

Auggie Probing Scripts

Thanks to ART for all the hard work he has put into, getting the probe working..

I am using these scripts on my mill and all is working fine, at least for me, but as always I don't expect the same results for everyone..

So use at you own risk,

First) make sure you have the latest version of Auggie installed.

To use the probing scripts you will have to unzip the probing zip file and put the probing folder inside the auggie script folder, and also any panels from the zip file into the auggie panel folder..

Now boot auggie, go to the configuration then Engine/config and then Engine/planner/config now scroll down to probePin and enter your pin number mine is set to pin 19, I'm using the pokeys 57cnc controller and also set the probe/ polarity true of false.

After setting the probe/polarity close auggie and reboot auggie.

I use both true and false, with my touch plate I set it to false, and with my touch probe I have it set to true, you will need to figure out how your probe needs to be set.

Make sure to do your testing while in the air before probing a touch plate or with the touch probe if set wrong the probe will most likely crash so be sure first..

You will also have to make sure you go to the LIB in auggie, and then make sure the scripts are checked and turned on.

Also go to configuration, and then check edit mode. Now add a panel to the screen and choose the probing panel form the Zip file that should now be in the auggie panel folder.

Make sure you enter all the values in the probing panel's dro's before probing...

I have added 3 buttons to the panel, X+ - Y + - and Z+ - , clicking any of these will change the direction of the probe, for my setup I leave them off, not even sure if there necessary but they are there if needed to reverse direction on probe there is also an led to tell if it's switched.. Green on, Red off

Also there is a button to turn off Z probing should only be used for X or Y centering and make sure the Z Zero is set right or the Z may not move far enough down, or to far down and crash the probe or tool. But it shouldn't seeing that when moving Z down off the parts edge if the probe id hit, the Z should then retract to a safe position ans Abort, but you never know when things may not work as planned.

There is an led to show if the probe was hit.. if I use a touch plate the led is geen not hit and ret hit Touch probe id red not hit green hit.

Or if you want to...

You can edit the scripts to fit you machine needs the Axis direction's may differ from mine.

Example if probing X center and X is moving in the wrong direction then edit the script, so if X is set to X- then change to X, may have to do the Y axis also.

I also have added some Buttons now to swap direction, may or may not work for everybody you will have to test it out.. Mine or set to Off

// not included yet will upload later

M6 T# If M6 is in the G code it will stop the G code execution, a dialog box will pop up and you can now jog any axis to a safe position to swap out the tool manually, Then when tool is changed.

You can do any of these options

1) First jog the X and Y back over part then You can now hit the Z Touch Off button and the Z will probe to the top of part, if you are using a Touch Plate, have it on top of part first, also make sure you enter a Value for Touch Plate Thickness in the probing DRO'S Value of 0 = no touch plate and tool will stop on parts surface and retract to safe position above part, Value of .475 Probe will hit touch plate and set the Z axis to .475 and retract to a safe Z Position above the top of touch plate. And be the retract distance above the top of part.

When done remove the touch plate close the dialog and hit RUN..

X Y and Z should return to there Positions before Jogging to do the change tool.

2) Keep same tool, exit and hit RUN Press the manual tool change button.

3) Jog to safe position to Manual change tool, then jog X Y back over part and Jog down till tool is touching part make sure to Zero Z axis at the top of part and then retract some, now hit the manual tool change button, X Y Z should return to the Position's before Jogging..

You Will need most of the setting Entered in the probing DRO'S for Z probing to work properly.

And you will also need the on screen Probing panel.

// end not included

Also working on an auto tool changer, that may be adaptable for different style tool changers, this one will use motor 6 and 7, move the changer in and then rotate..

Probing with the Z Touch off button from the probing Panel

All the DRO values should be entered from within the on screen probing panel

1) Jog over the part or touch plate and try to be above the surface and then Zero the Z axis DRO

make sure you have a large enough value in the probing dro distance below part.

Then hit the Z probe button, the Z should now probe downward till tool or probe hits the top of part or the touch plate, once probe has been hit, the Z should now retract to correct tool height.

Example if you have a touch plate with a value of .475 in the dro and a retract distance of 1.0"

in the dro, then when Z retracted, and after you remove the touch plate Z dro should be showing 1.0" above the top of part. Not above touch plate, If you have a 0.0 value in the touch plate dro, then Z will be 1.0" above the touch plate or part , if no touch plate is being used.

X Center probing - finding the Center of part on X axis

X Center probing Make sure all DRO values are entered first in the probing panel.

If for instance the part has a hole in the center, then you can turn off Z probing by pressing the No Z probing button in the probing panel. But you need to have the probe at a correct height, if not it may

move the probe to far below the top of part, or stop short.. it will still Z probe down when its off the parts edge, just in case so hopefully no crash.

!) Jog as close to the center of part make sure you are above the part, but not to high , Then Zero the X Y and Z Dro's.

2) Hit the X centering Button, The Z should probe down to first find the to Z zero when probe is hit Z axis will be set to Zero. Endless you Have Z probe Turned off. Then it will just jog off the part. The probe will now move to the X+ side of part $Xlength/2$ plus overshoot when reached, the Z axis will probe down to the Z Top of part plus overshoot amount if the probe is hit X center probing will Abort and Z will retract to Z start position then X will retract to the X start position.

Its kind of a safety feature so if you are using a touch probe it doesn't dive into the top of part, and at the worst case break or bend the probe could be a costly error.

If the probe is not Hit, Z will move to the overshoot distance below top of part, then start probing in the X- direction till part is hit.. if the probe is not hit then the X centering probing will be aborted the Z will retract to a start Z position, and the X will retract to the Start X position.

Usually this means the X length value is to large in the dro, and you went to far off the parts edge.

If the probe was hit it will do a probe back off and then Zero the Z axis retract Z to Z start position.

Now X axis will jog to the opposite X side should be X- and The Z will probe down till below the top of part, if the probe is Hit X centering will abort, the Z will retract to the Z start position and the X will jog back to the X start position.

If the probe is not hit the Z will move below the top of part, and start probing in the X+ direction if probe is hit, the X will probe X- till the probe is triggered open, save the X triggered position then retract Z to the Retract position and move the X to the parts Center and Zero the X axis. The spindle should be int the center of X.

If the release probe isn't triggered the it will Error the X probing, and the Z will retract to the Z start position, the X will jog back to the X start position.

Should also pop up a dialog box with the X probed Length's being displayed.

Y Center probing - finding the Center of part on Y axis

Y Center probing Make sure all DRO values are entered first in probing panel.

If for instance the part has a hole in the center, then you can turn off Z probing by pressing the No Z probing button in the probing panel. But you need to have the probe at a correct height, if not it may move the probe to far below the top of part, or stop short.. it will still Z probe down when its off the parts edge, just in case so hopefully no crash.

!) Jog as close to the center of part make sure you are above the part, but no to high Then Zero the X Y and Z Dro's.

2) Hit the Y centering Button, The Z should probe down to first find the to Z zero when probe is hit Z axis will be set to Zero.

The probe will now move to the Y+ side of part $Ylength/2$ plus overshoot when reached, the Z axis will probe down to the Z Top of part plus overshoot amount it the probe is hit X center probing will Abort and Z will retract to Z start position and Y will retract to the Y start position.

Its kind of a safety feature so if you are using a touch probe it doesn't dive into the top of part and at the worst case break or bend the probe could be a costly error.

If the probe is not Hit, Z will move to the overshoot distance below top of part, and then start probing in the Y- direction till part is hit.. if the probe is not hit then the Y centering probing will be aborted the Z will retract to a start Z position, and the Y will retract to the Start Y position.

Usually this means the Y length value is too large in the dro, and you went too far off the part's edge.

If the probe was hit it will do a probe back off and then zero the Z axis retract Z to Z start position.

Now Y axis will jog to the opposite Y side should be Y- and the Z will probe down till below the top of part, if the probe is Hit the Z will retract to the Z start position and the Y will jog back to the Y start position.

If the probe is not hit the Z will move below the top of part, and start probing in the Y+ direction if probe is hit, the Y will probe Y- till the probe is triggered open, save the Y triggered position then retract Z to the Retract position and move the Y to the part's Center and zero the Y axis. The spindle should be in the center of Y.

If the release probe isn't triggered it will error the Y probing and the Z will retract to the Z start position, and the Y will jog back to the Y start position.

Should also pop up a dialog box with the Y probed Length's being displayed.

X Y Center probing finding the Center of part on X and Y axis

X Center probing Make sure all DRO values are entered first in probing panel.

If for instance the part has a hole in the center, then you can turn off Z probing by pressing the No Z probing button in the probing panel. But you need to have the probe at a correct height, if not it may move the probe too far below the top of part, or stop short.. it will still Z probe down when it's off the part's edge, just in case so hopefully no crash.

1) Just Hit the Center XY Button Same process as finding the X center and finding the Y center only this will do both with one button press and place the spindle in the Center of the part on X and Y axis then both the X and Y Dro's will be set to 0.. you should now be in the part's center..

Should also pop up a dialog box with the X and Y probed Length's being displayed.

Probing to Find the Center of the corners X+ Y- / X+ Y+ / X- Y- / X- Y+

1) Press the Center Corners button in the probe panel dialog

A dialog box will pop up, and you have 5 buttons to choose one for each corner and abort.

On my machine the X+ Y- are the right front corner, the X+ Y+ are the right rear corner, X- Y+ left rear corner and, X- Y- left front corner.

You may have to use a different button, than the way I have them setup for me, or you may have to dig in and edit the scripts to suit your need and machine setup.

2) You first need to jog the probe off the part's edge, and then below the top surface the amount you move below the top is up to you but when the probe is finished the Z will jog up to the set Retract height that is entered in the probing panel Dro so make sure the Z will be higher than the top of part's surface when it's retracted or it will crash into the side of part.

When below the top of part then jog off the X axis that you wish to probe X+ or X- side, and then jog the Y towards the center of part about two sizes of the tool or probe tip dia Example probe tip dia, Dro = .250 then move at least .5 from the corner towards the center of the Y axis.

3) Now press the button for the corners you would like to probe if will probe towards the Y corner, hitting the X side till its off the parts Y edge then jog off the Y a little and start jogging the Y side back towards the X till off the parts edge. Once both edge's are probed the Z will retract to the Retract height entered in the retract height dro and the X and Y will jog over the center of parts edge and Zero the X and Y dros..

Same for all corners..

Probing to Find the edge of a part X+ Y- X- Y+

1) Hit the probe edge button in the probing panel, a dialog box will pop up.

2) Make sure all value's are entered in the probing panel dro's. Then hit the button for the edge you wish to probe, X+ my machine it's the right side, X- on mine would be the left side, Y+ is the back side and Y- is the front side.

You need to jog off the part's edge and jog down below the top of part, and make sure the Retract distance in the Retract DRO is large enough to retract the Z above the top of part or the tool or probe may crash into the edge when moving to it's center.

3) if all looks good hit the button for the edge you wish to probe, once finished the spindle center should be centered to the part's edge, and then the X and Y will be set to Work Zero in the DRO's.

Probing to Find Center of a bore-round

Center probing bore Make sure all DRO values are entered first in probing panel.

!) Hit Bore probe center button.

Make sure the probe is close to the center of part and below the surface.

A dialog box will pop up now hit the probe bore round button.

And it will probe X then Y and if no errors a dialog will pop up and show the bore size..

I have found that if probing a small bore .5 or less it's best to lower the Slow Feed rate value in the dro.

I have tested 1.0" and above at 10, and smaller sizes at 5 seems to work for me..

Probing to Find Center of a bore-square/ret

Center probing bore Make sure all DRO values are entered first in probing panel.

For square and ret you have to enter the X part length Y part length in the dro's

!) Hit Bore probe center button.

Make sure the probe is close to the center of part and below the surface.

A dialog box will pop up now hit the probe bore square/ret.

And it will probe X then Y and if no errors a dialog will pop up and show the X and Y length's..

I have found that if probing a small bore .5 or less it's best to lower the Slow Feed rate value in the dro.

I have tested 1.0" and above at 10, and smaller sizes at 5 seems to work for me..