

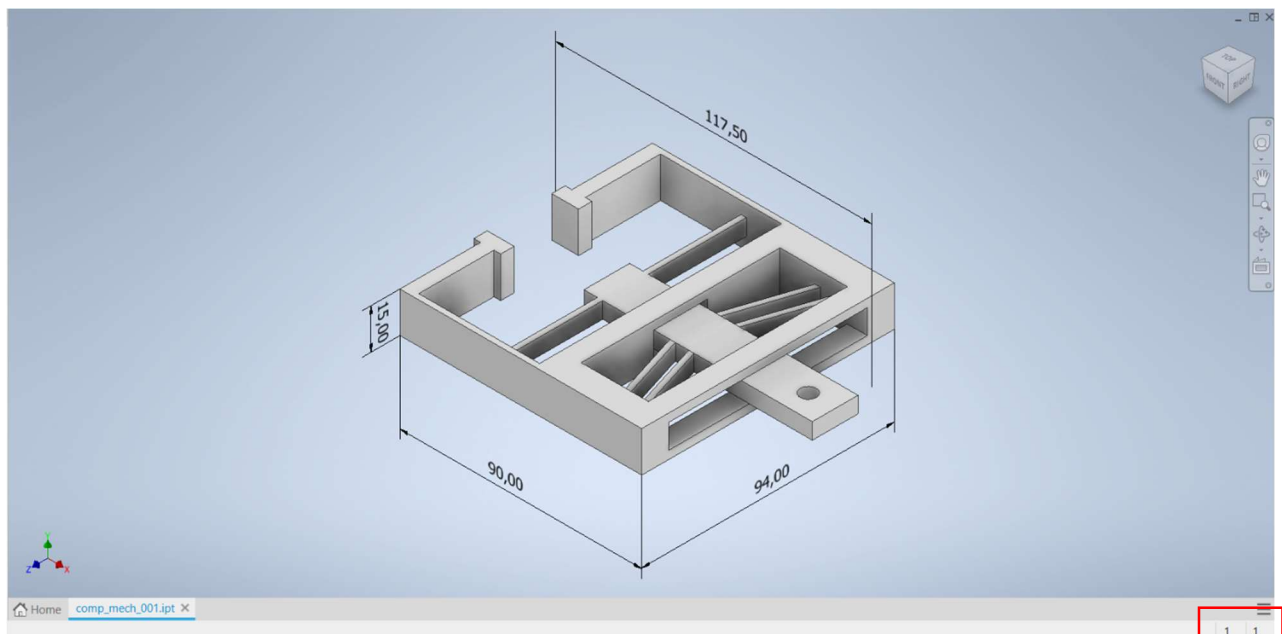
Workshop – 1

Aim:

To design and manufacture a compliant mechanism and analyze the mechanism quantitatively or qualitatively.

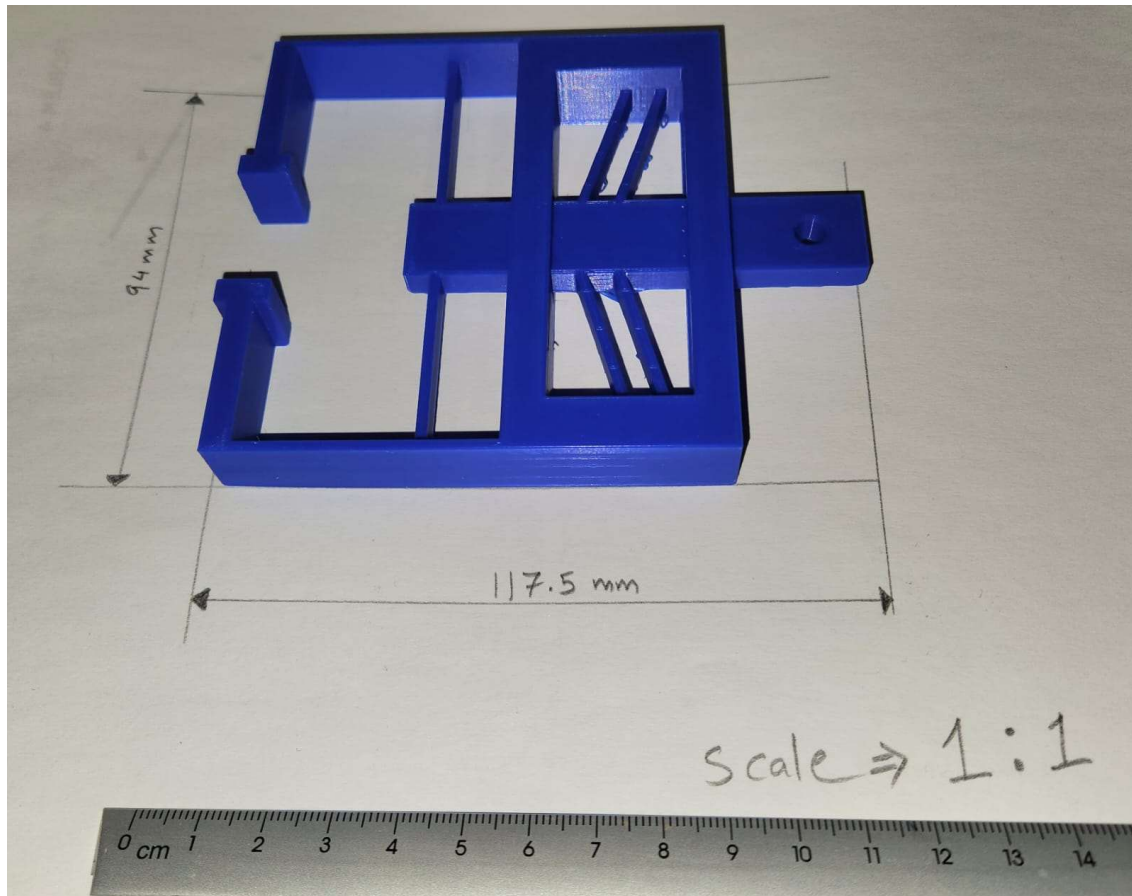
Design and Manufacturing:

The compliant mechanism was designed in Autodesk Inventor 2023 and 3D printed using a FDM 3D printer using PLA material. As can be seen in the below cad part drawing the overall dimensions of the part were 117.5mm X 94mm X 15mm.



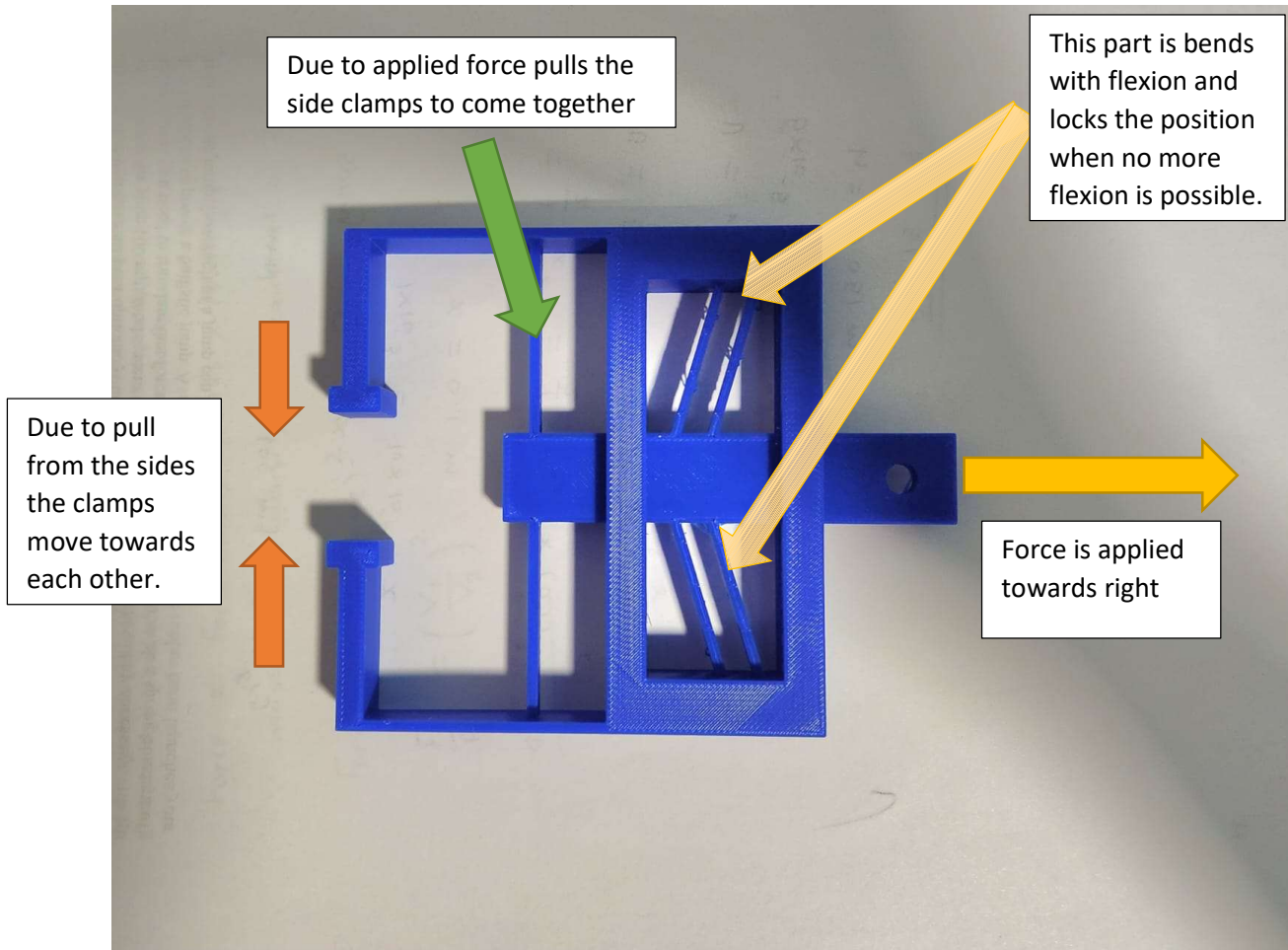
Scale => 1:1

After 3D printing the designed part was obtained as follows:



Analysis:

Due to poor estimation in considering the total displacement of the mechanism and stiffness of the material the obtained mechanism did not work out as intended. The expected behavior of the mechanism is explained as follows.



As explained before the mechanism didn't work as expected but with few modifications in design it can be made to work as intended. The changes to be made are explained in the next image.

