GIBBSCAM® 14

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Probing Tutorial

CAMBRIO

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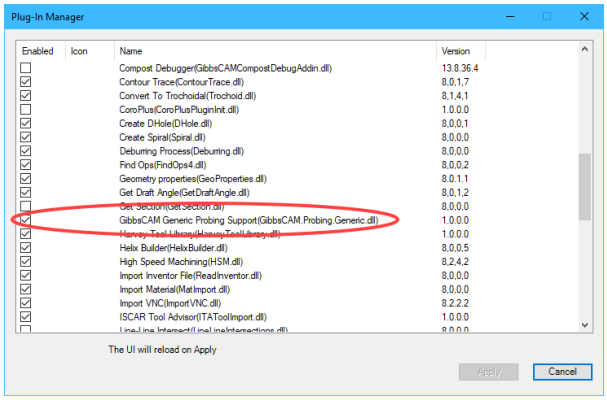
Probing Tutorial

Generic Option

This tutorial provides an introduction to using Probing functionality. The focus will be on the “Generic” option, which has a built in user interface integrated with GibbsCAM. Like all probing options, it requires Post modifications before it can be used on your machine.

Please Note:

In order for Probing to function, it must be enabled in Plugin Manager. If this has not already been done, go to Plug-Ins > Plugin Manager  and ensure the option “ GibbsCAM Generic Probing Support” is checked.



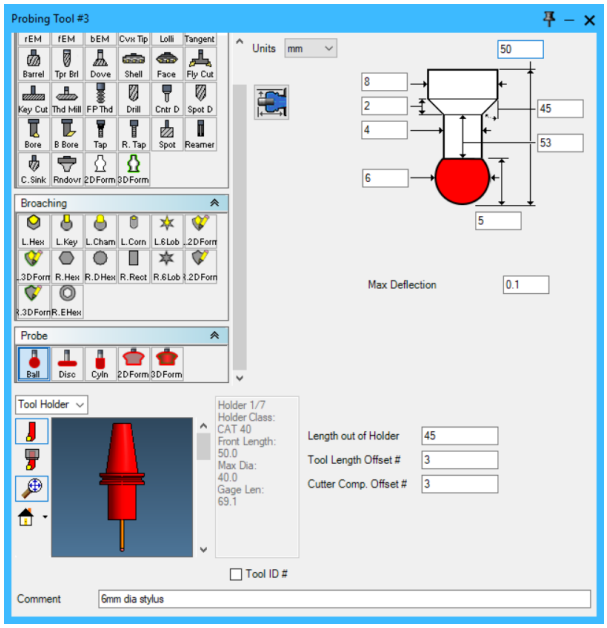
The tutorial assumes you have existing knowledge of GibbsCAM machining.

Steps

1. Open the file `Probing tutorial.vnc`.

The part consists of a simple rectangular solid with a circular hole that we will probe to update the Work Fixture Offset in X,Y and Z. We will then Mill, Finish and probe the part again to check for accuracy. Two Milling tools have already been created.

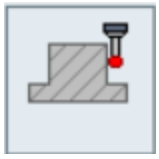
2. Double-click tool tile #3 and choose the Ball Probing tool.

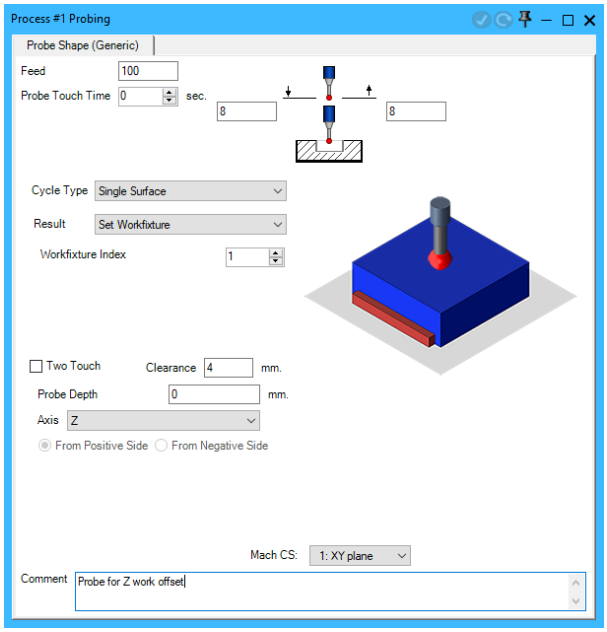


3. Enter the details as shown to create a 6mm diameter stylus probing tool.

We will now create a probing operation to update the Z work offset.

4. Drag the probing tool to Process Tile #1 and choose Shapes Probing





5. Enter details as shown. This will feed the probing tool to the top surface of the stock and probe the surface.

Select the circle.

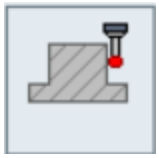
6. Click Do it.

7. Render the operation  .

We will now create a second probing operation to set the WFO to the top of the block in X and Y.

8. Choose the 6mm Ball Probing tool once more and drop it onto Process Tile #1.

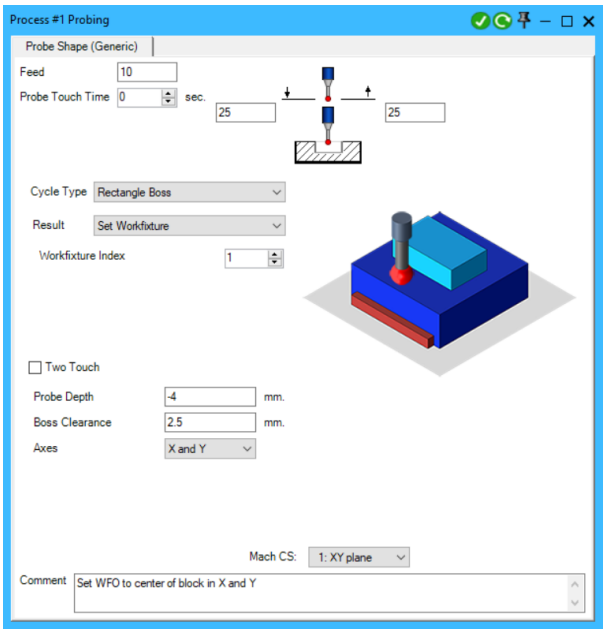
9. Choose the Shapes Probing operation.



This time we are probing the outside of the rectangular solid to set the WFO to center the block in X and Y.

10. Enter details as shown.

Once again we are probing the Stock, so we do not have to select anything.



11. Select Do it. 

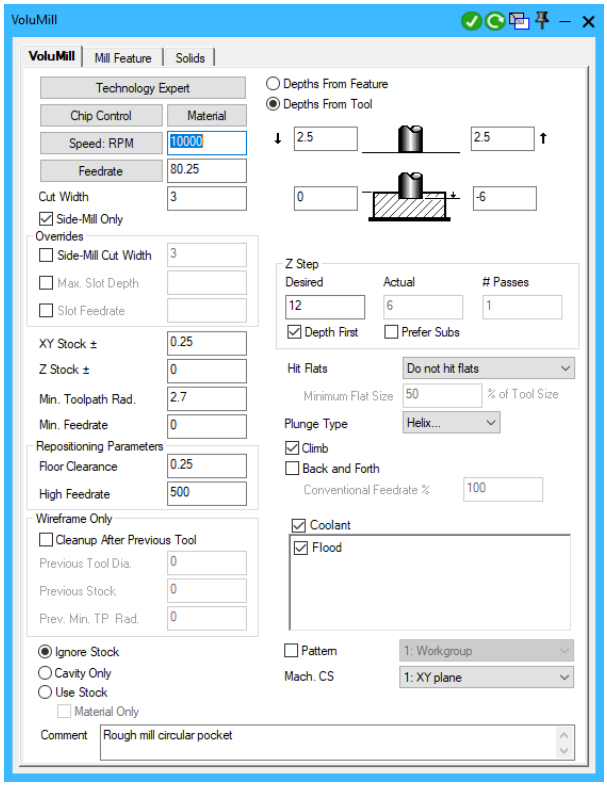
12. Render the operation  .

We will now create an operation to Mill the center hole.

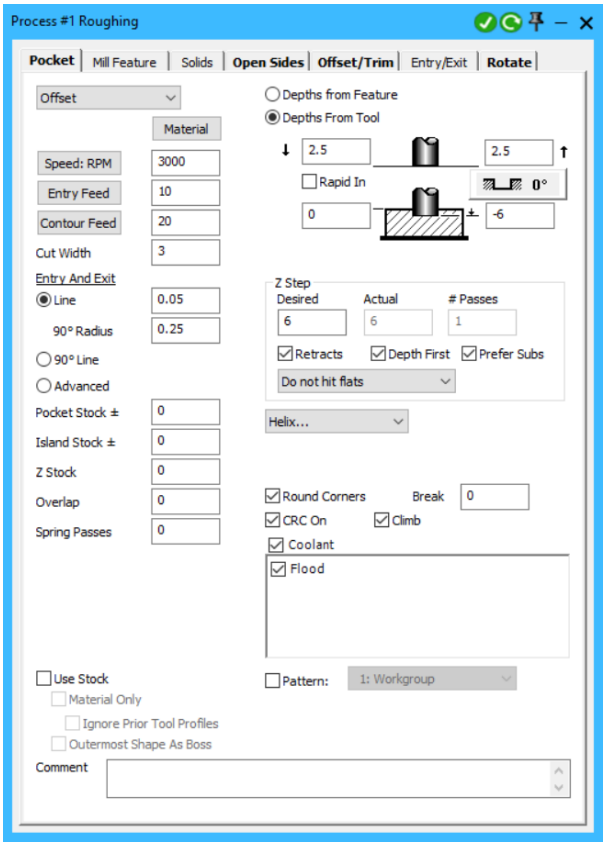
13. Double-click Process Tile #1 and choose Volumill. If you do not have this option, use the Roughing Process.

14. Choose Tool #1, the Rough Endmill and enter the details as follows.

Volumill Process



Roughing Process

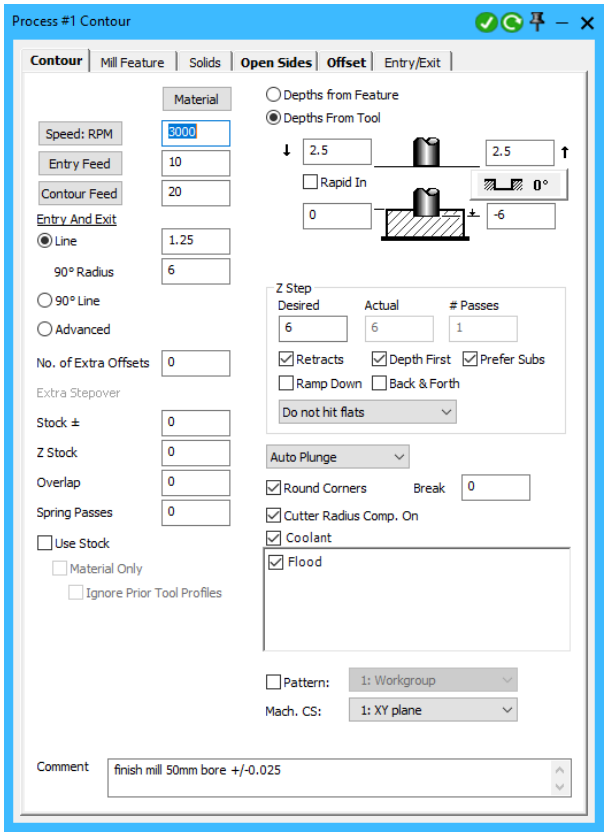


15. Select the circle geometry and click Do it.

We will now create a contouring operation to finish the part.

16. Double-click Process Tile #1 and select the Contouring operation.

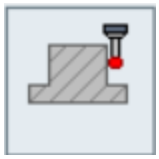
17. Select Tool #2, the Finish Endmill and complete the dialog as shown.

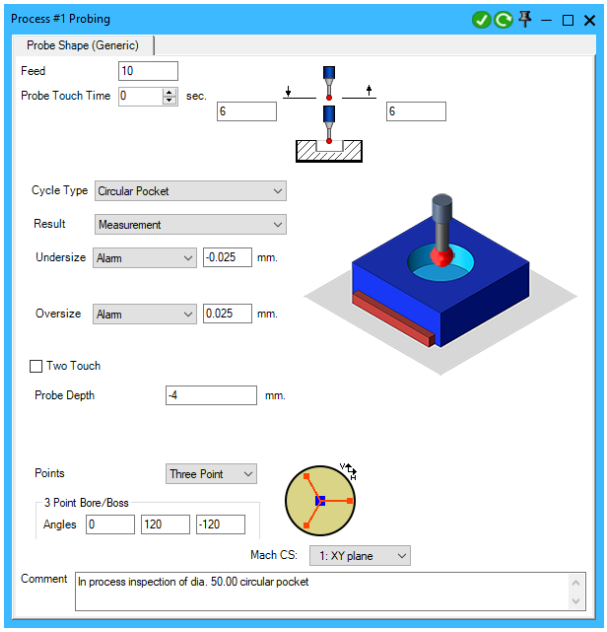


18. Select the circle geometry and click Do it.

We will now create another probing operation to measure the accuracy of the pocket.

19. Choose the Shapes Probing Process.





20. Enter the details as shown.

We will measure the pocket, then output an alarm if it is under or oversize by more than 0.025mm, probing at a depth of 4mm and checking three points.

21. Click Do it.

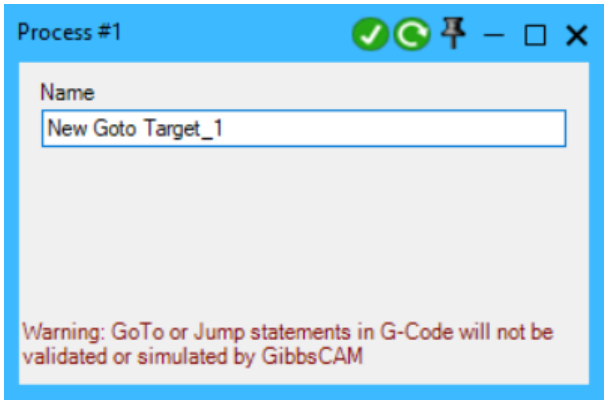
22. Render the operations.

Goto Operation

We have a Utility operation type that can be useful when probing, which is Goto. In this case we will use Goto to tell the machine to go back to the Contour operation if the part is undersize. Which will enable us to redo the Contour it if the pocket is not correct. In order to use this function we will first create a Goto Operation.

1. Double-click Process Tile #1, and in the Select Process Type menu, choose Goto from the Utility sub menu.

The operation is named automatically. You are free to rename it, as long as the name is unique - you must not have two Goto targets named the same. This Utility is output to G-code, but as stated on the dialog, is not validated or simulated by GibbsCAM.

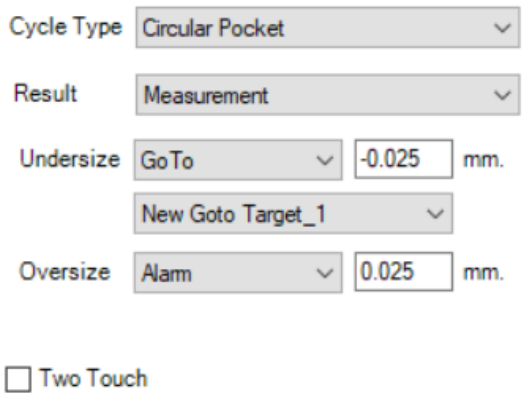


2. Click Do it.

3. We want the Goto operation to point to before the contour operation, so drag the tile to position #4 in the operation list.

Now we must edit the Probing operation to use the Goto.

4. Double-click the Probing operation #5 and edit it as shown.



5. Click redo.

6. Render the operations.

You will note that there is no visible difference between the previous render and the render including the Goto Operation. This is because GibbsCAM will not render Goto operations, they are simply output to the code.