ME 24-688 – Week 4
Problem Set Assignment

Carnegie Mellon University

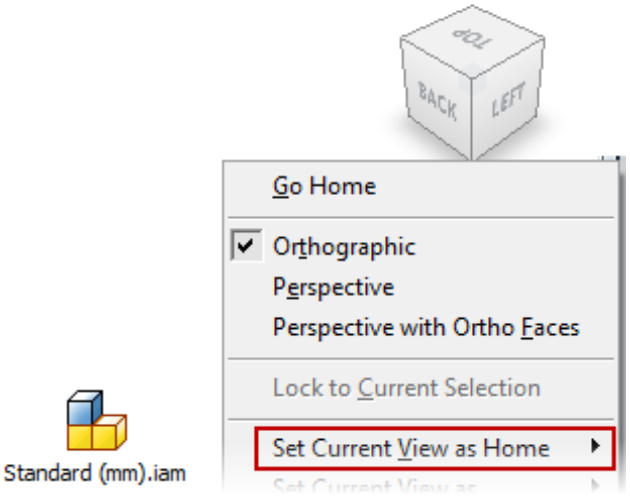
1 Assemble Automotive Lower Seat Frame

The week four problem set assignment focuses on the assembly environment of Autodesk Inventor. The goal of the assignment is to construct the lower frame assembly of the automotive seat with provided components. Once the assembly is constrained the seat pan can be raised and lowered by adjusting the ball screw drive motors mounted on the frame.

1.1 Provided Items

To start the assignment you are provided 74 files consisting of Autodesk Inventor part and assembly files in a ZIP file. Week 4 Problem Set Instructions.mp4 is a video showing the general placement and relationships of the component to help assemble the complete lower frame. Using the provided files you can build the assembly then adjust the height position of the power seat.

Use the **Standard (mm).iam** template for all assemblies required for this problem set. Set the Top Back Left Corner as the Home View.



1.2 Final Deliverable

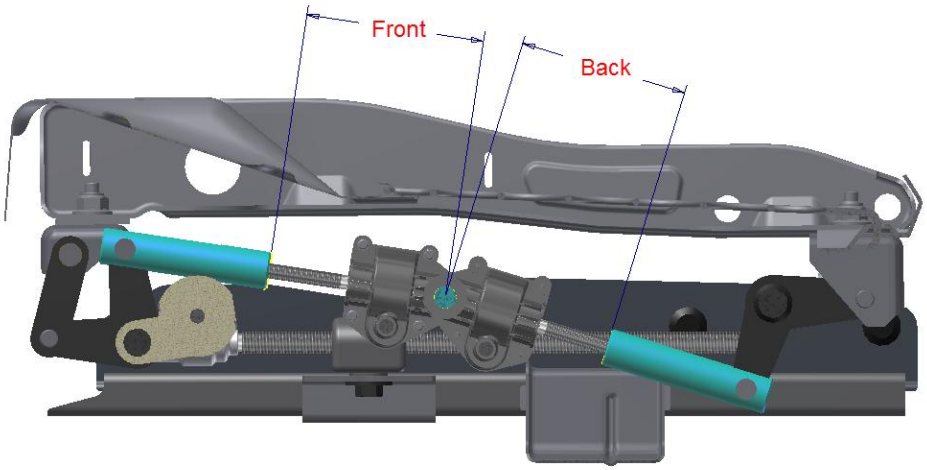
Once the main assembly is complete you will need to provide a **DWF** file in the **Lowered** position of the assembly. (See the Appendix at the end of this document for the steps to create a DWF) Then adjust the seat height position using the setup dimensions below and provide the measured value as noted for each setup in a custom iProperty.

Lower Frame Setup - Raised

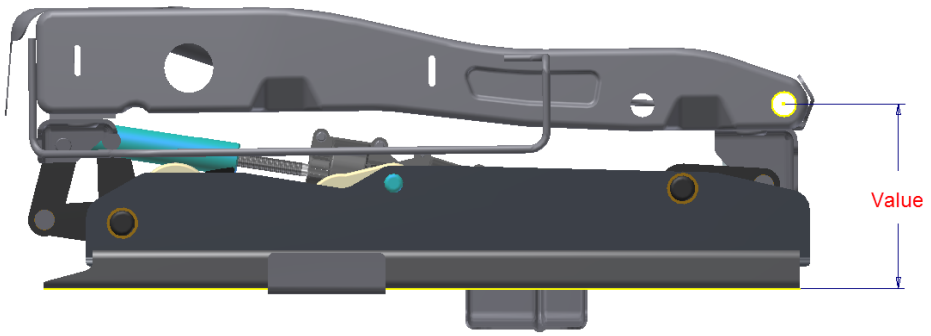
- Front = 95 mm
- Back = 90 mm
- Value = XXX.XXX mm

Lower Frame Setup - Lowered

- Front = 70 mm
- Back = 80 mm
- Value = XX.XX mm



Measure the distance from the center of the back hole as noted below and the bottom face of the seat rail track for each setup.



- Use the following naming convention for the top level assembly:

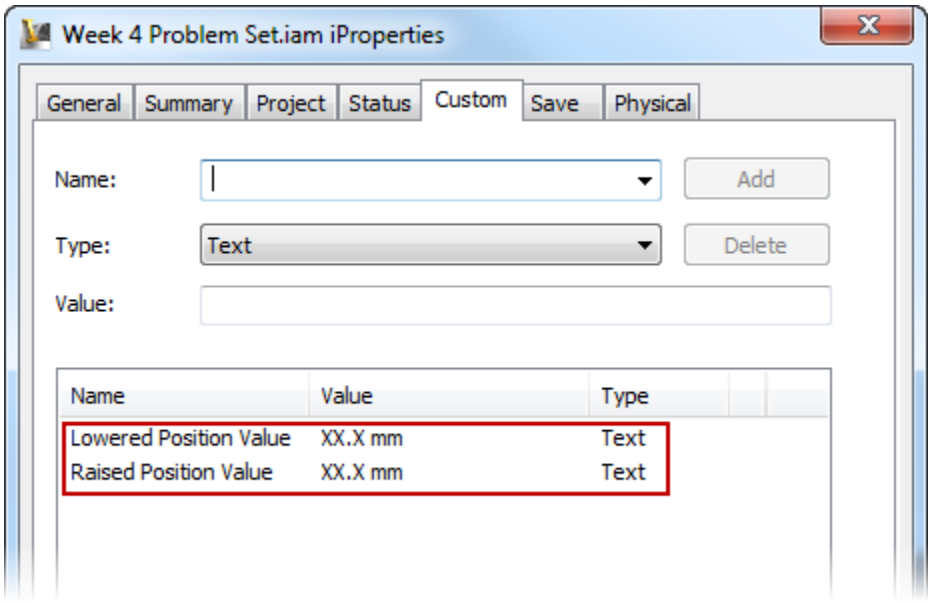
  `ps4_your_andrew_id`

1.3 Grading

Grading for this problem set will be based on the following elements:

- 85% - Correctly identify the values for the Raised and Lowered positions below
- 10% - File Count
  - There should be 133 Total files and 73 Unique files

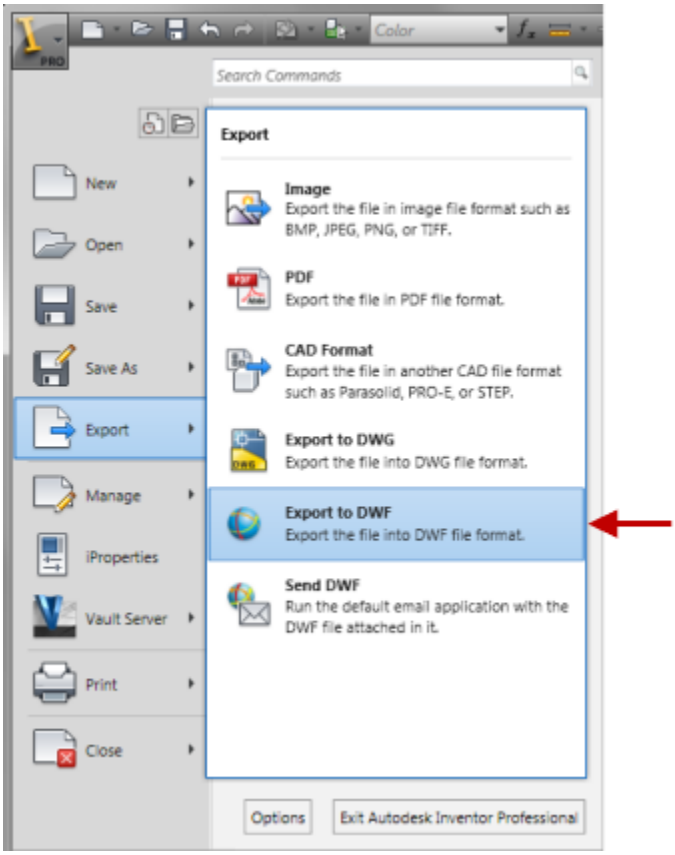
    133 73
- 5% - Assembly iProperty population
  - Author, Designer and Description
  - Custom iProperties (Lowered Position Value and Raised Position Value)

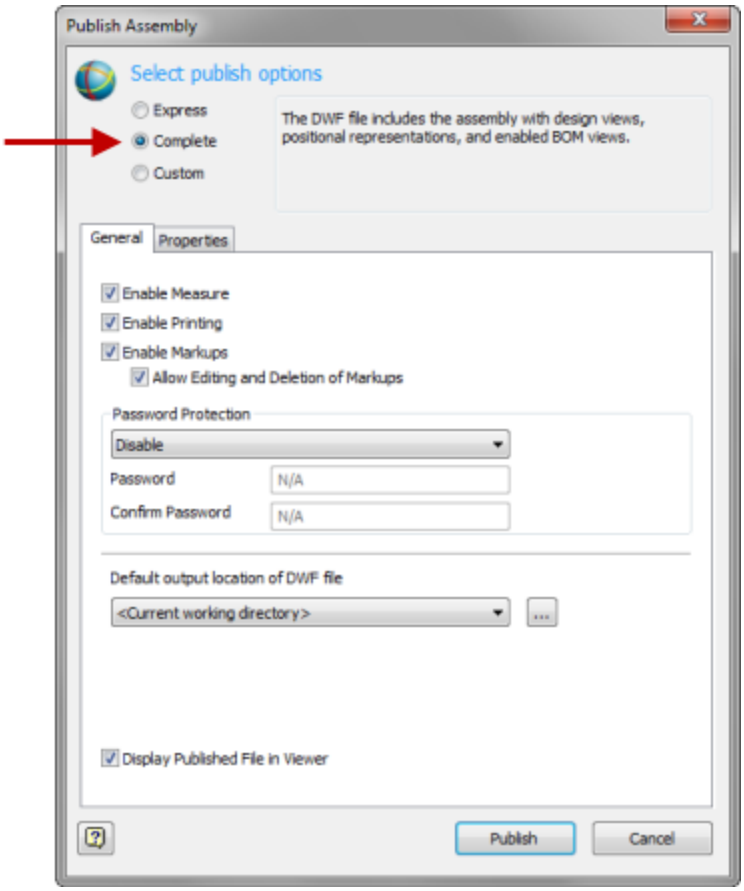


- Up to 10% Extra credit for creating a Raised and Lowed Positional Representation in the assembly

1.4 Appendix – DWF Export

The following images show the steps to export a DWF file.




Publish Assembly
Select publish options
Express
Complete
Custom
The DWF file includes the assembly with design views, positional representations, and enabled BOM views.
General
Properties
Enable Measure
Enable Printing
Enable Markups
Allow Editing and Deletion of Markups
Password Protection
Disable
Password
N/A
Confirm Password
N/A
Default output location of DWF file
<Current working directory>
...
Display Published File in Viewer
Publish
Cancel