

# Arch Machine Company, Inc

## Fusion360 EZ-Path Post Processor Instructions

Please take a moment to read these instructions before using this post processor with your machine. Improper configuration could result in a crash or personal injury. Please run programs with feed override turned down for the first time to verify proper operation.

Post properties

▼ Group 0

High/Low Gear	HI
User Max spindle speed	2500
Output Gear With Spindle Speed	<input checked="" type="checkbox"/>
High spindle speed range	4000
Low spindle speed range	1000

▼ Group 1

Home position X	2
Home position Z	4
Tool Change position X	3
Tool Change position Z	6

▼ General

Delay in program at coolant start	0.5
Has constant surface speed mode	<input checked="" type="checkbox"/>
Optional stop	<input checked="" type="checkbox"/>
Sequence number increment	10
Start sequence number	10
Use sequence numbers	<input checked="" type="checkbox"/>
Thread Minimum Depth	0.0005
Thread Cut Depth Reduction in Percentage	60

► Built-in

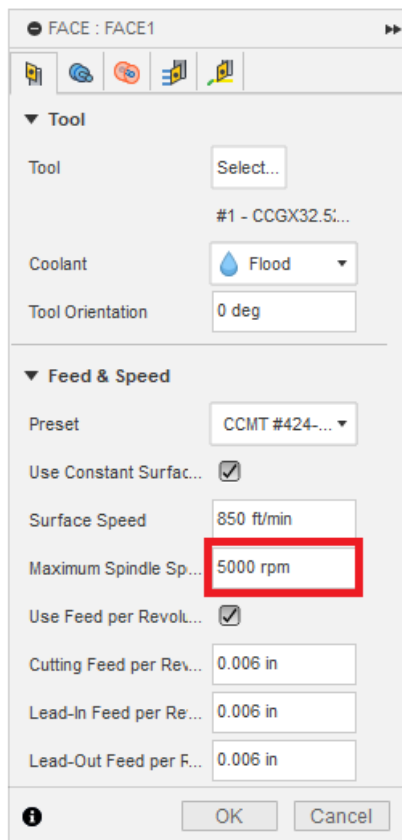
This post processor provides output of Conversational style code to be directly used by Bridgeport EZ-Path machined. This post processor has been customized to this machine and has a few settings that you should tailor to your machine, and your program.



## **“Group 0” Settings**

▼ Group 0	
High/Low Gear	HI
User Max spindle speed	2500
Output Gear With Spindle Speed	<input checked="" type="checkbox"/>
High spindle speed range	4000
Low spindle speed range	1000

These settings set up the machine spindle speed configuration. For EZ-Path S models, the spindle speeds are set by default. If using a machine without a variable spindle drive, the programed spindle speed is only an indicator and does not affect the program.



FACE : FACE1

▼ Tool

Tool: Select...

Coolant: Flood

Tool Orientation: 0 deg

▼ Feed & Speed

Preset: CCMT #424-...

Use Constant Surface Speed: ☒

Surface Speed: 850 ft/min

Maximum Spindle Speed: 5000 rpm

Use Feed per Revolution: ☒

Cutting Feed per Revolution: 0.006 in

Lead-In Feed per Revolution: 0.006 in

Lead-Out Feed per Revolution: 0.006 in

OK Cancel

**The High/Low Gear selection** will correct any operation that has a speed set greater than the maximum spindle speeds set for that gear. For example, if you program an operation as above, the spindle speed in the code will be corrected to the maximum for that gear. It will also output the correct “G#” with spindle speed output.

**The User Max Spindle Speed selection** will override the maximum gear speeds. This allows you to specify a lower than max gear speed for all operations in the current program.

**Output Gear with Spindle Speed selection** will control if the gear number “G#” will be output with the spindle speed command.

**High Spindle Speed Range** sets the maximum RPM of the high spindle gear range.

**Low Spindle Speed Range** sets the maximum RPM of the low spindle gear range.

*RPM Shown will be overridden in the post processor by the **Spindle Speed Range**, or the **User Max Spindle Speed** options.*



### “Group 1” Settings

▼ Group 1	
Home position X	2
Home position Z	4
Tool Change position X	3
Tool Change position Z	6

**The Home Position settings** set the position the machine will rapid to at the beginning and end of the program. The values entered here are in machine units, and should be set so the machine moves to a position where the machine slides, and tools, are far enough away from the workpiece that you can reposition or replace the workpiece if needed.

**The Tool Change Position settings** set the position the machine will rapid to between tool changes. The values entered here should move the machine far enough away from the workpiece that tools in a tool holder, or automatic turret, can be changed during the program.

**NOTE:** Its important to remember **these values are based upon your work coordinate positions**, not machine absolute position. So ensure these values are far enough away from your workpiece to not cause a collision. **A zero value in either of these four settings will result in an error to reduce the chances of a crash.**



## General Settings

General	
Delay in program at coolant start	0.5
Has constant surface speed mode	<input checked="" type="checkbox"/>
Optional stop	<input checked="" type="checkbox"/>
Sequence number increment	10
Start sequence number	10
Use sequence numbers	<input checked="" type="checkbox"/>
Thread Minimum Depth	0.0005
Thread Cut Depth Reduction in Percentage	60

The **General settings** set up the way the code is output.

**Delay in program at coolant start** is a delay in movement to allow the coolant pump to turn on, and have coolant flowing, before tools make contact with the workpiece. This can be useful when in full automatic operation, as there is an amount of time it takes the coolant to fill the hoses/pipes before it makes it to the tip of the tool.

## Configuring Operations

PROFILE ROUGHING : PROFILE ROUGHING

▼ Cycle and Direction

Cycle: Horizontal...

Direction: Front to L...

Grooving: Allow rat...

Use Canned Cycle: ☐

▼ Passes

Tolerance: 0.0004 in

Maximum Depth of Cut: 0.0393701 in

Even Depths of Cut: ☐

Make Sharp Corners: ☒

No Dragging: ☐

Use Pecking: ☐

▼ ☒ Stock to Leave

X Stock to Leave: 0.004 in

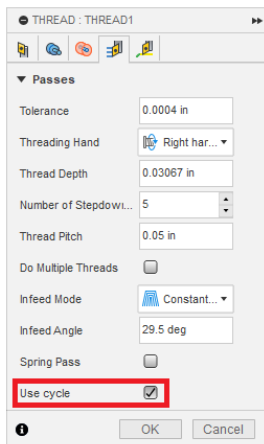
Z Stock to Leave: 0.004 in

Extend to Stock: ☐

OK Cancel

Currently, **cycles are not supported for roughing operations**. When programming a roughing operation, be sure to leave the “Use Canned Cycle” box **unchecked**.



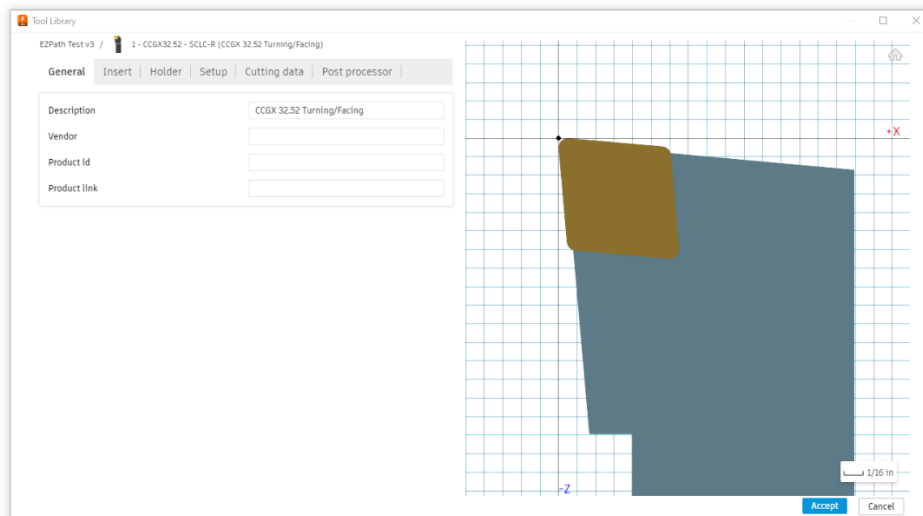


When programming threading operations, you **MUST** check the “**Use Cycle**” box, or else the output will fail.

Most other operations should be able to be programmed as usual.

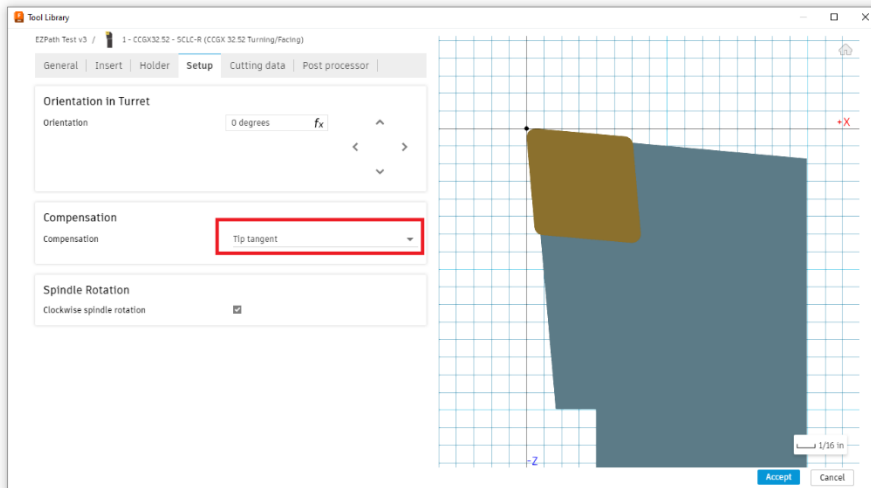
### **Fusion360 Tool Library Configuration**

Configuring tools in the tool library is also crucial to the proper operation of the machine from the output toolpath. In the tool library of Fusion 360, You must ensure that the compensation, and turret entries, match the physical lathe configuration.

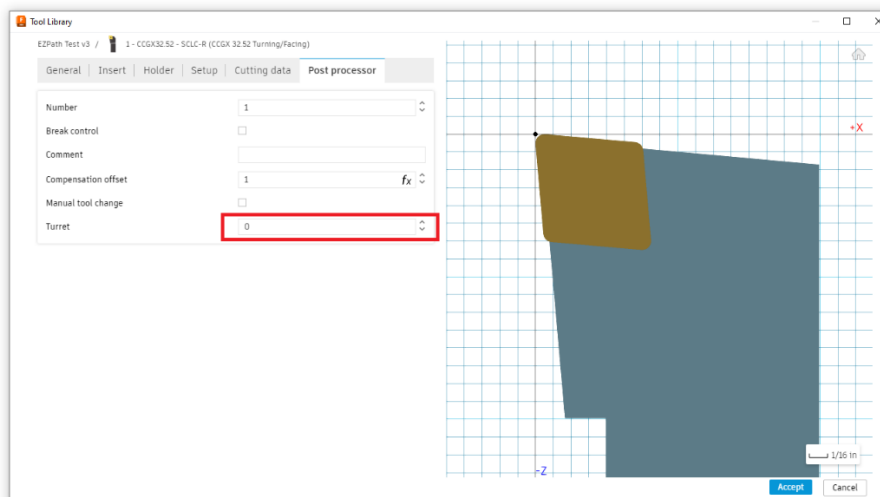


When configuring a standard right hand turning tool as shown above, After configuring the insert geometry, navigate to the **Setup** tab.





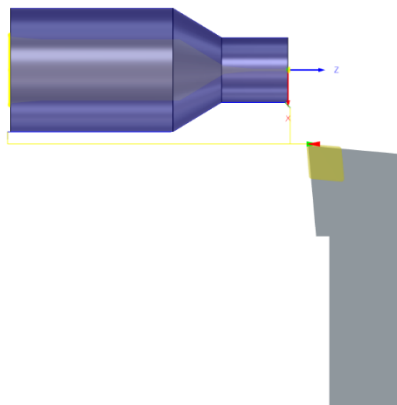
Under Compensation, “Tip Tangent” must be selected. This is the way the tools are configured in the EZ-Path tool library on the machine control. Without this selection, the output toolpath, will not match the tool position in the physical machine.



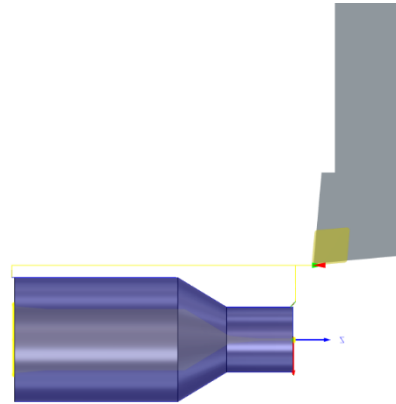
The final portion of the tool setup, is on the Post Processor Tab. The “Turret” selection configures the position of the tool in the lathe. Follow the guide below for setting the Turret setting in the Fusion 360 Tool library.



The following images are looking from the top down on the workpiece.



*Turret 0 = Front too or Automatic Turret*



*Turret 1 = Rear Tool*

Please report any issues discovered with this post processor to [Sales@ArchMachineCo.com](mailto:Sales@ArchMachineCo.com).

