Creating Assemblies with Autodesk Inventor 2014

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Student Resources

- http://students.autodesk.com
- http://autodesk.com/first
- http://www.youtube.com/user/AutodeskEd

- http://wikihelp.autodesk.com/enu
- http://engineeringexploration.autodesk.com

- FIRST@autodesk.com
- http://bxd.autodesk.com/

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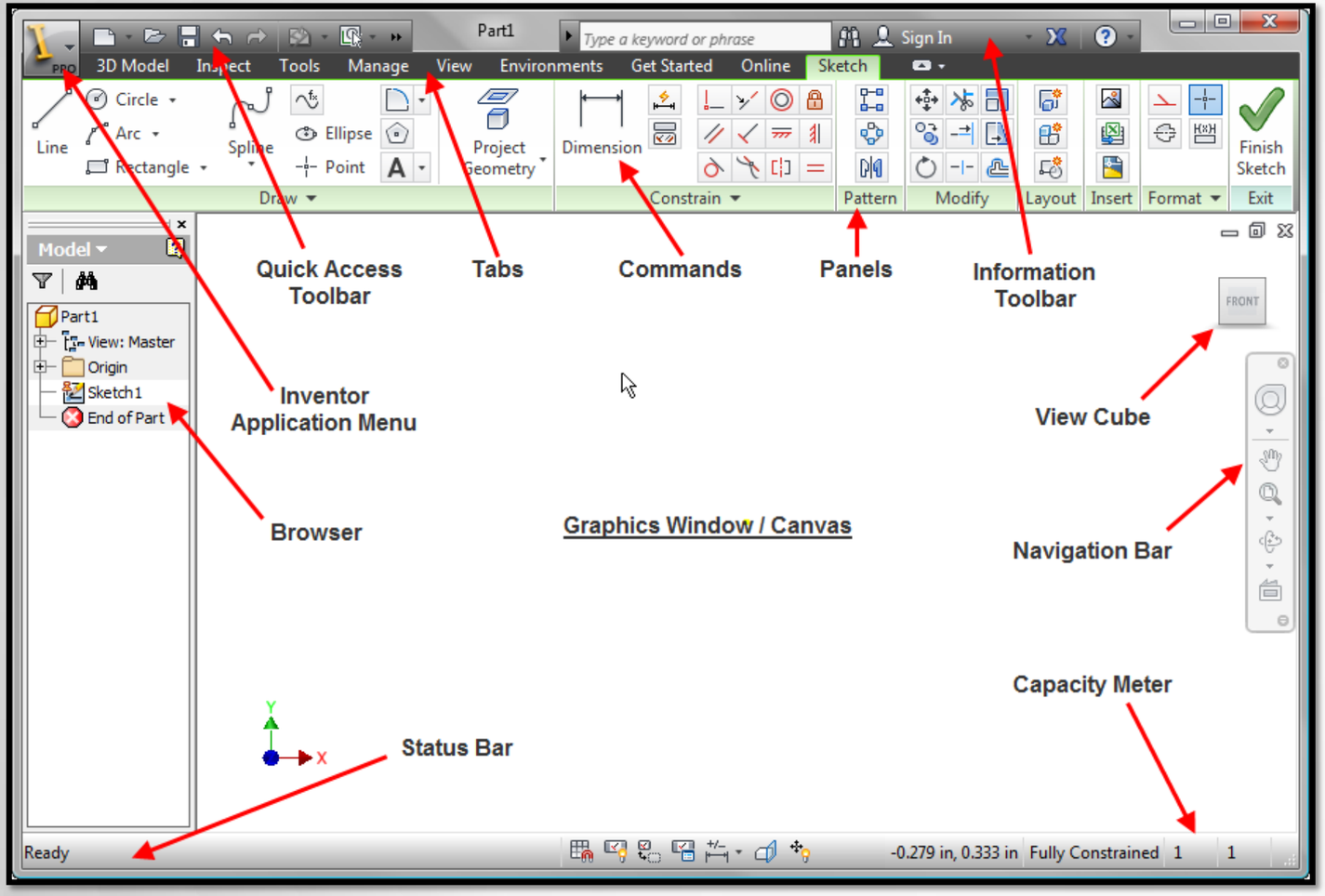
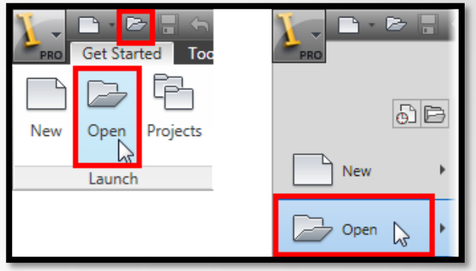
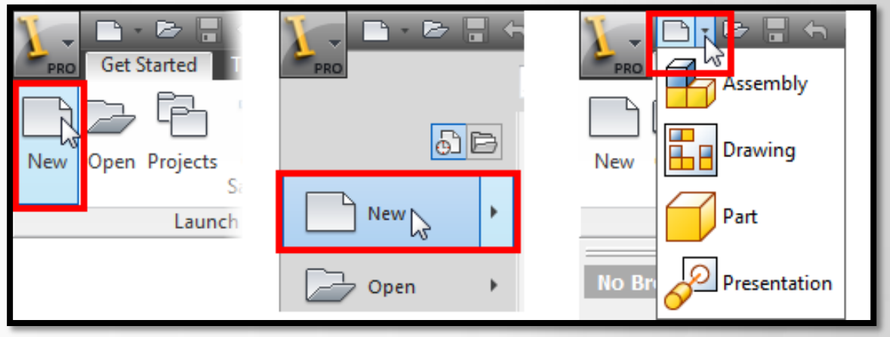
User Interface – Refresher







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What is an Assembly?

- Assemblies are just a bowl to hold information about the components within.
  - Sub-assemblies and parts
  - Relationships- External file references

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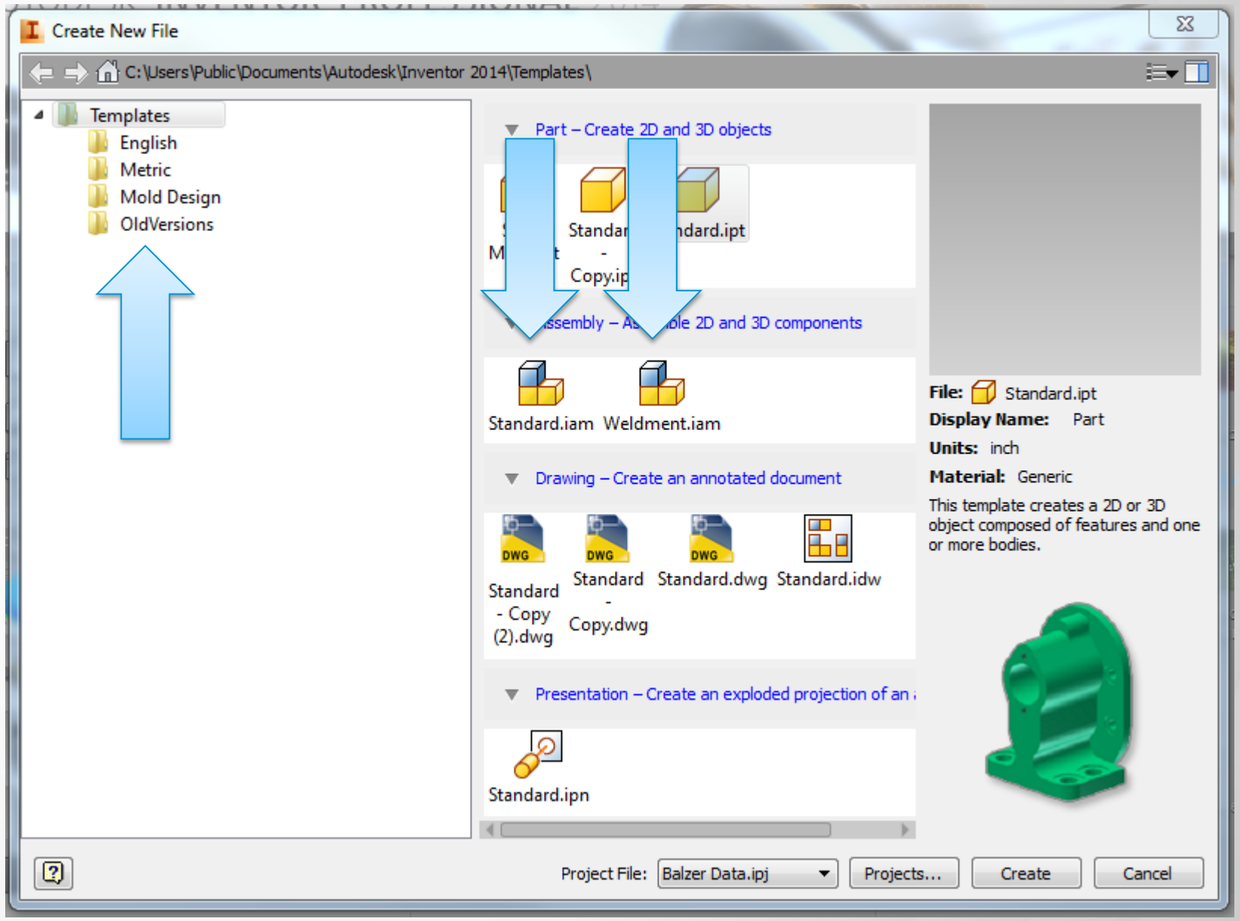
Open and Create New Files – Refresher

- Open
  - Open an existing Autodesk Inventor file
- New
  - Template for a new part, sheet metal part, assembly, presentation, or drawing



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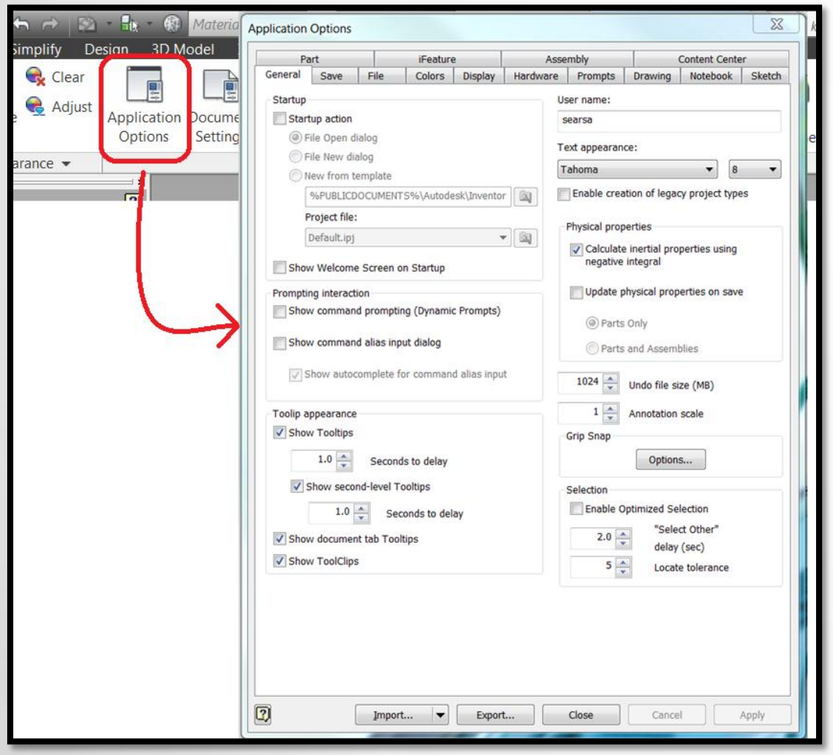
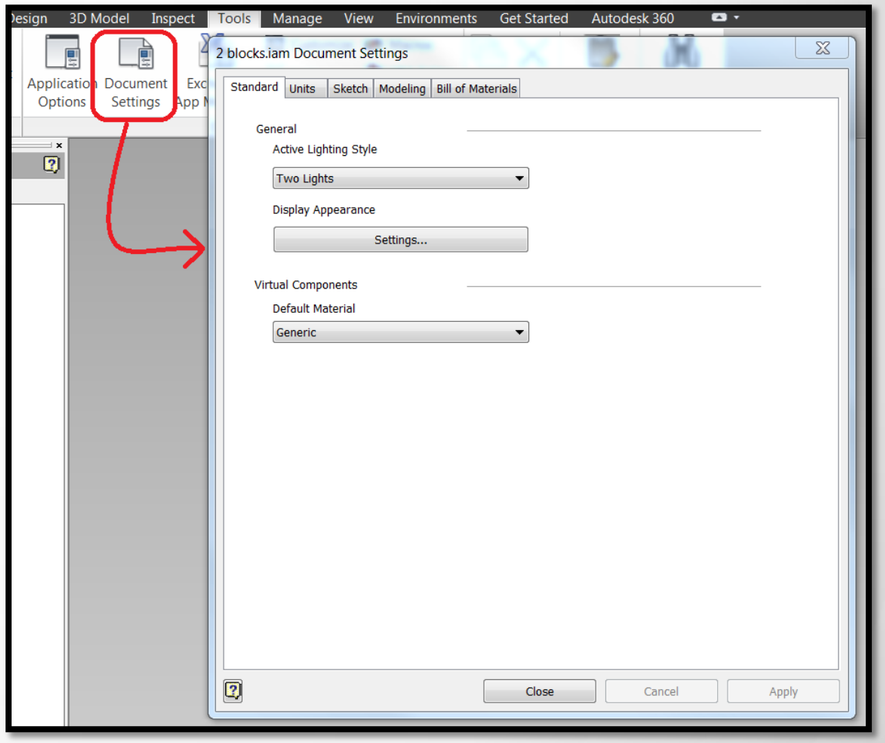
Application Options and Document Settings

- Controls how the program behaves



- Controls how the document behaves



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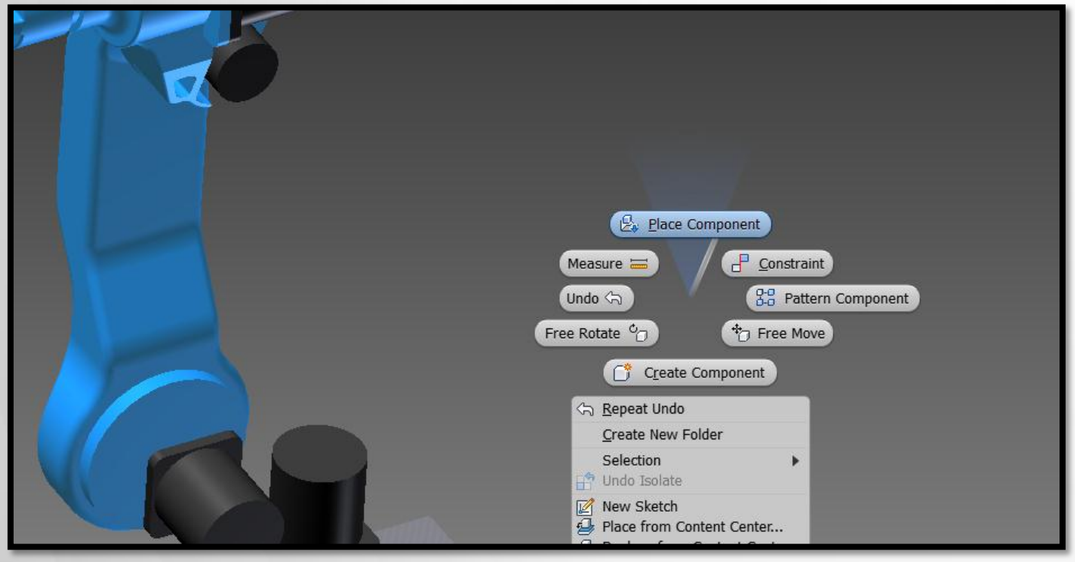
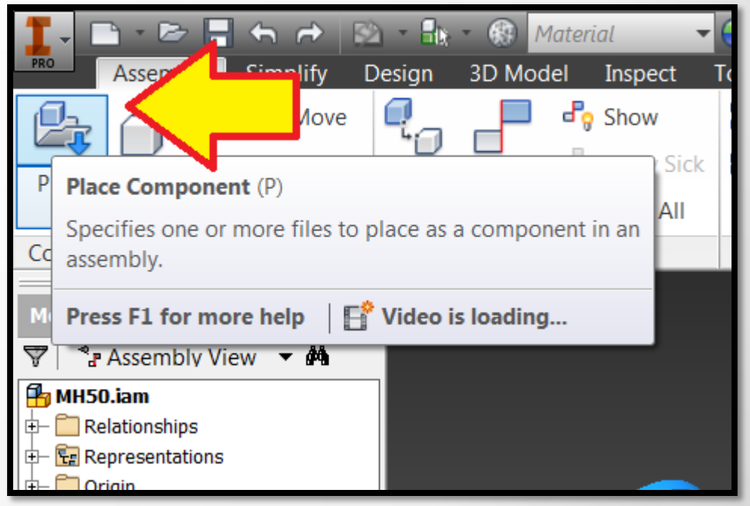
Inserting Parts Into an Assembly

- RMB in canvas to select “Place Component”



- Select “Place Component” from the browser or hit “P” for the quick key



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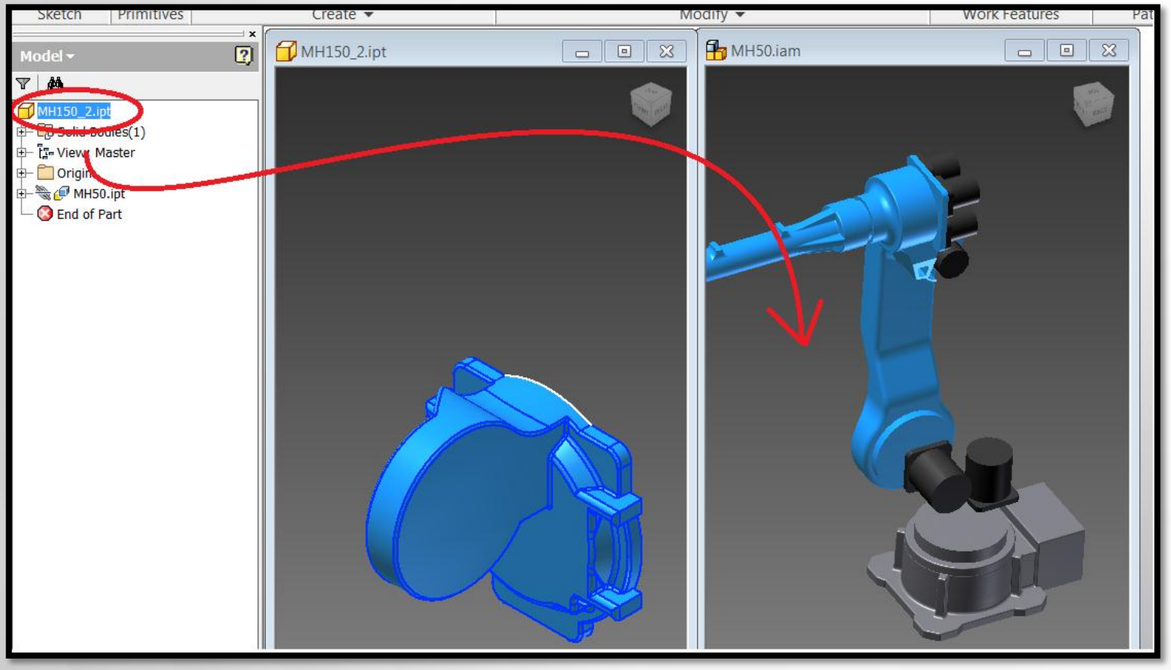
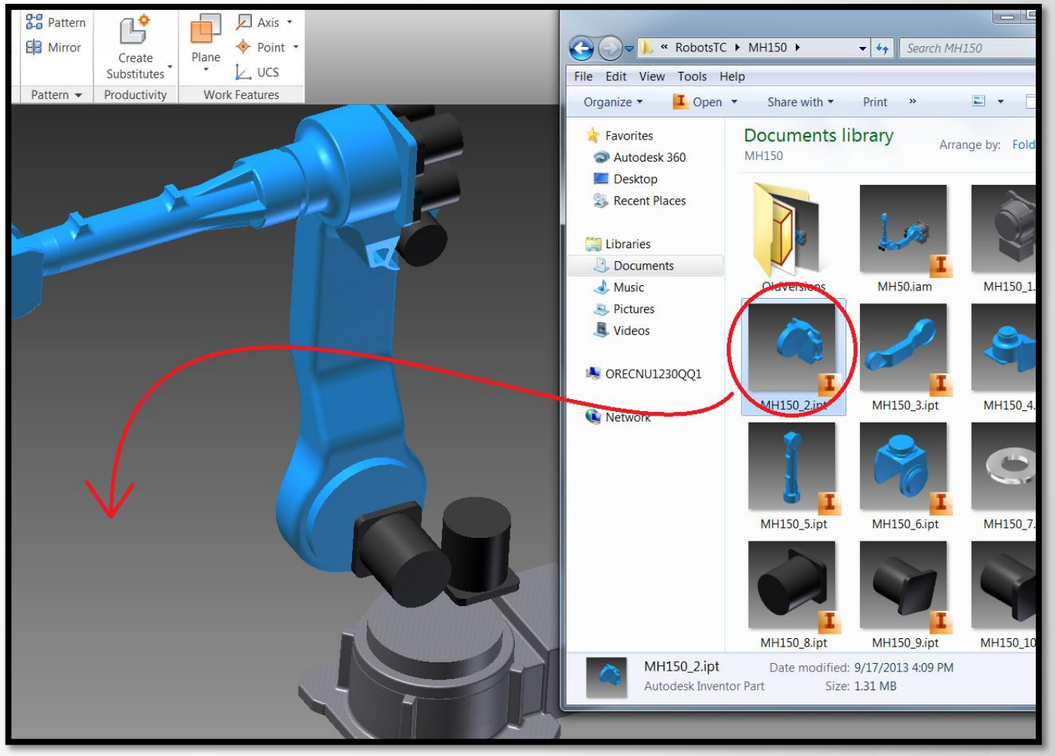
Inserting Parts Into an Assembly

- Drag and drop





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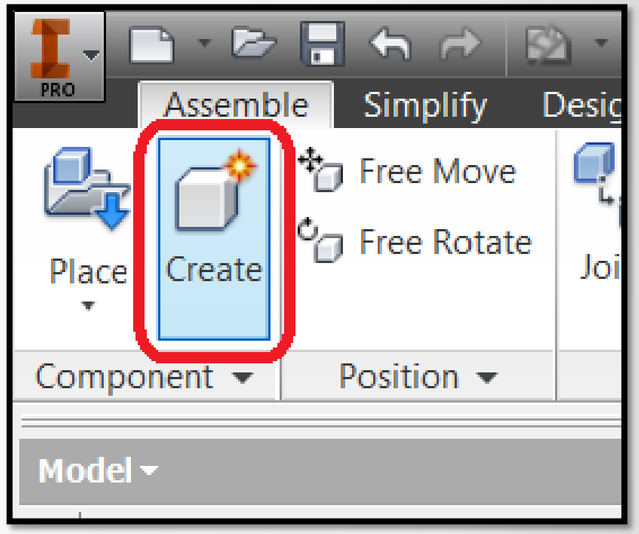
In Context Part Creation

- Create parts inside the assembly
  - Select “Create”
  - Choose the part template
  - Select a location a reference location for the part



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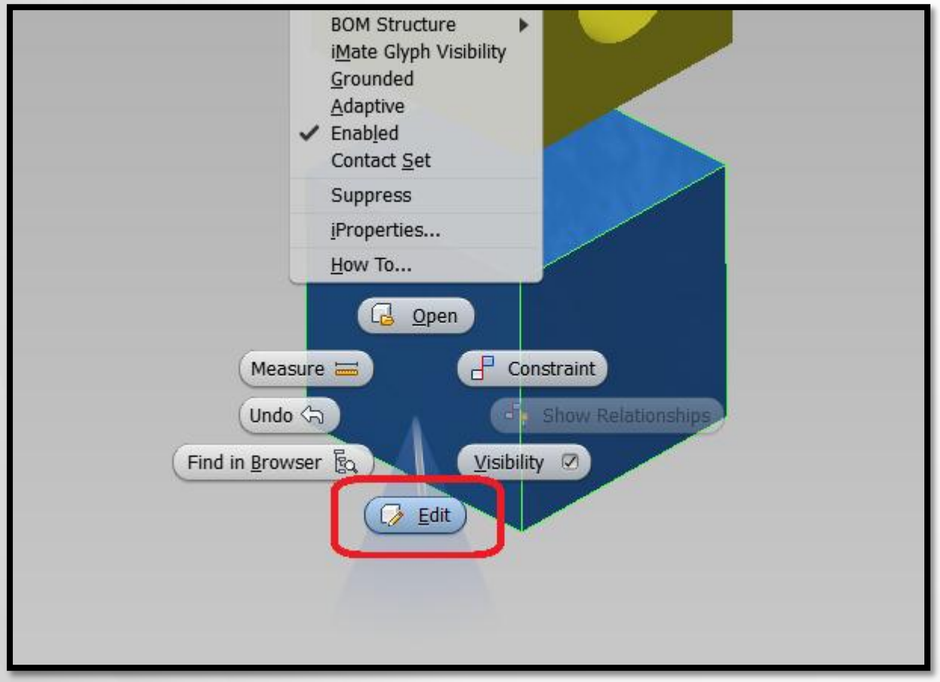
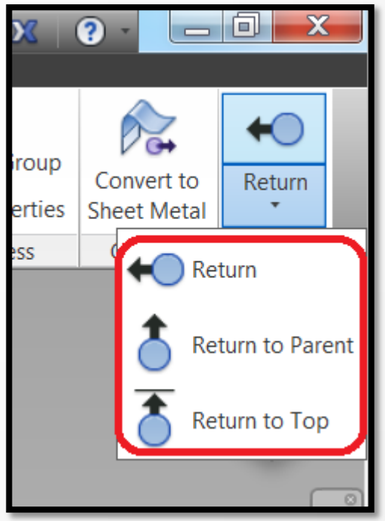
Edit Parts in Place

- Editing parts inside the assembly environment
- Getting back to the assembly environment





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- Demo

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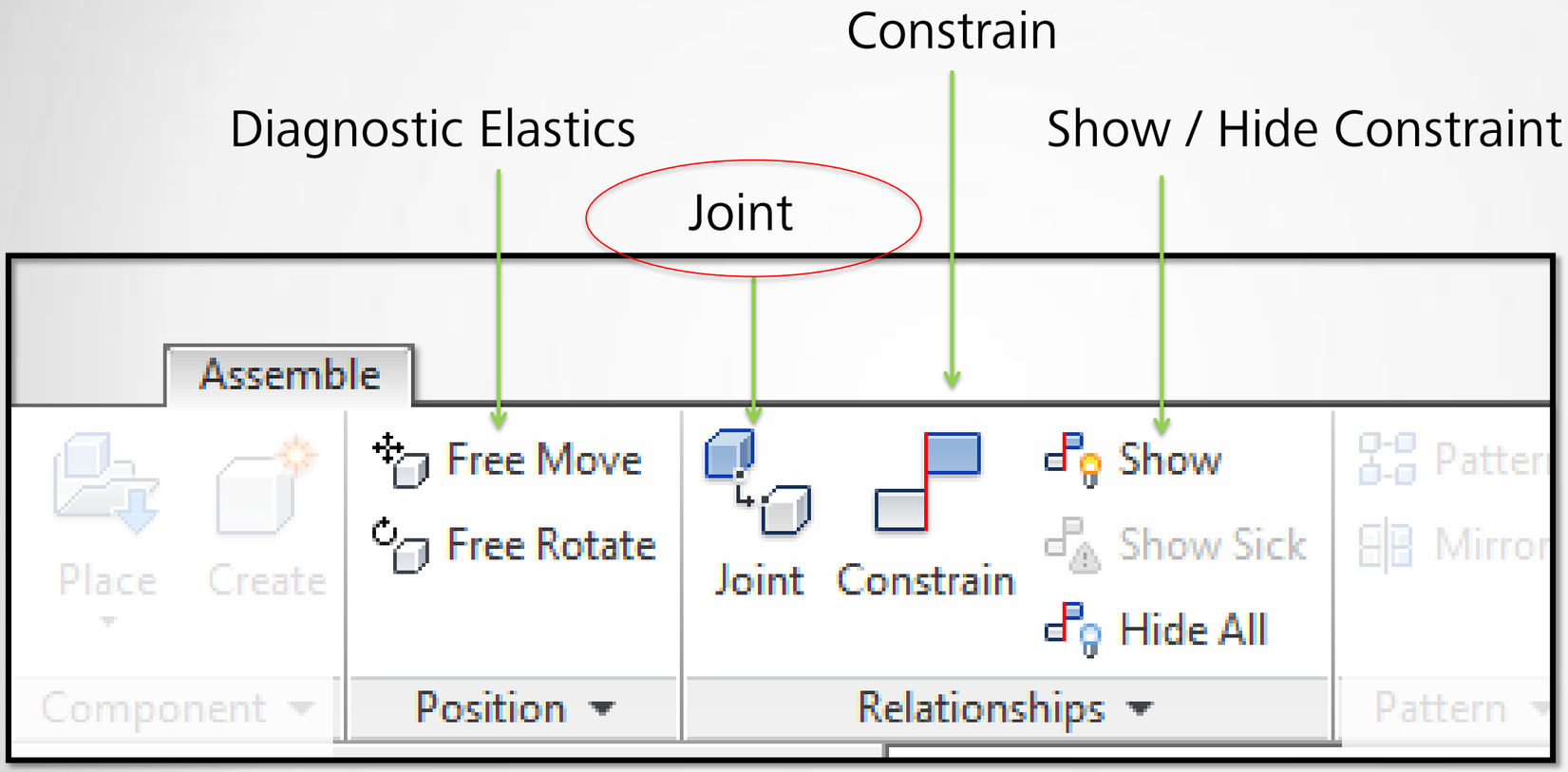
Relationship Tools



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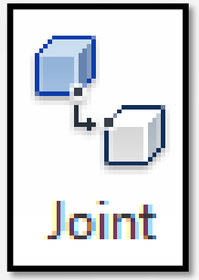
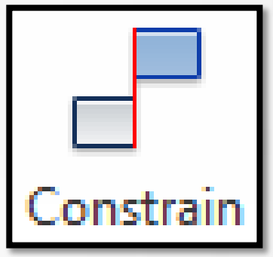
Joint or Constrain?



- More selection options for placement
- Internal and external points available
- Defines mobility
- New to Inventor 2014



- Limited to planes, edges, points
- Restricts mobility

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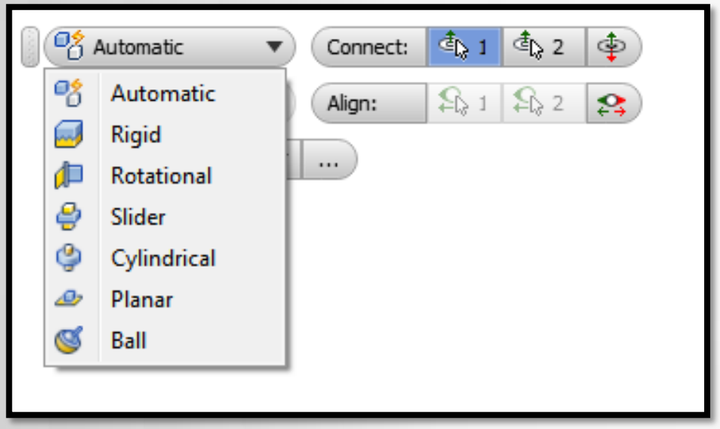
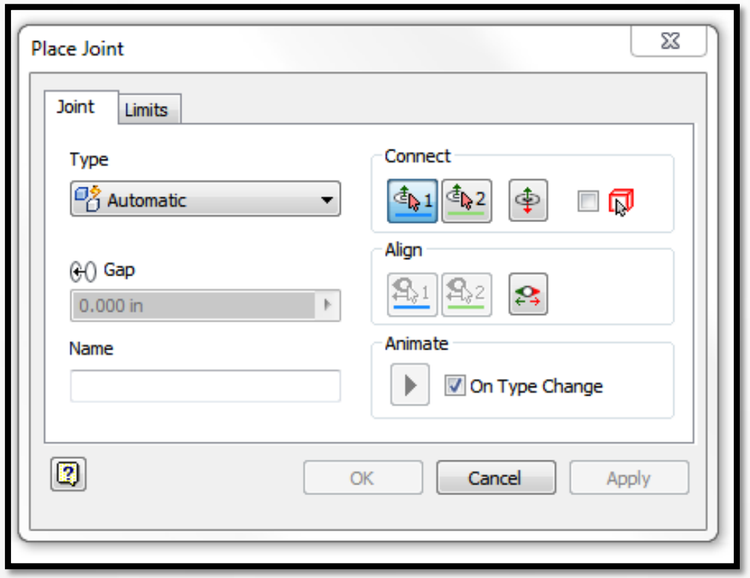
Joint Mini Toolbar and Dialog Box

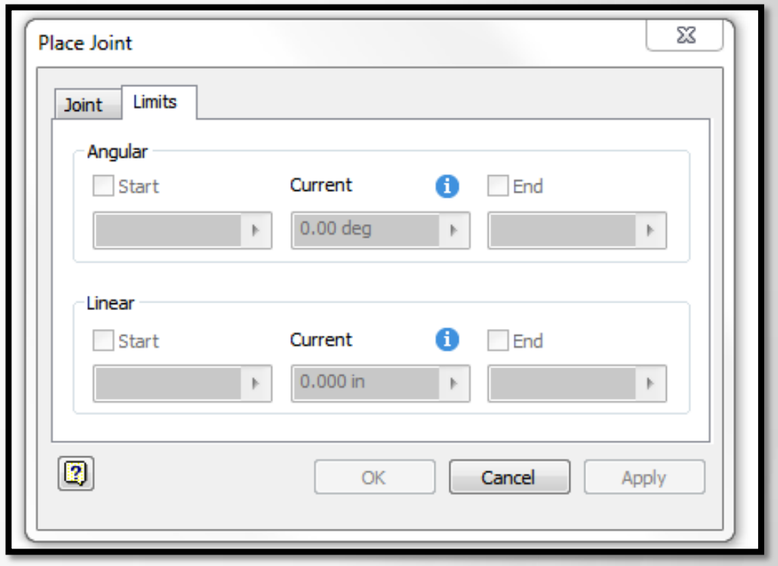
Joint Mini Tool Bar



Dialog Box



Joint Dialog Box (Limits)



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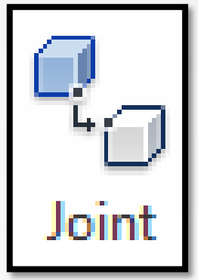
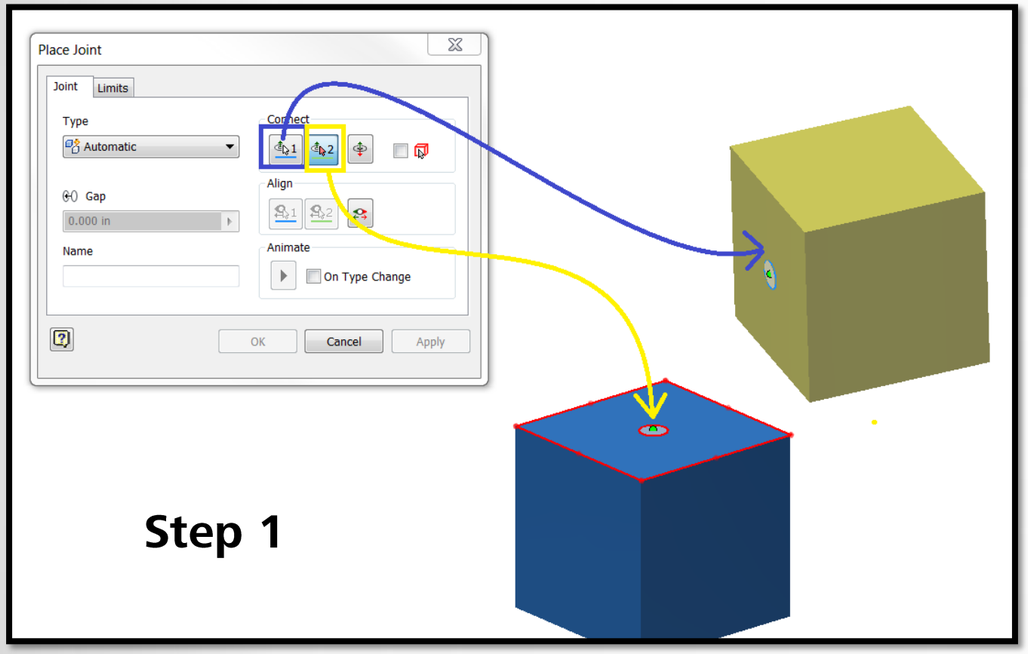
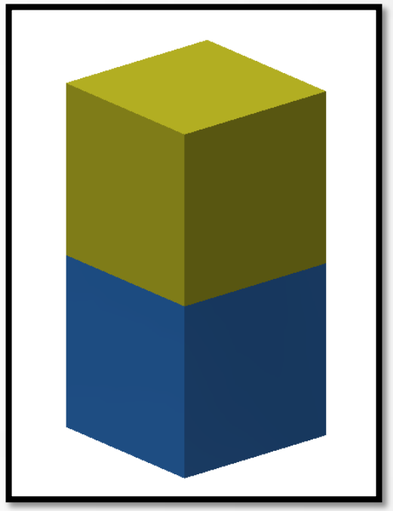
Typical Joint Workflow







Result

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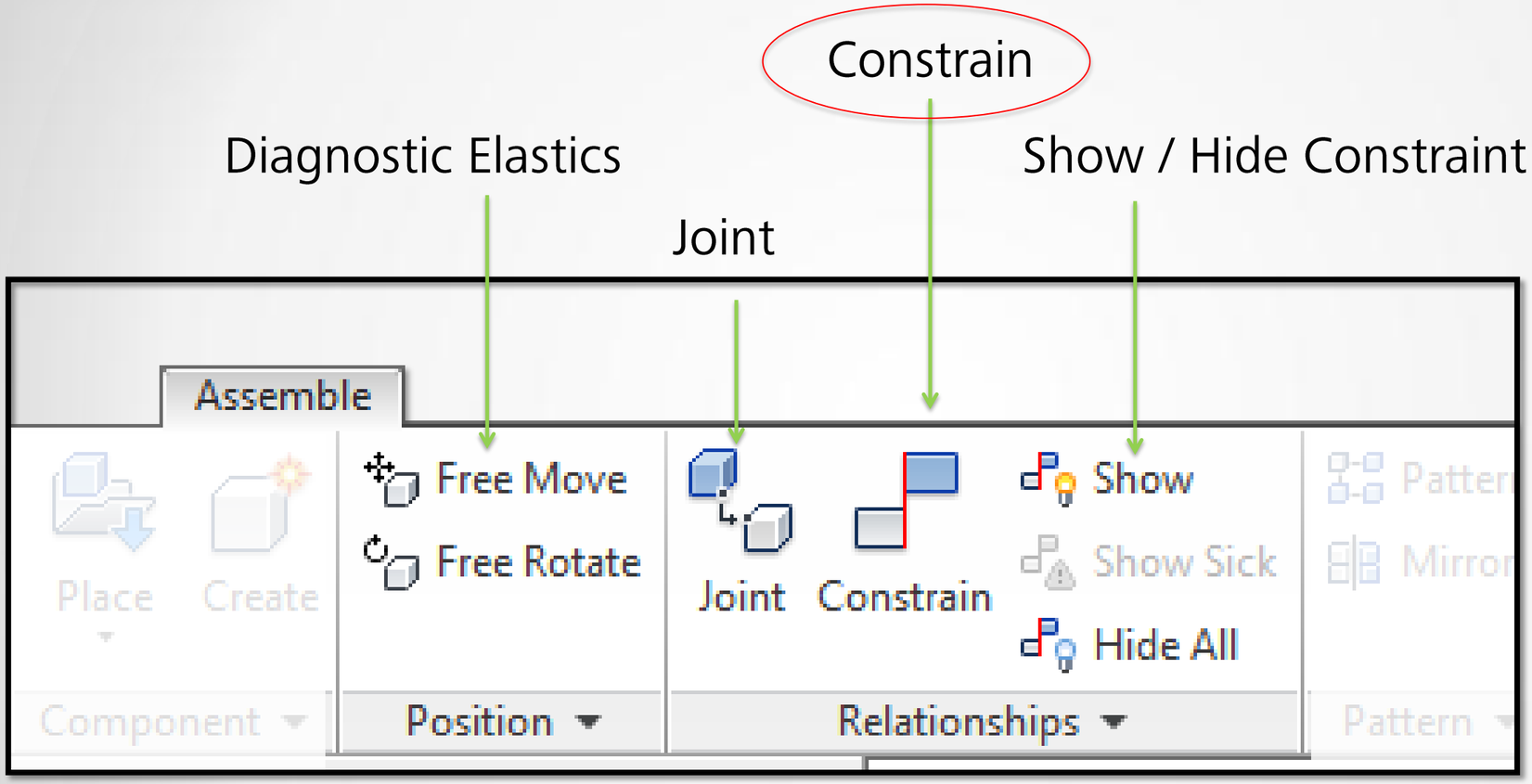
Relationship Tools



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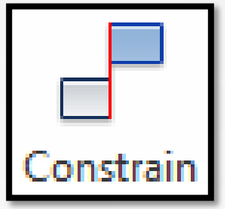
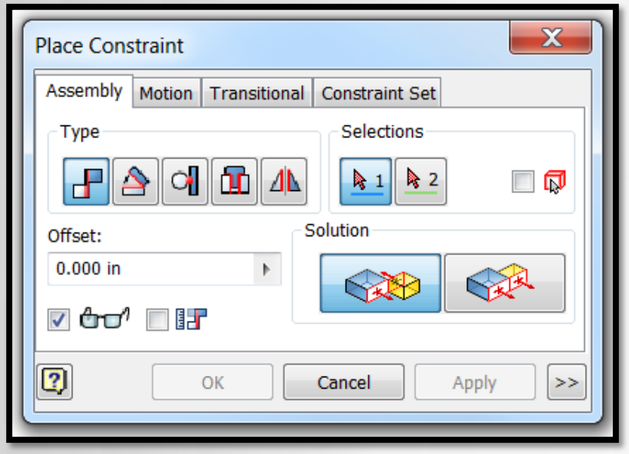
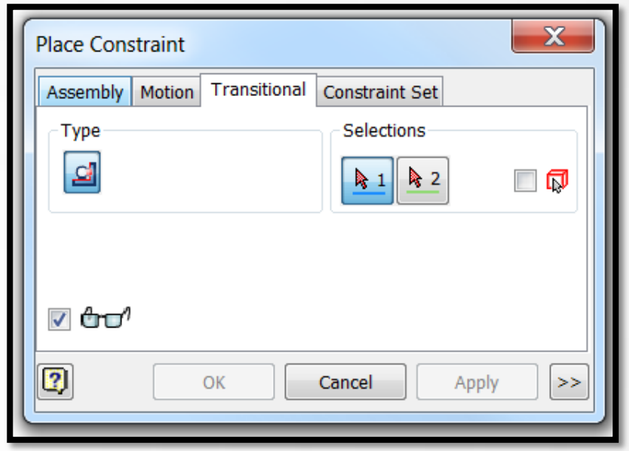
Constraint Dialog

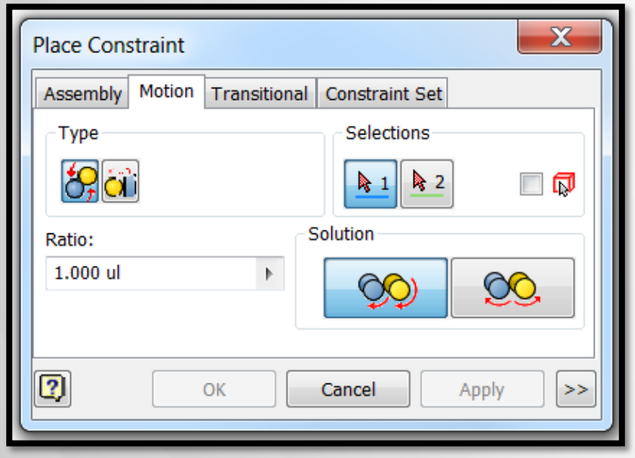




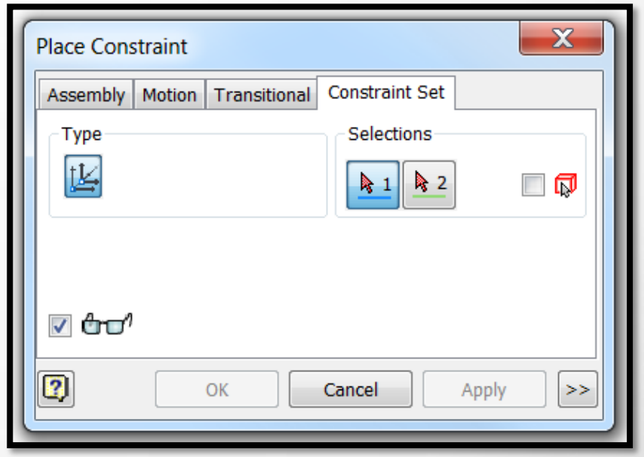
Assembly



Transitional



Motion



Constraint Set

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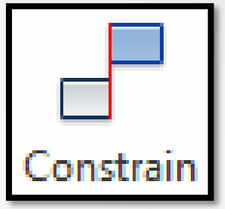
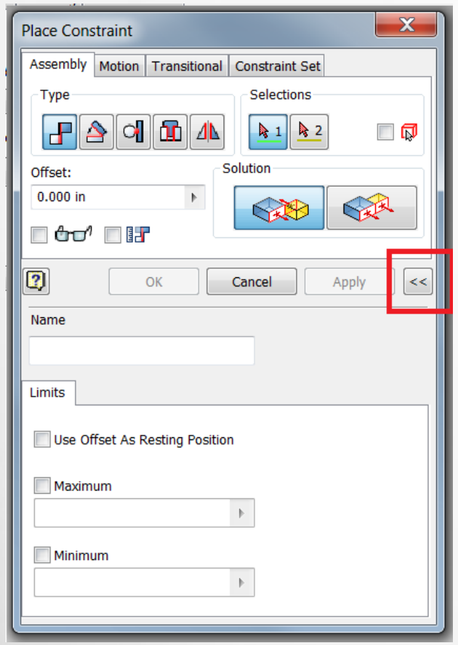
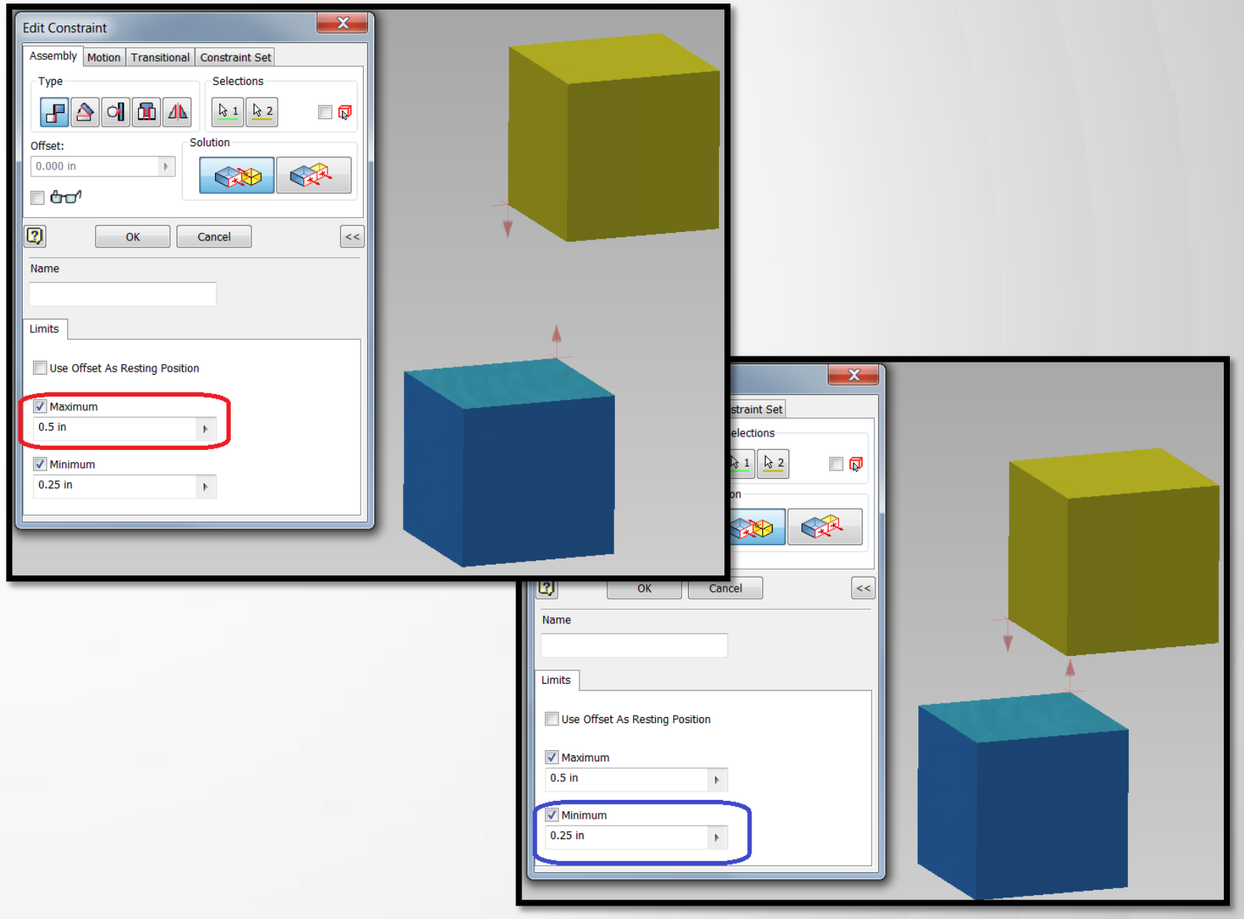
Constraint Dialog – More Button



- Exposes limits
  - Restrict positional movements
    - Linear or Angular





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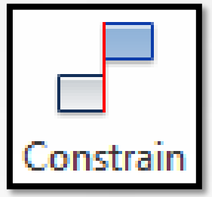
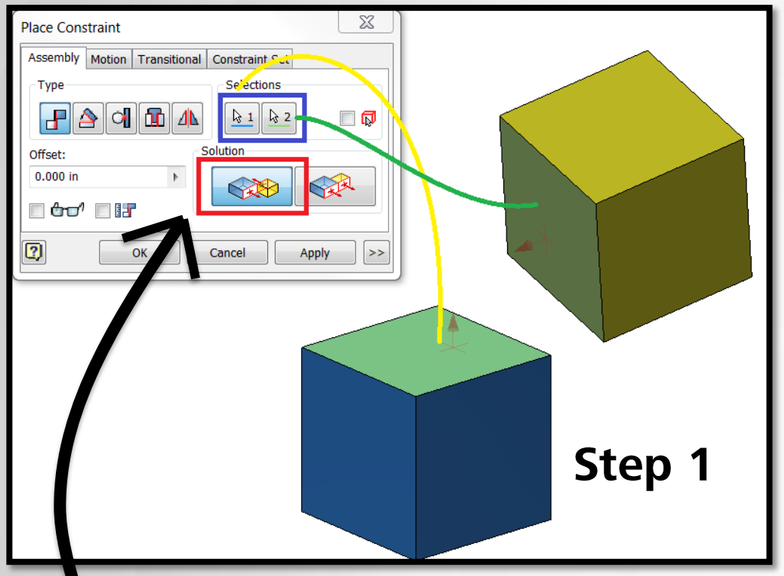
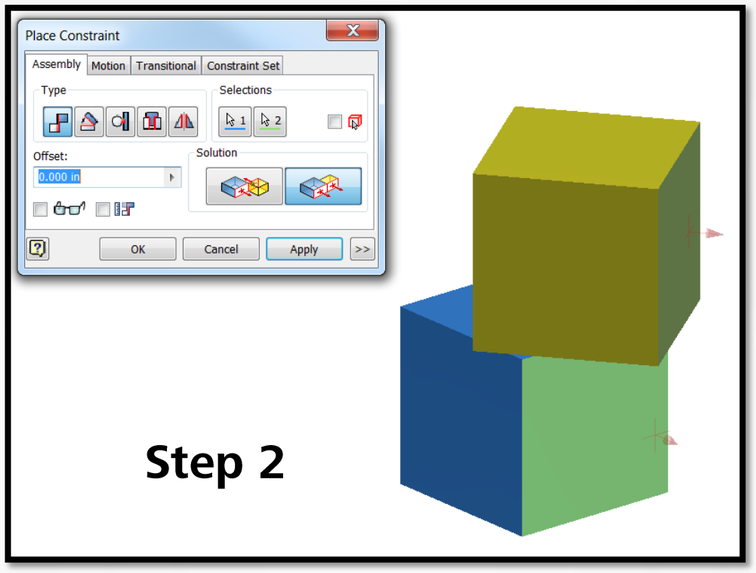
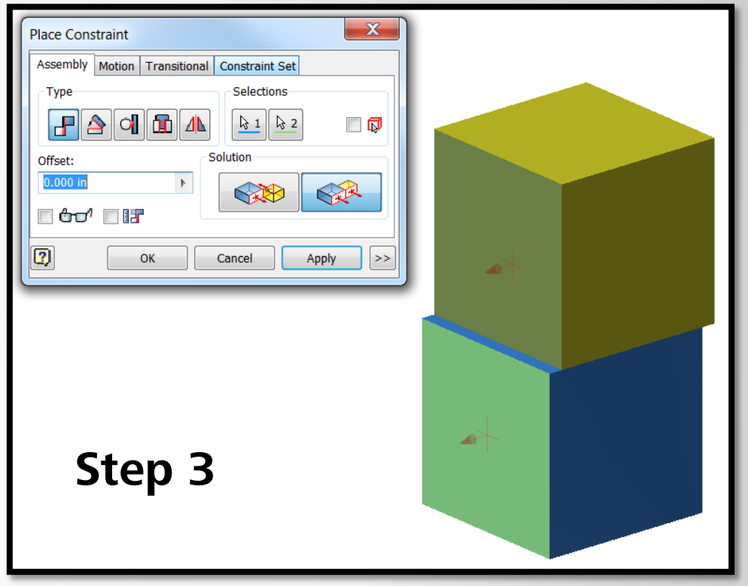
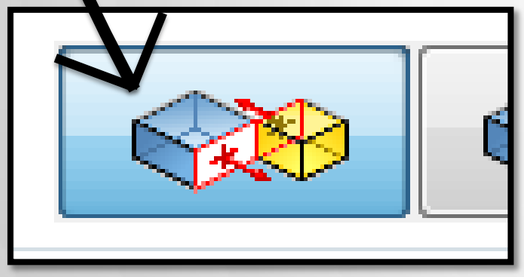
Typical Constraint Workflow

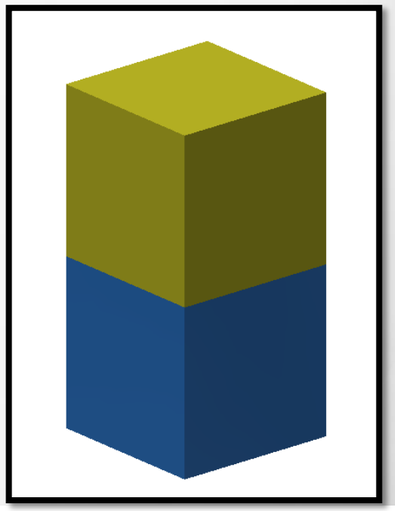












Result

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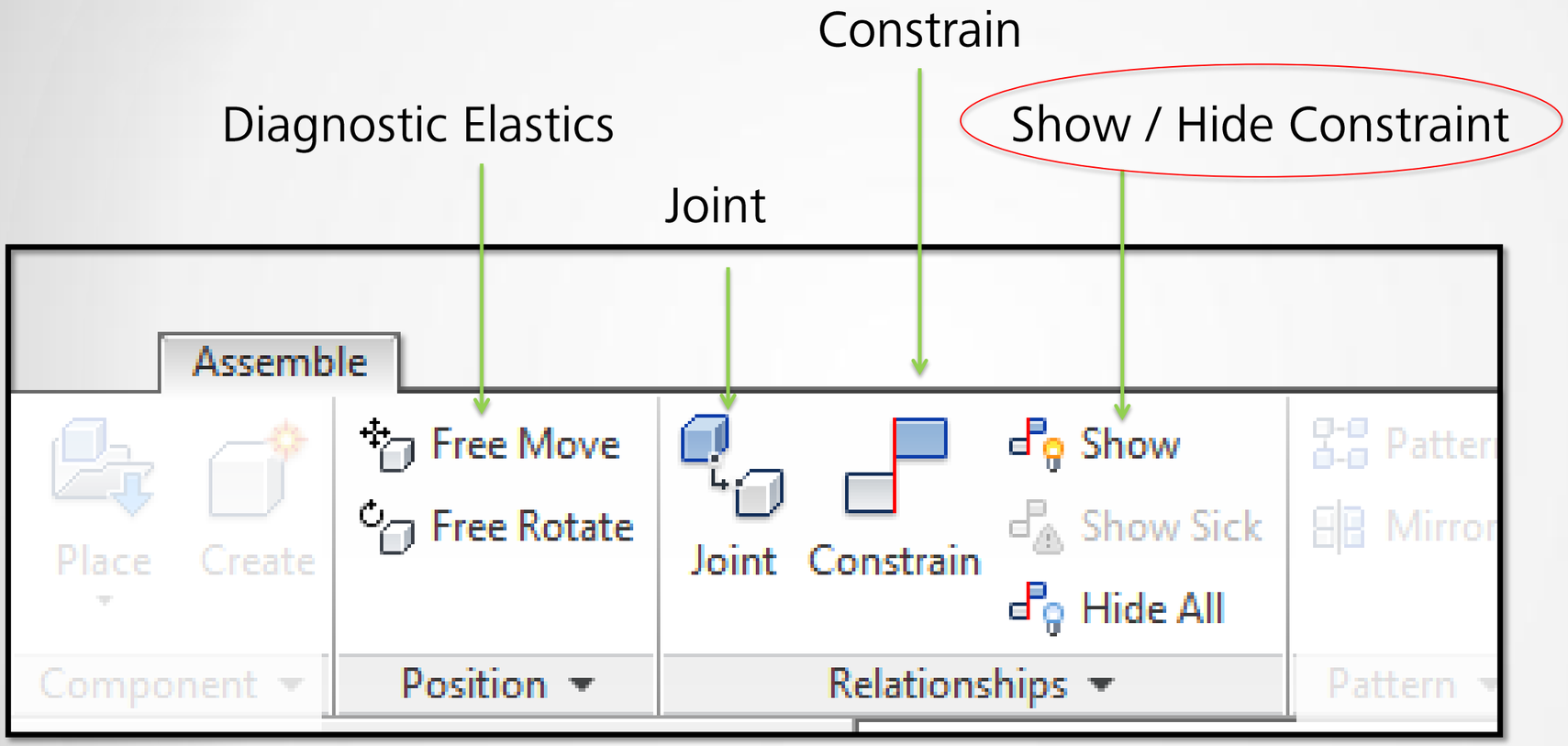
Relationship Tools



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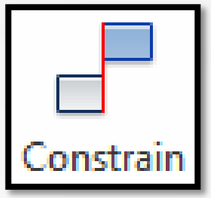
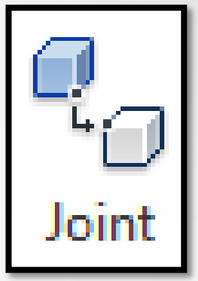
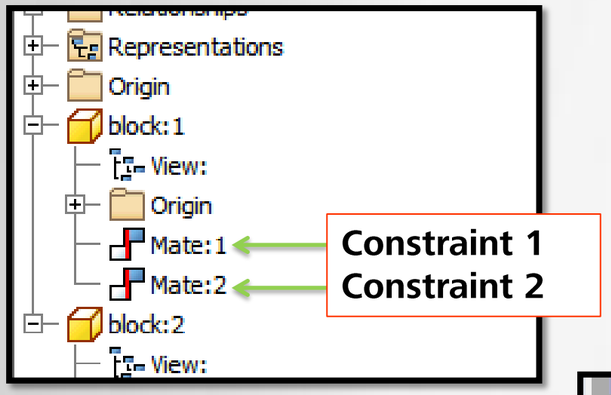
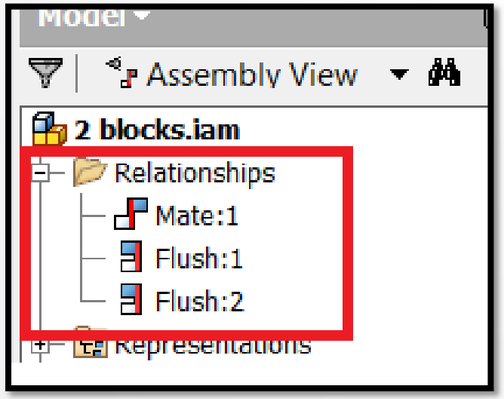
Finding Relationships for Edit



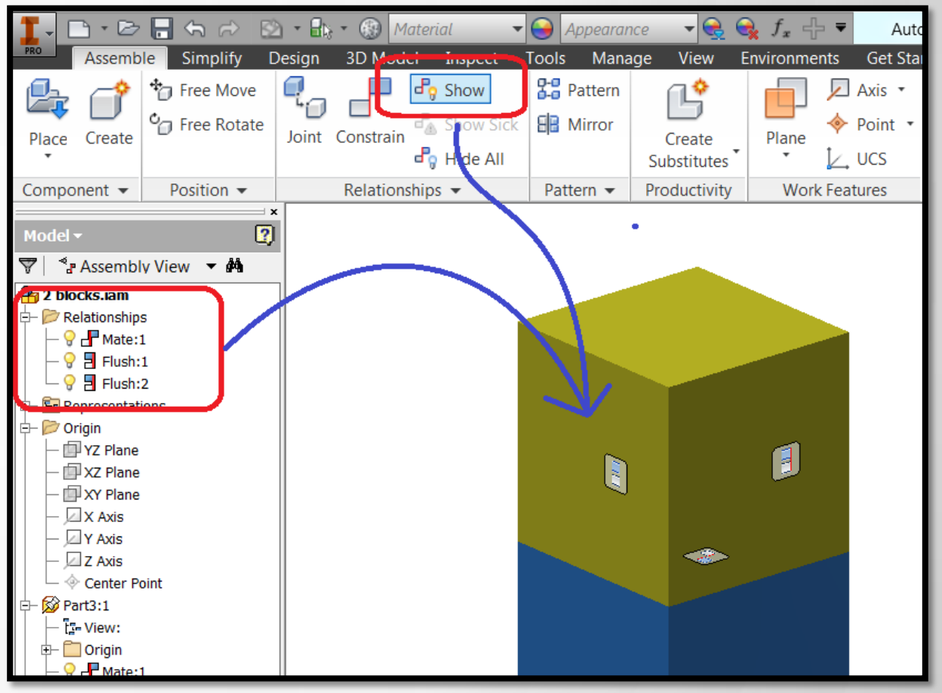


In the Browser





In the Workspace



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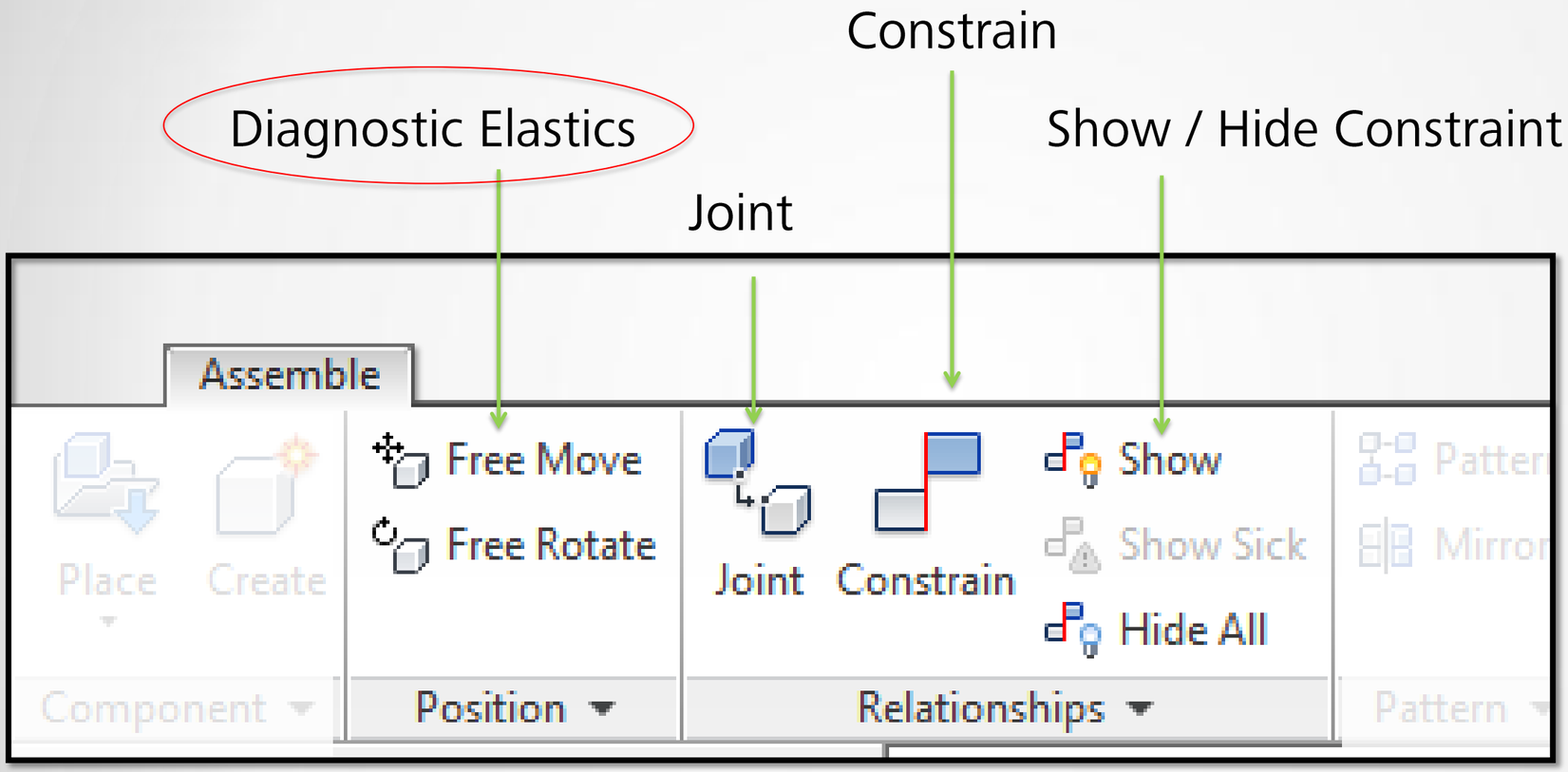
Relationship Tools



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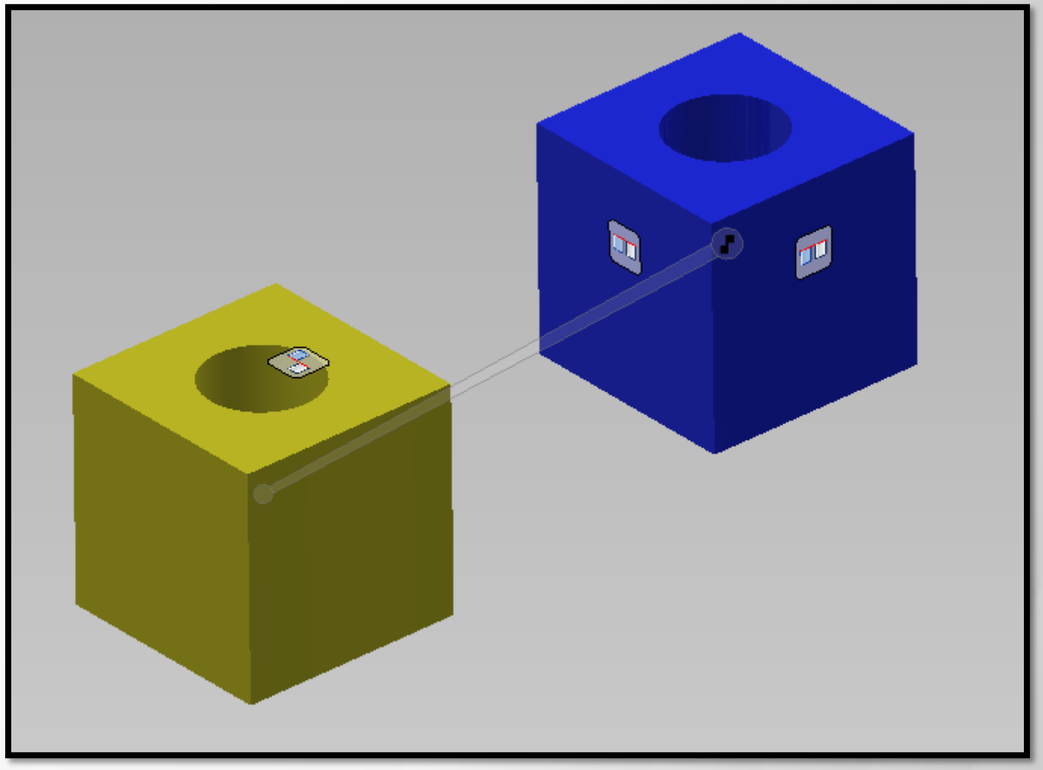
Diagnostic Elastics

- Show you how components are connected
- Modify relationships in canvas
- Use update to get back
- New to Inventor 2014



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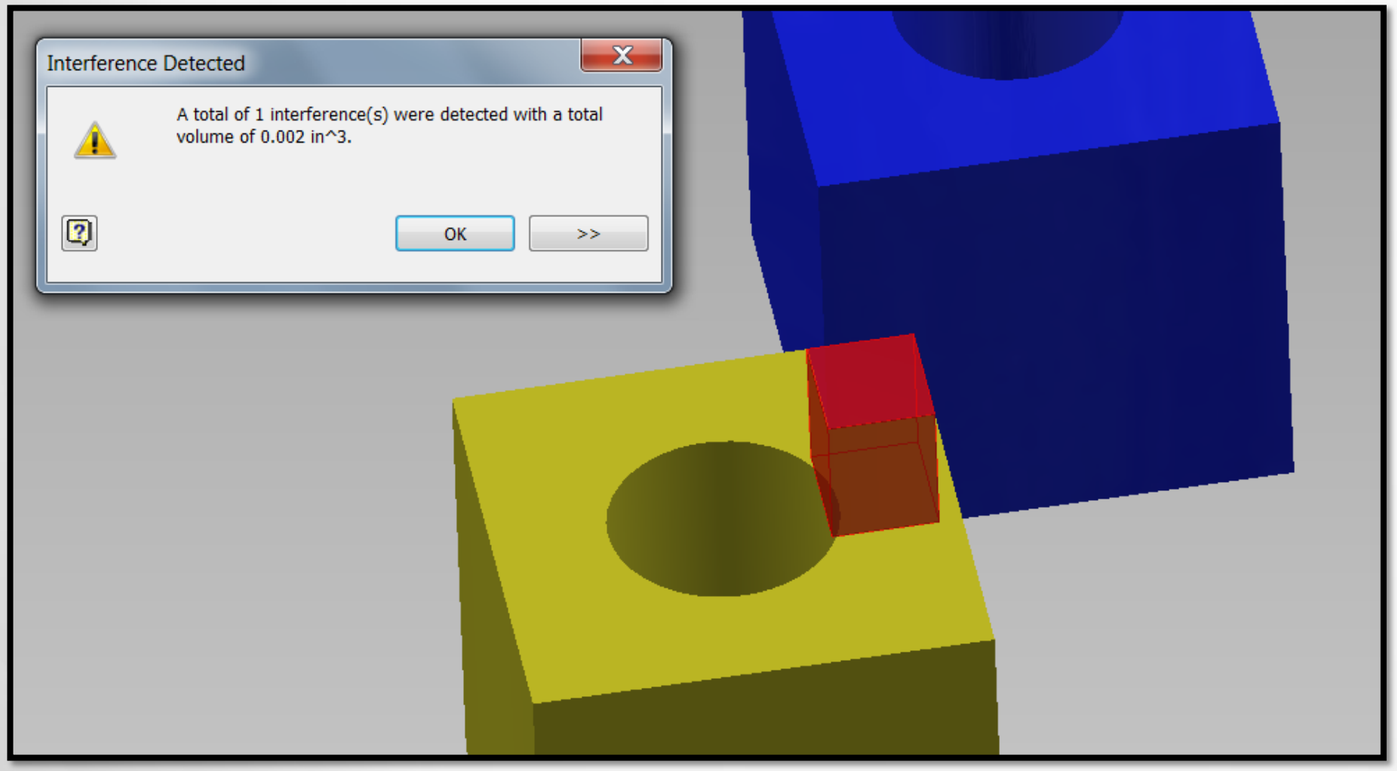
Interference Checking

- Finds components that intersect each other
- Provides visual reference



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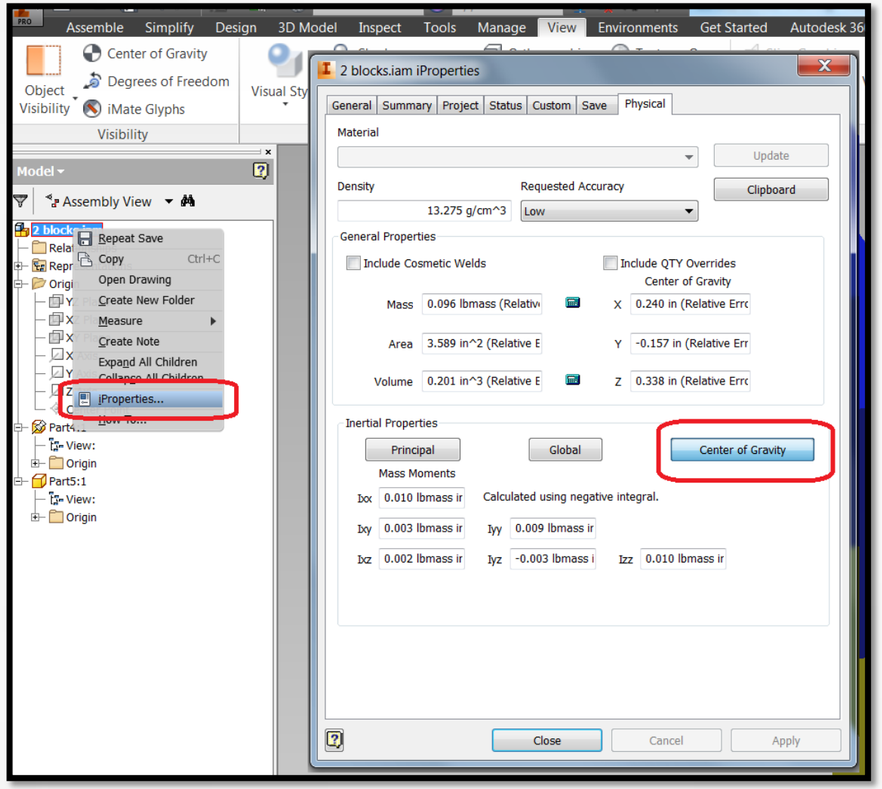
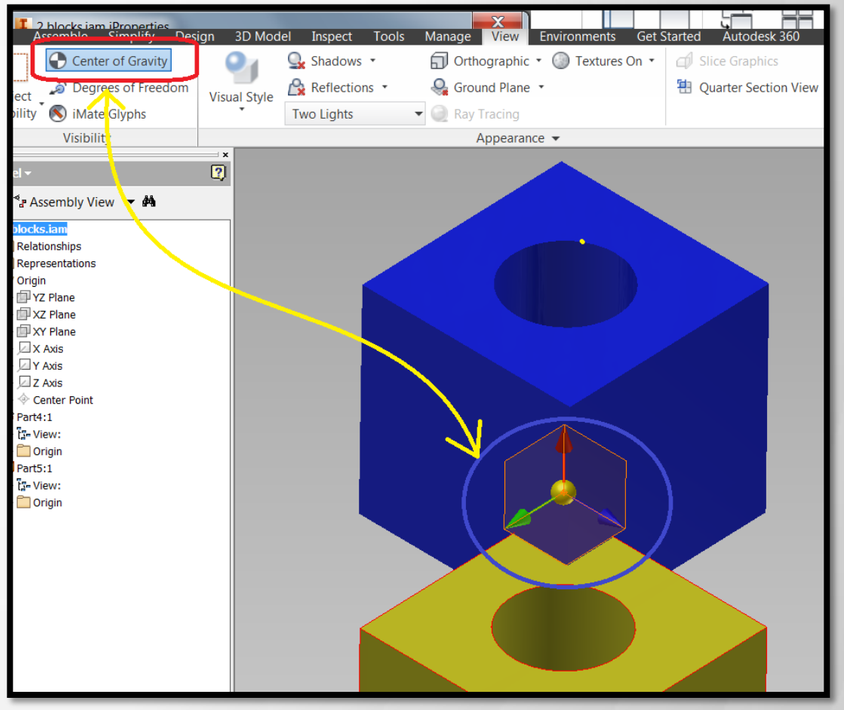
Center of Gravity

- View Tab
- iProperties





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Driving Constraints

- Use to verify desired motion
- Use to verify mechanism status
- Relies on relationships
- Kinematic motion only (no gravity or forces)

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Thank You!

- Questions?

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