

# Post-processing Resin Prints

Once a part is printed, the cleaning and finishing processes begin...

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## Washing

- Obtaining any reasonable final quality requires cleaning and such, but how that gets done is anyone's choice

## Dunk Buckets

- Nearly free since everyone has access to an airtight container that could hold the solvent
  - Once resin or resin containing solvent has touched the container it can NEVER be used for food EVER again!
- Strainers that fit inside the container of solvent are very convenient for cleaning small parts
- Containers with lids that seal well enough to shake and agitate the solvent without leaking are awesome!



## Resin Washing Machines

- Can be pricey at >\$100 USD for the simplest washing stations
- Mega convenient and easy, but not a Fix-All for cleaning
  - If parts are not "pre-rinsed" before being put inside a wash station, the solvent will foul much more quickly and need replacement or refreshment in a very short time
- My "ELEGOO Mercury X Bundle Wash and Cure Station Set" was \$200 USD when purchased and takes nearly 2 gallons (7.5l) of solvent
  - My first 2 gallons of solvent only lasted me 2 weeks

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- The image displays two views of the ELEGOO 3D printer. The left view shows the transparent front panel with a vertical scale indicating internal volume in milliliters (mL). The scale ranges from 500mL to 7000mL in increments of 1500mL. The right view shows the printer's output, a yellow 3D model of a muscular figure, standing on a platform. The printer has a digital display showing '3000' and the ELEGOO logo.

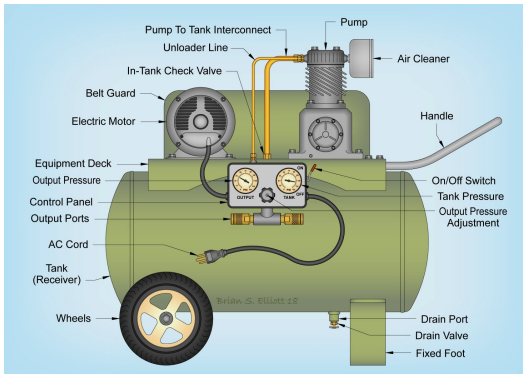
Blowing any resin or solvent from within the tiny crevices of a printed part, is a great way to ensure the highest quality finished product. This also means wearing an apron or smock to cover the body and a face shield to keep splattered resin off our faces.

- Fairly low pressure is good to prevent splattering solvent everywhere
- Lower pressures make the drying process take longer
- Very low risk of air jet breaking delicate printed features



Air Compressor <100PSI

- Higher volume and pressure levels are a double edged sword; fragile features can be destroyed by high pressure air
- Makes very quick work of drying parts without fragile details to break
- Buying a compressor, regulator, hose, and nozzles just for resin cleaning might be cost prohibitive



## Heated Drying Chambers

This is not truly necessary and doesn't have to be complicated. Our goal is to *warm* the printed, cleaned, and forced air dried part enough to dry any remaining solvent that might be hidden somewhere. Letting a printed, cleaned, and forced air dried part just sit to dry thoroughly overnight is a perfectly reasonable option, heat just makes it FASTER.

### Home Made hot boxes

- Fire Extinguisher - cause life happens and is very cheap insurance!
- Thermometer of some kind is nice, so we know the parts aren't getting too hot
- Possible heat sources
  - Hair dryer
  - Heat gun
  - Print chamber heater
  - Power supplies
  - Space heater
  - almost any other heater...
- Possible enclosures
  - Styrofoam drink cooler
  - Cardboard box
  - Wooden box or crate
  - Tent
  - Bucket
  - Barrel
  - anything that will safely contain whatever heat is being added

In the summertime, I have draped a black trash bag over a chair to cover my parts left on the seat. When the chair was left outside in the sun for a few hours everything underneath came out plenty dry and warm.

The PTC controller/sensor, 100W 12v heating element, and fan are the same parts used in the Resin Chamber Heater:



## Heated washing or curing machines

- Some Wash & Cure stations include a heating feature to aid in drying speed
- This additional automation can be both boon and curse
  - Automation is awesome! Who doesn't love less work?
  - If there is resin or solvent trapped somewhere it can leak out during the automated drying and/or curing process making the dried resin harder to wash off again if it didn't get cured onto the part.



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## Curing

Parts that have been printed, washed, and dried are still not up to their final material properties such as: strength, toughness, elasticity, etc. Parts must be thoroughly cured by using the same Ultraviolet light that was used to create them, except now we are "soaking" them over a longer duration.

## UV Lights

- Any UV light source in the 350nm to 425nm range can be used to cure resin prints
  - Flashlights, Flood Lights, LED Strips, UV Keychains, etc.
  - Outside in the Sun is always a reasonable option but can sometimes be too harsh
- We don't want to "burn" or over cure some of the more sensitive resins
  - White, Clear, Yellow, etc. can discolor or cloud if over cured or cured with too much intensity
  - Many have claimed that certain resins will warp if over cured but I have yet to have that issue
    - My parts typically warp for some OTHER reason!



## Curing Machines

- Their speed and convenience are excellent strengths, but there is always a cost for convenience
- Most machines have great features like timers, turntables, side lights, under lights, top lights, etc.
- This is another big thing that has to have a home in the work area... I need a bigger area!



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