MET 205

Top Down Modeling

Submit screen captures of all the images shown in this document. Make sure you include the model tree in all cases!

Create a rectangular block 3” x 3” x 1” that has a 1” diameter hole located through the center. Use an extrude and hole feature to create the geometry as shown below.

Create an assembly and constrain the datum planes of the lower plate to the default assembly planes.

Create the Top Plate component in assembly mode. Copy From Existing start.prt

If you get an error message when you select OK, try to Browse to the start.prt file.
Make sure that when you do your alignments, that the Horizontal datum on the Top Plate is coincident with the top **surface** of the Lower Plate.

Activate the Top Plate and create an extrusion that uses all edges of the top of the lower plate as references (ie no dimensions). It is easiest to use the Loop option so as to not have to worry about trimming or extending edges on the hole. Make the plate 1.5” thick.

When cropping this image, leave the sketch options showing on the right.

Turn on the Features option in Settings – Tree Filters for the model tree.

Display the dimensions for the extrusion.
Create a revolved counter-bore that is a basically a rectangular section .25" wide by .5" deep relative to the edge of the existing hole. After creating the feature, edit the Revolve and after selecting the dimension, right click and select Properties to move the dimension (Move Text) on the model.

Create a Leader Pin that references both the Lower and Top Plates. The only dimension that should exist is a dimension (.25") that defines the top of the pin above the Top Plate.
After creating the geometry, create an explosion of the parts as shown (View – View Manager)

Set the display style by selecting a component and picking on View – Display Style. Make the Leader Pin shaded and the top and bottom plate No Hidden.

Display the front view as shown. Note that all components have all features shown in the model tree.
Edit the Extrude and the Hole in the Lower Plate. Change the width, height and thickness to 2, and the diameter to 0.5. Make sure you regenerate the model. To display these dimensions, hold the ctrl key down while selecting the features and right click edit.

Display the completed geometry exploded.