

Module 10B: Creating Dove-Tail Seams on a Double-Curved Edge

In *Inventor Module 10A*, we have learned how to create a compound elbow in Autodesk Inventor. This compound elbow consists of four pieces of sheet-metal components with double-curved edges as well as straight edges (*Figure 10B-1*). If we need to add seams on the straight edges, then we can use the techniques learned in the previous modules, such as *Inventor Module 1C* and *1F* (*Figure 10B-2*). In this module, we will explore the skills of adding dove-tail seams on the double-curved edges of an Inventor sheet-metal part.

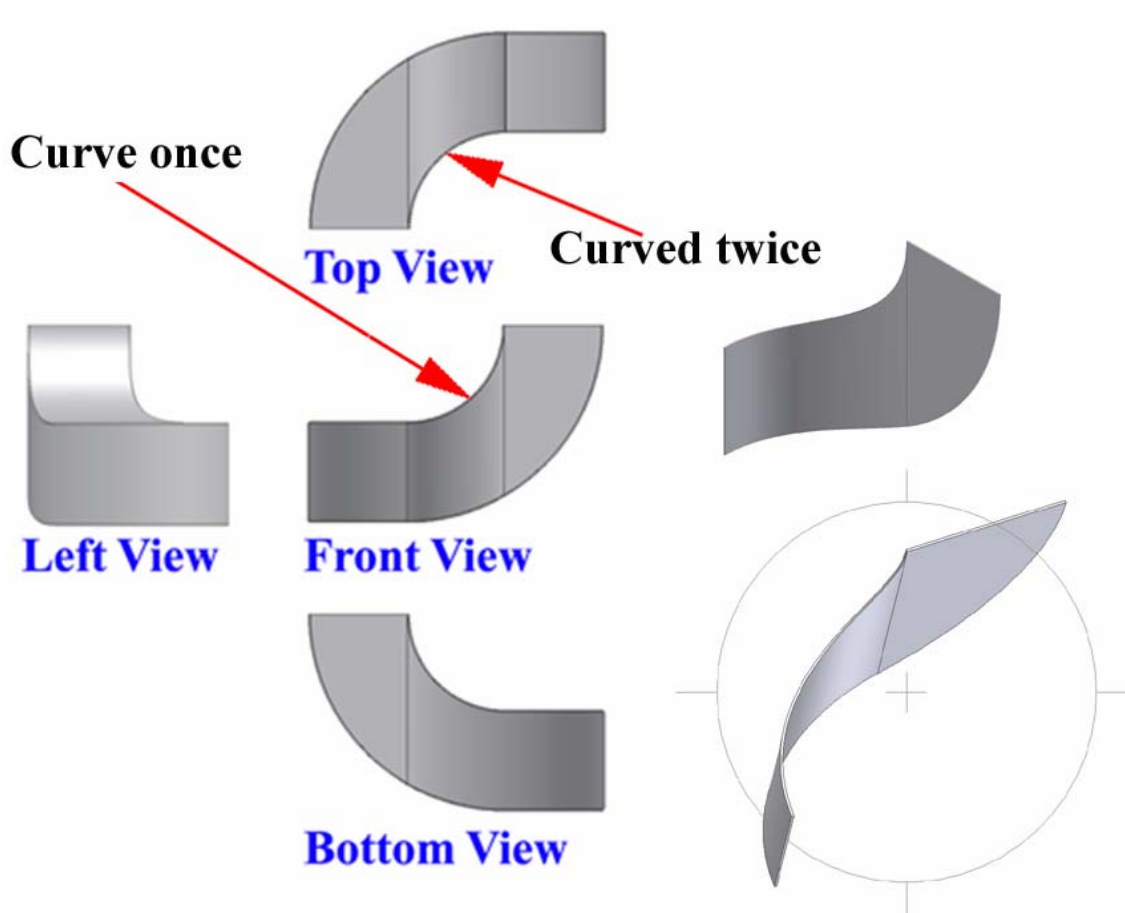


Figure 10A-1: Orthographic and isometric views of the right piece of the compound elbow with double-curved edge.

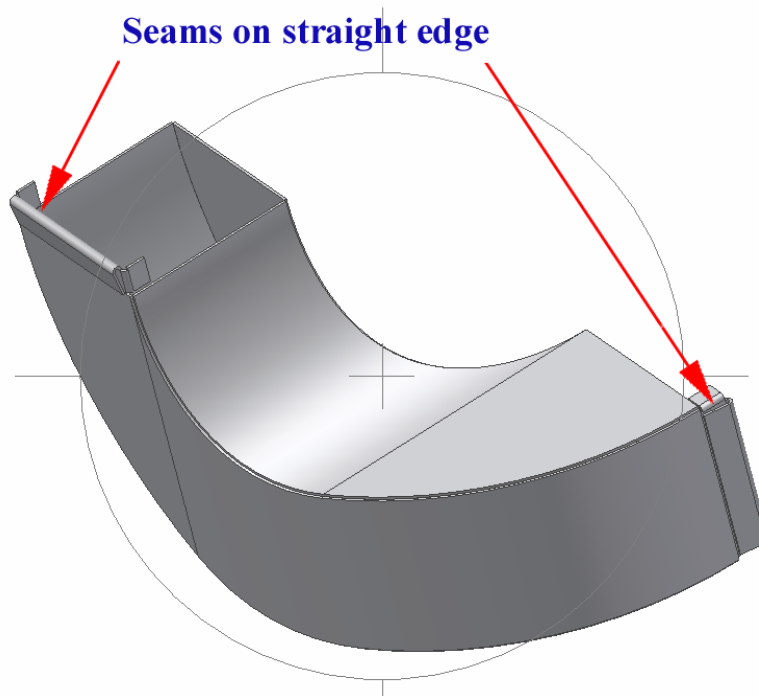


Figure 10B-2: Add seams on the straight edges.

In the previous modules, we have learned how to add seams to sheet-metal edges created in Inventor under different edge conditions:

In *Inventor Module 1F*, we have learned how to create locking seams on the straight lateral edges a circle-based cylindrical sheet-metal part (*Figure 10B-3*).



Figure 10B-3: The locking seam.

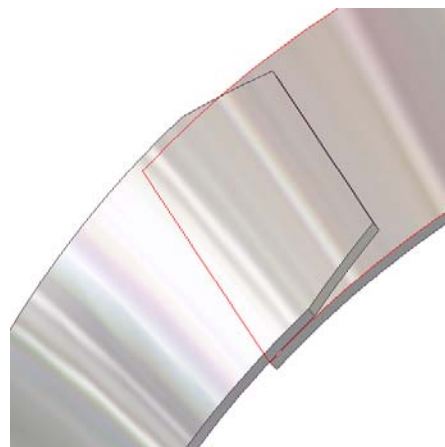


Figure 10B-4: The overlapping seam.

In *Inventor Module 1G*, we have learned how to create an overlaying lateral edge seam (*Figure 10B-4*), and dove-tail seams on the flatly truncated top edge of the lateral piece of a cylindrical sheet-metal part, in a “work-around” method (*Figure 10B-5*).

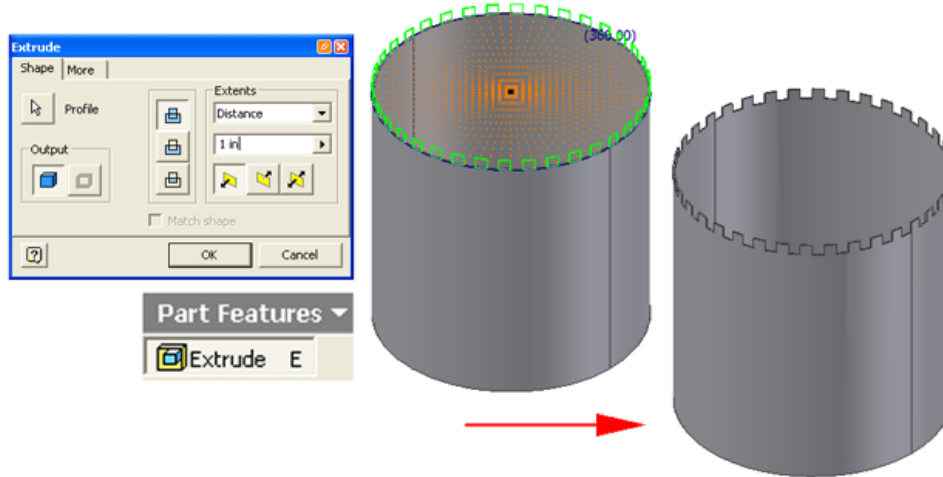


Figure 10B-5: Dove-tail seams on the flatly truncated top edge of the lateral piece of a cylindrical sheet-metal part created in a “work-around” method.

In *Inventor Module 1A* and *1C*, we have learned how to create dovetail seams on the curved edges of a flat sheet-metal piece (*Figure 10B-6*).

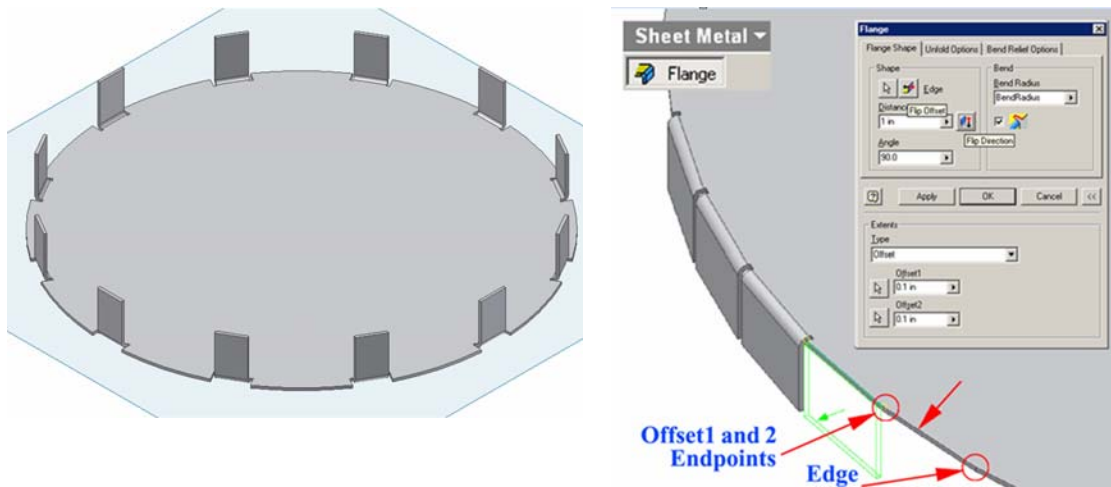


Figure 10B-6: Creating dovetail seams on the curved edges of a flat sheet-metal piece.

Up to this point, attempts at adding dove-tail seams on the double-curved edges of an Inventor sheet-metal part have failed. Therefore, we will explore a “work-around” method, which consists of exporting the **FlatPattern** view of Inventor file into AutoCAD format, and then adding dove-tail seams in the AutoCAD file, using the techniques explored in *AutoCAD Module 3A (Figure 10B-7)*.

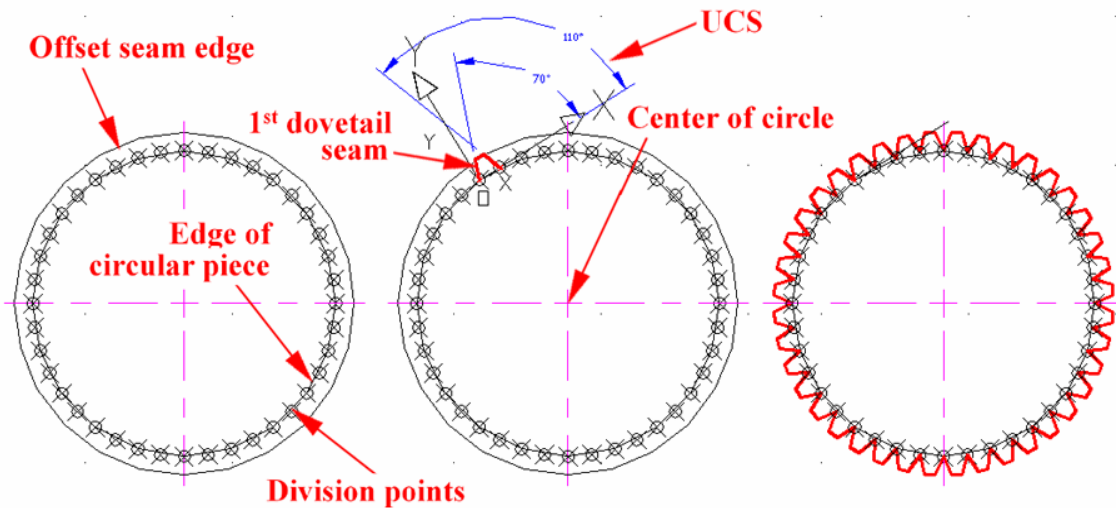


Figure 10B-7: The technique of adding dove-tail seams in the AutoCAD file.

We will use the *Tut-Right SM Compound Elbow.ipt* file created in the previous *Inventor Module 10A* as an example. First open the file. Next, click-select the **FlatPattern** feature in the **Model** panel, then right-click for the short-cut menu and choose the **Save Copy As...** option; the **Save Copy As** window opens; in the **Save as type** pull-down menu, choose the **DWG Files (*.dwg)** option, and click the **Save** button to save the AutoCAD format file in any convenient location (*Figure 10B-8*). Next, launch AutoCAD and open this file; and click the **Model** tab to go to the **Model Space** (*Figure 10B-9*). The AutoCAD switches the view to the Model Space; but we only see a blank space; this is because the flat pattern is hidden somewhere (*Figure 10B-10*). Type z, press the **Enter** key; and then type e, and press the **Enter** key again to bring out the flat pattern view (*Figure 10B-11*). Now, we can add dove-tail seams on the curved edges (*Figure 10B-12*).

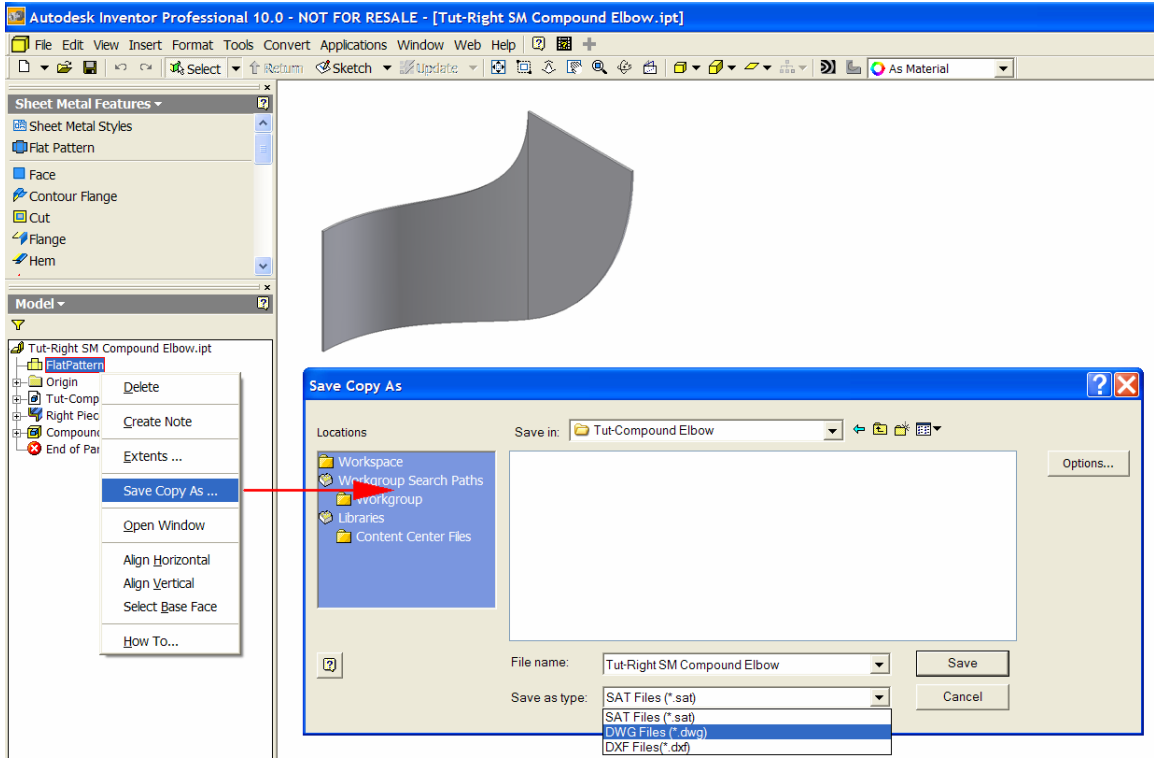


Figure 10B-8: Saving the flat pattern as an AutoCAD file.

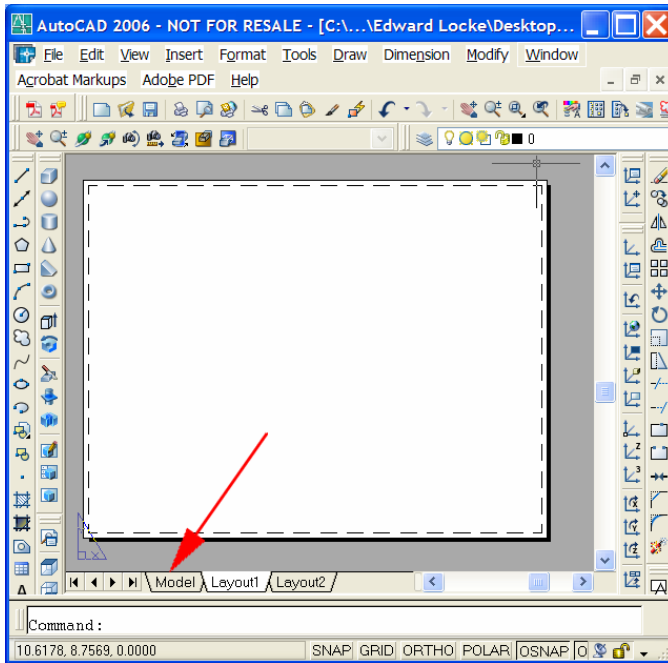


Figure 10B9-: Opening the file and clicking the Model tab to go to the Model Space.

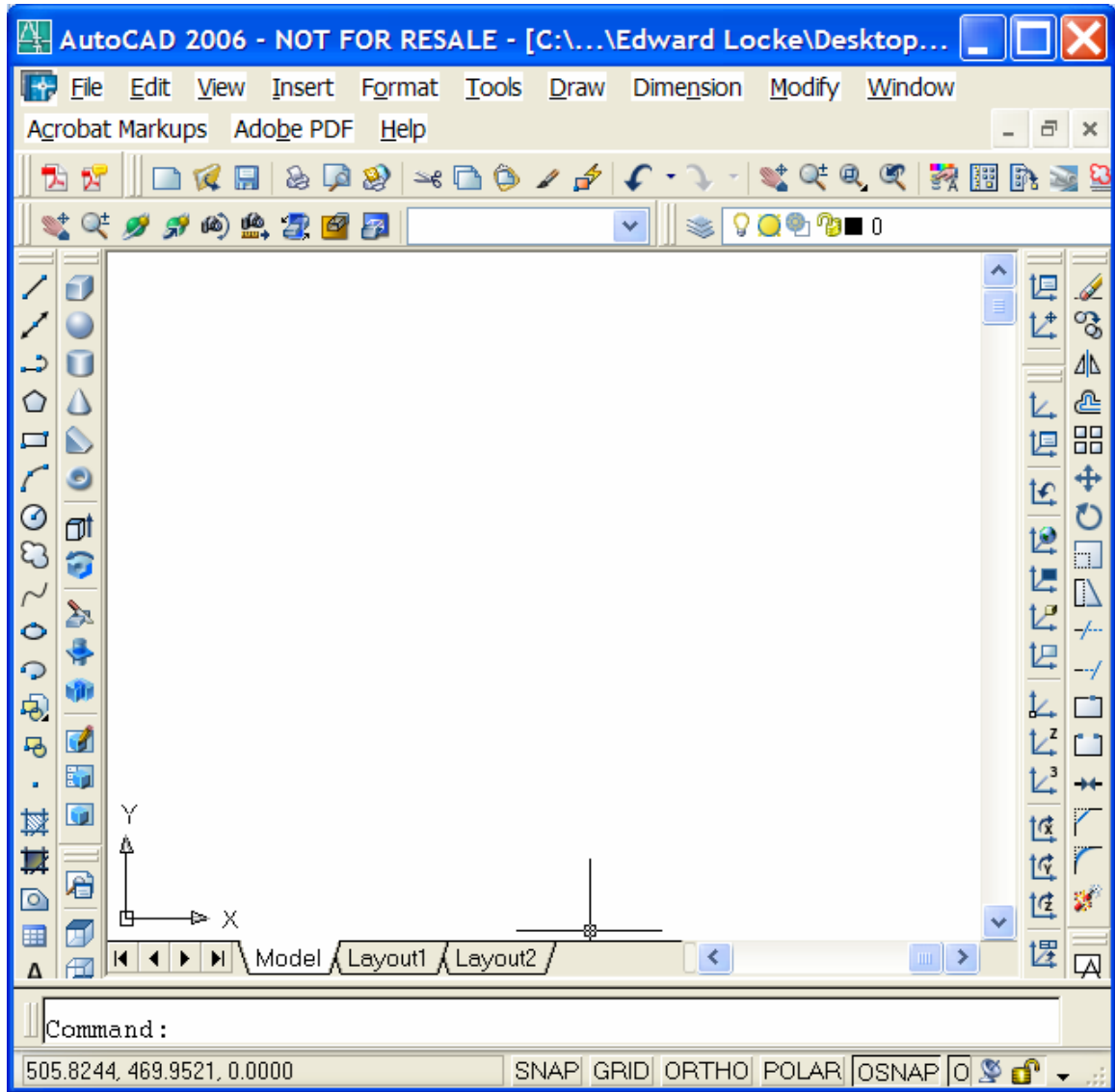


Figure 10B-10: The blank space seen with the flat pattern hidden somewhere.

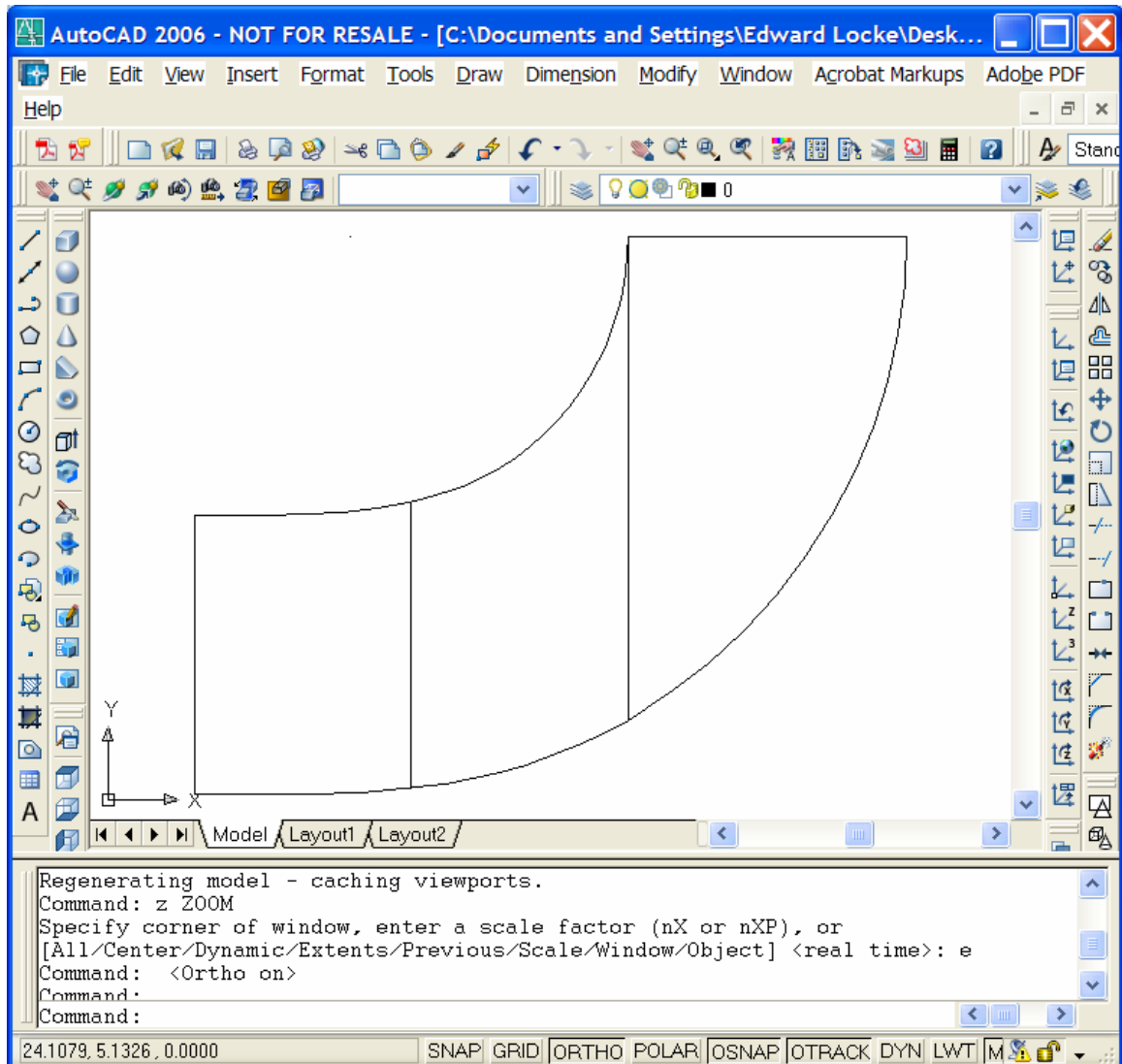


Figure 10B-11: The flat pattern view.

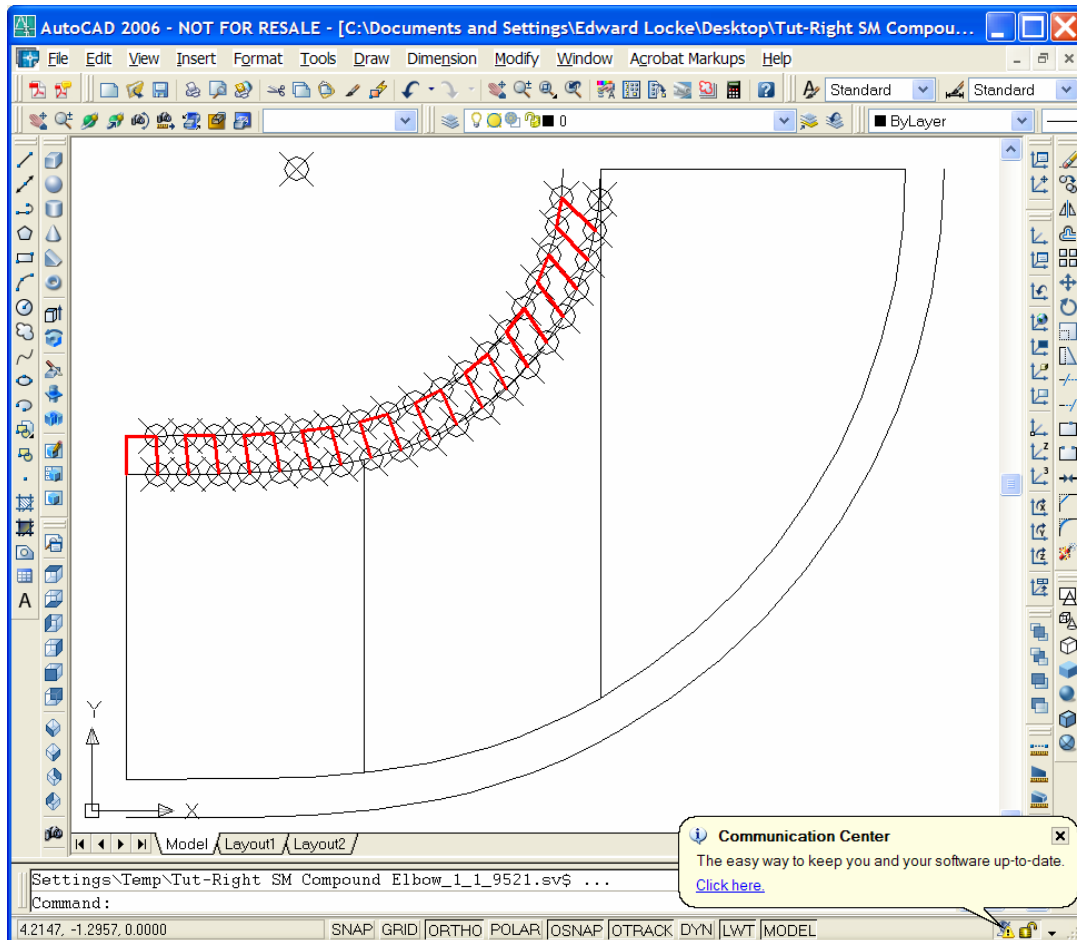


Figure 10B-12: Adding dove-tail seams on the curved edges.

Congratulations! In this Module, you have learned how to add dove-tail seams to a double-curved edge of a compound elbow piece. This completes the collection of learning modules with Inventor.



THE END