## Fabricate a shoulder washer using an AvCAM special layer.



So here is the deal. After the panel was cut and powder coated, you notice that you made the carb heat control cable cutout $1 / 2$ " instead of $3 / 8$ ". What to do? Make a shoulder washer using a lathe to turn it? No. Use a Panel Pro special layer to create this in a minute or so.

In this particular case the hole was made .5 " and the large part of the control cable was also .5".

Lets draw this up in CAD.
Set the current layer to "outside". Entities on the outside layer create a tool path on the outside of the entity and cut last. Draw a circle with the center at 0,0 with a diameter of .55 . This could be larger, but we want this to look like part of the normal installation and it will be visible from the pilot side.


Next set the current layer to "inside". Draw a circle at 0,0 with a diameter of .380. The threaded part that goes through the panel measures .375 . No sense making this too tight.

Entities on the inside and outside layers will cut at the depth set in AvCAM to cut clear through the material.

Now create a layer called "outcut0060". Any entities on this layer will cause a tool path to be generated on the outside of the entity, .060 from z zero which is normally the material surface. These entities will cut in the same order as the normal inside entities. The actual hole size was measured at .495 " which includes the paint thickness. Draw a circle .490" diameter at 0,0

The drawing will consist of 3 concentric circles centered at 0,0 .
To cut this, find a piece of .090 scrap and clamp it on the material mount bars of the Panel Pro.
First of all We are assuming you know basic Panel Pro operations such as setting z zero and work zero.
Some of the basic operations such as homing etc. are omitted. Open AvCAM.
Load the file you created in CAD. Select layers inside, outcut0060 and outside.
Verify you have a $1 / 8$ " end mill installed.
Set z zero to the top of the material. Set work zero where you want the center of the circle to cut.
Simulate and cut.


