-RAKO STUDIOS-

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## **SolidCAM fourth impression**

Finishing up the part with the five holes on the bottom. Automatic hole recognition does not work quite right.



Beginning part file here. Finished part file here.

Getting to the end of the job by shooting the five holes from the bottom. SolidCAM seems to know to do them all from the bottom, whereas SolidWorks CAM by CAMWorks wanted to do two from the top and three from the bottom, when doing "auto-recognition".

SolidCAM did split the holes into three groups. This is because the part is designed to trip up this auto-recognition stuff. In this case it is because the holes are all 0.38" deep, two are blind, two are through-holes, and one is partially broken out, a little bit through and a little bit blind. SolidCAM put the two through-holes with the breakout hole. It then identified the two blind holes in another group. The third group reselected the breakout hole, and any tool operation would end up doing this hole twice. There are many selection filters for the automatic recognition, but to me it's not really automatic if you have to click and set a dozen parameters to get it to do the right thing. For me it is simpler to just select the holes manually.

VisualMill got the closest to any workable automatic hole recognition, where you can select a face and it will pick all the holes on that face. I also learned to pick the hole edge, so there was no depth information to the holes. I still have user interface problems with SolidCAM, It seems like every exit from each of the dozens of dialog boxes are in a different place with a different symbol. And there is never any text under the icons to tell you what they do. It is obvious this program was designed by and for people that use it eight hours a day for their entire working life.

As an intermittent prototype user, this really concerns me. I am not sure if I will remember all the quirks and navigation if I have not used the program in a month or two. The video makes the program look clumsier because I have to drag dialog boxes onto the screen that is being recorded as opposed to just leaving them on one of the other monitors.



The usual way I work on this is to have SolidWorks stretched out across the two monitors on the left with the a FreeCommander file explorer on the right monitor. The top monitor is a 43-inch TV that is useful for Google searches when trying to figure things out on these complex CAD/CAM program.

The three bottom monitors are also great to stretch out the timeline on the Vegas video editing program, with the preview monitor on the large monitor on top. Using SolidCAM, the right-side monitor is where the dialog boxes pop up, so that is perfect for usability. It still does not end the confusion of the unlabeled icons.

After giving up on automatic hole recognition, selection the holes manually showed a feature of SolidCAM that is better than MasterCAM. MasterCAM will do the holes in some arbitrary order. You can fix this but it is really convoluted, like pretty much everything else in MasterCAM. With SolidCAM, the tool operation just follows the order you pick the holes in, a very simple and straightforward method.

Once you select the holes once, you can give that geometry a handy name, and just select that in the drop-down box in the "Geometry" tab of the drilling dialog box. With only five holes, it was almost as easy to just re-select them, and in the video, I wanted to show the selection order turned into the operation order.

Doing the tapped holes was straightforward. It did require doing three operations, the centerdrill, the drill, and the tap. Contrast this with BobCAD CAM, which will create four operations, doing those three as well as a chamfer operation before the tapping.

The real star in SolidCAM is the simulator. They model the taper on the end of the tap. This makes it easy to see if you are going to bottom out the tap in the hole with all the attendant destruction and misery of a broken tap.

I think SolidCAM will also model undercuts like T-slots and other features, such as snap-ring grooves. This seems like a great feature to investigate in future episodes. Also I want to look at doing fixturing, and how the program acts when inside an assembly. With those trials I will know which SolidWorks CAM I buy.