

## Diamond Scribing on MDX-40 & JWX-10



This document covers diamond scribing using the MDX-40 and JWX-10 as well as the required accessories.

## Materials Required:

- BT-EGX3-125**, High Precision Spring Loaded Burnishing Adaptor, **\$129.99**



- 21656108**, Top Loading 1/8" Guide Collet, **\$53.16**



- C2-125-DGK**, Diamond Scribing Tool, 5" Length, 1/8" Dia, **\$14.99**



- AS-10**, Adhesive Sheet Hold Down System, pkg. of 10, **\$34.99**

- Material to diamond scribe

## Other Requirements:

- Dr. Engrave, Engraving Software, included with machine
- Windows Driver Installed, included with machine
- 4<sup>th</sup> axis removed.

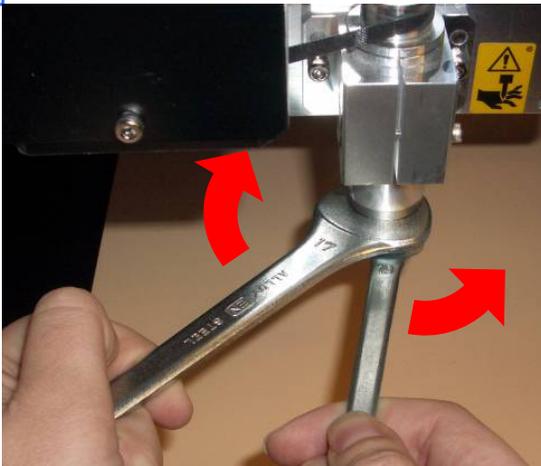
## Installing Hardware

1



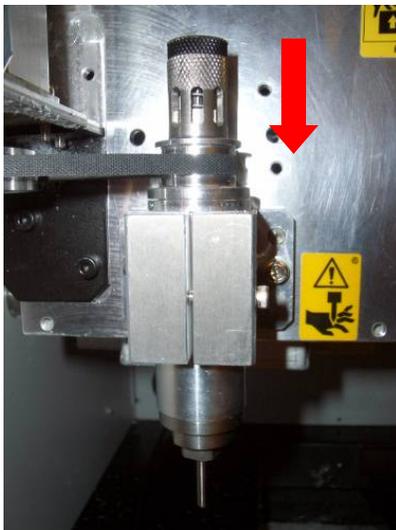
Install diamond scribe tool into spring loaded adaptor using included wrench.

2



Install the 1/8" engraving collet in the spindle. Place the 17mm tool in your left hand and over the spindle nut as shown. Place the 10mm tool in your right hand and over the collet. To tighten, pull the wrenches away from each other.

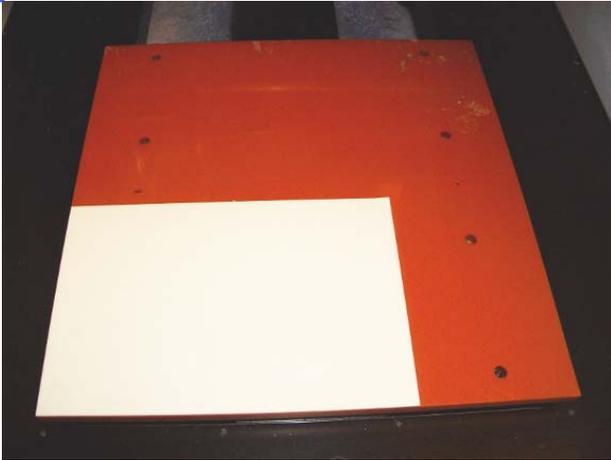
3



Gently install the tool and adaptor assembly from the top of the spindle assembly and turn **counter clockwise** to tighten. Only use finger pressure to tighten the assembly.

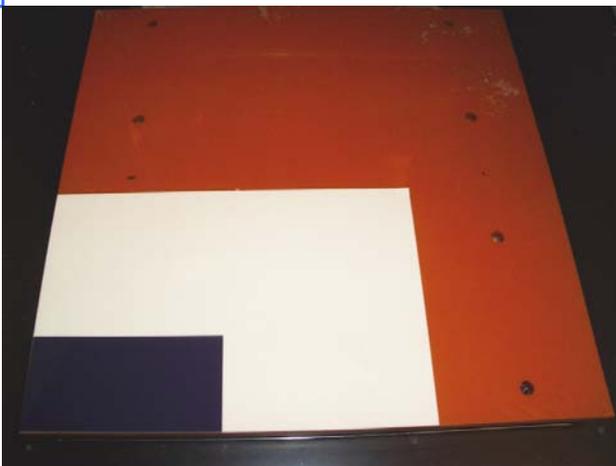
## Installing Material

1



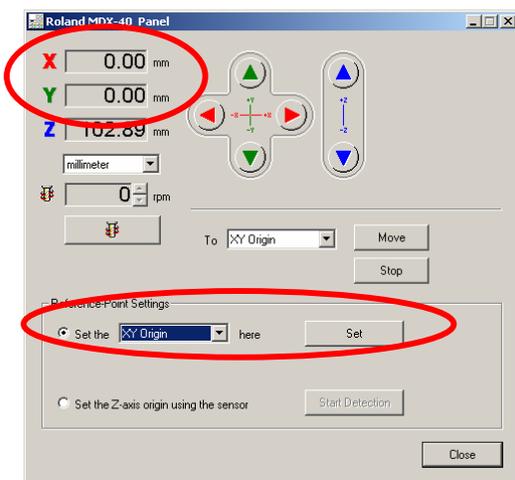
Please ensure the table is clean and free of debris. Remove protective AS-10 sheet coverings and place on table. Place the sheet on the lower left hand corner as we will be using that corner as our origin point.

2



Place material on the lower corner and press onto sheet. The AS-10 sheet is a non adhesive reusable sheet and can be used several times before needing to be replaced.

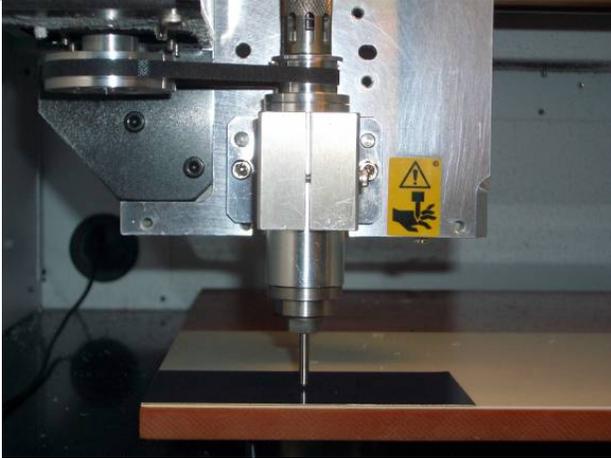
3



Set the XY Origin to the lower left hand corner of your engraving area. Use the Virtual Control Panel to set the XY Origin.

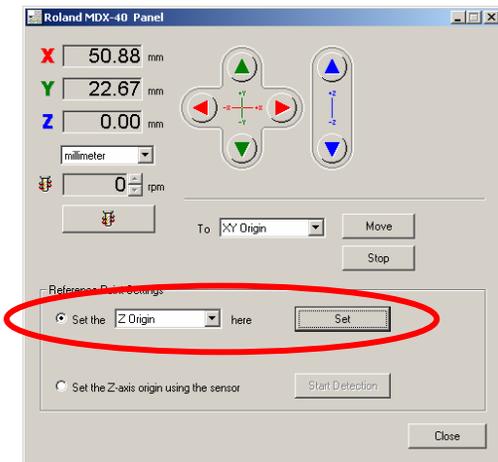
## Setting Correct Tool Height

1



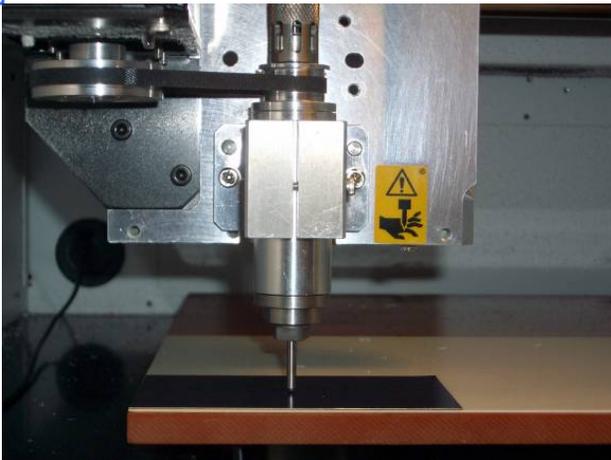
Lower the tool tip to the top of the material. Lower the tool 1mm (0.039") below this point.

2



Set the Z Origin at this point using the Virtual Control Panel.

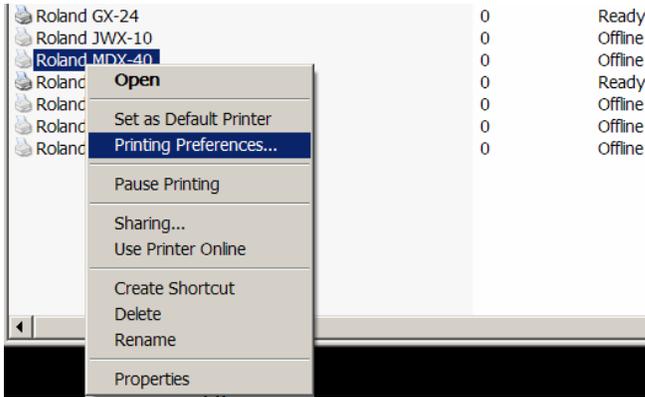
3



The tool height is now set.

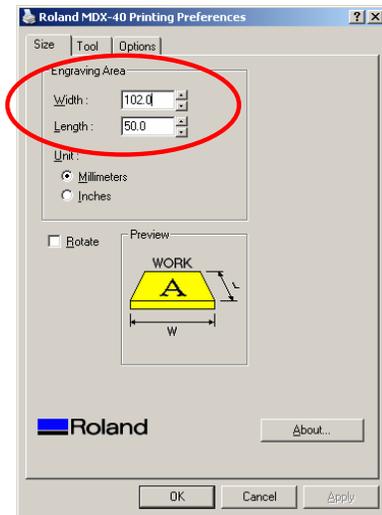
# Driver Settings

1



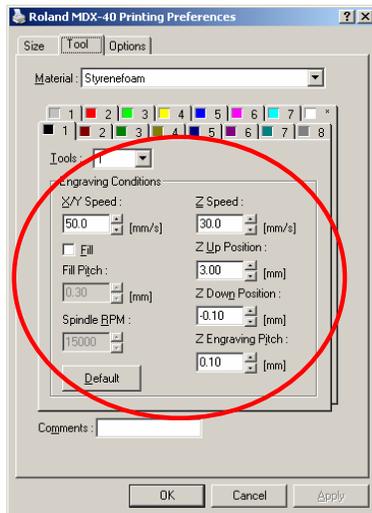
From your Windows Start Menu, open your Printers and Faxes folder. Right click over Roland MDX-40 and select Printing Preferences.

2



Measure material and enter dimensions in the Engraving Area. For this example we are using 102mm x 50mm (4" x 2")

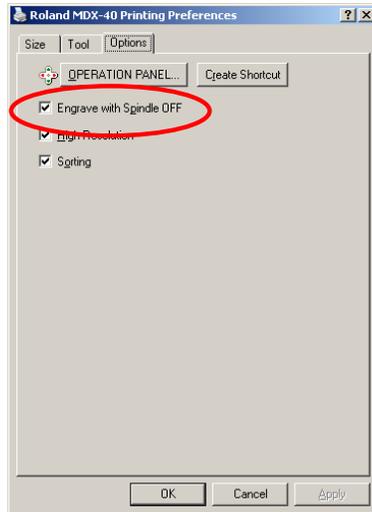
3



Select the Tool tab. We will use the maximum XY and Z speeds of 50mm/sec and 30mm/sec. Change your Z Up Position (amount tool will retract up when repositioning) to 3mm (.12"), your Z Down Position (total depth of cut) to -0.1mm (-.004"), and your Z Engraving Pitch (depth of each cut) at 0.1mm (.004").

## Driver Settings

4



Select the Options tab. Place a check in the Engrave with Spindle OFF to turn the spindle off. **Please remember to uncheck this box when you are returning to milling operations.**

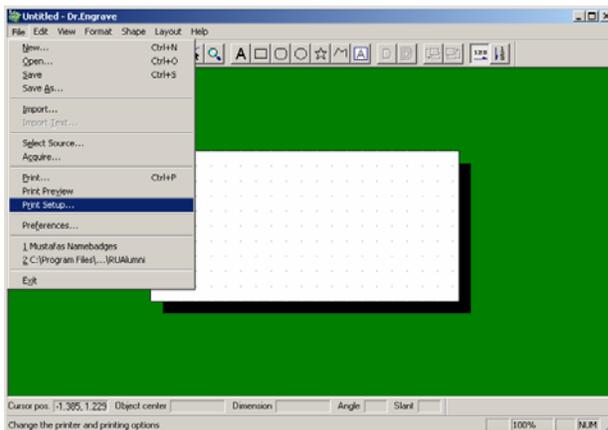
## Dr. Engrave Software

1



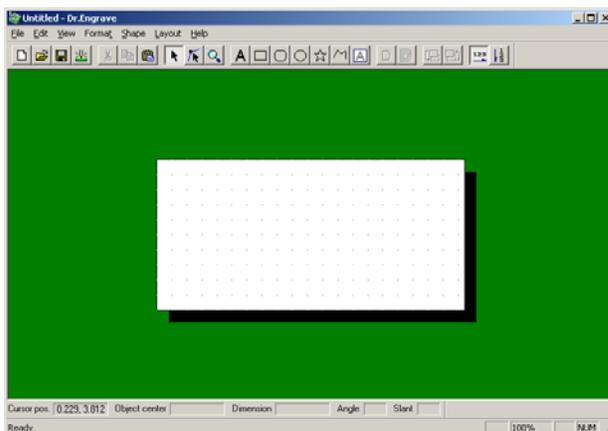
Start Dr. Engrave Software. Either Click on the Desktop Shortcut or Start menu, Programs and Roland Dr. Engrave.

2



Click on File and Print Setup to select your MDX-40/JWX-10.

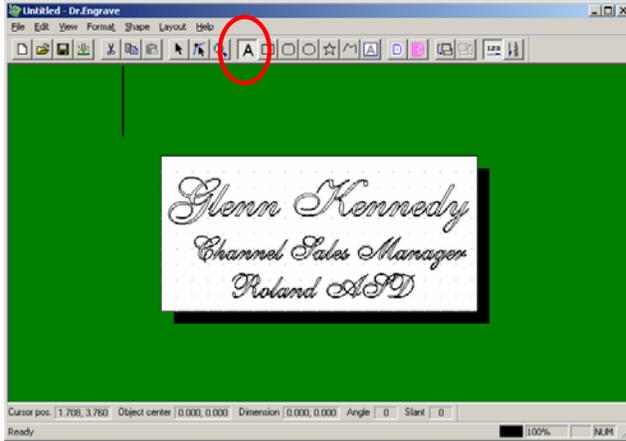
3



The material size will be set to the dimension specified on the driver settings.

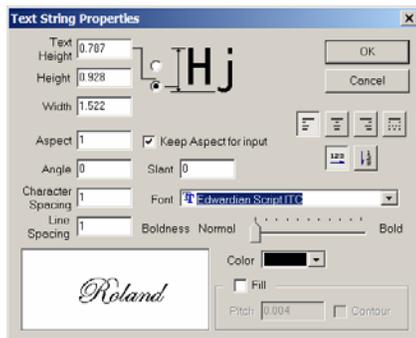
# Dr. Engrave Software

4



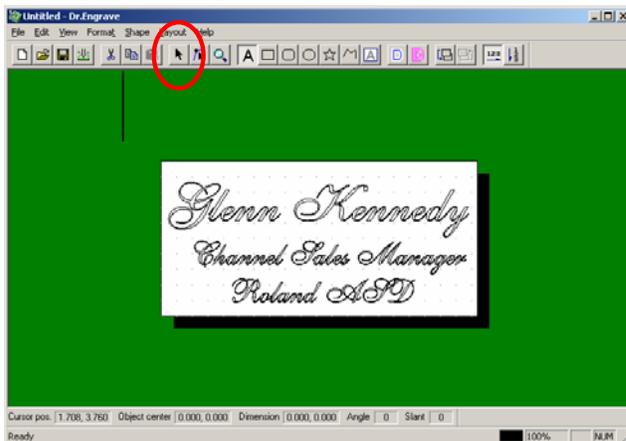
Click on the text button and enter desired text.

5



To modify the text properties, click on the text string, right mouse click and select properties. From here you can modify the font, size, and other features of the text string.

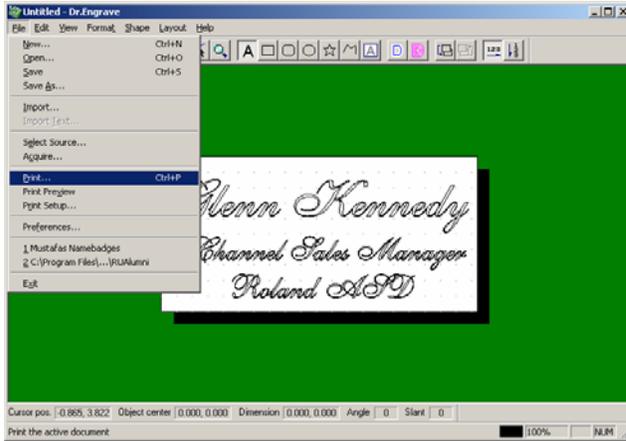
6



To move the location of the text, stretch, tilt, or rotate the text, select the arrow command and select the text string you would like to modify.

## Diamond Scribing

1



When you are ready to scribe, simply click on File and Print to start the diamond scribing process.

2



Diamond Scribing!

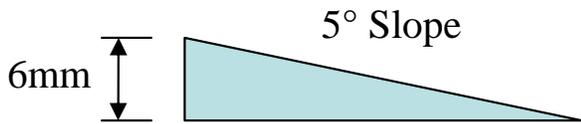
3



Finished Product!

# Limitations

1



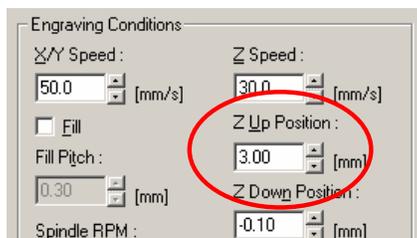
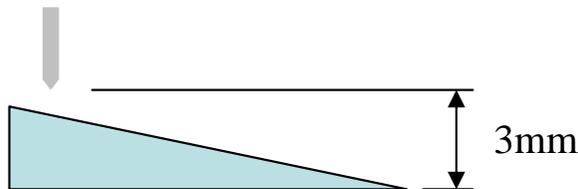
The maximum slope of an object that can be used is 5°, and the maximum amount of tool compression, or height, in the Z direction is approximately 6mm (0.24”).

2



When using irregular shaped objects, you must set the correct tool height at the lowest point.

3



You must also change the Z Up Position in the driver to ensure that the tool clears the highest point of your object so that the tool does not drag while repositioning.