ME 24-688 – Week 2

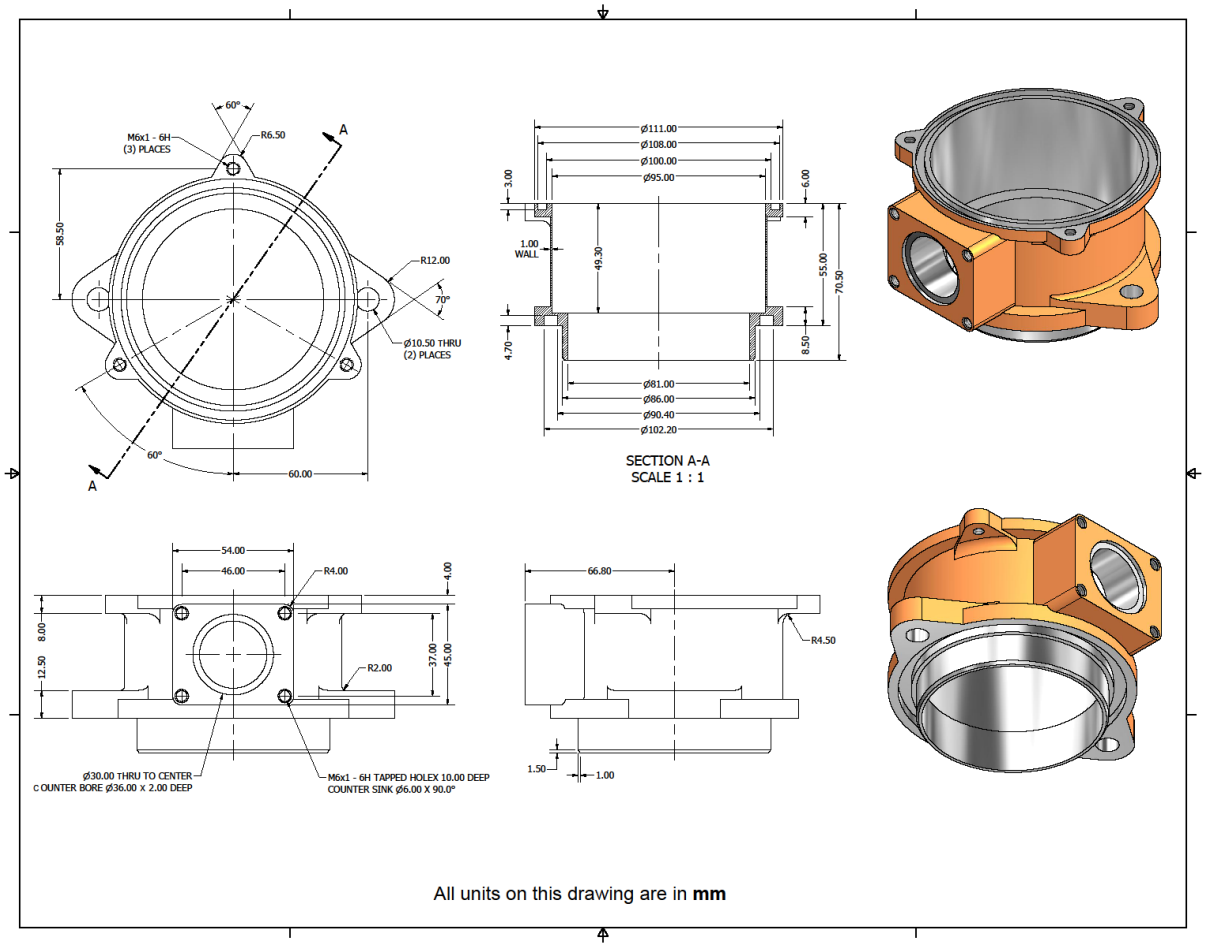
Problem Set Assignment

1 3D Part Design

The week two problem set assignment is to begin the journey of product design within Autodesk Inventor. During this assignment you will model a detailed casted flange component from a 2D detailed drawing.

1.1 Provided Items

The following detailed drawing of the flange component is provided as a viewable PDF file. All units on the drawing are in **mm**.



1.2 Final Deliverable

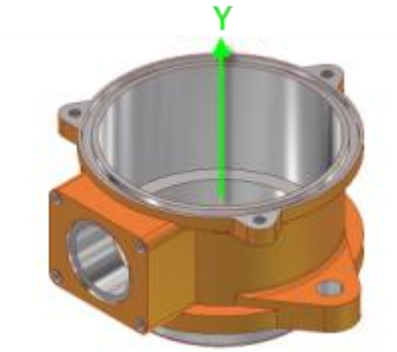
The final deliverable for this problem set assignment is to submit your completed **Autodesk Inventor IPT** part file. Ensure the final model matches the design and dimensions of the provided component detail drawing. Use the **Standard (mm).ipt** template to create the model.

- Use the following naming convention:

  flange_your-andrew-account.ipt

  File Name: flange
  Student's Andrew Account: your-andrew-account

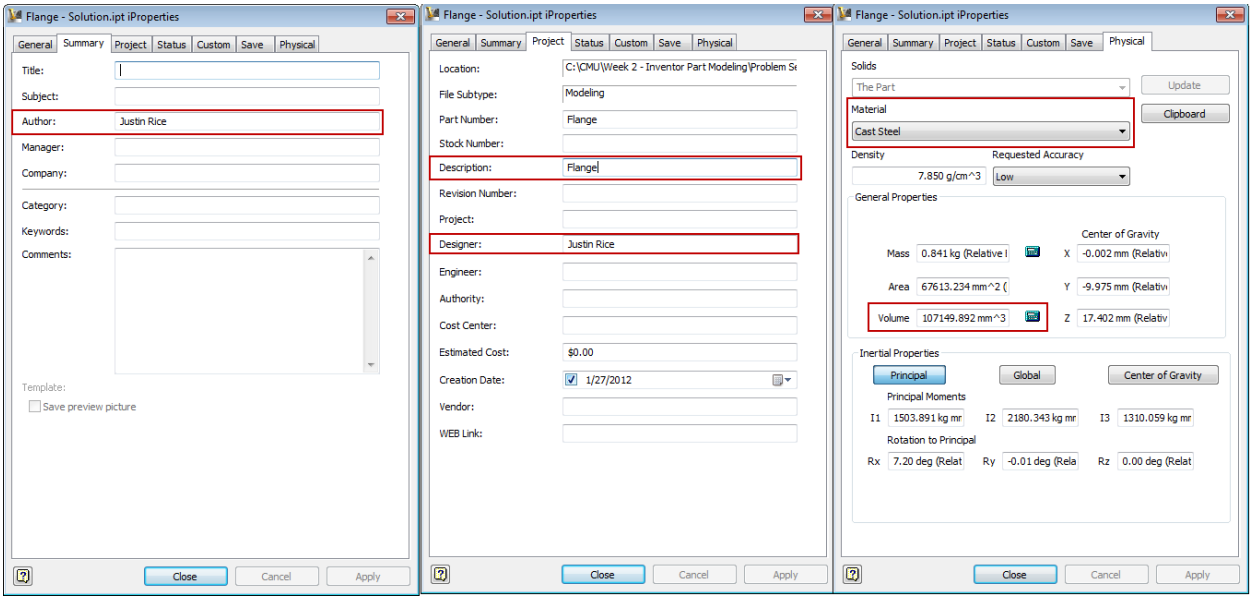
- The Y Axis must be the center axis of the main body



1.3 Grading

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

- 85% - Accuracy of the model
- 10% - Best Practices
  - See Part Modeling Best Practices
- 5% - iProperty population (see image below)


Flange - Solution.ipt iProperties
General
Summary
Project
Status
Custom
Save
Physical
Title:
Subject:
Author:
Justin Rice
Manager:
Company:
Category:
Keywords:
Comments:
Template:
Save preview picture
Close
Cancel
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Flange - Solution.ipt iProperties
General
Summary
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Status
Custom
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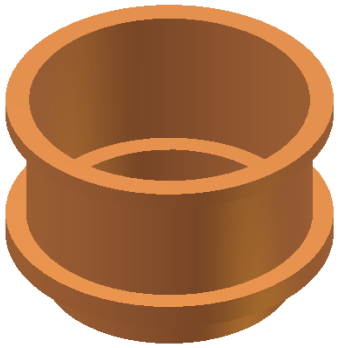
Physical
Location:
C:\CMU\Week 2 - Inventor Part Modeling\Problem Se
File Subtype:
Modeling
Part Number:
Flange
Stock Number:
Description:
Flange
Revision Number:
Project:
Designer:
Justin Rice
Engineer:
Authority:
Cost Center:
Estimated Cost:
$0.00
Creation Date:
1/27/2012
Vendor:
WEB Link:
Close
Cancel
Apply
Flange - Solution.ipt iProperties
General
Summary
Project
Status
Custom
Save
Physical
Solids
The Part
Update
Material
Clipboard
Cast Steel
Density
Requested Accuracy
7.850 g/cm^3
Low
General Properties
Center of Gravity
Mass
0.841 kg (Relative I
X
-0.002 mm (Relativ
Area
67613.234 mm^2 (
Y
-9.975 mm (Relativ
Volume
107149.892 mm^3
Z
17.402 mm (Relativ
Inertial Properties
Principal
Global
Center of Gravity
Principal Moments
I1
1503.891 kg mr
I2
2180.343 kg mr
I3
1310.059 kg mr
Rotation to Principal
Rx
7.20 deg (Relat
Ry
-0.01 deg (Rela
Rz
0.00 deg (Relat
Close
Cancel
Apply

1.4 Instructions

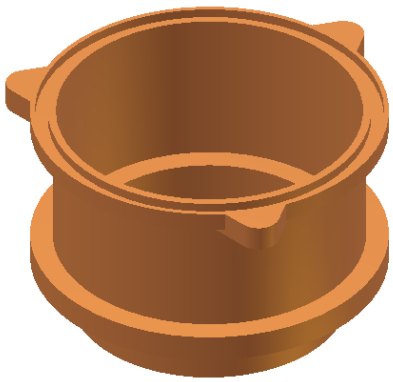
There are many ways the part can be modeled within Autodesk Inventor. To assist with learning part modeling the following general process is one suggested method of an order.

Step 1



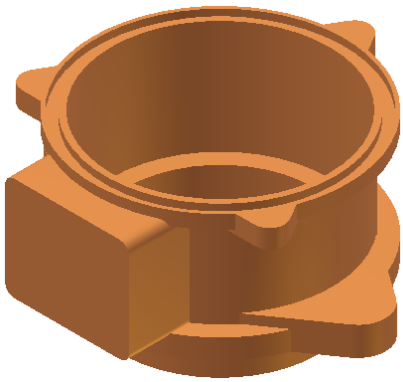
Step 2

Step 3

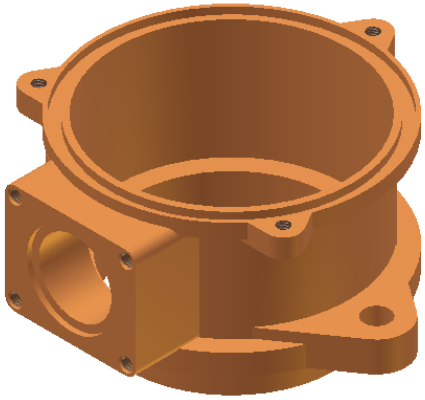


Step 4

Step 5



Step 6



Step 7