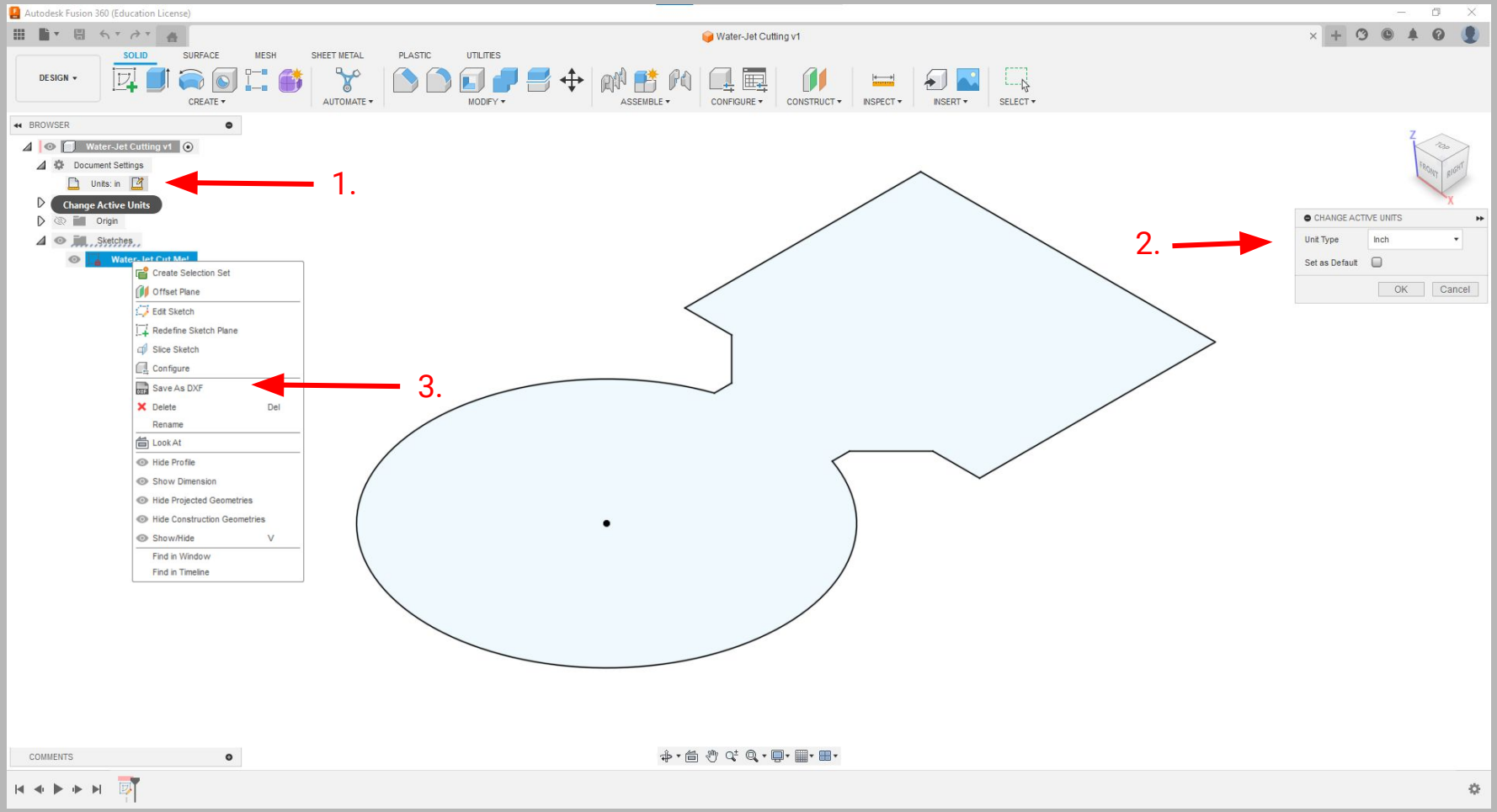
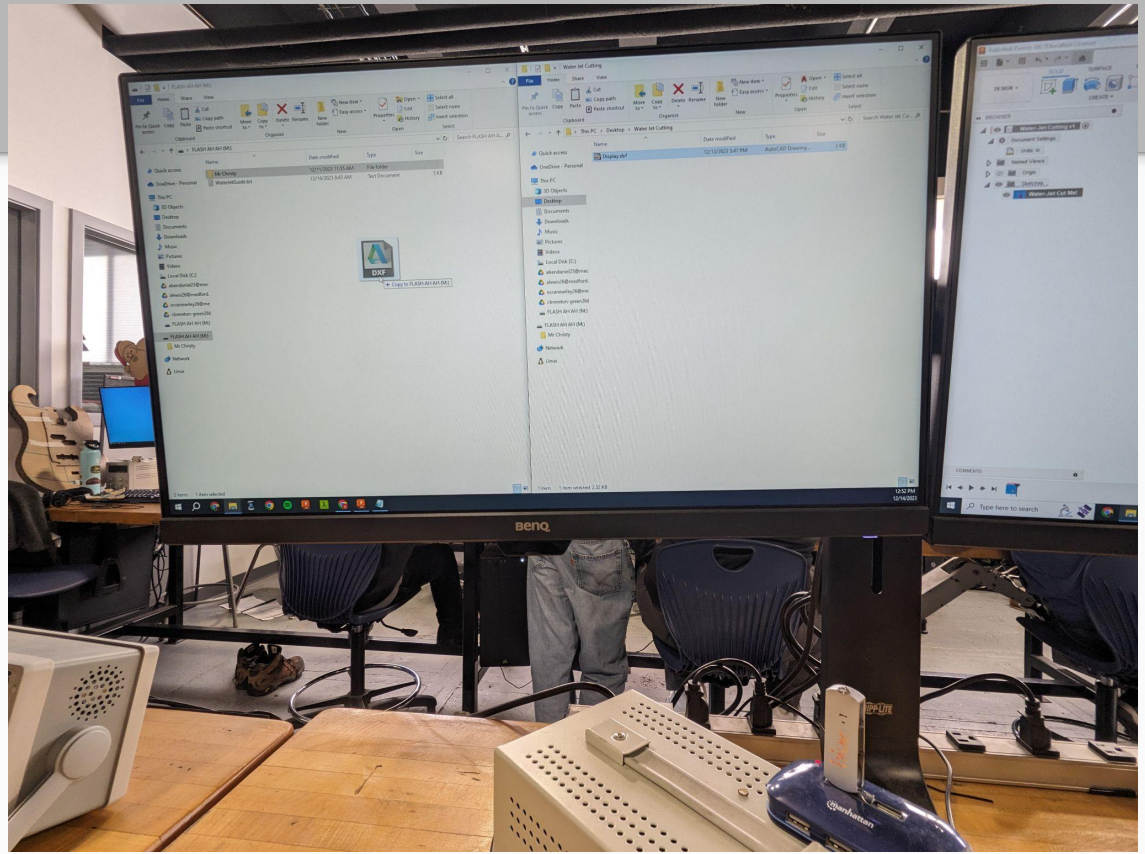
OMAX 2626 JET MACHINING CENTER Guide

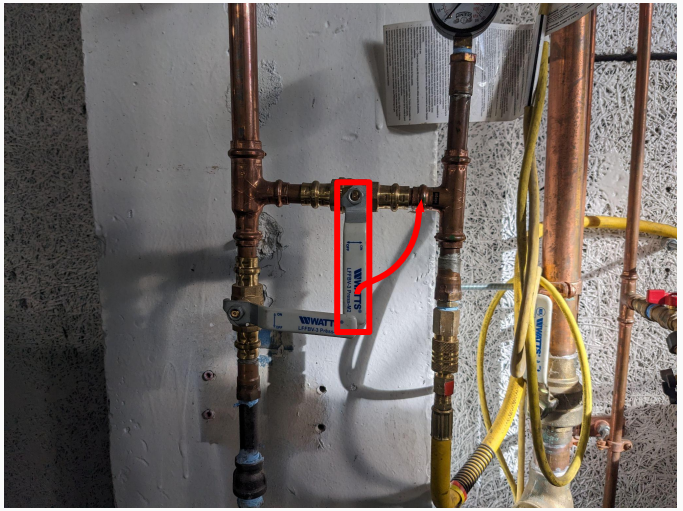
Export your geometry from Fusion 360 in **inches** OR **millimeters** format

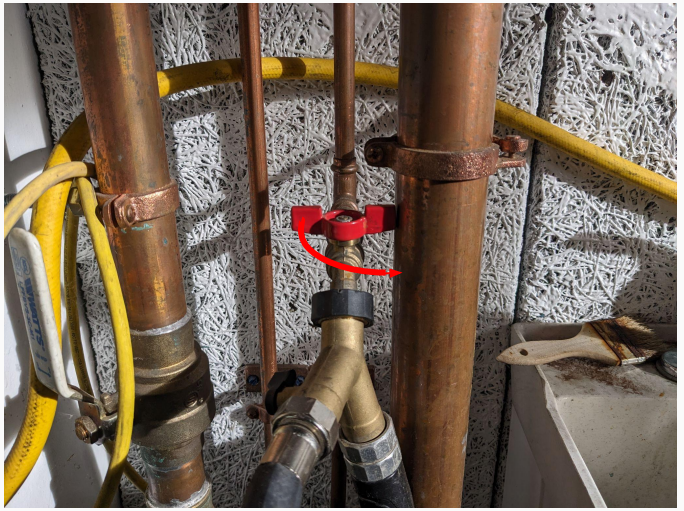


Load your file onto a USB Drive

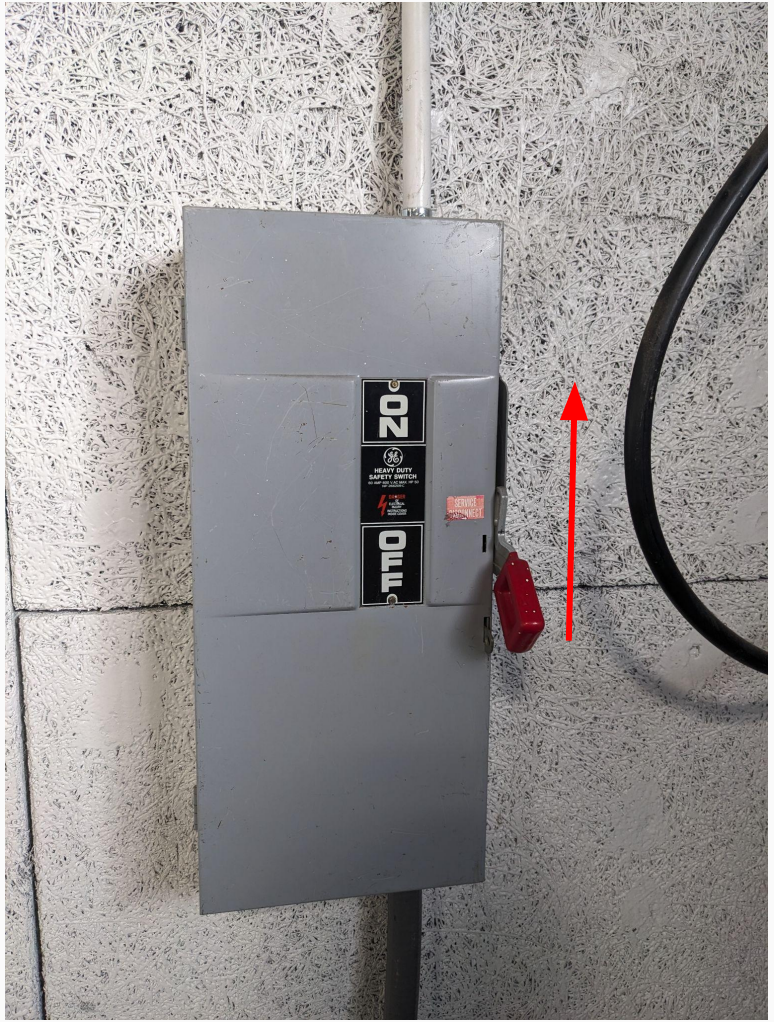


Turn on the air and water



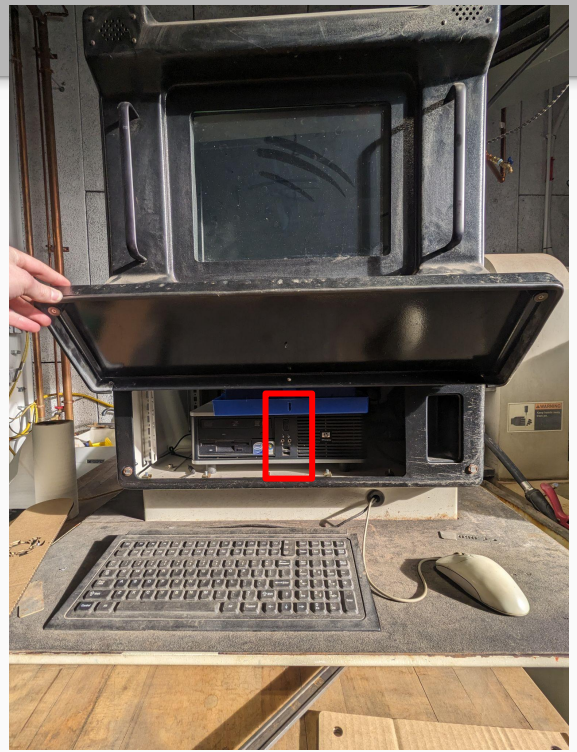


Turn on power



Rotate both power switches

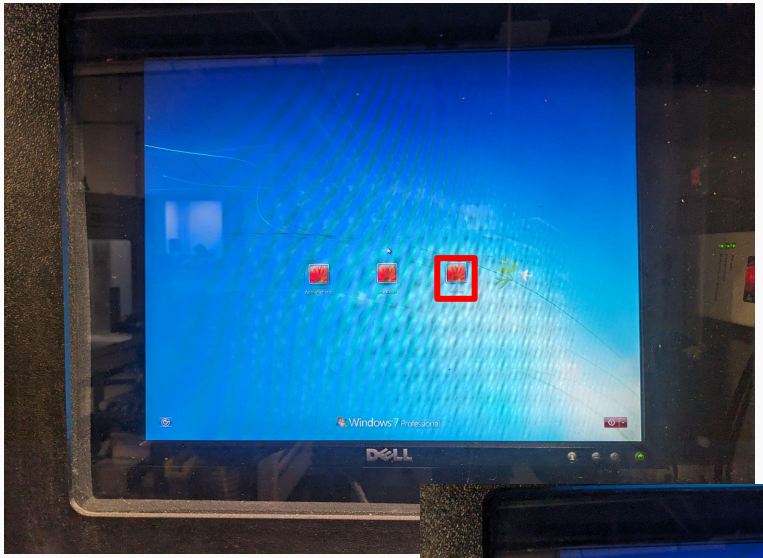
1. Remove all USB drives from the computer
2. Press the power switch on the computer



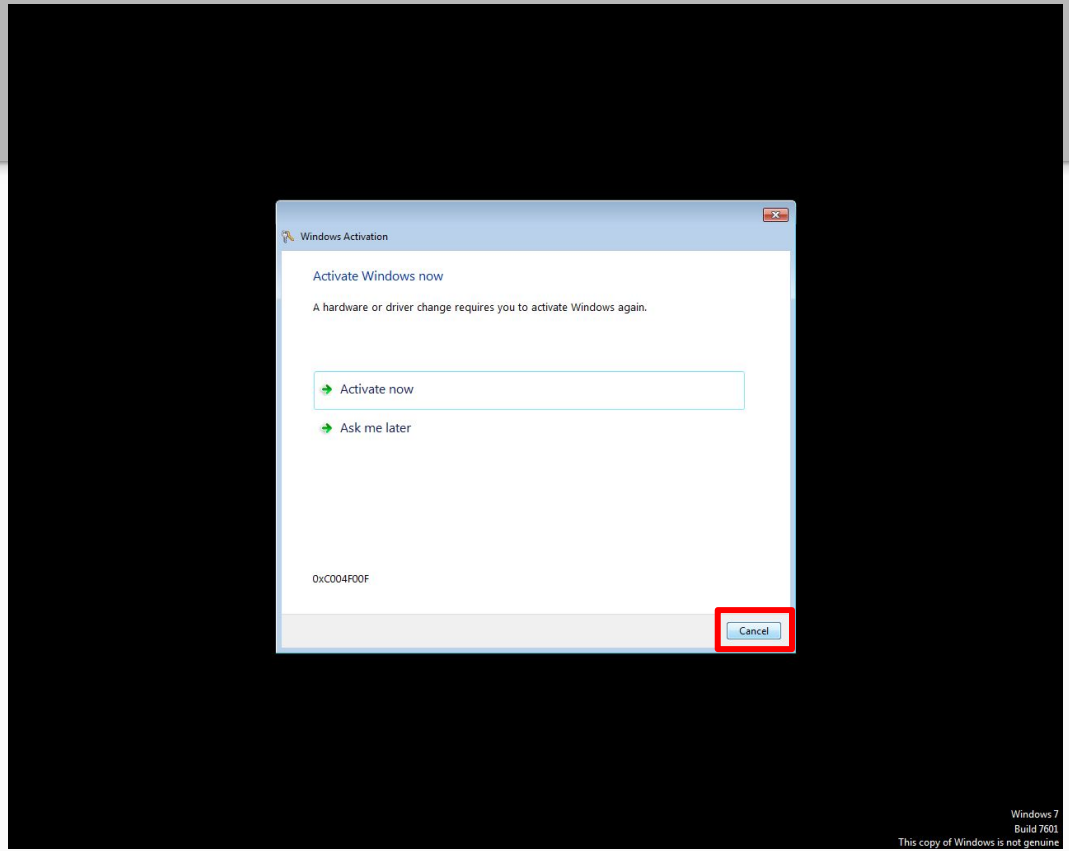
Sign into Windows

User: Student
Password: student

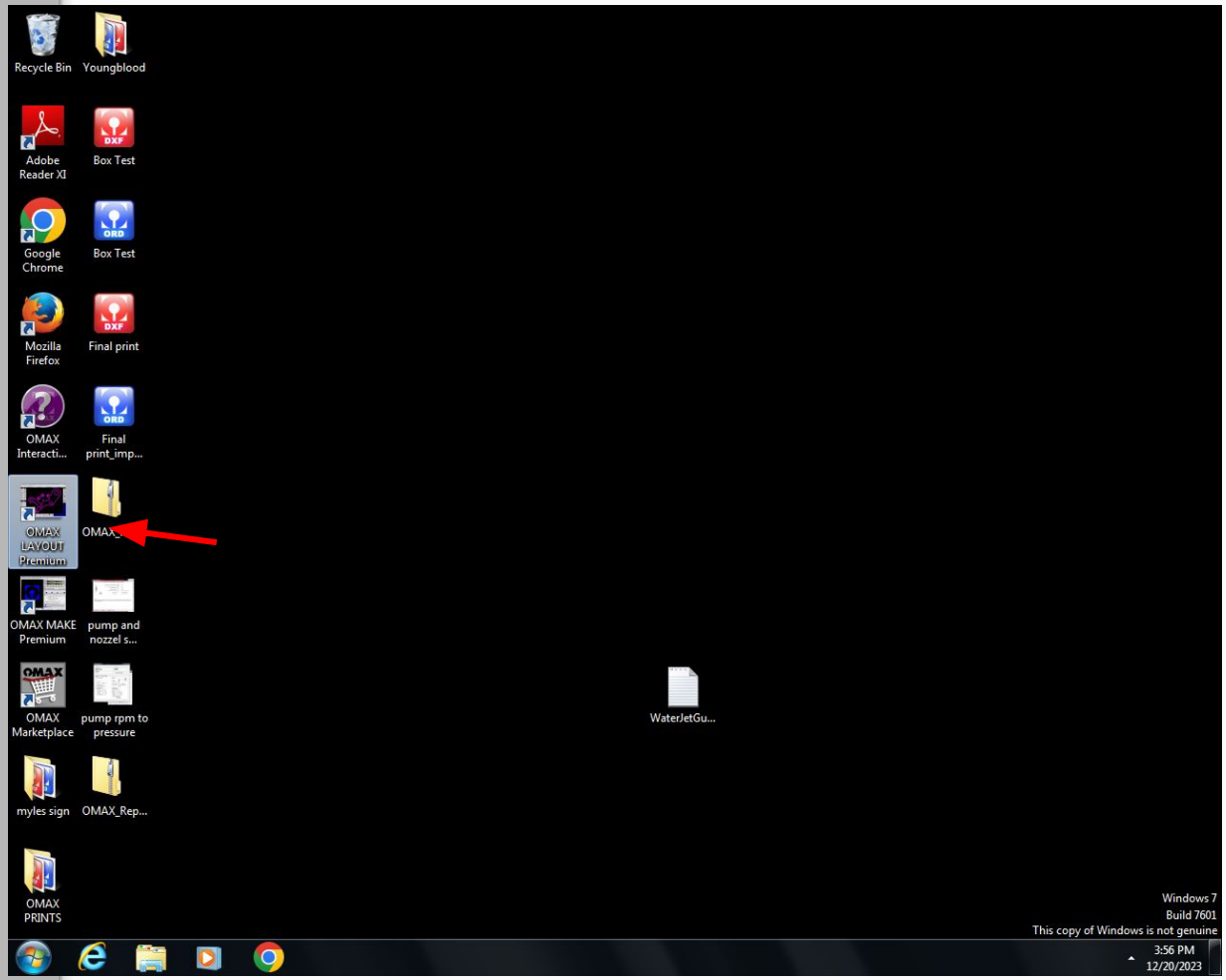
ALL LOWERCASE /\
CHECK CAPS LOCK



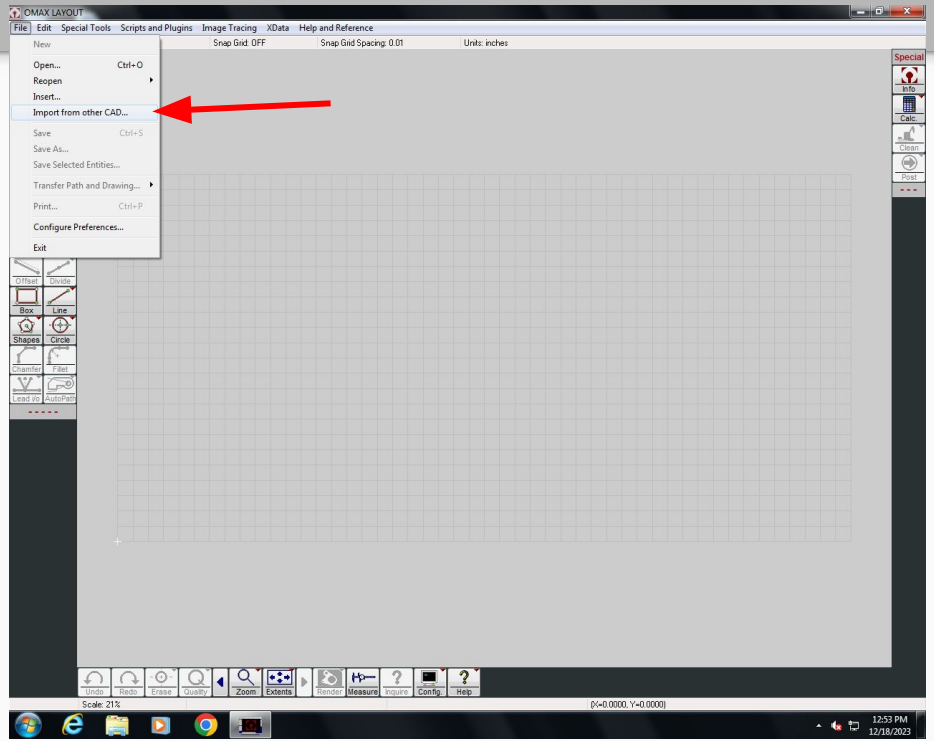
Click “Cancel”

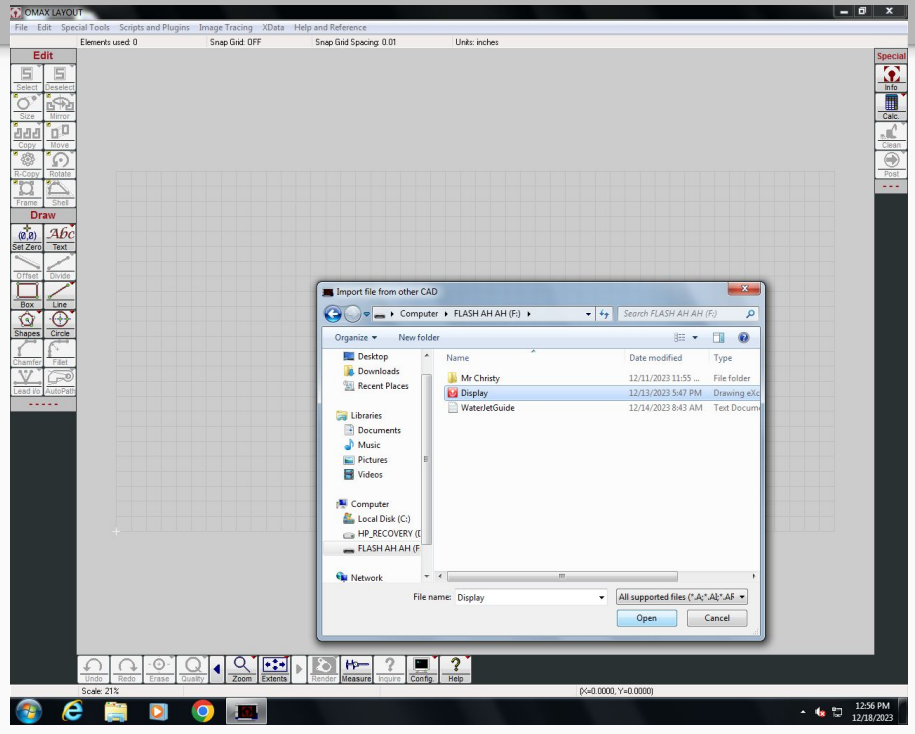


Plug your USB Drive in and then open the program “OMAX Layout Premium”

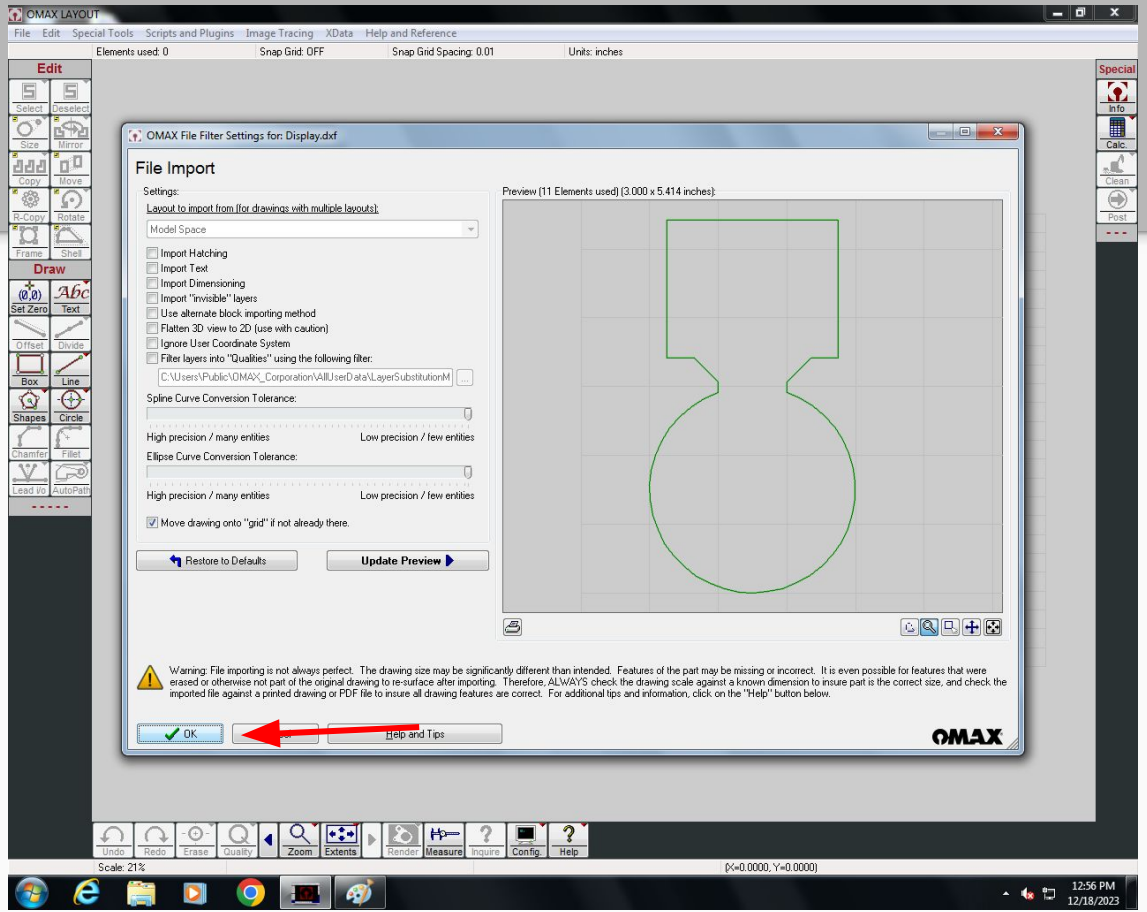


Under “File” select “Import From Other CAD” and select your .dxf



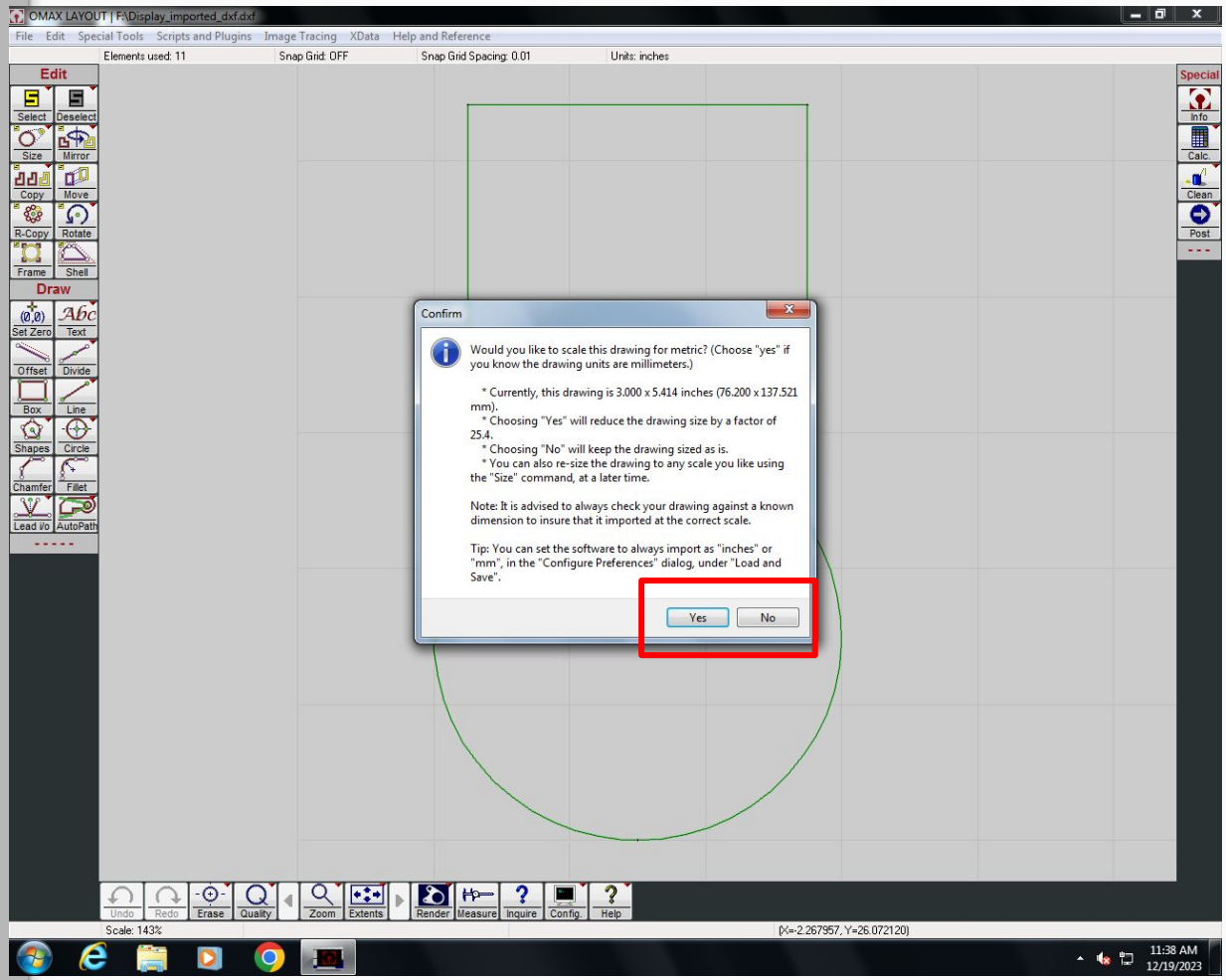


Click “OK”


OMAX LAYOUT
File Edit Special Tools Scripts and Plugins Image Tracing XData Help and Reference
Elements used: 0
Snap Grid: OFF
Snap Grid Spacing: 0.01
Units: inches
Edit
Draw
Special
OMAX File Filter Settings for: Display.dxf
File Import
Settings:
Layout to import from (for drawings with multiple layouts):
Model Space
Import Hatching
Import Text
Import Dimensioning
Import "invisible" layers
Use alternate block importing method
Flatten 3D view to 2D (use with caution)
Ignore User Coordinate System
Filter layers into "Qualities" using the following filter:
C:\Users\Public\OMAX_Corporation\AllUserData\LayerSubstitutionM
Spline Curve Conversion Tolerance:
High precision / many entities
Low precision / few entities
Ellipse Curve Conversion Tolerance:
High precision / many entities
Low precision / few entities
Move drawing onto "grid" if not already there.
Restore to Defaults
Update Preview
Preview (11 Elements used) (3.000 x 5.414 inches):
Warning: File importing is not always perfect. The drawing size may be significantly different than intended. Features of the part may be missing or incorrect. It is even possible for features that were erased or otherwise not part of the original drawing to re-surface after importing. Therefore, ALWAYS check the drawing scale against a known dimension to insure part is the correct size, and check the imported file against a printed drawing or PDF file to insure all drawing features are correct. For additional tips and information, click on the "Help" button below.
OK
Help and Tips
OMAX
Undo Redo Erase Quality Zoom Extents Render Measure Inquire Config. Help
Scale: 21%
(X=0.0000, Y=0.0000)
12:56 PM
12/18/2023

If you exported your .dxf in inches format, click “NO”.

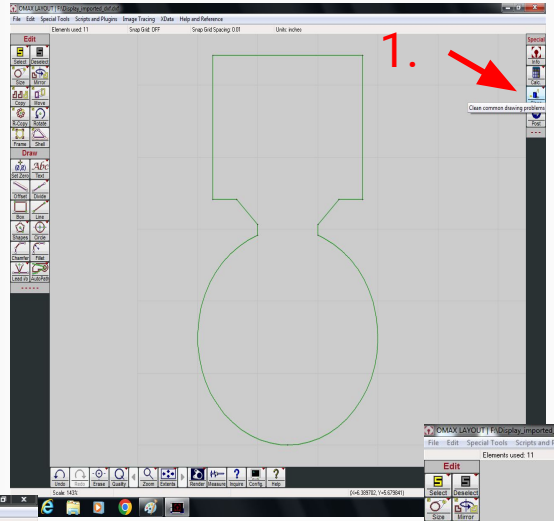
If you exported your .dxf in millimeters format, click “YES”.

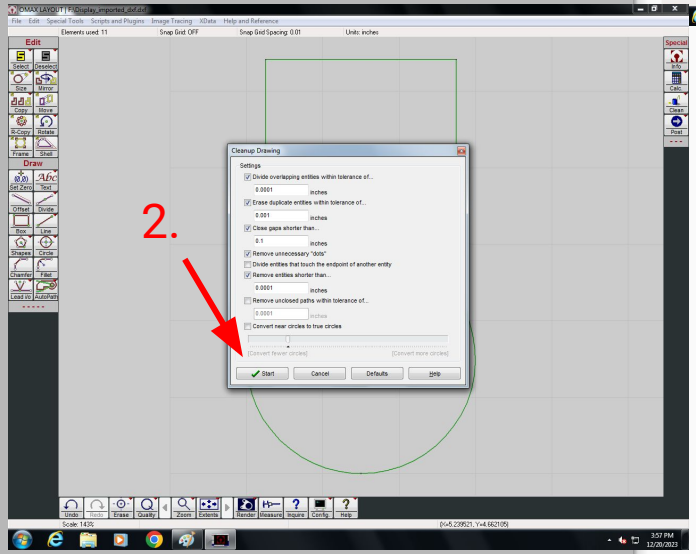


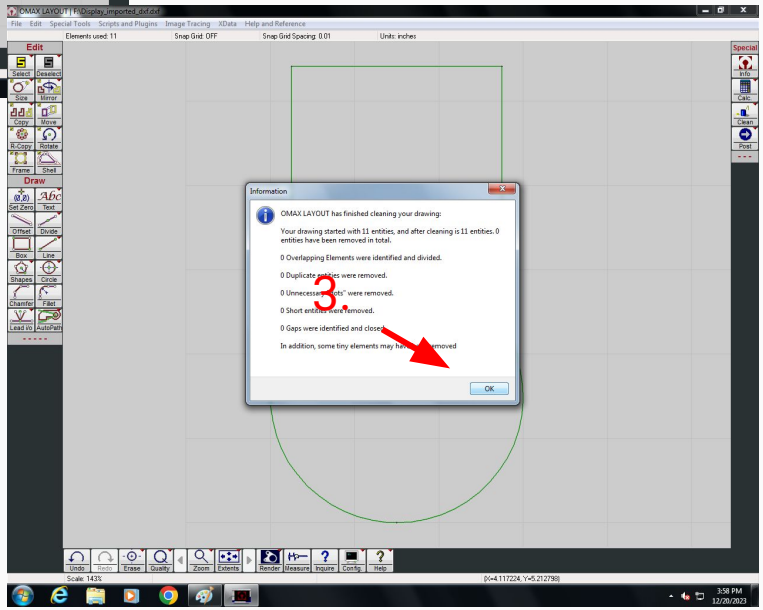
1. Click “Clean”

2. Click “Start”

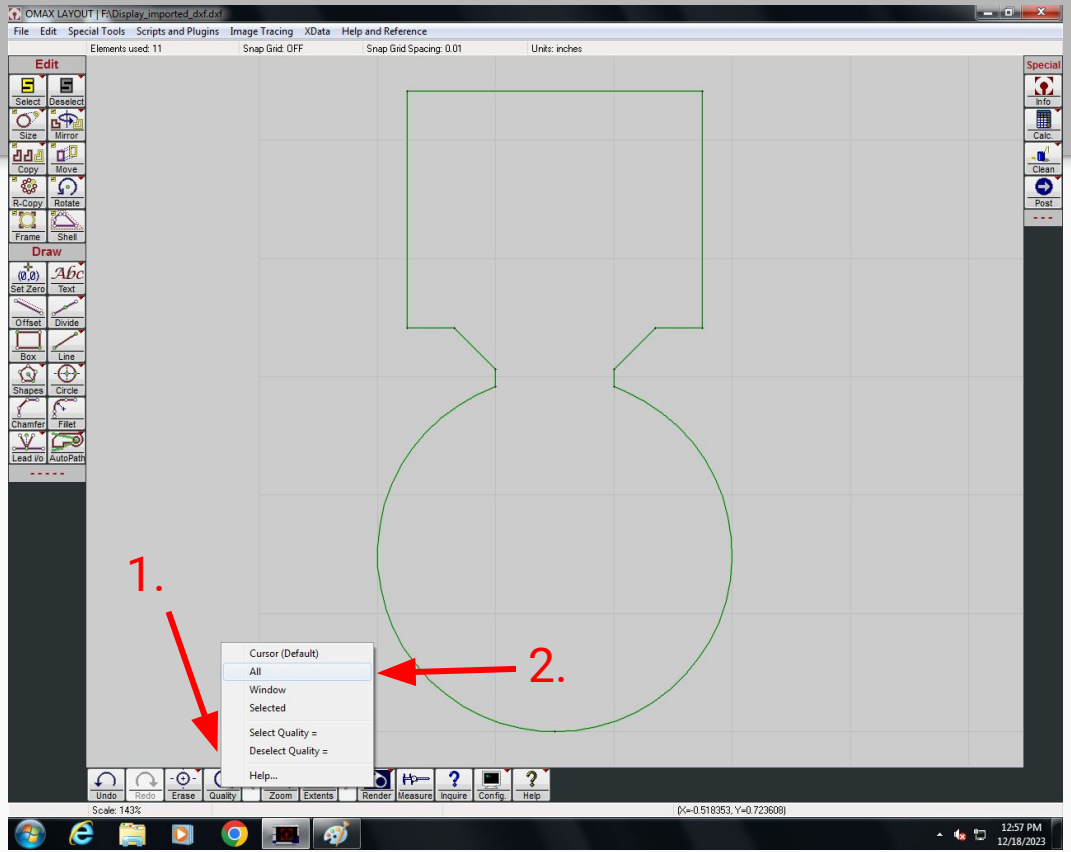
3. Click “OK”



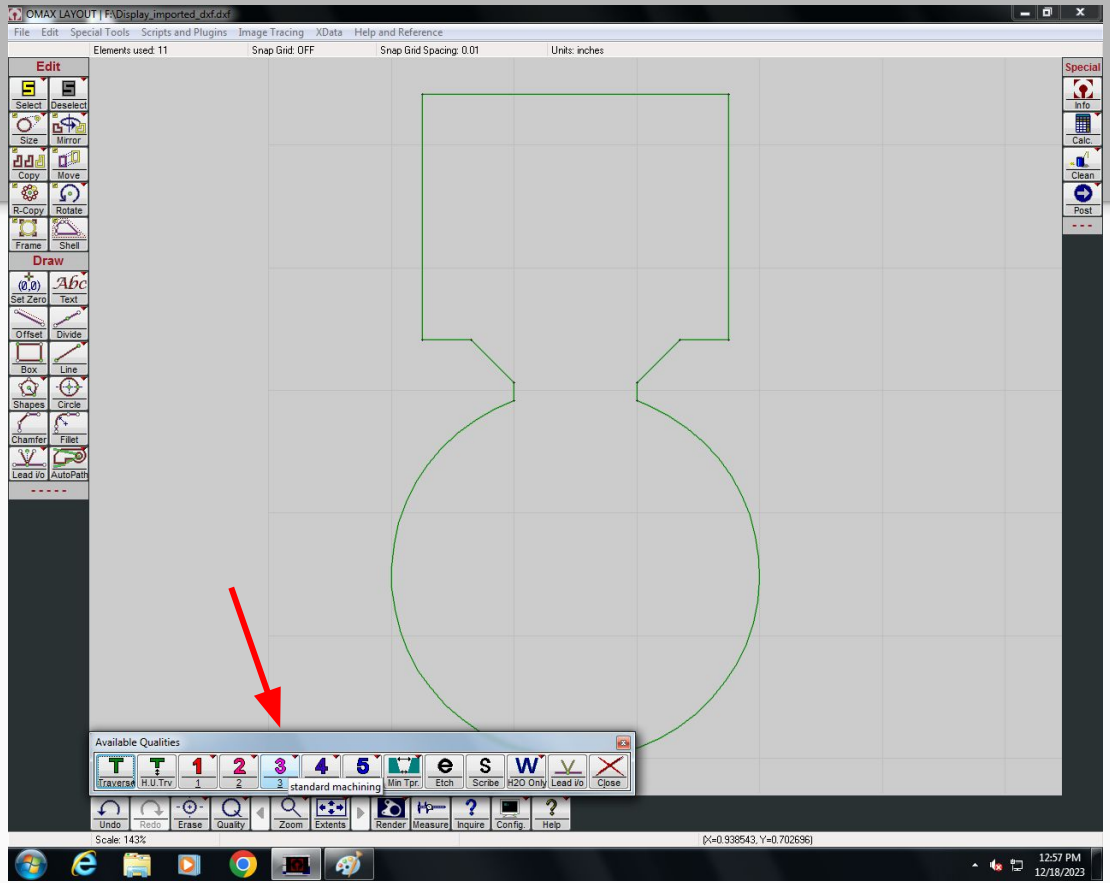




Right-click “Quality” and then click “All”



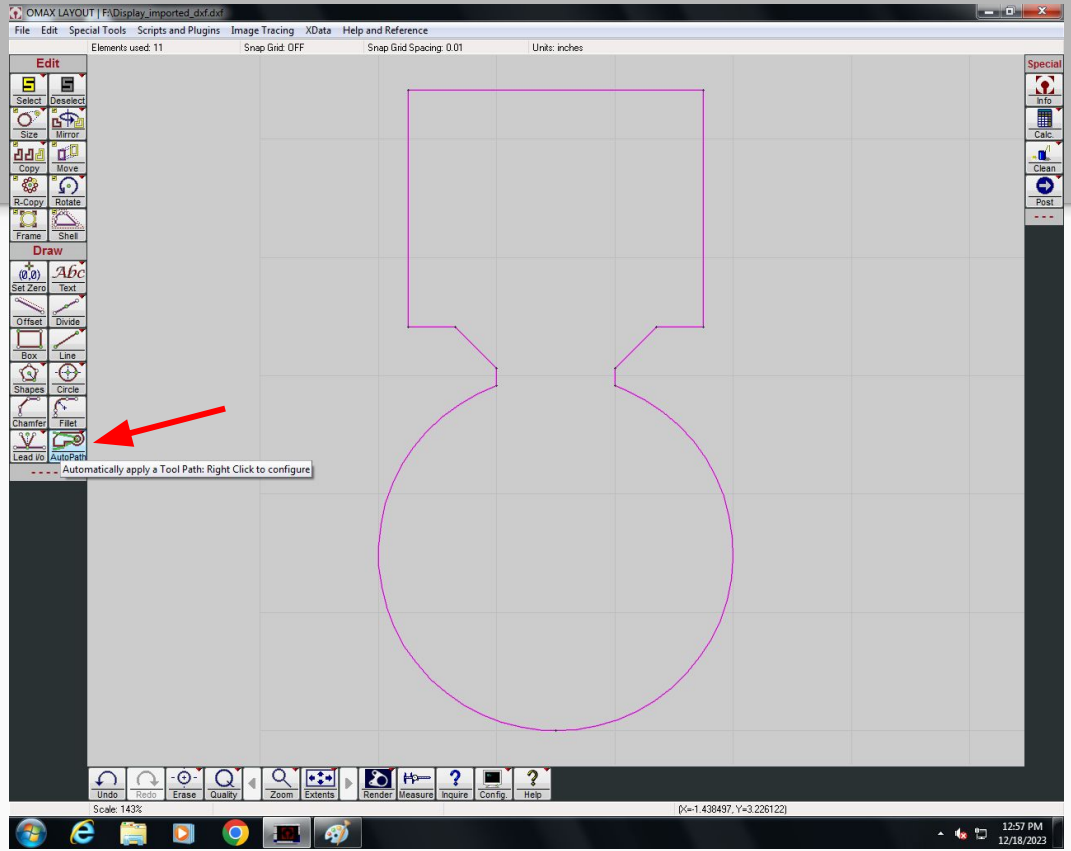
Click “3”


OMAX LAYOUT | F:\Display_imported_dxf.dxf
File Edit Special Tools Scripts and Plugins Image Tracing XData Help and Reference
Elements used: 11
Snap Grid: OFF
Snap Grid Spacing: 0.01
Units: inches
Edit
Select
Deselect
Size
Mirror
Copy
Move
R-Copy
Rotate
Frame
Shell
Draw
Set Zero
Text
Offset
Divide
Box
Line
Shapes
Circle
Chamfer
Fillet
Lead i/o
AutoPath
Special
Info
Calc.
Clean
Post
Available Qualities
Traverse
H.U.Trv
1
2
3
4
5
standard machining
Min Tpr.
Etch
Scribe
H2O Only
Lead i/o
Close
Undo
Redo
Erase
Quality
Zoom
Extents
Render
Measure
Inquire
Config.
Help
Scale: 143%
(X=0.938543, Y=0.702696)
12:57 PM
12/18/2023

IF YOU WANT TO MANUALLY DRAW TOOLPATHS, JUMP TO SLIDE 54.

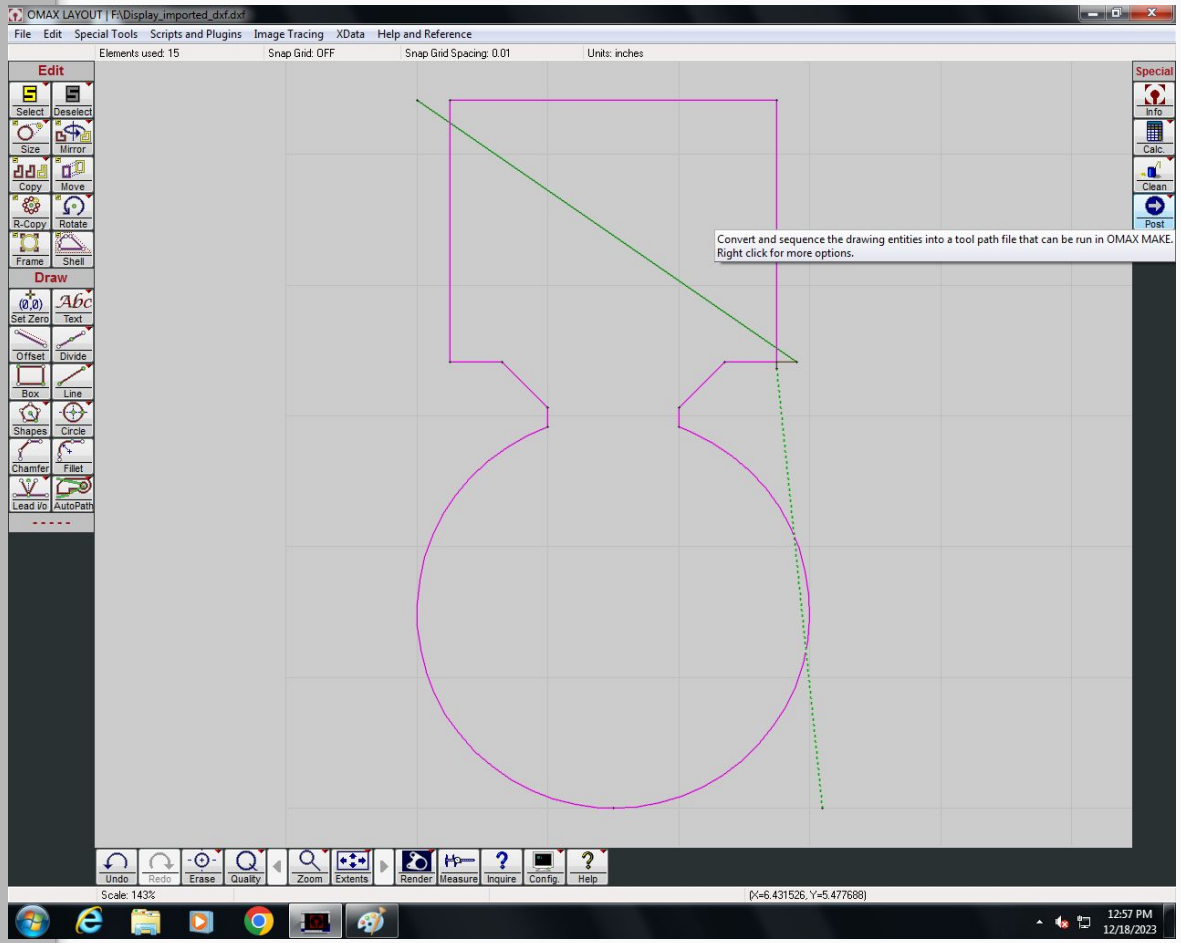
IF YOU DO NOT KNOW WHAT THAT IS OR DO NOT WANT TO, PROCEED TO THE NEXT SLIDE.

Click “AutoPath”

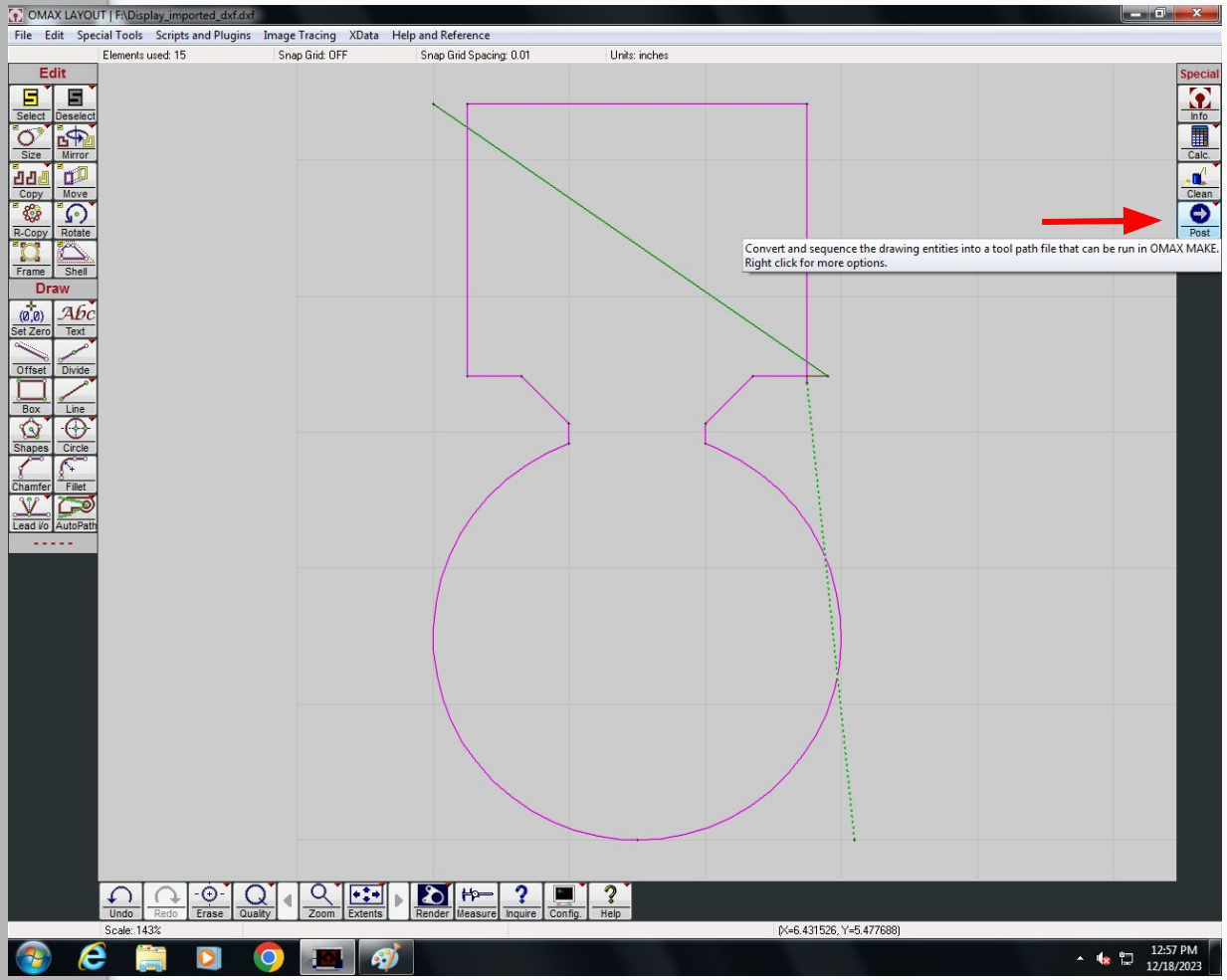


The autopath feature of LAYOUT is a little weird. Sometimes dashed lines may appear. You need to replace the dashed lines with solid ones.

Delete any dashed lines and draw new solid lines in their places using the “Line” tool.



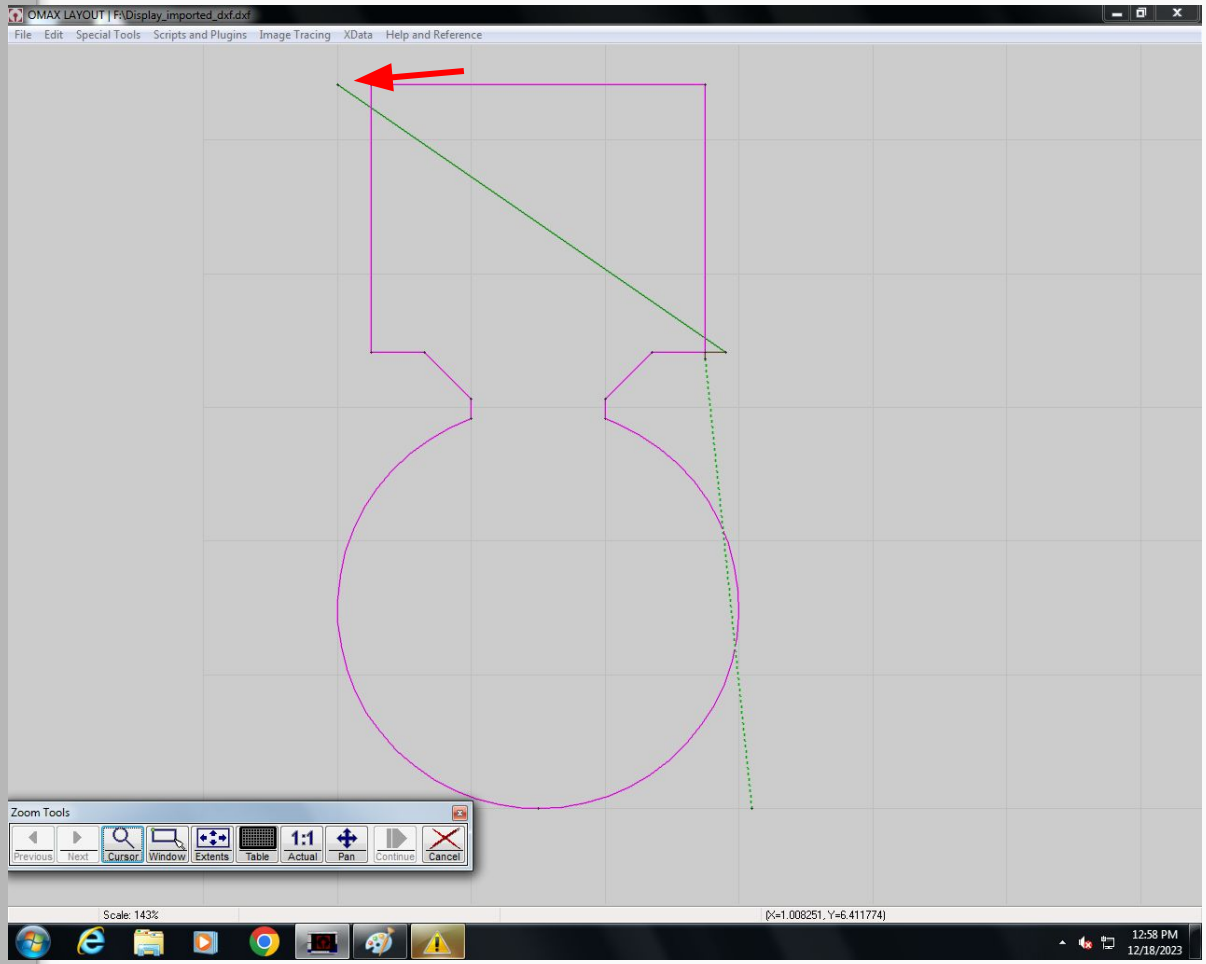
Click “Post”


OMAX LAYOUT | F:\Display_imported_dxf.dxf
File Edit Special Tools Scripts and Plugins Image Tracing XData Help and Reference
Elements used: 15
Snap Grid: OFF
Snap Grid Spacing: 0.01
Units: inches
Edit
Select
Deselect
Size
Mirror
Copy
Move
R-Copy
Rotate
Frame
Shell
Draw
Set Zero
Text
Offset
Divide
Box
Line
Shapes
Circle
Chamfer
Fillet
Lead i/o
AutoPath
Special
Info
Calc.
Clean
Post
Convert and sequence the drawing entities into a tool path file that can be run in OMAX MAKE.
Right click for more options.
Undo
Redo
Erase
Quality
Zoom
Extents
Render
Measure
Inquire
Config.
Help
Scale: 143%
(X=6.431526, Y=5.477688)
12:57 PM
12/18/2023

Click on the top-most left-most point.

It should be an unconnected end of a line.

This will be the start point of your toolpath



Review your toolpath.

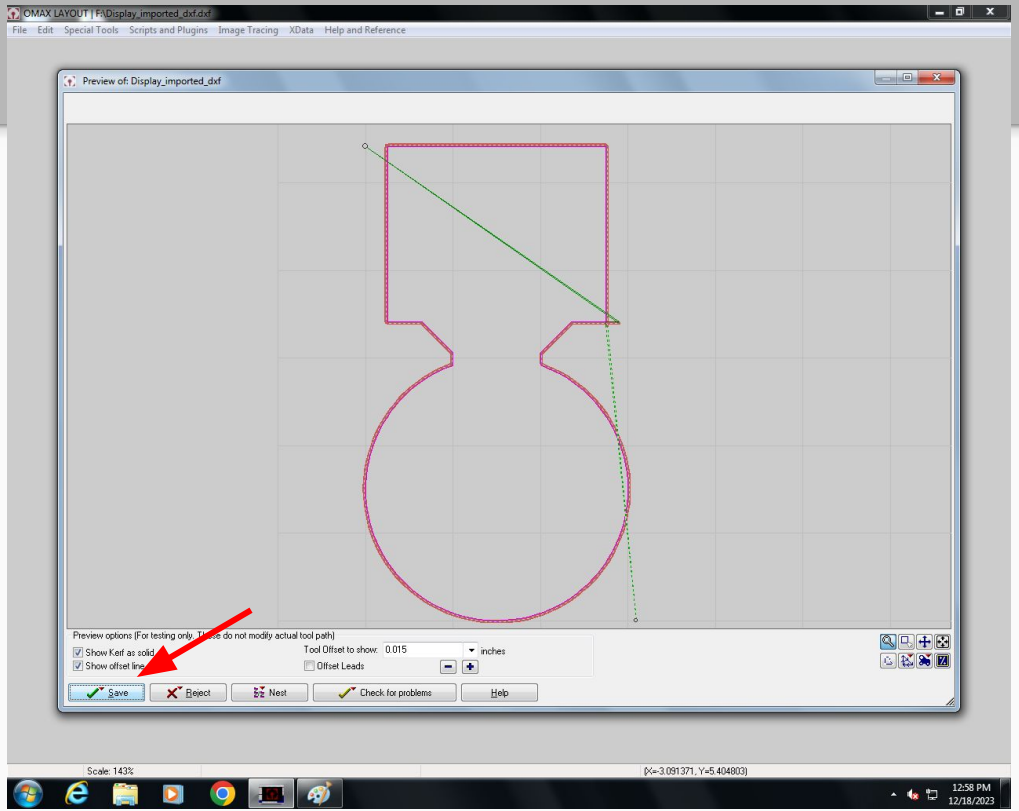
Make sure everything looks good.

Make sure interior cuts are on the inside and exterior cuts are on the outside.

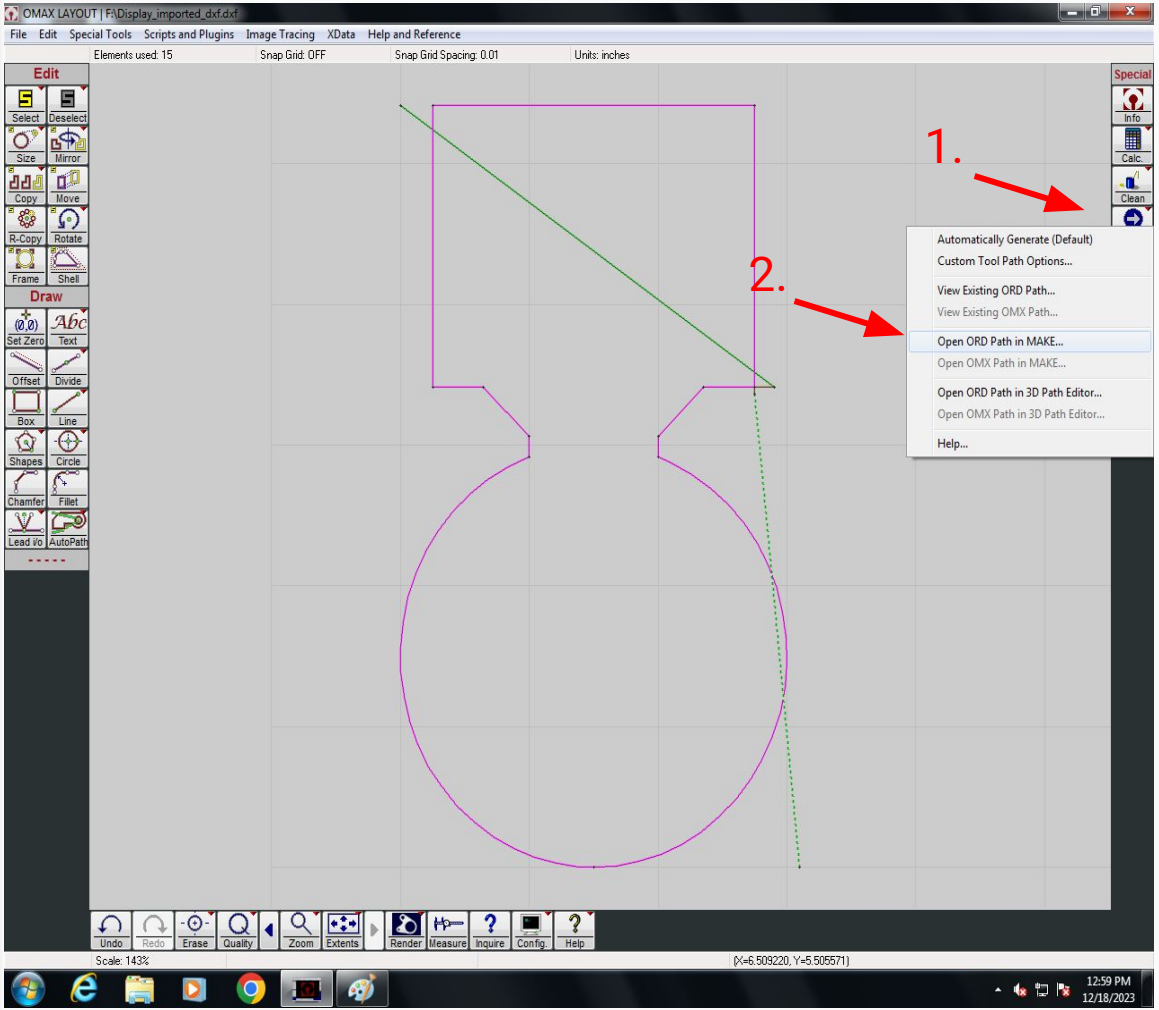
THE PINK LINE IS YOUR IMPORTED GEOMETRY.

THE RED LINE IS THE AREA THAT THE MACHINE WILL CUT

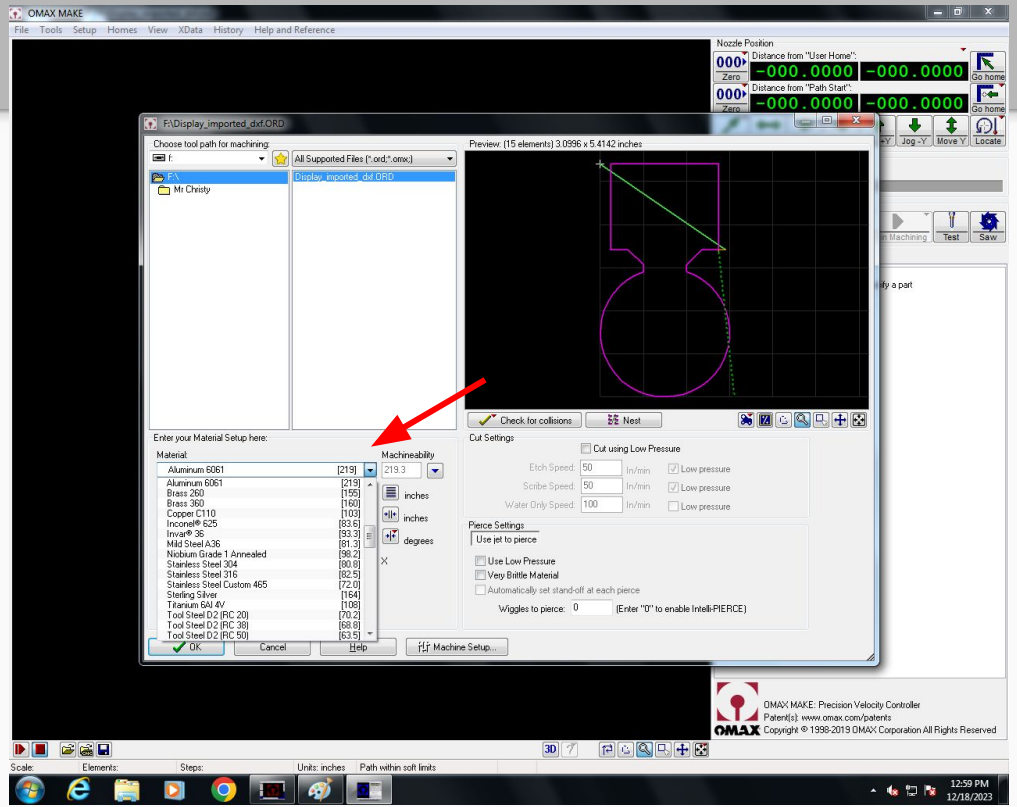
Once you are satisfied with your toolpath, click “Save”



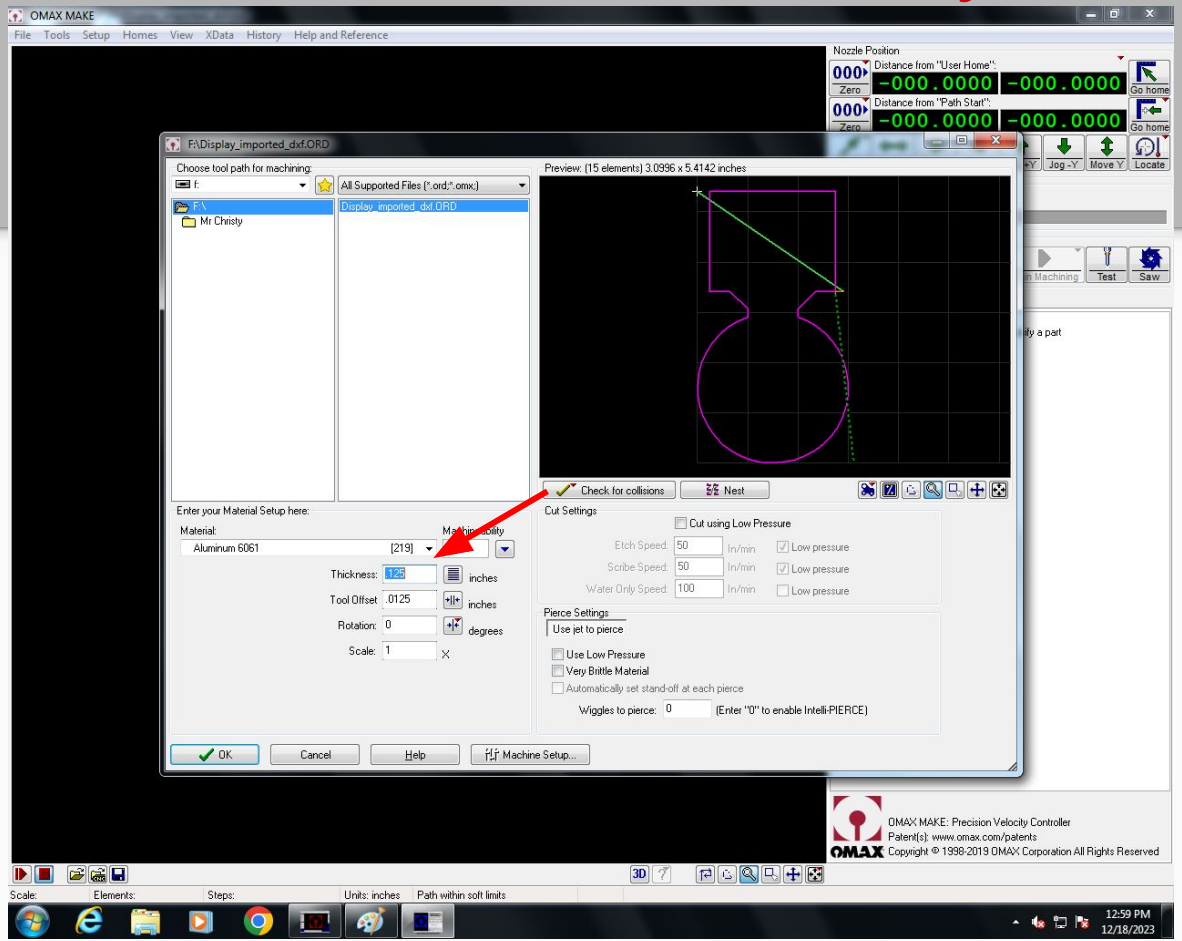
1. Right-click “Post”
2. Click “Open ORD Path in MAKE”



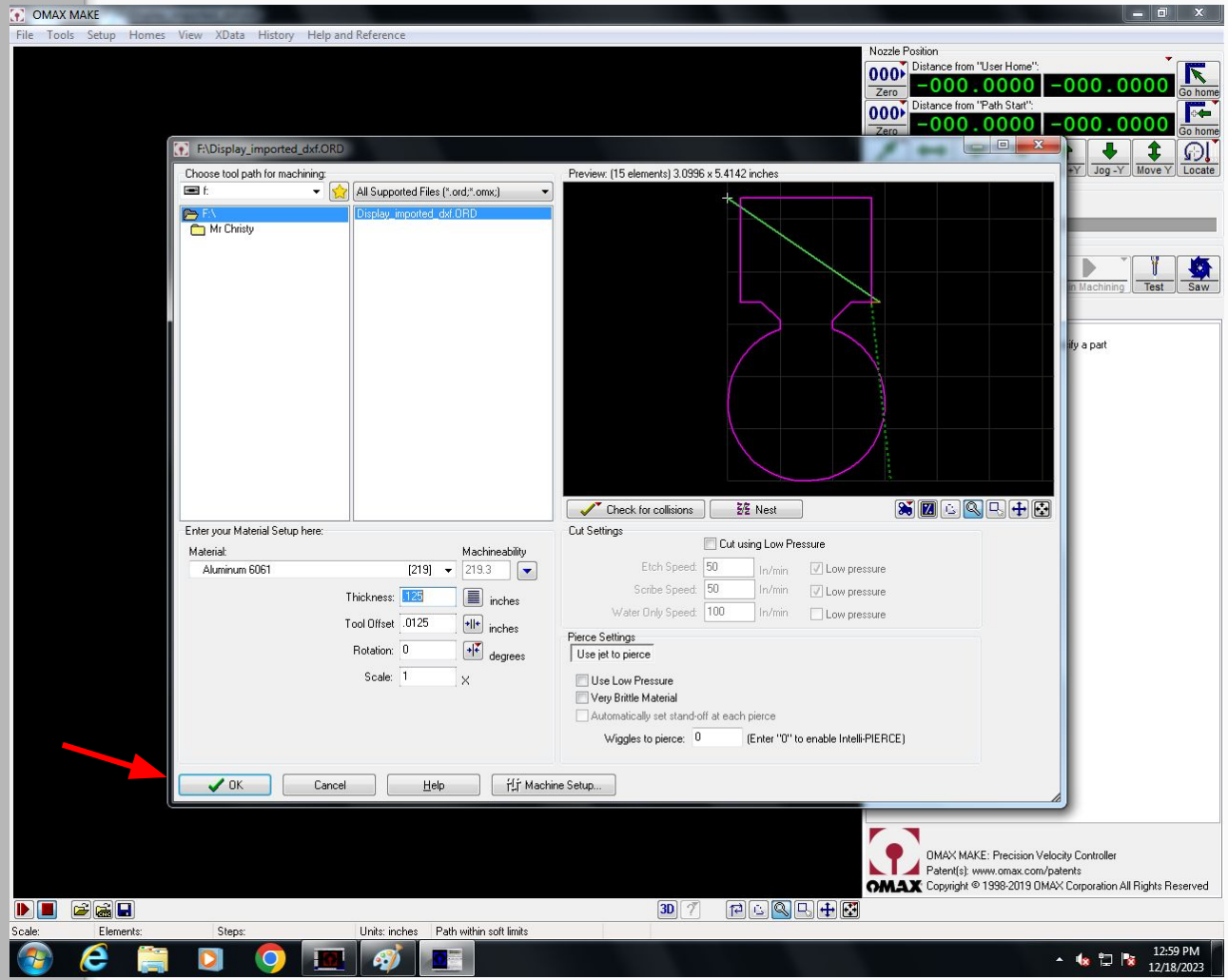
In the “Material” dropdown menu, select the material type you’re cutting out of



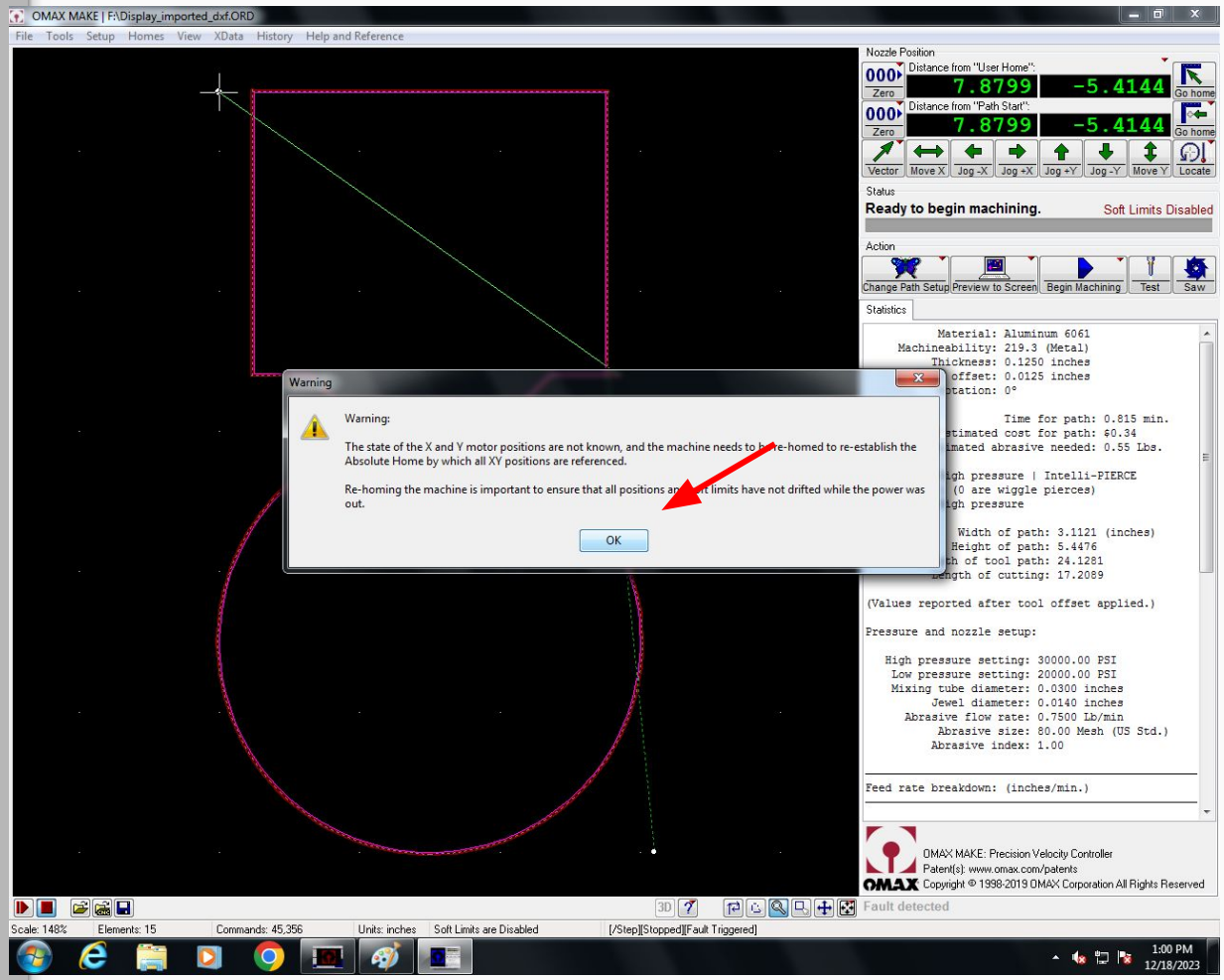
Input the thickness of the material you are cutting



Click “OK”


OMAX MAKE
File Tools Setup Homes View XData History Help and Reference
Nozzle Position
Distance from "User Home":
-000.0000 -000.0000
Distance from "Path Start":
-000.0000 -000.0000
Zero
Go home
Jog -Y
Move Y
Locate
Test
Saw
F:\Display_imported_dxf.ORD
Choose tool path for machining:
All Supported Files (*.ord;*.omx;)
F:\
Mr Christy
Display_imported_dxf.ORD
Preview: (15 elements) 3.0996 x 5.4142 inches
Check for collisions
Nest
Enter your Material Setup here:
Material:
Machineability
Aluminum 6061 [219]
219.3
Thickness: .125 inches
Tool Offset .0125 inches
Rotation: 0 degrees
Scale: 1
Cut Settings
Cut using Low Pressure
Etch Speed: 50 In/min Low pressure
Scribe Speed: 50 In/min Low pressure
Water Only Speed: 100 In/min Low pressure
Pierce Settings
Use jet to pierce
Use Low Pressure
Very Brittle Material
Automatically set stand-off at each pierce
Wiggles to pierce: 0 (Enter "0" to enable Intelli-PIERCE)
OK
Cancel
Help
Machine Setup...
OMAX MAKE: Precision Velocity Controller
Patent(s): www.omax.com/patents
Copyright © 1998-2019 OMAX Corporation All Rights Reserved
Scale:
Elements:
Steps:
Units: inches
Path within soft limits
12:59 PM
12/18/2023

Click “OK”


OMAX MAKE | F:\Display_imported_dxf.ORD
File Tools Setup Homes View XData History Help and Reference
Nozzle Position
Distance from "User Home":
7.8799 -5.4144
Distance from "Path Start":
7.8799 -5.4144
Zero Go home Vector Move X Jog -X Jog +X Jog +Y Jog -Y Move Y Locate
Status
Ready to begin machining.
Soft Limits Disabled
Action
Change Path Setup Preview to Screen Begin Machining Test Saw
Statistics
Material: Aluminum 6061
Machineability: 219.3 (Metal)
Thickness: 0.1250 inches
offset: 0.0125 inches
otation: 0°
Time for path: 0.815 min.
stimated cost for path: $0.34
imated abrasive needed: 0.55 Lbs.
igh pressure | Intelli-PIERCE
(0 are wiggle pierces)
igh pressure
Width of path: 3.1121 (inches)
Height of path: 5.4476
h of tool path: 24.1281
ength of cutting: 17.2089
(Values reported after tool offset applied.)
Pressure and nozzle setup:
High pressure setting: 30000.00 PSI
Low pressure setting: 20000.00 PSI
Mixing tube diameter: 0.0300 inches
Jewel diameter: 0.0140 inches
Abrasive flow rate: 0.7500 Lb/min
Abrasive size: 80.00 Mesh (US Std.)
Abrasive index: 1.00
Feed rate breakdown: (inches/min.)
Warning
Warning:
The state of the X and Y motor positions are not known, and the machine needs to be re-homed to re-establish the Absolute Home by which all XY positions are referenced.
Re-homing the machine is important to ensure that all positions and soft limits have not drifted while the power was out.
OK
OMAX MAKE: Precision Velocity Controller
Patent(s): www.omax.com/patents
Copyright © 1998-2019 OMAX Corporation All Rights Reserved
Fault detected
Scale: 148% Elements: 15 Commands: 45,356 Units: inches Soft Limits are Disabled [/Step][Stopped][Fault Triggered]
1:00 PM
12/18/2023

IF THE CUTTING HEAD IS RAISED ABOVE ANY WEIGHTS OR OTHER OBJECTS IN THE CUTTING BED PROCEED TO THE NEXT SLIDE.

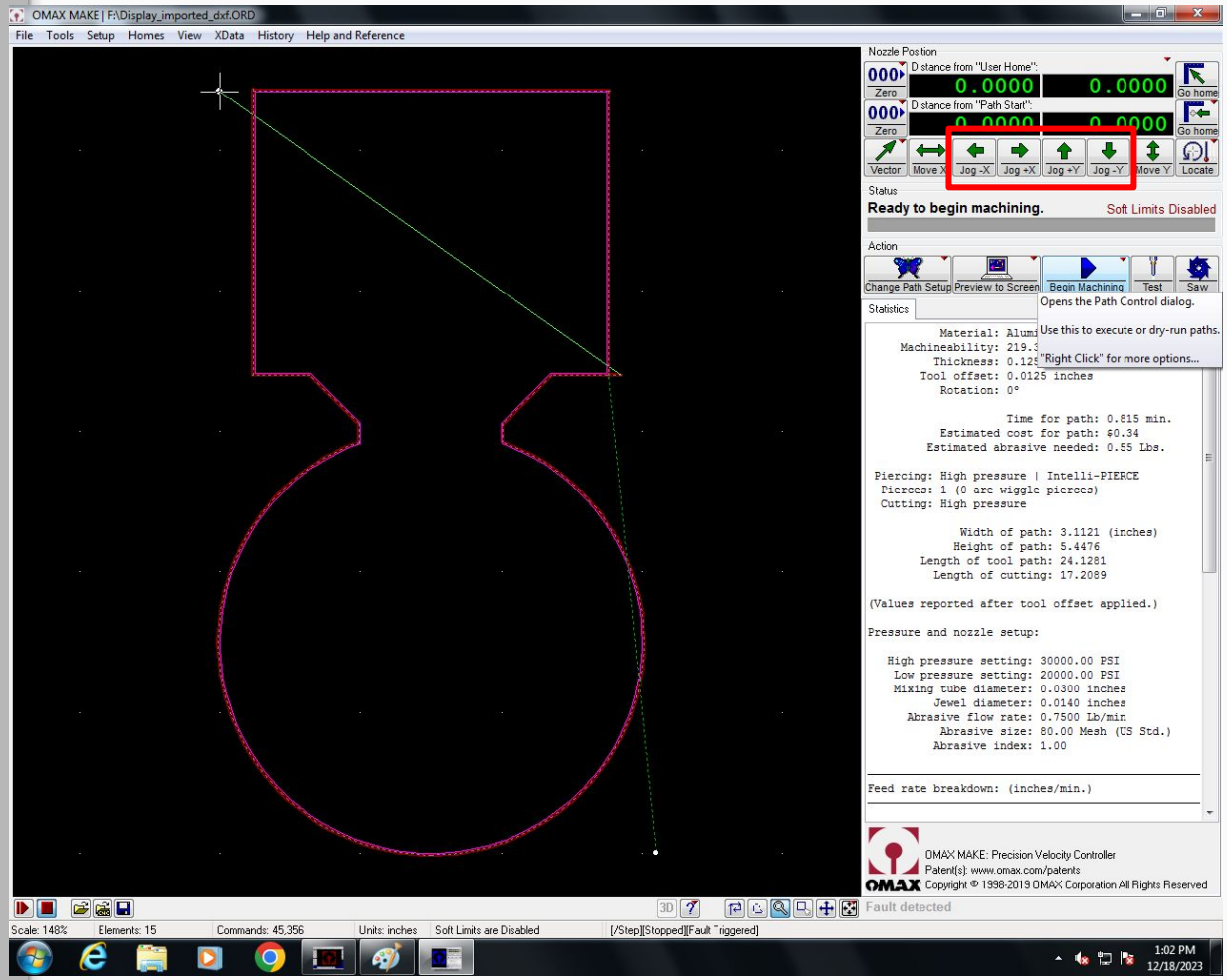
IF THE TOOL IS NOT, JUMP TO SLIDE 59.

IF THE MATERIAL YOU INTEND TO CUT FROM IS ALREADY SECURED IN THE MACHINE, PROCEED TO THE NEXT SLIDE.

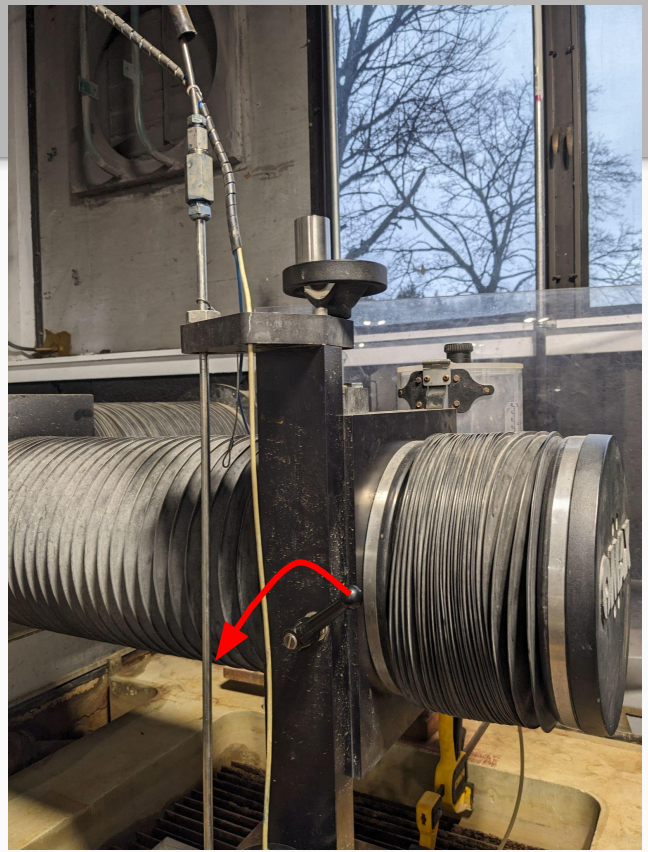
IF YOUR MATERIAL IS NOT ALREADY SECURED, JUMP TO Slide 62.

Flip the yellow splash-guard up (if it isn’t already)

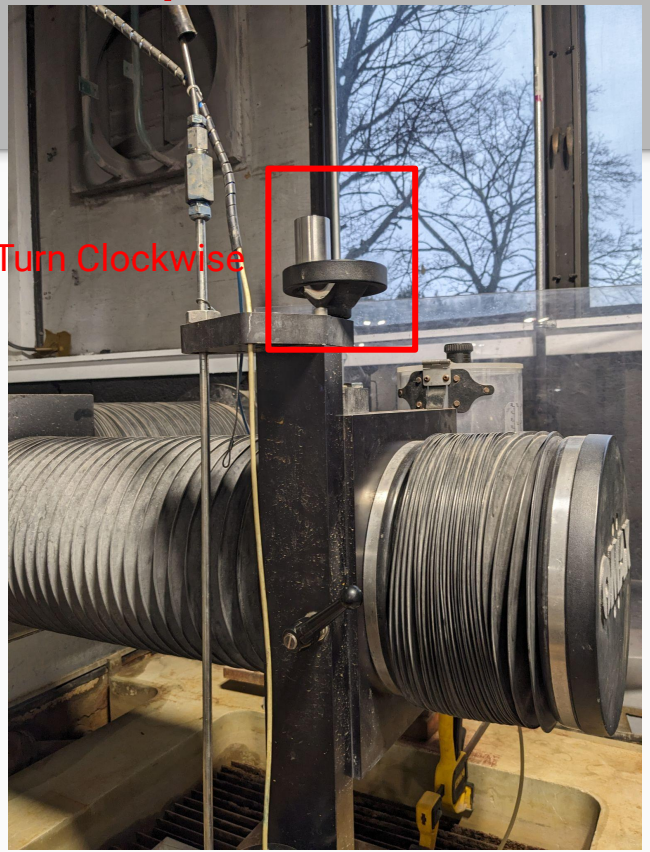
Jog the machine over the area of material you will cut from



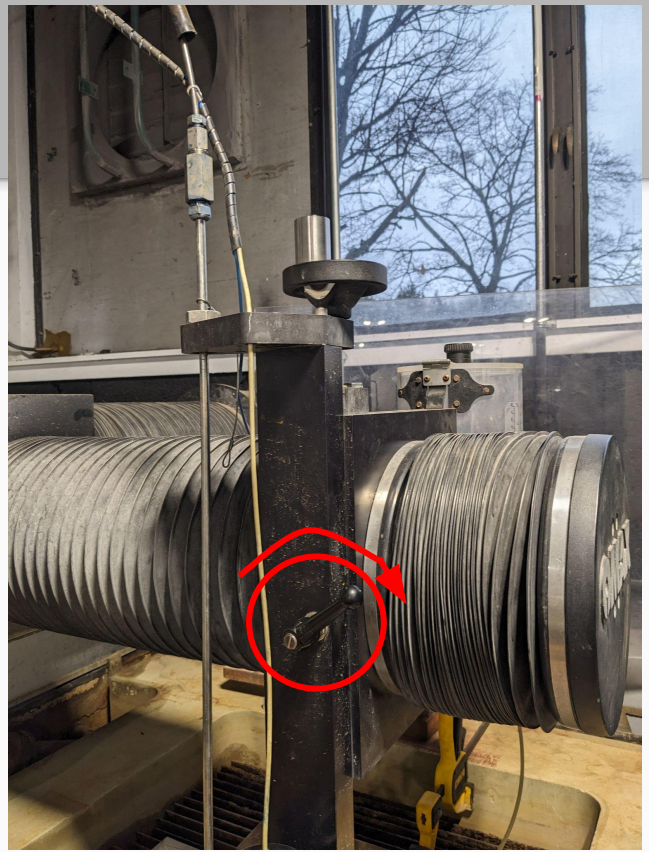
Loosen the cutting head (if isn’t already)



Lower the cutting head until it just barely touches the piece of metal, it should not pin it down.

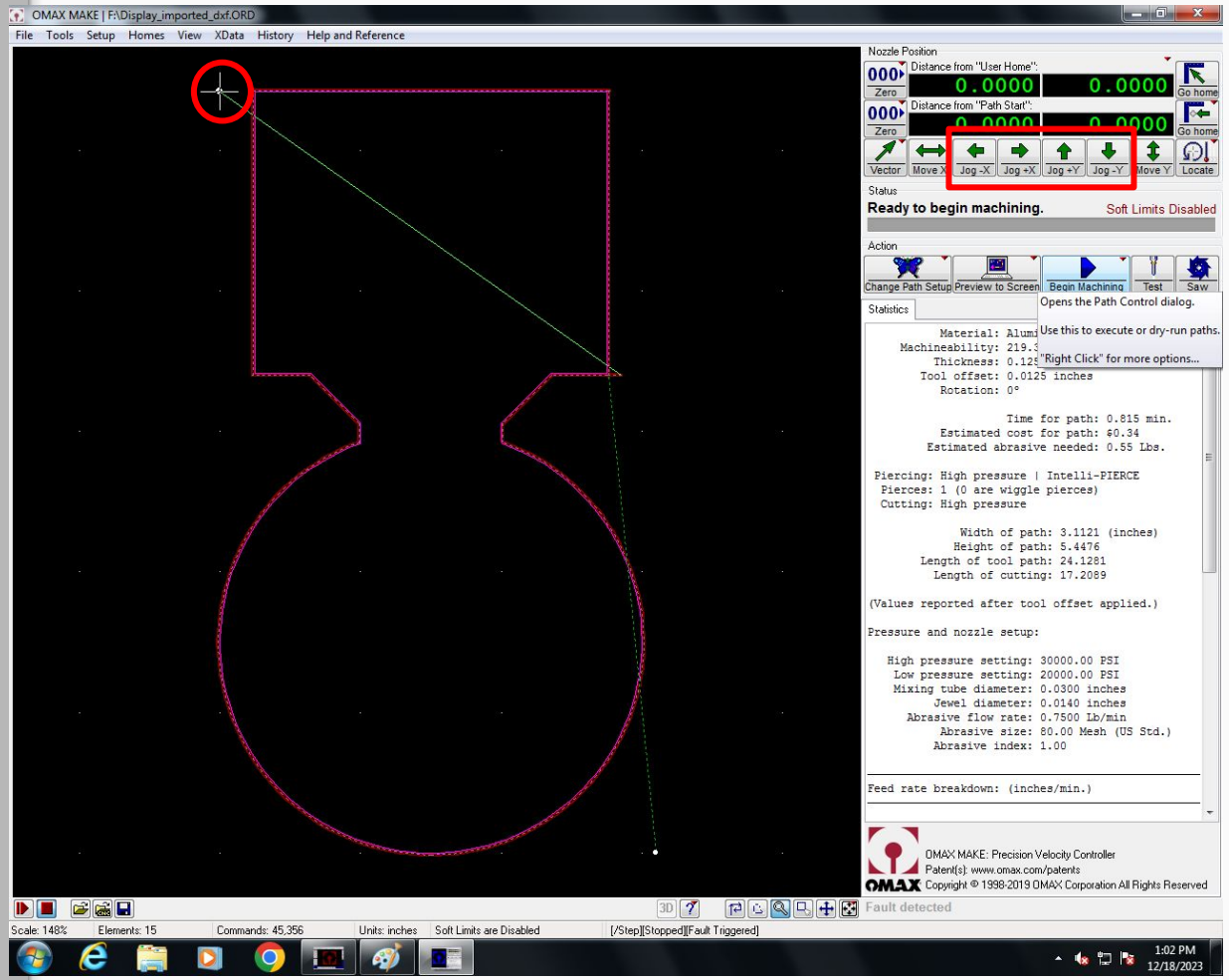


Tighten the cutting head and remove the piece of metal

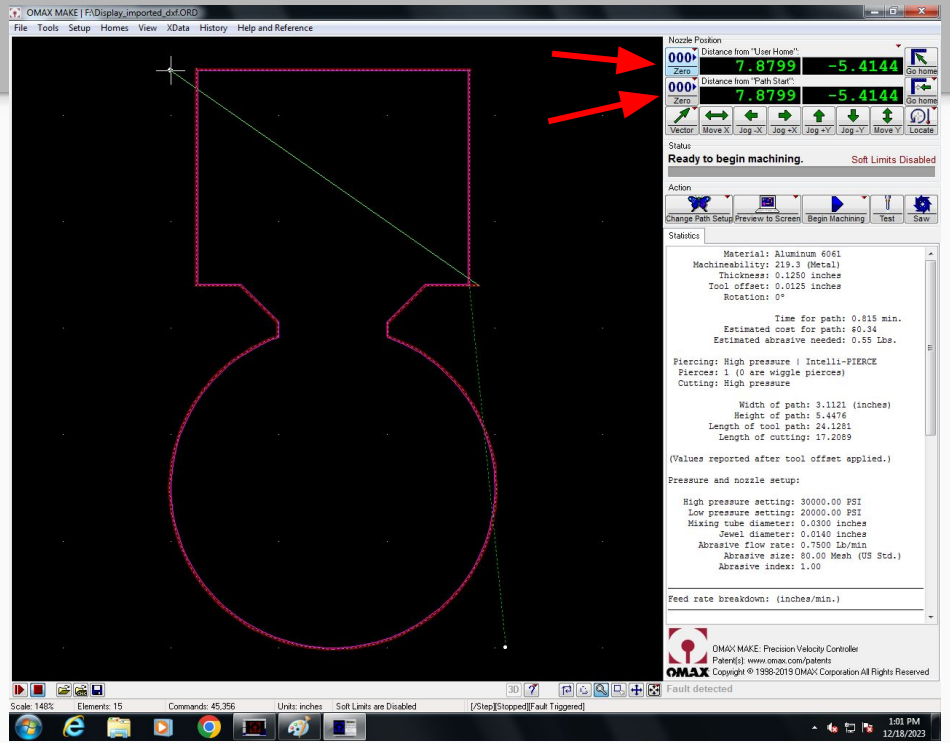


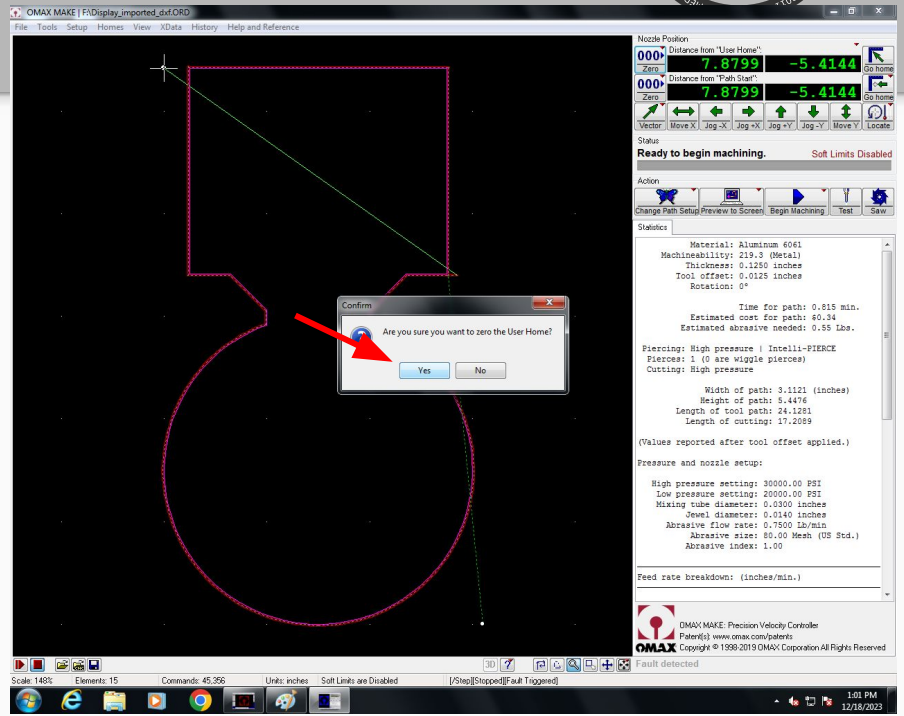
Jog the machine to position where your part will be cut.

The cutting head's position is where the top-left point on the unconnected line will be.

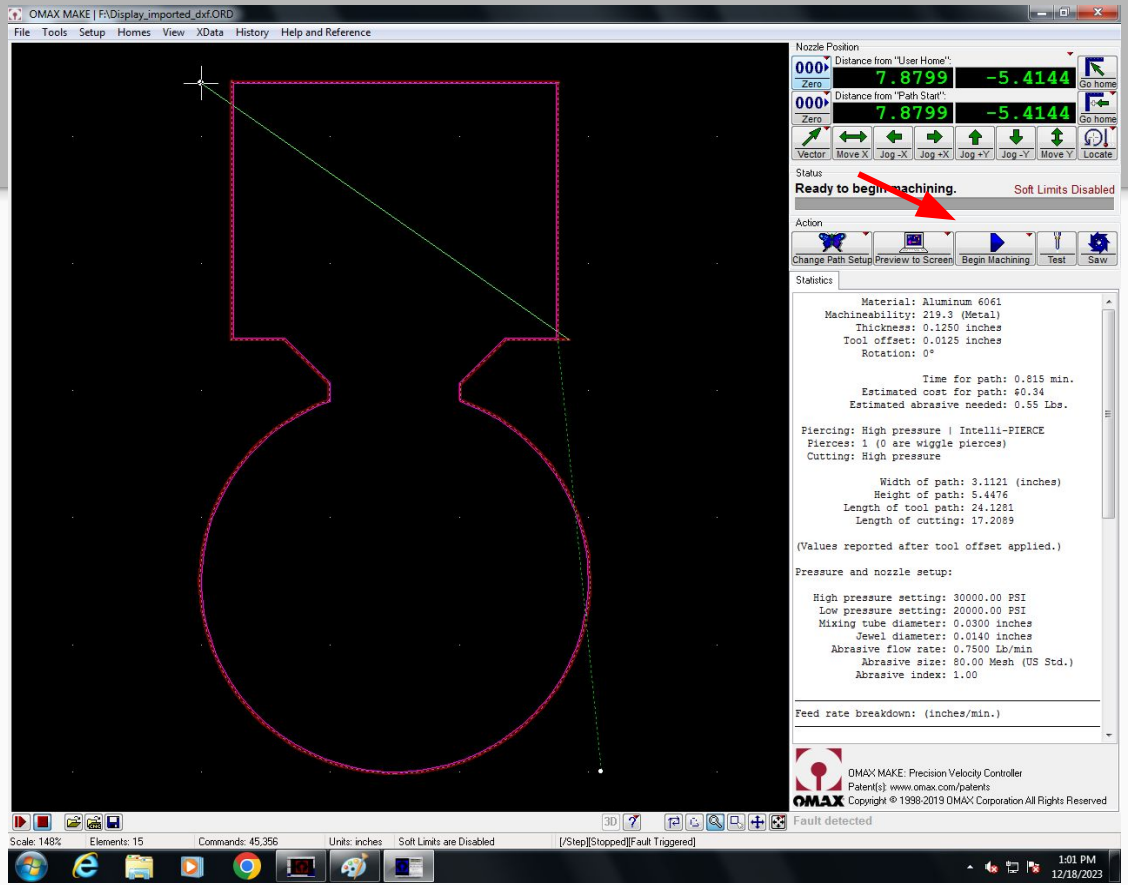


Click BOTH “Zero” buttons, and both “Yes” buttons



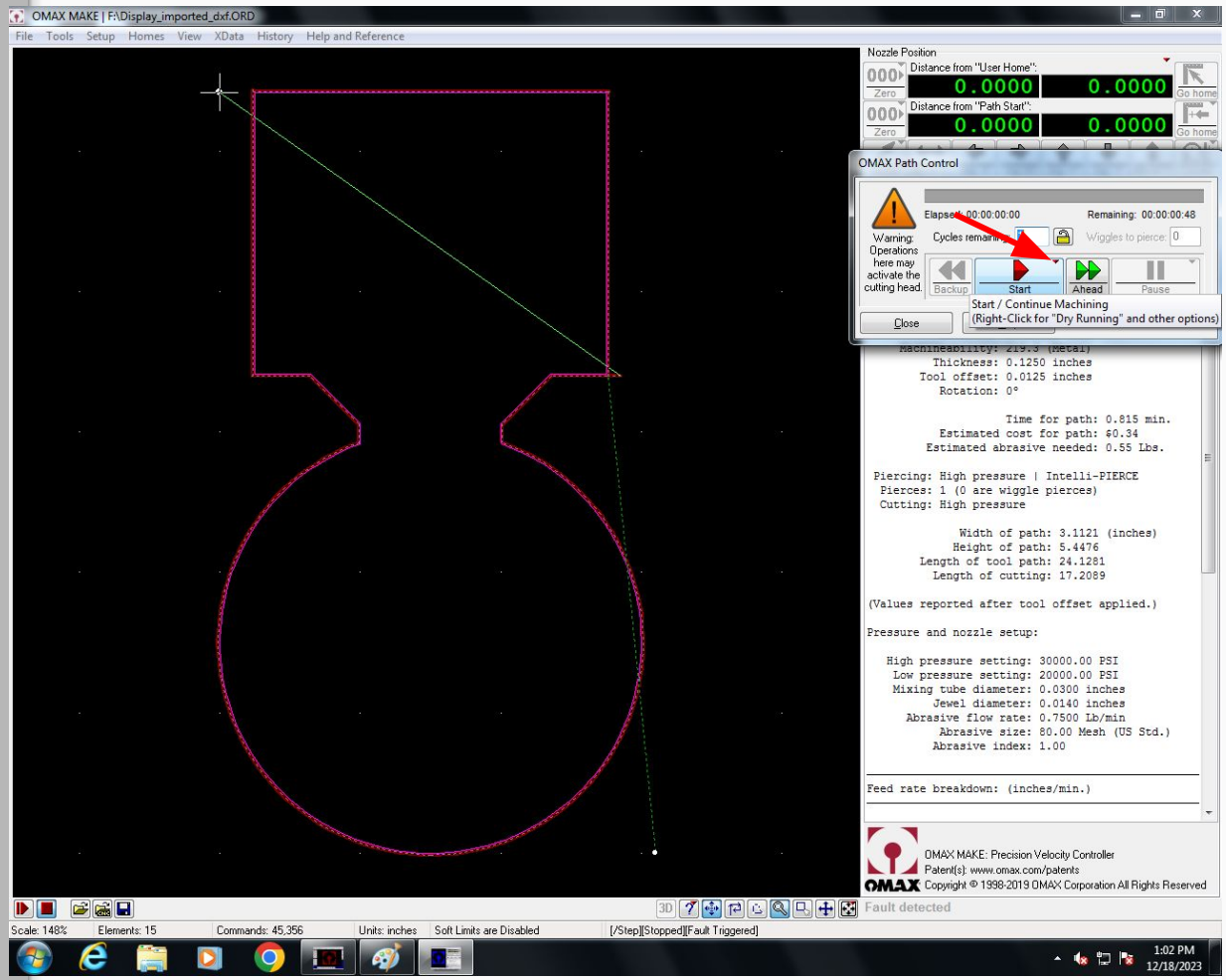


Click “Begin Machining” DO NOT CLICK “START”

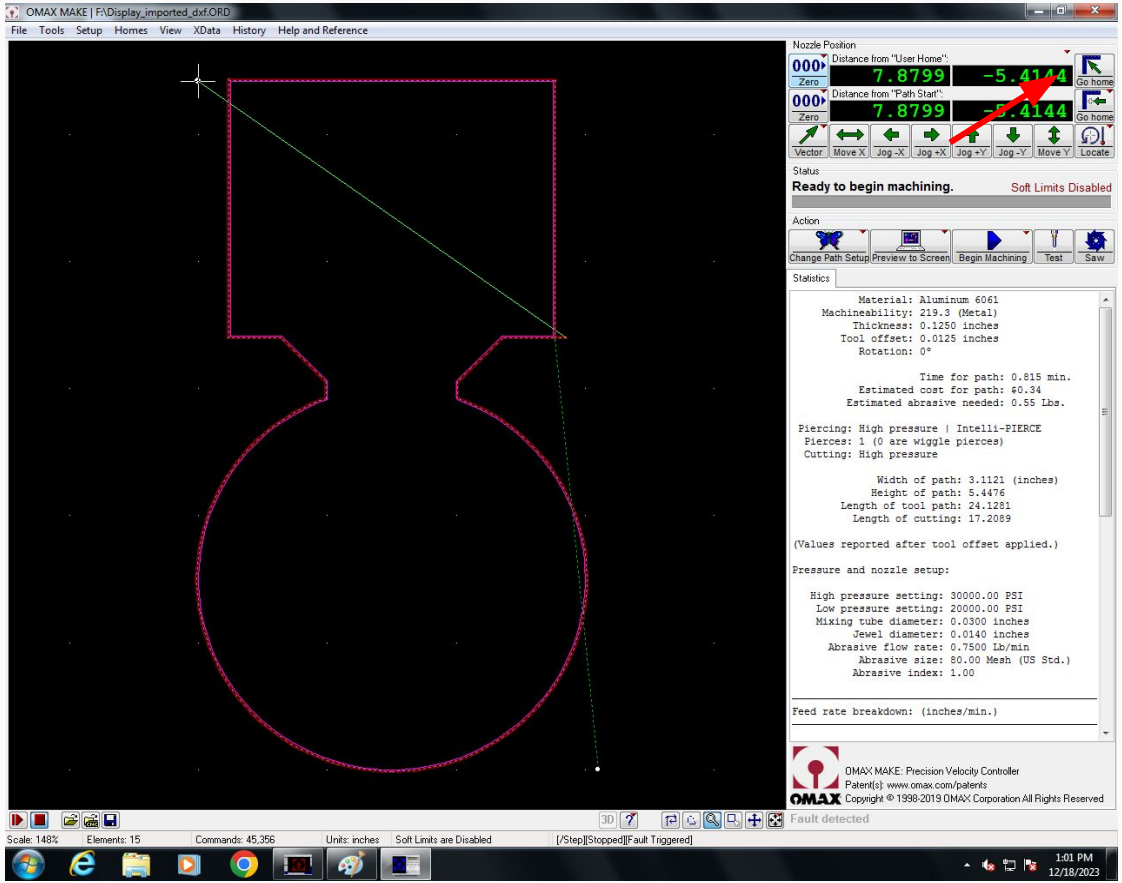


Click and hold “Ahead”.

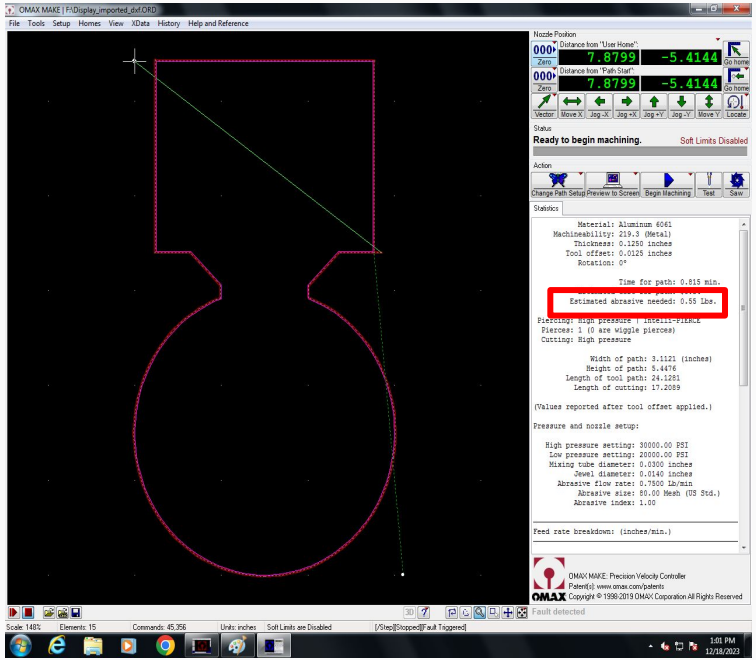
This will jog the machine along the toolpath it will cut. Make sure the cutter will go where you want to it and won’t crash.



1. Click “Close”
2. Click “Go home”
3. Click “OK”



Check how much abrasive the cut will consume. See if the machine has enough stored in it. Make sure there is *plenty* extra.



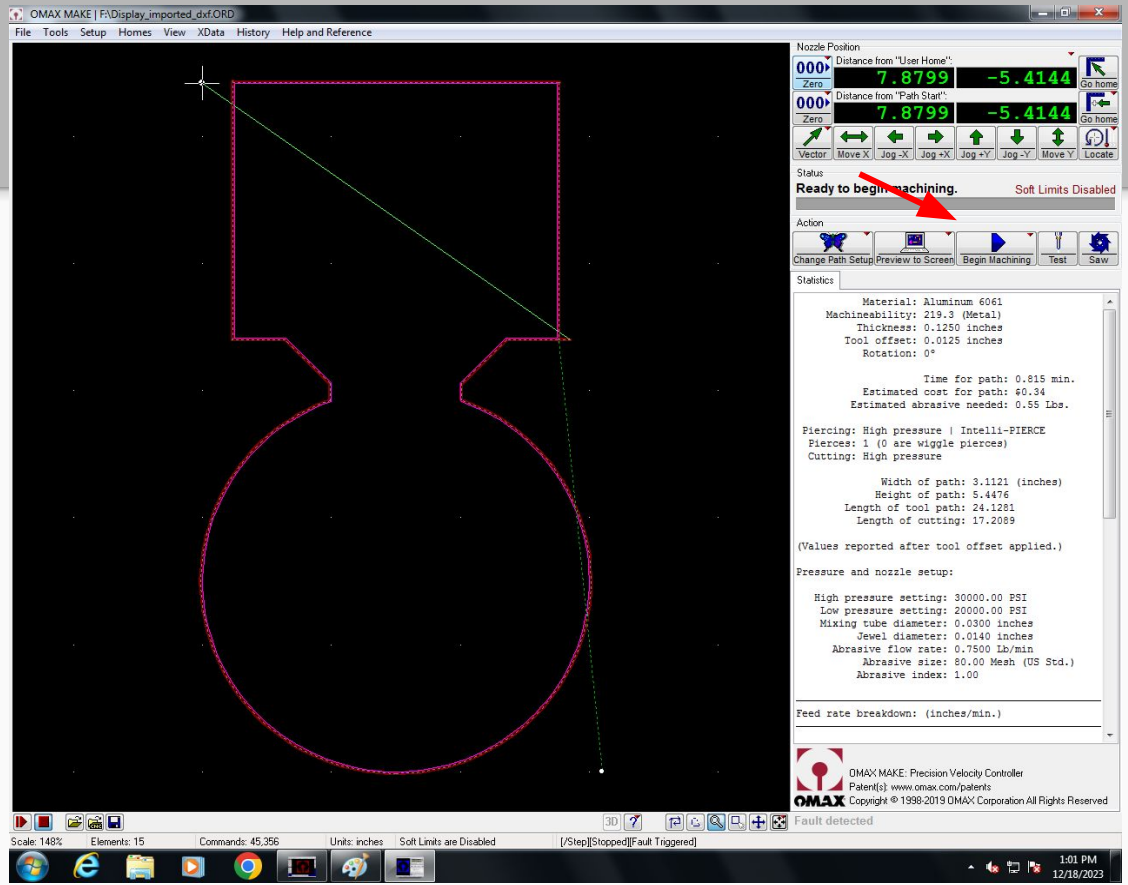
If there is not enough abrasive, add more using the cup.

Flip the yellow splash guard down

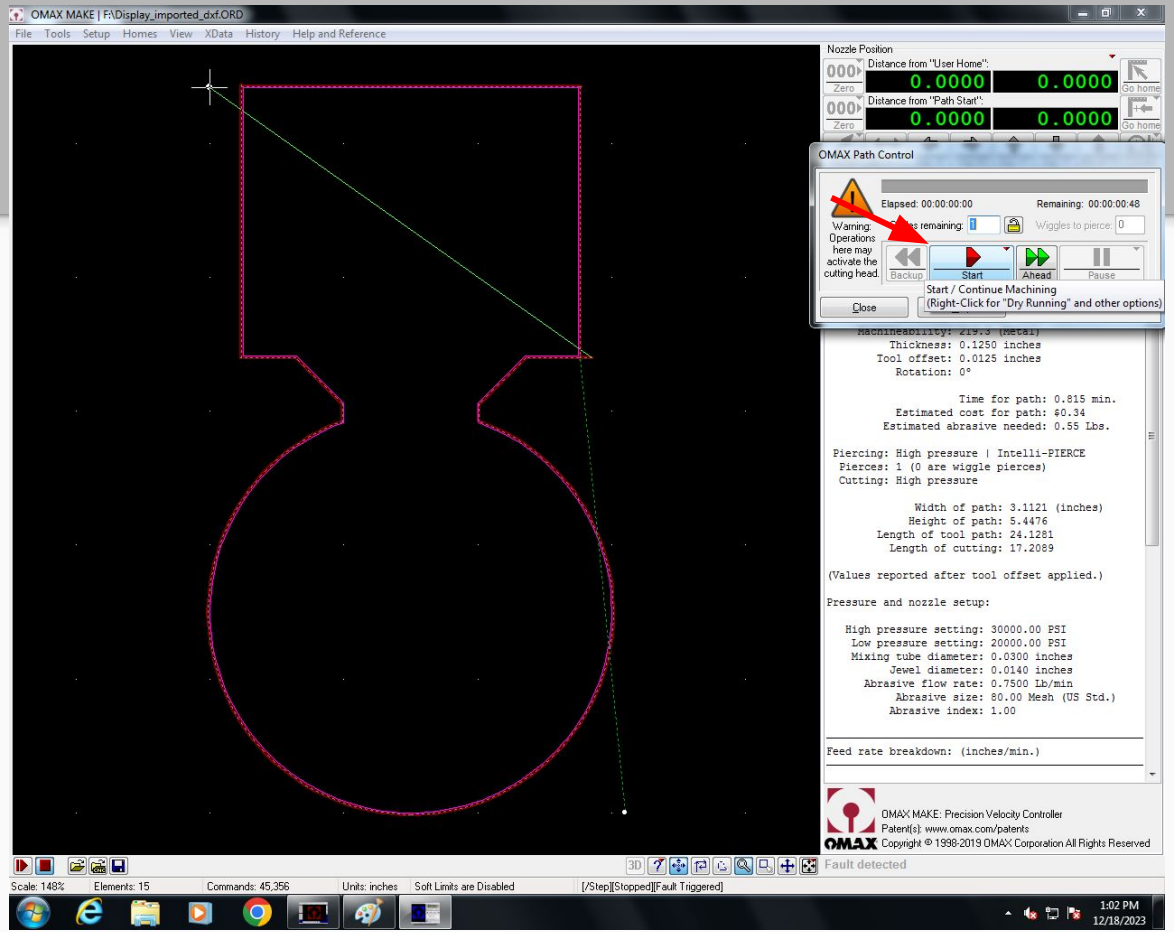
Use the “Water Level” switch to raise the water until it is about halfway up the splash guard.

IF SOMETHING GOES WRONG DURING THE CUT, IMMEDIATELY HIT THE EMERGENCY STOP BUTTON!

Click “Begin Machining”



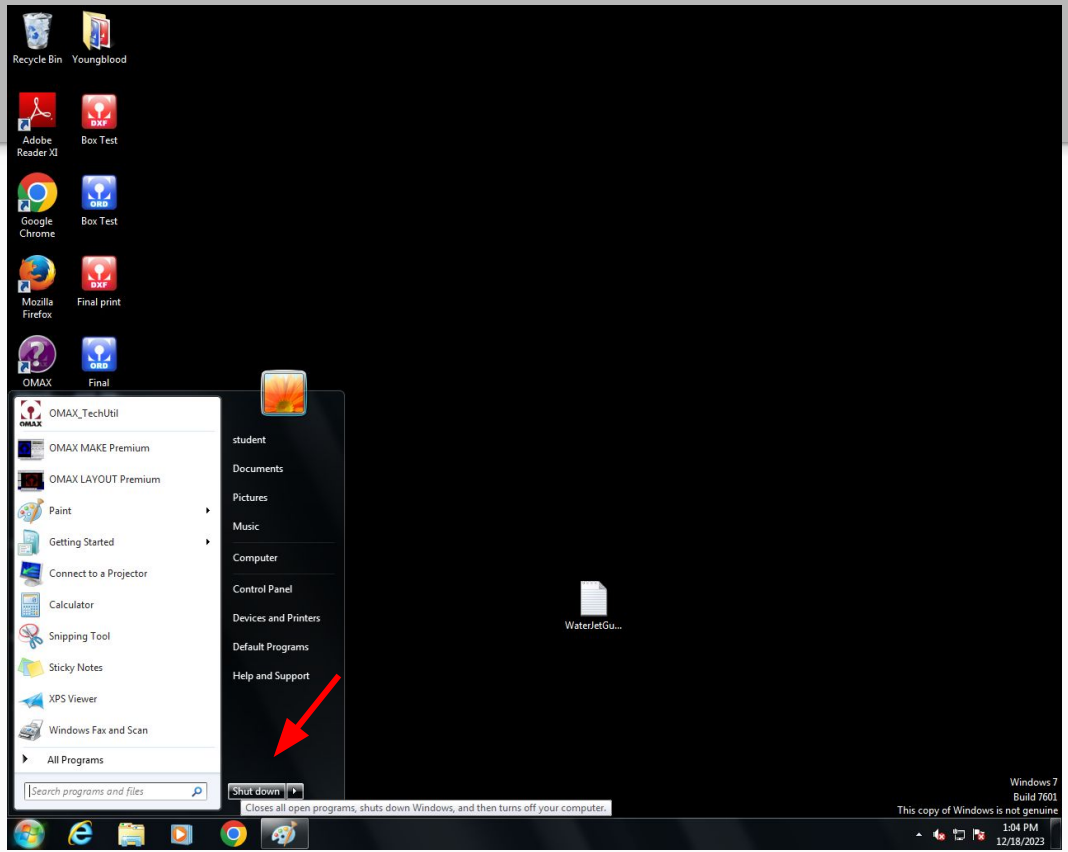
Click “Start”


OMAX MAKE | F:\Display_imported_dxf.ORD
File Tools Setup Homes View XData History Help and Reference
Nozzle Position
Distance from "User Home":
0.0000
0.0000
Distance from "Path Start":
0.0000
0.0000
OMAX Path Control
Elapsed: 00:00:00:00
Remaining: 00:00:00:48
Warning: Operations here may activate the cutting head.
Backup
Start
Ahead
Pause
Start / Continue Machining
(Right-Click for "Dry Running" and other options)
Close
Machineability: 219.3 (Metal)
Thickness: 0.1250 inches
Tool offset: 0.0125 inches
Rotation: 0°
Time for path: 0.815 min.
Estimated cost for path: $0.34
Estimated abrasive needed: 0.55 Lbs.
Piercing: High pressure | Intelli-PIERCE
Pierces: 1 (0 are wiggle pierces)
Cutting: High pressure
Width of path: 3.1121 (inches)
Height of path: 5.4476
Length of tool path: 24.1281
Length of cutting: 17.2089
(Values reported after tool offset applied.)
Pressure and nozzle setup:
High pressure setting: 30000.00 PSI
Low pressure setting: 20000.00 PSI
Mixing tube diameter: 0.0300 inches
Jewel diameter: 0.0140 inches
Abrasive flow rate: 0.7500 Lb/min
Abrasive size: 80.00 Mesh (US Std.)
Abrasive index: 1.00
Feed rate breakdown: (inches/min.)
OMAX MAKE: Precision Velocity Controller
Patent(s): www.omax.com/patents
Copyright © 1998-2019 OMAX Corporation All Rights Reserved
Fault detected
Scale: 148%
Elements: 15
Commands: 45,356
Units: inches
Soft Limits are Disabled
[/Step][Stopped][Fault Triggered]
1:02 PM
12/18/2023

Use the “Water Level” switch to lower the water below your material

Turn off the air and water

In the Start menu, click “Shutdown”
Wait for the computer to fully shutdown to continue

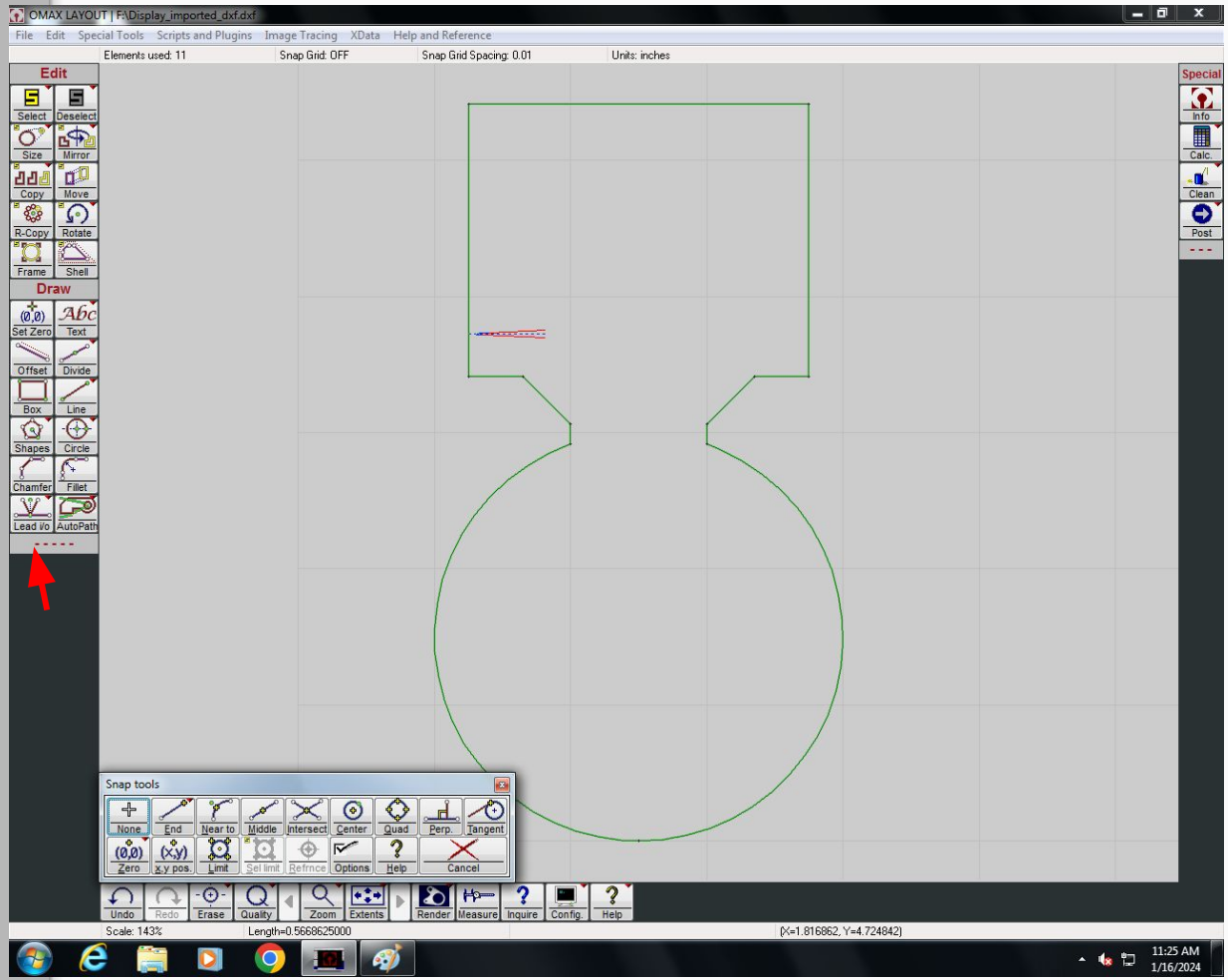


Rotate both power switches

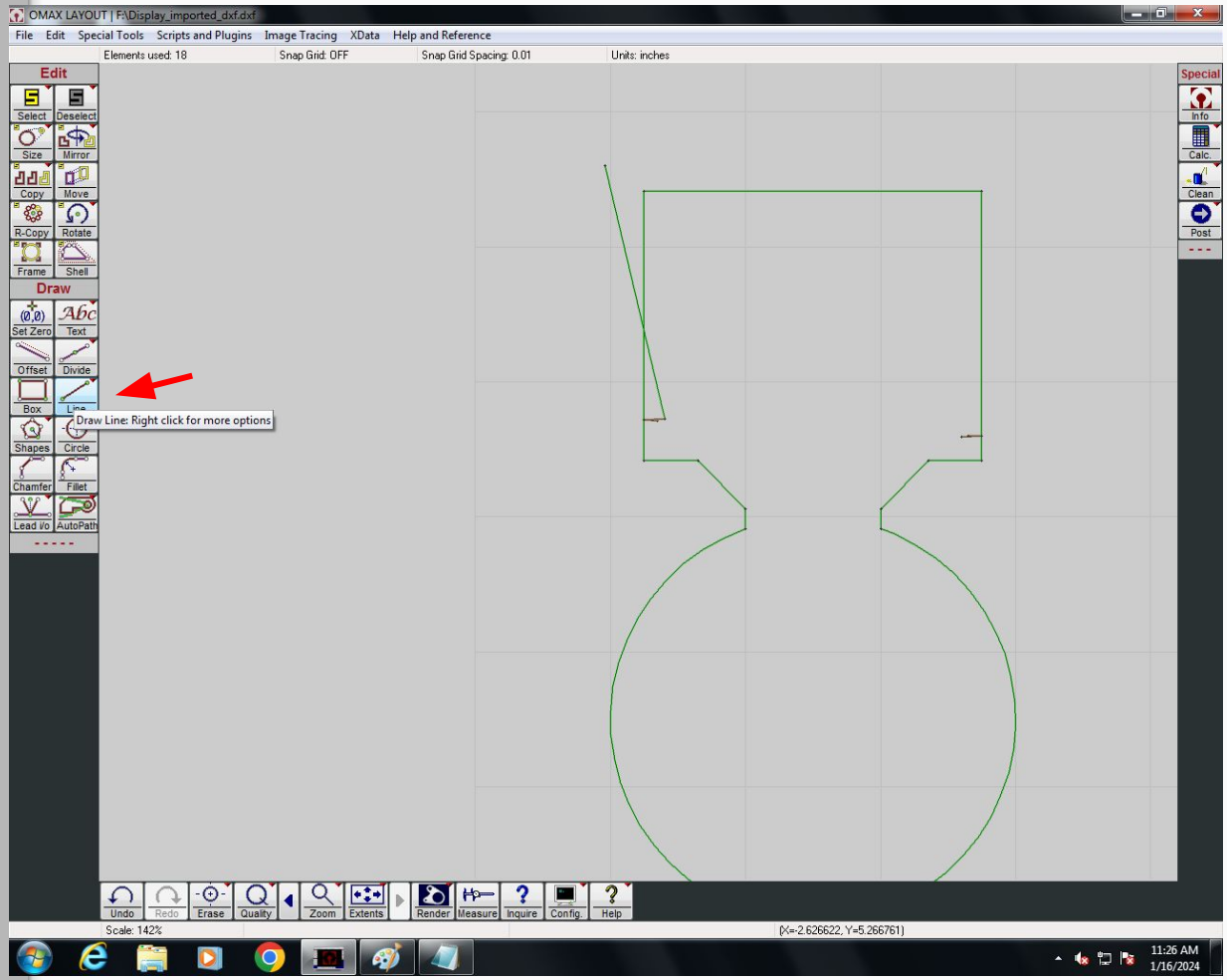
Turn off power

Congratulations! You have successfully used the OMAX 2626 JET MACHINING CENTER.

Select the “Lead In” tool and draw lead ins for all of your cuts. TAKE NOTE OF WHICH CUTS SHOULD BE ON THE INSIDE AND OUTSIDE

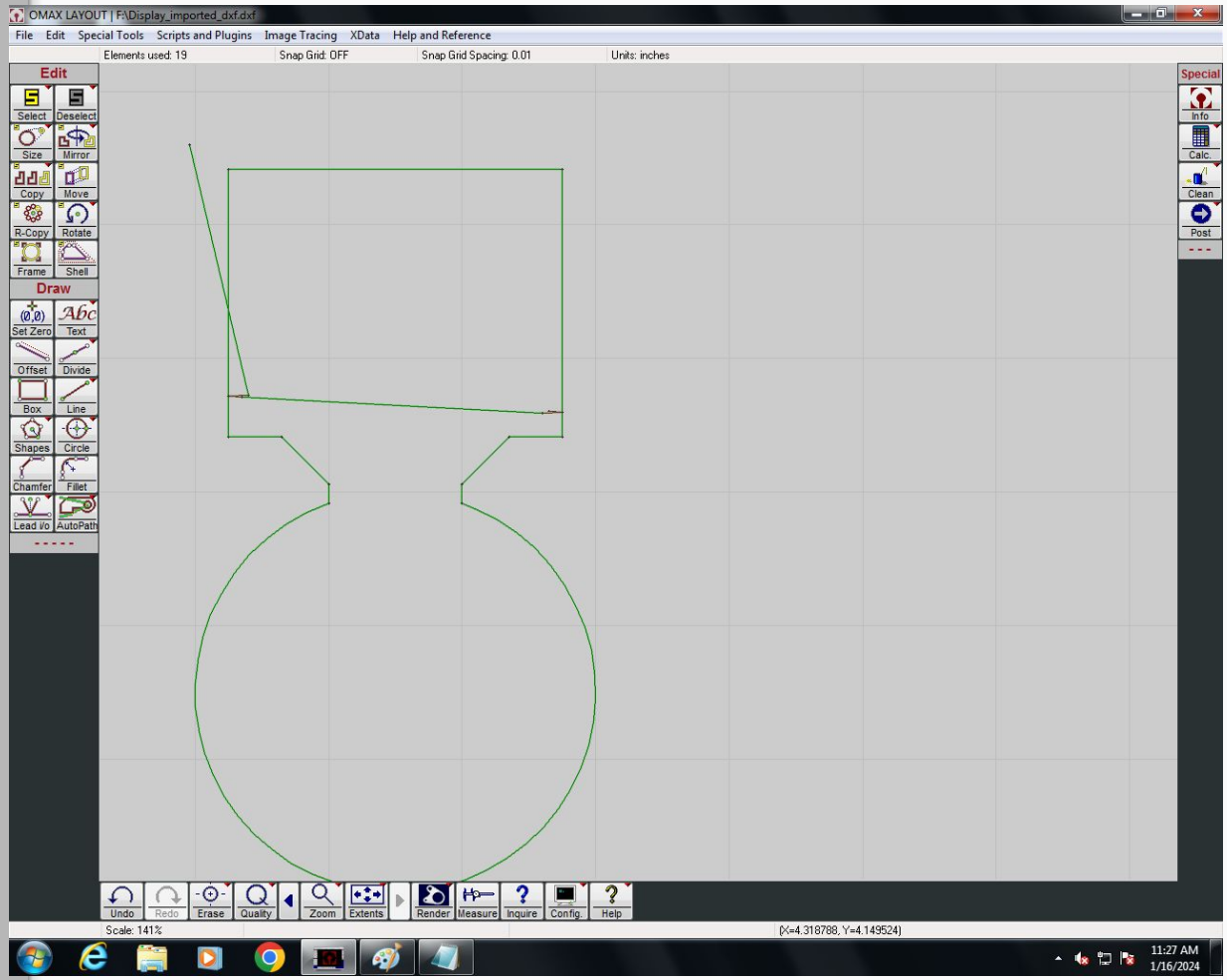


Select the “Line” tool and draw a line from the top-left corner of your part to the ***LONG*** end of your first cut



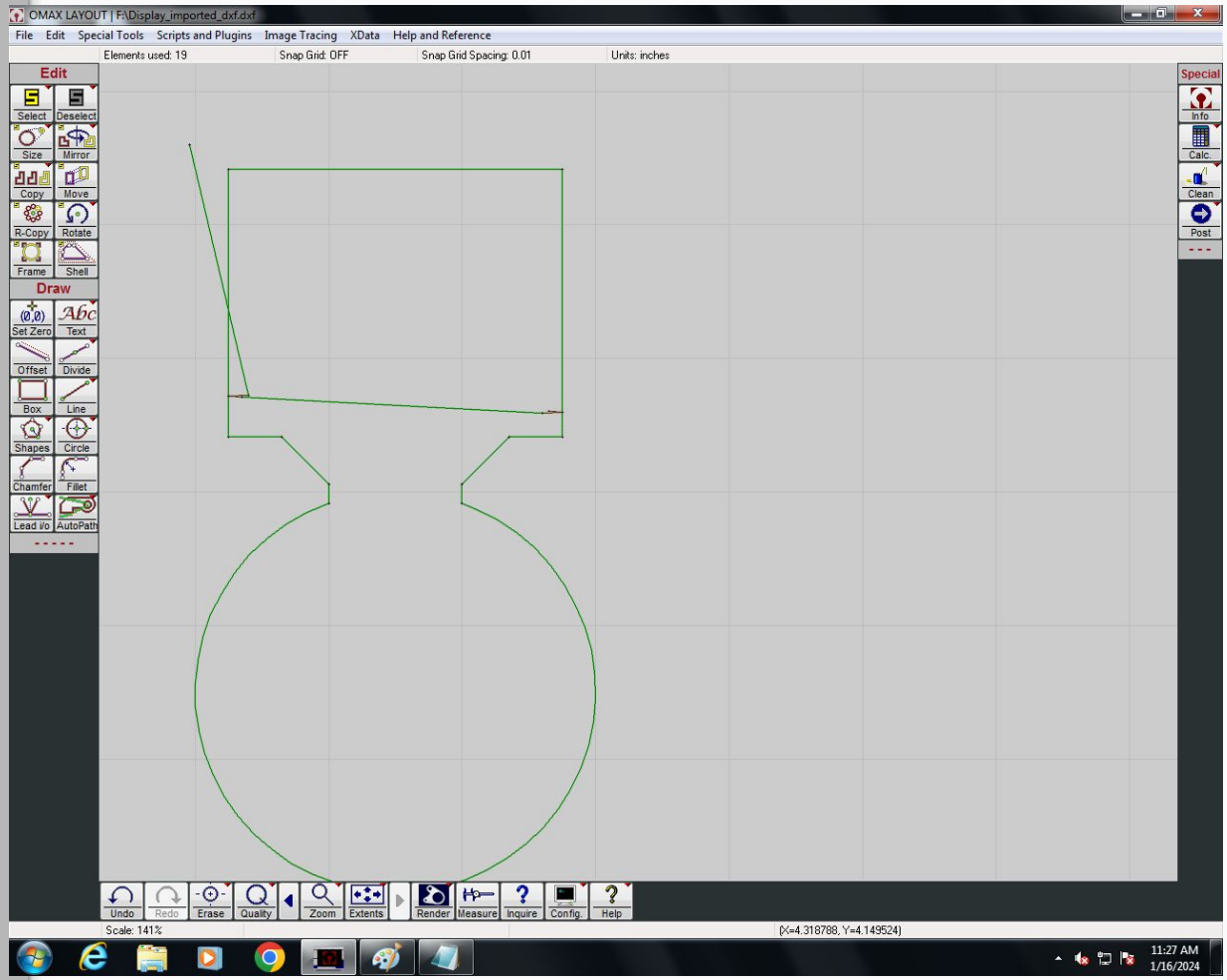
Use the “Line” tool to connect all of your lead ins in the order you want them to be cut.

This example part would only require one lead in, the second one is just an example.



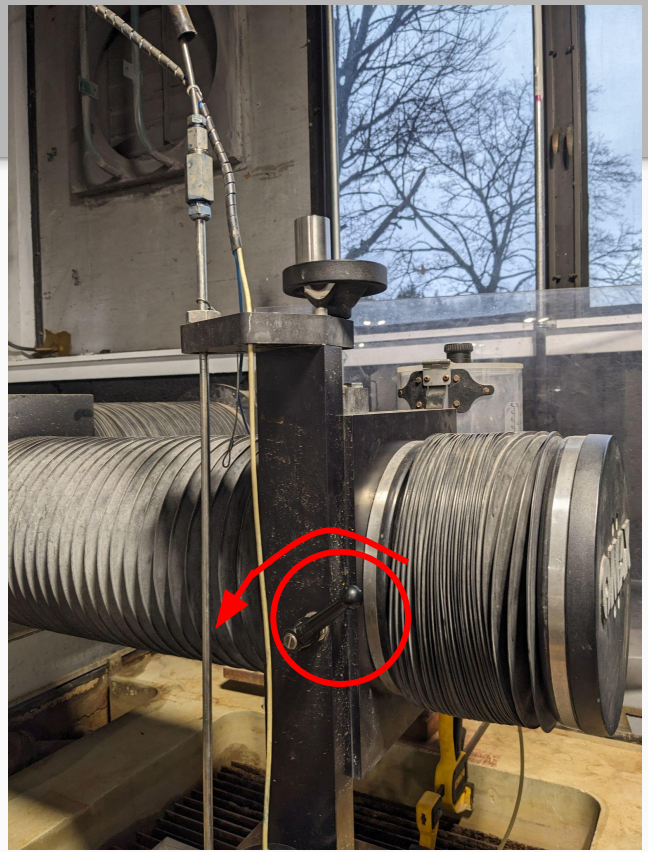
Try to reduce the amount of movement the cutting head will do over already cut area.

REMEMBER: THE ***LONG*** END IS THE LEAD IN, THE ***SHORT*** END IS THE LEAD OUT



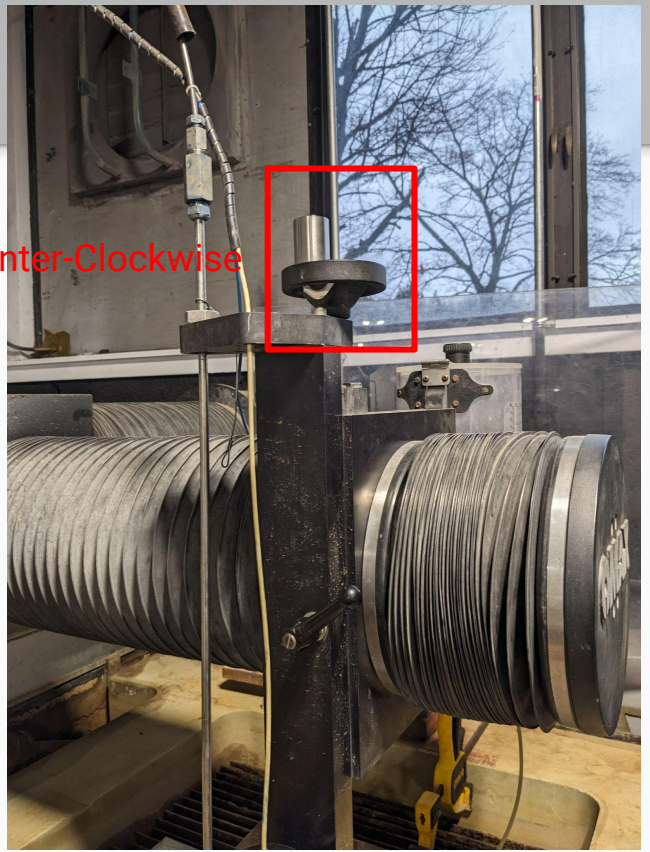
JUMP TO SLIDE 20 TO CONTINUE

Loosen the cutting head (if isn’t already)



Raise the cutting head until it is clear of any weights or other objects in the bed.

Turn Counter-Clockwise



JUMP TO SLIDE 29 TO CONTINUE

If there is already some material in the machine, remove it.

Then place the material you intend to cut from into the cutting bed

Your material should be up against the edge of metal in the bottom-left of the cutting bed

Use the clamp to secure the material.

Then place at least one weight on the material away from where you intend to cut from.

JUMP TO SLIDE 31 TO CONTINUE