

Inventor® Self-paced eCourse
Autodesk Inventor Advanced
Module 24
Weldments - Part 3

222

Learning Outcomes

When you have completed this module, you will be able to:

- 1 Describe how a weldment is machined after the welds have been created.

Machining

The third and final stage of completing a weldment is to create any post-weld machining that is required to the assembly. All welds must be created before the machining.

To start the machining, right click the Machining item in the Browser bar. In the right-click menu, select Edit as shown in Figure 24-1.

Figure 24-2 shows a pre-machined weldment and the completed weldment after machining.

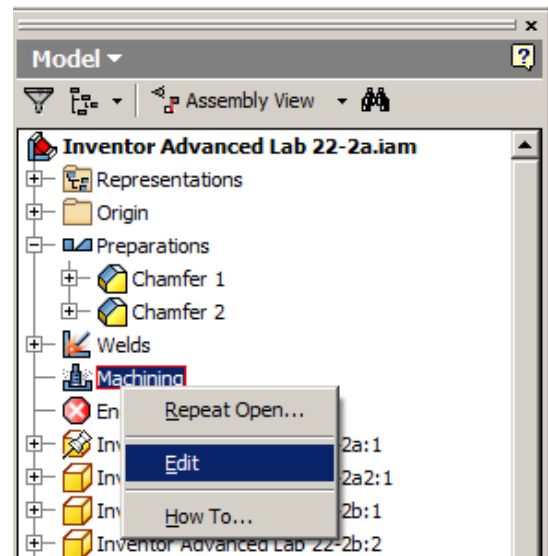


Figure 24-1
Machining

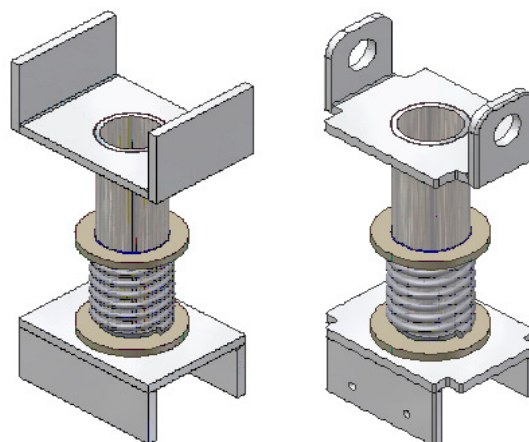


Figure 24-2
A Pre-Machined and a Completed
Machined Weldment

WORK ALONG

Machining a Weldment

Step 1 Open the part Inventor Advanced Workalong 22-1.iam. (Figure Step 1)

Step 2 Right click the Machining item in the Browser bar. In the right-click menu, click Edit. (Figure Step 2)

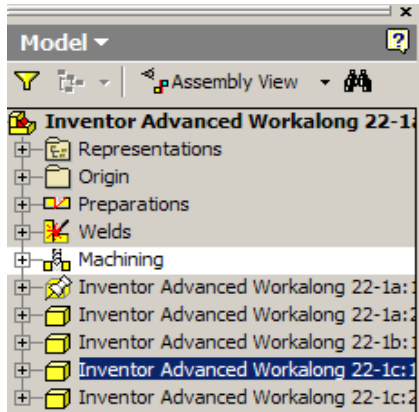


Figure Step 2

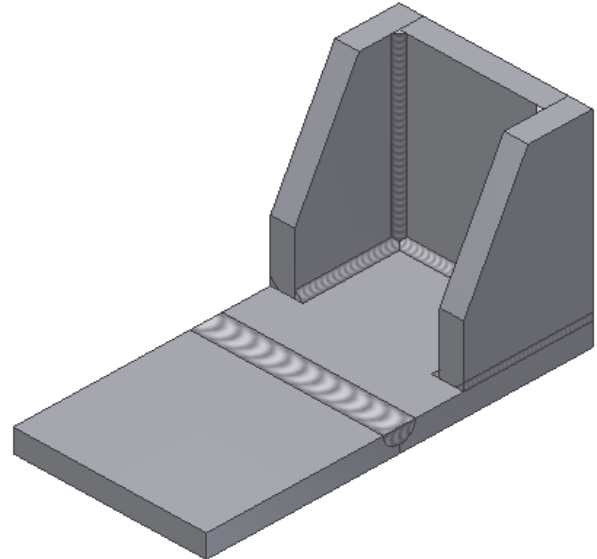


Figure Step 1

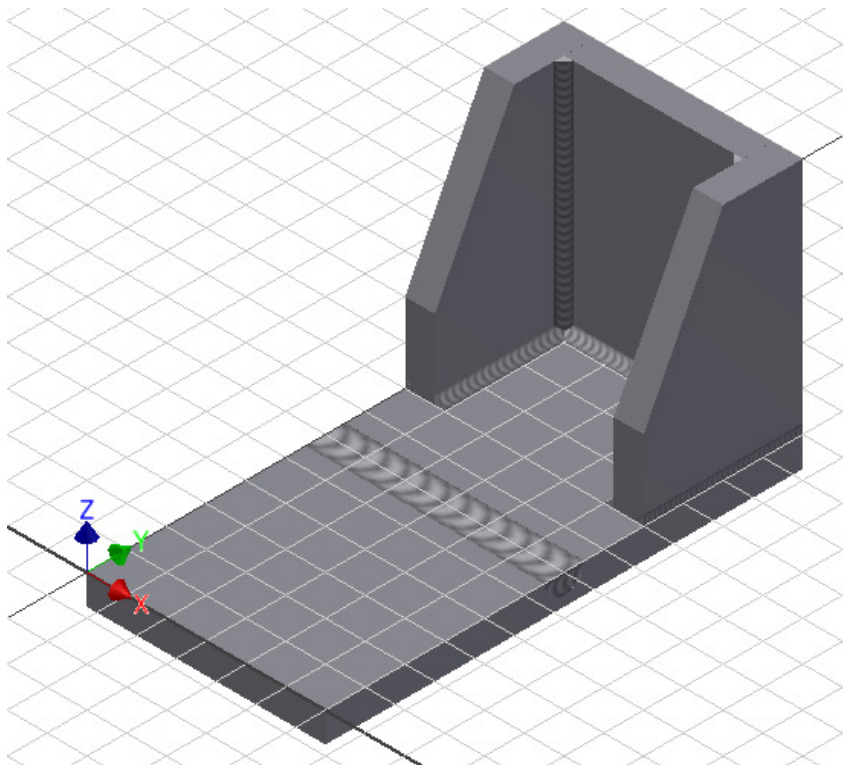


Figure Step 3

Step 3 Start a new sketch on the top of the bottom plate. Enter the PROJECT GEOMETRY command and project the end and both edges of the bottom plate onto the sketch. (Figure Step 3)

Step 4 Insert two center points onto the sketch and dimension them. (Figure Step 4)

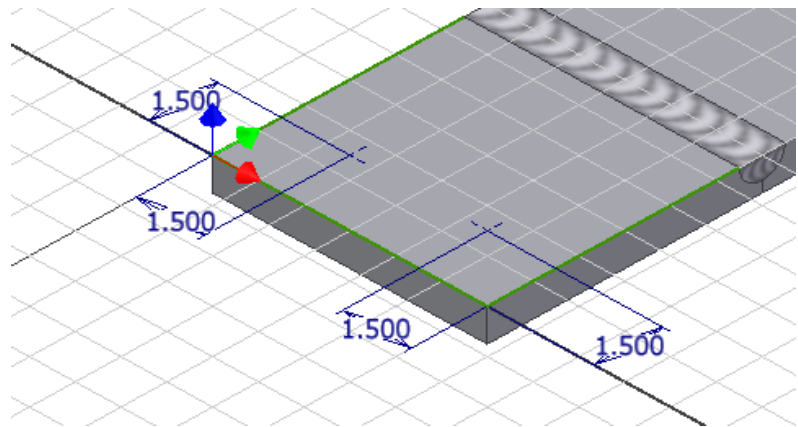


Figure Step 4

Step 5 Using the HOLE command, create two counterbored holes. (Figure Step 5)

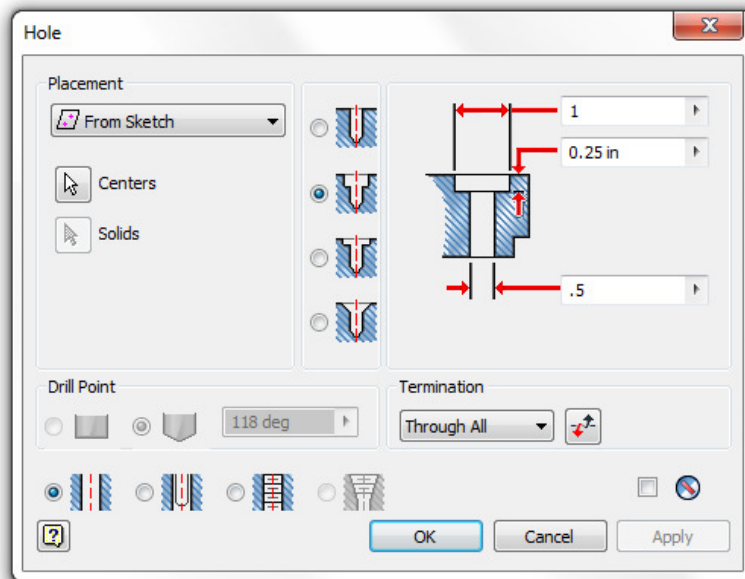
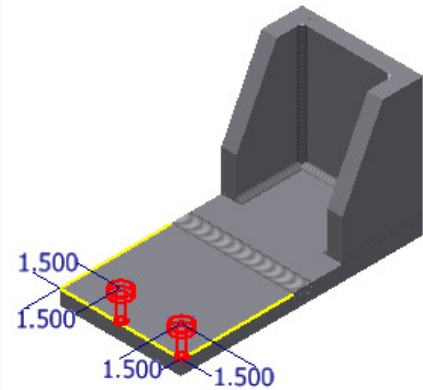


Figure Step 5



Step 6 Your weldment should now appear as shown in the figure. (Figure Step 6)

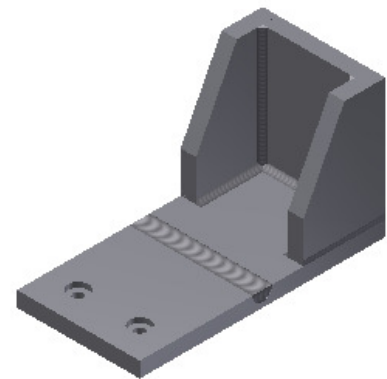


Figure Step 6

Step 7 Start a new sketch on the right side of the assembly. (Figure Step 7)

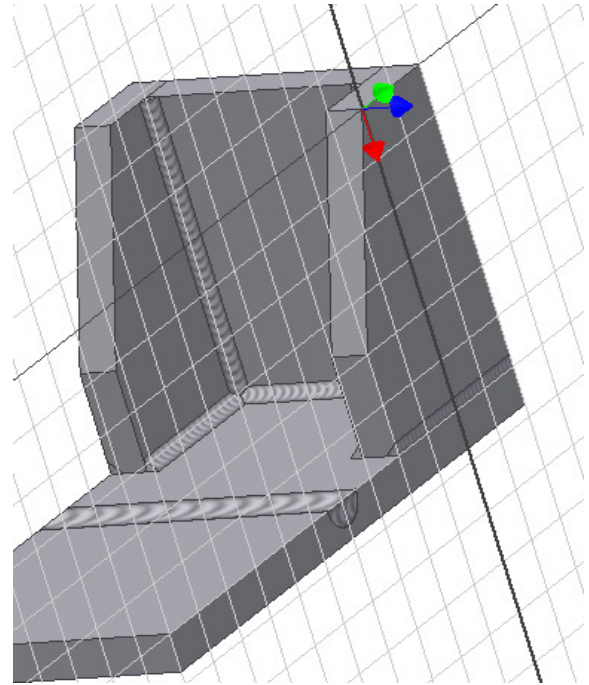


Figure Step 7

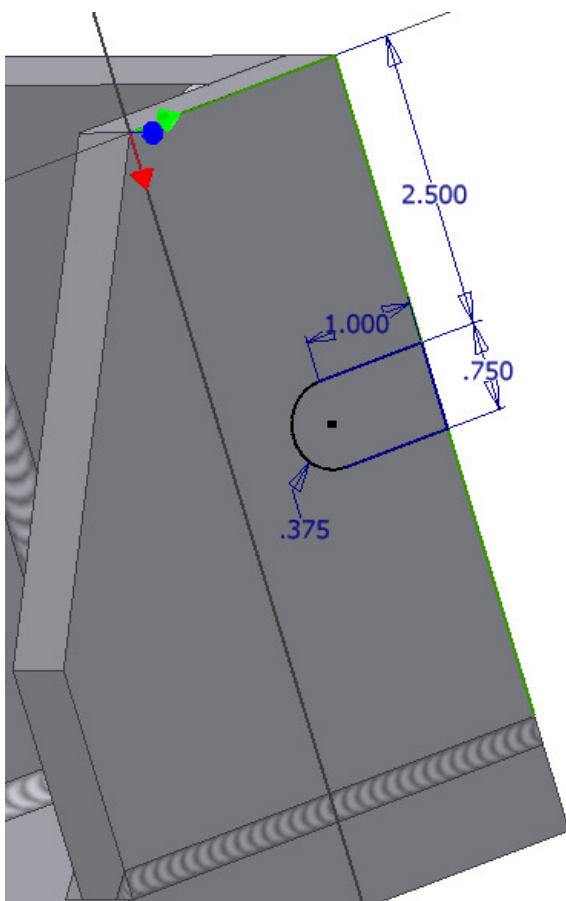
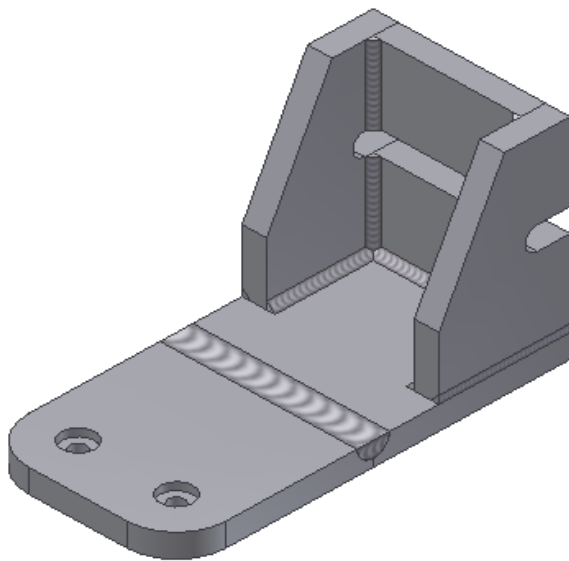
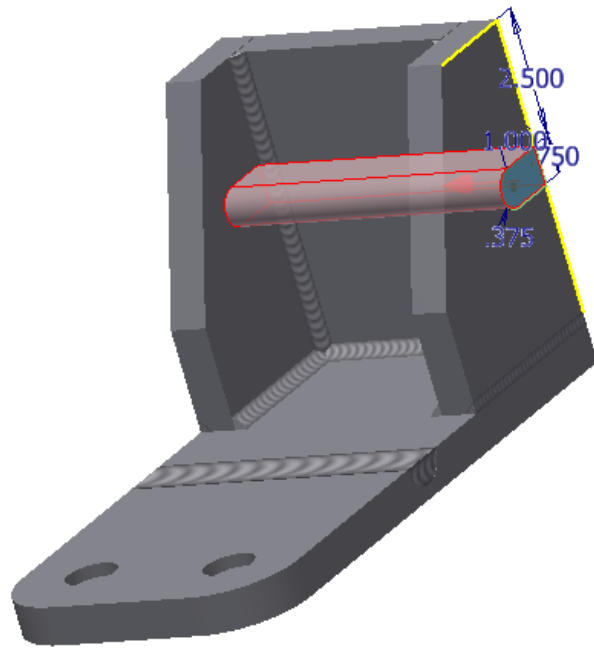


Figure Step 8

Step 8 Project the edges onto the sketch and draw and dimension the closed shape. (Figure Step 8)

Step 9 Extrude the shape through the assembly. (Figure Step 9)



Step 10 Your completed weldment assembly will appear as shown in the figure. (Figure Step 10)

Figure step 10

Step 11 Save and close the assembly.

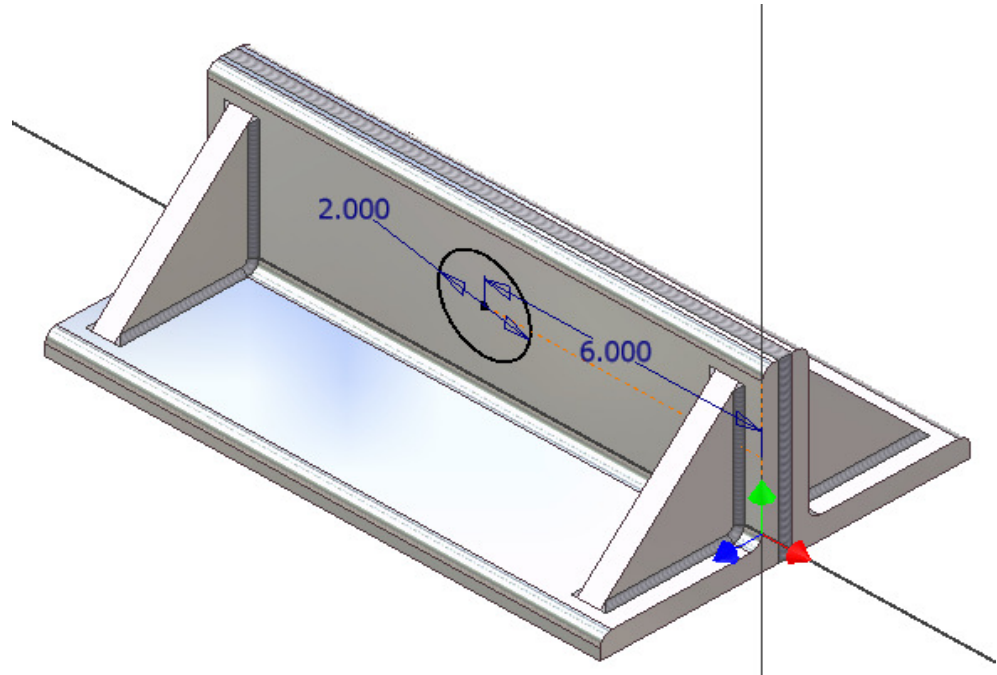
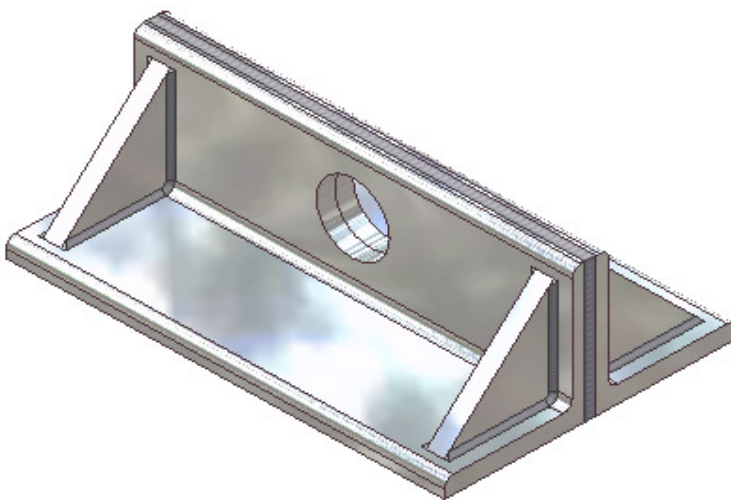
The Key Principles in Module 24

1 After you have prepared a weldment assemble and created the welds, the next step is to complete any machining required.

Lab Exercise 24-1**Time Allowed: 40 Min.****Name:** Inventor Advanced Lab 22-1**Project:** Inventor Advanced Course**Template:** N/A**Color:** N/A

Step 1 Open the weldment Inventor Advanced Lab 22-1.iam.

Step 2 Start a new sketch on the front of the assembly and draw and dimension the circle as shown below. (Figure Step 2)

**Figure Step 2****Figure Step 3**

Step 3 Extrude the circle through the assembly. (Figure Step 3)

Step 4 Rotate the model to look at the bottom. Start a new sketch and draw and dimension the shape shown on the figures below. (Figure Step 4A and 4B)

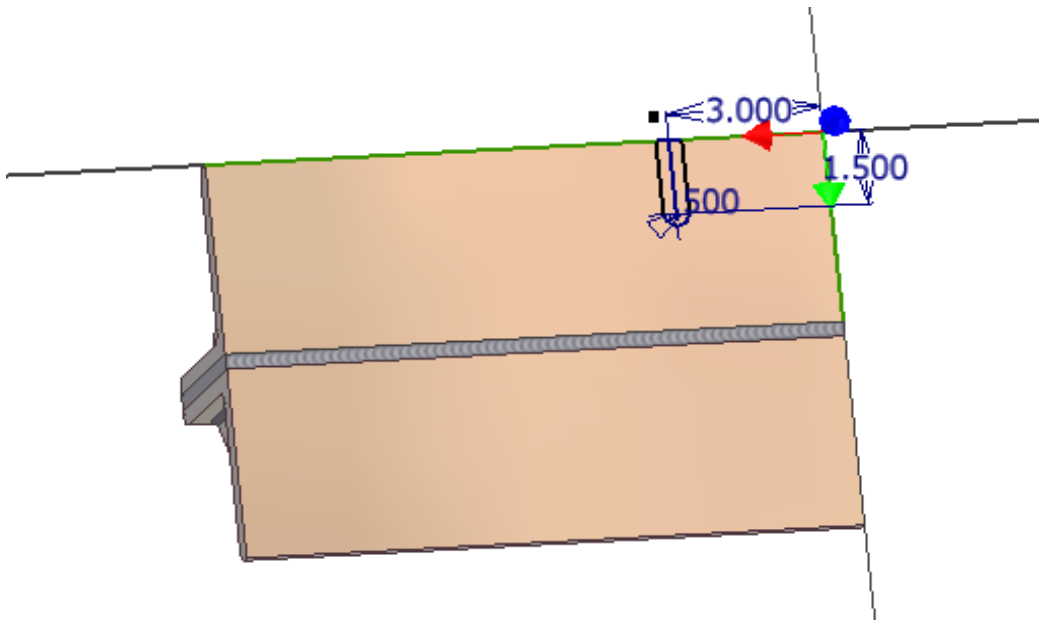


Figure Step 4A

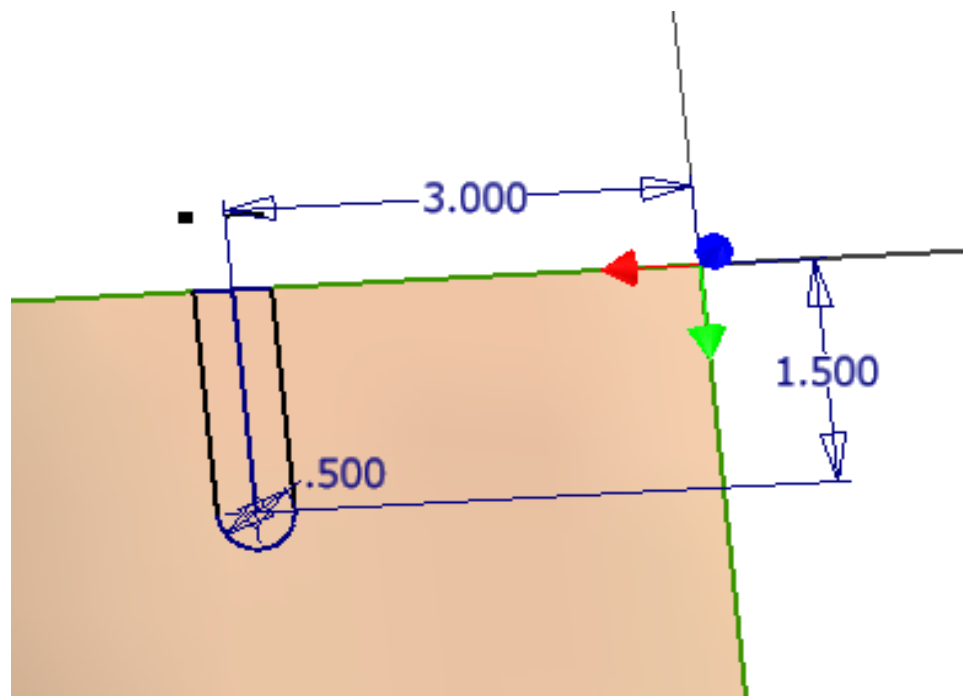


Figure Step 4B

Step 5 Extrude the shape through the model as shown.

Step 6 Using array and mirror, create four slots. (Figure Step 6A and 6B)

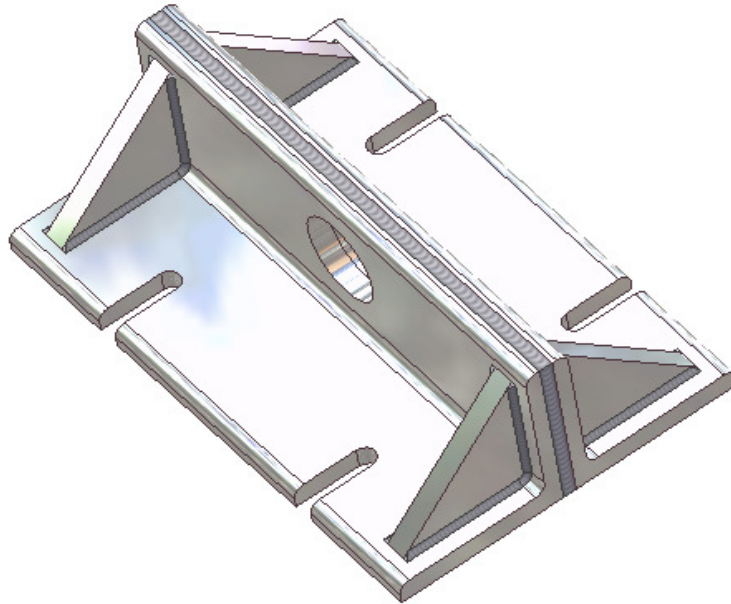
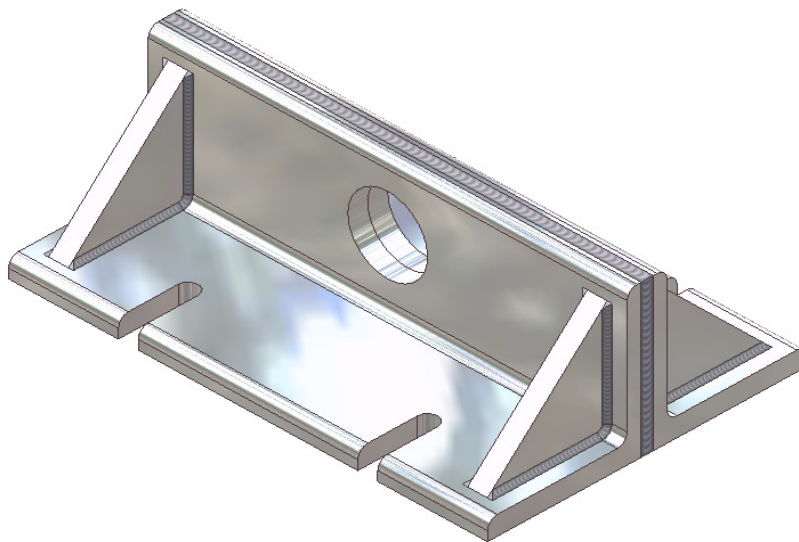


Figure Step 6A



Home or Isometric View
Figure Step 6B

Step 7 Save and close the assembly.

Lab Exercise 24-2**Time Allowed: 50 Min.****Name:** Inventor Advanced Lab 22-2**Project:** Inventor Advanced Course**Template:** N/A**Color:** N/A

Step 1 Open the weldment Inventor Advanced Lab 22-2.iam.

Step 2 Create a new sketch on the top of the bottom plate and draw a 20x20 shape.
(Figure Step 2)

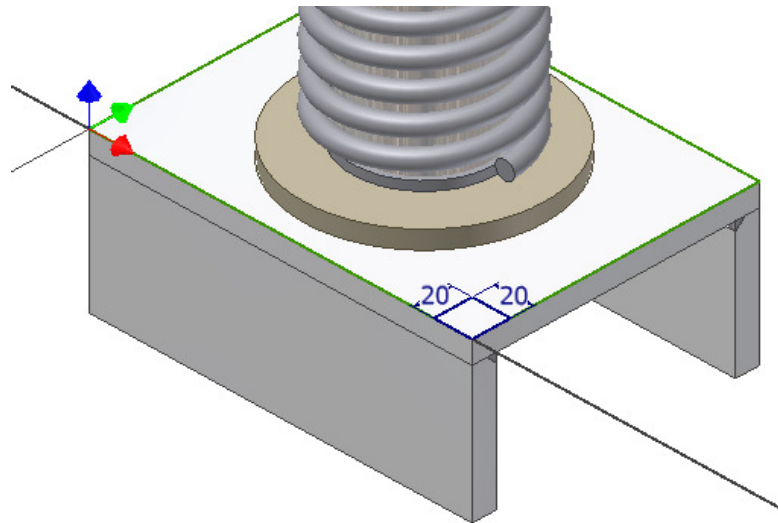


Figure Step 2

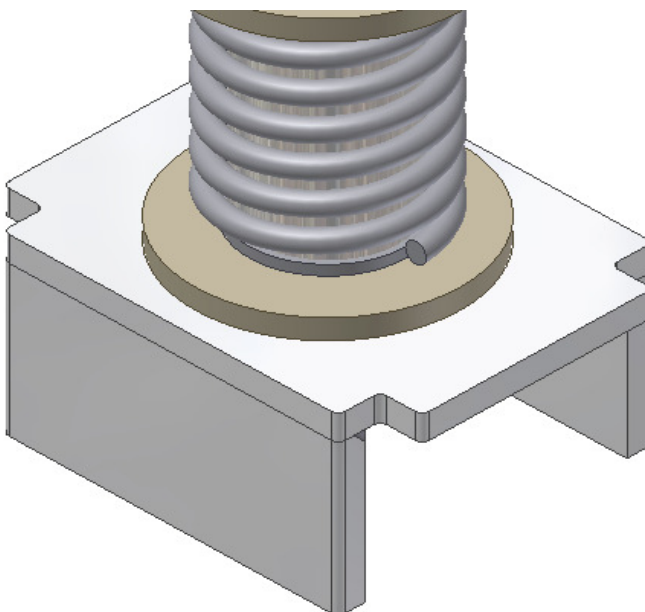


Figure Step 3

Step 3 Extrude the sketch. Insert 3 mm fillets and then array or mirror it to match the figure. (Figure Step 3)

Step 4 On a new sketch, draw and dimension as shown. (Figure Step 4)

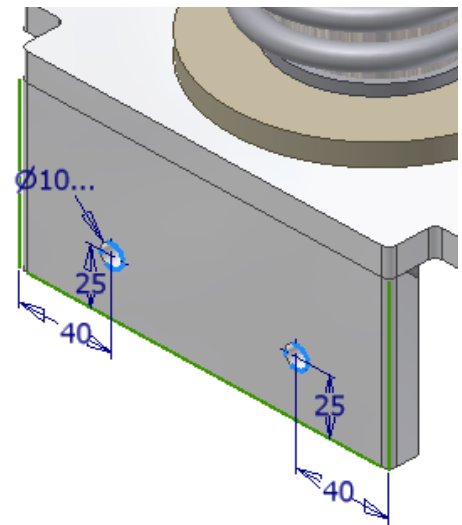


Figure Step 4

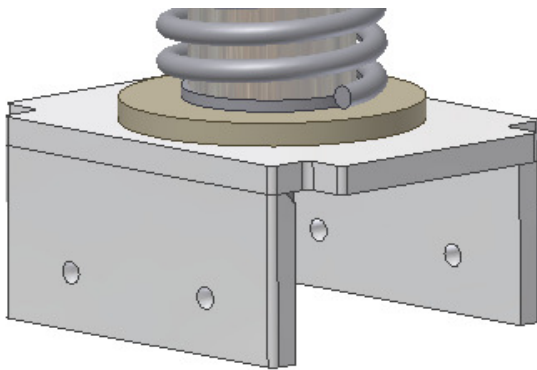


Figure Step 5

Step 5 Extrude the sketch to create the four holes as shown. (Figure Step 5)

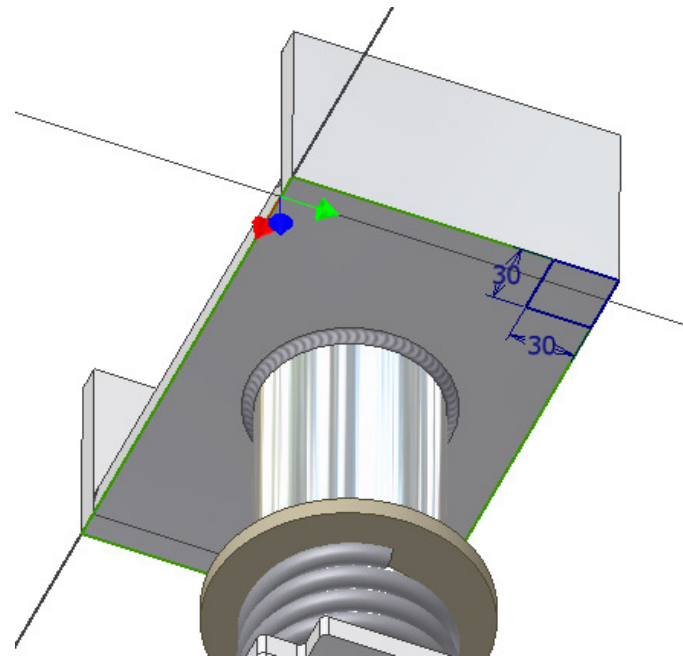


Figure Step 6

Step 6 On a new sketch, draw the shape shown. (Figure Step 6)

Step 7 Extrude and mirror and array to match the figure.
(Figure Step 7)

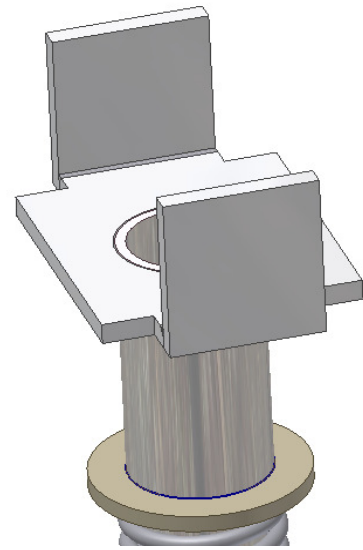


Figure Step 7

Step 8 Create the fillets. The large fillets are 25 mm radius and the small ones are 3 mm.
(Figure Step 8)

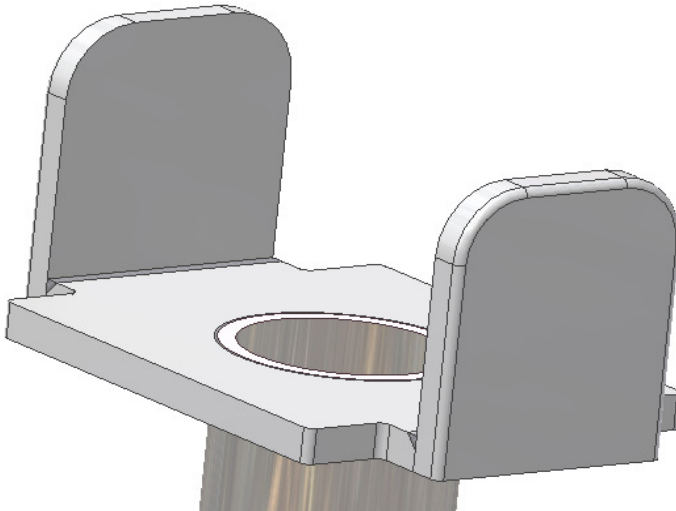


Figure Step 8

Step 9 On a new sketch draw and dimension a circle. (Figure Step 9)

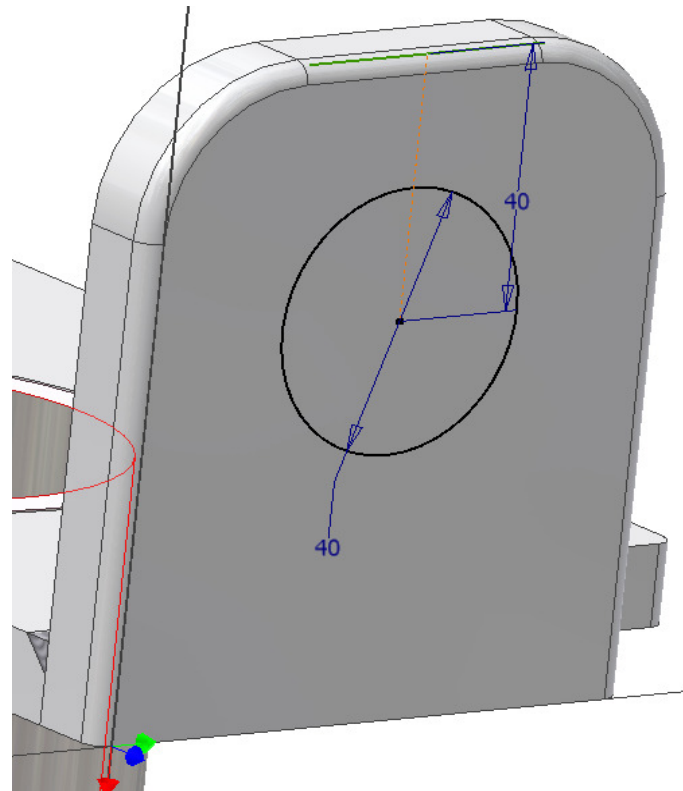


Figure Step 9

Step 10 Extrude the hole through model.
(Figure Step 10)

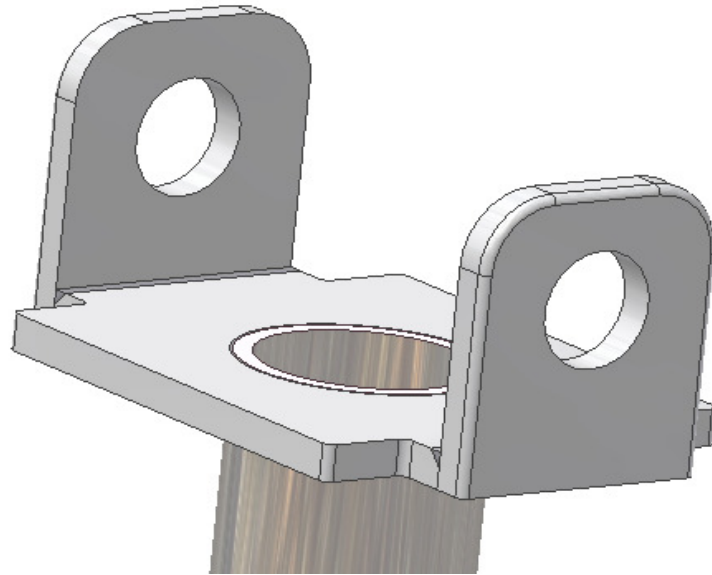


Figure Step 10

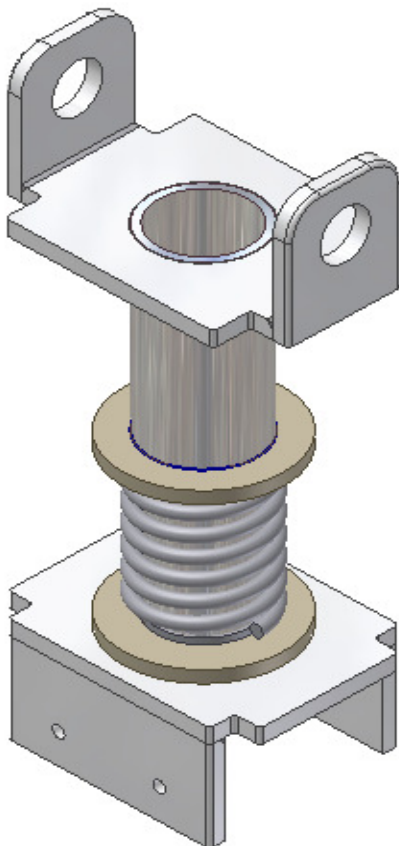


Figure Step 11

Step 11 Save and close the completed weldment.