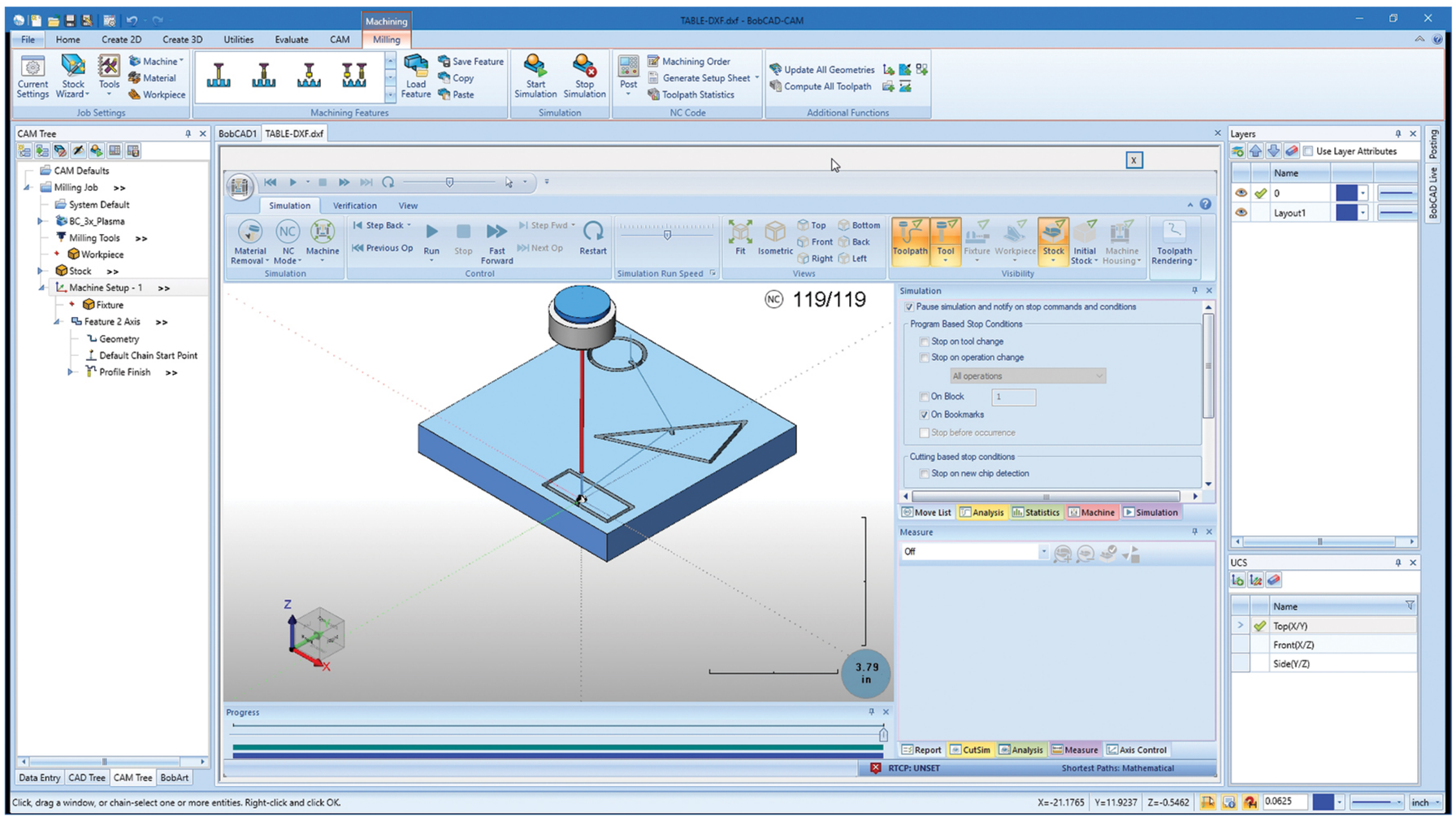
HOW TO PROCESS YOUR DRAWING FILE IN BOBCAD FOR THE PLASMA CUTTER VERSION 3



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Version V2
Published October 12, 2023
Langara Makerspace
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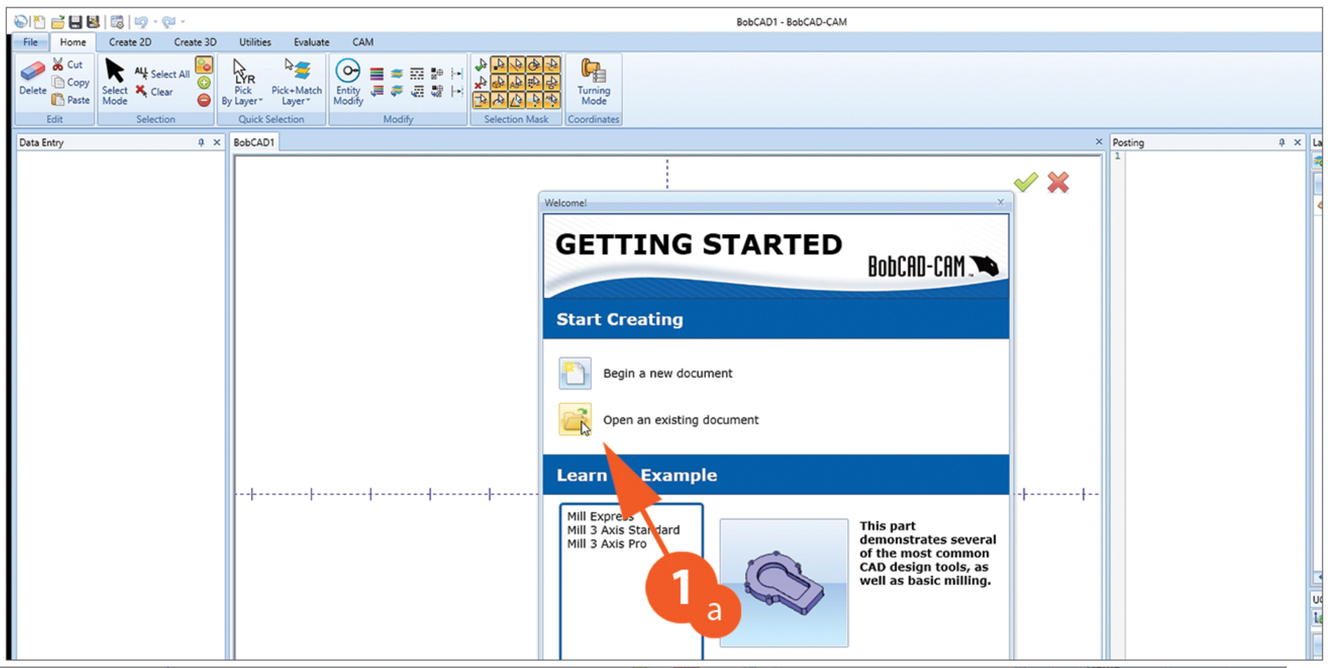
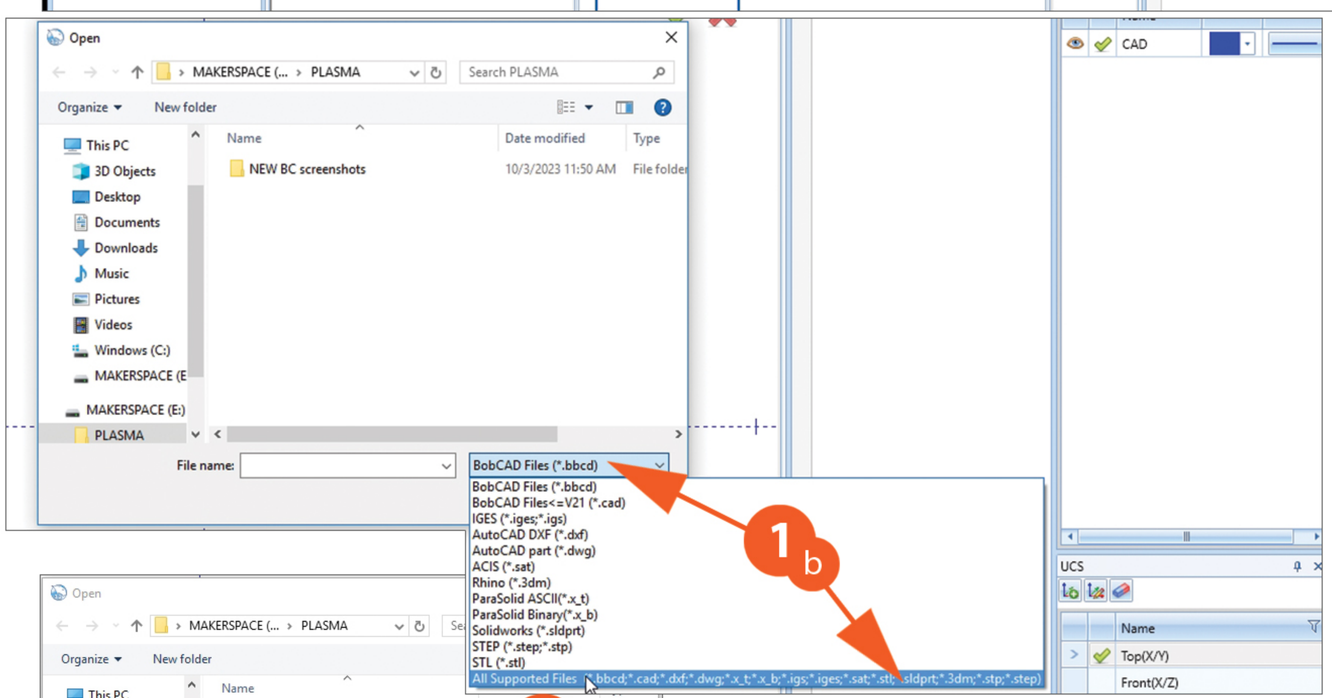
BOBCAD TO PLASMA - HOW TO GUIDE
DXF IMPORT & FILE SETUP



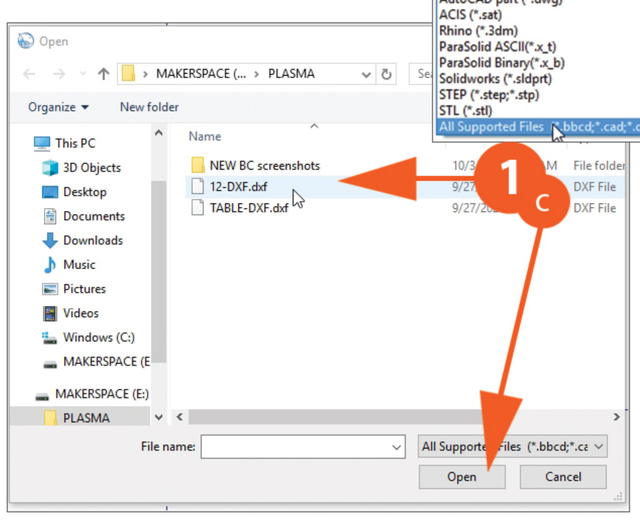
1

1- Open Bobcad

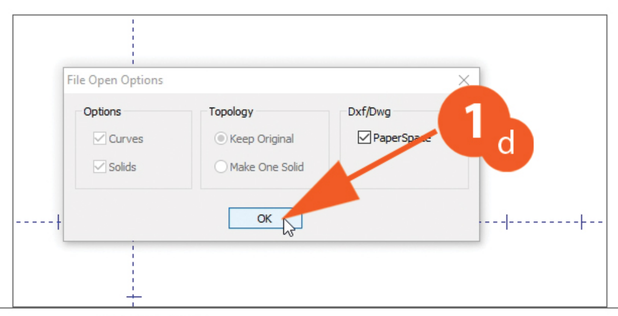
1a - Click **Open an existing document**



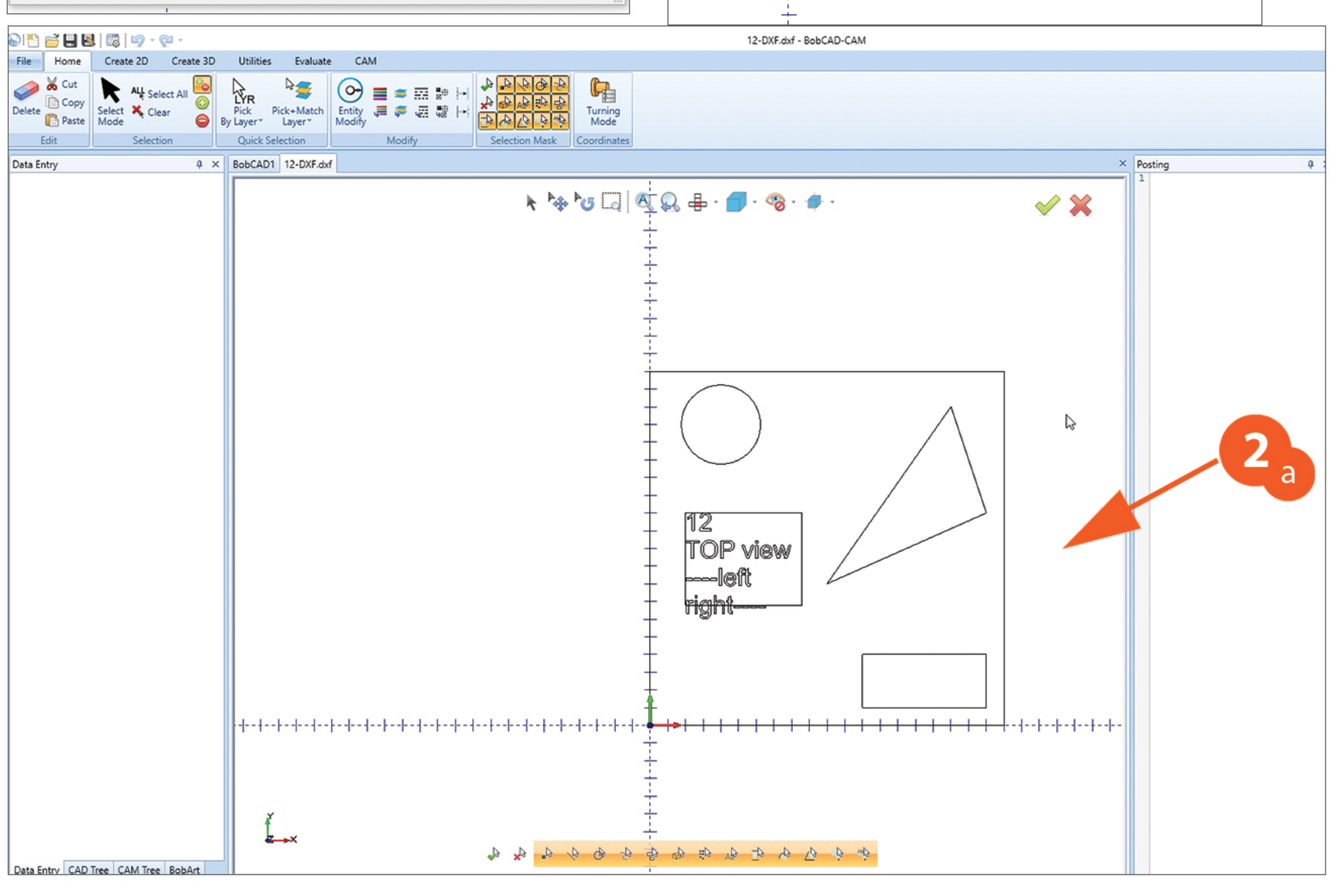
1b - In the drop down menu, select **All Supported Files** (you will be opening your: DXF, EPS or AI drawing file)



1c - Select your file, and click Open

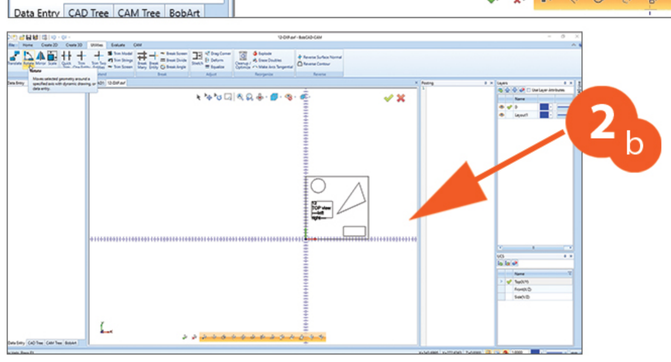


1d - Click **Ok** on the pop-up



2a - Your will then see your drawing in the main Bobcad window

2b - Use the **scroll wheel** on the mouse to zoom out so you can see more of the drawing & main window



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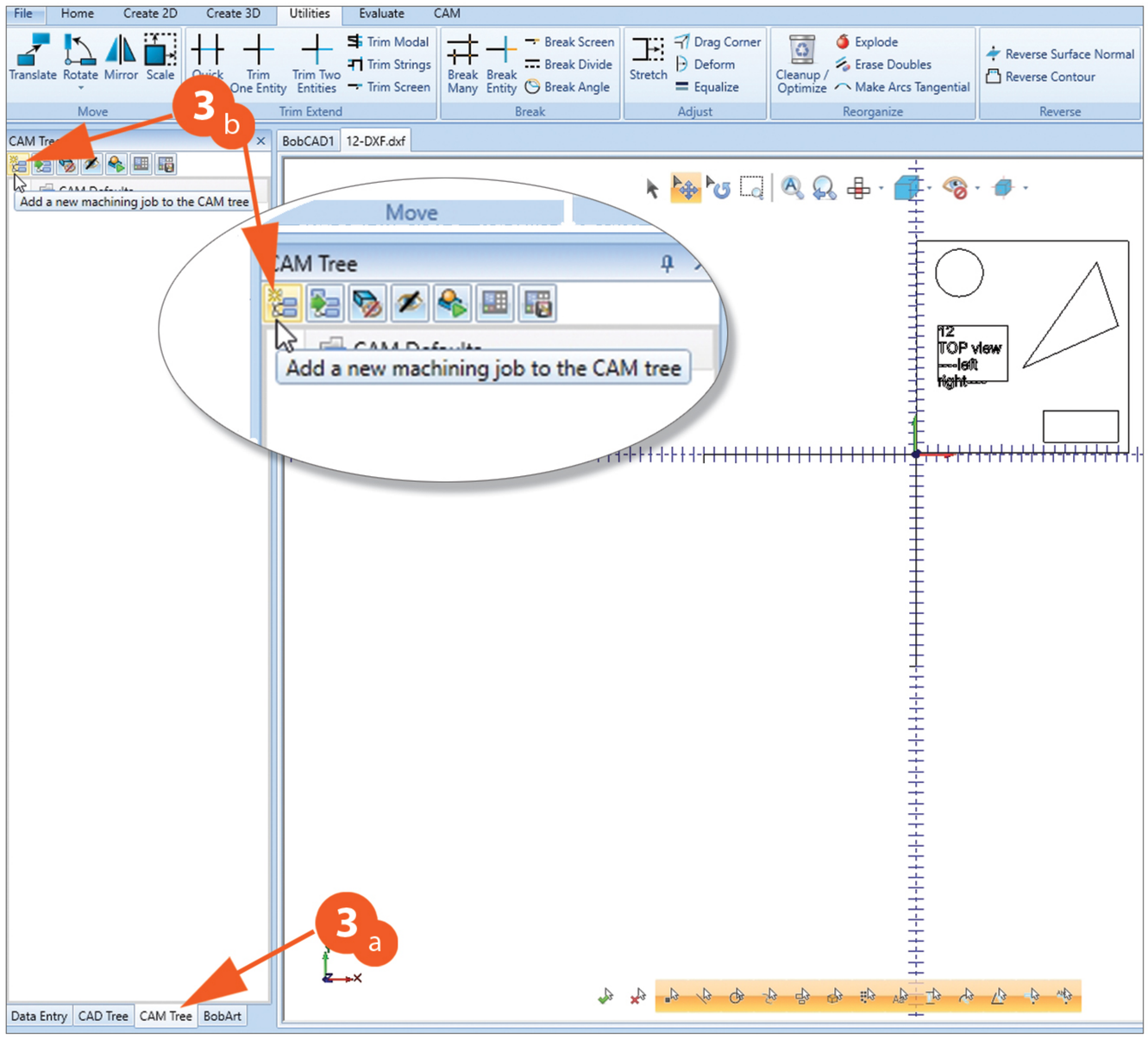
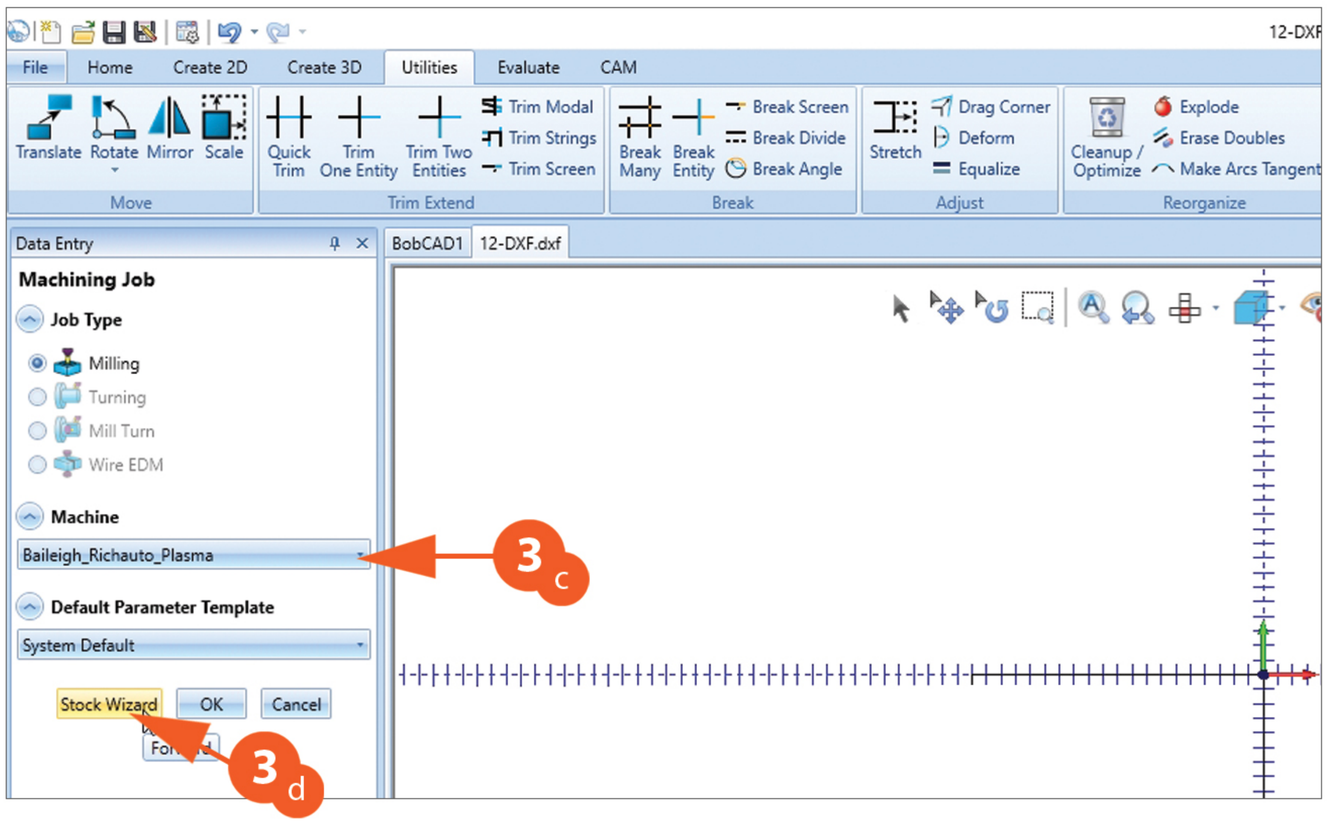


3

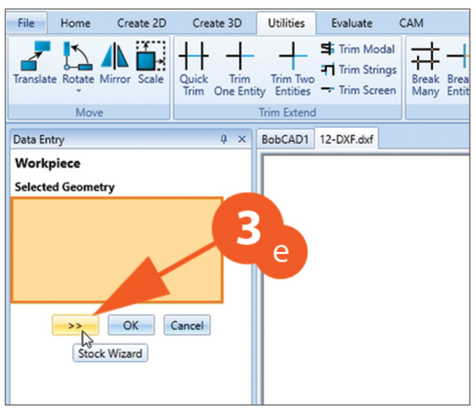
3a - Select the **CAM TREE** tab at the bottom left of the program

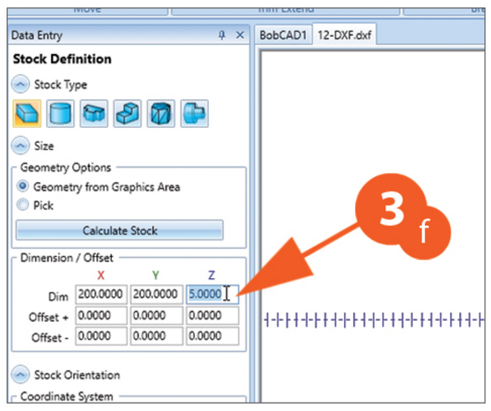
3b - Click on the **New Machining Job** icon near the top of the tab

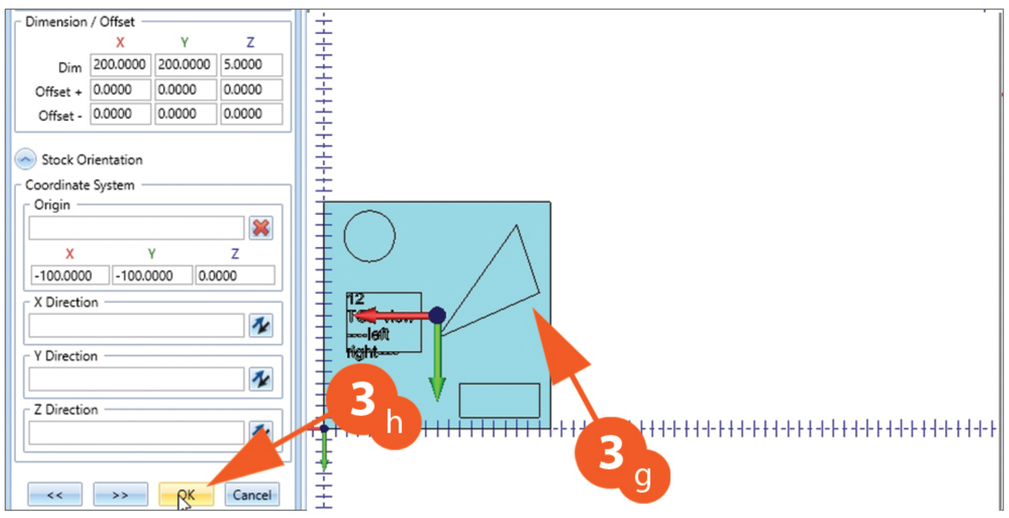


3c - On the left menu, under **Machine**, click on **Baileigh_Ricauto_Plasma** in the drop down list

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







3e - Click on the forward arrows >>

3f - Enter the thickness of your material stock to be cut

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

3h - Click on **OK**

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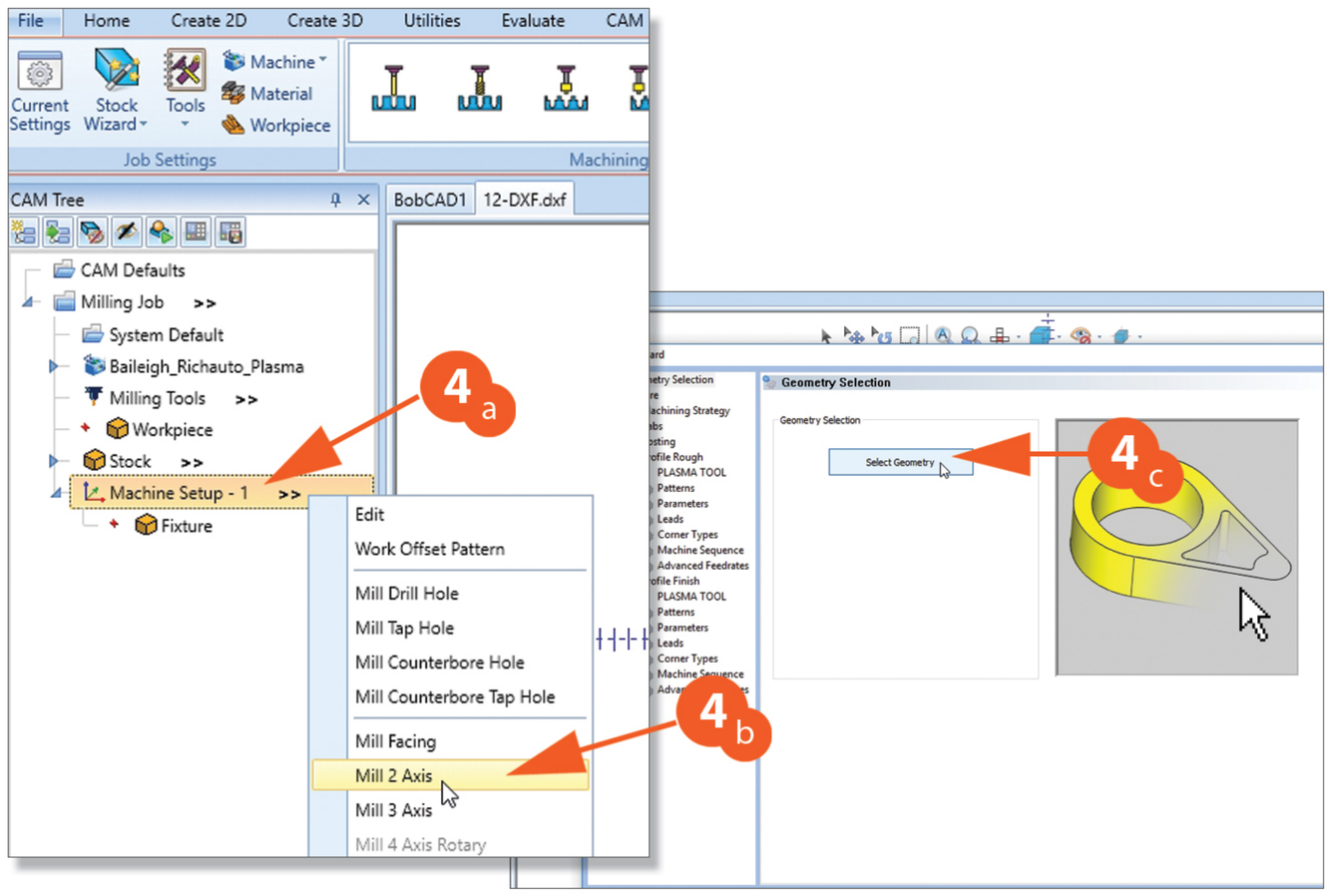
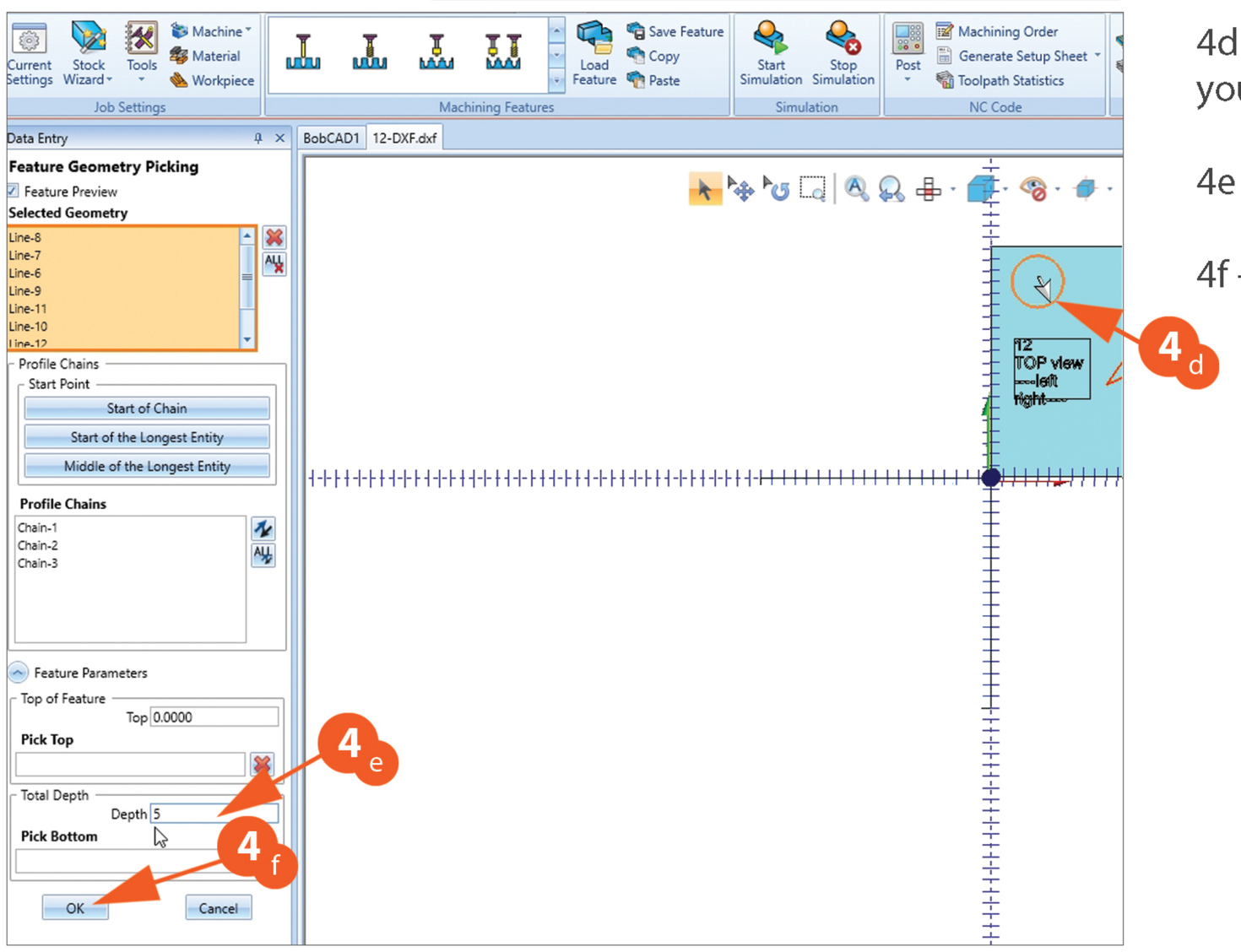


4

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

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

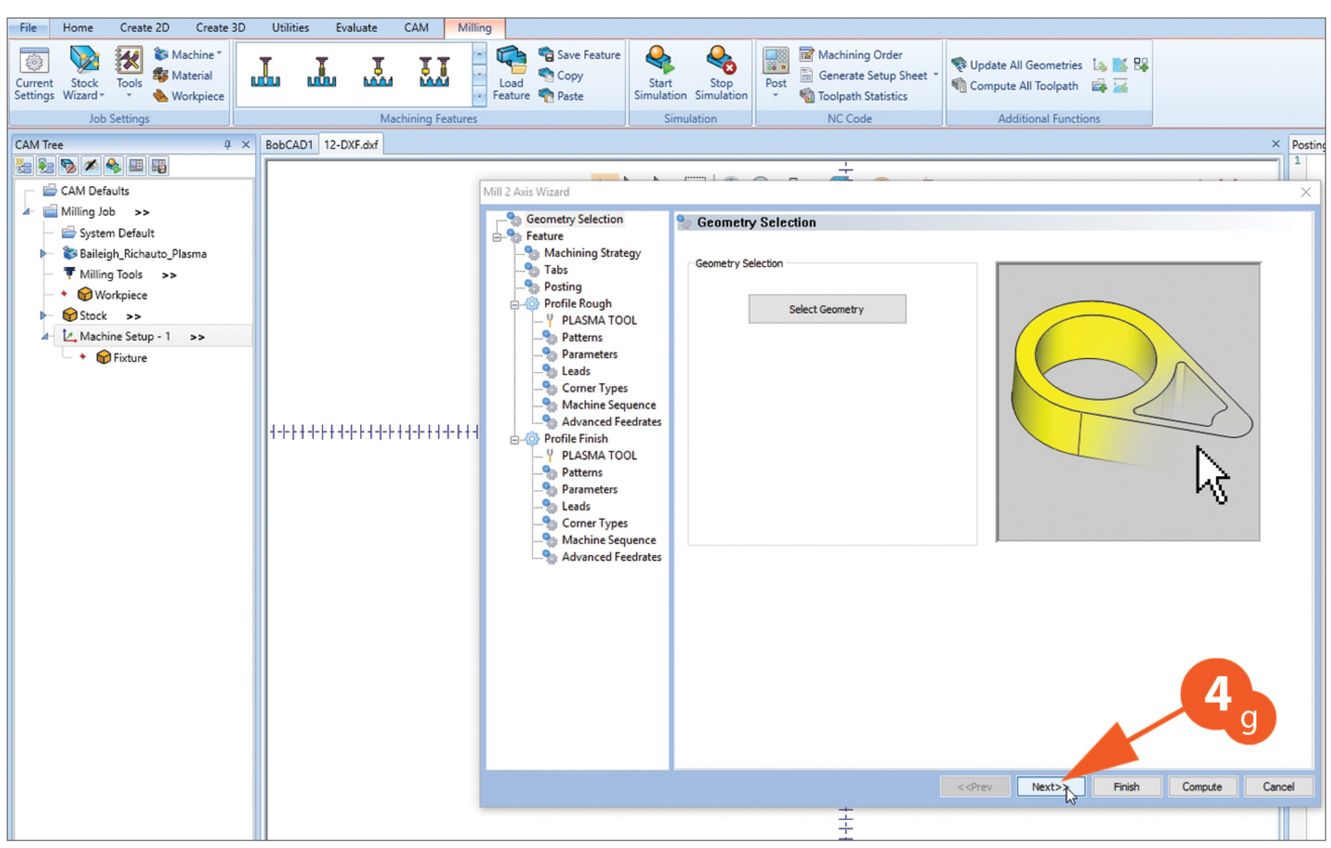
4c - On the pop-up click **Select Geometry**



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

4e - Enter the depth of your material stock

4f - Click **OK**



4g - Click **Next**

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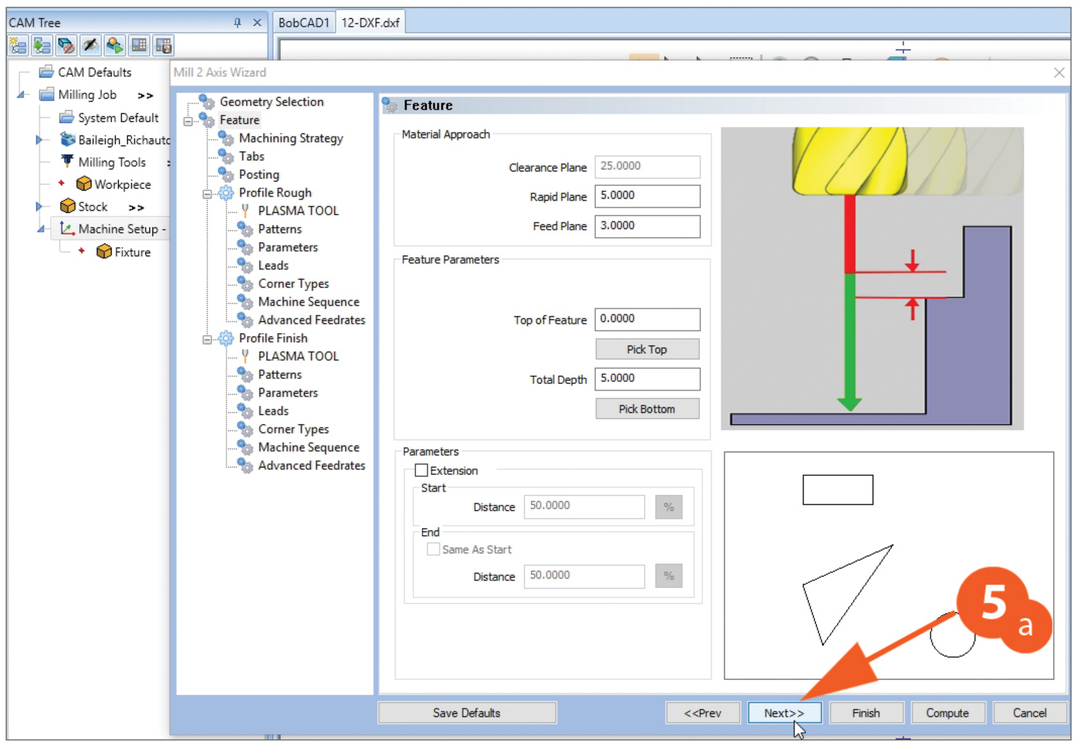
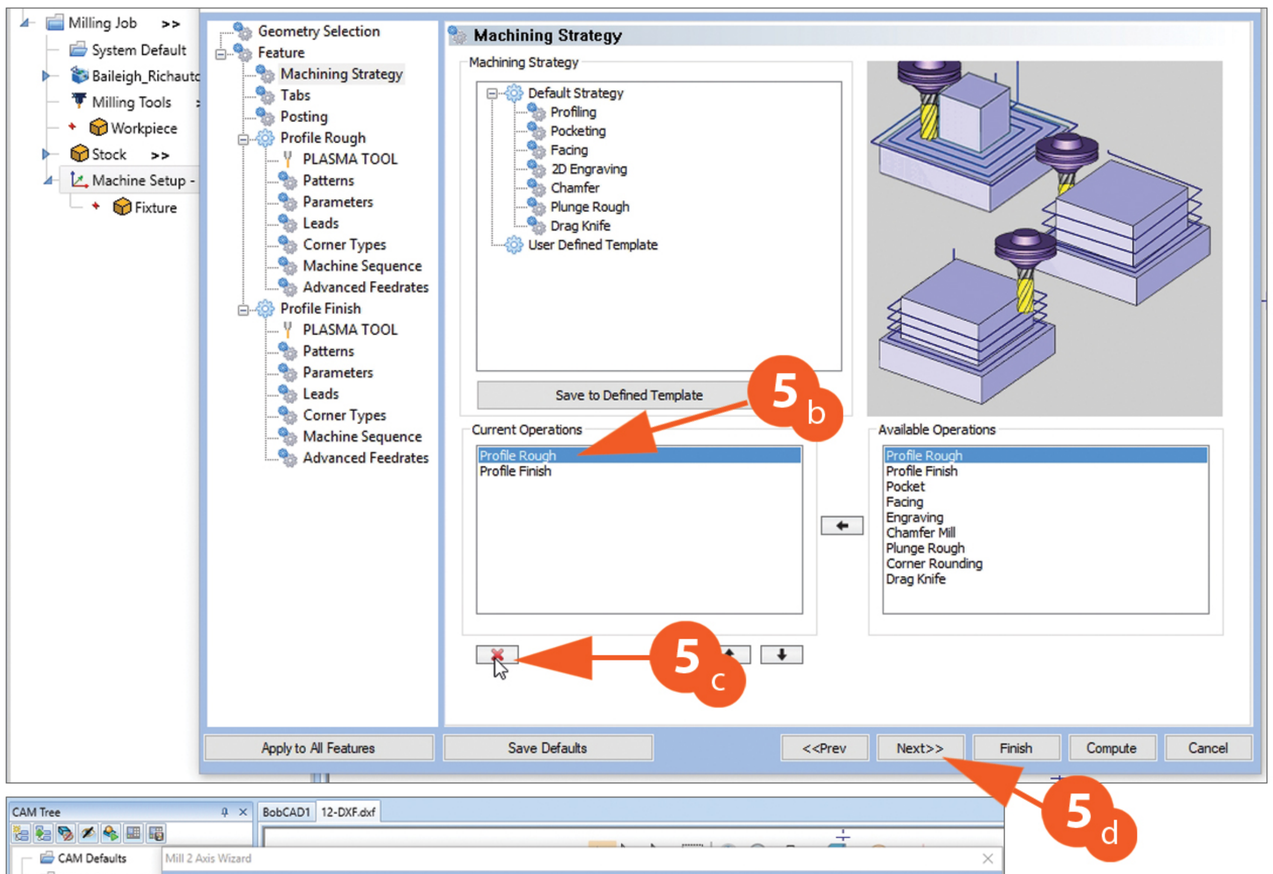


5

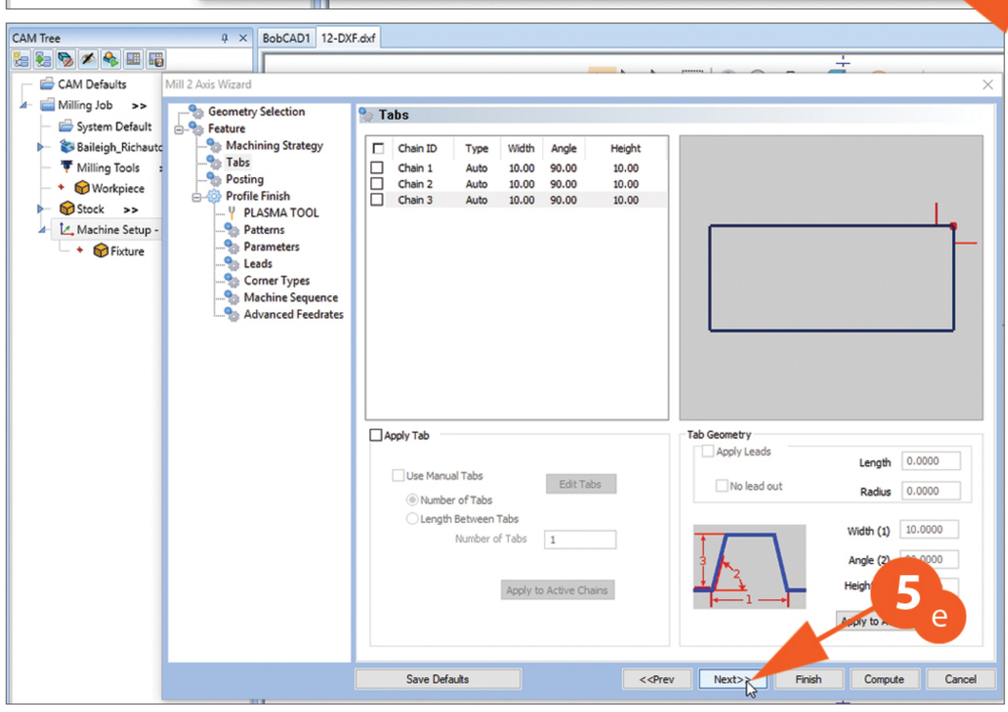
5a - click on **Next >>**



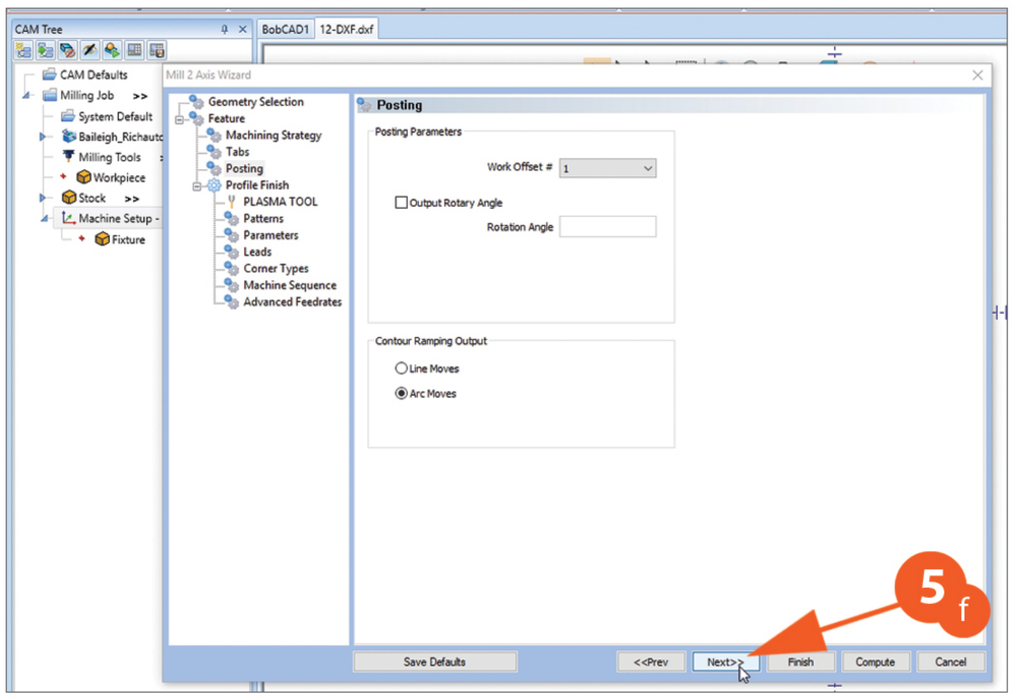
5b - Highlight **Profile Rough**

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

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



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



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

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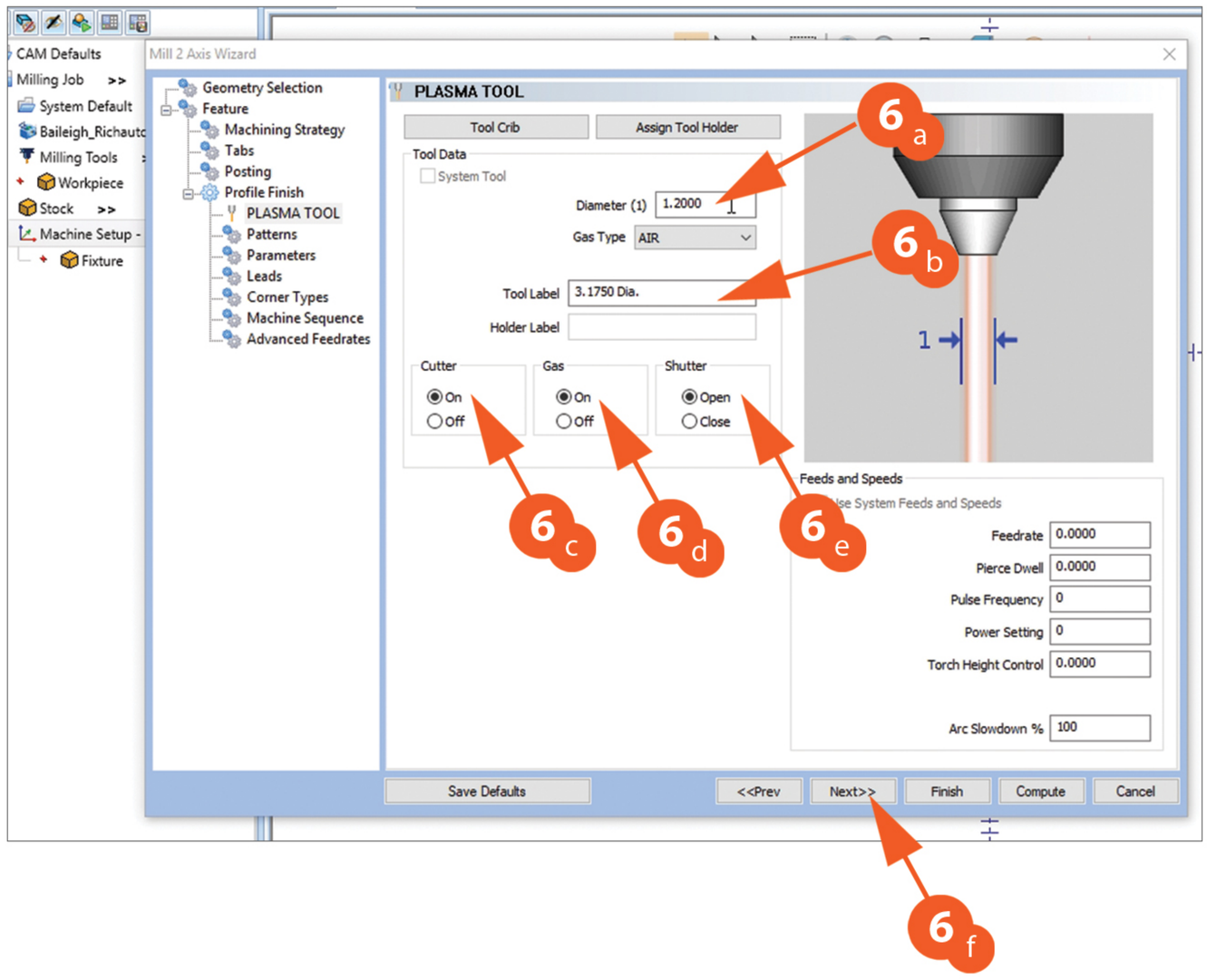


6

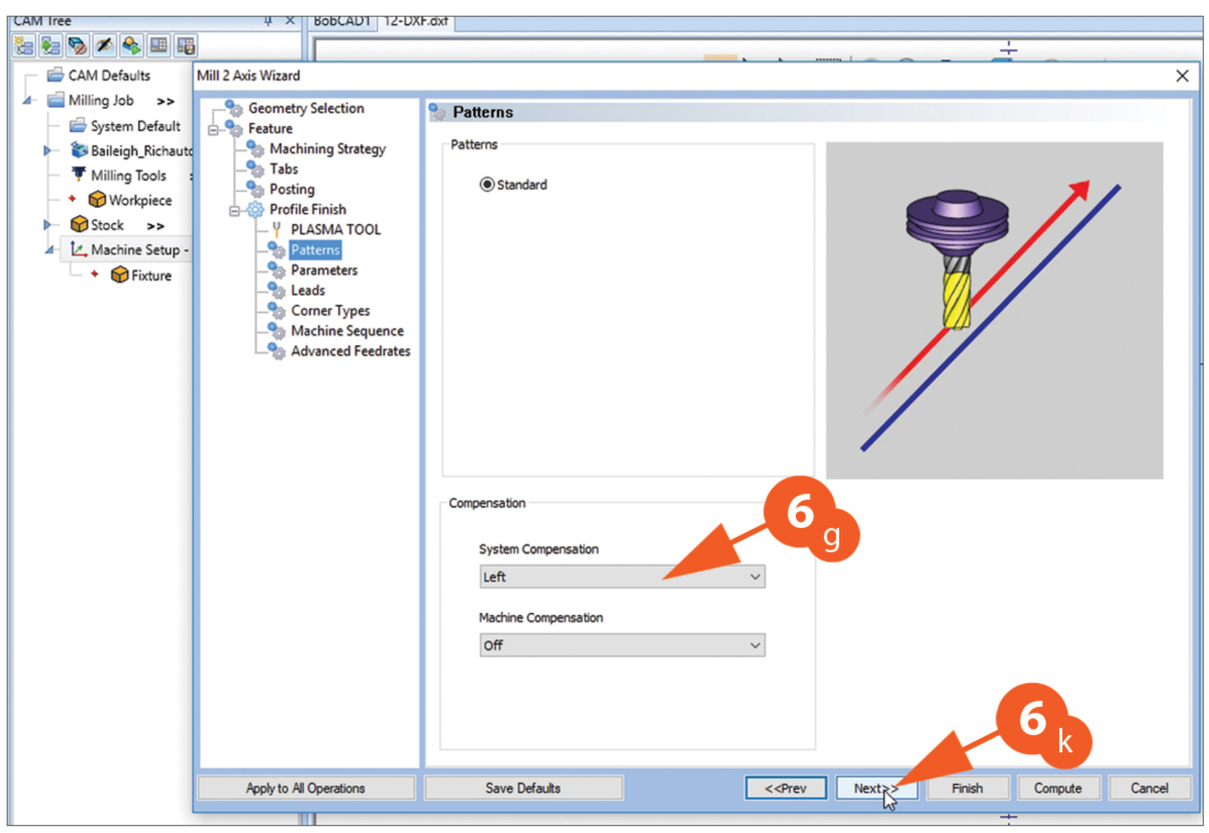
6 - Get the plasma tip Diameter (**Kerf Width**) from one of the following pages depending on your material:
Index-A = Mild Steel Cuts
Index-B = Mild Steel - Fine Cuts
Index-C = Aluminum Cuts
Index-D = Stainless Steel - Fine Cuts
Index-E = Stainless Steel Cuts

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>>**



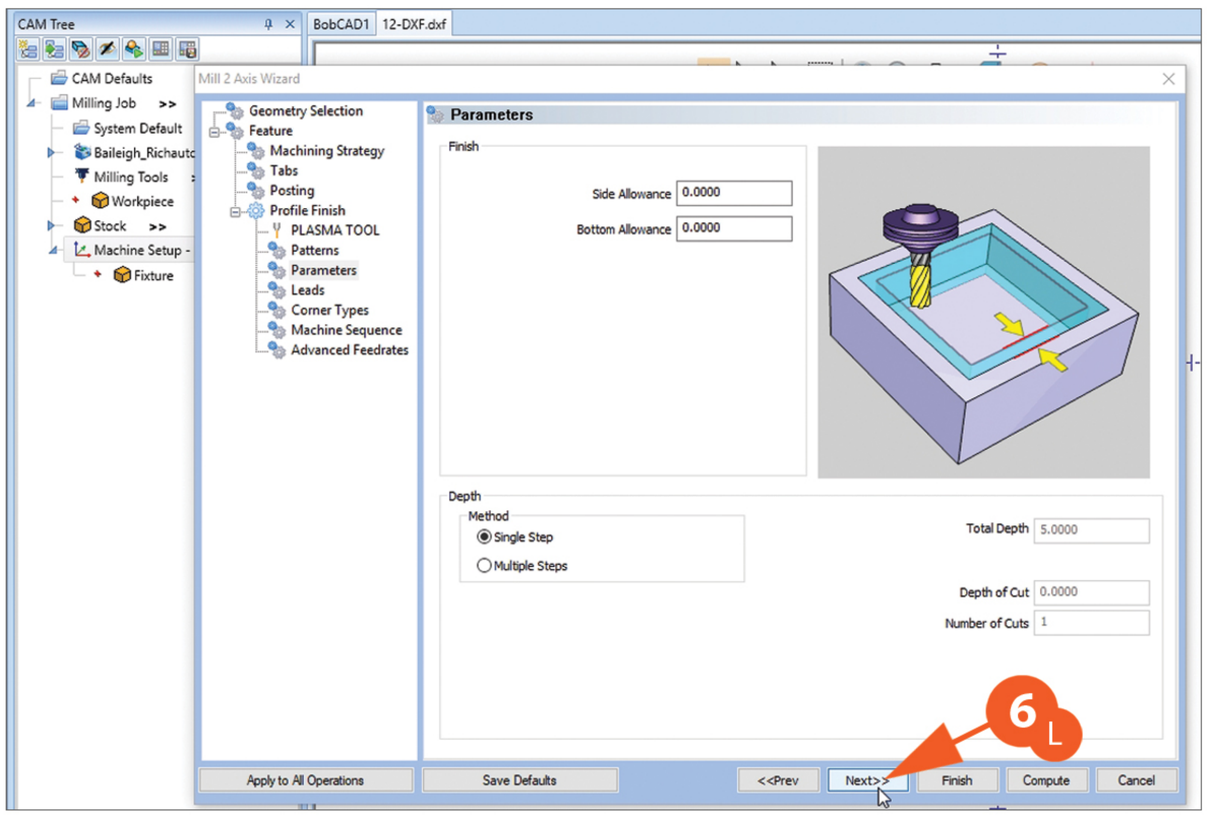
6g- Here you can select which side of your line the plasma cuts on. Keeping in mind the average width of the plasma (kerf) is 1.5mm.

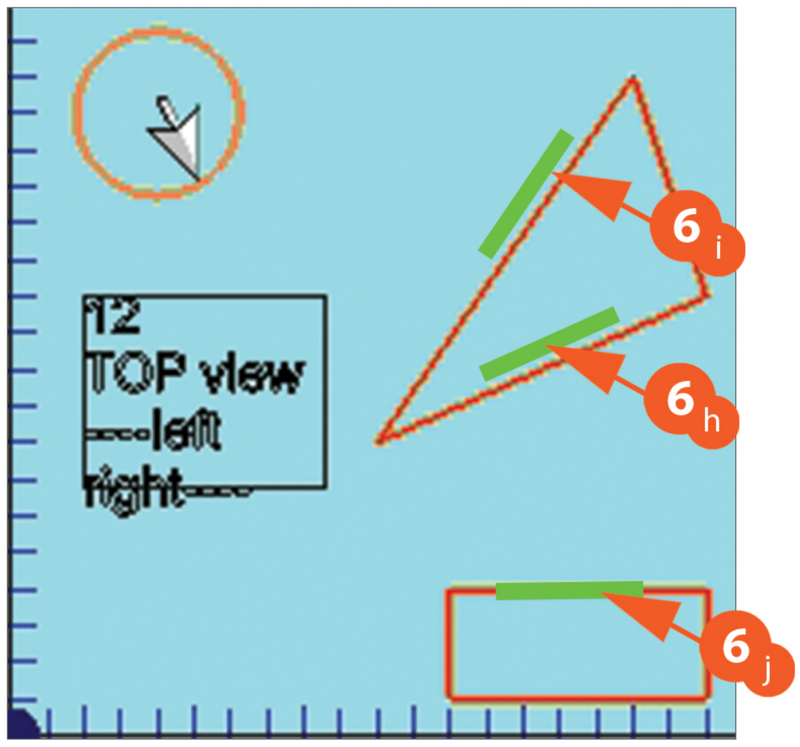
6h - Choose **left** to cut inside the line

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>>**

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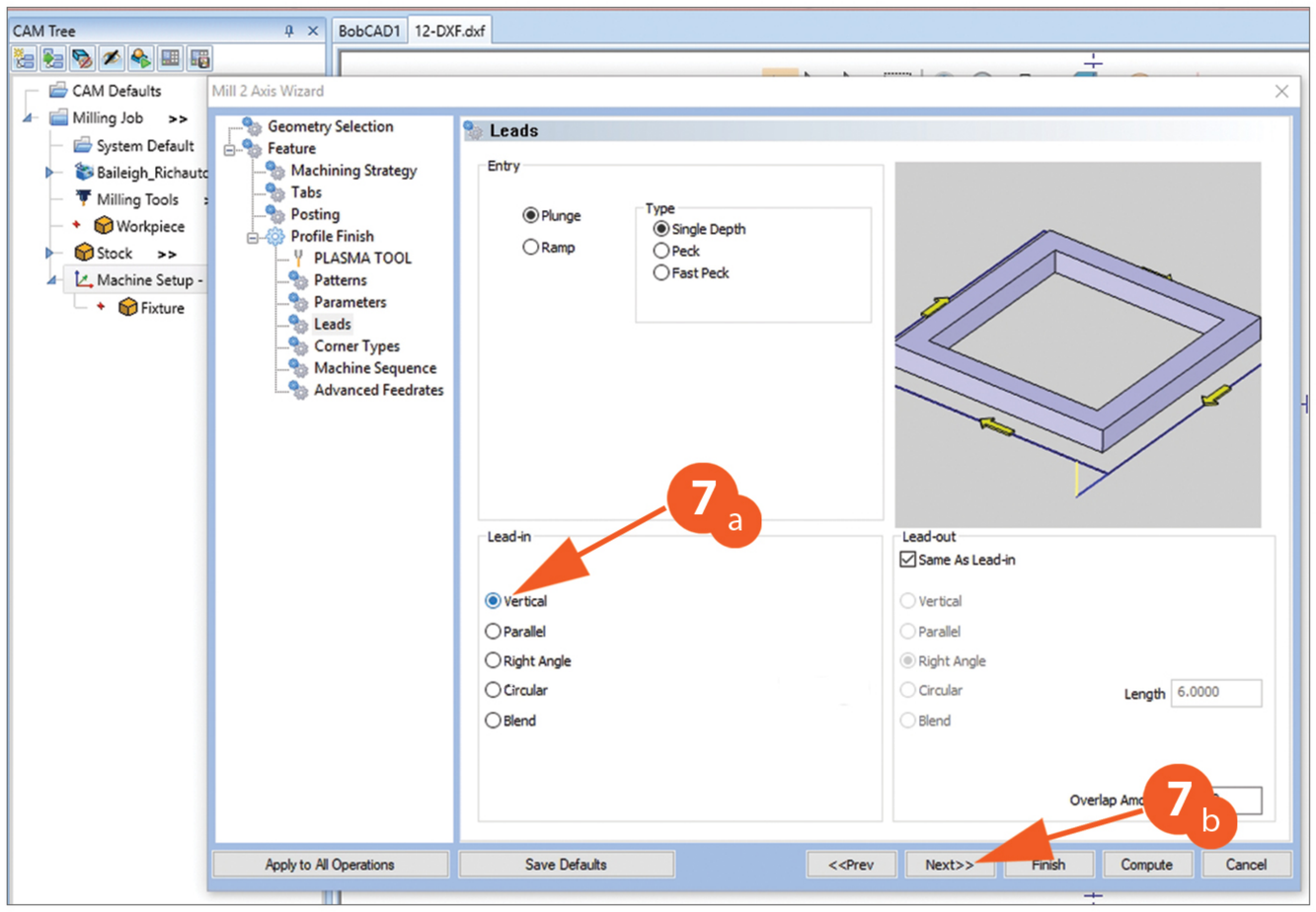
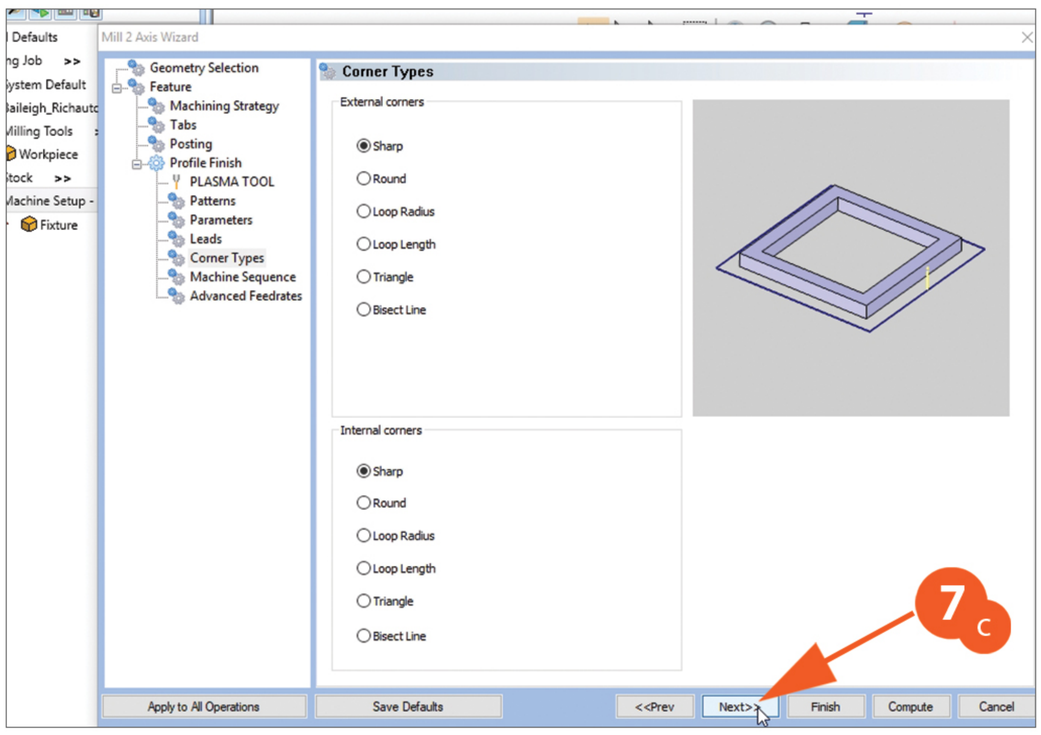


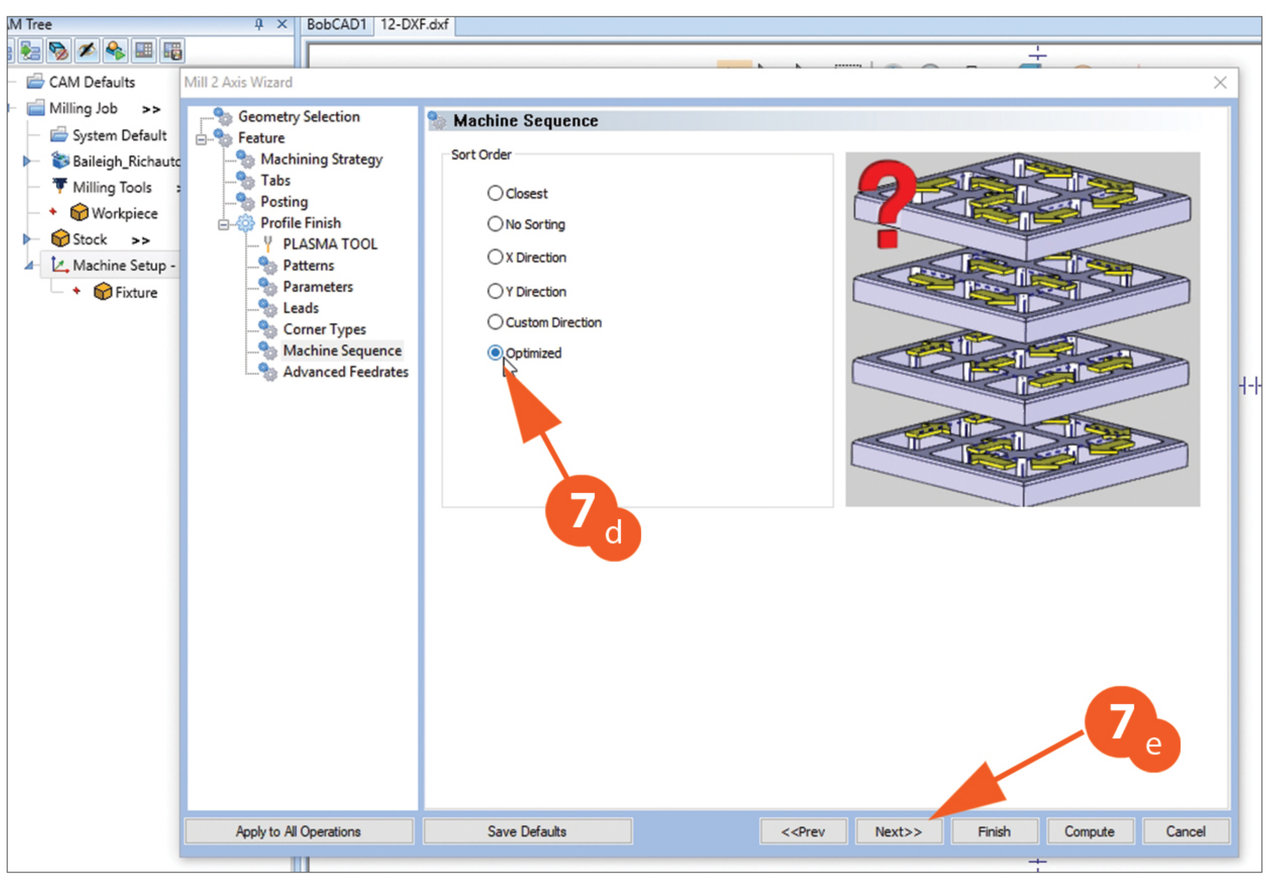
7

7a - Click on **Vertical**

7b - Click **Next>>**



7c - Click **Next>>**



7d - Click on **Optimized**

7e - Click **Next>>**

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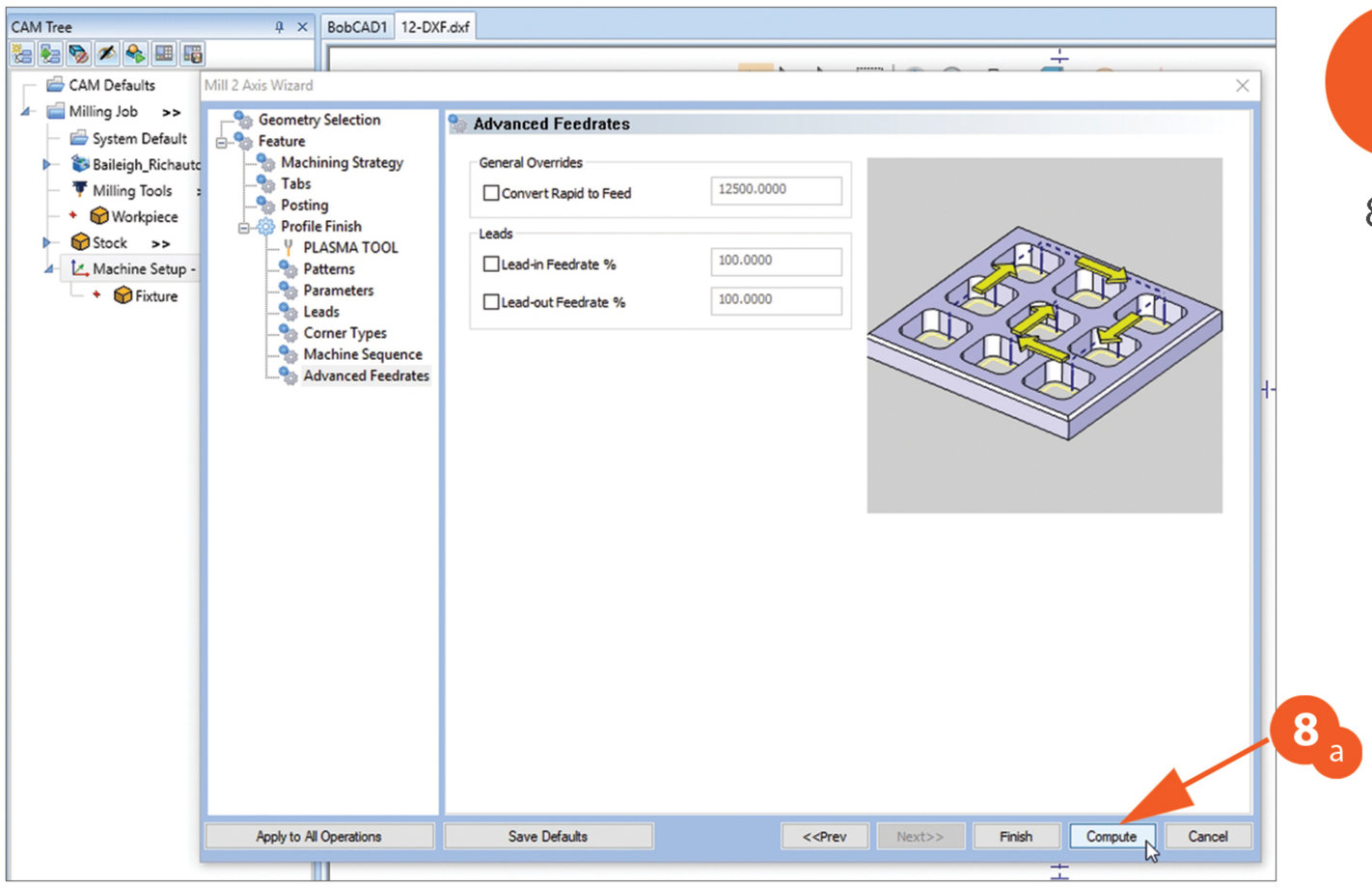
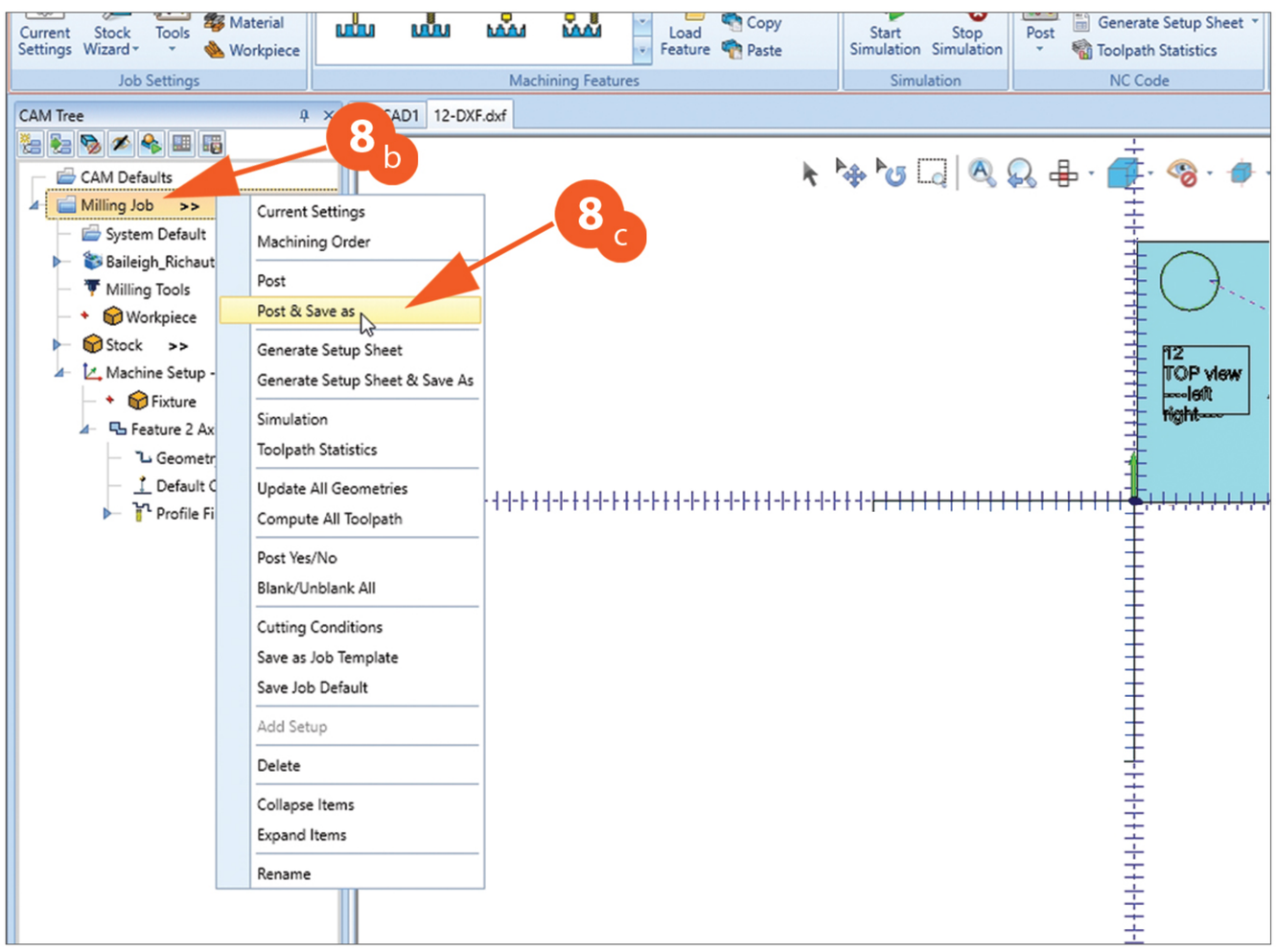


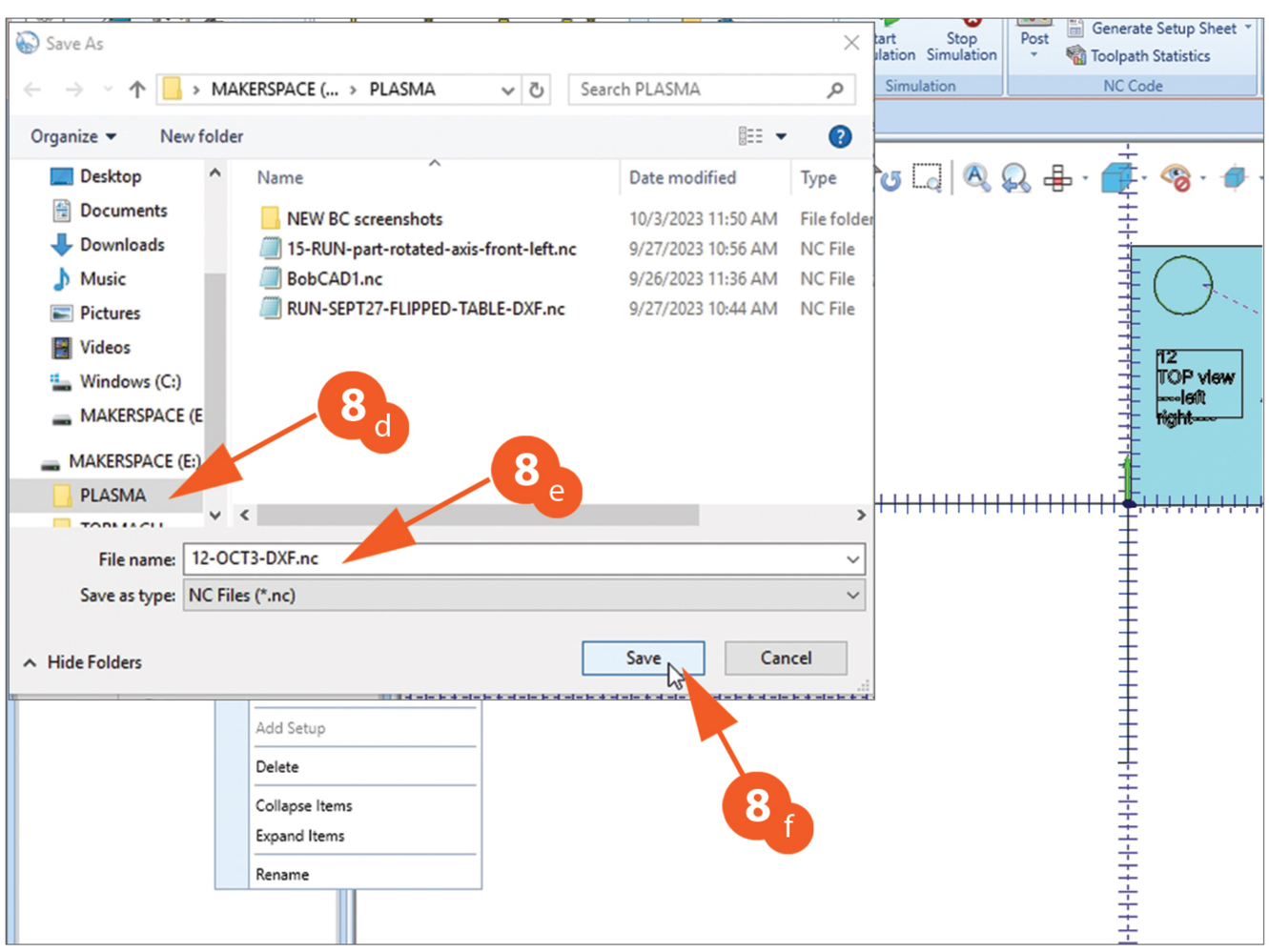
8

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**

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Mild 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
					Cut Speed	Voltage	Cut Speed	Voltage	
mm	mm	mm	%	seconds	mm/min	volts	mm/min	volts	mm
2	1.5	3.8	250	0.2	5560	128	7910	125	1.4
3					3960	128	5590	128	
4				0.4	2800	128	3960	128	1.5
6				0.6	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
					Cut Speed	Voltage	Cut Speed	Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
16 GA	0.06	0.15	250	0.1	249	128	320	125	0.053
14 GA				0.2	225	128	320	125	0.054
10 GA				0.4	129	128	181	128	0.057
3/16				0.5	85	129	122	127	0.059
1/4				0.6	48	130	72	127	0.061
3/8				0.8	33	136	38	133	0.069
1/2				1	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)

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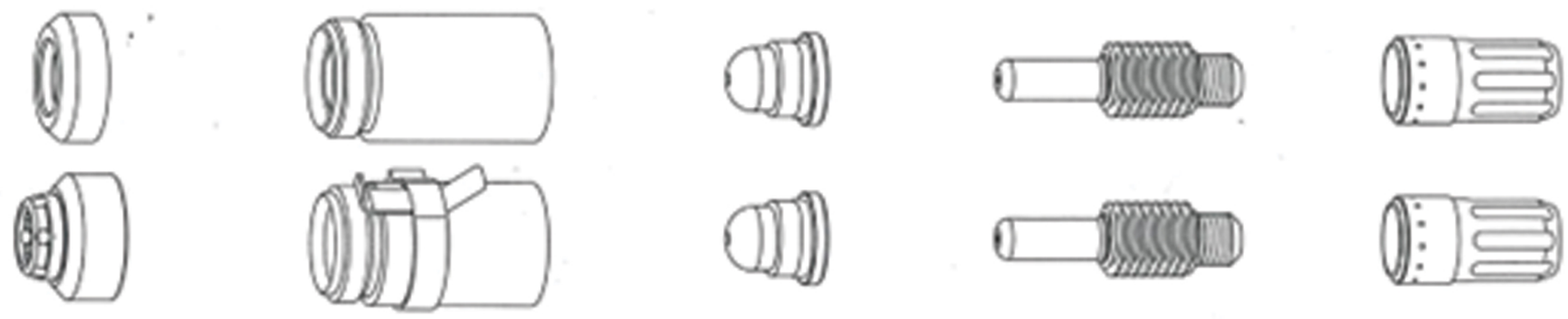
Mild Steel – FineCut – Air – Shielded and Unshielded



220955 (deflector)
220948 (shield)

220854
220953 (ohmic)

220930

220842

220947

Metric

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended Cut Speed	Recommended Voltage	Kerf Width
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	45				0.2	8250	78	0.7
1.5					0.4	6400	78	1.2
2						4800	78	1.3
3					0.5	2500	78	
4					0.6	1900	78	

English

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings Cut Speed	Best Quality Settings Voltage	Kerf Width
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	0.046
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)

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Aluminum – 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
					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	142	2
16					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					15	152	14	148	0.100
3/4					8	158	9	153	0.117

Gas flow rate – slpm / scfh

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

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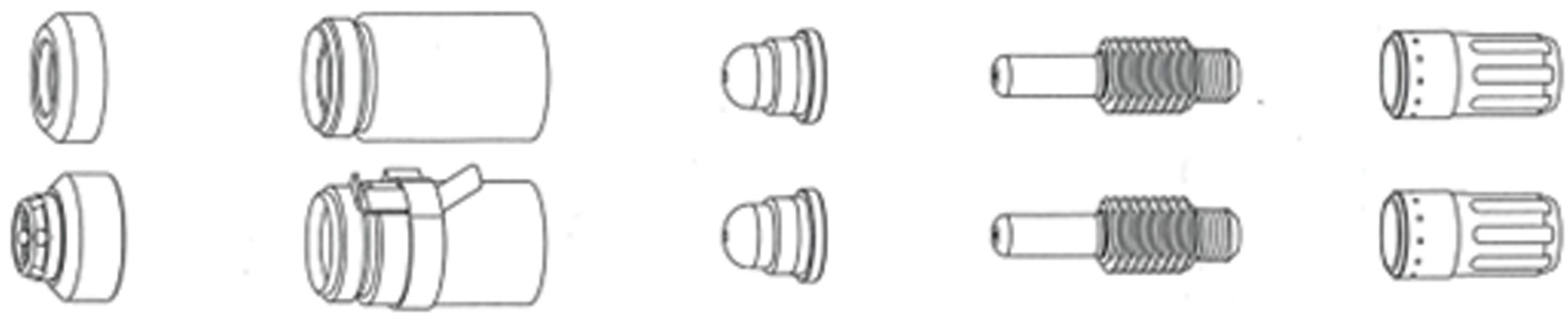
Stainless Steel – FineCut – Air – Shielded and Unshielded



220955 (deflector)
220948 (shield)

220854
220953 (ohmic)

220930

220842

220947

Metric

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Recommended		Kerf Width
						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					0.1	8250	68	
1	45				0.2	8250	68	0.6
1.5					0.4	6150	70	1.0
2						4800	71	
3					0.5	2550	80	1.4
4					0.6	1050	84	1.5

English

Material Thickness	Current	Torch-to-Work Distance	Initial Pierce Height		Pierce Delay Time	Best Quality Settings		Kerf Width
						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	325	68	0.036
16 GA					0.4	240	70	0.039
14 GA						200	70	0.040
12 GA					0.5	120	80	0.049
10 GA					0.6	75	80	0.055

Gas flow rate – slpm / scfh

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

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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
					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	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				0.8	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					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
					Cut Speed	Voltage	Cut Speed	Voltage	
inches	inches	inches	%	seconds	in/min	volts	in/min	volts	inches
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					7	148	9	145	0.116
7/8					5	151	6	149	0.137

Gas flow rate – slpm / scfh

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

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