



Part 4 of the iLogic Vessel Tutorial continues with the development of the vessel component. The objective will be to assemble the heads and shell. Once complete, you will understand the relationships between Inventor Parts and their parameters in the context of the iLogic environment.

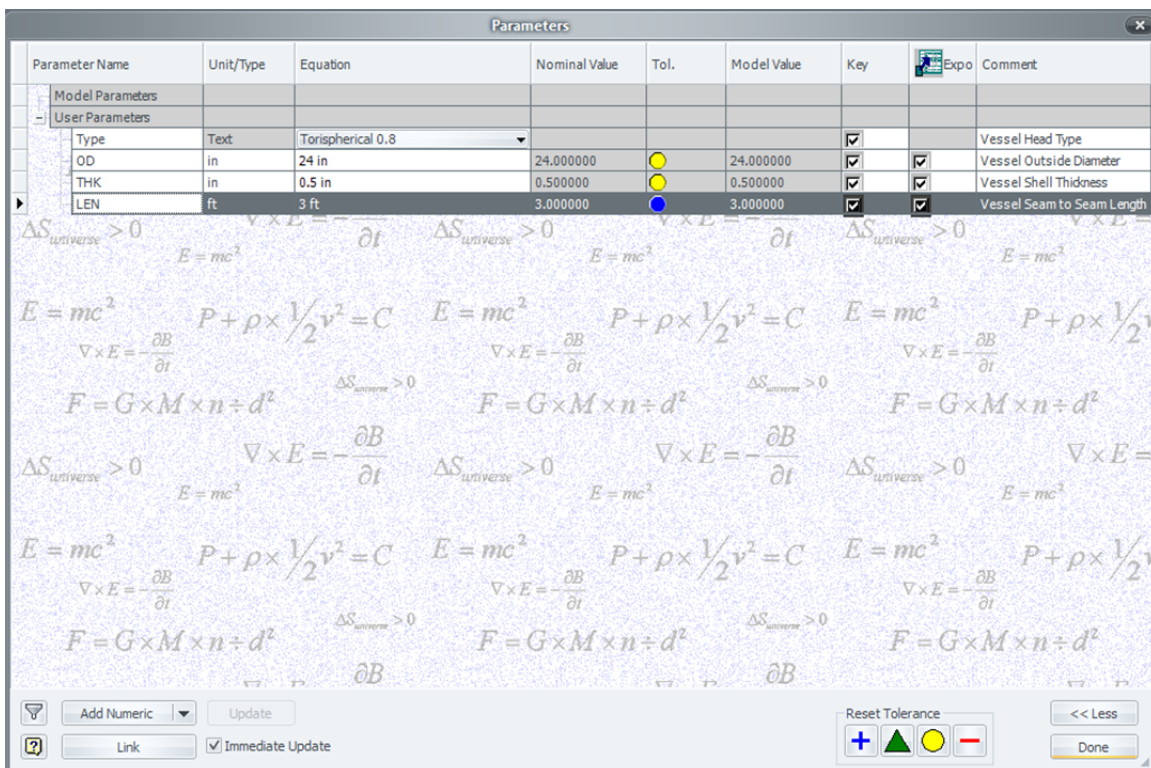
Create a new assembly using *%ProgramFiles%\Autodesk\Inventor 2011\Templates\Vessels\vessel.iam* as the template. Save the file as *vesselcomp.iam*.

You can download the files [here](#). Extract the contents to the iLogicTutorial workspace.

## Vessel Component Parameter Configuration

1. Open the Parameters Dialog box
  - a. Delete the SVOFS Parameter
  - b. Delete the SKLEN Parameter
  - c. Click *Done*

Your Parameters Dialog box should look like the one in the diagram.



### Assemble the Vessel

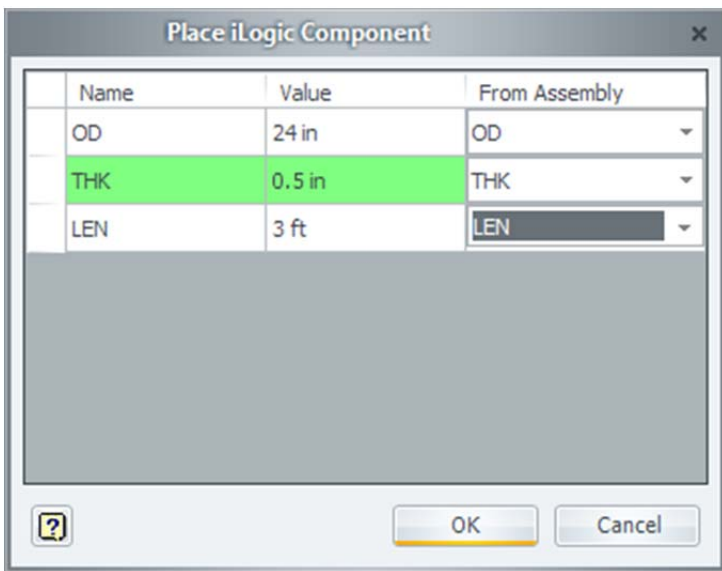
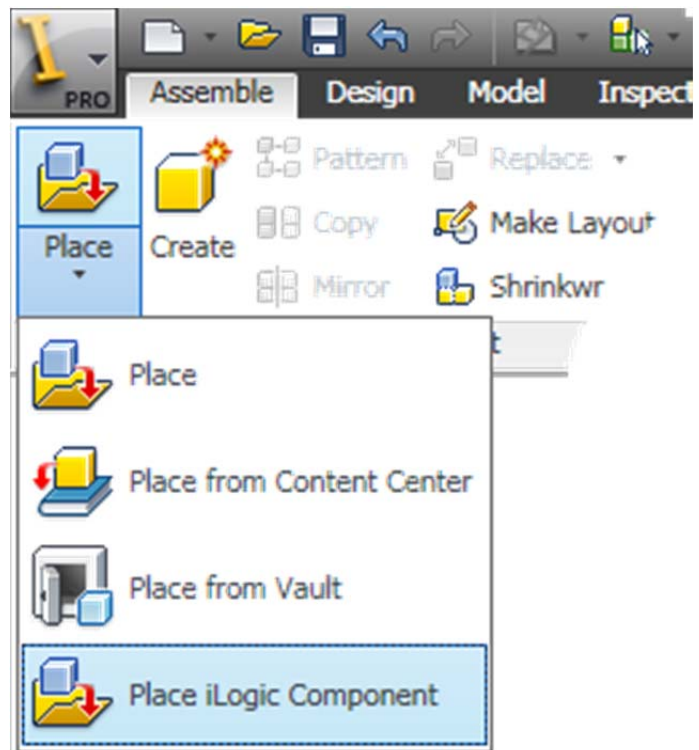
Place the Shell in the Assembly



1. Click *Place iLogic Component*
2. Select *Shell.ipt*
3. In the *Place iLogic Component* dialog
  - a. Set OD to the Assembly's OD parameter
  - b. Set THK to the Assembly's THK parameter
  - c. Set LEN to the Assembly's LEN parameter

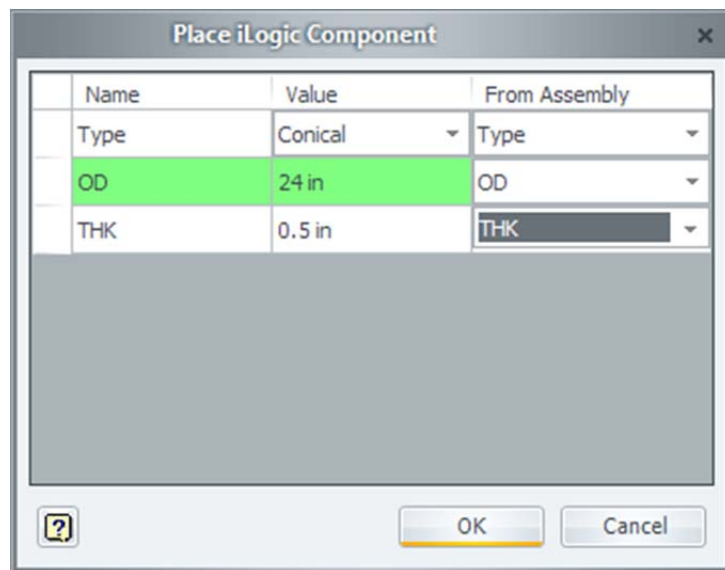
d. Click OK

4. Right click and click Done.



Place the Heads

1. Click Place iLogic Component
2. Select *Head.ipt*
3. In the *Place iLogic Component* dialog
  - a. Set **Type** to the Assembly's **Type** parameter
  - b. Set **OD** to the Assembly's **OD** parameter
  - c. Set **THK** to the Assembly's **THK** parameter
  - d. Click *OK*
4. Right Click, and select **Use iMate**, if it's not checked
5. Place the First Head
6. Place the second head
7. Right Click, and select *Done*
8. If you wish, constrain each head to the origin of the shell.



Open the Parameter Dialog box, and Change the Head Type to *Torispherical 0.8*. There may be an error message stating that the iMate failed to find a definition. This is ok, we will resolve that issue. It's a good idea to set the Head type in the template to the most common head type used in your projects.

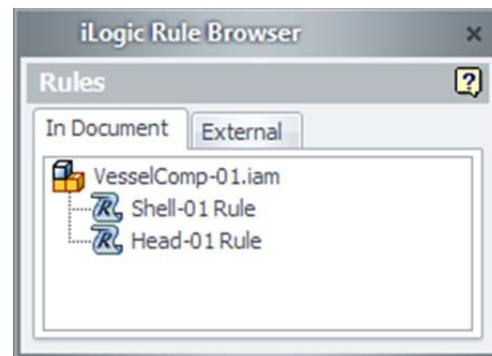
To resolve the iMate error, edit the insert constraints once the new heads have been updated. The error will not occur if you switch between torispherical heads. It is caused by the different sketches used for each head type.

## iLogic Code

When you create an iLogic Assembly, the code to control the parts and components is automatically generated.

Open the iLogic browser (Click *Manage* -> *Rule Browser*). As you can see, there are two rules, one for the shell, and one for the heads. Let's examine the code for the shell. If you right click a rule, you are given five options.

- Run Rule  
Runs the Rule Manually
- Edit Rule  
Opens the iLogic interface for editing
- Regenerate Rule  
Reconnects the rule with the model's parameters, recompiles the code, and then runs the rule
- Suppress Rule  
Prevents the Rule from running
- Delete Rule  
Deletes the rule



## Shell Component

In the iLogic Rule Browser, Right click *Shell-01 Rule*, and click *Edit Rule*. When the iLogic Shell was placed in the assembly, this code was generated by linking the Shell Parameters to the Assembly Parameters. When a parameter is modified in the parent assembly, this code is executed, and passes the values through to the shell.

```
Parameter("Shell-01:1", "OD") = OD  
Parameter("Shell-01:1", "THK") = THK  
Parameter("Shell-01:1", "LEN") = LEN
```

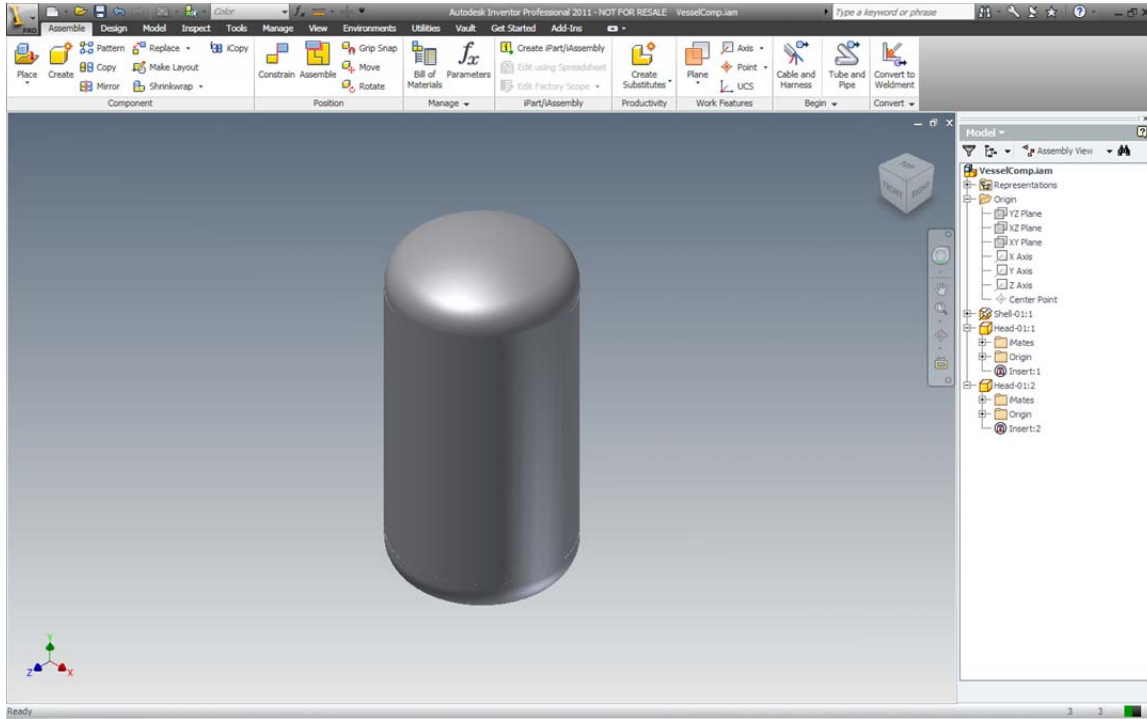
## Head Components

In the iLogic Rule Browser, Right click *Head-01 Rule*, and click *Edit Rule*. As with the shell, this code changes the selected head parameters whenever the parent assembly parameters are modified.

```
Parameter("Head-01:1", "Type") = Type  
Parameter("Head-01:1", "OD") = OD  
Parameter("Head-01:1", "THK") = THK
```

All the code can be modified as required to further automate the assembly.

Save the file.





*Conclusion*

This tutorial has attempted to explain how iLogic technology can be used to automate assemblies, and control parameters and features from the parent assembly, and maintain consistency in design. You are encouraged to explore the iLogic interface and develop your own iLogic code. You are free to modify the code as you require.

Should you have questions, please email [learning@camansol.com](mailto:learning@camansol.com).