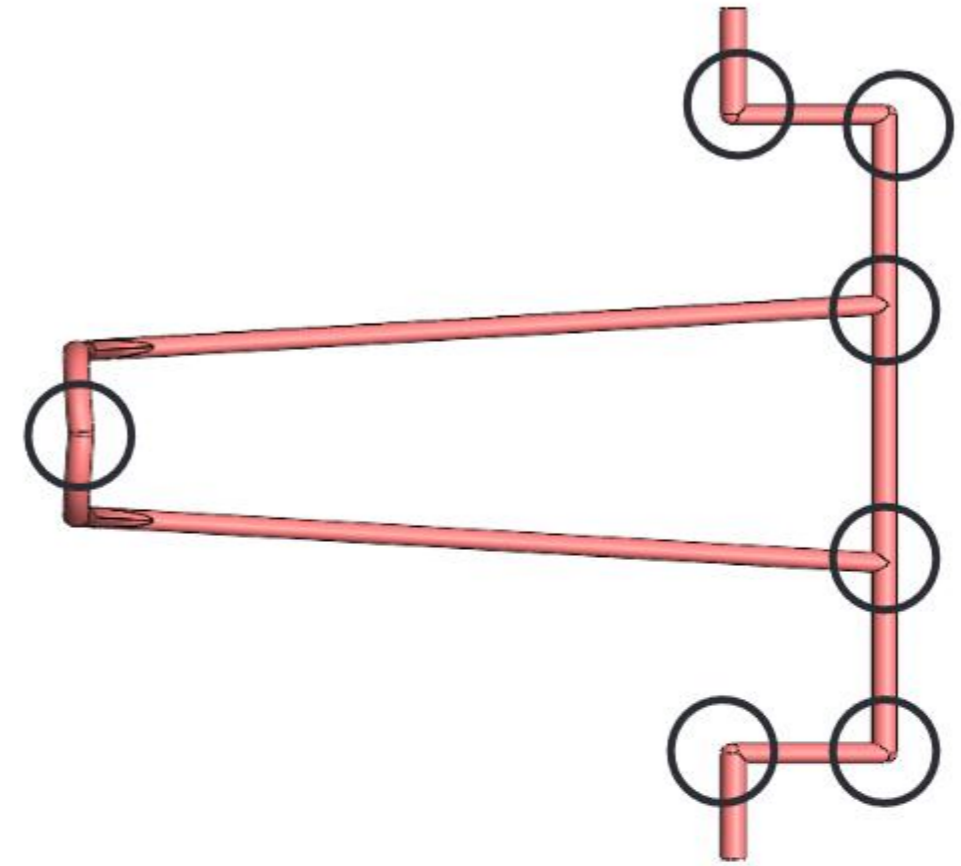


Take a metal segment 3 mm thick and 40 mm wide. Cut to a length of 60 mm and bend to 90 degrees

Step 9



WELD



In order to make the brake, you need to take the 13 mm pipe and cut it according to the list of materials and weld it according to the description.

It is important to ***pay attention**

to connect the 90 degree joints inside

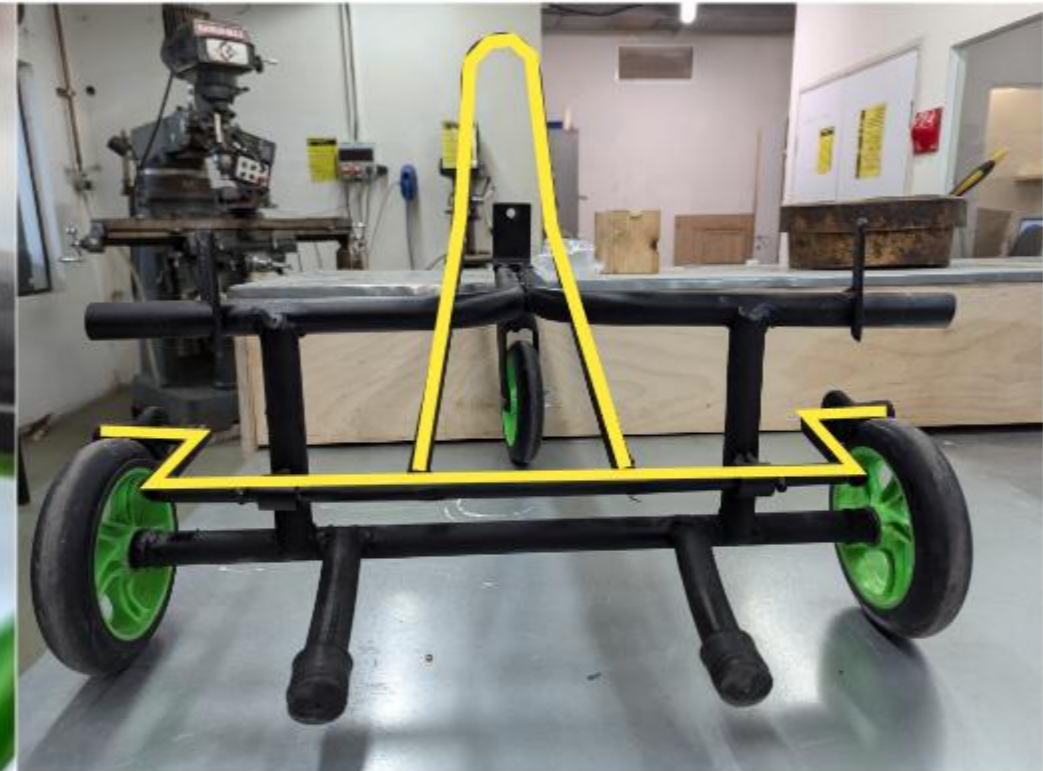
the holes for the brakes that we made beforehand.

The bending rod should be connected after the joints

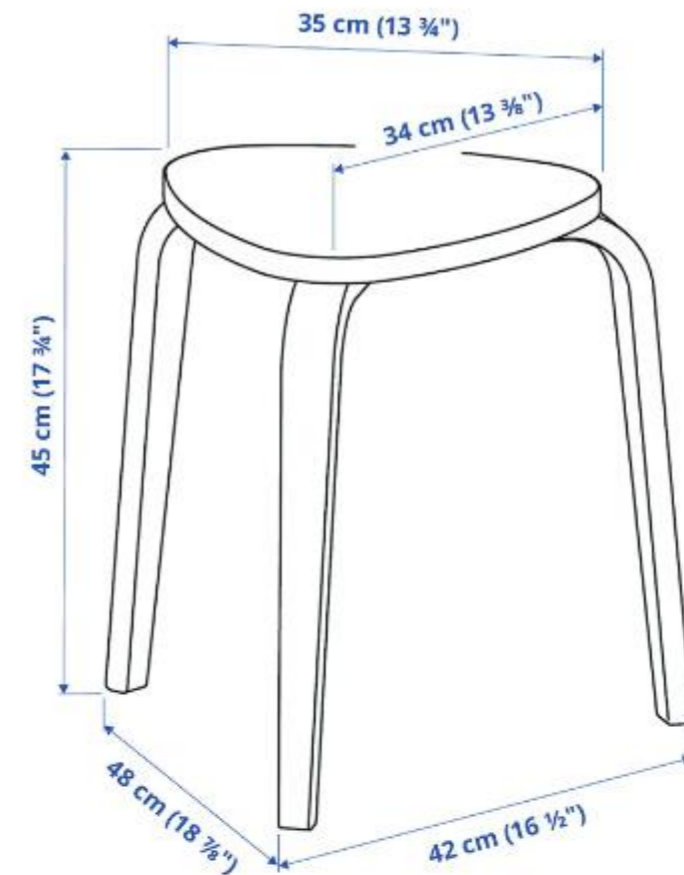
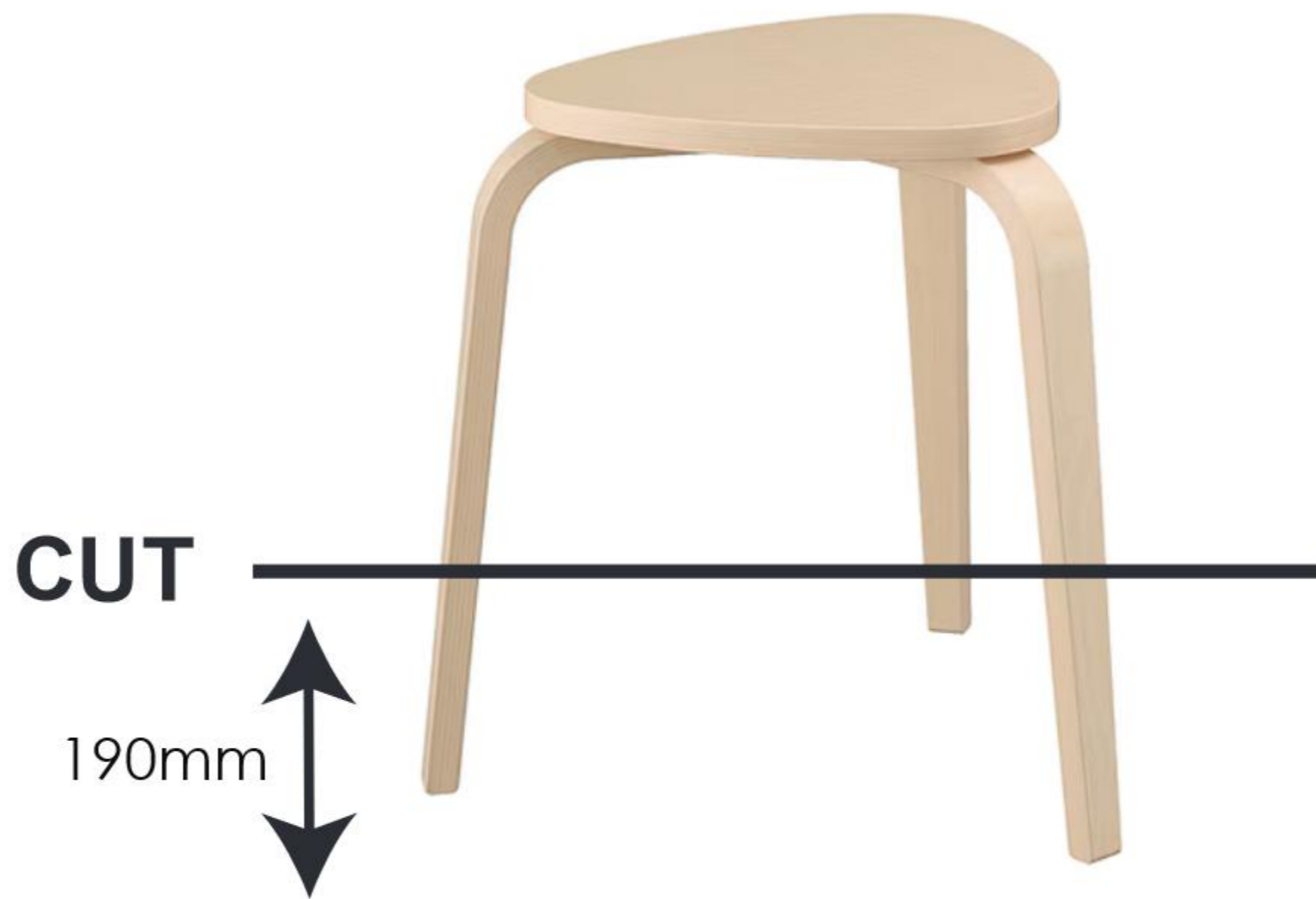
of the brakes are welded.

The bending of the handle should be done at 75 degrees or by direct welding with bending not available

Stop mechanism



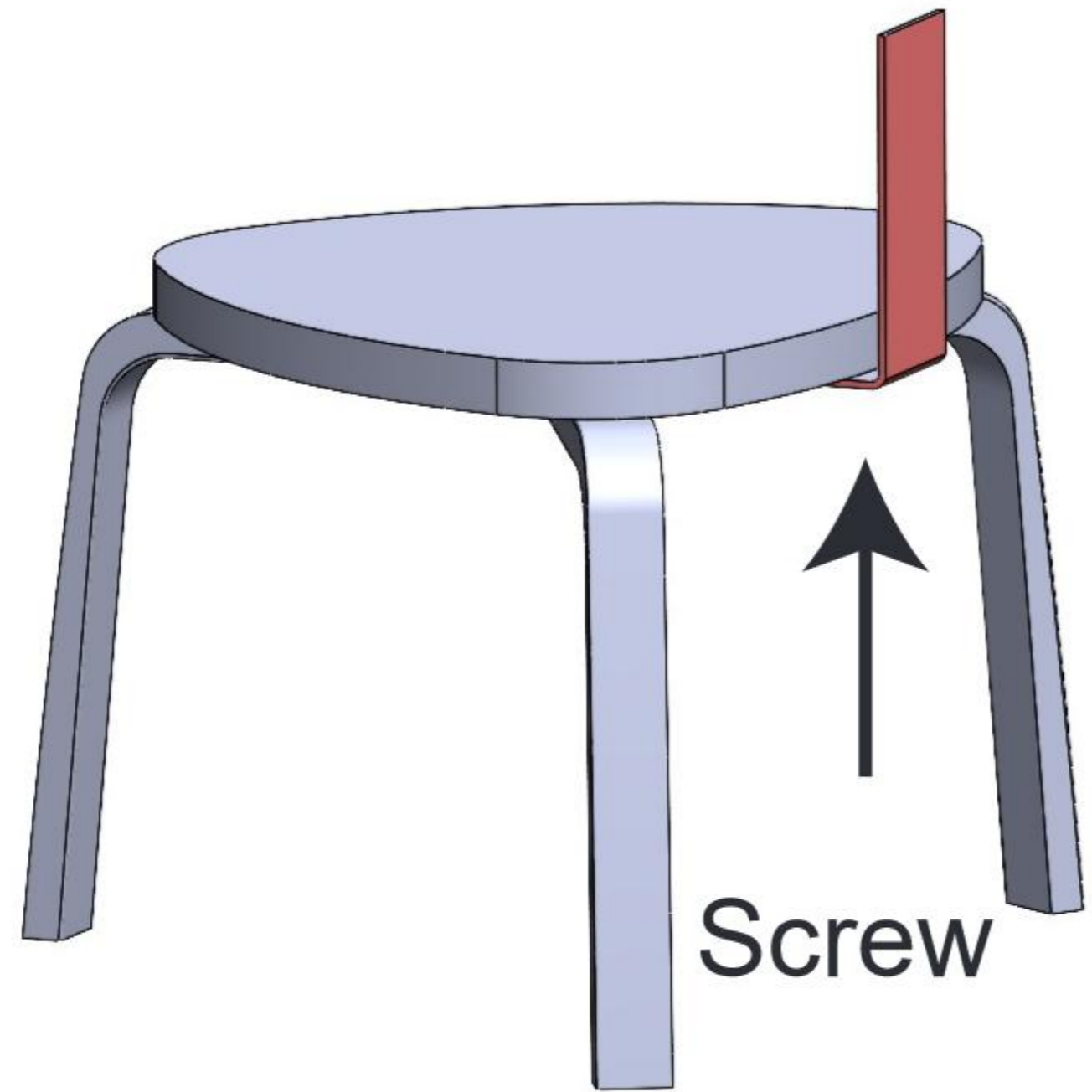
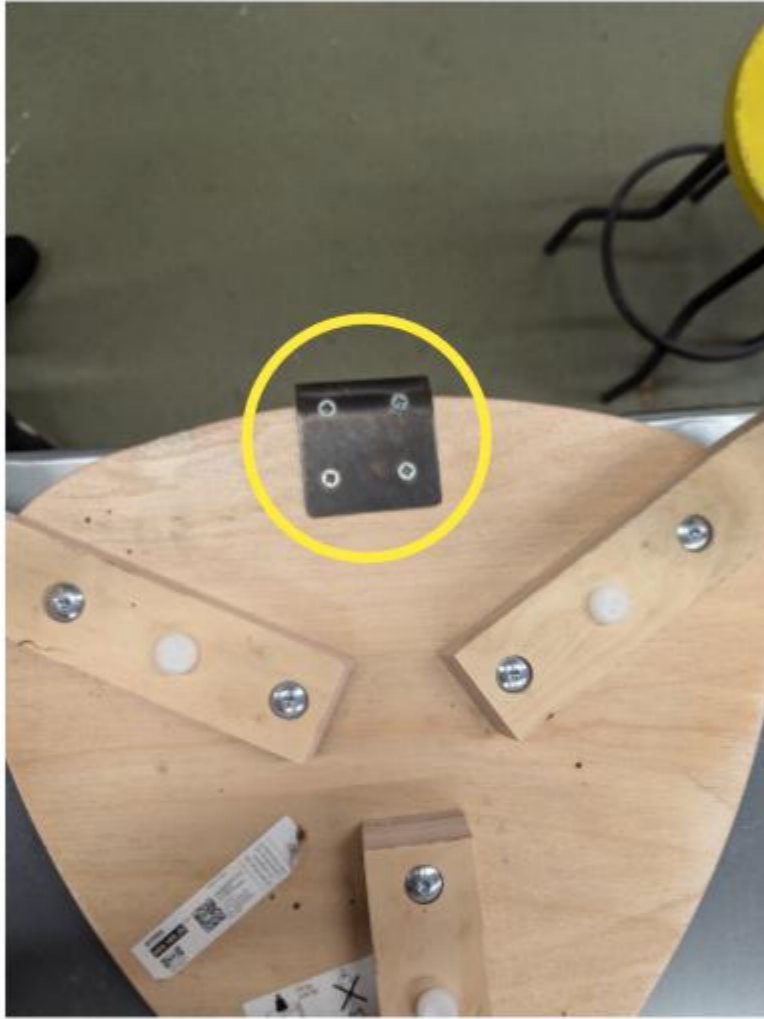
Step 10



After you have cut the legs, take the metal segment 3 mm thick, 6 mm wide, 230 mm long, drill 4 holes in it from each corner and bend it to 90 degrees.

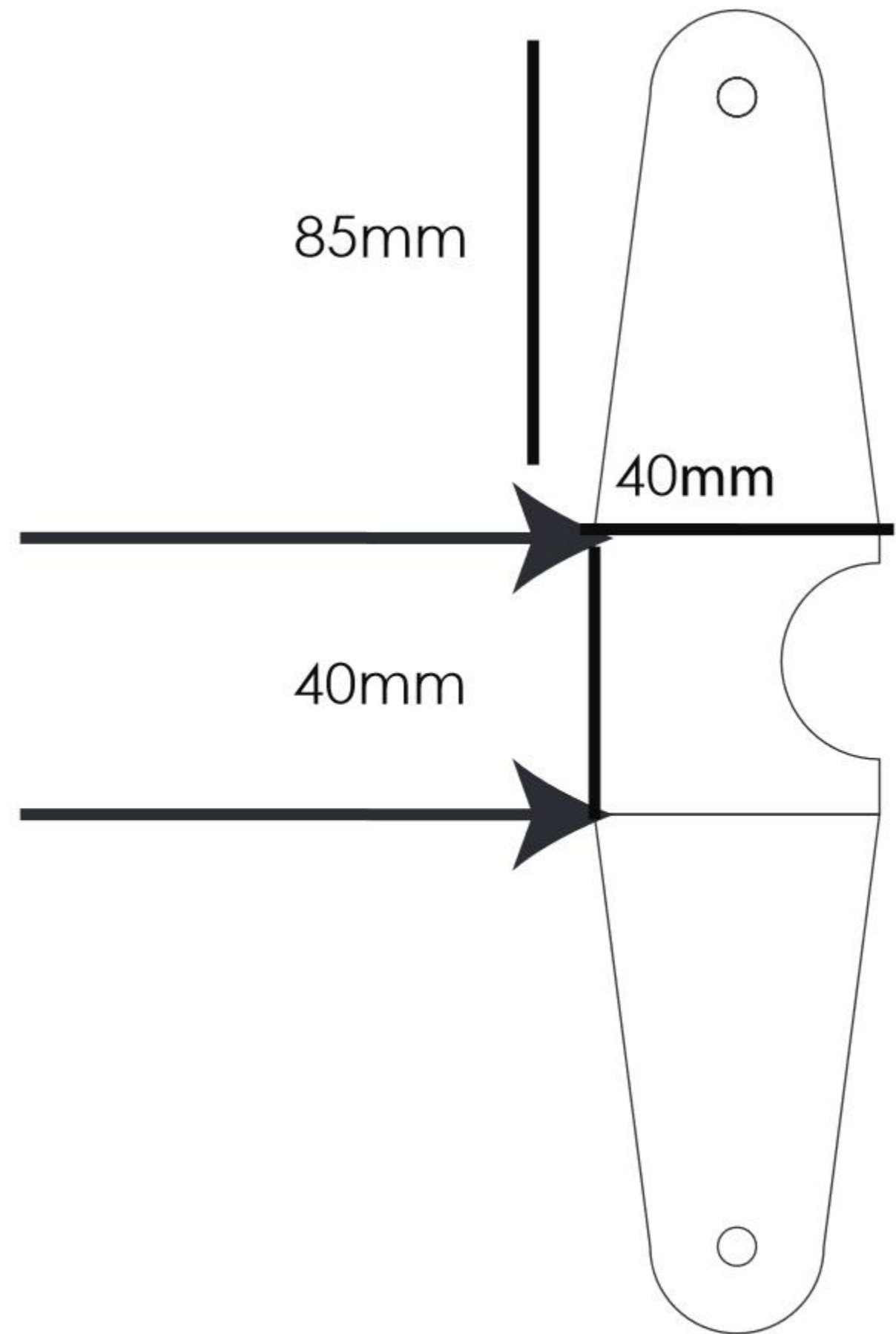
Then, screw the segment to the bottom of the stool

Step 11



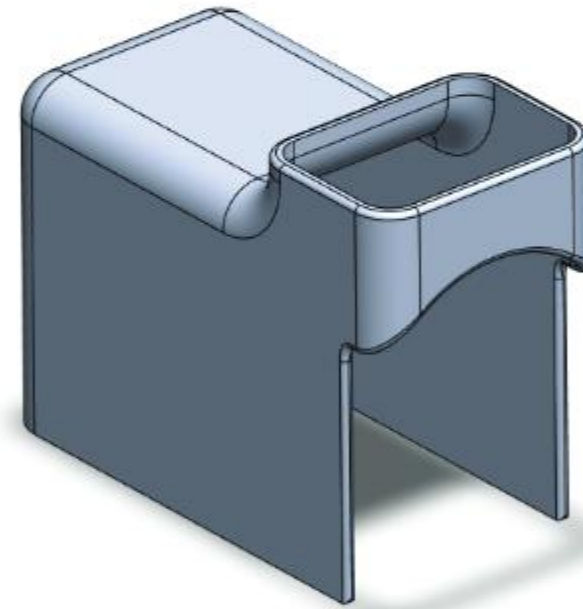
Step 12

DXF



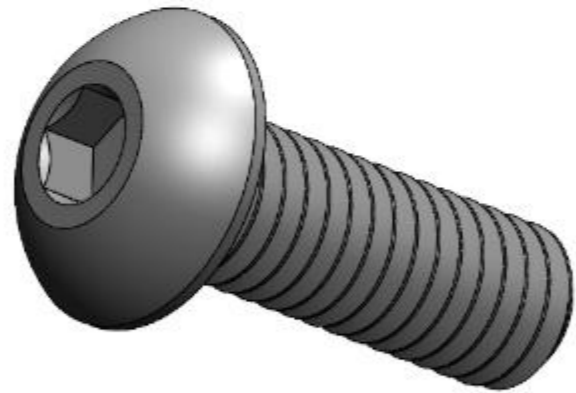
In order to create the front fork, you need to cut a 4 mm thick segment in a laser cutting machine in the following layout and bend it to 90 in the marked areas

Step 13



The following parts can be downloaded in the attached file.
Print the support in PLA and the other parts in TPU in a 3D printer

Step 14



After everything is welded
The wheels can be attached with Brass Button Head Hex Drive Screws

LINKS

The following products are listed on the website

