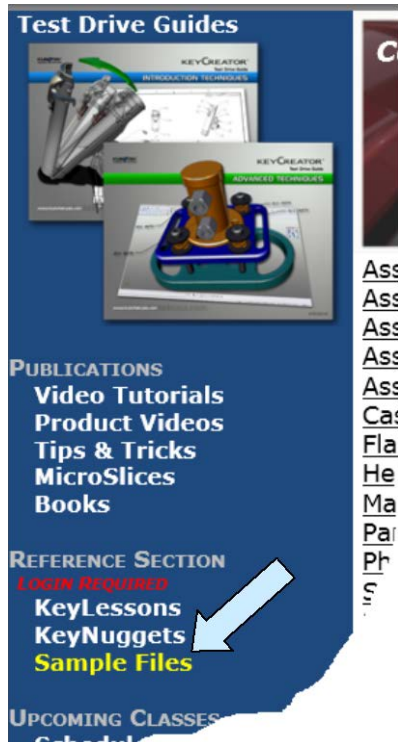
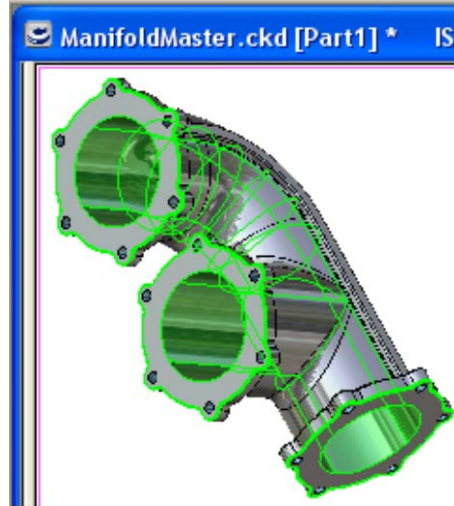


KEYCREATOR 3D Direct Modeling Software

KeyCreator Lesson KC8512

Analyzing Many Discrepant Faces

In this exercise we'll analyze two models where there are a large number of discrepant faces. By doing some initial visual inspection and using some common sense, we'll eliminate most of the clutter from the Difference Results Window so that we can quickly zero in on the differences between the parts.



Start by clicking on the Sample Files Option on the left side of the main Comparison Suite College Screen.

Then, click on the Manifold.zip file in the list of available files.

Note: Each of these zip files contains a set of two files. One file has “Master” in the name and one file has “Copy” in the name.

The Manifold.zip file will appear in your Downloads folder on your computer.

Right Mouse Click on the zip file and extract the two files within it.

You will have:

ManifoldMaster.ckd
ManifoldCopy.ckd

Click on the TOGGLE DIFFERENCE RESULTS Icon to display the window if it is not up.



KEYCREATOR 3D Direct Modeling Software

Next, click on the VALIDATE PARTS Icon.

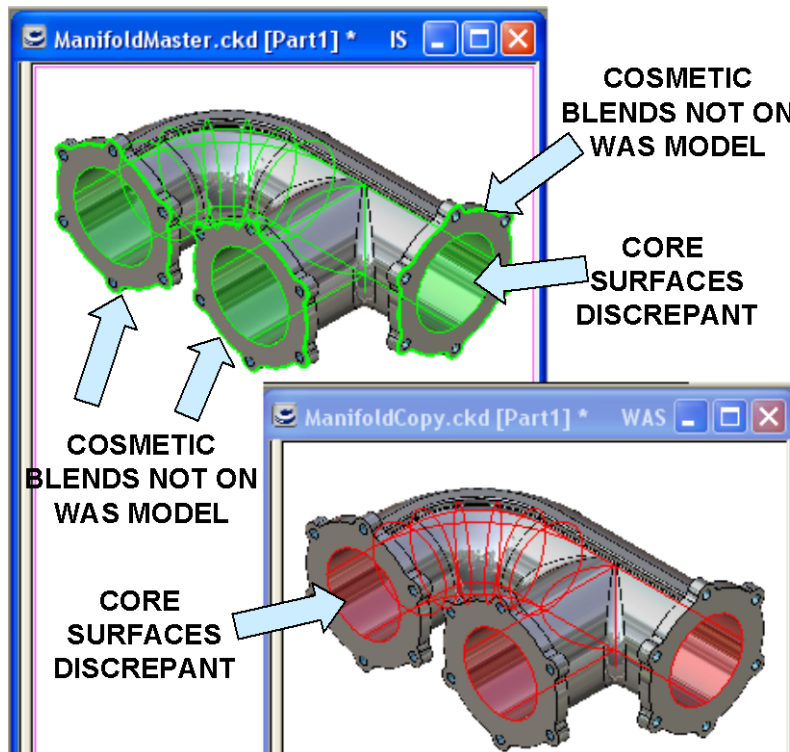


Open the ManifoldMaster file as the IS file and the ManifoldCopy file as the WAS File.

Your screen should look like this:



Notice that there are 76 entries in the Difference Results Window. Now while this may at first seem overwhelming, we'll see in a moment that the differences fall into clearly defined areas. Click on the RootFolder row in the Difference Results Window and the discrepant faces will all highlight on the IS and WAS models.

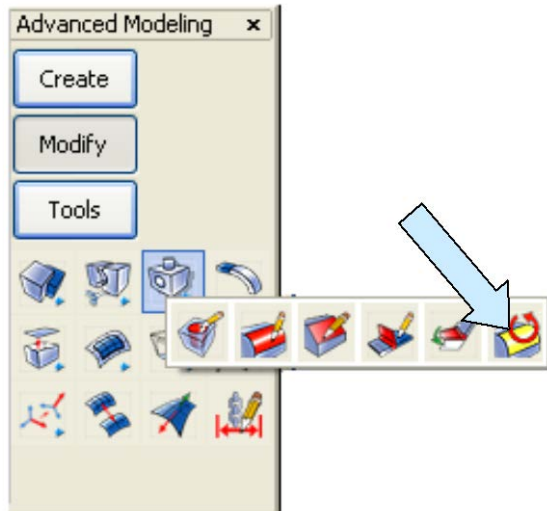


A quick cursory inspection reveals that the three flanges on the IS model have cosmetic blends that are missing from the WAS model.

Because of the complex perimeter of the flanges, these blends account for a large number of the discrepant faces.

KEYCREATOR 3D Direct Modeling Software

Let's use the powerful Suppress Function to temporarily remove these blends from the IS part. We'll then run a validation using the simplified part.



Note: Although KeyCreator is a Direct Geometry Modeler, it has many powerful Feature-Oriented tools like the Suppress Function that give you “Parametric Power on the Fly” without sacrificing any of the flexibility of freeform CAD.

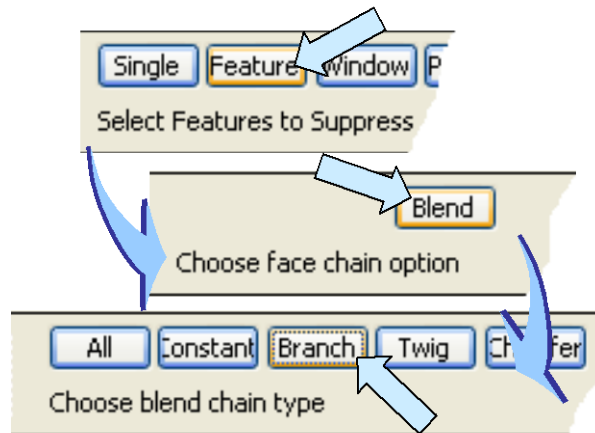
With the IS window active, click on the SUPPRESS Icon.

A Dialog Box appears. Click on the Blends Option and hit the ENTER Key.

Click on the Feature Option on the Conversation Bar, then on the Blend Option, and finally on the Branch Option.

Now, select the cosmetic blend on the outer face of each flange.

Then, hit the ENTER Key three times.



The cosmetic blends on the outer face of each flange are now missing from the model. (Note: You can use the ALT + LEFT ARROW to toggle the suppress tree window off the display so you can see your model again.)

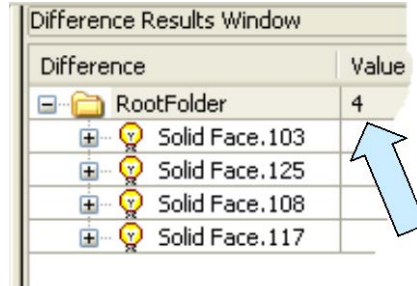


Now, click on the VALIDATE PARTS Icon.

You are asked if you wish to continue with the current parts. Click on the YES Button.

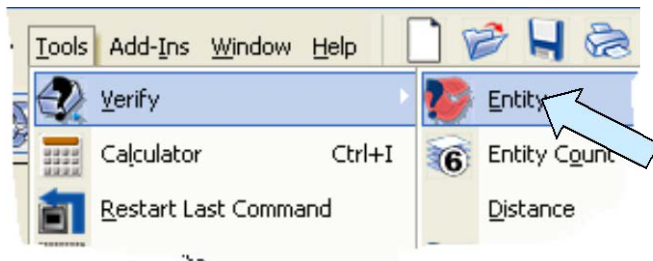
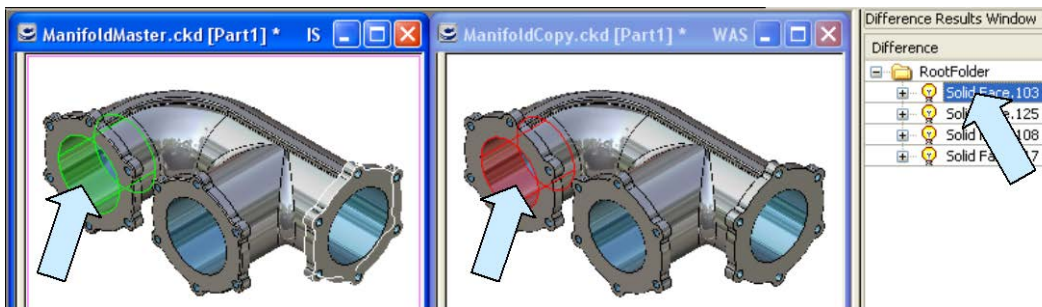
KEYCREATOR 3D Direct Modeling Software

Notice that the 76 entries in the Difference Results Window are now reduced to just 4!



Difference	Value
RootFolder	4
Solid Face.103	
Solid Face.125	
Solid Face.108	
Solid Face.117	

Click on the first entry in the Difference Results Window and you'll see the faces highlight in the IS and WAS models. The other three entries highlight the remaining core surface pairs.

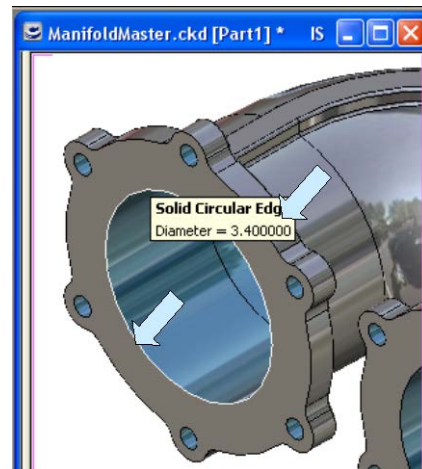


Click on the TOOLS/ VERIFY ENTITY Icon and move the cursor over the circle that defines the inner bore on the IS part.

Note that it is 3.4 inches in diameter.

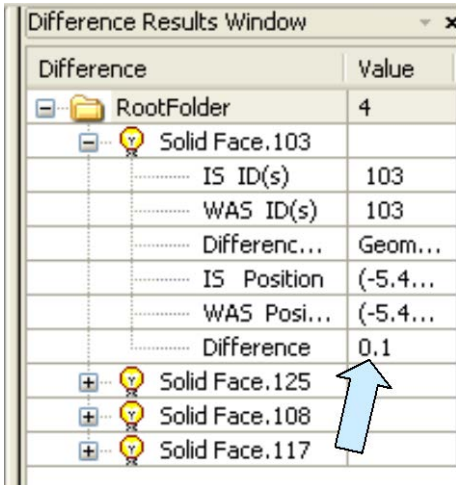
The equivalent circular edge in the WAS part is only 3.2 inches in diameter.

Obviously, we've found the other difference in the files.



KEYCREATOR 3D Direct Modeling Software

Note that you can also see the difference as a radial value in the Difference Results Window.



Difference	Value
RootFolder	4
Solid Face.103	
IS ID(s)	103
WAS ID(s)	103
Differenc...	Geom...
IS Position	(-5.4...
WAS Posi...	(-5.4...
Difference	0.1
Solid Face.125	
Solid Face.108	
Solid Face.117	

Click on the “+” in front of any one of the entries to expand it.

You’ll see a difference of 0.1 shown in the entry. (This is the radial difference. Multiply it by 2 and you get the diametric difference shown in the tool tips.)