



CAMDUCT MACHINE POST PROCESSORS DEMYSTIFIED

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CAMDUCT MACHINE POST PROCESSORS DEMYSTIFIED

- This class will focus on the machine post processors that ship with CAMduct. When you get a new machine, it can be a hassle figuring out how to get it up and running. We'll cover how to determine which Post Processor to use and verify and configure its output for your machine.
 - Reviewing sample CNC code
 - Testing Post Processor output
 - Common problems and how to overcome them
 - Troubleshooting techniques

DETERMINE THE POST PROCESSOR REQUIRED FOR YOUR TABLE

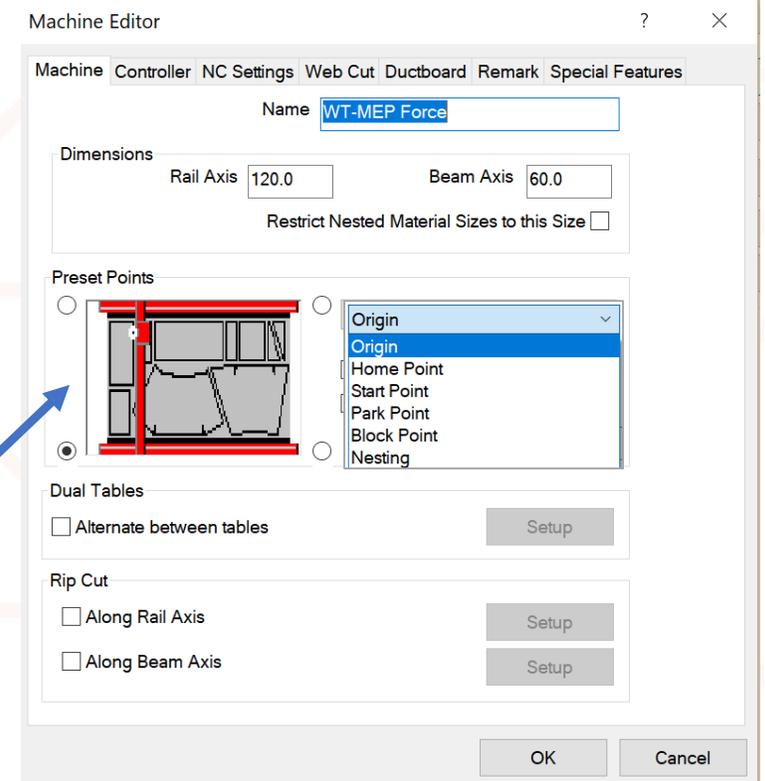
- CAMduct help “[Supported Post Processors](#)” will give a list of table manufactures and post processor file names.

File Name	Post Processor	Default File Extension
acl64.vpl	ACL Post Processor for ACL 2000 & ACL 3000 series	CNC
ACSGen64.vpl	ACS Post Processor	ACS
actechgen64.vpl	AC Tech Post Processor	TAP

- The D6 post processor will work for a lot of tables (Creonic Based)
 - Koike
 - Hypertherm Edge
 - Lockformer Vulcan
 - TechServ Controllers

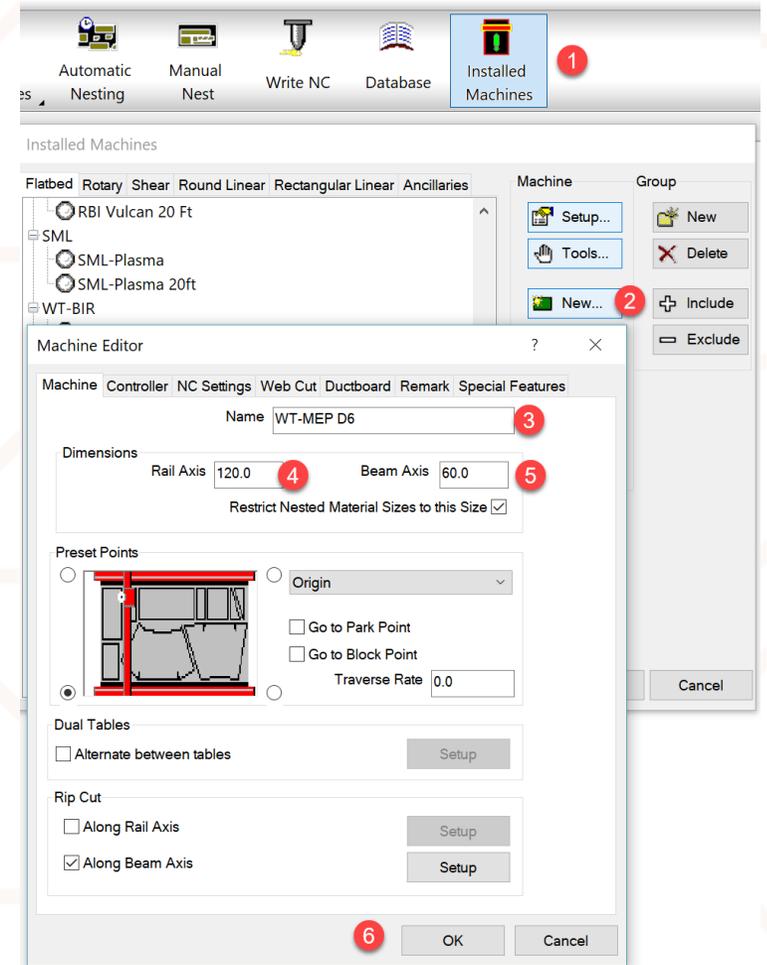
SETTING UP A NEW MACHINE, LESSONS LEARNED

1. It's not an easy task
2. You are very lucky if you get it right the first time
3. I have never found 2 machines exactly alike
4. It is a trial and error task
5. Take it one step at a time
6. The time that it takes me to setup tables ranges from 5 minutes to 3 days.
7. I am not an expert...
8. This machine image can be deceiving!



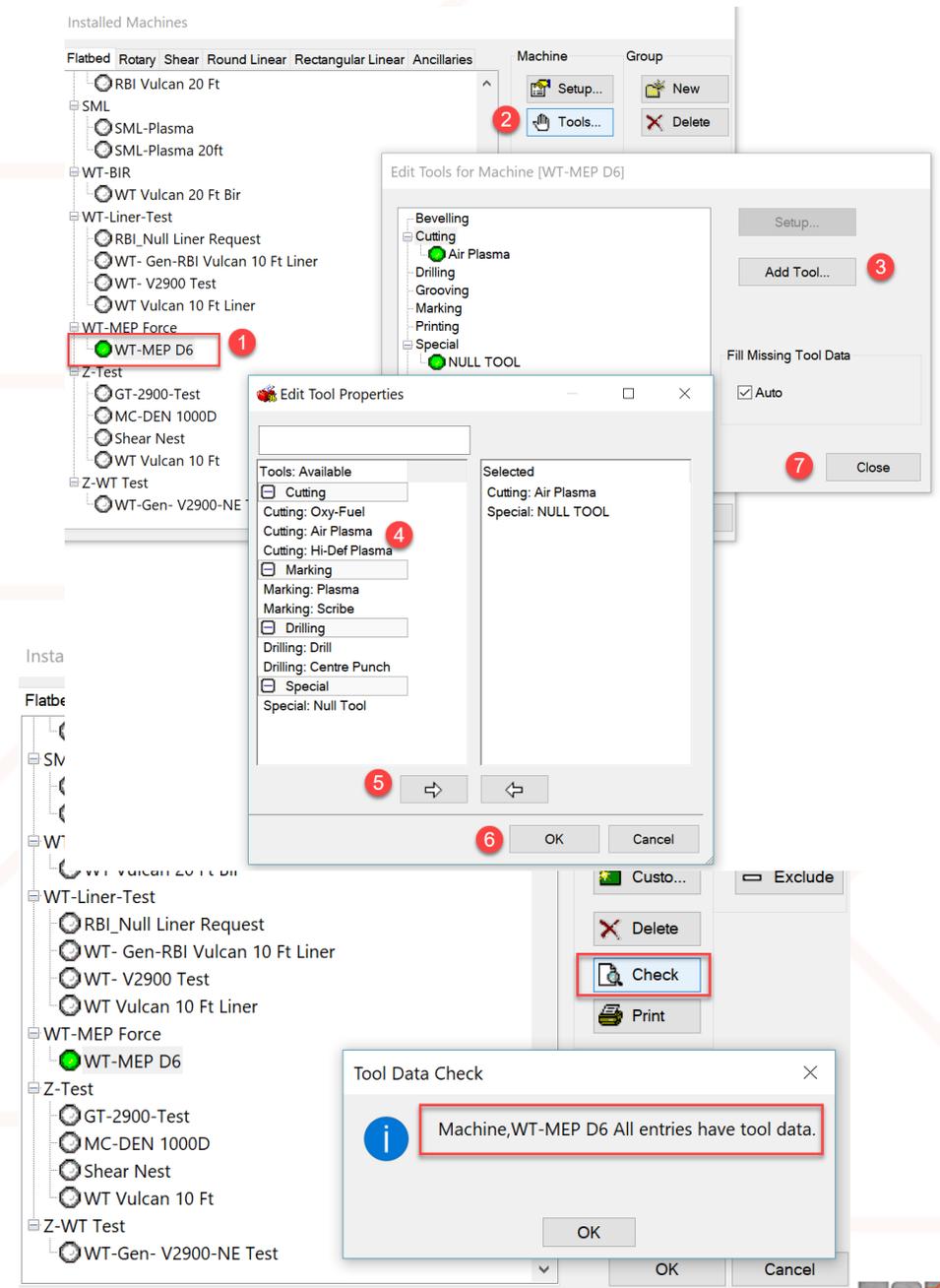
SETTING UP A NEW MACHINE

1. Select Installed Machines
2. Select New
3. Name the Machine
4. Set Table Length
5. Set Table Width
6. Select OK



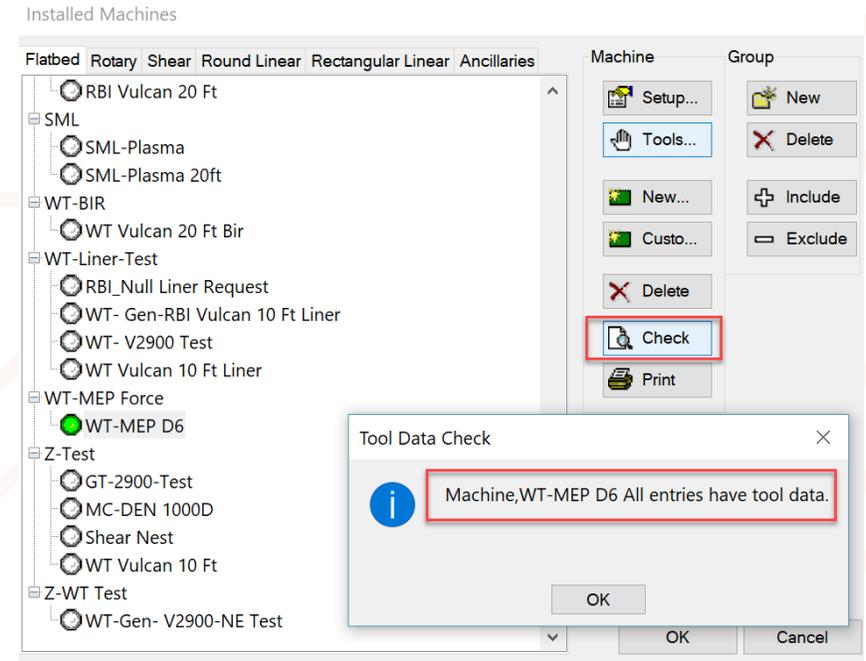
ADDING TOOLS

1. With the new machine selected
2. Select tools
3. Add Tool
4. Select “Air Plasma” (Assuming that is what you are using)
5. Add the tool
6. Select OK
7. Close



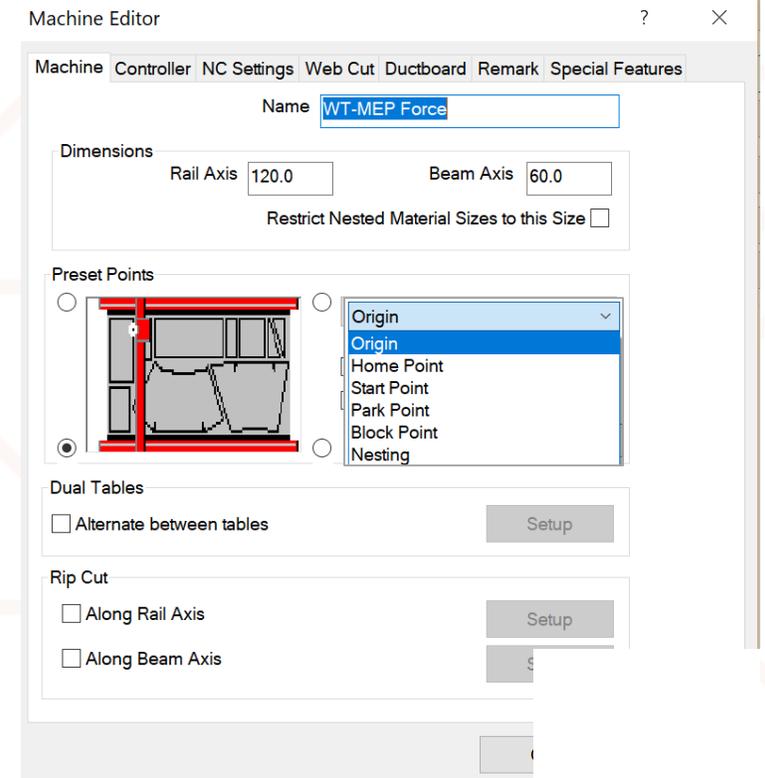
ADDING TOOLS

- Select “Check”
- This will check and add tool data for all your materials



MACHINE TAB

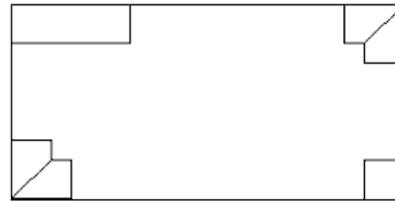
- Origin: The machines x0,y0 location
- Home point: The controllers home point
- Start Point: The starting point for the cut
- Nesting Point: The point that you will align the corner of the sheet.
- Block Point: This point is used for cutting a single part repetitively, maybe park the tool closer to the nesting point.



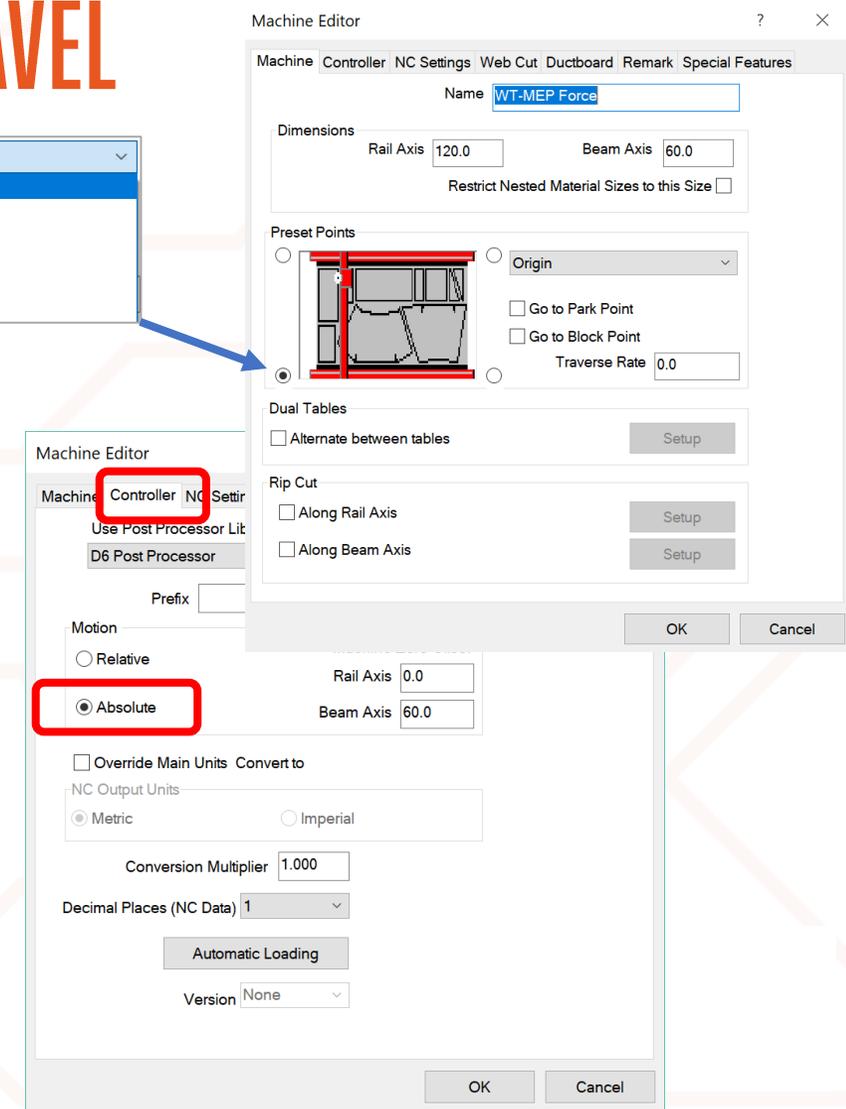
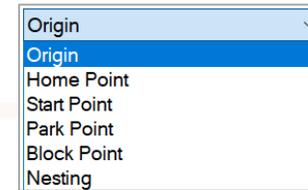
WHERE IS THE ORIGIN AND DIRECTION OF TRAVEL

- When trying to determine the origin of the machine, I like to:

- Manual nest a small square elbow without seams or connectors, one part at each corner of the sheet.



- Select all points at one corner try to cut a part and see which direction the head moves.
- I will keep moving all points to a different corner until I get the head moving toward the inside of all corners
- Set the controller motion set to absolute for troubleshooting, this can possibly be changed to relative after the machine is setup



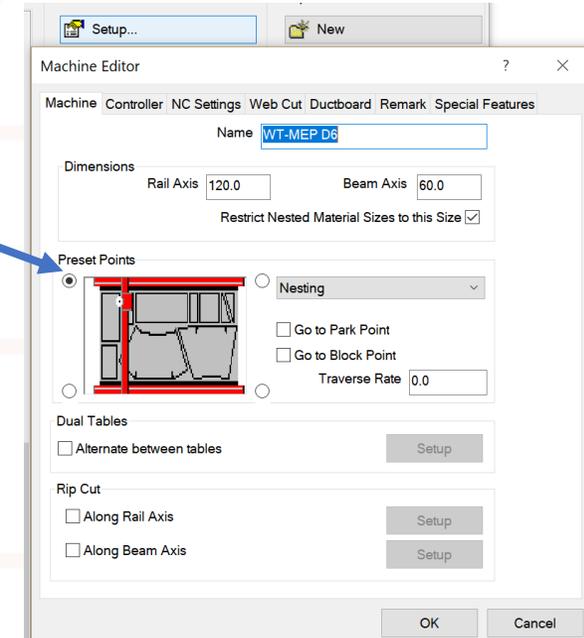
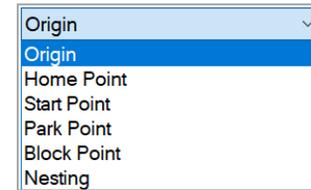
TROUBLESHOOTING THE G-CODE

- Write the NC for the sheet
- View the NC
- Review the G-Code and verify that all coordinates are positive values
- Negative values at this point is a bad thing
- At the machine control panel call the NC
- Instruct the machine for a dry run

```
(1462)
(ORIGIN=BOTTOM LEFT)
(INCH)
G70
(ABSOLUTE)
G90
(PART 1/Top Cheek)
G00X101.9Y59.9
M15
G01X119.9Y59.9
G01X119.9Y41.9
G01X107.9Y41.9
G01X107.9Y47.9
G01X101.9Y47.9
G01X101.9Y59.9
M16
(PART 1/Throat Wrapper)
G00X107.8Y0.2
M15
G01X107.8Y12.2
G01X113.8Y12.2
G01X119.8Y12.2
G01X119.8Y0.2
G01X113.8Y0.2
G01X107.8Y0.2
M16
(PART 1/Back Wrapper)
G00X0.1Y47.8
M15
G01X0.1Y59.8
G01X18.1Y59.8
G01X36.1Y59.8
G01X36.1Y47.8
G01X18.1Y47.8
G01X0.1Y47.8
M16
(PART 1/Bottom Cheek)
G00X0.1Y18.3
M15
G01X12.1Y18.3
G01X12.1Y12.3
G01X18.1Y12.3
G01X18.1Y0.3
G01X0.1Y0.3
G01X0.1Y18.3
M16
(PARK)
G00X0.0Y0.0
(END OF SHEET)
(END OF PROGRAM)
M02
```

WHERE IS THE ORIGIN AND DIRECTION OF TRAVEL

- If the tool moves towards the center of the table then you have located the origin
- If it fails, you need to change all points to another location



REVIEW THE G-CODE AGAIN

- Write the NC again
- Notice the negative values and they are on the width of the table
- I don't need to test this; I know it will fail
- Offset the beam by 60 or by the width of the table

```
(1462)  
(ORIGIN=TOP LEFT)  
(INCH)  
G70  
(ABSOLUTE)  
G90  
(PART 1/Top Cheek)  
G00X-59.9Y101.9  
M15  
G01X-59.9Y119.9  
G01X-41.9Y119.9  
G01X-41.9Y107.9  
G01X-47.9Y107.9  
G01X-47.9Y101.9  
G01X-59.9Y101.9  
M16  
(PART 1/Throat Wrapper)  
G00X-0.2Y107.8  
M15  
G01X-12.2Y107.8  
G01X-12.2Y113.8  
G01X-12.2Y119.8  
G01X-0.2Y119.8  
G01X-0.2Y113.8
```

Machine Editor

Machine Controller NC Settings Web Cut Ductboard Remark Special Features

Use Post Processor Library:
D6 Post Processor Browse...

Prefix File Extension MP NC files

Motion
 Relative
 Absolute

Machine Zero Offset
Rail Axis 0.0
Beam Axis 60.0

Override Main Units Convert to

NC Output Units
 Metric Imperial

Conversion Multiplier 1.000

Decimal Places (NC Data) 1

Automatic Loading

Version None

OK Cancel

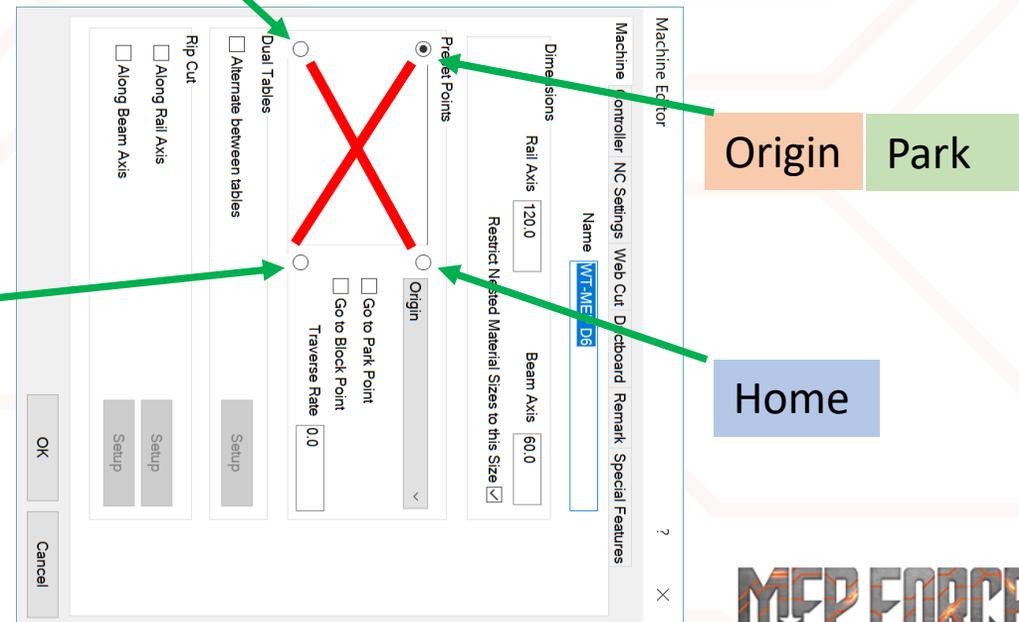
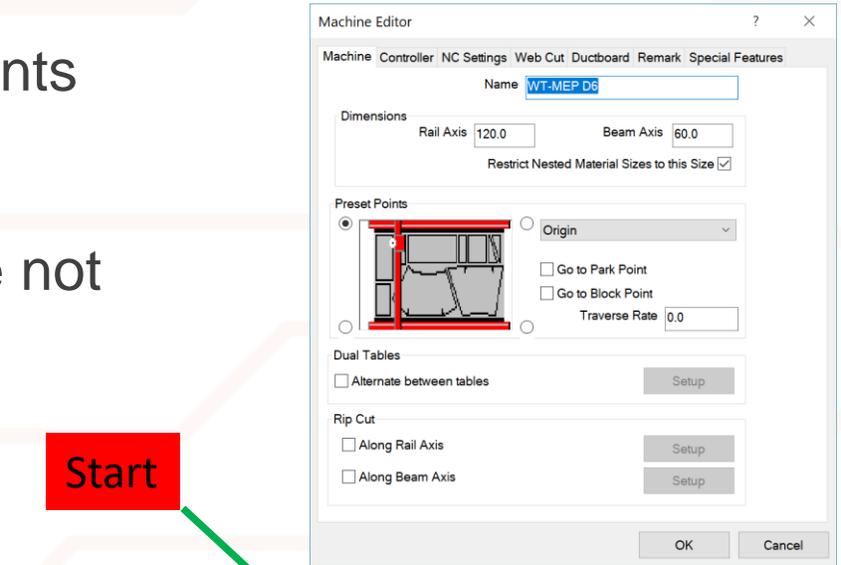
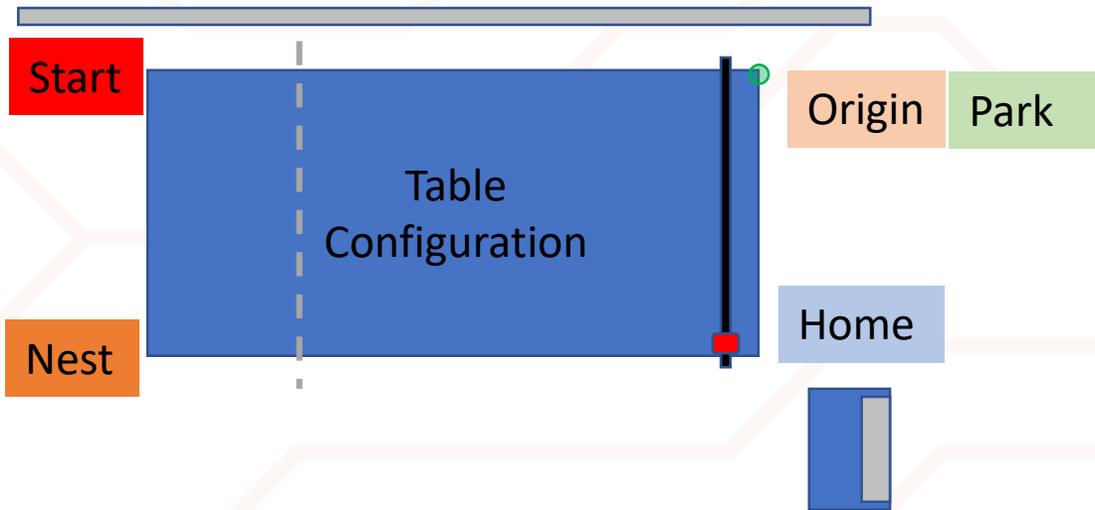
REVIEW THE G-CODE AGAIN

- Write the NC again
- Review the G-Code and verify that all coordinates are positive values
- At the machine control panel call the NC
- Instruct the machine for a dry run
- If the tool moves towards the center of the table then you have located the origin
- Let's say that it does

```
(1462)
(ORIGIN=TOP LEFT)
(INCH)
G70
(ABSOLUTE)
G90
(PART 1/Top Cheek)
G00X0.1Y101.9
M15
G01X0.1Y119.9
G01X18.1Y119.9
G01X18.1Y107.9
G01X12.1Y107.9
G01X12.1Y101.9
G01X0.1Y101.9
M16
(PART 1/Throat Wrapper)
G00X59.8Y107.8
M15
G01X47.8Y107.8
G01X47.8Y113.8
G01X47.8Y119.8
G01X59.8Y119.8
G01X59.8Y113.8
G01X59.8Y107.8
M16
(PART 1/Back Wrapper)
G00X12.2Y0.1
M15
G01X0.2Y0.1
G01X0.2Y18.1
G01X0.2Y36.1
G01X12.2Y36.1
G01X12.2Y18.1
G01X12.2Y0.1
M16
(PART 1/Bottom Cheek)
G00X41.7Y0.1
M15
G01X41.7Y12.1
G01X47.7Y12.1
G01X47.7Y18.1
G01X59.7Y18.1
G01X59.7Y0.1
G01X41.7Y0.1
M16
(END OF SHEET)
(END OF PROGRAM)
M02
```

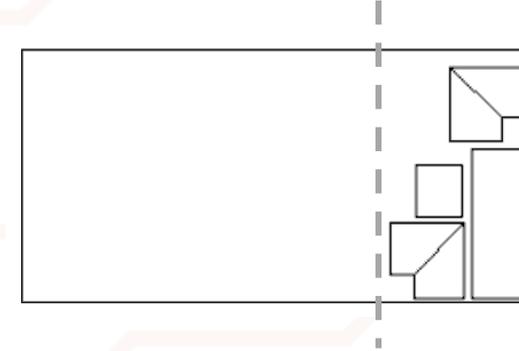
DETERMINE THE ORIENTATION OF YOUR TABLE

- Now that the origin is set you can set your other points
- The Origin and Home points are determined by the manufacturer
- Traverse Rate can be set to speed up the tool while not cutting



COMPLETE THE TABLE SETUP

- Setup the rip cut
- If you are using sheets you will need to set the rip cut minimum length that you would want to scrap
- If you have a decoiler at the table, you will want to select “Always”



Rip Cut

Along Rail Axis Setup

Along Beam Axis Setup

Rip Cut Beam

Always

Minimum Size

Position

Left of Nest

Right of Nest

Cut Order

Before Nest

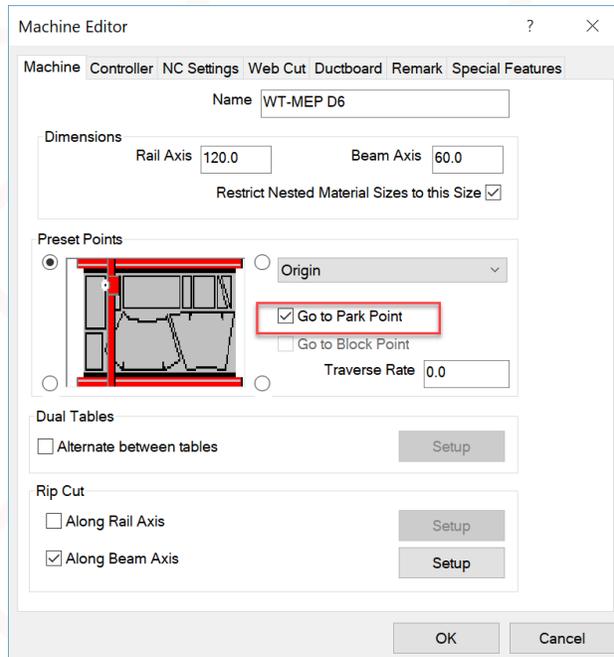
After Nest

Follow part boundaries

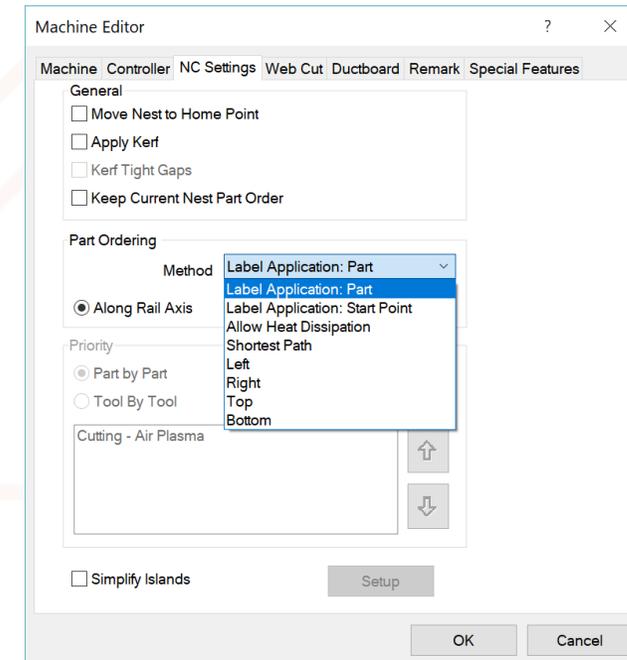
OK Cancel

COMPLETE THE TABLE SETUP

- Selecting “Go to Park Point” will have the tool return to the Park point after the sheet is cut.



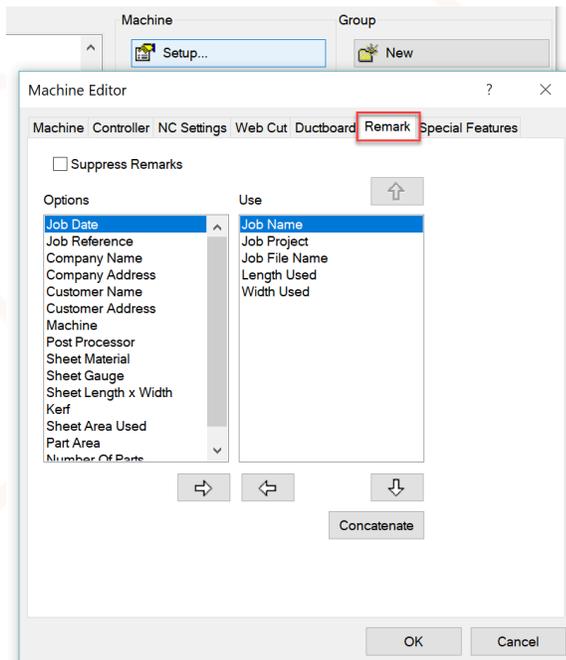
- NC Settings tab
 - Part Ordering: Load Application part is the most common: this will follow the order of the labels.
 - Shortest path may be the quickest cutting time



COMPLETE THE TABLE SETUP

- Remark tab

- This will add additional remarks to your NC file.
- This can be useful if you wanted to query some data out of the file
- Suppress Remarks will remove all remarks including Part Descriptions



```
(1464)
(Job Name=MEP Force)
(Project=)
(Job File Name=C:/Dropbox (Comfort Systems USA)/Au
(Length Used=33.680)
(Width Used=55.930)
(ORIGIN=TOP LEFT)
(INCH)
G70
(ABSOLUTE)
G90
(PART 3/Top Cheek)
G00X40.9Y87.3
M15
G01X40.9Y104.3
```

COMPLETE THE TABLE SETUP

- Controller tab
 - You may want to change from Absolute to Relative Motion.
 - This can make it easier for verifying/troubleshooting part dimensions
 - Some Post processors will not allow relative motion
 - Automatic loading can be used with combining NCs.
 - Some Post processors will not allow Auto Loading

The image shows a screenshot of a CAD software interface with several windows open. At the top right, a code editor displays the following G-code:

```
(1464)  
(ORIGIN=TOP LEFT)  
(INCH)  
G70  
(RELATIVE)  
G91  
(PART 3/Top Cheek)  
G00X40.9Y-32.7  
M15  
G01X0.0Y17.0  
G01X0.5Y0.4  
G01X0.4Y0.4  
G01X17.0Y0.0  
G01X0.1Y-0.4  
G01X0.5Y0.0
```

Below the code editor, the 'Write NC' dialog box is open, showing 'Generate NC Data: Flatbed'. The 'Create Files' section has the following settings:

- Keep current NC file numbers
- Within the Range: 1460 -> 1464
- Start At: 1460
- NC Batch Step: 10
- Filename Length: 1

The 'Machine Editor' window is also open, showing the 'NC Settings' tab. The 'Motion' section has 'Relative' selected. The 'Automatic Loading' dialog box is open, with 'Automatic Loading' checked.

OTHER HELPFUL INFORMATION

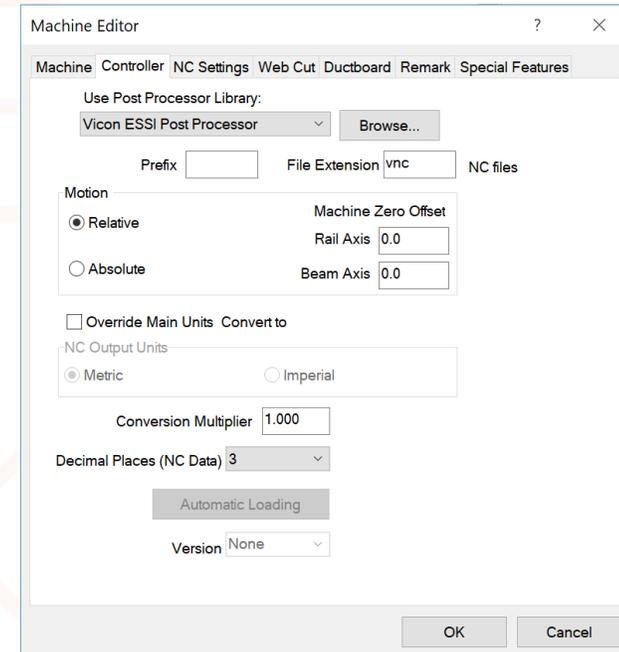
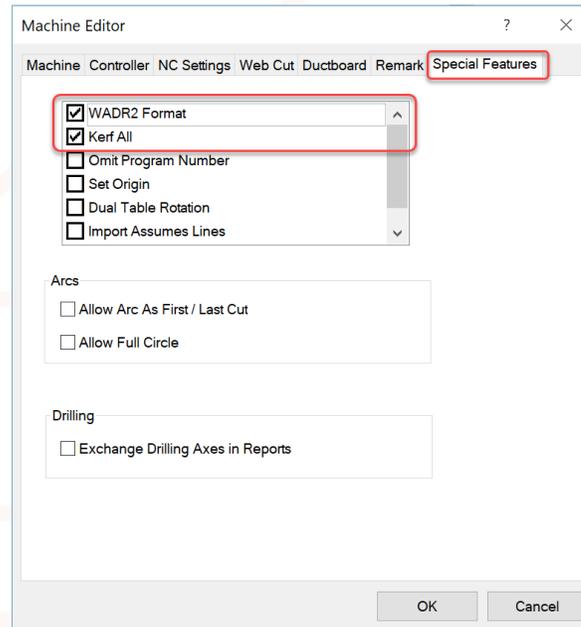
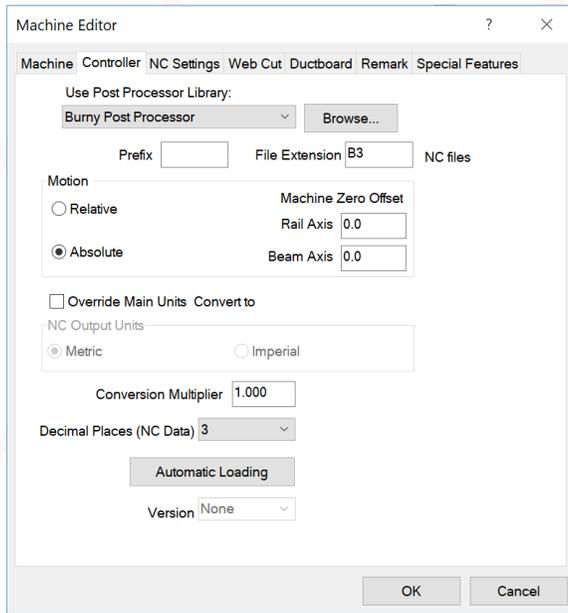
- If you have multiple tables of different sizes and multiple sheet lengths in your materials, you will want to check Restrict Nested Material Sizes to this size

The screenshot displays the MEP FORCE software interface. At the top, a menu bar includes options: Flatbed, Rotary, Shear, Round Linear, and Rectangular. Below this, a breadcrumb trail shows 'Air Systems' > 'ASFI-4x10 V2900-NF'. The 'Machine Editor' window is open, showing the 'Machine' tab. The 'Name' field contains 'WT-MEP D6'. Under the 'Dimensions' section, 'Rail Axis' is set to 120.0 and 'Beam Axis' is set to 60.0. A checkbox labeled 'Restrict Nested Material Sizes to this Size' is checked and highlighted with a red box. To the right, a material tree lists various material categories and their sub-items, including CSMS Vicon, CSUSA-Corp, CSUSA-SE, CSUSE 120 Vulcan 2900 NE, CSUSE V2900-NE, CSUSE V2900-NE-Edge, CSUSE V2900-NE-old, CSUSE V2900-NE-STOCK, CSUSE-PPI 10FT, CWC, CWC Table One 20ft, CWC Table Two 20ft, DMI Design Mechanical, DMI Full Joint10 Ft, DMI Vicon Liner, DMI Vulcan 10 Ft, DynaTen, DynaTen V2900-NE, EAS, EAS Vulcan 14 Ft, and EAS Vulcan 2x10 Ft. In the bottom left, the 'Edit Gauge 26' dialog box is open, showing a list of data fields. The 'Machine' field is highlighted in blue. Below the data fields, there are tabs for 'Flatbed', 'Rotary', and 'Shear'. The 'Flatbed' tab is selected, and a table of sheet lengths is shown with '120.000' highlighted in blue.

Machine
120.000
240.000

OTHER HELPFUL INFORMATION

- Vicon Tables, you have 2 options
 1. Use the Burny Post Processor and send the nest directly to the table
 2. Use the Vicon Post Processor and the file through the Vicon cutting software for translation



THANK YOU FOR ATTENDING OUR CLASS!

PLEASE FILL OUT THE SURVEY FOR THIS SESSION IN THE APP.

GO TO “MY SCHEDULE” → SELECT THIS SESSION → SCROLL DOWN TO “SESSION SURVEY”