The B9Creator™

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Visual Assembly Guide

Step 6 - Final Assembly (2 of 2)

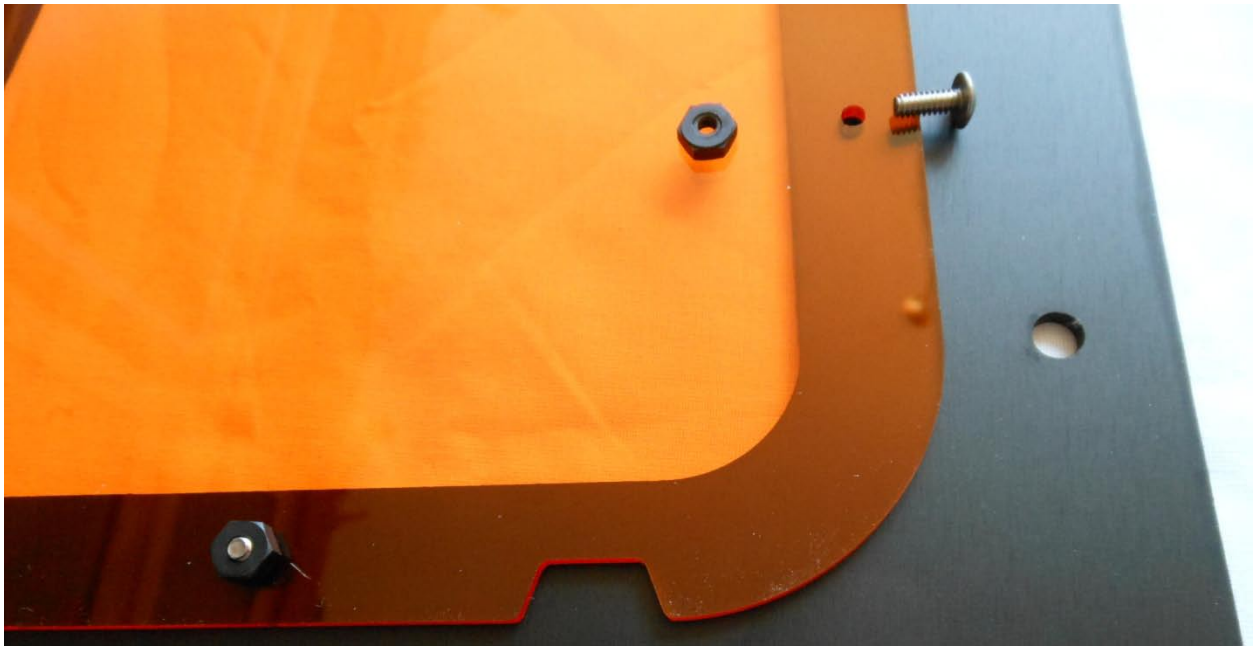
Completed B9Creator

View an online video of Step 6 - Final Assembly 2

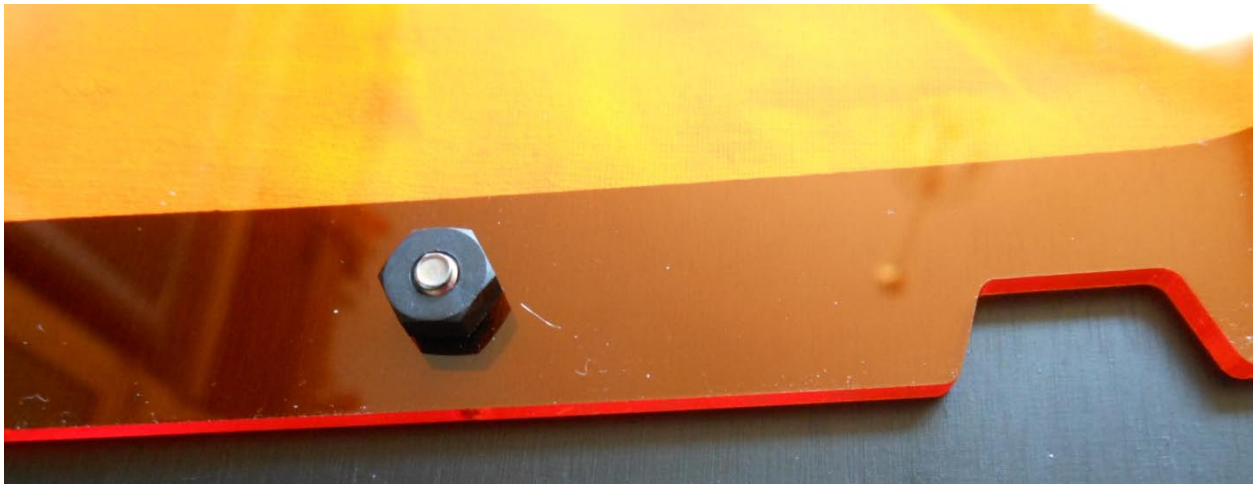
Window Assembly

Windows are secured to frames with SA18 hardware.

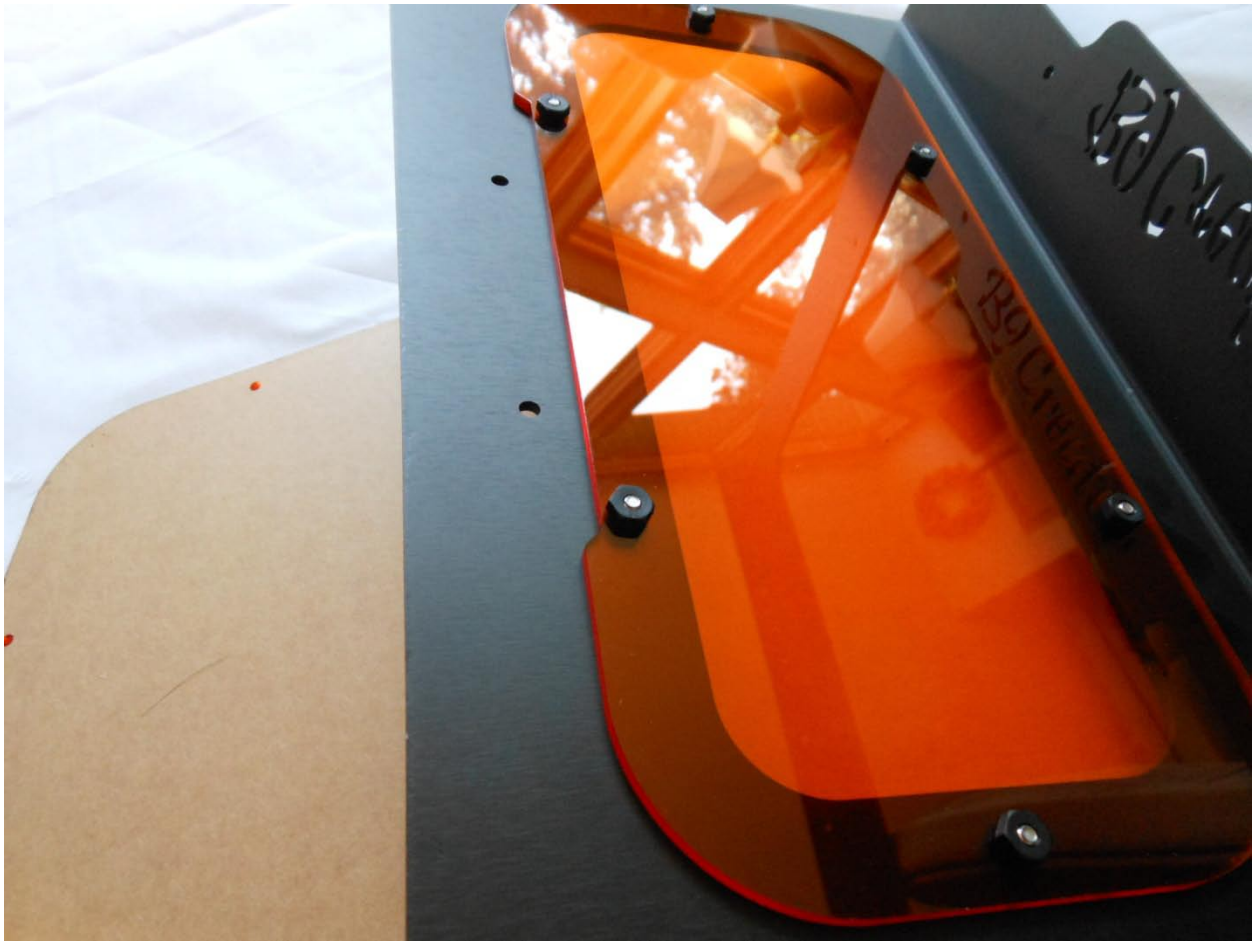
Peel the protective paper off the acrylic windows before proceeding.



Windows are placed on the inside of the frames.



Do not over tighten the nylon nuts.



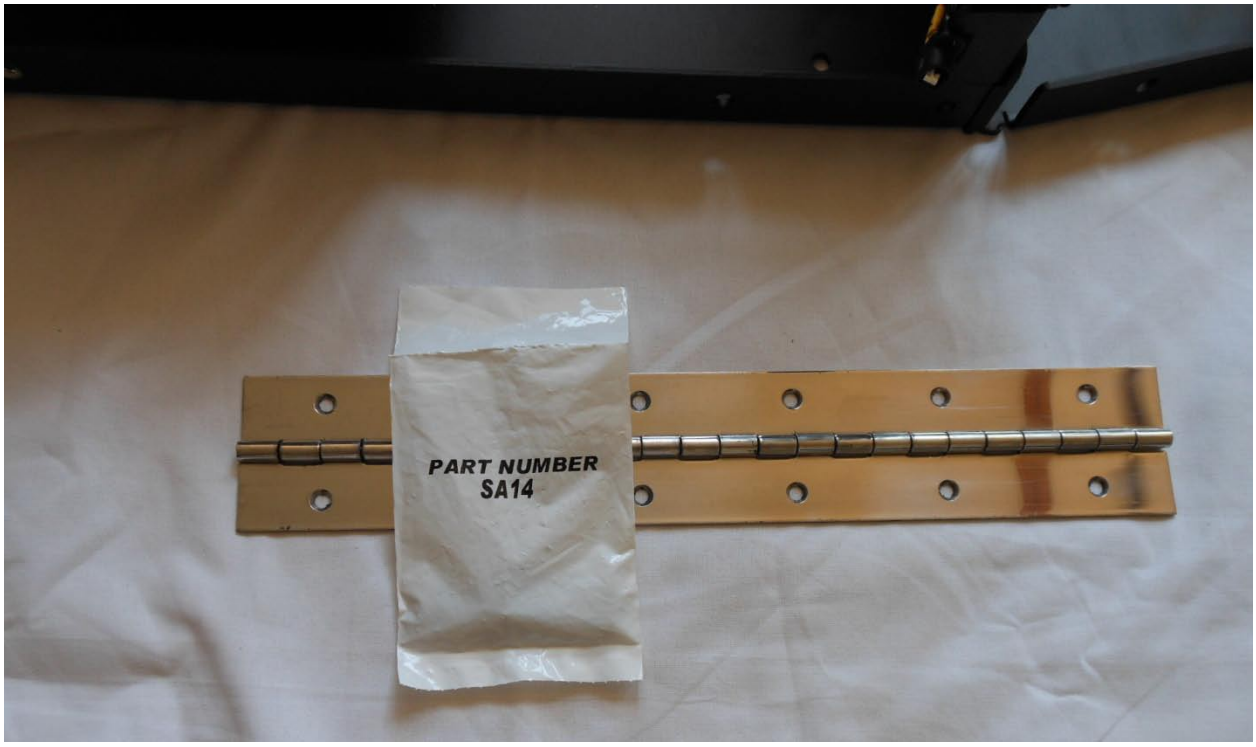
Note the orientation of the top window with clearance "notch" toward the handle screw holes.

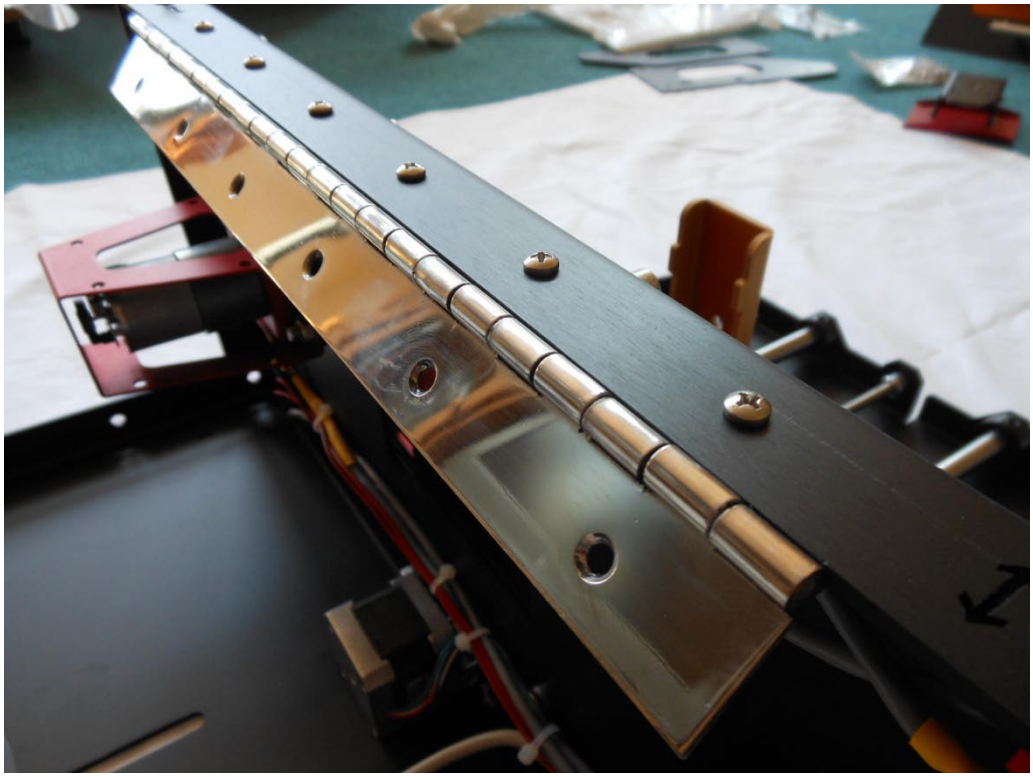
Windows installation finished.

Hatch Handle Installation

Handle secured with screws.

Attaching Hinge to XA Assembly

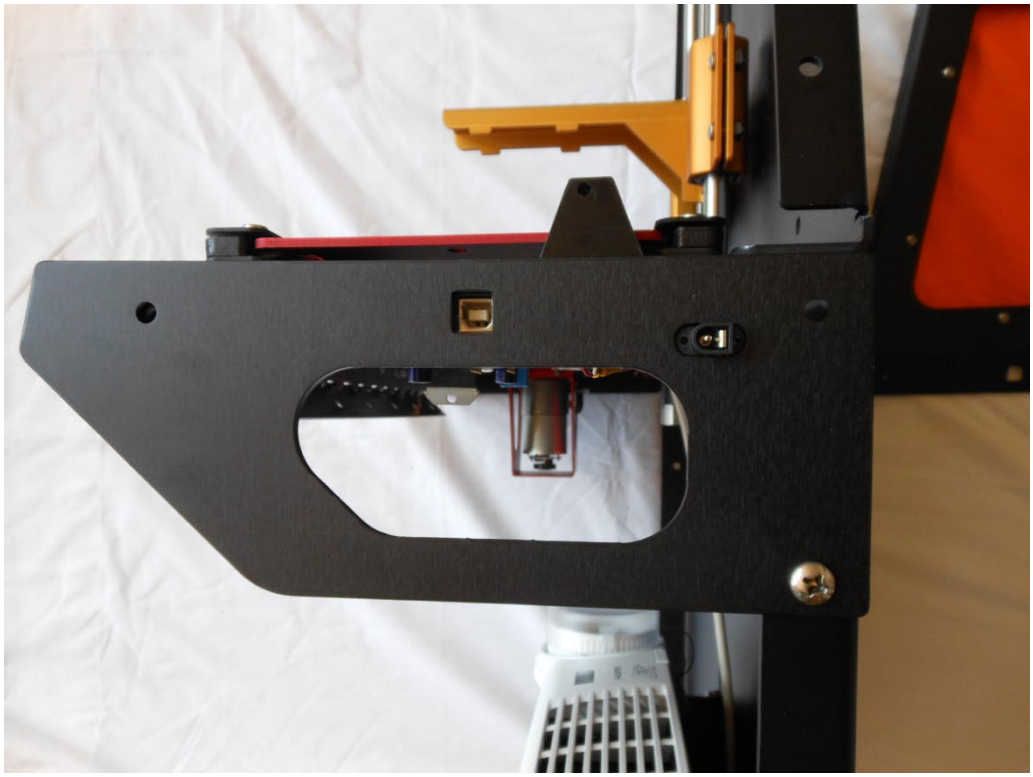




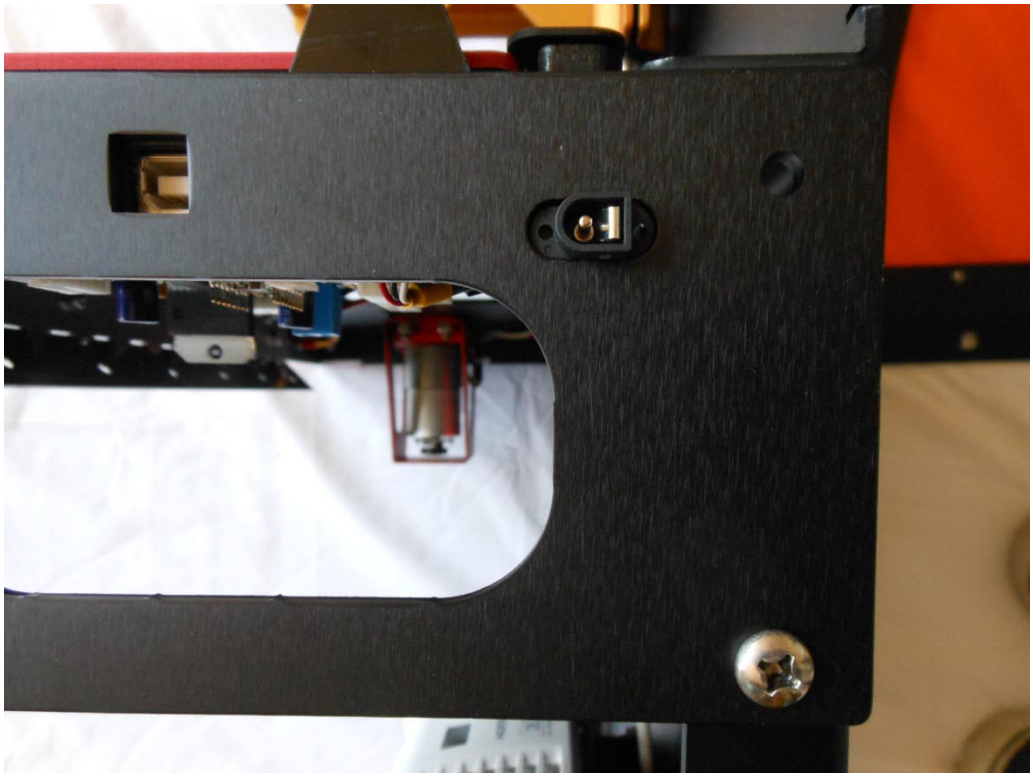
Attaching Left Side Frame & Foot ("printer's left" side)

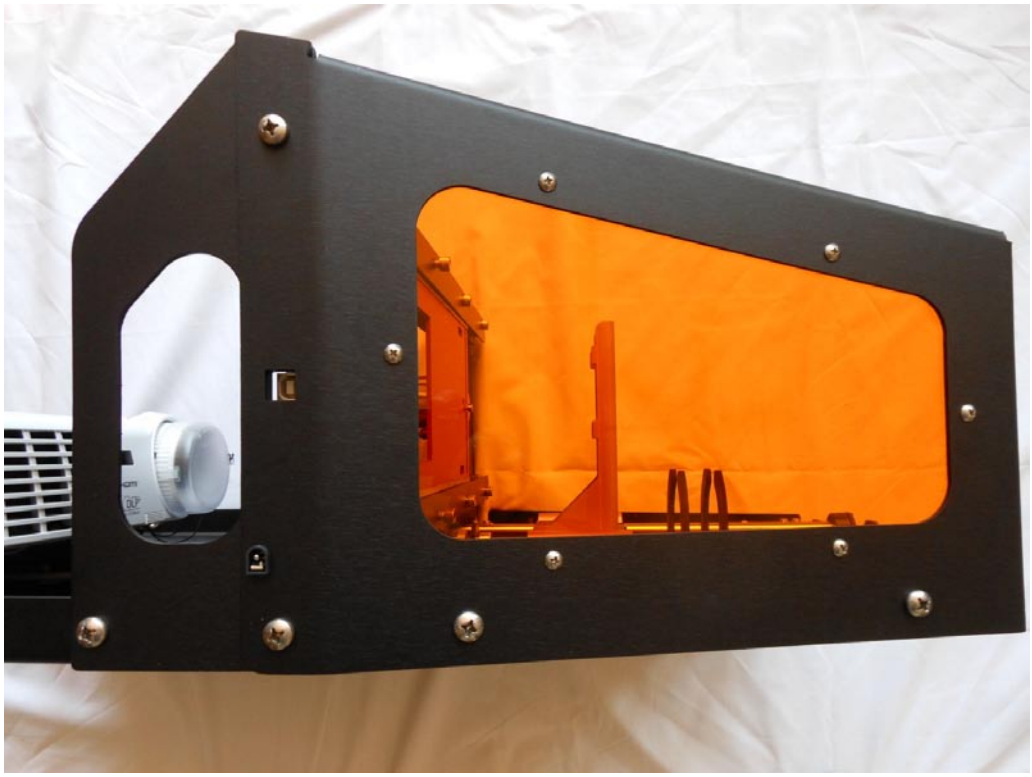
Note that four sets of the SA15 hardware were used in the last procedure. The remaining four sets will be used now, two on the left side and two on the right.

The SA15 screws are slightly longer than the SA17 and are used where we need to attach 3 layers of aluminum parts (vs only 2 layers for the shorter SA17 screws).

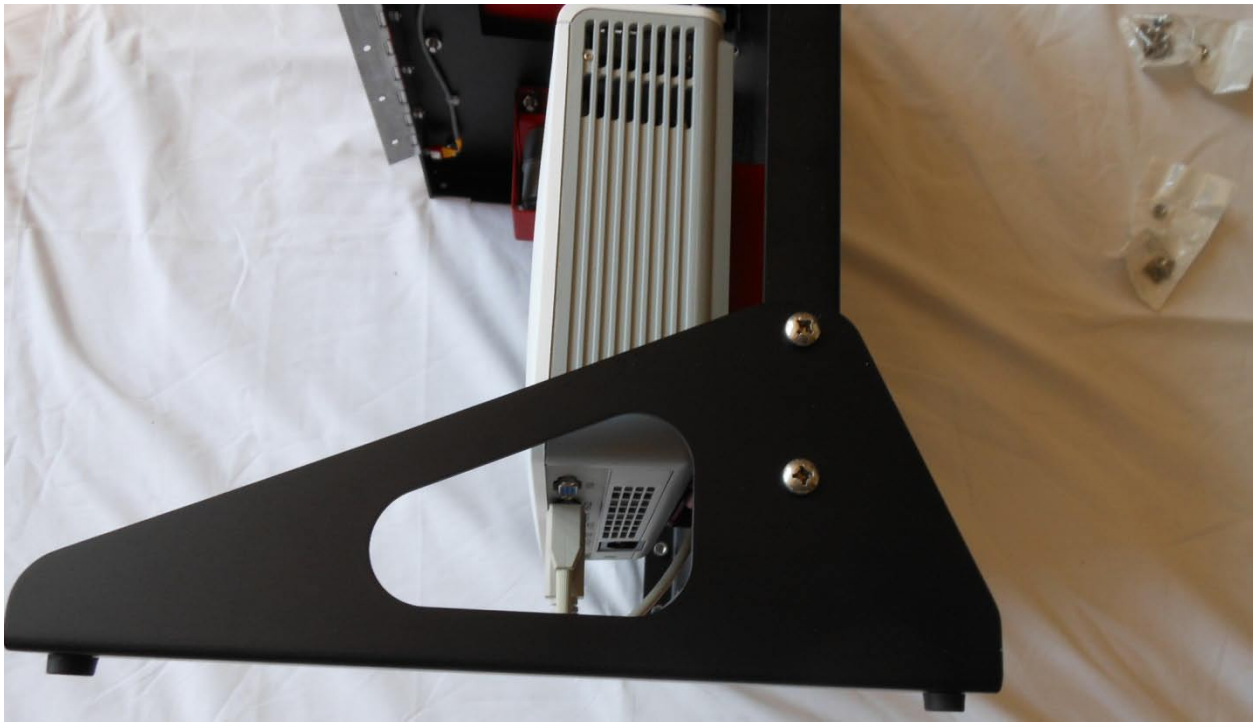


Held in place with one SA17 (do not fully tighten until all screws are started). Note alignment of the power input jack and Arduino USB port.



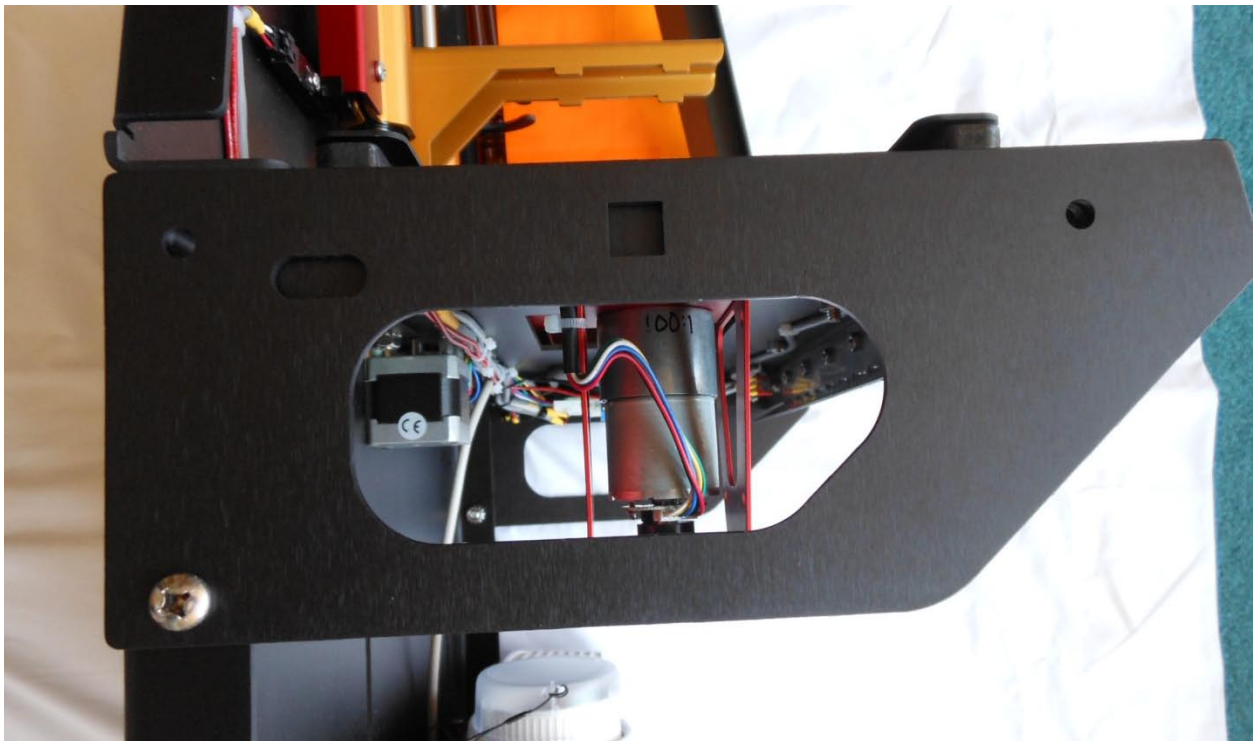


Attached with three sets of SA17 and two sets of SA15. Securely tighten all screws before finishing.

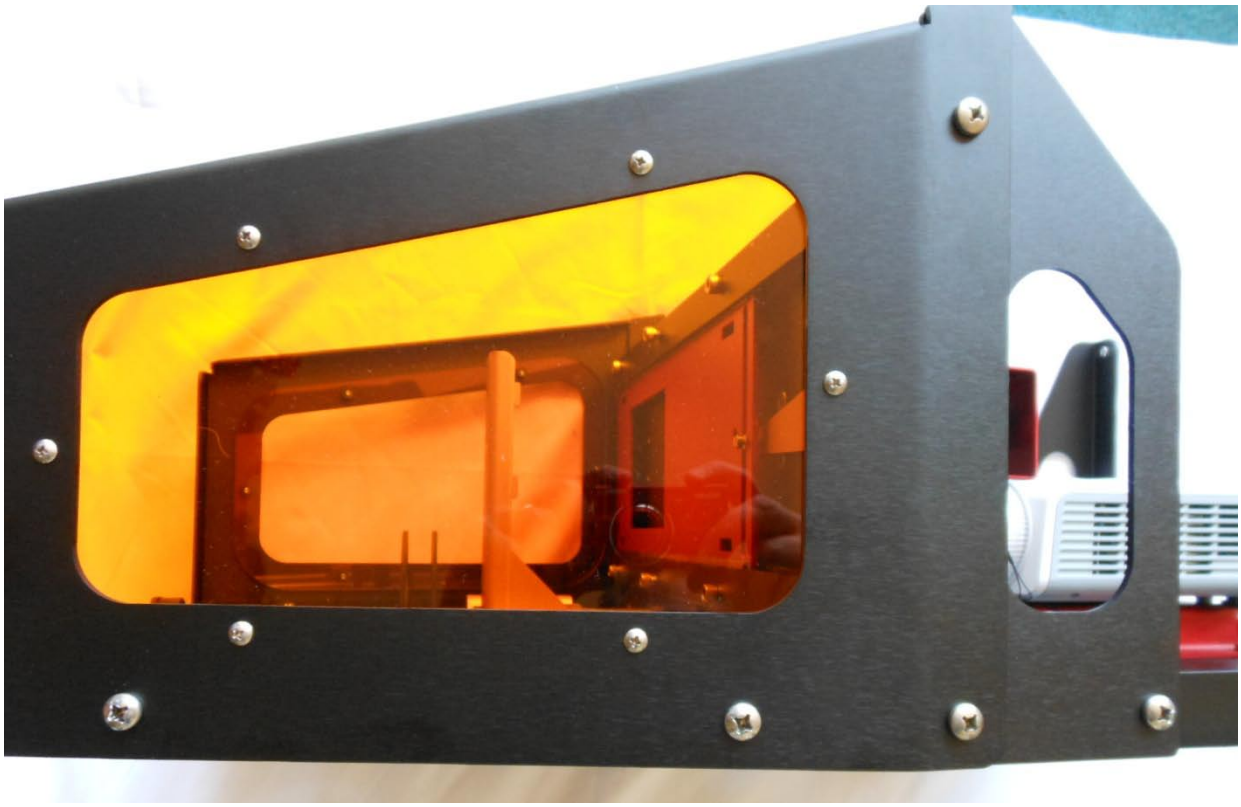


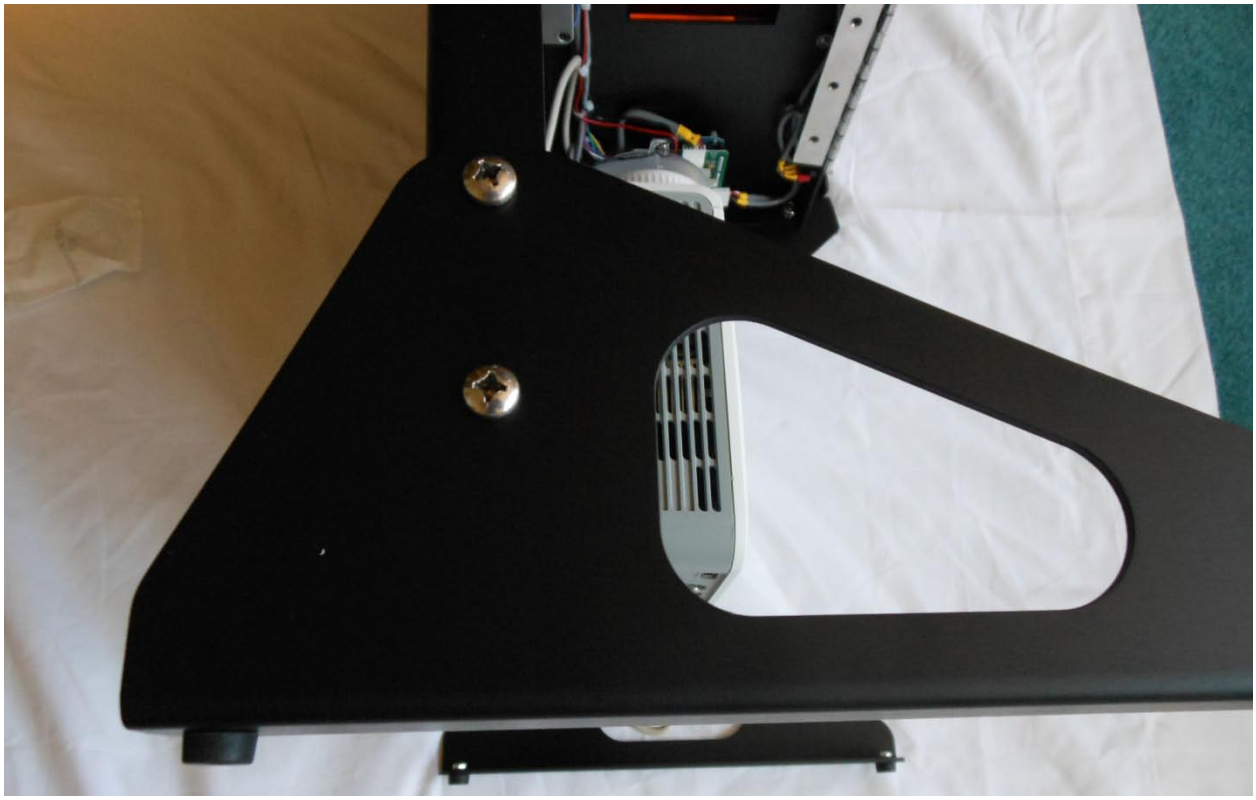
Attach foot with two SA17 screws, tighten securely.

Attaching Right Side Frame & Foot



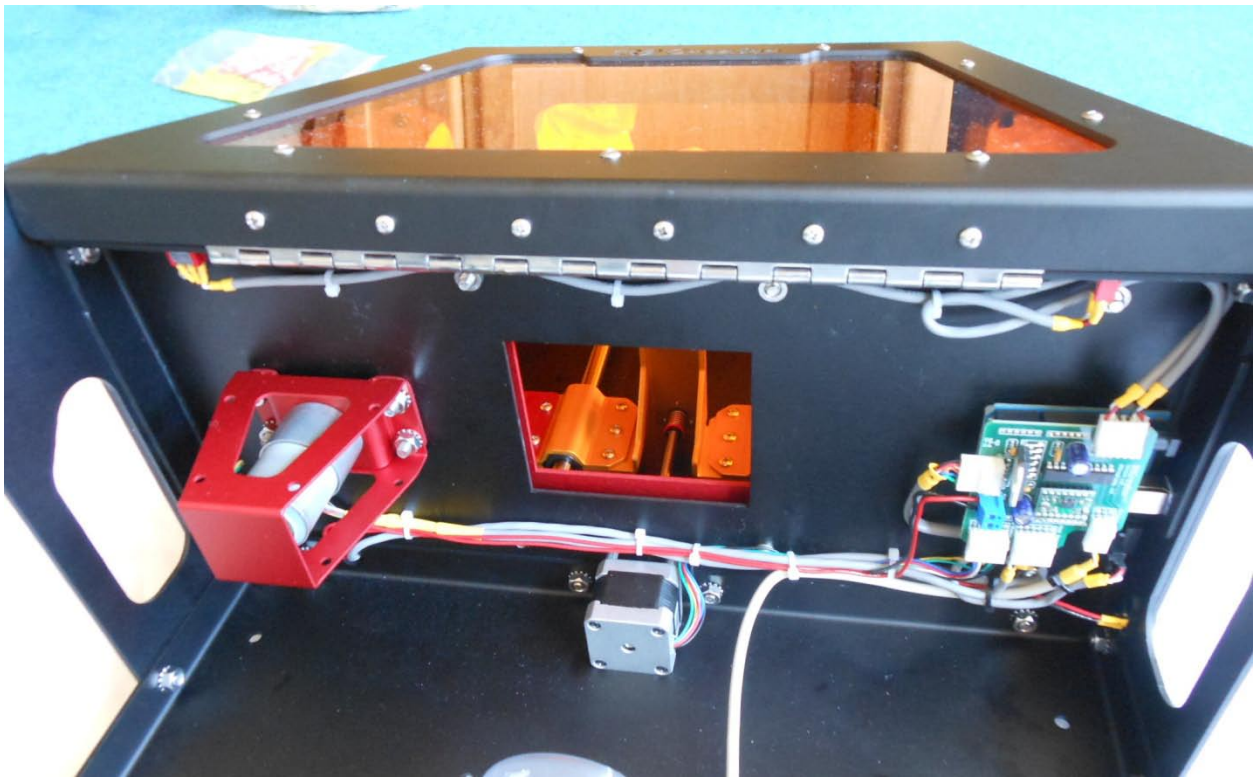
Similar to left side but without power & USB ports.





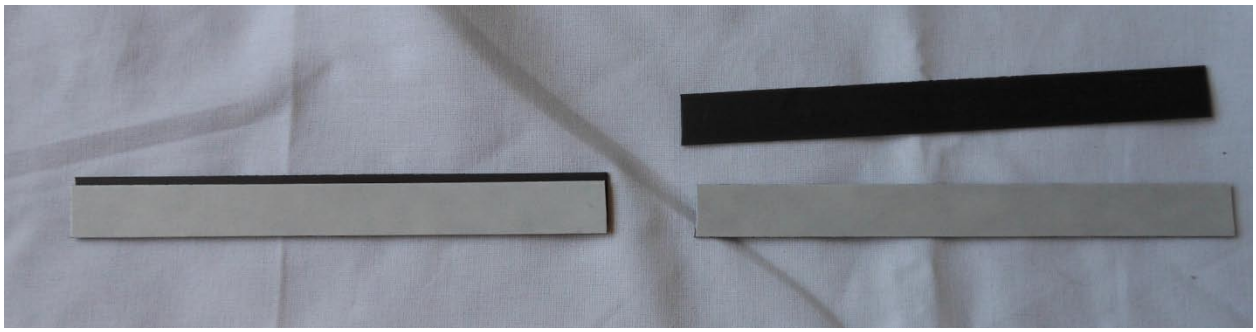
Both sides attached.

Attaching Hatch to Hinge



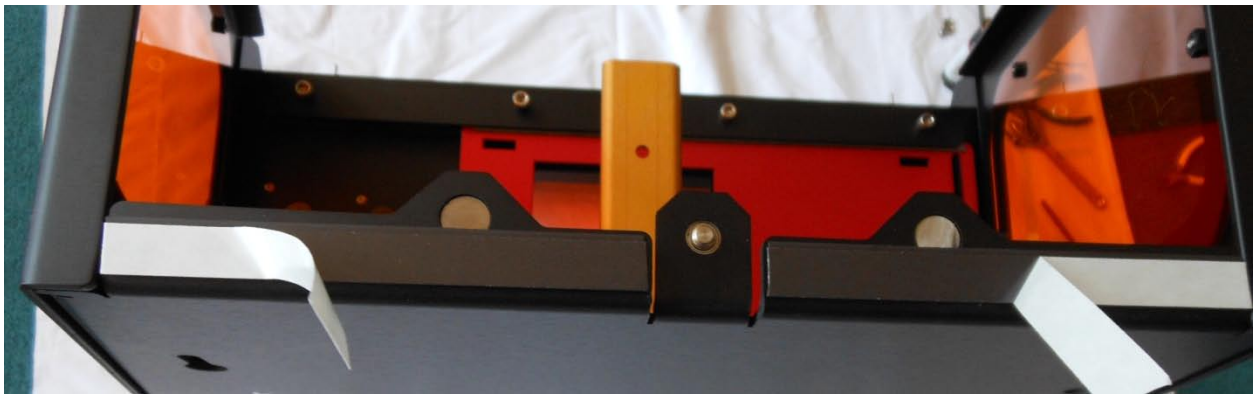
Attached Hatch, note hinge flap on inside lip of hatch.

Attaching Self Adhesive Magnetic Hatch Strips

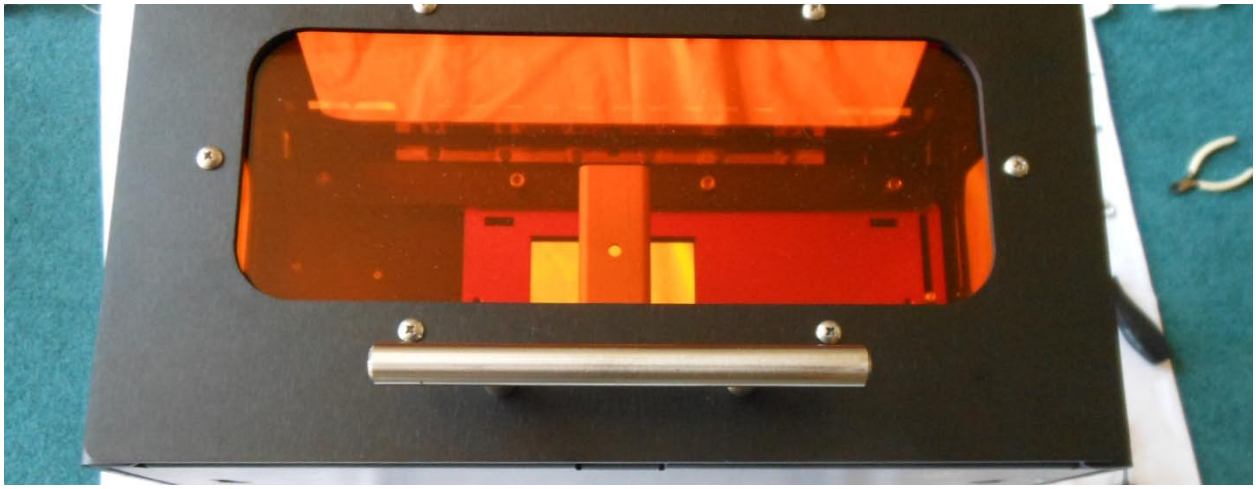


There are four magnetic strips, place two together with adhesive sides "out". Trim length with scissors if needed.

Remove protective paper from lower strips and affix to top lip of ZA as shown.



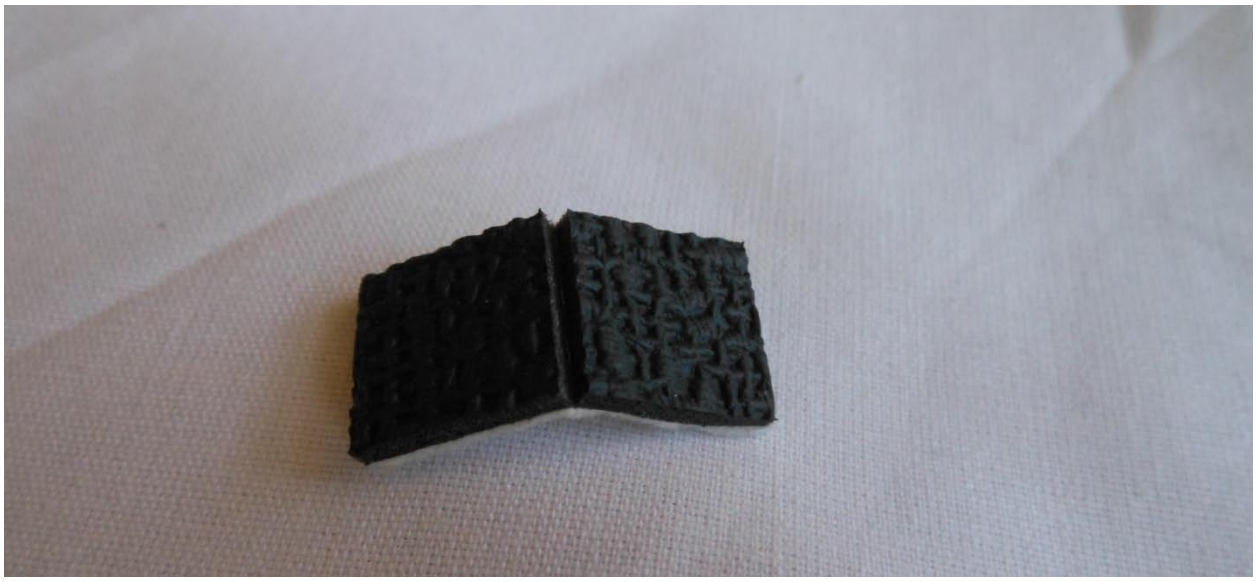
Remove protective paper from top strips. Carefully close hatch to correct position and press in place.



Hatch closed.

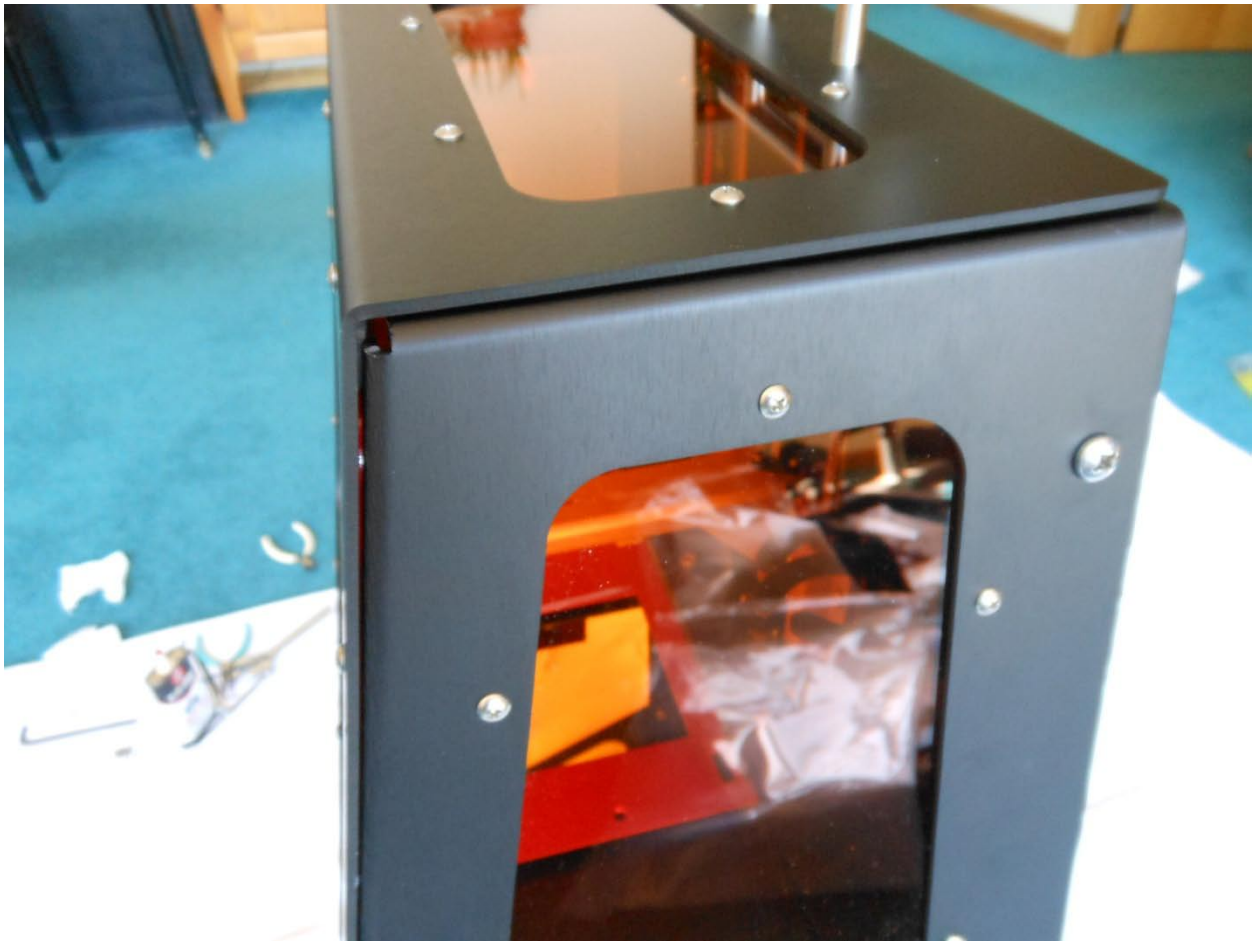
Top magnetic strips now adhered to hatch.

Attaching Self Adhesive Hatch Cushion Pads



Peel each off of protective paper.

Attach to inside front of hatch.



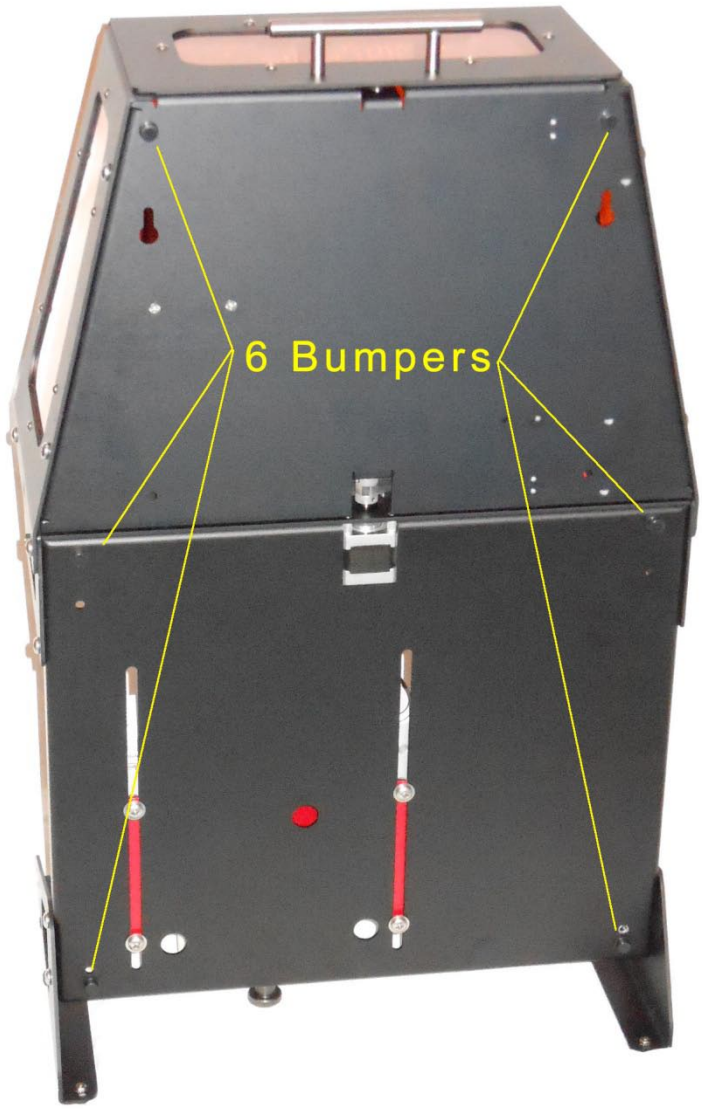
Hatch in closed position with cushions and magnetic strips.

The purpose of the hatch and windows is to block higher frequency light (blue and above) from curing the resin. Red and lower frequency light will not cure the resin. It also acts as a dust cover.

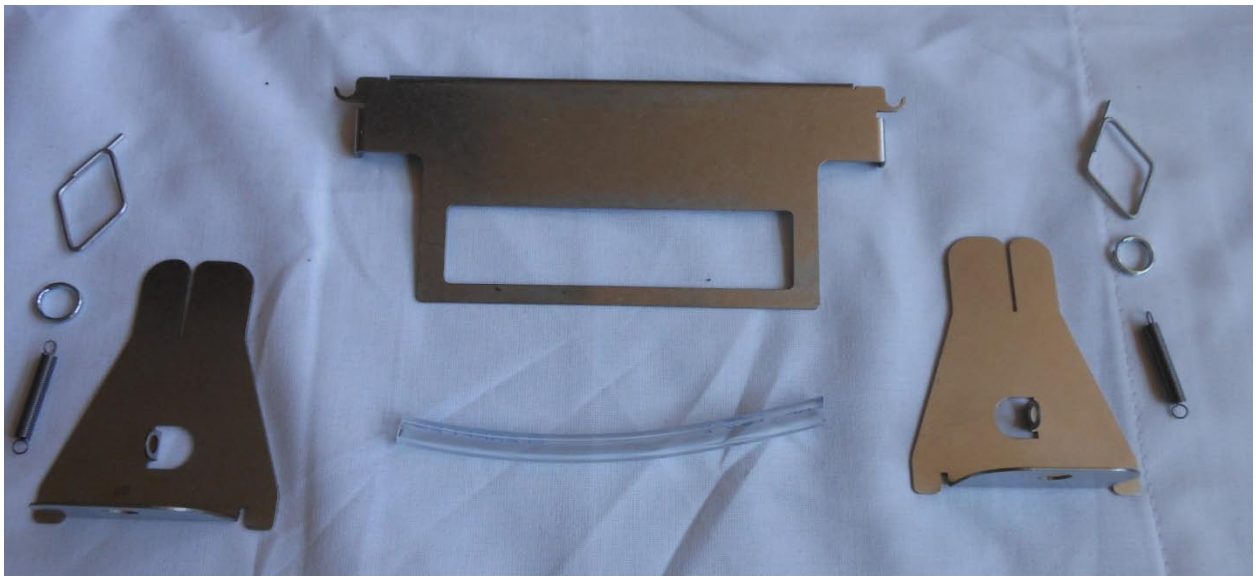
Attaching Self Adhesive Wall Standoff Pads

Peel each of the six pads off and affix them to the back of unit as shown below.

The Pad's purpose is to cushion the unit if mounted to a wall.

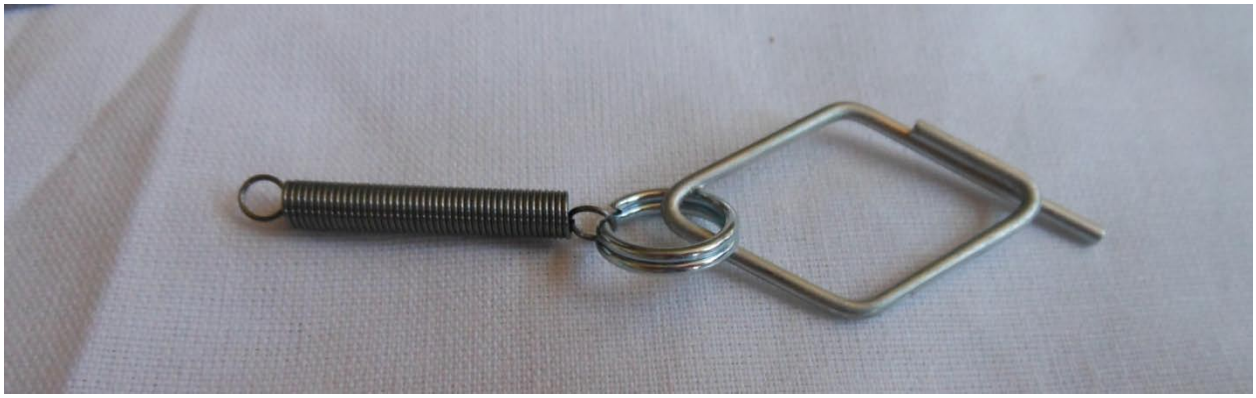


Sweeper Assembly & Attachment



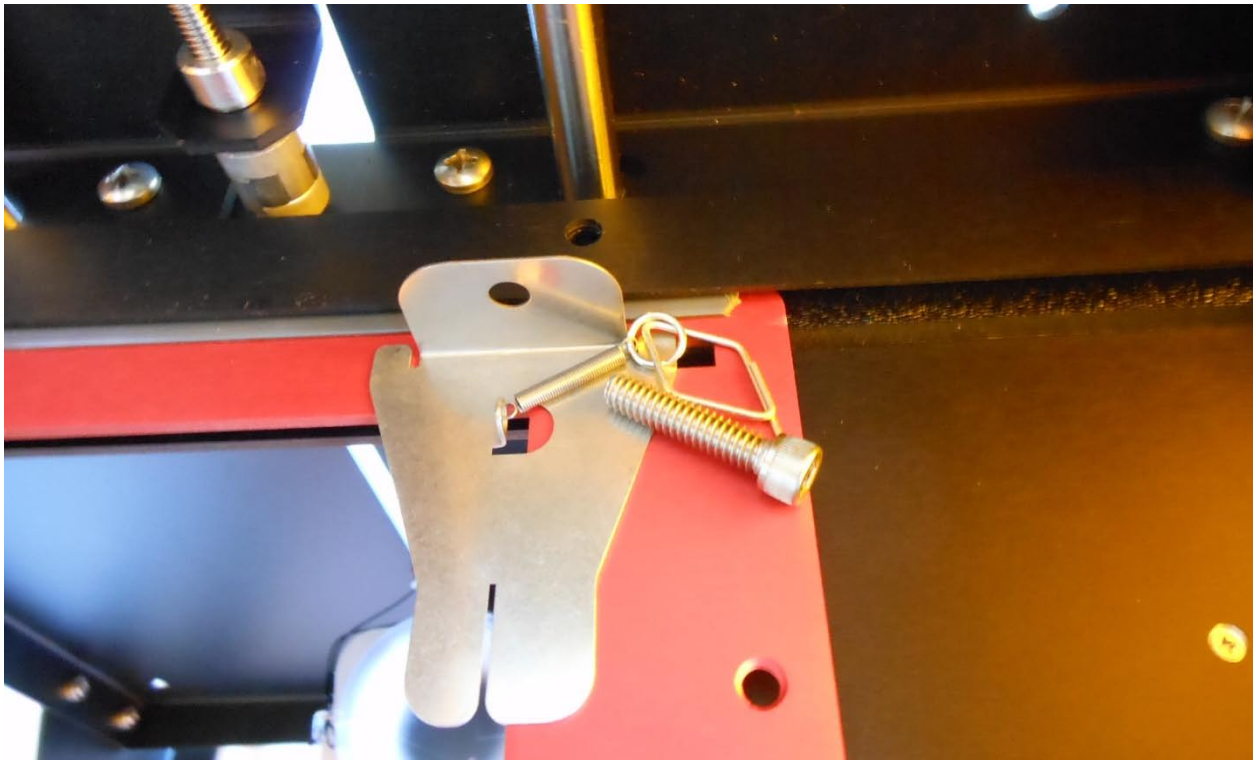
Note there are "front" and "back" brackets. In the above photo the "front" is the one on left and the "back" is the one on the right.

Sweeper with split PVC tube wiper attached.

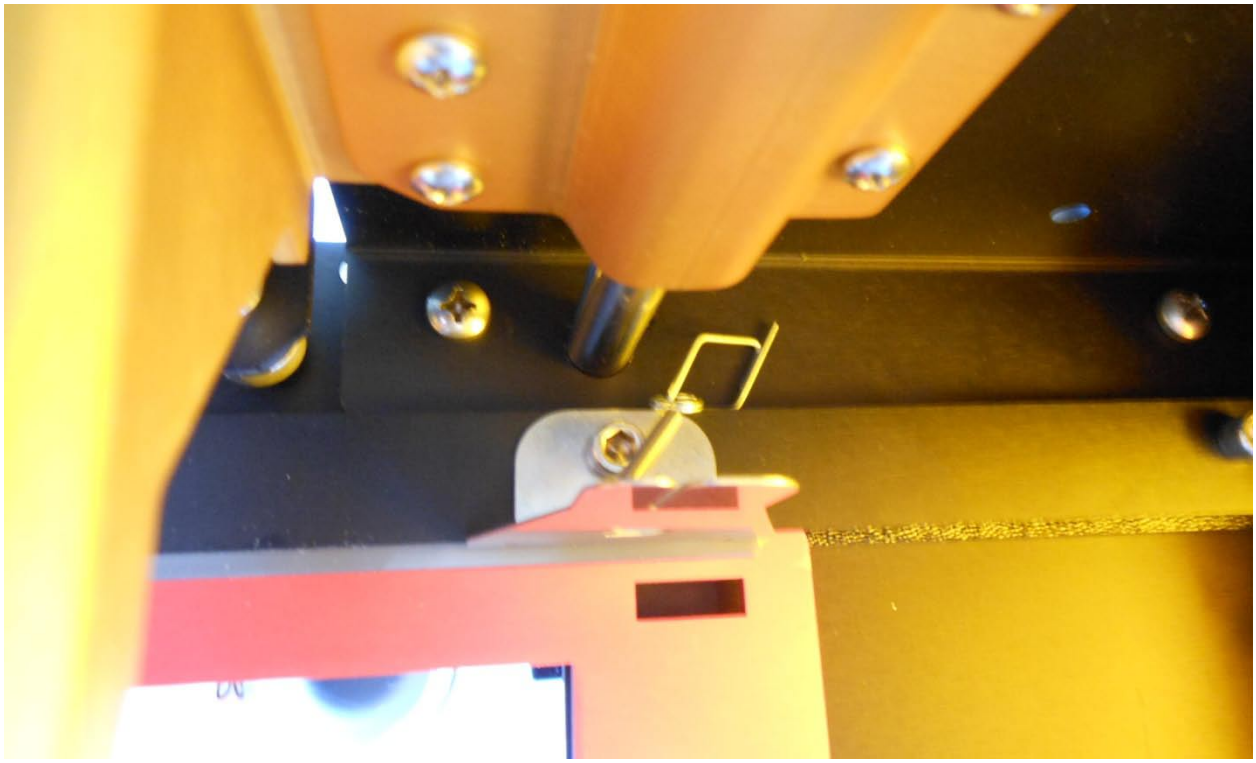


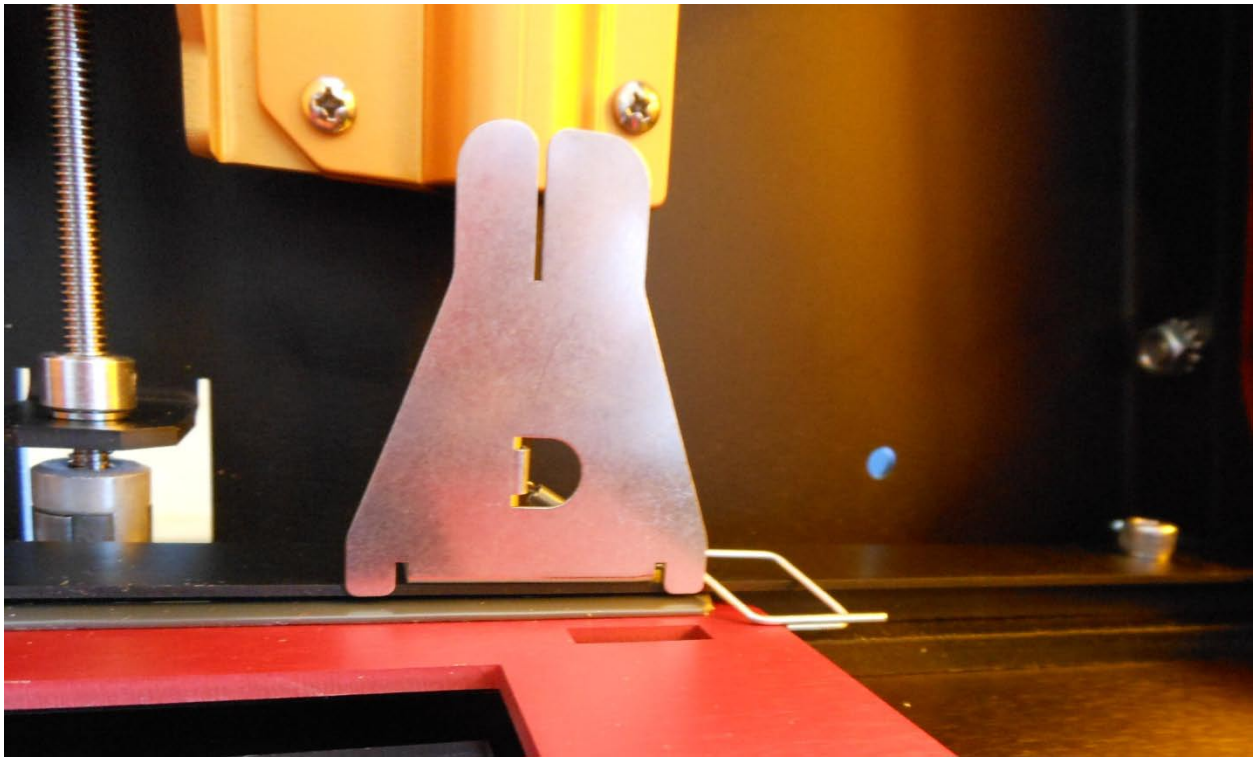
Back bracket spring assembly finished.

Front and Back brackets completed.

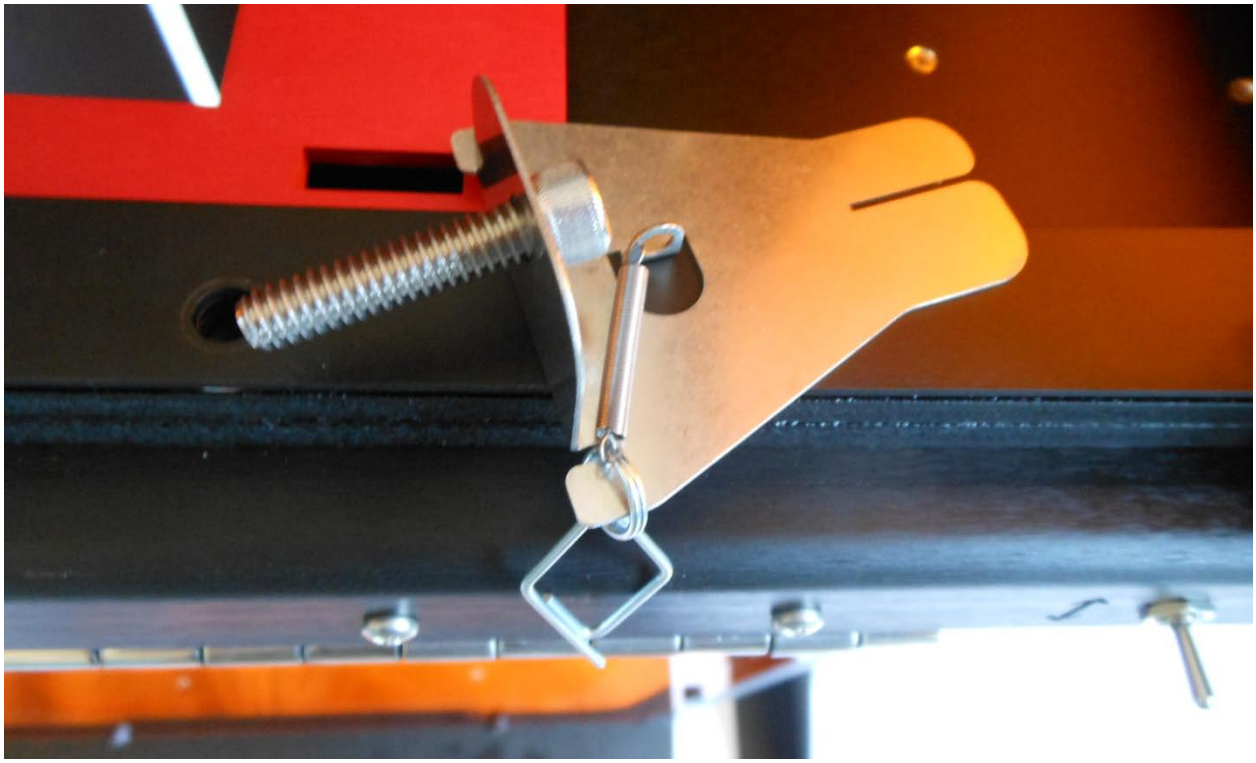


Preparing to attach the Back Bracket using the slide track screw.

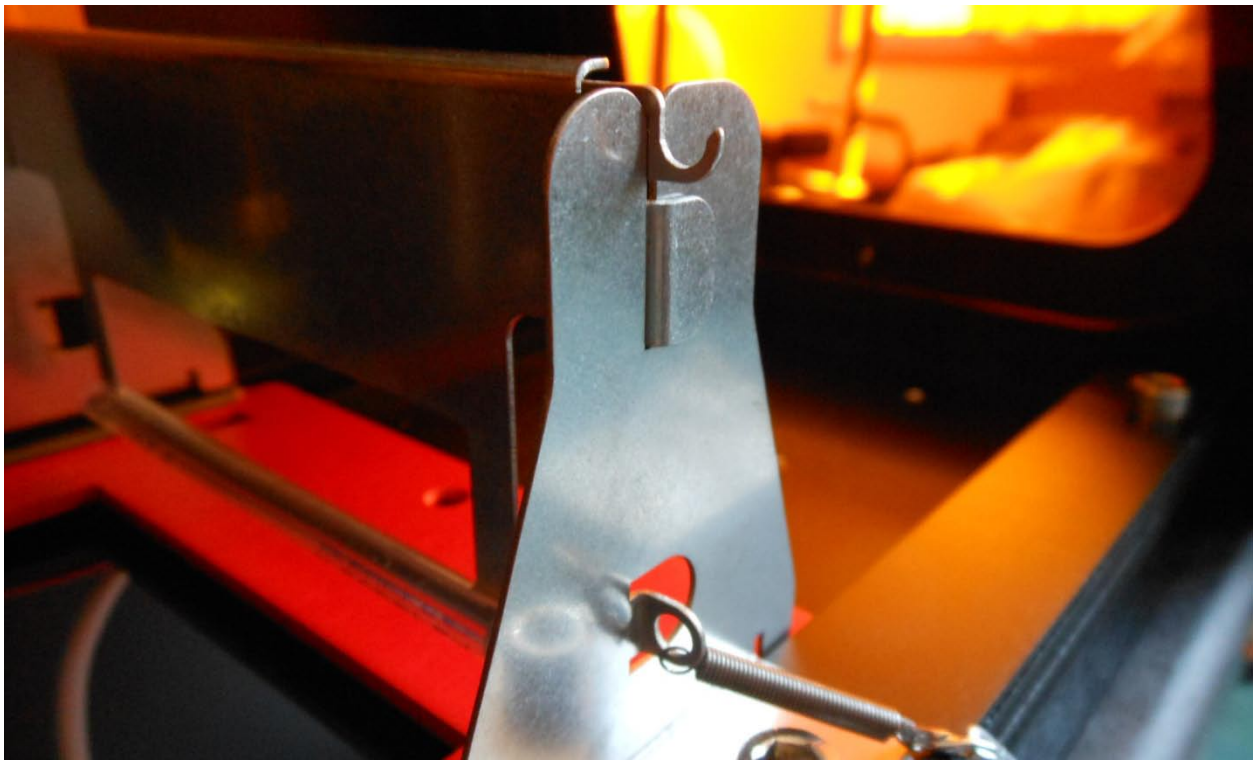




Back Bracket attached and secured with hex wrench.



Repeat the procedure for Front Bracket.



Detail of sweeper in place.

Detail of sweeper held in place under spring tension (VAT is not installed). Use the diamond shaped "handle" to easily hook/unhook the spring ring onto the sweeper hooks (front and back).

Note that sweeper should only be installed when there is resin in the Vat. The resin acts as a lubricant between the PVC wiper and the PDMS coating on the bottom of the VAT.

NEVER OPERATE THE SLIDING VAT "DRY" (No Resin) WHEN THE SWEEPER IS INSTALLED!

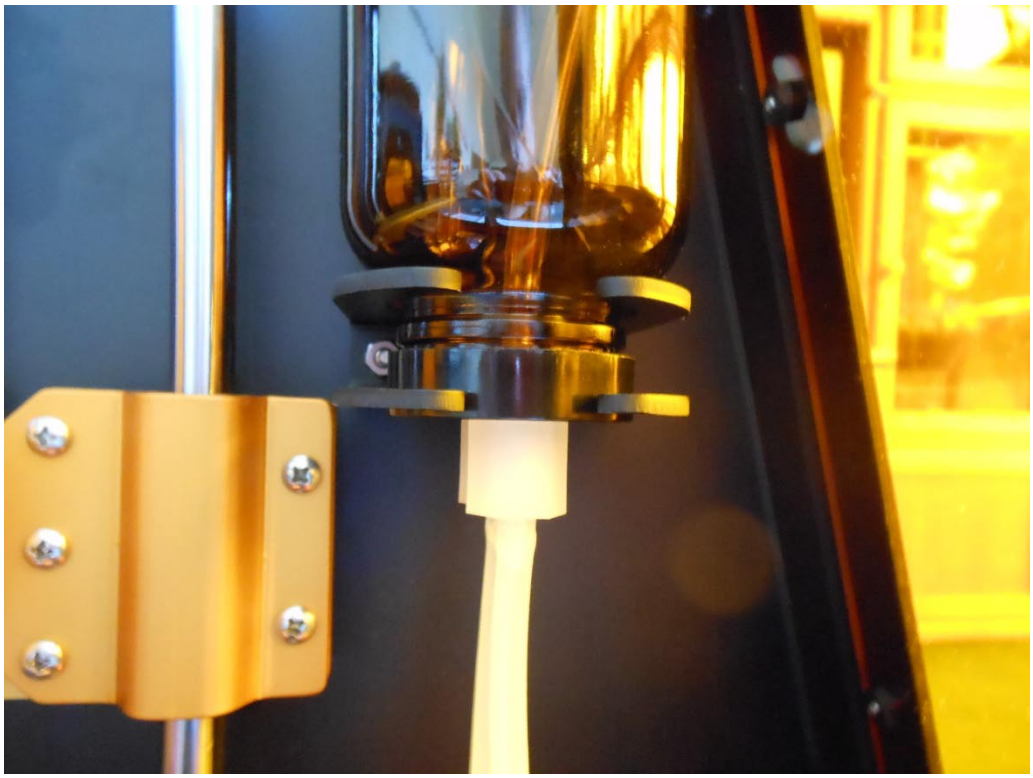
DOING SO MAY DAMAGE THE VAT'S PDMS COATING!

Please note: The Sweeper provides three functions. When the Vat slides during the part release cycle it clears the resin from the surface of the PDMS allowing atmospheric oxygen to be reabsorbed into the PDMS. It is the Oxygen in the PDMS which inhibits the resin from curing (sticking) to the bottom of the VAT. If the PDMS becomes oxygen "starved" during the print cycle it will eventually become damaged. Second, the sweeper clears the PDMS surface of any particles of cured resin which did not adhere to the object being printed. This prevents these particles from building up and damaging the PDMS. Finally, the sweeper stirs the resin helping to keep pigments from settling during long prints.

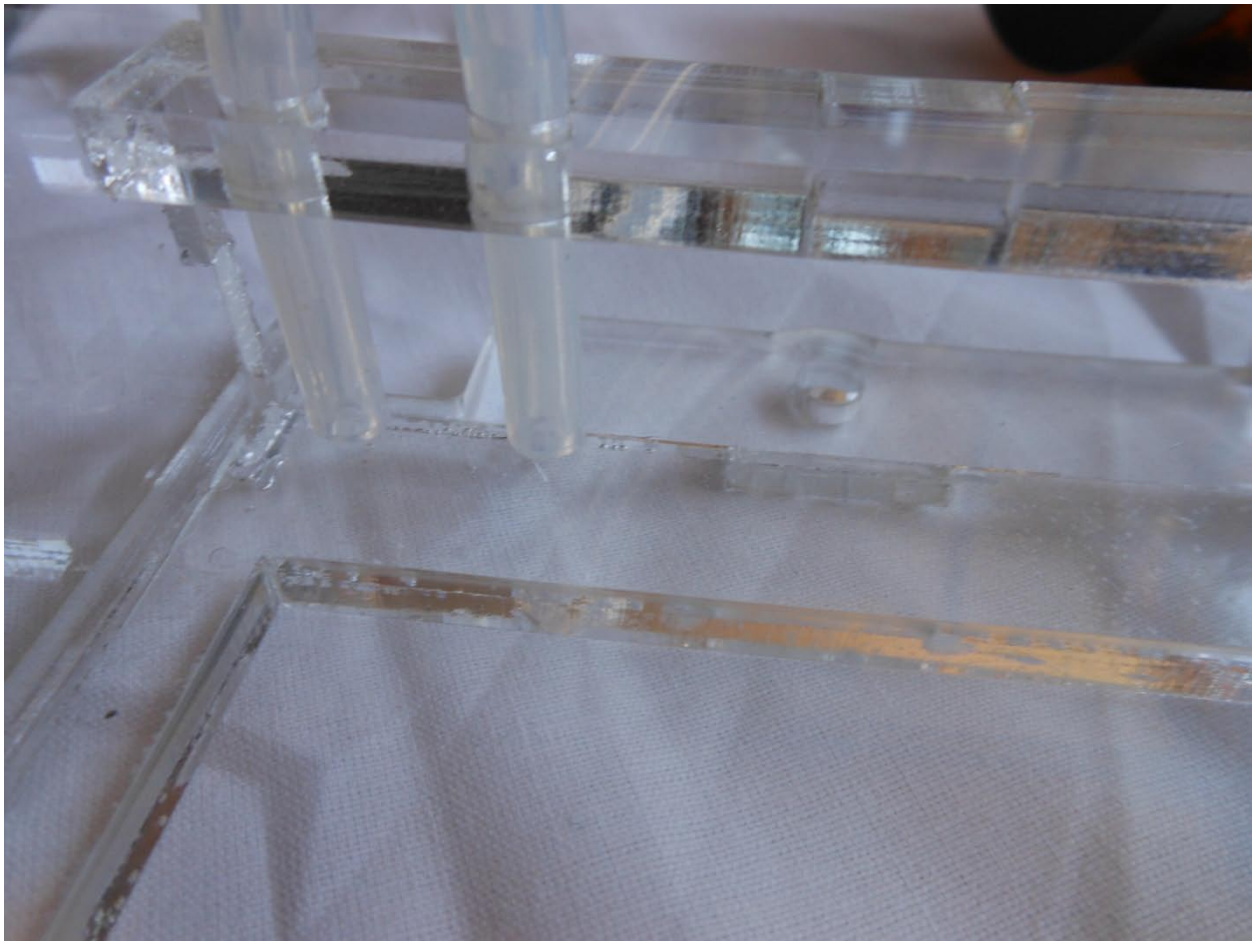
Reserve Resin Bottle

Assemble as shown. Note that one tube acts as a vent and the other as the supply.

The Reserve Resin Bottle is only used when printing large objects. The VAT typically holds sufficient resin reserves for most average sized prints.

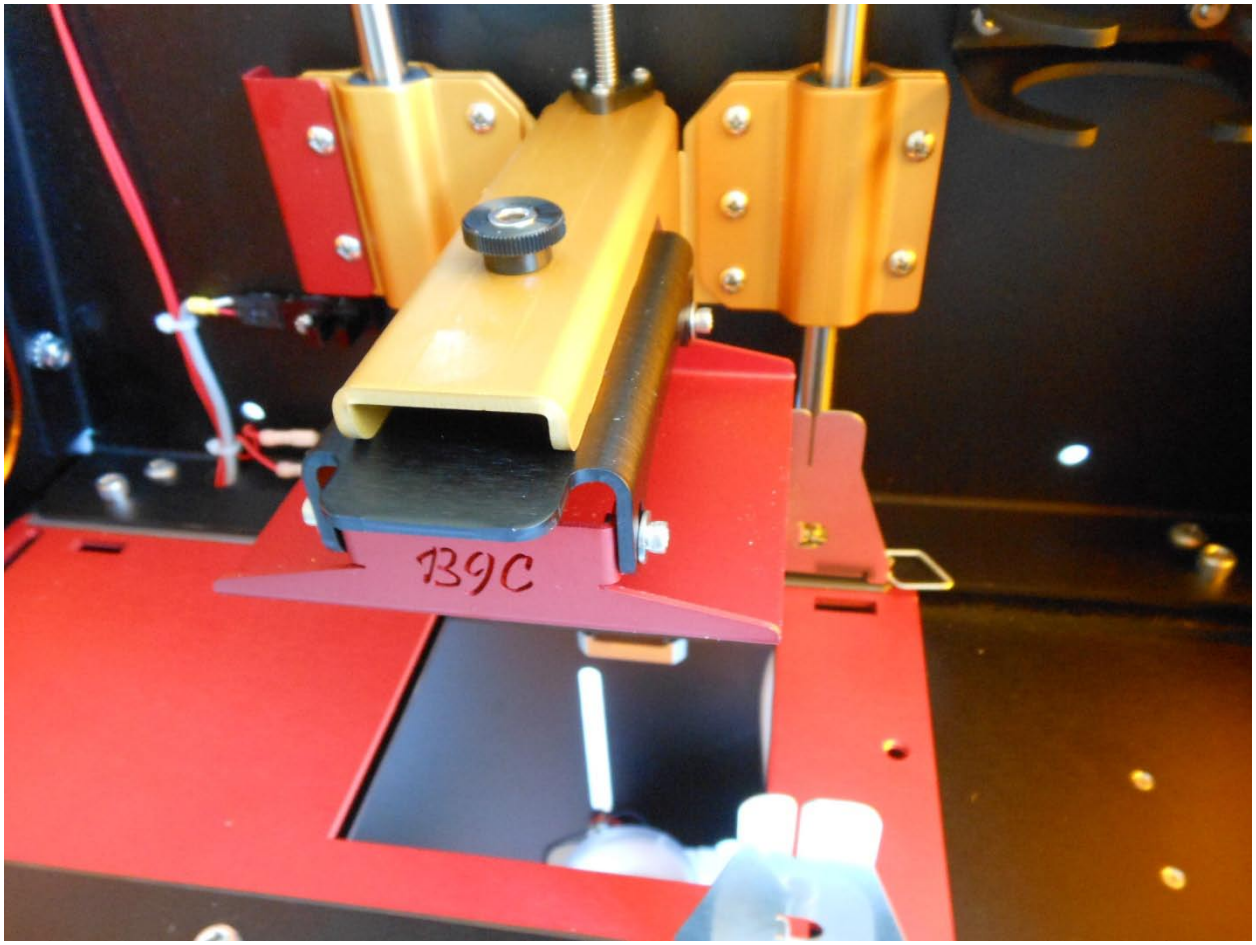


Reserve Resin Bottle in holder.

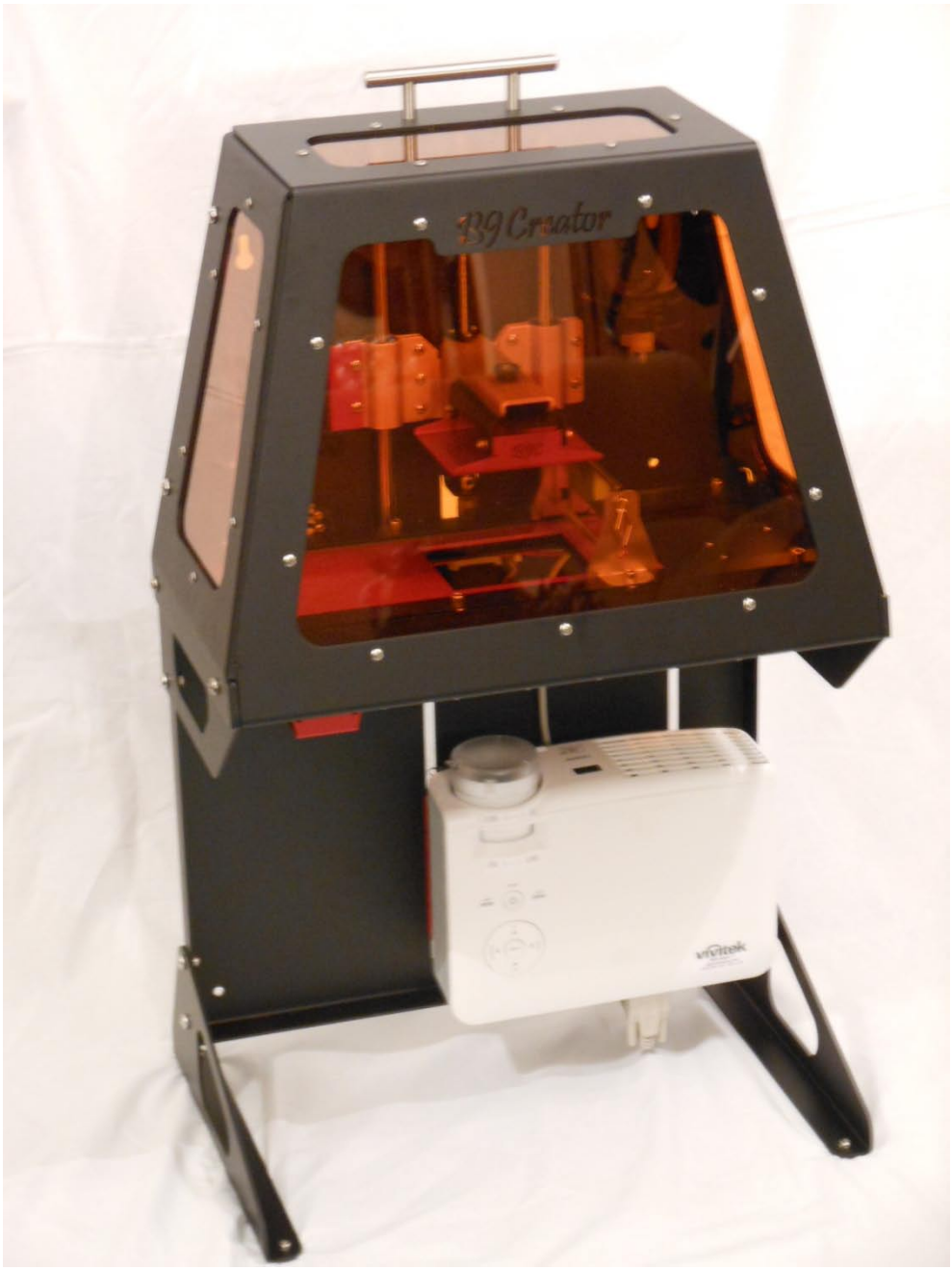


Detail of reserve resin feed and vent tubes inserted into VAT. Position the ends of the tubes such that there is a ~5mm (1/4") gap between the bottom of the tubes and the floor of the VAT. The resin level in the VAT will remain at a constant depth (at the bottom of the tubes) during a long build cycle provided there is resin remaining in the bottle.

Removable Build Table



Use the longer of the three thumb screws to attach the build table to the Z Axis support arm. The remaining two (shorter) thumbscrews are used to attach the VAT to red VAT sliding mount.



Your B9Creator™ Assembly is Complete!

Up next, using the "Calibration Guide" to prepare your printer for its first use.