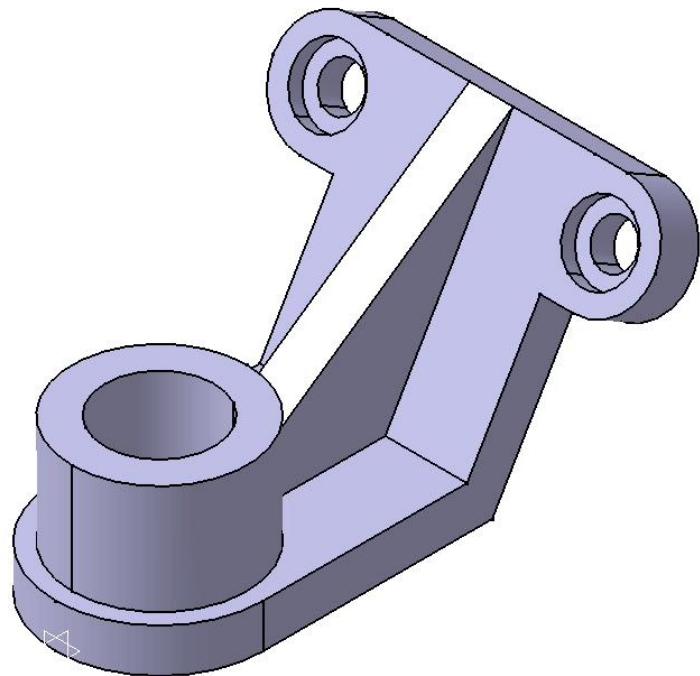


# PART DESIGN (STIFFENER COMPONENT)

From this diagram we have to know,

- ✓ Selection of plane
- ✓ Sketching the line and circle
- ✓ Constrain the dimension
- ✓ Angle dimension
- ✓ Exit work bench
- ✓ Pad open line profile
- ✓ Mirror extended
- ✓ Mirroring 3D object
- ✓ Tritangent fillet
- ✓ Concentricity the profile
- ✓ Project 3D plane
- ✓ Stiffener forming
- ✓ Hole definition
- ✓ Counterbored hole



CATIA v5 software is used to modeling this object.

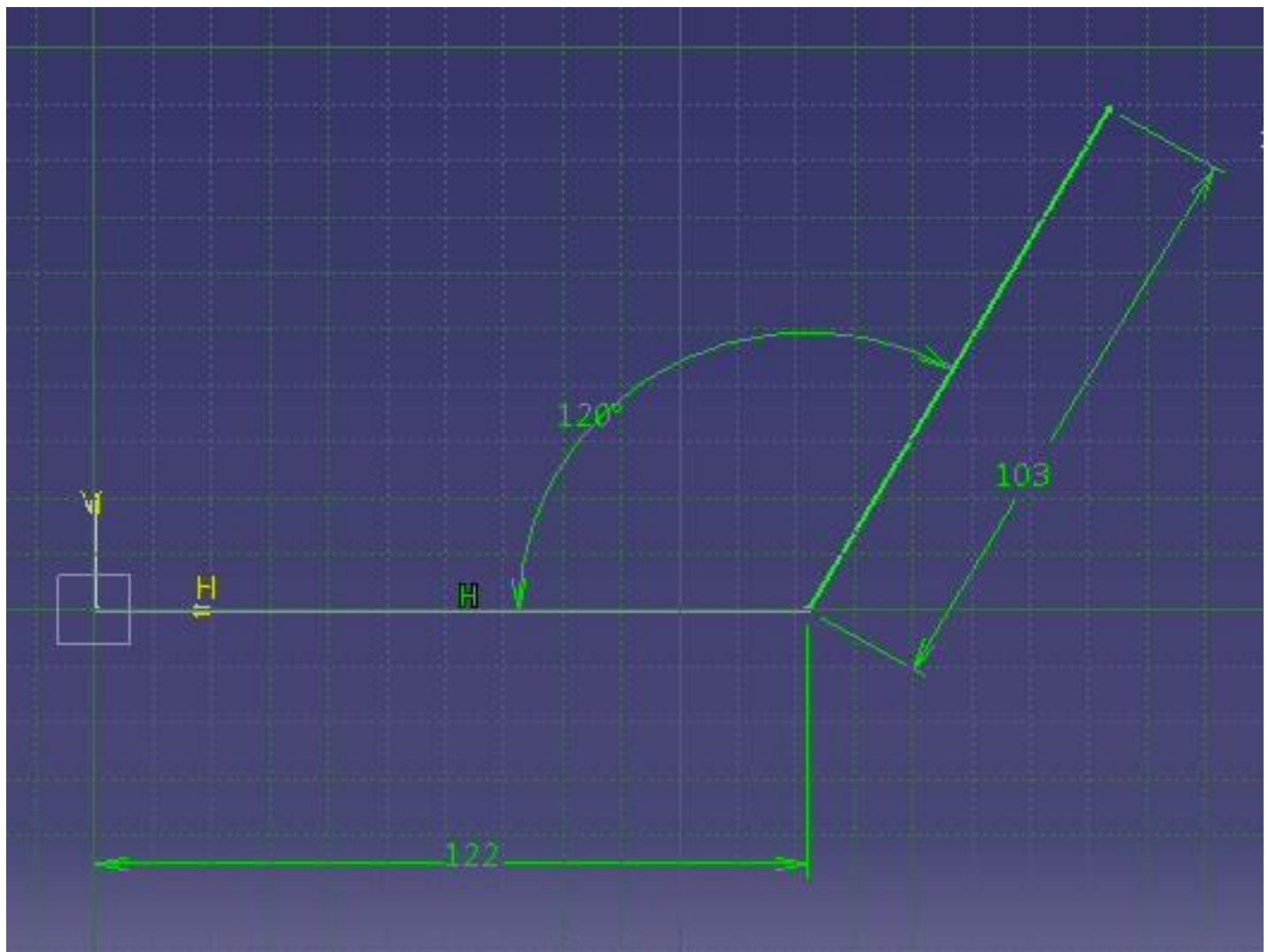
Prepared

**Veerapandian.K**

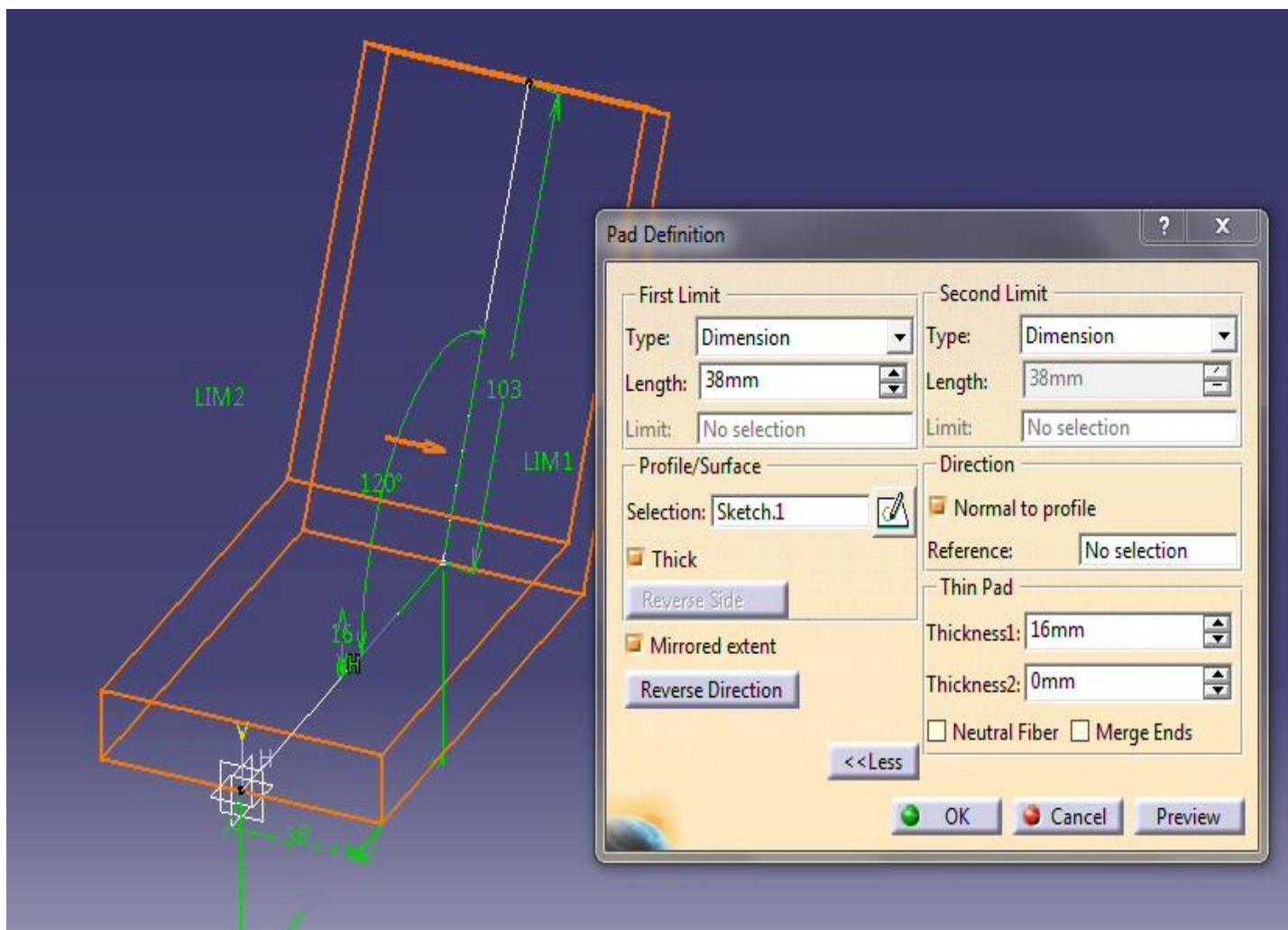
Mechanical Engineering. SRVEC

## WORKING STEPS

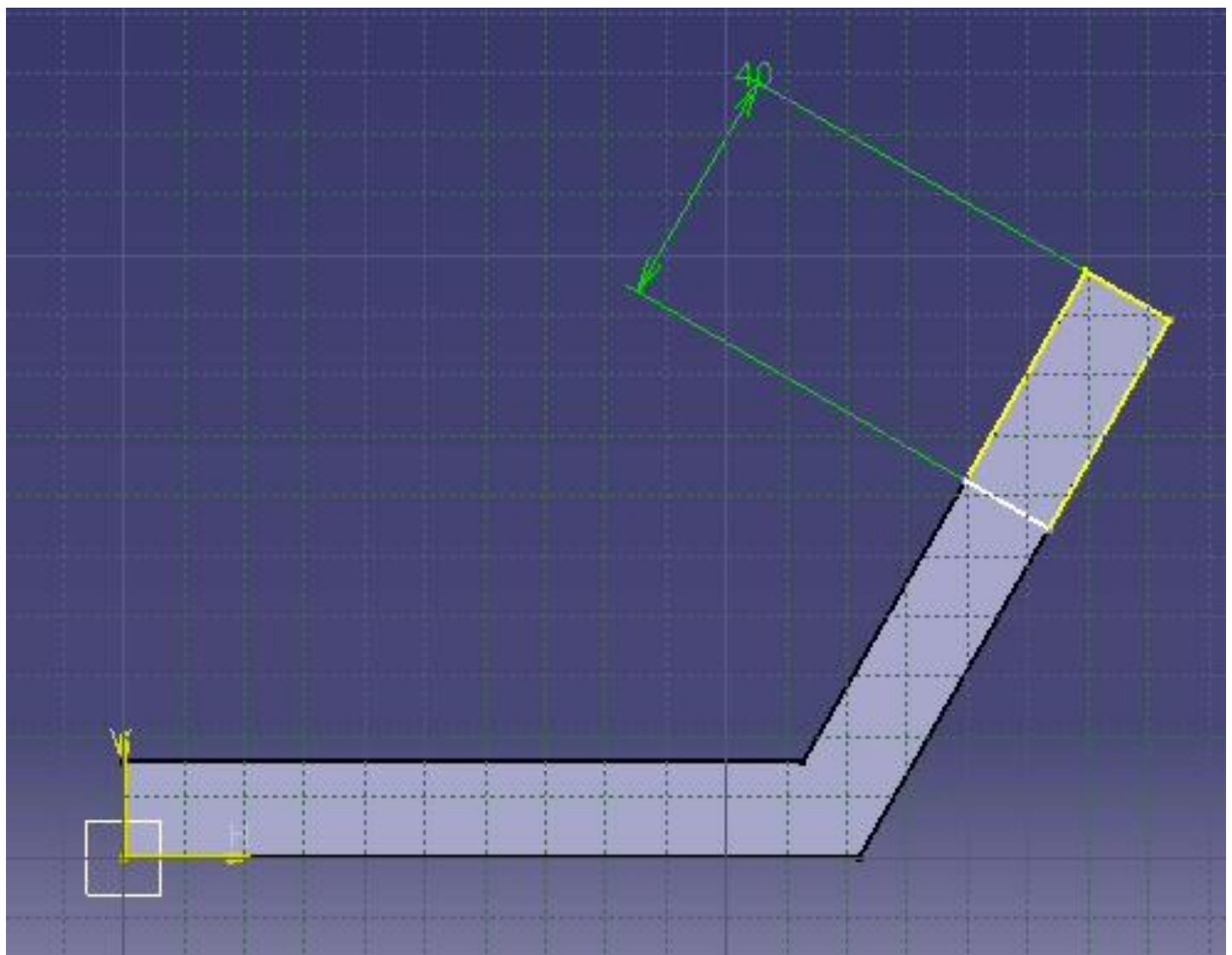
- Open the CATIA software in the system.
- Start /mechanical design/part design
- Select the ZX plane.then select sketch to draw the diagram.
- Give line dimension 122mm,103mm for other one. $120^{\circ}$  should be the angle between them.



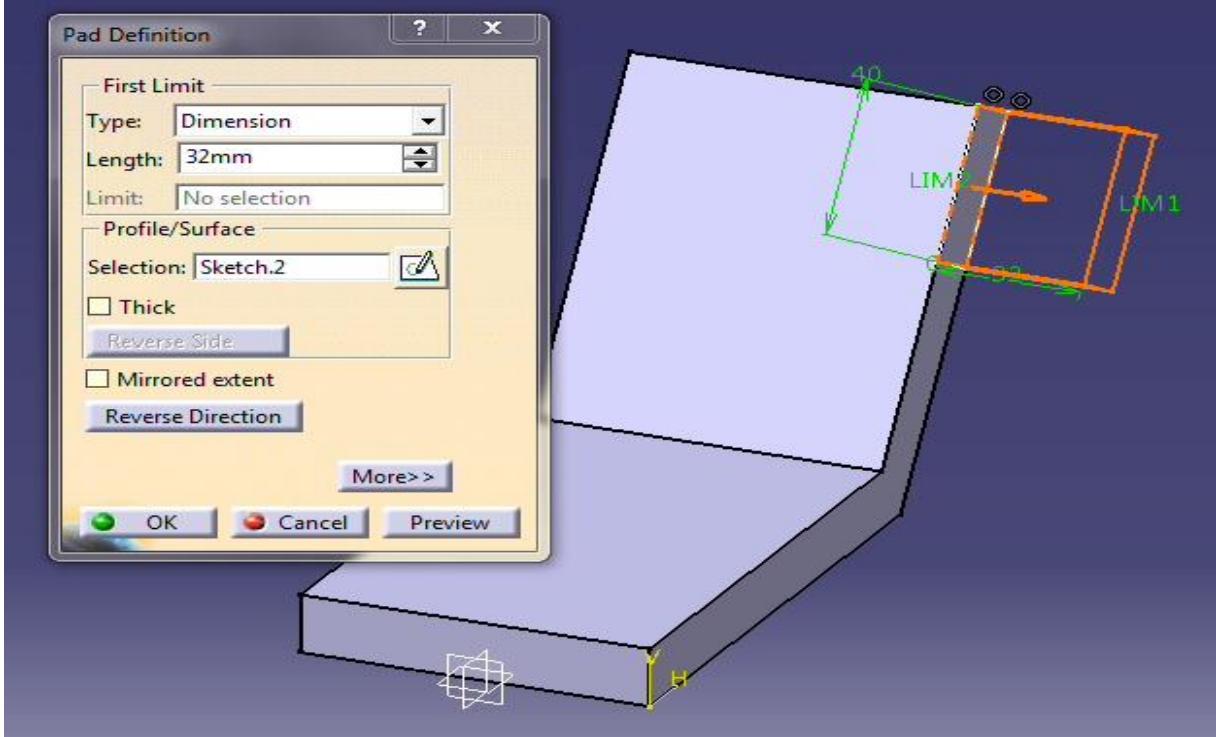
- After completion the above sketch give exit work bench  ..
- Then give pad for the drawing to be executed...There being a error occurred because open line profile cannot to be pad..so give thick and get more option in the dialogue box. Select mirror extend in the dialogue box.
- After completion of value given put ok see the pad profile. Like below as



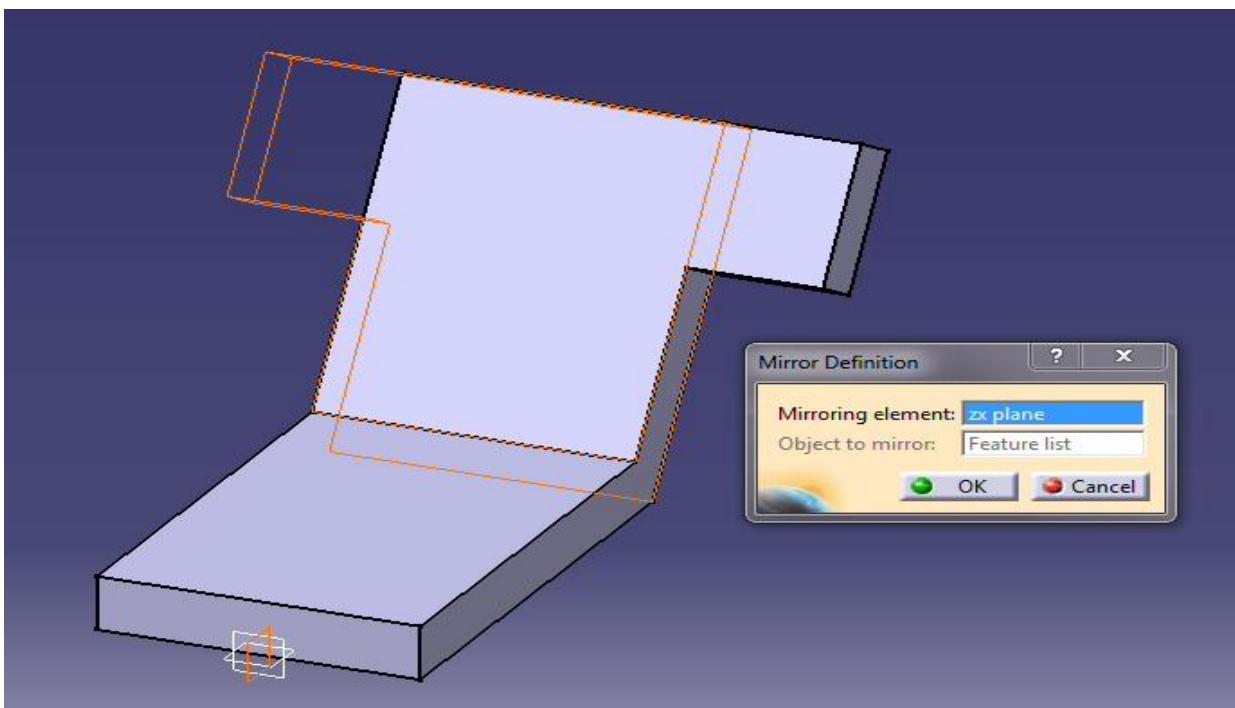
- If you perfectly complete the sketch you now select the ZX plane.
- Select the pad 1face in the ZX plane. Select the sketch to draw the projected profile lines for the object..
- Draw a cross line to form a closed profile. Give dimension as 40 mm from edge to the line. Trim the other portions to form profile.
- Exit the work bench



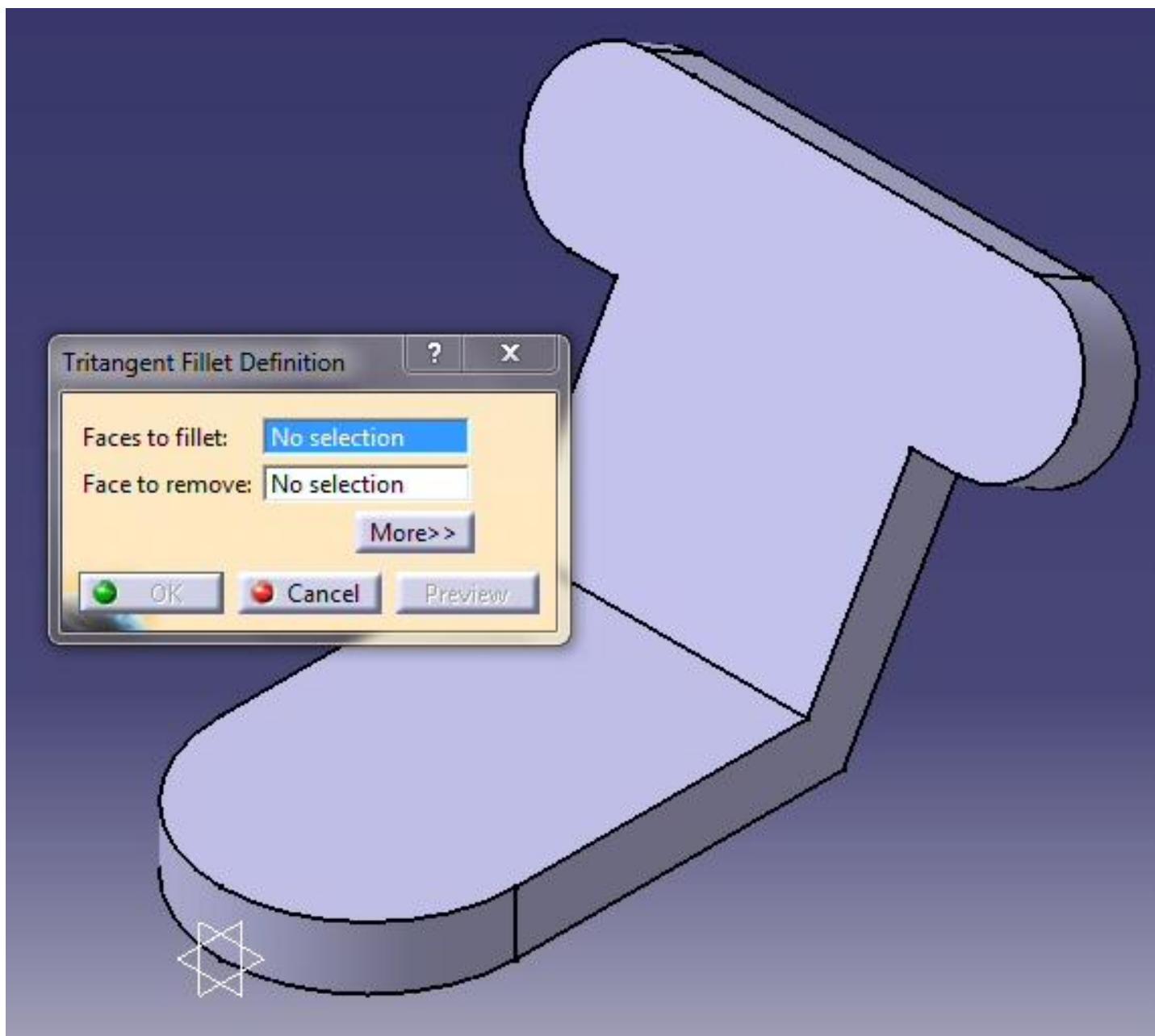
- Pad2 the drawing profile as 32 mm length as given below.



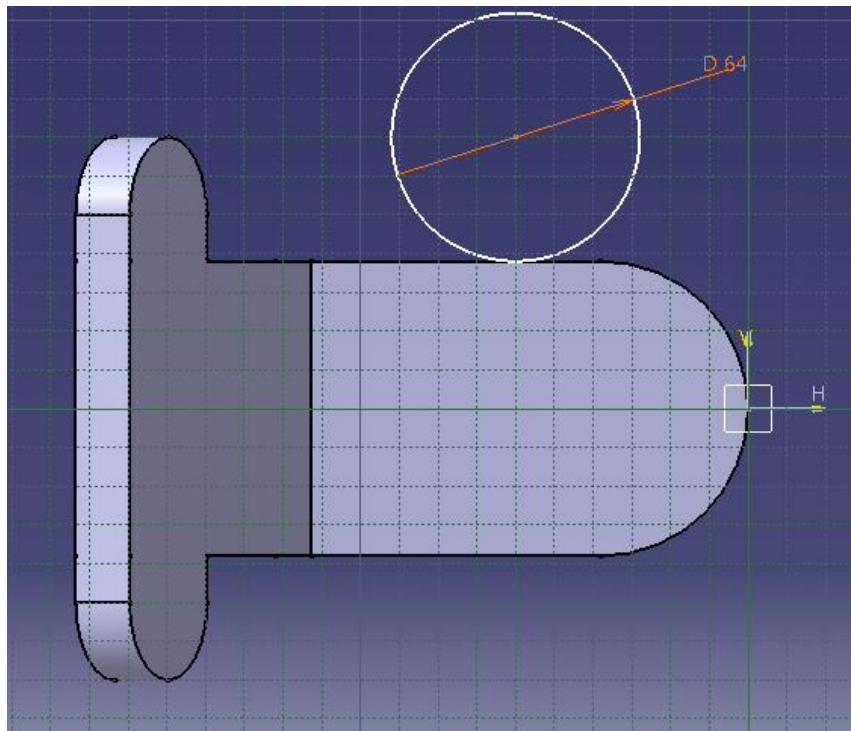
- After the pad 2 in right way you have to make same on the next side.  
This makes several so we go to mirror the pad.
- Select ZX plane. Put mirror to the pad 2.



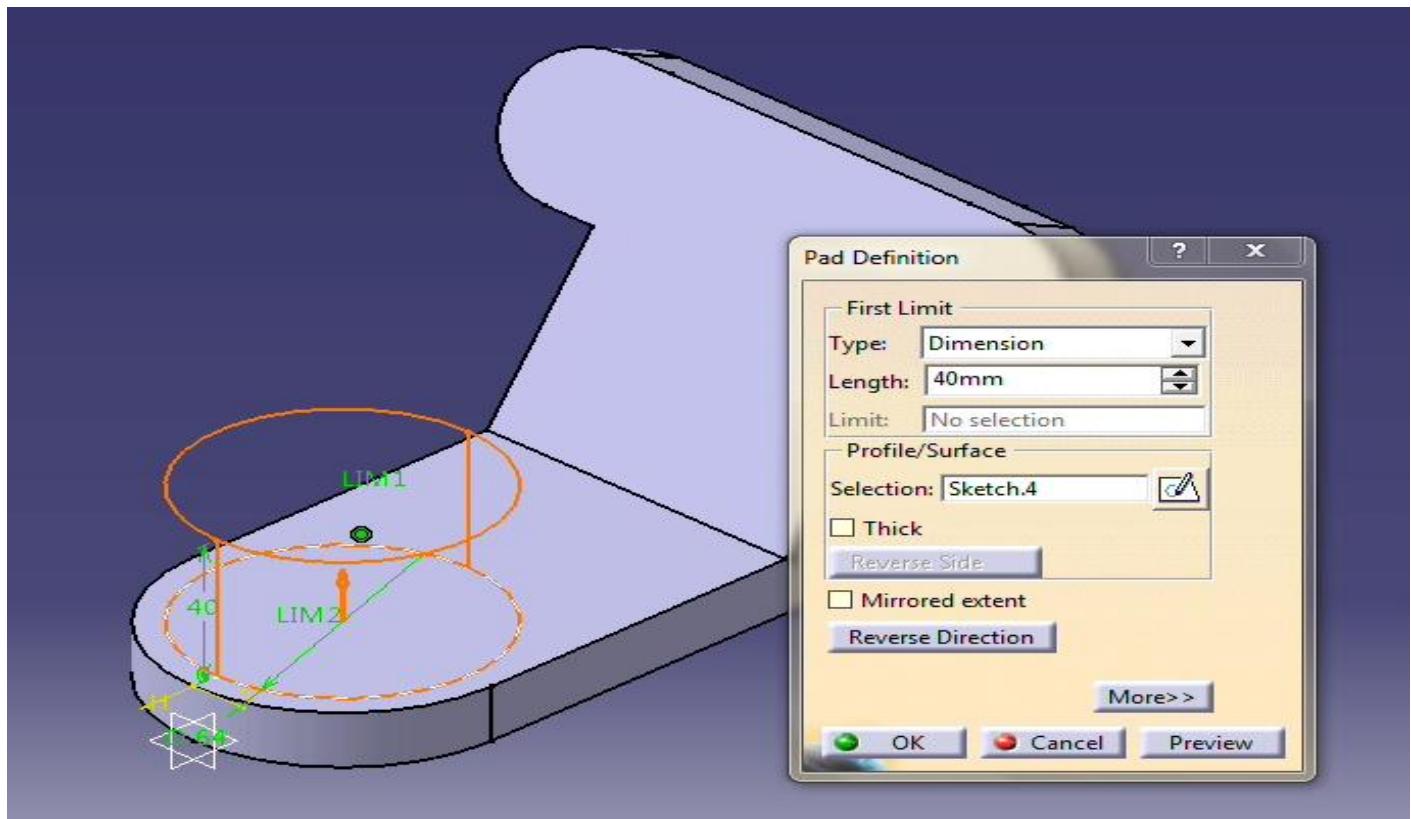
- Then select the tritangent fillet option to draw the curved profiles like as below.
- There be simple guide shown in the dialogue box open. So the select the appropriate face to make the tritangent fillet.
- Make the three circle projections in the needed portion.



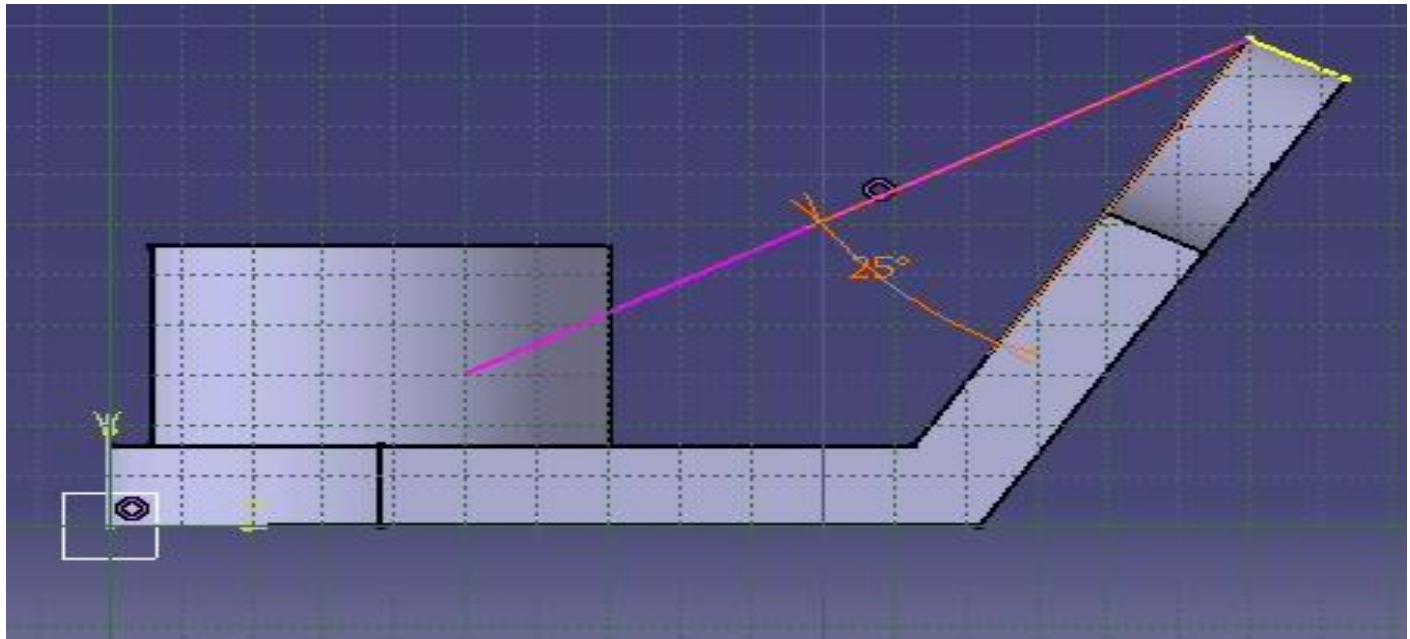
- Then draw a circle in out as the diameter of 64 mm. give concentric to the pad 1 face.



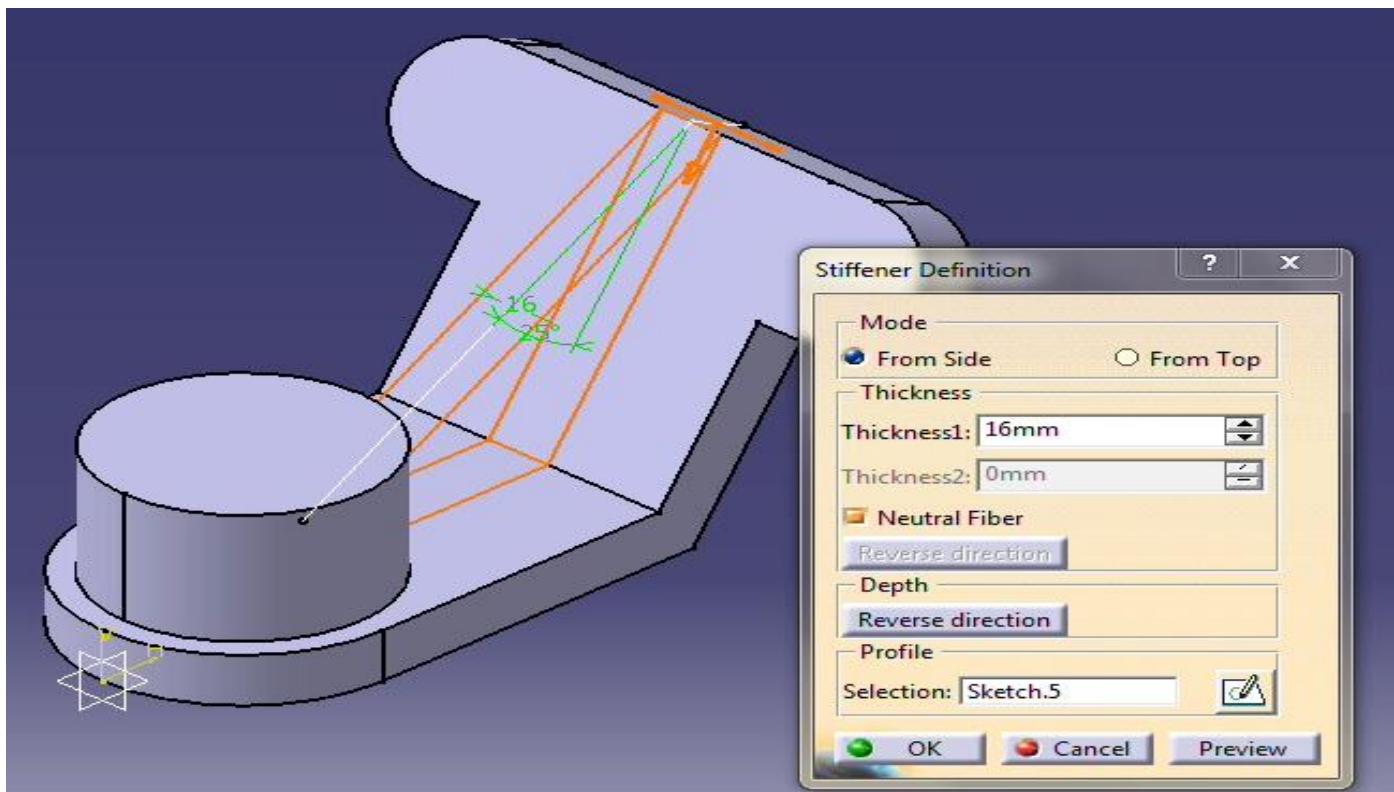
- Pad the circle to the length of 40 mm as below.



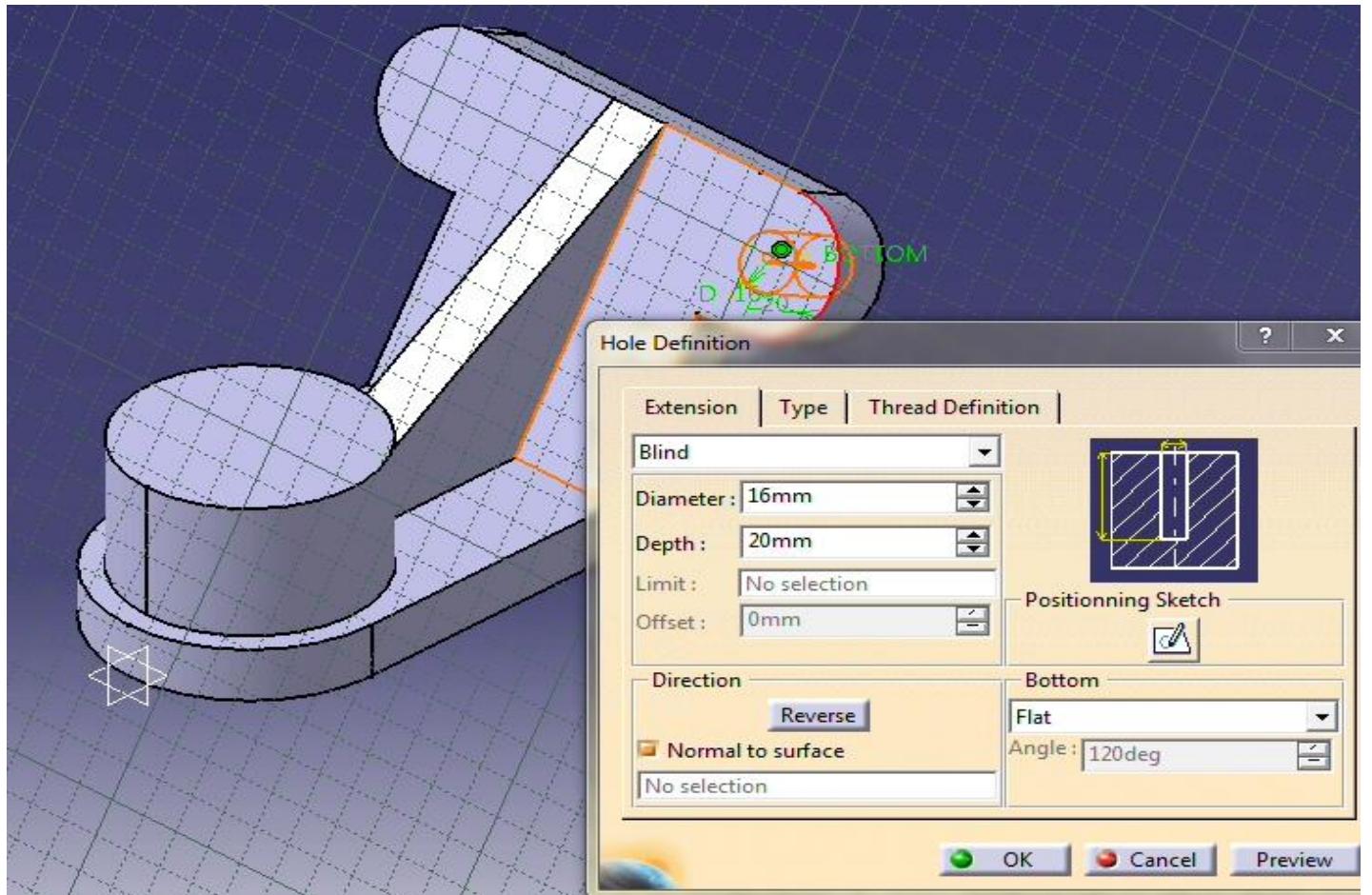
- Then select the ZX plane and select the face to regarding plane.
- Select the top edge put project 3D command. Draft the line via the point to make slope profile. Give angle  $25^{\circ}$  to the line.



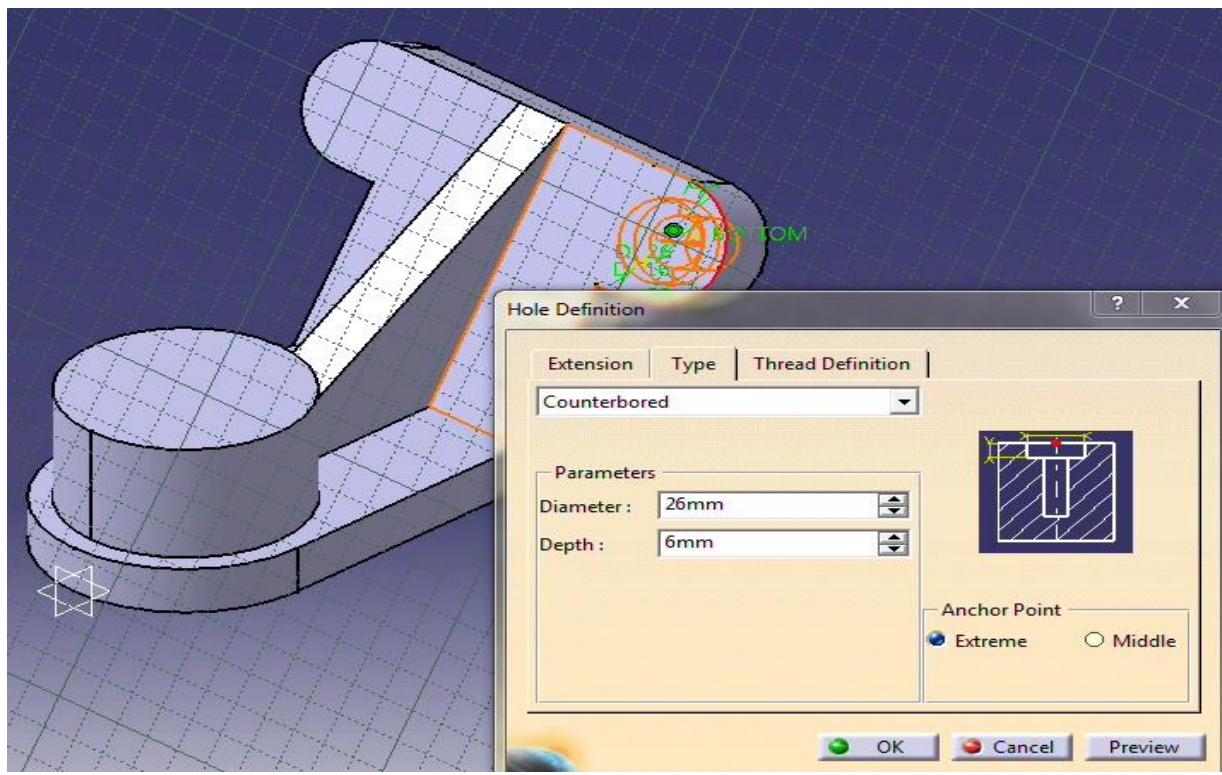
- Select the stiffener to make the slope pad easily.
- Give thickness of the stiffener should be 16mm.



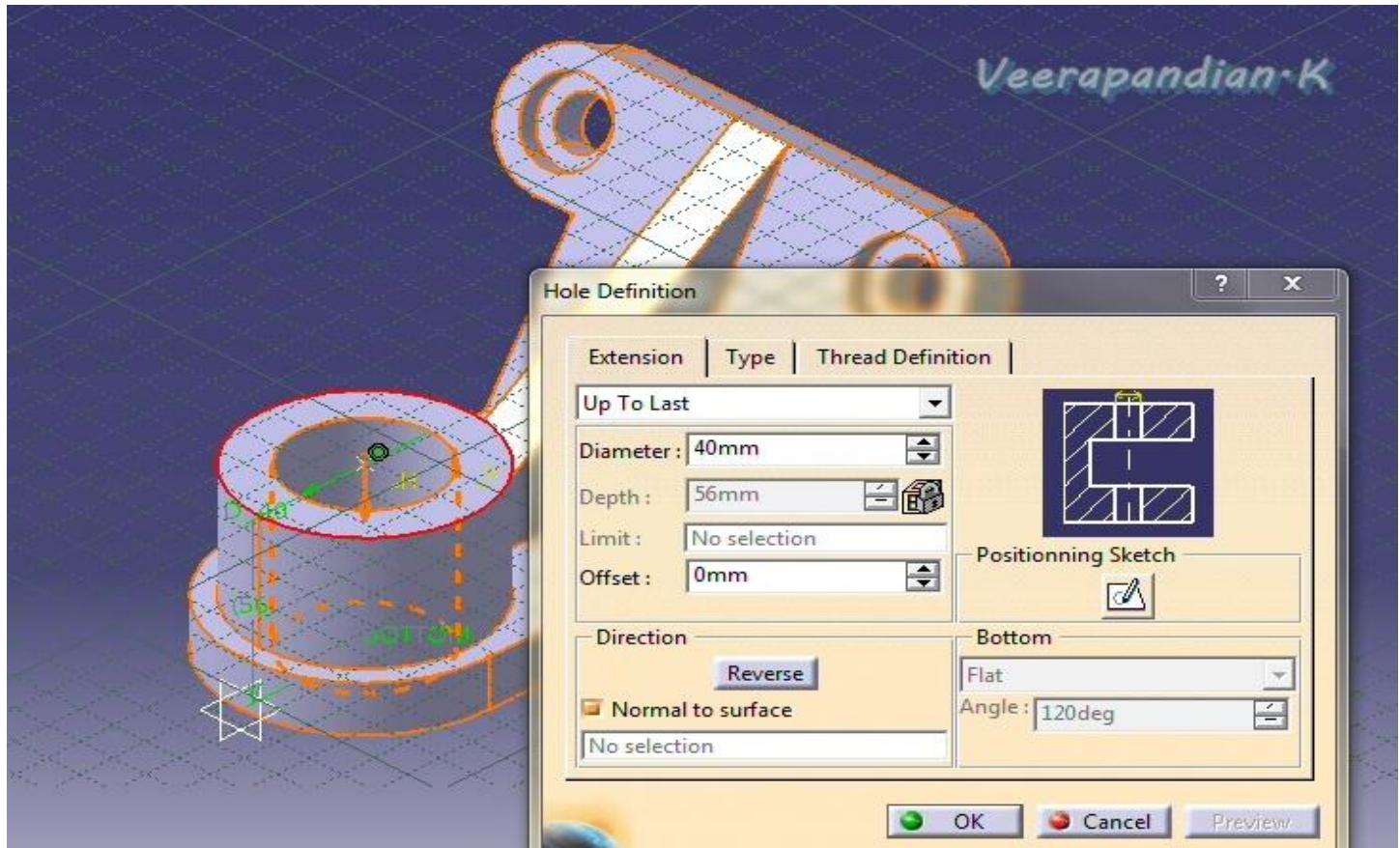
- After getting stiffener go to the face selection for hole drill required.
- Give hole diameter make the counter bored hole. Give the proper dimensions shown in the diagram.



- Hole definition dialogue box show three taps. They are extension, type, thread definition.
- We should understand the type of holes in nature. So we go to required hole from type tap menu.



- Finally the big pad circle need the hole making. Select the hole icon put diameter as 40mm remove material up to last.
- The given diagram completed successfully.



## DIAGRAM

