**WIPS**

We want to take a few minutes to show you the advantages of using the Haas Wireless Intuitive Probing System.

Now, setting up a machine is something that every machinist has to do every day, sometimes it's done once a week and sometimes it's done multiple times per day.

Either way, using the Haas Wireless Intuitive Probing System will speed up this process, make it more efficient for you, make it more accurate, and ultimately help you make more money.

Now, I'm sure some of you are thinking "yeah, but setting up simple jobs, I'm still faster as a human than if we do it with the Haas Wireless Intuitive Probing System".

So, what we have here is a video of us manually setting up the same job we are going to set up using WIPS.

Start playing video.

We are going setup a vise, setup the work offset for the material, just a square piece of material in the middle of the vise, and then we are going to setup four tools.

Now, this video is going to run in the background and as you can see we have speed it up to two times speed.

So, with that, I'm going to ask somebody in the crowd to start the timer on their smart phone.

Now, [Operator’s name] is going to go through and start setting up this job.

Again, this is just a square piece of material with four tools using the Haas Wireless Intuitive Probing System.

Now, all the features of the probe system, all the templates are right here in the offsets of the machine.

So, in this case [Operator’s name] is working with the work offset.

And right now he is manually jogging the probe into the middle of the part and about ten to twelve millimeters above the part.

Now, he will go through his offsets, he will select the type of probing he wants to do to set the Z offset.

And now he will enter a value of how far he wants this probe to probe down in the Z direction, in this case we've got twelve millimeters and away it goes.

We've now set the Z work offset for this material

Now [Operator’s name] will move the probe to the corner of this material and then he will select the appropriate template or probe the corner of this material.

Now, you'll see it probe along the X-axis and along the Y-axis.

So, again he goes into the offsets, selects the appropriate template for probing the corner of a vise, answer a few questions about how far along in X and how far along in Y we want to probe.

In this case we are doing 75 millimeters and then 50mm in Y.

Now we press {CYCLE START}.

Now, you will notice how in the video we are 4 minutes into the video and our machinist is still tramming in the vise, he's sweeping back and forth to make sure that those vise jaws run parallel to X.

This vise, we just set down onto the table and we will show you how there is no need to tram in the vise later on.

So, now [Operator’s name] has setup the X, Y, and Z work coordinates.

Now he's going to go through and he's going to setup these four tools.

So, again, using the templates that are in the offsets page

He is going to go to tool offsets and now just defining each one of these tools.

In this case, we need to probe the length of each one of these tools and for the two endmills; we're going to select a rotating probe routine.

In this case, we will measure the length, but with the tool rotating backwards, this ensures we have the longest length of each of the flutes on the tool.

So now, [Operator’s name] is done and what is the time?

Wait for time from audience.

So two and a half minutes later and [Operator’s name] is now freed up to go do something else.

He can prepare the material, check on another machine, etc.

The point is he is not tied up on this machine.

Here in the video, we are at six and a half minutes and we're just starting to use the edge finder for locating the corner of that material.

Now, back on the machine we have probed that tool, now we're going to change tools and probe the next one.

And again, you'll see that we rotate the tool backwards, we come down, and we just measured that Z length offset.

A lot of times people will assume that the probe is slower because they are watching this slow feedrate as the probe runs through its macros to come and probe that tool.

It's running slower just to be safe, in case you made a mistake.

But more importantly, there is no operator running this machine tool, the operator is freed up to go do other things.

That is what helps you become more productive with your machine tool.

Your machine tool should be running unattended as much as possible, setup just falls right into that.

So now, we are to our third tool.

The tool comes down, takes a measurement and back up it goes.

Now, we are on to our last tool and still we're nine minutes on the manual process versus about four and half minutes here.

And now we are done.

We have setup an X, Y, and Z work offset, we've accounted for any type of skew that's in the vice, and we've also setup the four tools.

Here, we still have another minute to go before this manual setup video is complete.

Start the presentation.

So we have watched us set up this job, let's talk a little bit about some of the math, some of the understanding of why this makes you even more productive.

If we look at just this simple example of four tools and a work offset, you see that we did the work offset in a minute using WIPS, whereas with the manual process on the video, it took seven minutes.

We did tool offsets in 15 seconds with WIPS and the manual process took one minute per tool.

So, we are four and seven times faster using WIPS versus a manual set up.

Now, let's consider that over the course of six months or a year, on average, you spend one hour each day setting up a machine tool.

It might mean you set up three different jobs in one day.

Or maybe two times per week, but let's just say it's an hour a day you spend on setup.

Conservatively speaking, your shop rate is $60 per hour.

Let's say we can only cut your setup time in half, in which case we are saving you $30 per day, that's a minimum.

As you have seen, we are at least four times faster.

So, if I take that $30 per day and divide it into the price of the Haas Wireless Intuitive Probing System, in 9 months we have paid for that probe.

But, there are so many more opportunities savings.

The fact that you are freeing up a machinist to go do other things while the machine finishes setting up the job automatically.

With WIPS you have a more accurate and more repeatable setup, which means blend lines between tools will be better.

The consistency from part to part is also vastly better.

You no longer have to worry about the hard stop deflecting and yielding inconsistent dimensions.

Let the probe of WIPS locate your part each time or deal with the material size inconsistencies.

One of things we haven't talked about are some of the advance features such as the broken tool detection.

If you have a critical part that has a higher possibility of breaking a drill, you can set up the machine to check for a broken tool before it changes to the next tool.

Just saving one of those scrapped parts could pay for your probing system.

Another advanced feature included with the WIPS option is the use of G68, Coordinate Rotation and Scaling.

[Operator’s name], could you take us through the use of G68 to account for a skewed vise.

([Operator’s name] speaking)

Sure, the Haas Wireless Intuitive Probing System comes with a feature called Coordinate Rotation and Scaling, it also comes with macros.

So, we are utilizing those two features to record the angle of the vise relative to the machine axes.

Now, you'll notice when I probed for the X and Y work offsets, I took two probe hits along X and two probe hits along Y.

So, in the background the control is determining what angle that material is actually orientated relative to the machine axes.

You will recall I never spent any time tramming in my vise.

As a matter of fact, I have the output of the macro variables displayed on the screen down here.

It is called ‘Angle’ and it's stored in this macro variable number one.

It is 1.99 degrees.

We have recorded that angle and populated the variable with that angle.

Now, we can use G68, the Coordinate Rotation and Scaling G-code, to rotate the program around the corner of the vise, eliminating the impact of that skewed vise.

This eliminated the need for the operator to spend time painstaking squaring up the vise and still possibility introducing more error.

(Sales person speaking)

There are even more advanced features found in the WIPS system such as in process inspection.

These features can help you be even more profitable.

Check out diy.haascnc.com for more details.

In simple terms, you get faster setups, more consistent setups, more advanced features, and most importantly Haas WIPS allows your machine tool and machinist to be more productive.

More productive means you are making money faster.

Any questions?