



APPRENTICE "AS" ECO CHASSIS INSTALL GUIDE

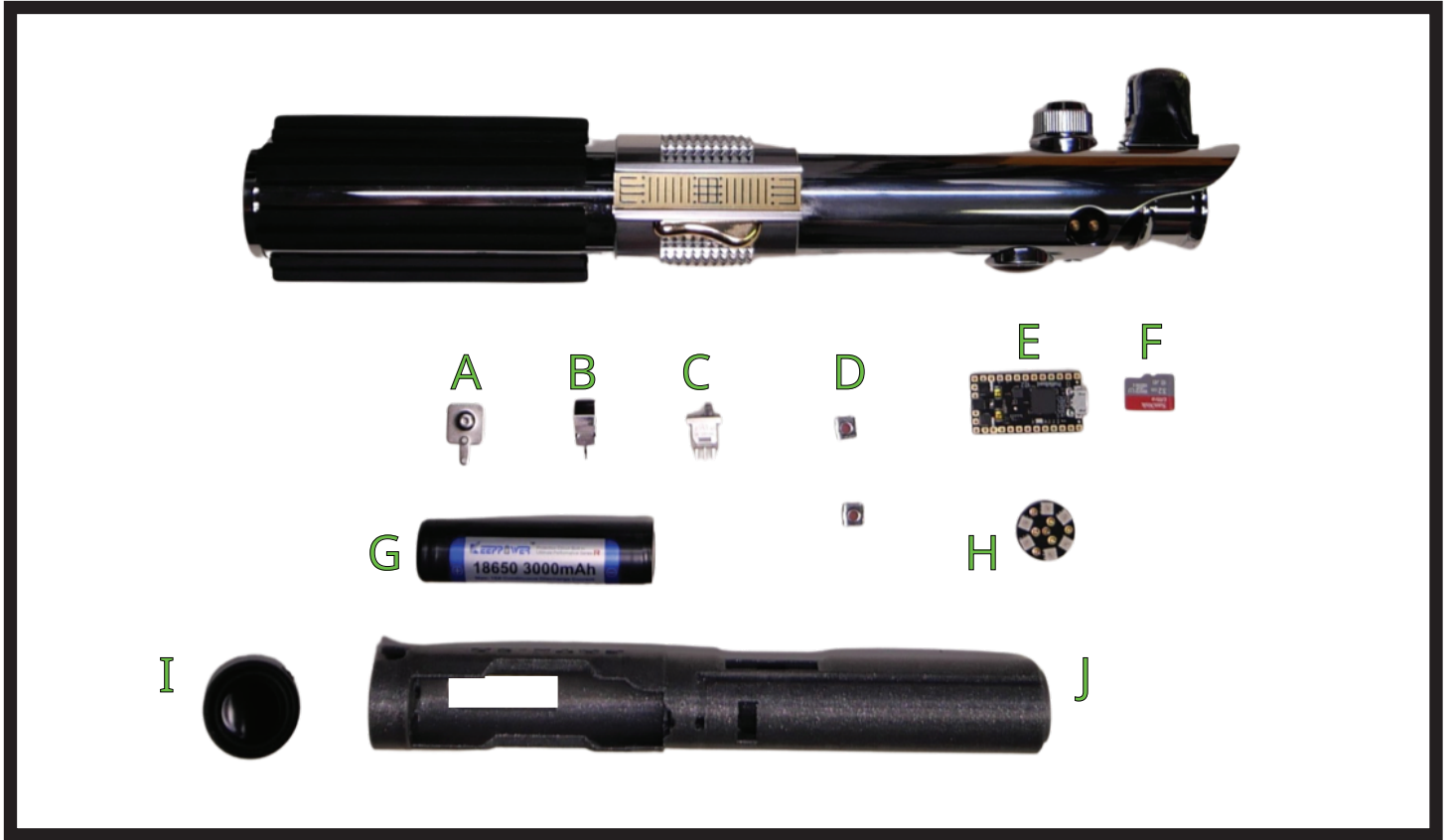


Chassis designed by Goth3Designs.



*Installation guide by Sabers Forever.  
August 2022.*

## *Inventory of Saber Parts:*



This guide will provide you with a visual index of the saber parts along with assembly instructions for the Apprentice "AS" Goth3Designs ECO chassis.

You will need to possess basic soldering skills and an understanding of how to read wiring diagrams.

ALL IMAGES ARE PROVIDED FOR VISUAL REFERENCE ONLY.  
THE PHOTOGRAPHS ARE NOT TO SCALE.

### **Component List** (as shown above)

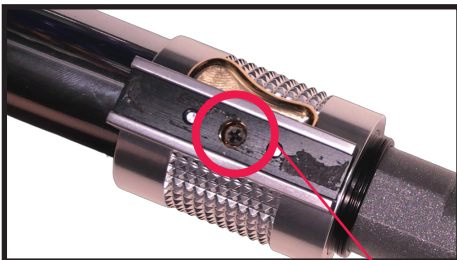
- A. Positive terminal
- B. Negative terminal
- C. Battery killswitch
- D. 2x tactile switches
- E. Soundboard (of your choosing)
- F. SD Card
- G. 18650 Battery cell
- H. Eco NPXL connector
- I. 28mm speaker
- J. Chassis



## STEP 1- Hilt Preparation/Disassembly



In preparation of installation we need to disassemble the hilt. The hilt bottom and top are threaded together. Unscrew these two pieces from each other.



### Activation Box Removal -

There is a philips head underneath the brass card securing the box to the body of the saber.

In order to gain access to the screw, the brass card needs to be peeled up.

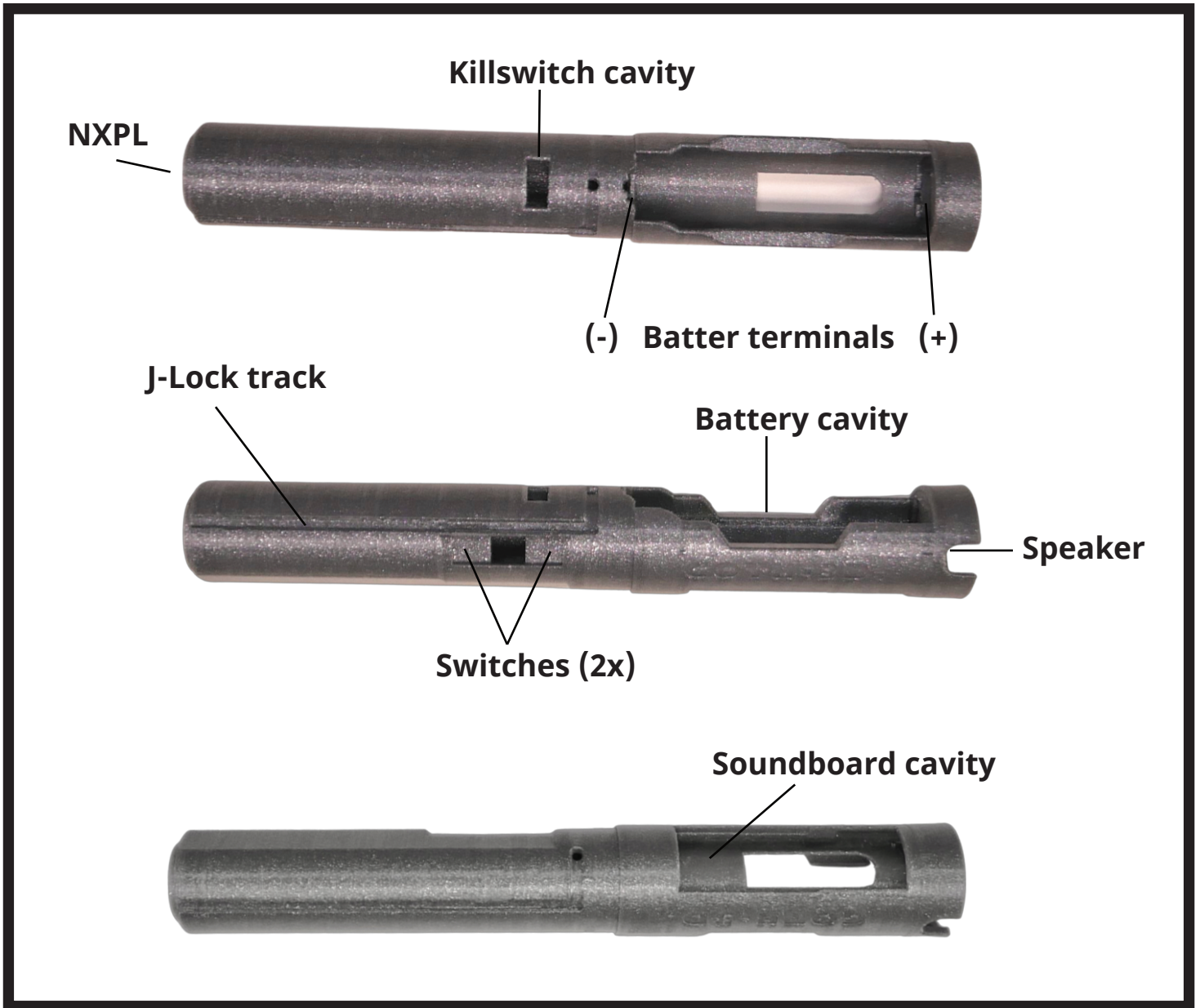
It is held on with double stick tape.

*Unscrew the philips head to remove the activation box.*

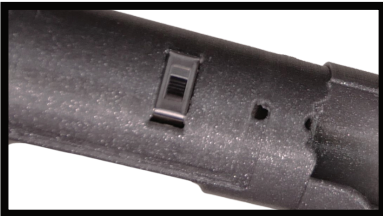
With the activation box removed we can take the opportunity to threadlock or hand tighten the activation box sleeve assembly. The sleeve assembly is threaded together and should have the ends tightened to prevent rattling.

## Chassis Anatomy Pre-Installation-

Quarter turn views listed below to show where components sit within the chassis.



J-Lock track screws  
for chassis alignment.



Part C (Killswitch)



Part H (NPXL)



Part A (Positive terminal)

## STEP 2- TEST FIT

Test all the components to confirm they fit well in the chassis.

Be careful not to press in any locking parts before soldering. {i.e. Negative terminal (Part B)}

Parts should be able to sit level.

If components do not fit, consider whether the chassis or component need alteration.

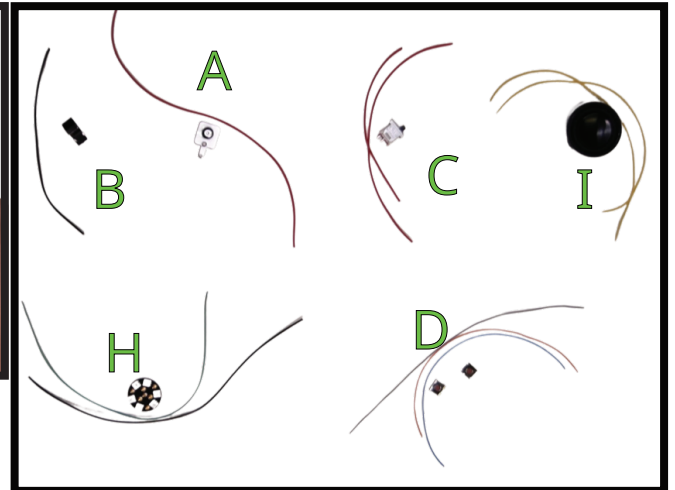
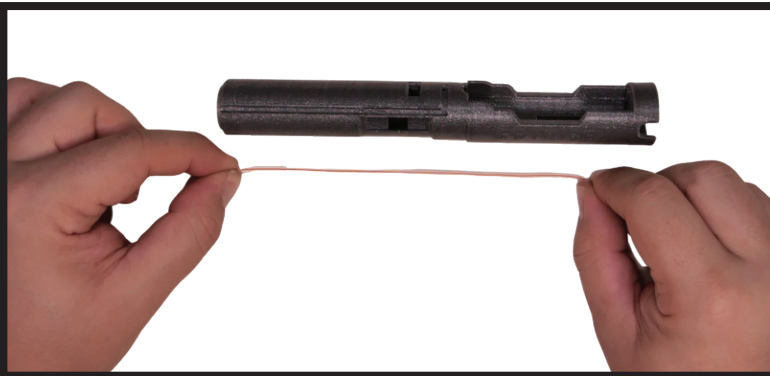
Light sanding or careful dremeling is advised to modify the material.

**Use caution and wear PPE while working.**

## STEP 3- WIRE PREP

After determining where each component goes and their fit in the chassis, wires can be roughly cut to length using the chassis as a reference for how long wires should be or use the rough measurements listed below.

Be sure to give yourself extra length for feeding wires through parts as you work.



Wire lengths are cut roughly as follows:

Part A: 120mm (22AWG)

Part B: 50mm (22AWG)

Part C: 2x wires 80mm/100mm (22AWG)

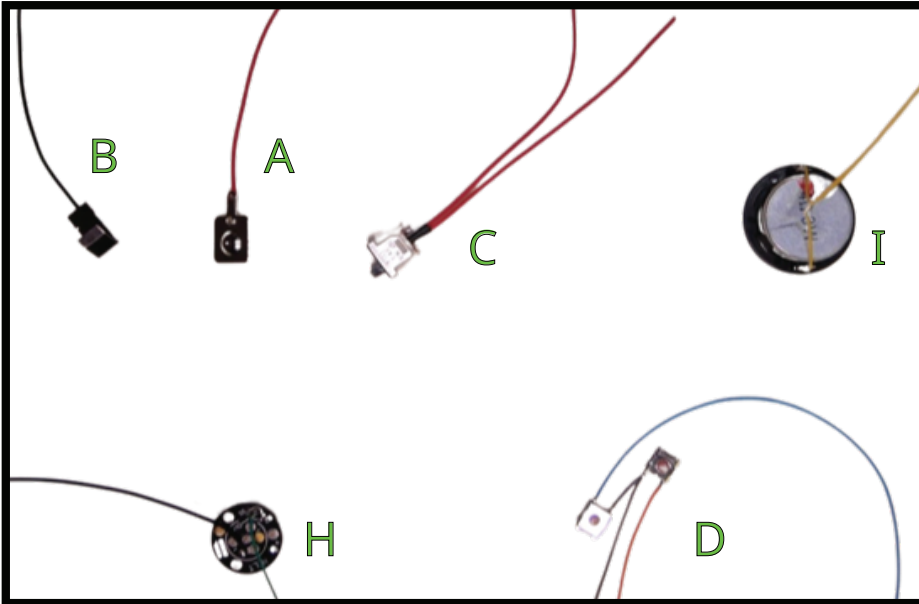
Part I: 75mm x2 (28AWG)

Part H: 2x wires 150mm (Neg.22AWG/Data28AWG)

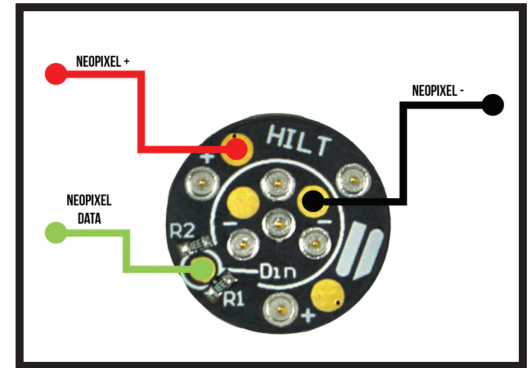
Part D: 80mm (28AWG)

## STEP 4- WIRING COMPONENTS

Visual Index of soldered components



## NPXL Wiring Diagram



Below: enlarged images of soldered parts

The following listed components need to be soldered in preparation for their installation into the chassis. Some wires need to be fed through the chassis before they can be soldered to a component:

**NPXL-** Data line(28AWG), Negative(1x 22AWG or 2x 28AWG).

Note "PartH" only has the negative and data line soldered on at this point. The positive wire will be soldered on from "PartC" later in the assembly.

**Killswitch-** Cut off 1 of the 3 legs and solder **two** 22AWG wires to **one** of the remaining two.

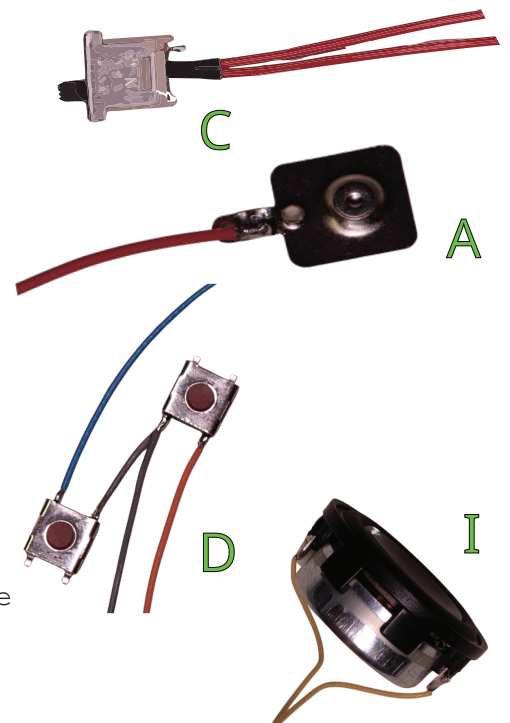
**Positive terminal-** Solder one 22AWG wire to the back of the terminal tab.

**Negative terminal-** Cut off the tab on the bottom and solder one 22AWG wire to the back.

**Tactile switches-** Each switch gets an independant lead on one leg, while the common ground wire should be bridged leaving only three wires to solder instead of four. All wires can be between 28-32AWG.

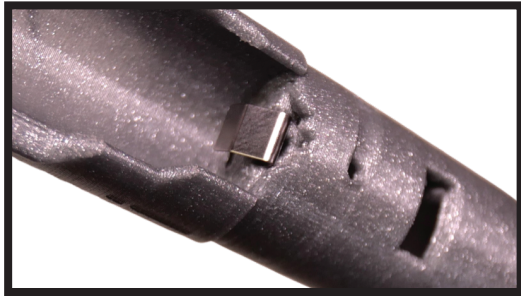
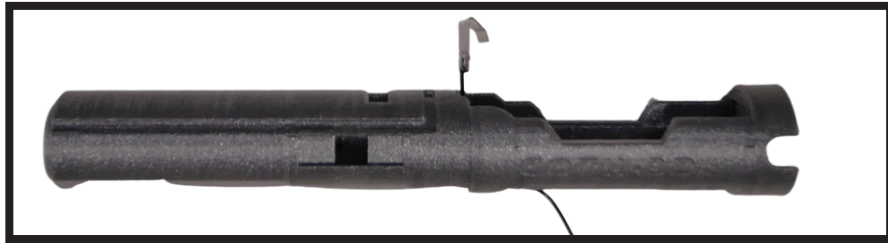
**Speaker-** Solder two 28AWG wires to each pad.

Once these components have been prepped, the parts are ready to be assembled into the chassis.

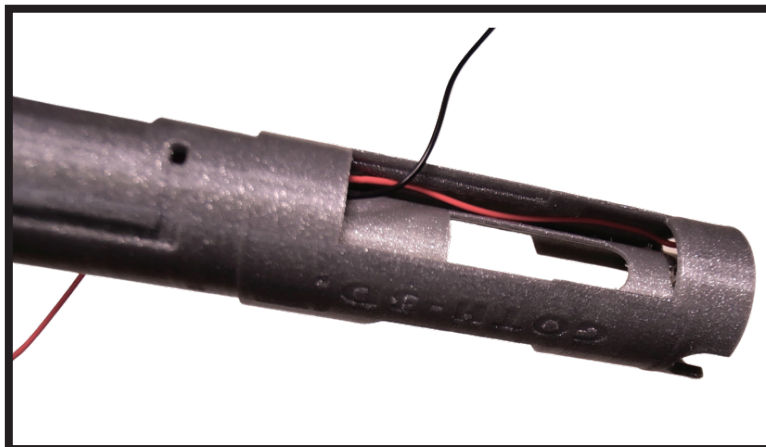
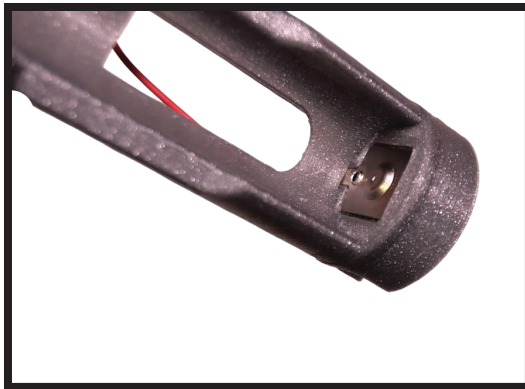


## STEP 5- ASSEMBLING THE CHASSIS

Insert negative terminal into chassis and feed out of sound board cavity.



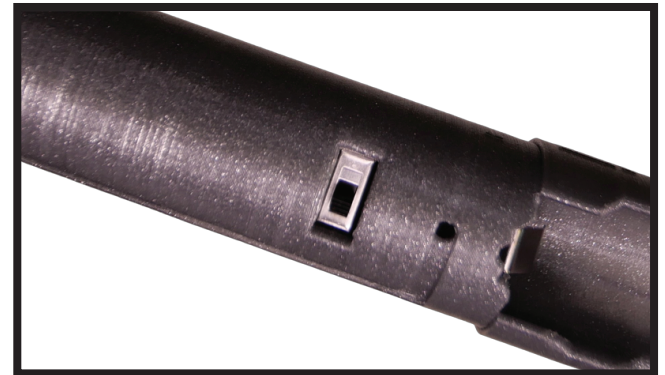
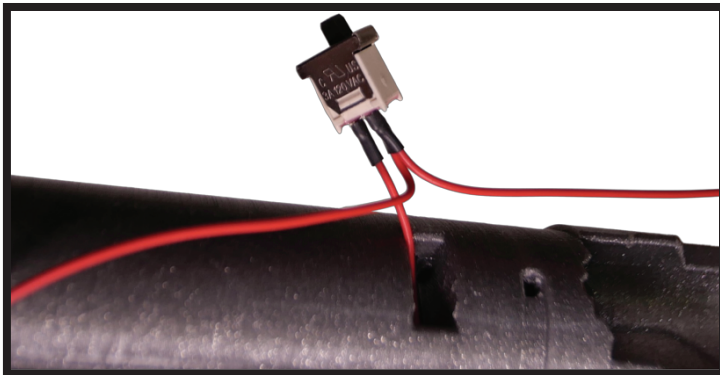
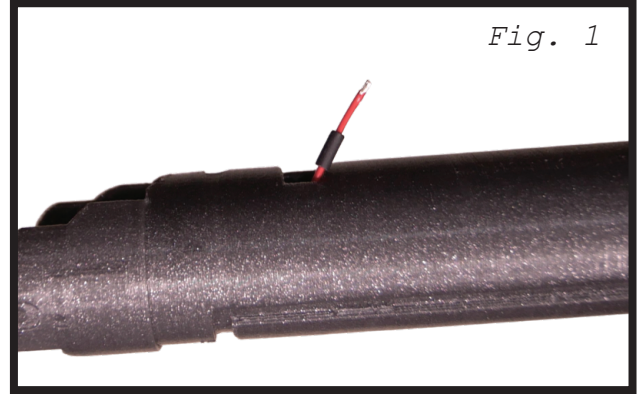
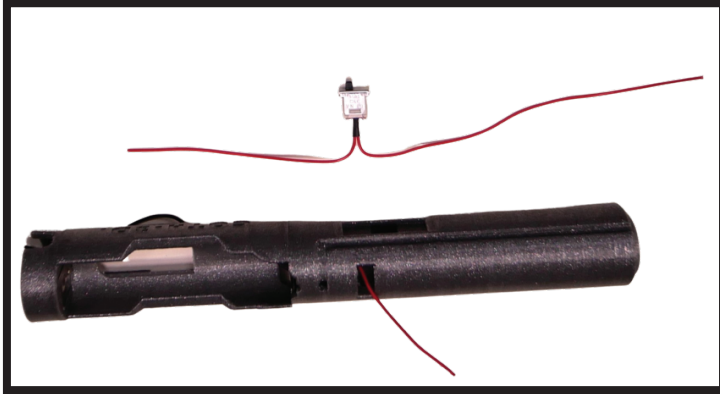
Glue in positive terminal and feed the wire through the killswitch cavity.





The wire leading from the positive terminal should be soldered to the open leg on the killswitch.

Note: See Fig. 1- Don't forget your heat shrink before attaching the lead to the killswitch.



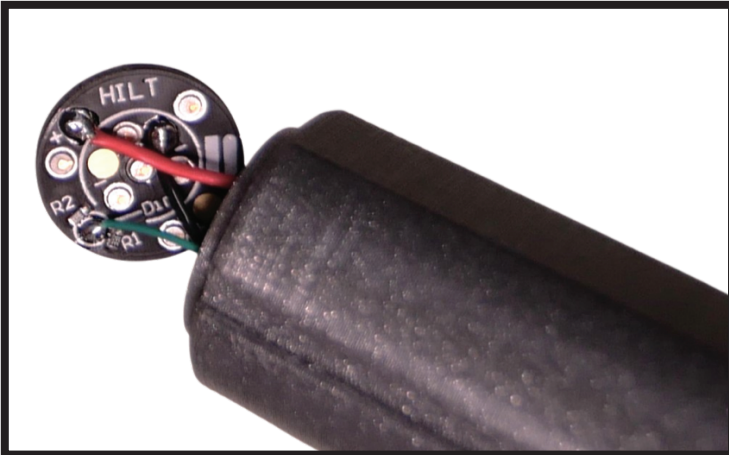
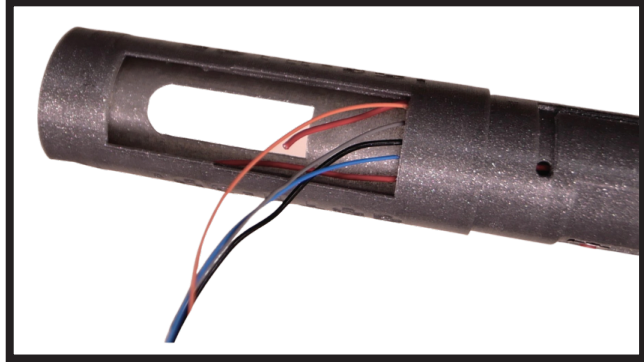
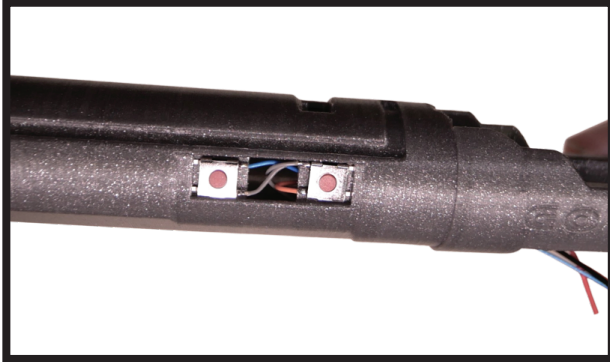
Next feed one of the wires out the top of the chassis for the NPXL, and the other wire out of the soundboard cavity.

Glue the killswitch in place.

(My personal preference for orientation is to have the killswitch "On" position be set to the right.)

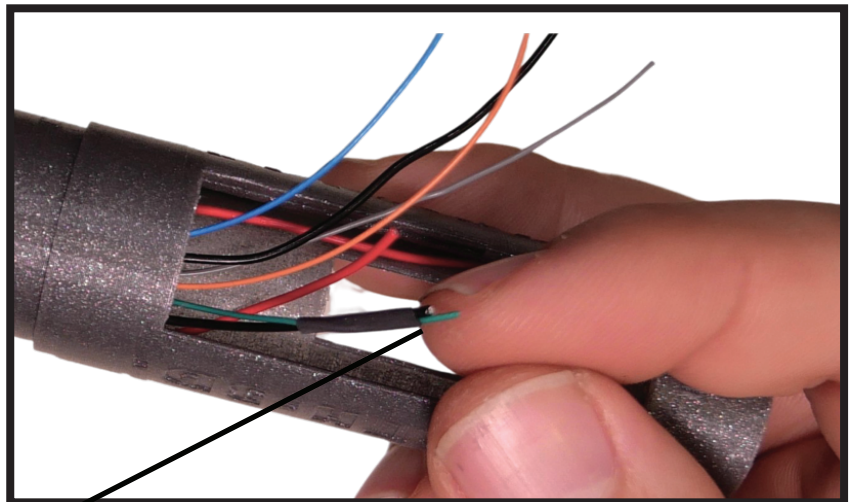


Glue in tactile switches. Keep in mind which side you want to have for power and which side for auxillary. These wires should be colored accordingly for your reference. Feed the switch wires through the chassis and out of the soundboard cavity.



Solder the red wire coming from the killswitch to the NPXL positive pad.

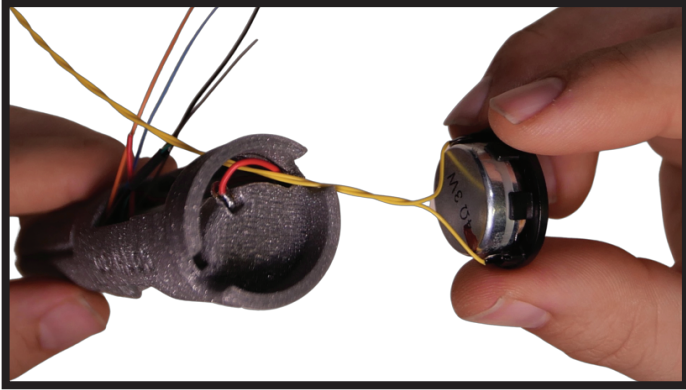
Feed the negative and data wires through the chassis and out the soundboard cavity.



Wires from NPXL

If you did not already check the fit of the speaker you should do so now before glueing the it in place.

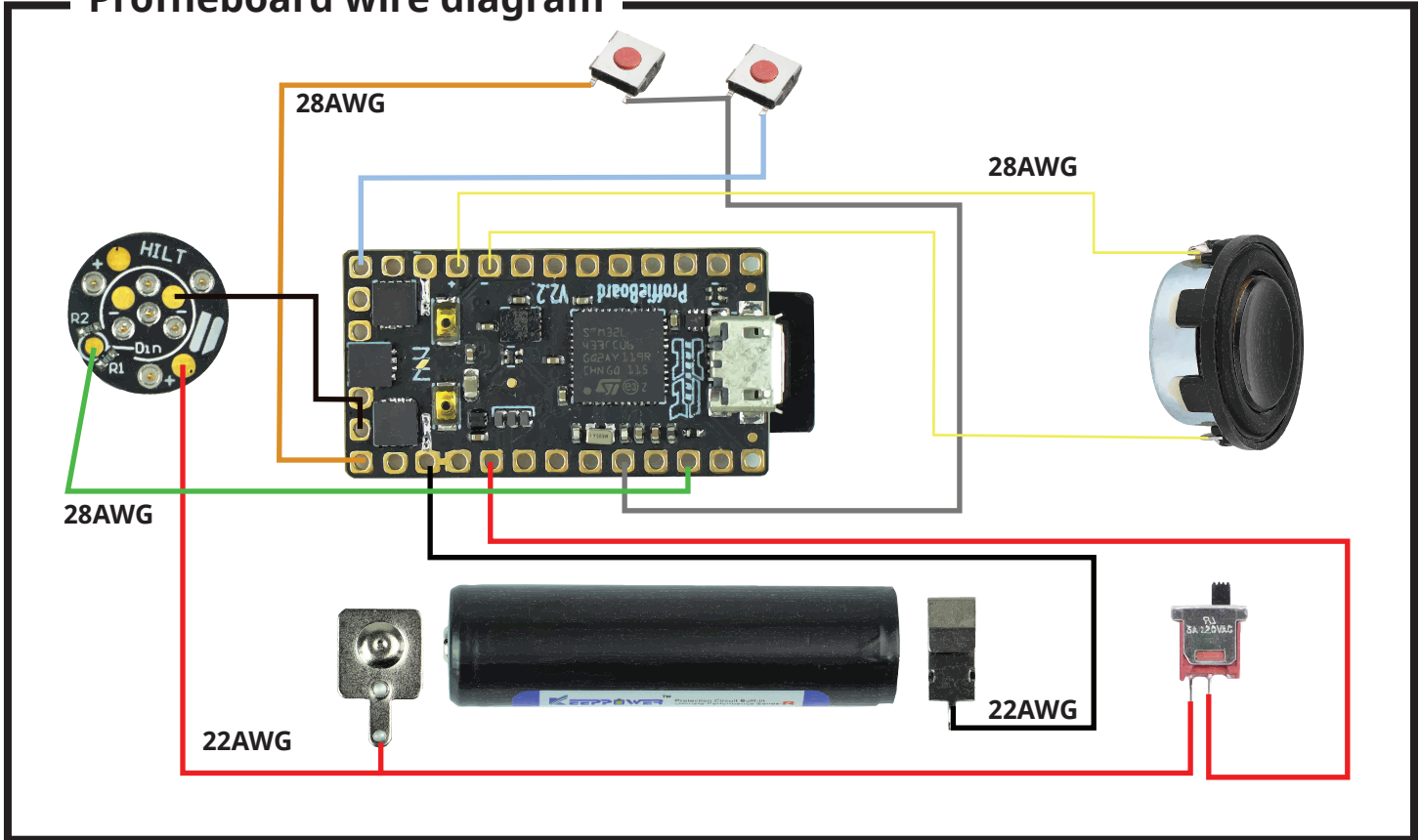
Feed in the speaker wires through the back of the chassis and glue in place.



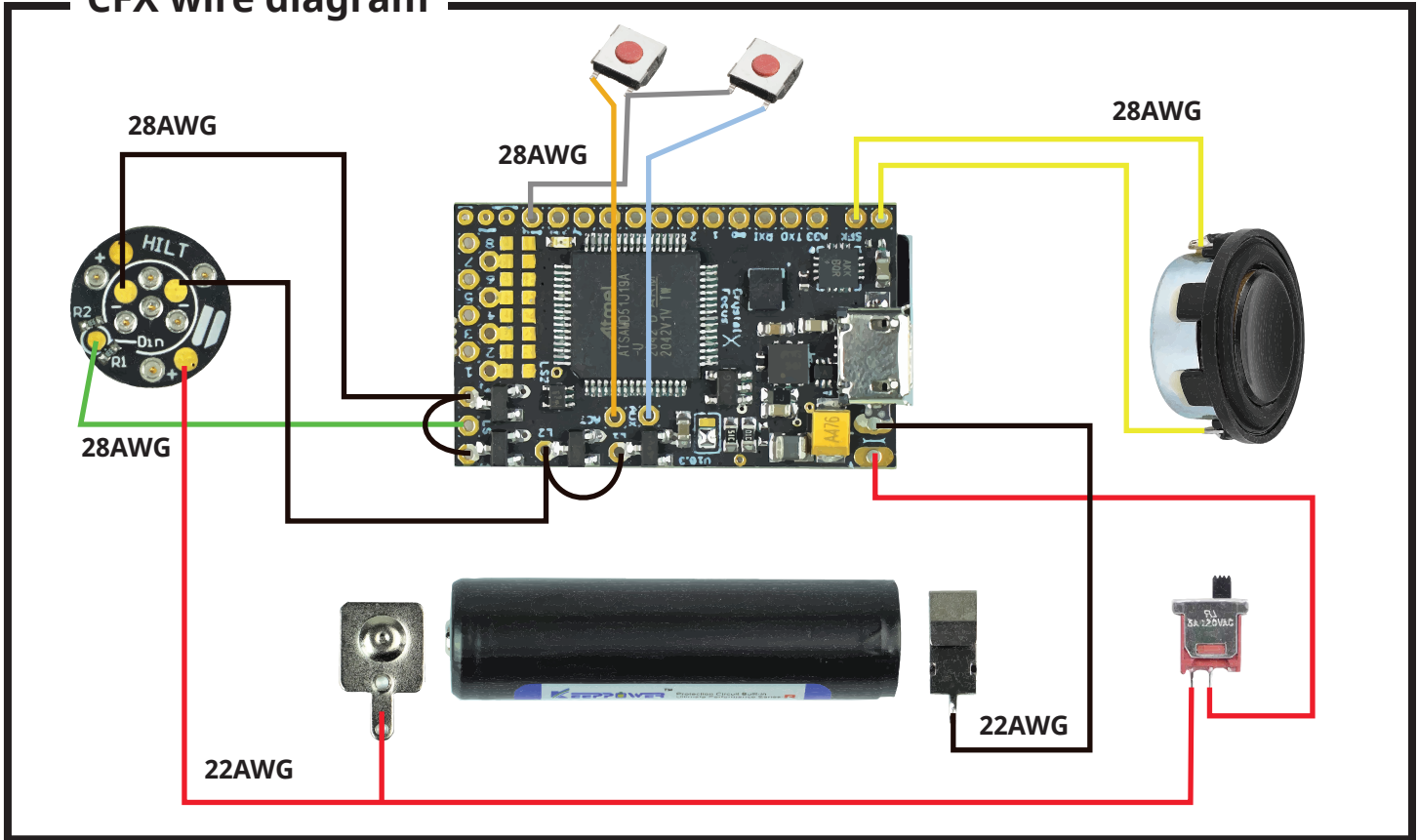
*I'm a really big fan of this product.  
Great for speaker pads and battery terminals.*



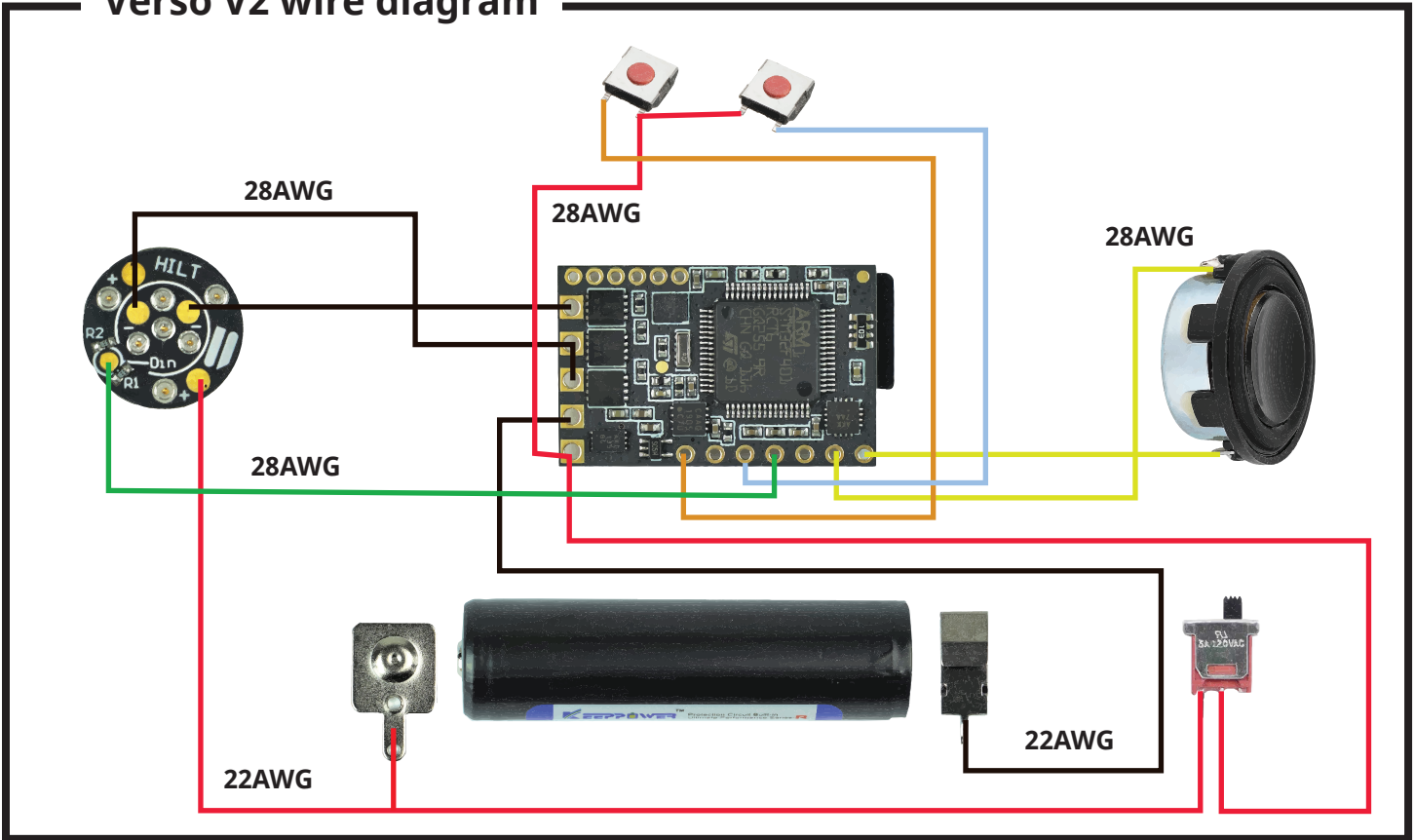
### Proffieboard wire diagram



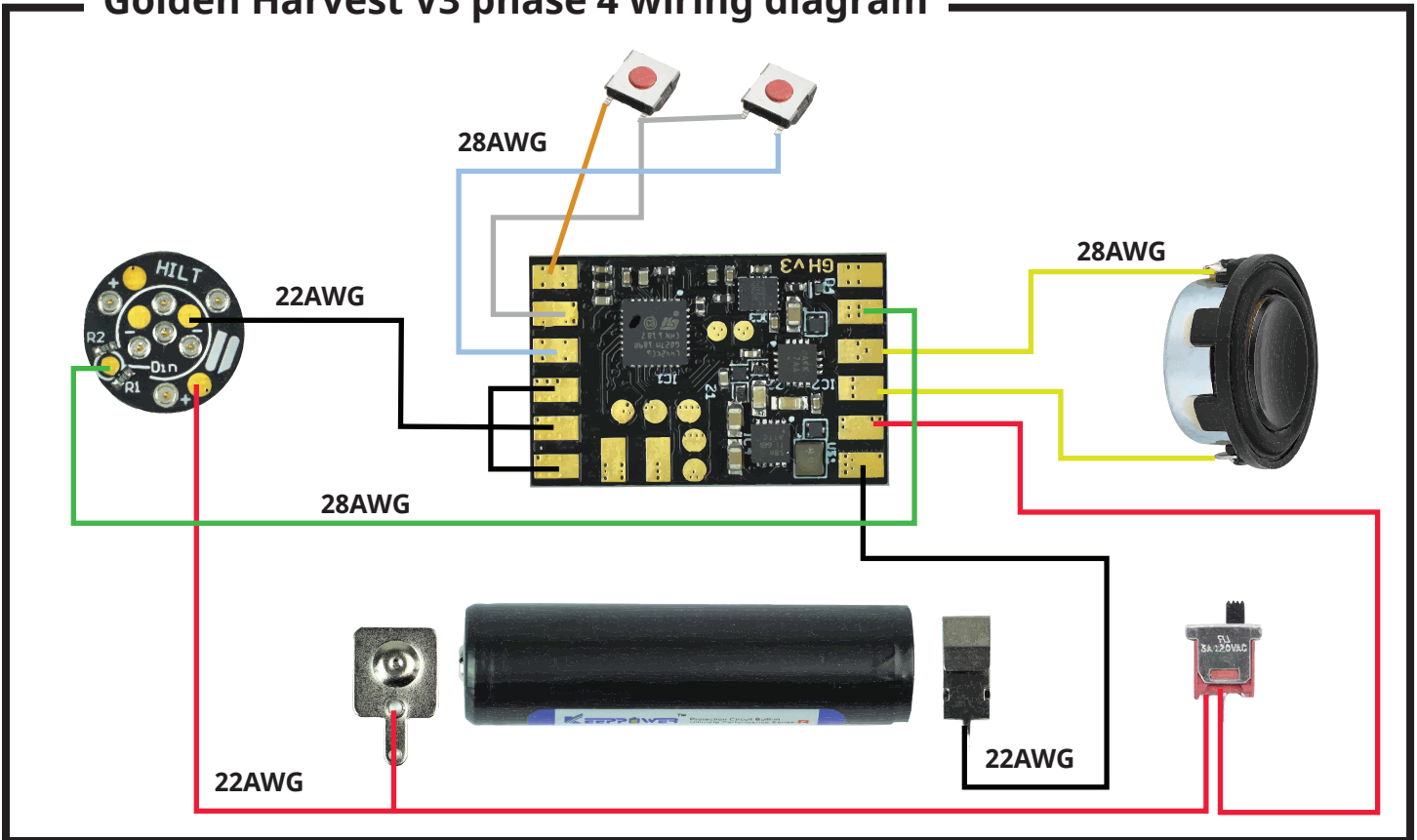
### CFX wire diagram



### Verso V2 wire diagram



### Golden Harvest V3 phase 4 wiring diagram



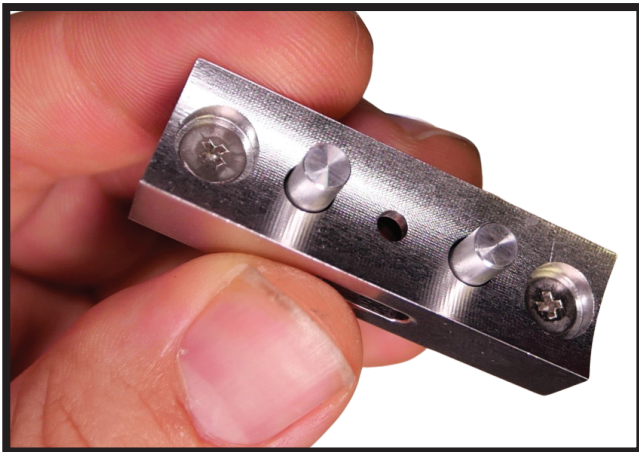
## STEP 6- ADJUSTING THE ACTIVATION BOX

The underside of the activation box has two adjustable pins. These pins are used for pushing the switches on the chassis. If they are too long, they will not allow the chassis to be inserted. If they are too short, they will not reach the switches.

By unscrewing a pin you are making the pin recess deeper into the body of the saber.

Check the height of these pins with the chassis inserted into the saber. Make sure there is enough room for the chassis to slide freely in and out and can be rotated into locking position. Make sure the pins depress the switches inside the chassis.

Once you have found the correct height, remove the pins and apply lock tight and fasten into position. Test that the pins make contact with the switches again.



Once your activation box pins are set to the correct height you will install the battery into the chassis and flip the killswitch into the "On" position. You should hear a boot up. Insert the chassis into the saber and test that everything is functioning accordingly.

## STEP 7- FINAL ASSEMBLY

The chassis slides into the saber with the flat side of the chassis aligned under the activation box. The switch section on the chassis will be oriented underneath the brass greeblie on the activation box.

Push the chassis into the saber and twist to the left to lock in place.

**Chassis flat**



Once the electronics are functioning you can close up the saber by putting on the bottom of the hilt and any other components that need to be attached (i.e. Brass card and pommel pieces).



*Congratulations on completing the installation  
of your saber. We hope you had much success with this guide.*

*We would like to say thank you.*



*May the force be with you, always.*