ME 24-688 – Week 15

Autodesk Inventor Publisher Project 1

Carnegie Mellon University

1 Introduction to Autodesk Inventor Publisher®

The following section will give an overview of some of the major user interface and tools specific to Autodesk Inventor Publisher.

1.1 File Types

The file format used for Autodesk Inventor Publisher is **.ipb*

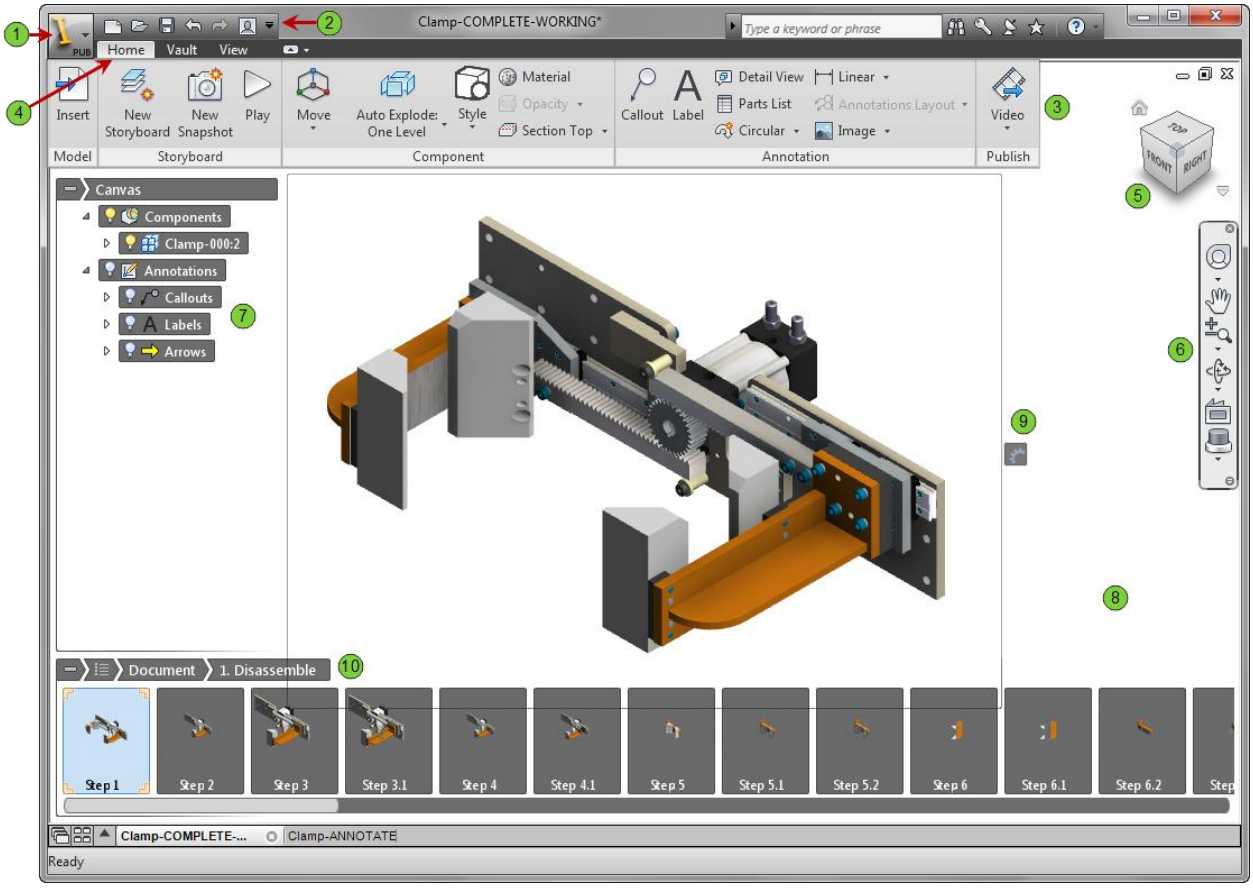
The following Autodesk Inventor® files formats are supported for import and are associative. Associative data means that any geometry or file property information that is changed in the Autodesk Inventor files can be synchronized to the Autodesk Inventor Publisher file insuring that you are always using the most up-to-date information.
Assembly files: **.iam*.
Part files: **.ipt*

Other supported non-associative file formats that can be imported for use in Autodesk Inventor Publisher are as follows:
CATIA V4 Import Files (**.model; *.session; *.exp; *.dlv3*)
CATIA V5 Import Files (**.CATPart; *.CATProduct; *.cgr*)
DWF Files (**.dwf; *.dwfx*)
DWG Files (**.dwg*)
IGES Files (**.igs; *.ige; *.iges*)
JT Files *(*.jt*)
Parasolid Binary Files *(*.x_b*)
Parasolid Text Files (**.x_t*)
ProE Files (**.asm; *.prt; *.g*)
SAT Files (**.sat*)
STEP Files (**.stp; *.ste; *.step*)
SolidWorks Files (**.prt; *.sldprt; *.asm; *.salasm*)
NX Files (**.prt*)

1.2 User Interface

Autodesk Inventor Publisher uses a standard structure common in all Autodesk and Microsoft Windows applications. All environments share a common layout for tabs on a single toolbar across the top of the application window called the ribbon. The structure is context-sensitive based on the environment and mode you are using. Many of the navigation and view tools are the same as in other Autodesk applications.

The following image illustrates the major areas of the Autodesk Inventor Publisher user interface.

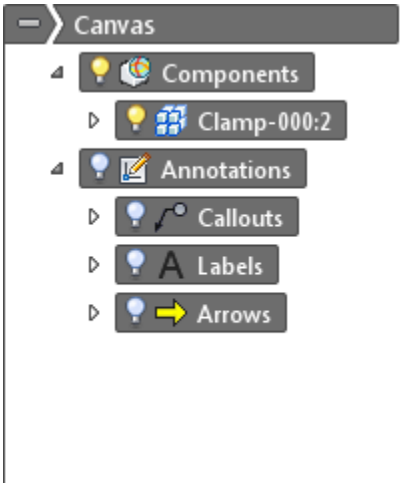


1. Application Menu
2. Quick Access Toolbar
3. Ribbon
4. Ribbon Tabs
5. ViewCube
6. Navigation Bar
7. Canvas Browser
8. Graphics Window
9. Publish Area
10. Storyboard Editor

1.2.1 Canvas Browser

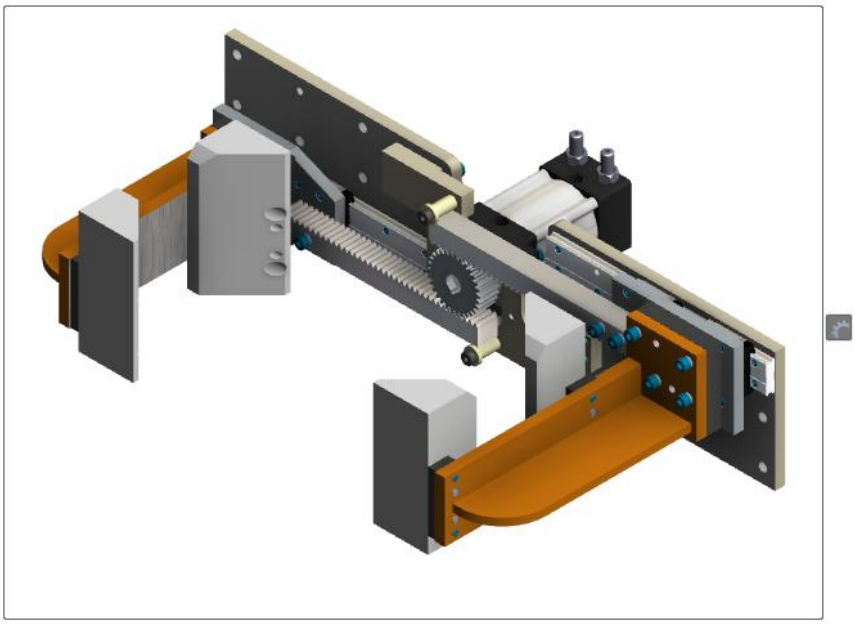
The **Canvas Browser** is an organized view of the data within the Autodesk Inventor Publisher document. Inserted files are displayed under the Components node. Detail items which are created within Autodesk Inventor Publisher such as Annotations and Selections are located in separate nodes below the Components node.

Canvas Browser



1.2.2 Publish Area

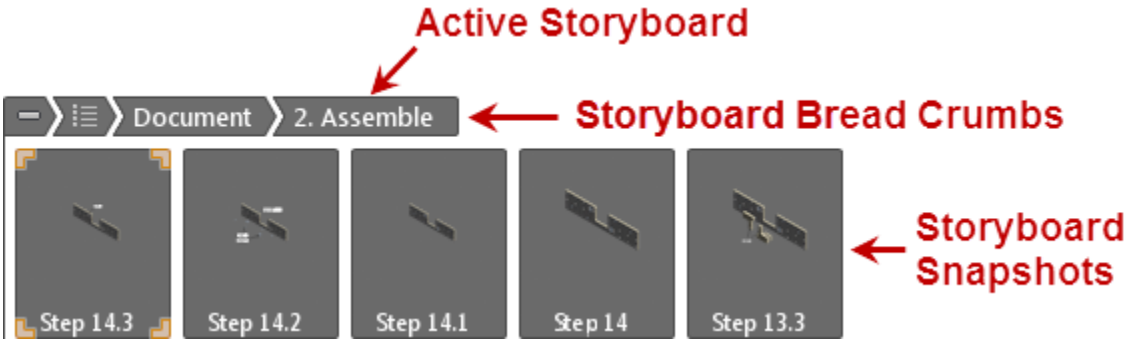
The **Publish Area** is a bounding box displayed in the middle of the **Graphics Window**. The bounding box defines the boundary, resolution, and print size of the published output file. Any geometry, annotations, or notes outside this boundary will not be seen in the published output file. The border is defined by pixel size and is on by default.



1.2.3 Storyboard Editor

At the bottom of the **Graphics Window** is the **Storyboard Editor**. Each Autodesk Inventor Publisher document can have multipule storyboards and each storyboard will have multipule snapshots. You develop the model's overall documention story by adding additional snapshots. Each snapshot contains componets views, component movement, annotions, etc. Within the **Storyboard Editor** snapshots can

either be viewed as **Thumbnail View**, as shown below, or as **Timeline View** which shows a list of the actions taking place in each snapshot. Activating a snapshot with display the model in the **Graphics Window** with the required settings for that snapshot.



2 Authoring an Assembly into Autodesk Inventor Publisher

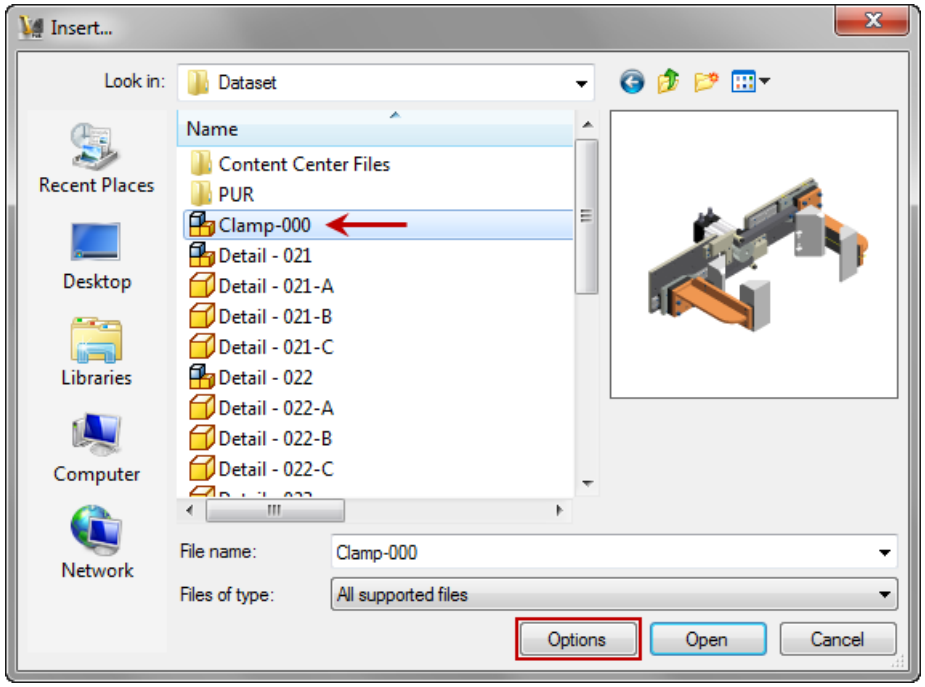
This project will guide you through the process of inserting an Autodesk Inventor assembly into Autodesk Inventor Publisher. Other file formats are supported for authoring but Autodesk Inventor assemblies provide additional benefits because the components inserted are then associative back the original model files.

Creating storyboards and snapshots tells the documentation story of how the product is assembled or disassembled. Each snapshot changes part appearance, part movement, camera position, and annotations.

2.1 Project 1

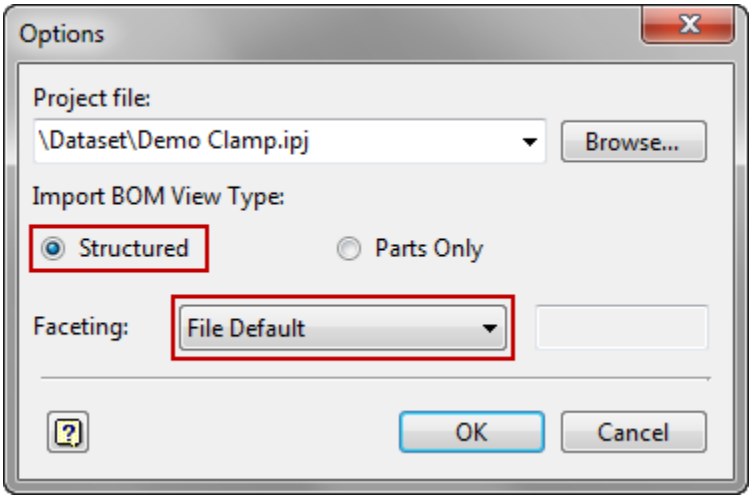
1. Click the **New** icon on the **Quick Access Toolbar**

2. On the **Insert** dialog box locate and single-click *Clamp-000.iam* in the *dataset* folder, then click on the **Options** button.



3. Click the **Browse** button on the **Options** dialog box, then select the *Demo Clamp.ipj* project file from the same folder as *Clamp-000.iam*.

4. Set the **Import BOM View Type** to **Structured**.



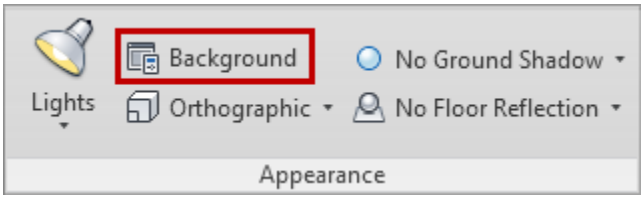
5. Leave the **Faceting** as **File Default** and click **OK**.
   NOTE: Changing the faceting will lower file size but also create a rougher looking model.

6. Click **Open** on the **Insert** dialog box and the model will be imported into a new Autodesk Inventor Publisher file **.ipb*

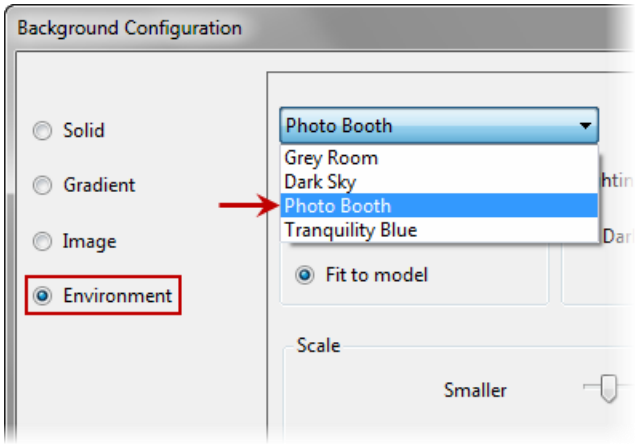
7. The import process may take several minutes, then click on the **Save** button on the Quick Access Toolbar.

8. Type the filename *Clamp-000* and click **Save**. The model has been authored into Inventor Publisher.

9. Change the Background color
   - **View tab | Appearance panel | Background**



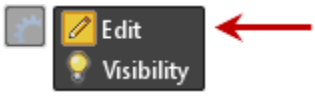
- On the **Background Configuration** dialog box pick **Environment** then select the **Photo Booth** environment the drop down menu and click **OK**.



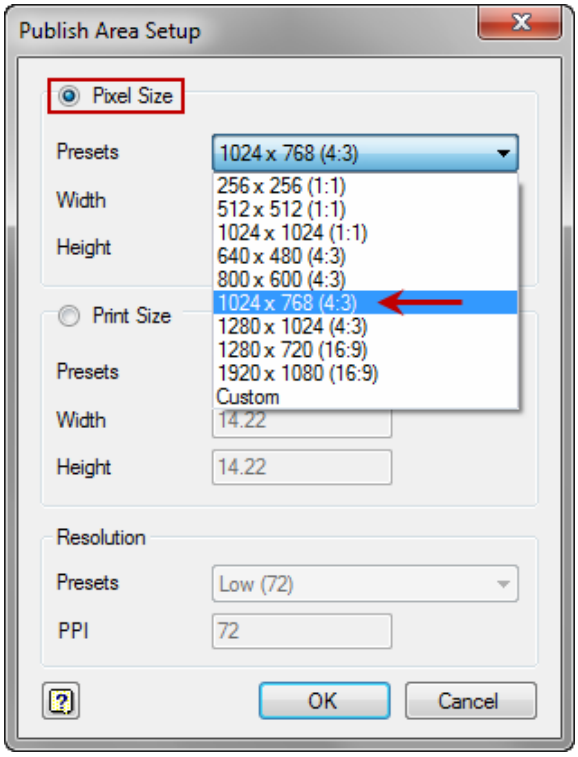
10. Set Publish Area Options

- In the graphic window click the **Publish Area Options** button 

- Click the **Edit** option

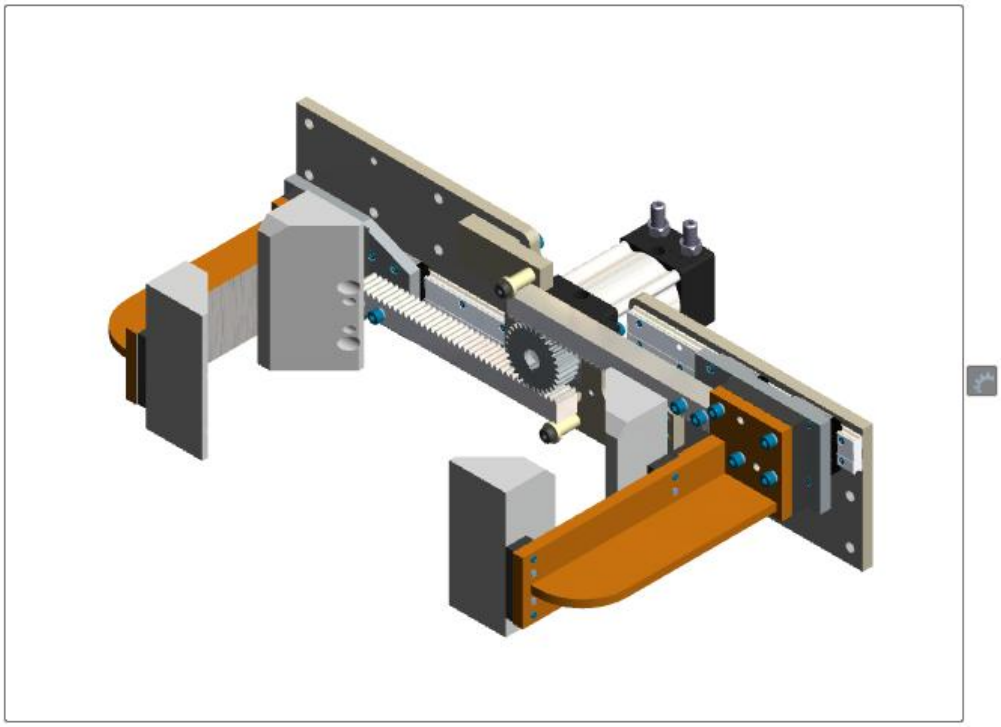


- On the **Publish Area Setup** dialog box, Select **Pixel Size**, and set the size to **1024 x 768 (4:3)** from the **Presets.** Click **OK**



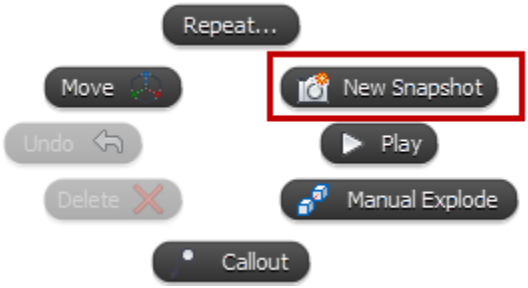
NOTE: Depending on your screen resolution you may have to select a smaller publish area Preset.

11. Using the Navigation and View tools set the model view as shown within the **Publish Area**.



12. There is currently one Snapshot in the **Storyboard Editor**, click on the name and rename it to *Step 1*

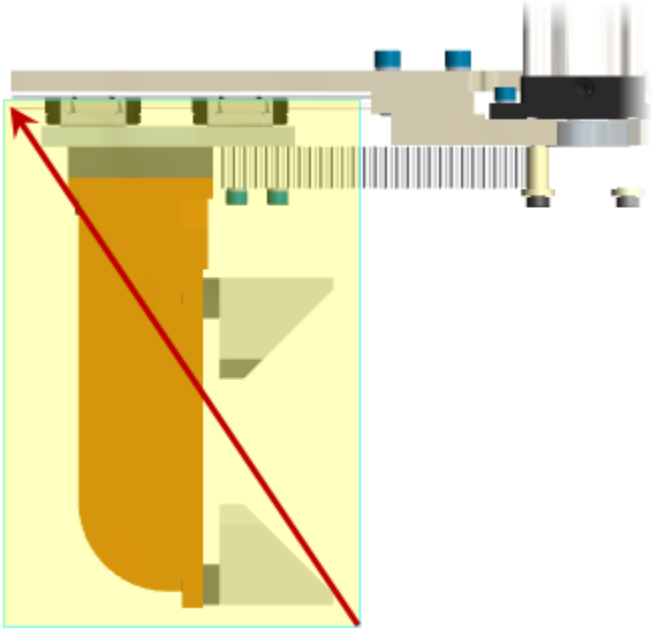
13. Right-click anywhere in the graphics window, select **New Snapshot** from the **Marking Menu** Rename the new Snapshot: *Step 2*



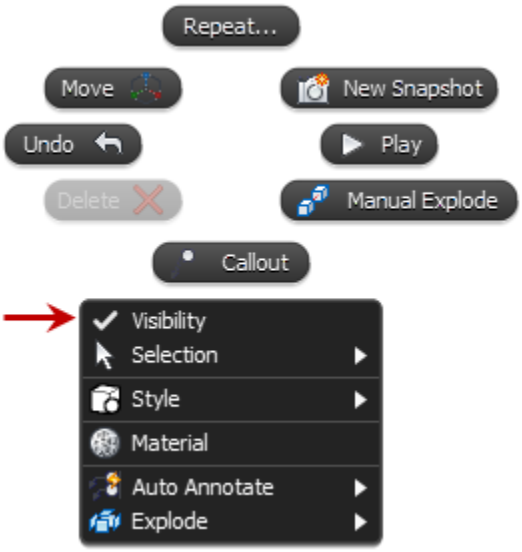
14. Click on the **Top** face of the view cube.

15. Using the **Zoom** and **Pan** tools, reposition the view within the **Publish Area.**

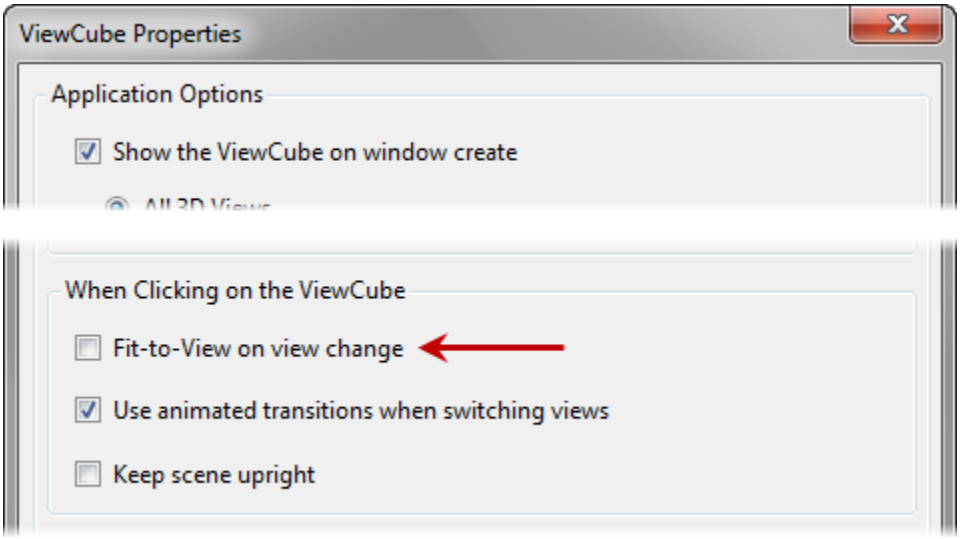
16. Click and drag a window selection as shown. Almost all of the left side parts in the assembly should be selected as shown.
    NOTE: Window drags from right to left will select all objects touching the window.



17. With the components highlighted right-click in the **Graphic Window** and select **Visibility** from the **Overflow Menu**.
    NOTE: The assembly is mostly symmetrical so you only need to document one side.

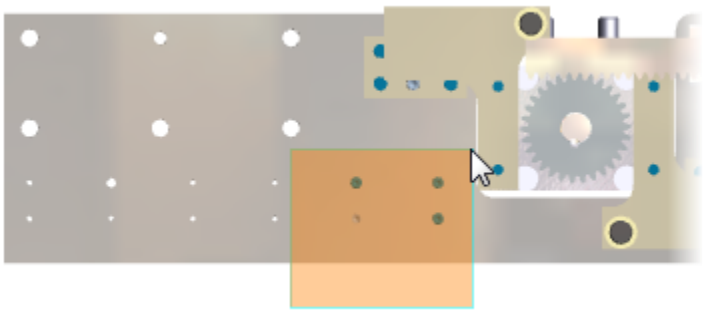


18. Edit the ViewCube properties.
    On the **ViewCabe Properties** dialog box Uncheck the **Fit-to-View on view change** option



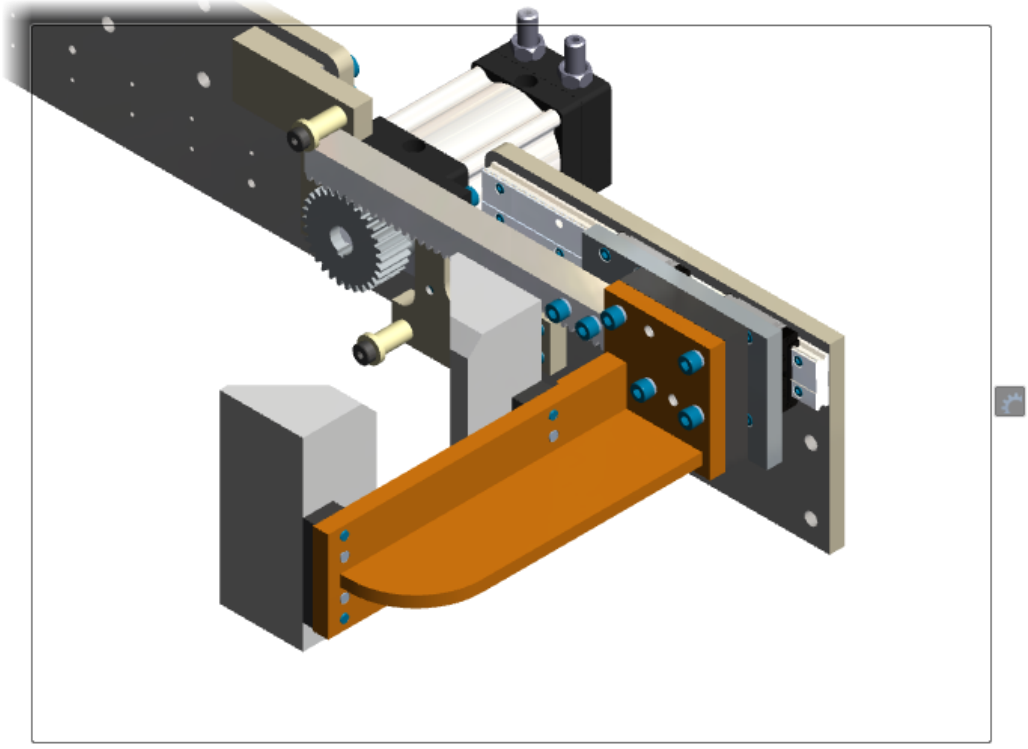
19. Click on the lower arrow on the view cube to go to the **Front** view.

20. Click and drag a window selection as shown to grab the remaining pin and bolts.
    NOTE: Window drags from left to right will only select objects that are completely inside the window.



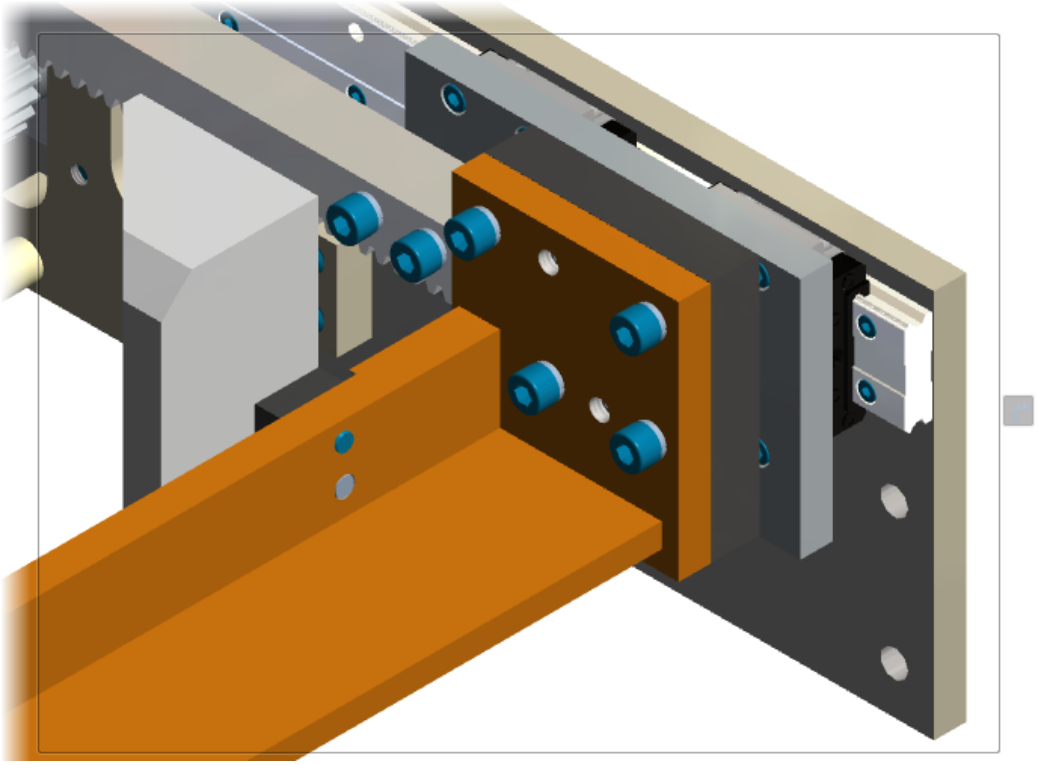
21. With the components highlighted right-click in the **Graphic Window** and select **Visibility** from the **Overflow Menu**.

22. Set the view as shown here. Be sure that the remaining components fit inside the **Publish Area**

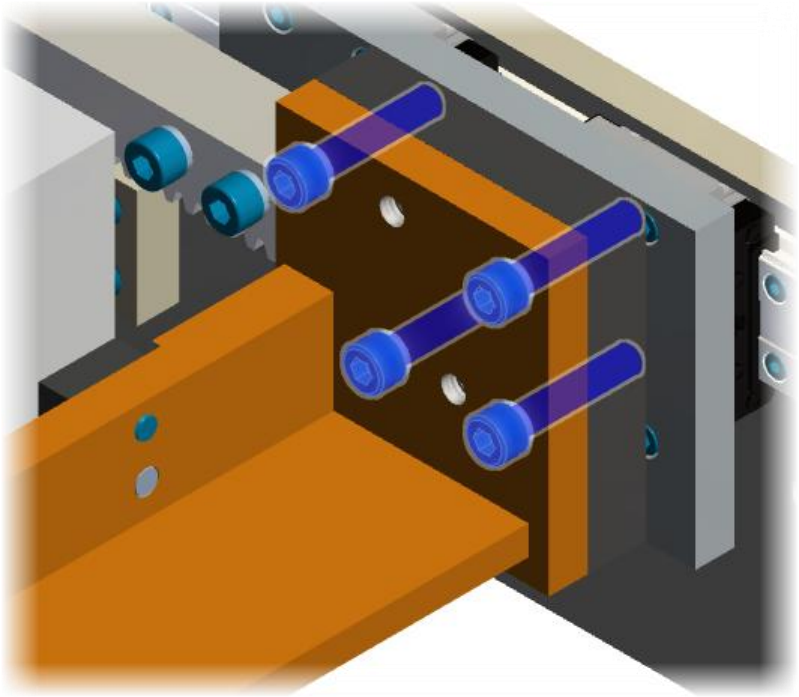


23. Right-click anywhere in the graphics window, select **New Snapshot** from the **Marking Menu**
    Rename the new Snapshot: *Step 3*

24. Zoom view as shown within **Publish Area**

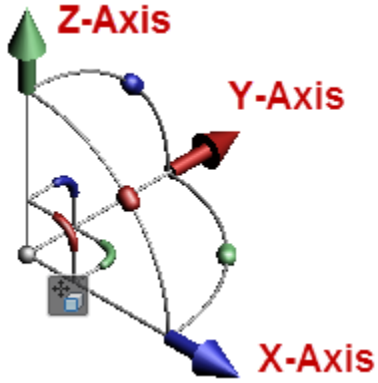


25. Right-click anywhere in the graphics window, select **New Snapshot** from the **Marking Menu** Rename the new Snapshot: *Step 3.1*
26. Hold the **CTRL** key then select the four bolts shown in the orange weldment.

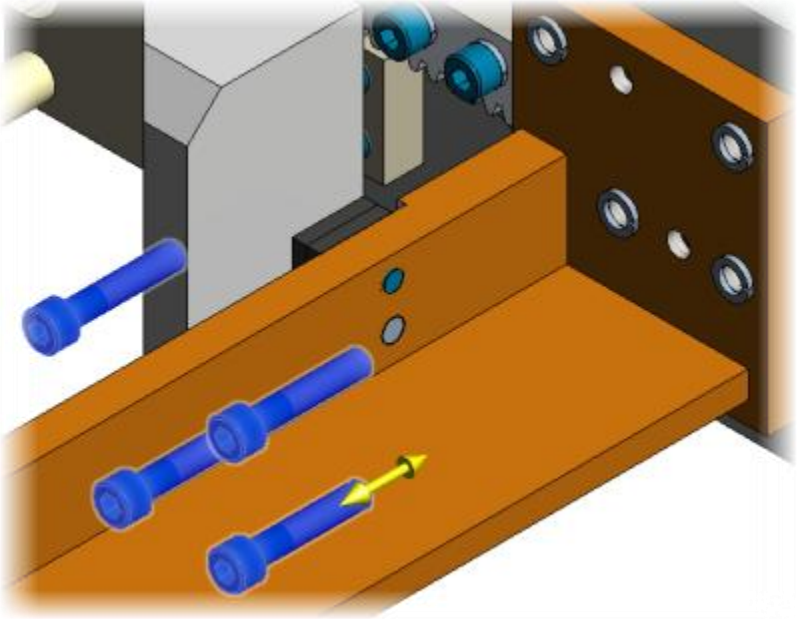


27. Right-click anywhere in the graphics window, select **Move** from the **Marking Menu**

28. Click and drag the Y-Axis arrow of the **Move Triad** which is parallel to the selected bolts.



Drag the Triad arrow until the bolts are approximately in the position shown.

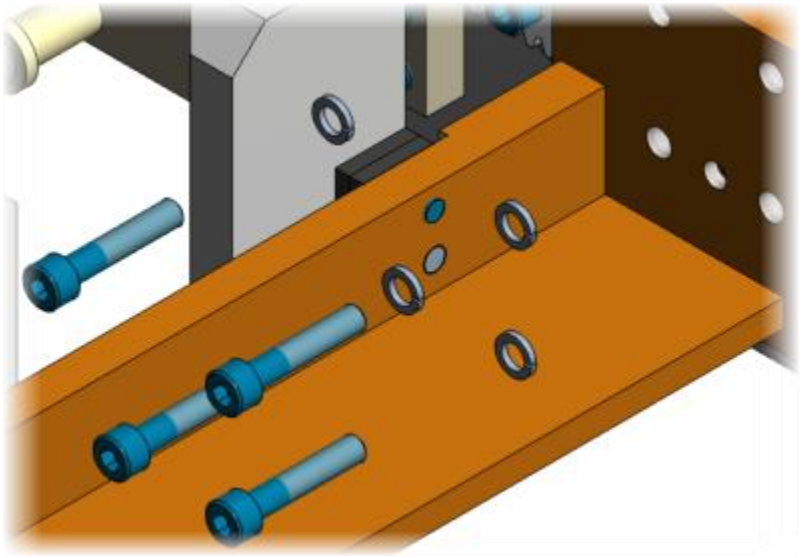


29. Click the graphic window to complete the **Move** tool and deselect all objects.

30. Hold the **CTRL** key then select the four spring washers that were under the bolts.

31. Start the **Move** tool again.

32. Drag the Triad arrow until the washers are approximately in the position shown.



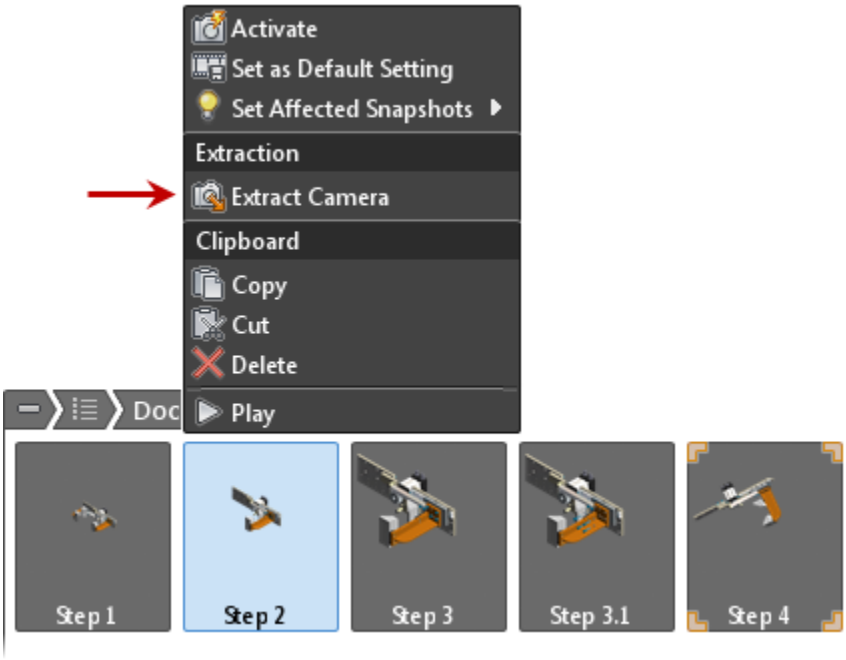
33. Click the graphic window to complete the **Move** tool and deselect all objects.

34. Create a **New Snapshot**.
    Rename the new Snapshot: *Step 4*

35. Select the bolts and washer moved in the previous steps, turn Off their Visibility

36. Pan, Zoom, or Orbit the view to any point of view different.
    Notice the 5th snapshot thumbnail in the Storyboard Editor (which is the active snapshot, *Step 4*) updates to the current view.

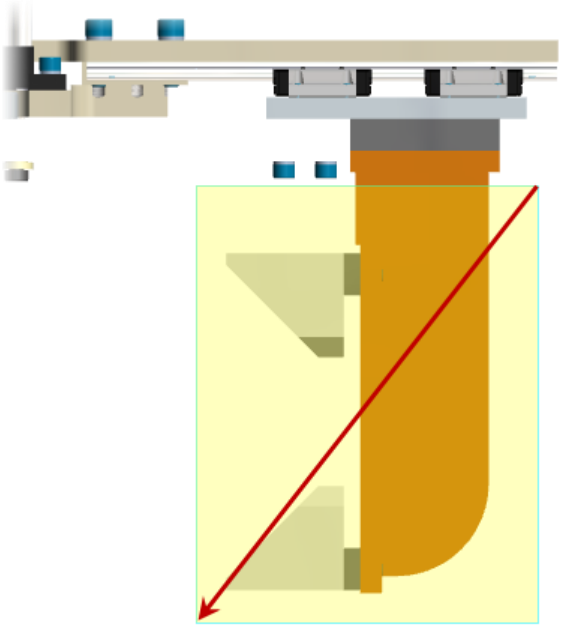
37. With snapshot *Step 4* active, right-click on snapshot Step 2
    Select **Extract Camera** from the snapshot menu to create the same model view in the active snapshot.



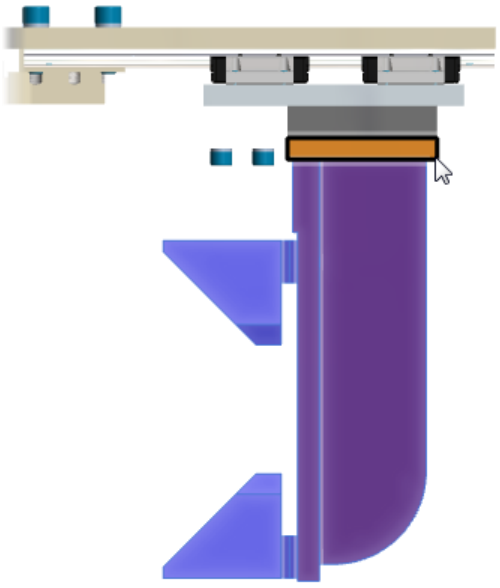
NOTE: Unintentionally changing the camera position of the active snapshot is a common mistake. If editing is required that will change the desired camera position and no other snapshots have the desired camera position, create a new temporary snapshot before editing. That way the desired camera position can be achieved again.

38. Create a **New Snapshot**.
    Rename the new Snapshot: *Step 4.1*
39. Click on the **Top** face of the view cube.

40. Window select around the assembly as shown, insuring to select internal components with the crossing window.

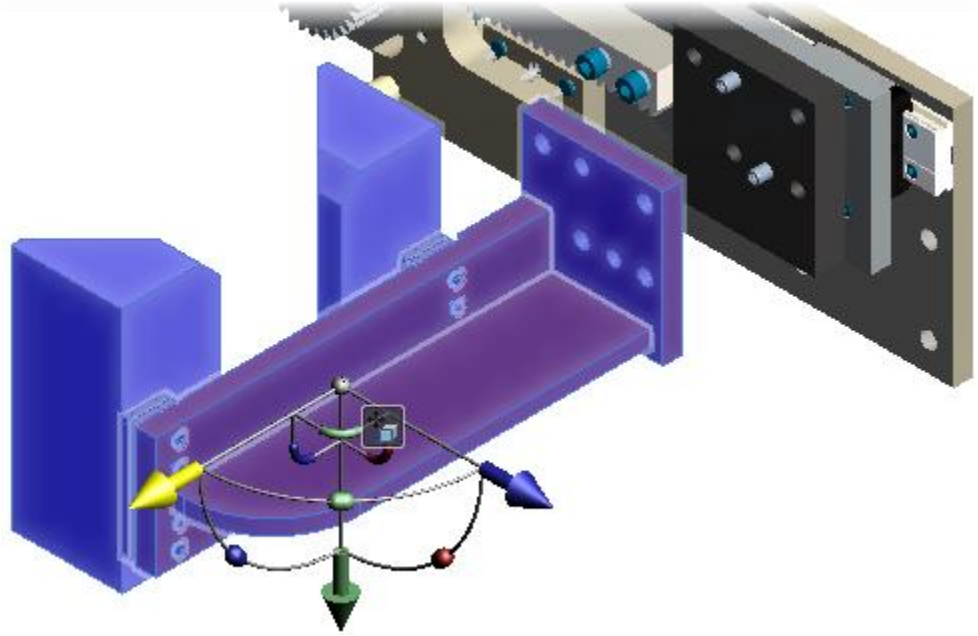


41. With the other components still selected, hold the **CTRL** key and select the orange plate of the weldment that was not included in the selection window.



42. With the components still selected, right-click snapshot *Step 4* and select **Extract Camera**.

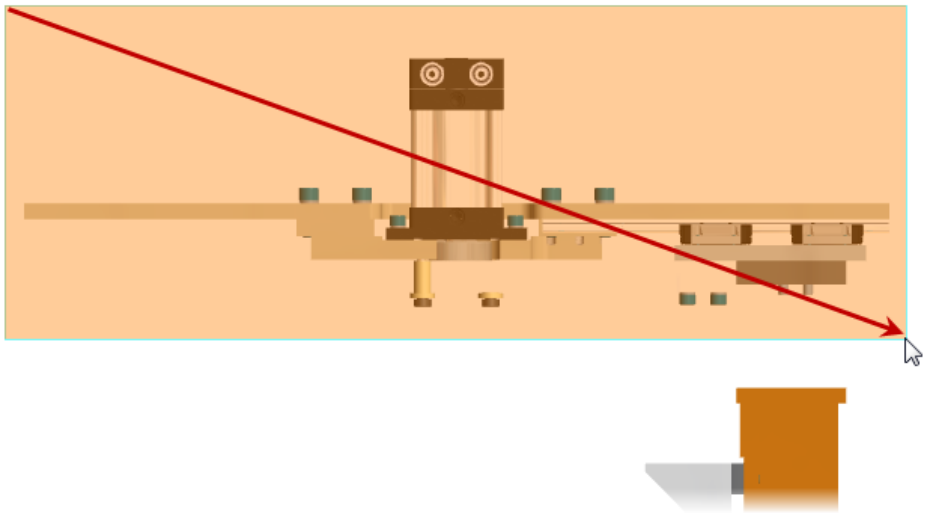
43. Start the **Move** tool, move the selected parts away from the main assembly as shown.



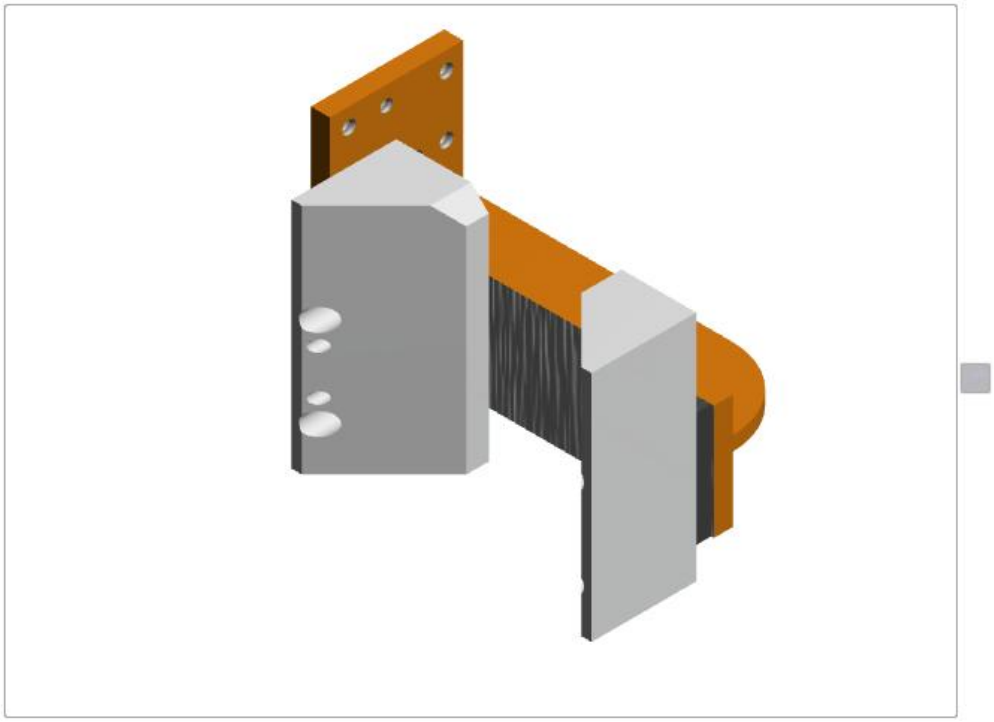
44. Click the graphic window to complete the **Move** tool and deselect all objects.

45. Create a **New Snapshot**.
    Rename the new Snapshot: *Step 5*

46. Select all components in the main assembly, turn Off their Visibility

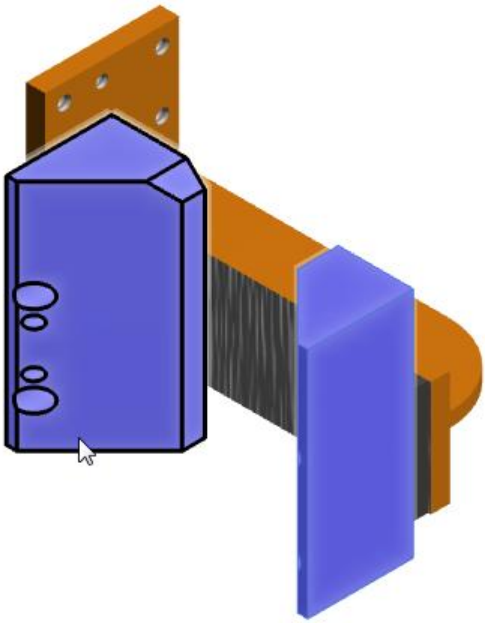


47. Set the view as shown within **Publish Area**

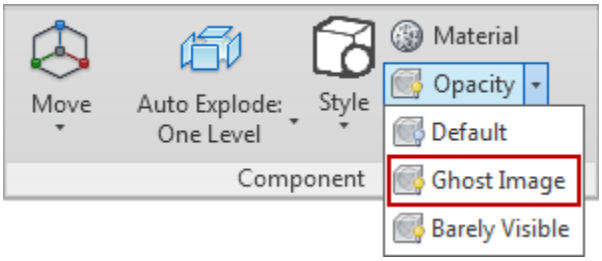


48. Create a **New Snapshot**.
    Rename the new Snapshot: *Step 5.1*

49. Select the two gripper finger blocks.



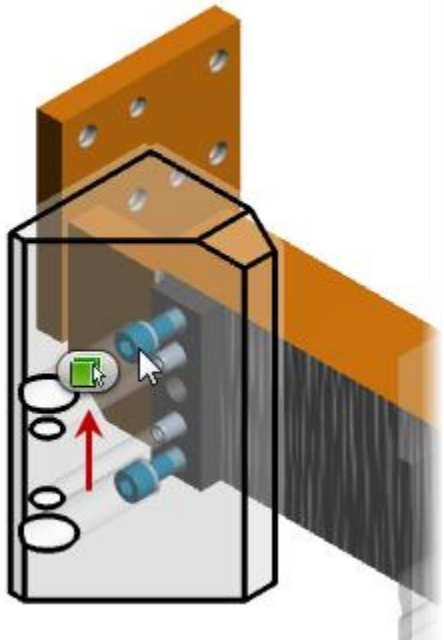
50. Set component opacity
    Home tab | Component panel | Opacity drop down | Ghost Image



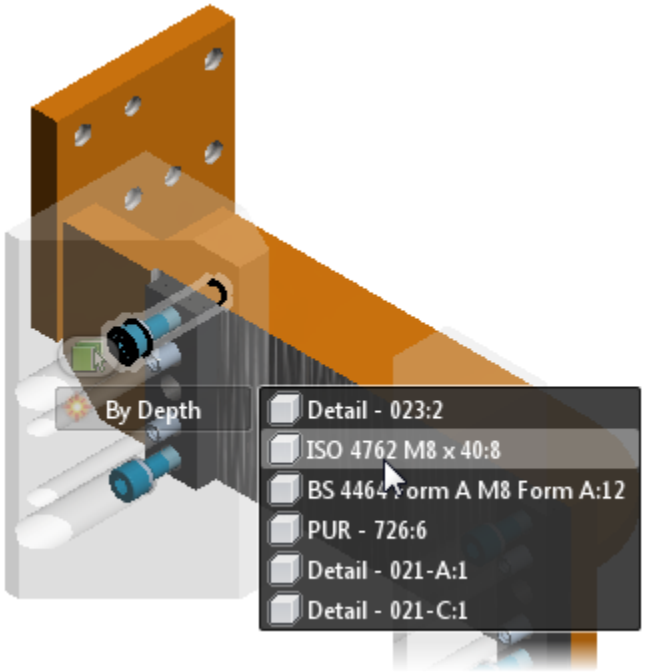
51. Click the graphic window to deselect all objects

52. Create a **New Snapshot**.
    Rename the new Snapshot: *Step 5.2*

53. Select the bolts and washers **By Depth**.
    - Hover cursor over the bolt.
    - Wait 1 - 2 seconds for the **Selection Mini-Toolbar** to appear as shown.

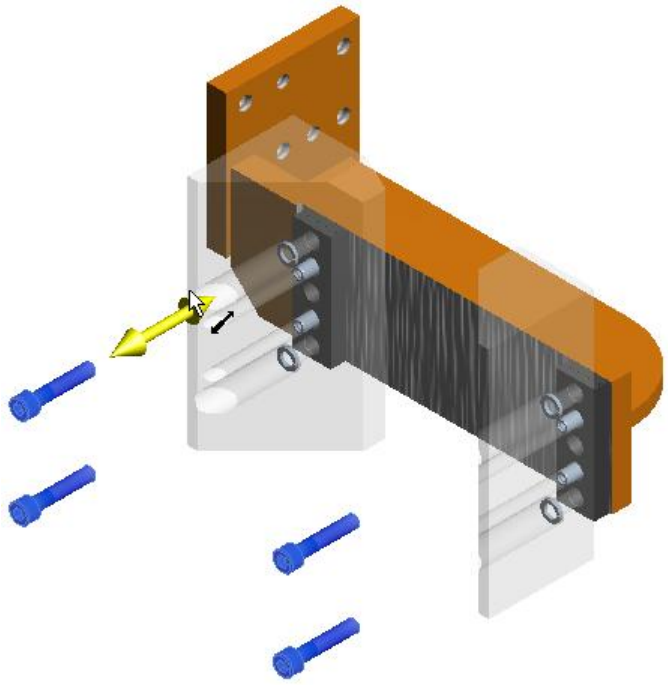


- Select *ISO 4762 M8 x 40* from the **By Depth** selection option

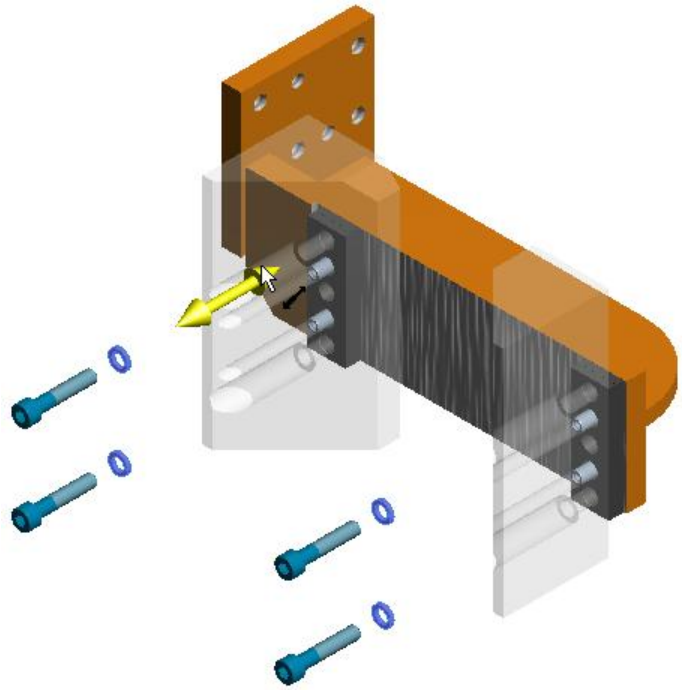


54. Hold the **CTRL** key then repeat the previous step to select the three remaining bolts *ISO 4762 M8 x 40*

55. Start the **Move** tool and drag the hardware out, leaving space between the blocks and the bolts as shown.

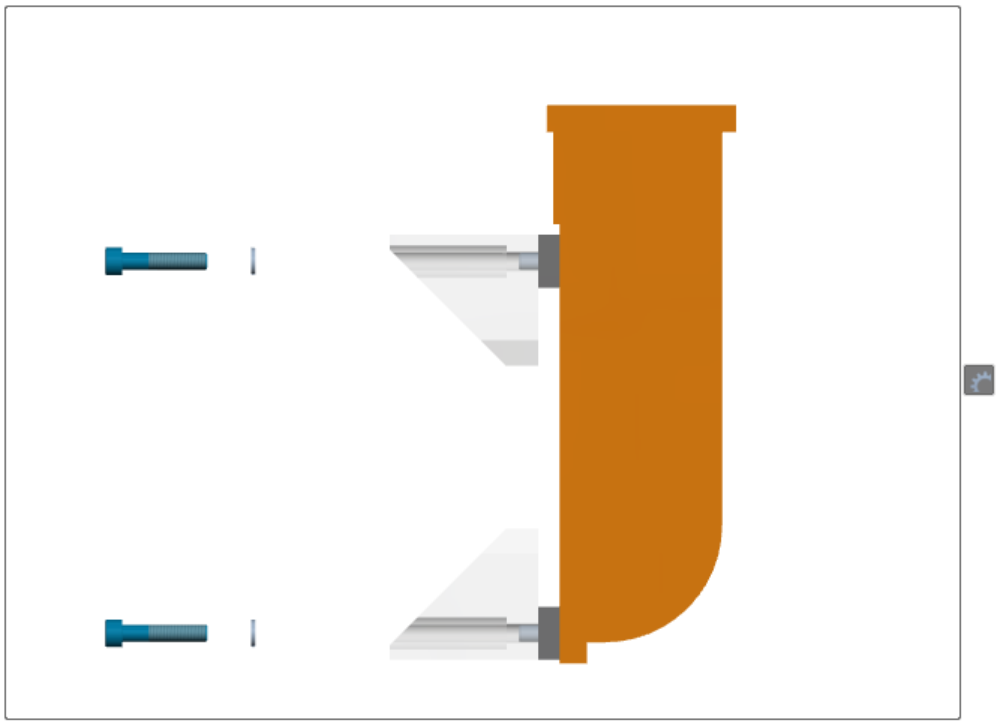


56. Repeat the previous steps for the lock washers *BS4464 Form A M8 Form A* as shown



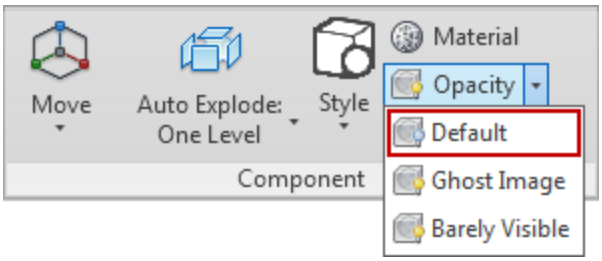
57. Create a **New Snapshot**.
    Rename the new Snapshot: *Step 6*

58. Set the view as shown within **Publish Area**



59. Select the bolts and washer moved in the previous steps, turn Off their Visibility

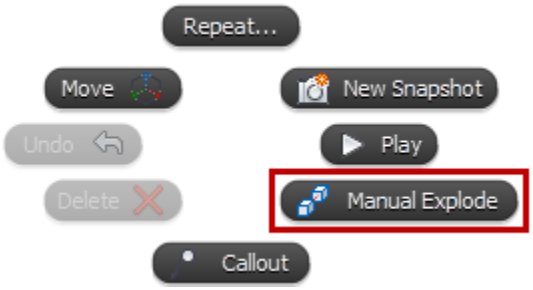
60. Set clamp finger block opacity
    Home tab | Component panel | Opacity drop down | Default



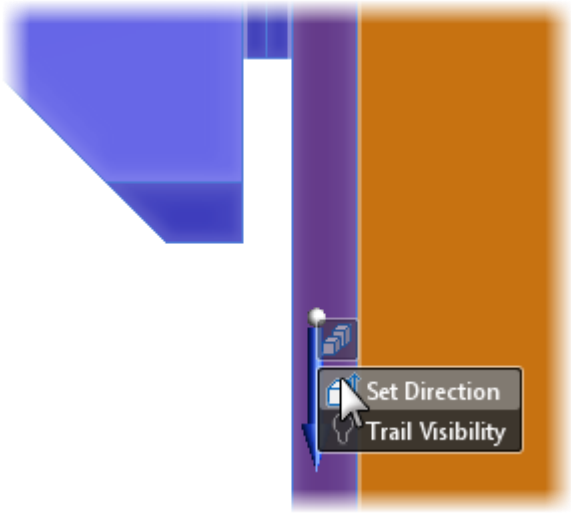
61. Create a **New Snapshot**.
    Rename the new Snapshot: *Step 6.1*

62. Holding the **CTRL** key to select the 7 parts shown.
    (2) Clamp Finger Blocks
    (4) Spacers
    (1) mounting plate of weldment

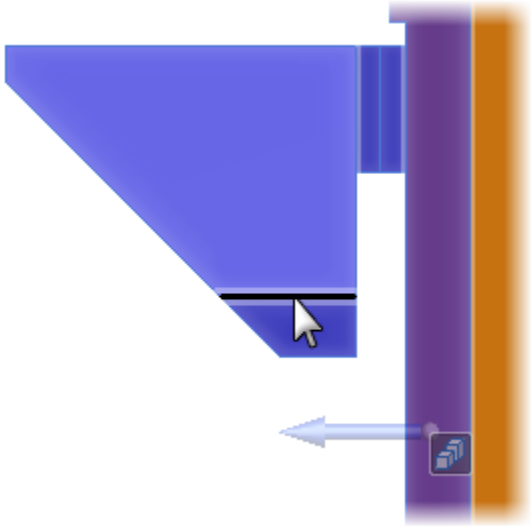
63. Right-click and select **Manual Explode** from the **Marking Menu**



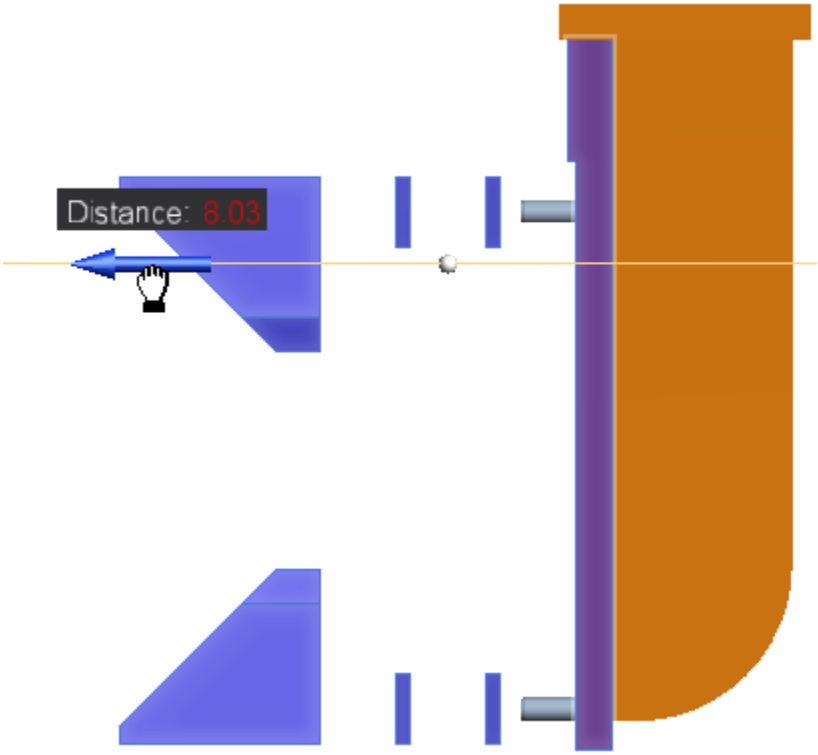
64. If the direction arrow is not horizontal, select the Explode Options button 
Select **Set Direction** as shown.



- Pick a horizontal edge as shown.



65. Drag the blue direction arrow approximately 8 units as shown



66. Click the graphic window to deselect all objects

67. This completes the project.
    Optional:
    - Disassembling the rest of the clamp assembly.

68. Close all files.
    Do not save.