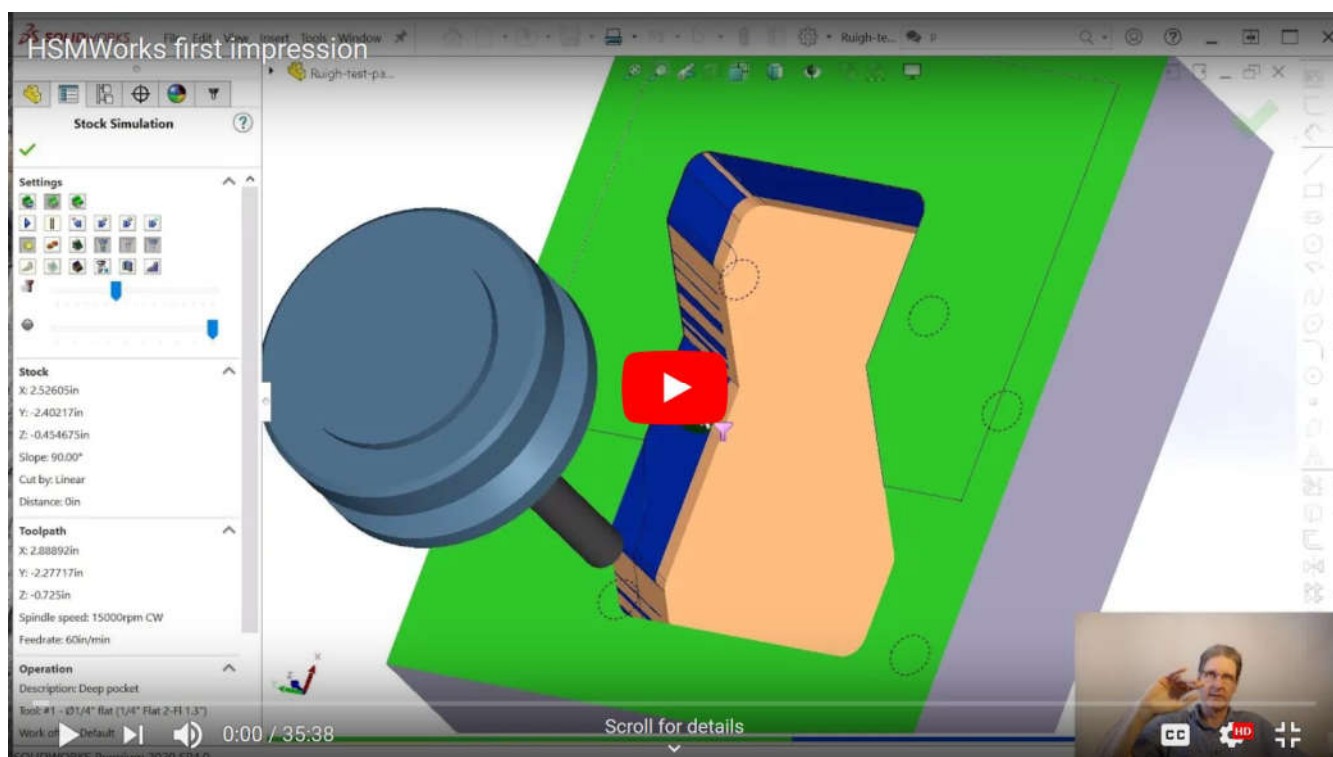—**RAKO STUDIOS**—

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HSMWorks first impression
HSMWorks CAM software runs inside Solidworks. You rent it for $500 a year as opposed to a perpetual license.

Beginning part file here.
Finished part file here.

When I went to evaluate all the CAM (computer-aided manufacturing) programs that run inside SolidWorks, I looked at the "Gold Partner" listing on their website. My mechanical engineer buddy reminded me that HSMWorks works inside of SolidWorks but since they are owned by AutoDesk, they are not a Gold Partner. I asked the AutoDesk salesman if this pettiness was from SolidWorks or AutoDesk, and he said "Probably a little bit of both." I am glad that I learned of this before giving out $5,000 for another program. AutoDesk includes HSMWorks with a Fusion 360 subscription.

Like most CAM companies, when I called an AutoDesk salesman, there was a deal. Buy in the next two days and it is only $300 this first year instead of $500. I can still get my money back after 30 days, so I jumped on it.

I hate subscription software, and I hate cloud software. Fusion360 is both. I don't want to send my precious CAD files to AutoDesk's cloud. Thankfully, that is not the way the HSMWorks plug-in for SolidWorks operates. I swore I would never get a subscription for software, but the reality is that $500-a-year is better than $5000 up front. Especially for an old guy like me that might die in 10 years. Also, if I invest the $4500 at 8% then it lasts 17 years before running out.

1	$4,500	$4,860
2	$4,360	$4,709
3	$4,209	$4,546
4	$4,046	$4,369
5	$3,869	$4,179
6	$3,679	$3,973
7	$3,473	$3,751
8	$3,251	$3,511
9	$3,011	$3,252
10	$2,752	$2,972
11	$2,472	$2,670
12	$2,170	$2,343
13	$1,843	$1,991
14	$1,491	$1,610
15	$1,110	$1,199
16	$699	$755
17	$255	$275

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Here is the math. At the beginning of year-1, you have $4500 since you just rented the program. The 8% average stock market rise gives you $4860 at the end if the first year. Then you subtract $500 bucks for the rent, and start the second year with $4360. The 8% return means you end the second year with $4709.

Thing is, if you can get a 10% return, you will never need more than the original $5000, and when you die, you still have that $5000 in the market. OK, subscription software approved.

Even more compelling, the best CAM software I have used is SolidCAM. It is less than $5000 for the base package, but it only has two simple 3D toolpaths. To get surfacing, add $2k, to get 3D roughing, add $2k, to get 3D machining, add $2k, to get 3D adaptive, add $2k.

SolidCAM is a little hard to use, but it has the best simulator. It is nowhere near as goofy as MasterCAM. If I had a machine shop and was a young guy, I might well buy SolidCAM. But I am a non-machinist prototype guy that is an intermittent user. Heck, I could let the HSMWorks rental lapse, and then just buy a month of it for 60 bucks if I needed to.

After owning AutoCAD 10, 11, 12, 13, and 14, I swore I would never use another AutoDesk product. I got burned learning and using their AME (advanced modeling extension) only for them to drop it after two years. Every time I needed help or wanted to design a CMM interface they said "Talk to your dealer".

A few years ago I fired up an AutoCAD 14 that is still on an old Windows XP box. I was reminded how completely incompetent the print/plot dialogs were. I tried to give AutoDesk another chance with their 123Catch 3D-recognition software. Like the AME, they dropped it after a couple years because, a) it didn't work, and, b) it didn't work.

So my first impression of HSMWorks is that anything done by the original Danish HSMWorks company is great, anything done by AutoDesk is horrible. Case in point: After I pay, I get the "get started" email. I don't click on the link right away. Ten days later, I am ready to install, and the link gives me a page "Expired, contact support." Just like the old days.

I call them up, and get a new email, and that link works, so I make my AutoDesk user account. It shows that I have paid and can use Fusion360 and HSMWorks, it was not clear I had to go to "all products" to see HSMWorks plugin. Then after installation, it asks for my username and password, and promptly rejects it. Now it wants a serial number since it will expire in 30 days. They never sent a serial #.

OK, so as long as HSMWorks is not done by the folks in Sausalito, I think it will be pretty good. There are things that I saw just watching YouTube videos that made me think it was going to be an OK program. I love that they mostly constrain all the dialog boxes to work inside the SolidWorks tree panel. I love that they put the tool tab first, most machinist I know think of the tool first, and then what they are going to cut with it.

The other tabs make sense, geometry comes next, then levels, then paths or parameters as VisualMill calls it. The final tab is links, how the toolpaths are connected. I have not used that tab at all. This test part is most all a 1/4-inch end mill. So that means I am only using the 2nd, 3rd, and 4th tabs. Having just three places to go gives the program a pretty simple and intuitive feel.

One exasperation was editing the tool. When you invoke the tool library, you do get a giant pop-out dialog. They do not show the the number of flutes or the length of cut. You have to right-click the header and add those, then drag them to the right so they are handy.

They had no 2-flute endmills. So I edited an existing one. It was straightforward to increase the length, but the number of flutes was under the "Speeds and Feeds" tabs. Madness.

After spending a half-hour to find how to set the number of flutes, I tried to save the tool only to get a "Read only" error. Another hour trying to figure that out, before seeing you have to copy the "Sample library" that they give to another location, then right click all the contents and do properties, then uncheck the "read only" attribute. As part of getting a tool that is long enough, and with 2 flutes, you can set the default speeds and feeds inside this same tool definition.

Once you have a tool and start making operations, all these CAM programs are mostly similar. You select a tool, a geometry, the levels, the passes, and any linking of the toolpaths. What is nice about HSMWorks is that they are not popping up giant dialog boxes with no labels, the way SolidCAM does.

Because of the strict constraint of staying in the SolidWorks Tree area, I tend to remember how to use HSMWorks much better. Even after one day, I am starting to really like HSMWorks. I hope it can do the things the other CAM programs I looked at can do. We shall see.

One deficiency with the stock simulator is that it does not show color-coded gouge and excess conditions like SolidWorks CAM by CAMWorks, VisualMill, or SolidCAM. It does have a "compare" function, but it only gives shades of gray within a tolerance band you define. The default was 0.01" per 20 shades. I left the 20, but went to 0.001" per shade. This made the edges sharper and gave me more confidence that the part was getting cut properly.

The stock simulator in HSMWorks is far superior to the ModuleWorks simulator used in MasterCAM and BobCAD CAM. One nice thing is you can hover the mouse over the part and there is a "distance" entry in the tree that tells you how much stock is under the surface.

Doing the facing, and two pockets was similar to all the other programs. I do love that HSMWorks pre-selects the last tool you used. SolidCAM that makes you re-select it every time. I did get exasperated setting part zero, but it is still much better than SolidCAM where you have to set the zero before the stock, then move the zero to the stock, then re-open and close stock so things are in the right spot. So far, HSMWorks looks like a keeper.