

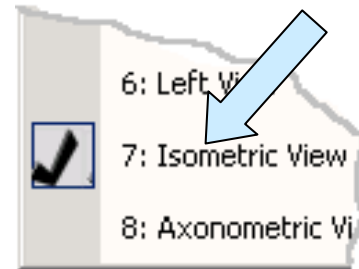
Next, click on the Common Import Options Tab.

Place checks on the Merge Redundant Faces and Repair Bad Spline Surfaces Options.

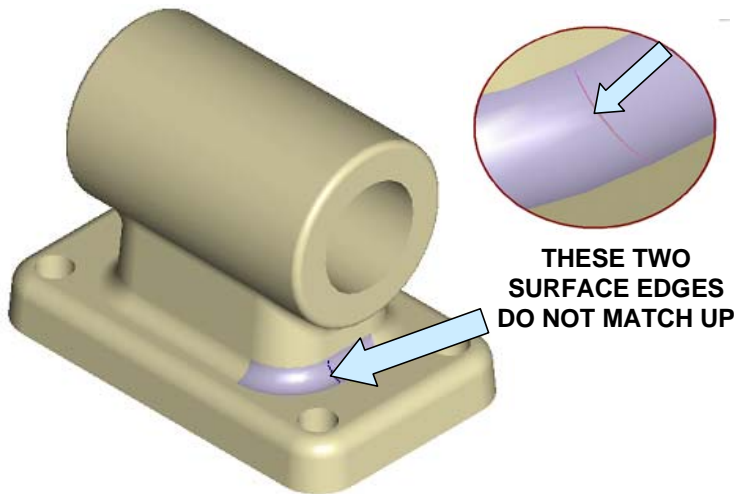
Then, click on the OK Button.

When the file has been converted, switch to the Isometric View.

A quick test reveals that we have a collection of individual surfaces in this file.



You will find that if you try to stitch the surfaces together, you don't get a solid model.



Look closely at the area indicated by the arrow in the illustration to the left and you will see that there are two adjoining surfaces that do not quite fit snugly.

This is a bad Co-edge situation.

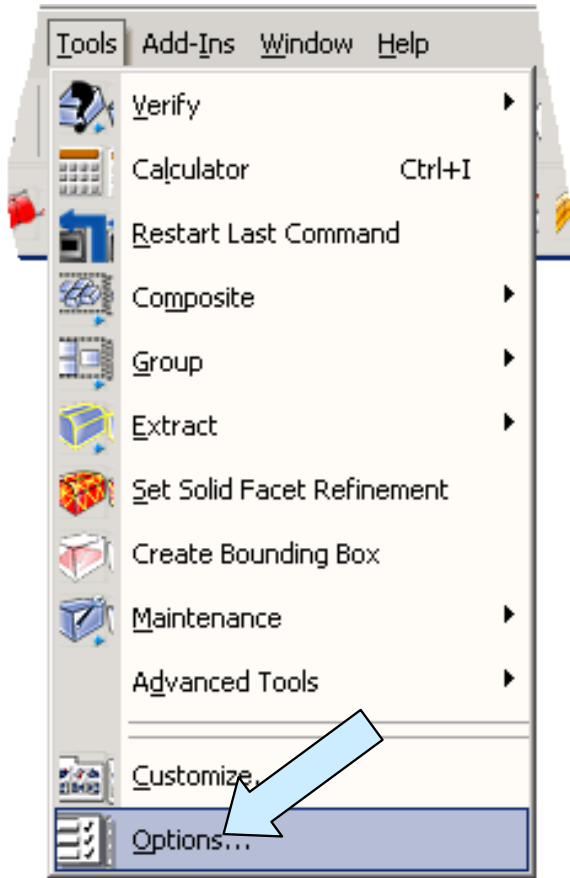
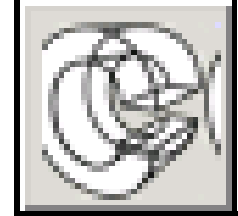
Let's look at a simple way to fix this problem using some of the powerful surface manipulation tools in KEYCREATOR.



First, let's zoom in on the problem area.

Click on the ZOOM WINDOW Icon or use the DrWalt Hot Key ALT + W.

Also, switch to Wireframe Display.



For the construction that we are about to undertake, we'll want to display the surfaces with flowlines.

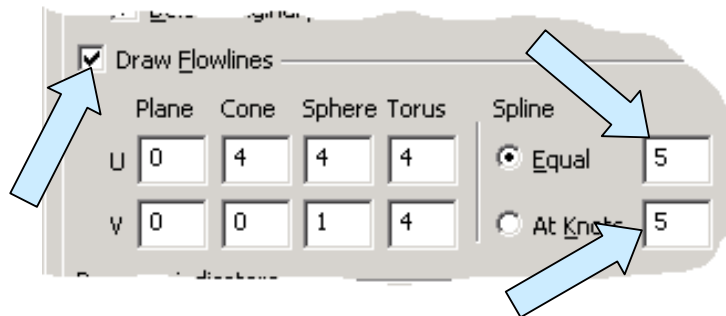
Click on the TOOLS Pulldown Menu and then on OPTIONS.

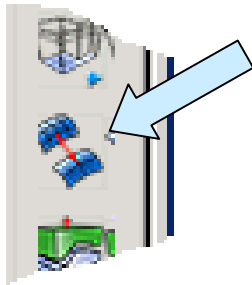
Next, click on the SOLIDS Tab at the top of the Dialog Box that appears.



Click to place a check on the Draw Flowlines Option.

Type 5 for the number of u lines and 5 for the number of v lines. Then, click on the OK Button.





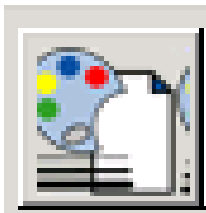
To update the display to these settings, click on the **MODIFY FLOWLINES** Icon.

A Dialog Box appears. KEYCREATOR has automatically made the settings in this box equal to those that you just established in the Configuration Menu. Click on the **OK** Button.

Click on the **ALL DSP** Option and then on the **ALL** Option. Hit the **ENTER** Key.

All of the surfaces on your part will now be displayed in wireframe with flowlines. This aids in visualization but also is valuable in another way as we'll see in a moment!

We're going to use a neat trick to eliminate the bad co-edge problem. Now this is just one of several approaches that you could take to solve this issue. I'm using this method to illustrate some of the extreme flexibility that you have at your fingertips.

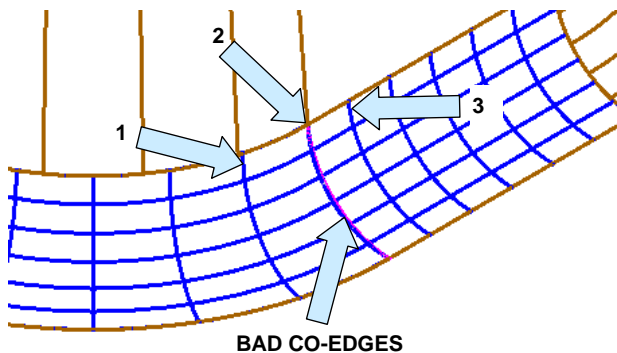
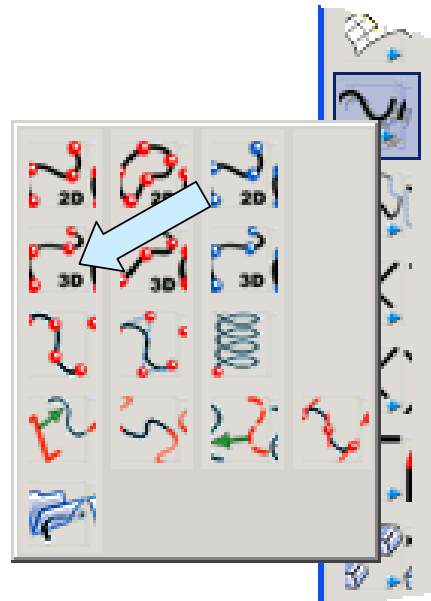


Click on the **SET ATTRIBUTE** Icon.

A Dialog Box appears. Select a color that will contrast well with the geometry on the screen.

Also, click on the **#3 Line Width**. Then, click on the **OK** Button.

Next, click on the **CREATE 3D SPLINE** Icon.

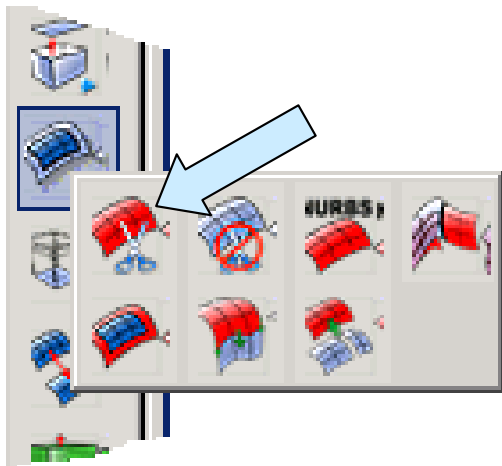
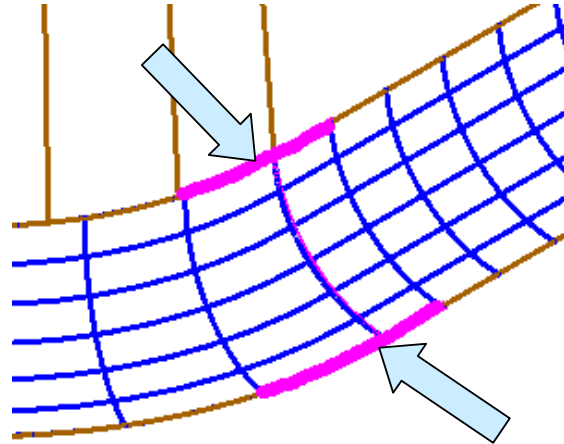


Using the **EndEnt** Option, create a spline that connects the three points labeled 1,2,3 in the illustration to the left.

After the third point, hit the **ENTER** Key and click on the **NATURAL** Option twice to complete the spline.

Repeat this process, creating a second spline connecting the bottom ends of these same three curves.

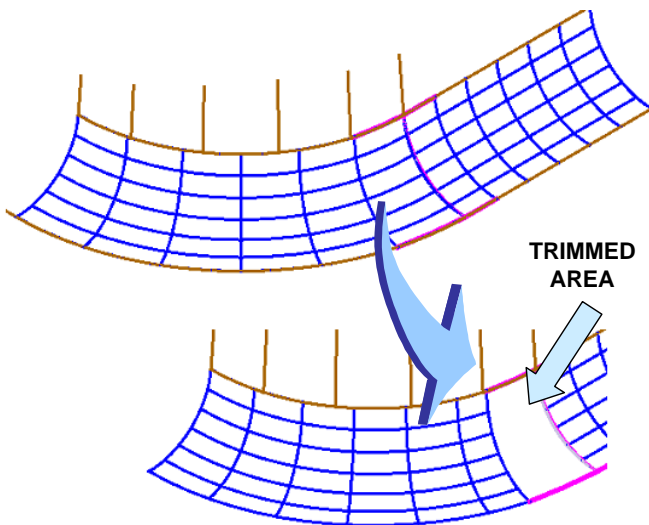
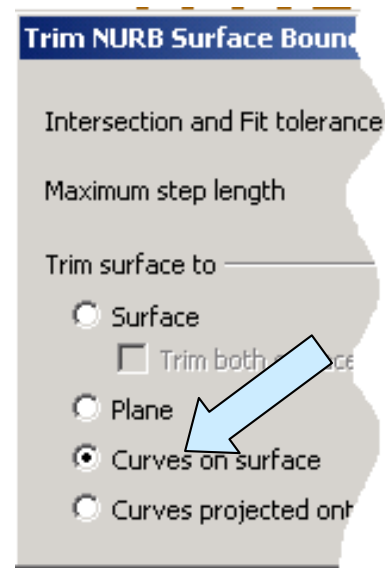
Your construction should now look like this: (I've indicated the new splines with arrows.)



Now, click on the TRIM SURFACE TO CURVE/SURFACE Icon.

A Dialog Box appears.

Click on the Curves on Surface Option and then on the OK Button.



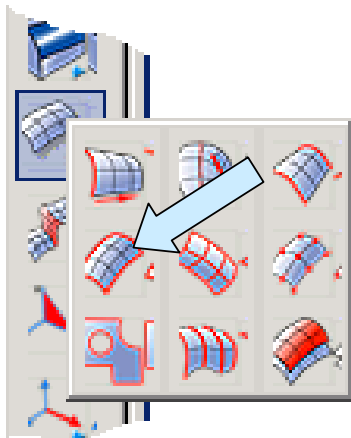
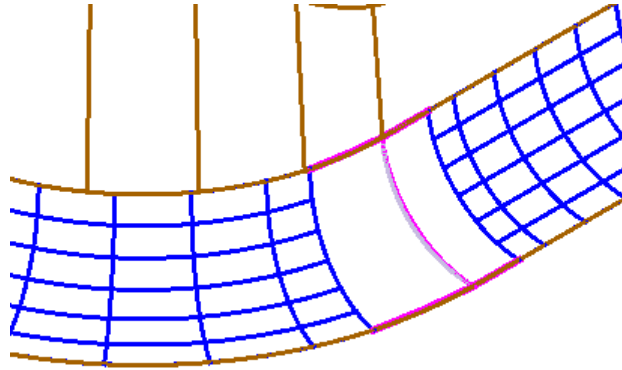
Now, click on the left end of the left problem surface and then on the first flowline in from the bad edge.

Hit the ENTER Key.

This trims the surface back to this flowline.

Repeat this process with the problem surface on the right, trimming back to the flowline closest to the bad co-edge.

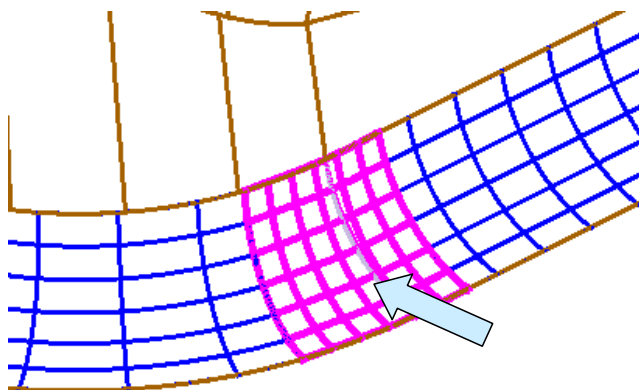
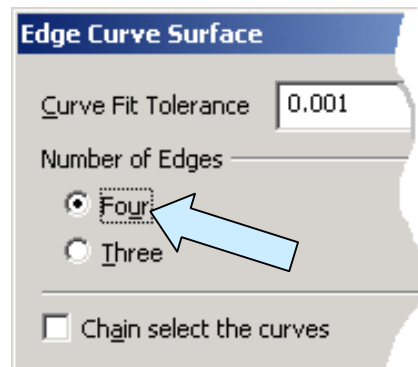
Your construction should now look like this:



Click on the CREATE SURFACE FROM 3 Or 4 EDGES Icon.

A small Dialog Box appears.

We'll use the default 0.001 tolerance. We're creating a four edge patch, so we'll use the default "Four."



Click on the top spline that you made earlier, then on the left edge of the right surface, the bottom spline that you made earlier, and on the right edge of the left surface.

You will now have a new surface patch that completely eliminates the problem with the co-edge.

You will find that if you use the STITCH tool now you will get a closed solid model! Save this part. Call it "GoodBearing."

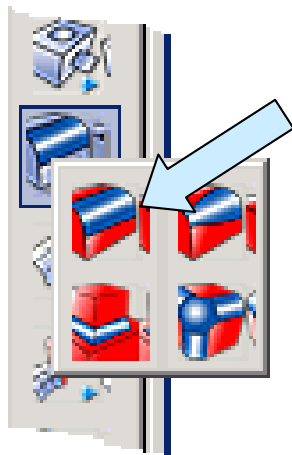
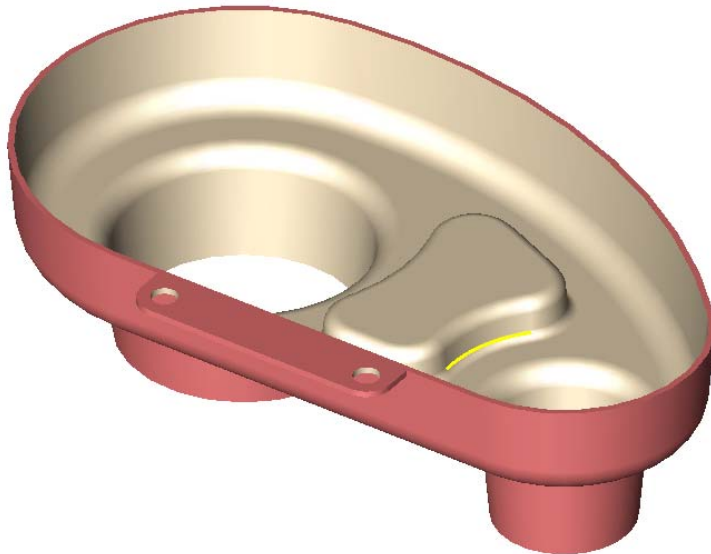
Repairing Non-Manifold Solid Models

You will sometimes import models (Or maybe even create them all by yourself!) that are non-manifold. Let's look at a typical example and see how we can quickly fix the problem.

For this exercise, open up the KEYCREATOR Design file on the enclosed CDRom named "Housing."

Your part should look like this.

Now at first glance, this appears to be a perfectly fine part.



Let's attempt to create a blend at the intersection of the tab and the part wall.

Click on the CONSTANT RADIUS BLEND Icon.

Type 0.125 for the Radius.

Now, click on one of the short, vertical lines at the intersection of the tab and the outside body wall.

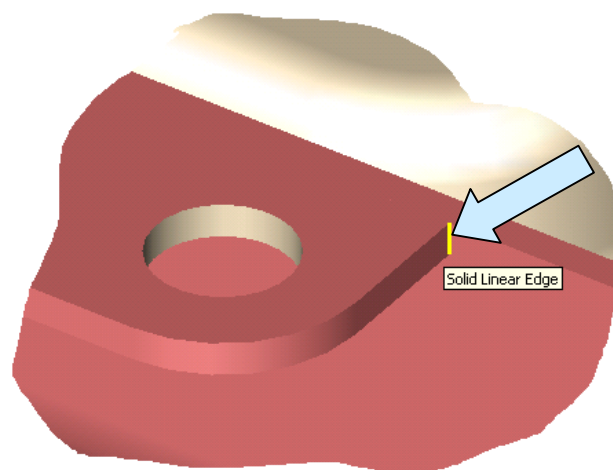


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