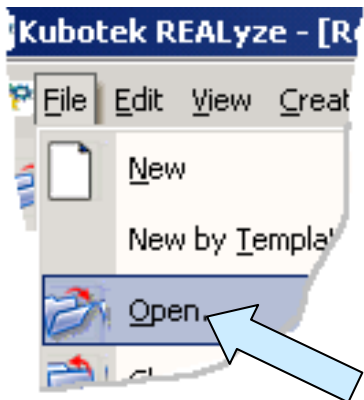
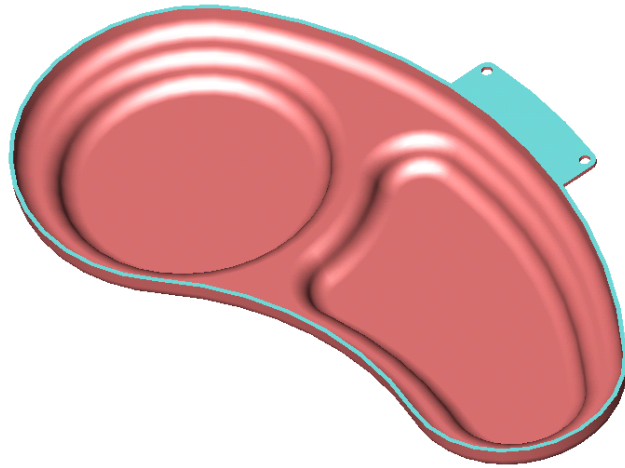


Importing a STEP File of a Molded Plastic Cover

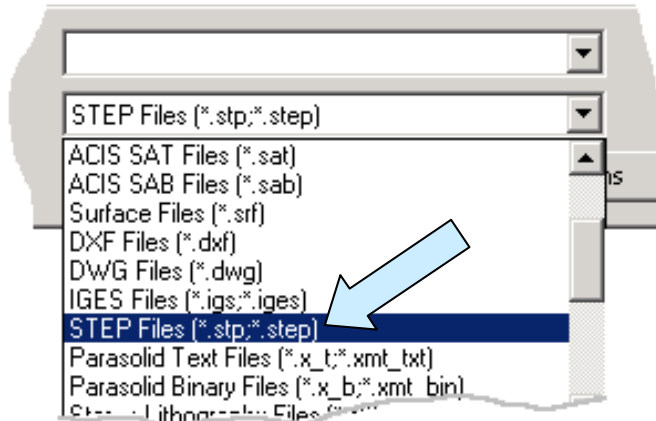
In this exercise, we're going to work with a STEP File of the molded plastic cover illustrated to the right.

This particular file is an advanced B-Rep Model in the STEP AP203 Format. The part is an injection-molded plastic cover with a 0.050 wall thickness.

After importing the file, I'll show you a powerful modification technique that you can apply to quickly change the wall thickness of the part.

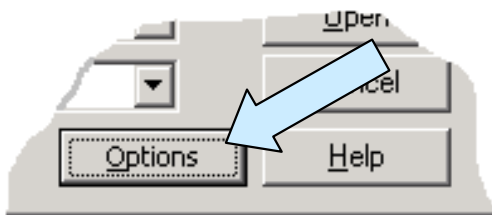


Click on the FILE Pulldown Menu and then on the OPEN Option.



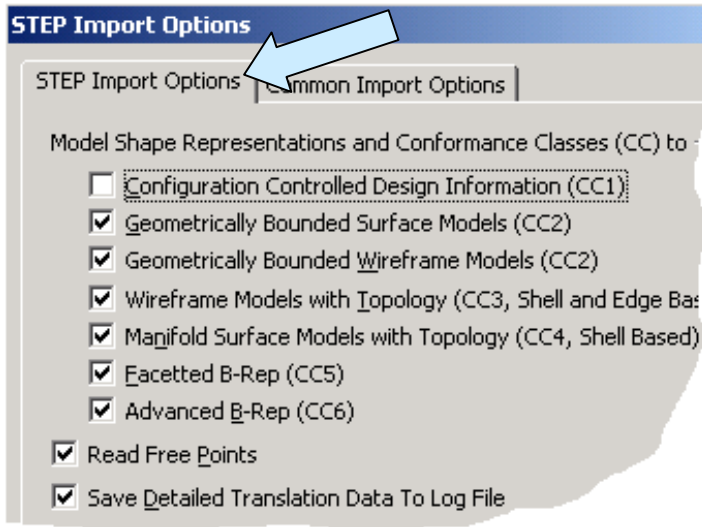
Next, click on the Pulldown Arrow to the right of the Files of Type Field.

Select the STEP File Option.



Select the file named "KidneyCover" on the Enclosed CDROM.

Click on the OPTIONS Button at the bottom of the Dialog Box.



An OPTIONS Dialog Box appears.

We'll use all of the Default Checked Options in the first Tab.

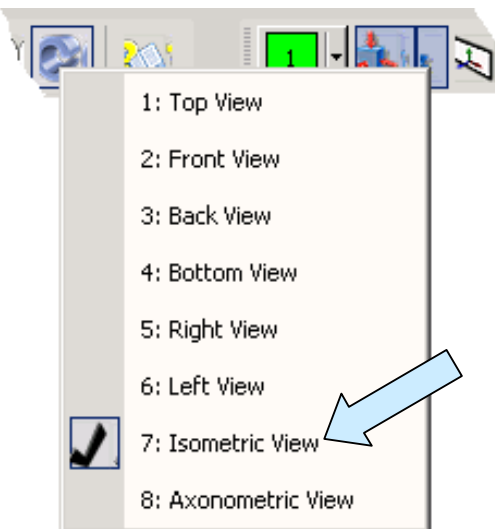
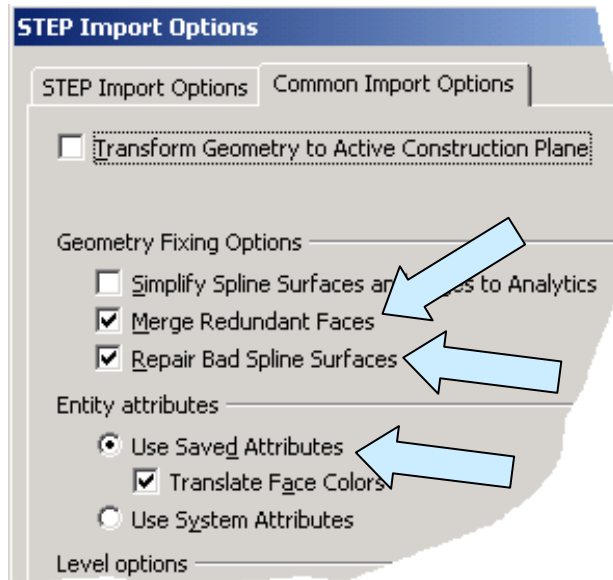
Next, click on the Common Import Options Tab.

We'll check the Merge Redundant Faces and Repair Bad Spline Surfaces Options.

Also, click on the Use Saved Attributes Option with Translate Face Colors.

Then, click on the OK Button.

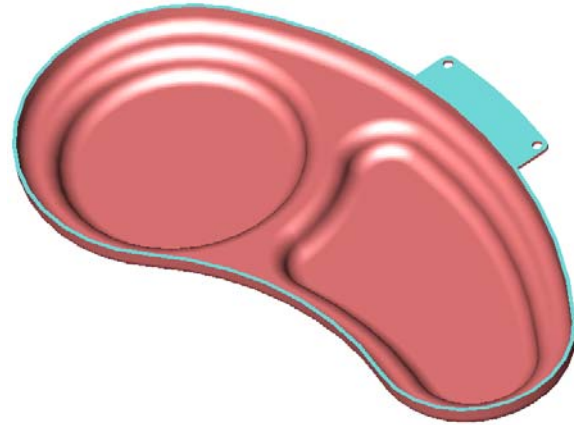
Now, click on the OPEN Button.



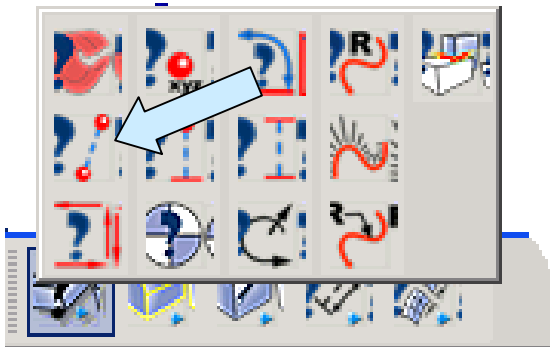
You will see the translation progress and when it is finished, a Translation Status Box will appear on the screen.

Close out of this box and then switch to the Isometric View.

Your part should look like this:



Now this part was originally designed with a 0.050 wall thickness.



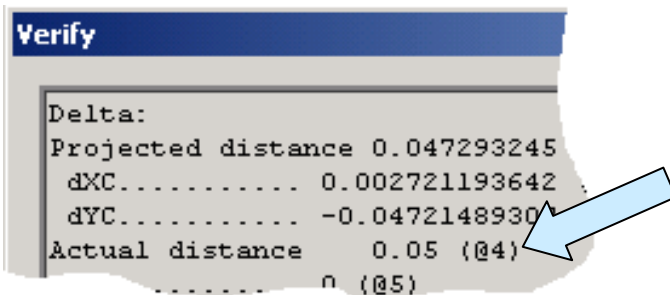
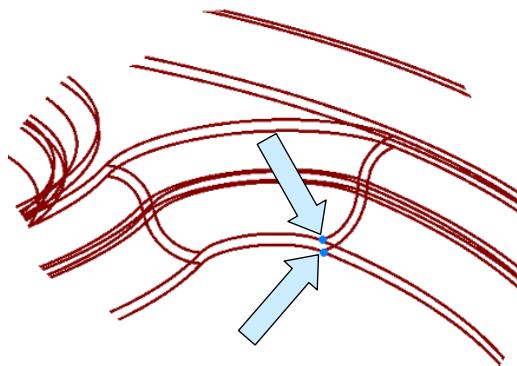
You can verify this yourself.

The VERIFY Tools are located on a toolbar at the bottom, left of the interface in the DrWalt Workspace.

Click on the VERIFY DISTANCE BETWEEN TWO POSITIONS Icon.

Using the ENDENT Option, click on an intersection of two edge lines that define the bottom, inner core surface of the part.

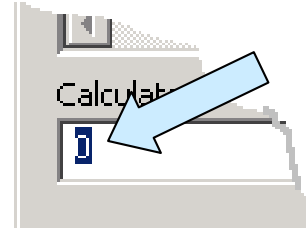
Then, using the ENDENT Option, select a matching intersection on the bottom, cavity surface of the part.



A VERIFY Dialog Box appears. Note that the Actual Distance is 0.050. Also note the @4 annotation after the value.

This means that this value is currently stored on the 4th register in the microprocessor of your computer.

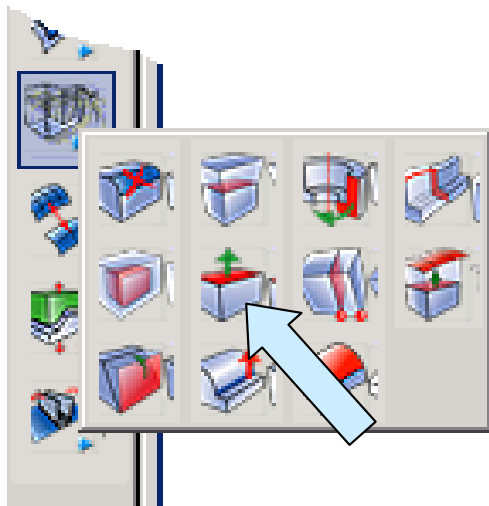
Anytime you verify a distance or other physical attribute in a REALyze file, you will get the register variable locations as annotations next to the calculated values. If you look at the lower section of the VERIFY Dialog Box, you will see A Calculator Field. It currently has a zero value in it.



Type the phrase "t = @4" in this field. This now stores the value of the shell thickness in a variable named "t" for the duration of this REALyze session. Anytime you have to type a value in an entry field, you can use a variable instead. This is a handy way to use design information in a working file!

Now, let's suppose that you've imported this part and are preparing to develop injection mold tooling to produce it. As you begin development of the tooling, a decision is made to increase the shell thickness to 0.060. This will affect all of the surfaces on the core side of the part and also result in thickening of the one tab by adding 0.010 material to the underside.

You could start all over and request a new STEP file from the designer. (On a more complicated part, you probably would resort to this since other issues might arise because of the change that are best resolved in the design environment!) On a simple part like this, however, it would be much more convenient to simply thicken the part yourself.

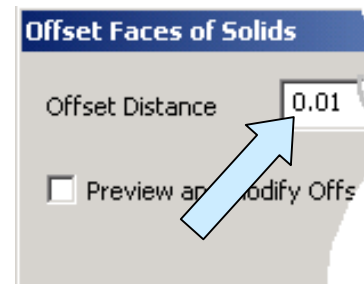


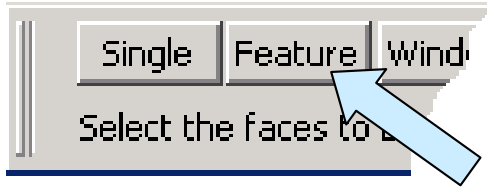
If you look carefully at the part, you'll realize that all of the core surfaces flow smoothly into one another with tangential relationships. This is relatively common on molded parts.

We can quickly solve our problem by using the CONSTANT OFFSET FACE Function.

Click on the CONSTANT OFFSET FACE Icon.

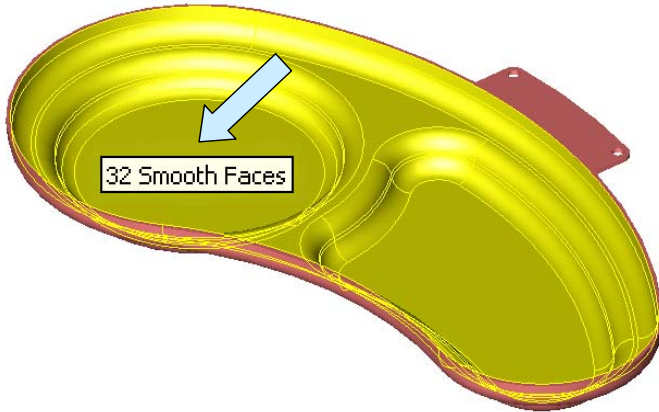
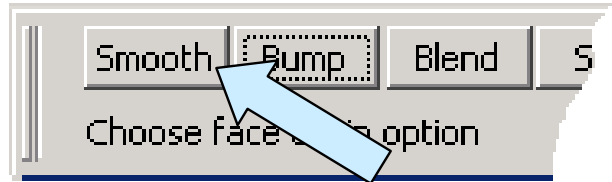
A small Dialog Box appears. Type 0.01 for the Offset Distance and hit the ENTER Key.





Click on the FEATURE Option on the Conversation Bar.

Next, click on the SMOOTH Option.



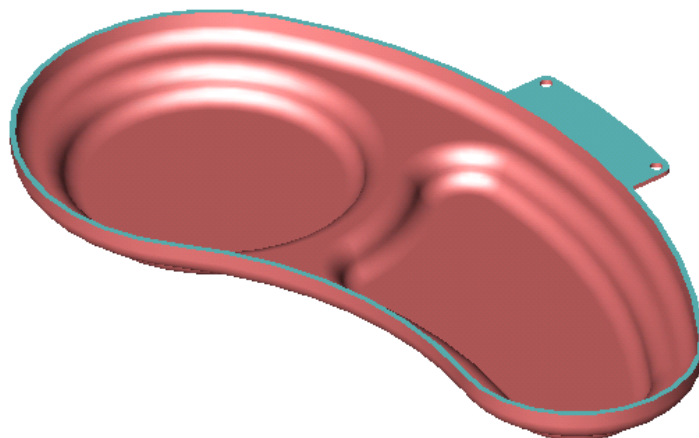
Now, click on any face on the core side of the part and all of the core surfaces highlight.

Hit the ENTER Key and the entire core side of the part is rebuilt with 0.010 offset surfaces.

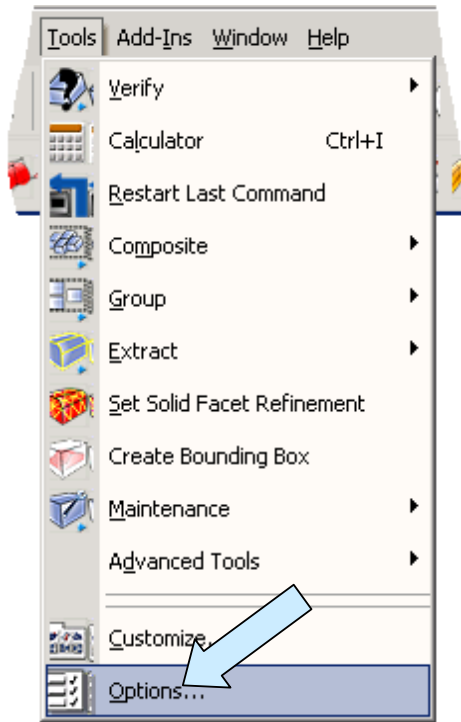
Now, single-select the underside surface of the tab. Since this surface is hidden in this view, you need to toggle the face selector to access it. In a normal install, REALyze assigns the SPACEBAR as the Hot Key for toggling selection behavior. (See the Sidebar on the next page for more information on toggling selection options.)

After selecting the underside surface of the tab, hit the ENTER Key. The tab also rebuilds so that it is now 0.060 thick.

Your completed part should look like this: (I've face colored the parting line surface to add contrast to the part.)



TO ASSIGN A KEY FOR TOGGING SELECTION

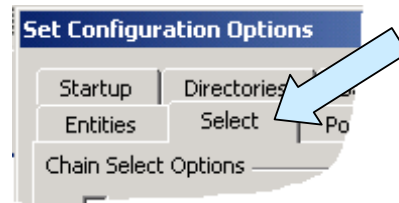


First, click on the TOOLS, Pulldown Menu.

Then, click on OPTIONS

The CONFIGURATION OPTIONS Dialog Box appears.

Click on the SELECT Tab.



The current key for toggling selection is displayed. You can click in this field and type a different key such as TAB. Then, click on the OK Button.

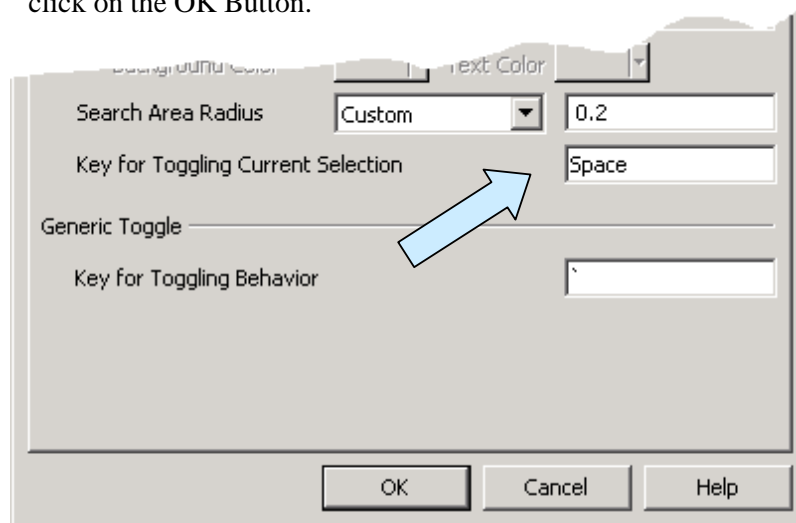


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