WAZER Desktop Waterjet Cutter Safe Operating Procedures

Last Updated: 7/20/23 Rachel
This SOP is compiled from the following sources. For more information reference these sources.

- Wazer User Manual
- Wazer Maintenance Manual

Training Checklist

- Safety Considerations
- Materials
    - Allowed Materials
    - Prohibited Materials
- Mounting Materials in the Bed: Polypropylene Plastic Corrugated Bed
- Cutting
- Troubleshooting
- General Material Recipes For Aluminum
    - Thickness, cutting settings
- Ask wizard for assistance creating new material recipes

Location

The Wazer Waterjet is located on the second floor in the Innovation Workshop, found across from the lathe.

Overview

- This training provides an introduction to using and operating the waterjet cutters including:
    - File Types
        - DXF
        - SVG
    - Software
        - Job Control
        - WAM Software
    - Safety
        - General hazard
        - Material composition
    - Waterjet Use

Safety Considerations

- Always wear safety glasses when using the machine.
- Always work with the machine cover closed.
- NEVER leave the waterjet alone when running a job.
- **The machine door must be left open while you are away.**

- Remove leftovers of used abrasive in the used abrasive bucket before running a new job.
- Confirm that there are no leaks when running a job.

Material

Always check materials list BEFORE attempting to cut/engrave a material. If unsure contact IW Staff.

Allowed Materials

- Thin sheets of metal (less nominal results for thicker sheets)
- Glass and ceramics (will produce larger kerfs)

Not Recommended Materials

- Plastic (poor finish and will clog filters)
- Rubber (poor finish and will clog filters)
- Composites (will delaminate)

Cutting with the Wazer Waterjet

1. **Check water bed level**. Make sure the water level is nearly up to the top of the bed (within 2 mm or so). If there is not enough water, add some more with the rubber hose connected to the DI water. Insufficient water levels will not allow the waterjet to turn on.
2. **Check Abrasives**. Make sure the unused abrasives will be
3. **Turn on Water and Power Supplies**. Turn on the water by turning the sink on. If there are any signs of leaks, turn off the water immediately and notify a wizard. Make sure the power supplies have a green light on. If not, try pressing reset.
4. **Open WAM**. This is where you will create the toolpath for your job. Upload your DXF or SVG file onto the software, and export it via SD card.
5. **Place material on bed**. Fixture your material with fasteners. For brittle materials, do not over-torque the fixture. Make sure your fixtures are not in the way of the toolpath.
6. **Insert SD Card and Turn On**. Make sure you insert the SD card before turning on the waterjet! The power switch is located on the underside of the right, towards the front.
8. If everything is OK, click the play button and your part will begin to print.
9. **YOU MUST NOT LEAVE WHILE PART IS BEING CUT AS FIRES COULD OCCUR**
10. Once the print has been completed, open the lid, lower the bed and remove the part. Make sure all pieces of material are removed from bed.
11. **Turn off the printer** and close the lid. The computer should be left on.

Troubleshooting

- If there are no cuts appearing after starting a job, it may be because the abrasive is clogged. Make sure there is abrasive coming out by removing the abrasive slip cover and then the dry abrasive hopper. Check to see if the plug hole has anything clogging it with a flashlight, and if there is, press the pinch valve button and clear it with compressed air. Press the pinch valve button again and if there is abrasive flowing through, the clog has been resolved.
- Make sure that cuts are hairline thickness.
- If the PC will not connect to JobControl after clicking the USB button try restarting JobControl or turning the printer off and back on after 5 sec.

- If the jobs menu disappears from the right side of Job Control, you can get it back under the “view” dropdown.

General Material Recipes For Acrylic

Thickness	Engraving Settings	Cutting Settings
1/16“	50% power, 25% speed	100% power, .6% speed
1/8”	50% power, 30% speed	100% power, .45% speed
1/4“	50% power, 30% speed	100% power, .2% speed

General Curf Width For Acrylic

Thickness	Curf Width
1/16”	.001“
1/8”	.0065“
3/16”	.085“
1/4”	.0056“
