

A 3D CAD model of a robotic gripper, rendered in orange and yellow, is shown against a light gray grid background. The gripper has two curved fingers and a central base. The text is overlaid on the left side of the image.

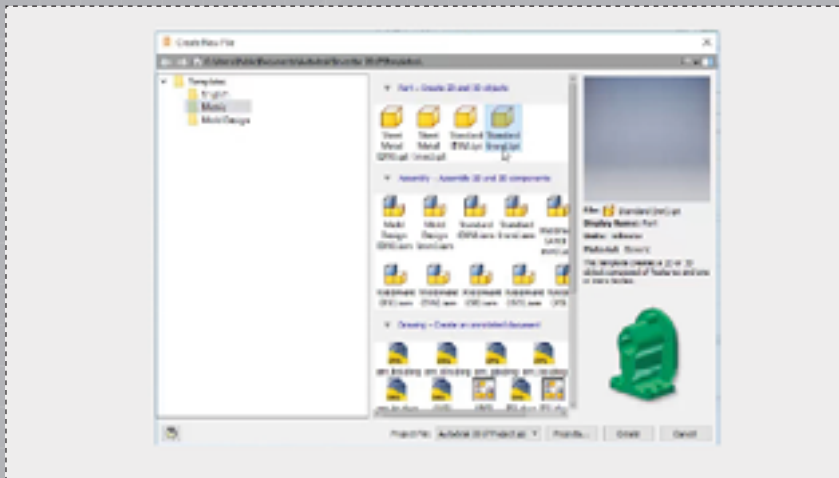
AUTODESK **INVENTOR** Trial Projects

CAD Interoperability

Create a 3D model of a robotic gripper
from a 2D DWG

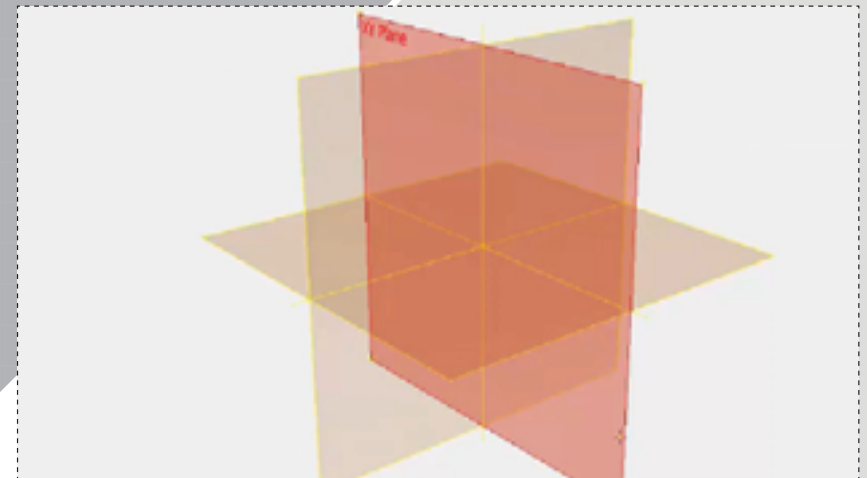
PART 1: CAD INTEROPERABILITY

1.



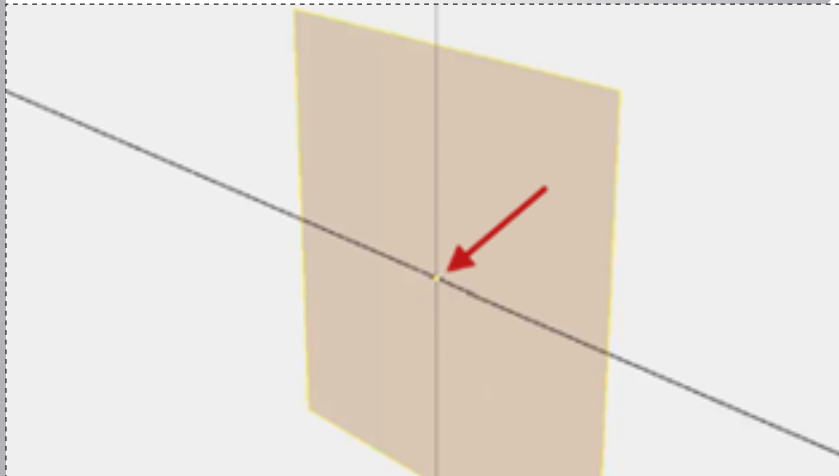
In Inventor, click the 'Projects' icon in the ribbon. Navigate to where you saved the project files and select **300730-000.ipj**. Create a new part file using the **Standard (mm).ipt** template.

2.



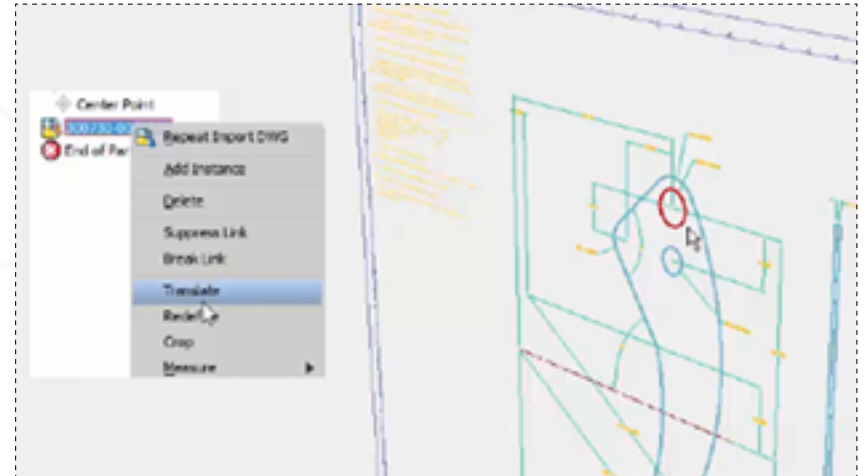
Save the part file before continuing. Import **300730-001.dwg** file from the data folder and place on the XY plane.

3.



Select the part's default origin for the .DWG placement.

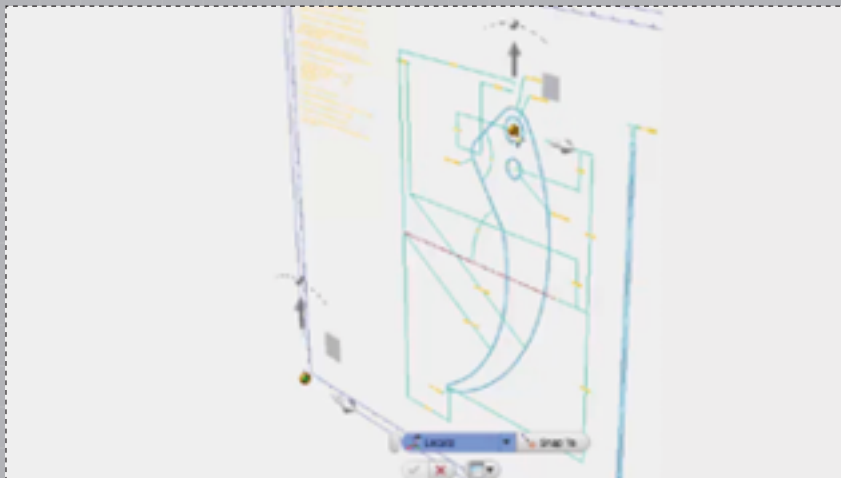
4.



Right-click the .DWG listing in the browser and select 'Translate' to reposition it.

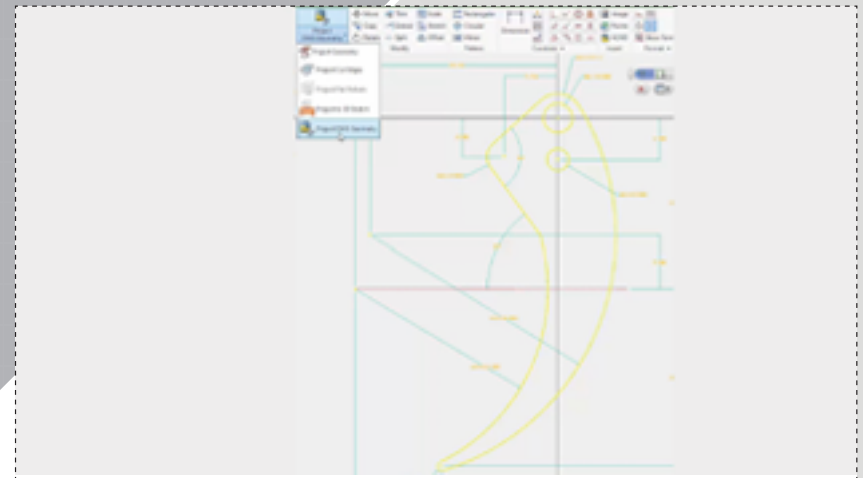
PART 1: CAD INTEROPERABILITY

5.



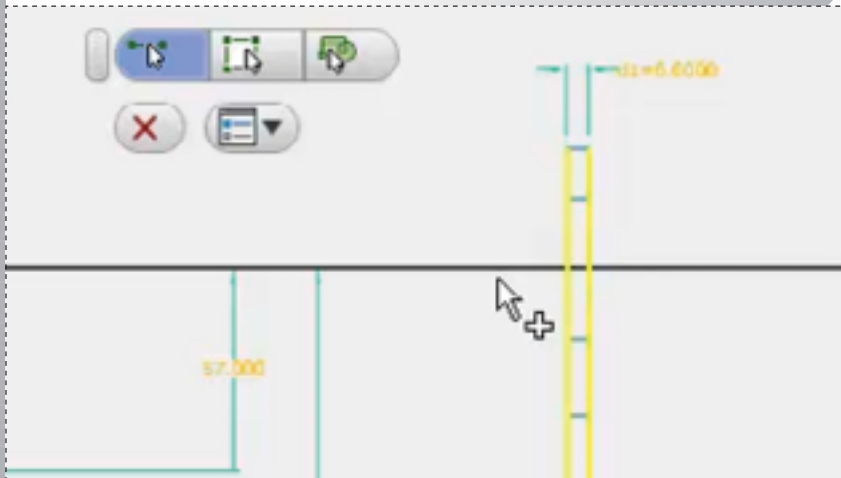
Locate the new origin reference at the pivot point shown. Create a new sketch on the XY Plane.

6.



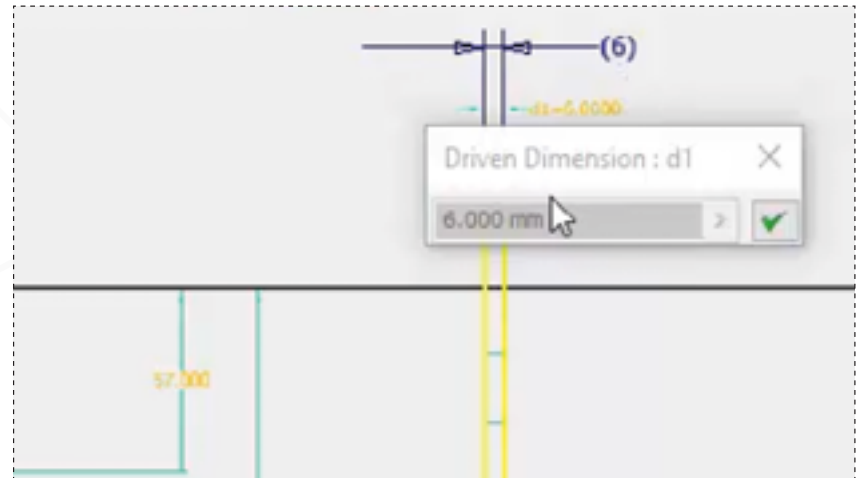
Activate 'Project DWG Geometry', selecting all the segments making up the model profile.

7.



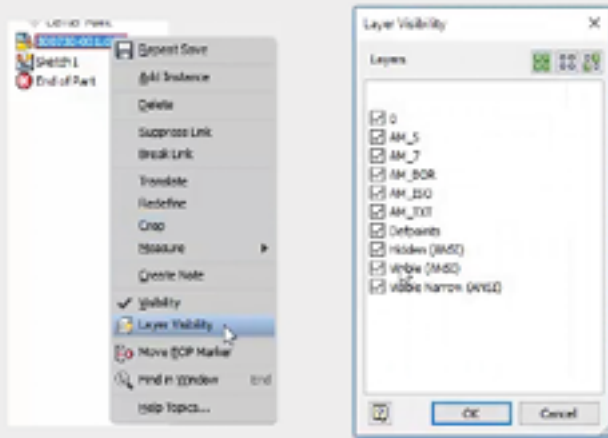
With 'Project DWG Geometry' still active, select the two vertical lines in the side view before closing the command.

8.



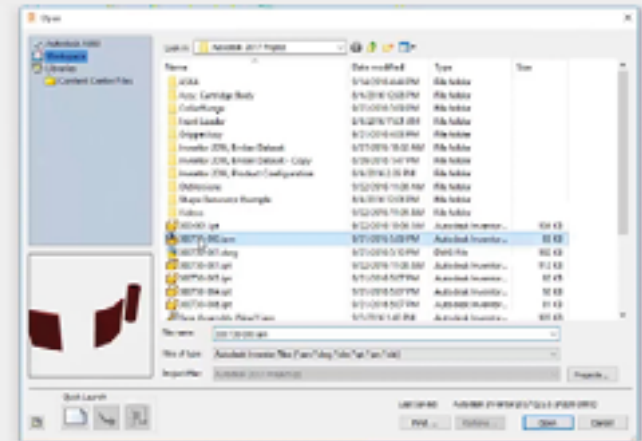
Insert a 6mm driven dimension between the two lines as shown, and then click 'Finish Sketch'.

9.



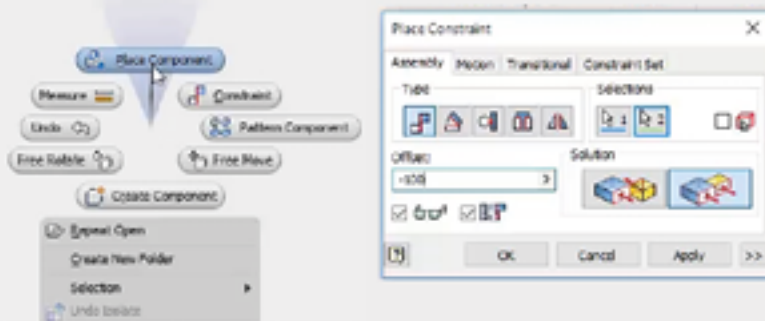
Clean up the DWG view by unchecking the layers you don't want to see. Save your changes to continue.

10.



Open the **300730-000.iam** assembly file.

11.



Click 'Place Component' to insert the DWG into the assembly, and then constrain the part's default planes to be coincident with the assembly's YZ Plane and XZ Plane, but offset -100mm from the XY Plane.

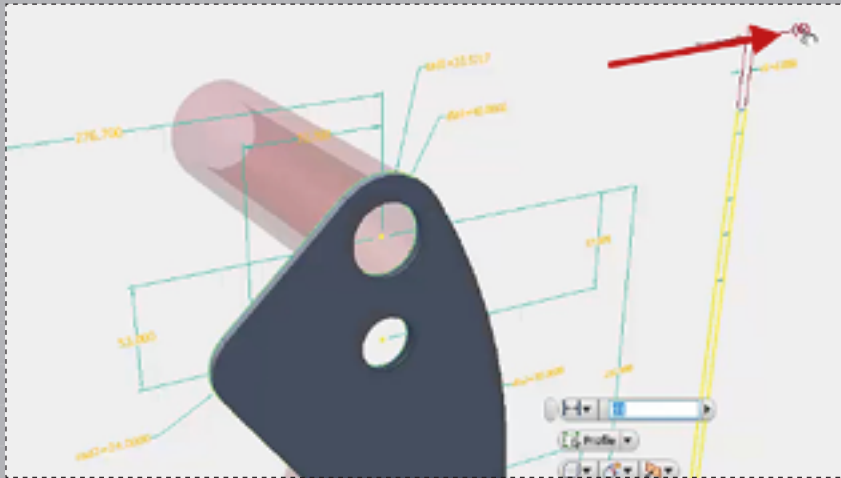
12.



Ensure the DWG reference part is closed so that it can be edited within the context of the assembly.

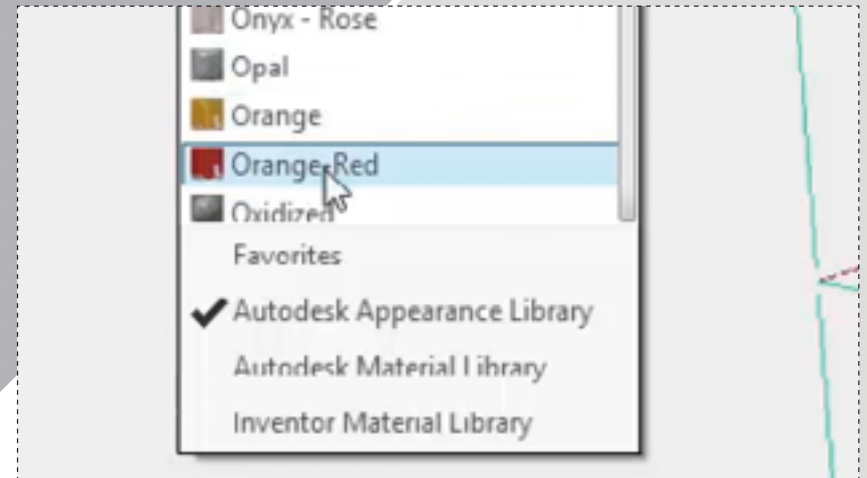
PART 2: CAD INTEROPERABILITY

13.



Edit the part within the context of the assembly and extrude the profile as shown, using the driven dimension created earlier as the dimension reference.

14.



Modify the part's appearance to 'Orange Red'.

15.



Turn off the 'Visibility' of the part to hide the DWG information, and then click 'Return' to exit the part edit.

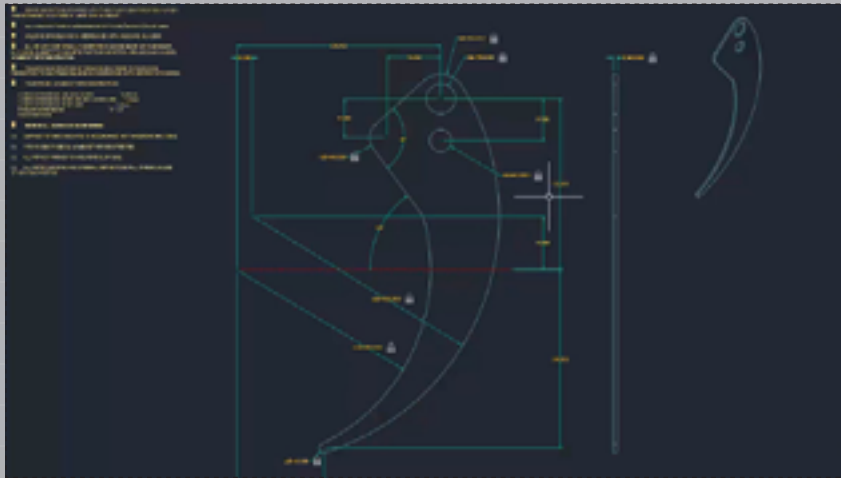
16.



Mirror the part about the XY Plane to complete the Gripper Arm assembly design.

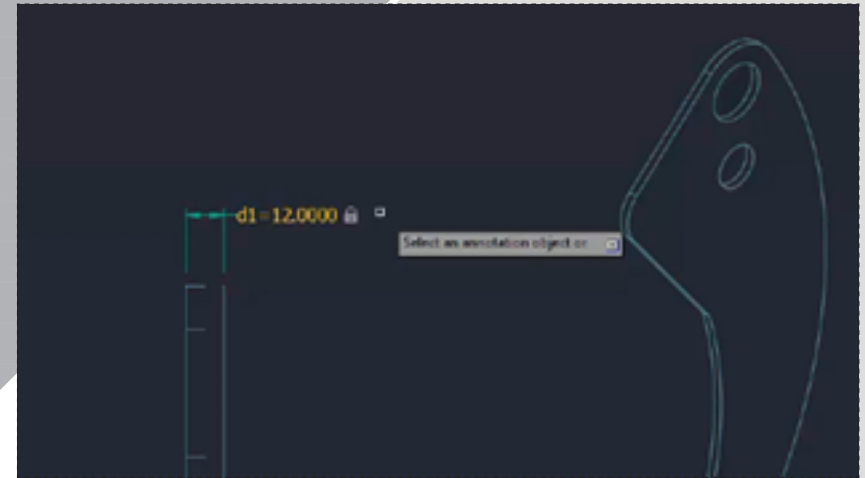
PART 2: CAD INTEROPERABILITY

17.



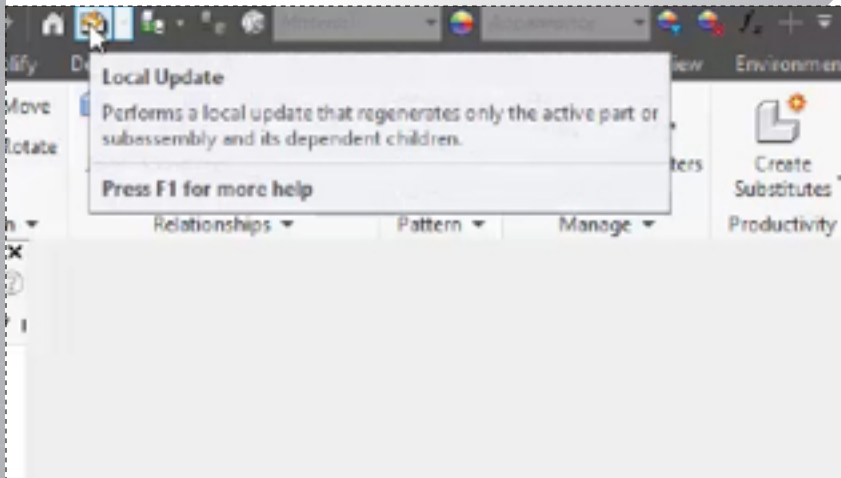
Save the assembly file, and then switch back over to AutoCAD to view the original .DWG file.

18.



Edit the d1 dimension, defining the part's thickness, to 12mm. Save the AutoCAD file, and then go back to the Inventor assembly file.

19.



Use the 'Local Update' command to see if the thickness changes made to the .DWG file carry over to the assembly as expected.

20.



Save all files to finish.



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