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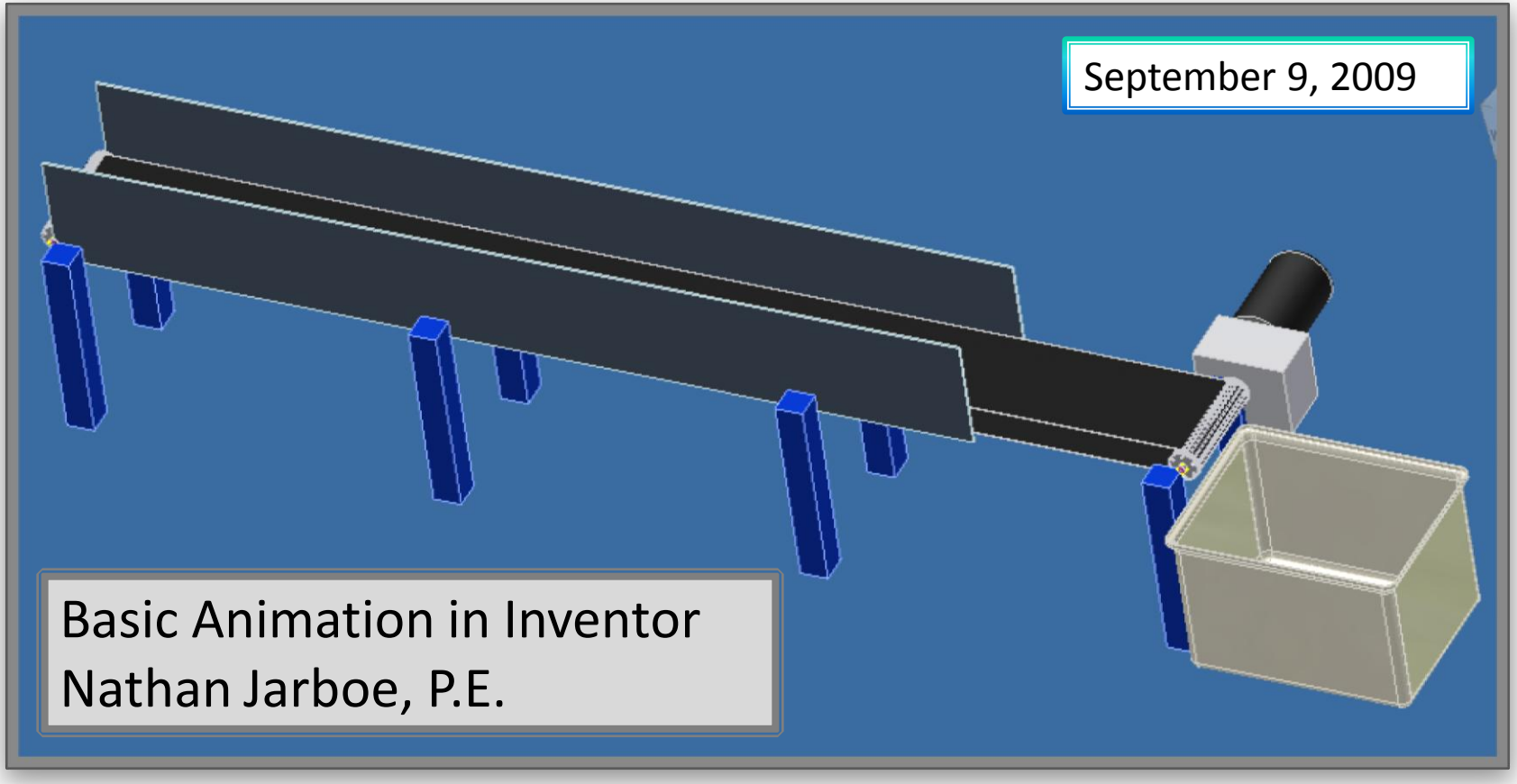
Conveyor Animation in Inventor



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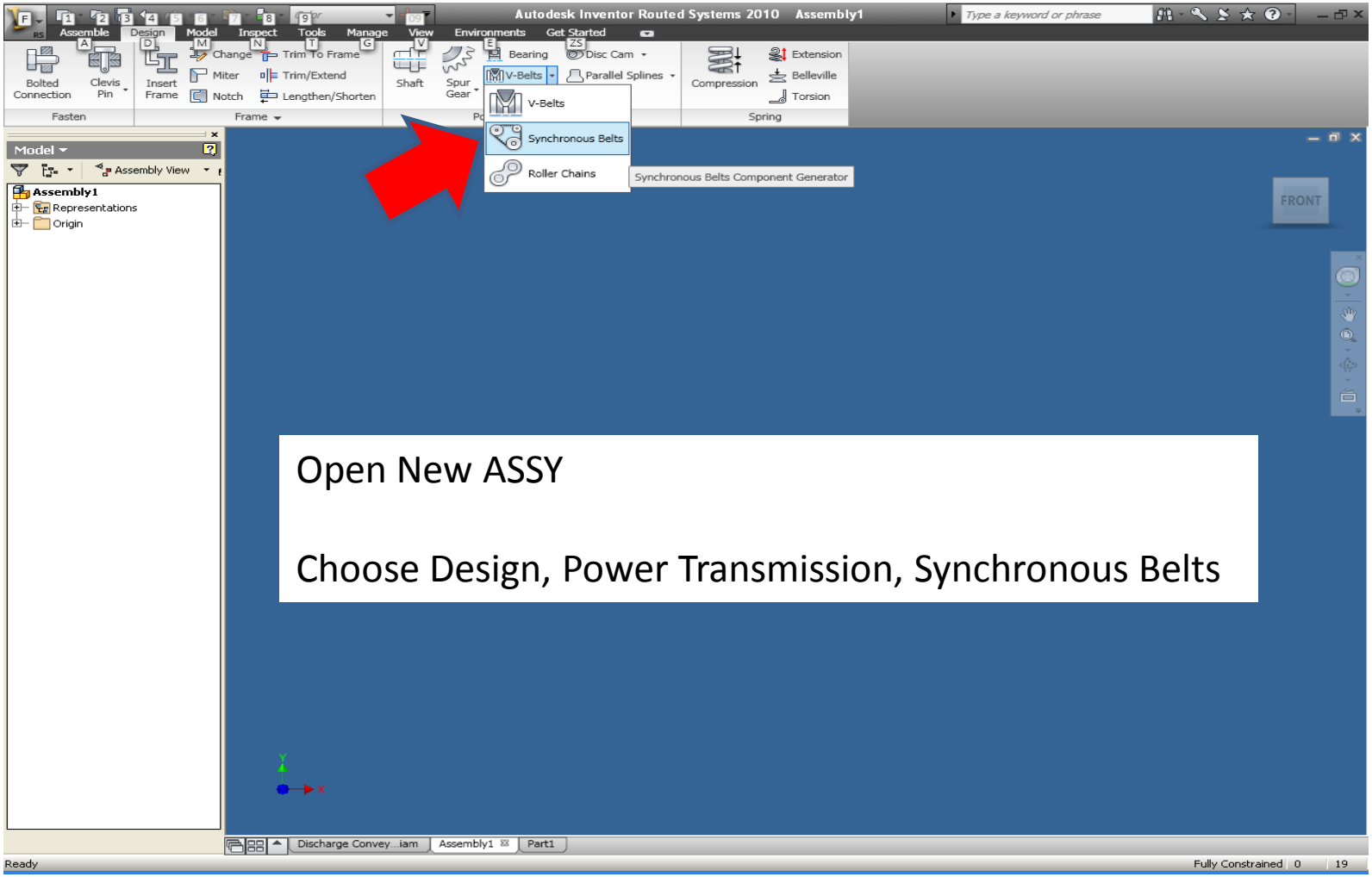

Open New ASSY

Choose Design, Power Transmission, Synchronous Belts

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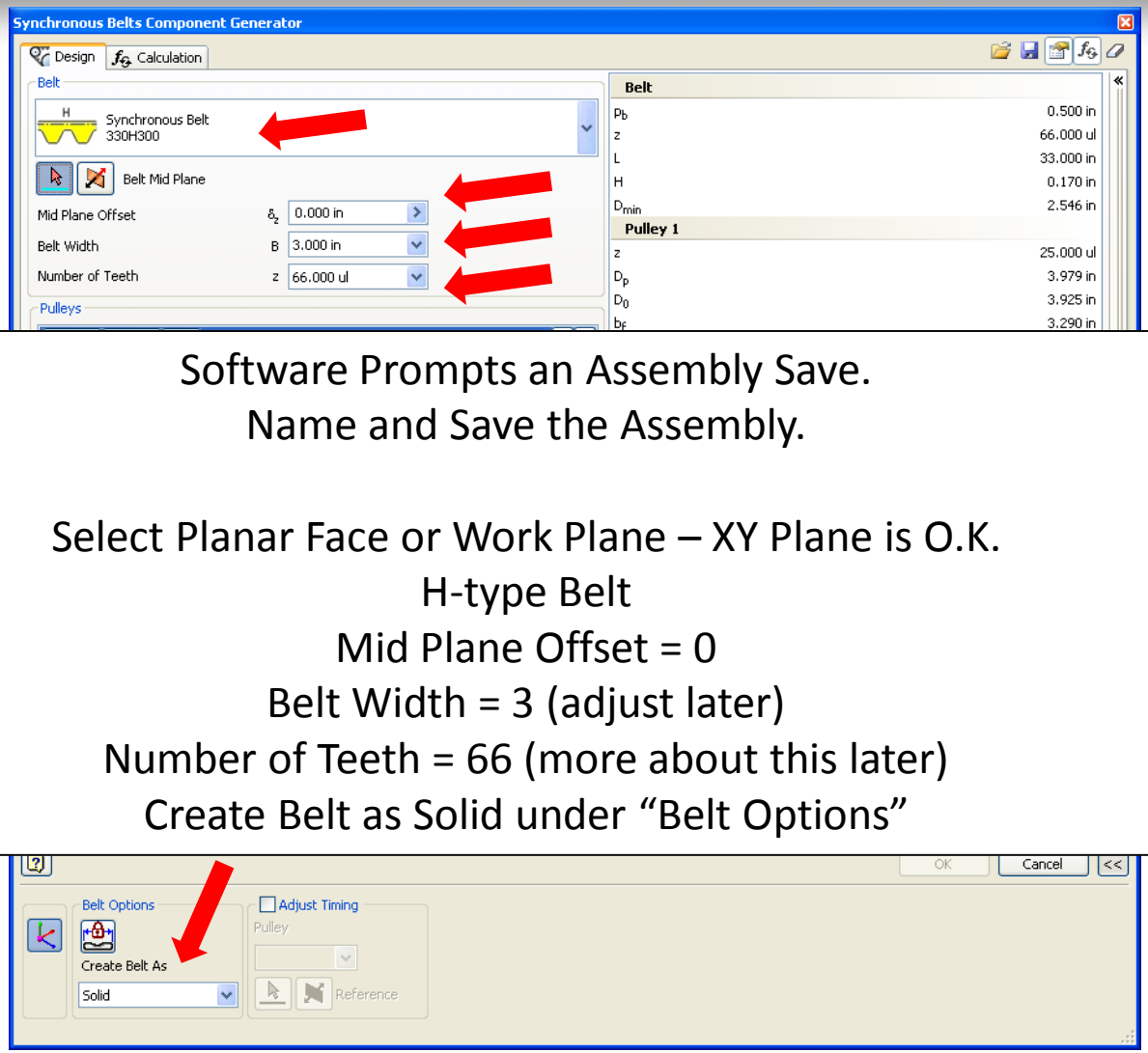

Software Prompts an Assembly Save.
Name and Save the Assembly.

Select Planar Face or Work Plane – XY Plane is O.K.
H-type Belt
Mid Plane Offset = 0
Belt Width = 3 (adjust later)
Number of Teeth = 66 (more about this later)
Create Belt as Solid under “Belt Options”

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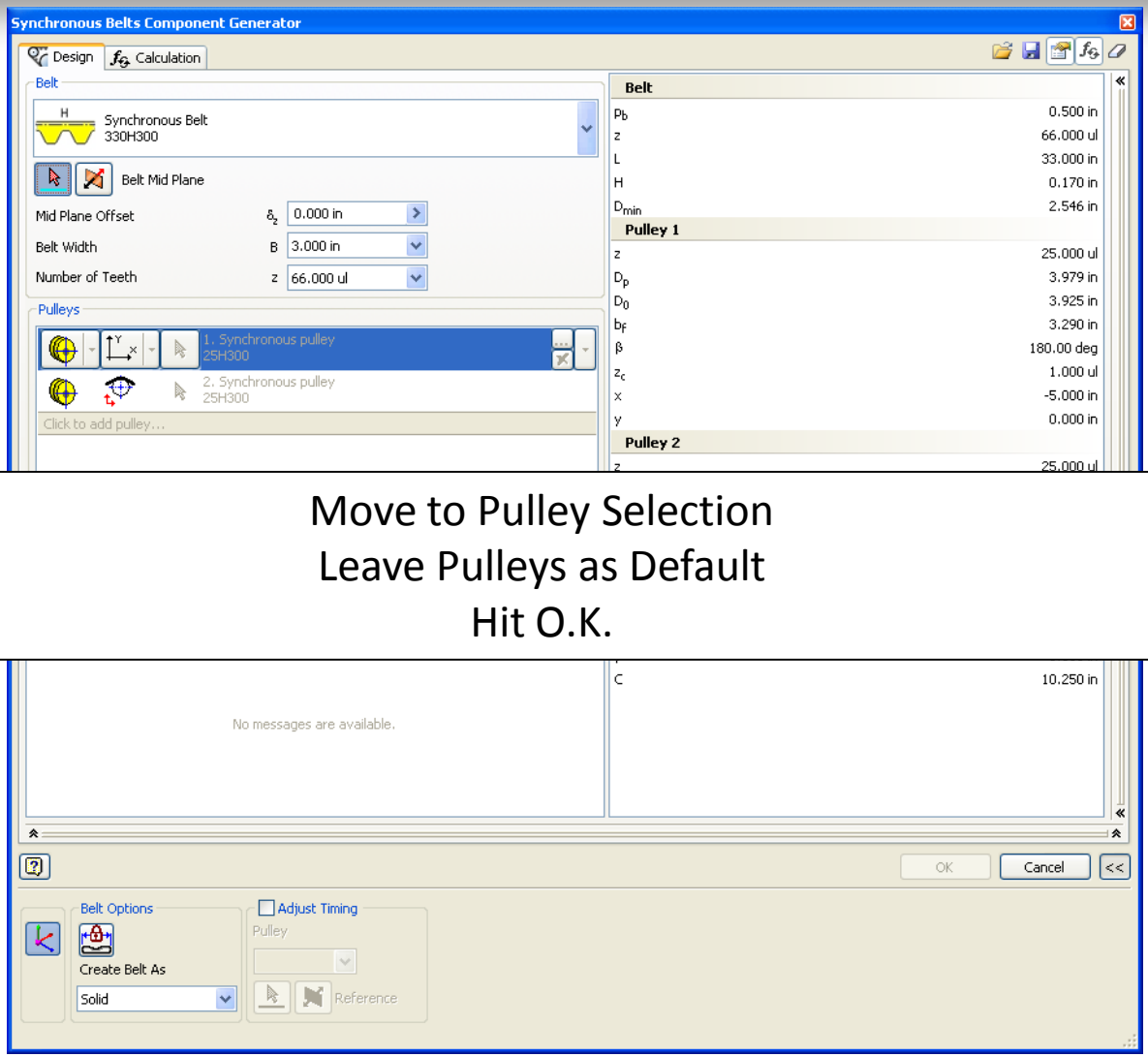

Move to Pulley Selection
Leave Pulleys as Default
Hit O.K.

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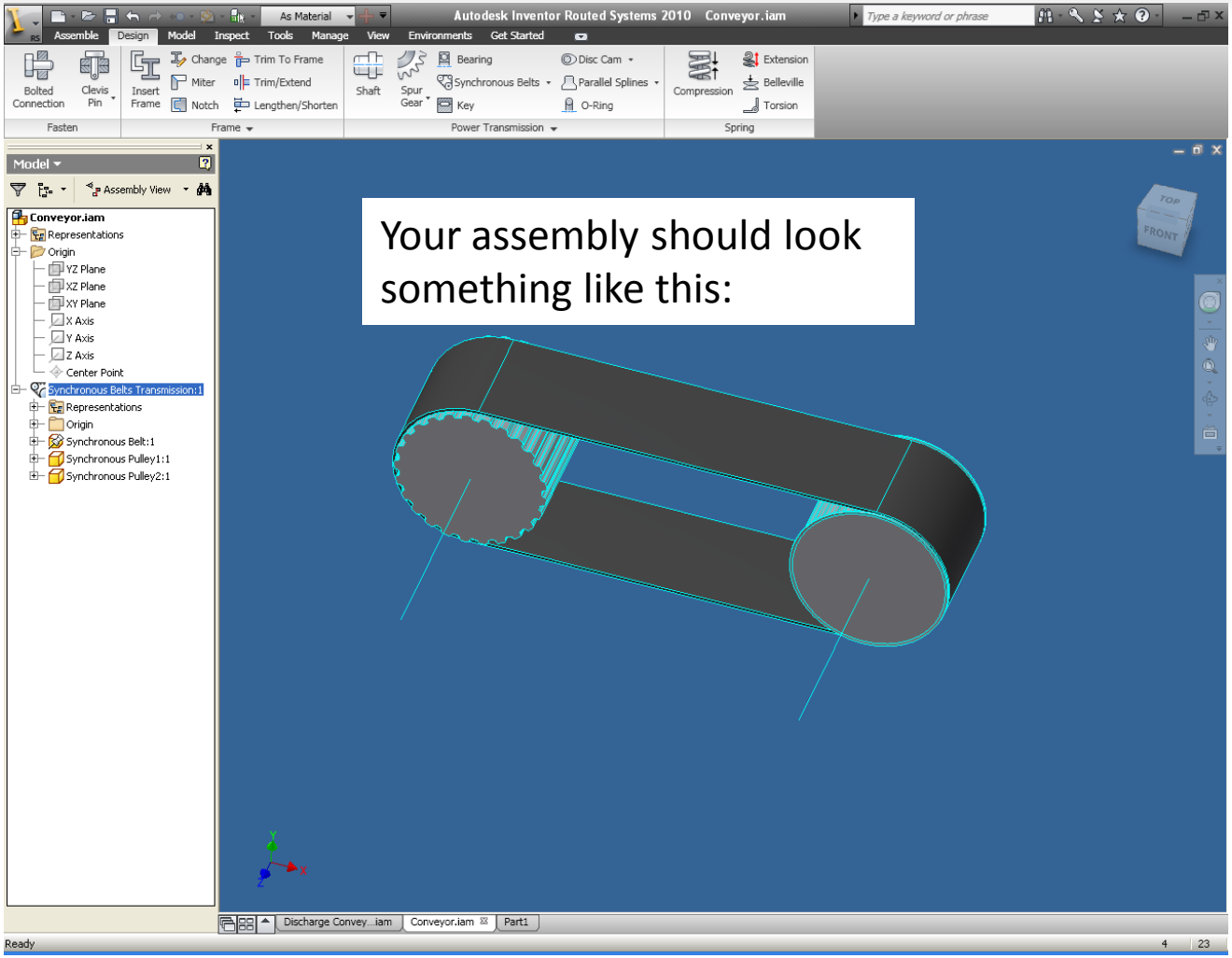

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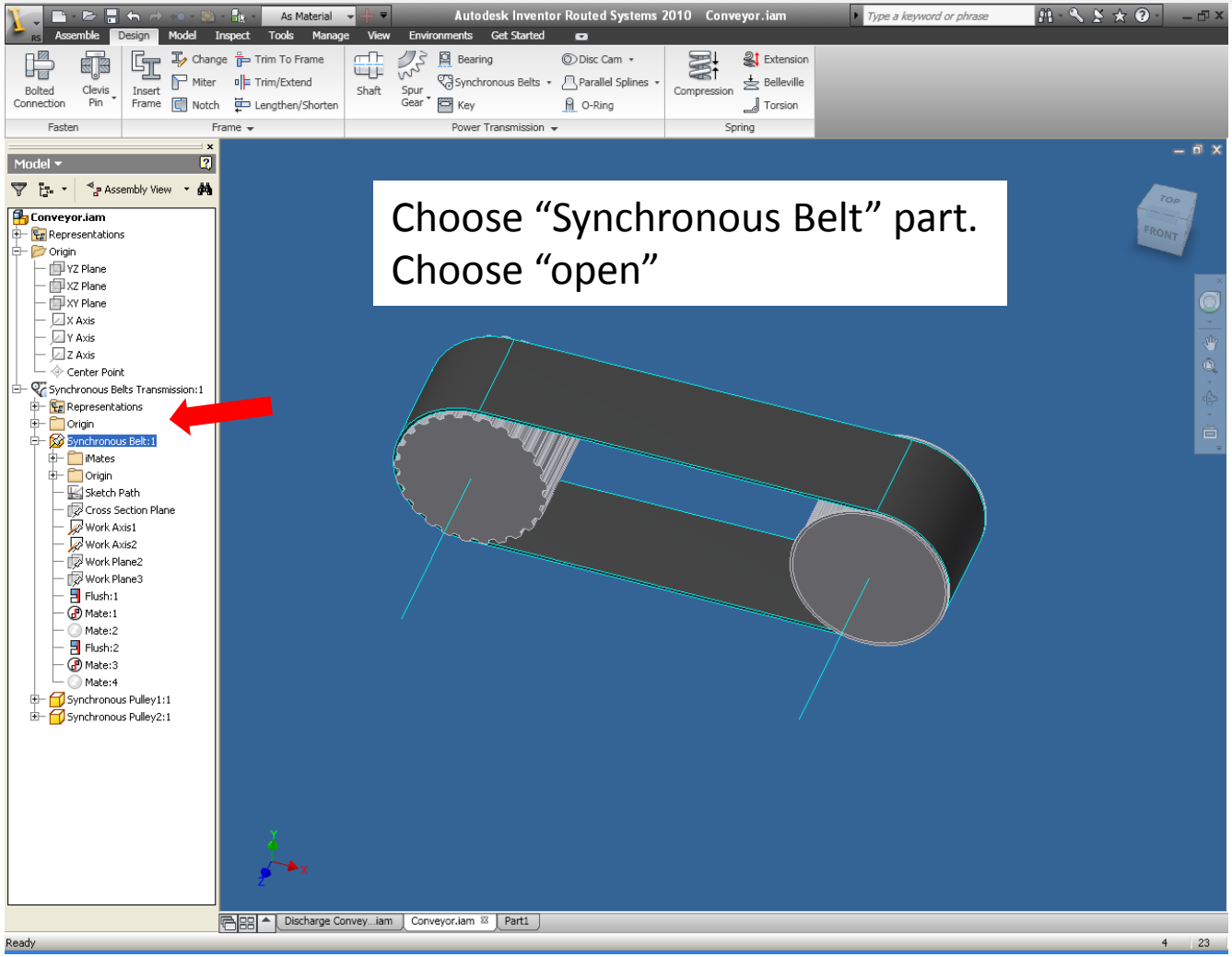

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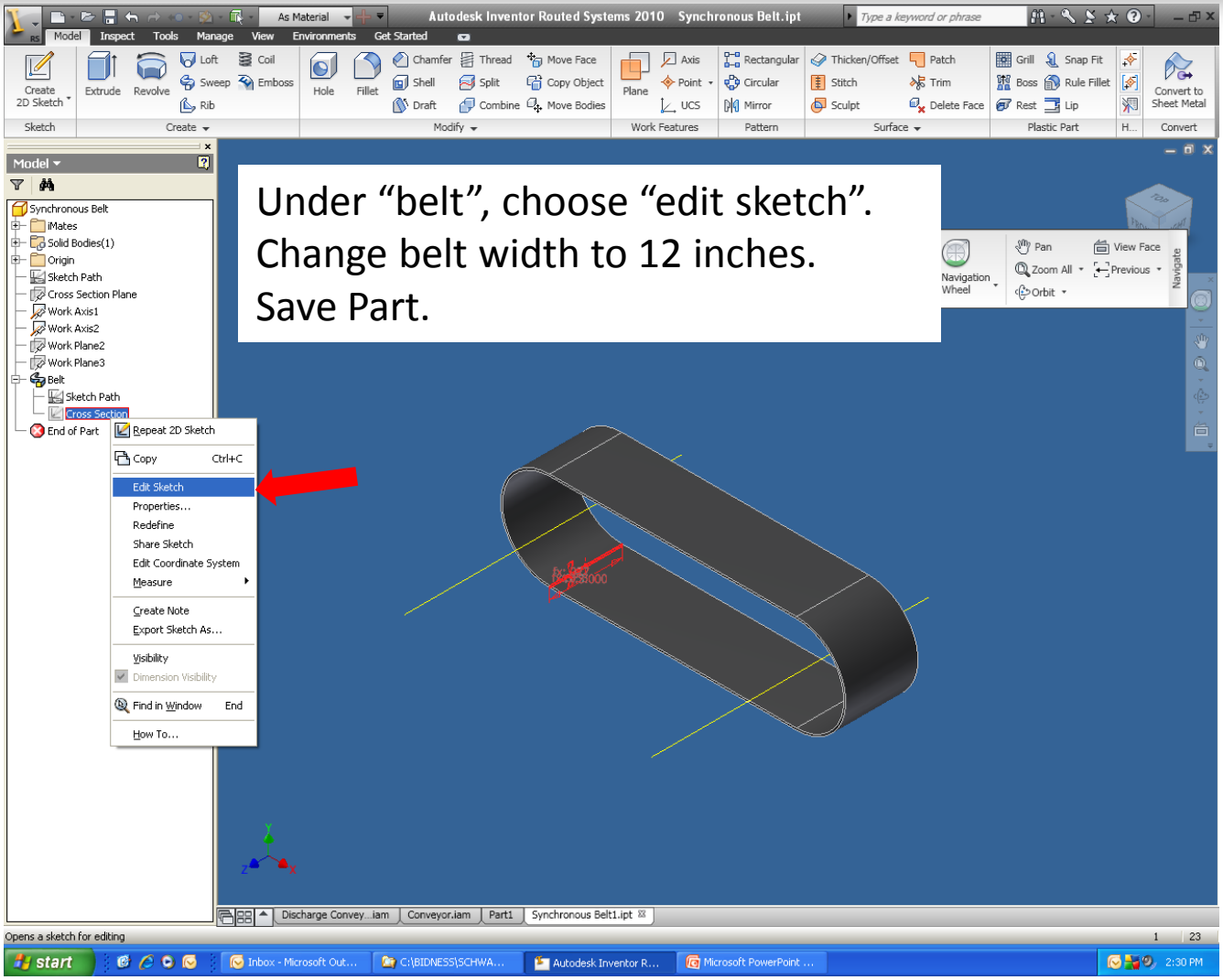

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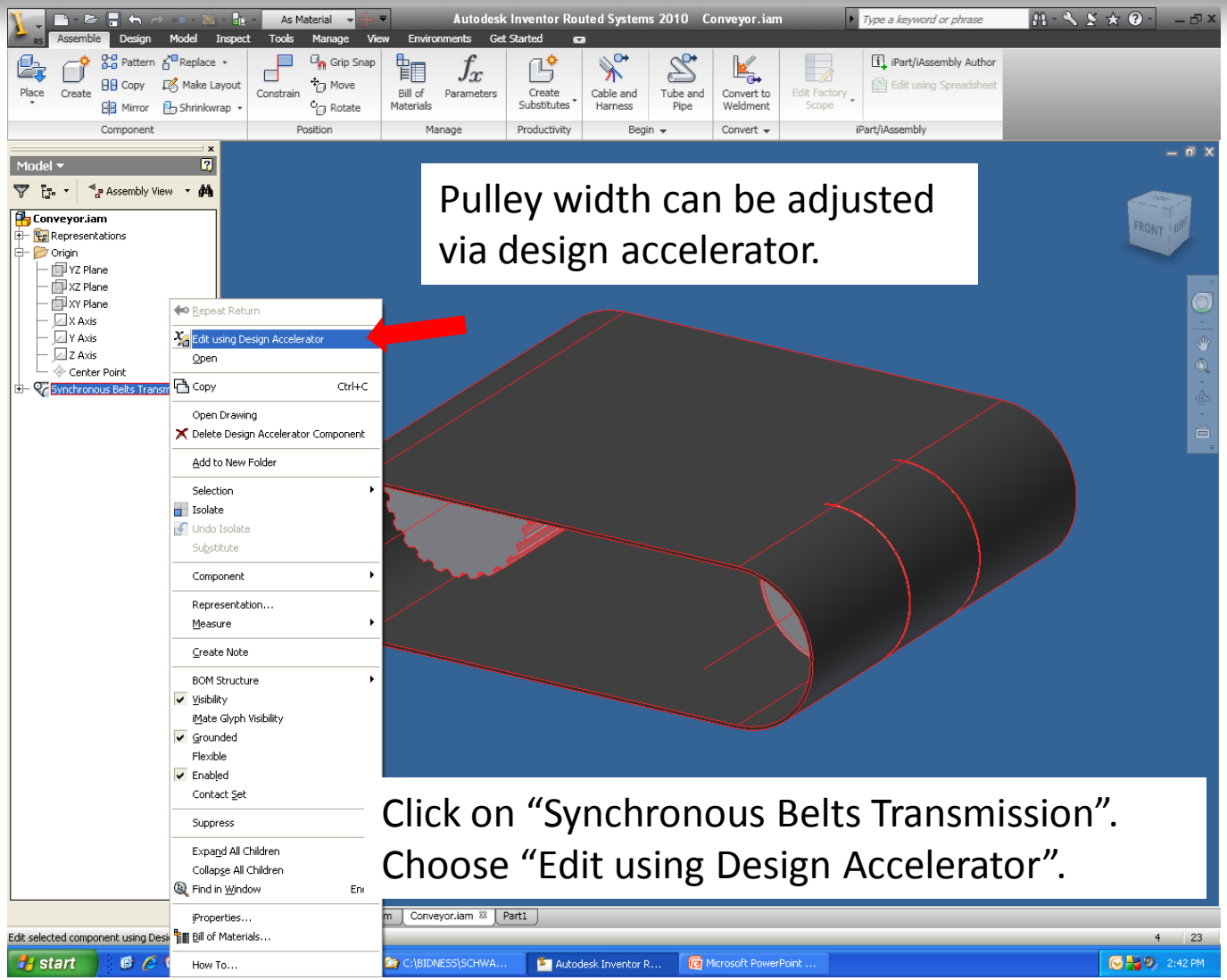

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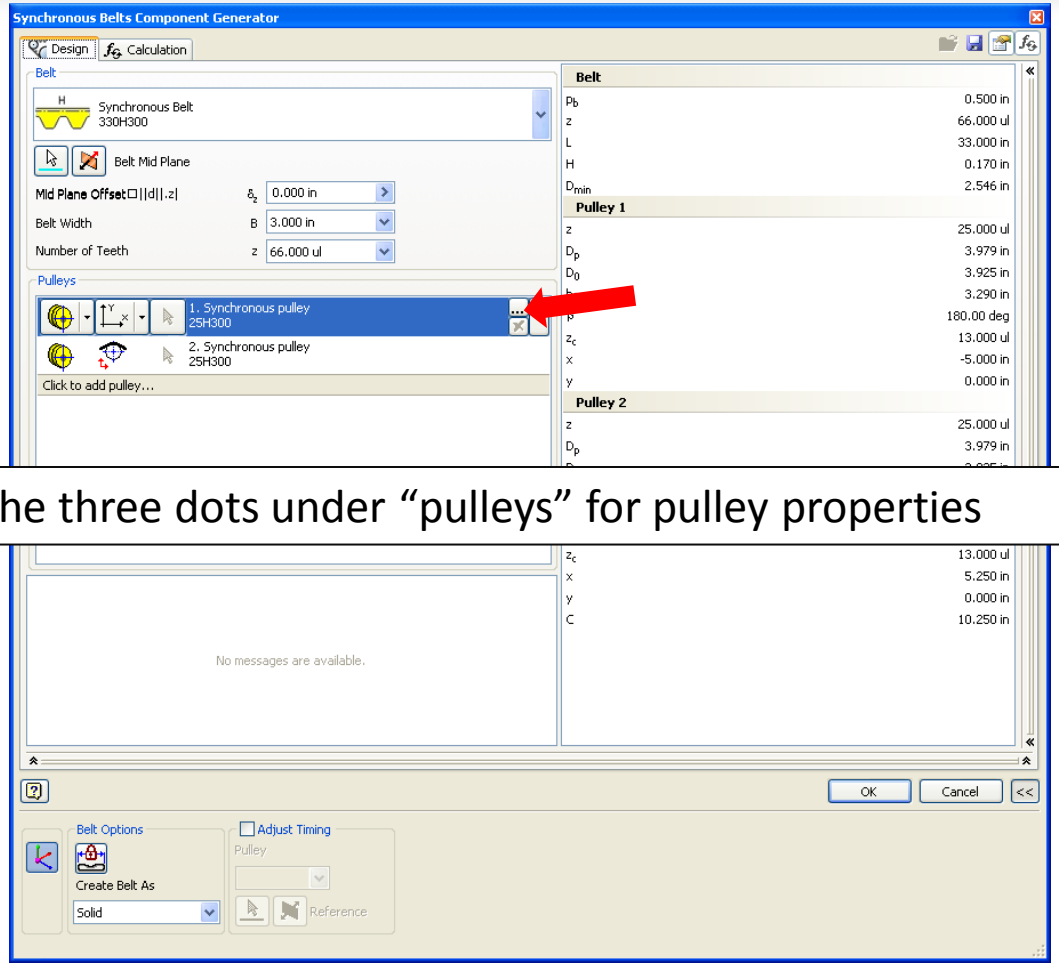

Click on the three dots under “pulleys” for pulley properties

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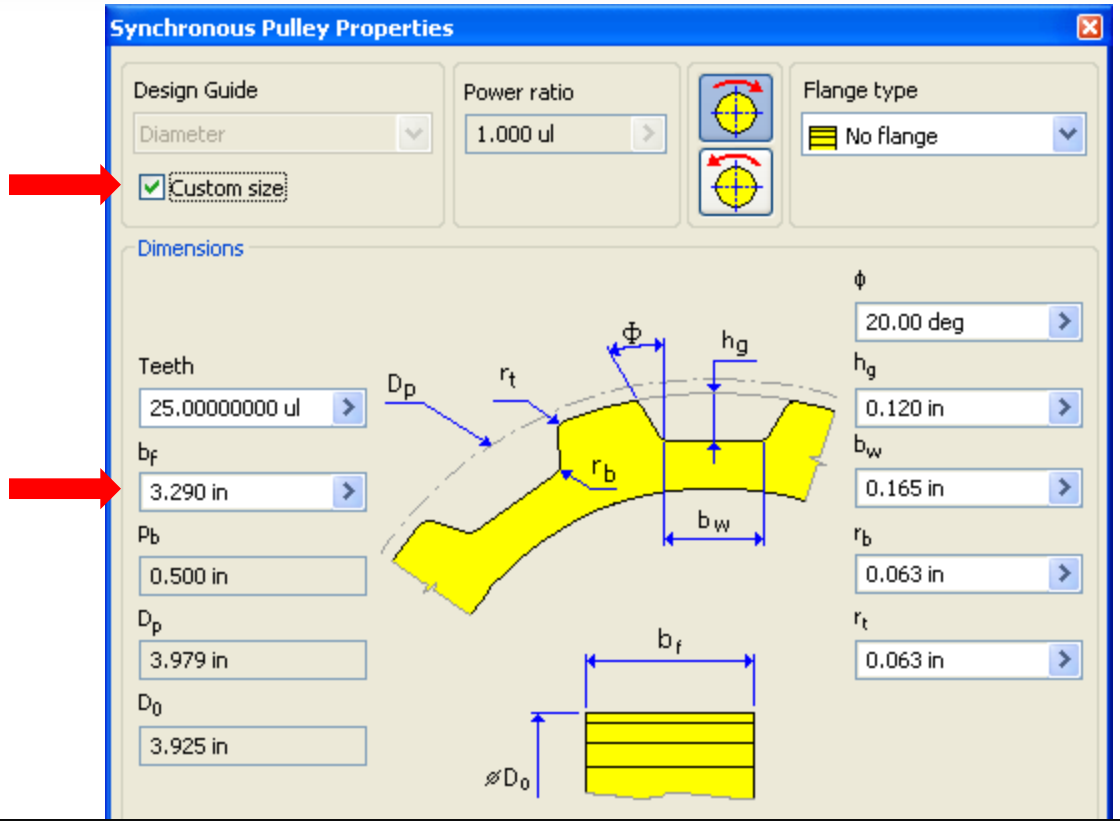

Choose “custom size” at the top left.
Change width of pulleys to 14 inches. Do this for both pulleys.

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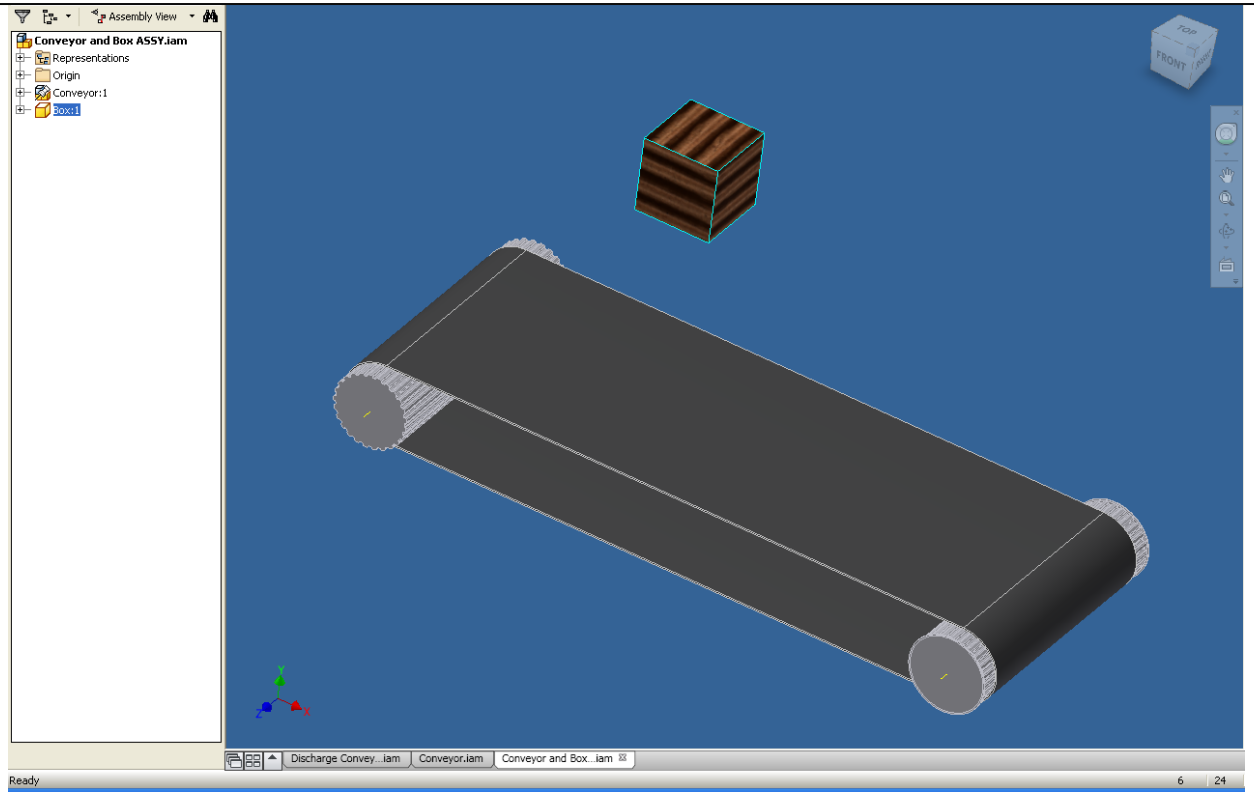
Create another assembly file for conveyor and box.
Create another part file, a box to be used on the “conveyor”.
Lengthen pulley by editing the assembly in Component Generator.
Increase belt “number of teeth”, as shown on slide 3, to 150.



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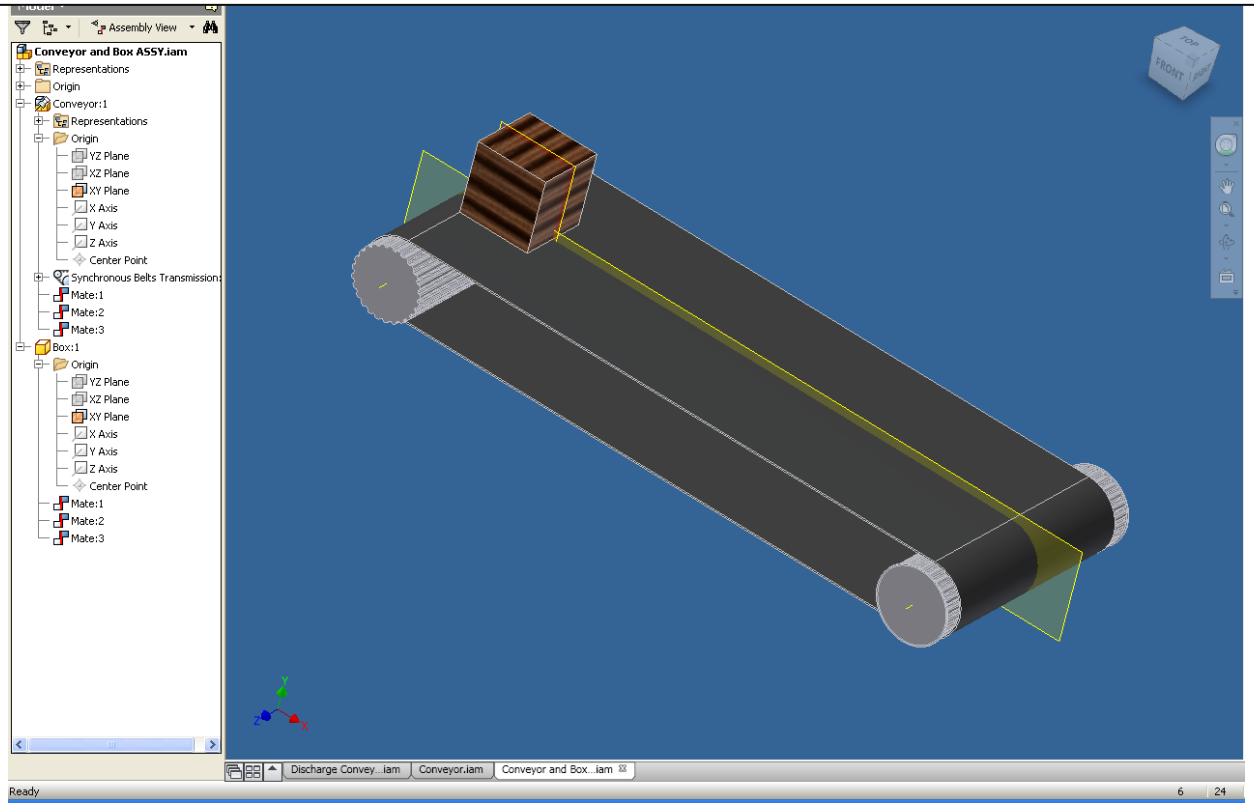
Constrain box center plane (xy) to conveyor center plane (xy).
Constrain box bottom to conveyor top.
Constrain box toward one end of conveyor.



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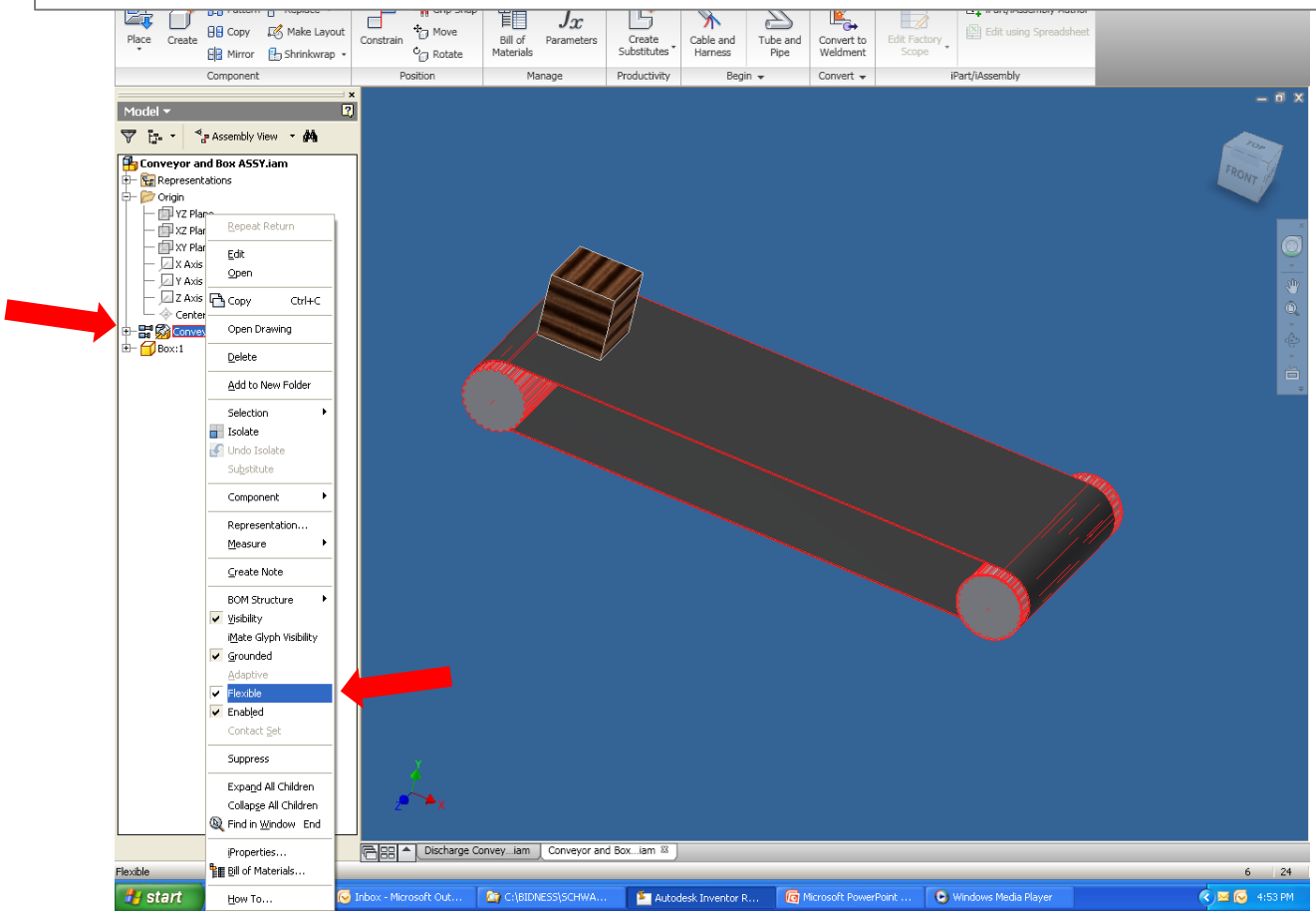
Choose Pulley and Belt Assembly in model viewer, right click, and choose “flexible” to allow pulleys to rotate during animation.



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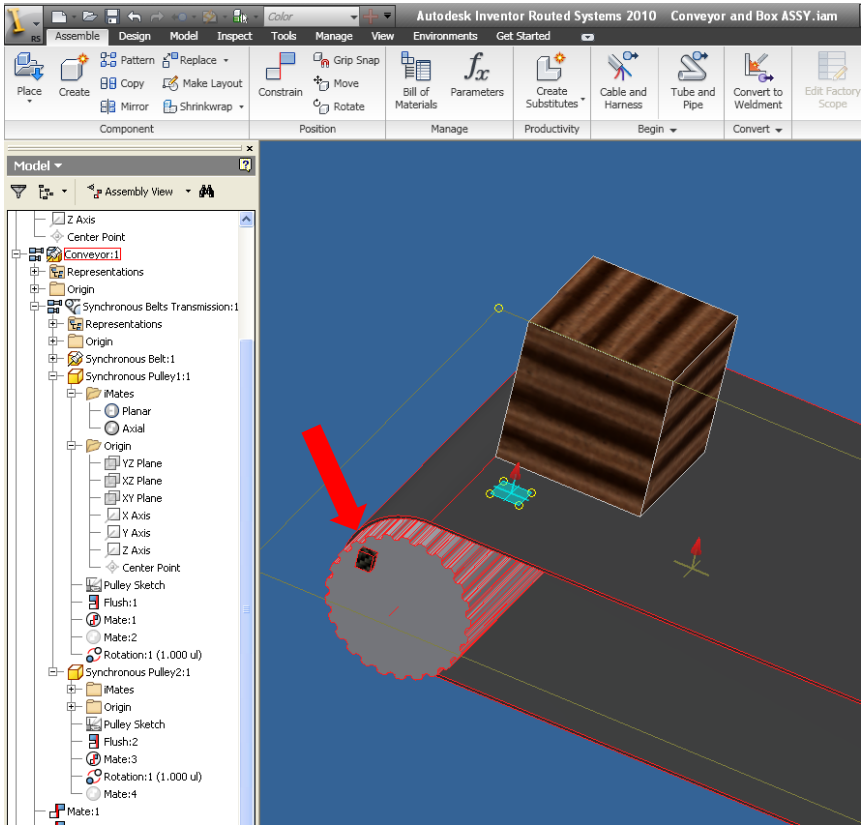
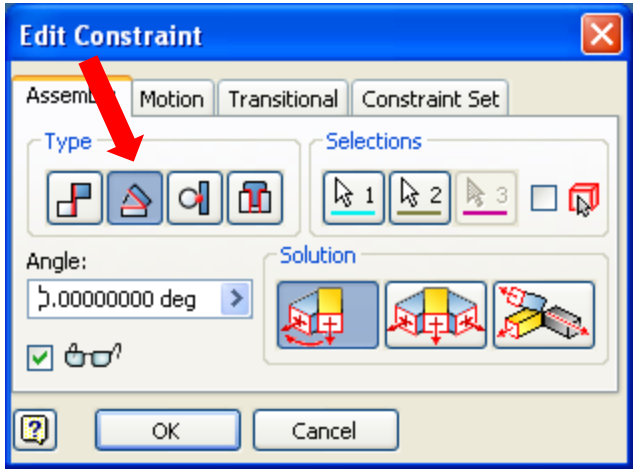
Create constraint on pulley to manipulate during later animation.
Constrain XZ plane of pulley to XZ plane of overall assembly, angle = 0 Deg.
Create contrast feature on pulley to more easily visualize rotation.





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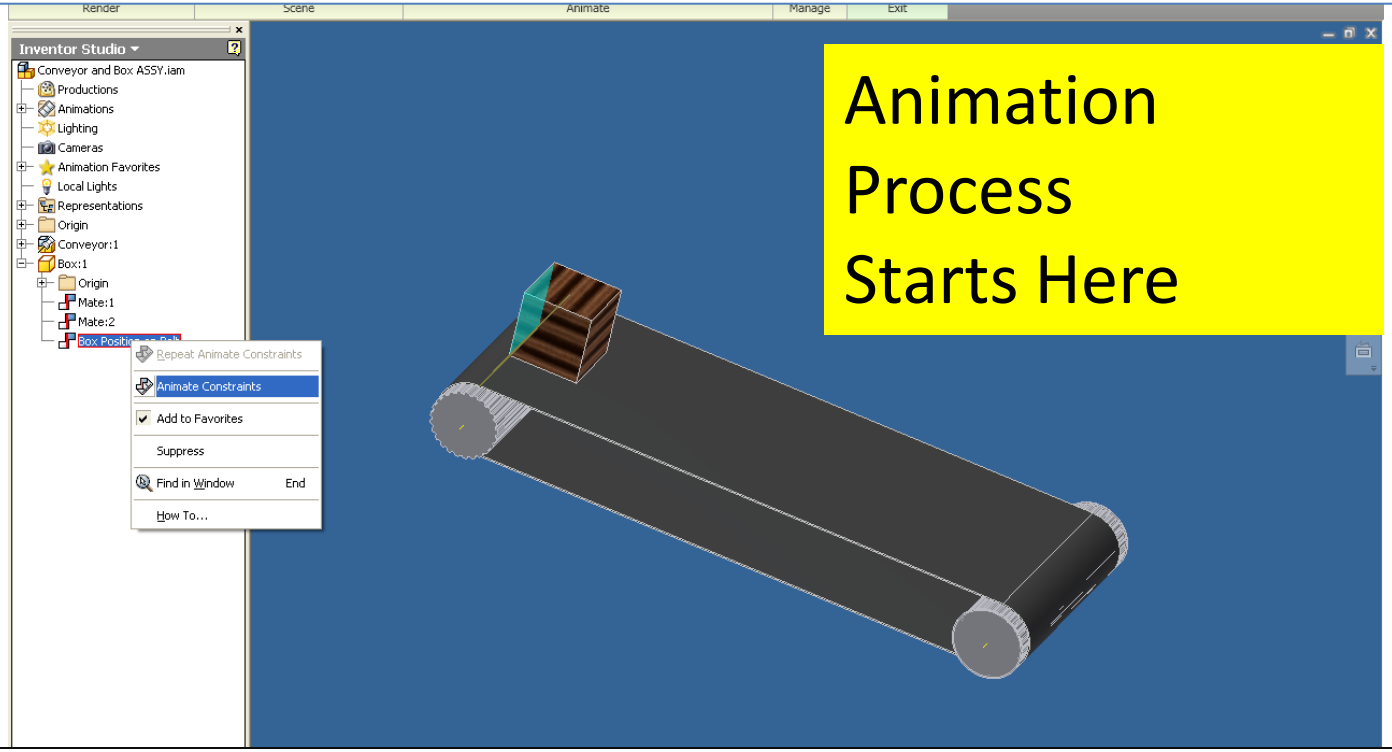
Animate Parts and make a video:
Go to Environments, Inventor Studio.



Right click the constraint holding the box toward one end of the conveyor.
Choose “Animate Constraints”.

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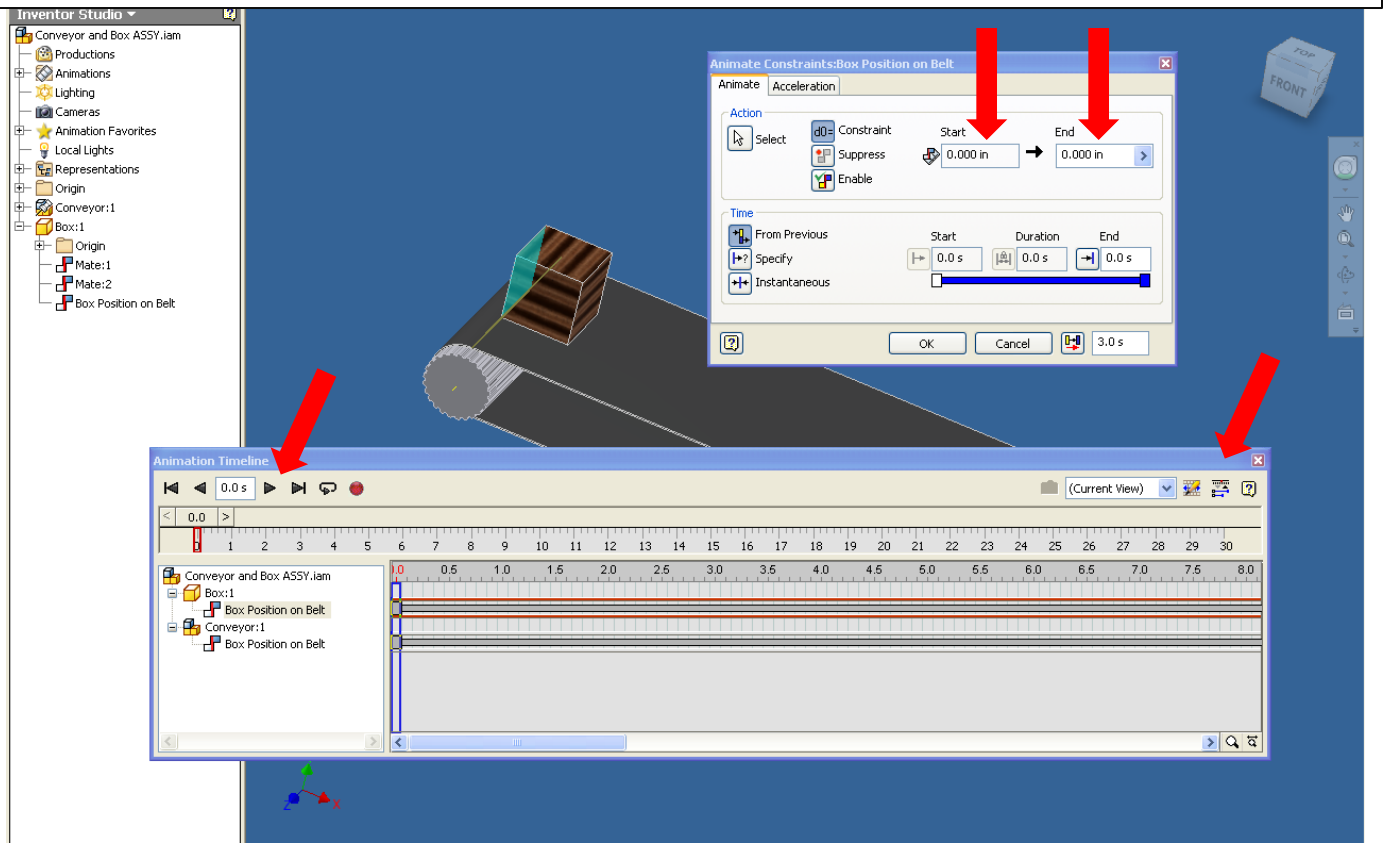
Choose a start and end distance for box travel: 18 inches.
Choose a start and end time for box travel: 0 to 5 seconds.
Use play button to preview animation. Expand Action Editor.
Record button can be used to render animation as a video.



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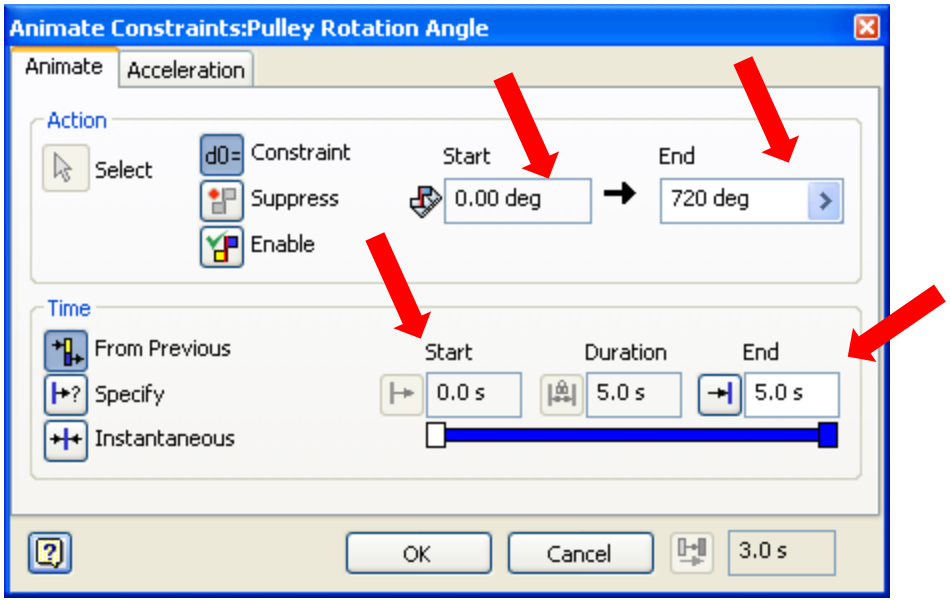
Drive Pulley Rotation Constraint in Inventor Studio:
Set local-XZ-to-global-XZ-angle to range from 0 to 720 Degrees in 5 seconds.
This makes pulleys rotate during animation while box moves down the line.



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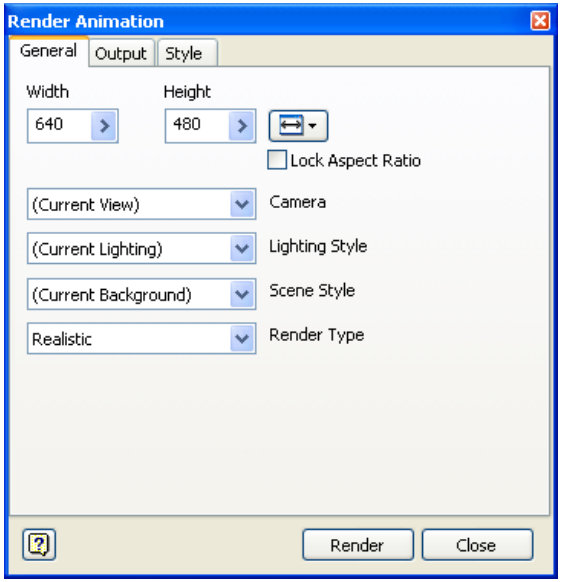
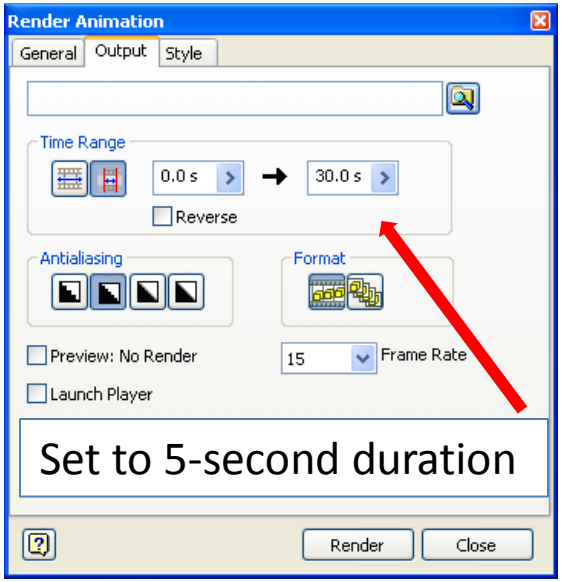
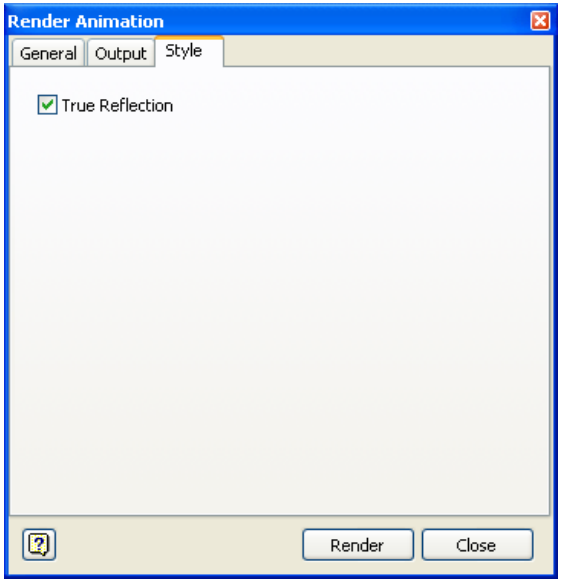
Choose the red button to render an animation, or choose “render animation”.

General: Video Size, Lighting, Scene, etc. Play with these variables for effect.
Output: Choose time range, file name, location to save file, quality of video, etc.
Style: Frankly, I don’t know what true reflection means but I use it!







Enjoy!