Machinist Drawings

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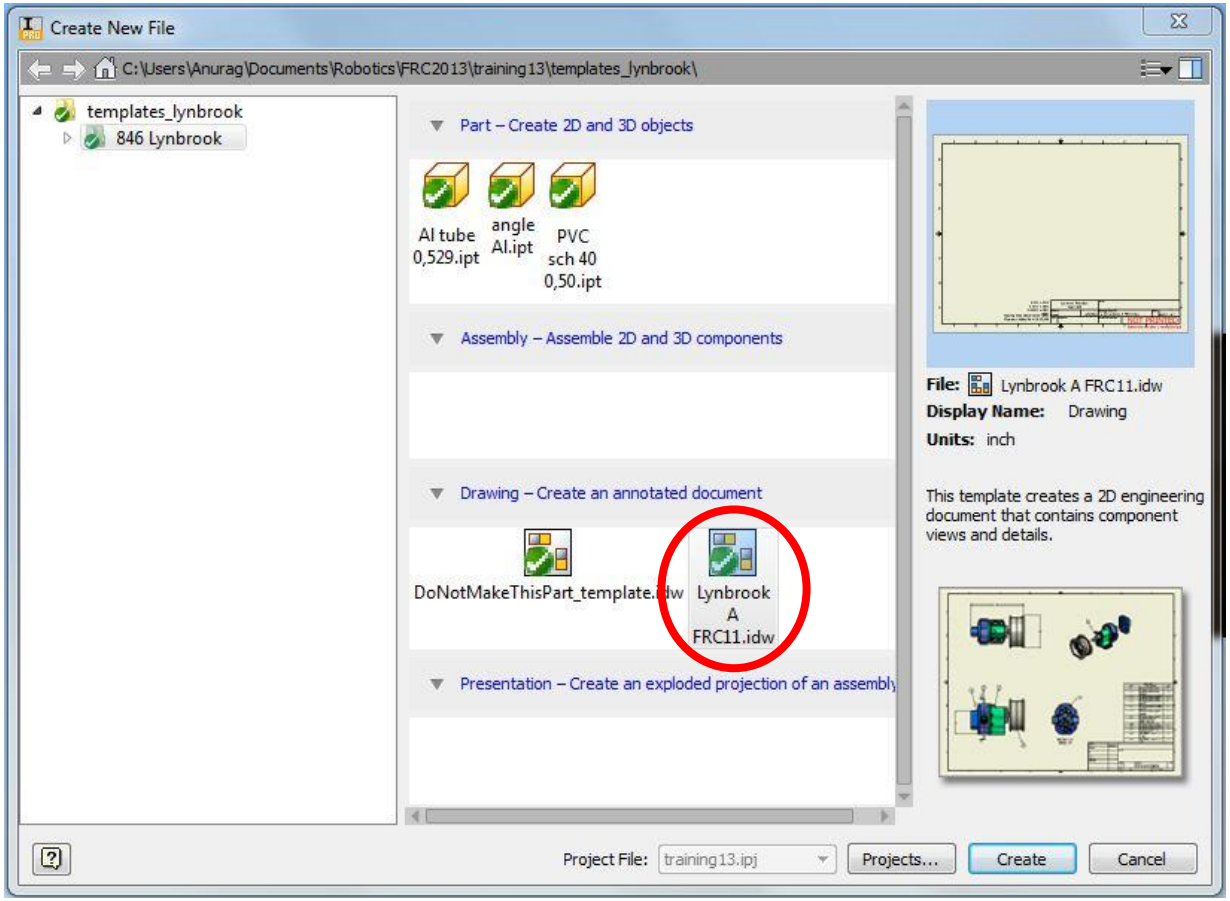
Homework check!

make sure to do them :P

To make the parts we model in Inventor real, we make machinist drawings and then machine the parts.

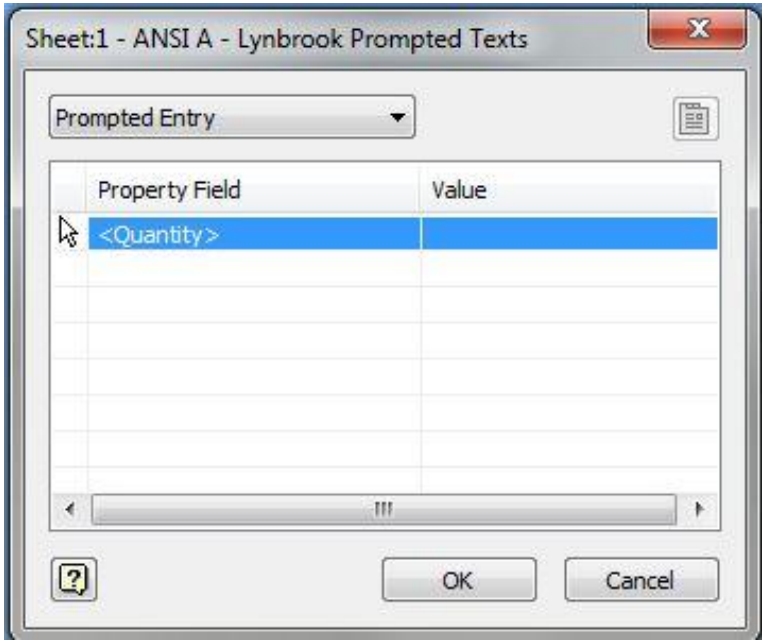
Creating a Drawing

File --> New --> Templates --> Lynbrook A



Quantities

Quantity --> 1



First Step: Get the part File

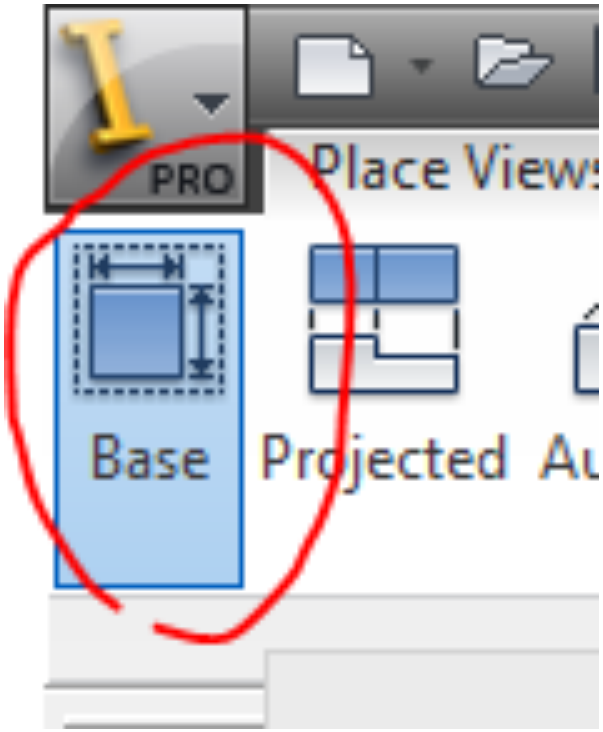
training13 --> CAD Workshops --> Open .ipt

IMPORTANT: Open the part file and save it in this orientation:

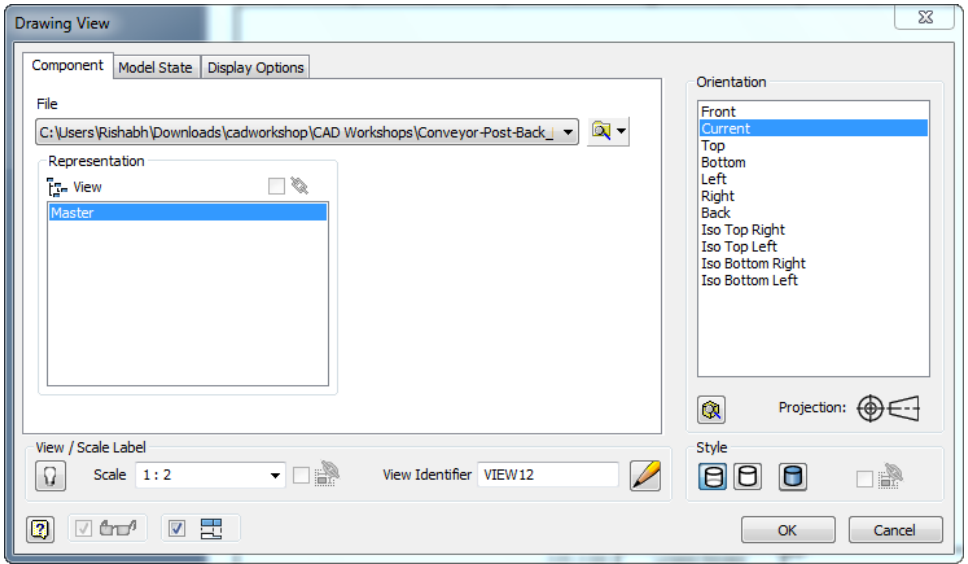
Next Step: Place a view

Different views show the part from different angles.

- Click on "Base" in the top left
- corner.

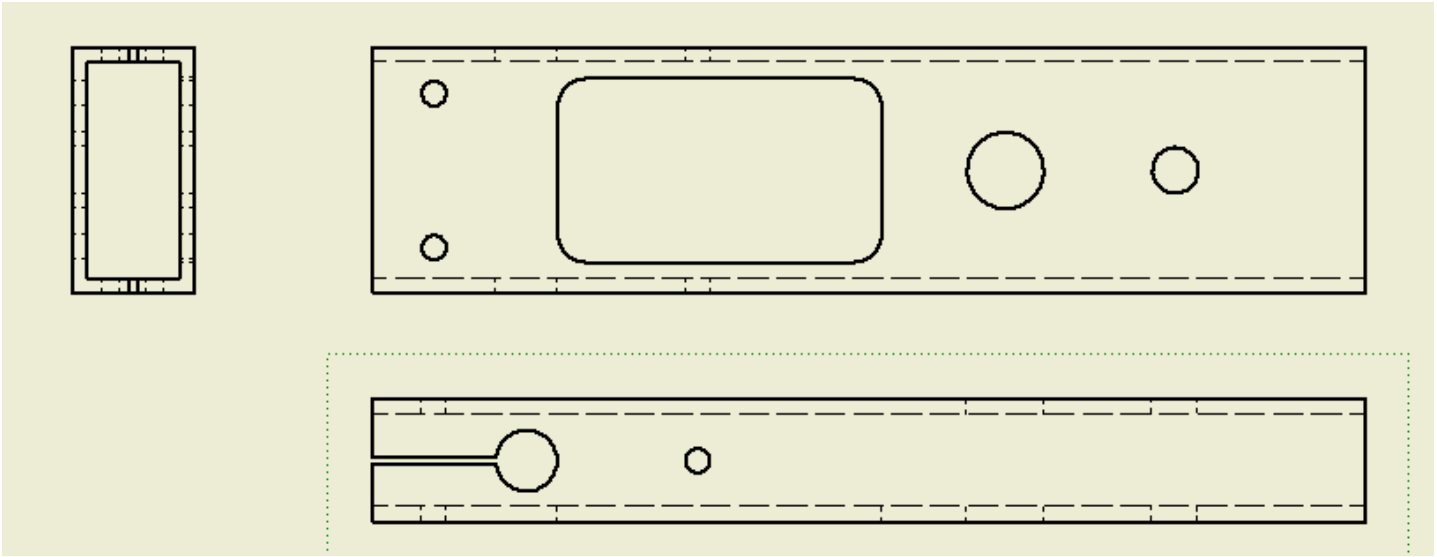


- Click on the Browse Icon and select the Collector Bar.
- The Orientation is which side of the part is showing.
  - For now, set it to "Current."
- The Scale the size of the part; decrease the ratio to decrease the size.
  - For now, set it to 1:1.4.
- Click "OK" to place the part.



Step 3: Projected Views

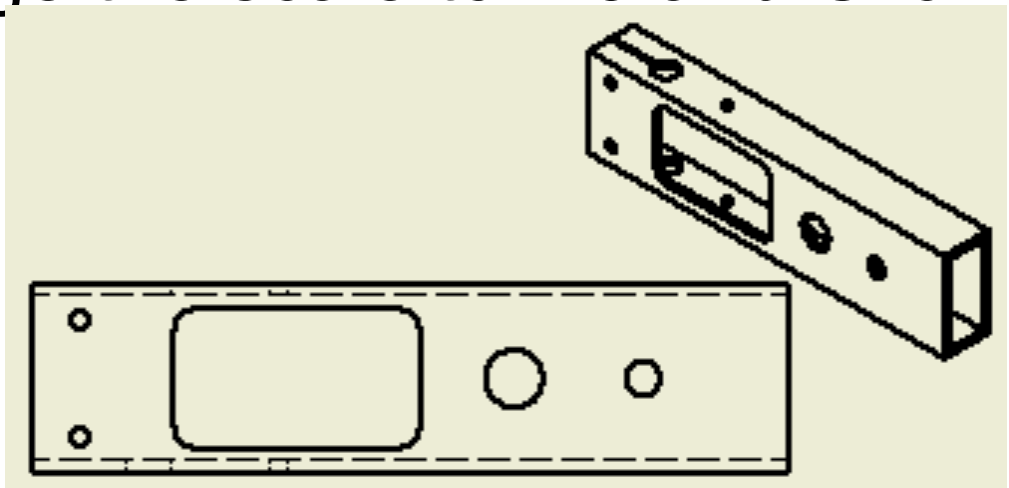
- Move your mouse around, and you will see previews of views that can be placed.
- Place a view to the left to base view, and place one below it.



- Right-click and click on "Create" to save the views. **Do not press escape to exit the command!**

Step 4: Place an auxiliary view

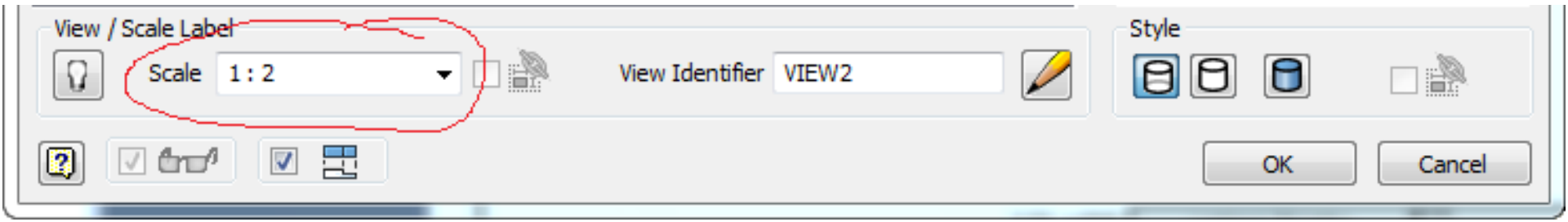
- Click on "Projected", which is next to base.
- Click on the top view that you placed.
- Move your mouse to see the previews of the views, and place a view near the top right, so that the part is seen at an angle.
- Right click and save the part.
- Right click again, and select "Edit View".
- Change the scale to 1:3 and Click "OK".



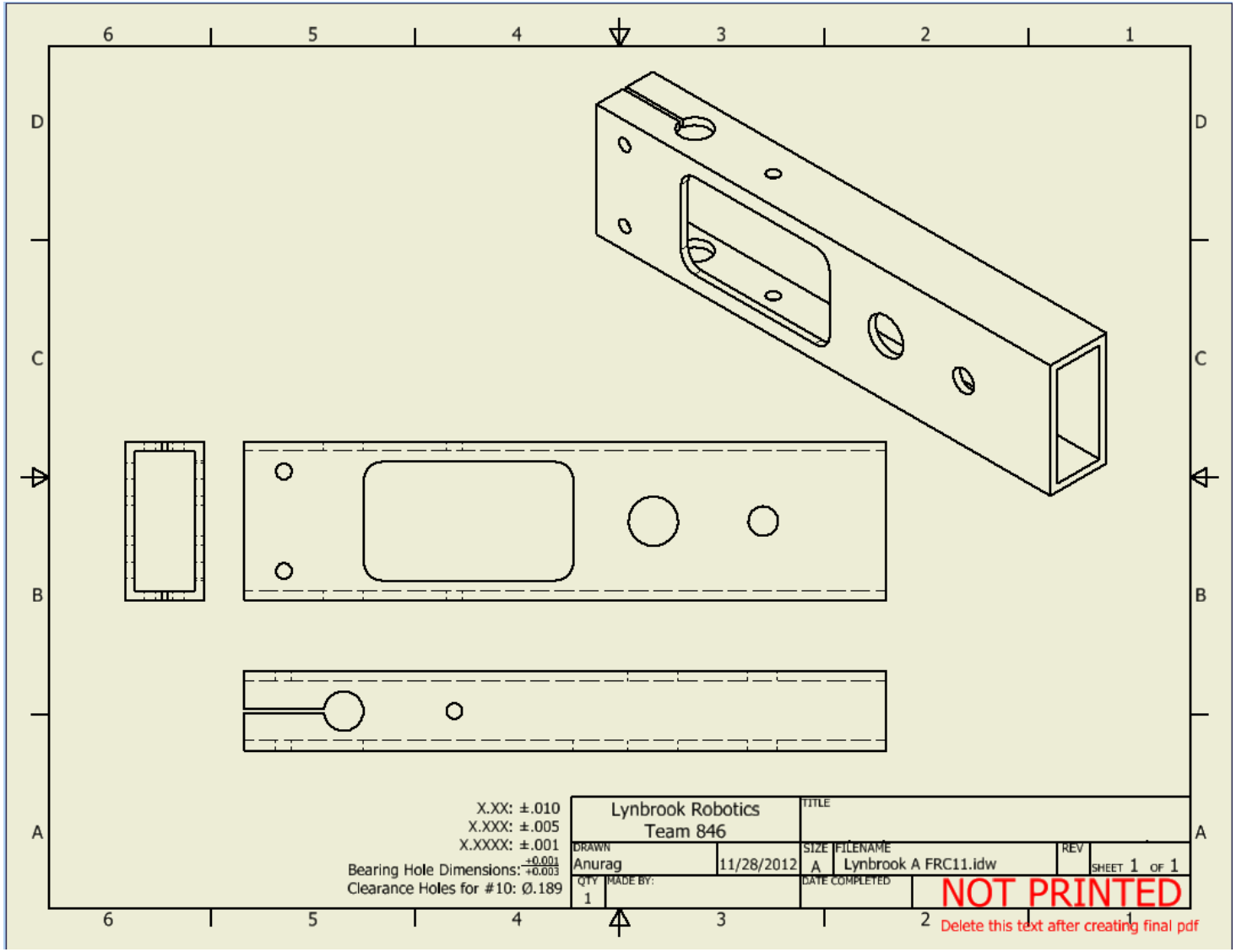
Step 5: Moving and Resizing Parts

Right now, the views you have might be placed in awkward locations or might not fit properly on the drawing. To fix this we can move or resize the views.

- To move views, simply drag them.
- To resize views, right click the view, and pick "Edit view."
- In the window that pops up, you can change the scale by changing the ratio in "Scale". Change it to 1:1.4



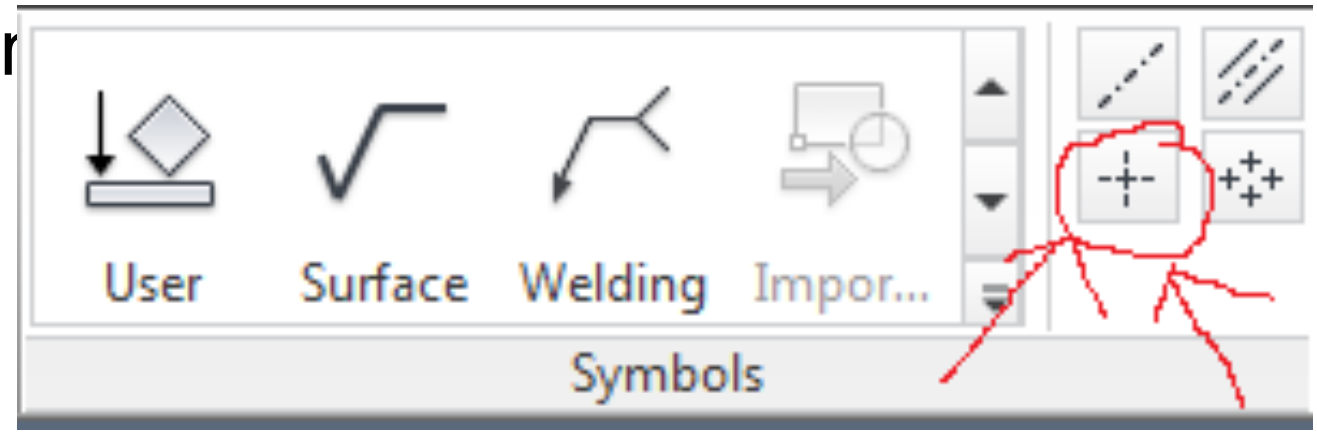
Your Drawing Should Look Something Like This:



Step 6: Ordinate Dimensions

The next thing we have to do is add dimensions.

Dimensions tell the machinist how large the part should be.

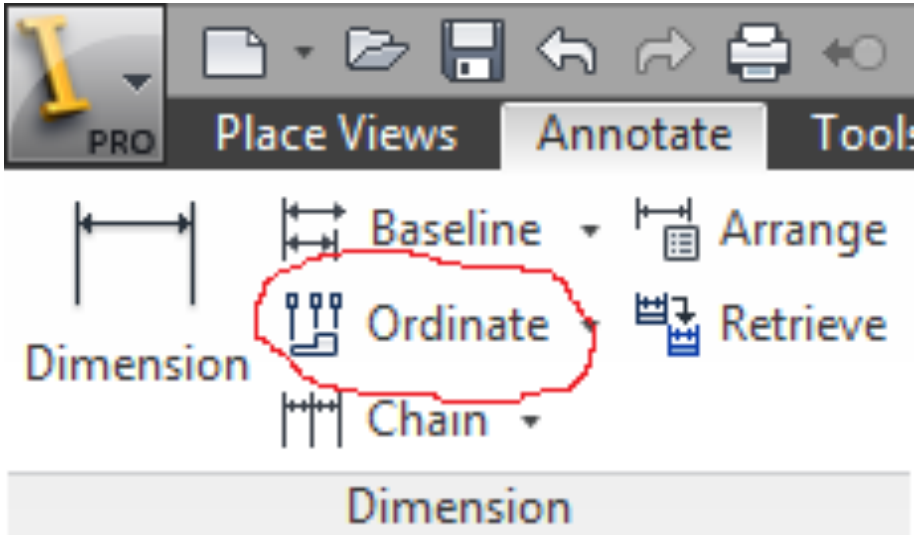
- Change the tab to "Annotate".
- Before adding the dimensions, we need cer 

Icon.

- Click on all 10 of the circles/arcs in all of the views to place center points.

Step 7: Dimensioning the Top View

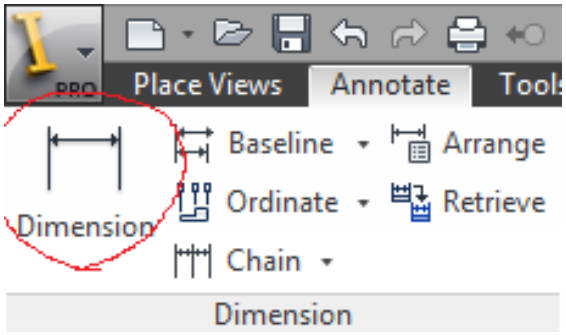
- Click "Ordinate" in the top left corner.



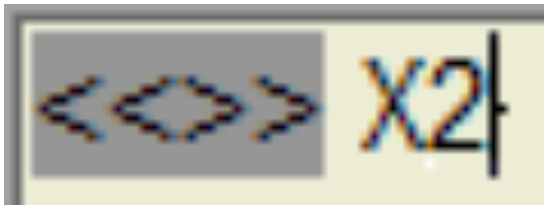
- Click on the top view.
- Click the top left corner of the view to place the Origin Point.

- Click on the center points you made in the top view, along with the far right edge. (If there is more than one point in the same vertical line, click only the bottom one.)
- Right click, and press "Continue".
- Move your mouse up to dimension by horizontal distance, and click to place the numbers.
- Right Click and select "OK" to save the dimensions.
- Now select Ordinate again, and dimension the holes and bottom edge by vertical distance.
- If the text overlaps, then you can drag it to move it around.

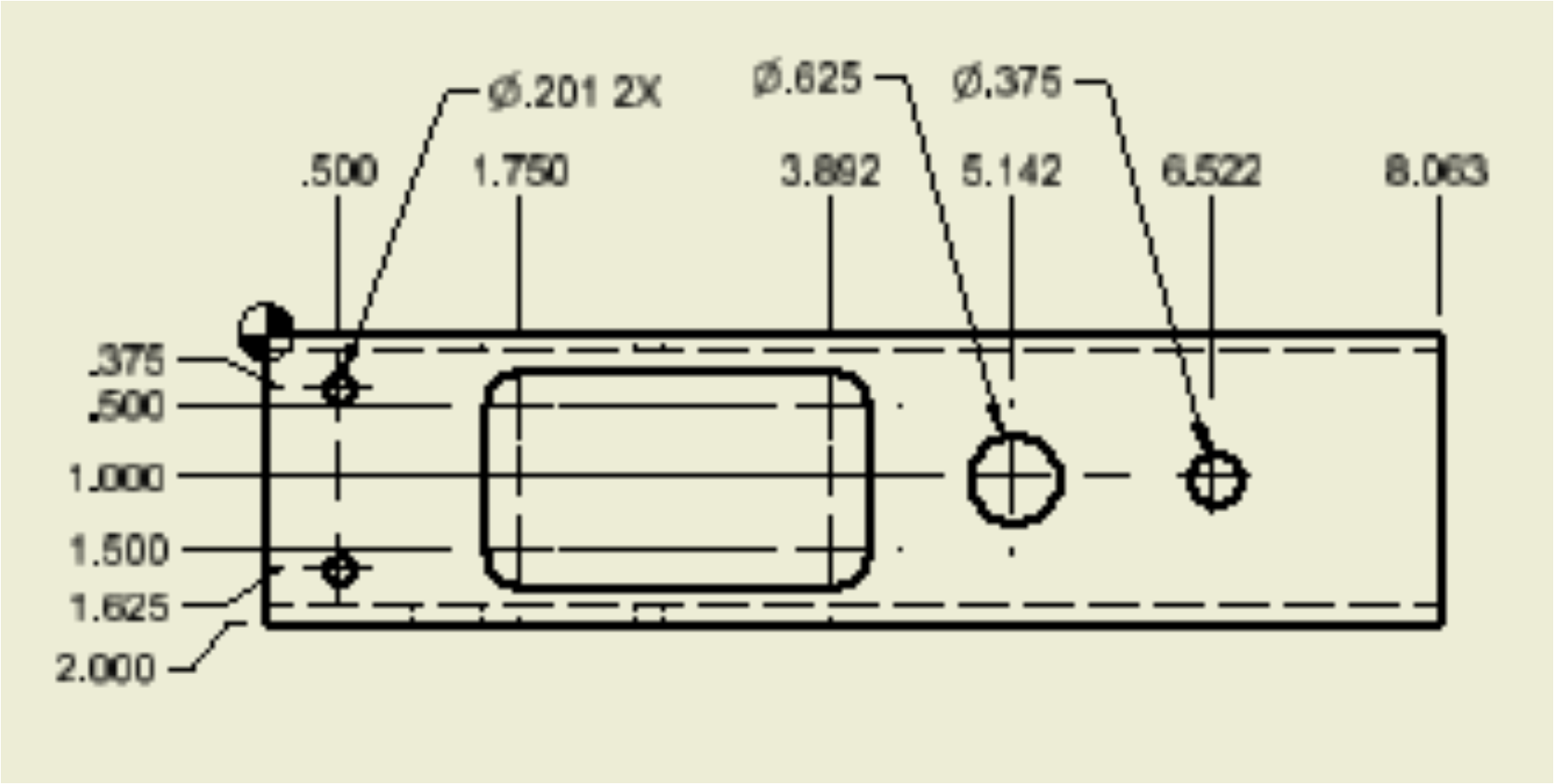
- Next, Click on "Dimension" in the top left corner.



- Click on the rightmost circle, click to place the diameter, and click "OK" in the dialog box to save the dimension.
- Do the same thing for the circle to the immediate left.
- The last two circles are the same size, so simply add a "X2" after the arrows in the dialog box.

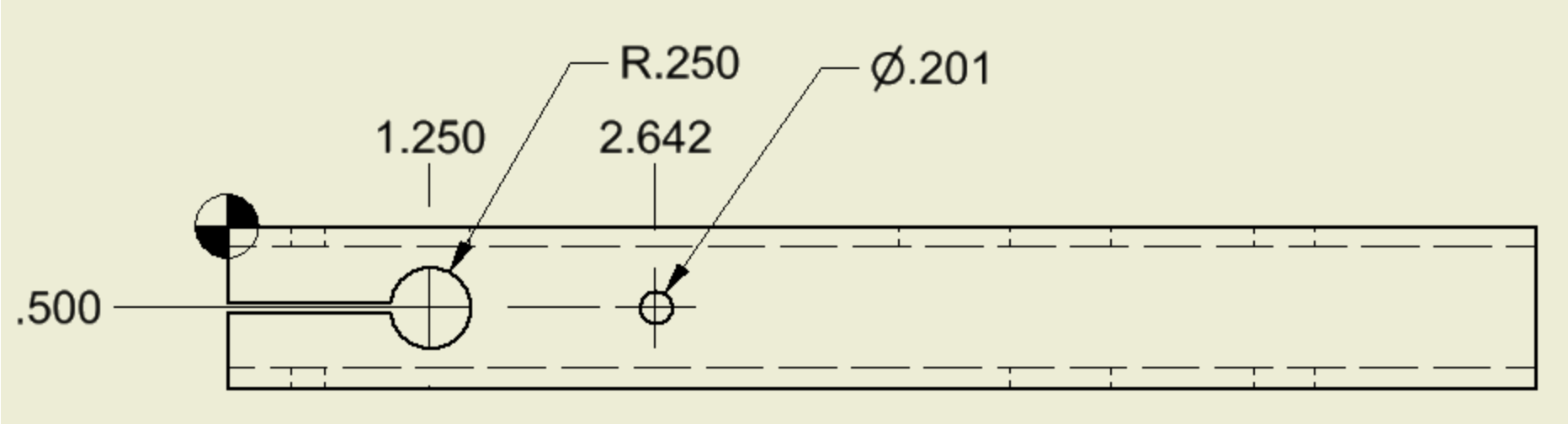


The view should now look like:

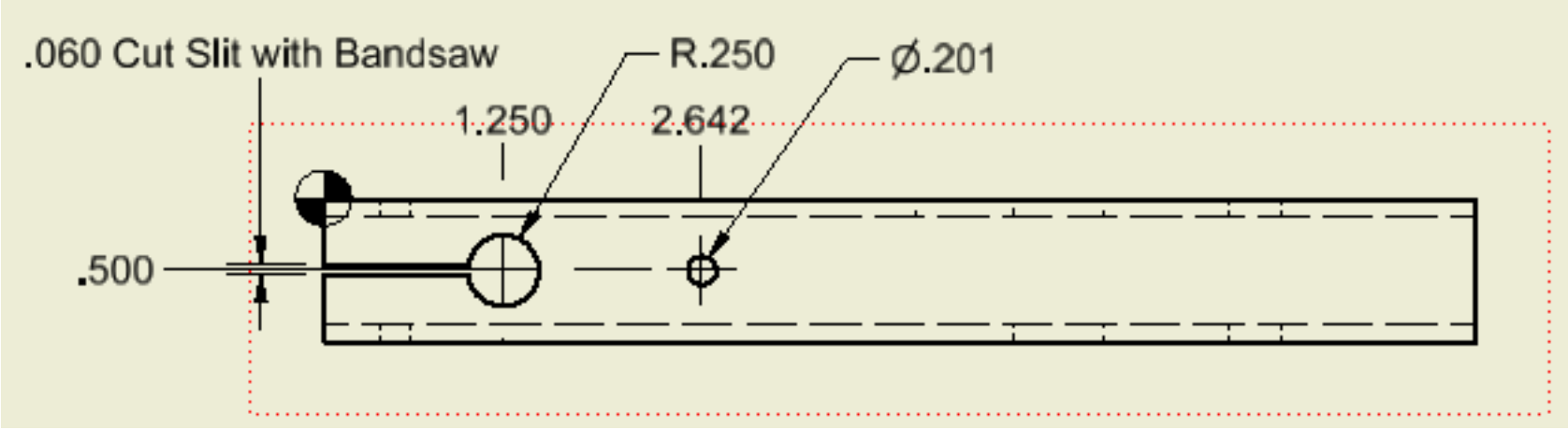


Now Try It On Your Own!

Try to dimension the two circles on the base view with position and diameter by yourself.

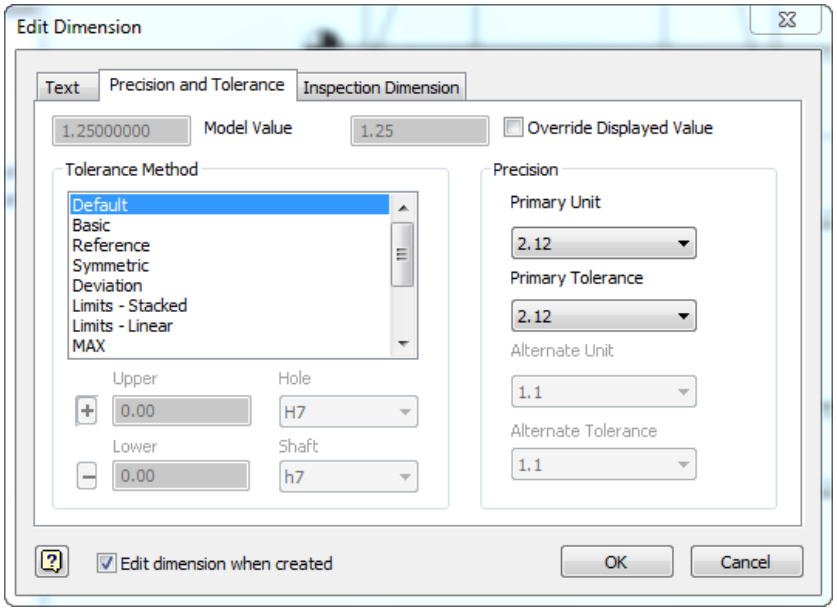


- To dimension the slit in the right side, click on "Dimension".
- Click on the 2 lines that make up the slit, and then place the dimension to the right.
- In the dialog box, Type "Cut Slit With Bandsaw" After the arrows.
- Move the text to keep it in a convenient



Precision and Tolerance

- Right click on the 1.250 Dimension on the bottom view and select "Edit".
- Go to the "Precision and Tolerance" tab.
- Change the primary Unit and Primary Tolerance to 2.12. Click "Ok".



X.XX: ±.010
X.XXX: ±.005
X.XXXX: ±.001

- Add the Diameter to one of the arcs in the large rectangular hole, and change the precision 2.12.
- Change the precision of the slit to 2.12 as well.