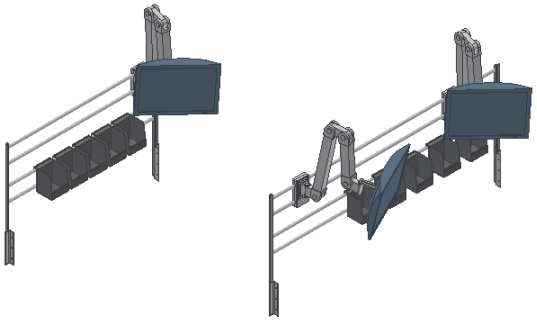
KETIVAMA
AUTODESK MANUFACTURING ACADEMY

Configurable Design

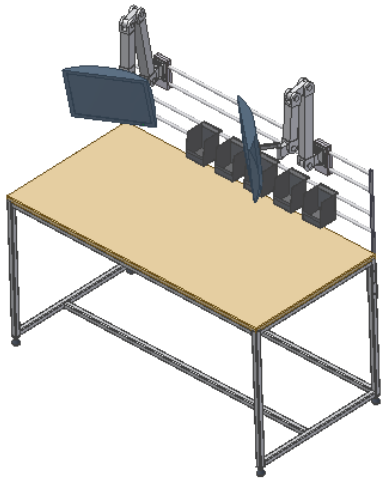
1-C | 1:00 - 2:15 pm
Instructor: Nicole Morris



Understanding Configurable Design

When we talk about configurable design, most often we are discussing the ability to take an existing design and make variations. Speaking for the example shown in the image to the right, you may have several variations available of this assembly or even a custom variation.

First you will see how you can use Inventor's iAssembly tool to create a master assembly and several different variations of your original assembly. We will talk about the capabilities and best practices for using these configurations and documentation for your variations. We will also show how you can use Inventor's iLogic to control the iAssembly interface. Finally we will show a similar concept using AutoCAD's Dynamic Block capabilities.



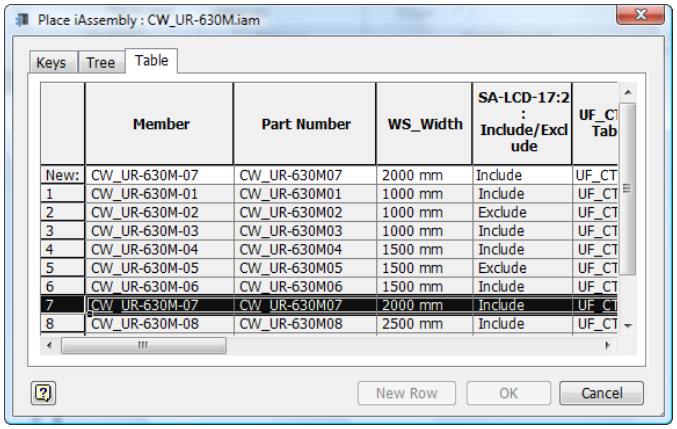
Assembly Configuration in Autodesk Inventor

One basic principal to understand is that the iAssembly function controls parameters that are available at the assembly level. Some of these values include constraint parameters, suppression values, iPart versions and assembly features. A list of parameters available at the assembly level is included in the detailed handout. In short information contained in the top level assembly can be controlled by the iAssembly function.

A "factory" is then generated which contains all the different configurations. Once a factory is generated it can be edited and appended. The factory generates members that are kept in an subfolder named for the factor in the project's workspace. As a member is used a file will be created for it in this folder.

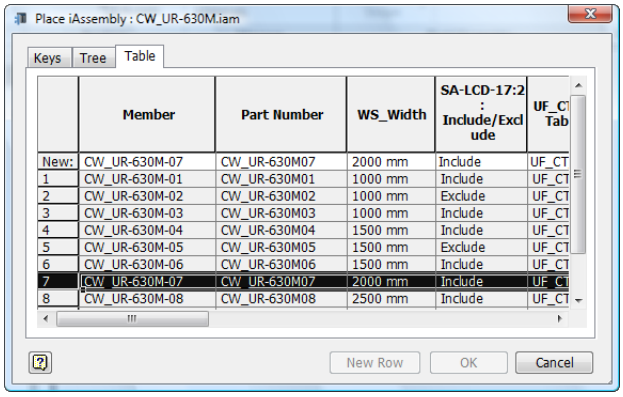
Change current Member

Once you have created your assembly you will see a Table icon in your browser. You can double click on the different members of your iAssembly to see the different configurations.



iAssembly Usage

When you insert an iAssembly into another assembly you will have the option to select which member to include. Use Keys, Tree or Table View.



Each time a member is used a member is created in the project in a subfolder named for the Factory. Each member will have the Member name given in the original iAssembly Author dialog box.

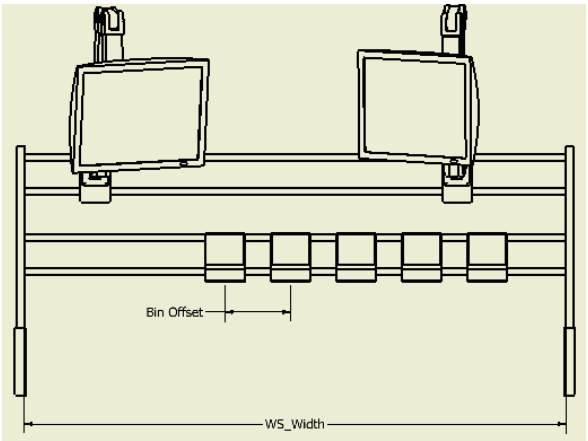
You can also add new members by plugging in different parameters and selecting New Row. This will update the original factory.

iLogic Rules in iAssembly

In order to facilitate combinations of functions such as changes to nested parameters and changes in iFactory members, consider becoming familiar with Inventor's iLogic. iLogic is a rules based configuration tool that you can easily set up to control functions in Inventor. In today's example we will show how you can automate the changing of the length of a work bench and selecting the appropriate rack for that length.

iAssembly Documentation

You can create a specification sheet of an iAssembly factory. You can create a detailed parts list of your factory, listing each variations bill of materials. You can also create a Table that lists parameters for each variation as commonly seen in a specification sheet.



TABLE

Member	SA-LCD-17:2:Include/Exclude	WS_Width	Bin Count	Bin Offset
CW_UR-731H-01	Include	1000 mm	3 ul	50 mm
CW_UR-731H-02	Exclude	1000 mm	5 ul	50 mm
CW_UR-731H-03	Include	1000 mm	3 ul	50 mm
CW_UR-731H-04	Include	1500 mm	5 ul	150 mm

Configurations in AutoCAD Using Dynamic Blocks

You can use Dynamic blocks in AutoCAD to represent different configurations of an assembly or part. Once this block is complete, you can copy and paste in onto a tool palette for future use. People who are using AutoCAD to layout drawings can now select which configuration of the design they would like to use.