Autodesk Products Tip & Tricks

Product: Inventor 2010
Topic: Unfold and Refold Tools
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New in Inventor 2010 are the Unfold and Refold features in the Sheet Metal environment. You can use Unfold to flatten bends, apply features to the flattened face or faces, then re-bend the part with the Refold tool.

For example, the sheet metal part shown below (Figure 1) has no flat faces on which to create a sketch or project flat pattern geometry.

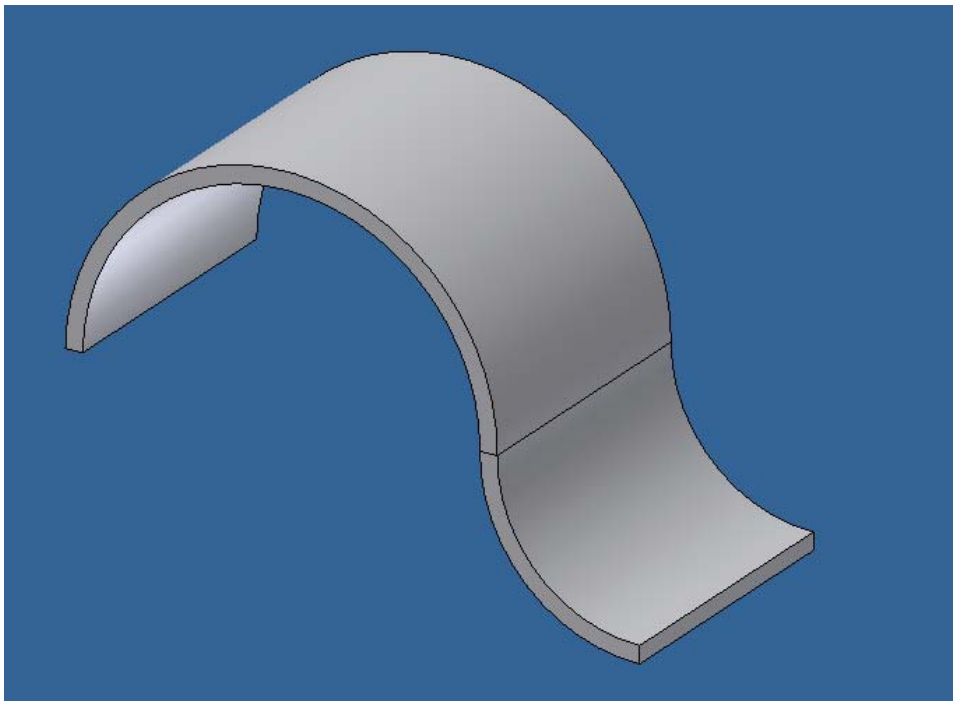

Figure 1

I can use the Unfold tool, found under the Sheet Metal tab in the Modify Panel (Figure 2), to create a temporary flat pattern of the part.

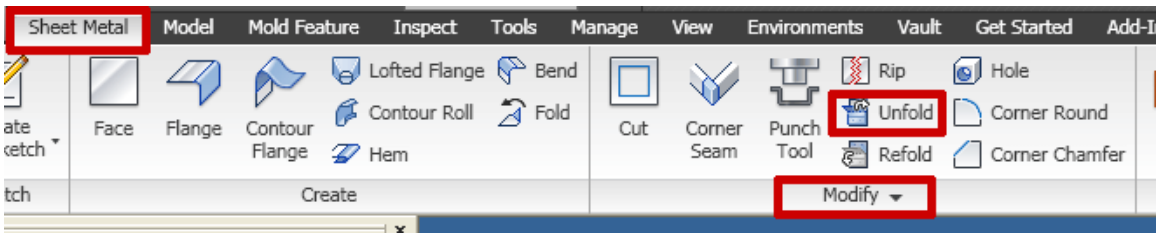

Figure 2

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You first select a sheet metal edge to remain stationary during the unfolding process (Figure 3). Inventor provides planes for easy selection at this stage.

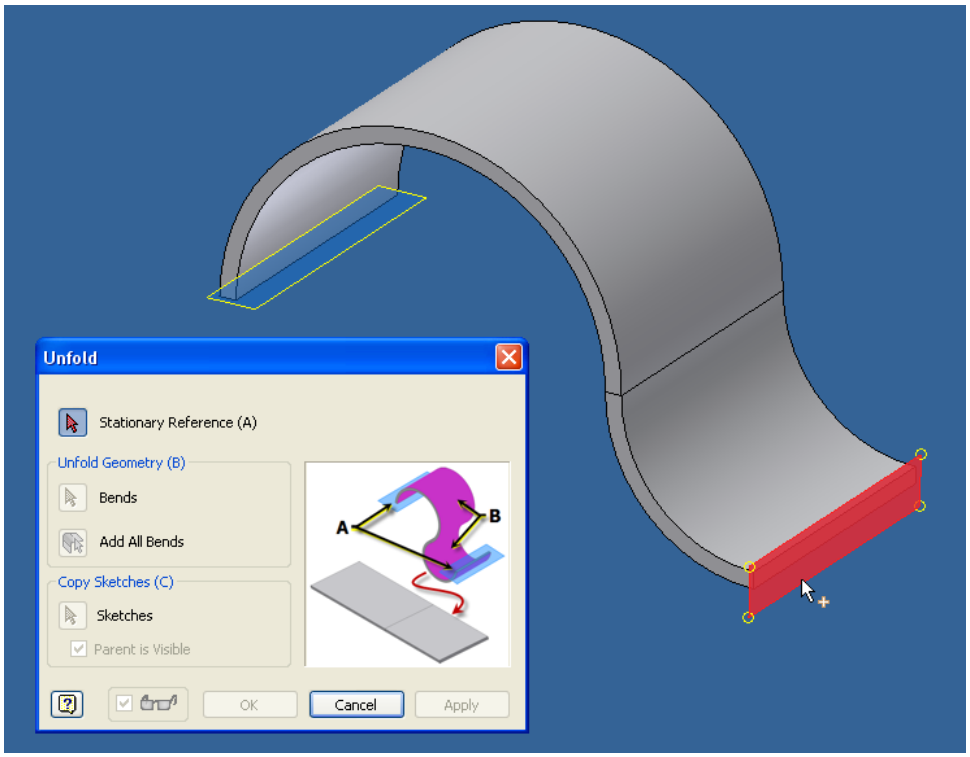

Figure 3

Once the Stationary Reference is selected, you can select the sheet metal bend or bends that you wish to unfold. You can select a single face (Figure 4), all faces (Figure 5), or any other available combination.

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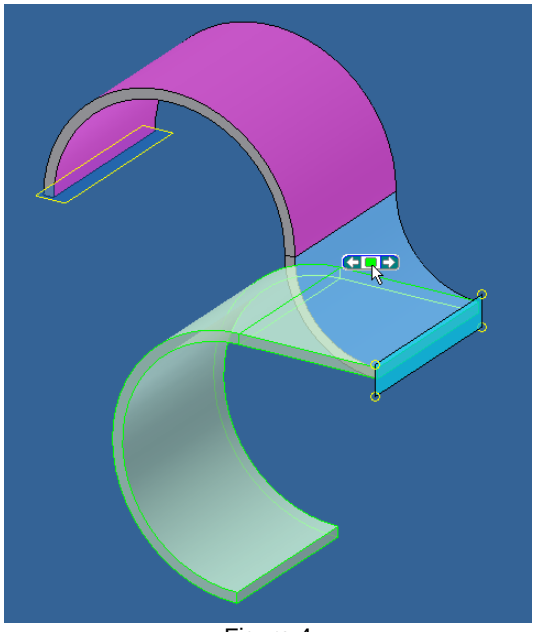

Figure 4

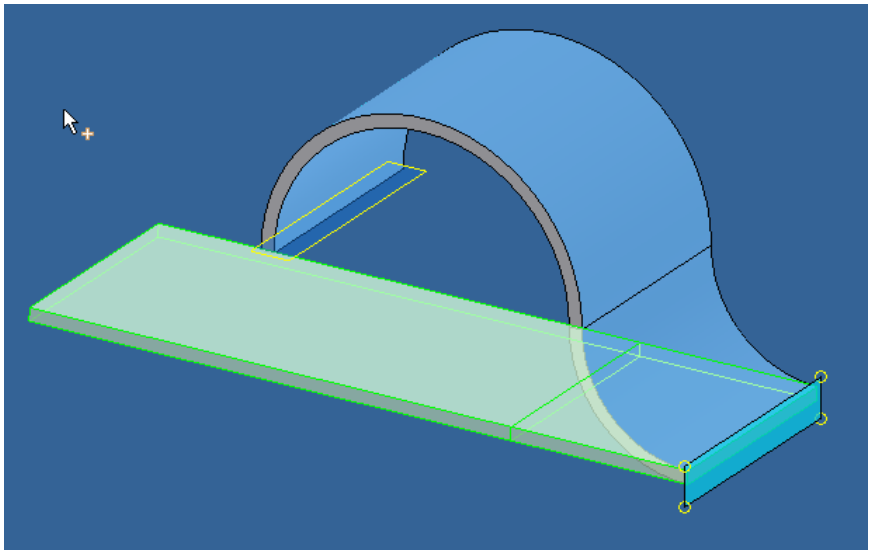

Figure 5

In this example, both of the bends will be selected for unfolding. The results are shown in Figure 6. (Note the addition of the Unfold feature in the browser.)

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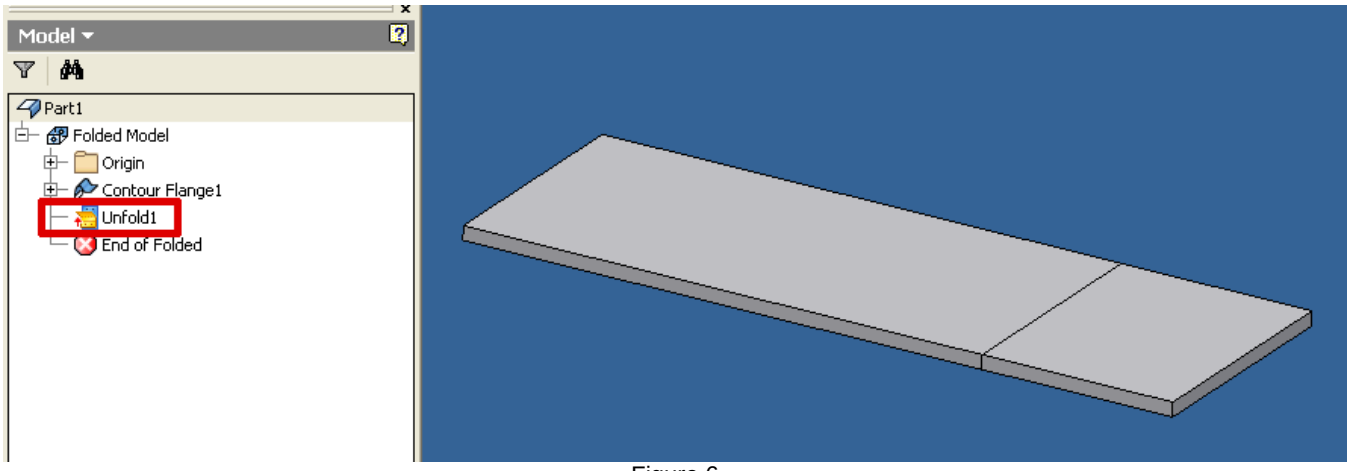

Figure 6

This newly flattened face can now be used as a sketch plane (Figure 7) to add additional features to the part (Figure 8).

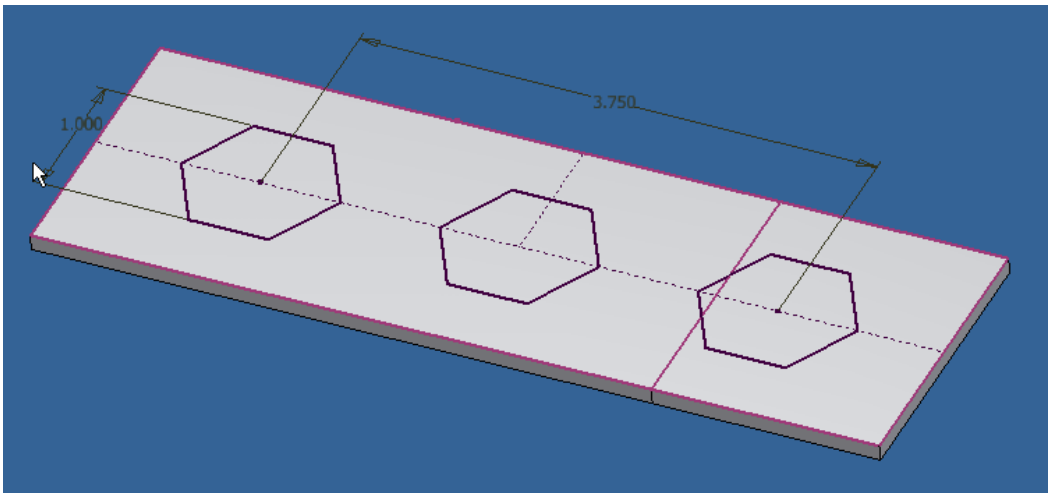

Figure 7

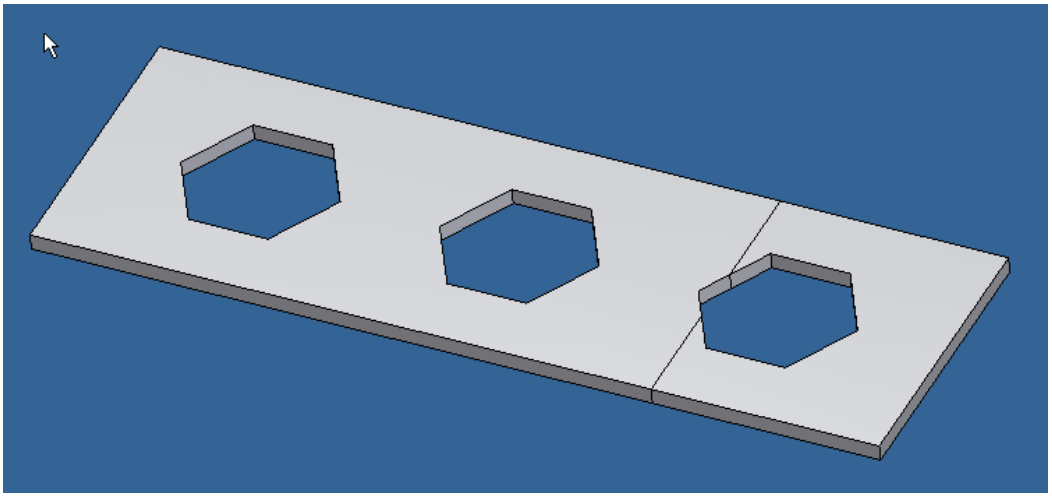

Figure 8

Once the desired features have been added to the flattened faces, the Refold tool can be used to restore the original bends. Again, the Refold tool is found under the Sheet Metal tab in the Modify panel (Figure 9).

Figure 9

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The workflow is similar to the Unfold tool. First, the Stationary Reference is selected (Figure 10).

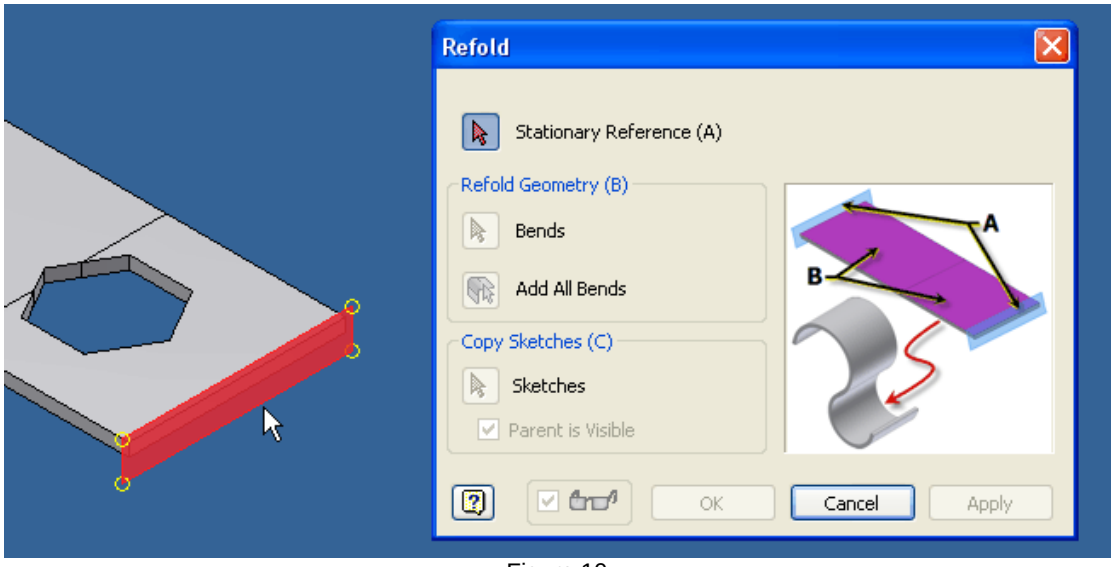

Figure 10

The desired bends to be refolded are then selected. In Figure 11, both of the bends are selected to be refolded.

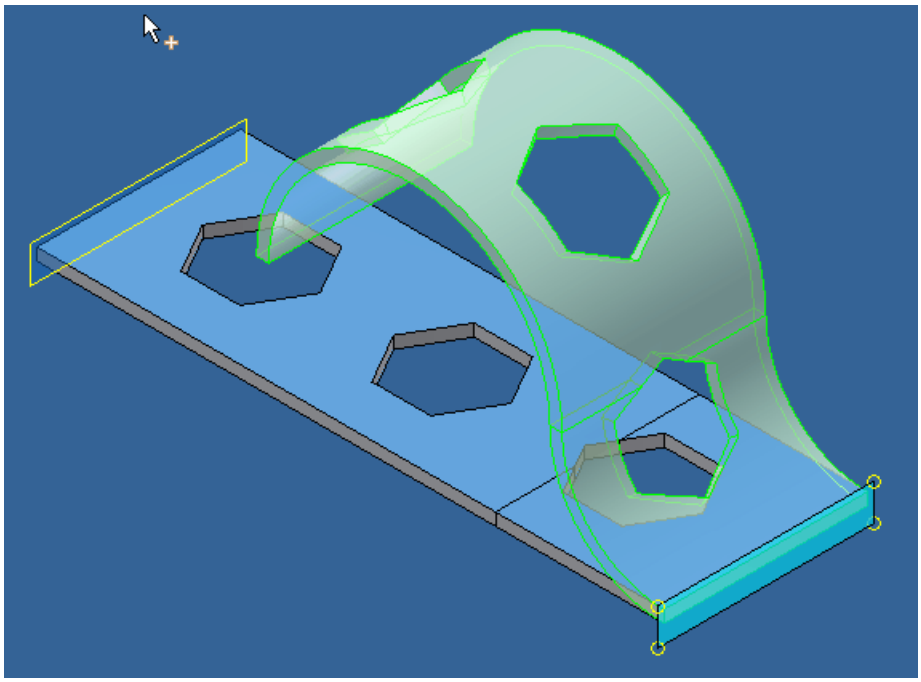

Figure 11

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The part is refolded, and the added features now follow the curvature of the bend (Figure 12).

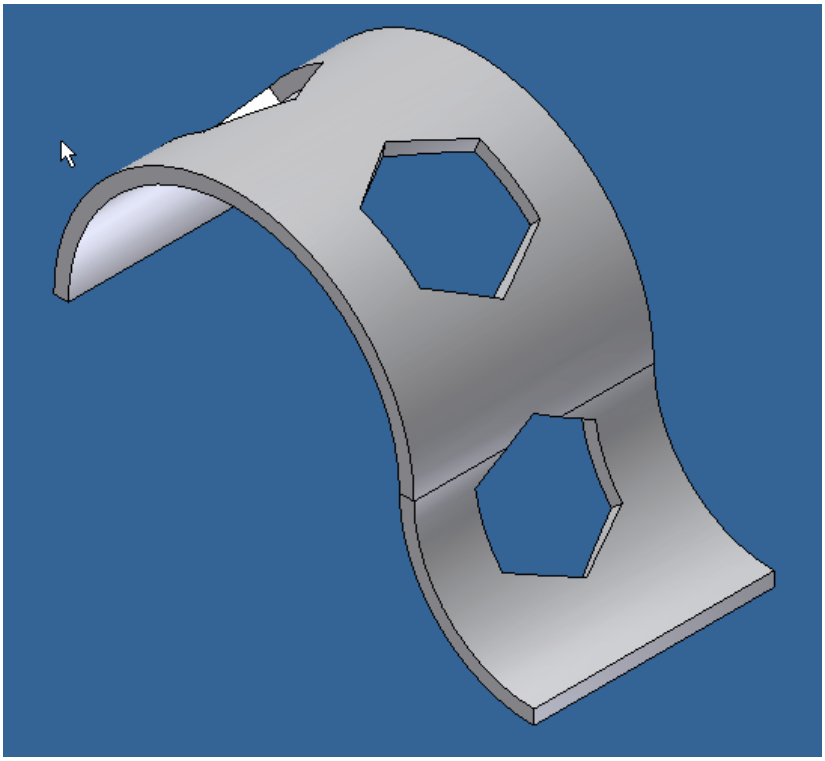

Figure 12

A Refold feature now appears in the browser as well (Figure 13).

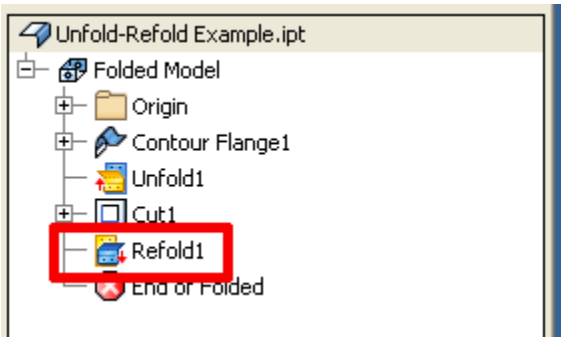

Figure 13