STEP 2

Now, we will create a polyline that we'll use for screw thread. But before that we need to set our Ortho settings to snap to 45 degrees. To do that, right click the Ortho in status bar and select settings. Next a window pops up where you can set angle which Ortho uses. So, set it to 45 degrees like on the image 25

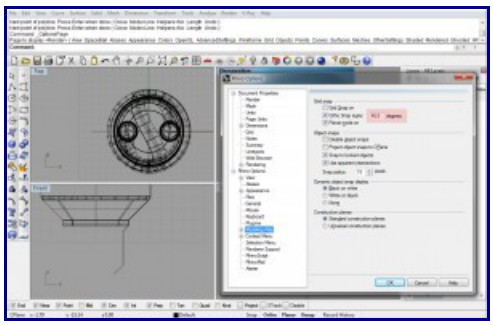

image 25

The polyline will consist out of three segments. First one under 45 degrees and 0.7cm long, second one vertical 3.1cm long, and the third one will be again under 45 degrees and 1.2cm long.

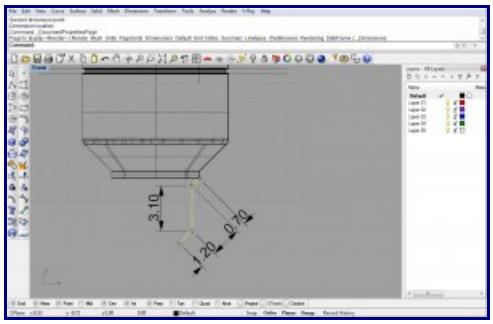

image 26

Now, using Fillet command, filet the two corners of this polyline with 1cm as radius:

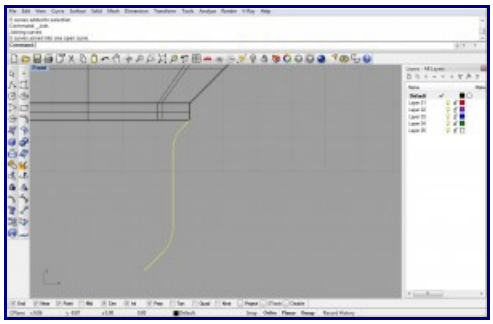

image 27

Now, this line is still made out of 5 curves, and if we try to make a surface out of that kind of line, then we will also get 5 surfaces, while we want only one. Why? Well, because we'll be modeling screw threads here, and when it comes to trimming if we trim one surface with one polysurface it is very common we will run into problems with trimming. Actually, while making this tutorial I did run to the problems in terms of invalid trim. So, to avoid that we'll just rebuild this curve using Rebuild command and specifying the control points so we don't change the original shape of this curve too much:

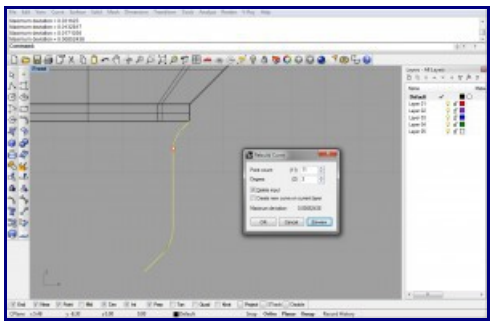

image 28

Now, this curve has a fairly dense control points, but since this part is going to be “dense” with threads it is ok. I guess this is the sacrifice I’m willing to give for not having problems with trim

Using PointsOn we can clearly see the number of control points. After that we can use PointsOff to hide them and be able to work with the curve again.

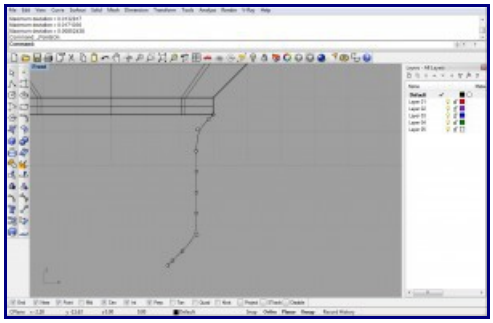

image 29

Now, you can revolve this curve or using Sweep1 command make a surface. I used Sweep1:

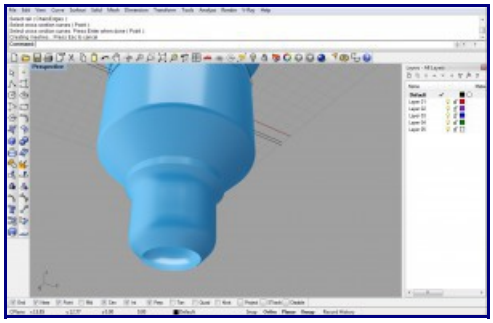

image 30

Ok, now we are going to model electrical foot contact. We need to offset the far lower edge two times. Once from front or right viewport by 1cm down, and once from top viewport by 1cm inwards (the second time we do offset we will be offsetting the already offset circle).

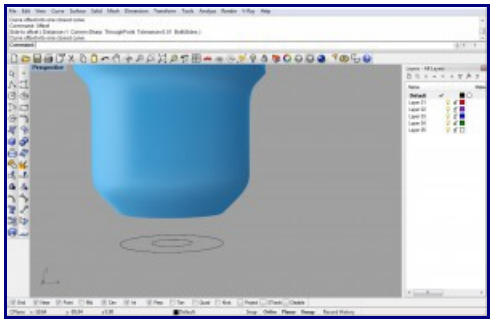

image 31

You can delete the outer circle, and use the smaller one and the edge to Loft between them:

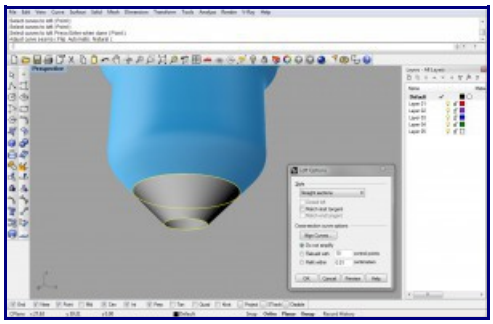

image 32

Now, using Patch command, patch the lower hole. Be sure to select the edge, not the circle because we need the tangency from that surface:

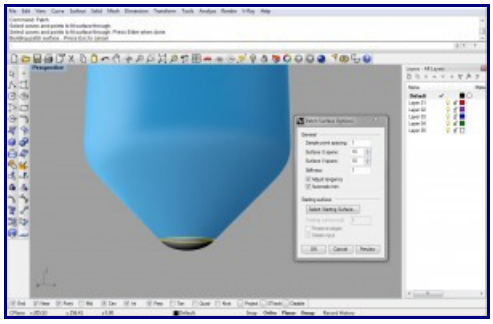

image 33

Now, using InterpCrv command, we will create one freeform curve. Just make sure you are drawing this curve from either front or right viewport. I really can't tell you much, except try to recreate the curve the best you can. It doesn't matter if it is a bit too big, or a bit too small.

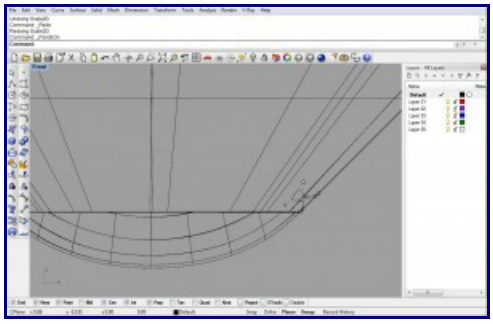

image 34

Copy the curve and move it up to do the same thing. Now, using Sweep1 sweep it around edge of the middle surface, and trim with middle surface:

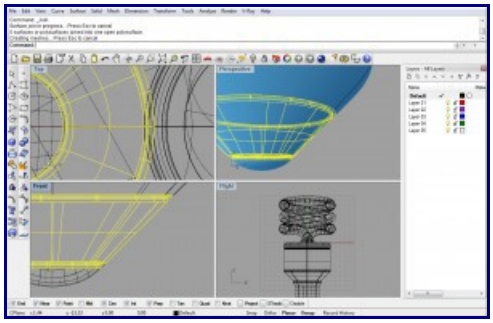

image 35