

Working with Inventor View Representations

Mike Thomas

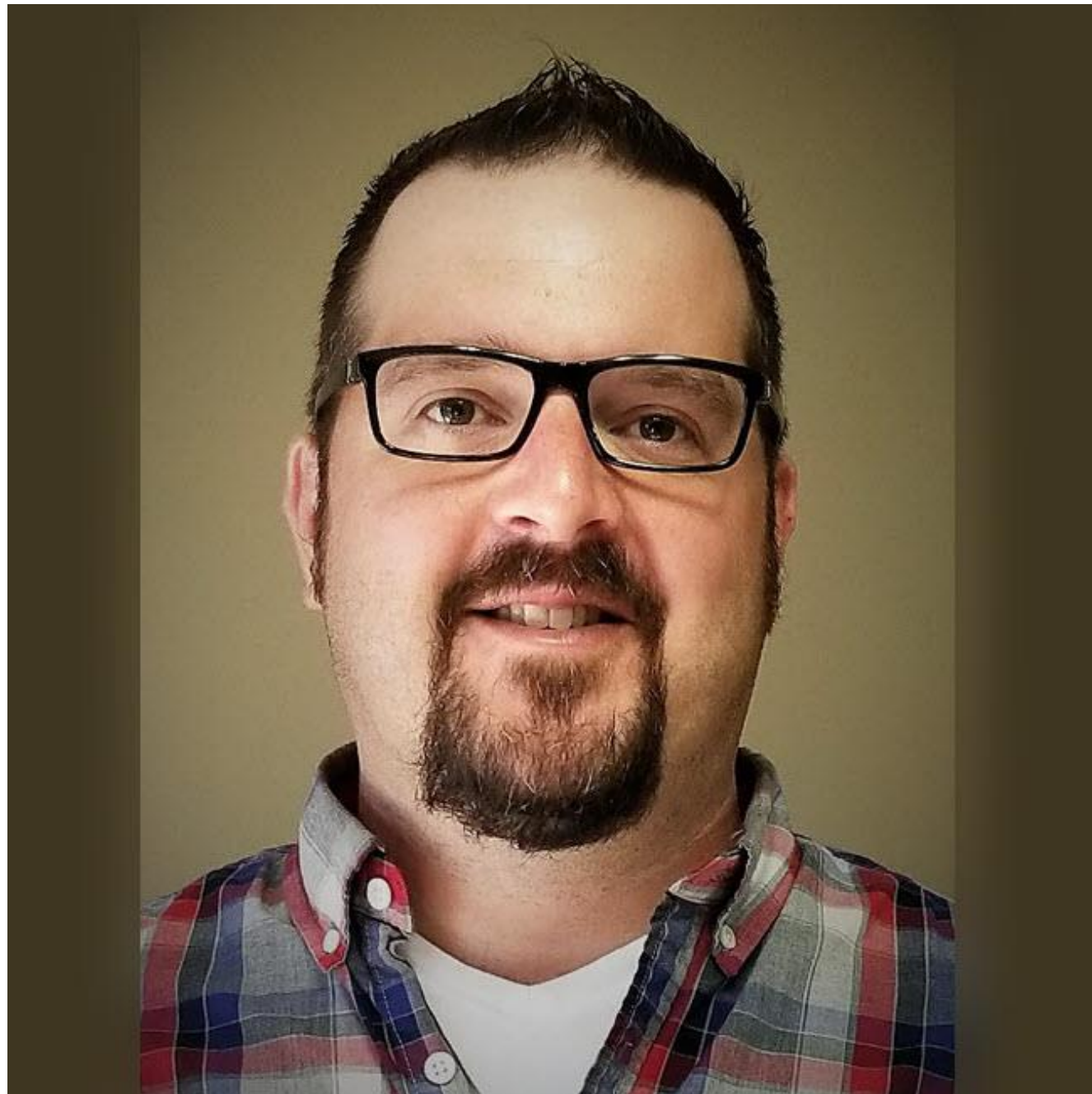
Technical Services Manager – Prairie Machine

IM196136



Class Summary

Now You See It (Now You Don't) - This class will teach you how to use View Representations in Inventor assemblies.



About the speaker

Technical Services Manager

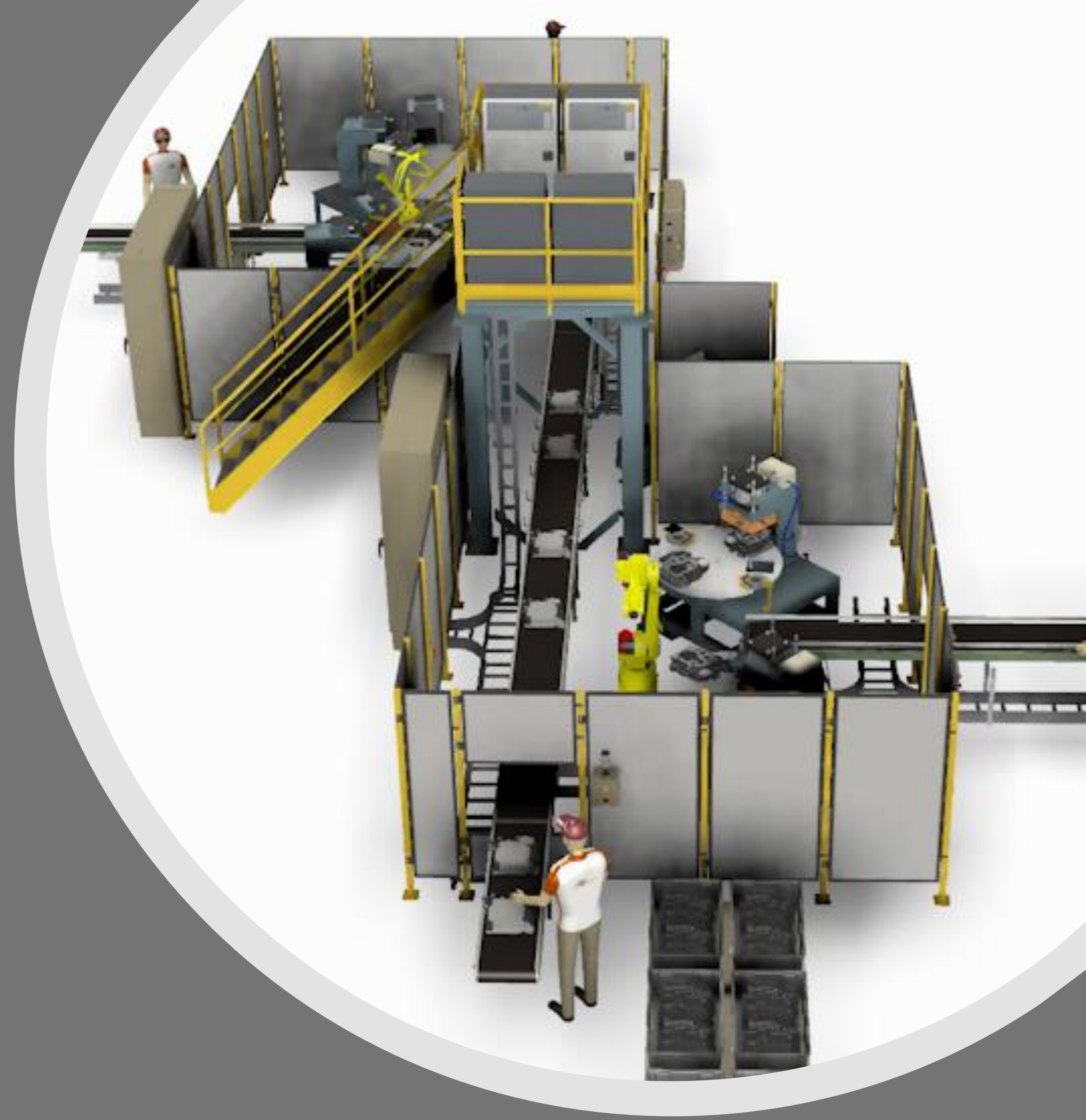
I spent the first 12-years of his career in the Autodesk channel working for an Autodesk reseller. I've has been using AutoCAD since r13, cut my solid modeling teeth on Mechanical Desktop, and have been using Inventor since before it was known as Inventor.

I am now the Technical Services Manager at Prairie Machine, a mining equipment manufacturer. Reporting to the general manager, I am responsible for overseeing the company's technical operations and the strategic technical growth.

Representations

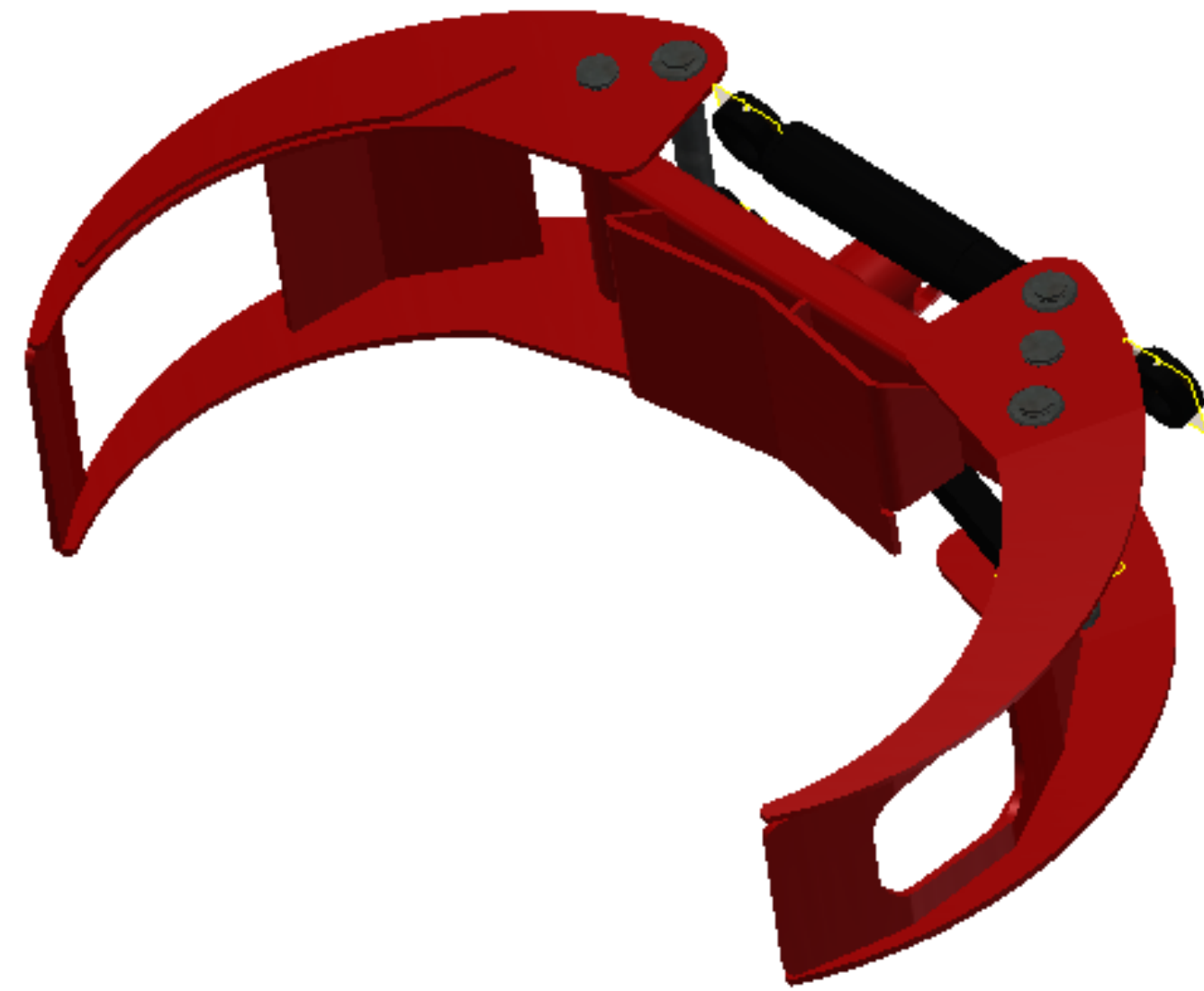
Inventor provides three types of representations to help manage your assemblies. This includes **View**, **Position**, and **Level of Detail**.

Both **View** and **Level of Detail** representations help with large assembly performance.



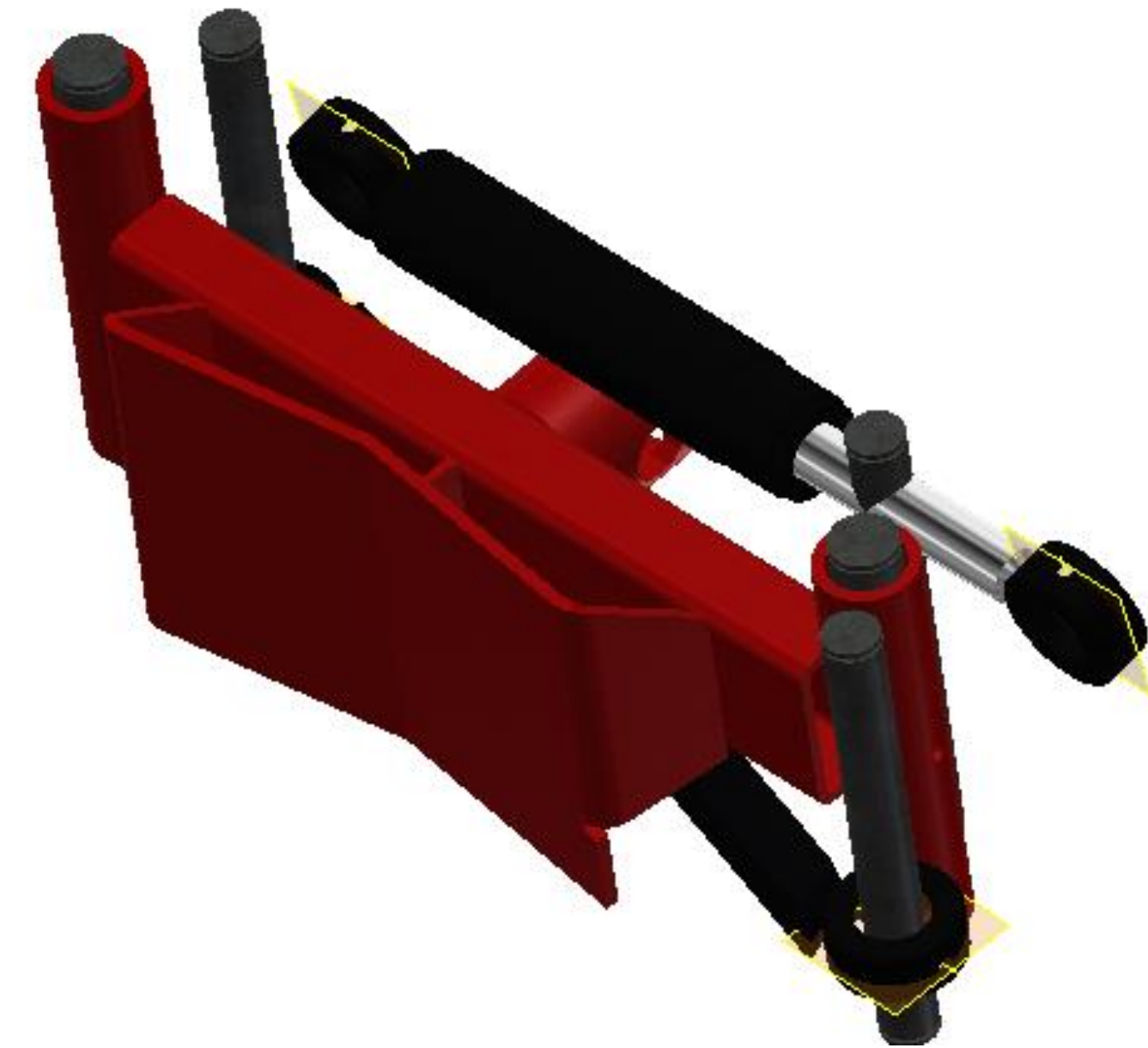


What are View Representations?



View Representations

Design View Representations capture view related information in a named configuration that can be restored at a later date.

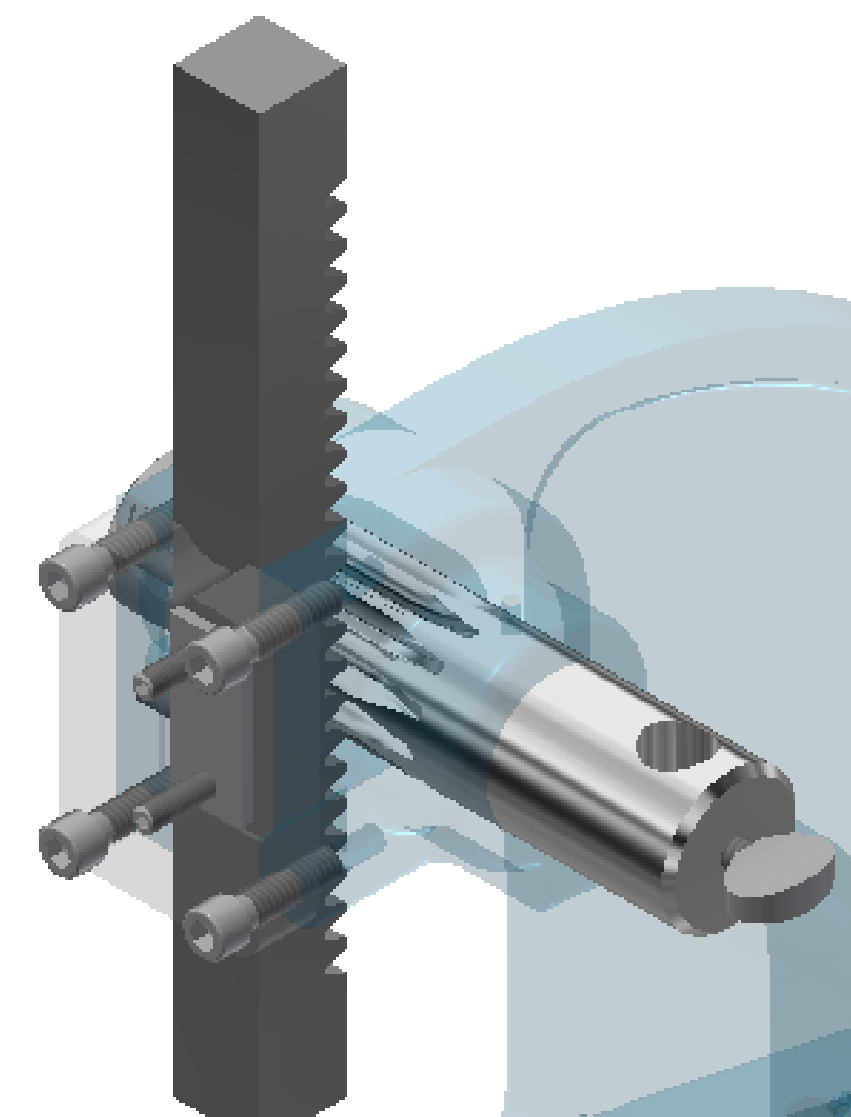
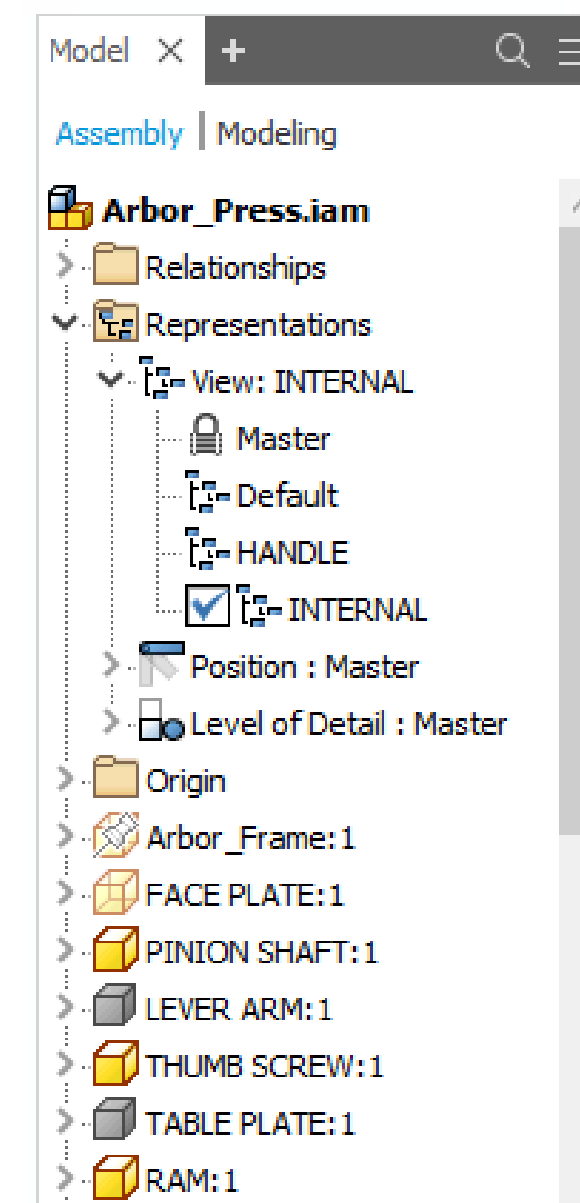
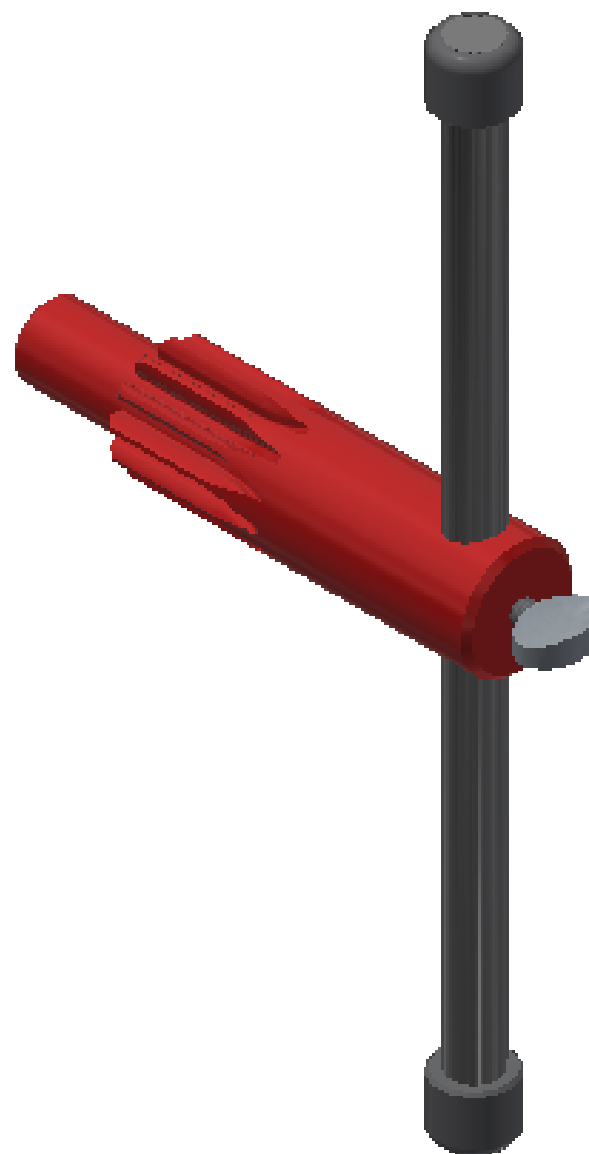
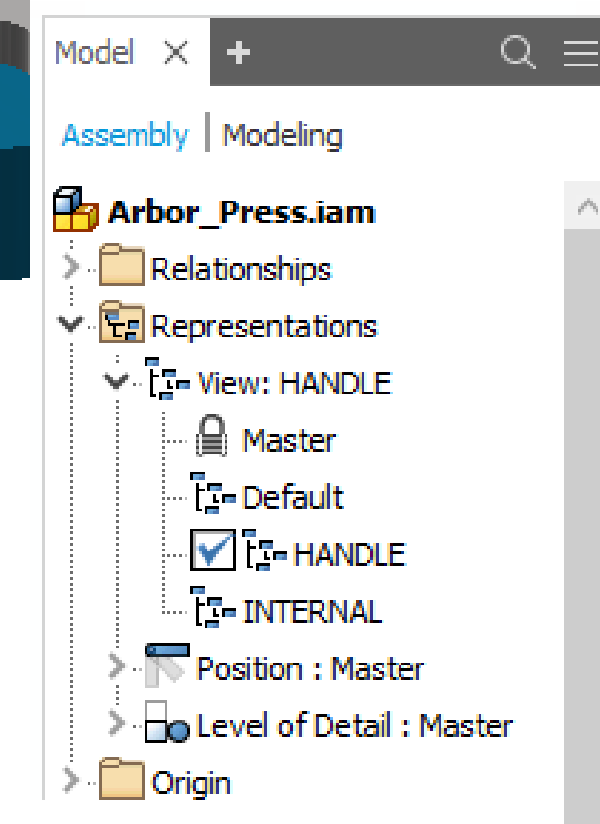
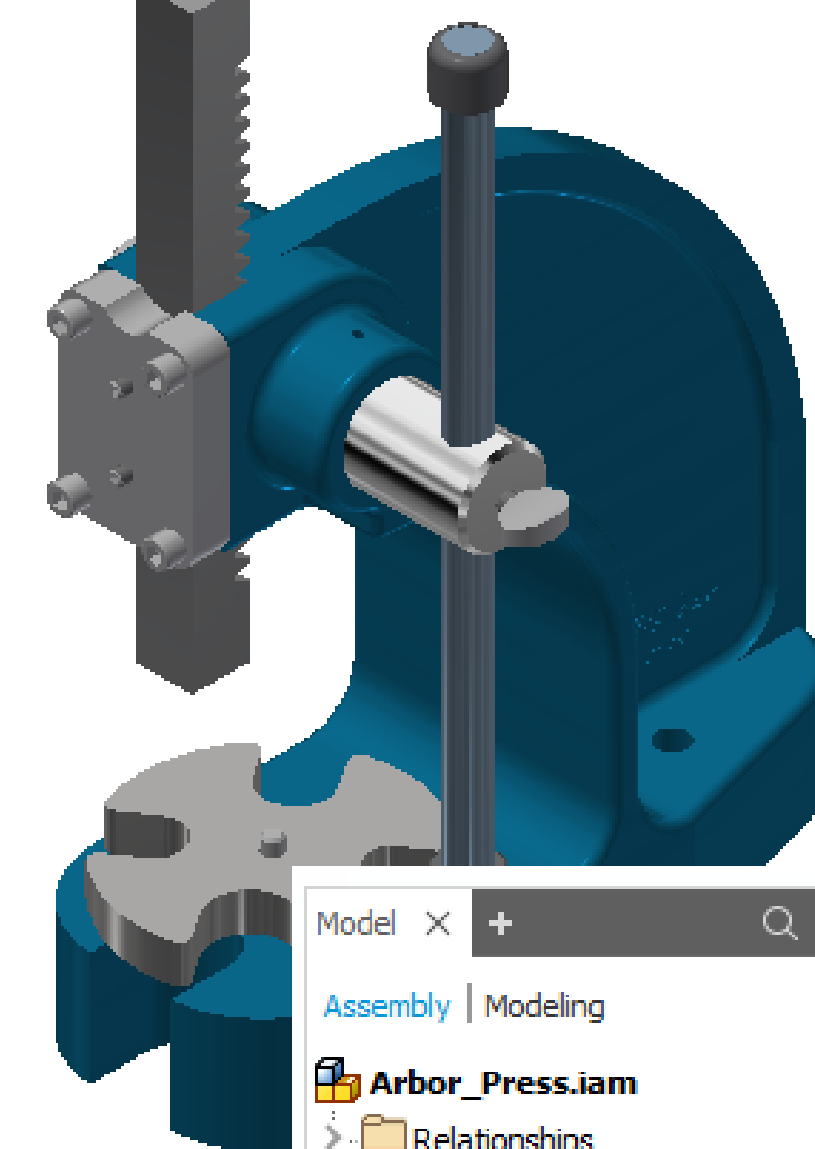
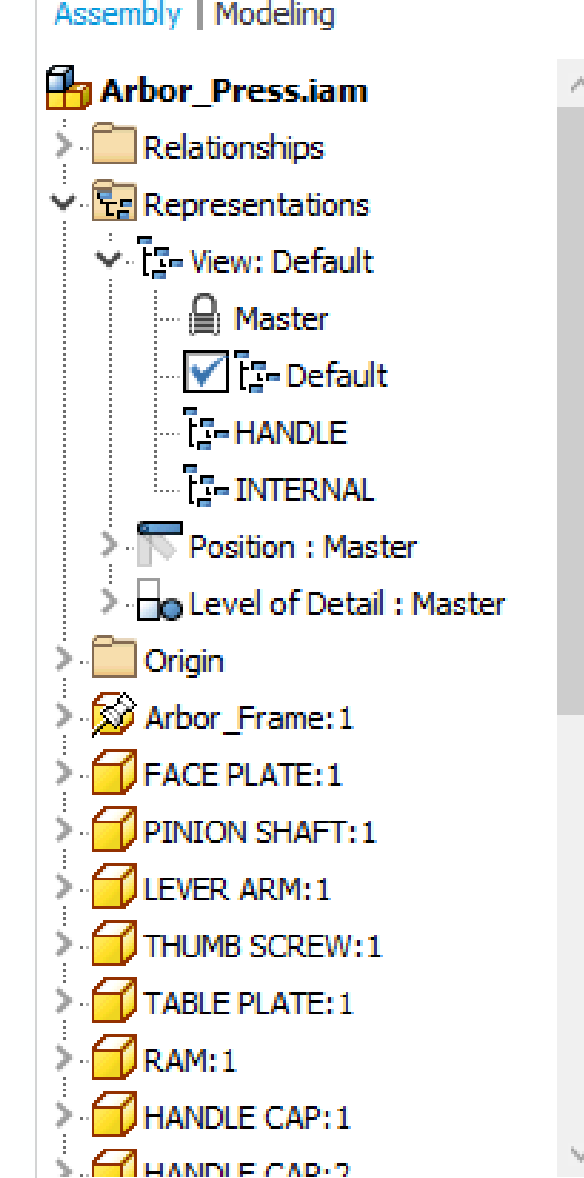


View Reps Capture:

- **Component Visibility** (as in on or off), **Status** (enabled/disabled), & **Transparency**
- **Colour** (and other style characteristics) of individual components
- Sketch & Work Feature **Visibility**
- **Selection Status**
- **Camera State, Zoom magnification, and viewing angle**

Use View Reps to...

- Turn off component visibility (simplify tasks)
- Manage what's shown in a drawing view - aids in documenting the assembly and Improve the performance of drawings
- Control the visibility of welds in a weldment
- Assign transparency to components you want to see through in the display or in drawing views
- Create unique views to filter the parts list in a drawing
- Capture viewing angle and zoom factor - convenient for presentations
- Assign unique colours to component instances
- Control sketch and work feature visibility (manage clutter)
- Simplify positional representations
- Help manage multi-user projects
- Prepare the assembly for the creation of a Level of Detail representation



Working with View Representations

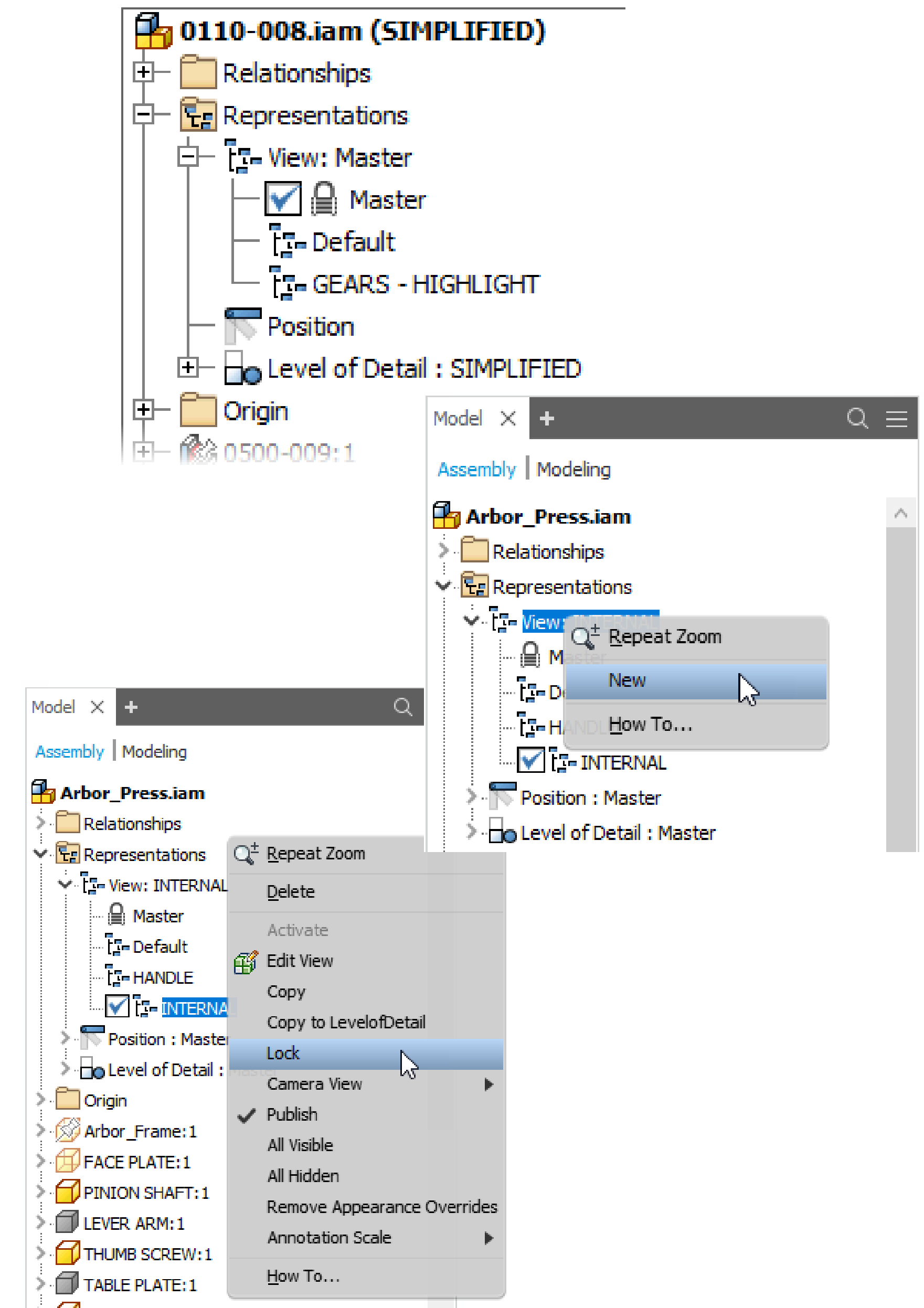


Working with View Reps

- To create a new View Rep, right click the Master View Rep and select **New**
- Double-click to **activate** the View Rep, click twice slowly to **rename**
- **Lock View Reps** to prevent any changes (right-click)
- **Copy** to create duplicates of existing representations (right-click)
- **Remove Appearance Overrides** to restore overridden component appearances to their original styles
- Use **All Visible** and **All Hidden** to quickly toggle the visibility of all components (top-level) within the assembly
- Select the desired **Annotation Scale** to manage the size of *3D Annotations*
- **Camera View** to manage the capturing of camera positions with the View Reps.

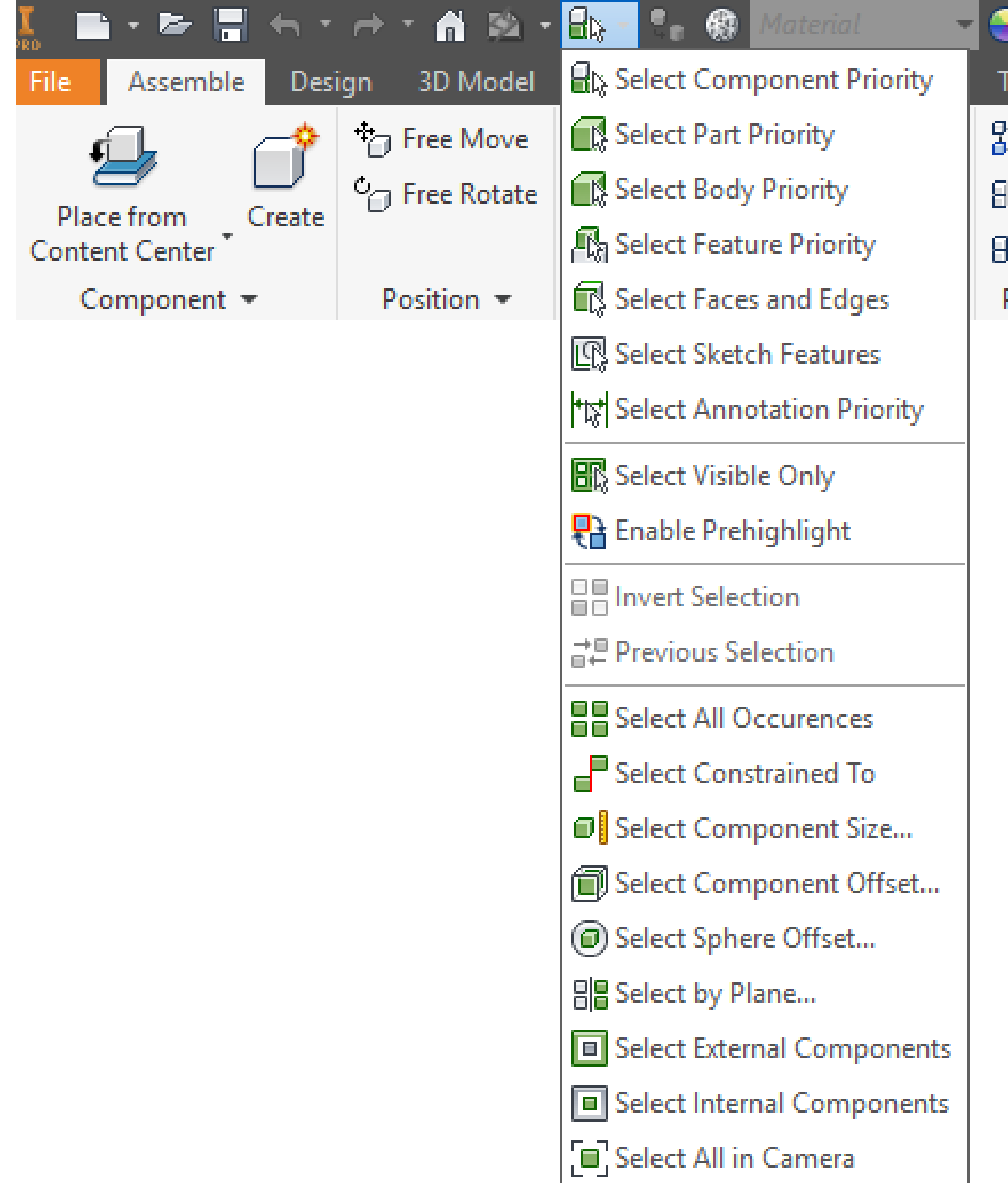


Name your view reps descriptively... view1, view2 doesn't mean much to others



Utilize Selection Tools

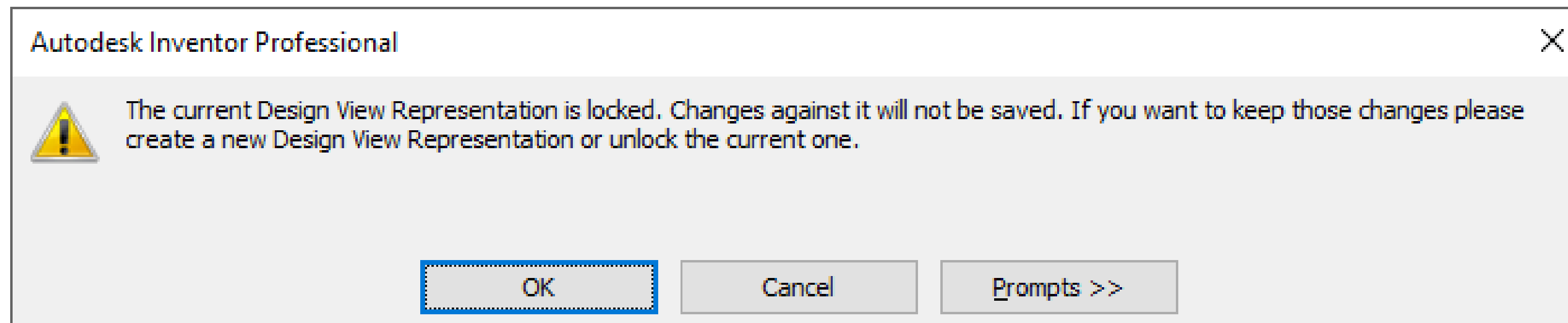
- Utilize the component selection tools to aid in generating View Representations
- Example: Use All in Camera to select only components that you can see.



Changes against it will not be saved?

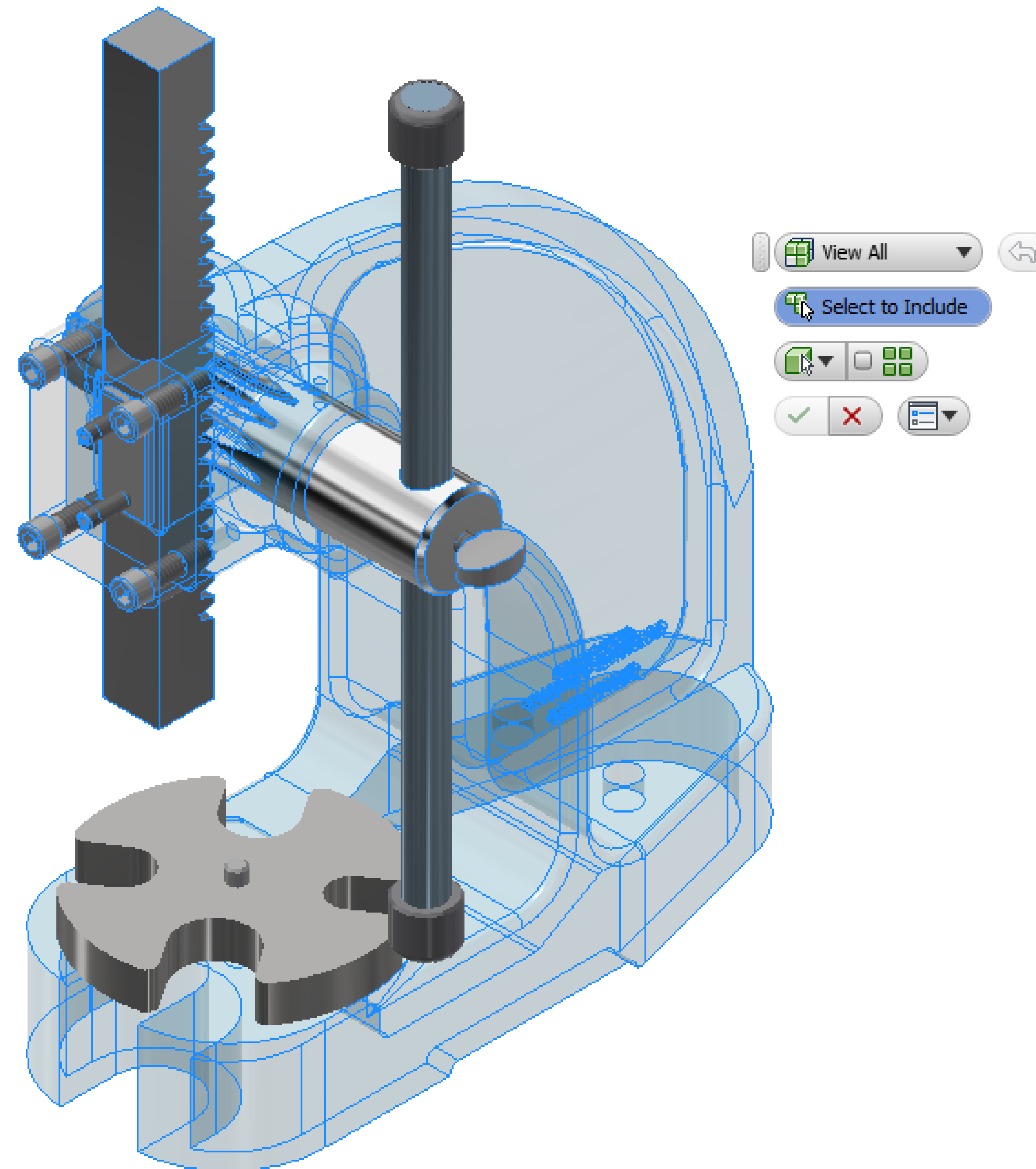
View Representations are “live” (by default). When Locked you are still allowed to make adjustments, but the changes are NOT saved to the View Rep.

Attempting to save changes to a locked View Rep causes the most panic-inducing message in all of Inventor!



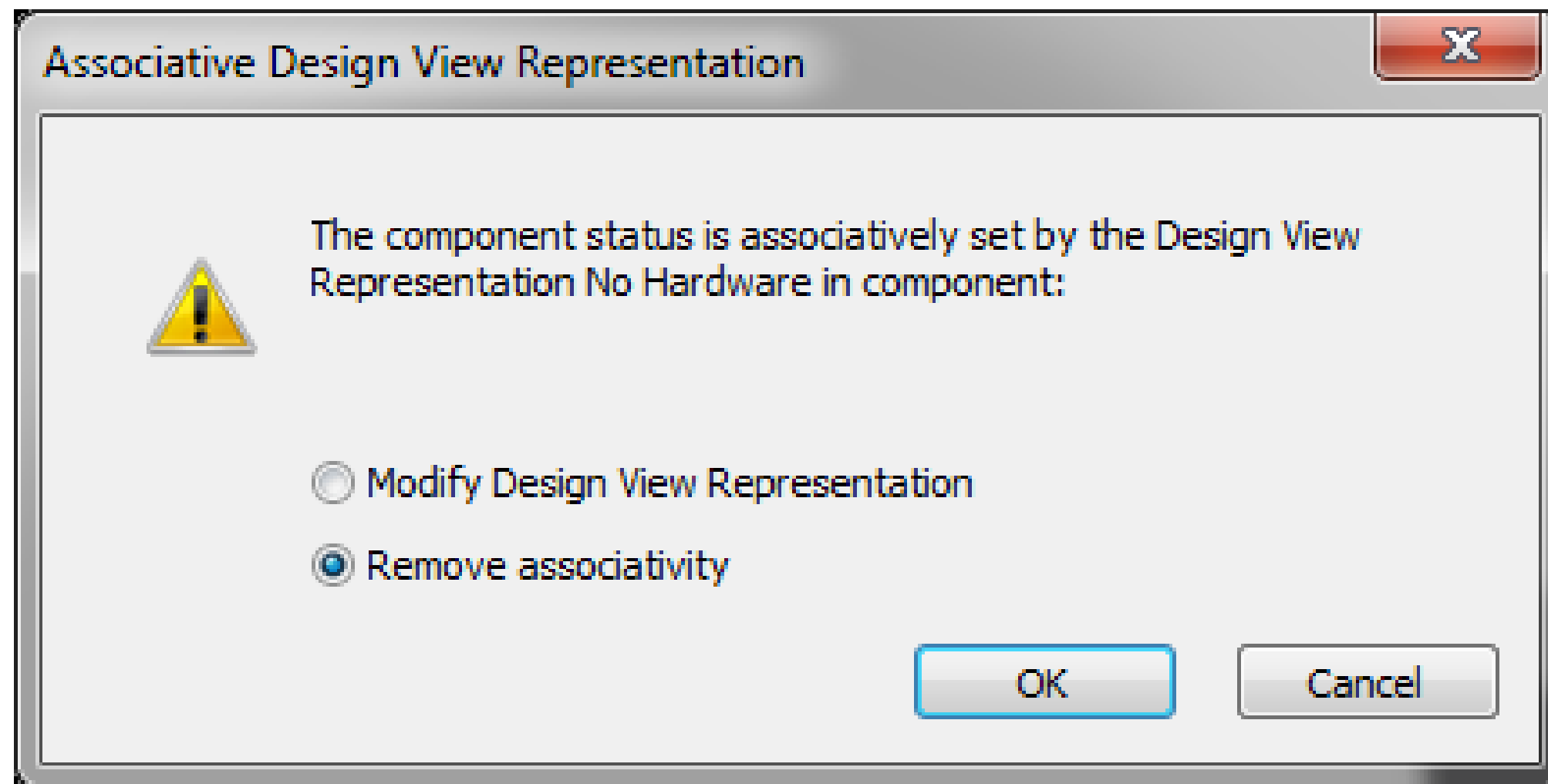
Edit View

- Utilize the **Simply View tools** (Edit View) to work with component visibility within the window opposed to the browser:
 - **View Options** to display all components, excluded (invisible), and included (visible)
 - Toggle the selection priority: **Component, Part, & Parent** priority
 - Selecting **All Occurrences**



Demonstration!





Design View Associativity

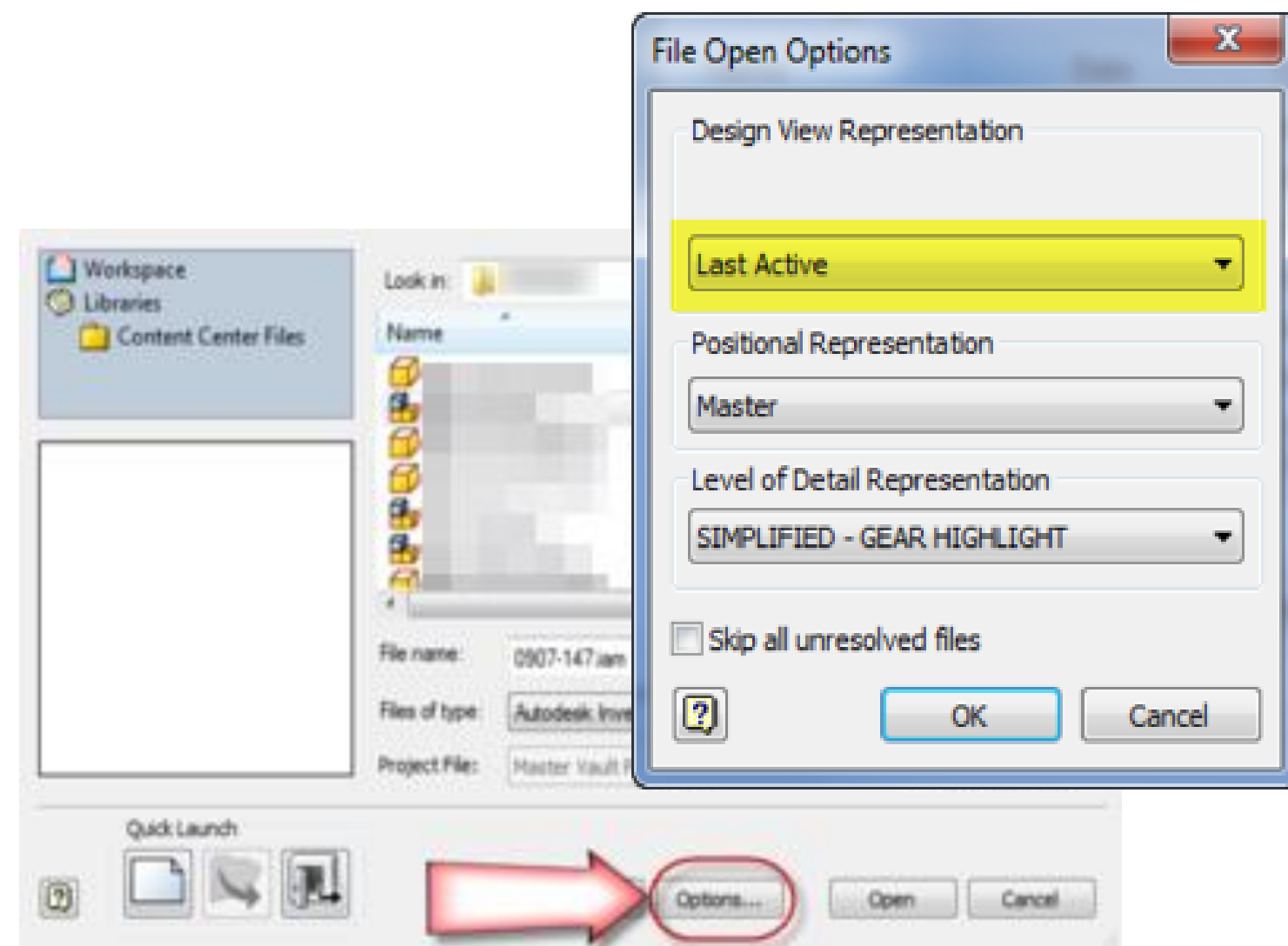
Components placed into assembly remain associative to its View Representations

Changes to the component automatically update the instances in the assembly

Making changes in context of the assembly prompts you to decide on maintaining the associativity

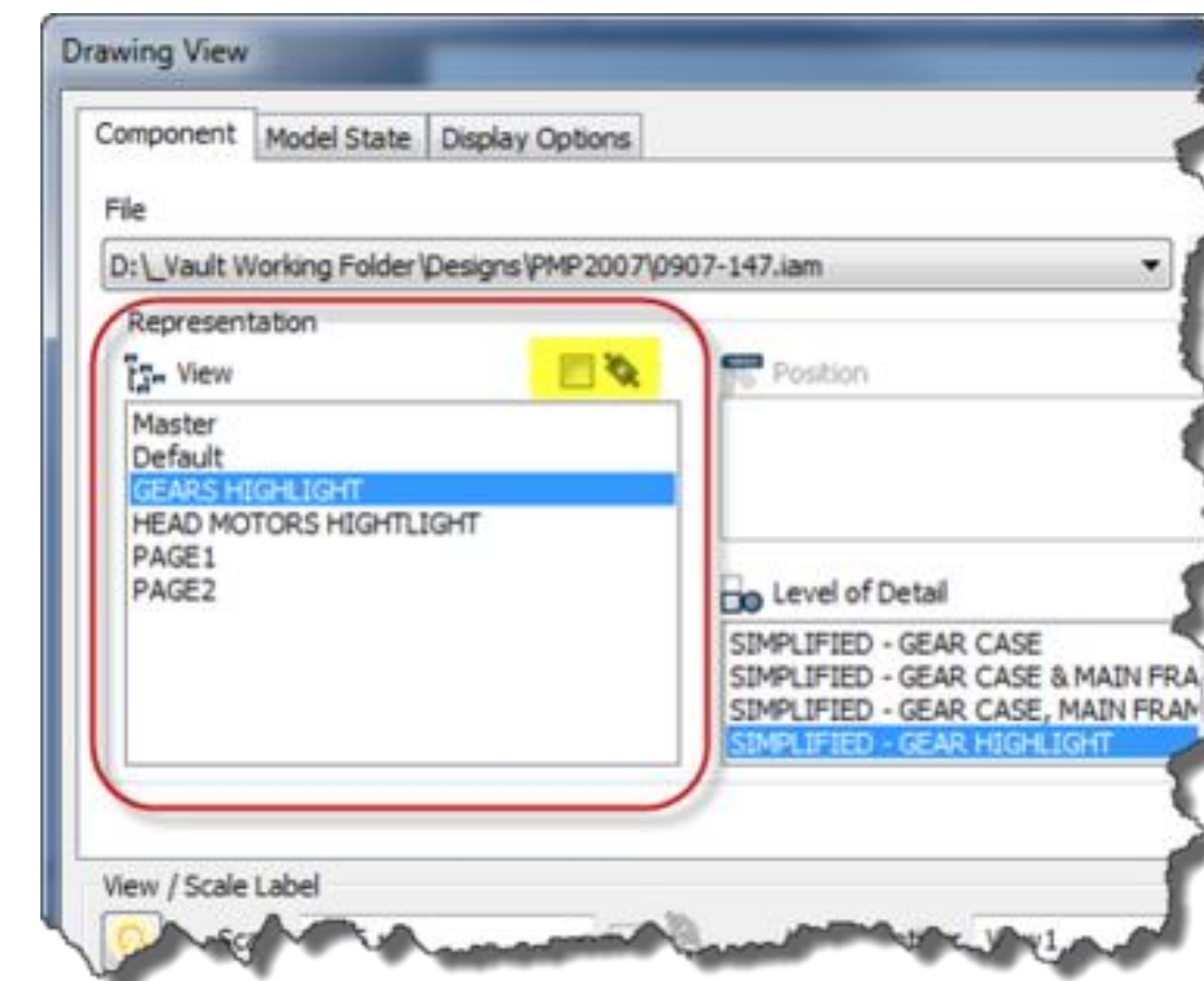
Demonstration!





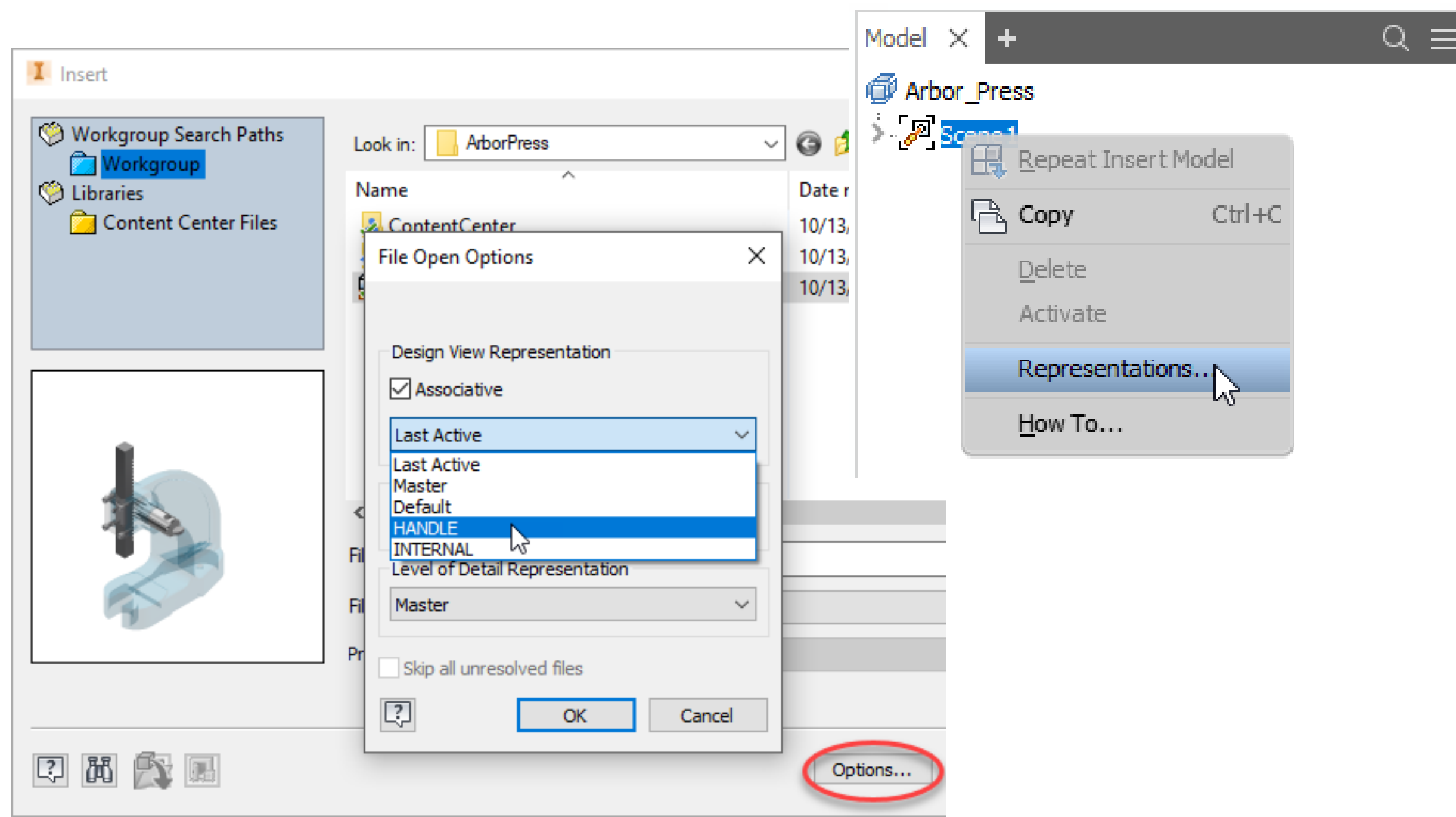
File Open Options

Select a View Representation on open and placing sub-assemblies



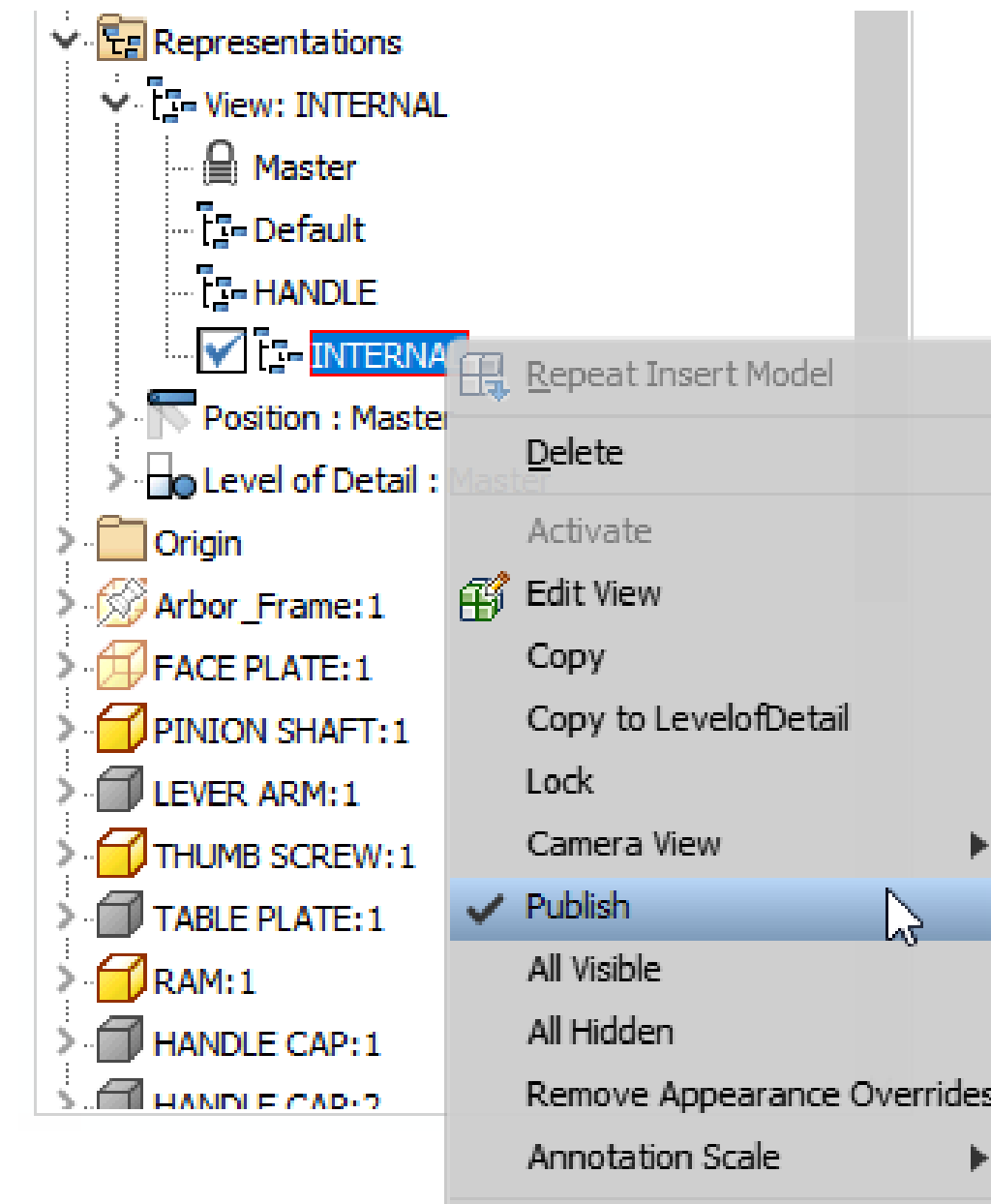
Drawing View Options

Specify View Representations for drawing views



With Presentations

Use View Reps to manage component visibility in Presentations



3D PDF Export

Right-click the View representation and select Publish to include it with the 3D PDF

Demonstration!





View vs. Level of Detail Representations



View vs. Level of Detail Representations

Level of Detail (LOD) Representations?

Levels of Detail Representations provide tools to help manage the RAM usage of Inventor by reducing the complexity of the components in the assembly AND reducing the number of components in the active assembly.

- Both **View** and **LOD** reps manage the number of components visible, improving both the performance and capacity.
- View Reps capture the “*look*” whereas LODs capture the component’s load (memory) status



Component Suppression is ONLY available by creating a LOD... if you don't, Inventor will create one for you

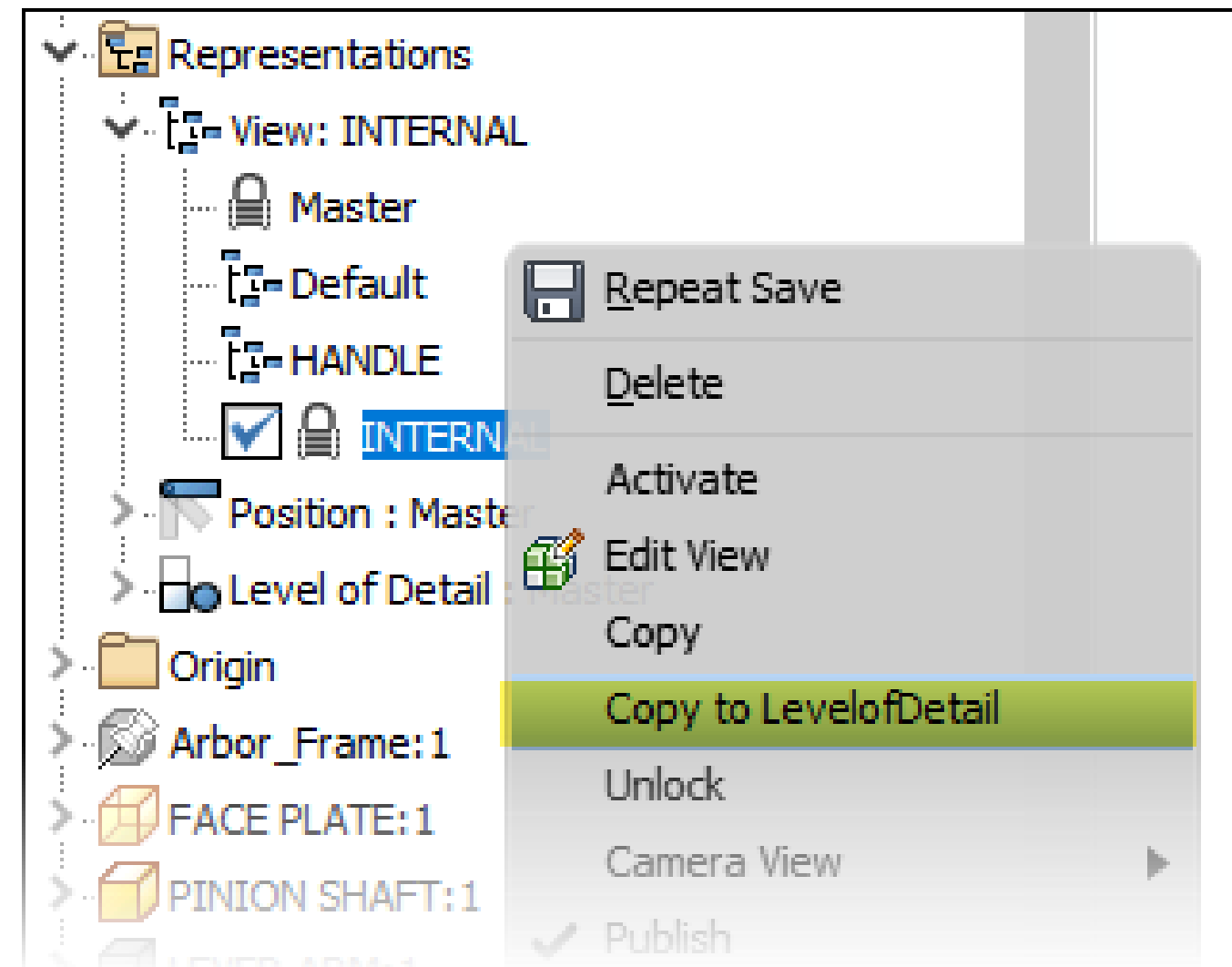
View vs. Level of Detail Representations

Level of Detail (LOD) Representations?

Whenever a component is made visible, it is loaded into memory. Without using LODs, to unload unnecessary information you must close the document and reopen it with a specific view representation

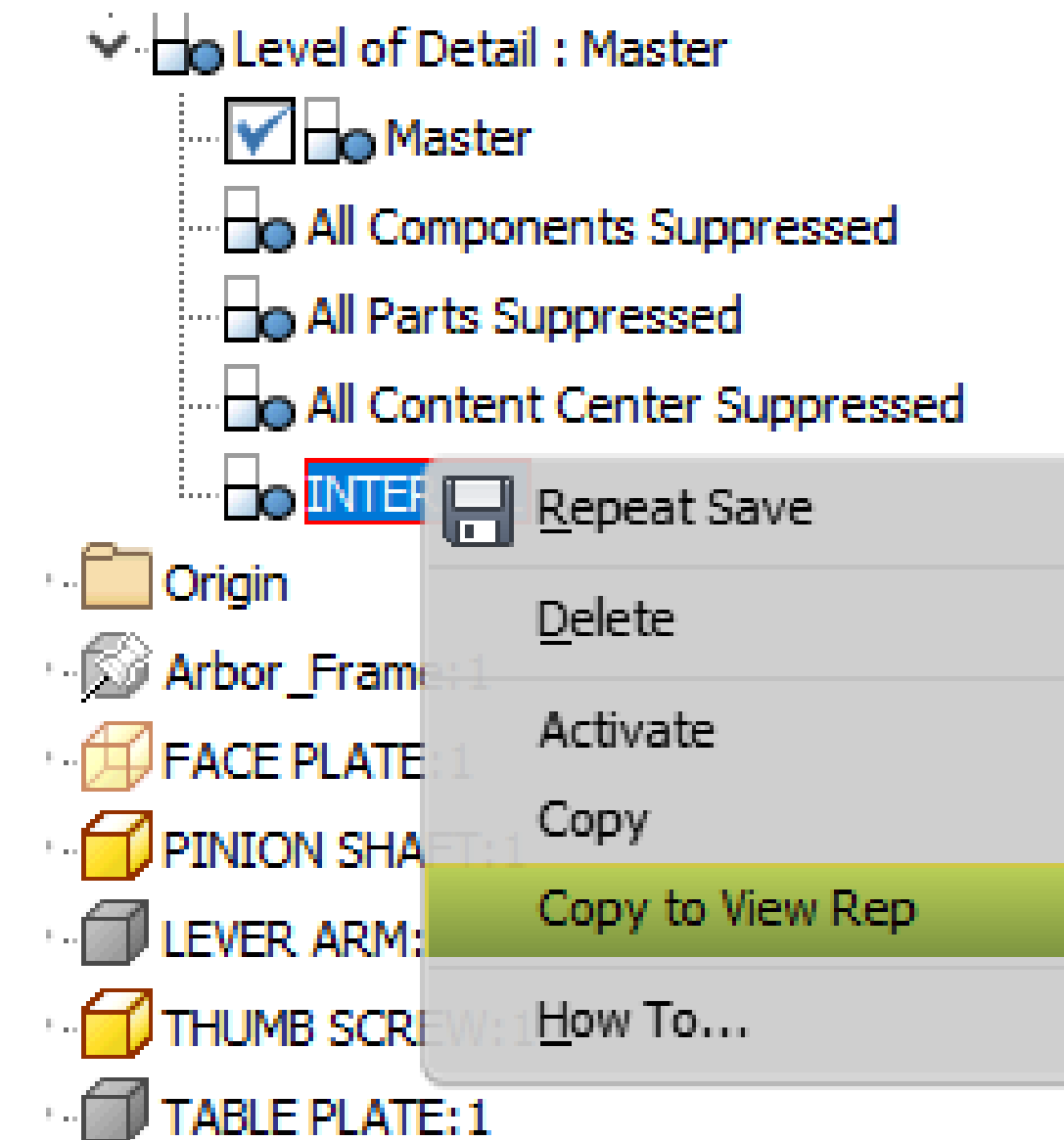


Create a View Rep first to utilize ALL of Inventor Selection features



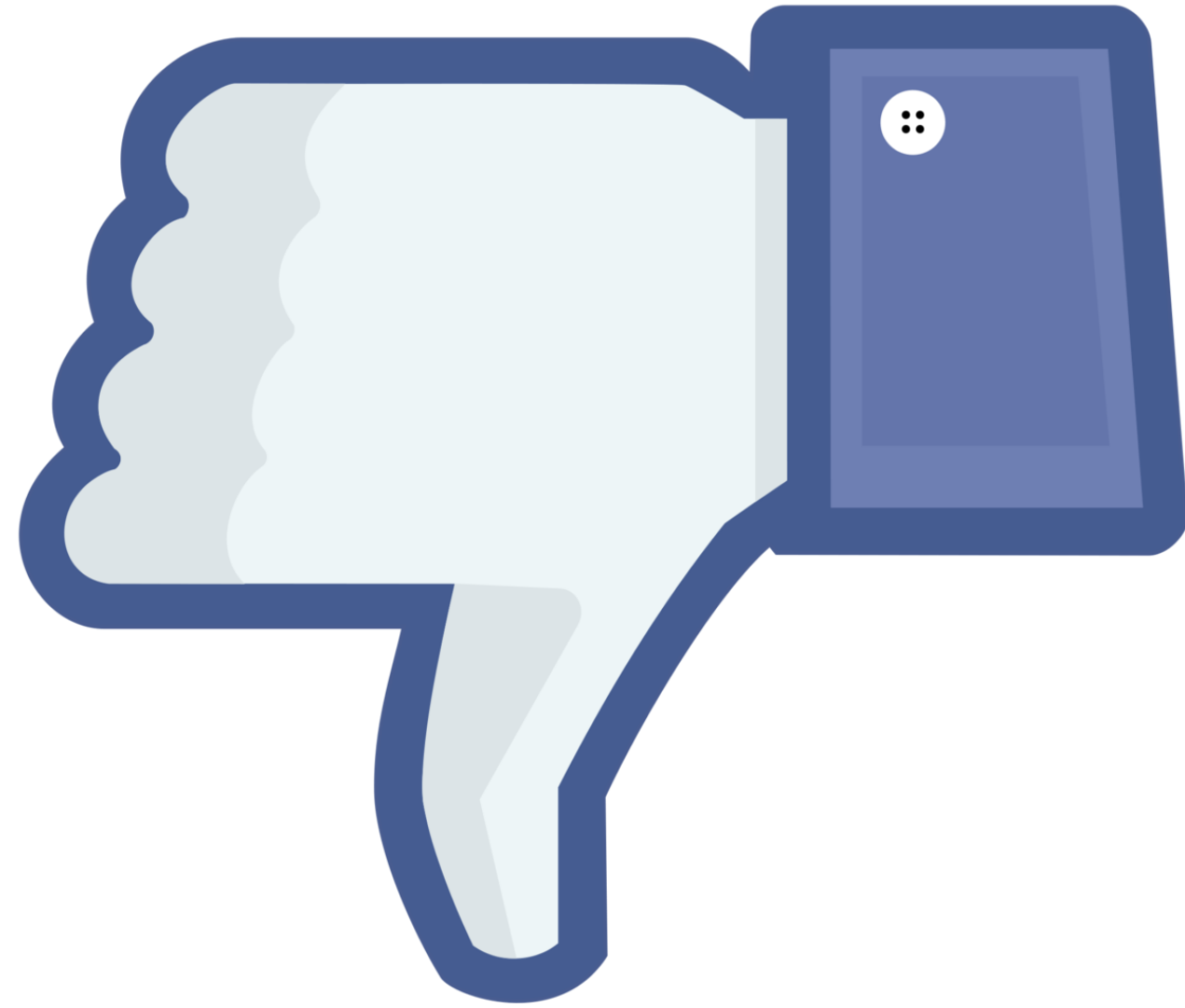
Copying to a LOD

Right-click the View Representation and select Copy to Level of Detail – a LOD matching the View Rep populates the browser. Invisible components are suppressed (removed from memory).



Copying to a View Rep

Right-click the LOD and select **Copy to View Rep** - a View Rep matching the LOD populates the browser. Suppressed components are unsuppressed, loaded into memory, but made invisible



When to NOT use a LOD

- Switching often between different sets of visible components
- With Drawing Views (using multiple LOD's can cause performance hits)



When to USE a LOD

- When you need to reduced memory (aka very large assemblies)
- When placing a reduced component version of a sub-assembly
- When removing IP (intellectual property)
- Configurations



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