

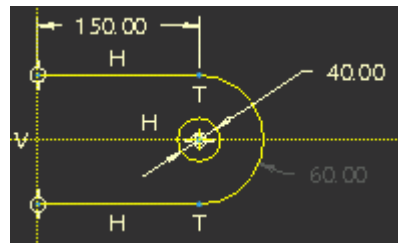
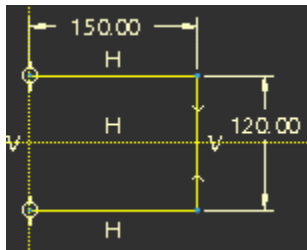
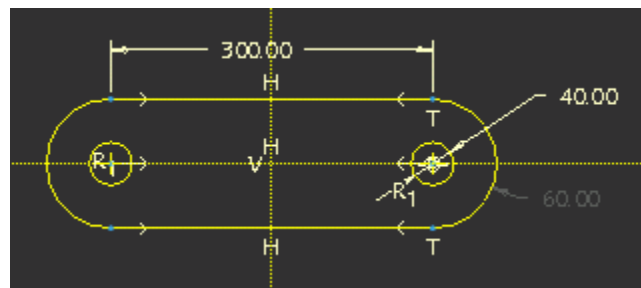


U-BRACKET



- File > Open > New File > Name it U-Bracket > OK
- Use the centerline tool  to draw a horizontal and vertical line on the page.
- Use the single line tool and draw three lines to match the sketch. Use the constraints tool and make the vertical line symmetric about the horizontal centerline. Use the dimension tool and set the dimensions to the indicated values. Now create the arc by using the “Create an arc by picking its center and end points” tool . Delete the horizontal line. Place the 40 mm diameter circle or 20 mm radius as indicated. SAVE

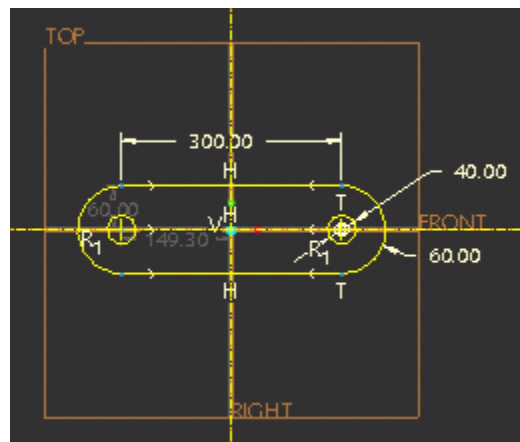


- Now select the entire image and mirror it about the vertical centerline. Your image should now match the one below. SAVE

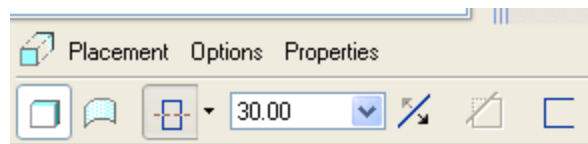


- After the sketch is complete it will be transferred to the part mode and extruded.
- Go to File > New > Select the Part button (name it U-Bracket) > OK.
- Before the part is started the measurement style must be changed to metric. Go to Edit > Setup > Units > millimeter Newton Second (mmNs) > Set > Interpret Dimensions (for example 1” becomes 1 mm) > OK > Close > Done.

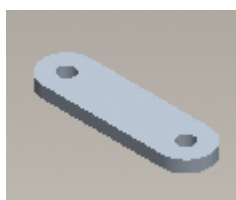
- Select the extrude button  > Placement > Define > Choose Top as the sketch plane > Right Plane as the reference facing right > Select Sketch.
- Now go to the top of the screen and select Sketch > Data from File > File System > Find and select the U-Bracket Sketch. When you drag the cursor onto the screen it will have a Plus sign trailing it. Place the point of the arrow on the X,Y intersecting point and left click. When the scale rotation box opens in the top right corner, change the scale to 1.
- If necessary use the dimensioning tool  and set the sketch so it is now centered on the X,Y intersect point. It should match the image below. SAVE



- If the sketch is complete and centered, select the blue check mark to accept the design and bring it into the extrusion mode.
- Once in the extrusion mode the design should turn yellow in color. Select symmetric about the workplane and a distance of 30 as indicated below.



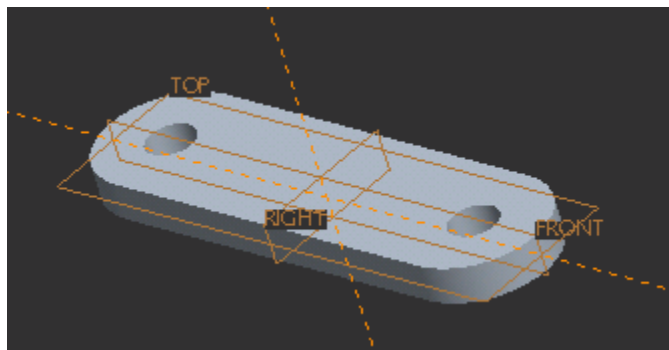
- Preview the design using the eyeglasses and if complete accept it by selecting the green check mark. Your design should match the following. SAVE



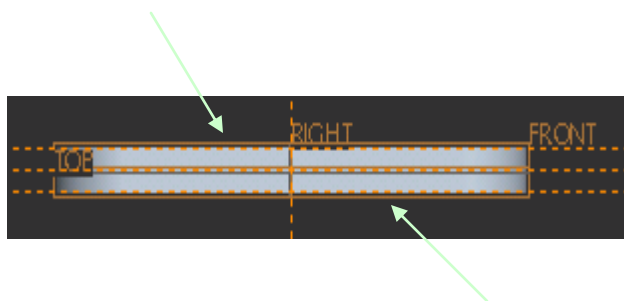
- We will now add the arched section to the U-Bracket.
- Select the extrusion tool, Placement, Define, sketch plane will be Front and reference will be Right, Right.



- By selecting the front workplane, you are actually sketching in the middle of the section. This will allow you to extrude the next section symmetric about the workplane.



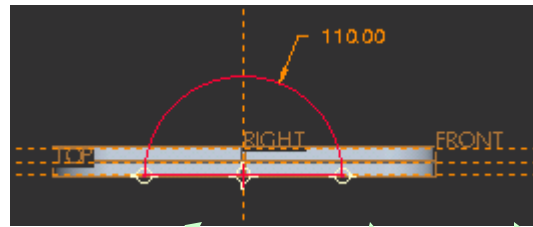
- Go to Sketch > References > Select the Top and Bottom Edge of the Object. This function will help you when completing the remainder of the U-Bracket.



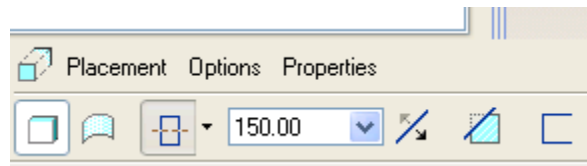
- Select the “Create an Arc by Selecting the Center and Endpoints”.



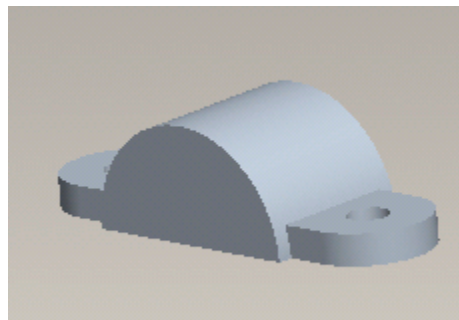
- Start the arc by selecting the bottom center point, move the cursor to the left, then draw the top section of the arc.



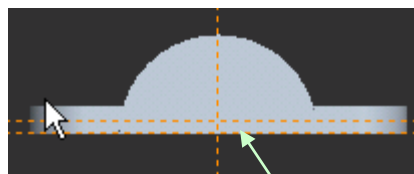
- Now dimension the arc to have a Radius of 110 or a diameter of 220 and connect the endpoints with the single line tool to create an enclosed sketch.
- Accept the sketch, choose symmetric about the workplane and a distance of 150.



- Preview the sketch with the glasses, if it matches the design below, accept it with the green check mark. SAVE

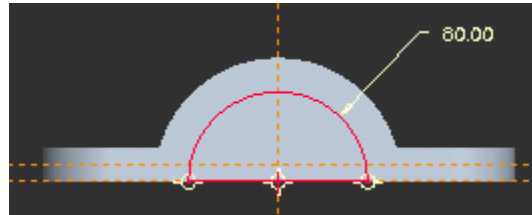


- We will now cut a hole through the middle of the part. Select the extrusion tool, placement, define, sketch plane is front, reference plane is right, right. Go to sketch > Reference > select the bottom edge as a reference plane. This will help you with the next arc.

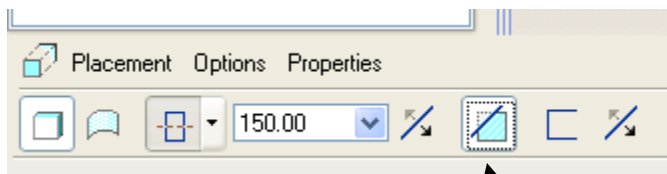


Reference Edge

- Draw an arc as in the previous step and set the Radius to 80 or a Diameter of 160. Connect the 2 ends of the arc with the slid line tool. This will create an enclosed sketch

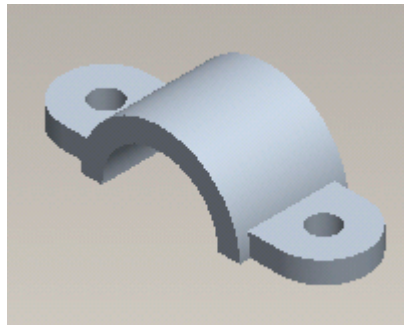


- Once accept the sketch to bring you into the Extrusion mode. Select Symetric about the workplane, distance of 150, AND SELECT THE REMOVE MATERIAL BUTTON.

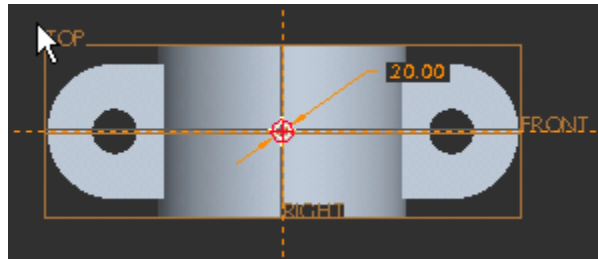


Remove material buton

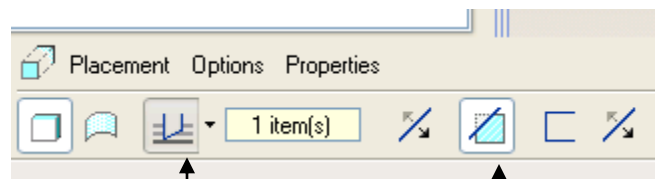
- Preview the sketch with the eyeglasses button. If it matches the design below, accept it with the green check mark. SAVE



- Using the top workplane as your sketch plane and right, right as your reference plane, cut the hole through the top of the U-Bracket.



- After the circle has been drawn and dimensioned, accept the sketch, remove material, Extrude to intersect with selected surface (select the top of the arc so the hole will cut thru. Preview the part. Your completed part should match the following.



Extrude to Intersect With
Selected Surface

Remove Material

Select this Surface

