



NEWSLETTER

August 2023

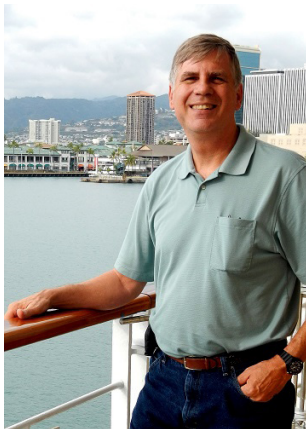
"The MakerBarn is a member-driven family-friendly makerspace that exists to provide a place for our members to envision, design, and realize creative projects. We are dedicated to building a creative maker community among our membership and the community at large."

Cool Air and Hot Plasma!

I don't know about you, but I am sure glad we installed the two mini-split air conditioners in the shop. July was a scorcher. The new A/C units kept the shop habitable the entire month.

The other big change was the three new 3D printers in the lab. All three have been working well and getting plenty of use. They are so easy to use compared to what we had before. Members have also done a nice job of keeping the printers tidy. That is much appreciated.

On another subject, the CNC Plasma cutter has arrived. It was quite a job assembling the machine. We spent at least two days putting it together. It is an amazing machine. It does a super-fast job of precisely cutting thin sheet metal. We have also cut material as thick as 5/8 inch steel! It is truly the friendly giant in the shop. Currently it is located in the back of the main shop, near the powder coating equipment. This is so as many people as possible can learn how to drive it. Once the weather cools, it will be moved to its permanent location in the welding shop. We have a Slack channel dedicated to the CNC Plasma, so join the channel to ask questions and learn more about the machine.



If you have ever thought about volunteering to be a MakerBarn manager, Jim Baron will be happy to tell about the job and sign you up. Our Shop facility requires someone to be present at all times just to keep an eye on things and lend a hand as needed, could that be you? I hope so...

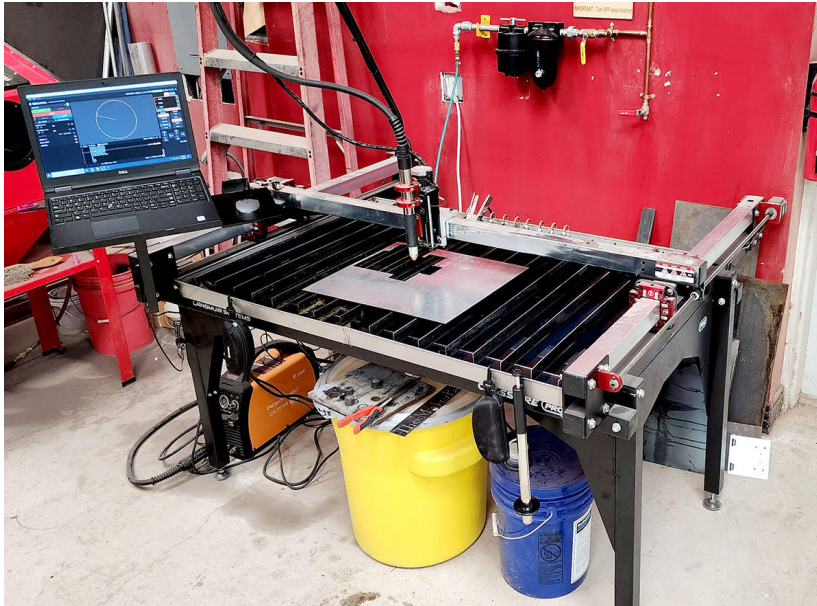
What improvements would you like to see at The MakerBarn? Post your ideas on Slack so we can discuss them. The Lab and Shop are both comfortable, so escape the heat and come make something with us!!

George Carlson
President, MakerBarn



Plasma Debuts at MakerBarn

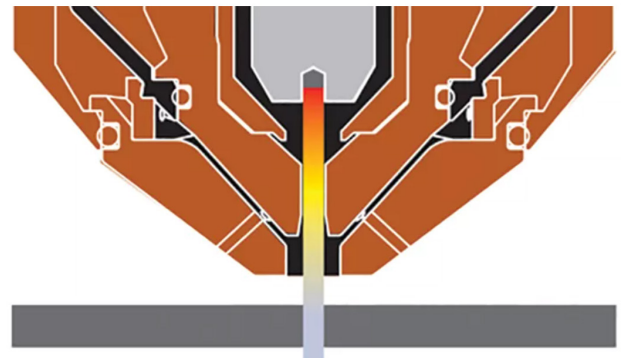
We recently purchased a CNC Plasma cutting machine. To those unfamiliar with the technology, here it is in a nutshell.



The plasma cutter uses electricity to generate a super-hot stream of gas (air) that is so hot that it burns through metal. The temperature of this plasma is said to be 40,000 degrees Fahrenheit, which is four times hotter than the surface of the sun. To control this stream of hot gas, the nozzle of the cutter shapes the flow of the gas into a very tight vortex less than 1/20th of an inch in diameter. The very hot gas, combined with high-speed vortex, melts the metal and blows it through the piece. Because the plasma is generated by an electrical arc, the material being cut must be conductive.

We have had a hand operated plasma cutter in the shop for several years, but adding precision computer controls is a game changer. Operating the CNC Plasma is much like operating one of our laser engraver/cutters. Depending on the material, the operator must adjust the power and the speed of the cut. In the case of the plasma, we set the power by setting the amperage of the cutter. This is done manually using a knob on the front of the plasma machine. The speed of the cut is set using the G-Code that controls the machine.

Like most any CNC machine, the device is controlled using a special control language called G-Code. When using the lasers, we use a program called LightBurn to analyze our drawing and generate the G-Code. Then, using the controller built into the laser, we load the G-Code, the laser's controller interprets the G-Code and drives the laser to cut out our part. The CNC Plasma works much the same, we have to design the part we want to cut out. This design can be output as a DXF file and brought into a program called SheetCAM for the generation of G-Code, or if Fusion 360 is being used, brought into the manufacture side of Fusion 360 for the generation of G-Code.



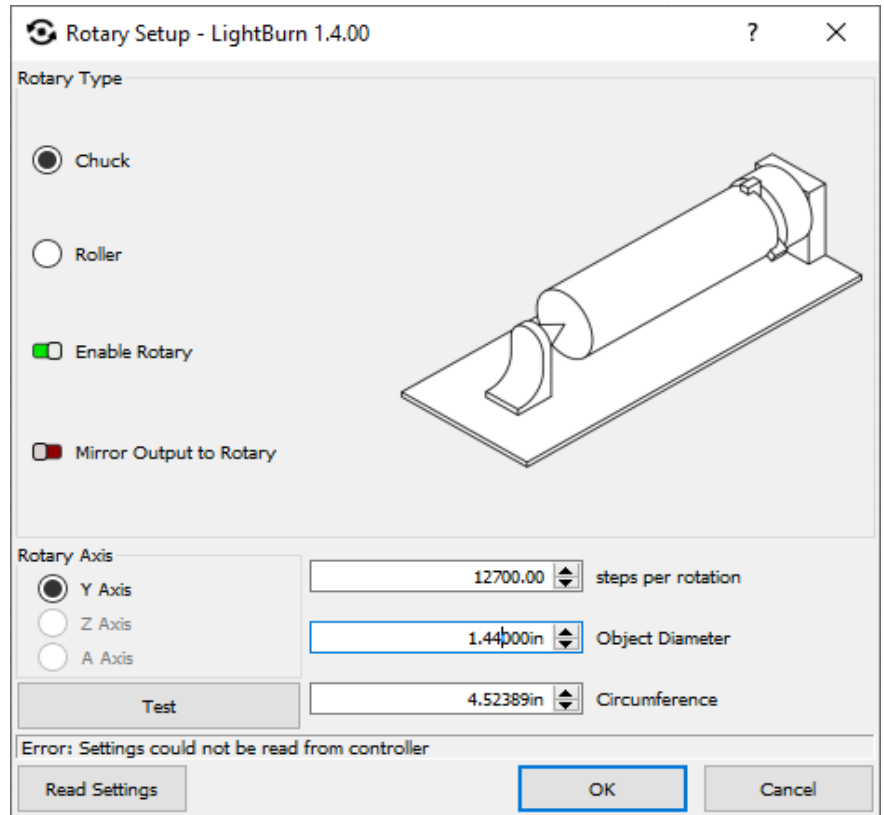
The precise steps that need to be taken are outside of what we can discuss in this paper, but a good source of information are the videos on YouTube and our CNC Plasma channel on Slack.

How to Use “Thing 3”; the Green Rotary Laser Machine

After a few false starts, we have “Thing 3”; the rotary laser machine working pretty well.

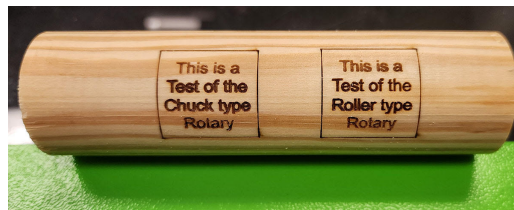
There are a few operating steps to use the rotary devices & now is a good time to review them:

1) To use the Chuck type, put Lightburn in the rotary mode using the “Laser Tools”, “Rotary Setup” window. Select “Chuck” and set the “Enable Rotary” to green. Be sure to set the object diameter. See image:



2) To use the Roller type device, do not use the “Rotary Mode”. Instead, make sure the “Enable Rotary” is red in the Rotary Setup window. Using the rotary enable when the roller is being used will cause the image to be stretched. The roller mode works very well, but it does have problems if you have a very light weight item. There is a lot of slippage which will distort your image.

3) Cutting cardboard tubes can be a problem because they are so light. Placing something heavy inside the tube will prevent slippage.



Finally, with either rotary mode, be sure to use the “Frame” feature to help make sure you get what you want.

Ceramics arrives at MakerBarn

Our new Ceramics program is in full swing!

This past month MB Ceramics members led by area manager Lisa Lane put the kiln into operation, trained some more members on the slip casting process and held a paint & glaze orientation.



The results of our very first kiln firing



**Paint & Glaze
class**



MADE AT MAKERBARN!

Krista Young made a shelf for her weaving accessories. She bought a design from Etsy then widened the shelves using Adobe Illustrator. It was much easier than she thought to widen those shelves. Krista intends to stain it soon.



MADE AT MAKERBARN!



We all owe thanks to **Raul Garcia** this month as he completely disassembled and reassembled the shop grinder in the Shop. Many thanks Raul!



Somehow, **Raul Garcia** also found time to make a beautiful foam tool holder for his toolcase and a leather (left hand!) holster for his Bosch cordless drill.



MADE AT MAKERBARN!



George Carlson made a bracket using the new CNC Plasma cutter. It was made to help support the air dryer and filter for the CNC Plasma machine. It was cut from 1/8" steel in about 20 seconds!



Meet the Area Managers



WOODWORKING

Mark Bush is area manager of woodworking. Contact him via SLACK.



LASER PRINTING

Greg Radliff is an artist and expert at using Laser Cutter and Engravers. Greg can show you the LightBurn software we use and can check you out for use of the Laser printers in the Lab. Contact him via SLACK



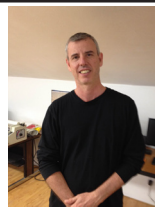
METALWORKING

Bryan Manka is area manager for metalworking which includes the metal mill and the metal lathe at the Barn. He can check you out for use of either of these machines. Contact him via SLACK.



3D PRINTING

Jody Cochran is a graphic artist with deep experience in 3D printing and other graphics tools. Jody can show you slicer and other software used with the 3D printers. Contact him via SLACK.



ELECTRONICS

Raul Garcia is area manager for electronics. More of a fixer than designer, but willing to help and learn together. See Raul for anything related to microcontrollers, electronic devices or other electronics related projects. Contact him via SLACK.



CERAMICS

Lisa Lane is area manager for ceramics. Contact her via SLACK.



WELDING

Joe Foster is area manager for welding. Contact him via SLACK.

For New Members

WELCOME to the wonderful world of making!! We know you will come to love this place as much as we do.

First and foremost, this place is about the people. We would like to encourage you to see yourself as more than just a member. We are a community. Because we don't have any employees, we rely heavily on our community to keep things running. So please join in, pitch in, and get involved. Ask lots of questions. We are a really friendly group and love to help one another. The MakerBarn is a fantastic community of makers and we are glad you are here!



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MakerBarn Directors:

George Carlson, Director and President
Jeanie James, Director
Greg Radliff, Director

Executive Committee:

Kathy Barbieri - Procurement and Acquisitions
Jody Cochran - Secretary
Raul Garcia - Member at Large
Jim Barron - Membership
Matt Folsom - IT
Doug Green - Web Site
Ashley Dickson - Member at Large
John Buckley - Newsletter Editor

Area Managers: (Guru or Custodian):

Woodworking - Mark Bush
Lasers - Greg Radliff
3D Printing - Jody Cochran
Metalworking - Bryan Manka
Electronics - Raul Garcia
Welding - Joe Foster
Lisa Lane - Ceramics

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