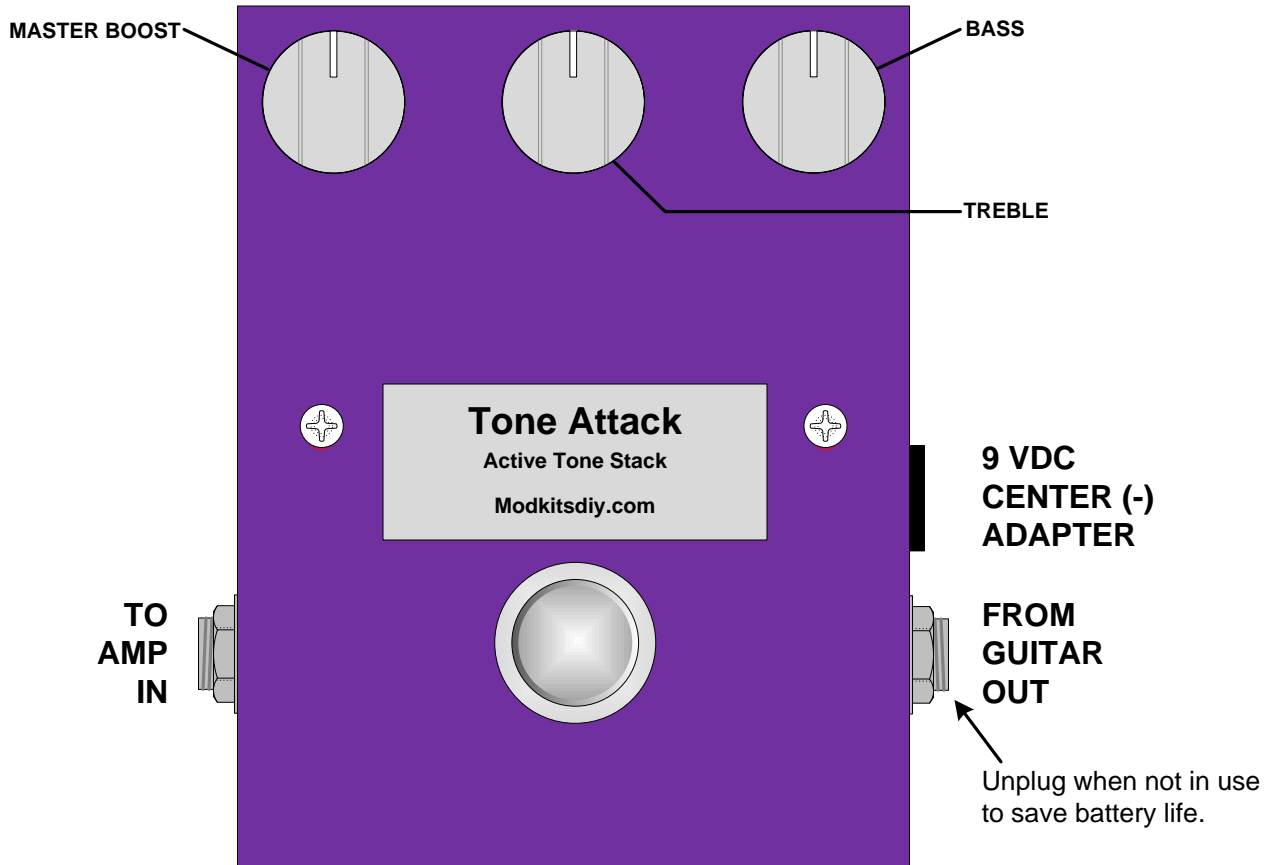


THE TONE ATTACK (K-998)



Use these instructions to learn:

- How to build an effects pedal for boosting and cutting tones.

Shape your sound with the Tone Attack. 12 o'clock settings give an approximate unity gain with the pedal. Rotate the treble or bass knob counterclockwise to cut the corresponding frequencies. Rotate these same knobs clockwise to boost the frequency bands. The Master Boost knob can be used to attenuate your signal or push your tone to screaming loud volumes.

Warning: This circuit was designed for use with a 9 VDC power supply only.

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These are the last 2 pages. They should be separated and used as a reference to help assemble the kit correctly. Hi-res color versions available on modkitsdiy.com

Visit www.modkitsdiy.com if you have any problems when first turning on your pedal for troubleshooting help. Remember to use caution when applying power to the pedal to avoid electric shock.

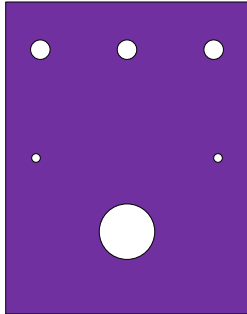
TOOL LIST

- Wire Strippers
- Needle Nose Pliers
- Hex Key (Allen Wrench)
- Cutting Pliers
- Desoldering Pump
- Solder (60/40 rosin core)
- Soldering Station
- Phillips Head Screwdrivers
- Slotted tip screwdrivers (3 mm tip)
- Channellock Pliers (or similar type)
- Ruler
- Hobby Vise (or other means to secure box while working)

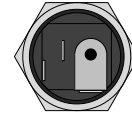
PARTS LIST 1

Stranded Wire (22 AWG) - White
K-PUL1569-WHITE (3 FT)

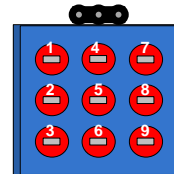
Enclosure
P-H1590BBCE-DP (1)



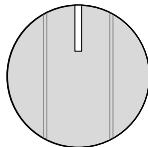
DC Power Jack
S-H750 (1)



3PDT LED Foot Switch
P-H590-RG (1)

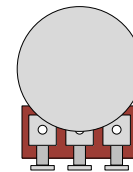
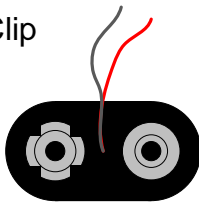


Light Grey Knob with White Line
P-K380LG (3)

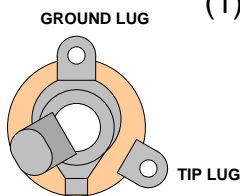


Potentiometers:
R-VAM50KL-SS ("B50K") (2)
R-VAM100KA-SS ("A100K") (1)

Battery Clip
S-H155 (1)



1/4" Mono Jack (Output Jack)
W-SC-11 (1)

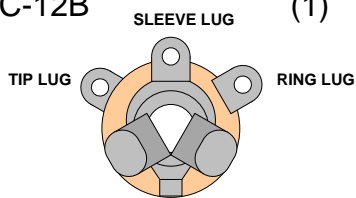


#4 Screw (1/2" long)
S-HS440-12 (2)

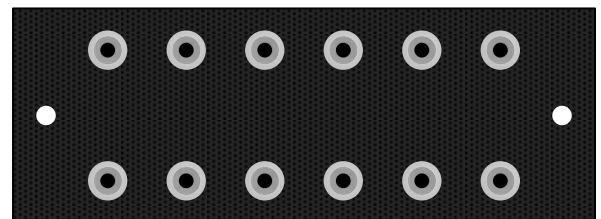
#4 Nut
S-HHN440 (4)

#6 Locking Lug
S-H112 (2)

1/4" Stereo Jack (Input Jack)
W-SC-12B (1)



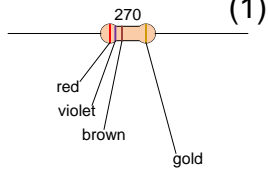
Turret Strip
P-HTUR-STRIP-12 (1)



PARTS LIST 2

270 Ω Resistor $\frac{1}{2}$ W

R-A270 (1)



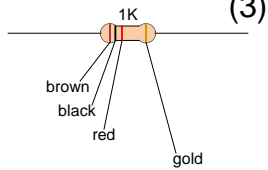
0.22 μ F Capacitor

C-PEID22-100 (4)



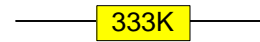
1k Ω Resistor $\frac{1}{2}$ W

R-A1K (3)



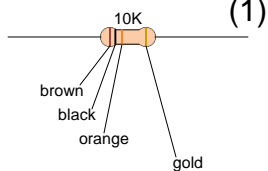
.033 μ F capacitor

C-TD033-400 (1)



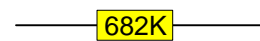
10k Ω Resistor $\frac{1}{2}$ W

R-A10K (1)



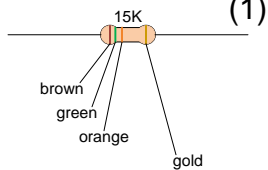
.0068 μ F capacitor

C-TD0068-630 (1)



15k Ω Resistor $\frac{1}{2}$ W

R-A15K (1)



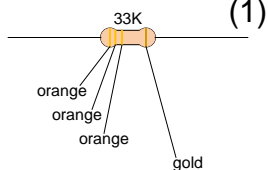
N-Channel JFET (PF5102)

P-QPF5102 (1)



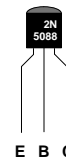
33k Ω Resistor $\frac{1}{2}$ W

R-A33K (1)



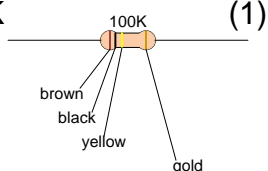
NPN BJT (2N5088)

P-Q2N5088 (1)



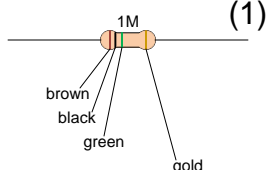
100k Ω Resistor $\frac{1}{2}$ W

R-A100K (1)



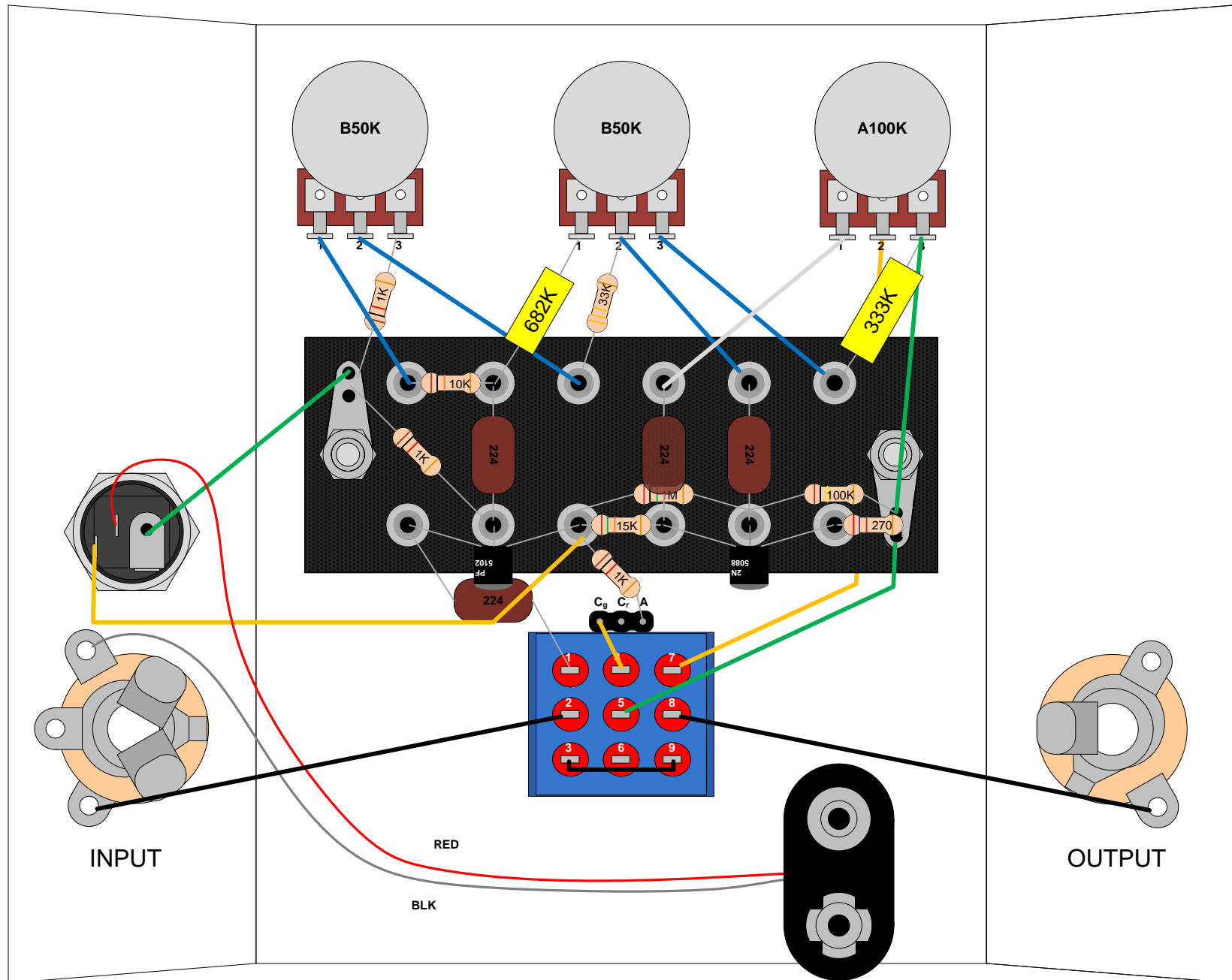
1M Ω Resistor $\frac{1}{2}$ W

R-A1M (1)



FINAL ASSEMBLY REFERENCE DRAWING

This is a large version of the final assembly drawing. Refer to this drawing as you make your way through each step of the instructions. Before you make a new connection at a particular terminal or solder lug, notice how many other connections will be made at that terminal. That way you can decide whether it's best for you to solder the connection and leave space open for future connections or hold off on soldering until after every connection at that location has been made.



SOLDERING TIPS

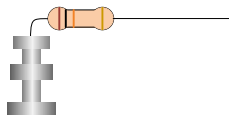
It is important to make a good solder joint at each connection point. A cold solder joint is a connection that may look connected but is actually disconnected or intermittently connected. (A cold solder joint can keep your project from working.)

Follow these tips to make a good solder joint. *Take your time with each connection and make sure that all components are connected and will remain connected if your project is bumped or shaken.*

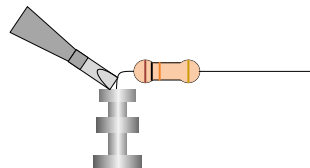
1. Bend the component lead or wire ending and wrap it around the connection point.
 - Make sure it is not too close to a neighboring component which could cause an unintended connection.
2. Wrap the component lead so that it can hold itself to the connection point.
3. Touch the soldering iron to both the component lead and the connection point allowing both to warm up just before applying the solder to them.
4. Be sure to adequately cover both component lead and connection point with melted solder.
 - Remove the soldering iron from your work and allow the solder joint to cool. (The solder joint should be shiny and smooth after solidifying.)
 - Cut off any excess wire or component leads with cutting pliers.
 - Clean the soldering iron's tip by wiping it across the wet sponge again after making the solder joint.



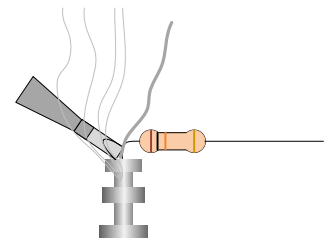
1. Bend the component lead and cut it so that it is shorter than the turret and won't stick out of the bottom



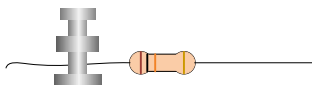
2. Guide the prepared lead into the top hole of the turret.



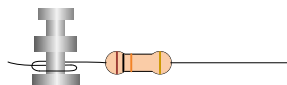
3. Heat up both component lead and connection point with the soldering iron.



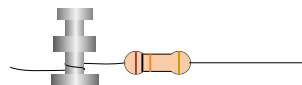
4. Apply solder to both component lead and connection point. The hole should be covered with solder that slightly slopes up the component lead when the connection is cool.



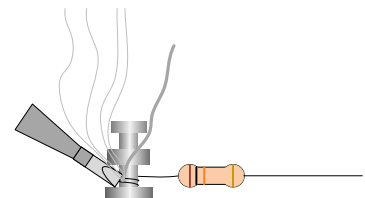
1. Place the component on the board in the location it will stay once mounted.



2. Loop the lead around the lower section of the turret.



3. Pull the lead tight so that the wrap is snug around the lower section of the turret. Repeat this wrap at least once more to ensure that it will stay in place. Cut the excess lead.



4. Heat up both component lead and connection point with the soldering iron. Apply solder to both component lead and connection point.

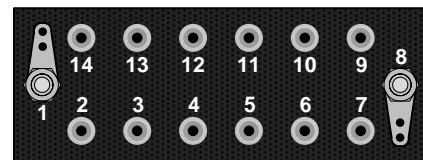
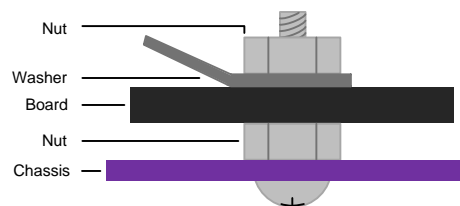
SECTION 1 – Mount Large Components

Please refer to **DRAWING 1** and **DRAWING 2**.

Orient the enclosure with the three 9/32" holes on top.

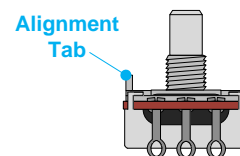
- Mount the two #4 screws in the two 1/8" holes in the middle of the chassis using two of the #4 nuts.
- Mount the turret board on top of the two nuts on the #4 screws. Place the #6 locking lugs on each side and orient them as they are in Drawing 2. Use the remaining #4 nuts to hold them in place.

The turrets and lugs will be referred to as #1 through #16 throughout this build. The diagram on the right shows the labeled numbers with their corresponding connection.

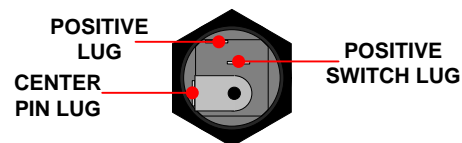


- Mount the three pots in their respective 9/32" holes as shown in Drawing 2. 50K on the left, 50K in the middle, and 100K on the right.

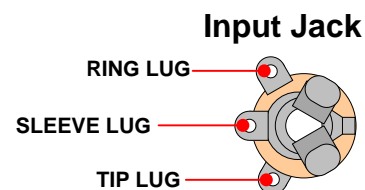
Bend back and remove the alignment tab on the top of each potentiometer using a pair of pliers before mounting the pots so that they can mount flush against the enclosure surface.



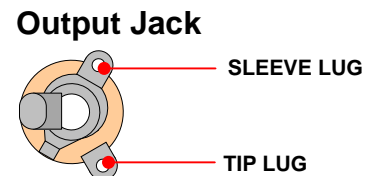
- Mount the DC power jack in the 15/32" hole on the left side of the enclosure. Orient its solder lugs so that the center-pin lug is facing the bottom side of the enclosure.



- Mount the input jack in the 3/8" hole on the left side of the enclosure with the hardware provided. The washer goes under the nut on the outside of the enclosure. Make sure the center solder lug of the input jack is facing up. Correct positioning of the jack makes soldering the connections easier.

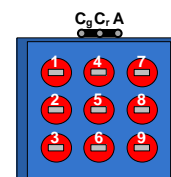


- Mount the output jack in the 3/8" hole on the right side of the enclosure. Make sure the two solder lugs are in their most upright position before tightening the nut.



- Mount the LED footswitch to the 3/4" hole. Be sure to orient the LED leads towards the top with A on the right and C_g on the left

You must remove the button cap with a hex key before mounting.

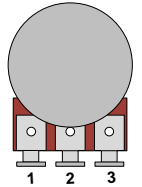
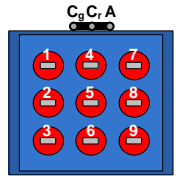


SECTION 2 – Wire Low Lying Components

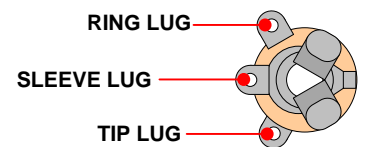
Please refer to **DRAWING 3**.

Stripping wire, tinning wire and soldering. Throughout these instructions you will be told to strip and tin a length of wire numerous times. Unless noted otherwise, cut the wire to the length stated in the instructions. Then strip 1/4" of insulation off each end. Twist each end of the stranded wire, and apply a small amount of solder to each end (i.e. tin the wire ends). This will prevent the stranded wire from fraying and will make the final soldering much easier.

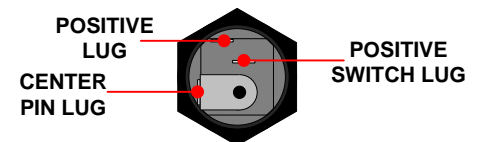
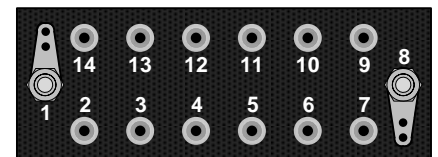
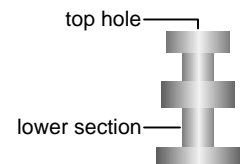
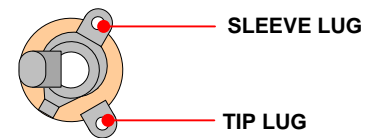
- Strip and tin a 3 ½" piece of wire and connect lug 7 of the footswitch to lug 2 of the right 100K pot. Run the wire beneath the turret board. **Solder both connections now.**
- Strip and tin a 1" piece of wire and connect lugs 3 and 9 of the footswitch. **Solder both connections now.**
- Strip and tin a 1 ¾" piece of wire and connect lug 2 of the footswitch to the input jack's tip lug. **Solder both connections now.**
- Strip and tin a 1 ¾" piece of wire and connect lug 8 of the footswitch to the output jack's tip lug. **Solder both connections now.**
- Strip and tin a ½" piece of wire and connect lug 4 of the footswitch to the C_g LED pin of the footswitch. **Solder both connections now.**
- Strip and tin a 2" piece of wire and connect lug 3 of the right 100k pot to #8
- Strip and tin a 2 ¼" piece of wire and connect lug 5 of the footswitch to #8. **Solder the connection at lug 5 of the footswitch now.**
- Connect a 1k resistor from #1 to the lower section of #3. Wrap the lead around the lower section of the turret. **Solder the lower section of #3 now.**
- Connect a 1k resistor from #4 to the A pin of the LED footswitch. Wrap the lead around the lower section of the turret. **Solder the connection at the A pin now.**
- Connect a 1M resistor from #4 to #6. Wrap the leads around the lower section turrets. **Solder the lower section of #4 now.**
- Connect a 100k resistor from #6 to #8. Wrap the leads around the lower section turret. **Solder the lower section of #6 now.**
- Connect a 1k resistor from #1 to lug 3 of the left 50k pot. **Solder the connection at lug 3 of the pot now.**
- Strip and tin a 1 ¾" piece of wire and connect the center pin lug of the DC jack to #1. **Solder both connections now.**
- Connect a .22µF capacitor from lug 1 of the footswitch to the top hole of #2. The capacitor's body should be facing down. **Solder the connection at lug 1 of the footswitch now.**
- Connect a 33k resistor from #12 to lug 2 of the center 50k pot. Wrap the lead around the lower section turret. **Solder the lower section of #12 now.**
- Strip and tin a 1 ¼" piece of wire and connect lug 2 of the center 50k pot to the top hole of #10. **Solder the connection at lug 2 of the center 50k pot now.**
- Strip and tin a 1 ½" piece of wire and connect lug 3 of the center 50k pot to the top hole of #9. **Solder the connection at lug 3 of the center 50k pot now.**



Input Jack



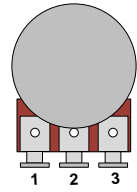
Output Jack



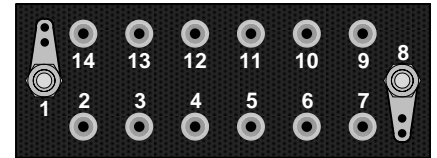
SECTION 3 – Mount Components to Terminal Strips

Please refer to DRAWING 4.

- Strip and tin a 1 ¼” piece of wire and connect lug 1 of the left 50k pot to the top hole of #14. **Solder the connection at lug 1 of the pot now.**
- Strip and tin a 1 ¾” piece of wire and connect lug 2 of the left 50k pot to top hole of #12. **Solder both connections now.**
- Strip and tin a 1 ½” piece of wire and connect lug 1 of the right 100k pot to top hole of #11. **Solder the connection at lug 1 of the pot now.**



- Connect a .033μF capacitor from the top hole of #9 to lug 3 of the right 100k pot. **Solder both connections now.**



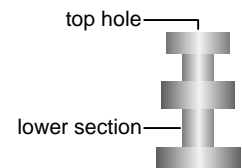
- Connect a 10k resistor from the top hole of #14 to the top hole of #13. **Solder the connection at #14 now.**

- Connect a .0068μF capacitor from the top hole of #13 to lug 1 of the center 50k pot. **Solder the connection at lug 1 of the pot now.**

- Connect a .22μF capacitor from the top hole of #13 to the top hole of #3. **Solder the connection at #13 now.**

- Connect a 15k resistor from the top hole of #4 to the top hole of #5.

- Connect a .22μF capacitor from the top hole of #5 to the top hole of #11. **Solder the connection at #11 now.**



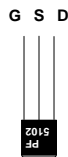
- Connect a .22μF capacitor from the top hole of #6 to the top hole of #10. **Solder the connection at #10 now.**

- Connect a 270 ohm resistor from the top hole of #7 to the lug #8. **Solder the connection at #8 now.**

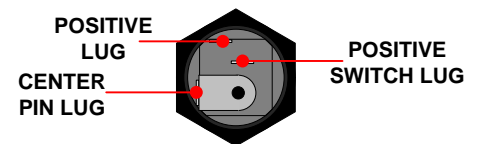
- Strip and tin a 1 ½” piece of wire and connect the positive lug of the DC power jack to the top hole of #4. **Solder the connection at DC jack now.**

- Connect the PF5102 JFET to the top holes of #2, #3 and #4 as listed:

Top Hole #2: Gate
 Top Hole #3: Source
 Top Hole #4: Drain

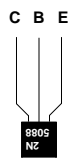


Solder all three connections now.



- Connect the 2N5088 transistor to the top holes of #5, #6 and #7 as listed:

Top Hole #5: Collector
 Top Hole #6: Base
 Top Hole #7: Emitter



Solder all three connections now.

- Locate the battery clip. Connect the red wire to the positive-switch lug of the DC power jack. Connect the black wire to the ring lug of the input jack. **Solder both connections now.**

SECTION 4 – Finishing Up

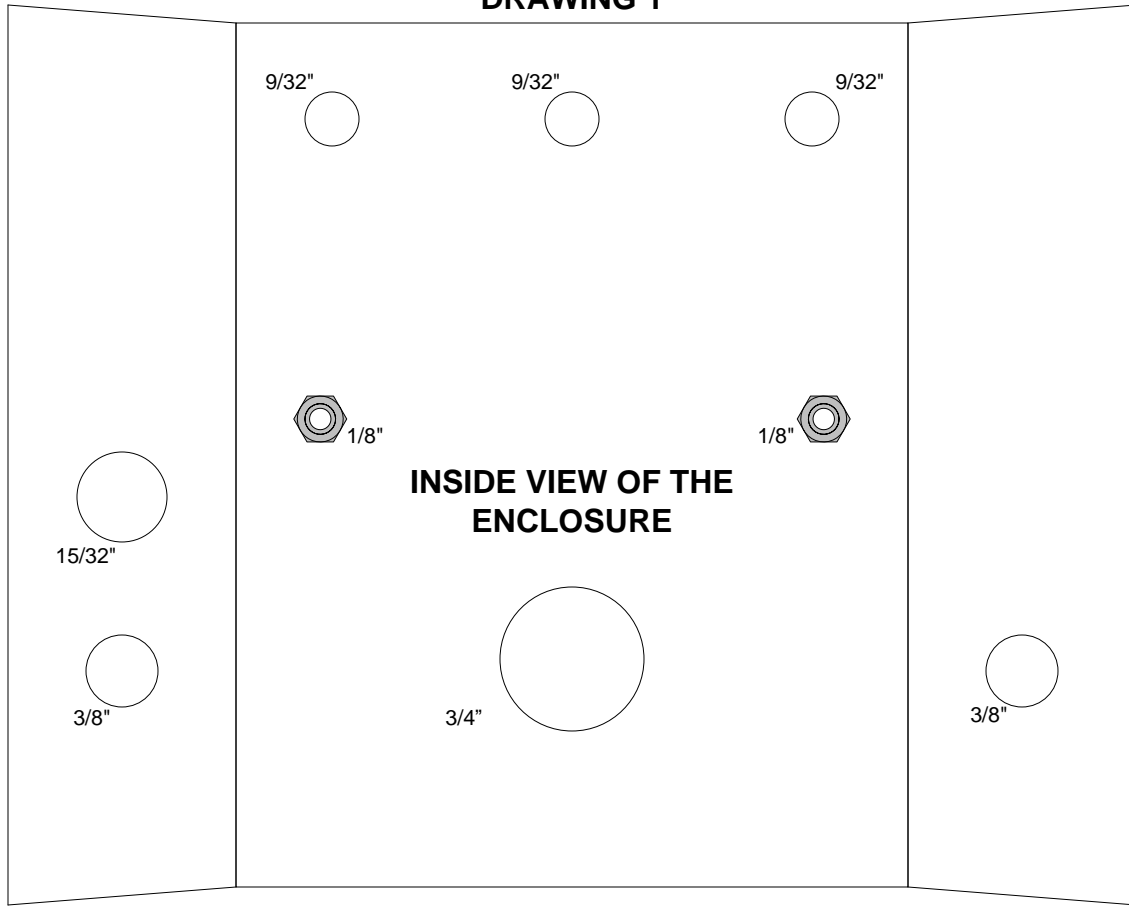
It's always a good idea to thoroughly double-check your connections before applying power. This will minimize the risk of damaging components.

- Fasten the knobs to the potentiometer shafts by tightening their set screws. Install a 9 volt battery if needed. Fasten the cover using the four screws provided. Plug your guitar into the input jack on the right side of the pedal. This turns power on when you are not using an AC adapter for power. Plug another cable from the output jack (left side) to your amp's input.
- When using a battery for power, remember to unplug from the input jack of the pedal to turn it off and save battery life.

If your pedal does not work properly, the first step is always to double-check your connections. If everything looks good, then e-mail info@modkitsdiy.com for troubleshooting help.

DRAWING 1

LEFT SIDE



RIGHT SIDE

DRAWING 2

