

60 Inventor Tips in 60 Minutes

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Class Summary

- Whether new to Inventor software or a seasoned pro, you'll learn something from this fast-paced course that will highlight 60 Inventor tips in 60 minutes.
- We'll showcase some of the less obvious commands or features and their location within the Inventor environment.
- Along the way, we'll look at how some of the tips work and how they might help you in your daily designing. So, buckle up—we've got a lot to cover and only 60 minutes to get it done.

Key Learning Objectives

- Discover 60 tips in Inventor
- Learn where these items are in the Inventor environment
- Learn about how these tips might help your daily activities
- Have fun

On Your Mark... Get Set... GO!!

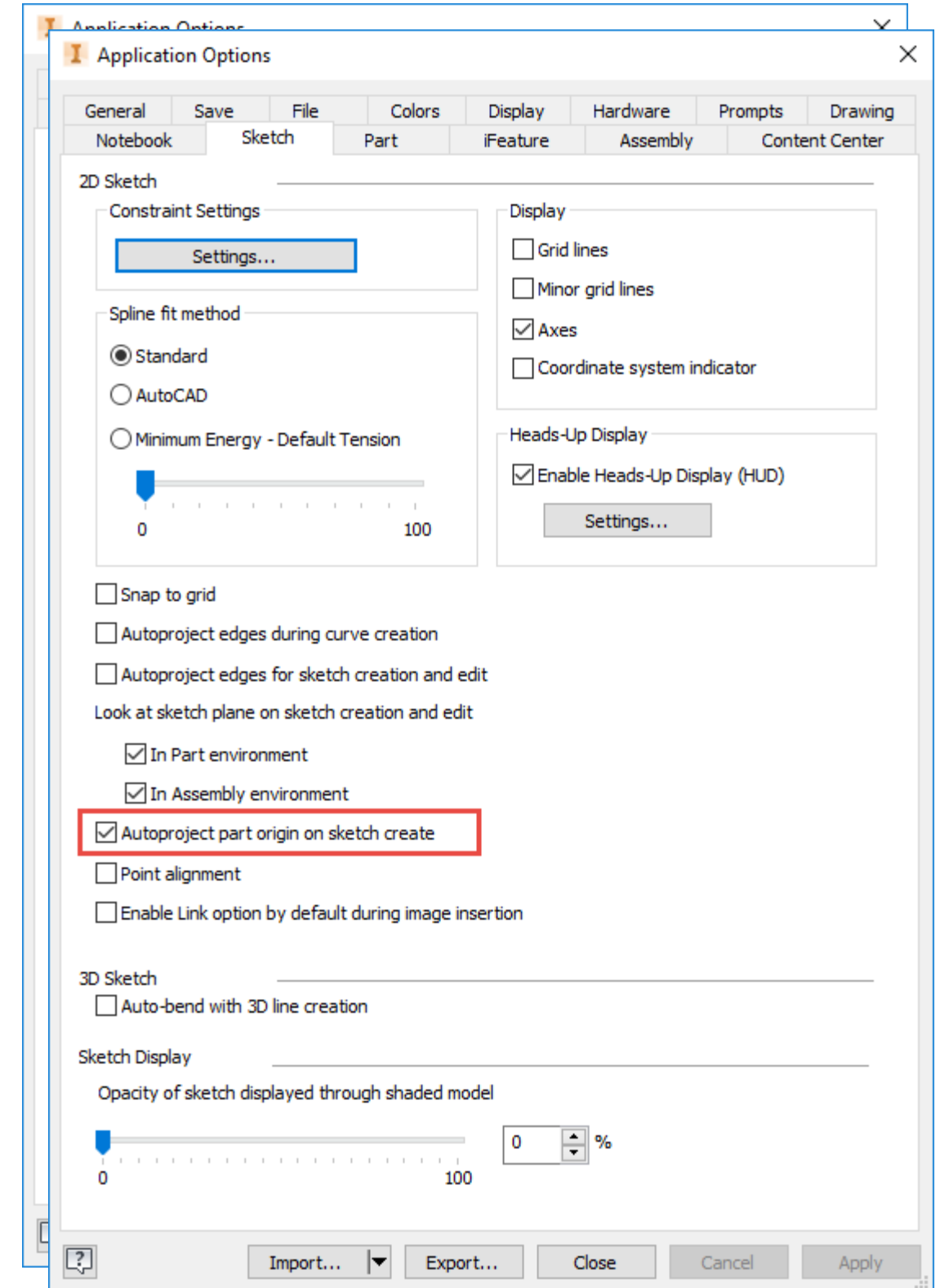
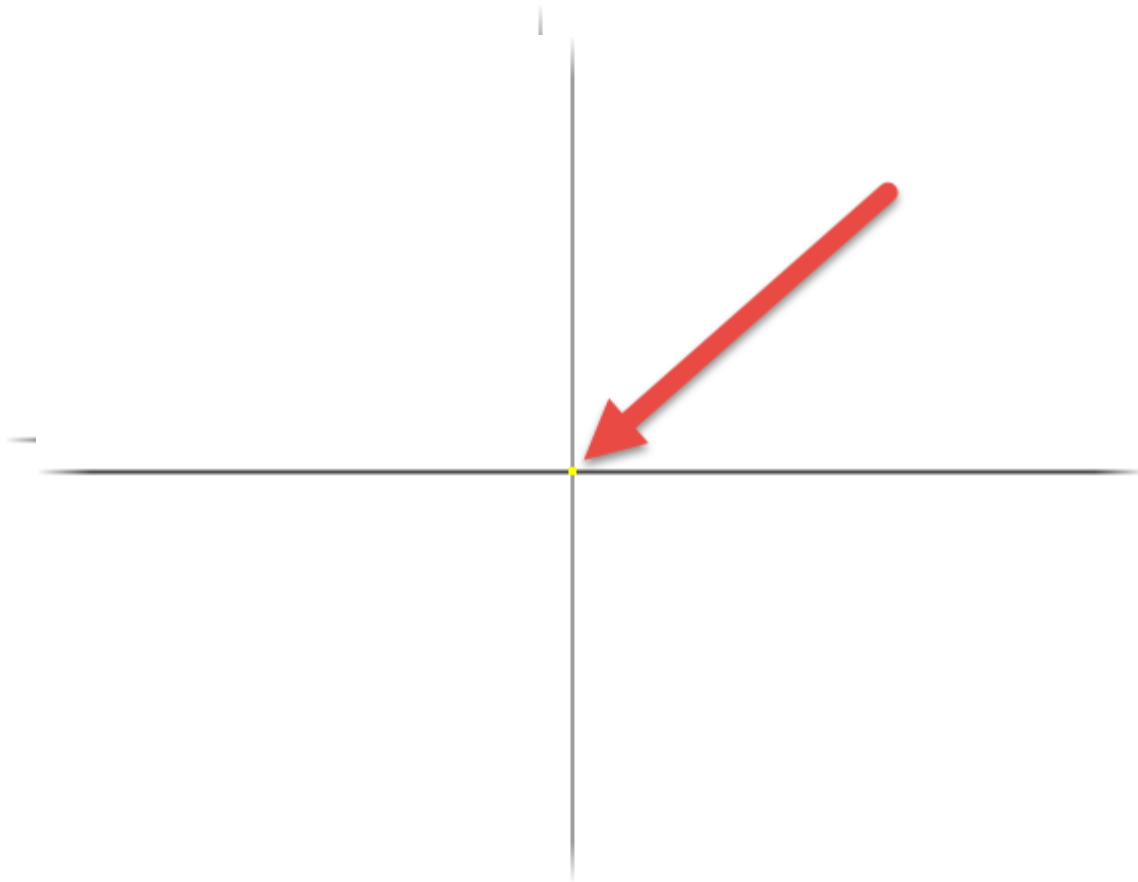


The background of the slide is a complex, abstract wireframe mesh. The mesh is composed of numerous interconnected lines forming a series of organic, flowing shapes that resemble a stylized, interconnected network or a series of overlapping, curved planes. The lines are thin and grey, set against a white background. A solid blue horizontal bar spans the bottom portion of the image, providing a contrasting background for the text.

Sketching

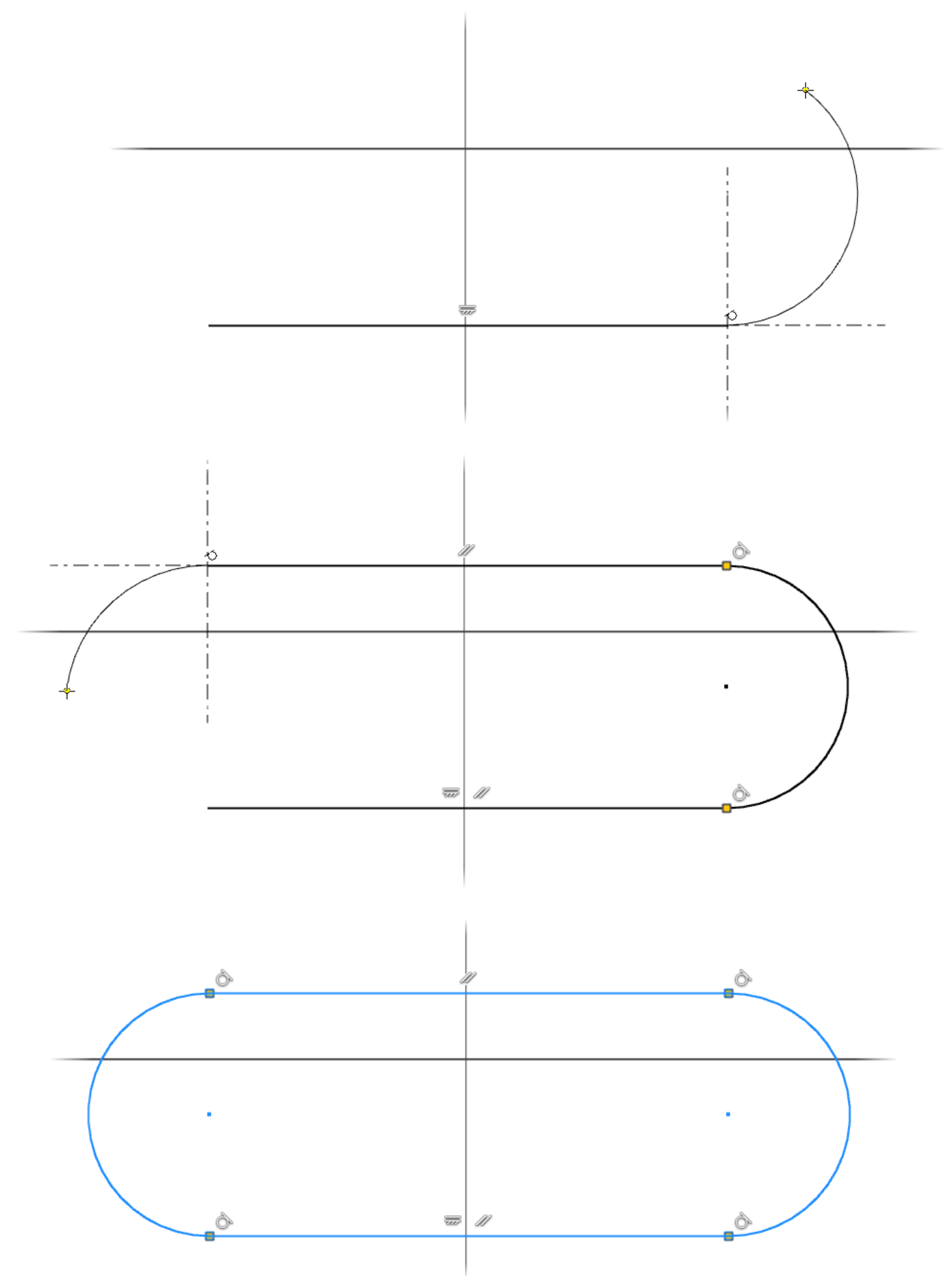
#1 Sketch Zero Origin

- If not on by default, turn on under Applications Options
Autoproject part origin on sketch create



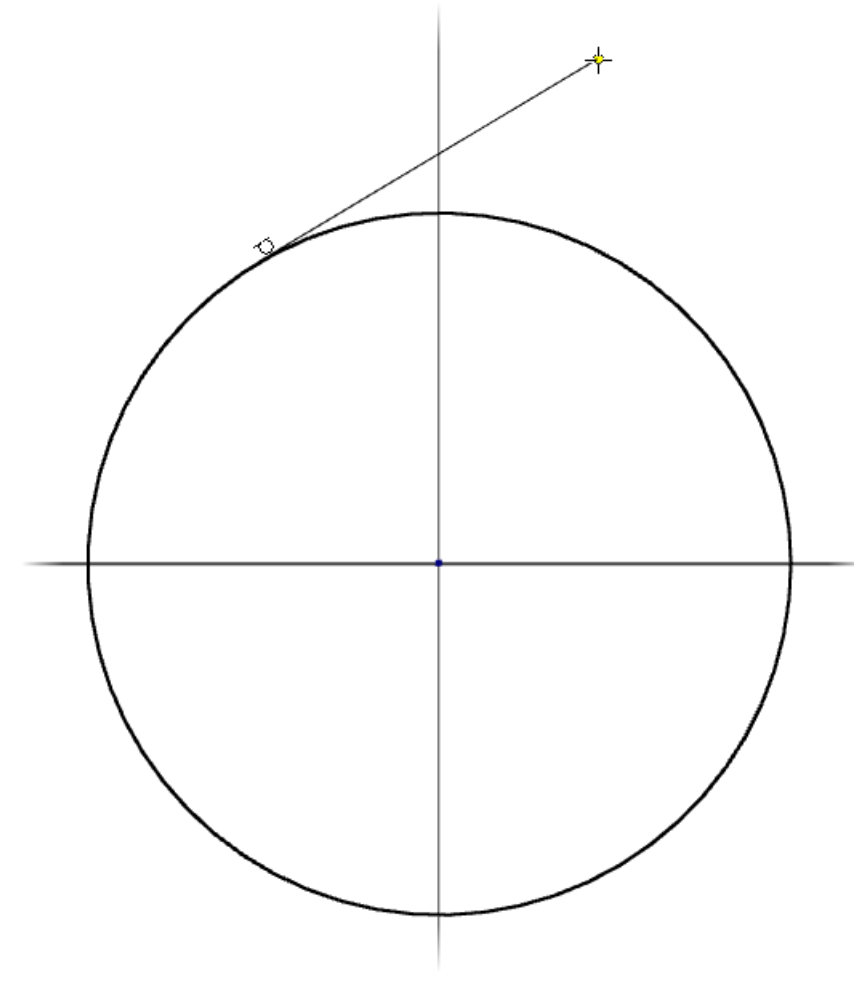
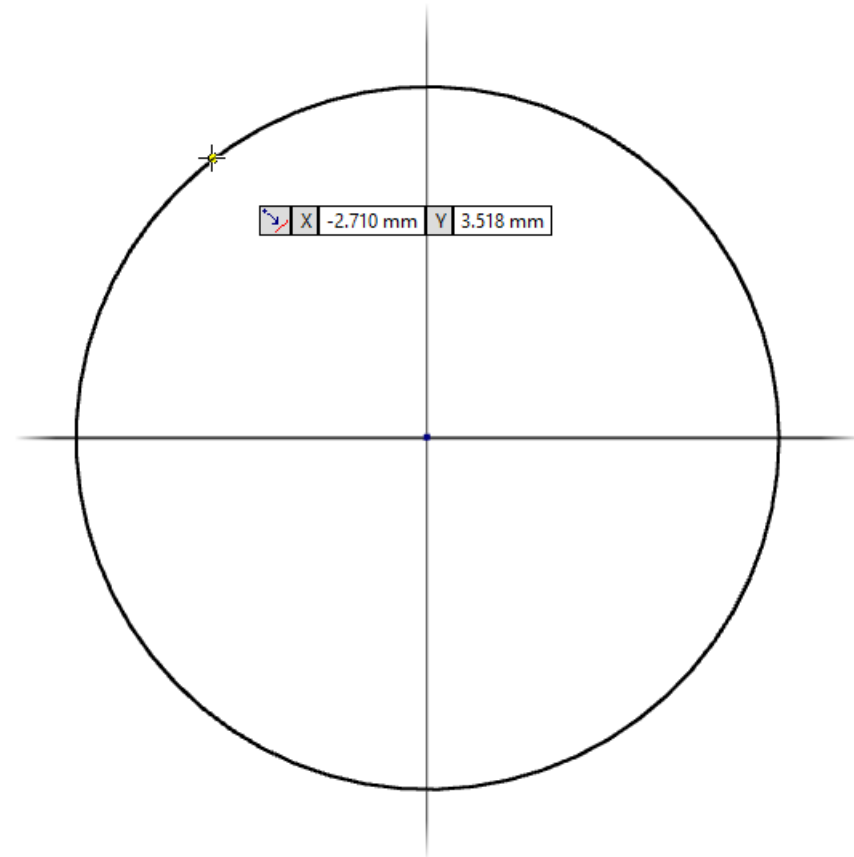
#2 Click Hold Arc / Slot

- Start **Line** command
- Draw line segment
- Click and Hold on the end of the line segment
- Use **Point Alignment** to create fully constrained slot sketch



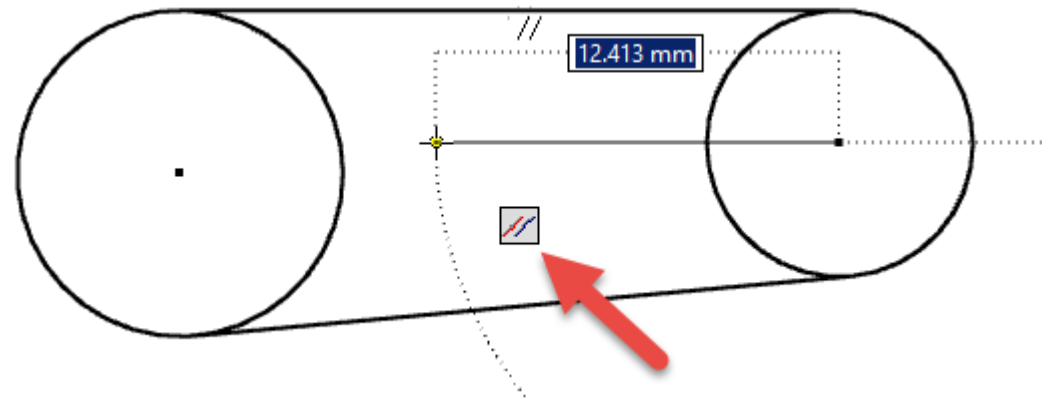
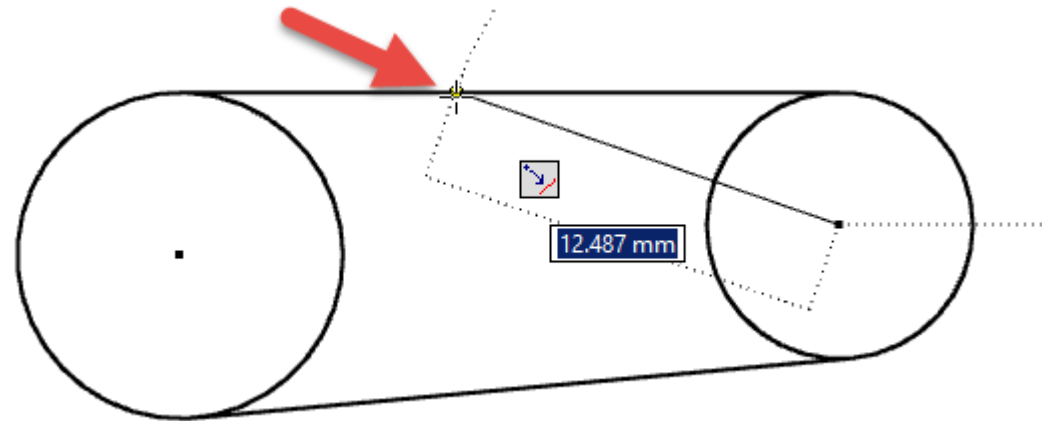
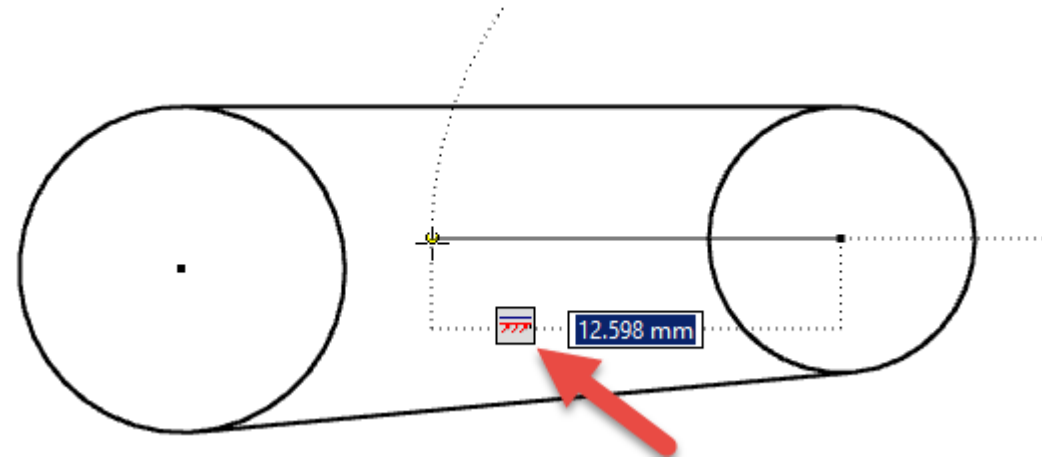
#3 Click Hold Tangent Constraint

- Start **Line** command
- Click and Hold on arc or circle
- Drag line out, **Tangent** constraint inferred



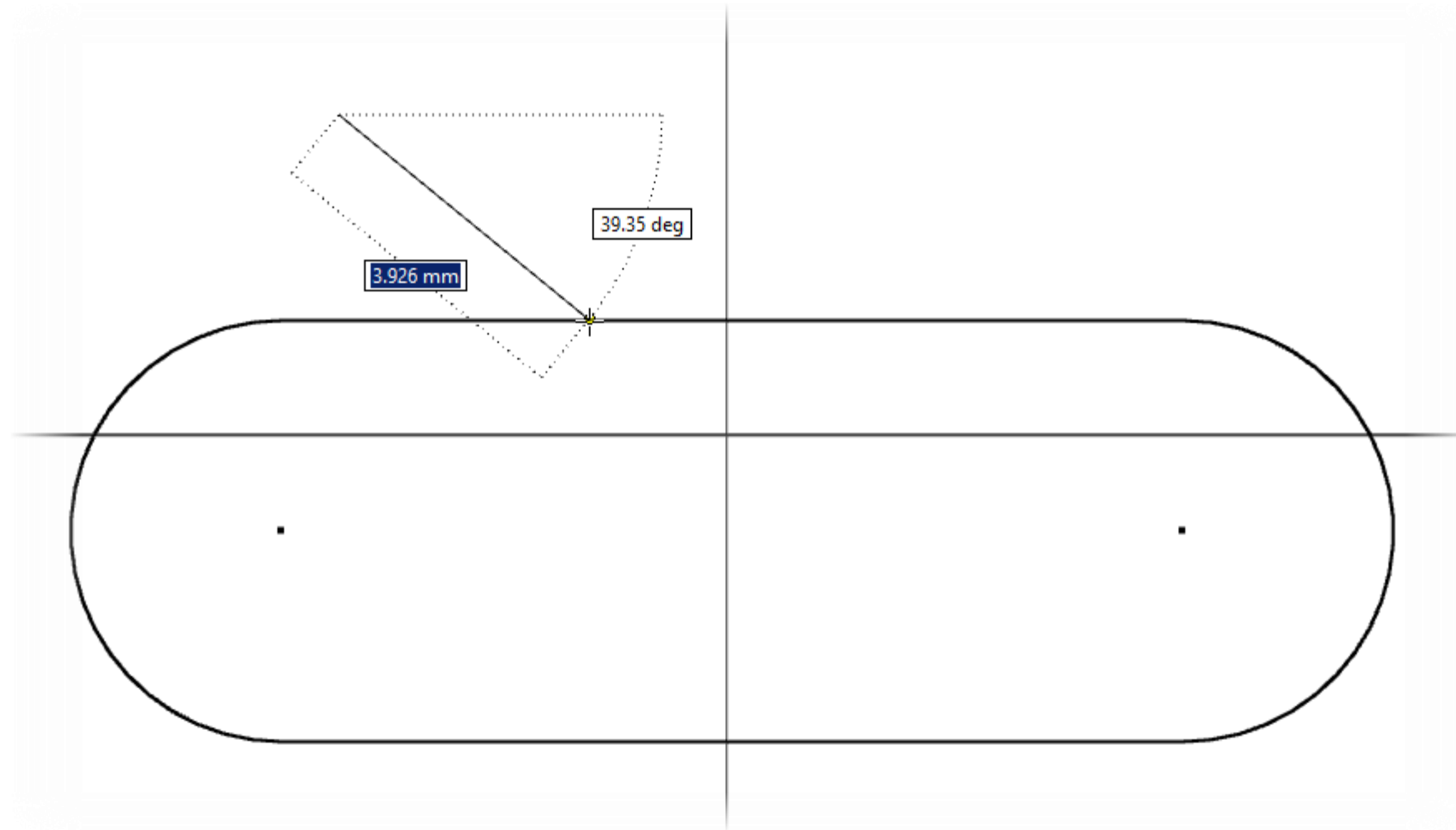
#4 Scrub Geometry for Inferred Constraint

- Inferred Constraint not currently the correct one desired
- “Scrub” cursor over geometry you want constraint referenced to
- New inferred constraint now shown



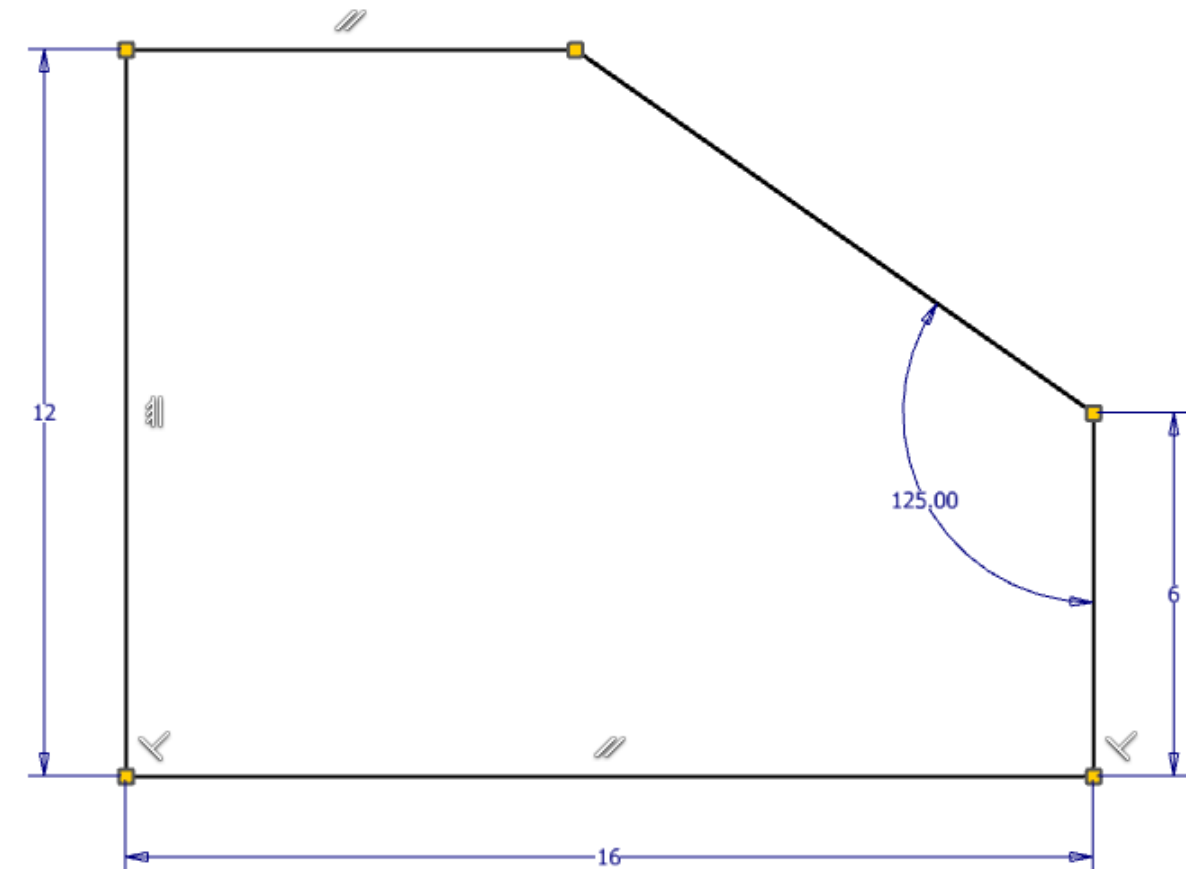
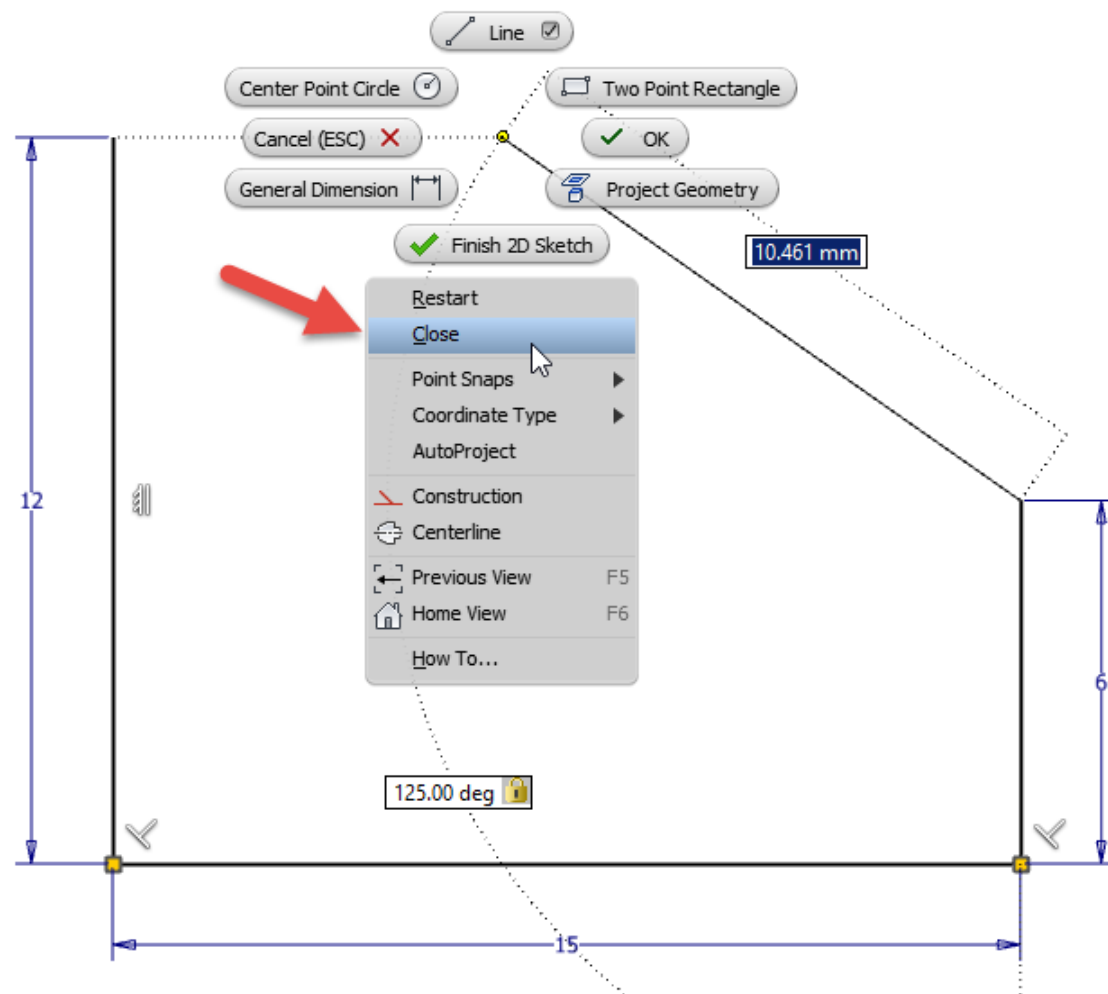
#5 Temporarily Disable Inferred Constraint

- Hold **Ctrl** while sketch command is active



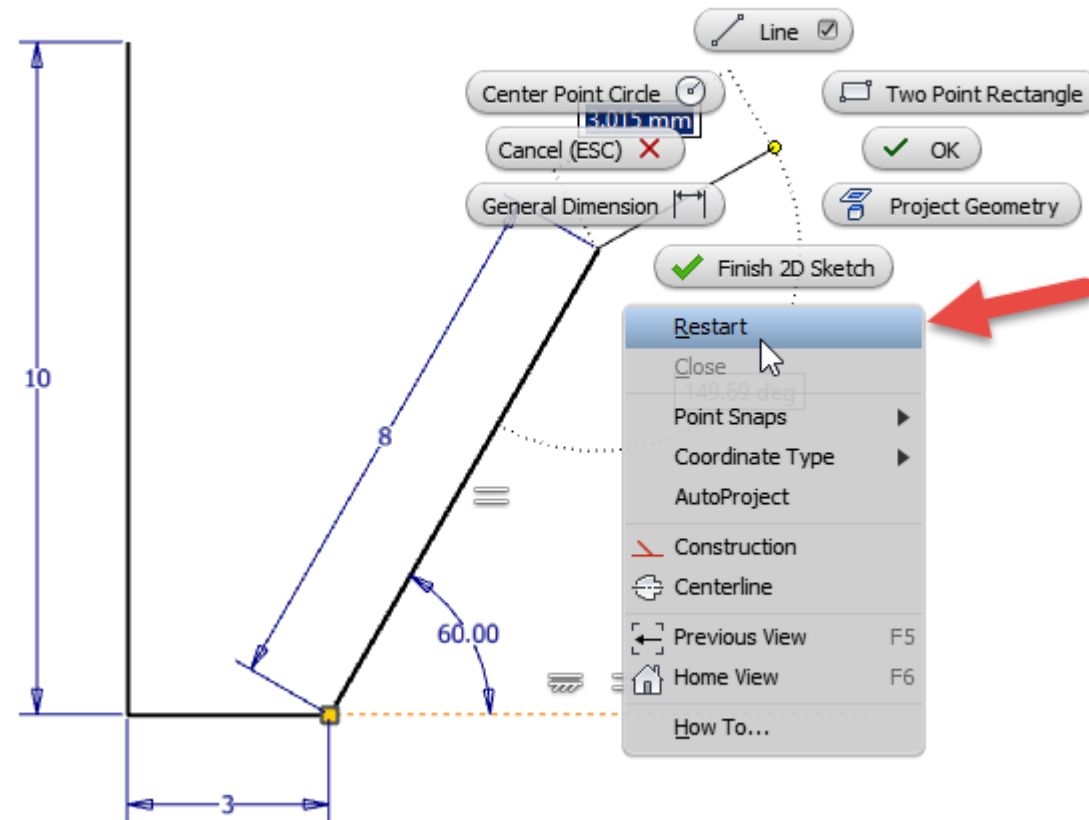
#6 Close Sketch

- While **Line** command is active Right-click
- Select **Close** from the **Marking Menu Overflow Menu**
- Closed profile created



#7 Restart, Line Command

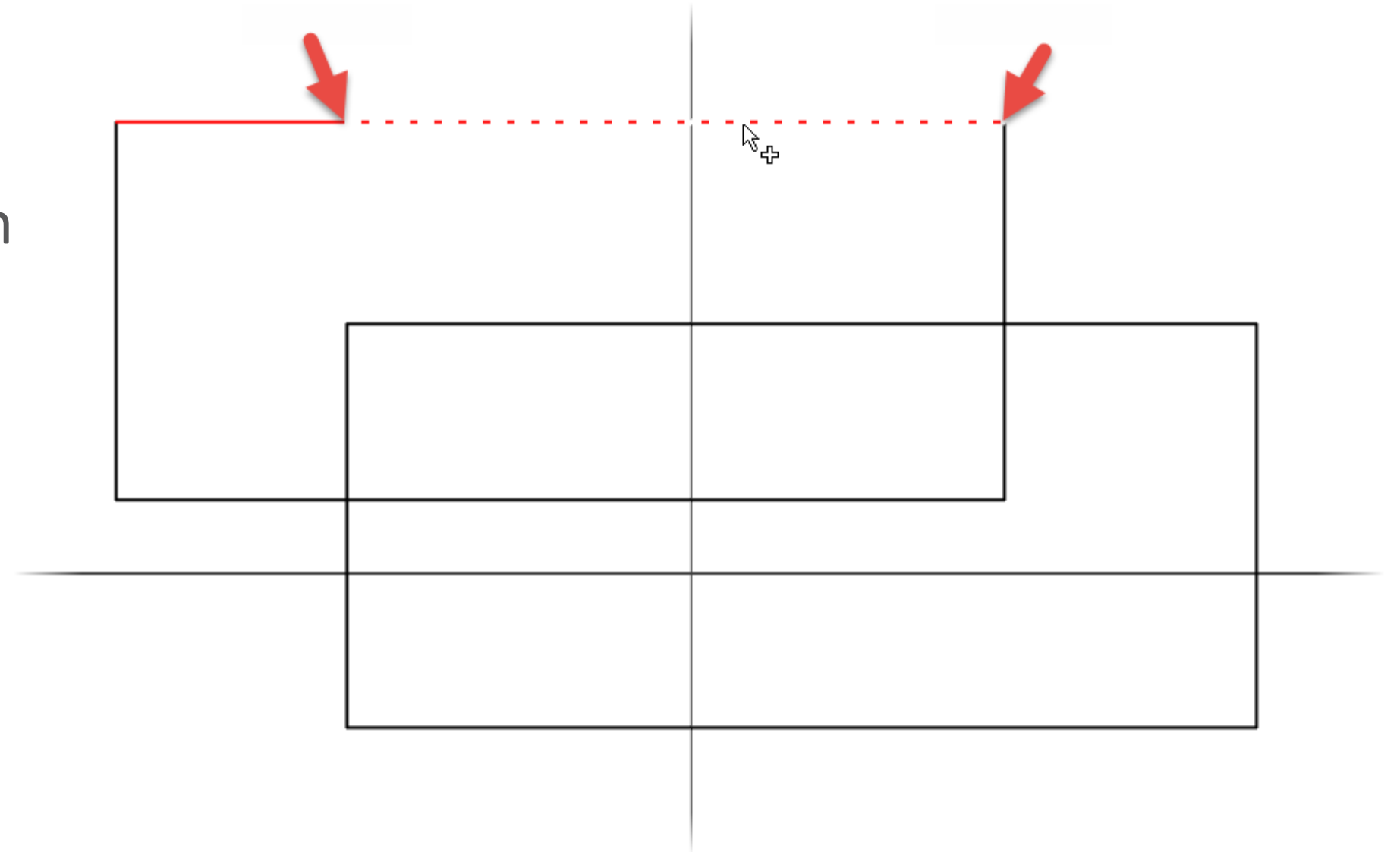
- While **Line** command is active Right-click
- Select **Restart** from the **Marking Menu Overflow Menu**
- **Line** command restarts without ending and restarting the command.



#8 Inferred Trim

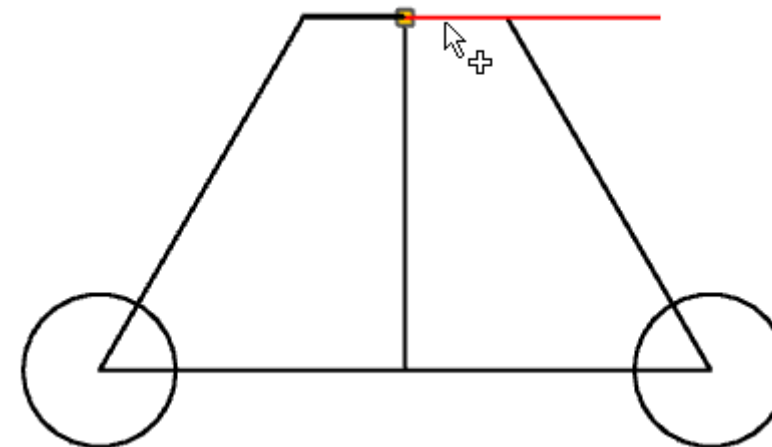
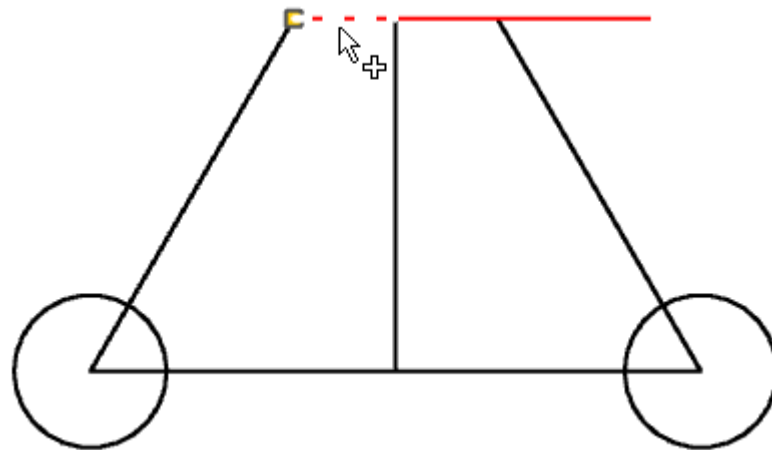
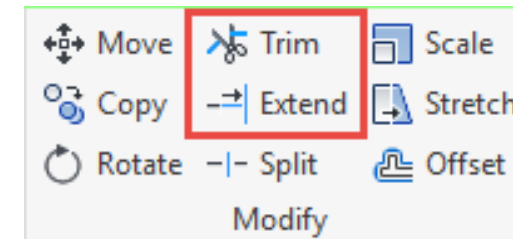
- **Trim** command infers trim section based on the sketch geometry even if the segments don't intersect

TIP: Hold **Ctrl** to specify the trim segment



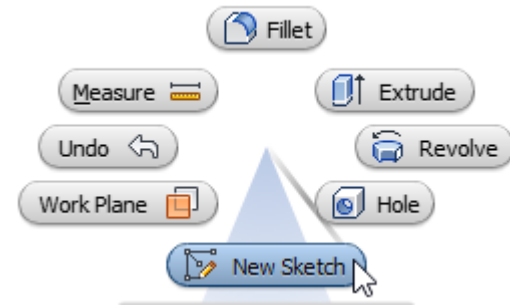
#9 Shift Trim/Extend

- Start either the **Trim** or **Extend** command
- Hold **Shift** on the key on the keyboard
- The opposite command is used when **Shift** key is held
- No need to exit the command

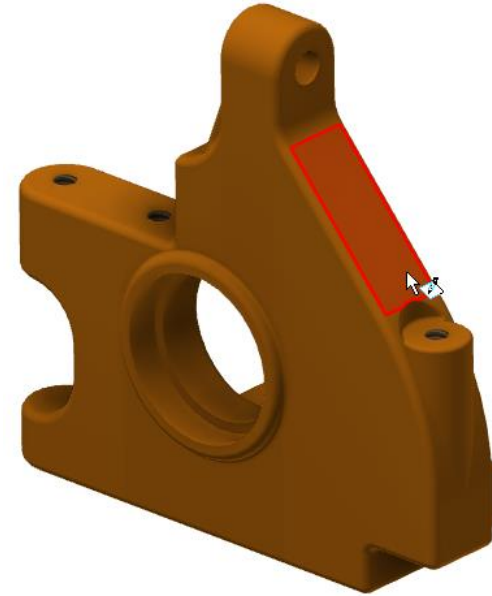


#10 Offset Work Plane on Sketch Creation

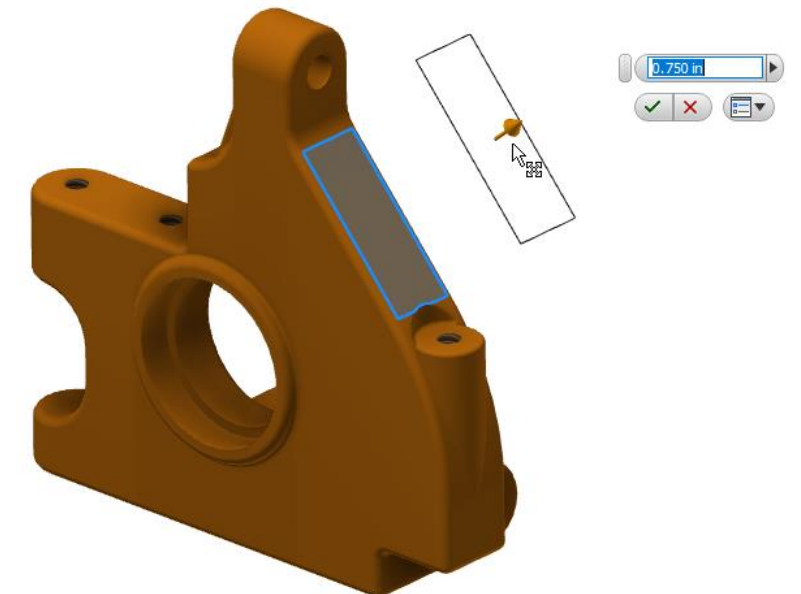
- Start 2D Sketch tool



- Select and hold on a face or existing plan

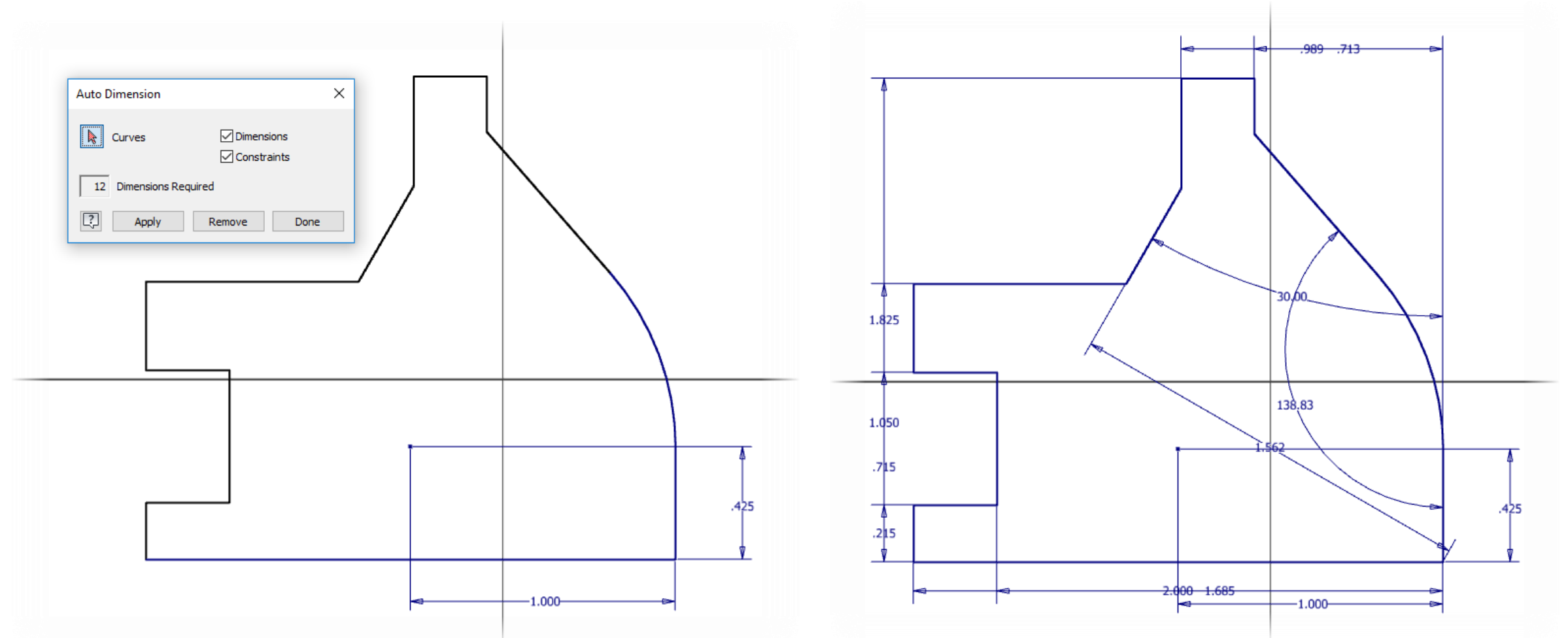
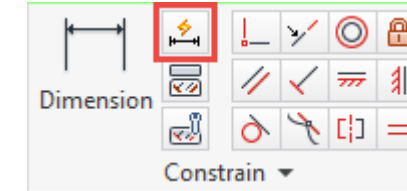


- Drag away from face or existing plane required distance or enter a view



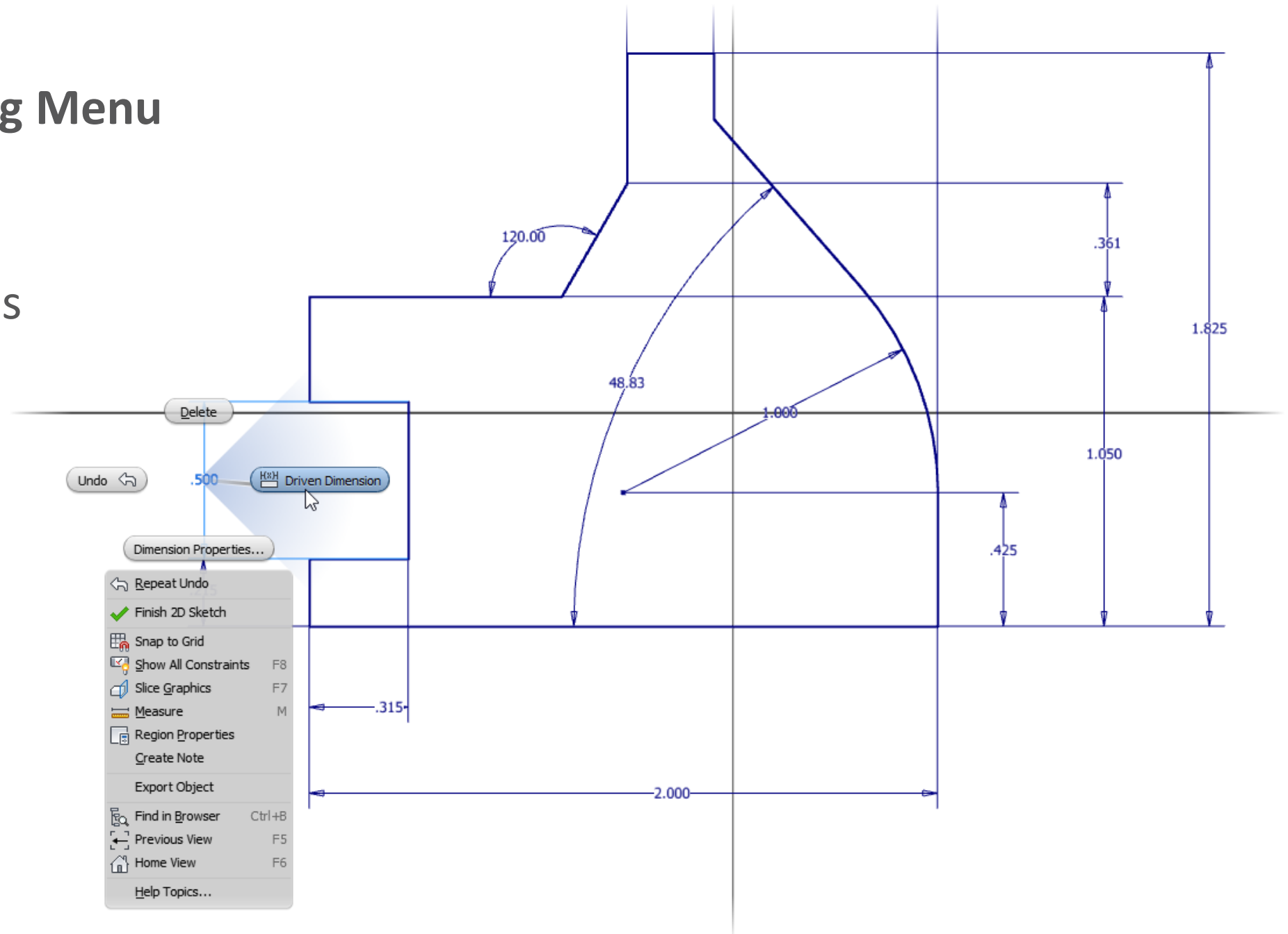
#11 Auto Dimension

- Sketch tab > Constrain panel > Automatic Dimensions & Constraints
- Recommended – Place locating dimensions first
- Select Curves to dimension
- No select will apply to entire sketch



#12 Driven Dimension

- Right-click dimensional constraint
- Select **Driven Dimension** from **Marking Menu**
- Dimension does not control sketch
Can be referenced by other dimensions
or Parameters

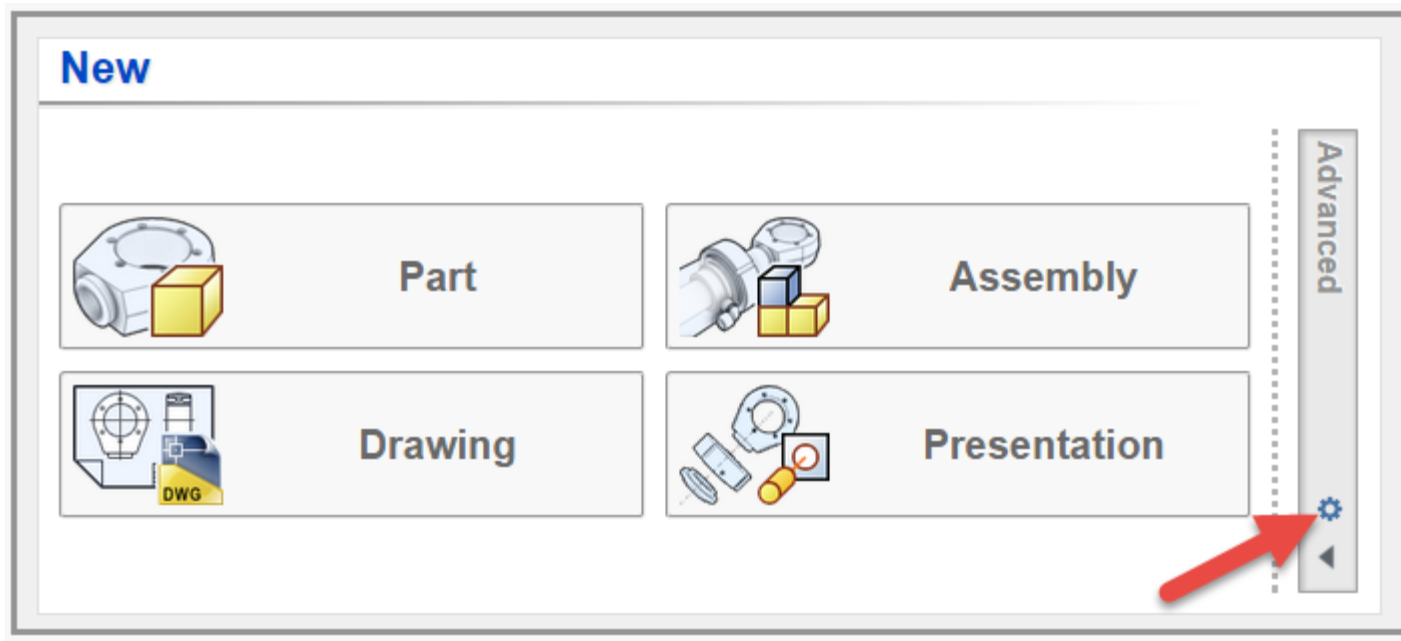




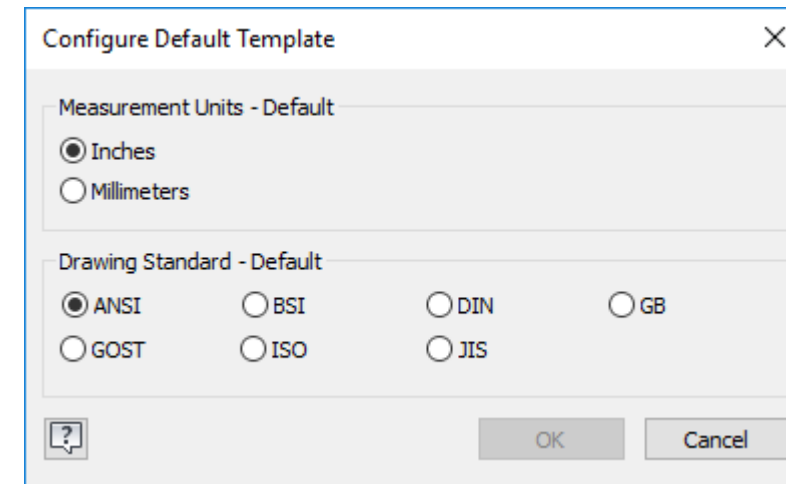
System & Settings

#13 Configure Default Templates

- Inventor Home screen > New > Advanced > Configure Default Templates (gear icon)



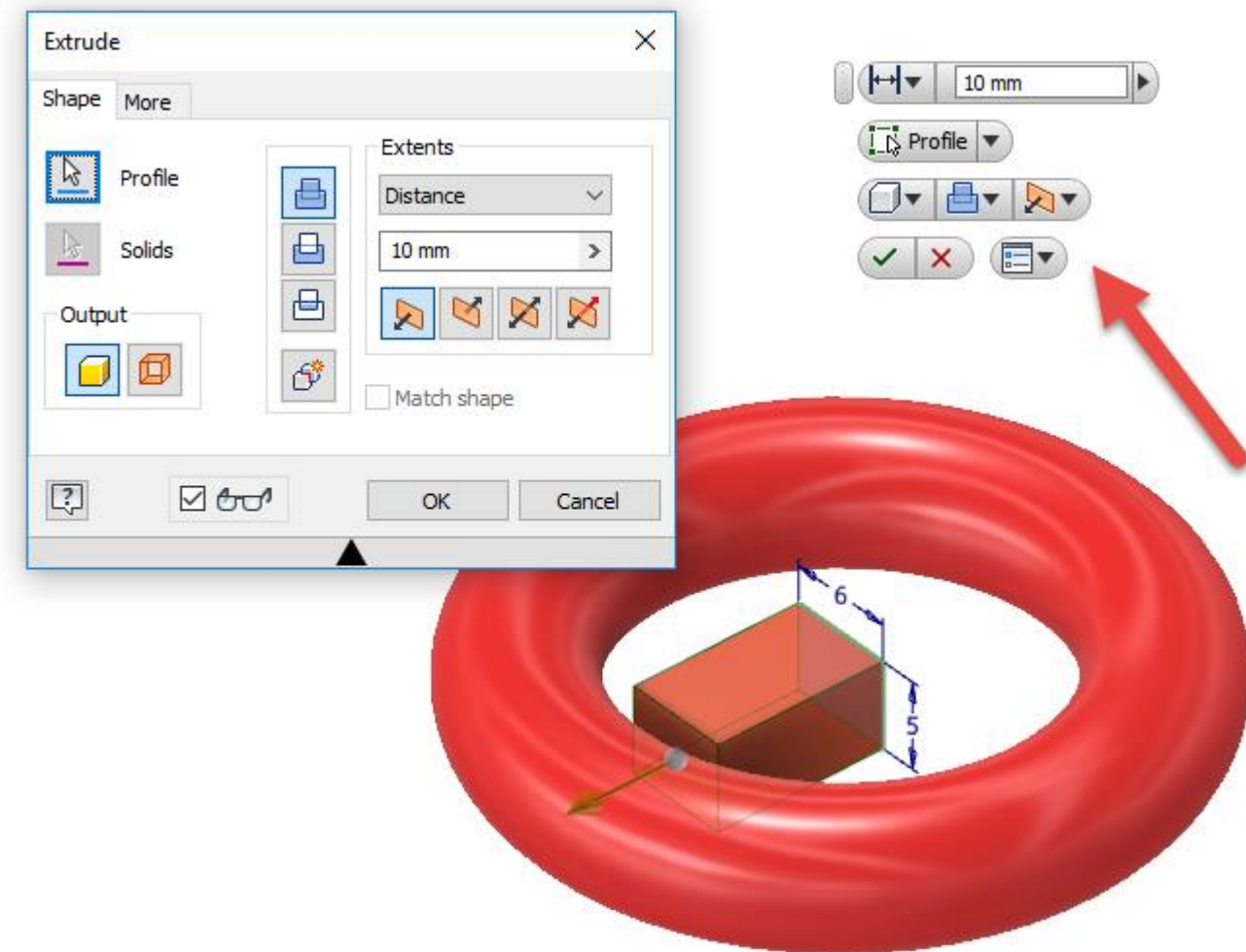
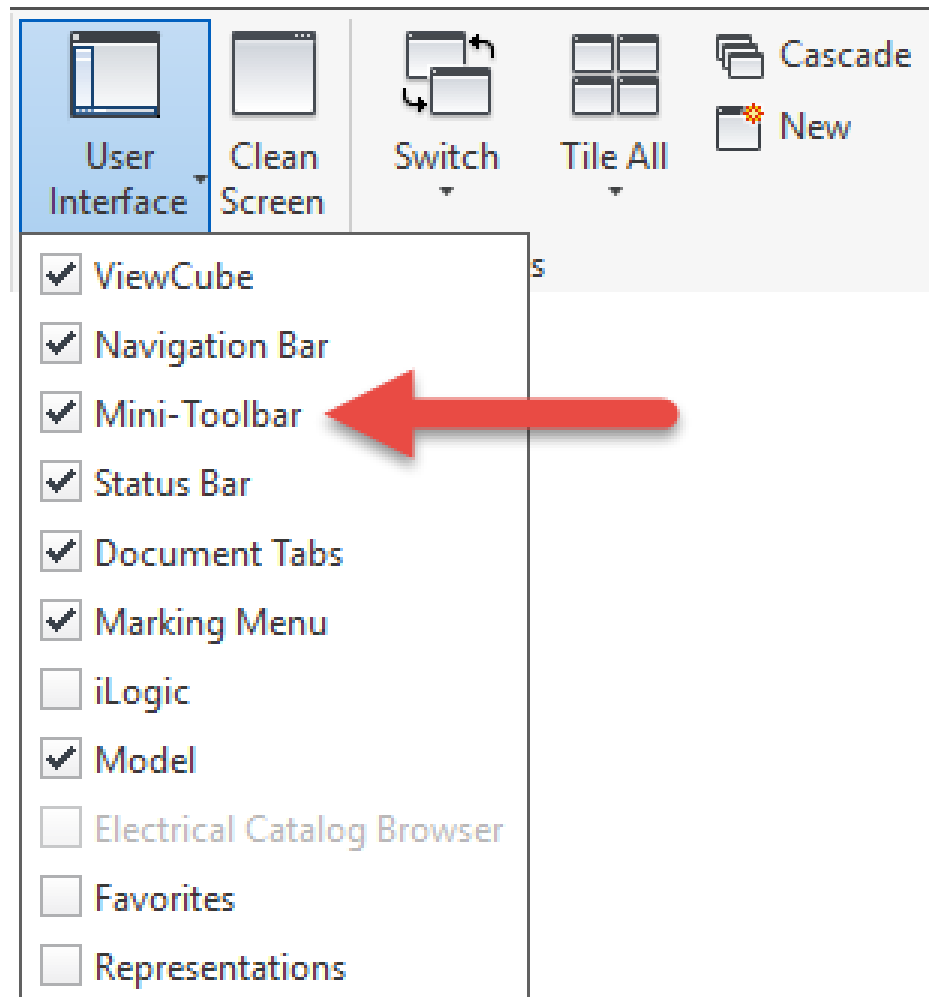
- Set Measurement Units & Drawing Standards



NOTE: Just for Default Templates – Does Not Effect or templates

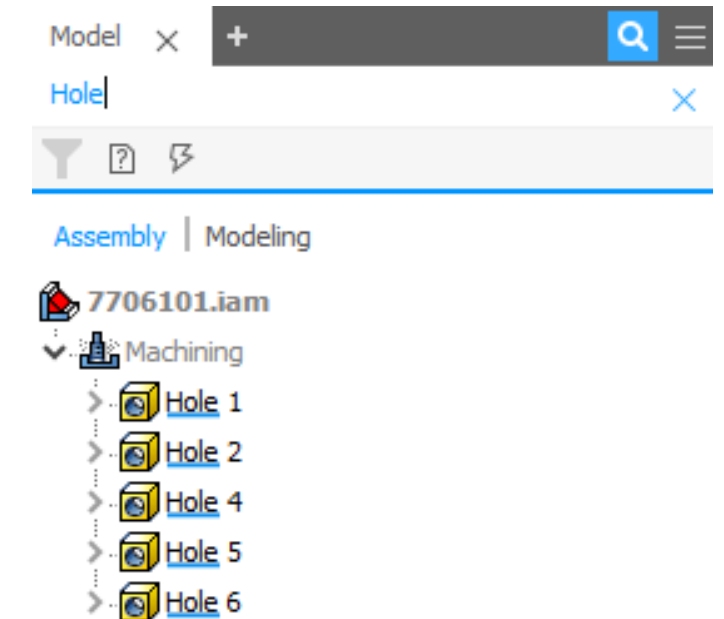
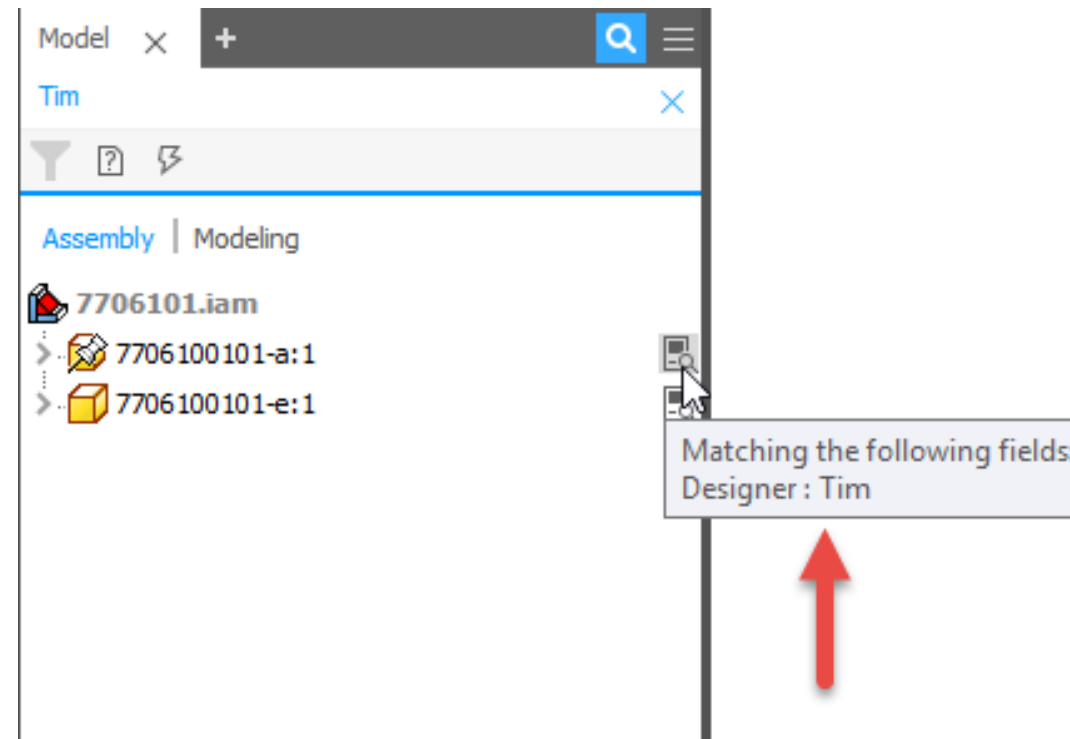
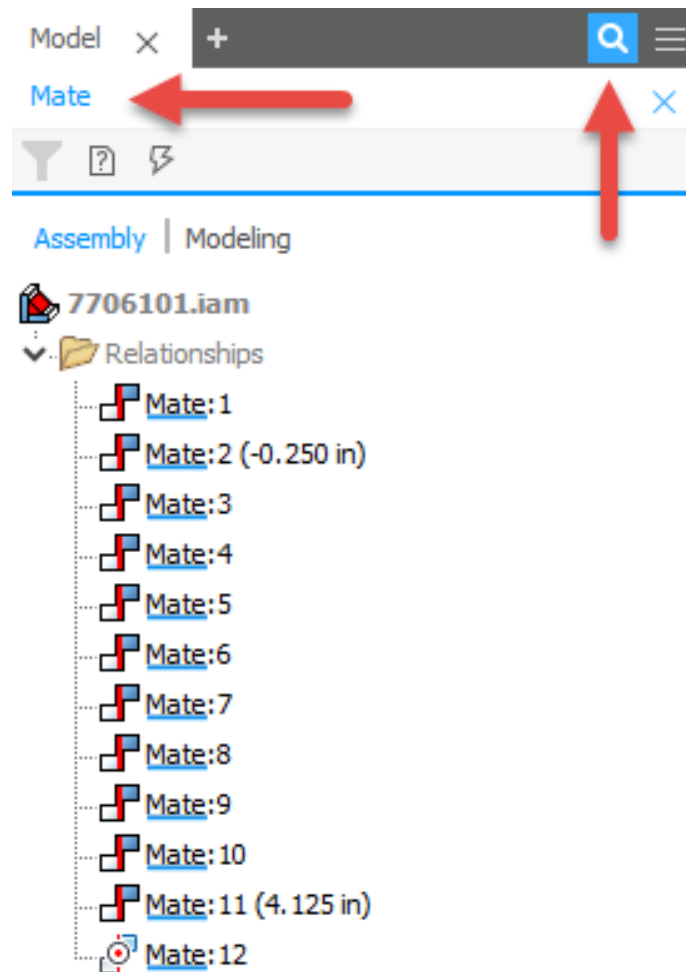
#14 Mini-Toolbars OFF by Default (2018)

- View tab > Windows panel > Mini-Toolbar
- Check to turn them on



#15 Search Browser (2018)

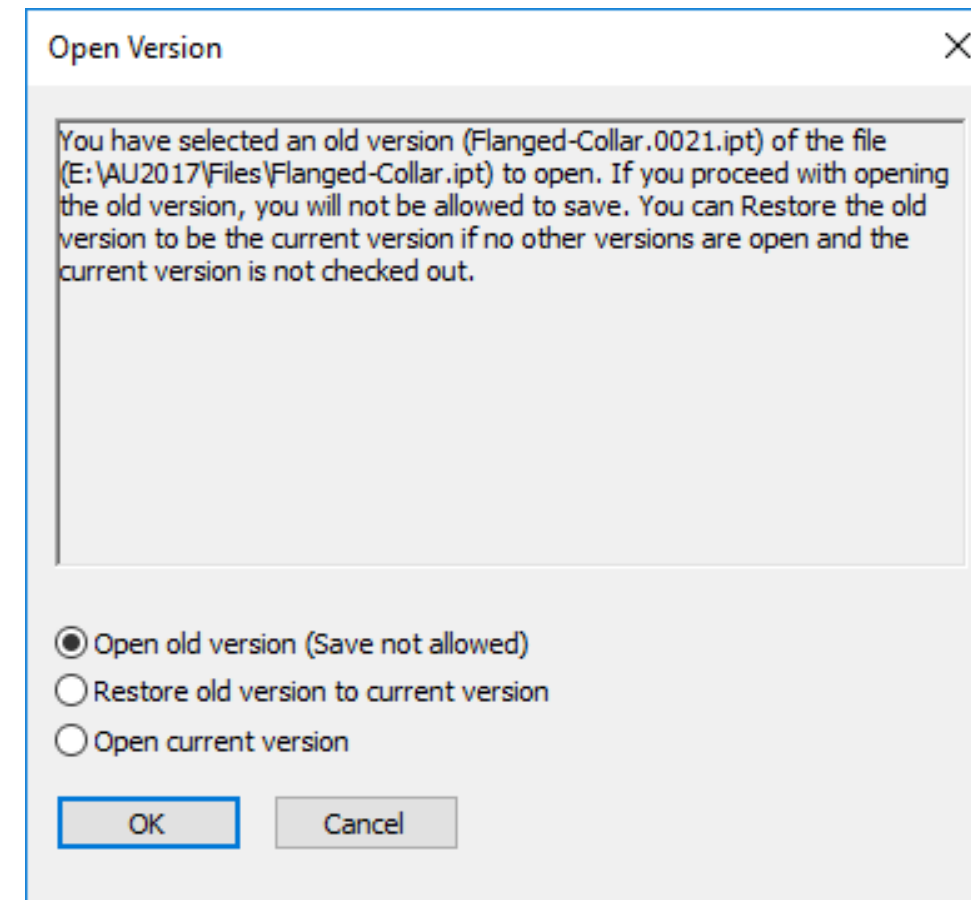
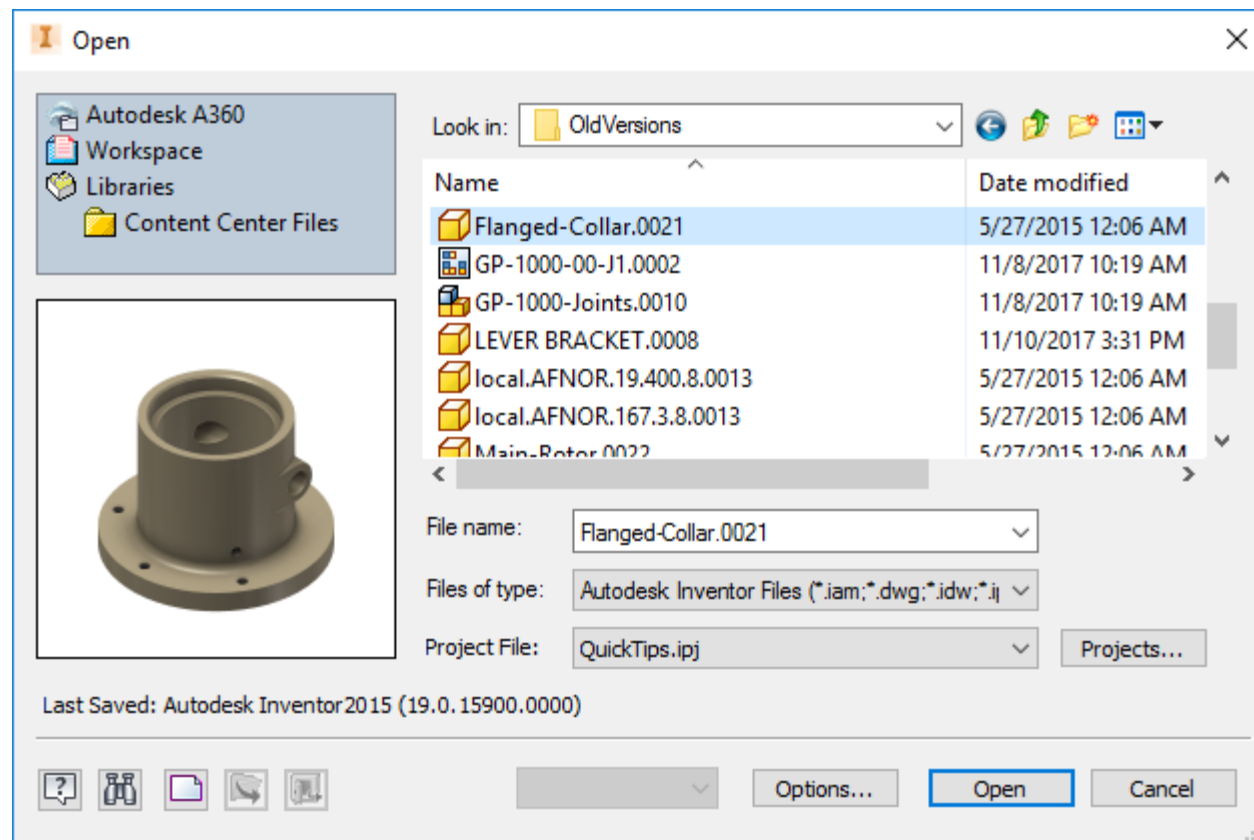
- Click **Magnifying Glass** icon on **Browser**
- Enter text for search. Name or iProperties



#16 Old Versions



- Open file from the **OldVersions** fold
- Options to **Open old version (Save not allowed)**, **Restore old version to current version**, or **Open Current Version**

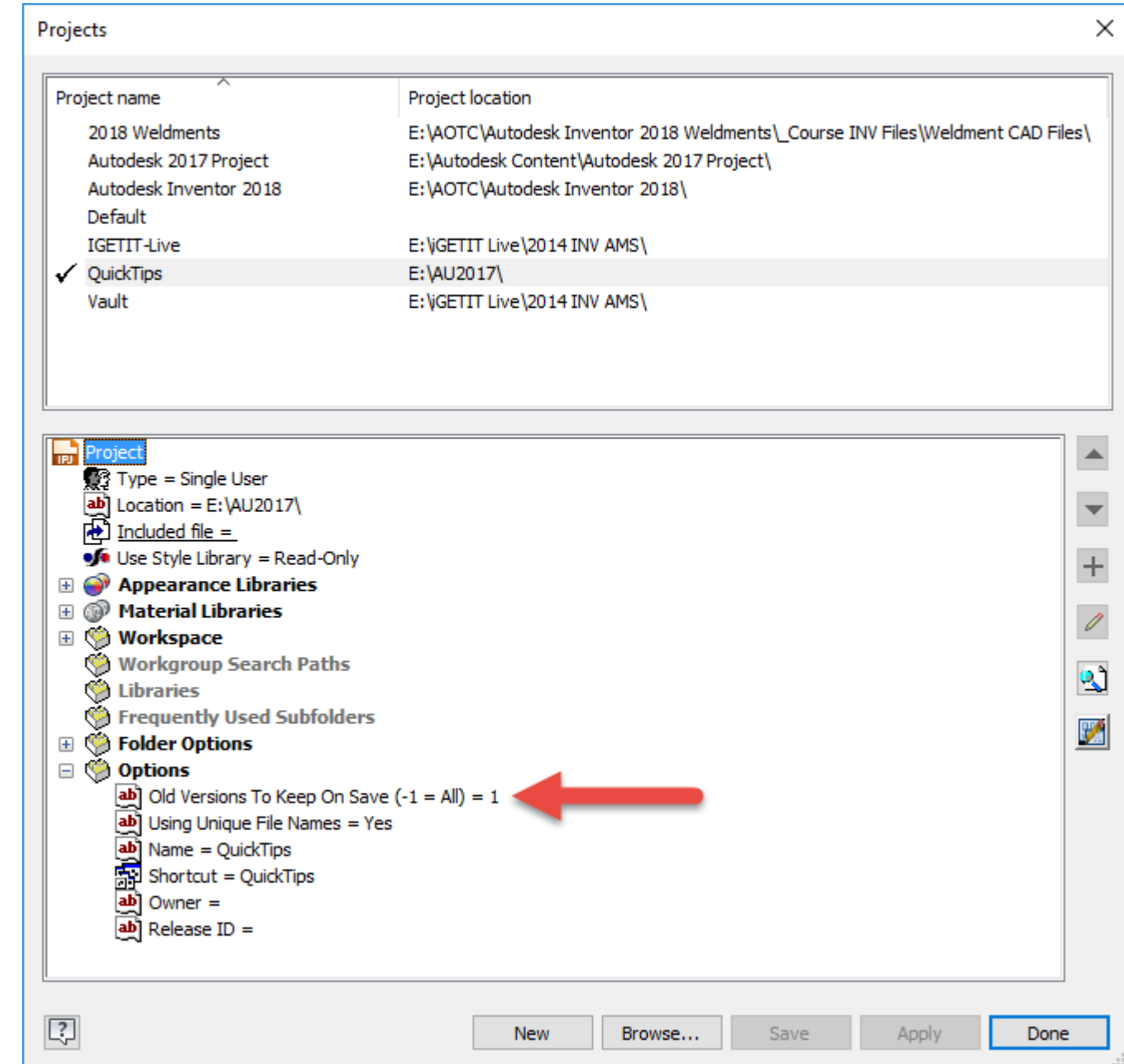
NOTE: If file is copied out of the **OldVersions** folder, file is treated as it's own file



#17 Old Versions Save Option

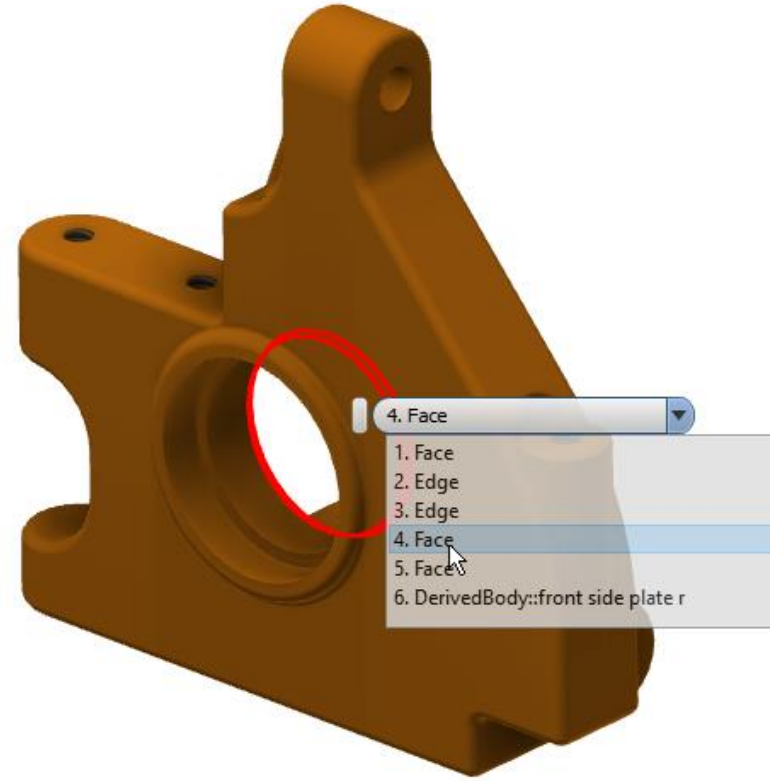
- Control the number of **Old Versions** saved in the project file
- **Options > Old Version To Keep On Save**
- Default = **1**
- **-1** = All Old Versions Saved

 **Options**
 Old Versions To Keep On Save (-1 = All) = 1



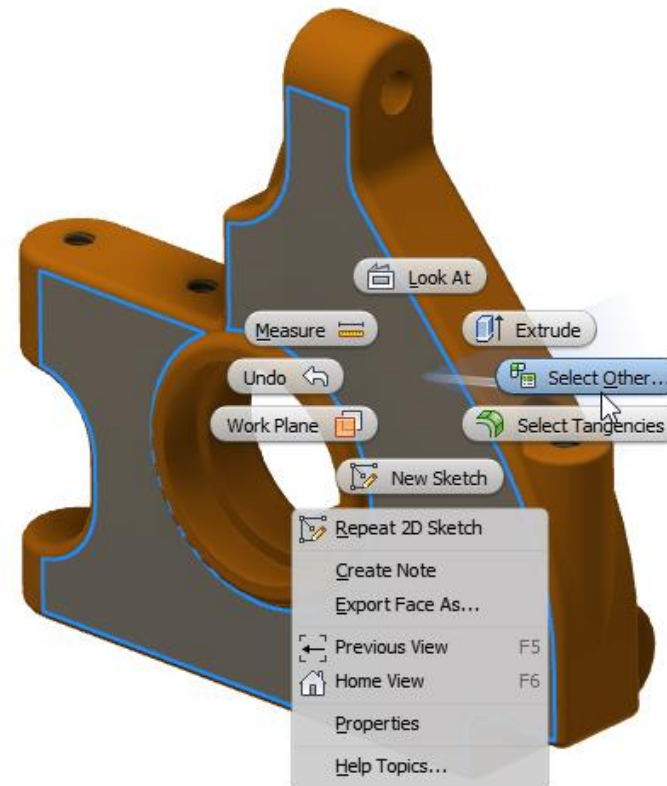
#18 Select Other

- Hover over part or assembly
- Item selection from dropdown list



OR

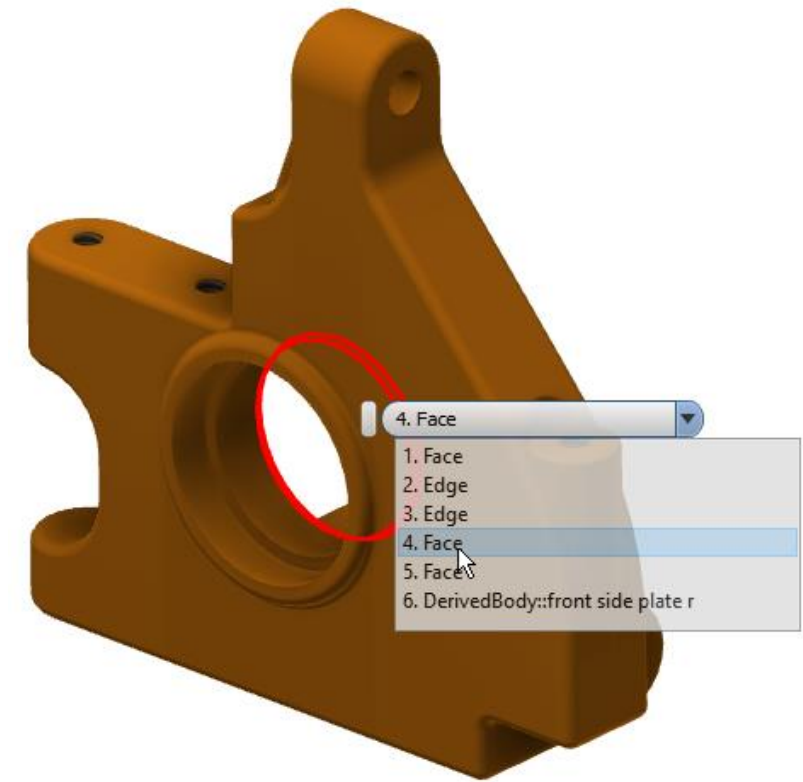
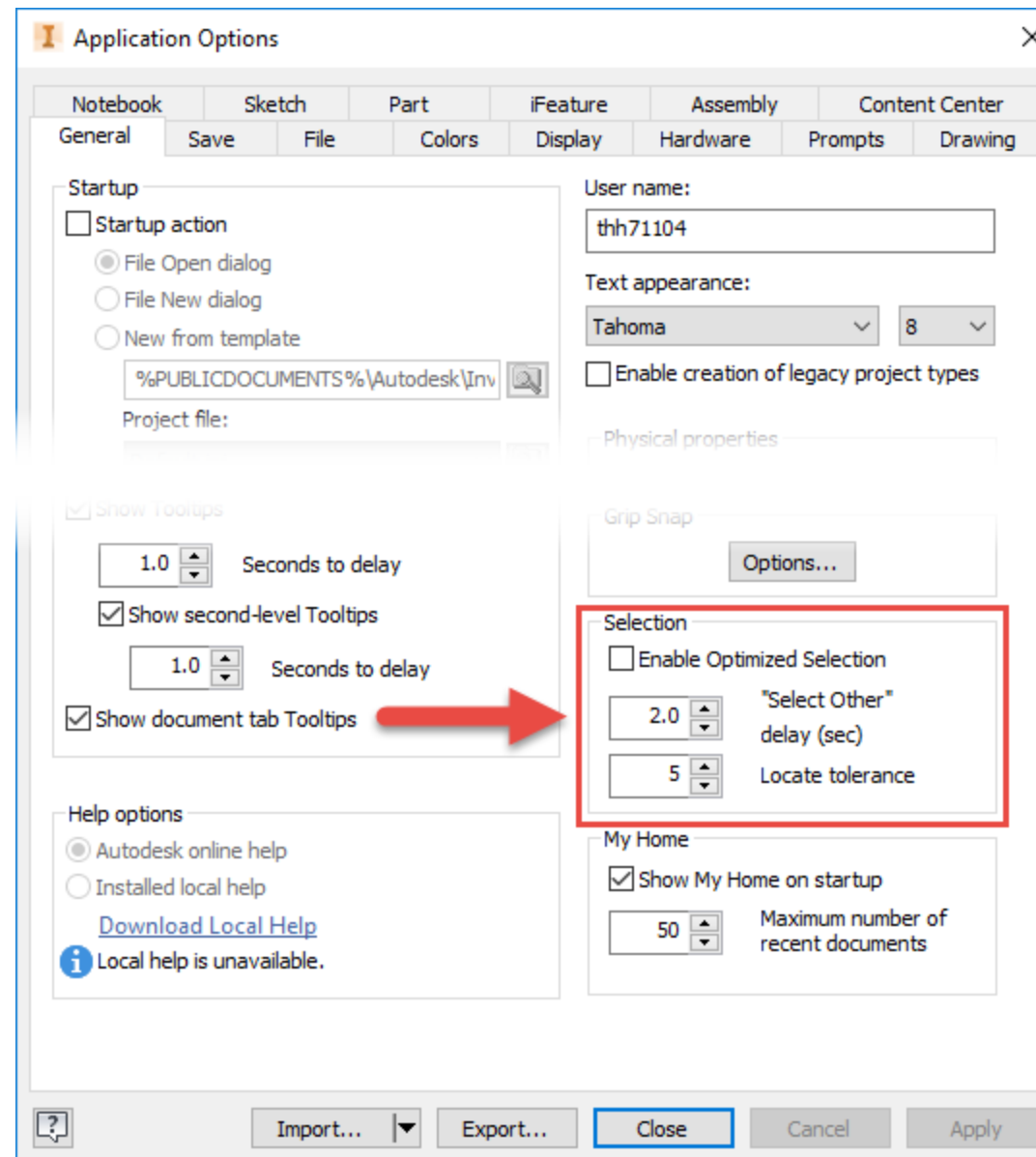
- Right click on part or assembly
- Select Other** from **Marking Menu**



#19 Select Other - Timing

- Tools tab > Option panel > Application Options
- General tab > Selection
- “Select Other” delay (sec)

TIP: Enter value **OFF**
To turn off **Select Other** function



The background of the slide features a complex, abstract wireframe pattern. This pattern consists of numerous interconnected lines forming a mesh of irregular polygons, which together create a sense of three-dimensional, undulating forms. The lines are thin and light gray. A solid blue horizontal bar, with a gradient from a darker blue on the left to a lighter blue on the right, spans the bottom portion of the image. The word "Viewing" is written in white, sans-serif font on the left side of this blue bar.

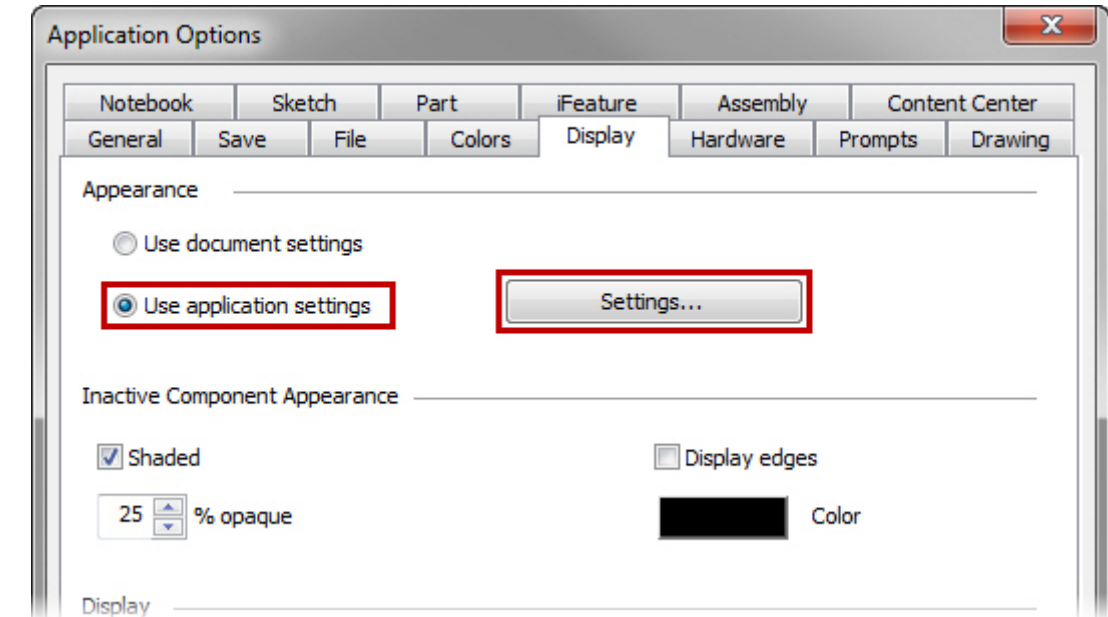
Viewing

#20 Ambient Shadows Always On

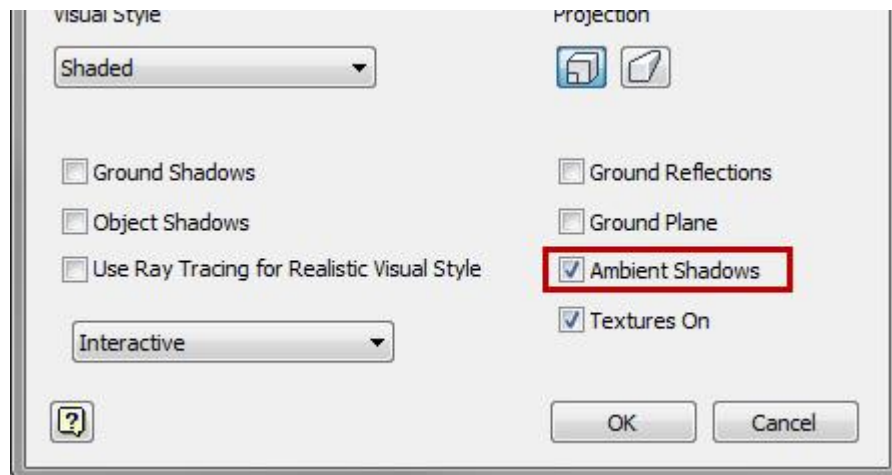
- Open the **Application Options**
Tool > Options > Application Option



- On the **Application Options** dialog box on the **Display** tab:
Select **Use application settings**
Then click the **Settings...** button

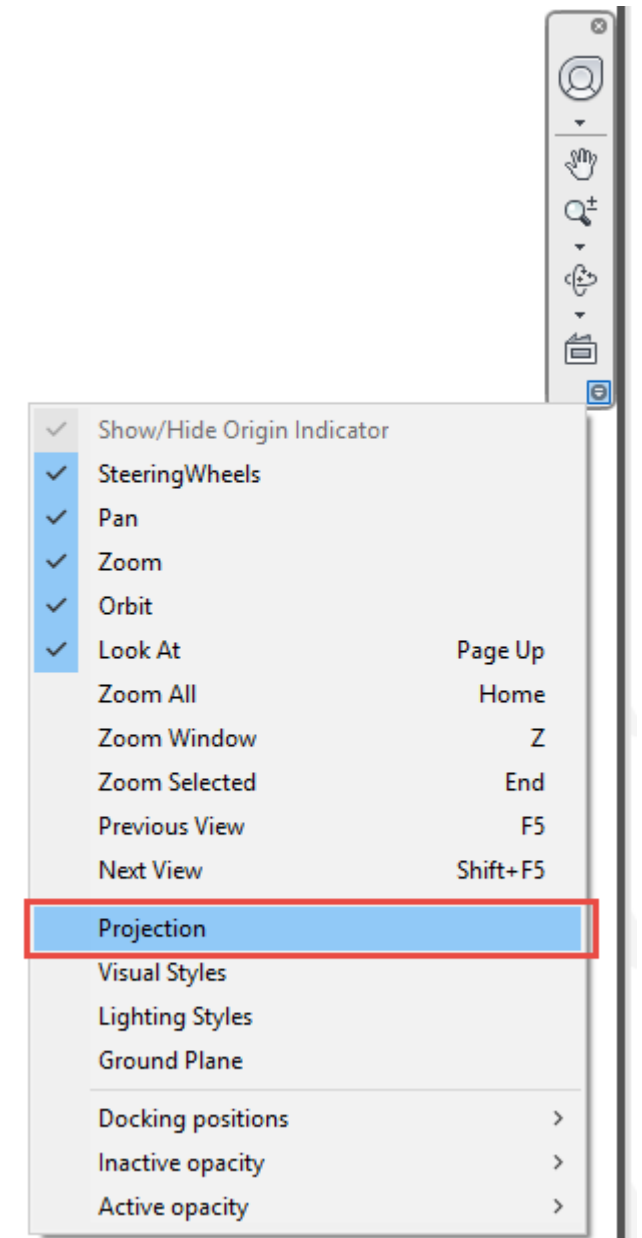
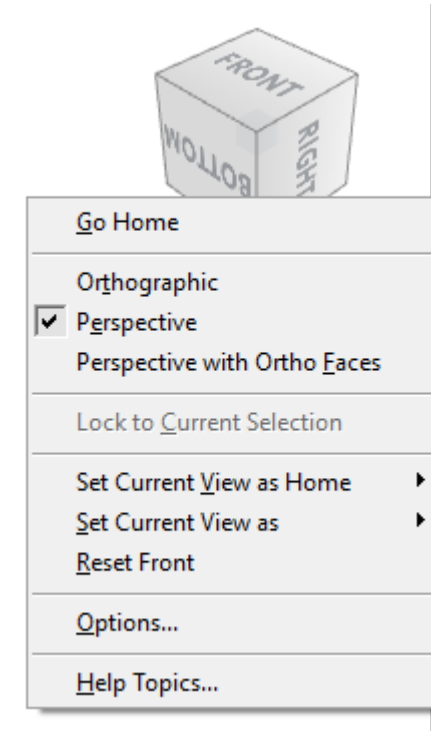


- On the **Display Appearance** dialog box check the box for **Ambient Shadows**. Then click **OK**.



#21 Ortho/Perspective View from View Cube

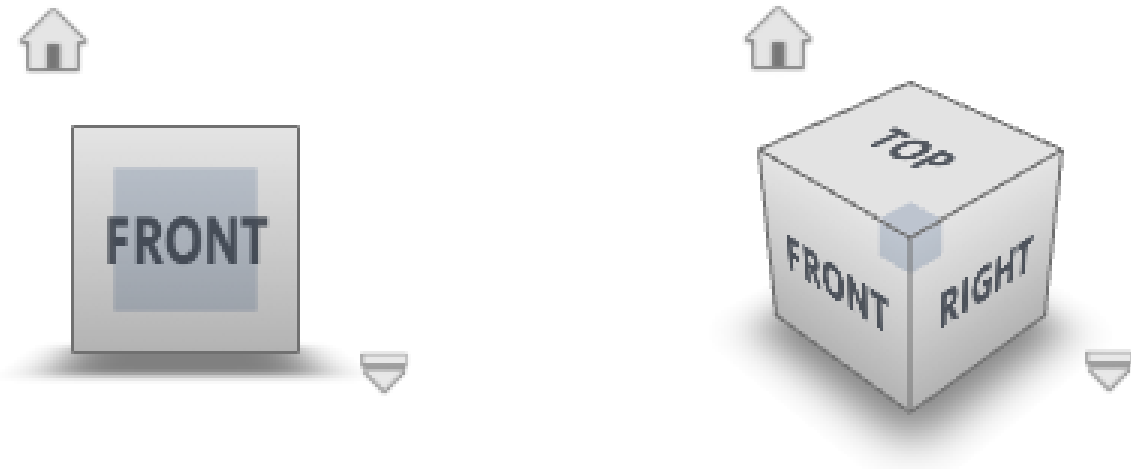
- Right-Click on **View Cube**
Orthographic / Perspective / Perspective with Ortho Faces
- Also available from the **Navigation Bar**
More Options drop down list / **Projection**



#22 View Cube Predefined View Indicator

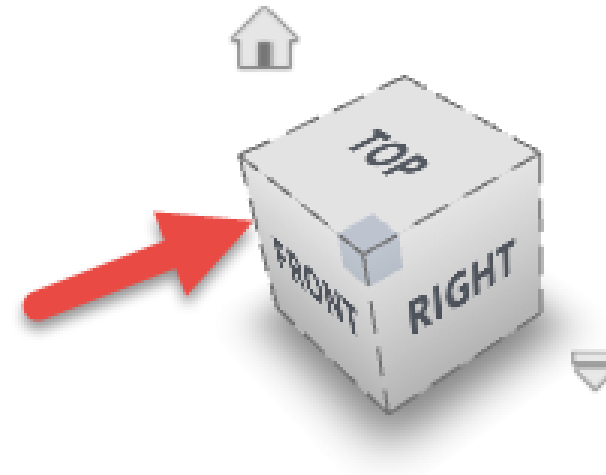
- **Predefined Views**

View Cube has solid edge lines



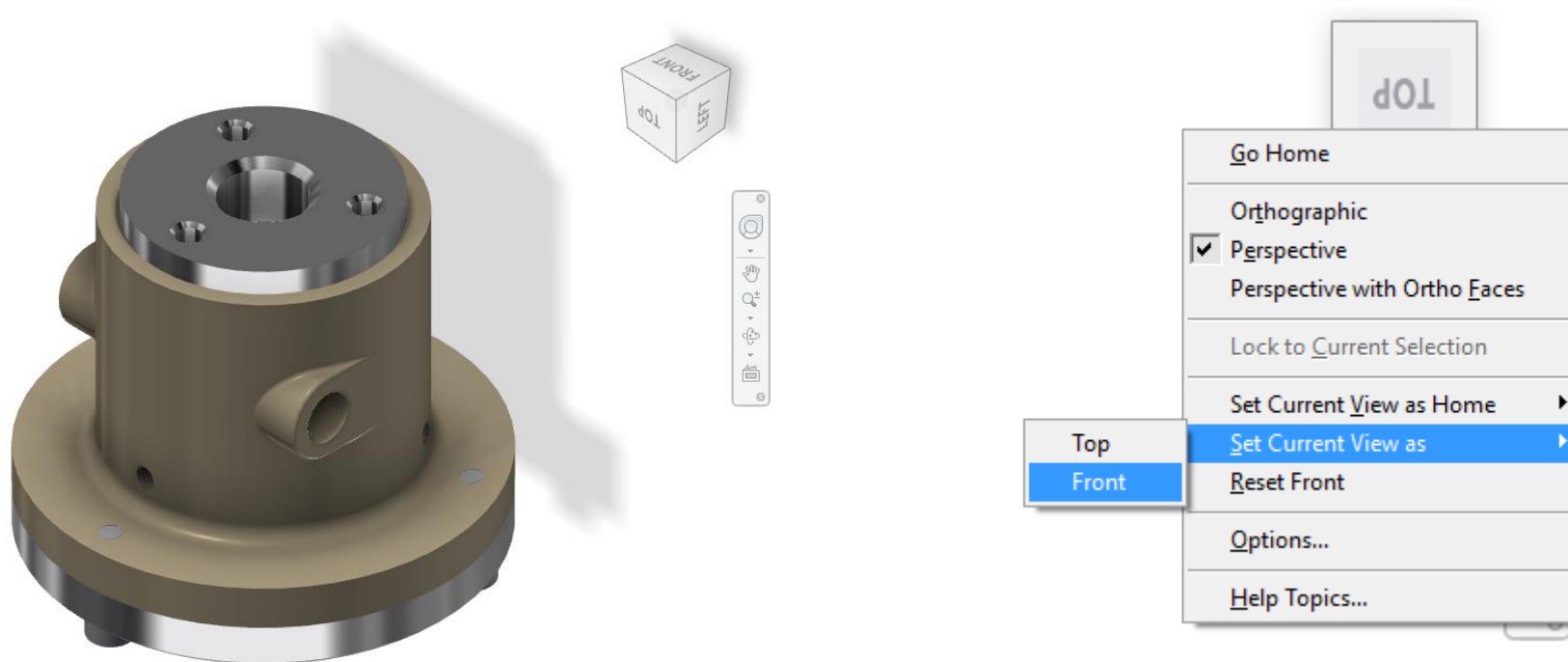
- **Not Predefined View**

View Cube has dashed edge lines

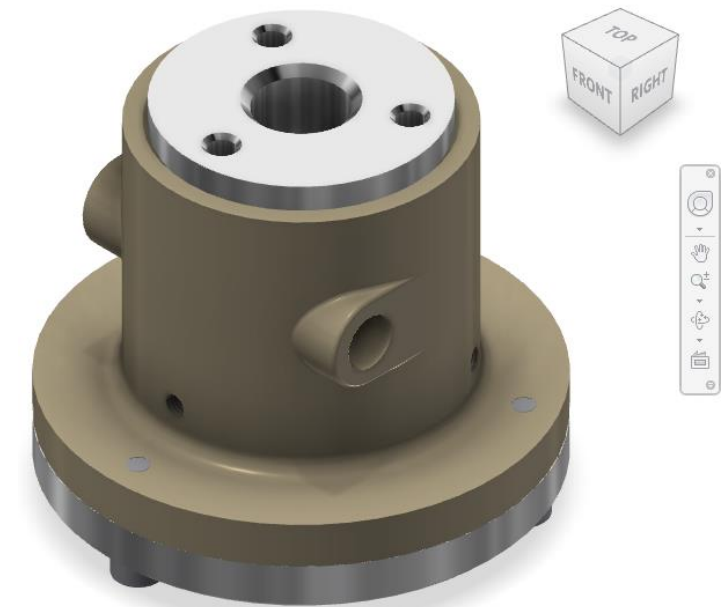


#23 Reorient Lighting

- Orient model view to look at desired “Front” of model
- Right-Click **View Cube** > **Set Current View As** > **Front**



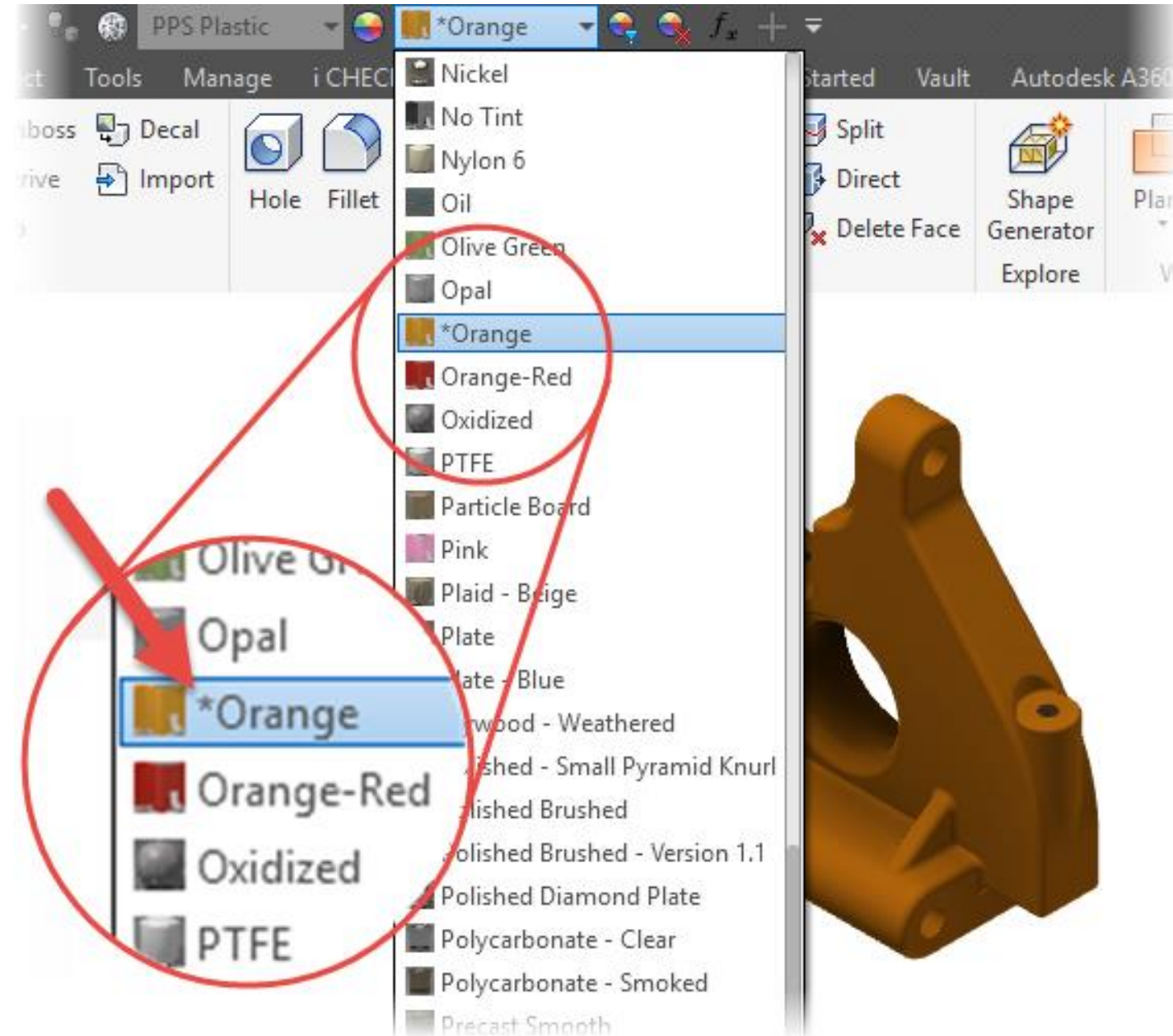
**Wrong Ground Shadow
Direction**



**Correct Ground Shadow
Direction**

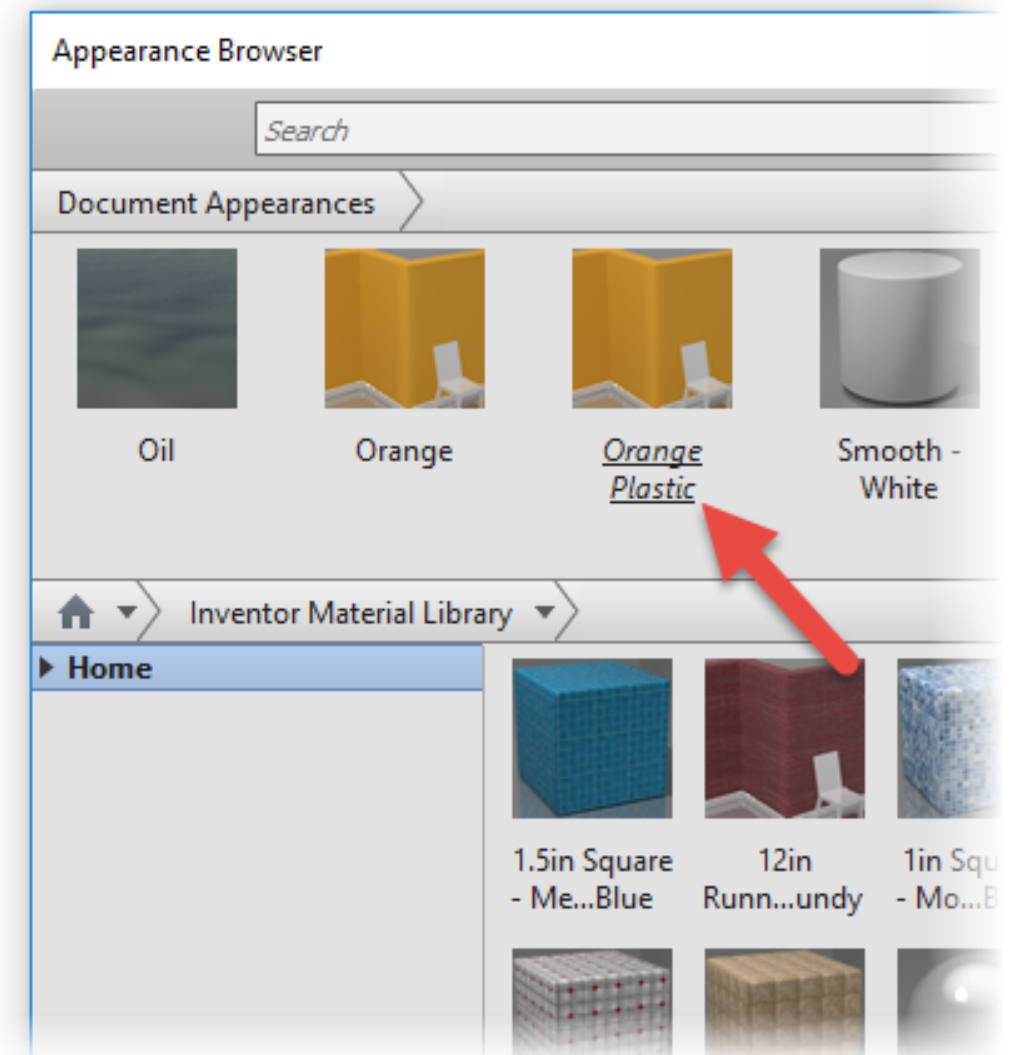
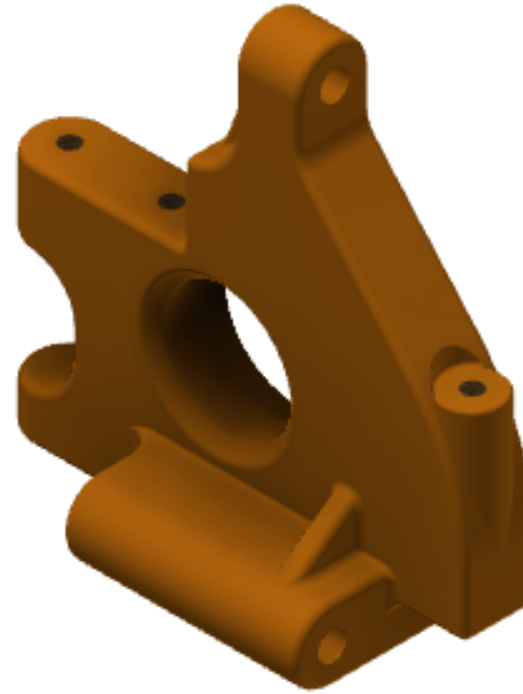
#24 Appearance Override Indicator

- Asterisk * next to **Appearance** name in **Appearance** dropdown list indicates the this appearance color is **Overriding** the **Material Appearance**



#25 Appearance Override Not In Library Indicator

- In the **Appearance Browser**, appearance names that are shown in *Italic* text indicates that the **Appearance** does not exist in the current project appearance libraries.



NOTE:

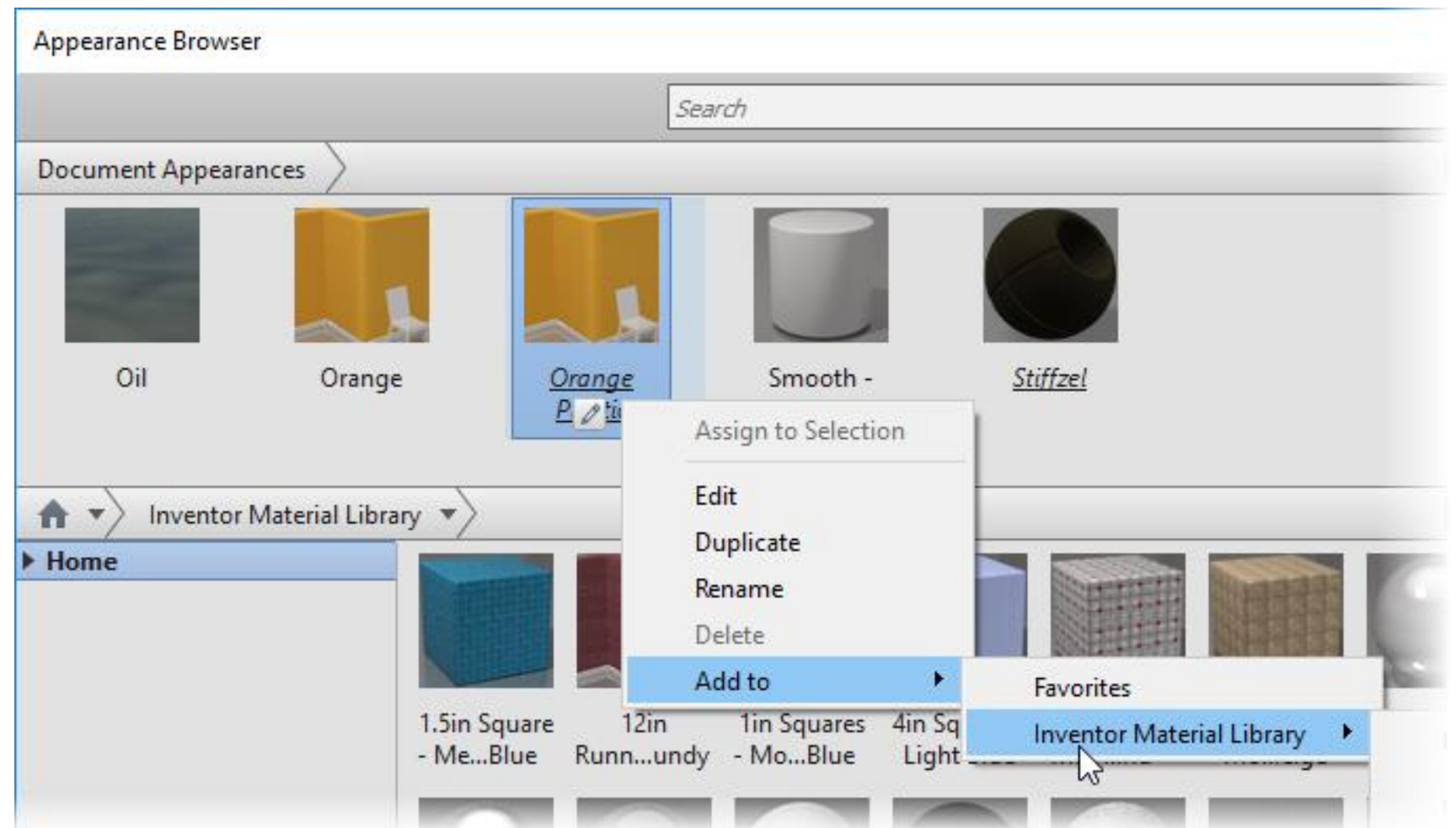
Similar Indicator in the Material Browser

#26 Add Appearance To Library

- Right-click appearance in the **Appearance Browser**
- Click **Add to** in the short cut menu
- Select required Library

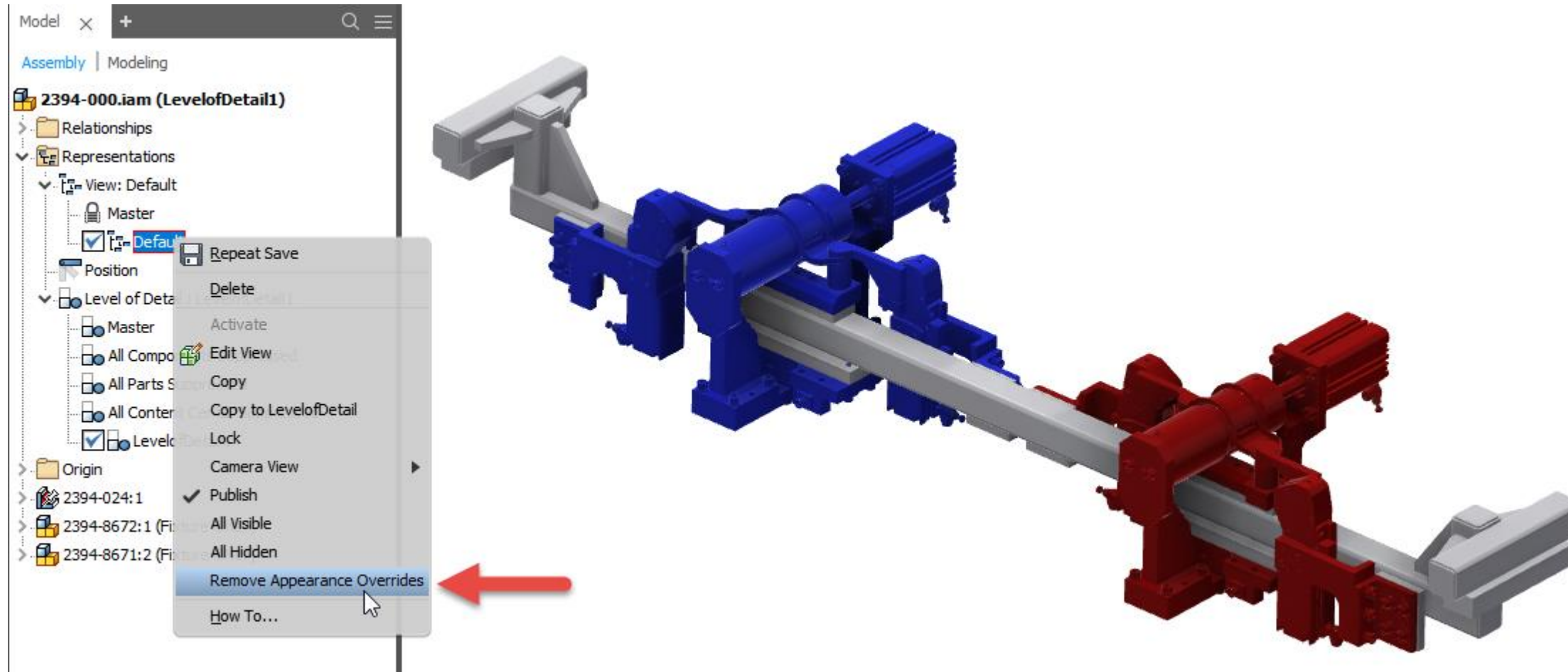
NOTE:

Library must be a part of the current project



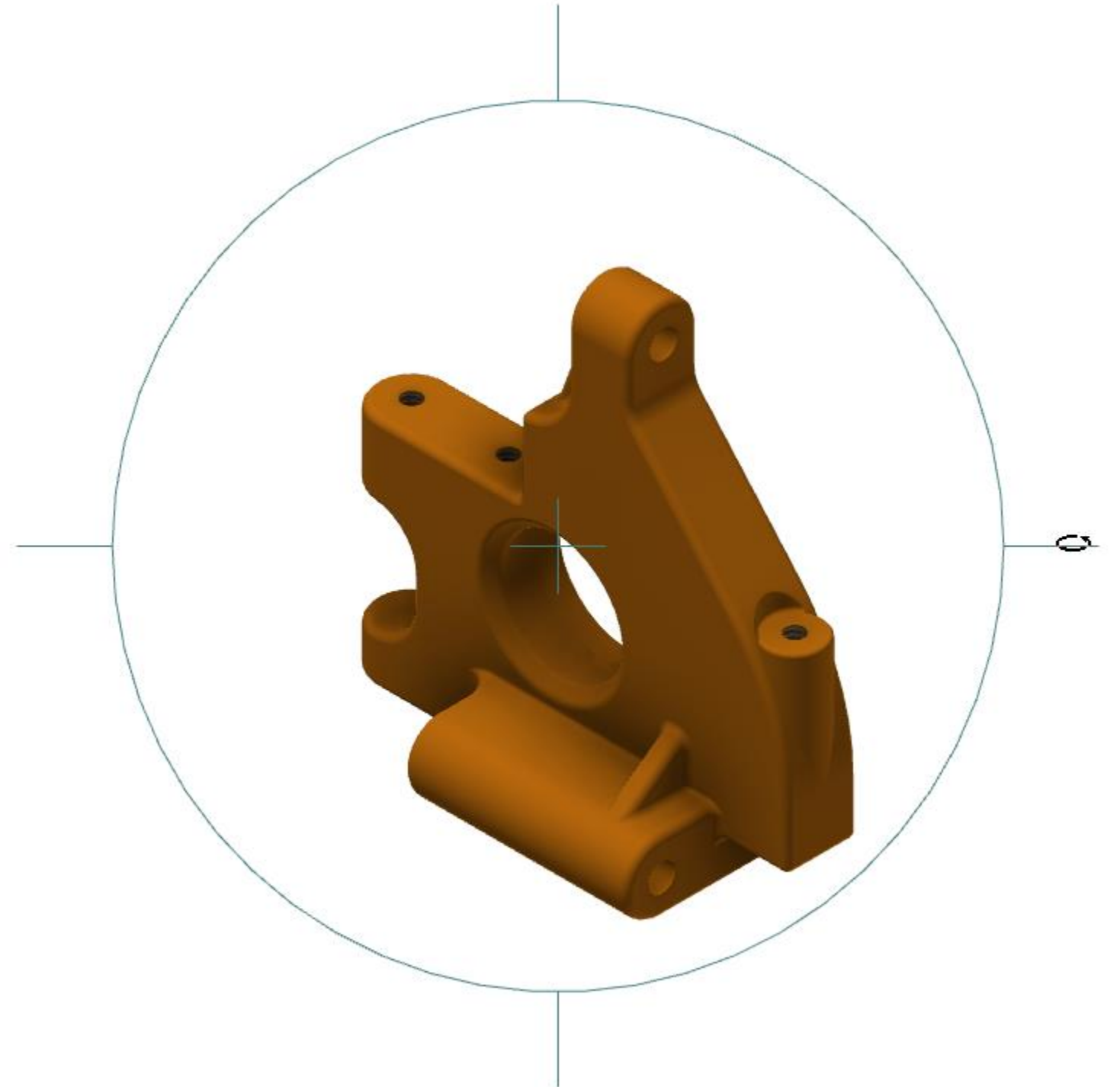
#27 Remove All Appearance Overrides

- Right-click on **View Representation** in Browser
- Select **Remove Appearance Overrides** from the shortcut menu
- Works on both Parts and Assemblies



#28 Continuous Orbit

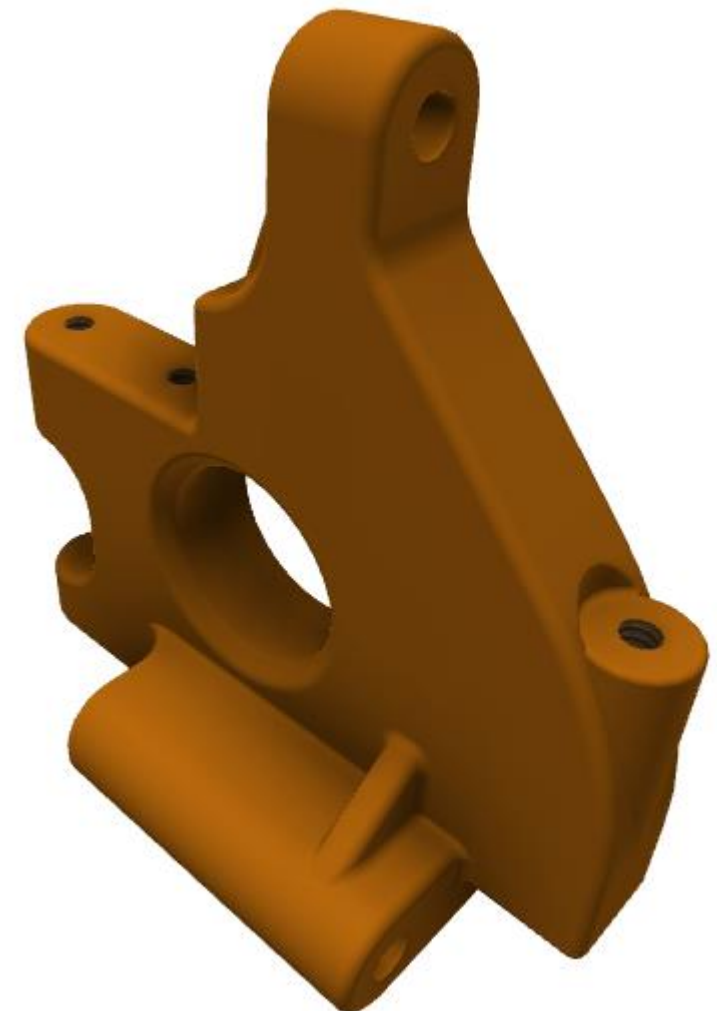
- Start the **O**bit command
- Hold down **S**hift on the keyboard
- Which the mouse click and drag the orbit and then release.
- The speed in which you click, drag, release controls how fast the continuous orbit spins



#29 Zoom / Adjust Perspective View

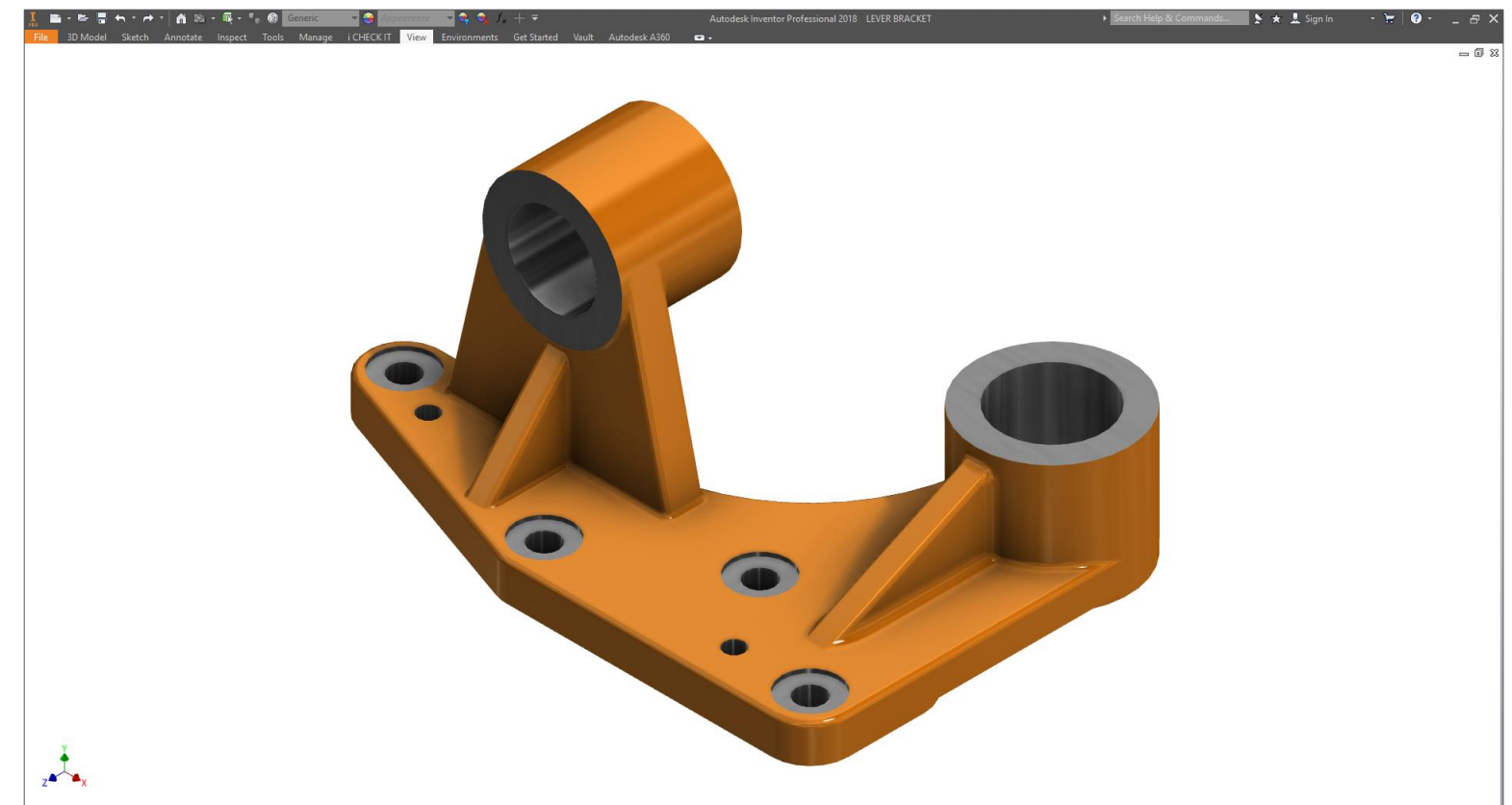
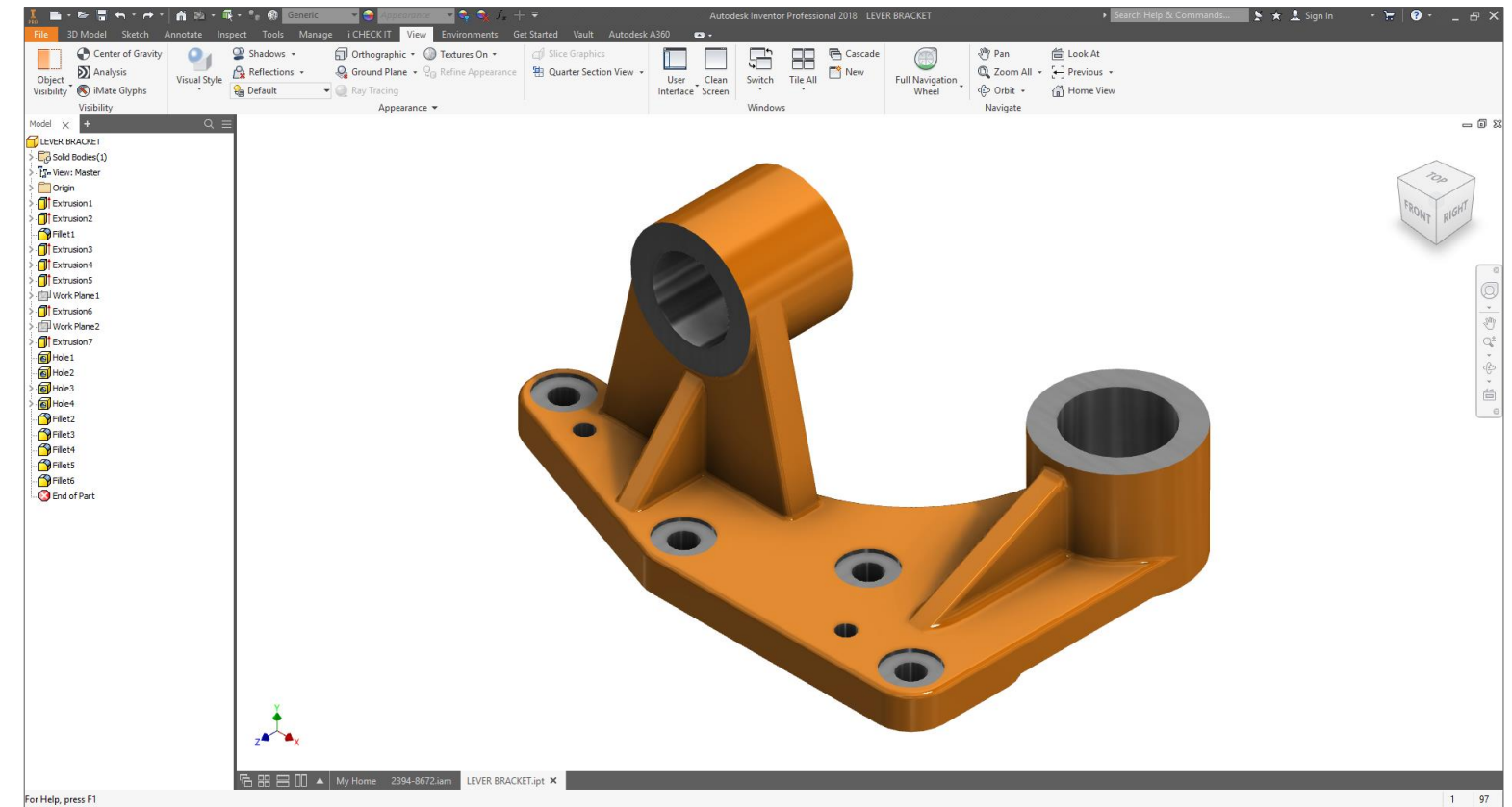
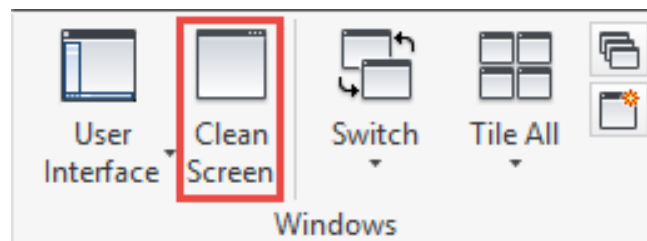
- Start the **Zoom** command (with Perspective View active)
- Hold down **Shift** and **Ctrl** on the keyboard
- Zoom with the mouse

Perspective view is zoomed / adjusted



#30 Clean Screen

- **Ctrl + 0** (zero), Toggle on & off
- **Ribbon Bar, Browser, View Cube & Navigation Bar hidden**
- **View Cube & Navigation Panel** still available
- **Clean Screen** also available from ribbon
View tab > Windows panel > Clean Screen

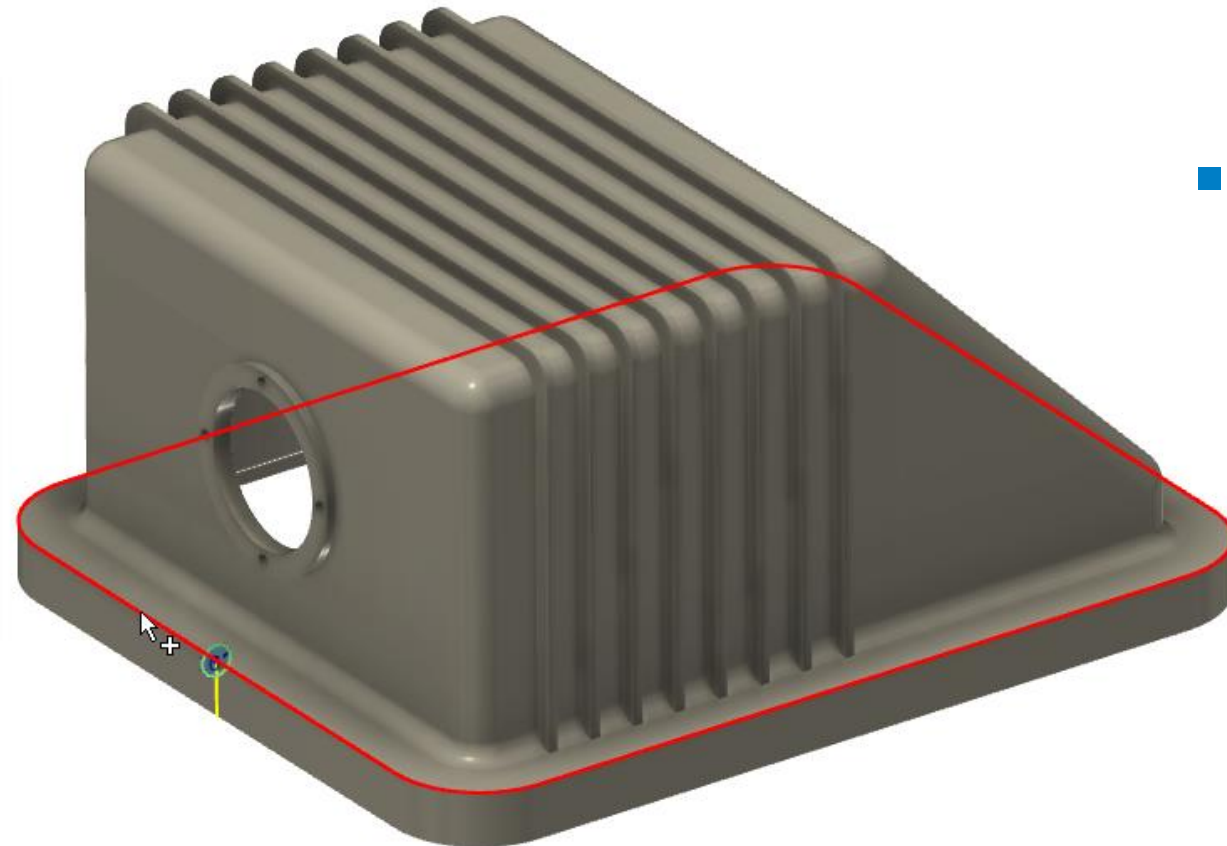
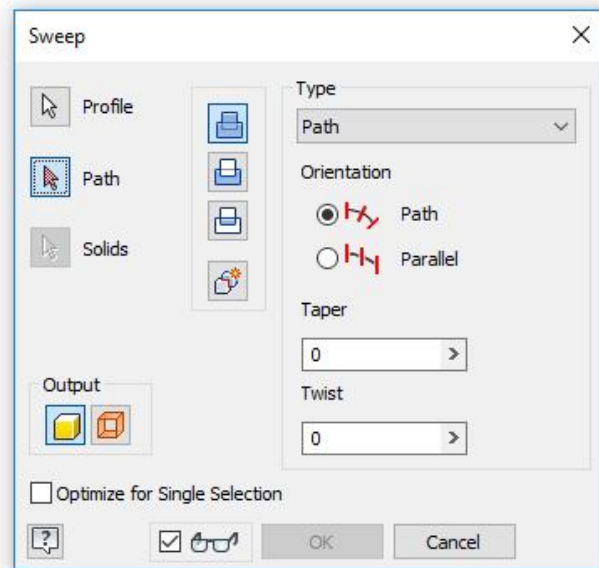
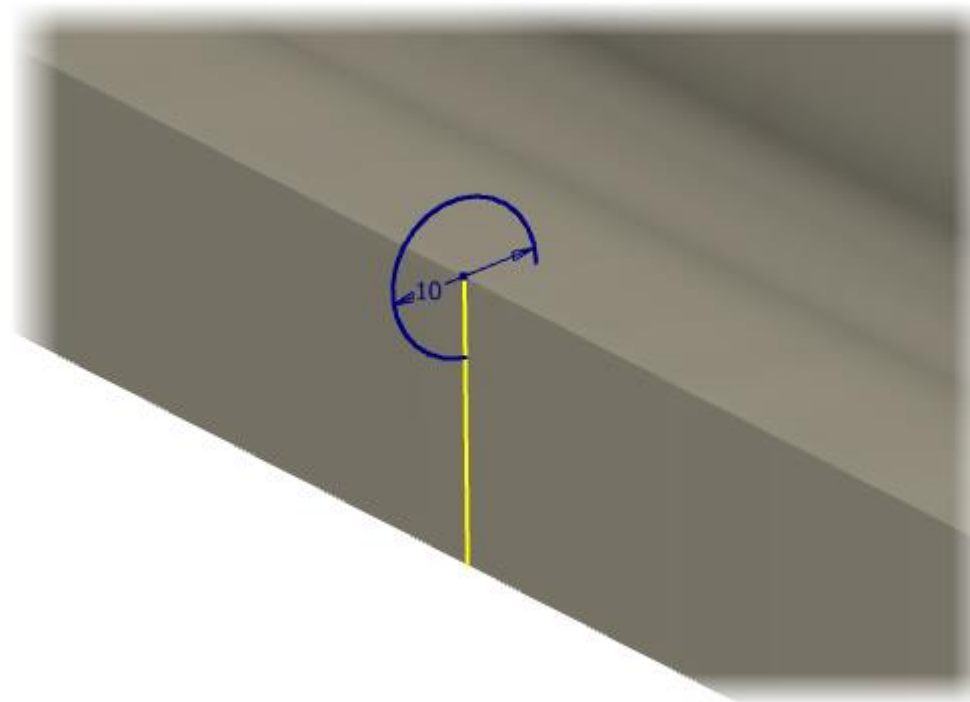


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Modeling

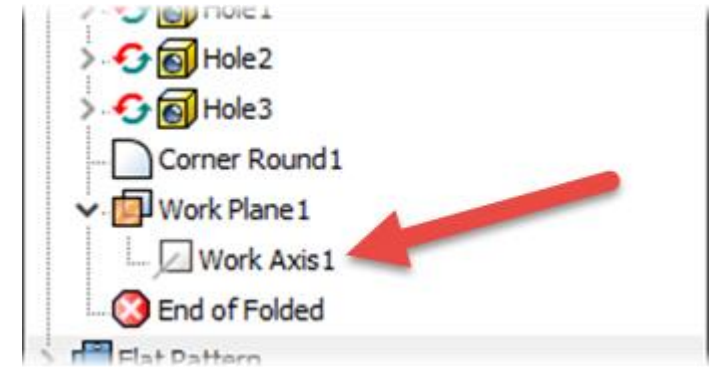
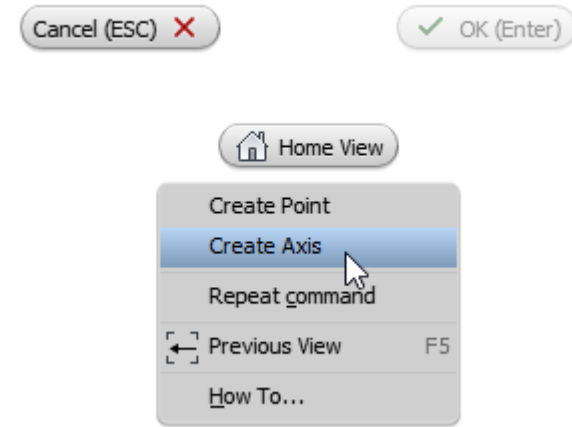
#31 Sweep Using Edge

- Sweeps need a **Profile** and a **Path**
- Single Profile sketch
- Use existing edge for the Path instead of a second sketch

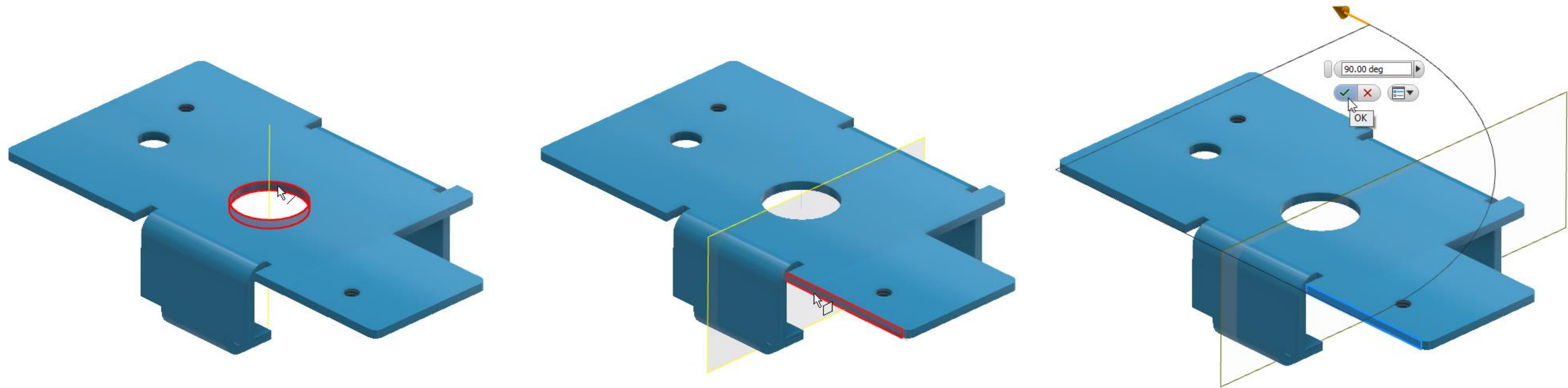


- 3D Sketch is created for the sweep path

#32 In-Line Work Features

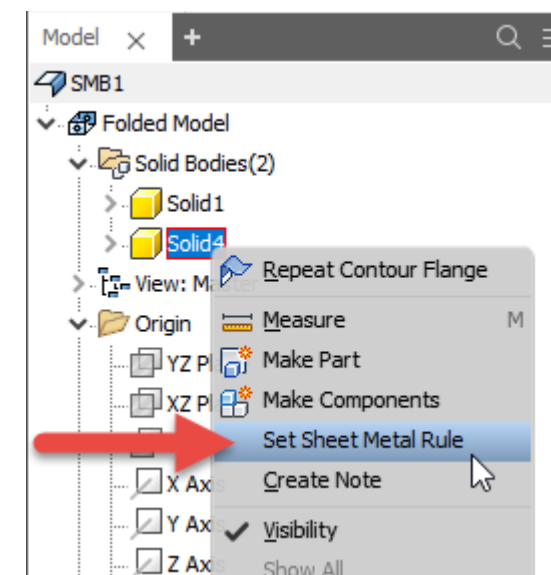
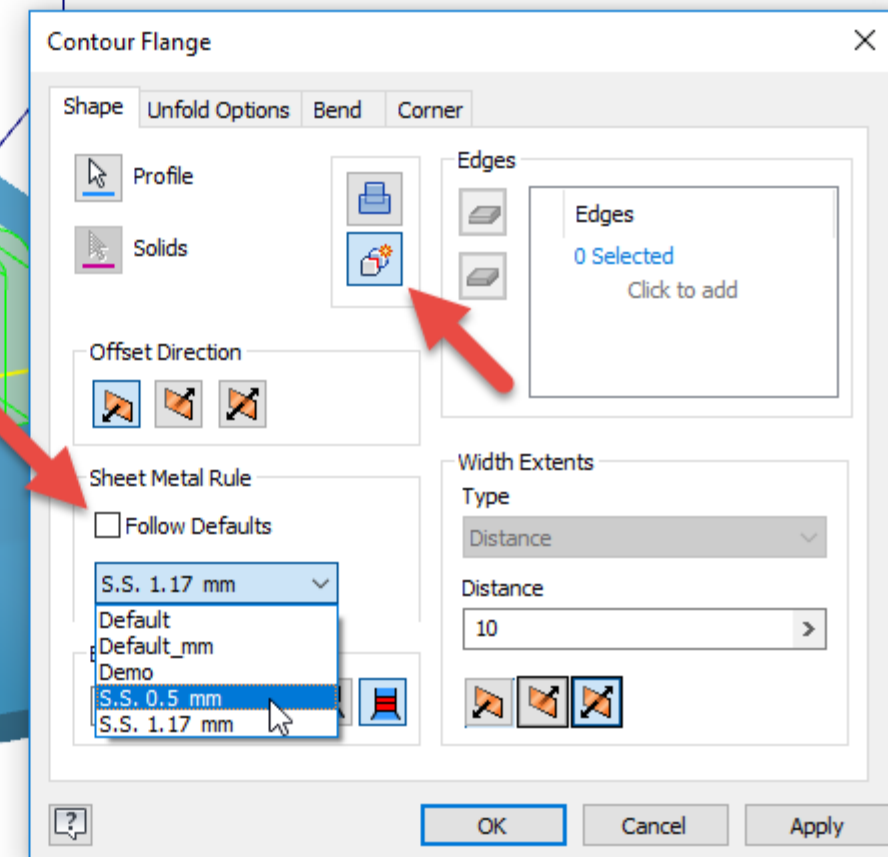
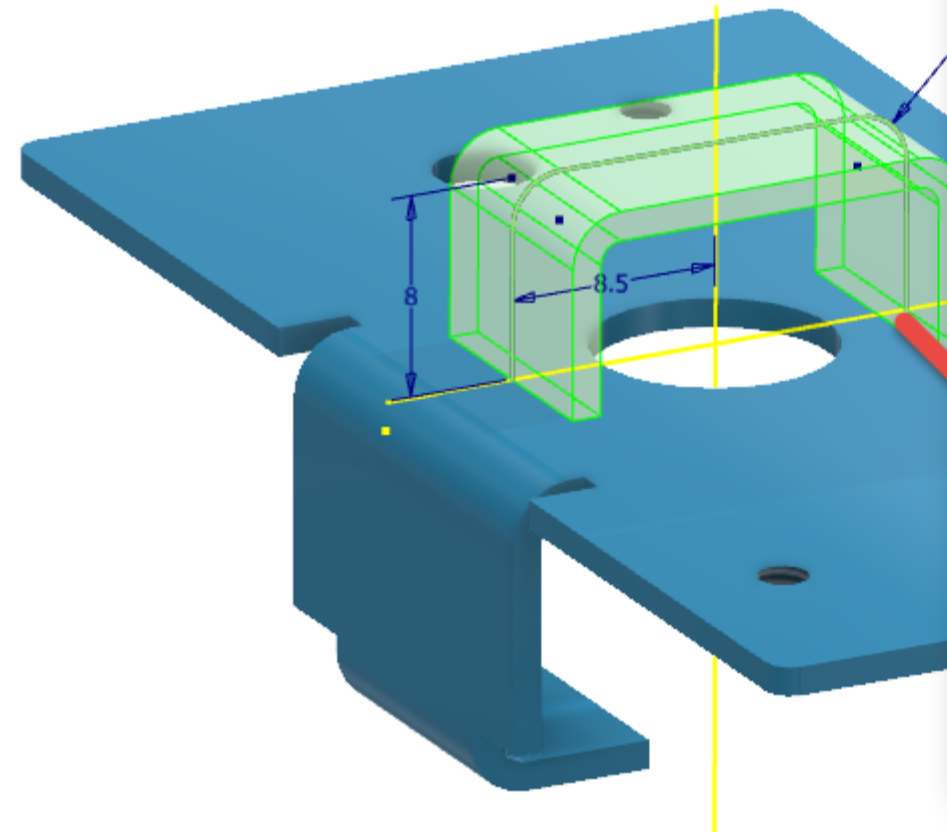


- Start main required **Work Feature** (i.e. **Work Plane**)
- Right-click **Graphics Window**, Select in-line work feature from Marking Menu
- Select geometry for in-line work feature > then select geometry for main work feature > then select **OK**
- In-line work feature is shown nested under the main work feature in the **Browser**



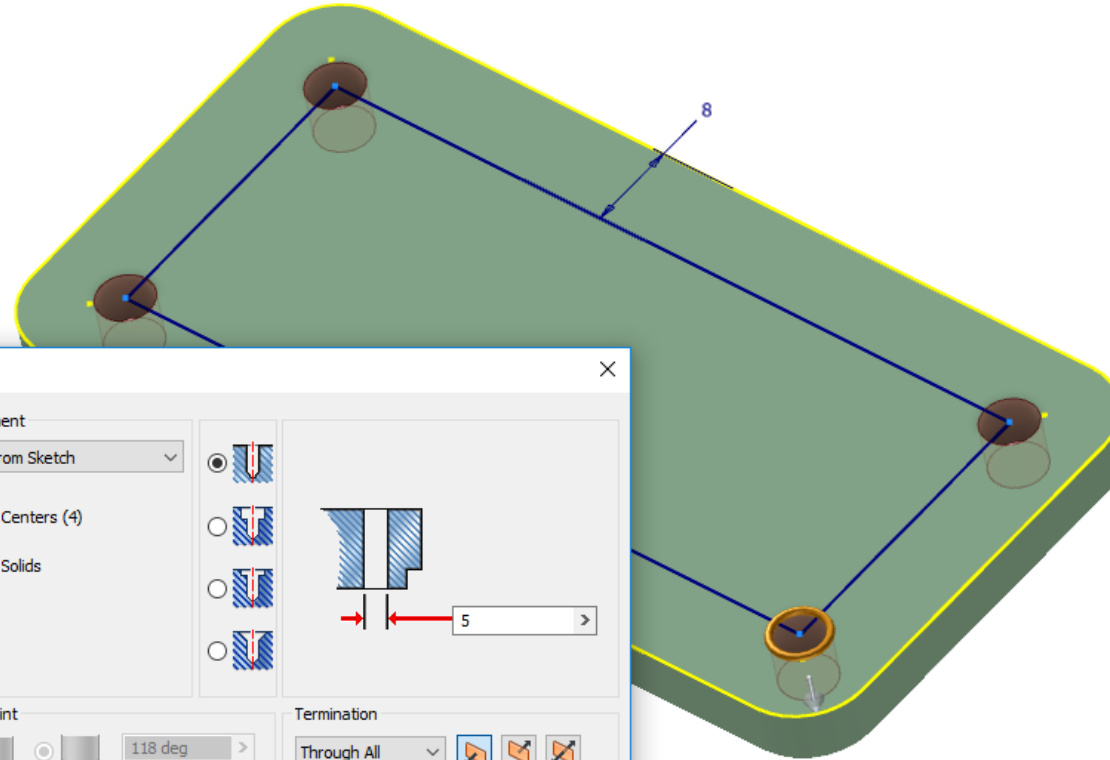
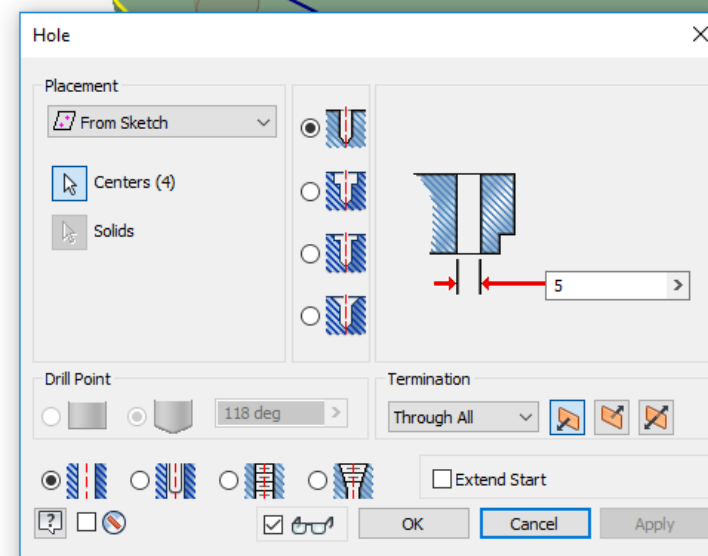
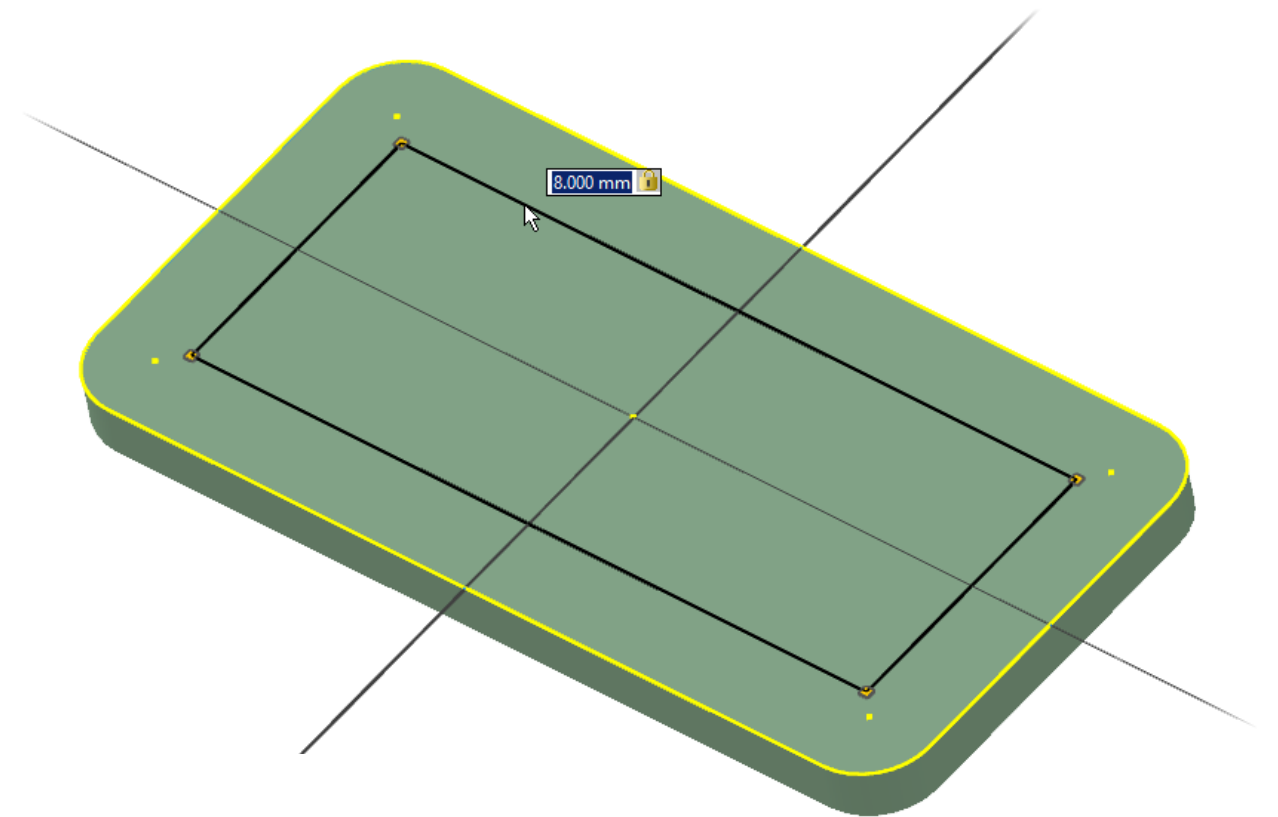
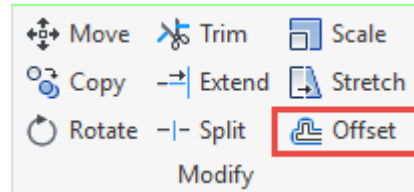
#33 Sheetmetal – Multi Thickness (2018)

- Create new Flange Feature
- Select **New Solid** from dialog box
- Uncheck **Follow Defaults**, select a different Sheet Metal Rule from the dropdown list
- After creation: Right-click on **Solid Body** in the Browser
Select **Set Sheet Metal Rule** from the short cut menu



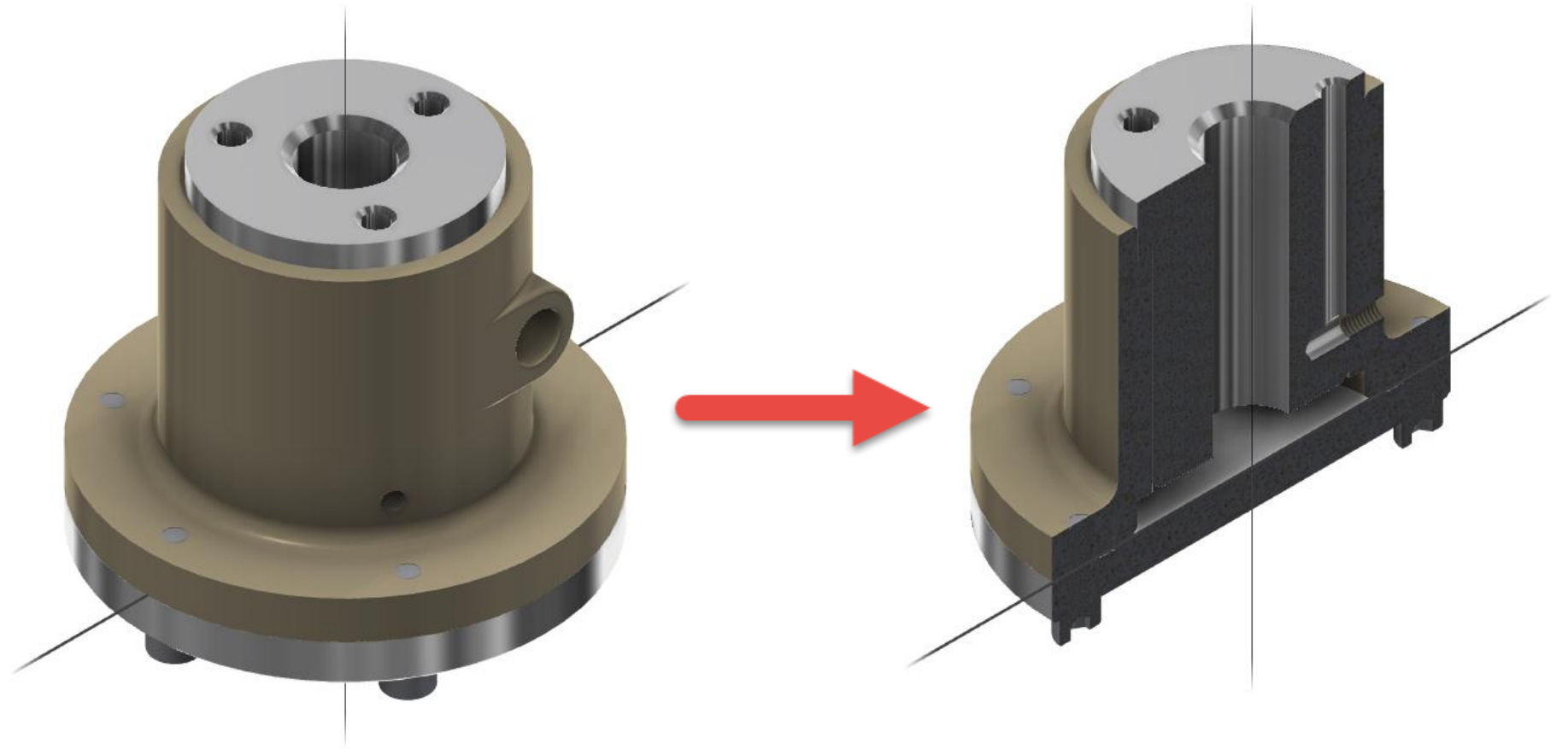
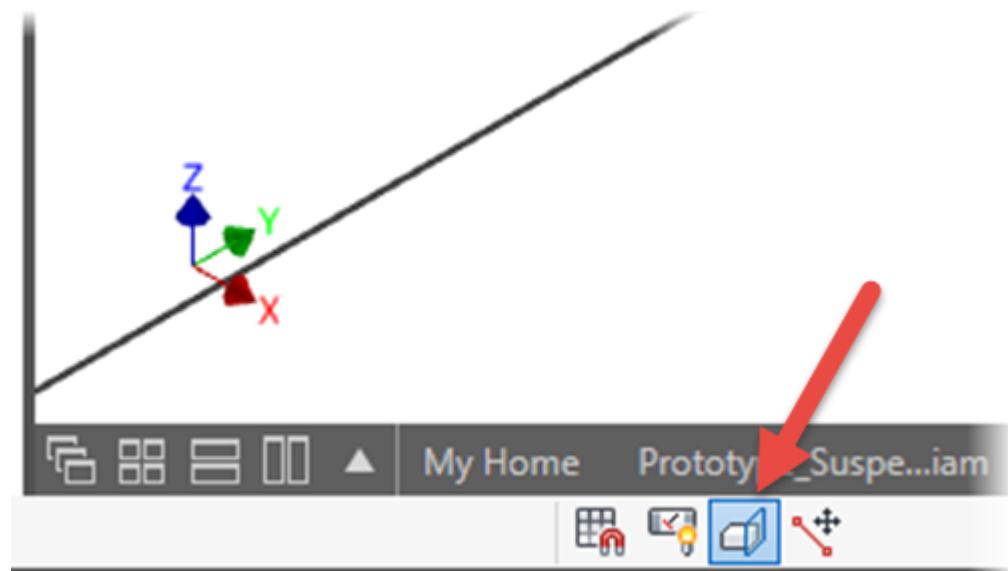
#34 One Dimension Hole Location

- Start sketch on desired face
- Start the **Offset** command
- Select projected edge profile – Enter in value for offset
- Place hole locations on sketch.
Offset will update with
model changes



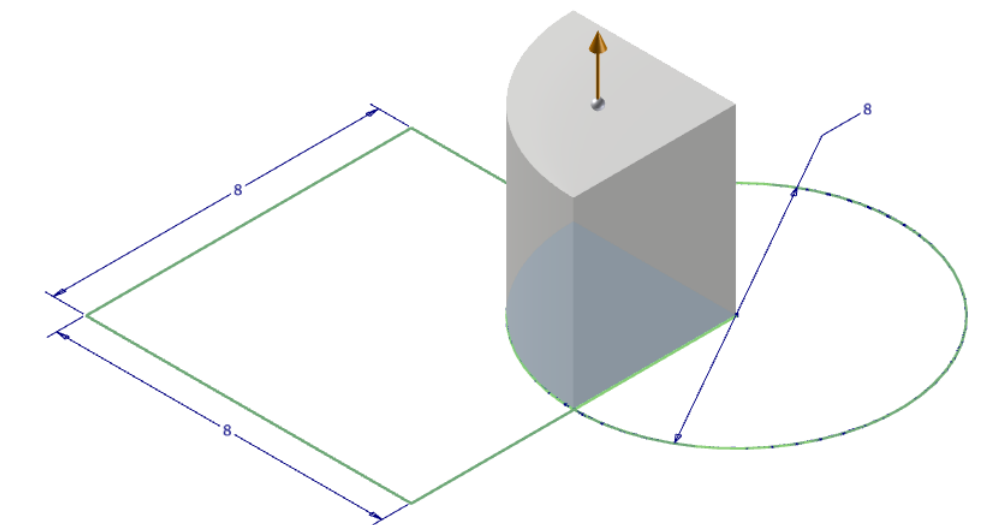
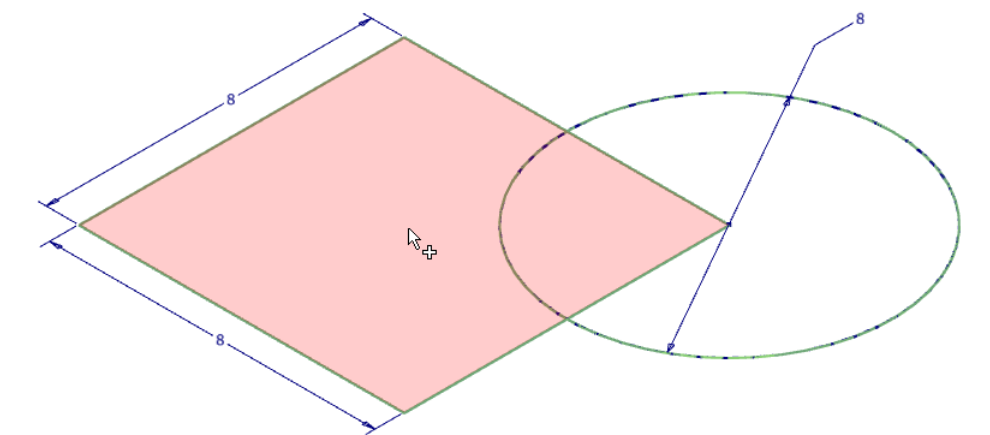
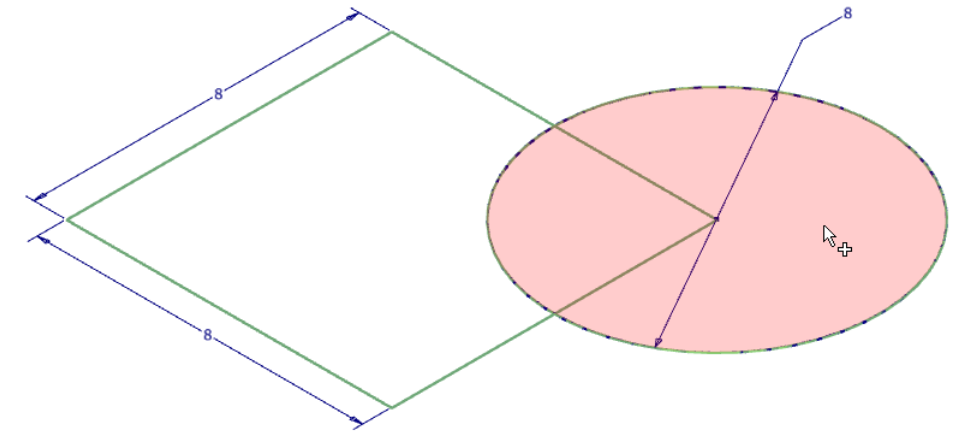
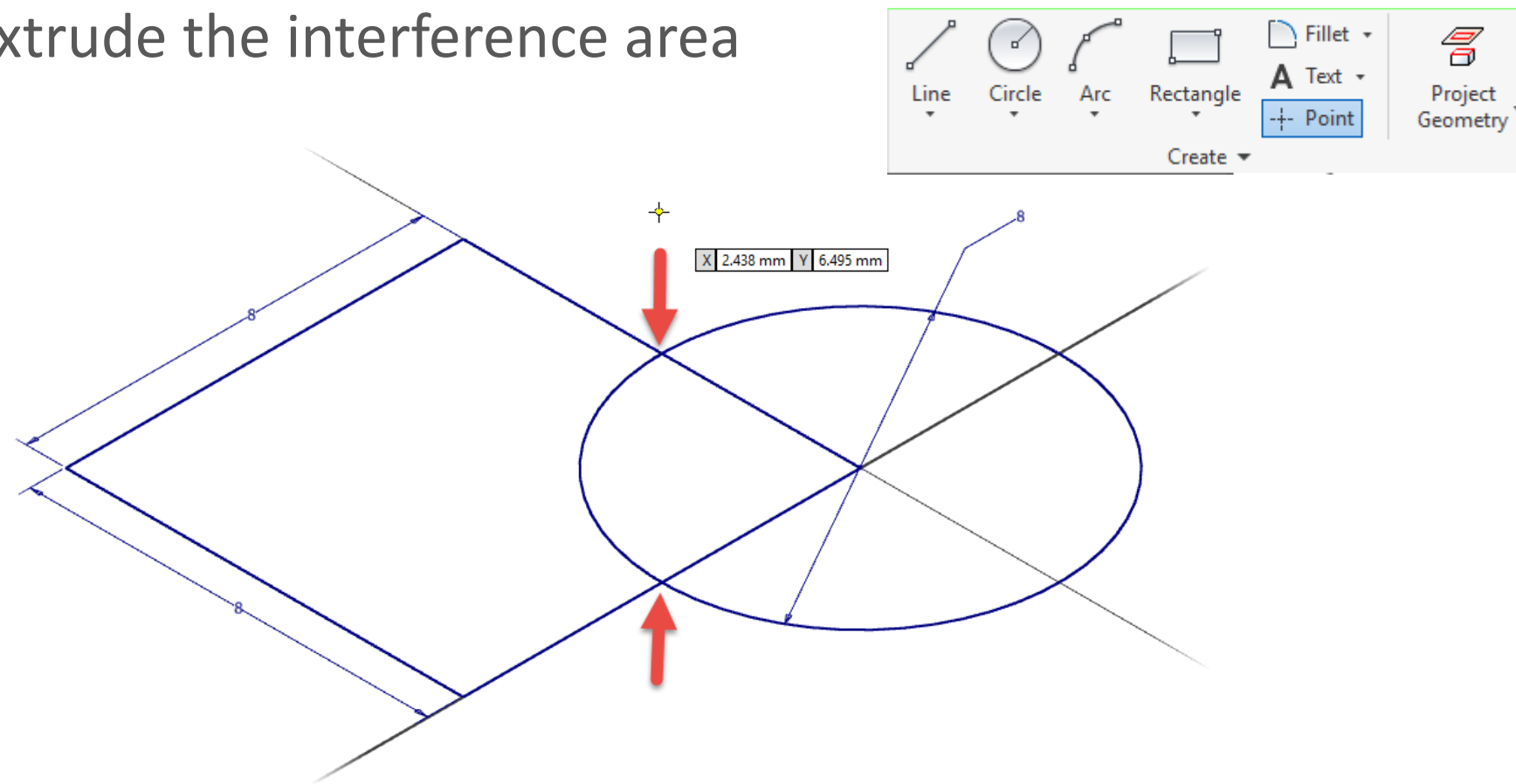
#35 Slice Graphics

- Sketches in the middle of a part or assembly
- F7
- Menu Bar



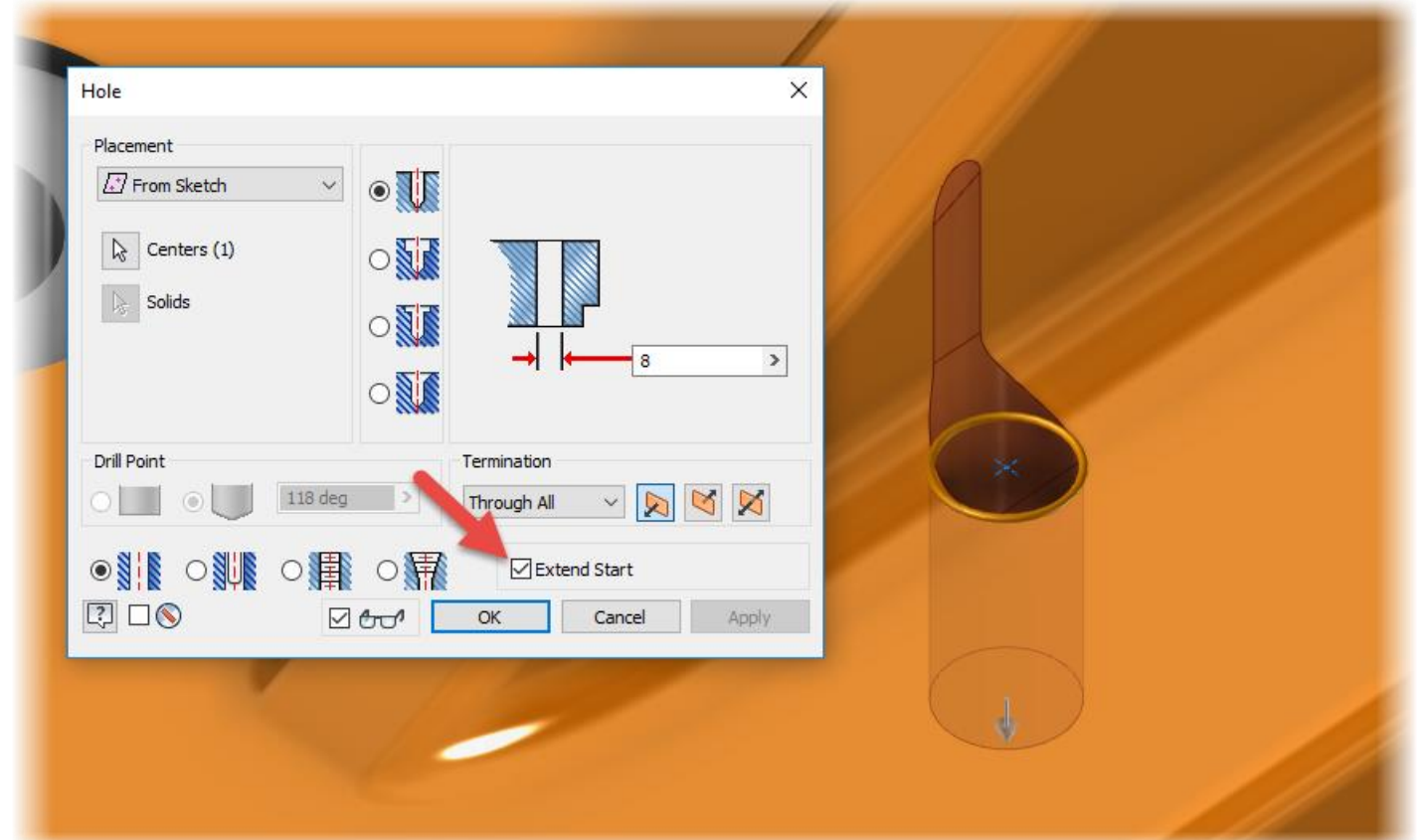
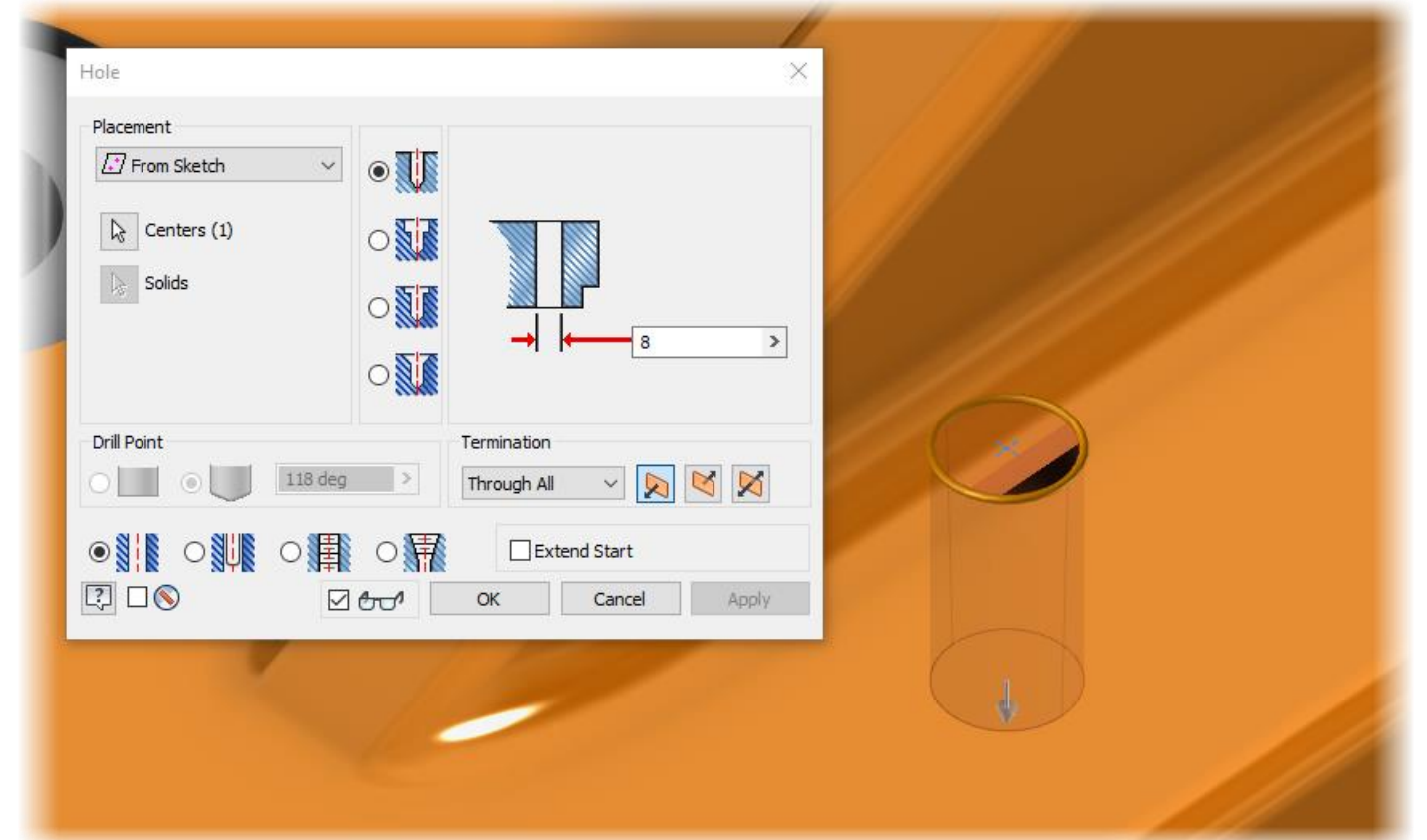
#36 Extrude Interfering Sketch Profiles

- Two closed sketch profiles
Extrude will want to extrude the profiles, not the interference area
- Edit Sketch, add a sketch **Point** at each intersecting line segments
- Extrude the interference area



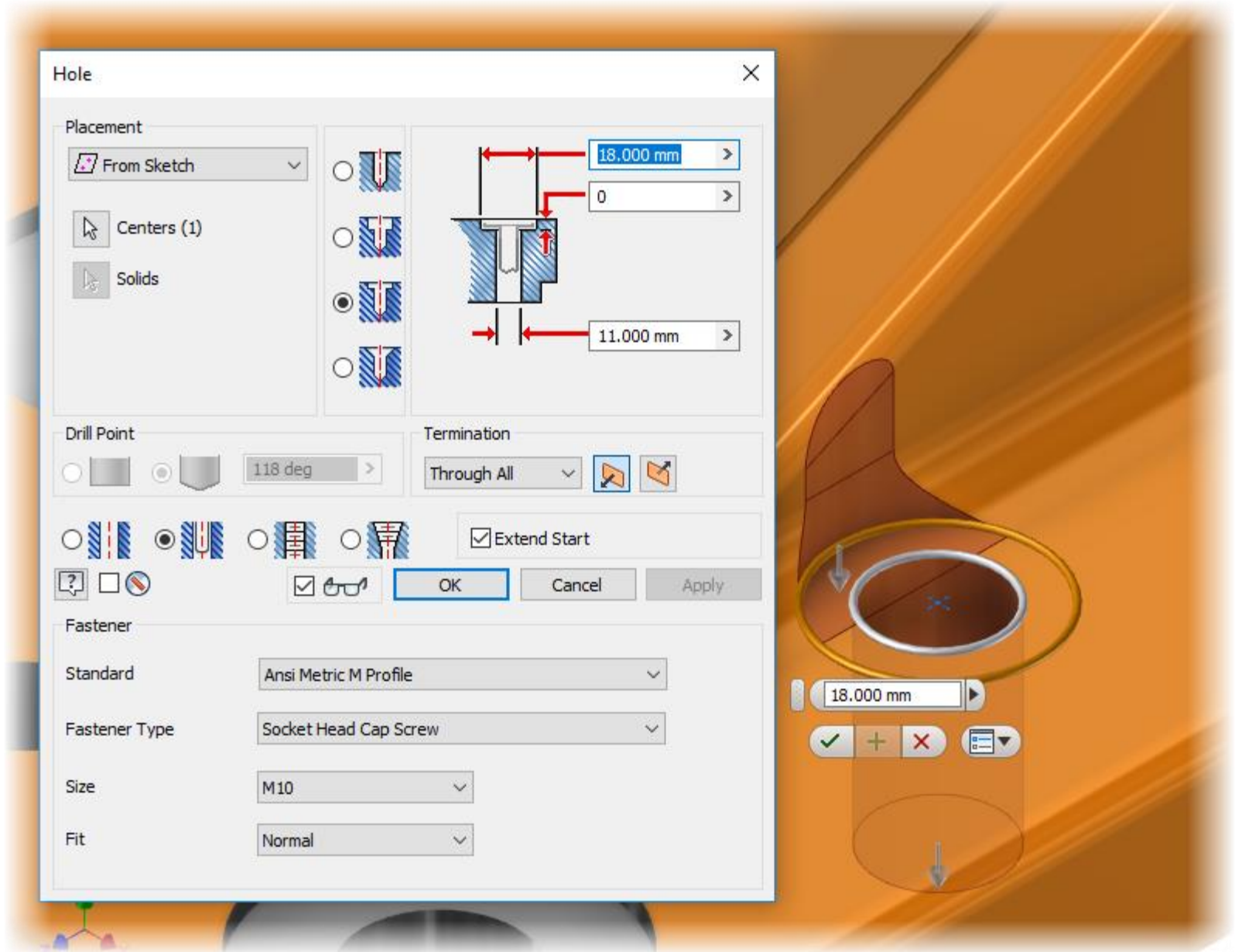
#37 Extend Start (2018)

- Material above **Hole** start location
- Check on **Extend Start** option on **Hole** dialog box
- Material removed up to open space



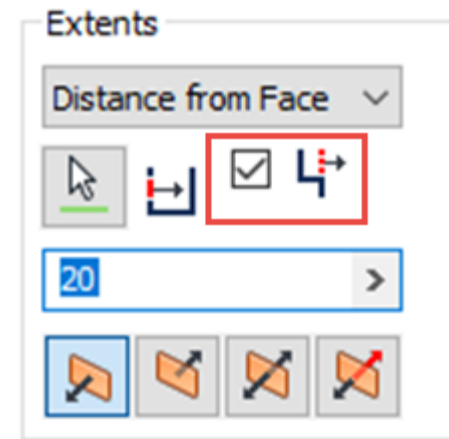
#38 0 Value Spotface (2018)

- Create **Spotface** type hole
- Enter **0** (zero) value for **Spotface** depth
- Check on **Extend Start** option on **Hole** dialog box
- Material removed up to open space

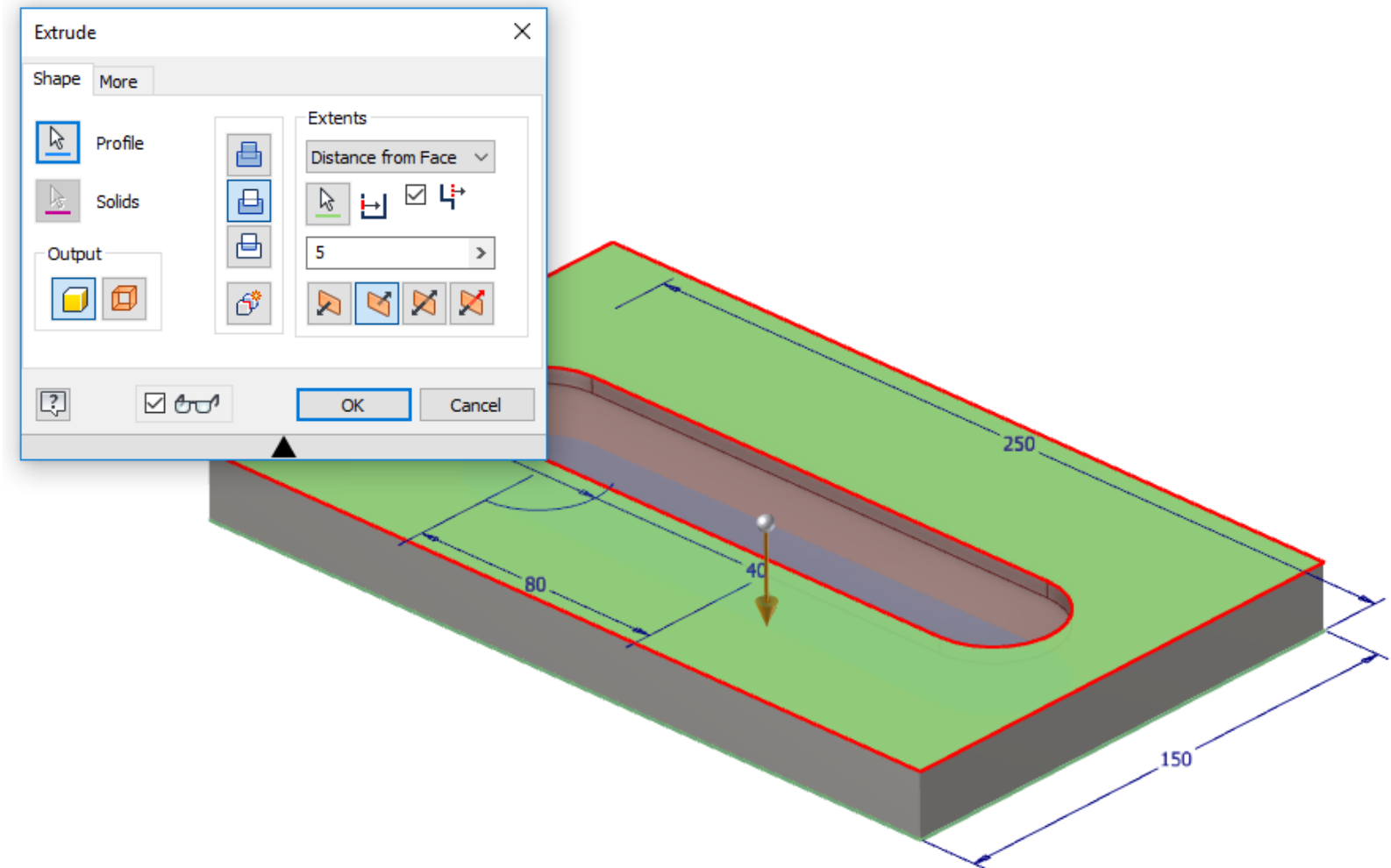
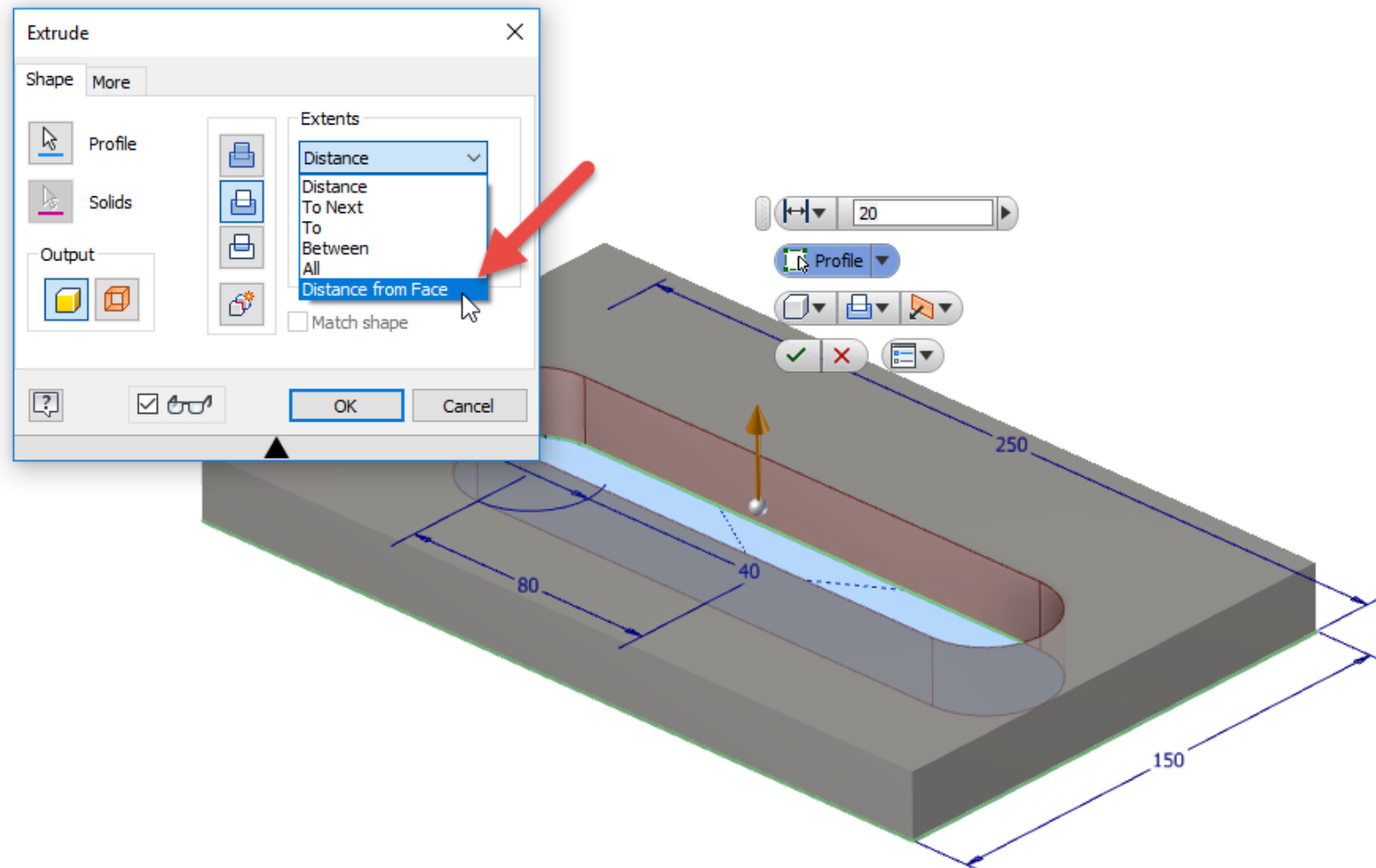


#39 Extrude Distance From Face (2018)

- **Extrude** dialog > **Extents** > **Distance From Face**
- Select existing face or work plane

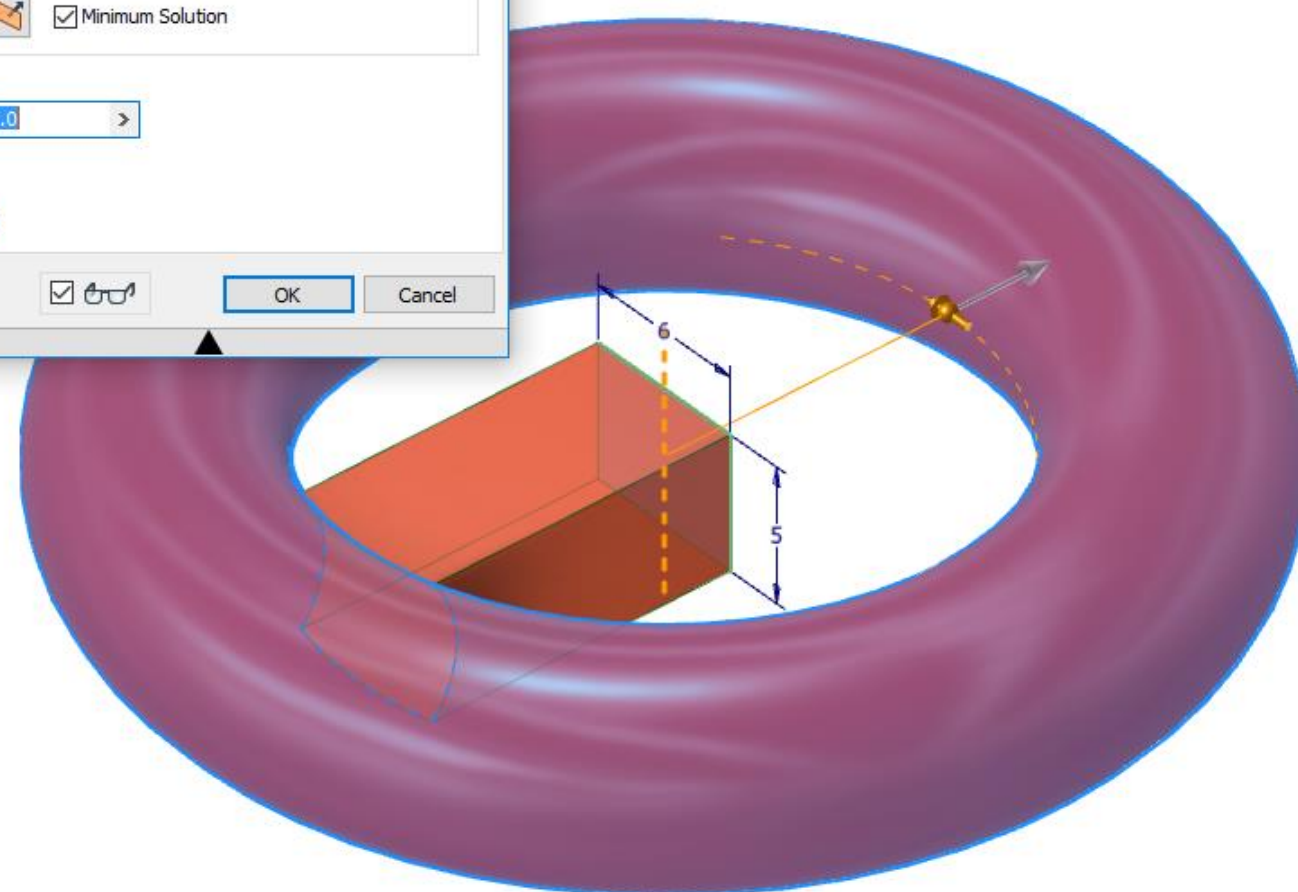
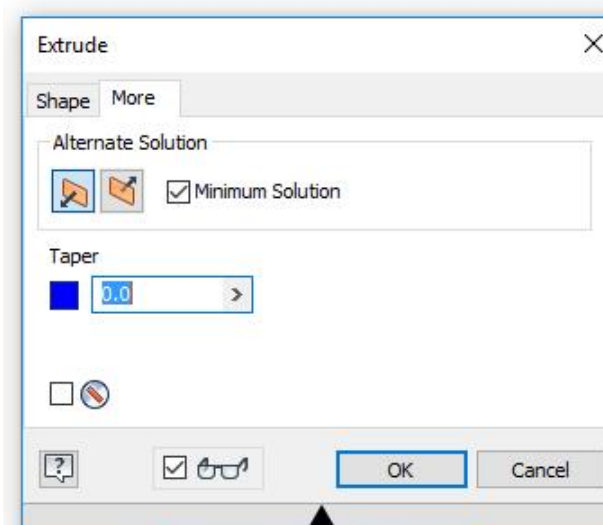
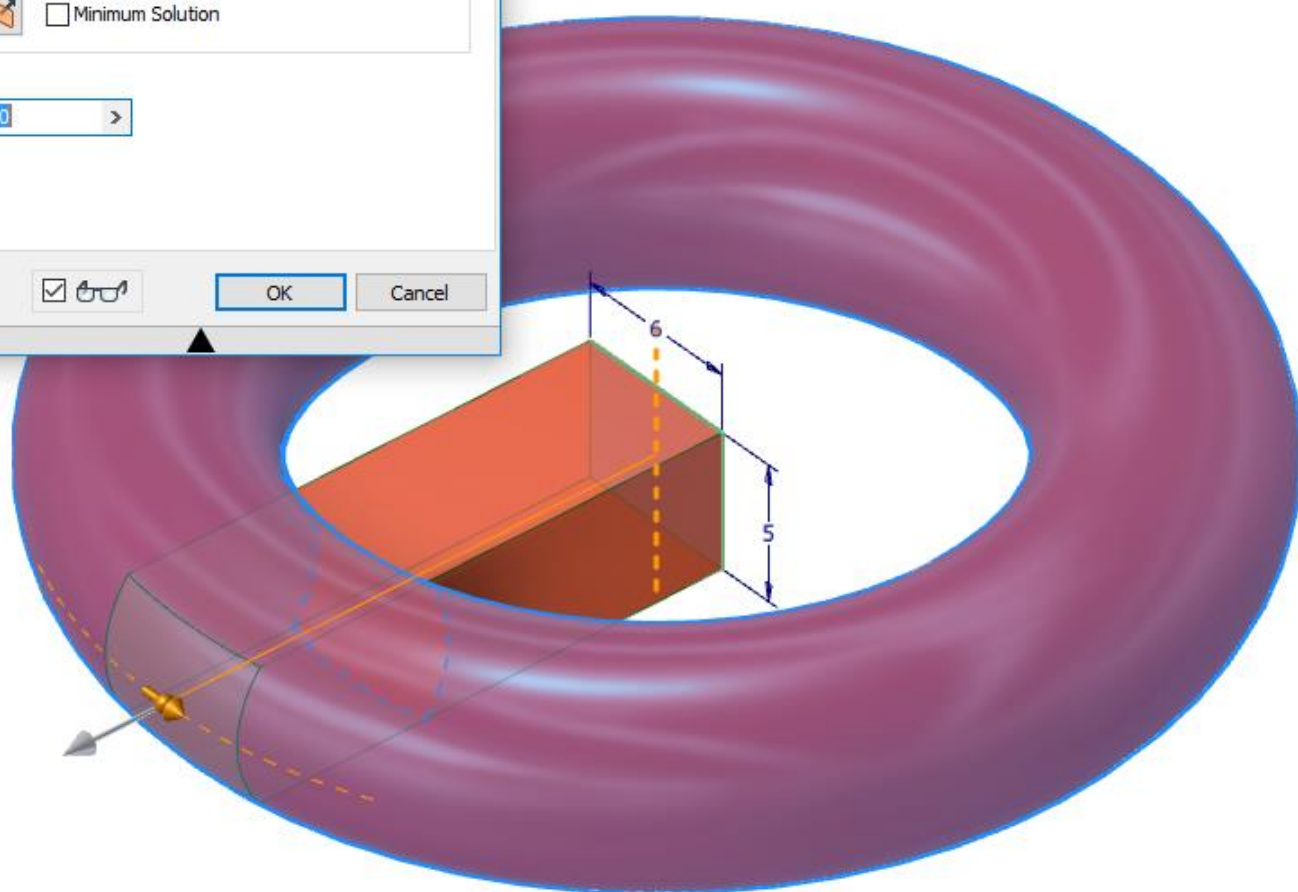
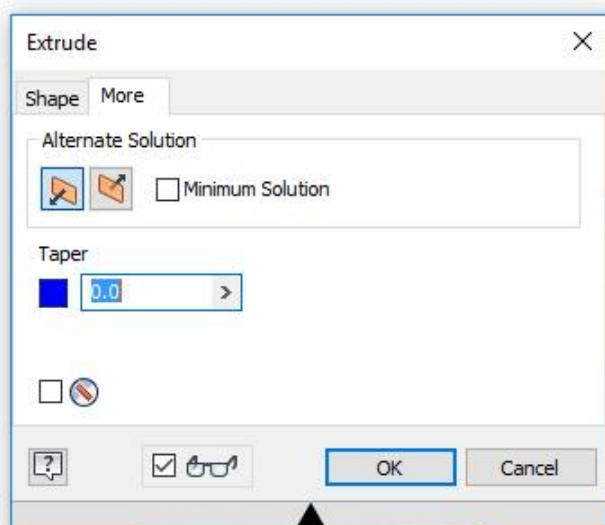


- If profile extends beyond existing face select **Extend Faces**



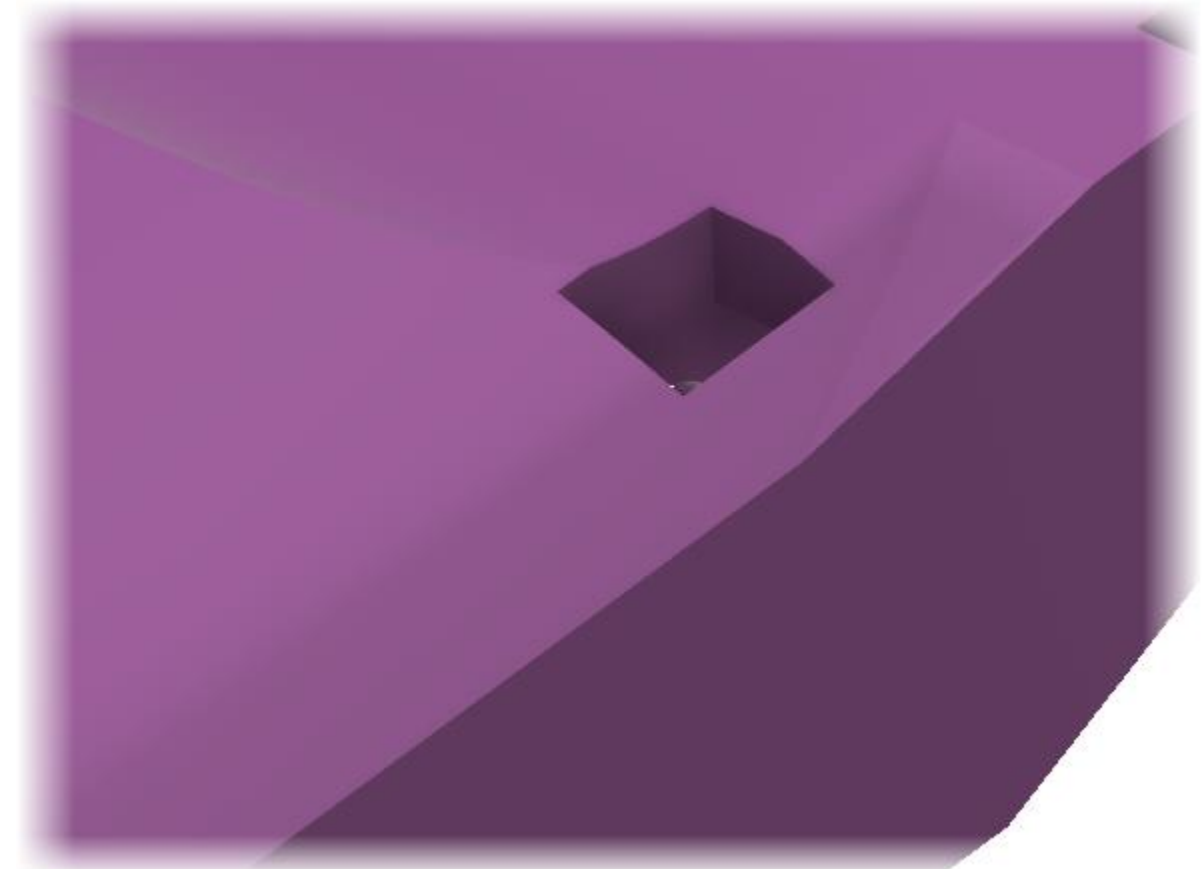
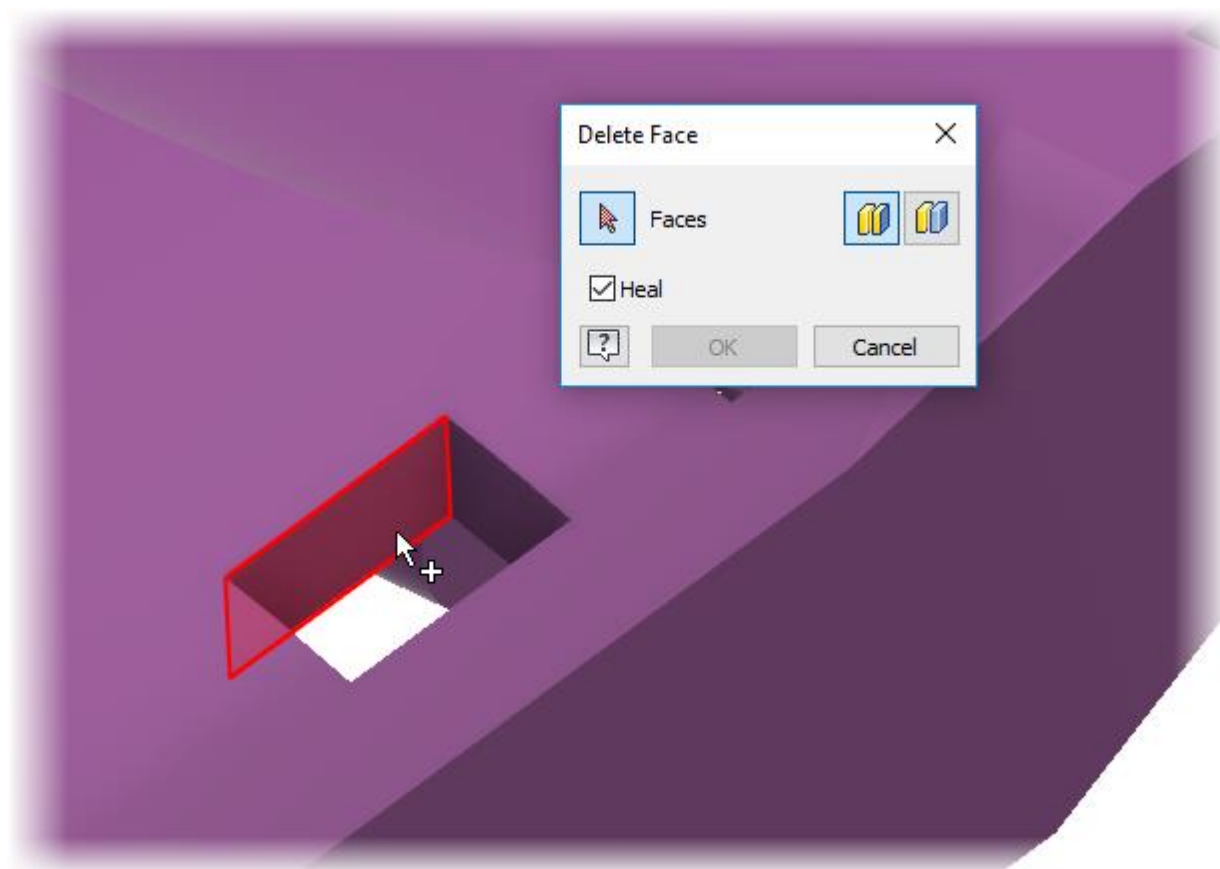
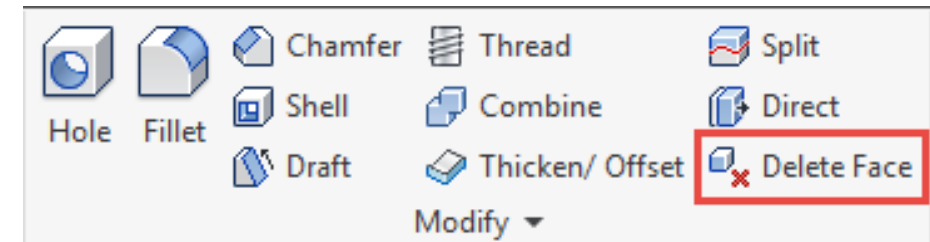
#40 Extrude More Option (2018)

- Extrude dialog > More tab
- Alternate Solution / Minimum Solution



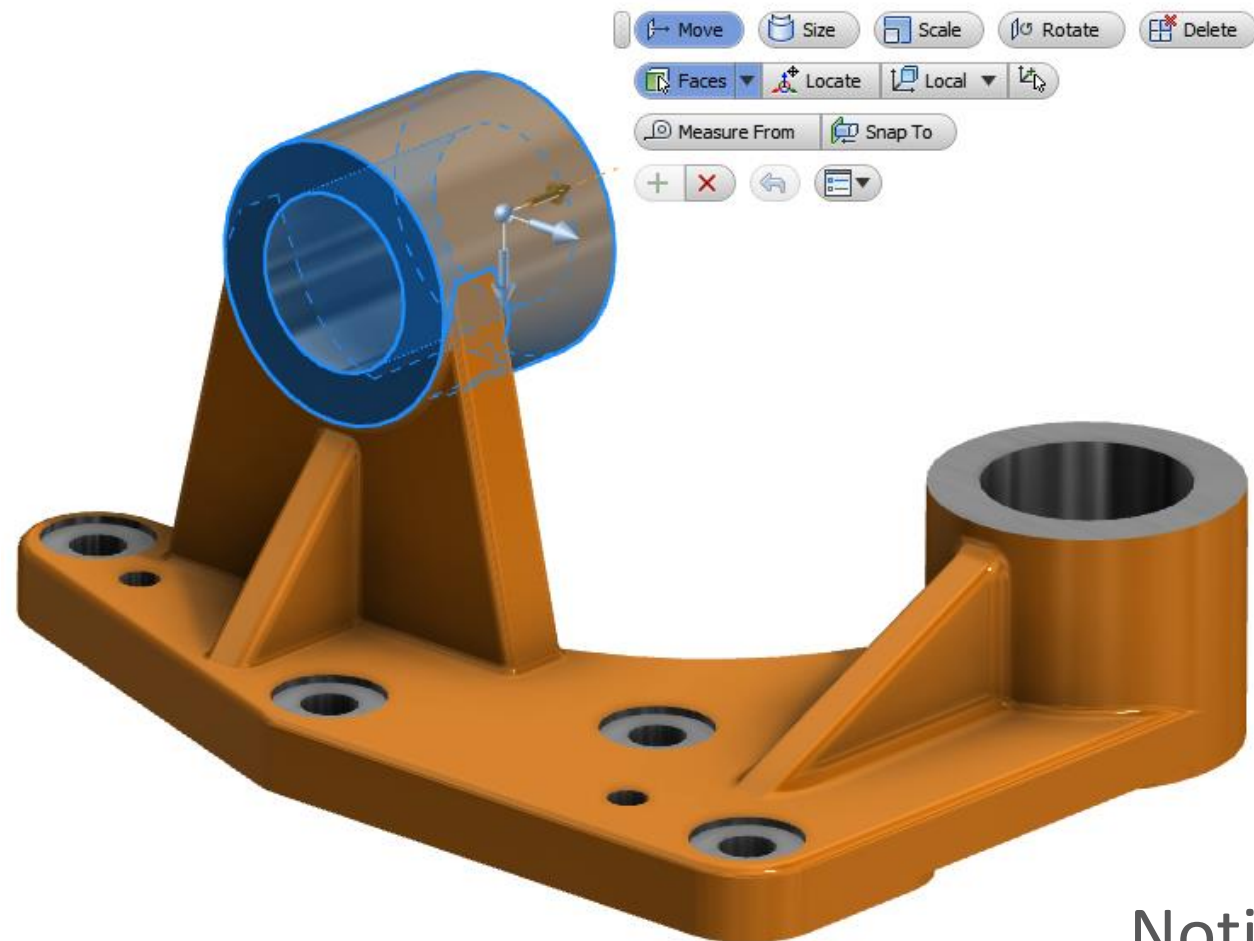
#41 Delete Face – Heal

- 3D Model tab > Create panel > Delete Face
- Select face in area to delete, check on **Heal** option
- Recommended for imported components where features cannot be edited

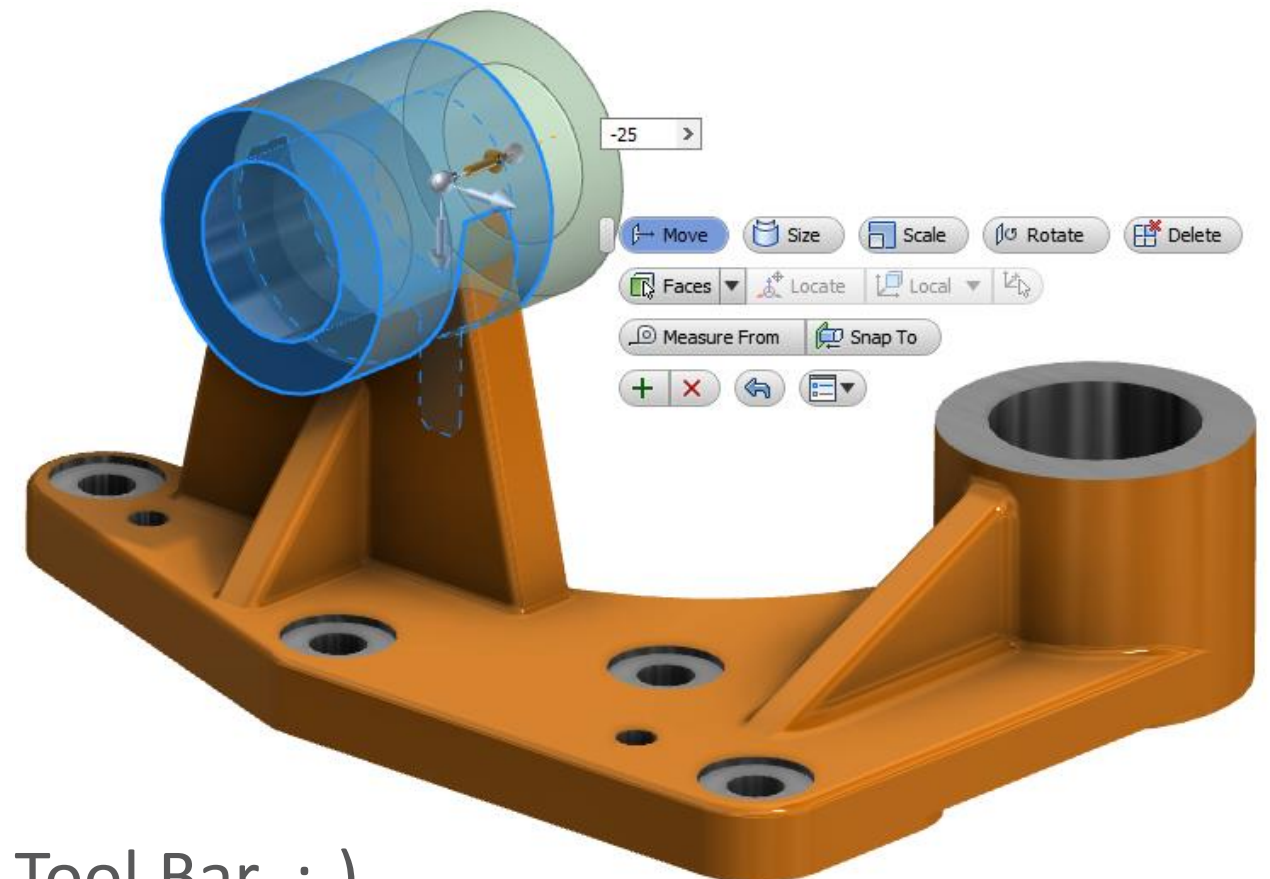


#42 Direct Edit

- 3D Model tab > Create panel > Direct Edit
- Select faces or solids to edit
- Move, Size, Scale, Rotate, or Delete



All Edits are recorded Parametrically



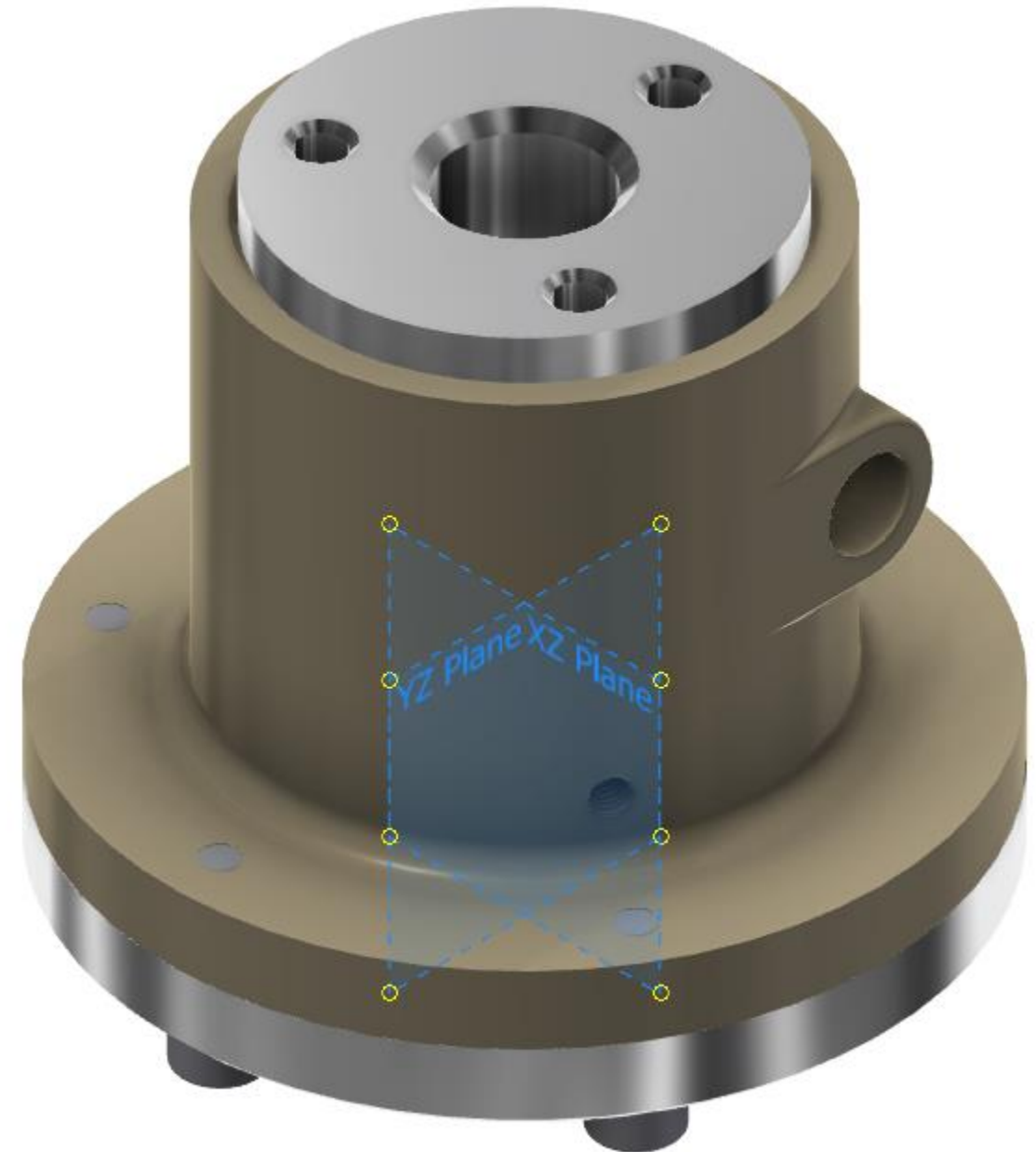
Notice: Mini-Tool Bar ;-)

The background of the slide is a complex, abstract wireframe mesh. The mesh is composed of numerous interconnected lines forming a series of organic, flowing shapes that resemble a network or a topological structure. The lines are thin and grey. A solid blue gradient bar, transitioning from a darker blue on the left to a lighter blue on the right, spans the bottom portion of the image. The word "Assembly" is written in white, sans-serif font on the left side of this blue bar.

Assembly

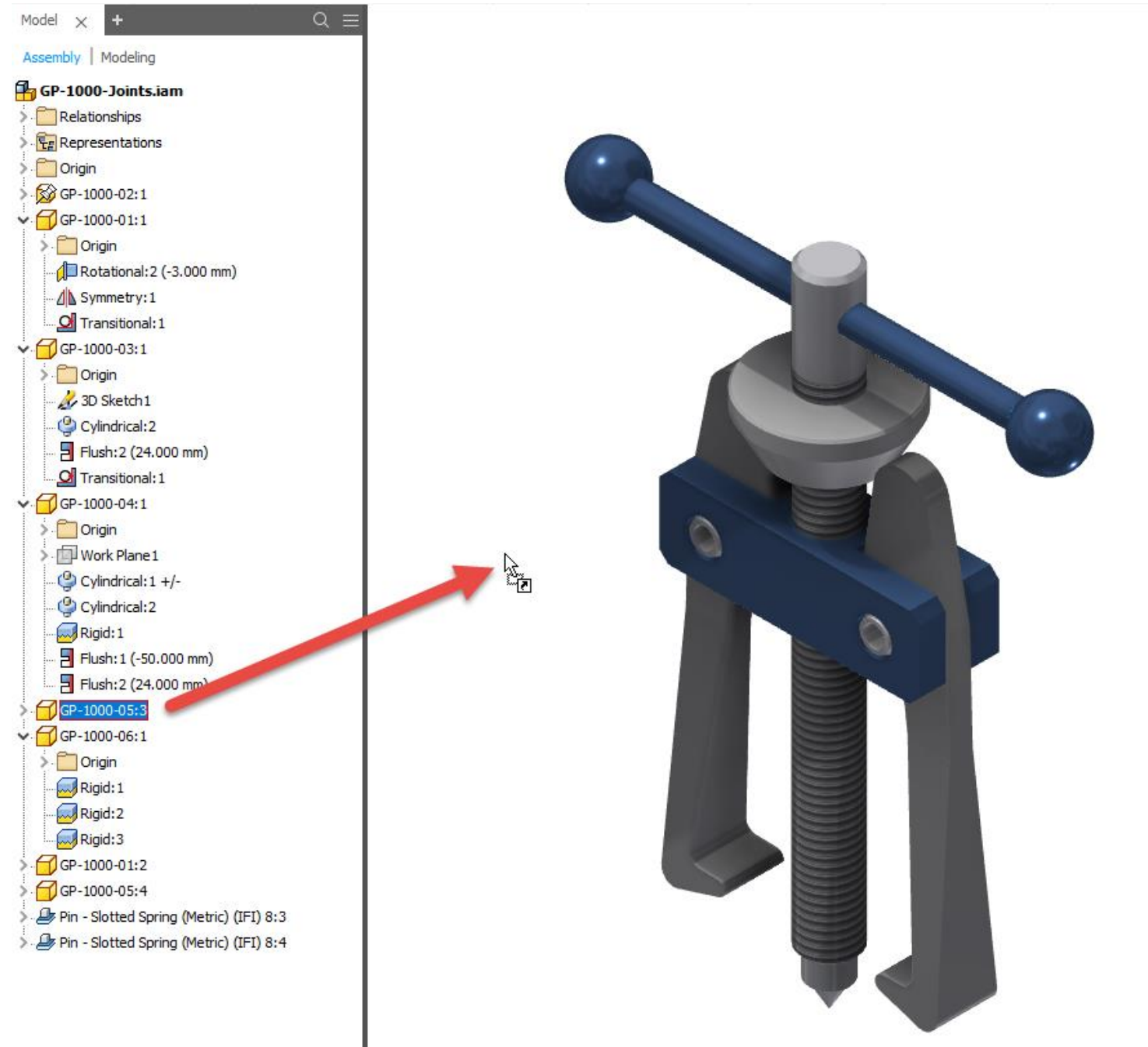
#43 Assembly Zero Origin

- Constrain (when possible) assembly components to the origin planes of the assembly
- Allows for easier location of constraints
- Less chance for errors when modifying components



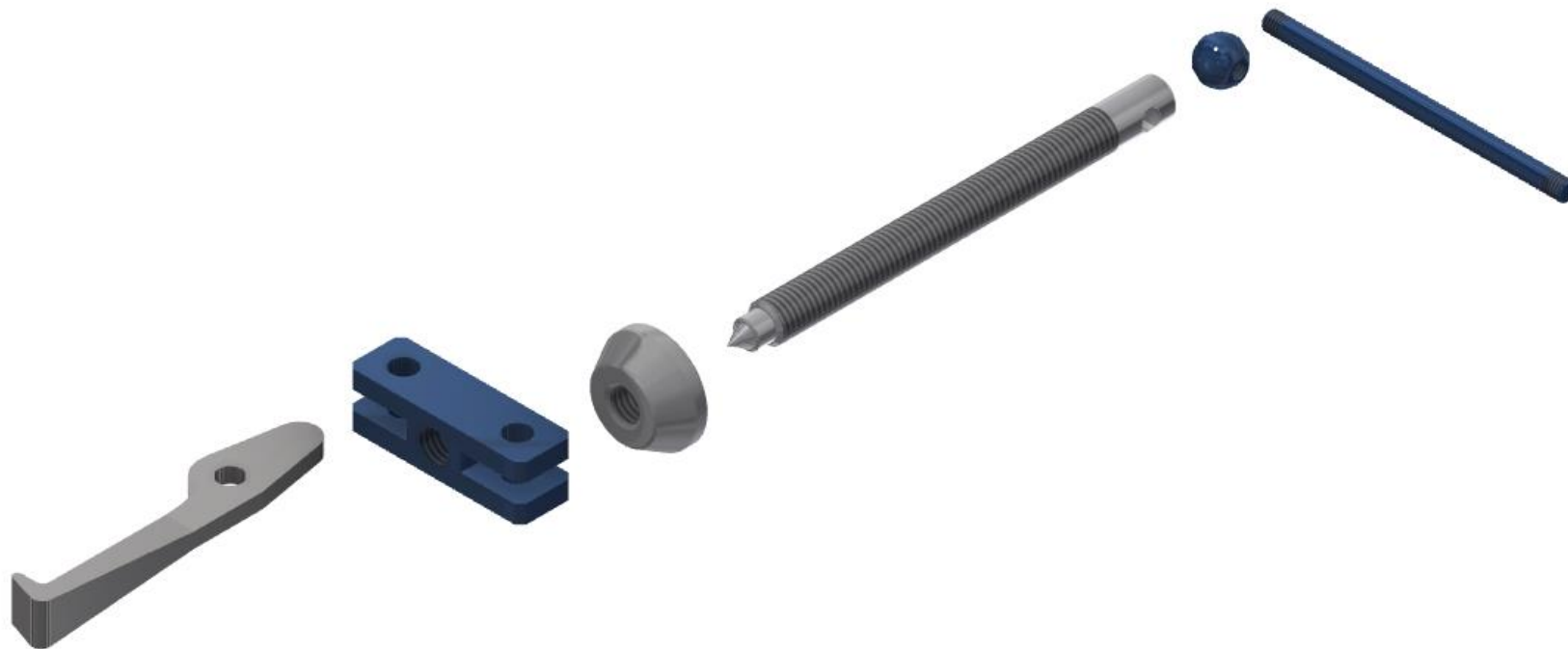
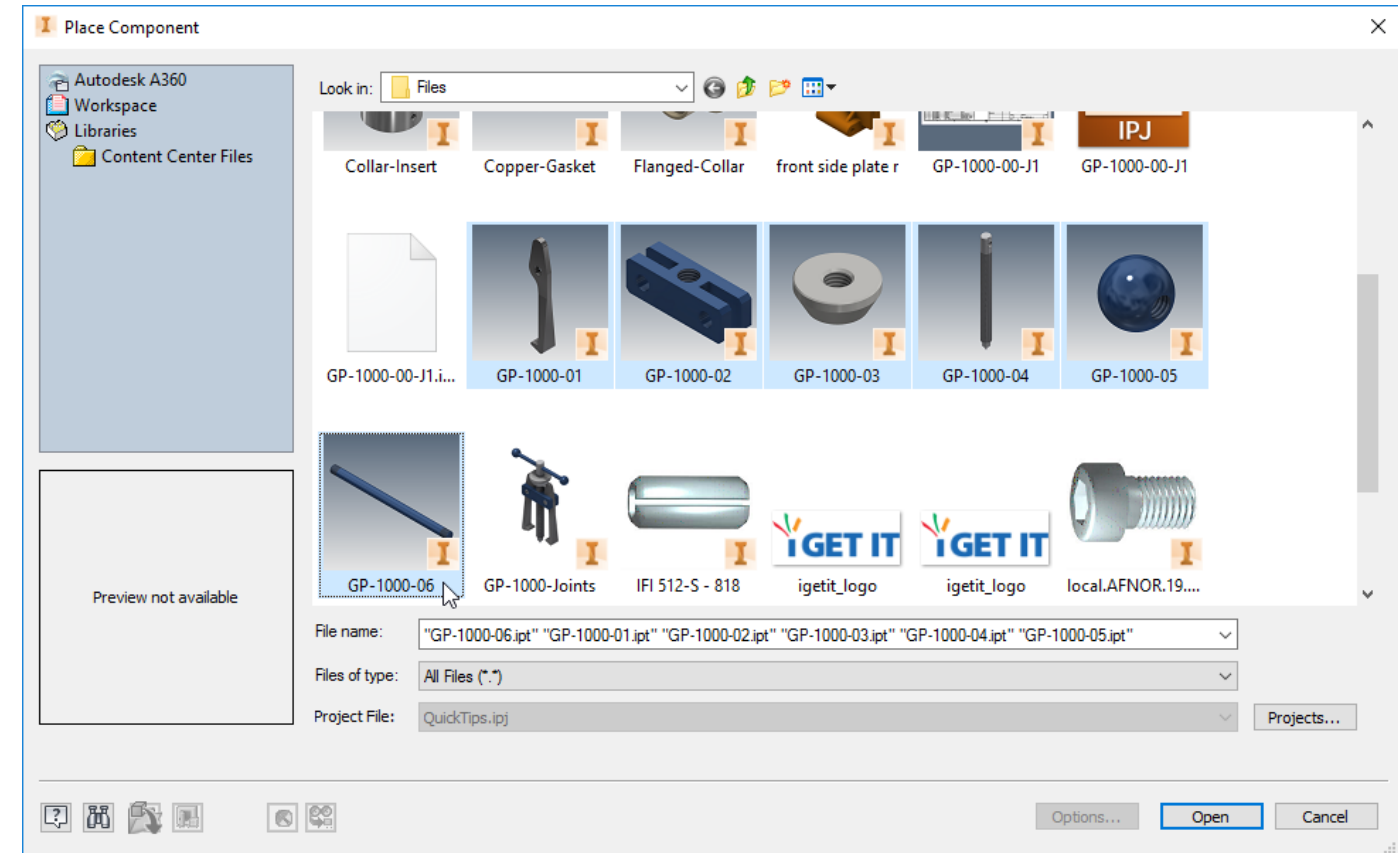
#44 Drag & Drop Duplicate Component

- Click and Drag existing component from the **Browser** into the **Graphics Window**
- New instance of component placed in assembly



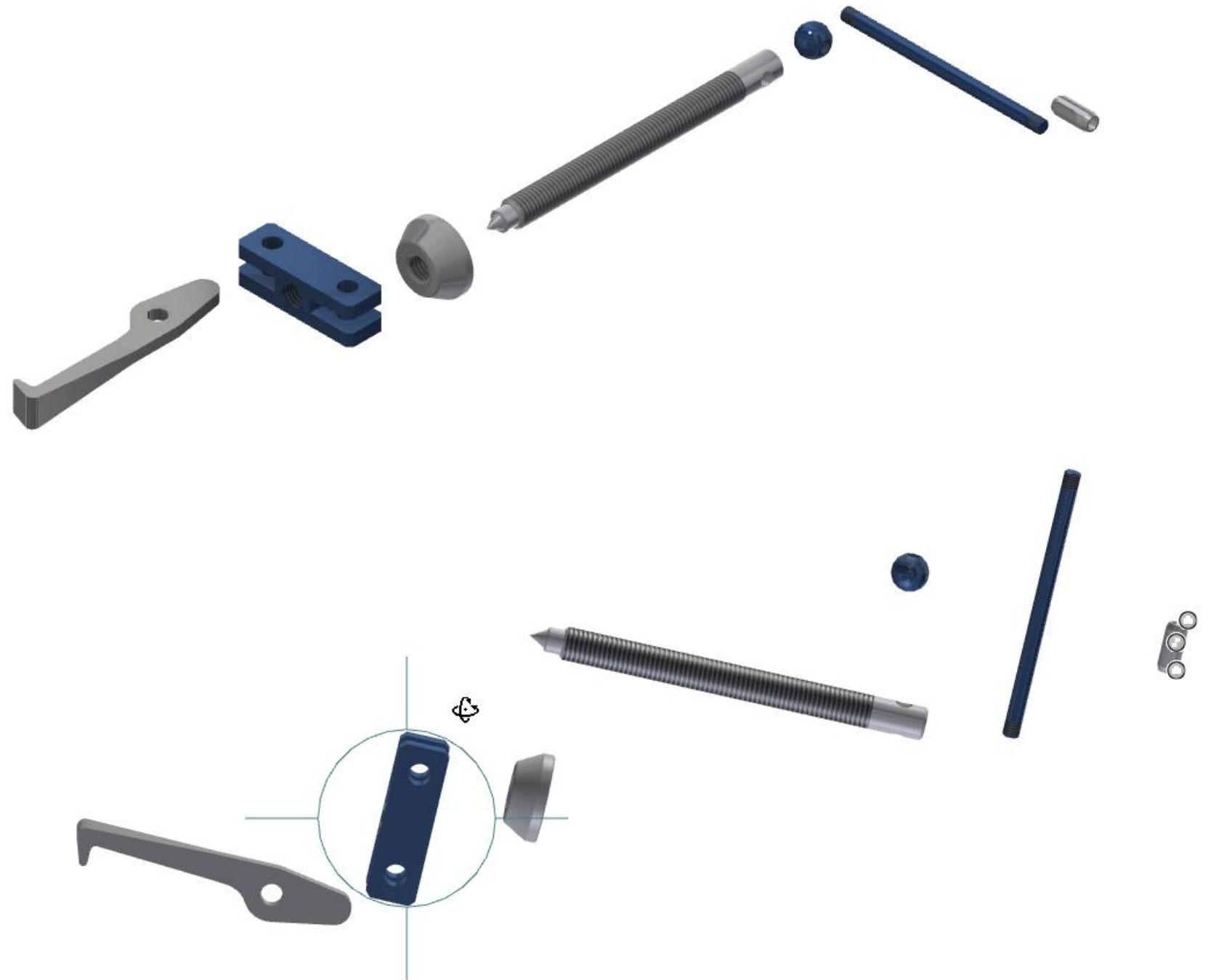
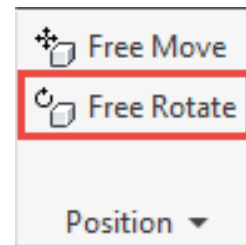
#45 Place Multiple Components At Once

- **Ctrl** select the components required
- Click **Open**
- Place the components in the assembly



#46 Free Rotate Multiple Components

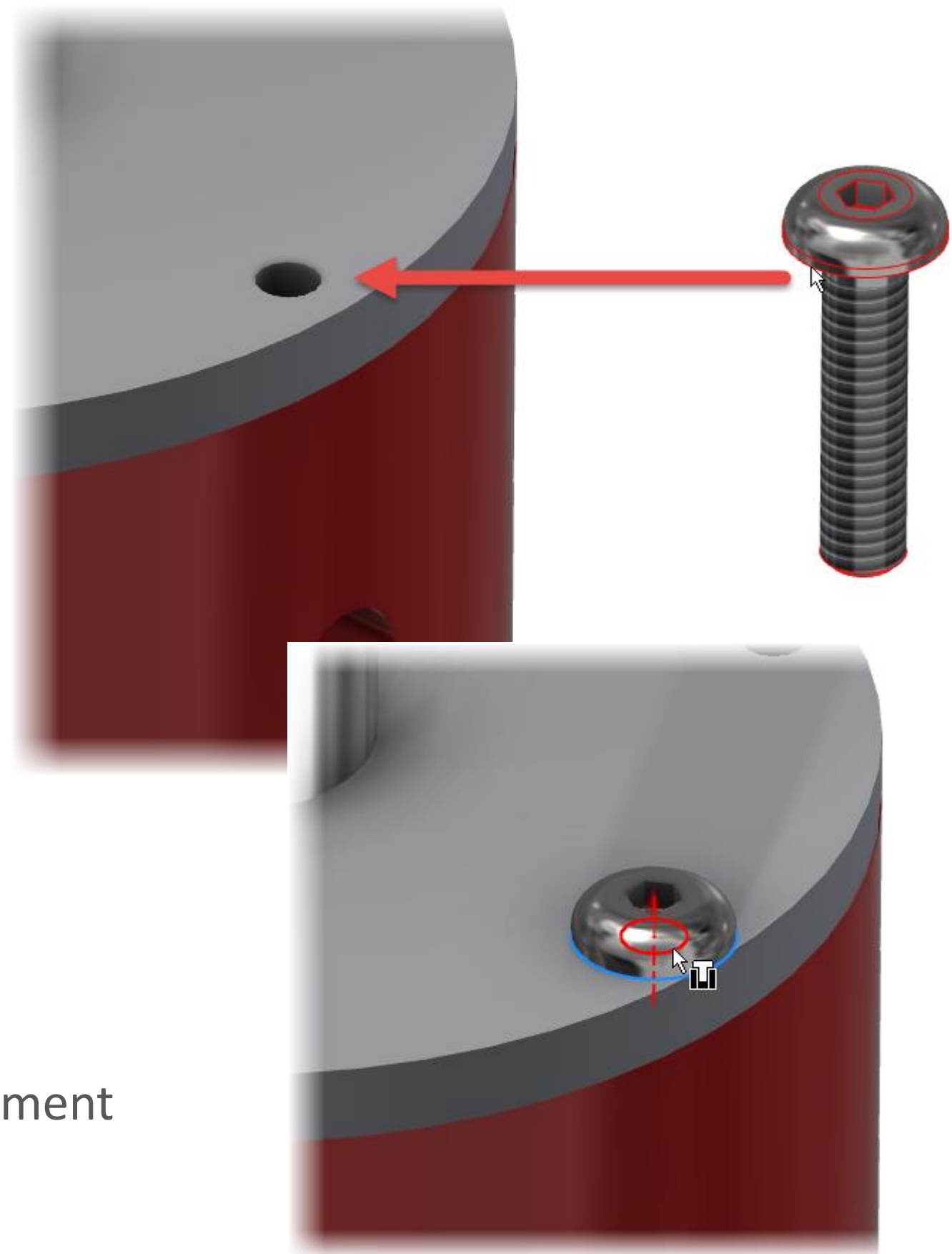
- **Ctrl** select the components required in the **Graphics Window**
- **Assemble** tab > **Position** panel > **Free Rotate**
- Rotate components



#47 Alt-Drag Constraint

- Hold down **Alt** key on keyboard
- Click and Hold on a component in the **Graphics Window** near where constraint should be placed
- Drag to where component should be constrained in assembly
- Constraint is created

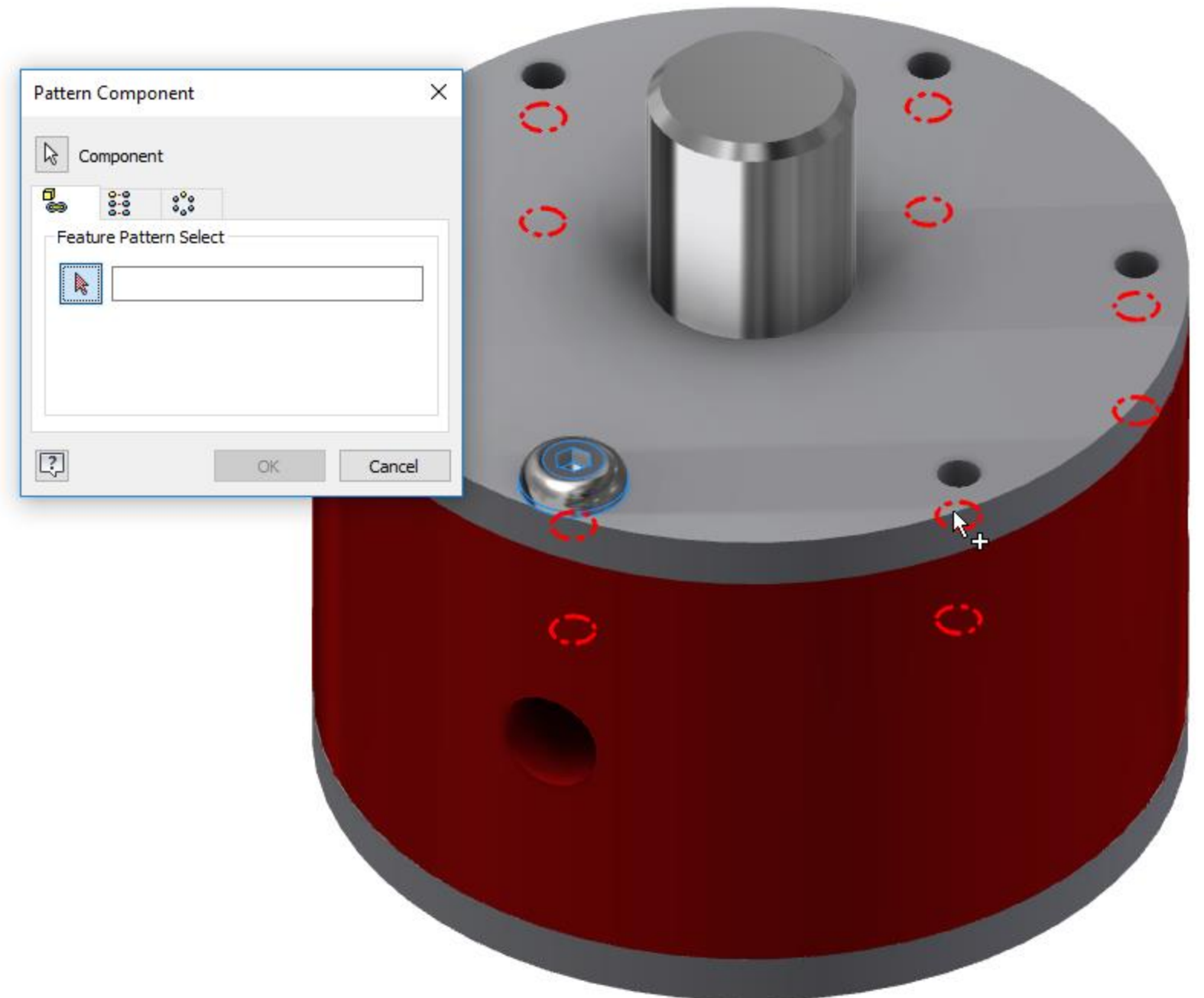
NOTE: When there are options for constraint placement press the **Spacebar** to cycle thru options



#48 Pattern Component – Feature Pattern

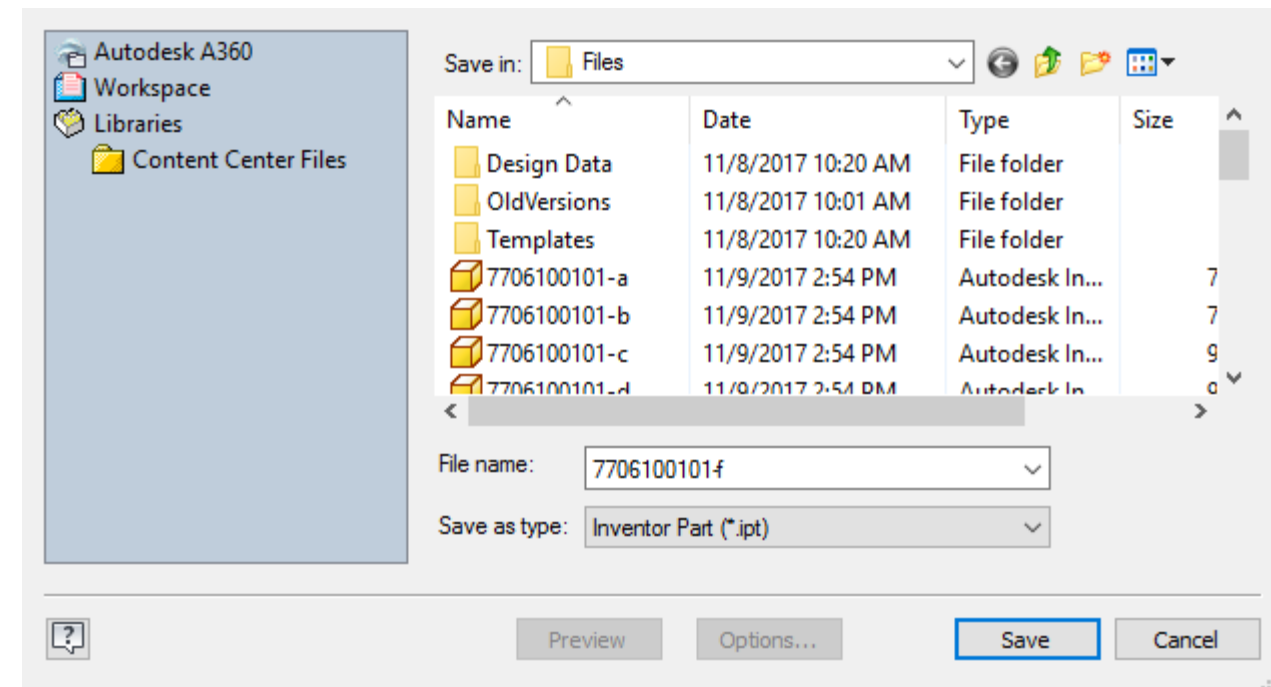
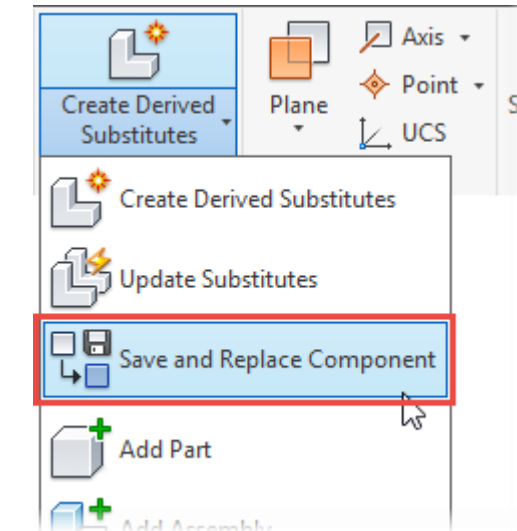
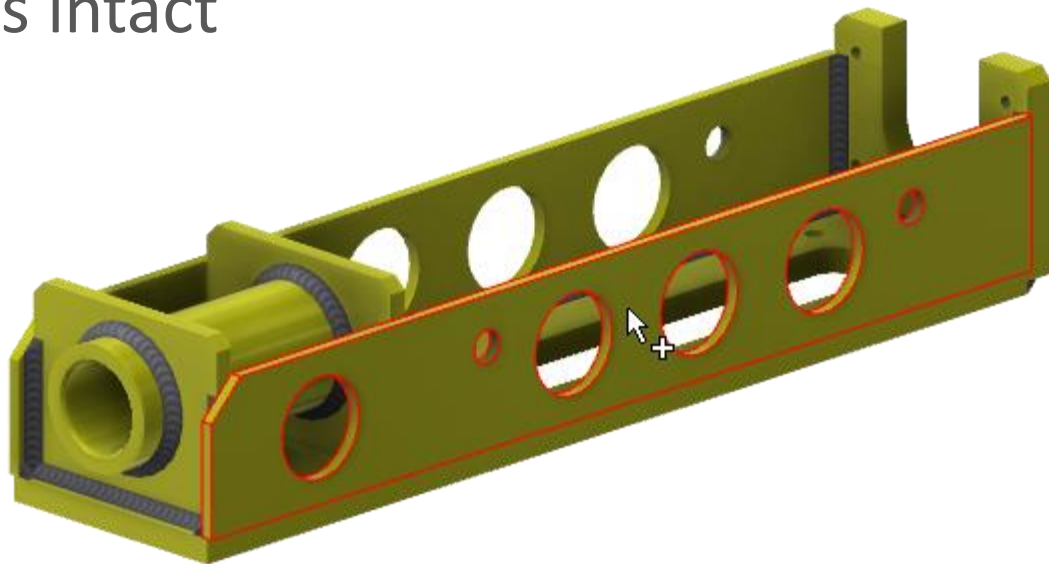
- **Assemble** tab > **Pattern** panel > **Pattern**
- Select component to pattern
- **Feature Pattern Select**
Select an existing feature pattern

Component Pattern is updated if the feature pattern is changed



#49 Save & Replace Component

- **Assemble tab > Productivity panel > Save and Replace Component**
- Select component to replace
- Save new component
- New component replaces existing component with all constraints and features intact

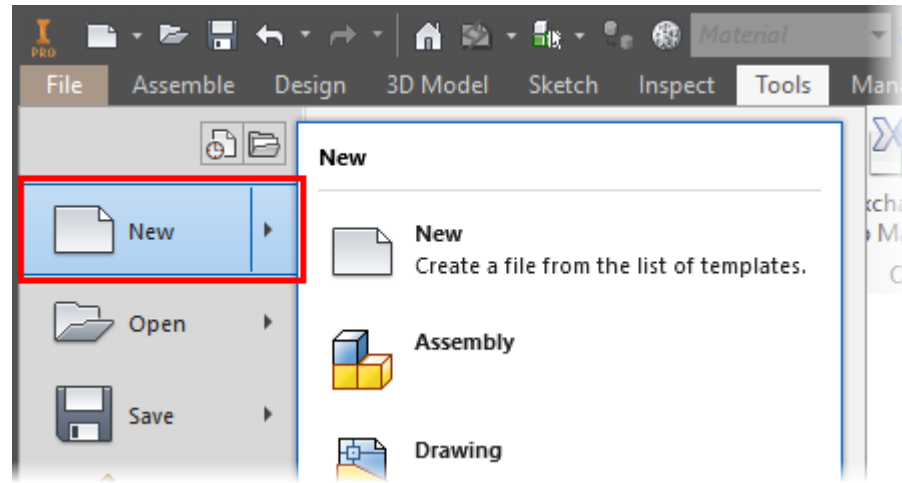




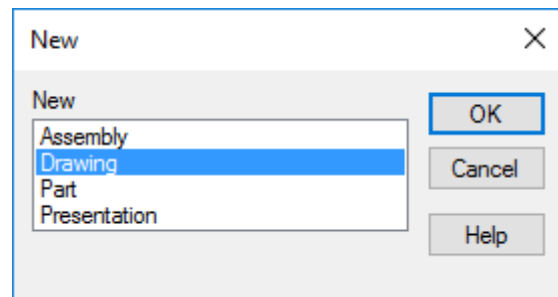
Drawings

#50 Create New Empty Drawing

- Hold down the **Ctrl + Shift** keys while selecting **New** on the **Application Menu**



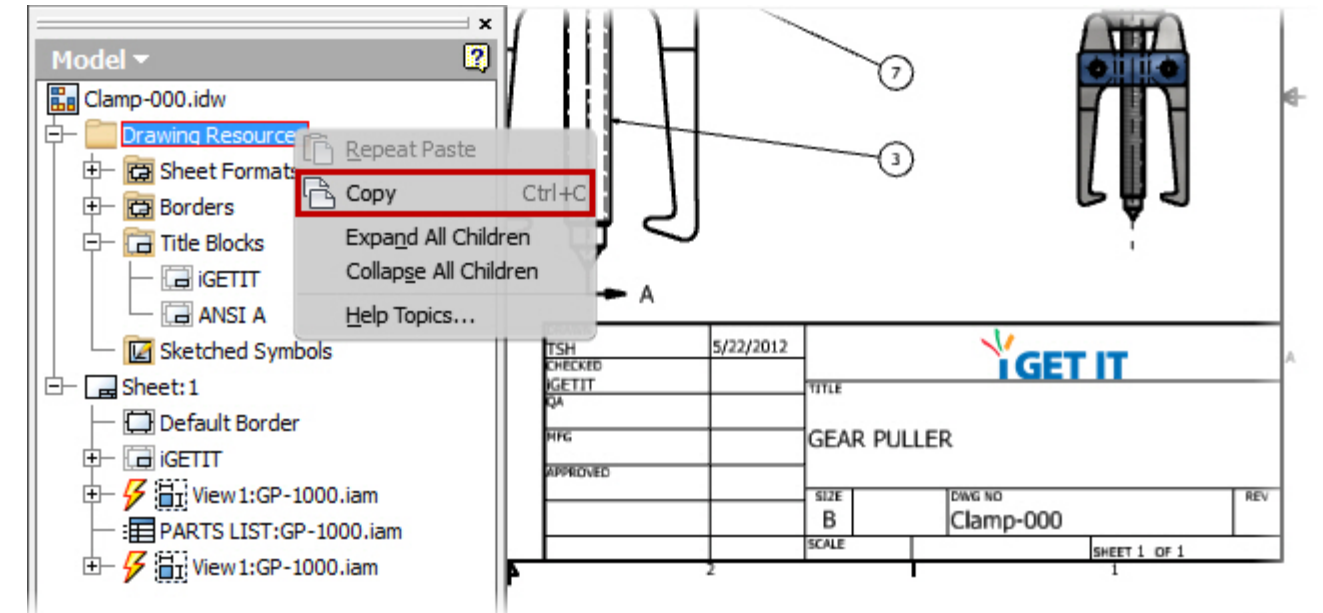
- Select **Drawing** on the **New** dialog box



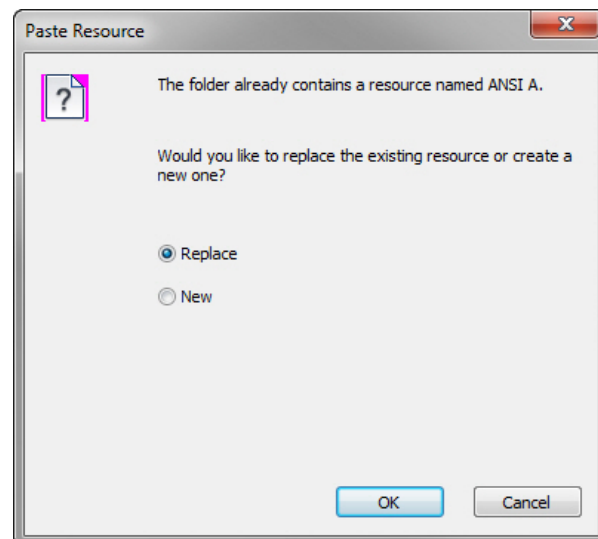
- Click **OK**

#51 Copy Drawing Resources Between Drawings

- Right Click the **Drawing Resources** folder in Browser
- Then select **Copy** from the Right-Click short cut menu
- In new drawing, Right-Click on the **Drawing Resources** folder in the browser and select **Paste**.

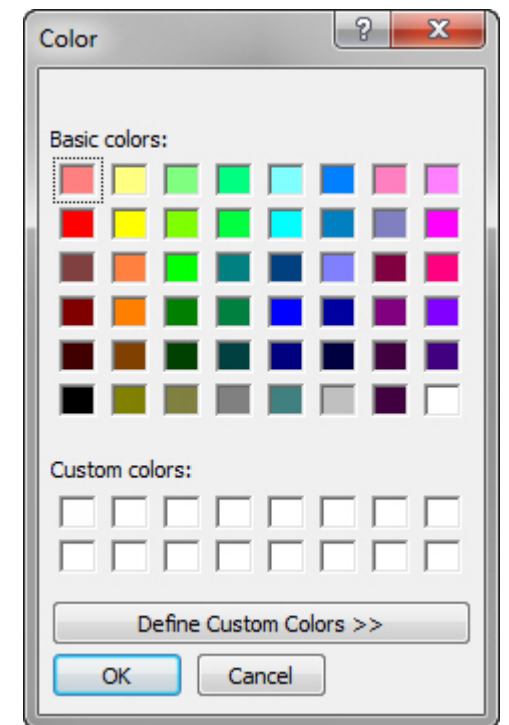


- If there are any resources in the new drawing that are named the same as the items you are copying in you are prompted to either Replace the existing resource, or create it as a New resource.



#52 Change Drawing Sheet Background Color

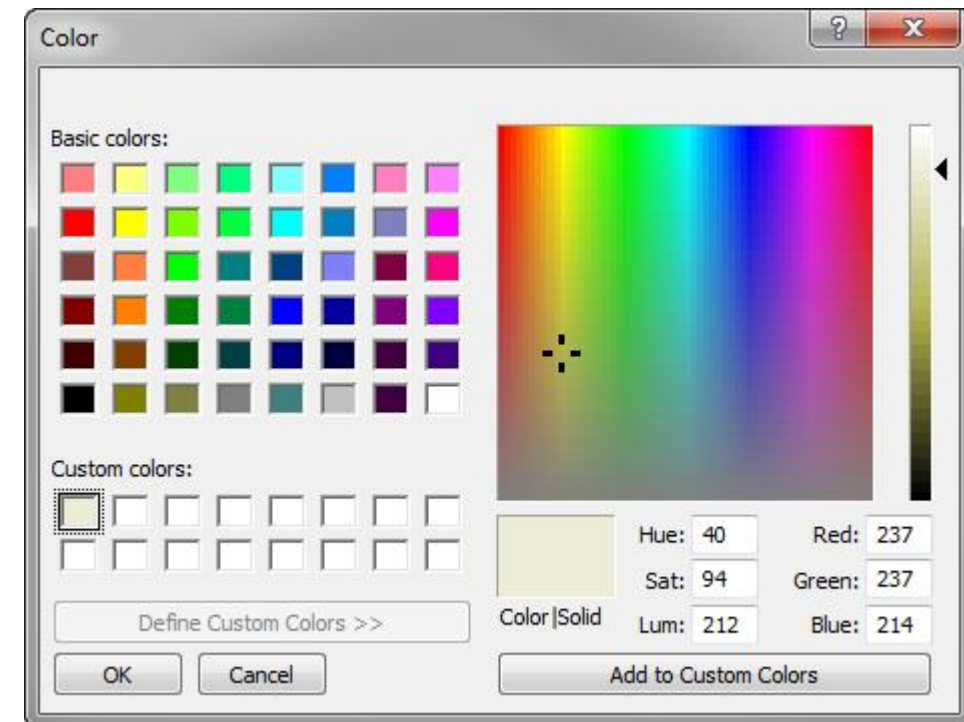
- The sheet background color is stored in the **individual documents** and is accessed in the **Document Settings**
- On the **Document Settings** dialog back, on the **Sheet** tab, under **Colors** select the color button for **Sheet**
- On the **Color** dialog box select the desired background color or define a custom color.



Note: Layers with a color set to Black will display as White on a black background, and layers with a color set to White will display as Black on a white background.

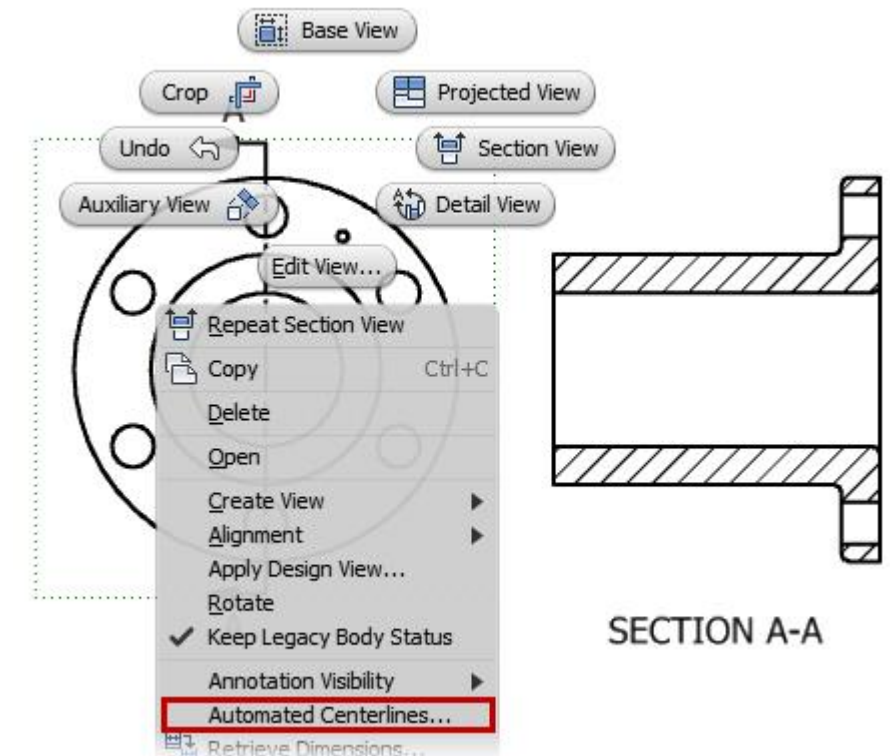
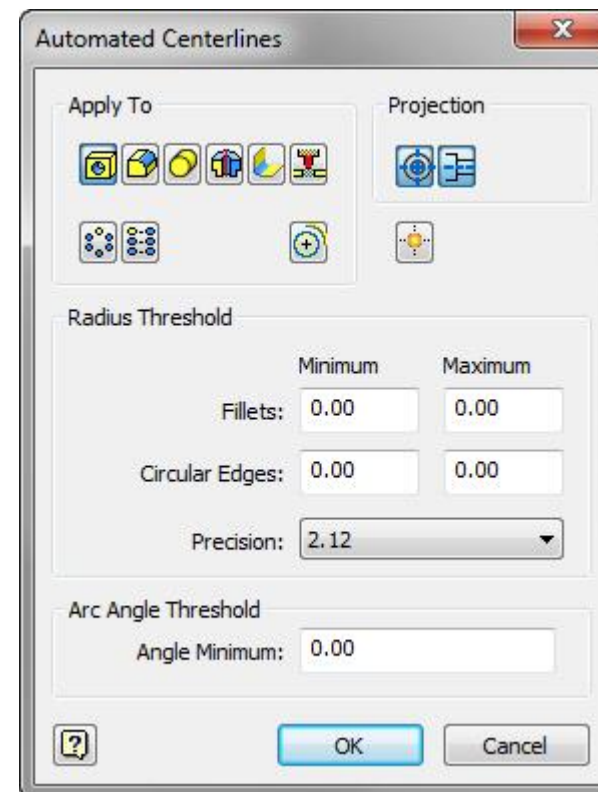
#53 Reset Default Drawing Sheet Background Color

- The sheet background color is stored in the **individual documents** and is accessed in the **Document Settings**
- On the **Document Settings** dialog back, on the **Sheet** tab, under **Colors** select the color button for **Sheet**
- On the **Color** dialog box, set the following **RGB** values under **Define Custom Colors >>**
- Red: 237 Green: 237 Blue: 214
- Select **Add to Custom Colors**
- Select the new color from the **Custom colors** pallet
- Click **OK**



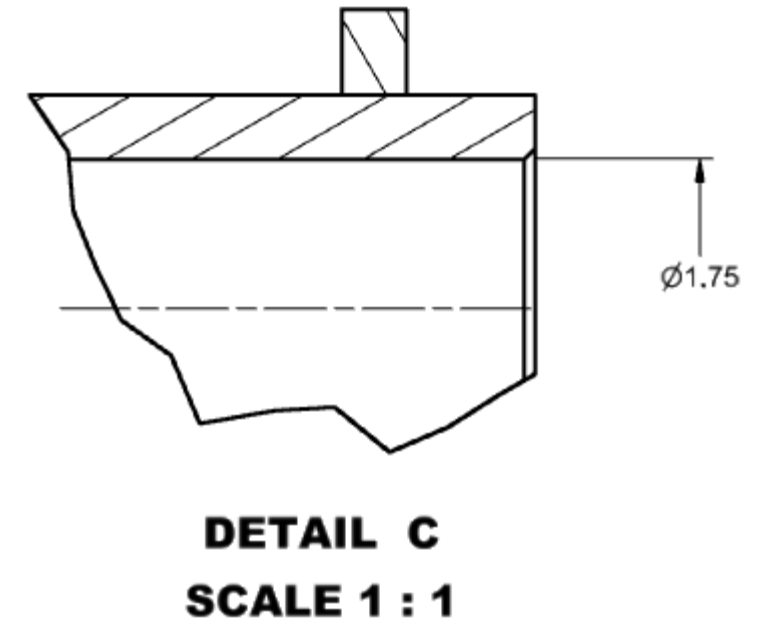
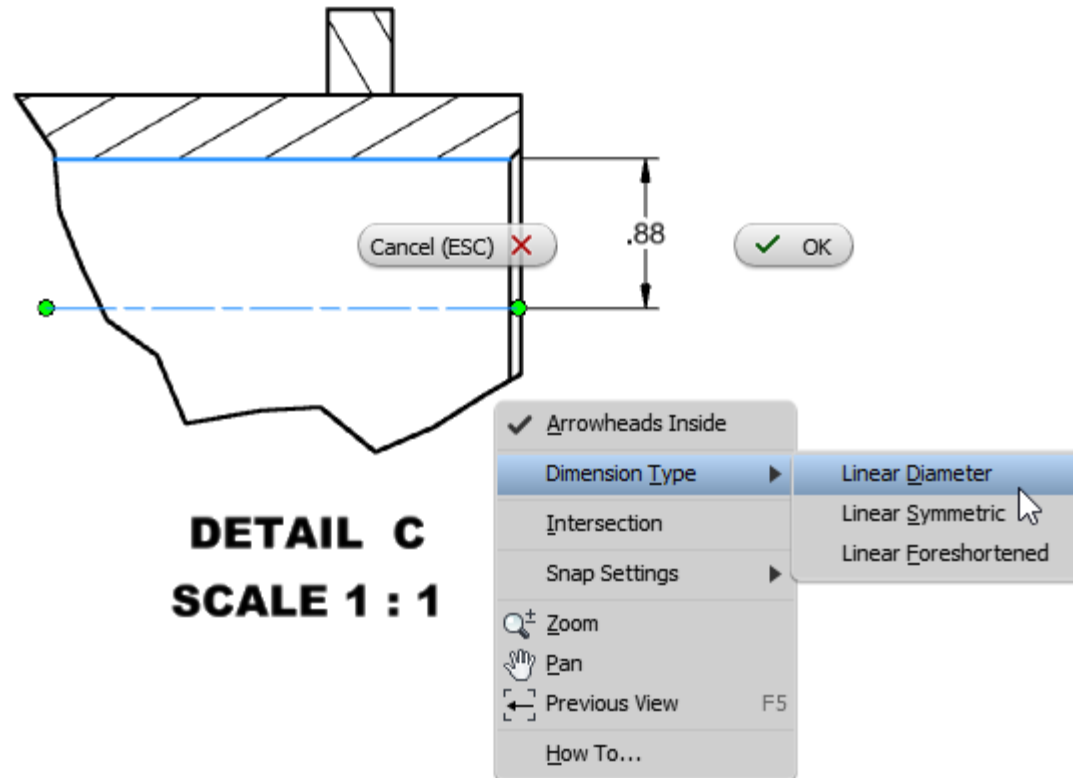
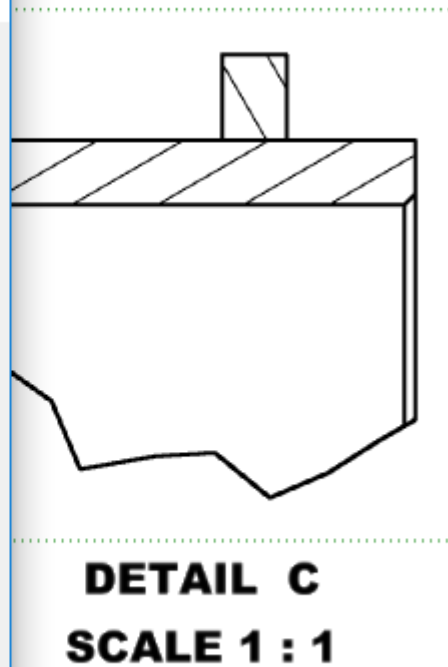
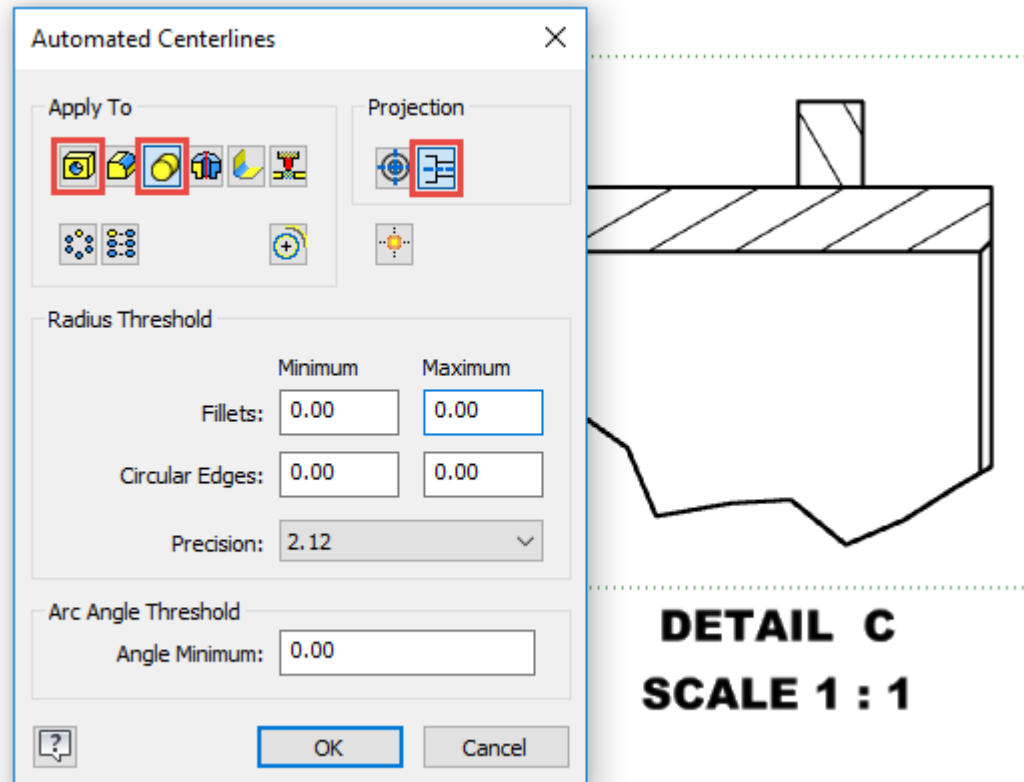
#54 Automated Centerlines

- Right-Clicking on any existing drawing view, **Automated Centerlines...**
- **Automated Centerlines** dialog box allows you to select the features and pattern types on which Automated Centerlines will be applied to the drawing views. Also the view projection type can be selected.
- **Tip:** Holding Ctrl or Shift will allow you to select multiple drawing views there by allowing you to apply **Automated Centerlines** to all the selected views.



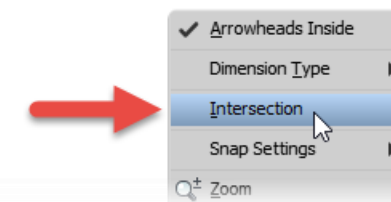
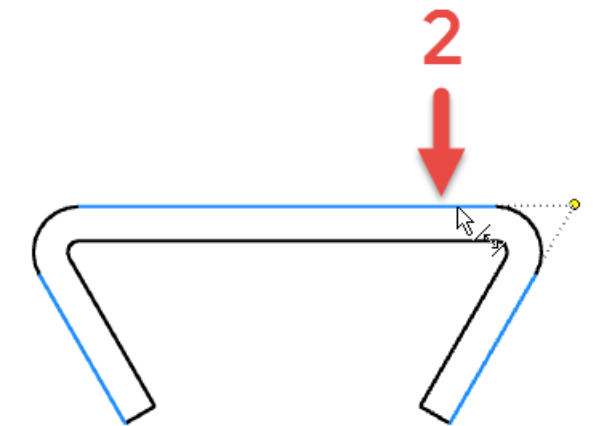
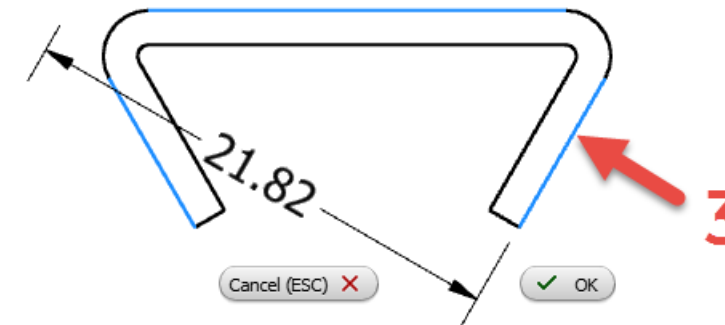
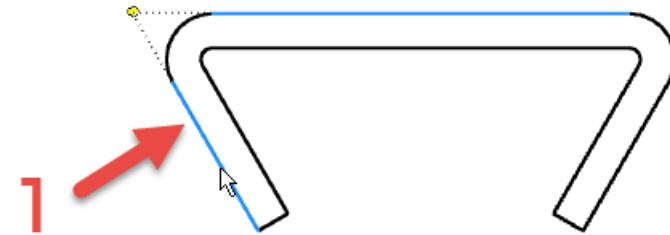
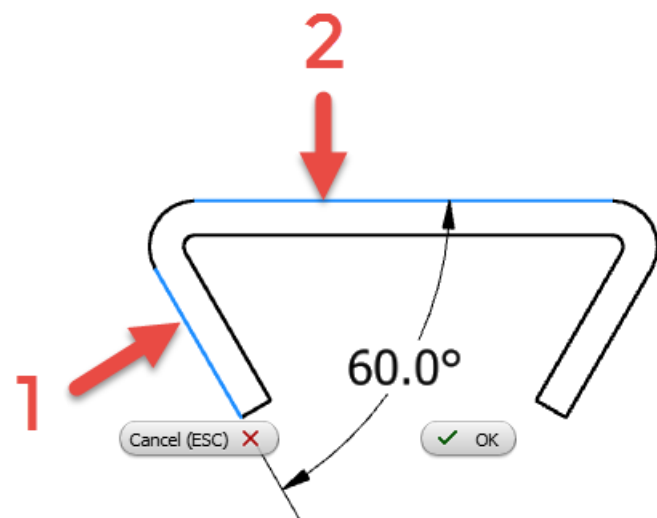
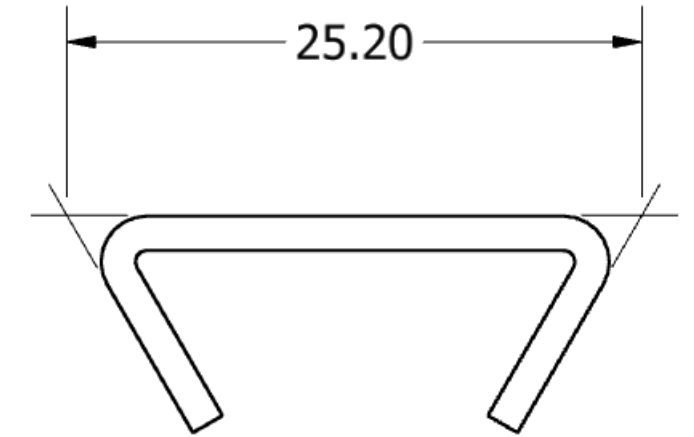
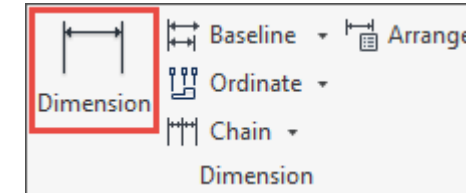
#55 Linear Diameter in Detail View

- Right-Clicking on detail view, Select **Automated Centerlines...** , Place Centerline
- Start **Dimension** command, select Centerline and edge line
- Right-click, selection **Dimension Type > Linear Diameter**
- Place dimension



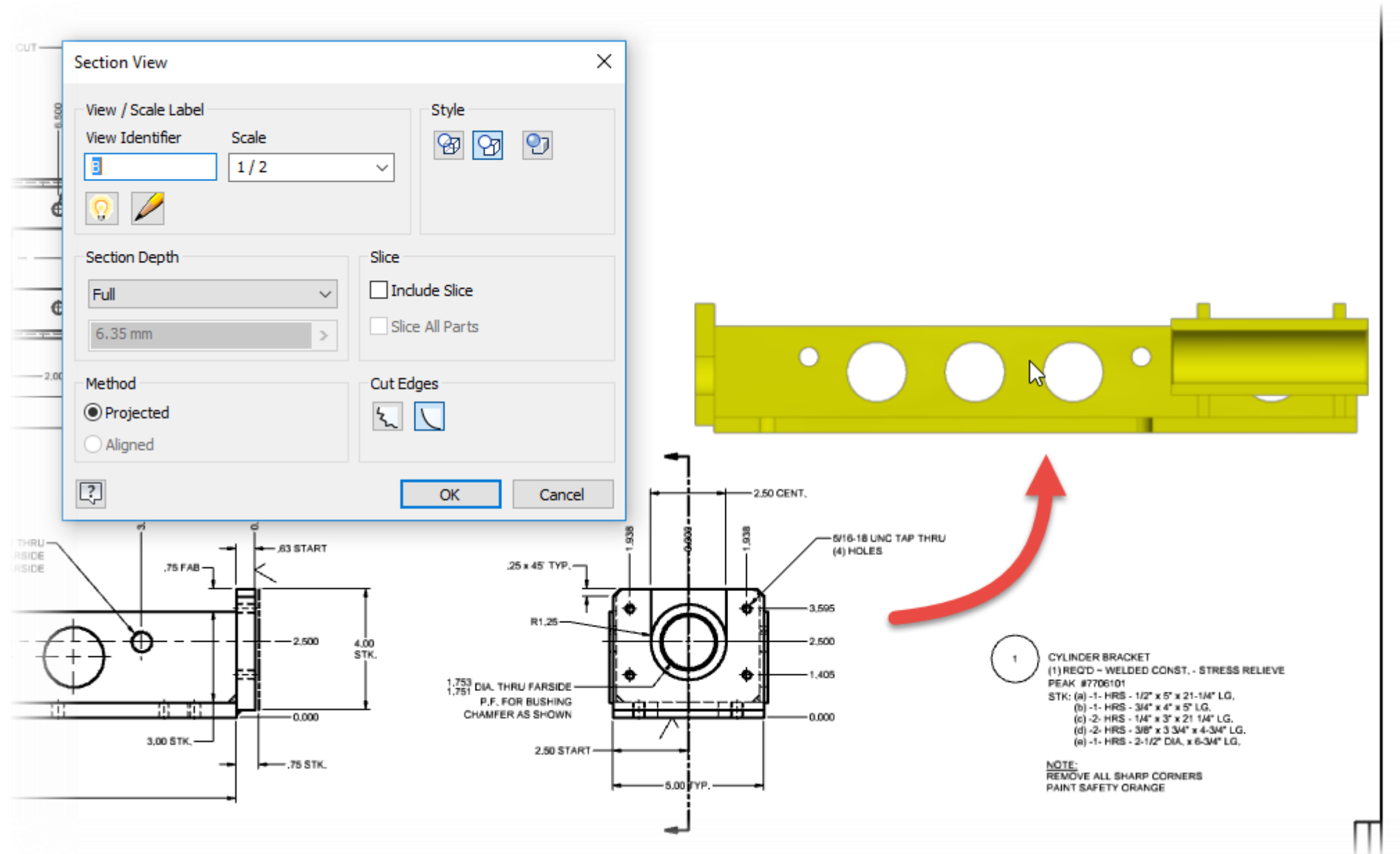
#56 Intersection Dimension

- Start the **Dimension** Tool
- Select first and second line, then right-click, select **Intersection** from shortcut menu
- Select first line again and then third line, then right-click, select **Intersection** from shortcut menu
- Select second line again
- Place dimension



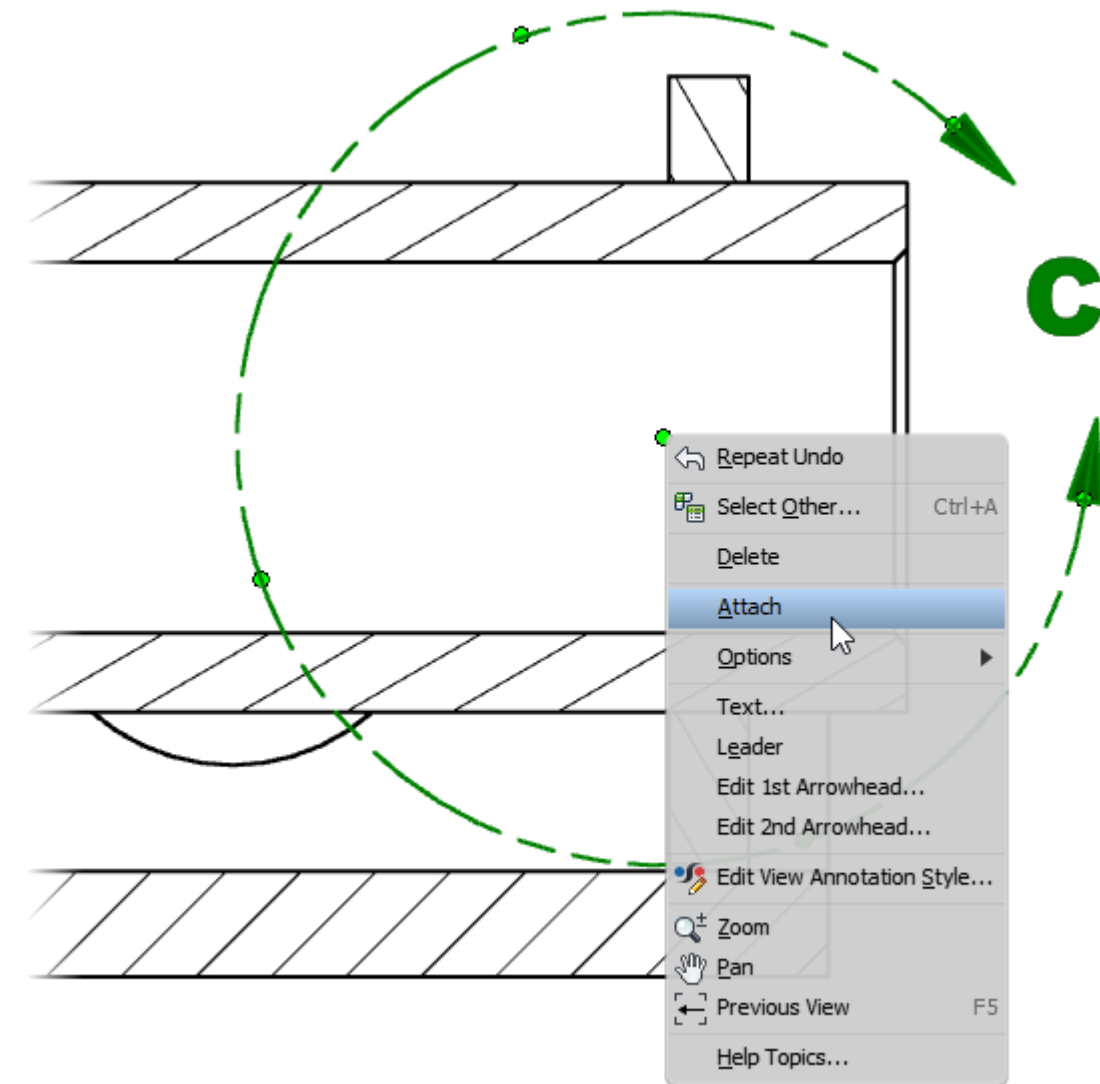
#57 Break Section View Alignment on Creation

- While creating a **Section** view
- Hold down **Ctrl** to break the alignment on creation



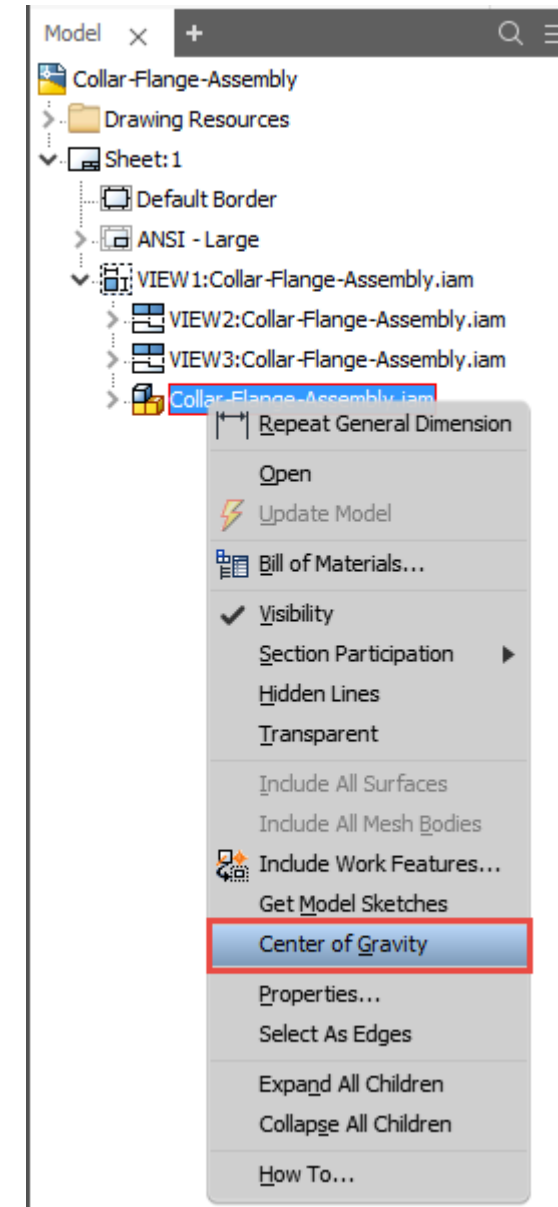
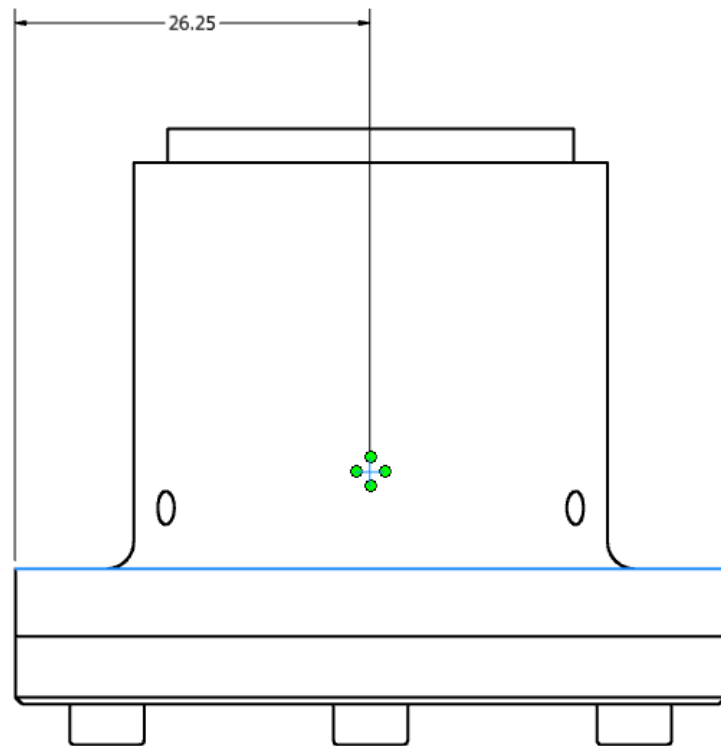
#58 Detail View Attachment

- Right-Click on **Detail View** arrow
 - Select **Attach** from shortcut menu
 - Select geometry in the drawing view to attach
 - Detail view will move with geometry if change is made
-
- Right-click **Detail View** arrow
 - Select **Detach** from shortcut menu to remove attachment



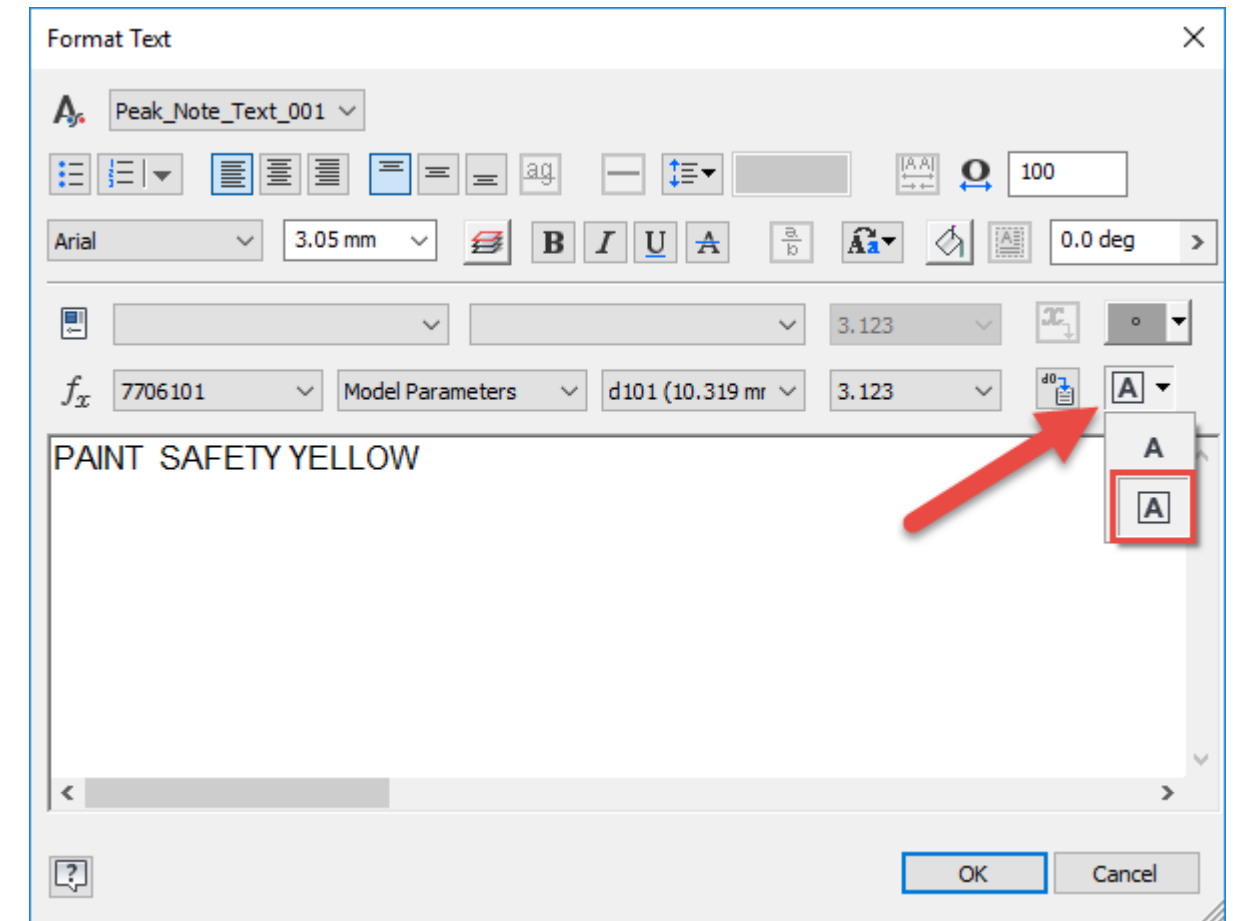
#59 Display Center of Gravity in Drawing View

- Expand drawing view, Right-Click on model in **Browser**
- Click **Center of Gravity** from Shortcut Menu
- Center Mark is displayed in the drawing view



#60 Text Border (2018)

- **Annotate** tab > **Text** panel > **Text** OR **Leader Text**
- **Format Text** dialog box
- **Border Option** dropdown list
- Detail view will move with geometry if change is made

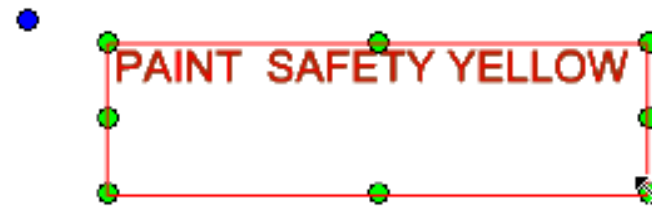


NOTE: Text box grips can resize the border

NO controls for size i.e. No Dimensional Constraints

If specific border size is required then a sketch symbol should be used

PAINT SAFETY YELLOW → PAINT SAFETY YELLOW



Questions



Questions?



Handout Available Online

Additional Information



REALIZING DESIGN POTENTIAL



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