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 <u>https://youtu.be/OcvS-Jw3xdA</u>
- LED Acrylic Light https://youtu.be/2SvQKV7HiJo
- Slate Coaster <u>https://youtu.be/qWtwCxdybWY</u>
- Personalized Pencils https://youtu.be/W5Wem4nuWIE

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)				
Polycarbonate/Lexan (>1mm)	Fire Hazard			
Polypropylene Foam				
Polystyrene Foam				
ABS	Health Hazard – Cyanide Gas			
PVC (Poly Vinyl Chloride)				
Vinyl	Health Hazard – Chlorine Gas			
Pleather/Artificial Leather				
Coated Carbon Fiber				
Fiberglass	- Health Hazard - Novious Fumes			
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	Action	DPI/Freq	Power
Notes			
Acrylic – 100% Cuts extremely well, leaving a beautifully	Photo Engraving	300 DPI	90s 50p
polished edge. Cutting Note: Adjusting the standard focus distance so it is closer to the lens	Text/Clipart Engraving	300 DPI	90s 70p
edge quality on 1/4" acrylic and thicker. Two passes may produce better results and allow for	Text/Clipart Engraving	600 DPI	90s 65p
cutting through thicker materials. There are two types of acrylic: cast is better for engraving	Cutting 1/8" (3 mm)	5000 f	15s 100p
(creates a frosted look when engraved) and extruded acrylics are better for smooth-edged cuttina.	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	Engraving	300 DPI	90s 40p
thickness/quality of cork. Engineered cork contains glue and may not cut as well. Cut up to ¼" thick.	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").	Photo Engraving	300 DPI	90s 30p
Real leather only. "Pleather" poses a health hazard.	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	Photo/Clipart Engraving	300 DPI	90s 45p
engraving anodized aluminum, text appears best at 600 DPI, but photos and clipart can be	Photo/Clipart Engraving	600 DPI	90s 40p
engravea with great aetail down to 300 DPI.	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	Engraving	400 DPI	70s 80p
Bottom-up engraving is suggested. Watch for fire.	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	Photo Engraving	300 DPI	90s 45p
low and increase the power with a second run if you haven't used that marble before.	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	Text/Clipart Engraving	600 DPI	40s 100p
cutting of thicker materials. You can readjust the focus between passes down to the center	Text/Clipart Engraving	300 DPI	35s 100p
MDF/Engineered woods are acceptable to use,	Deep Engraving	600 DPI	20s 100p
but may experience greater charring when cut.	Cutting Thin Veneer	500f	30s 14p
Use caution with plywood/composite woods; these contain glue and may not laser cut as well as solid wood	Cutting 1/8" (3mm)	500f	35s 100p
Avoid oily/resinous woods. Oily/resinous woods	Cutting 1/4" (6mm)	500f	15s 100p
may catch fire.	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."

General	Color	Composite	Layout	Prepress	No Issues		
Destir	nation —						
Pri <u>n</u> te	er:	Epilog Engra	ver WinX6	4		▼ <u>P</u> referen	ces
Page:		Match orient	tation (Por	trait)		Use PPD	
Statu	5:	Default printe	r; Ready				
Locat Com	ion: ment:	10.71.5.30				Print to fi <u>l</u>	e 🕨
Print	range				Copies		
O C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C	i <u>r</u> rent doo	cument O	0 ocument	s	Number of <u>c</u> opies:	1	-
0 C <u>ı</u>	irrent pag	je 🔿 🖸	election		606060		
() Pa	ges:	1			142434		ate
				Ŧ	Print as <u>b</u> itmap:	300	🗘 dpi
Print sty	(le:	CorelDRAW De	faults			▼ Sa <u>v</u>	e As
			~				

3. Click on "Advanced."

General	Color Composite Layout Pr	epress 🗄 No Issues		
⊢ De Pri Sta Lo Cc	Resolution:	Job Type Raster Vector © Combined	anced C or Mapping Forer setting Speed: Power: Engrave Direction: Image Dithering: Standard	- + 50 % - + 50 %
Print	Options Auto Focus Center-Engraving Center-Center Send to Laser Send to Manager	Piece Size (inches) Horizontat 8.50 Verticat 11.00	Vector Setting Speed: Power: Freq: Vector Sorting Prequency Automatic	- + 50 % - + 50 % - + 2500 Hz - + 2500 Hz
			ОК	Cancel

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."

Pri General Advanced Color Mapping Pa Raster Type Language Configurations Ste 3D Image: Stamp Image: Classic UI Pri Stamp Settings Image: Classic UI Stamp Settings Image: Classic UI Pri Stamp Settings Image: Classic UI Stamp Vector 600 DPI acrylic Gmm Vector 600 DPI acrylic Gmm Vector 600 DPI acrylic-Iphto-300 Raster 300 DPI acrylic-text.300 Raster 300 DPI Update Firmware Image: Mirror Fence Image: Prince Iman	De	Epilog Engraver W	/inX64 Properti	es					7
Paster Type Language Configurations Sta 3D Implify File Job Type Resolution Pri Stamp Settings Implify Implify File Job Type Resolution Pri Stamp Settings Implify	Pri			General	Advanced	Color Mapping			
Str Basic	P <u>a</u>	Raster Type	Language		Configur	ations			
Lo 3D Cc 3tamp Classic UI Pri Stamp Settings Shoulder: (0-50) Shoulder: (0-50) Widening: (0-6) Widening: (0-6) Widening: (0-6) Mirror Fence Print Update Firmware File: No File Logid	Sta	Basic	English		V Folder:	C:\Users\Makerspac	e\Documents\epilog	j\er Bro	wse
Cc Stamp Classic UI Pri Stamp Settings Classic UI Stamp Settings Shoulder: (0-50) O Shoulder: (0-50) Videning: (0-6) Videning: (0-6) Mirror Fence Update Firmware Update Firmware File: No File	Lo	🔾 3D				File	lob Type	Baselution	Die
Pri Stamp Settings Shoulder: (0-50) Stamp Settings Shoulder: (0-50) Widening: (0-6) Wirror Fence Update Firmware (0-6) File: No File	Co	 Stamp 	Πa	assic I II			Job Type	COO DDI	Pie
Print Update Firmware File: No File	Dei	Stamp Sattings		13310 01		acrylic 3mm	Vector	600 DPI	12
O Image: Construction of the second seco	P II	Stamp Settings	Shoulder: (0-50)		acrylic 6mm	Vector	600 DPI	8.
O Widening: (0-6) Widening: (0-6) Image: Control of the state index of the sta	•			💽 🔽	5	acrylic 9mm	Vector	600 DPI	8.5
Widening: (0-6) Image: Construction of the second	0				a	acrylic-photo-300	Raster	300 DPI	8.
Print Update Firmware File: No File			Widening: (0-6)			acrylic-text-300	Raster	300 DPI	8.5
Print Update Firmware File: No File	~		<u> </u>	- 🗛 🗆		acrylic-text-600	Raster	600 DPI	8.
Print Update Firmware File: No File Load Save						alumamark-300	Raster	300 DPI	8.4
Print Update Firmware Update Firmware File: No File Load Save	- 1	EPILOG	Mirror	🗹 Fence		alumamark-600	Raster	600 DPI	8.
Print Update Filmware		Update Firmuare			ar	nodized-photo-300	Raster	300 DPI	8.
File: No File	Print				<	iodized-photo-600	Raster	600 DPI	8.:
File: No File Load Save		Update Firmware							
		File: No File		Load	_		Load	Say	/e

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.

Pri <u>n</u> ter: E	-pilog Engraver WinX64		
	phog englaver mixtor	•	<u>P</u> references
P <u>ag</u> e: I	Match orientation (Portrait)	•	Us <u>e</u> PPD
Status: D	efault printer; Ready		
Location: 10 Comment:	0.71.5.30		Print to file
Print range		Copies	
Current docur	ment <u>D</u> ocuments	Number of <u>c</u> opies:	1
○ C <u>u</u> rrent page	\bigcirc Selection		
O Pages:	I	1 2 2 3	C <u>o</u> llate
		Print as <u>b</u> itmap:	300 🏮 dpi

