

HOW TO PROCESS YOUR DRAWING FILE IN BOBCAD FOR THE PLASMA CUTTER VERSION 5

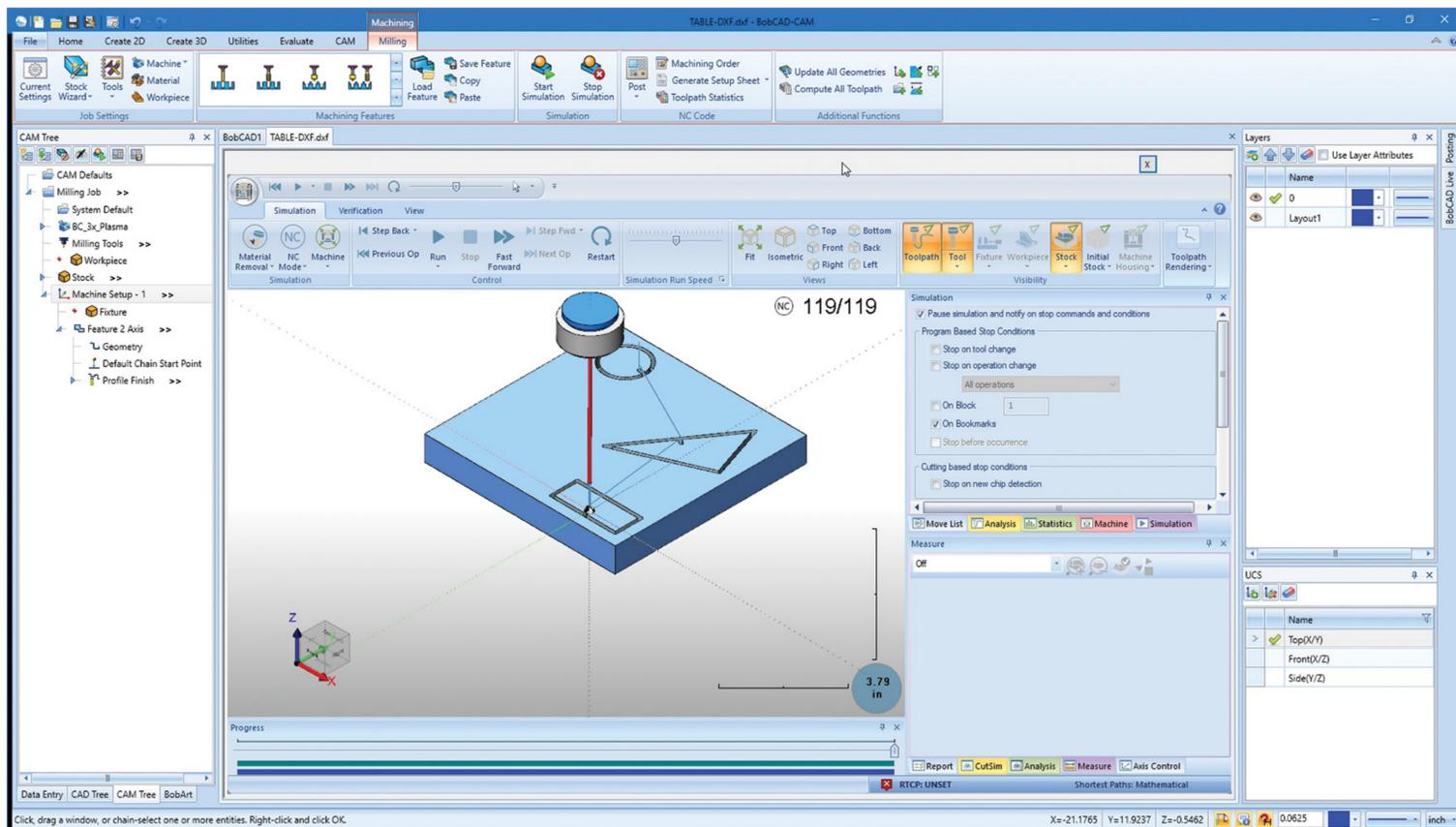


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Version V4

Published October 10th, 2024

Langara Makerspace

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1- Open Bobcad

1a - Click **Open an existing document**

* Note: Bobcad is set to **mm**

1b - In the drop down menu, select **All Supported Files** (you will be opening your DXF drawing file)

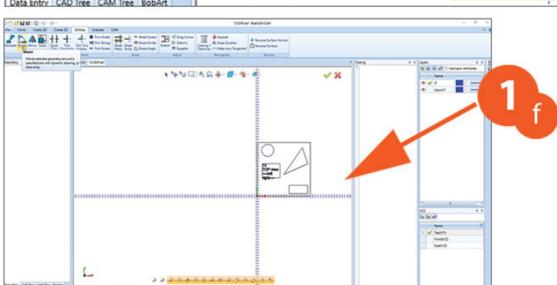
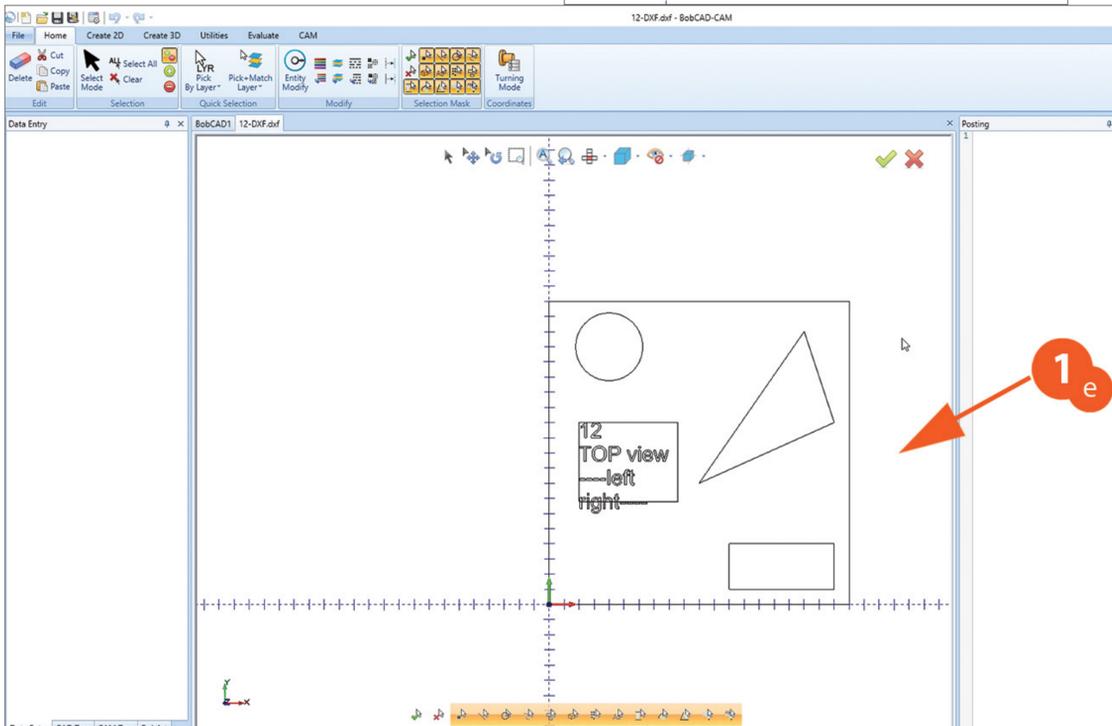
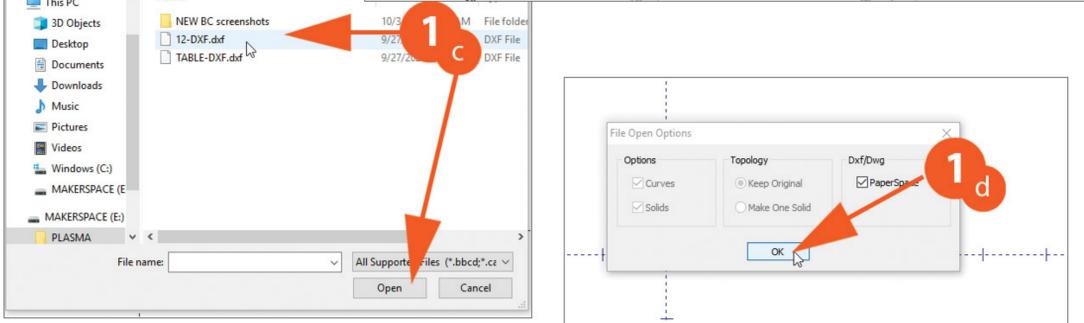
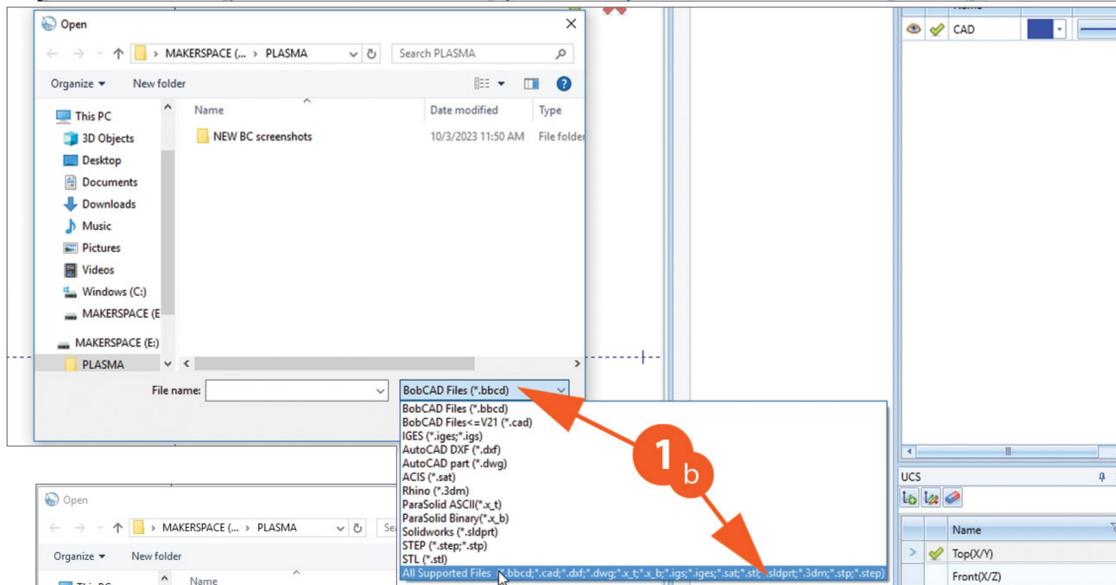
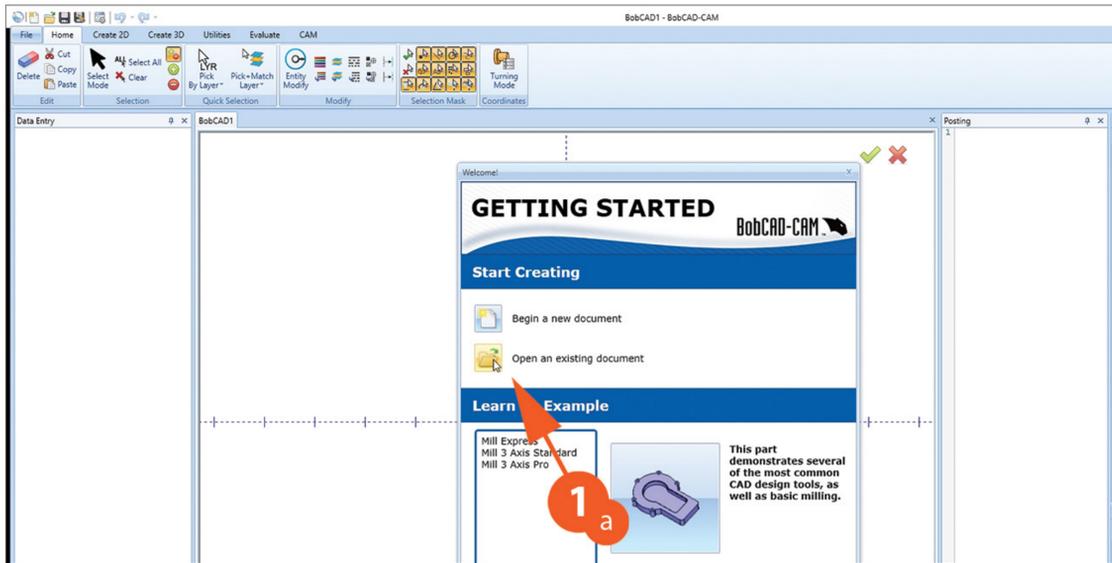
1c - Select your file, and click Open

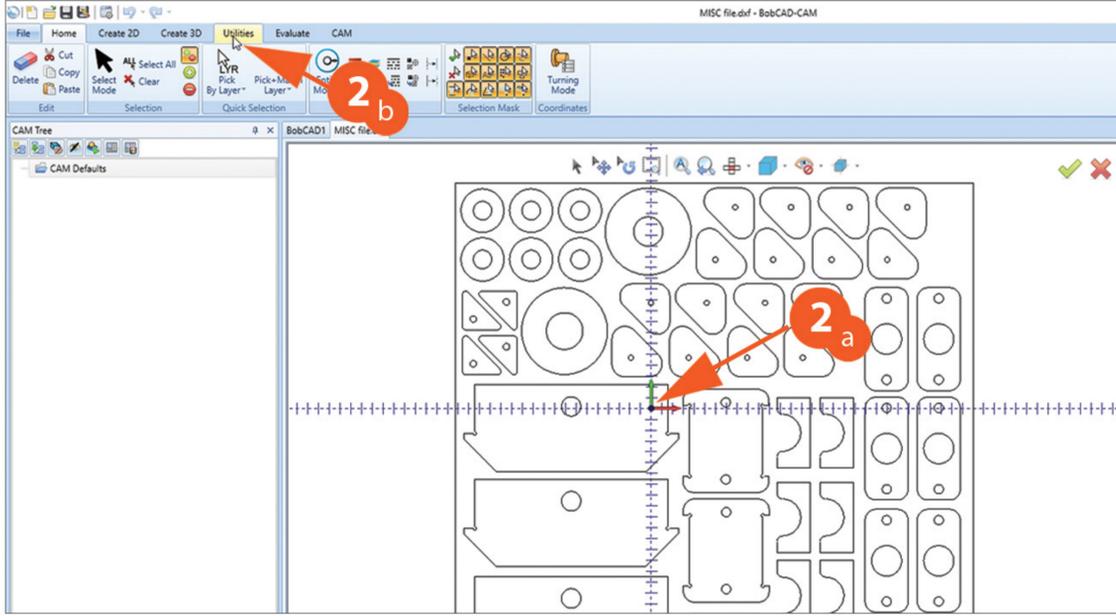
1d - Click **Ok** on the pop-up

1e- You will then see your drawing in the main Bobcad window

1f - Use the **scroll wheel** on the mouse to zoom out so you can see more of the drawing & main window

* **If your file is not lined up to the XY origin (green & red arrows) as illustrated, please refer to Page 2.**

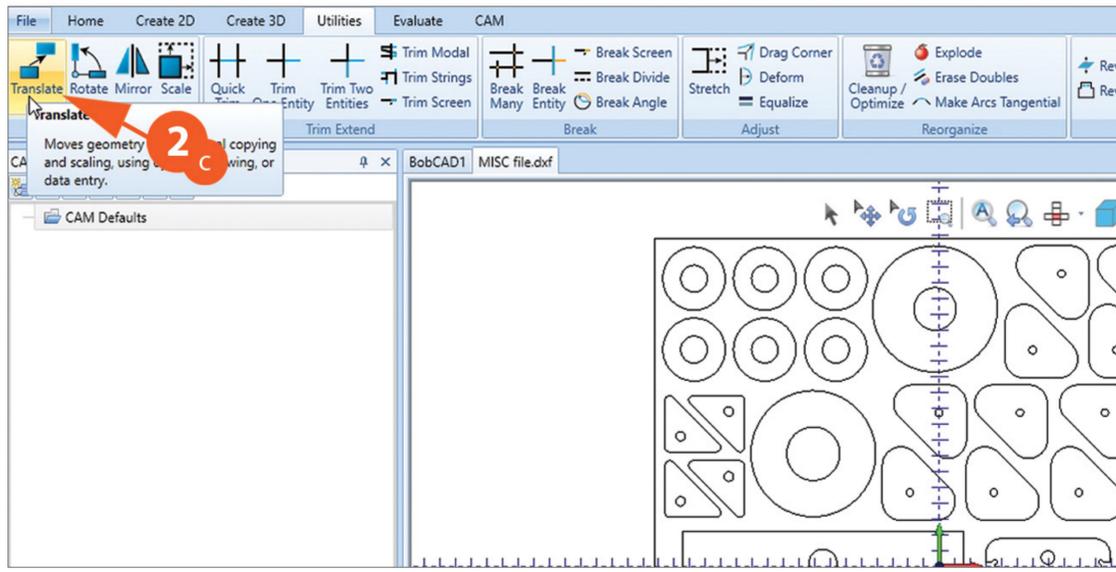




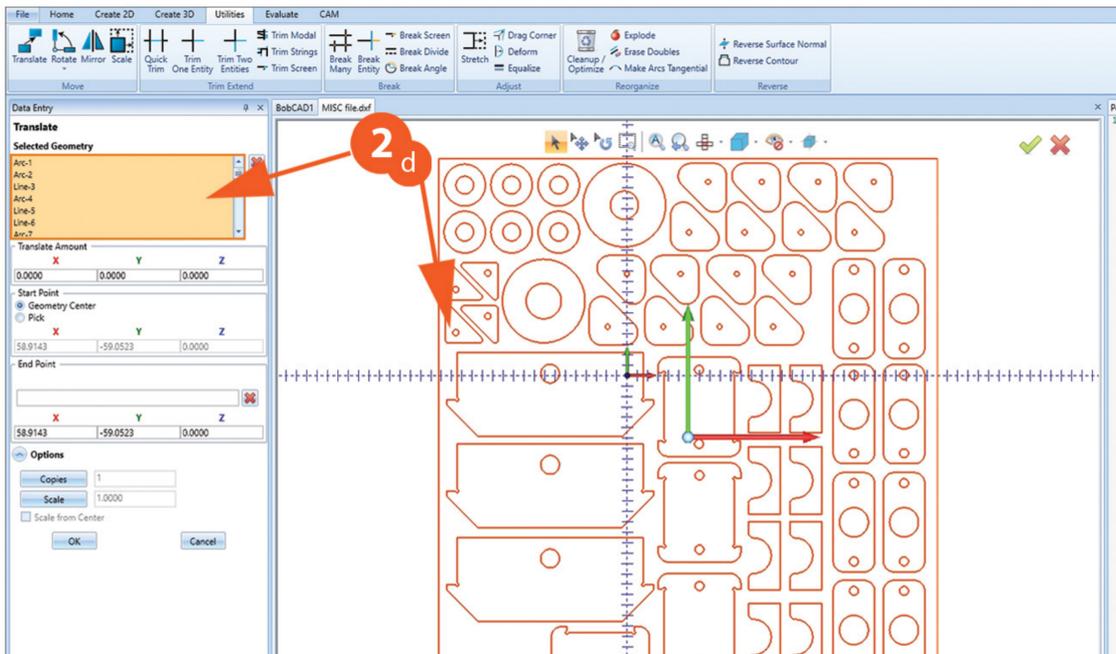
2

2a - If your file is not lined at the front left corner to the origin... please proceed with the following:

2b - Click on the Utilities Tab.



2c - Then Click on the Translate Button.



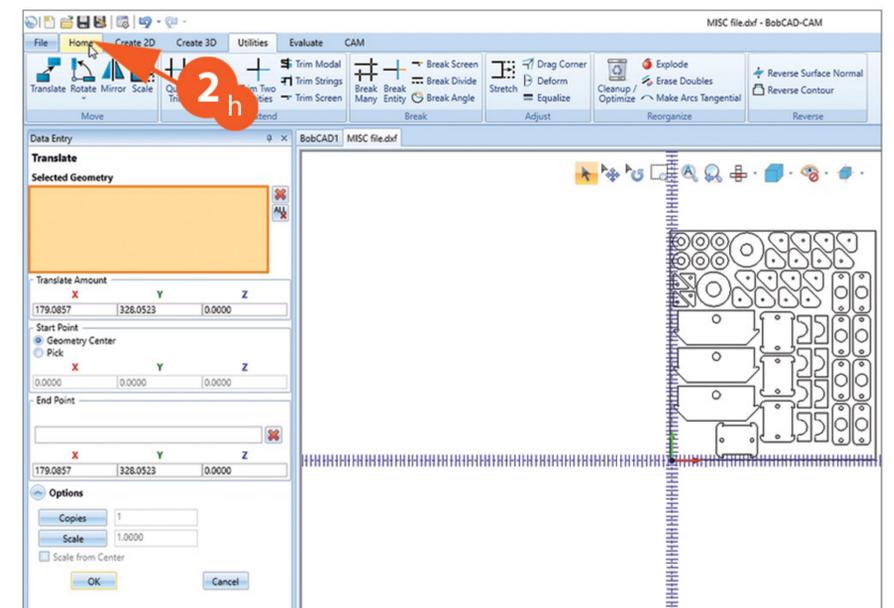
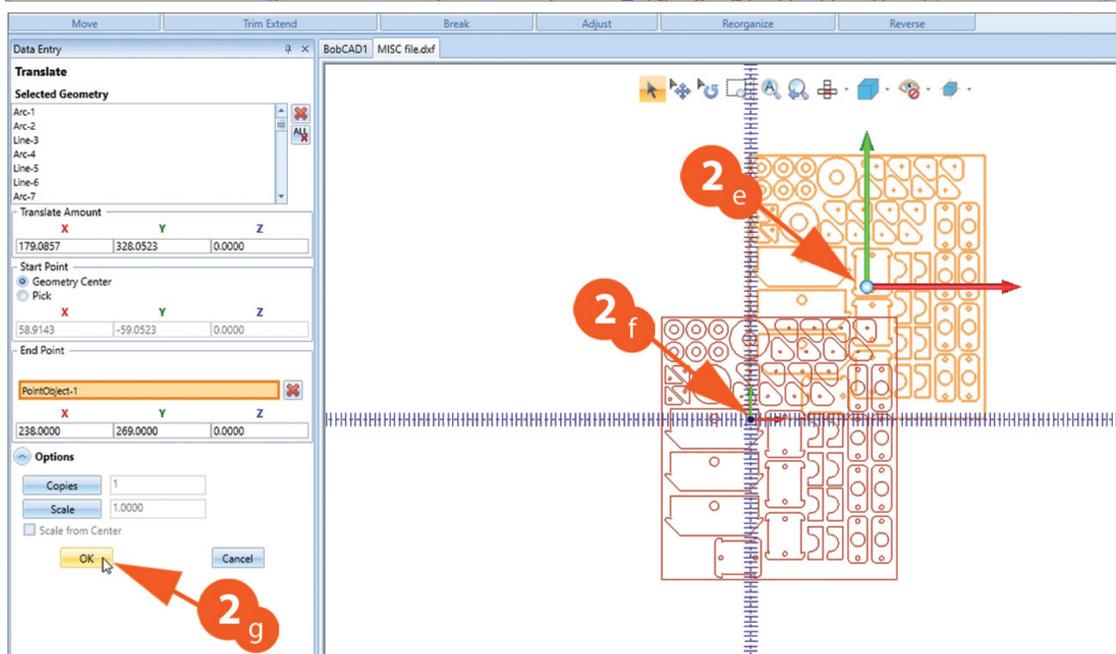
2d - With your mouse, drag and select all of the geometry from your DXF file. It will change colour & you will see it itemized on the left column.

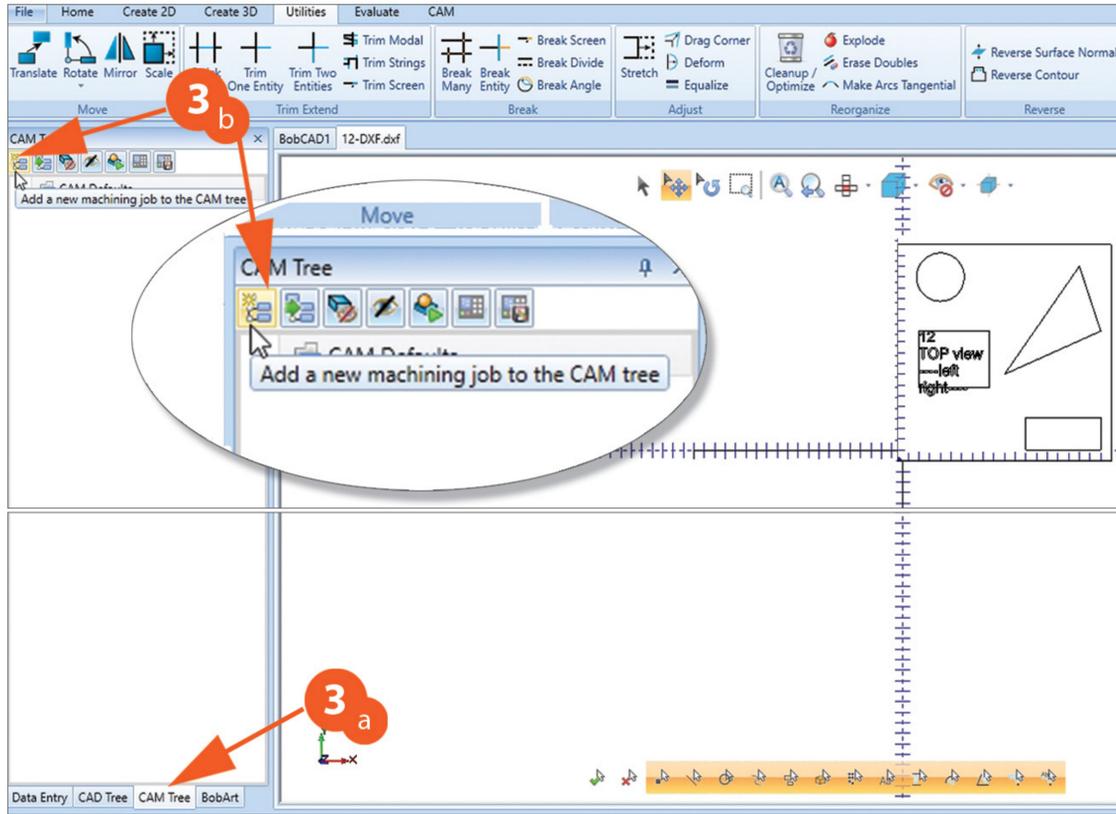
2e - Using the **Left Mouse button**, click on the large **green/red icon**...

2f - & drag your geometry to lineup the front/left corner to the XY origin. A ghost in red of the origin location will remain. Once happy with the location **Click the Left Mouse Button** to lock it.

2g - Click on the Ok Button.

2h - Click on the Home Tab to return to the Home screen .

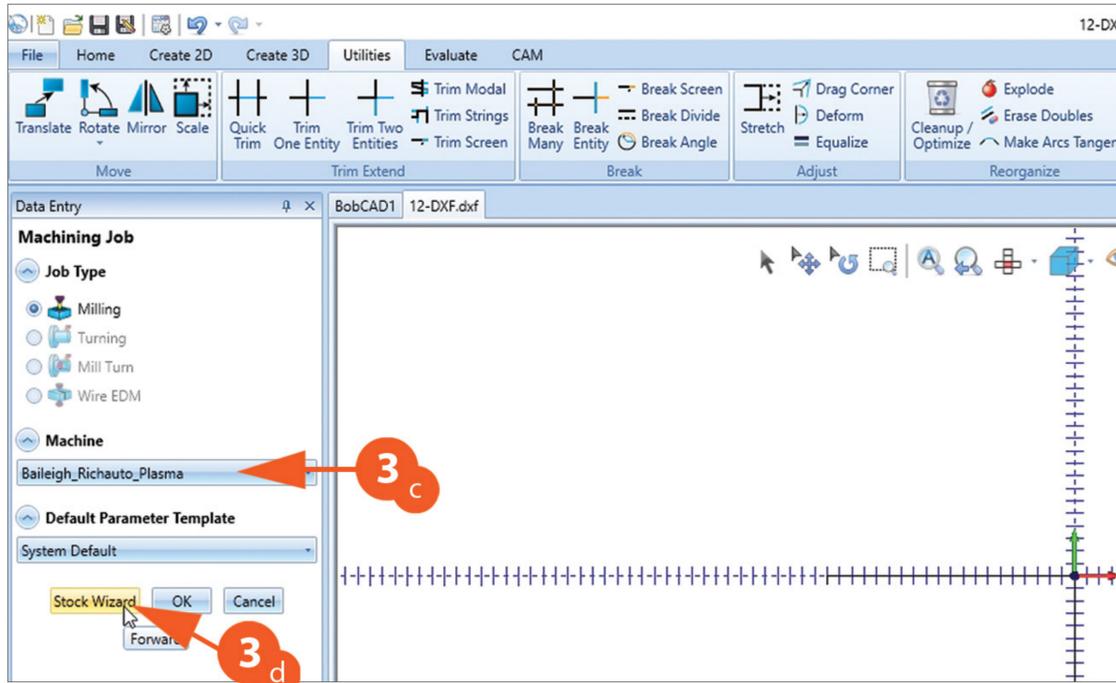




3

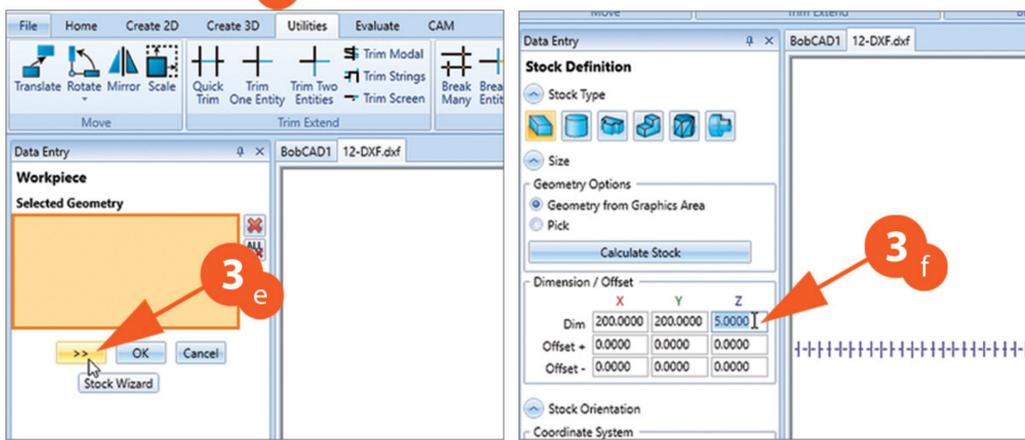
3a - Select the **CAM TREE** tab at the bottom left of the program

3b - Click on the **New Machining Job** icon near the top of the tab



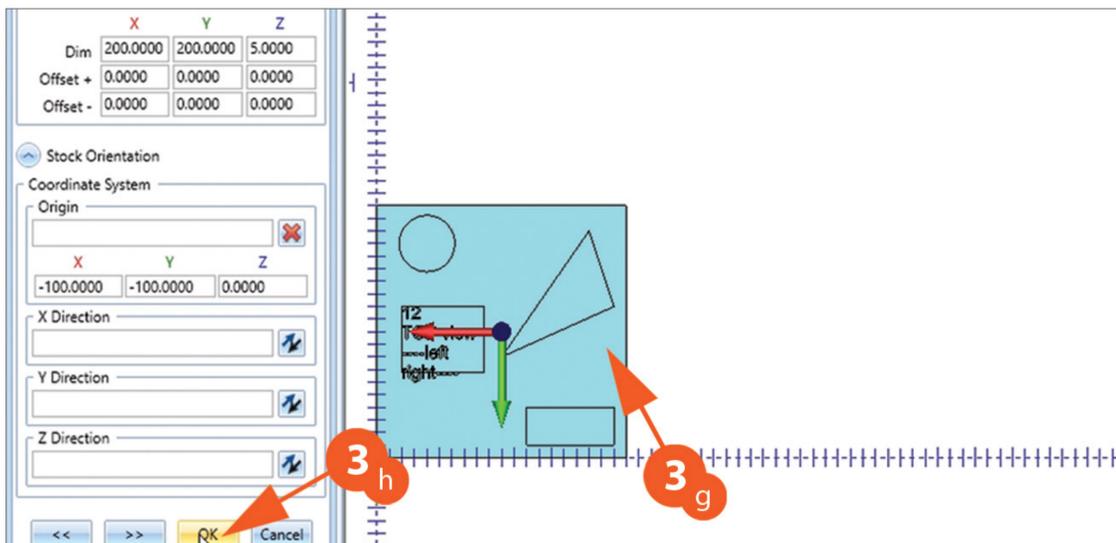
3c - On the left menu, under **Machine**, click on **Baileigh_Ricauto_Plasma** in the drop down list

3d - Then click on **Stock Wizard**



3e - Click on the forward arrows >>

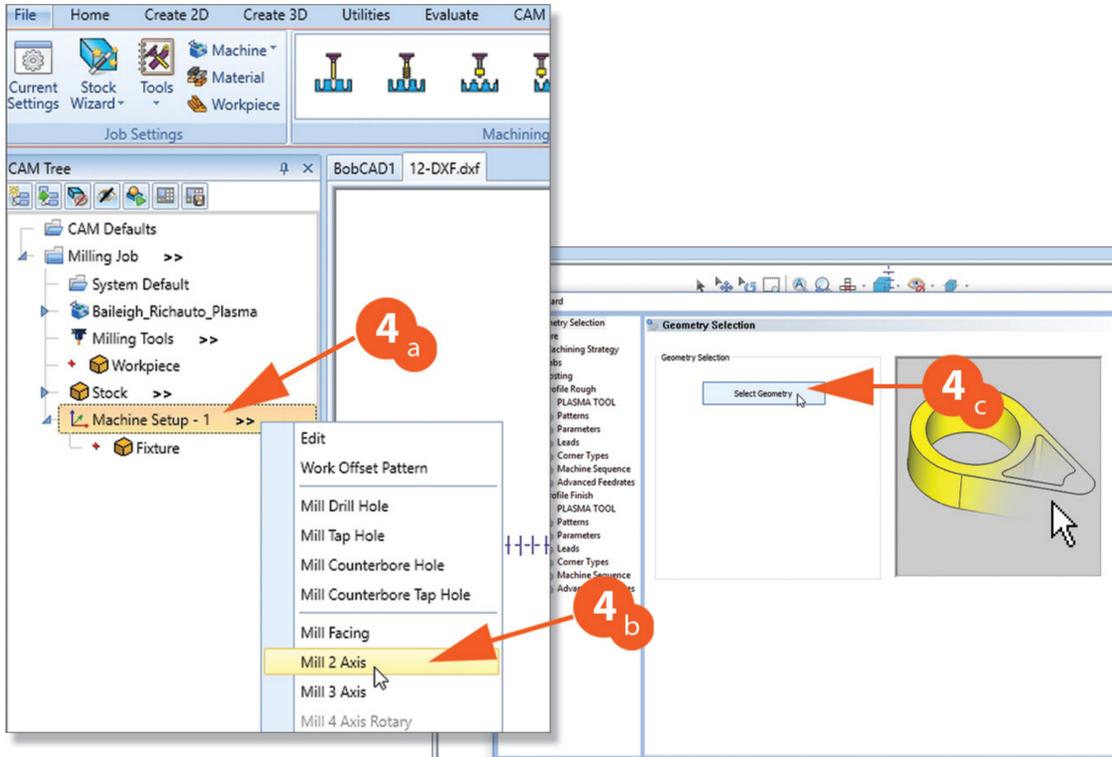
3f - Enter the thickness of your material stock to be cut. This should be in **mm**



3g - Your stock should appear **blue**

3h - Click on **OK**

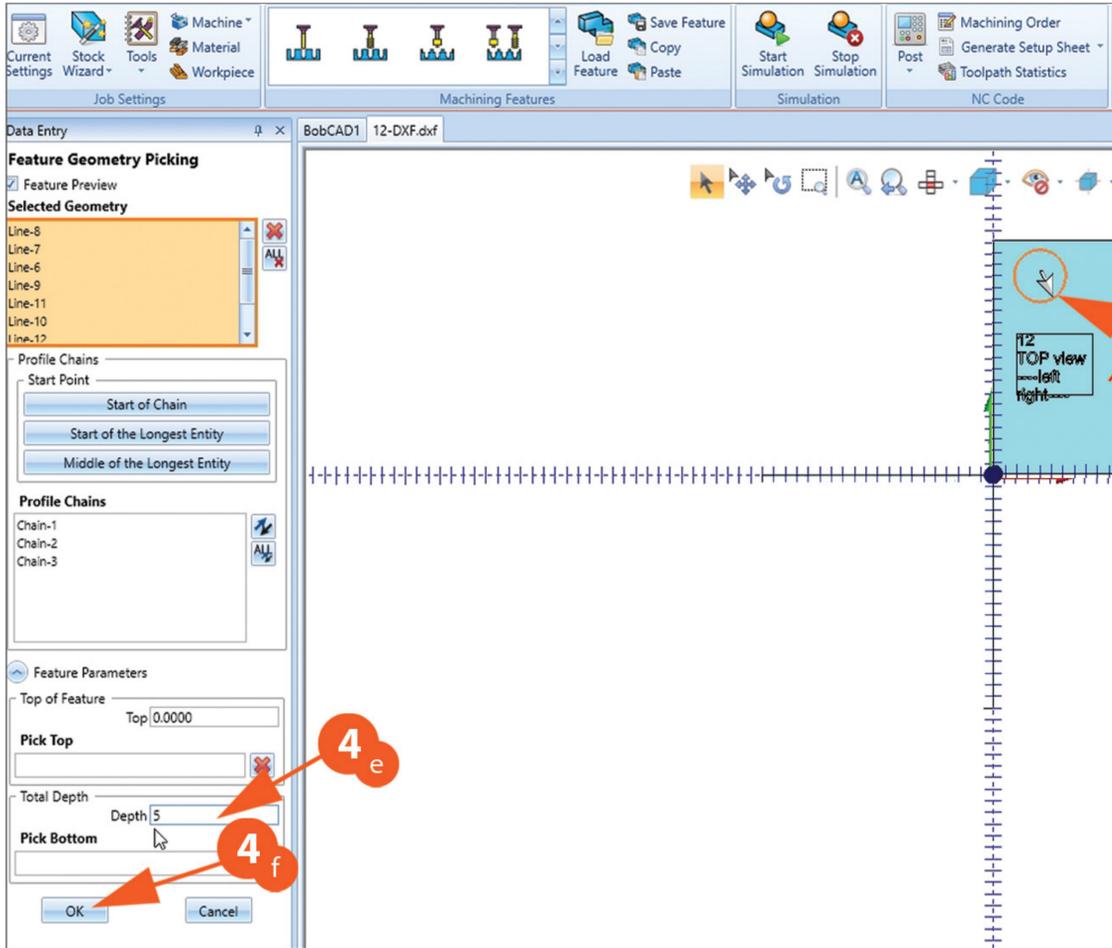
4



4a - Right click on **Machine Setup - 1**

4b - On the drop-down menu, select **Mill 2 Axis**

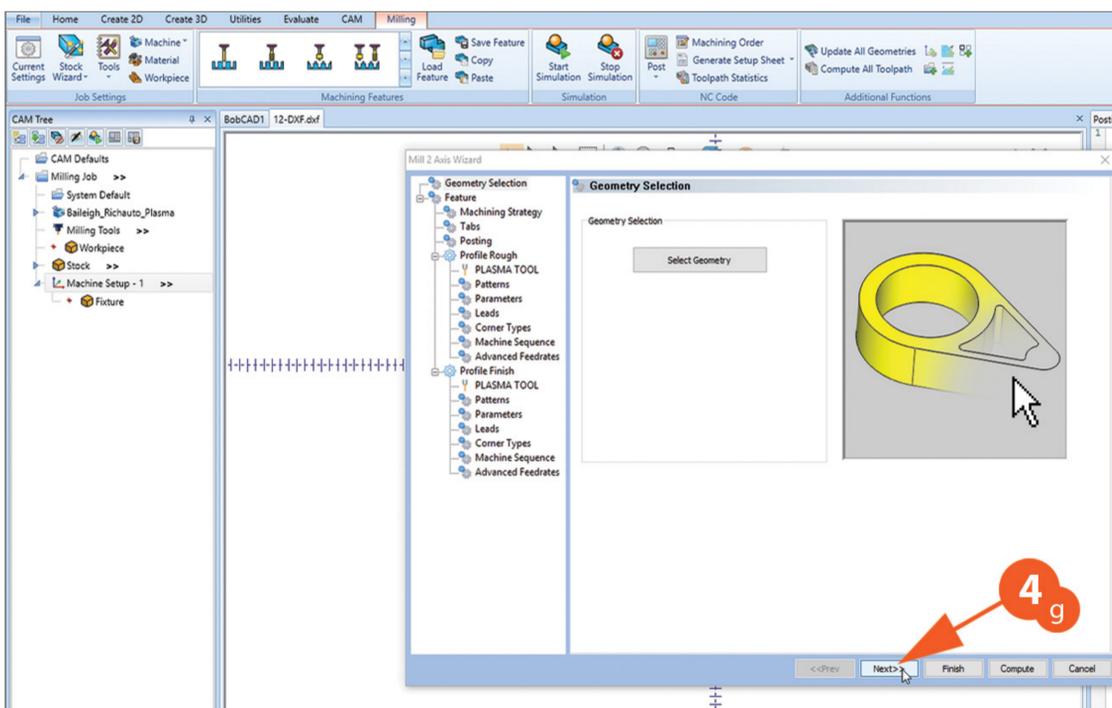
4c - On the pop-up click **Select Geometry**



4d - Go around your drawing and click on each line you want to machine

4e - Enter the depth of your material stock in **mm**.

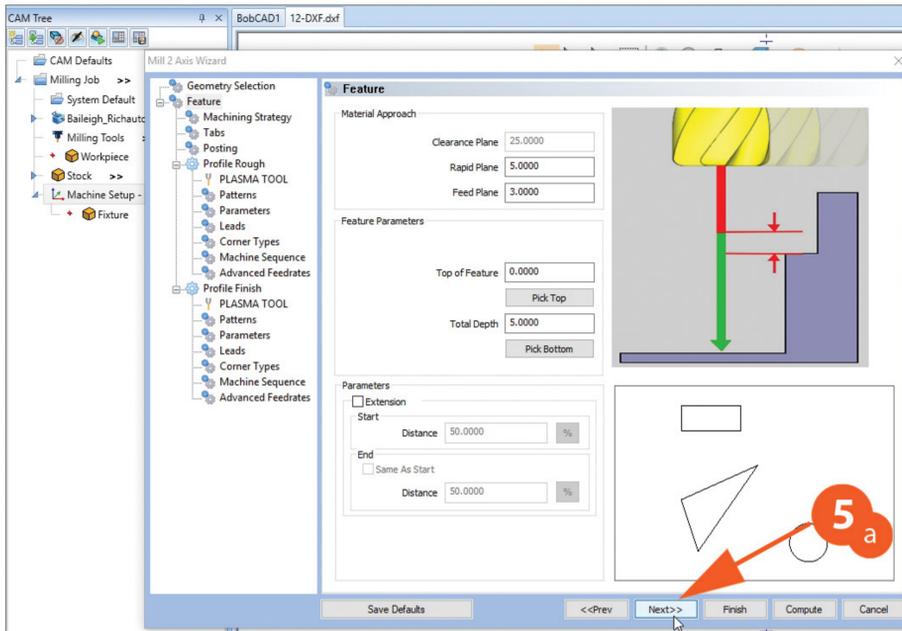
4f - Click **OK**



4g - Click **Next**

5

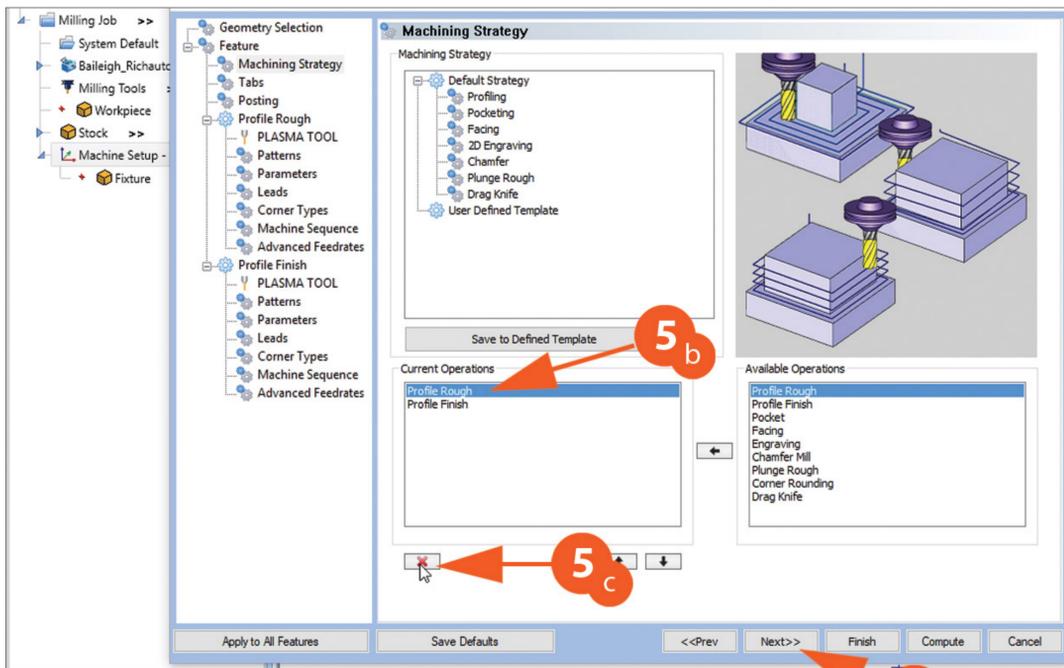
5a - click on **Next >>**



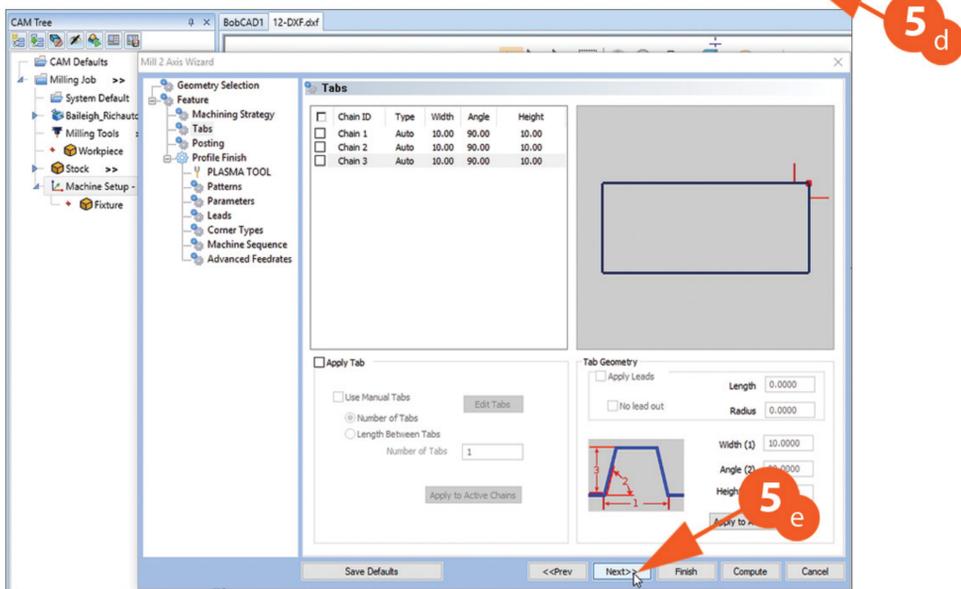
5b - Highlight **Profile Rough**

5c - Click on the **Red X**, to delete it

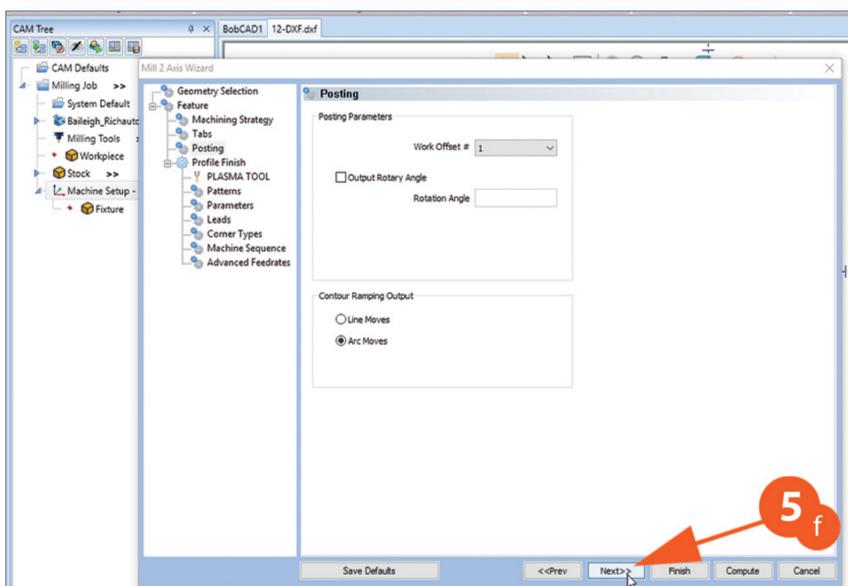
5d - Click on **Next >>**

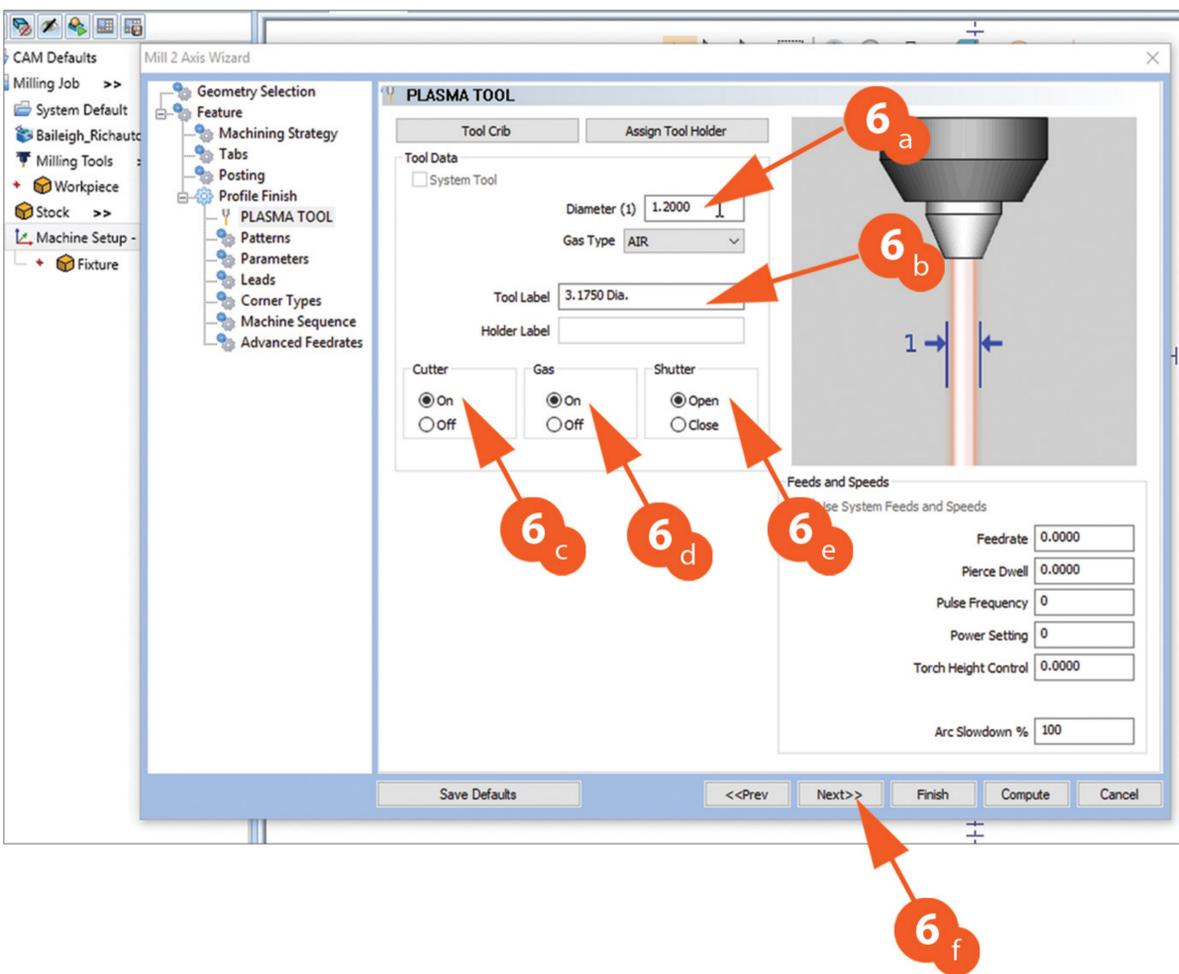


5e - Click on **Next >>**



5f - Click on **Next >>**





6

6 - Get the plasma tip Diameter (**Kerf Width**) from one of the following pages depending on your material:

- Index-A = Mild Steel Cuts
- Index-B = Mild Steel - Fine Cuts
- Index-C = Aluminum Cuts
- Index-D = Stainless Steel - Fine Cuts
- Index-E = Stainless Steel Cuts

6a - Enter your **Diameter** (Kerf Width)

6b - **Tool Label**, make the same as the **Diameter**

6c - Cutter **On**

6d - Gas **On**

6e - Shutter **Open**

6f - Click **Next>>**

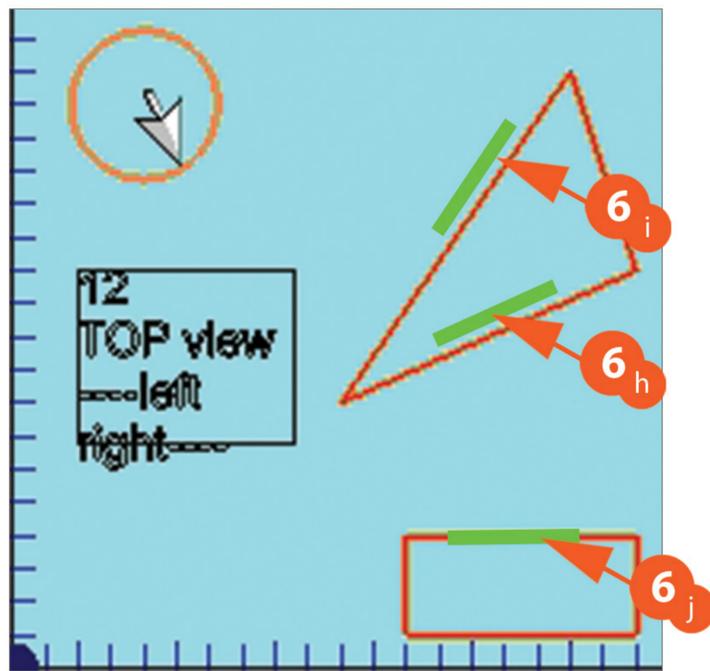
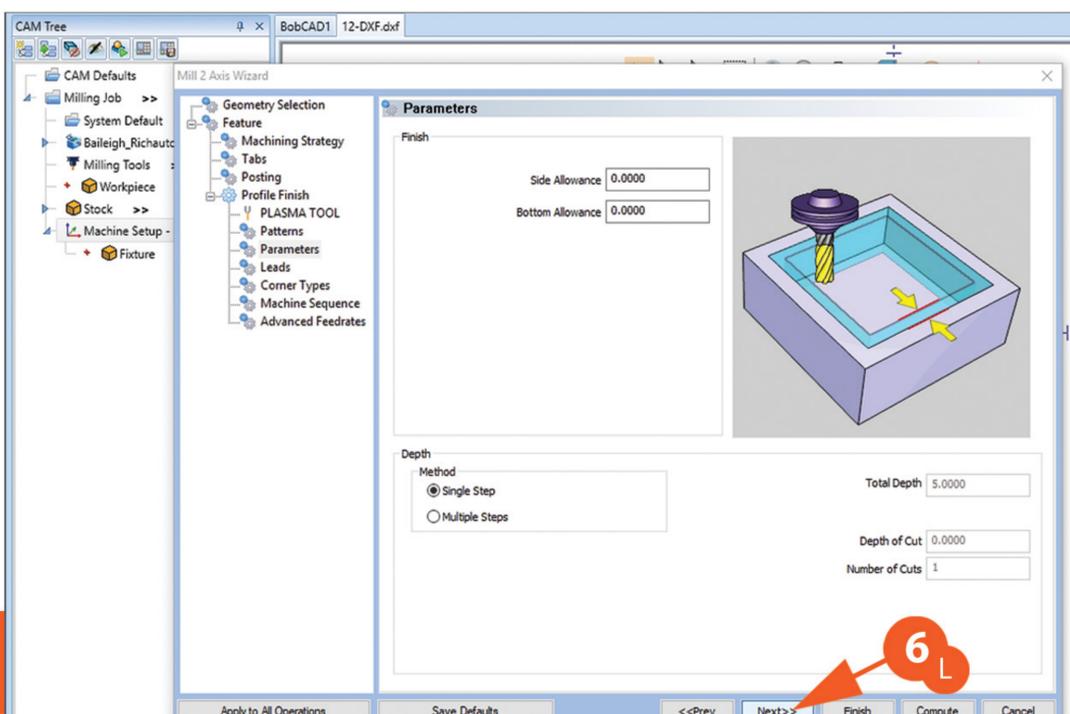
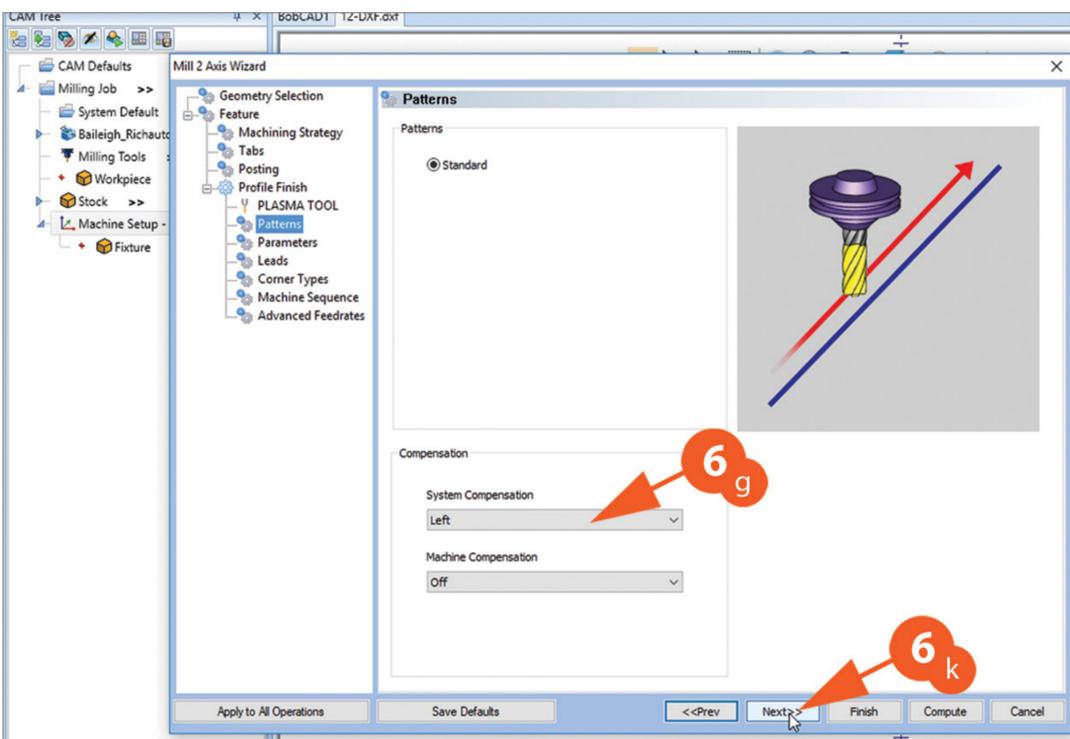
6g- Here you can select which side of your line the plasma cuts on. Keeping in mind the average width of the plasma (kerf) is 1.5mm.

6h - Choose **left** to cut inside the line

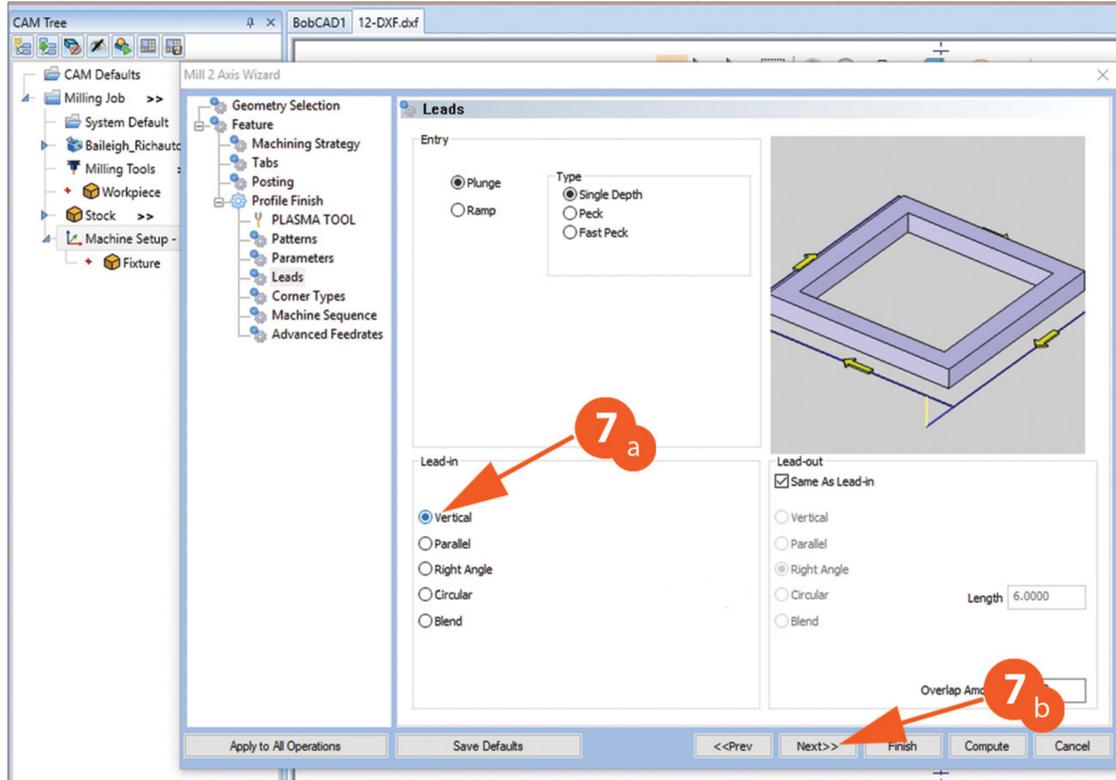
6i - Choose **right** to cut ioutside the line

6j - Choose **off** if you want it centered to the line

6k - Then Click **Next>>**



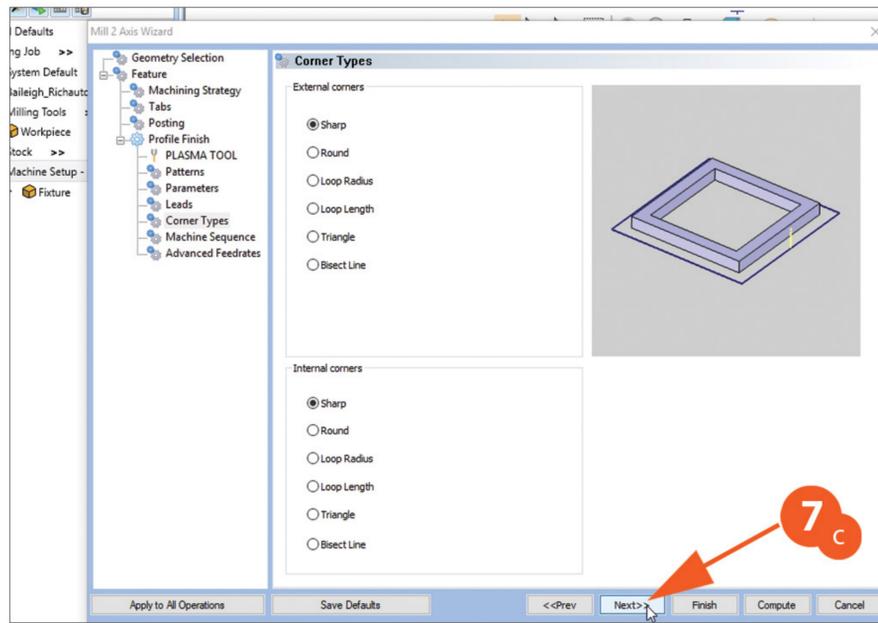
6L - Click **Next>>**



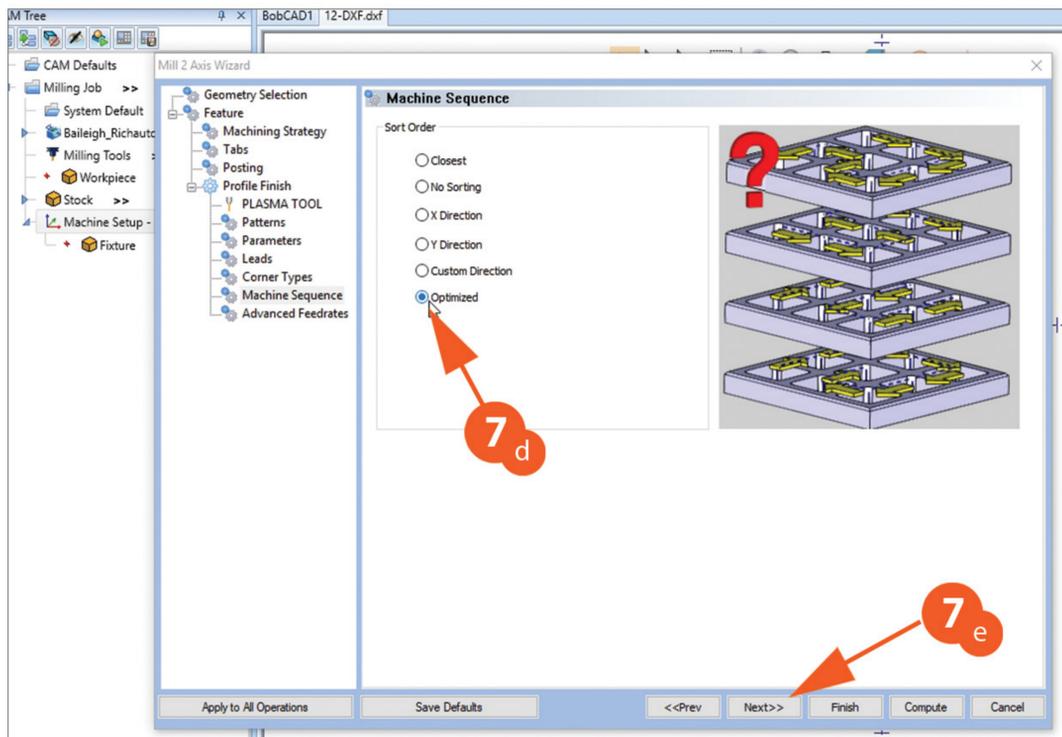
7

7a - Click on **Vertical**

7b - Click **Next>>**



7c - Click **Next>>**

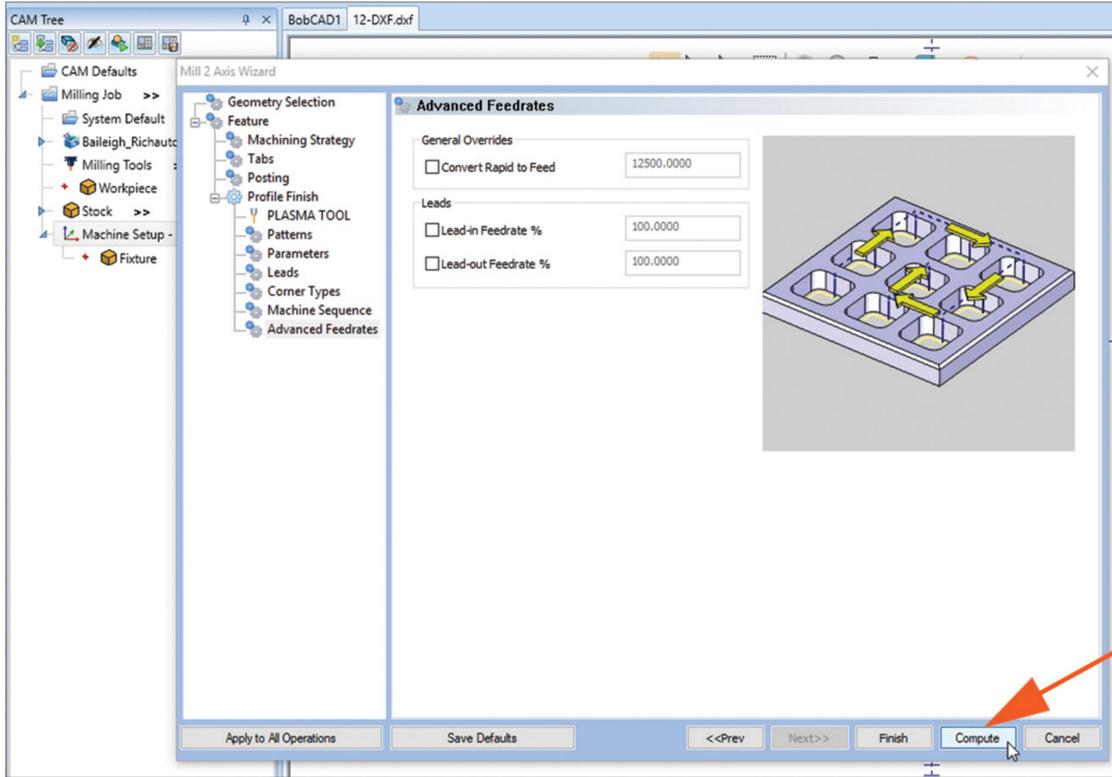


7d - Click on **Optimized**

7e - Click **Next>>**

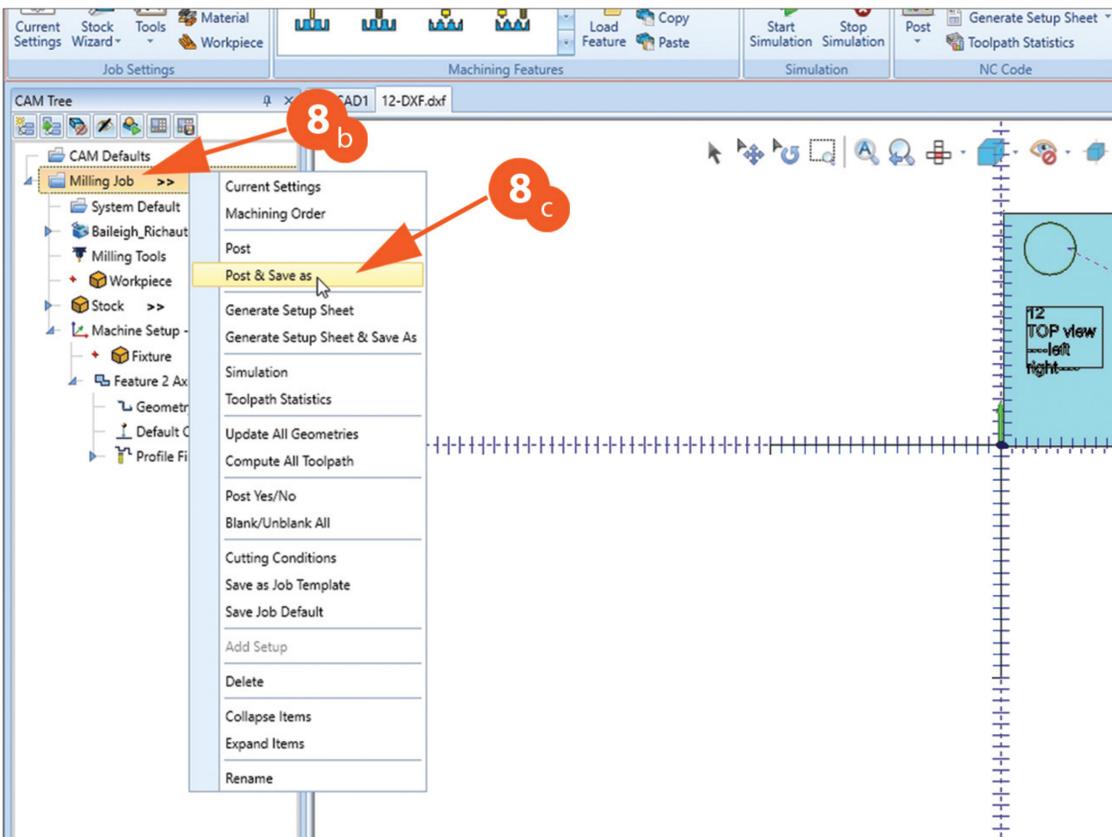
8

8a - Click on **Compute**



8b - Right click on **Milling Job**

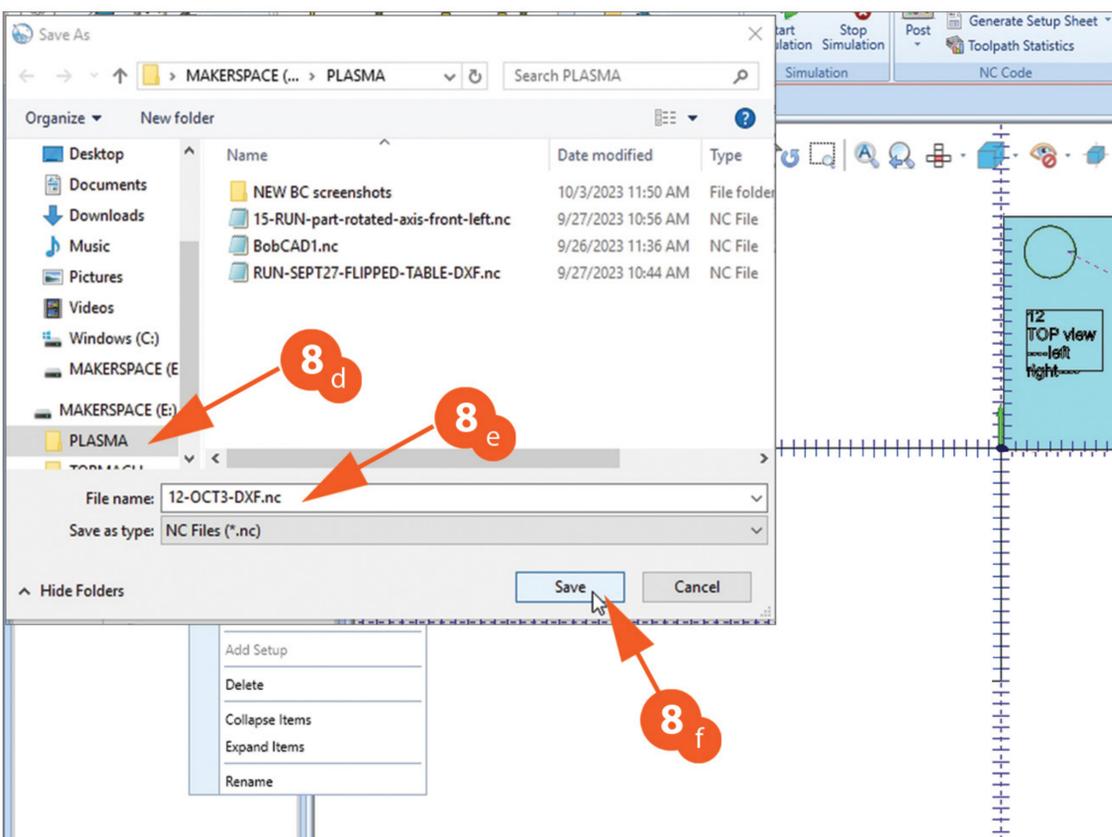
8c - Select and click on **Post & Save As**



8d - Select the folder you wish to save it to

8e - Name your file

8f - Click on **Save**



Mild Steel – 45 A – Air – Shielded



Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings		Kerf Width				
		mm	%		mm/min	volts	mm/min	volts					
2	1.5	3.8	250	0.2	5560	128	7910	125	1.4				
3					3960	128	5590	128					
4					2800	128	3960	128	1.5				
6					1430	130	2110	127					
8					1020	133	1385	130		1.7			
10								0.8	780	136	920	134	1.8
12								1	540	140	690	138	1.9
16	Edge Start				310	146	400	141	2.1				
20					170	152	240	147	2.3				
25					110	157	145	154	3				

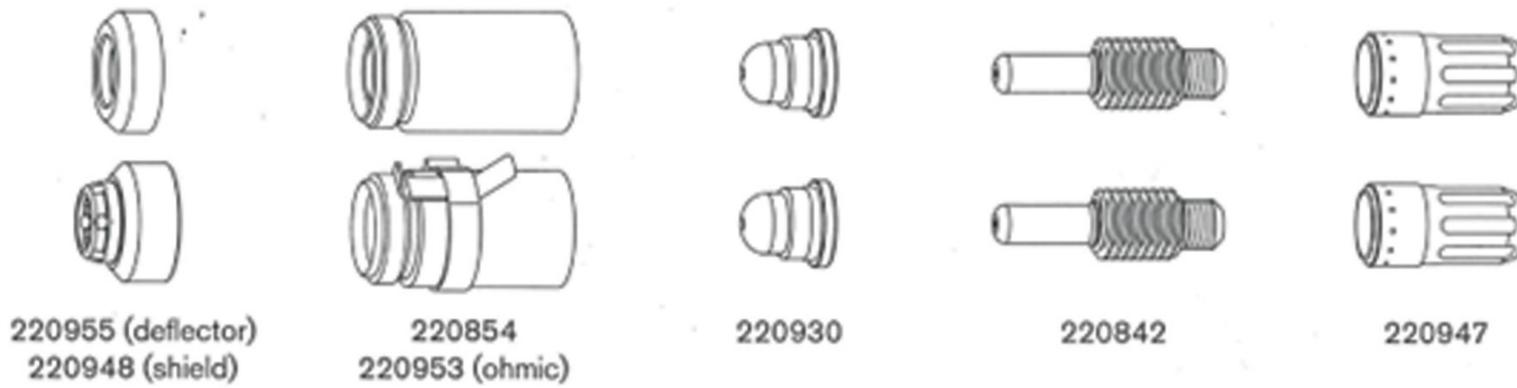
English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings		Kerf Width
		inches	%		in/min	volts	in/min	volts	
16 GA	0.06	0.15	250	0.1	249	128	320	125	0.053
14 GA					225	128	320	125	0.054
10 GA					129	128	181	128	0.057
3/16					85	129	122	127	0.059
1/4					48	130	72	127	0.061
3/8					33	136	38	133	0.069
1/2					18	141	24	139	0.077
5/8	Edge Start				13	146	16	141	0.082
3/4					7	151	10	145	0.086
7/8					6	154	7	151	0.103
1					4	157	6	154	0.119

Gas flow rate – slpm / scfh

151 / 320	Hot (cutflow)
184 / 390	Cold (postflow)

Mild Steel - FineCut - Air - Shielded and Unshielded



Metric

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended		Kerf Width
			mm	%		Cut Speed	Voltage	
mm	A	mm	mm	%	seconds	mm/min	volts	mm
0.5	40	1.5	3.8	250	0.0	8250	78	0.7
0.6						8250	78	
0.8					0.1	8250	78	0.6
1	0.2					8250	78	0.7
1.5					0.4	6400	78	1.2
2	0.5					4800	78	1.3
3					2500	78		
4	0.6				1900	78		

English

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Kerf Width
			inches	%		Cut Speed	Voltage	
inches	A	inches	inches	%	seconds	in/min	volts	inches
26 GA	40	0.06	0.15	250	0.0	325	78	0.025
24 GA						325	78	0.029
22 GA					0.1	325	78	0.024
20 GA						325	78	0.020
18 GA	45				0.2	325	78	0.043
16 GA						0.4	250	78
14 GA					200		78	0.049
12 GA					0.5	120	78	0.052
10 GA	95	78	0.051					

Gas flow rate - slpm / scfh

155 / 330	Hot (cutflow)
215 / 460	Cold (postflow)

Aluminum - 45 A - Air - Shielded



Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings		Kerf Width
					Cut Speed	Voltage	Cut Speed	Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
2	1.5	3.8	250	0.1	7890	121	9585	134	1.3
3				0.2	4850	130	7120	129	1.5
4				0.4	3670	133	5650	129	
6				0.5	2060	139	3095	132	1.6
8				0.6	1330	139	1830	136	1.7
10				0.7	860	142	1015	140	1.9
12				Edge Start			620	144	745
16	Edge Start			360	152	340	148	2.5	

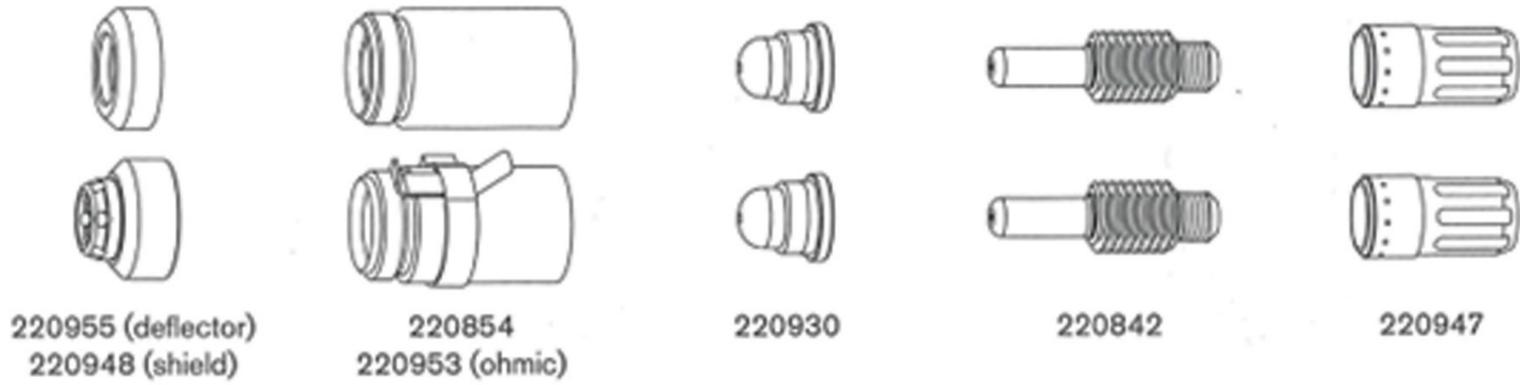
English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings		Kerf Width		
					Cut Speed	Voltage	Cut Speed	Voltage			
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches		
1/10	0.06	0.15	250	0.2	240	126	320	131	0.056		
1/8				0.4	170	131	263	128	0.060		
3/16					120	134	184	130	0.061		
1/4				0.5	70	137	104	132	0.063		
3/8				0.7	36	141	42	139	0.073		
1/2				Edge Start			21	145	26	143	0.082
5/8				Edge Start			15	152	14	148	0.100
3/4	Edge Start			8	158	9	153	0.117			

Gas flow rate - slpm / scfh

151 / 320	Hot (cutflow)
184 / 390	Cold (postflow)

Stainless Steel - FineCut - Air - Shielded and Unshielded



Metric

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended		Kerf Width			
			mm	%		Cut Speed	Voltage				
mm	A	mm	mm	%	seconds	mm/min	volts	mm			
0.5	40	0.5	2.0	400	0.0	8250	68	0.6			
0.6						8250	68	0.5			
0.8						8250	68				
1	45				0.2	2.0	400	0.2	8250	68	0.6
1.5									6150	70	1.0
2								4800	71		
3								2550	80	1.4	
4								1050	84	1.5	

English

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Kerf Width			
			inches	%		Cut Speed	Voltage				
inches	A	inches	inches	%	seconds	in/min	volts	inches			
26 GA	40	0.02	0.08	400	0.0	325	68	0.024			
24 GA						325	68	0.021			
22 GA					0.1	325	68	0.018			
20 GA						325	68	0.017			
18 GA	45				0.2	0.08	400	0.2	325	68	0.036
16 GA									0.4	240	70
14 GA								200		70	0.040
12 GA								0.5		120	80
10 GA		0.6	75	80					0.055		

Gas flow rate - slpm / scfh

155 / 330	Hot (cutflow)
215 / 460	Cold (postflow)

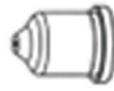
Stainless Steel - 45 A - Air - Shielded



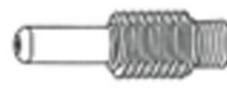
220817



220854
(220953 for ohmic sensing)



220941



220842



220857

Metric

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings		Kerf Width
		mm	%		seconds	Cut Speed	Voltage	Cut Speed	
2	1.5	3.8	250	0.1	5620	126	7830	129	0.6
3				0.2	3285	129	4725	128	0.9
4				0.4	1995	130	2960	129	1.1
6				0.6	1145	131	1695	131	1.2
8				830	134	1100	134	1.4	
10				605	137	870	137	1.6	
12		4.6	300	1.2	380	141	540	139	1.8
16		Edge Start			240	145	320	142	2.4
20	Edge Start			160	149	205	146	3.1	

English

Material Thickness	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Production Settings		Kerf Width
		inches	%		seconds	Cut Speed	Voltage	Cut Speed	
16 GA	0.06	0.15	250	0.1	237	125	320	128	0.017
14 GA				0.2	230	126	320	129	0.022
10 GA				0.4	90	130	134	128	0.041
3/16				0.5	63	131	93	130	0.044
1/4				0.6	40	131	59	131	0.047
3/8				0.8	26	137	29	136	0.061
1/2		0.18	300	1.2	12	142	19	140	0.075
5/8		Edge Start			10	145	13	142	0.096
3/4		Edge Start			7	148	9	145	0.116
7/8		Edge Start			5	151	6	149	0.137

Gas flow rate - slpm / scfh

151 / 320	Hot (cutflow)
184 / 390	Cold (postflow)