

# AlibreCAM 2018-MILL Quick Start

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## Useful Tips

Here are some useful tips that will help you use this guide effectively.

1. Copy the tutorial files to a location other than the installation folder to make sure you have read/write privileges to the files.
2. Once you start working with the tutorial file, save your work periodically!
3. Don't stress out too much if you are having trouble with the tutorial. Call us or send us email and we can help you out.
4. Most of all have fun!

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## What's New

You can find out [What's New](#) in the latest release of [AlibreCAM 2018](#) here:



### Related Topics

[What's New in AlibreCAM 2018](#)

## Videos & Guides

Quick Start Guides for each AlibreCAM 2018 module are available in both PDF and Video format. Refer to the following information to access these guides:



### 2018 Quick Start Guide Videos

[AlibreCAM 2018 MILL Quick Start](#)

[AlibreCAM 2018 TURN Quick Start](#)

[AlibreCAM 2018, 2½ Axis Introduction](#)

[AlibreCAM 2018, 3 Axis Introduction](#)

[AlibreCAM 2018, 4 Axis Introduction](#)



### The Complete 2018 Video Play List

[Here is a link to the complete 2018 Video Play List](#)



### How to Access the 2018 Quick Start Guide Documents

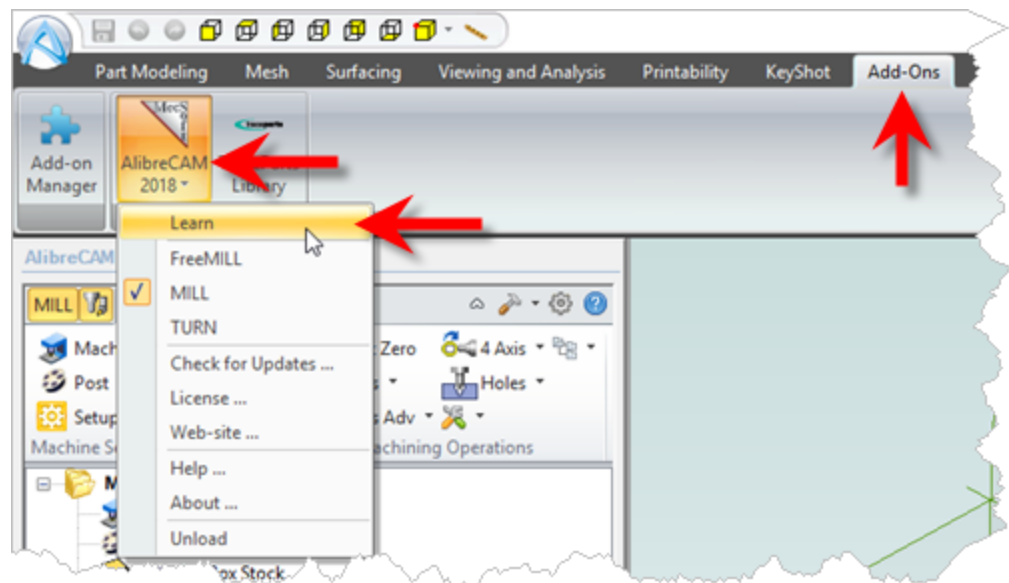
To help you quickly get started in working with each module, select one of the Help files located on the AlibreCAM 2018 Learning Resources dialog.

You will find:

- [Data Sheets](#)
- [Quick Start Guides](#)
- [What's New documents](#)
- [Online Help links](#)

The [Quick Start Guides](#) will help you step through an example tutorial which will illustrate how to use the module. To access the [Learning Resources](#) dialog:

1. From the [Add-Ons](#) menu in [Alibre Design](#), select [AlibreCAM 2018](#) and then [Learn...](#)



To access the AlibreCAM Learning Resources dialog

2. Select a document from the [Learning Resources](#) dialog to get started using the module of your choice.



Learning Resources dialog

## About this Guide



## About the MILL Module

The [AlibreCAM 2018 MILL](#) module offers fast gouge free solids/surface model machining technology coupled with cutting simulation/verification capabilities running inside [Alibre Design](#) for programming CNC Mills. This integration allows for seamless generation of toolpath and cut material simulation/verification within [Alibre Design](#), for programming milling machines that support 3, 4 and 5 axis continuous machining.

The module also comes with numerous post-processors to output the programmed G-code to some of the most popular machines on the market. A simple and well thought out user interface makes this system one of the most intuitive and easy to use milling systems available today.

You can work with the native [Alibre Design](#) data as well as use any of the data types that can be imported into [Alibre Design](#) such as solids, surfaces and meshes. Then you can use the [AlibreCAM 2018 MILL](#) module with its wide selection of tools and toolpath strategies to create machining operations and associated toolpaths for CNC Mills. These toolpaths can then be simulated and verified, and finally post-processed to the controller of your choice.

## Using this Guide

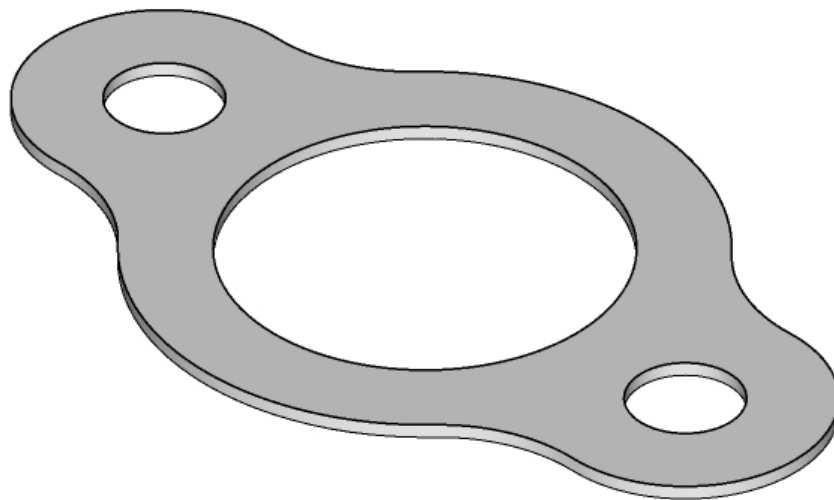
If you have installed [AlibreCAM 2018](#) successfully on your computer and are now looking at the blank screen of [Alibre Design](#) and wondering what to do next, this is the guide for you.



This guide will explain how to get started in using the [AlibreCAM 2018 MILL](#) module to program a simple part through an example.

This guide will illustrate machining of a simple prismatic part such as this gasket using 2-1/2 Axis milling operations. Even though we have created a 3D representation of the gasket, it will become apparent as we go that we can machine this using just 2D curves. The reason we are able to do this is because of the prismatic nature of this model, which means that the curves can be treated as the edges of vertical walls in the geometry.

This guide has two associated [Alibre Design](#) files that you can find located in the [QuickStart](#) folder under the installation folder of [AlibreCAM 2018](#). The first file is a completed file that contains all of the completed toolpaths and machining operations and represents the file that you should end up with after working through the tutorial. The other file is a starter file that contains only the geometry. Use the completed file as a reference. Copy the starter file and use this file to begin the tutorial.



MILLQuickStartTutorial.AD\_PRT

## Getting Ready

### Running AlibreCAM 2018


Locate the [Alibre Design](#) shortcut on your desktop and double click to launch the application.

Alternatively you can also click on the Windows [Start](#) button and select [All Programs](#). Go to the program group containing [Alibre Design](#). (The name of this program group will usually be called [Alibre Design](#), unless you specified otherwise during setup.)

Once you locate the program group, select it and then select [Alibre Design](#) to launch the application.

If the installation was successful, upon launching of [Alibre Design](#) and opening a [Part](#) document you should observe a menu entry called [AlibreCAM 2018](#) in the [Add-Ons](#) tab menu bar of [Alibre Design](#). To run [AlibreCAM](#), drop-down the [AlibreCAM 2018](#) menu and select either [MILL](#) or [TURN](#). This will display the [Machining Browser](#) on the left side of the screen.

If you do not see this menu entry then please check the [On Line Help](#) document of the product (found in the installation folder) for help with trouble shooting the installation.

 **AlibreCAM 2018 only operates in the Part mode of Alibre Design.** If you are running in the [Drawing](#) or [Assembly](#) mode of [Design](#) you will not see [AlibreCAM's](#) menu loaded in the [Alibre Design Add-Ons](#) menu.

## Machining Strategy

### Main Programming Steps

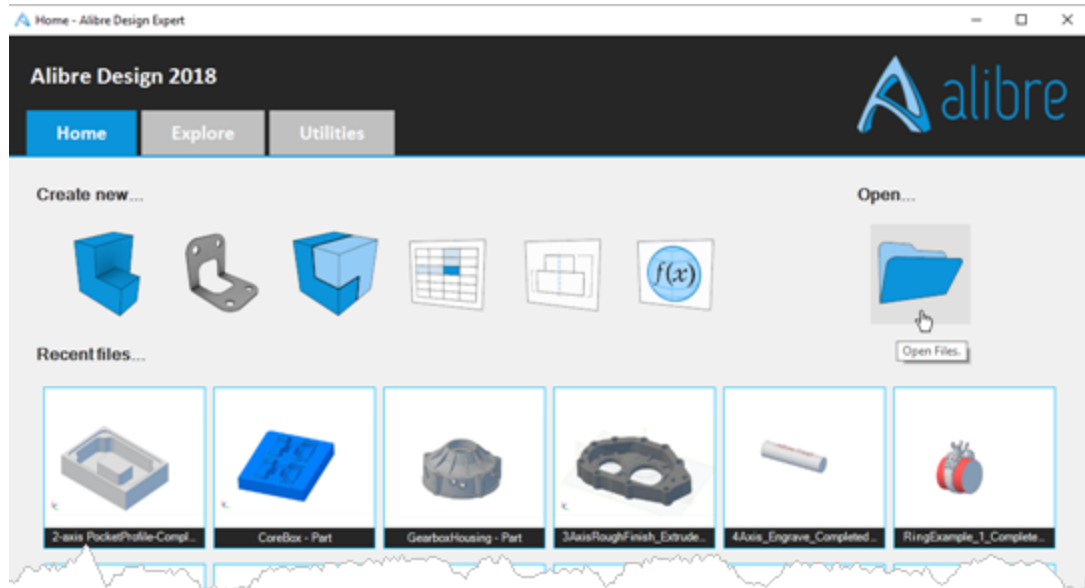
The following steps will be followed in machining this model. Some of these steps will have to be performed just once and others may have to be repeated to complete the machining.

1. Define the [Machine](#) and [Post-processor](#) to use.
2. Define the [Machining Setup](#) including [Stock Geometry](#), [Material](#) and [Work Zero](#).
3. Create and [Select](#) a [Tool](#) to use for machining.
4. Create the [Machining Operations](#) including the [Feeds and Speeds](#), the [Clearance Plane](#) and other [Cutting Parameters](#).
5. [Generate](#) the toolpaths.
6. [Simulate](#) the toolpaths.
7. [Post Process](#) the toolpaths.
8. Generate [Shop Documentation](#).

## Load the Part Model

The **Part** typically is the geometry that represents the final manufactured product.

1. Select **Open** from the **File Menu**.




2. From the **Open** dialog box, select the **MILLQuickStartTutorial.AD\_PRT** file from the **C:\ProgramData\MecSoft Corporation\AlibreCAM 2018\QuickStart\** folder. As mentioned before, it is advisable to make a copy of this part at a suitable alternative folder so that you have write privileges to modify the part.

**!** By default, the **ProgramData** folder is "hidden" from view. Here are the steps to Show hidden files and folders:

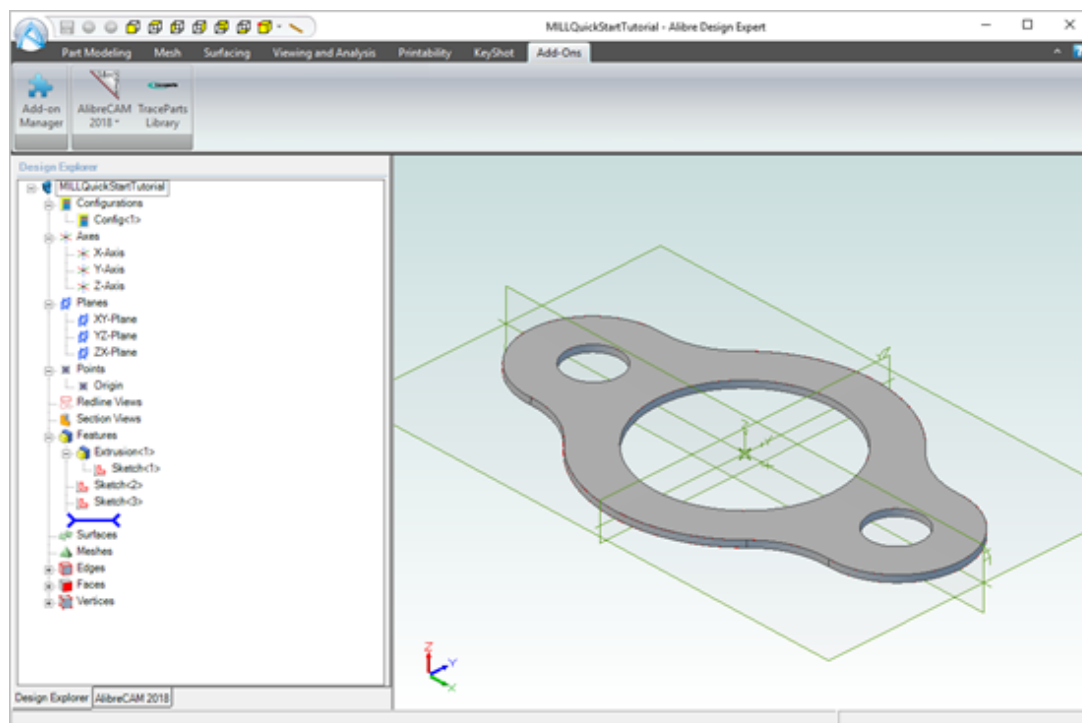
1. For **Windows7/8** users: Go to **Control Panel > Appearance and Personalization > Folder Options**.
2. Select **View** tab and under advanced settings select **Show Hidden files and folders**, clear the check boxes for:
  - **Hide extensions for known file types**
  - **Hide protected operating system files (Recommended)**

## Advanced settings:

- ☒ Always show menus
- ☒ Display file icon on thumbnails
- ☒ Display file size information in folder tips
- ☒ Display simple folder view in Navigation pane
- ☐ Display the full path in the title bar (Classic folders only)
-  Hidden files and folders
  - ☐ Do not show hidden files and folders
  - ☒ Show hidden files and folders
- ☐ Hide extensions for known file types
- ☐ Hide protected operating system files (Recommended)
- ☐ Launch folder windows in a separate process
- ☒ Remember each folder's view settings

3. Click **Apply** and **OK**.

The part appears as shown below

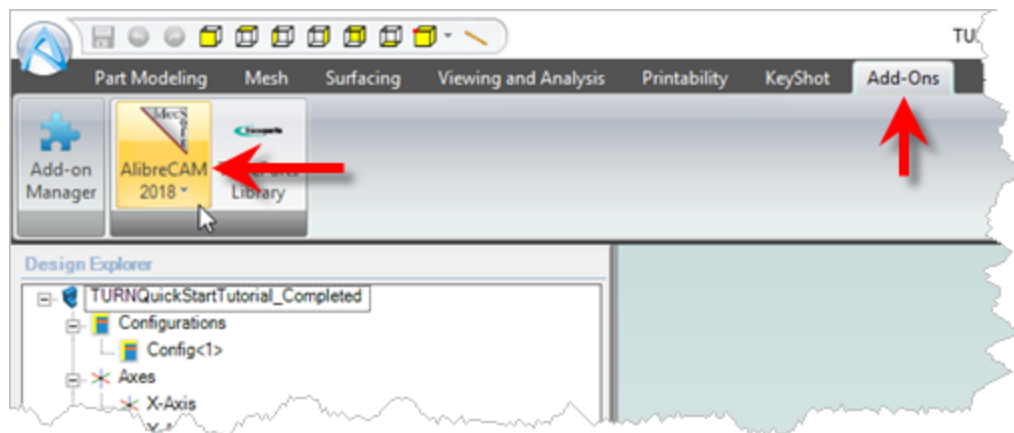


MILLQuickStartTutorial.AD\_PRT



In the future you can import 2D drawings, Solid, Surface and Mesh models that are supported in Alibre Design.

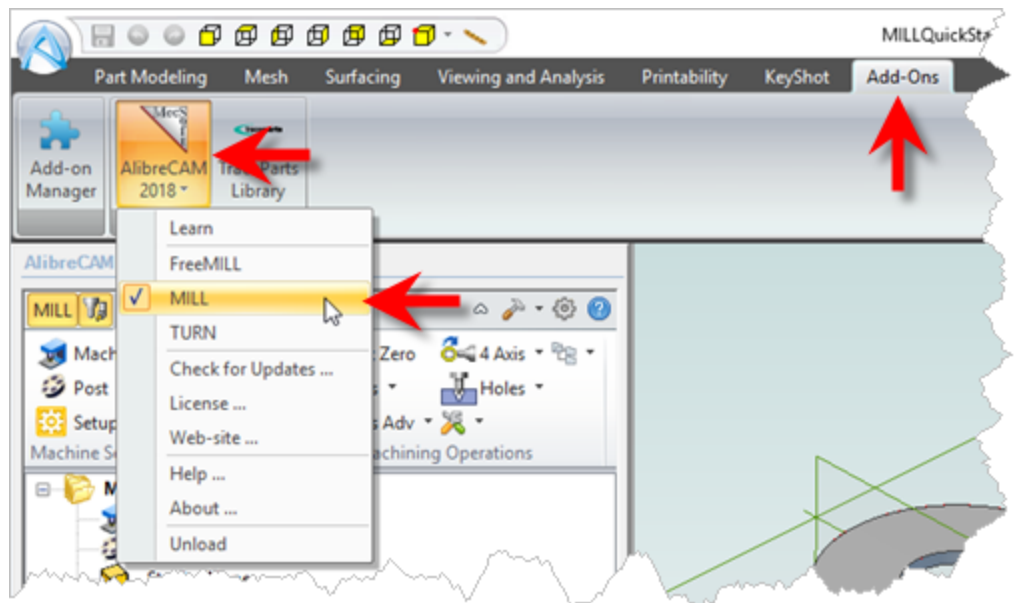
3. The **AlibreCAM 2018** menu item is added to the **Add-Ons** ribbon bar in **Alibre Design**.



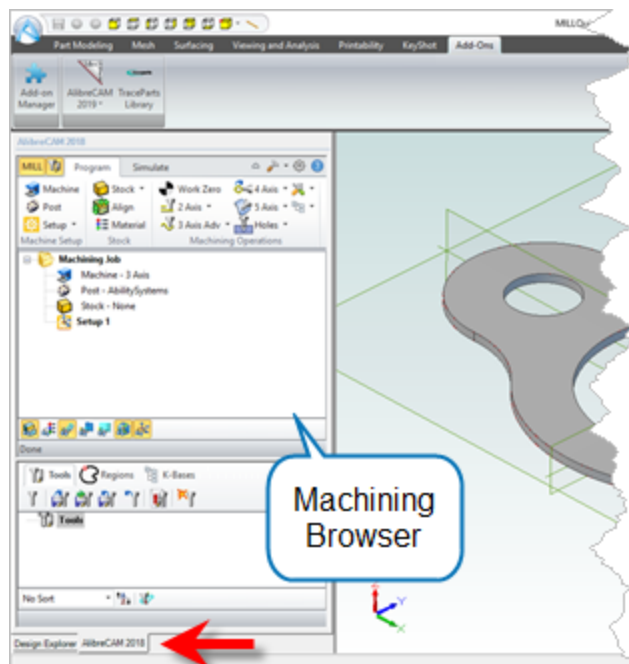
## Load the MILL Module

Follow the procedure below to launch the [AlibreCAM 2018 MILL](#) module for [Alibre Design](#):

1. Select [MILL](#) from the [AlibreCAM 2018](#) menu located on the [Add-Ons](#) ribbon bar in [Alibre Design](#).

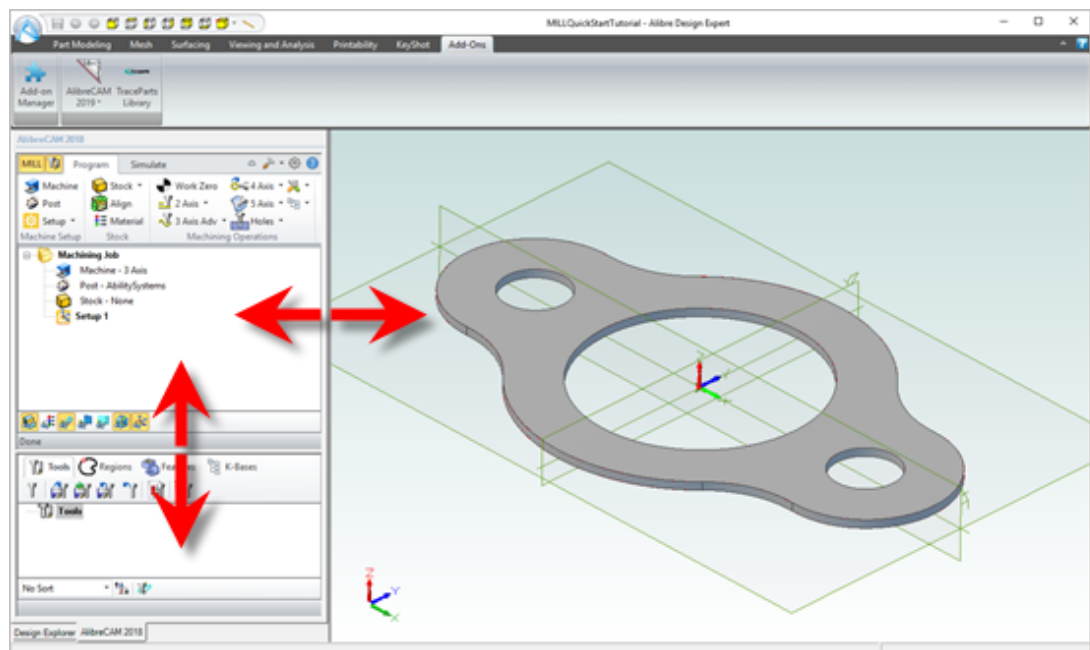


2. You will see the [Machining Browser](#) displayed on the left in a separate tab labeled [AlibreCAM 2018](#) next to the [Design Explorer](#) tab.



The Machining Browser is also referred to as the Machining Operations Browser or the Mops Browser.

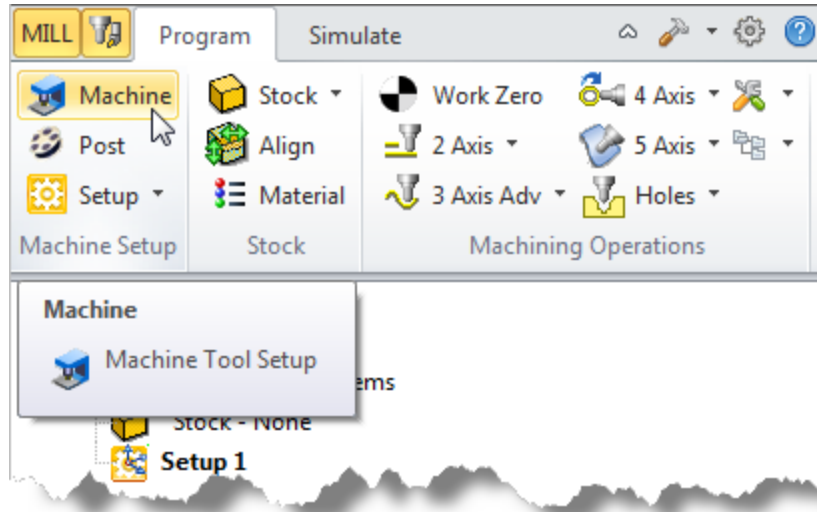
3. You can also re-size the height and width of the browser making sure that all of the command icons and menus are easily accessible.



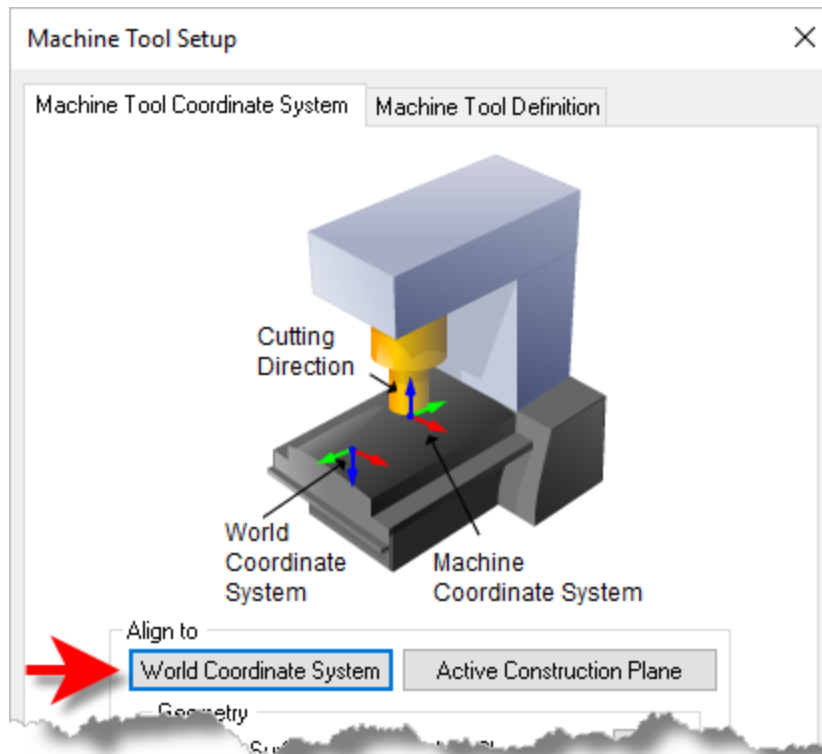
## Define the Machine Tool

The first step in the machining process is to define the machine tool to use.

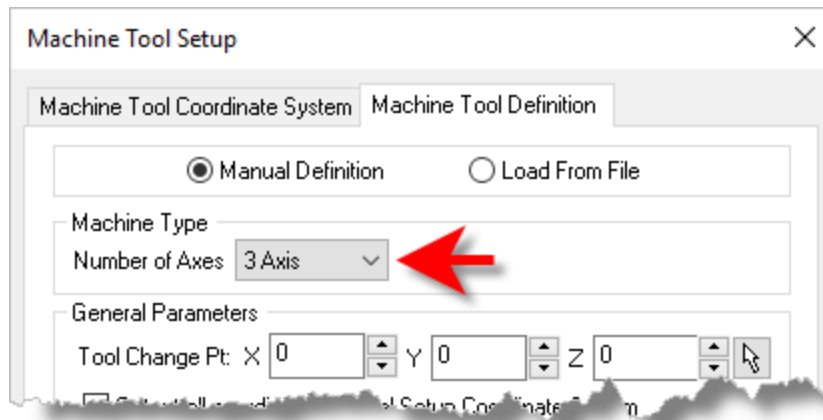
1. From the **Program** tab of the **Machining Browser** select **Machine**.



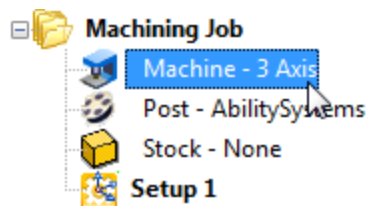
2. Under the **Machine Tool Coordinate System** tab, select the **World Coordinate System** button to align the **Machine Coordinate System** (MCS) to the **World Coordinate System** (WCS).



- Now select the **Machine Tool Definition** tab and under **Machine Type**, set **Number of Axes** to **3 Axis**.



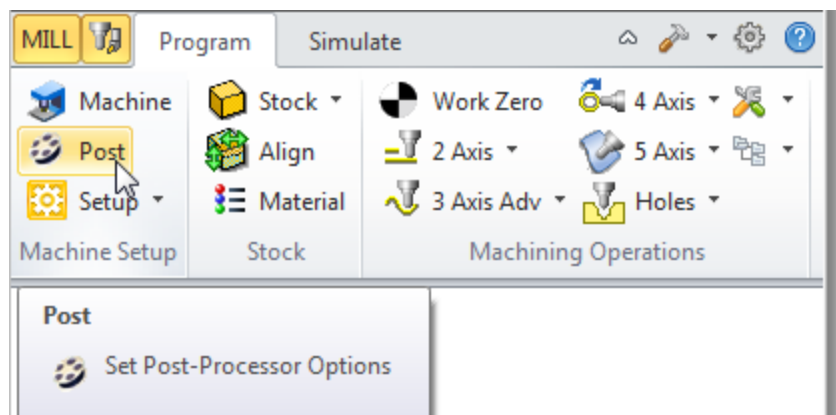
- Click **OK**. The machine type now appears under **Machining Job** in the **Machining Browser**.



## Select the Post Processor

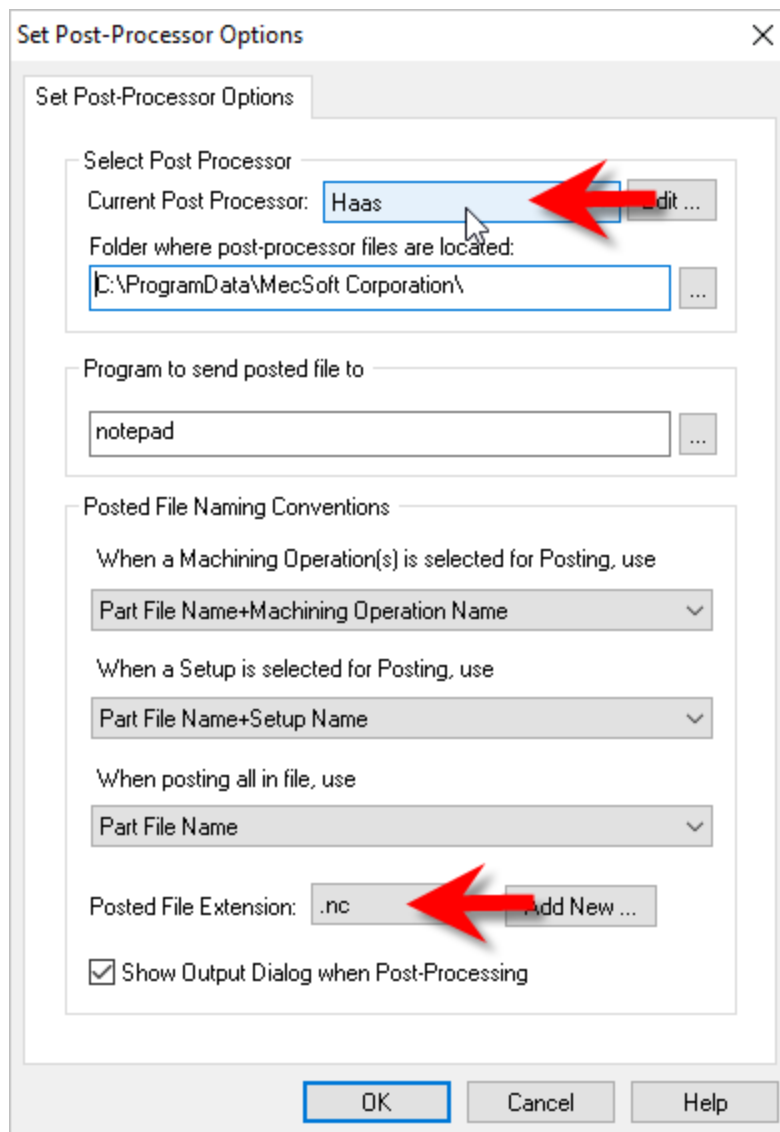
Next, we'll define the **Post Processor**.

- From the **Program** tab select **Post** to display the dialog.



- For the **Current Post Processor**, select **Haas** from the list of available posts.
- Then set the **Posted File Extension** to **.nc**. Other file extensions are available depending on your machine requirements.

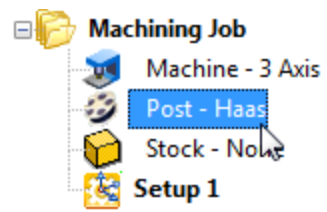




! By default, post processor files are located under  
[C:\ProgramData\MecSoft Corporation\AlibreCAM  
2018\Posts\MILL\](#)

The program to send the posted output data to is set to notepad.

4. Pick **OK** and notice that the **Post** type now appears under **Machining Job** in the **Machining Browser**.



## The Setup

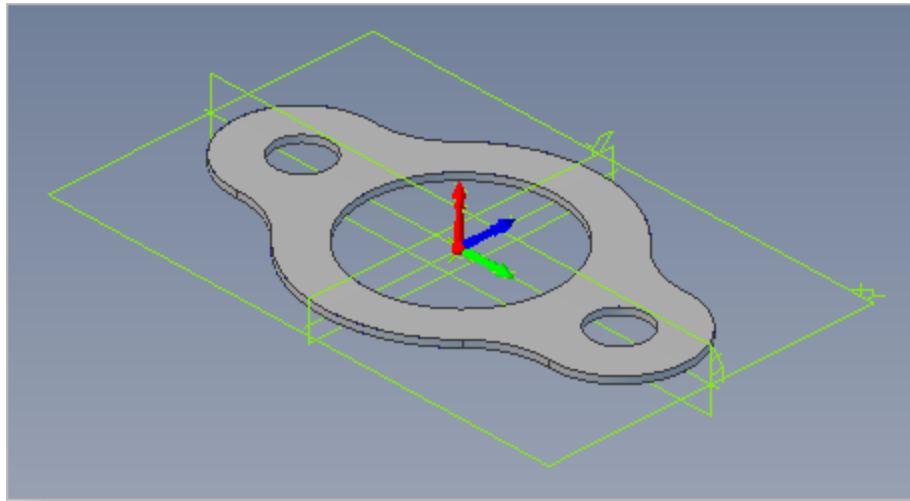
### Machining Setup - Skip if in STD or EXP Configuration

Now let's define the **Machining Setup**. The **Machining Setup** allows you to orient the **Machine Coordinate System** such that the part is aligned in exactly same way as it would be fixtured on the machine tool for cutting.

**!** This functionality is available only in the **Professional** and **Premium** configurations of the product. When working with your part files and running the **Express**, **Standard** or **Expert** configuration, you will have to use the **CAD** tools to orient the part geometry so that it is in the correct orientation for machining.

If in the future, if there is no **Setup1** listed under your **Machining Job**, the system automatically creates one when a **Work Zero** or an operation is generated.

However in our tutorial part, by default, the **MCS** (**Machine Coordinate System**) is already aligned with the **WCS** (**World Coordinate System**) so this step is not required for this part.

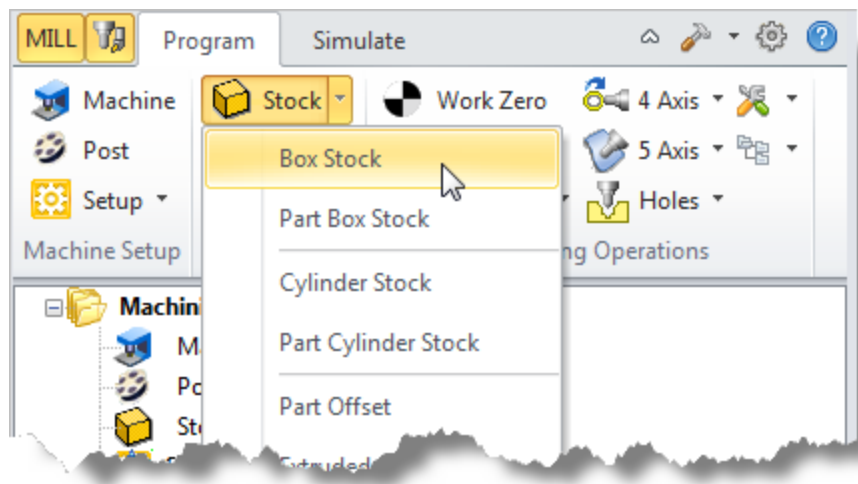


However, in production you can have multiple setups and assign different machining orientations for each, when running the **Professional** or **Premium** configurations.

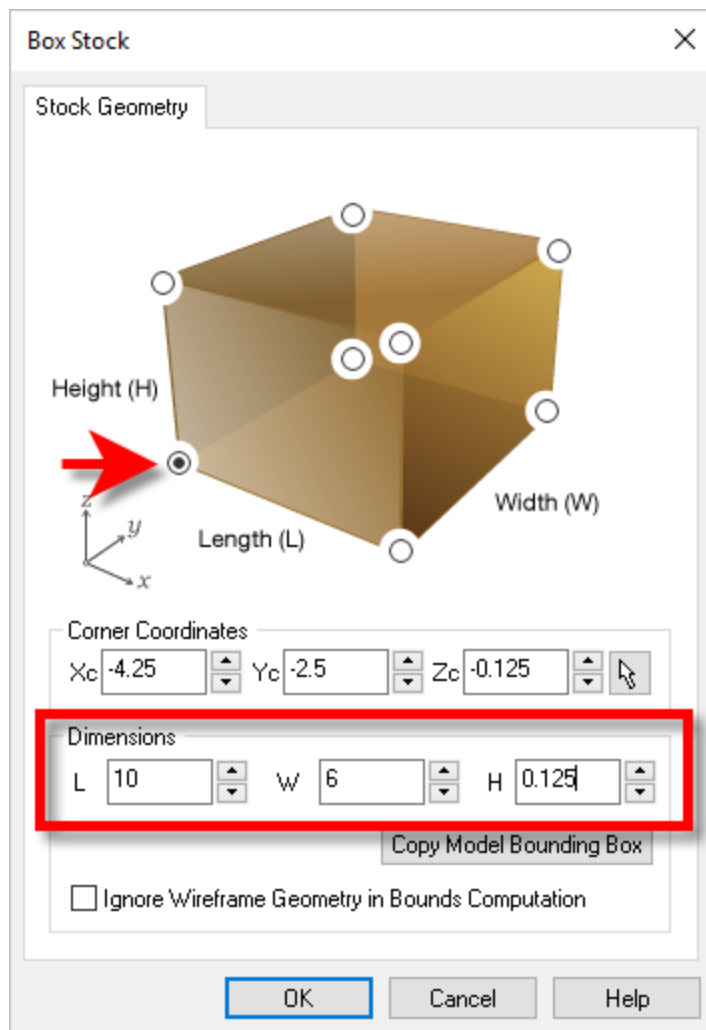
### Create Stock Geometry


In this step we'll define the raw stock from which to cut the part.

1. From the **Program** tab select **Stock** and then select **Box Stock** from the menu to display the dialog.



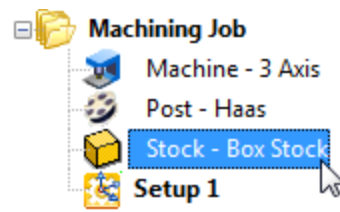
2. Under **Dimensions**, set the **Length L** to 10.0, **Width W** to 6.0 and **Height H** to 0.125. Note that the stock dimensions you enter are measured from the corner of the bounding box selected in this dialog.



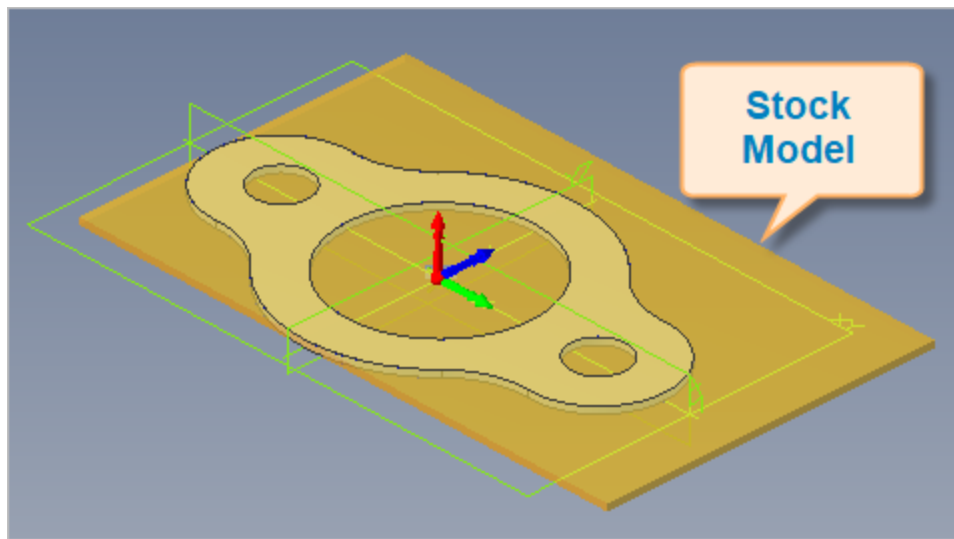
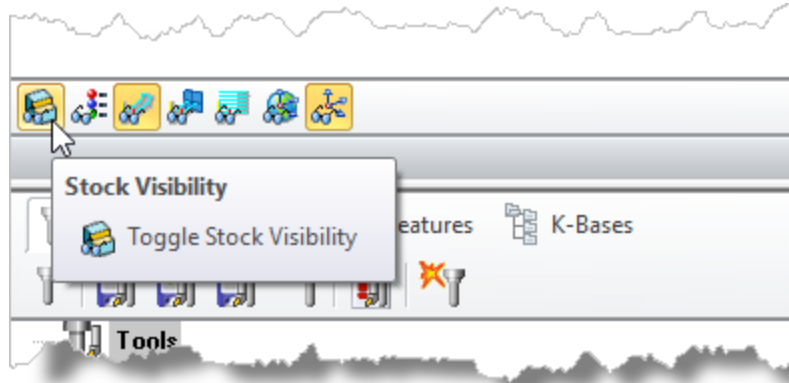
 The dimensions of the stock are interpreted in relation to the corner selected in the dialog box above. For example if the corner of the box is selected as the **Bottom South West** corner (as shown in the dialog above), the **Length (L)** is interpreted to be along the **+X** axis, the **Width (W)** along the **+Y** axis and the **Height (H)** along the **+Z** axis.

The direction of the dimensions will change depending on the corner selected. For example if the **Top South West** corner is selected, then the **Height (H)** is interpreted to be along the **-Z** axis and so the stock will extend below the corner.

3. Pick **OK** and notice that the **Stock** type now appears under **Machining Job** in the **Machining Browser**.



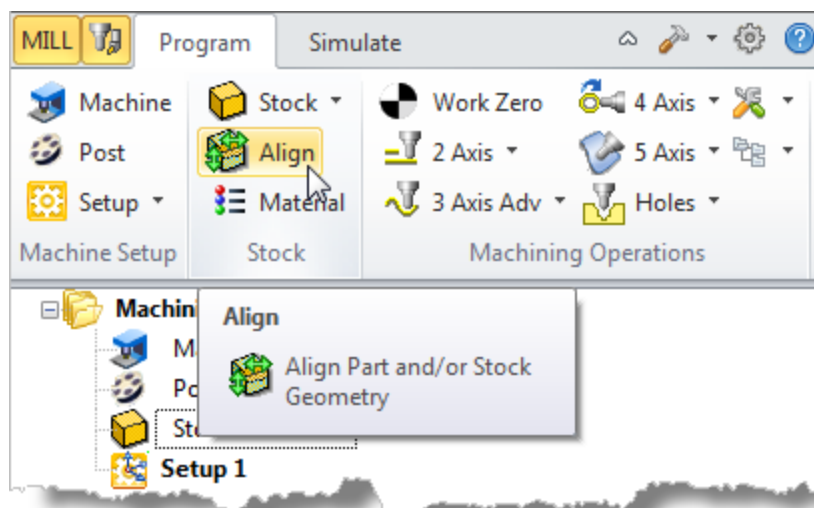
4. If the stock does not display on the screen, select the **Stock Visibility** icon located at the base of the **Machining Browser**.



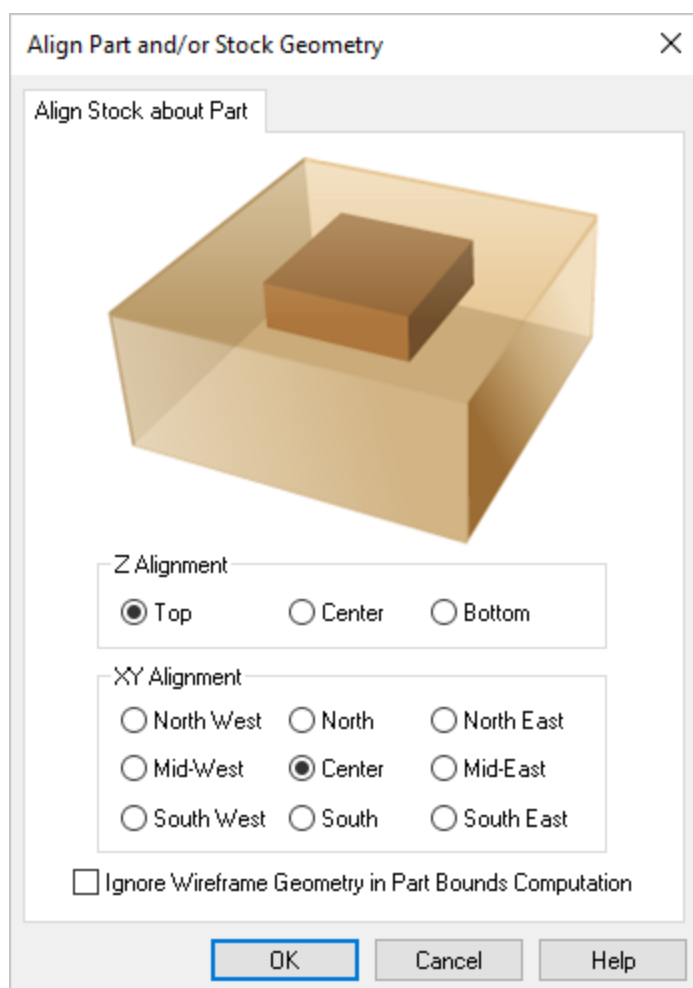
## Align Part and Stock

Once the stock model is created you can move it in alignment with the part if needed.

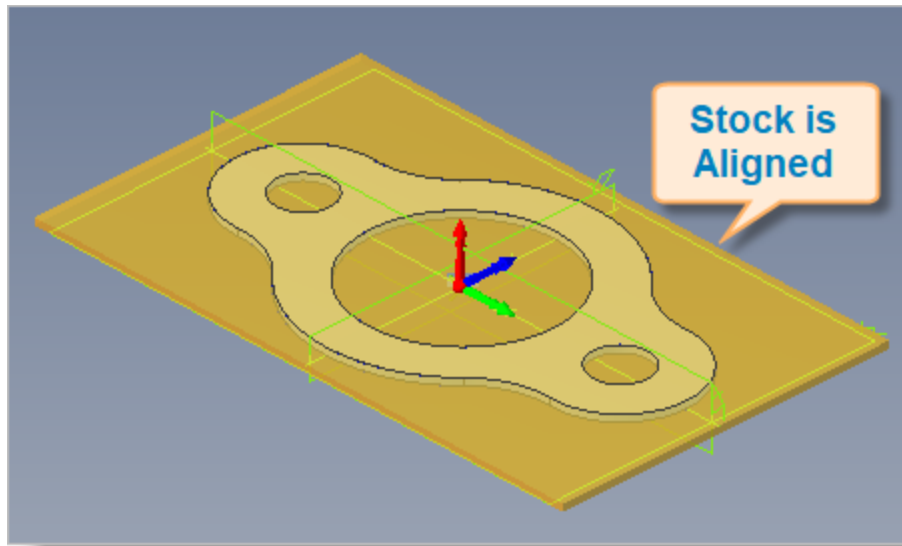
1. From the **Program** tab select **Align** from the menu to display the dialog. Notice that we are working our way from left to right in the **Program** tab.



2. For Z Alignment select **Top** and for XY Alignment select **Center** and then pick **OK**.



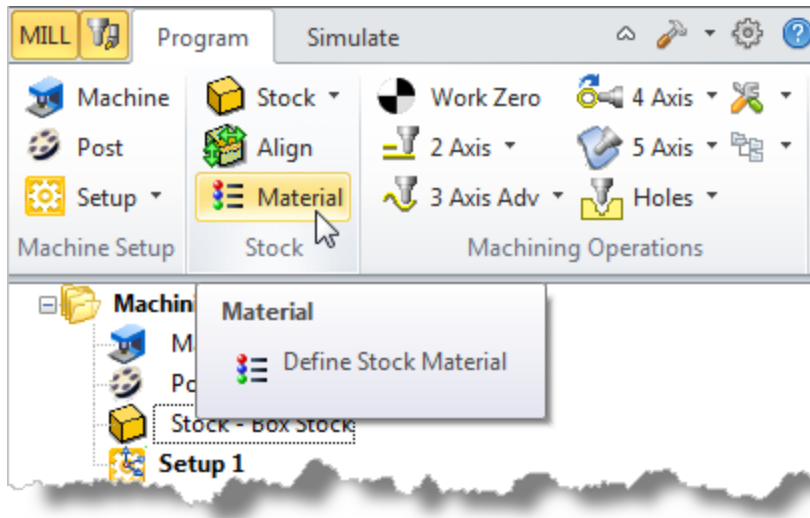
The stock is now aligned to the **Center** of the part in **XY** and the **Top** of the part in **Z**.



## Specify Material

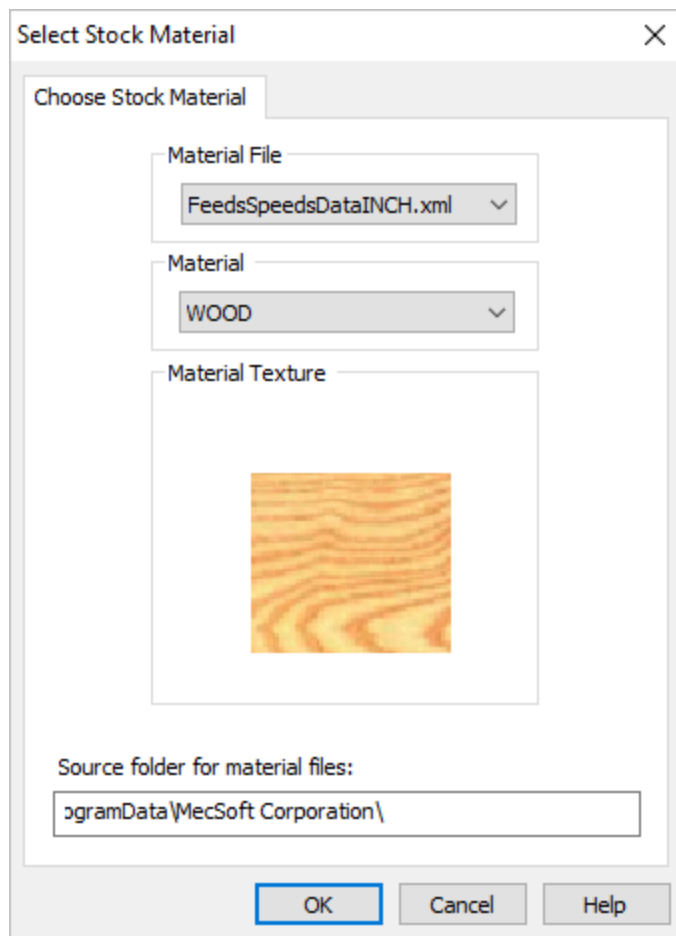
Next, we'll set the material for the stock geometry.

1. From the **Program** tab select **Material** to display the dialog box.



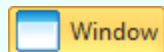
2. For **Material**, select **Wood** from the list of available materials and then pick **OK**.

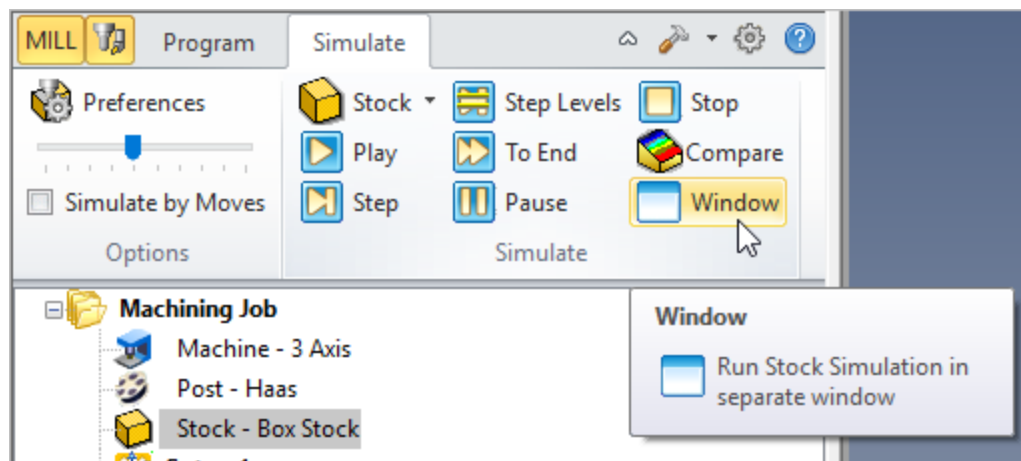




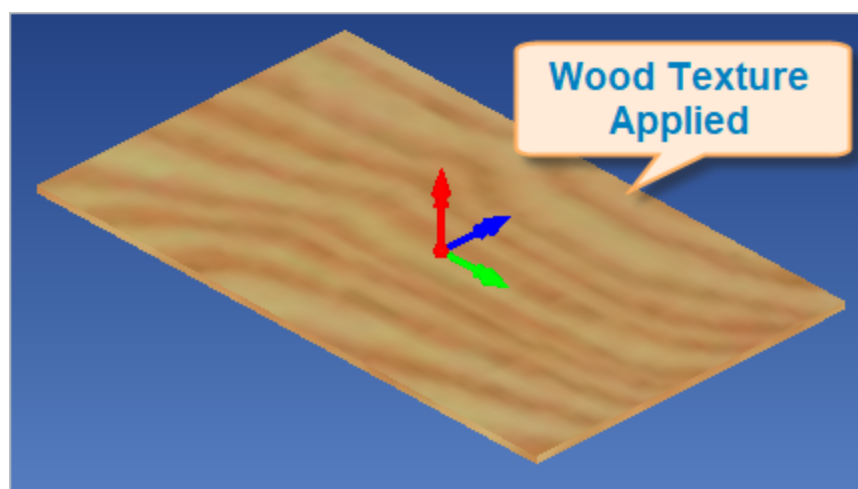
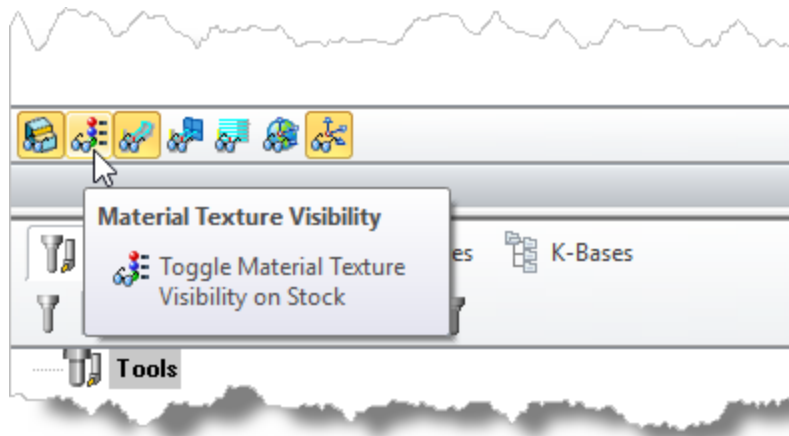
The material texture is now assigned to the [Stock](#) geometry. The texture is applied when the stock model is displayed in the [Simulation](#) window.

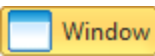
**Note:** AlibreCAM 2018 uses a separate simulation window to perform and render the cut material simulation. To bring up this window, select the [Simulate](#) tab from the [Machining Browser](#) and select the [Window](#) icon as shown below:





3. If the material texture does not display on the stock, select the [Material Texture Visibility](#) icon located at the base of the [Machining Browser](#).



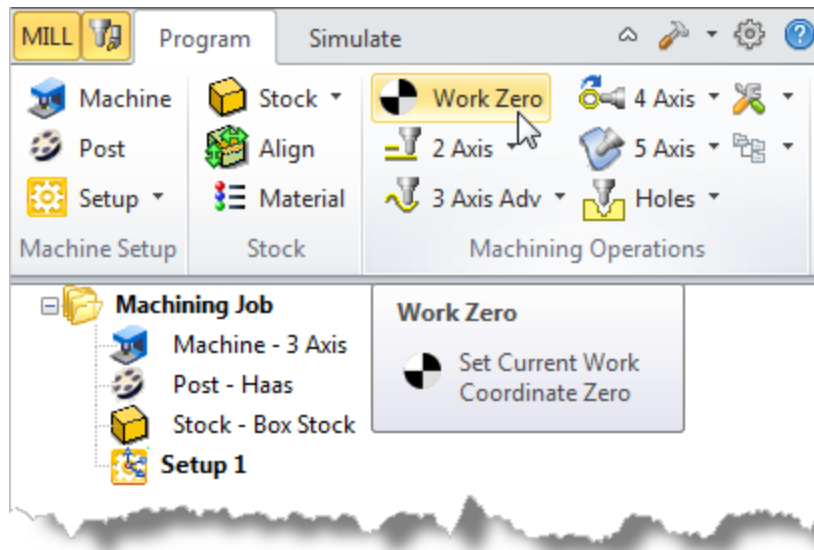
Now select the [Window](#) icon  again to close the [Simulation Window](#).

## Set Work Zero

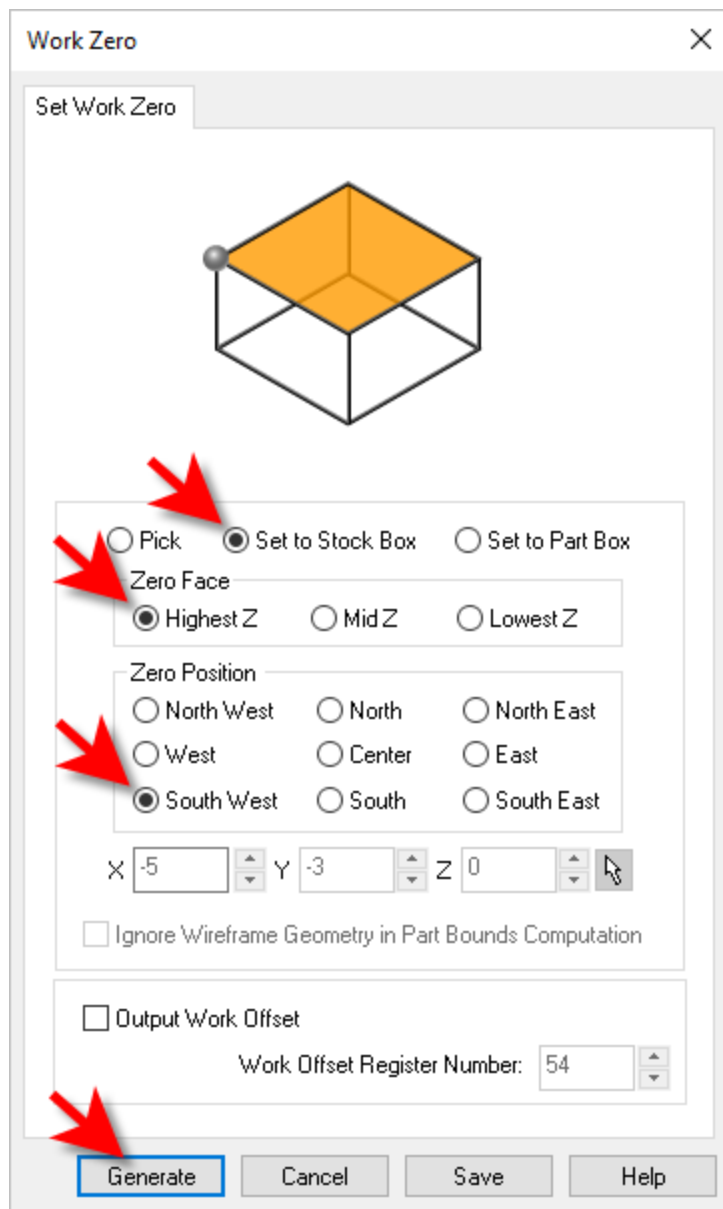
Now that the stock is aligned to the part geometry, in this step, we will establish the work coordinate origin also referred to as the **Work Zero**. The **Work Zero** translates the **MCS** origin from the **Setup** to the desired location. This can be set to any location on the part or stock geometry.


**!** The **Work Zero** defines the zero point with respect to which all toolpath points are interpreted by the controller. This would normally be the same as the tool touch off point on the actual work-piece on your machine. So care should be taken to make sure that this **Work Zero** point defined in **AlibreCAM** matches the tool zero point used on the actual work piece located on the table of your machine.

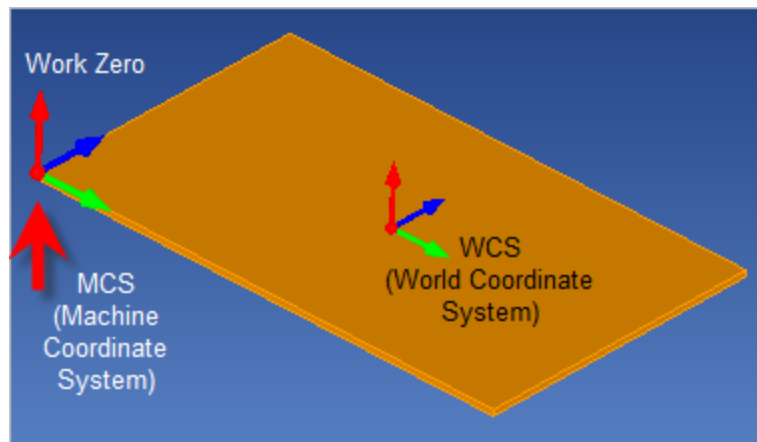
1. From the Program tab, select **Work Zero** to display the dialog.



2. Select **Set to Stock Box** and then set **Zero Face** to **Highest Z**, **Zero Position** to **South West** corner and then pick **Generate**. This sets the machine home to the top of the stock material and the southwest corner of the stock geometry.

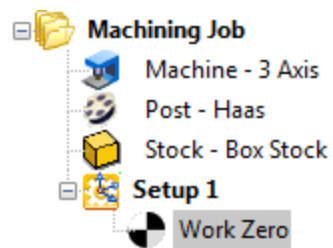


3. The **Work Zero** is now translated to the **Southwest** corner and top of stock material. The **Work Zero** is displayed graphically when the **Simulation Window**  **Window** is displayed.



4. Also, the **Work Zero** now appears under the **Machining Job** in the **Machining Browser**.

**!** Note that the **Work Zero** should appear as the **FIRST** item **UNDER** the **Setup** in the **Machining Job** tree so that all operations in that **Setup** will inherit that **Work Zero** origin.



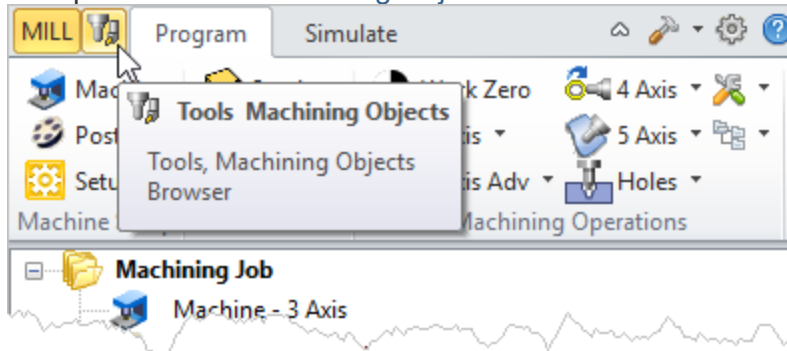
## Create Tools

To machine the above part we will now create a ½ inch (0.5") **Flat End Mill**.

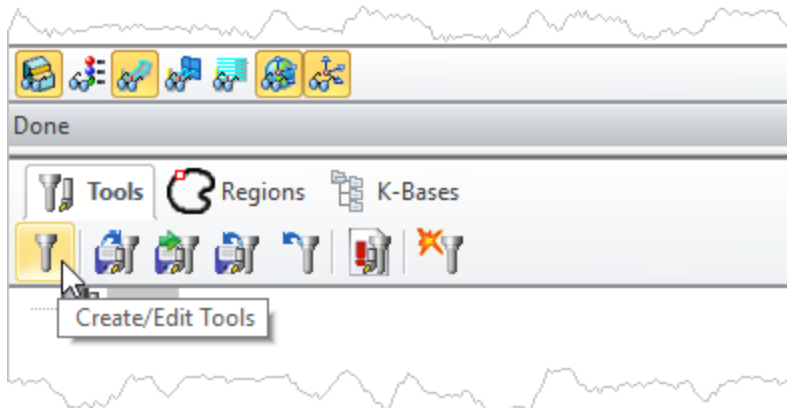
1. Next to the **Program** tab at the top of the **Machining Browser**, locate and select the **Tools Machining Objects** button. Selecting this button toggles the **Machining Objects** lower portion of the browser **On** and **Off**. Then locate the **Tools** tab and pick the **Create/Edit Tools** icon.

These buttons and icons are shown in the menus below:

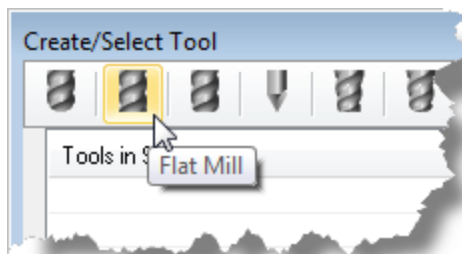
First pick the **Tools Machining Objects** button to make sure the **Tools** tab is displayed:



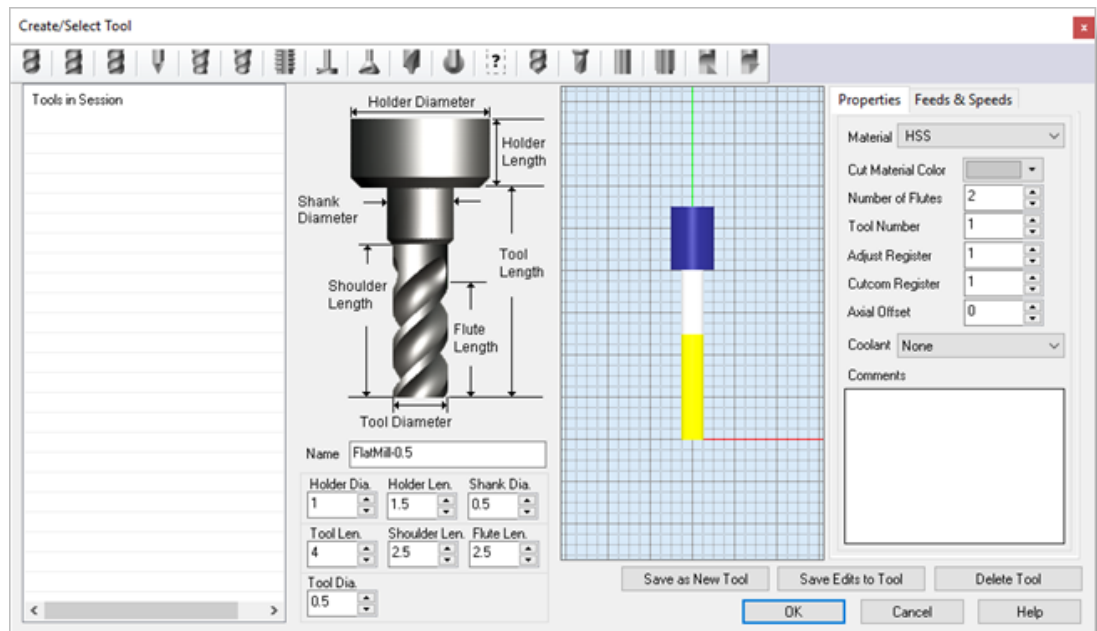
Then select the **Create/Edit Tools** icon:



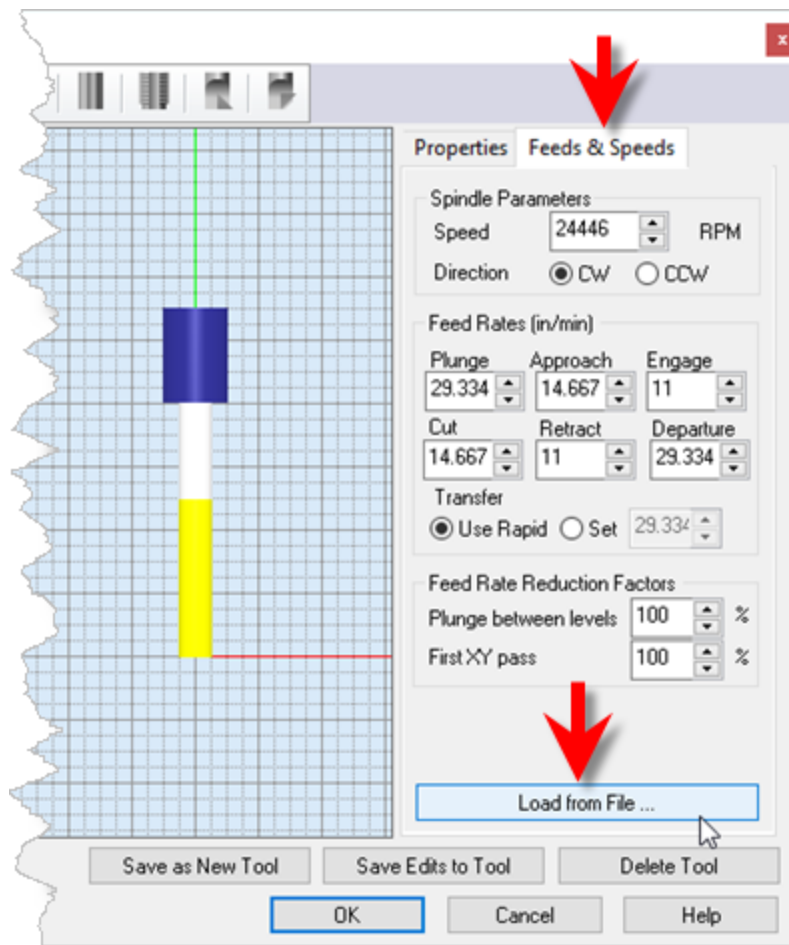
2. This will display the **Create/Select Tool** dialog. Select **Flat Mill** from the **Tool Type** menu at the top of the dialog.



- Set tool Name to FlatMill-0.5 and Tool Diameter to 0.5. Under the Properties tab set Material to HSS and Tool Number to 1.

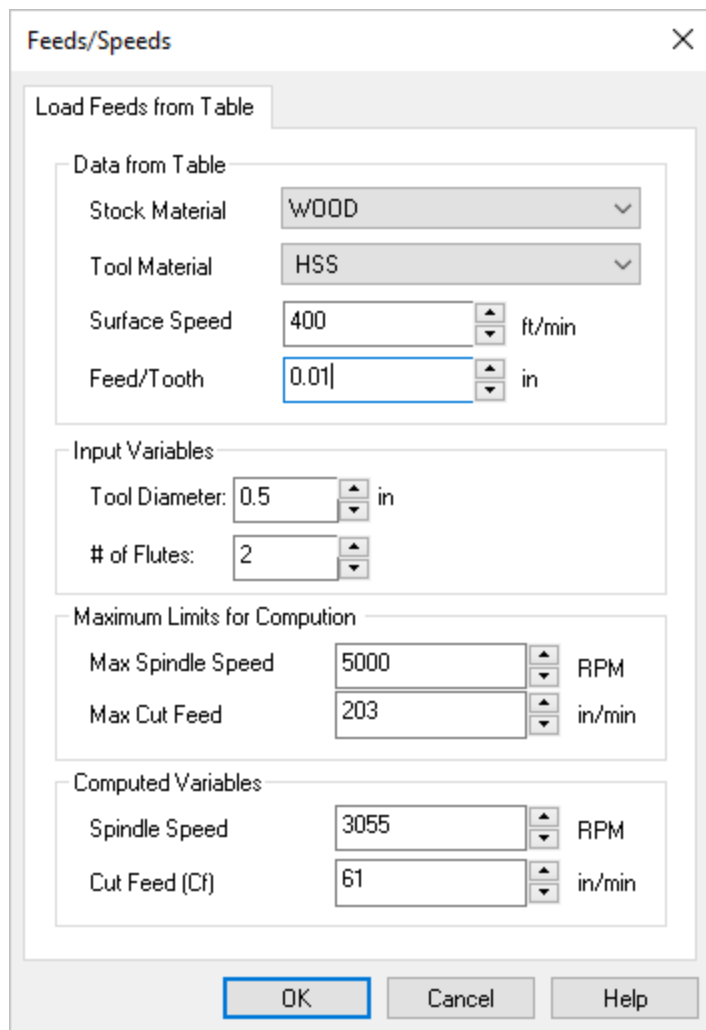


- Switch to Feeds and Speeds tab and click Load from File.



5. From the dialog that displays, set **Stock Material** to **Wood** and **Tool Material** to **HSS**.

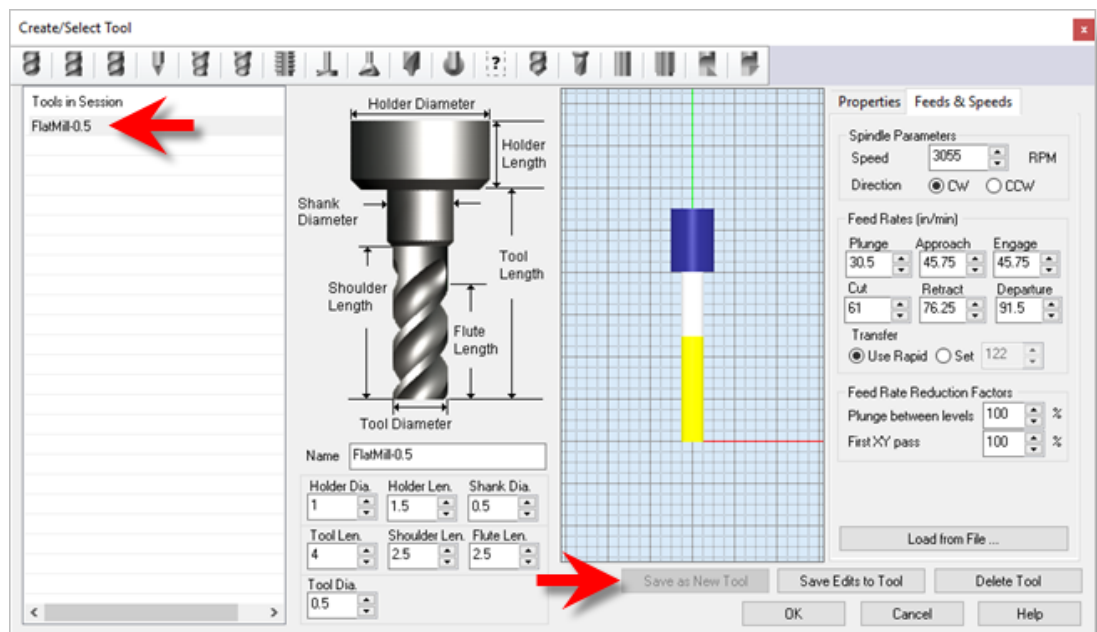




The image shows a software dialog box titled "Feeds/Speeds" with a close button (X) in the top right corner. The dialog is divided into several sections. The first section, "Load Feeds from Table", contains a "Data from Table" group with "Stock Material" set to "WOOD" and "Tool Material" set to "HSS". Below these are "Surface Speed" set to 400 ft/min and "Feed/Tooth" set to 0.01 in. The second section, "Input Variables", includes "Tool Diameter" set to 0.5 in and "# of Flutes" set to 2. The third section, "Maximum Limits for Computation", shows "Max Spindle Speed" at 5000 RPM and "Max Cut Feed" at 203 in/min. The fourth section, "Computed Variables", displays "Spindle Speed" at 3055 RPM and "Cut Feed (Cf)" at 61 in/min. At the bottom are "OK", "Cancel", and "Help" buttons.

Section	Parameter	Value	Unit
Data from Table	Stock Material	WOOD	
	Tool Material	HSS	
	Surface Speed	400	ft/min
	Feed/Tooth	0.01	in
Input Variables	Tool Diameter	0.5	in
	# of Flutes	2	
Maximum Limits for Computation	Max Spindle Speed	5000	RPM
	Max Cut Feed	203	in/min
Computed Variables	Spindle Speed	3055	RPM
	Cut Feed (Cf)	61	in/min

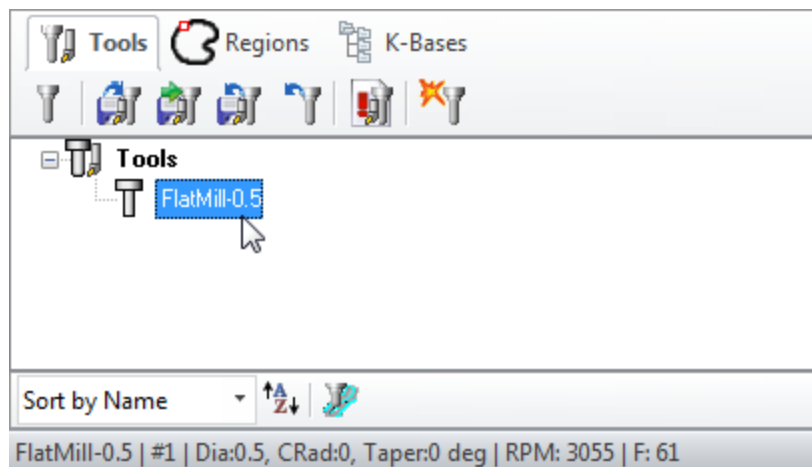
- Now pick **OK** and the computed cut feedrate and spindle speed are transferred to the **Feeds and Speeds** tab of the **Create/Select Tool** dialog.



7. Pick **Save as New Tool** to save the tool. The tool is now created and listed under **Tools in Session** on the left side of the dialog.
8. Pick **OK** to close the dialog.

**!** You can edit the tool properties and pick **Save Edits to Tool** to save the changes to this tool. To edit and save this as a **New Tool**, you must enter a different tool **Name**.

The created tool is now listed under the **Tools** tab in **Machining Objects** browser.



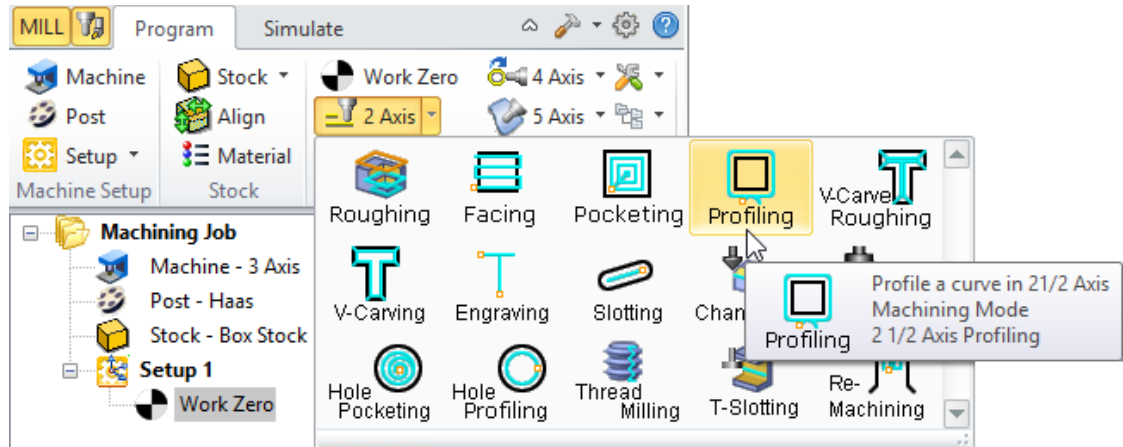
**!** In the future you can save your tools to a **Tool Library**. To save **Tools** to a library, click **Save Tool Library** under the **Tools** tab in the **Machining Objects Browser** and specify a folder

location and file name in the [Save as](#) dialog box. Two [Tool Library](#) file formats are supported ([\\*.vkb](#) and [\\*.csv](#)). The native [Tool Library](#) file format for [AlibreCAM 2018](#) is [\\*.vkb](#).

## Machine the Inner Profiles

Now we're ready to create our first machining operation.

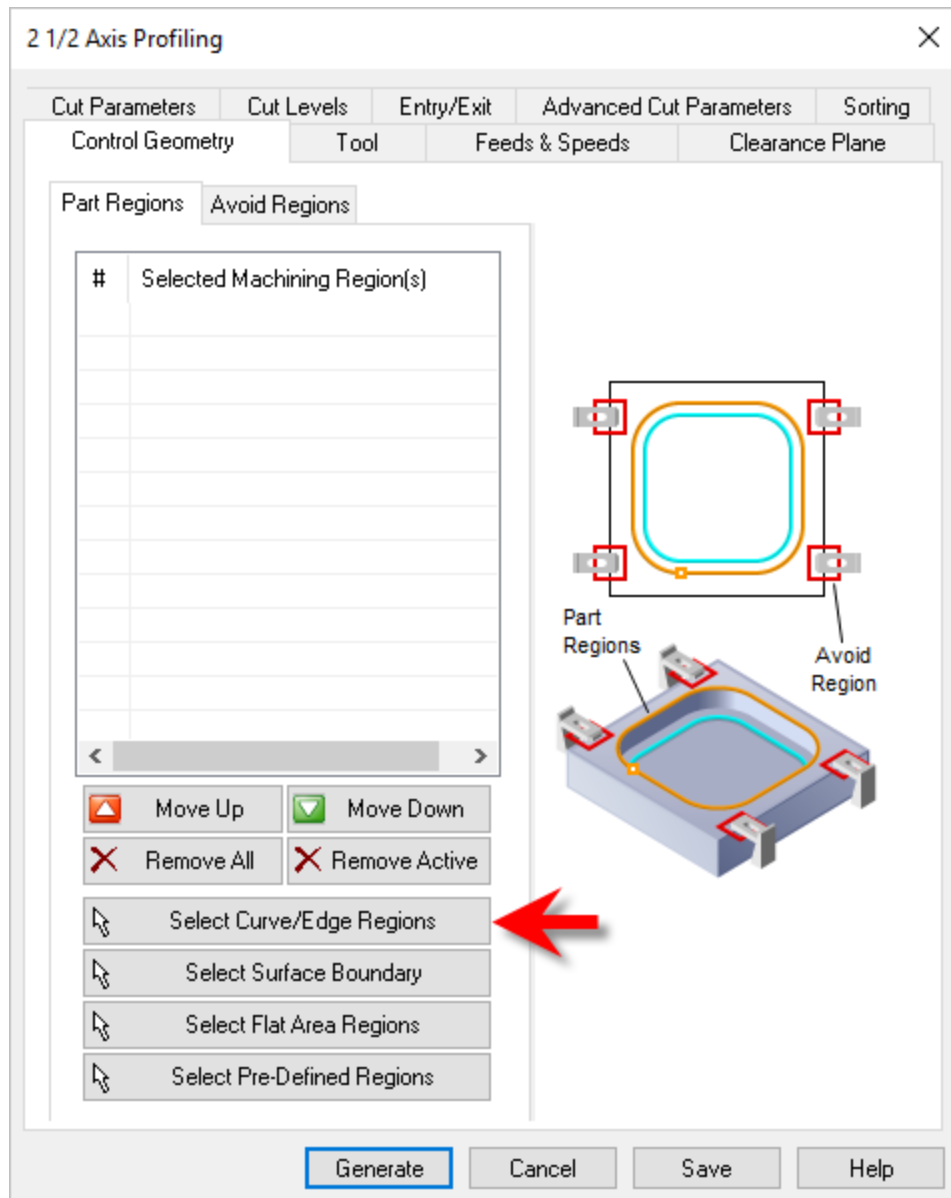
1. From the **Program** tab select **2 Axis** and then **Profiling** from the menu of **2 Axis** operations.



This will display the **2 1/2 Axis Profiling** operations dialog. We will go over the steps for creating the profile operation for the inner features of the **Gasket**.

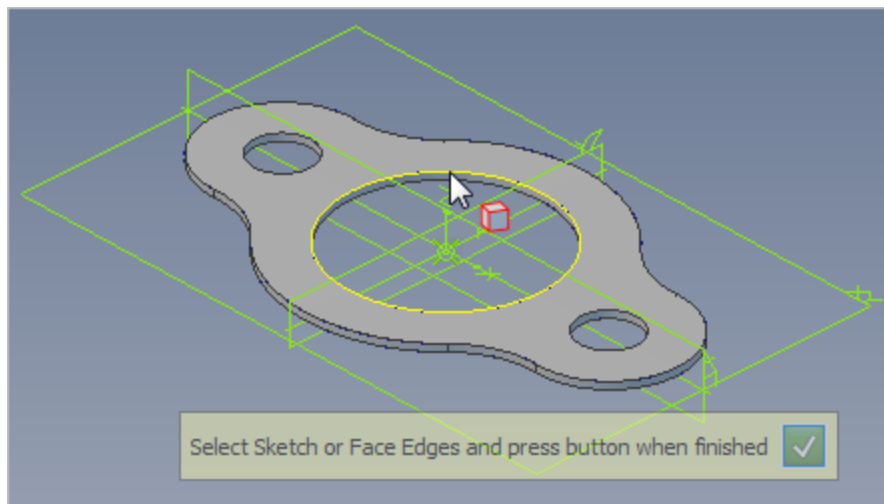
## Control Geometry

2. Under the **Control Geometry** tab pick **Select Curve/Edge Regions**.

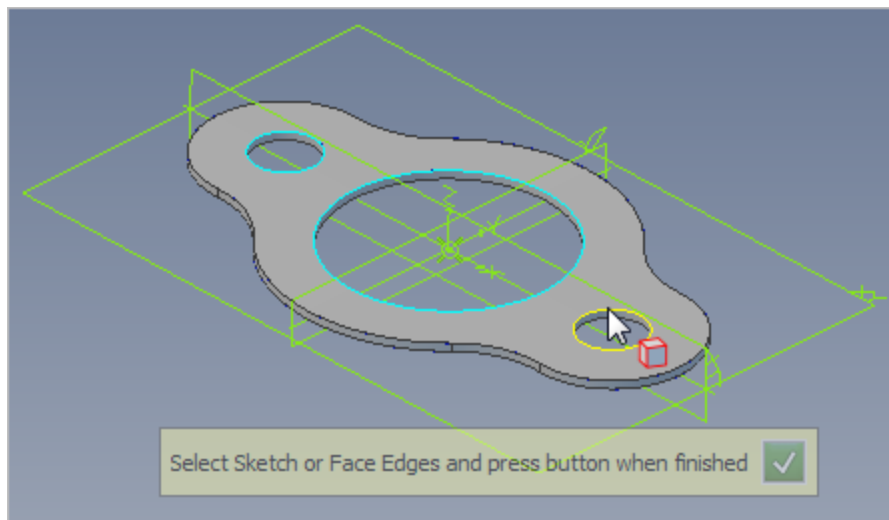


The **Profiling** operation dialog is now minimized and allows selection of features to machine. We will now select the surface edges of the 3 inside hole features.

3. While pressing the **<Shift>** key, select the first hole by clicking near the upper surface edge as shown below.

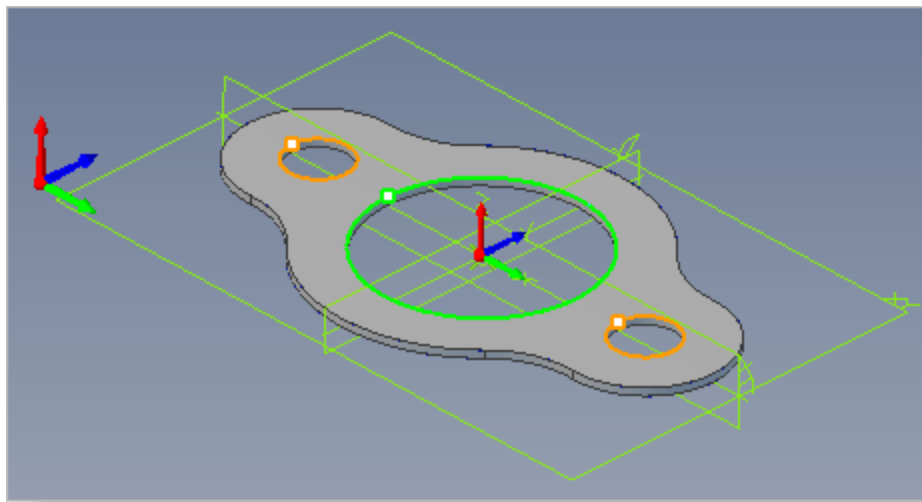
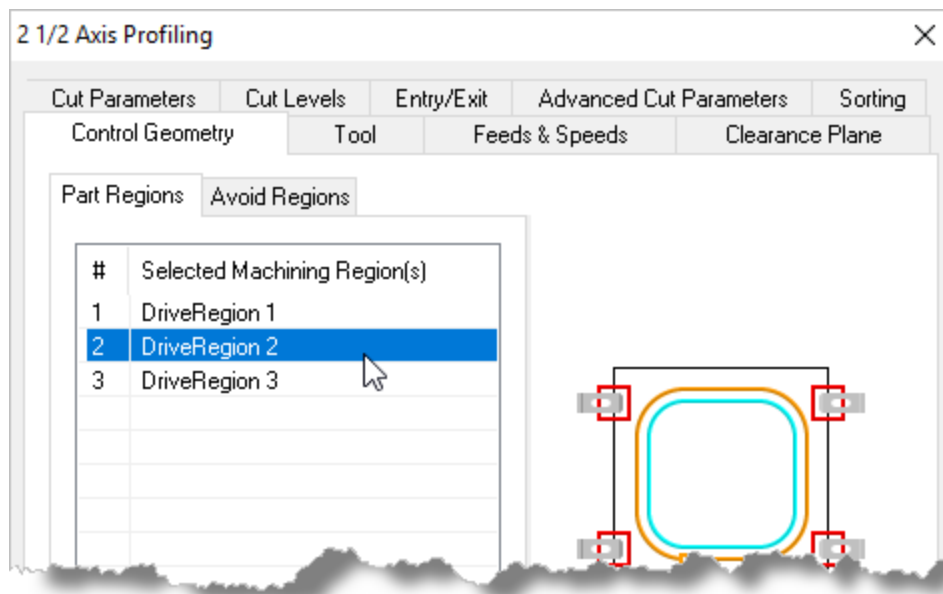


4. Now, while the **<Shift>** key is still pressed, repeat to select the edges of the two smaller holes.



Now select the  icon to complete the selection.

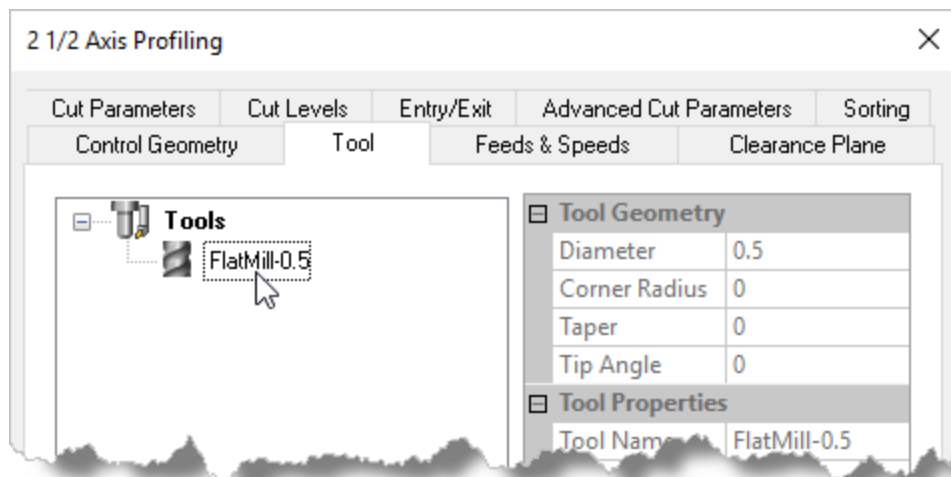
5. The **2½ Axis Profiling** dialog comes back up displaying the selected **Drive Regions**. They are also highlighted on the part.
6. Notice that selecting a **Drive Region** from the list highlights the corresponding surface edge curve on the part.



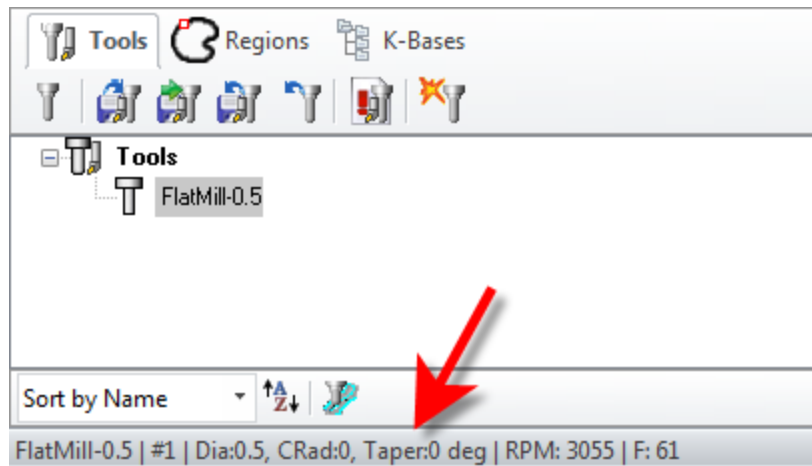
## Cutting Tool

Now we'll select the **Tool** for our operation:

1. Switch to the **Tool** tab of the dialog.
2. Select **Flat Mill-0.5** under **Tools**. The **0.5" Flat End Mill** is now selected as the active tool.



Note that the **Tool** parameters of the currently active tool are always displayed in the status bar at the bottom of the **Machining Browser**.

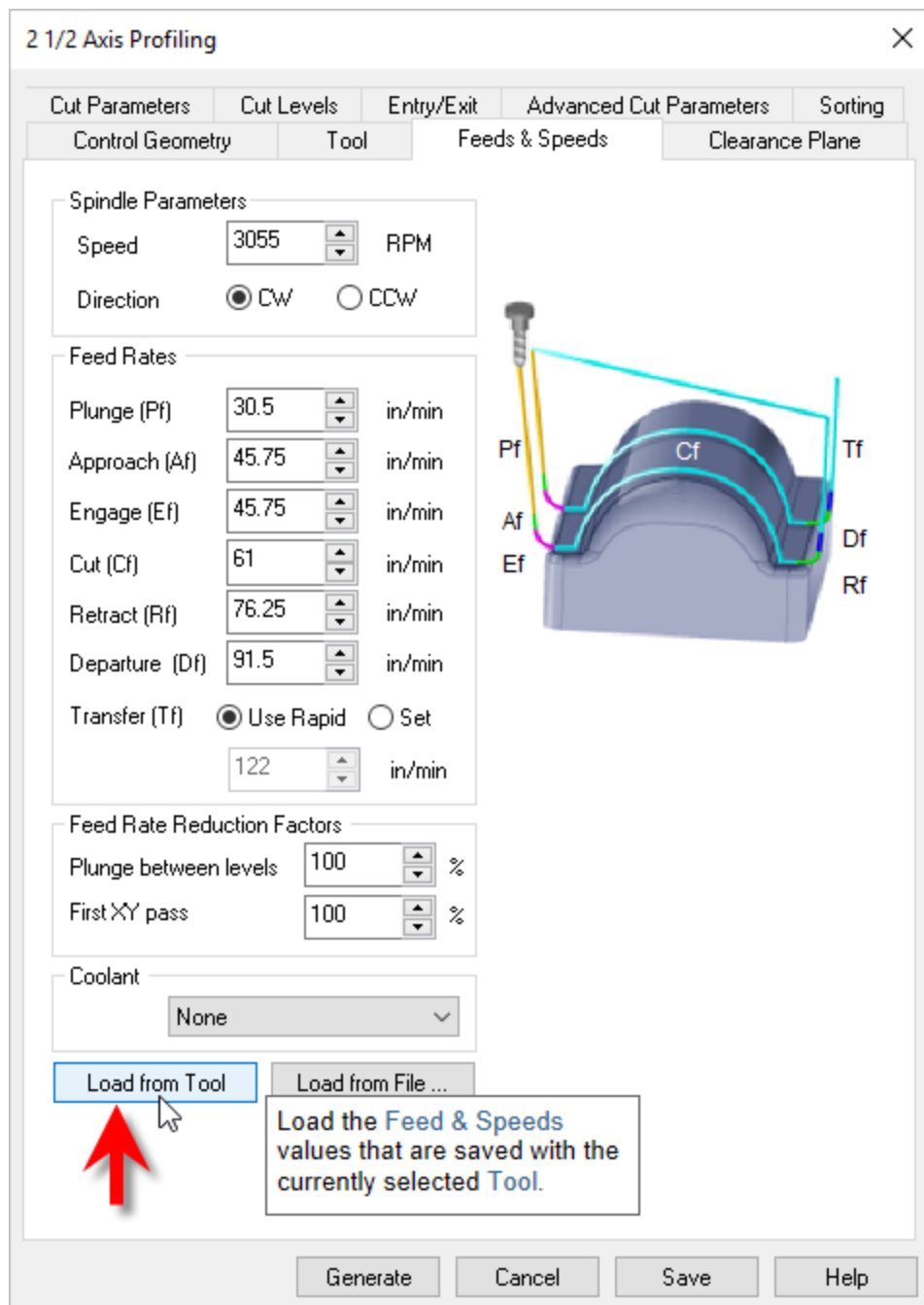


## Feeds and Speeds

Now we'll set the **Speeds and Feeds** for our operation:

1. Switch to the **Feeds & Speeds** tab of the dialog.
2. Select the **Load from Tool** button. **AlibreCAM 2018** will retrieve the feeds and speeds parameters that were set when the tool was defined and associate them with the current operation.

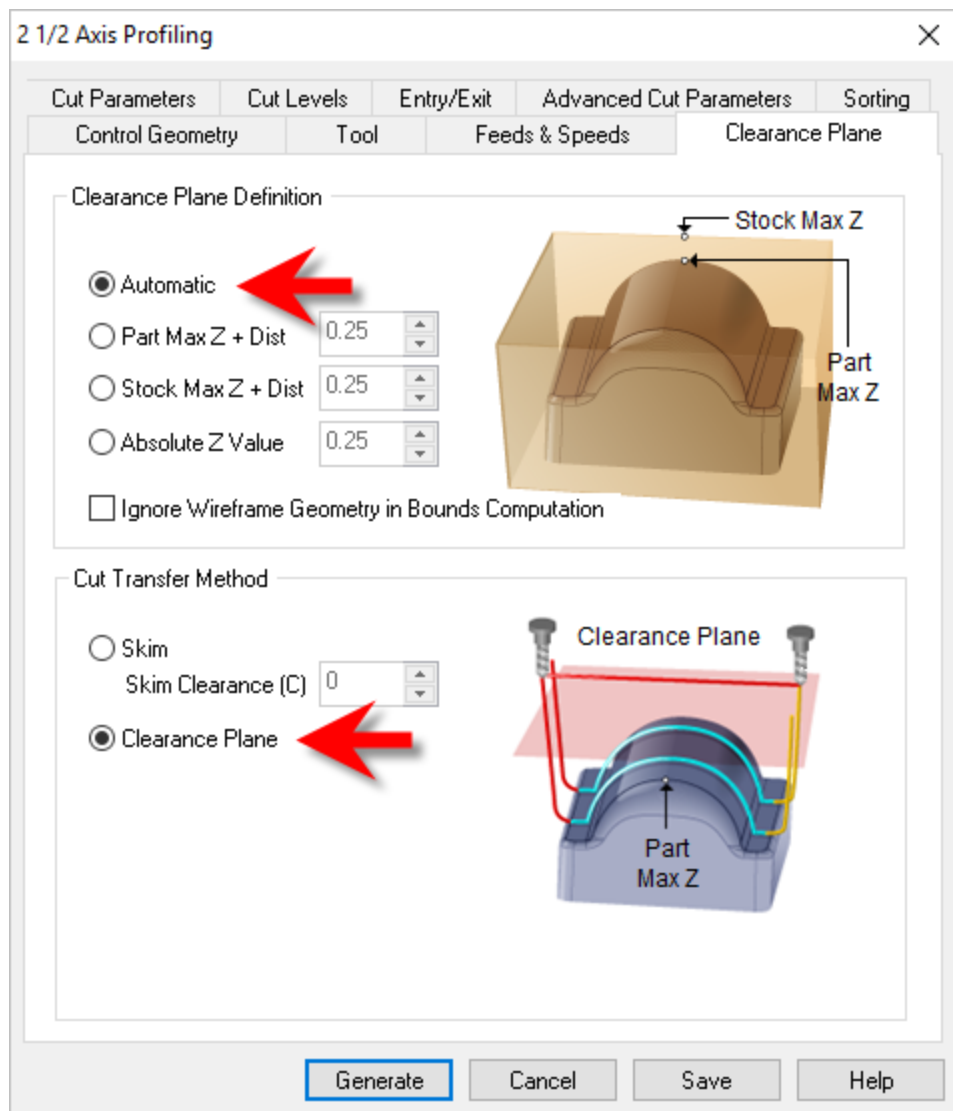




## Clearance Parameters

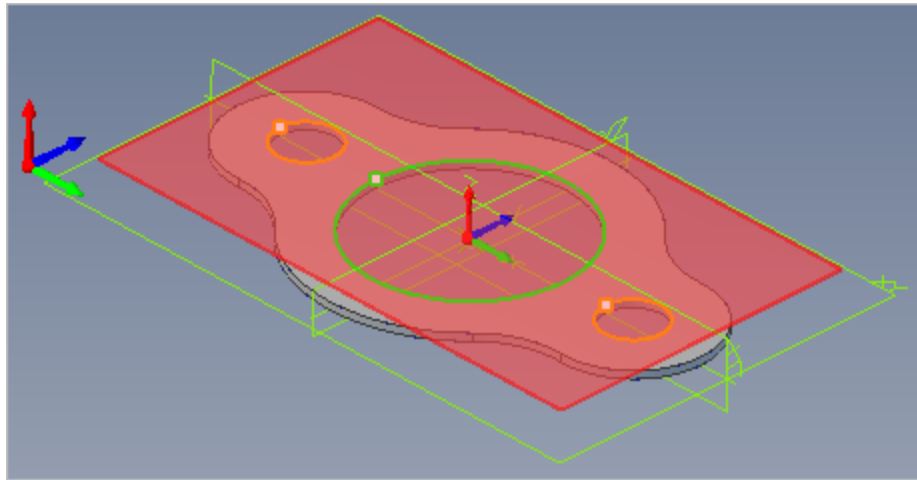
Now we'll set the **Clearance** parameters for our operation:

1. We'll switch to the **Clearance Plane** tab of the dialog.
2. Set the **Clearance Plane Definition** to **Automatic** and **Cut Transfer Method** to **Clearance Plane**.



In the [Automatic](#) mode, [AlibreCAM 2018](#) will determine a safe Z height for locating the clearance plane. Setting the [Cut Transfer Method](#) to [Clearance Plane](#) will force all transfer moves to be performed in this determined clearance plane.

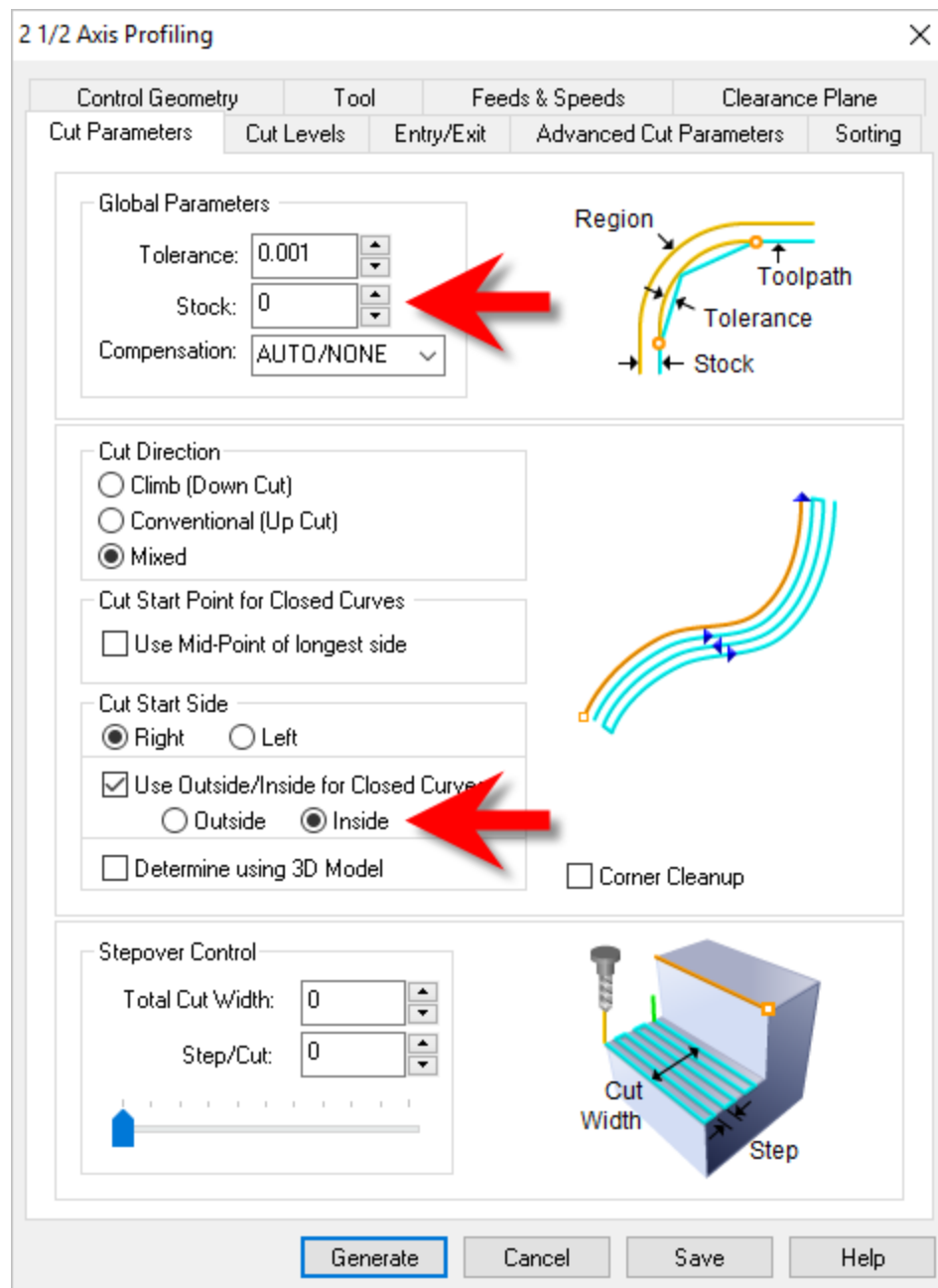
When this tab of the dialog is active, the clearance plane is shown on the graphics screen.



## Cut Parameters

Now we'll set the [Cut Parameters](#) for our operation:

1. Switch to the [Cut Parameters](#) tab of the dialog.
2. Set the [Stock](#) to 0. This means that we will not be leaving any thickness on the part after machining.
3. Under the [Cut Start Side](#) section check the box next to [Use Outside/Inside for Closed Curves](#) and then select [Inside](#).



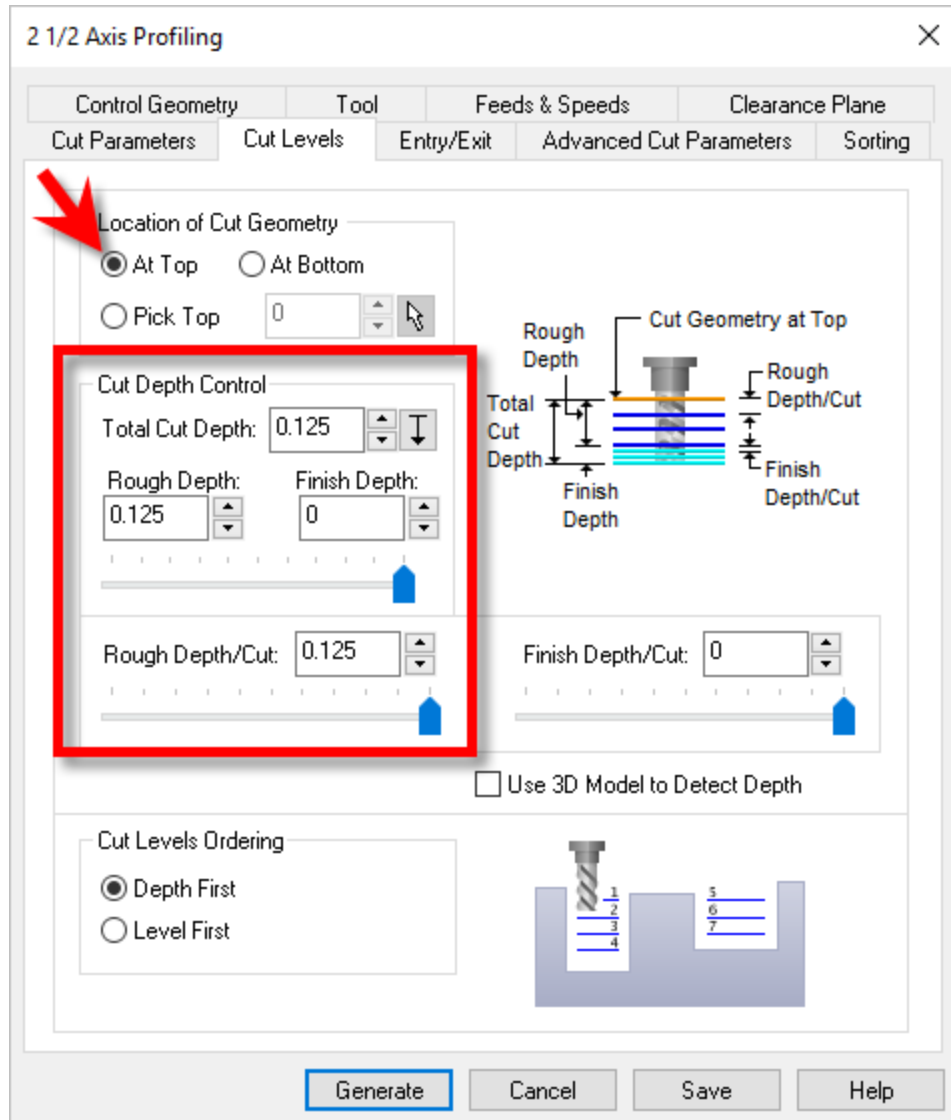
Alternately you could use the [Determine using 3D Model](#) option. In this case [AlibreCAM 2018](#) would use the 3D model to determine which side of the curve to place the cutter for machining.

## Cut Level Parameters

Now we'll set the [Cut Level](#) parameters for our operation:

1. Select the [Cut Levels](#) tab of the dialog.

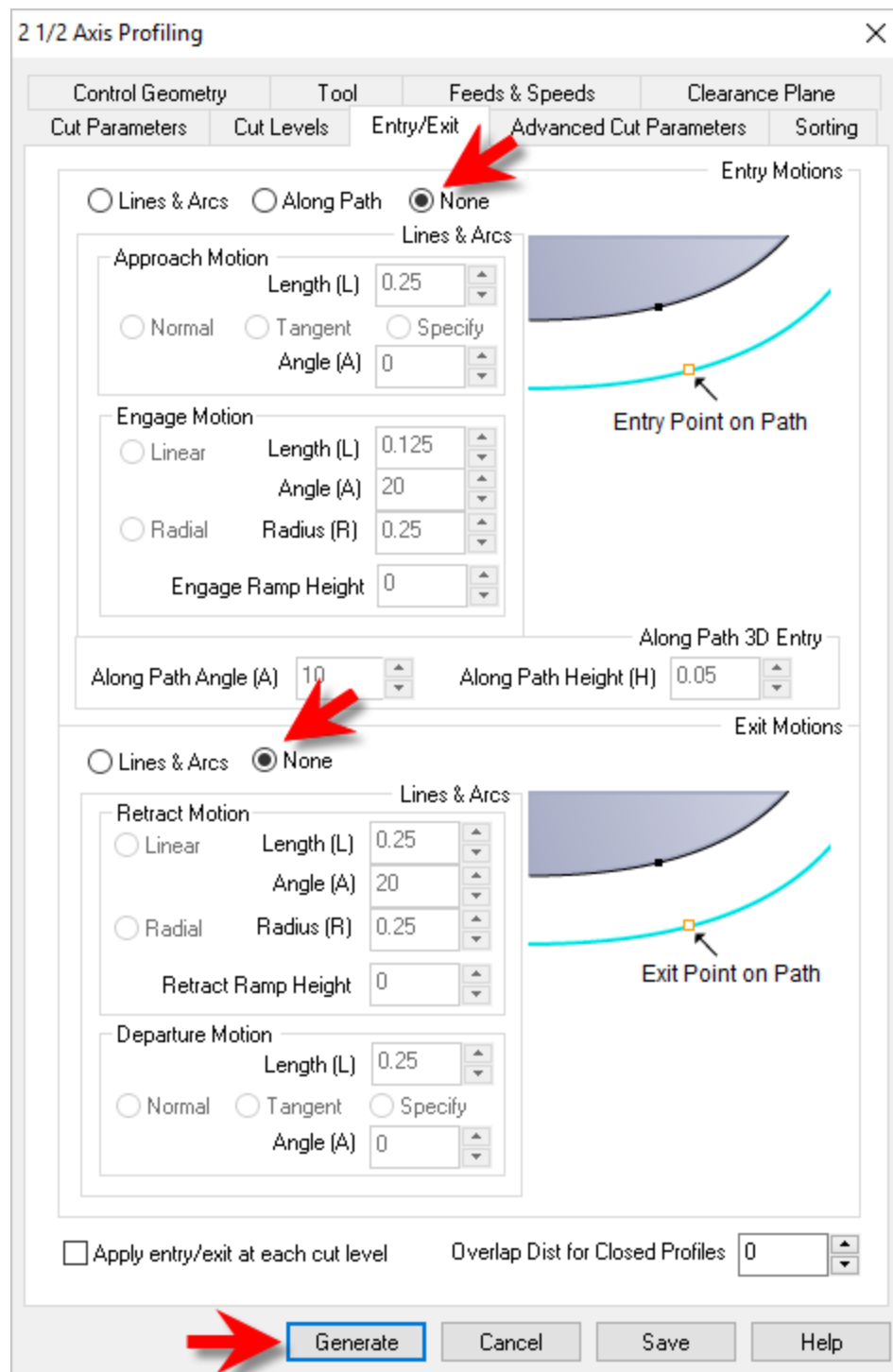
2. Set [Location of Cut Geometry](#) to [At Top](#).
3. For [Total Cut Depth](#), enter 0.125. The cut depth is always set as an absolute value.
4. This automatically sets the [Rough Depth](#) and [Rough Depth/Cut](#) to 0.125.



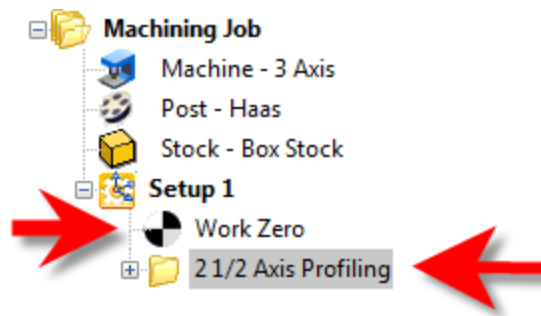
## Entry/Exit Parameters

Next we'll set [Entry](#) and [Exit](#) parameters for our operation:

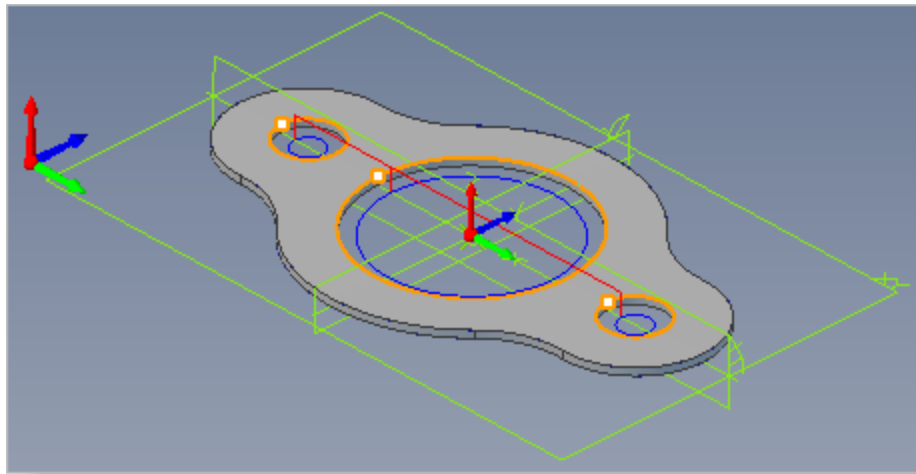
1. Select the [Entry/Exit](#) tab of the dialog.
2. [Entry/Exit](#) parameters control how the cutter will engage material as it begins cutting and how it leaves the material as it completes cutting.
3. Set [Entry Motions](#) and [Exit Motions](#) to [None](#).
4. Now pick [Generate](#).



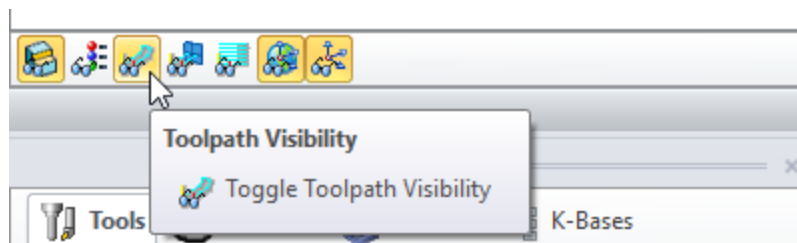
- The 2½ Axis Profile toolpath is generated and the operation is listed under Setup 1 in the Machining Browser. **NOTE:** Notice that it appears UNDER the Work Zero in the Setup.



6. The toolpath is also displayed in the graphics screen.



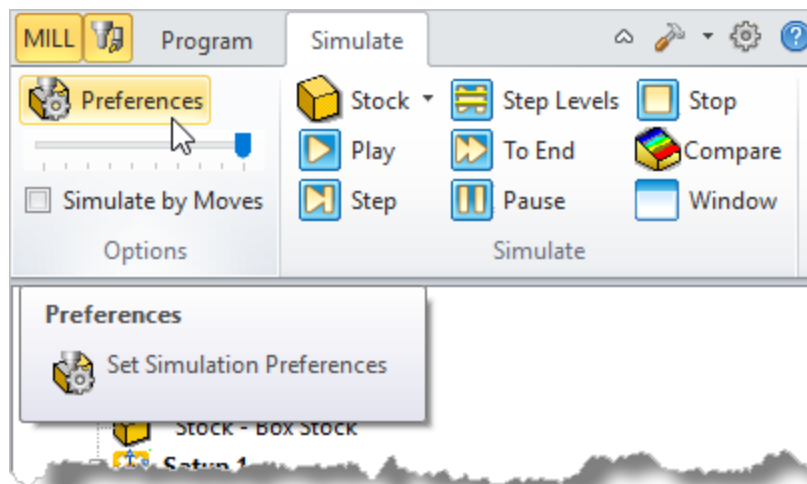
7. Note that the display of the toolpath in the graphics screen can be turned on/off by selecting the **Toggle Toolpath Visibility** icon located at the base of the **Machining Browser**.



## Cut Material Simulation

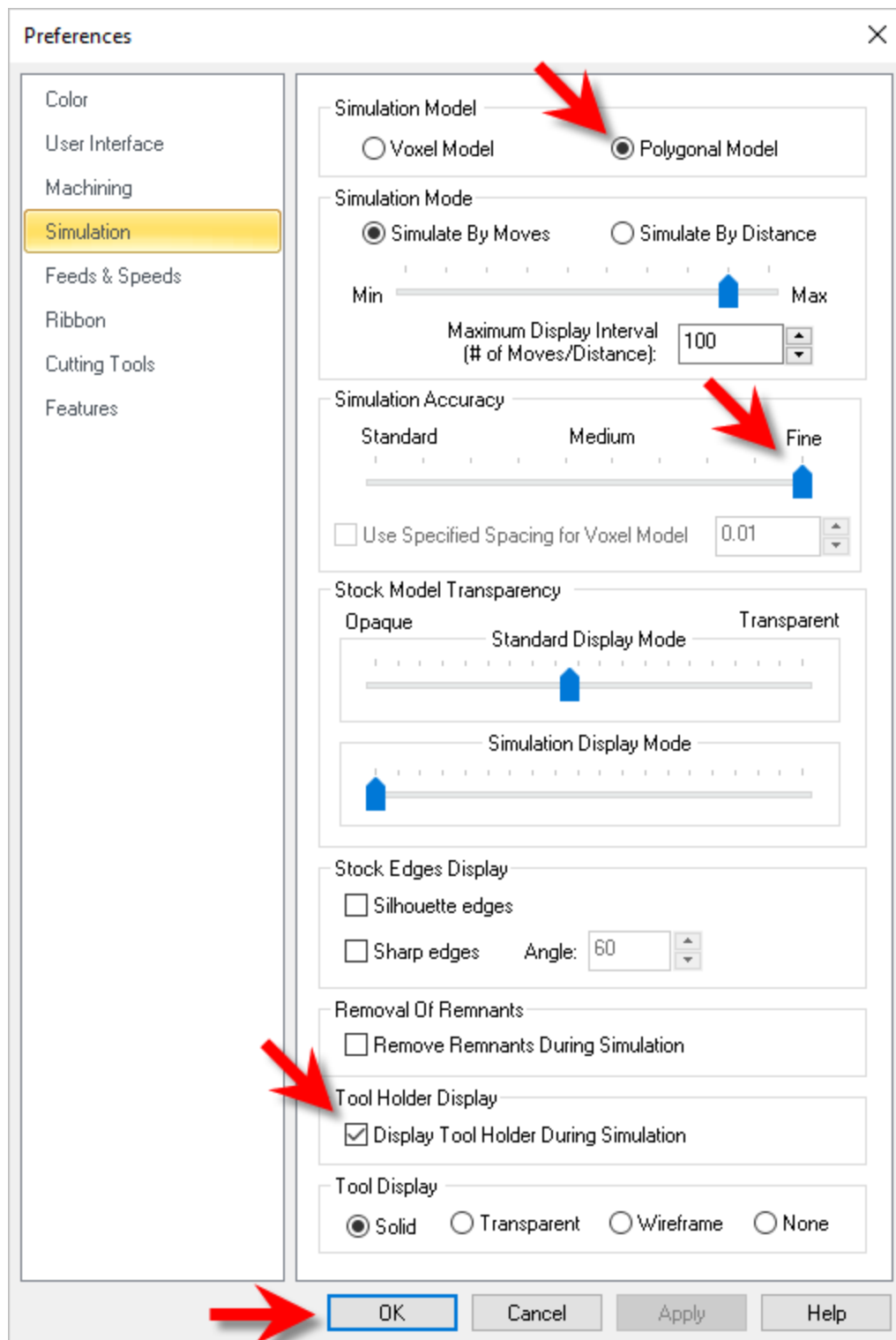
The new toolpath can now be **Simulated** to display the in-process stock model.

1. Switch to the **Simulate** tab at the top of the **Machining Browser**.
2. Select **Preferences** from the **Simulate** tab.



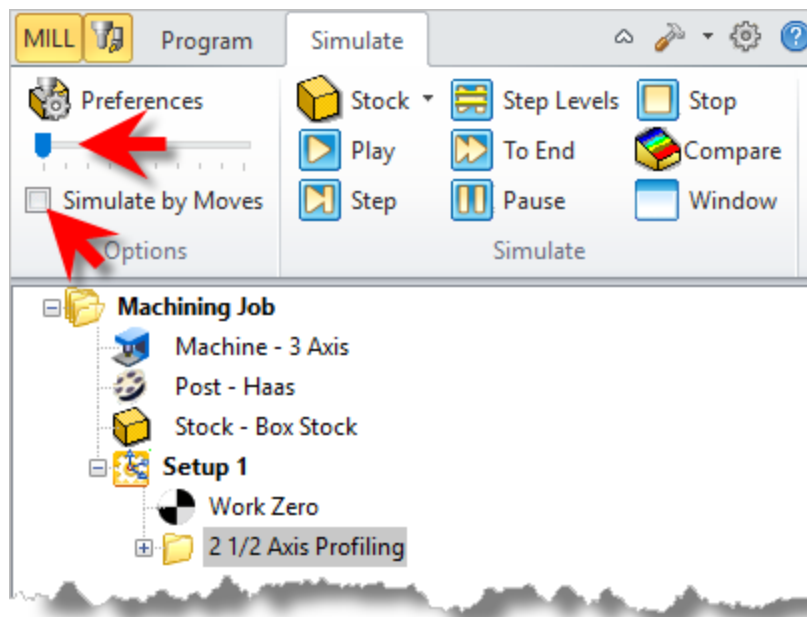
3. From the [Preferences](#) dialog set the [Simulation Model](#) to [Polygonal](#) and the [Simulation Accuracy](#) to [Fine](#) and then pick [OK](#).




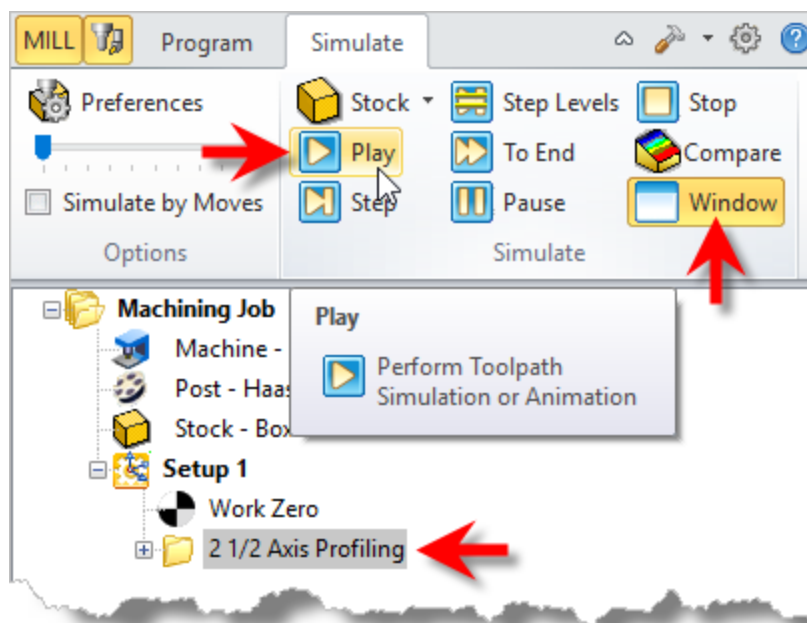


Set Simulation Preferences

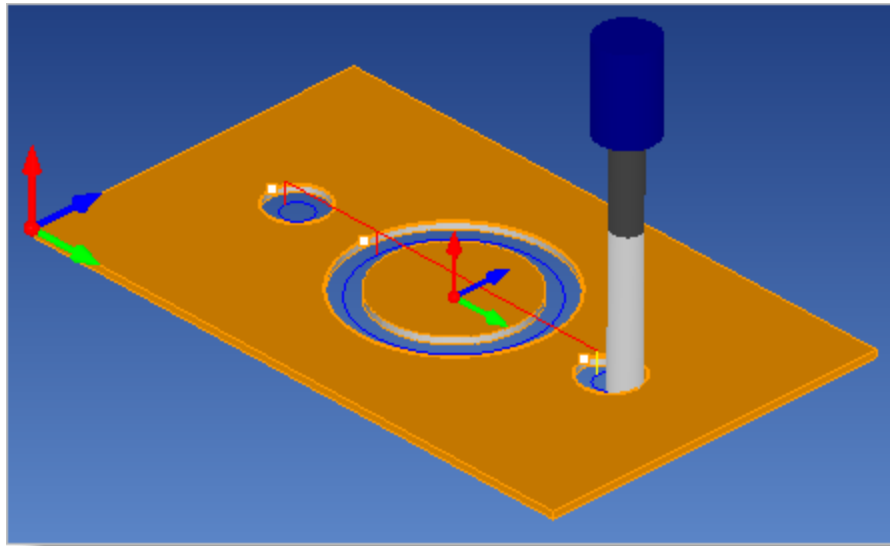
4. Then from the **Simulate** tab, uncheck **Simulate by Moves** and adjust the slider to the left to slow down the simulation speed.



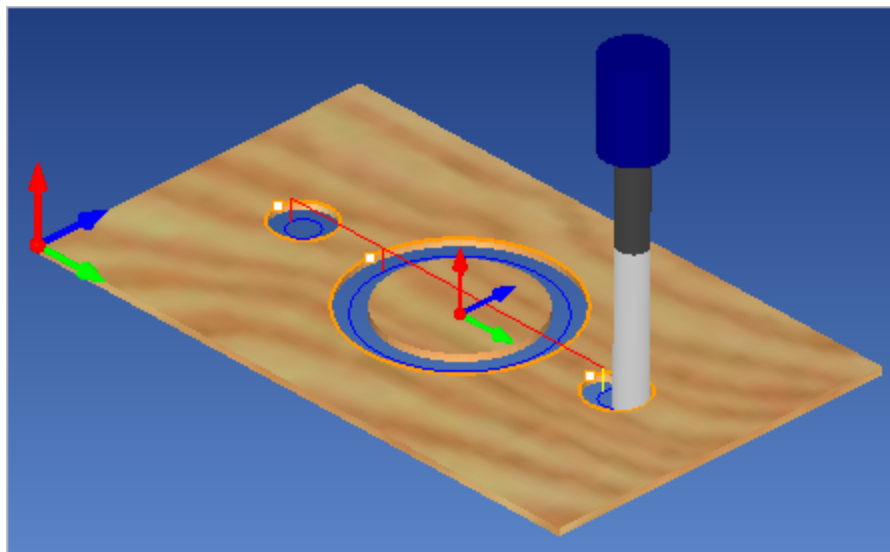
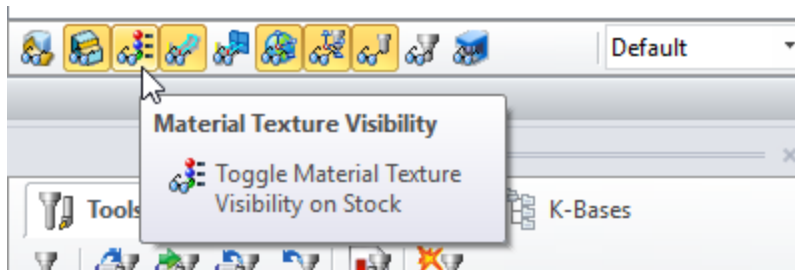
5. Now, under **Setup 1** in the **Machining Job** tree, select the **2½ Axis Profiling** operation we just created, select the **Simulation Window** icon , and then pick **Play** to start the simulation.



6. You can stop the simulation at anytime by selecting the **Pause** button from the **Simulate** tab. Subsequent to pausing the simulation, you can either choose to continue the simulation by selecting the **Play** button again or exit the simulation by selecting the **Stop** button.



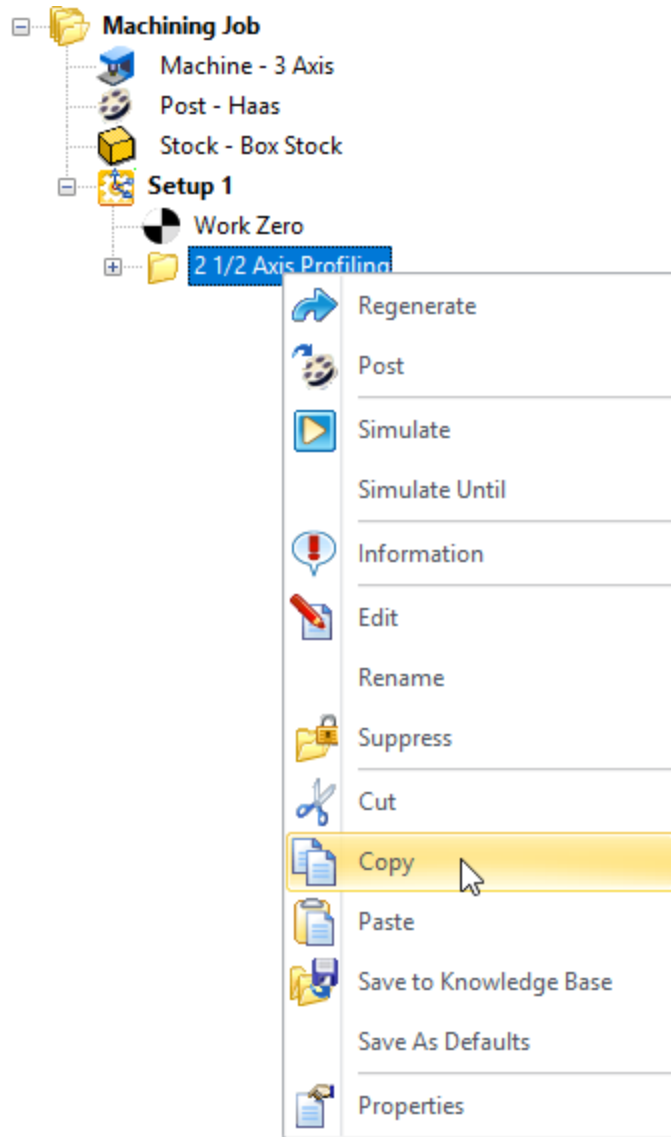
7. To view the cut model with textures applied, select the **Toggle Material Texture Visibility** icon located at the base of the **Machining Browser**.



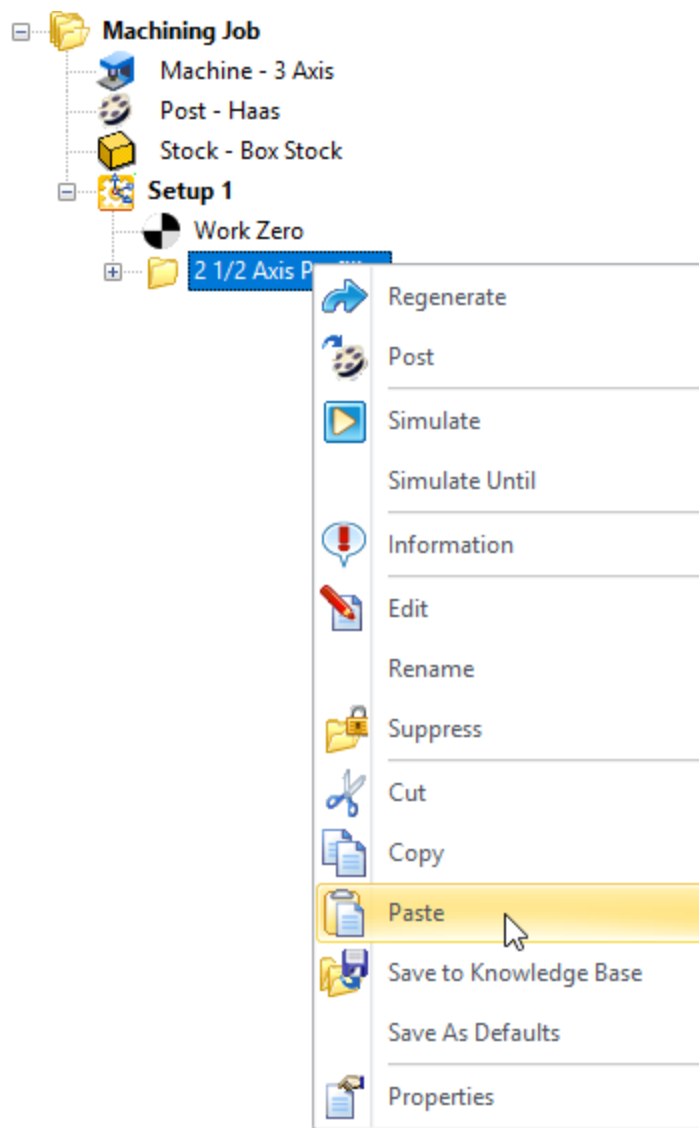
## Machine the Outer Profile

Now we will turn our attention to machining the outer profile of the part. Again, we will create a simple profile toolpath, this time around the outer perimeter of the part.

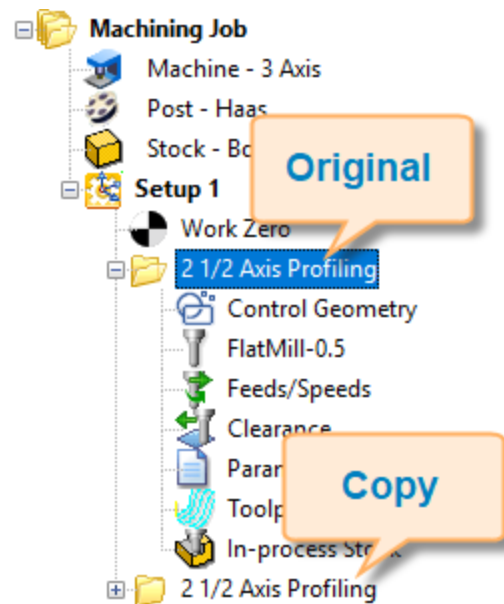
1. Switch to **Program** tab in the **Machining Browser**.
2. Select the **2½ Axis Profiling** operation we just created.
3. **Right-click** on the selected operation and select **Copy**.



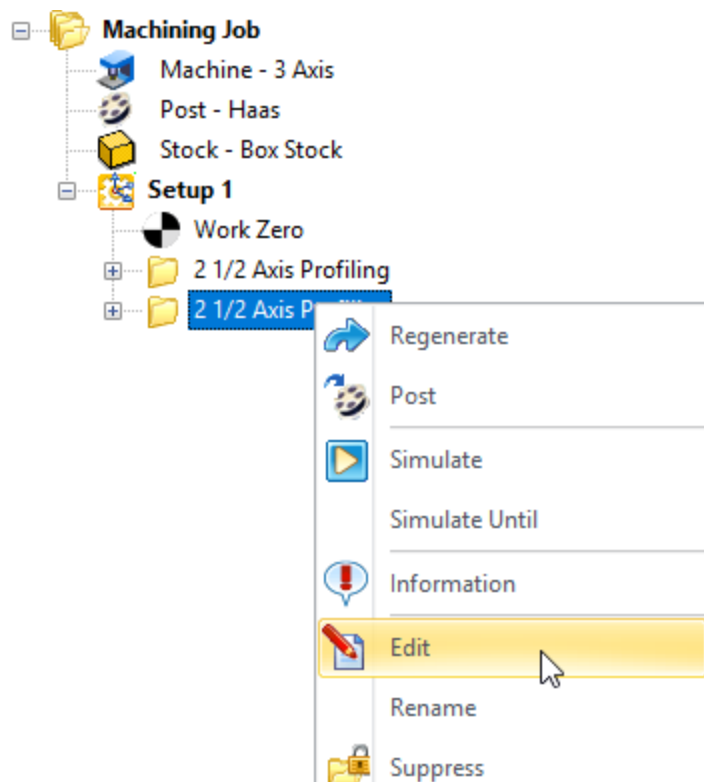
4. Now **Right-click** again and select **Paste**.



5. This creates a copy of the operation and places it below the original in the [Machining Job](#).




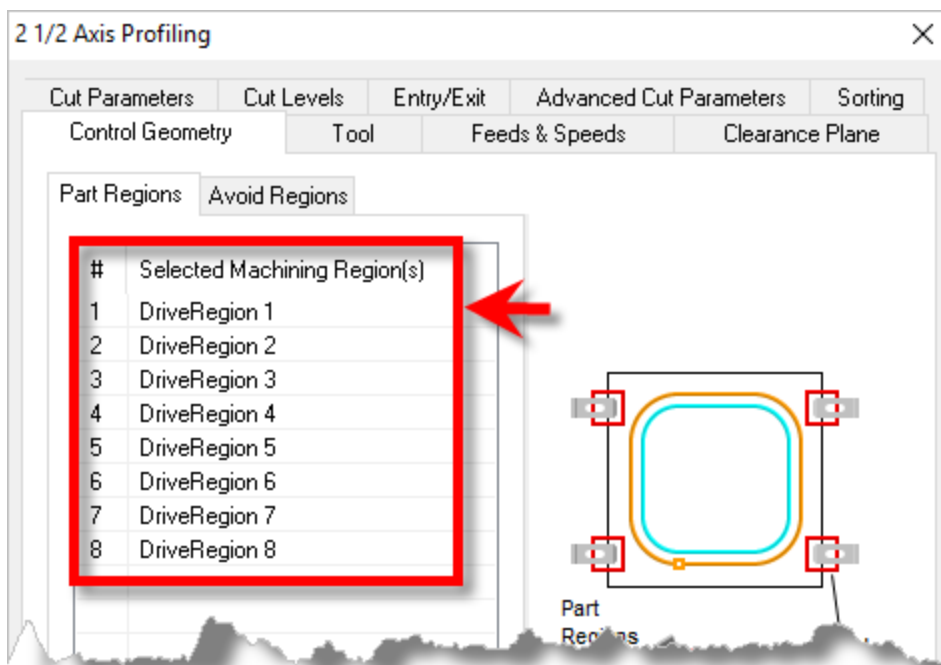
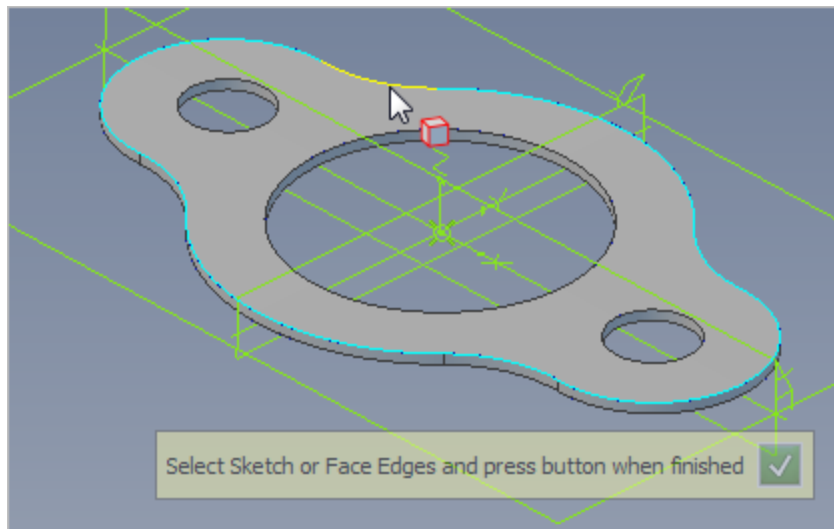
6. Now [right-click](#) on the second operation and pick [Edit](#) to adjust its parameters.



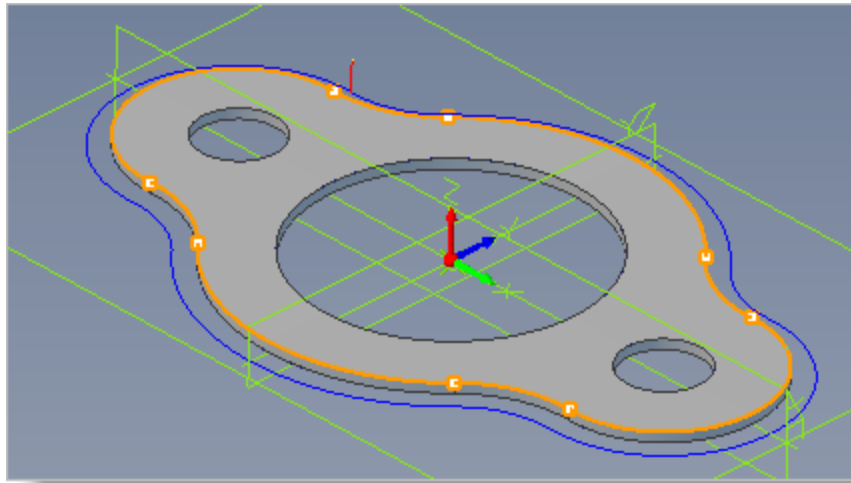
7. From the [Control Geometry](#) tab, pick [Remove All](#).


8. From the [Control Geometry](#) tab, pick [Select Curve/Edge Regions](#).

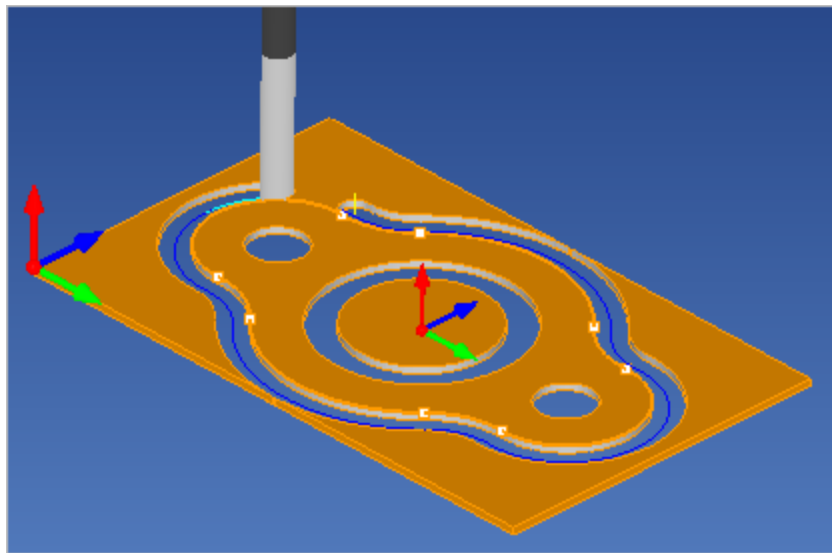
9. While pressing the <Shift> key, select the top outer surface edge and then select the  icon to complete the selection. **Note:** This edge has eight (8) separate segments so be sure to select all of them as shown in the dialog below.



10. Switch to the **Cut Parameters** tab and change the **Cut Start Side** to **Outside**.
11. We'll accept all of the remaining parameters and pick **Generate**.
12. The new **2½ Axis Profiling** toolpath is generated and displayed on the graphics screen.



13. Now we'll select the new 2½ Axis Profiling operation we just created, select the Simulation tab, select the Simulation Window icon  and then pick Play.

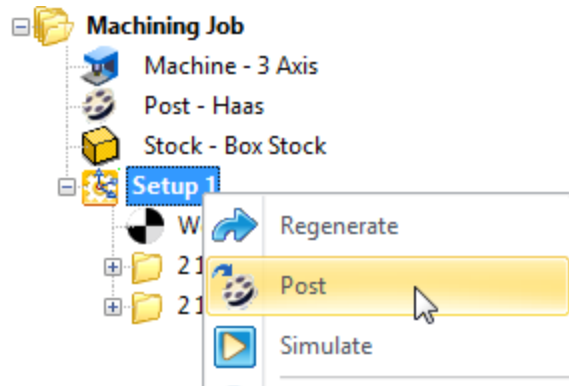





## Post G-Code

Now with the toolpaths complete we're ready to post-process to an output text file containing G-codes that can then be sent to the machine tool to actually machine the part.

1. Select **Setup 1** from the **Machining Job**, right-click and select **Post**. This will post-process all operations created under the **Setup**.



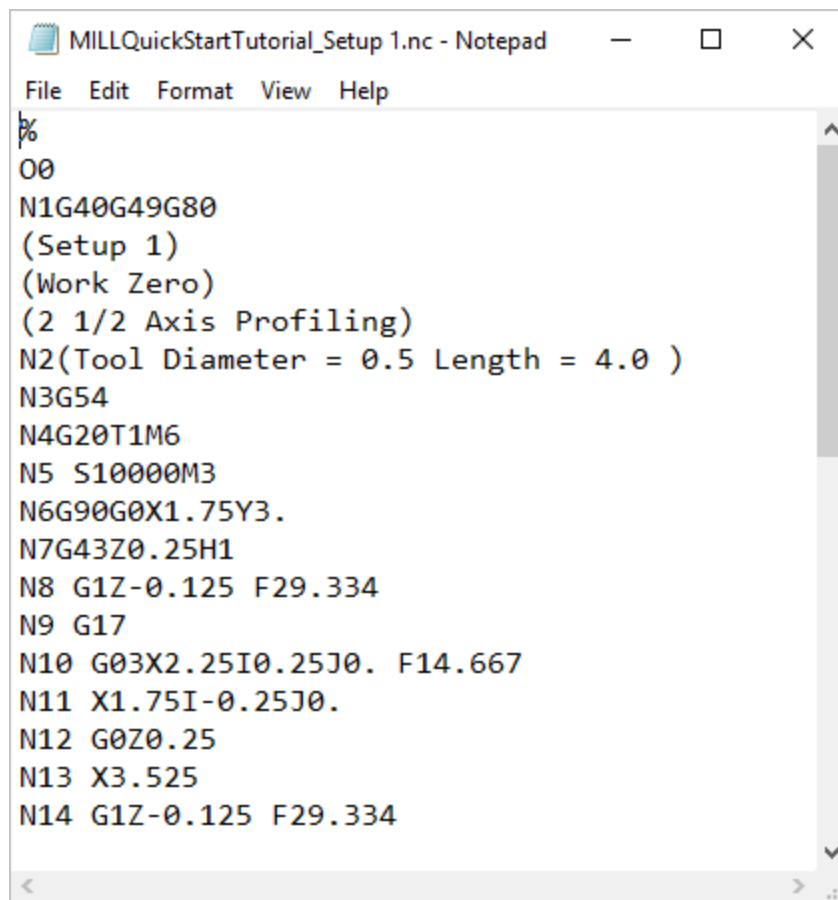
2. The **Post & Save As** dialog is displayed. By default, the **Part** file name and the **Setup** name are appended for the G-code **File name**. Also by default, the posted G-code file is **Saved** in the folder where the file was last saved.

 The output file names can be controlled by setting the Posted **File Naming Conventions** sections of the **Set Post-Processor Options** dialog. Refer to the [Select the Post Processor](#) step for displaying this dialog.



! As you may recall we set the post to [Haas](#) back in the [Select Post Processor](#) section of this guide. You can change the post processor from this dialog by selecting a different one from the drop down menu in the [Current Post](#) list. The posted G-code by default will be saved to the folder where the part file is located.

3. Now pick [Post](#) and the G-code file is displayed in [Notepad](#) where it can be viewed or edited manually.



```
%  
O0  
N1G40G49G80  
(Setup 1)  
(Work Zero)  
(2 1/2 Axis Profiling)  
N2(Tool Diameter = 0.5 Length = 4.0 )  
N3G54  
N4G20T1M6  
N5 S10000M3  
N6G90G0X1.75Y3.  
N7G43Z0.25H1  
N8 G1Z-0.125 F29.334  
N9 G17  
N10 G03X2.25I0.25J0. F14.667  
N11 X1.75I-0.25J0.  
N12 G0Z0.25  
N13 X3.525  
N14 G1Z-0.125 F29.334
```

4. Now close [Notepad](#).



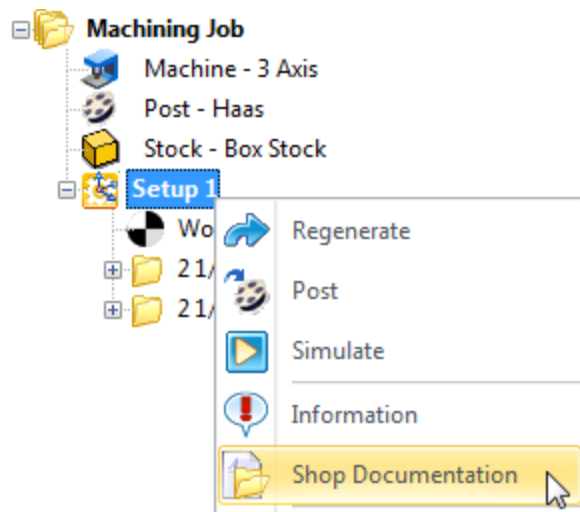
**Note** (Professional & Premium configurations only): In the future, if your [Machining Job](#) contains multiple [Setups](#), you can perform the same right-click sequence on the [Machining Job](#) to determine the estimated machining time for all [Setups](#).

4. Now pick [OK](#) to close the [Information](#) dialog.

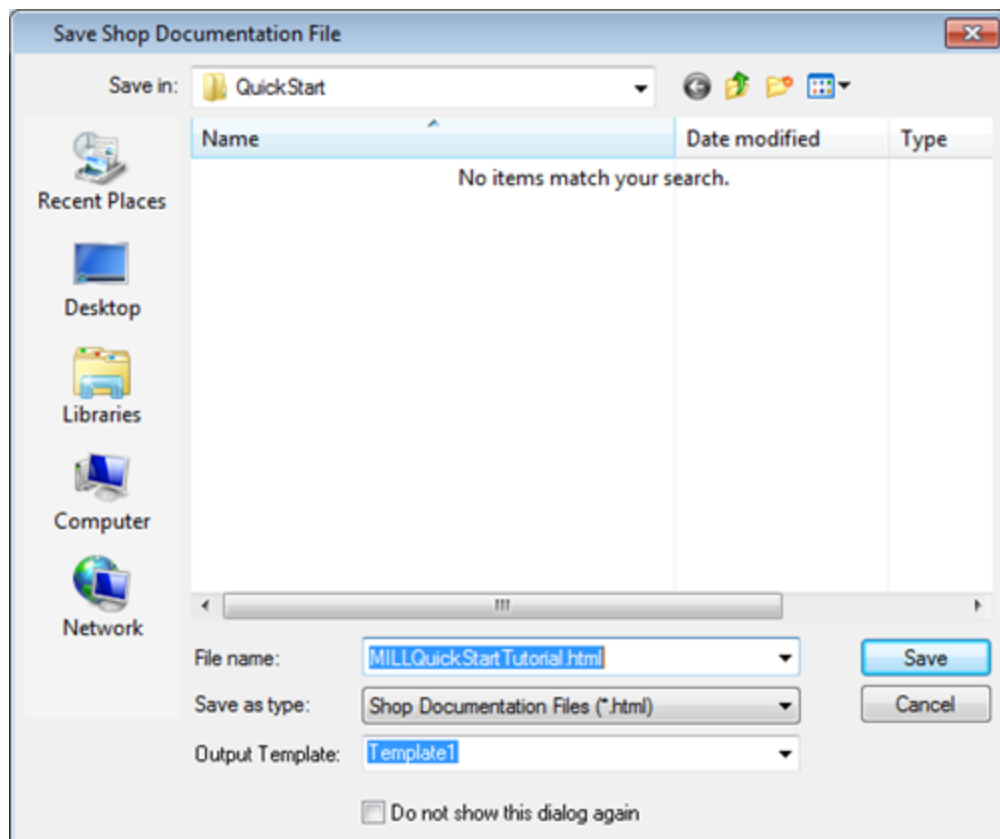
## Shop Documentation

You can also create a [Setup Sheet](#) by generating a [Shop Document](#). This is typically used to instruct machine operators on how to setup and machine the part on the CNC machine.

1. Under the [Machining Job](#), select [Setup1](#).
2. Right-click and select [Shop Documentation](#).



3. From the [Save Shop Documentation File](#) dialog, select [Template1](#) and pick [Save](#).



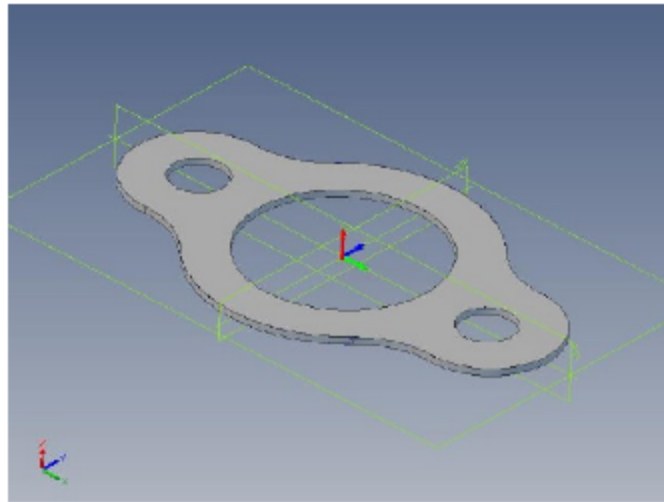
4. This creates an [HTML](#) based [Shop Document](#) that can be viewed in a web browser.

You can select from one of the multiple HTML templates that are shipped with the product and generate shop documentation. Each template provides varying amounts of information. Once you have selected the [Output Template](#) and pick [Save](#), a shop documentation html file will be created and saved. This file can then be printed and/or viewed in your default web browser such as [Internet Explorer](#).



SETUP SHEET		
File Name: C:\DON64-PC\MecSoft\DEMOS\VisualCAM for Geomagic\QuickStart\MILL\QuickStartTutorial_Complexed_AD_PRT		
Date: 7/18/2017	Units: inch	Total Machining Time: 42 sec
Stock Dimensions: Length(X): 10.000; Width(Y): 6.000; Height(Z): 0.125		
No. of Ops: 3	Stock Material: WOOD	Number of Tools: 1

### PART SETUP



TOOL LIST								
No.	Name	Number	Type	Dimensions				Comments
				Radius	C-Radius	Taper	Length	
1	FlatMill-0.5	1	Mill	0.125	0.000	0.000	4.000	None

MACHINE OPERATIONS LIST					
Operation Number: 1					
Name	Tool Used	Cut Feed	Spindle Speed	Machining Time	Comments

5. **Note** (Professional & Premium configurations only): In the future, if your [Machining Job](#) contains multiple [Setups](#), you can perform the same right-click sequence on the [Machining Job](#) to generate [Shop Documentation](#) for all [Setups](#).

## Where to go for more help

If you need additional help please take advantage of the following MecSoft resources:

1. **Quick Start Guides**

AlibreCAM 2018 includes step-by-step [Quick Start Guides](#) to help you get started using the program. You can find these and other resources on the [Learning Resources](#) dialog.

2. **On-Line Help**

The on-line help distributed with the product is a great resource to find reference information on the various functions available. You will find links to the online help for each module and other resources on the [Learning Resources](#) dialog (AlibreCAM 2018 > Learning...).

3. **Best Practices in 3 Axis Machining**

[This is an extended 5,000+ word original content article on The MecSoft Blog packed full of Best Practices advice prepared by the MecSoft support staff!](#) 3 Axis machining is THE MOST common application for all of MecSoft's CAM milling plugins. The reason is quite simple. This suite of toolpath strategies can quickly and accurately machine a vast majority of components and tooling required by industry today. In this post we'll explore some of the Best Practices for machining in 3 Axis using MecSoft CAM. [Read the full article...](#)

4. **Best Practices in 2-1/2 Axis Machining**

[2½ Axis](#) machining is the 2nd most common application (behind 3 Axis machining) for all of MecSoft's CAM plugins. The reason for this is because a large number of parts found in the real world lend themselves to 2½ Axis machining. The majority of 2½ Axis components are simple prismatic shapes composed of drilled holes, flat horizontal faces and straight or drafted verticals walls. [Read the full article...](#)

5. **MecSoft.com Resources Page**

You can find learning materials and industry resources on the [MecSoft.com Resources Page](#).

6. **Free Videos**

You can visit the [MecSoft Corporation YouTube Channel](#) to watch videos. Note that the functionality of MecSoft's CAM products is very similar across each of the different platforms that we support!

7. **MecSoft Blog**

You can visit the [MecSoft Blog](#) for short articles about using our products.

8. **Case Studies**

You can also visit our *real-world* [Case Studies page](#) to learn how others are using MecSoft products in their workshops.

9. **CAMJam Video Archive**

If you are an active [AMS \(Annual Maintenance Subscription\)](#) user, you have free access to our [CAMJam self-training video archive](#) and companion guide containing over 80 videos from our support staff on every aspect of AlibreCAM 2018. If you are new or have recently signed up for AMS, [this document will show you how to access your CAMJam archive](#). Want to sign up for AMS? Just give a call at 949-654-8163



(select [Option 1](#) for Sales).

**10. Support Forums**

If you are an active [AMS \(Annual Maintenance Subscription\)](#) user, you have free access to our Premium Support Forums where you can discuss projects with other experienced users that eager to assist. If you are new or have recently signed up for AMS, [this document will show you how to access the Premium Support Forums](#). Want to sign up for AMS? Just give a call at 949-654-8163 (select [Option 1](#) for Sales).

**11. Knowledge Resources Forum**

If you are an active [AMS \(Annual Maintenance Subscription\)](#) user, you have free access to the [Knowledge Resources Forum](#) (part of the Premium Support Forums) where you will find additional tutorial documents and source files such as [The F1 CO2 Racer Body Tutorial](#) and [The Cutting Tools Workbook](#). If you are new or have recently signed up for AMS, [this document will show you how to access the Premium Support Forums](#). Want to sign up for AMS? Just give a call at 949-654-8163 (select [Option 1](#) for Sales).

**12. MecSoft Support**

If you need additional help, or if you have any questions regarding [AlibreCAM 2018](#), you may contact us via e-mail at [support@mecsoft.com](mailto:support@mecsoft.com) or our [online support page](#).

**13. On-Demand Training**

[MecSoft Corporation](#) offers [On-Demand Training](#) as well as personalized full day training sessions. Please look up our website or email us at [sales@mecsoft.com](mailto:sales@mecsoft.com) for further details

**14. Product Page**

Please do continue to [visit the AlibreCAM 2018 product page](#) to learn about the latest updates and additional help material.

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