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Universal -- PLS 6.75
Universal Power Settings
Laser: 75w
Bed Size: 18in x 32in
Printer Name: PLS6.75
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Rhino File Setup

When you are modeling you will use a different layer for different types of cuts.
Etch = red
Cut = blue
Raster Engrave = green
Test = magenta
Modeling = black (no cut)

Set Properties

When you are finished with your design in Rhino, you will go to File > Print

1. Scale is 1:1
2. Go into Properties
3. **Select all properties** and set to Speed = 15, Power = 15, PPi = 200 (this sets a base line)
   Turn Air Assist on: Flow = Air , Flowrate = 50%
4. Measure your material with a caliper
5. **Set your Z** based on the thickness of your material. (Measure with a caliper)
6. Cut order is based on the order listed. Always have the raster engraving and etching happen before the cutting. You can change the order by clicking and dragging.
7. Less power is how you reduce burn
8. For wood you can set PPI to 200, for plexi you can set it to 1000. Consult the notebook next to the computer for other material guidelines, but always do your own tests before you cut your design.
9. **Test Cutting**: Always start with a setting that is too low, and run a series of tests on your actual material increasing power or (decreasing speed to increase the effective power) until you reach a setting that cuts through but does not start a flame. I use a small circle and start with the base line settings and increase the power until I get the desired cut. Here are a few of the cut settings I made:

Cardboard: Power = 30, Speed = 12, PPI = 200
Plexi: Power = 100, Speed = 15, and PPI= 1000
Canvas: Power = 50, Speed = 20, PPI= 200
Felt: Power = 12, Speed = 15, PPI= 200
Cotton: Power = 15, Speed = 15, PPI= 200
Send to Cut:

Ready to cut!

1. Turn on the exhaust (big green button) on the wall.
2. Place your material.
3. Log onto the computer and open your file
4. Print and set your print settings
5. This is where you will first run your test cut

6. Press Print
7. Open the Universal Laser Control Panel
8. Use the move tool if necessary to move your file
9. Check the alignment of the laser
10. Calculate your cut time if want
11. Press the big play button
12. Watch it cut!

*NEVER LEAVE THE MACHINE CUTTING UNATTENDED.

Materials:
It's important that your material is flat! Start out with something under 1/8 inch thick. Anything on the Paper, mat board, card stock, Cardboard, chipboard, Plexiglas, organic fabrics (spray lightly with water first), solid wood, plywood (fewer plys is better), cork, Anodized Aluminum (Etch only), Stone (Etch only)

Banned Materials:
Vinyl, Lexan, Foam, Polycarbonate, PVC, Styrene, Mirror (mirrored acrylic sheet is OK if the mirror is face down)

New User Config Settings:
\\picasso.mica.edu\Courses_Student Resources\dFab\Resources\Lasers\NewUser.las
Materials

Understanding Power, Speed, and PPI:

Power - A percentage (%) of the total machine power (watts). Increase the power and you will increase how deep you cut.

Speed - A percentage (%) of the total machine speed. Decrease speed to increase how deep you cut. For Vector (following your lines) processes, this value should not be above 15% to 20%. For Raster (zig zag over a jpeg for example) this value should be 100% unless you need to cut deeper and are already at 100% power.

PPI- Pulses Per Inch. A value between 0 and 1000. The laser is actually making a series of very small holes when it "cuts". These are approximately 0.005" in diameter. One inch divided by 0.005" is 200, so the minimum setting for this parameter is usually 200ppi. Some materials burn more than others, for wood sometimes we'll go down to 160ppi (assuming a diameter of 0.00625") to reduce burning. For Acrylic sheet we set this to 1000ppi for a better edge finish.