Laser Engraver
(Epilog Laser Helix)

What is provided:
- Laser Engraver/Cutter
- Rotary Attachment
- Design Software, including CorelDRAW
- Support from staff

What to bring:
- Materials
    - **Up to 18" x 24"**
    - See list of prohibited/allowed materials below
    - Can engrave cylindrical objects (vases, cups, etc.)
- Artwork/Text/Design for Engraving
- Flash Drive (to save your projects)

Instructions:
Call 330-722-2681 to schedule an appointment.

Before your appointment watch at least one of the MCDL project videos to familiarize yourself with the software and equipment. Choose from:
- Family Recipe Cutting Board - https://youtu.be/OcvS-Jw3xdA
- LED Acrylic Light - https://youtu.be/2SvQKV7HiJo
- Slate Coaster - https://youtu.be/qWtwCxdybWY
- Personalized Pencils - https://youtu.be/W5Wem4nuWlE

To use the Laser Engraver, you will need to…
1) Select your materials.
2) Create your artwork file in CorelDRAW.
3) Select and apply your settings.

Tips:
- Every type of material will react differently with the laser.
- Similar materials use similar settings.
- Test your material, before attempting your entire project.
- When in doubt, start with lower power settings. Remember: you can always re-run your job as long as you don't move it in the machine.

Select Your Materials

Prohibited Materials

These materials may be hazardous to the user's health and/or may damage the equipment.

Materials that will not cut successfully on the laser engraver.	
Material	**Danger**
HDPE (Milk Bottle Plastic)	Fire Hazard
Polycarbonate/Lexan (>1mm)	
Polypropylene Foam	
Polystyrene Foam	
ABS	Health Hazard – Cyanide Gas
PVC (Poly Vinyl Chloride) Vinyl Pleather/Artificial Leather	Health Hazard – Chlorine Gas
Coated Carbon Fiber	Health Hazard – Noxious Fumes
Fiberglass	
Rubber	
Plastic	
Lead Crystal	Health Hazard – Crystal Shatters
Mylar	Tends to warp and bubble.
Solid Styrene	Generates too much smoke.
Carbon Fiber Mats	Health Hazard – Noxious Fumes

Allowed Materials

Material *Notes*	**Action**	**DPI/Freq**	**Power**
Acrylic – 100% *Cuts extremely well, leaving a beautifully polished edge. Cutting Note: Adjusting the standard focus distance so it is closer to the lens by about .030" (.762 mm) will produce better edge quality on 1/4" acrylic and thicker. Two passes may produce better results and allow for cutting through thicker materials. There are two types of acrylic: cast is better for engraving (creates a frosted look when engraved) and extruded acrylics are better for smooth-edged cutting.*	Photo Engraving	300 DPI	90s 50p
	Text/Clipart Engraving	300 DPI	90s 70p
	Text/Clipart Engraving	600 DPI	90s 65p
	Cutting 1/8" (3 mm)	5000 f	15s 100p
	Cutting 1/4" (6 mm)	5000 f	8s 100p
	Cutting 3/8" (9.5 mm)	5000 f	3s 100p

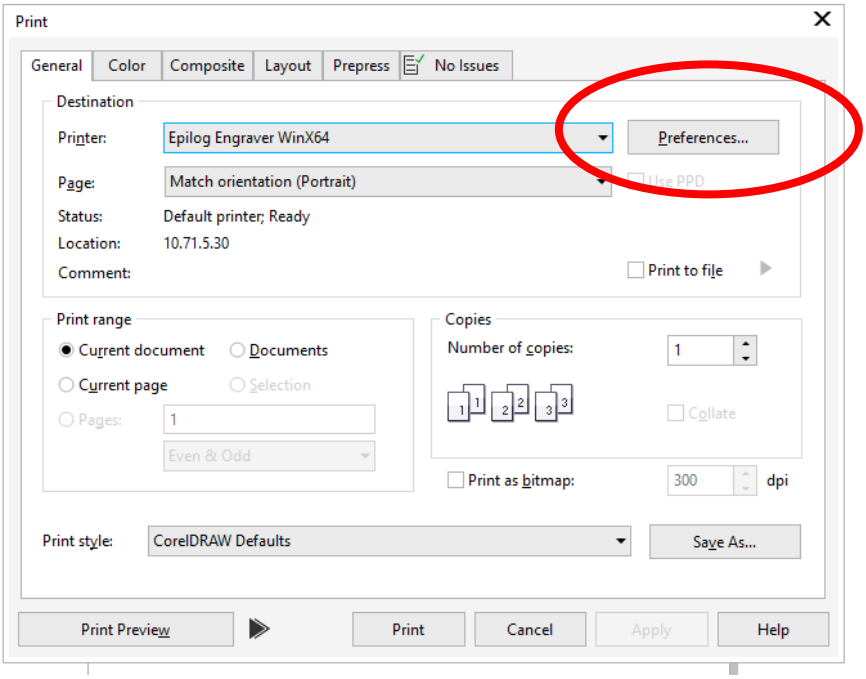
Ceramic Tile *Apply dry erase marker to emphasize engraving*	Engraving	600 DPI	90s 50p
Cork *Cuts nicely, but quality of cut depends on thickness/quality of cork. Engineered cork contains glue and may not cut as well. Cut up to ¼" thick.*	Engraving	300 DPI	90s 40p
	Cutting	500f	25s 40p
Fabric *When engraving fabric, try changing the graphic to 80% gray and use the Jarvis dithering pattern.* *No plastic-coated or impregnated cloth!*			
Fabric: Cotton *Also cuts well; test a swatch first and adjust settings as needed.*	Engraving	300 DPI	90s 20p
Fabric: Denim *Also cuts well; test a swatch first and adjust settings as needed.*	Engraving	300 DPI	90s 25p
Fabric: Fleece	Engraving	150 DPI	90s 25p
	Cutting	2500f	25s 15p
Fabric: Twill	Cutting	2500f	50s 40p
Glass *Green or dark colored glass works best and produces a sandblasted look. When etching glass, try changing the graphic to 80% gray before engraving and using the Jarvis dithering pattern. You can also diffuse heat by covering the glass with a thin sheet of dish soap.*	Engraving	300 DPI	70s 40p
Leather/Suede *Leather can be cut in thinner than a belt (1/8").* Real leather only. "Pleather" poses a health hazard.	Photo Engraving	300 DPI	90s 30p
	Text/Clipart Engraving	600 DPI	90s 40p
	Cutting 1/8" (3mm)	500f	30s 70p
Magnetic Sheet *Cuts beautifully.*	Cutting	2500f	45s 100p
Metal: AlumaMark	Engraving	300 DPI	90s 35p
	Engraving	600 DPI	90s 25p

Metal: Anodized Aluminum *Vaporizes the anodization away. We find when engraving anodized aluminum, text appears best at 600 DPI, but photos and clipart can be engraved with great detail down to 300 DPI.*	Photo/Clipart Engraving	300 DPI	90s 45p
	Photo/Clipart Engraving	600 DPI	90s 40p
	Text Engraving	600 DPI	90s 50p
Metal: Painted/Coated Metals *Vaporizes the paint away*	Engraving	600 DPI	90s 50p
Metal: Painted Brass	Engraving	300 DPI	90s 45p
Metal: Stainless Steel w/ Cermark	Engraving	600 DPI	30s 100p
Mat Board/Cardboard/Paper/ Cardstock *Bottom-up engraving is suggested.* Watch for fire.	Engraving	400 DPI	70s 80p
	Cutting	500f	20s 40p
Gator Foam *Can be cut if monitored. Foam core burned faster than top/bottom shell.*	Cutting		
Depron Foam *Must be constantly monitored. 1/4" cuts nicely, with a smooth edge.*	Cutting 1/4"		
Kapton Tape (Polyimide) *Cuts well in thin sheets and strips.*	Cutting 1/16”		
Teflon / PTFE *Cuts acceptably in thin sheets.*	Cutting (thin)		
Stone, Granite, Soapstone, Onyx *Gets a white “textured” look when etched.*	Engraving		
Stone: Marble *Every marble is very different for settings. Start low and increase the power with a second run if you haven’t used that marble before.*	Photo Engraving	300 DPI	90s 45p
	Text Engraving	600 DPI	90s 55p
Stone: Slate	Photo Engraving	300 DPI	100s 20p
	Text Engraving	300 DPI	100s 20p
Pumpkins *May take 3 passes*	Text/Clipart Engraving	600 DPI	55s 100p
Wood	Photo Engraving	600 DPI	50s 100p

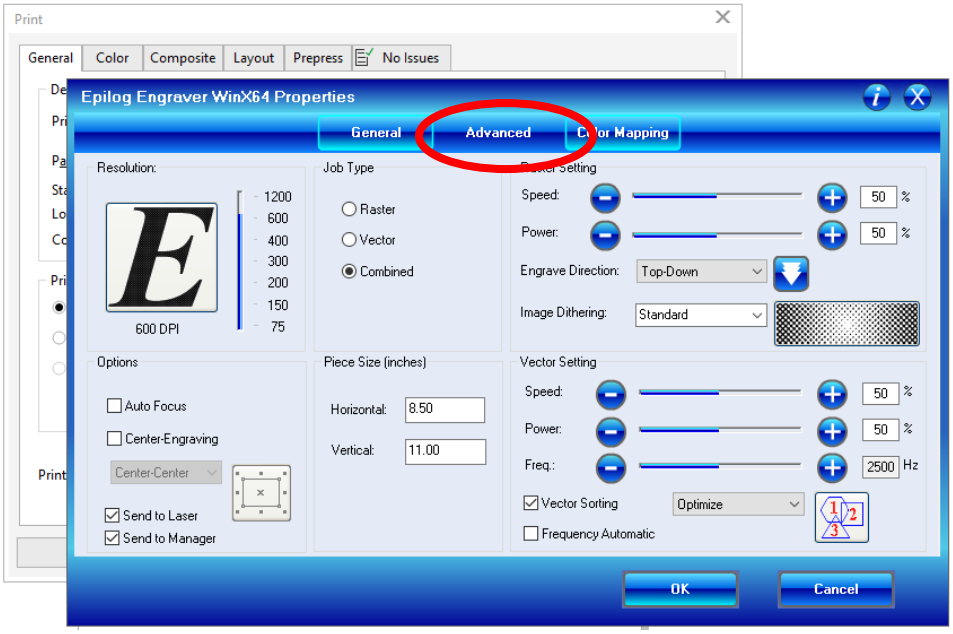
Wood (continued) *When cutting wood, multiple passes may allow cutting of thicker materials. You can readjust the focus between passes down to the center point of the cut for the best results.* *MDF/Engineered woods are acceptable to use, but may experience greater charring when cut.* *Use caution with plywood/composite woods; these contain glue and may not laser cut as well as solid wood.* *Avoid oily/resinous woods.* Oily/resinous woods may catch fire.	Text/Clipart Engraving	600 DPI	40s 100p
	Text/Clipart Engraving	300 DPI	35s 100p
	Deep Engraving	600 DPI	20s 100p
	Cutting Thin Veneer	500f	30s 14p
	Cutting 1/8” (3mm)	500f	35s 100p
	Cutting 1/4" (6mm)	500f	15s 100p
	Cutting 3/8” (9.5mm)	500f	6s 100p

Printing your file on the Epilog engraver

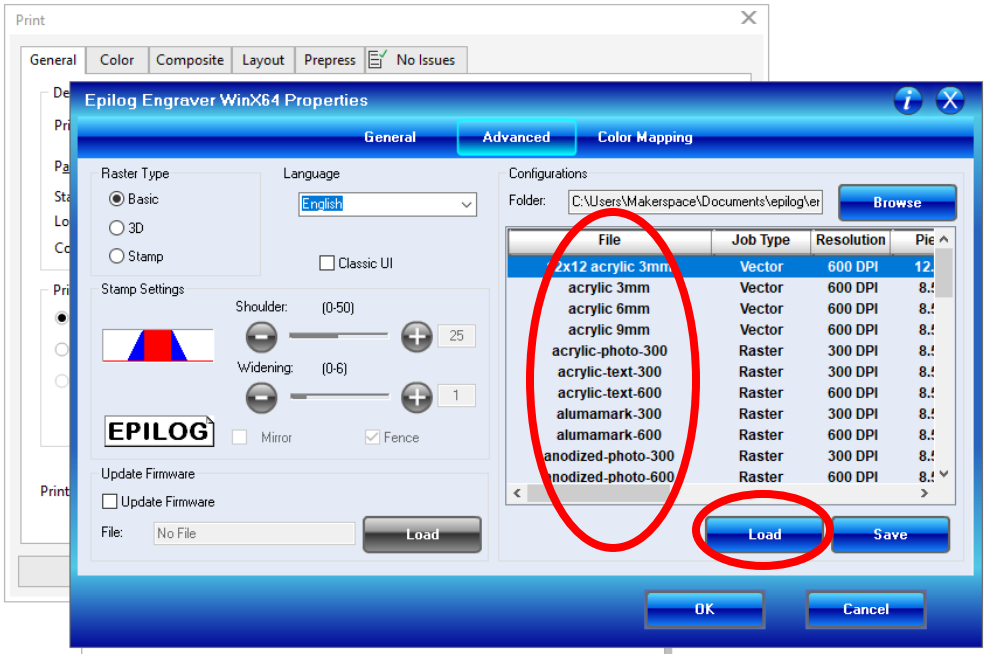
1. With your file opened in CorelDRAW, Click on File then click on Print (or press CTRL+P).
2. Then click “Preferences.”



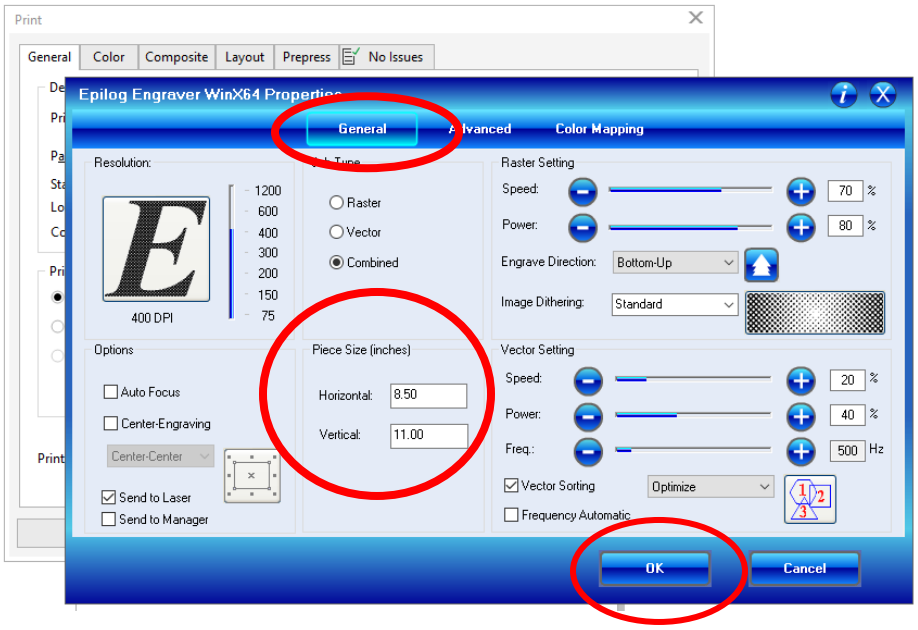
3. Click on “Advanced.”



4. In “Advanced,” scroll through the available material profiles until you locate the material type with which you are working. Click on the material you are using, then click “Load.”



5. Once the profile has loaded, click on “General.” Verify/enter the correct size of the piece you want to engrave/etch. Then click OK.



6. Verify that there are “no issues” (see tab at right), then click “Apply” and click “Print.” Your job will then be sent to the Epilog Laser queue and is available for release on the Epilog Laser.