

# COLLEGE OF ART AND ARCHITECTURE

## TECH SHOP LASER CUTTER

UNIVERSAL X-660 or V-460

All files must be on USB drives - No CDs, floppies, Zips, portable hard drives, or networking

Each student is allowed only 1 hour per day cutting time with a maximum of 3 hours per week.

All cutting diagrams must be in the same file regardless of material or scale. The file must be easily visible when you first open the drive. It cannot be buried multiple layers deep in subfolders.

Files presented for cutting within 30 minutes of closing time may be rejected based upon the judgement of the shop tech.

**All files must be properly prepared by the student or they will not be cut.** Employees of the shop are not AutoDesk, Rhino, or Adobe instructors.

Importable files must be saved as .dwg, .pdf.(editable), or .jpg. These files can be generated in Autodesk, Adobe Illustrator, CoreIDRAW, or other vector based design programs.

Files created in Rhino and exported as a .dwg need to be verified by you before you bring them in for cutting. Check lineweights, colors, view orientation, etc. Be certain that you are presenting a 2D file for cutting! Export your Rhino files as 2D .dwg.

Lines for vector cutting or engraving must be drawn in .000 lineweight or they will not work at all. "Default" line weights simply will not work.

Draw a box in your model space that represents the size of material that you will be using so that you are certain that the parts all fit on your material. The line bounding this box should be black or white. The box will need to be in scale. The laser cutter leaves an uncut area of 1/4" around the edge of the material.

Avoid stacked lines as they will cut twice and you may not like the outcome. Your file will be rejected on the basis of double lines.

Colors **must** be assigned by layer. (cyan layer, magenta layer, etc.)

Please turn off all layers that will not be cutting. Simple files with fewer layers are easier to work with!

Raster engraving is used for text and for engraving bitmap images or solid hatch areas **only**.

Vector engraving is used for engraving lines, such as brick pattern onto the surface of the material. It is also used for small text, numbers of other marking used to identify parts.

Only materials on the Approved Material List may be cut or engraved.

Students are responsible for clearing away and disposing of waste material

**Maximum cutting area of the X-660 is 32" wide by 18" high (landscape)**

**Maximum cutting area of the V-460 is 24" wide by 18" high (landscape)**

There is always a sign-up sheet/waiting list. Sign the list when you want to use the machine. We will cut only your files. No grouping up.

The Universal Laser cutter is for academic projects only. We will not process any file featuring Greek letters. We will not process any file containing any mention of seasonal, holiday or commemorative messages. Anyone attempting to engrave gift items, personal items or other non-academic projects will be banned from the machine for one month.

### LINE WEIGHT AND COLOR ASSIGNMENTS (cutting order):

ORDER	COLOR	CUTTING STYLE	DESIGN REQUIREMENTS
Ø	Black	Layout lines (do not cut)	Ø
Ø	White	Layout lines (do not cut)	Ø
1st	Red	Raster engraving - (light engraving)	use for solid hatching, fill or larger text ONLY!
2nd	Green	Raster engraving - (deeper engraving)	use for solid hatching, fill or larger text ONLY!
3rd	Yellow	Vector engraving - (light engraving)	lineweight → <b>.000 ONLY!</b>
4th	Blue	Vector engraving - (deeper engraving)	lineweight → <b>.000 ONLY!</b>
5th	Magenta	Vector cutting - interior cuts	lineweight → <b>.000 ONLY!</b>
6th	Cyan	Vector cutting - final perimeter cuts	lineweight → <b>.000 ONLY!</b>