GHOST DRIVE

THE ORIGINAL UNOBTAINIUM OVERDRIVE

INSTRUCTION GUIDE

BASED ON THE KLON CENTAUR PROFESSIONAL OVERDRIVE

The Ghost Drive is rooted in the reknowned Klon Centaur Professional Overdrive circuit. This pedal was designed to achieve realistic tube-like harmonics and saturation out of high wattage amps at a volume that was suitable for clubs. It fast became one of the most sought-after pedals of all time due to its smooth and accurate sound.

The Centaur was built around a hand-populated printed circuit board that was then covered in opaque epoxy to conceal the components and their values.

Manufactured from 1994 to 2008, the Centaur was replaced by the KTR model in 2014. While voiced to sound like the Centaur, the considerably less expensive KTR utilizes surface mount technology with boards that are populated with robots. Our kits reflect the original Centaur circuit, not the KTR.

As of January 2022, prices of the original Centaur Professional Overdrive are approaching the $10k mark.

FIRST TIME BUILDING A PEDAL? Kick back and watch our 4-part series where we show you the basics of pedal building. Even if you're a complete beginner don't worry! We go over everything from unboxing, to choosing the right soldering iron, to making every connection. We also give tips on painting your pedal.

Visit: stewmac.com/pedal-build

Not pictured: #1 Phillips screwdriver, and supplies to paint your pedal, clear silicone adhesive, spray finish.

Power: Model #12250 requires a standard 9V DC center-negative power supply (not included) and consumes less than 100mA.

TOOLS AND SUPPLIES
(REQUIRED OR RECOMMENDED)

Soldering Iron #0502
Solder Wick #0504
Solder #0505

PC Board Holder #0500

Guitar Tech
Wrench Set #3691
or Nut Drivers/Sockets

Long-Nose Pliers #1610

Fine-Gauge Wire
Stripper #1606

Wire Cutter #1607

TOOLS AND SUPPLIES
(HELPFUL)

Magnifying Glass or
OptiVISOR #1685

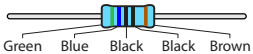
Multimeter PM16B #3607

Soldering Aids #0521

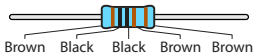
Our Pedal Building Tool Set #2318 is the perfect companion for new pedal builders who do not already have a lot of tools and supplies.

We know you are excited to get started building. That said, one of the keys to a successful build, is taking the time to get to know all of your parts. Sort all of your pedal's parts and check off according to the parts lists that follow. If you are not familiar with what they do, the next section will give you a little primer.

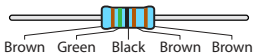
PARTS LIST



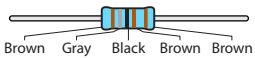
560Ω resistor (2) #7356



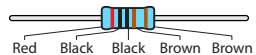
1K resistor (2) #7357



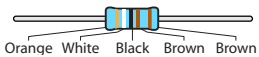
1.5K resistor (2) #7358



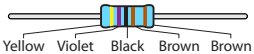
1.8K resistor (1) #7384



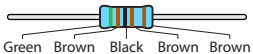
2K resistor (1) #101121



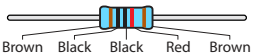
3.9K resistor (1) #100700



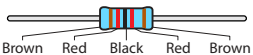
4.7K resistor (1) #7359



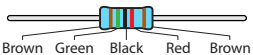
5.1K resistor (1) #7360



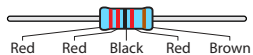
10K resistor (2) #7362



12K resistor (1) #7392

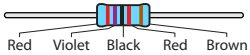


15K resistor (2) #7378

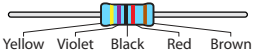


22K resistor (1) #7379

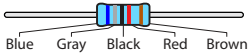
PARTS LIST (CONT)



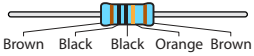
27K resistor (3) #7398



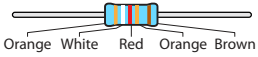
47K resistor (1) #7369



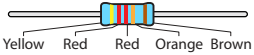
68K resistor (2) #7380



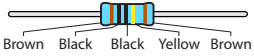
100K resistor (4) #7365



392K resistor (1) #101120



422K resistor (1) #101119



1M resistor (2) #7367

1N34A germanium diode (2)

1N4001A rectifier diode (2)
#7404

1N4742 rectifier diode (1)
#100730

1µF capacitor (7)
#7314

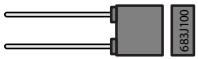
47µF capacitor (2)
#100726

4.7µF capacitor (2)
#7316

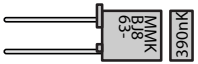
390pF capacitor (1)
#101177

820pF capacitor (1)
#100722

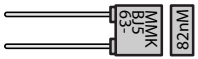
PARTS LIST (CONT)



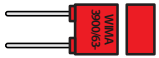
68nF capacitor (2)
#101115



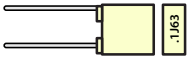
390nF capacitor (1)
#101117



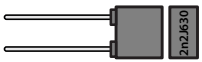
82nF capacitor (1)
#101116



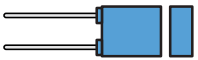
3.9nF capacitor (1)
#101178



100nF capacitor (2)
#7304



2.2nF capacitor (1)
#7324



27nF capacitor (1)
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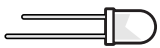
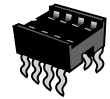


White LED (1)
#7422

5mm LED mounting bezel (1)
#7432

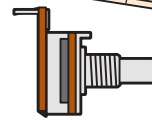
TC1044 charge pump (1)
#100732

TL072 op amp (2)
#7444

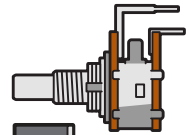


Integrated circuit socket (3)
#7484

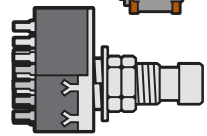
Adhesive foam tape squares (4)
#7560



B10K linear taper pot (2)
#7532

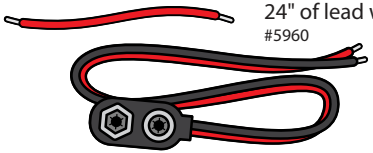


B100K Dual linear taper pot (1)
#100734



3PDT latching footswitch (1)
#1611

PARTS LIST (CONT)



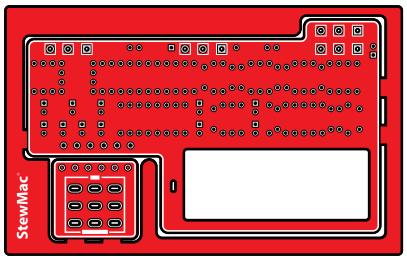
24" of lead wire (1)
#5960

Battery connector (1)
#1225
(Only for kit #12254)

2.1mm DC power jack (1)
#7468 (Only for kit #12250)

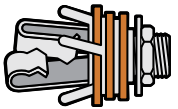
2.1mm DC power jack (1)
#7467 (Only for kit #12254)

Control knobs (3)
#100736

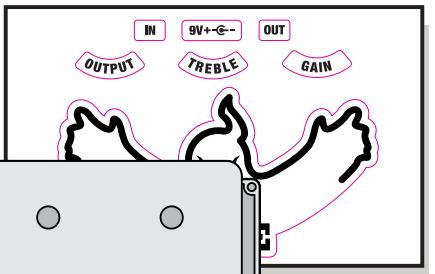


PCB and breakout board (1)

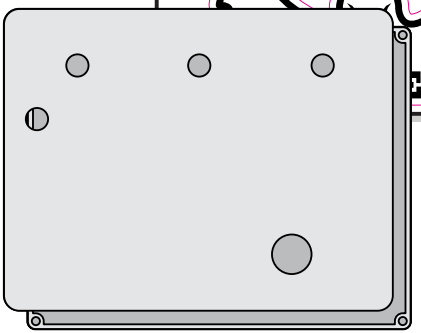
1/4" Mono jack (2)
#4652 (Kit #12254 only has 1)



1/4" Stereo jack (1)
#4653 (Only for Kit #12254)



Sticker sheet (1)



Pre-drilled enclosure (1) #7667/#7669

Give your pedal a custom paint job by painting and adding the stickers provided in this kit (or custom decals that you can create on your own). Doing this pre-build is not only fun, but it's much easier than disassembling the pedal to paint it once you put it together. Don't forget to order quality primer and lacquers from stewmac.com.

1 PAINTING YOUR PEDAL HOUSING

1. To minimize redoing steps, make sure you have a solid idea of the look and feel you're going for.

2. Lightly sand housing with a P240 grit sandpaper and wipe clean any debris.

3. Cover the holes from the inside with masking tape.

4. On a large piece of cardboard, elevate the housing top and bottom on a couple of small blocks of wood.

5. With long, slow strokes, spray one light coat of primer or primer/paint on top and bottom. Allow 45 minutes of drying time between next two to three coats.

6. If you're using primer followed by paint method, paint 3 coats with 45 minutes between coats.

7. Now, add your Ghost Drive sticker and any other desired decoration (paint pens, acrylic paint, Sharpie etc.). Allow drying time.

8. Add 3 coats of clear coat glaze with 45 minutes between coats. Wait at least 2 hours before adding parts.

UNDERSTANDING ELECTRONIC COMPONENTS

A number of different components are used to make an effects pedal. Here's an overview of what they do..

RESISTORS

A resistor is used in an electrical circuit to present an opposition to current flow. It resists the amount of current that can pass through it.

A resistor's value—the amount of resistance it creates – is rated in ohms (Ω). The higher the ohmic value, the greater the resistance to this flow of current. For example, a 100Ω resistor creates ten times as much resistance as a 10Ω resistor.

Resistor values are indicated by colored bands, read from left to right. The first color in the code is usually the one painted closest to a lead. When a gold or silver band is present, it's always one of the last colors in the code.

	Band 1	Band 2	Band 3	Multiplier	Tolerance
BLACK	0	0	0	1	
BROWN	1	1	1	10	+/- 1%
RED	2	2	2	100	+/- 2%
ORANGE	3	3	3	1,000	
YELLOW	4	4	4	10,000	
GREEN	5	5	5	100,000	+/- 0.5%
BLUE	6	6	6	1,000,000	+/- 0.25%
VIOLET	7	7	7	10,000,000	+/- 0.10%
GRAY	8	8	8	100,000,000	+/- 0.05%
WHITE	9	9	9	1,000,000,000	
GOLD				0.1	+/- 5%
SILVER				0.01	+/- 10%

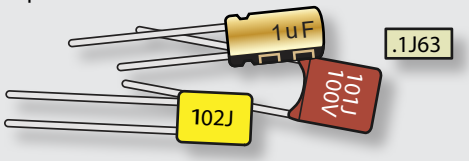
4-band code: read Bands 1 and 2 same as above, then Band 3 is the Multiplier and Band 4 is the Tolerance.

If you're having trouble reading the color bands, there are apps that make easy work of identifying them. Or, try using a multimeter to read a resistor's value. Just set your multimeter to ohms and connect the test leads on each side of the resistor.

CAPACITORS

The two main uses of capacitors are to store electricity and to block the flow of DC current.

Capacitor values are typically printed on the component. The key values with caps are their voltage and capacitance.



The voltage spec for a cap refers to how much DC voltage it can handle at any given time. If this rating is exceeded, the capacitor will fail.

Capacitance, measured in farads, refers to how much electricity a capacitor can hold. One farad (1F) would be much too large for use in a pedal. Caps for pedals are rated between millionths of a farad, called microfarads (µF), billionths of a farad, called nanofarads (nF), or trillionths of a farad: picofarads (pF). **.001µF = 1nF = 1,000pF**.

Resistors and capacitors may also be referred to with shorthand notation on the printed circuit board when there is a decimal in the value. For example, the place on the board for the 4.7K resistor will read 4K7 and the spot for a 2.2nF capacitor will read 2n2. This is done to save space on the board and make the labels as clear as possible.

Some capacitors have polarity and some don't. It's extremely important to install polarized caps correctly in a circuit. The negative lead will often be indicated by a band of arrows pointing to the negative lead and will be shorter than the positive lead. The positive lead of an electrolytic cap will be longer and won't have any arrows pointing to it.

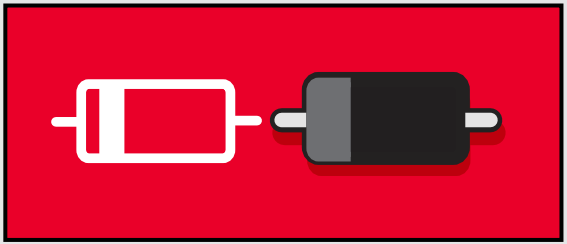
Installing capacitors with the polarity backwards will make the circuit malfunction and quickly destroy the capacitor— even causing it to explode.

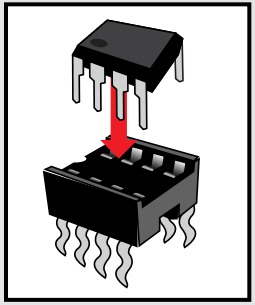
UNDERSTANDING ELECTRONIC COMPONENTS (CONT)

DIODES

Diodes are used where you want electricity to flow in only one direction, such as power rectification, and also to limit how much current can flow, to create "clipping" distortion.

Diodes are also polarized, so they need to be installed in the correct orientation. The stripe around one end marks the negative (minus) lead of the diode. On the circuit board, the printed outline of the diodes also shows this stripe. Install each diode so that its stripe matches the direction shown on the circuit board.



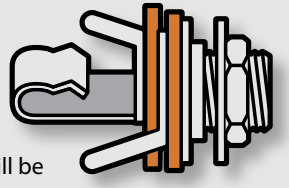


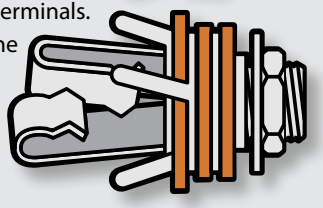
INTEGRATED CIRCUITS

Integrated circuits are complex, tiny, self-contained collections of components that contain a complete circuit. Op-amps, audio processors, and linear voltage regulators are three kinds of integrated circuits.

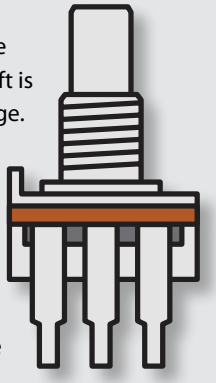
INPUT JACKS

Ghost Drive kits without battery capability use a two terminal mono input jack. If your kit has battery capability, your input jack will be a stereo jack, with three terminals. The third terminal puts the battery into the circuit and acts as a power switch when you plug in your guitar.

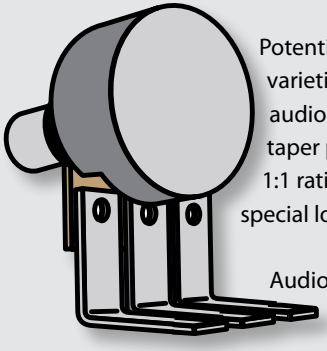




POTENTIOMETER



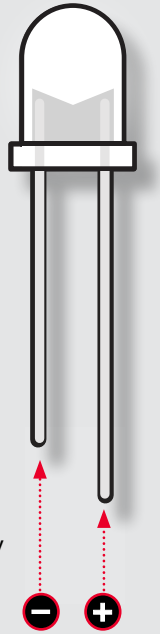
A potentiometer, or pot, is a variable resistor. This means as the knob shaft is rotated, the DC resistance will change. There are three lugs or soldering terminals on a conventional potentiometer. The outside two are the ends of the resistive strip, and the center lug is connected to the "sweeper." The sweeper allows you to vary the DC resistance relative to its position along the resistive strip, or relative to the outer two lugs.



Potentiometers come in two varieties, linear-taper and audio-taper. The linear-taper pot's taper works at a 1:1 ratio. Audio taper, has a special logarithmic ratio.

Audio taper is used because our ears don't hear changes in volume in a linear fashion as you might expect. As the volume increases, a greater change in signal or sound-pressure is required to perceive a smooth transition.

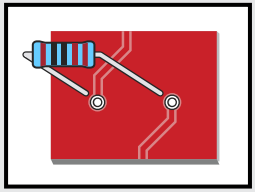
LED

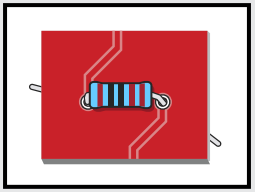


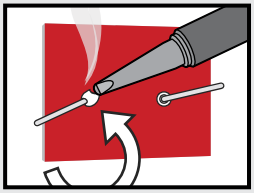
LED stands for Light Emitting Diode, and functionally LEDs are very similar to regular diodes. LEDs are most often used as indicator lights in pedals. They are polarized just like diodes and electrolytic capacitors and must be installed in the correct orientation to work. The positive (anode) lead of the LED will be longer and the anode side of the LED housing will be round. The negative (cathode) lead of the LED will be shorter and the cathode side of the LED housing will be flat. LEDs are mounted inside of a bezel, which protects the LED and insulates the leads from shorting against the enclosure or any internal components.

SOLDERING

The solder joints you'll make on the circuit boards are very small, and too much heat can damage the board. The idea is to make joints quickly, without scorching the holes.

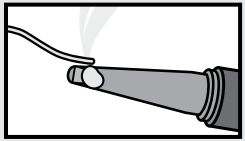






1. Hold components in place for soldering by threading the leads through the board and bending them apart on the reverse side. You will be making your solder joints on the reverse side of the board.

2. Tin the iron by melting a small amount of solder onto the tip of the iron.



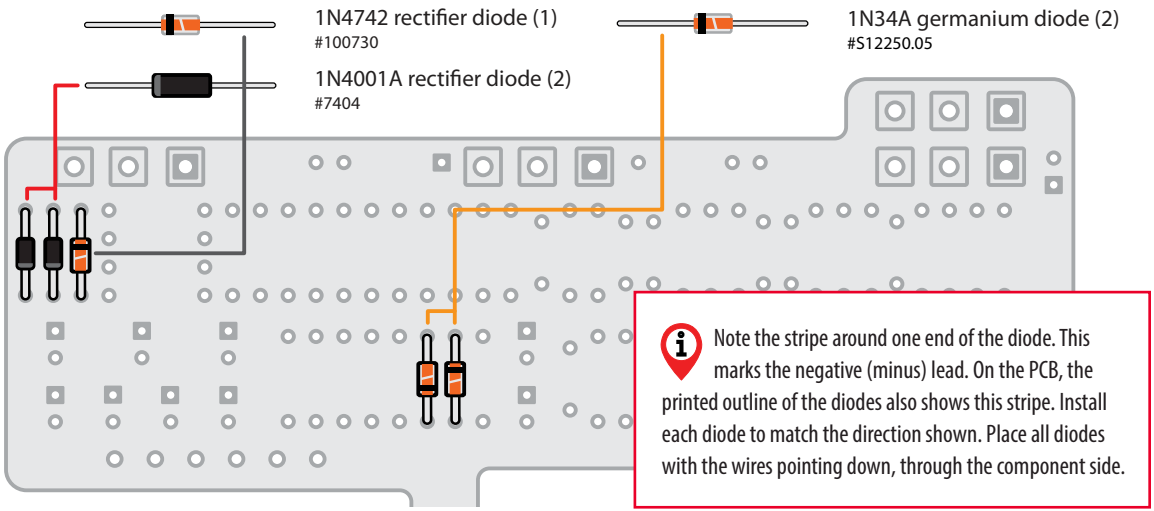
3. Insert the tip into the hole and let it heat for 4-5 seconds before touching it with solder. This heats the contact enough for the solder to flow nicely without damage. Feed the solder to the hole, not the iron, and you don't need much solder, just enough to fill the hole. Keep the iron on the connection for a second longer; this pause gives time for all of the flux to cook out of the joint. After the joint has cooled, trim away the excess lead wire.

Here's a few more soldering tips that might be helpful:

- Keep your soldering tip clean by wiping it often on a damp sponge.
- Also keep it tinned by occasionally melting a little solder onto it.
- Don't blow on the hot solder or touch anything until the joint has cooled completely. A good solder joint is shiny – a sign that it was left to cool undisturbed.
- Plan so each joint is only soldered once. Resoldered joints are messy and more likely to fail.

Free the printed circuit board (PCB) and breakout board from the frame by cutting the small tabs with a string cutter or side cutter. Insert the diode leads through the component side (the side with the components' values and outlines silkscreened in white). In many cases, components must be inserted in a specific direction due to polarity, so follow the graphics carefully. For example, diodes are polarized, so they must be installed in the correct orientation. Solder the diodes on the opposite side of the board, known as the component side.

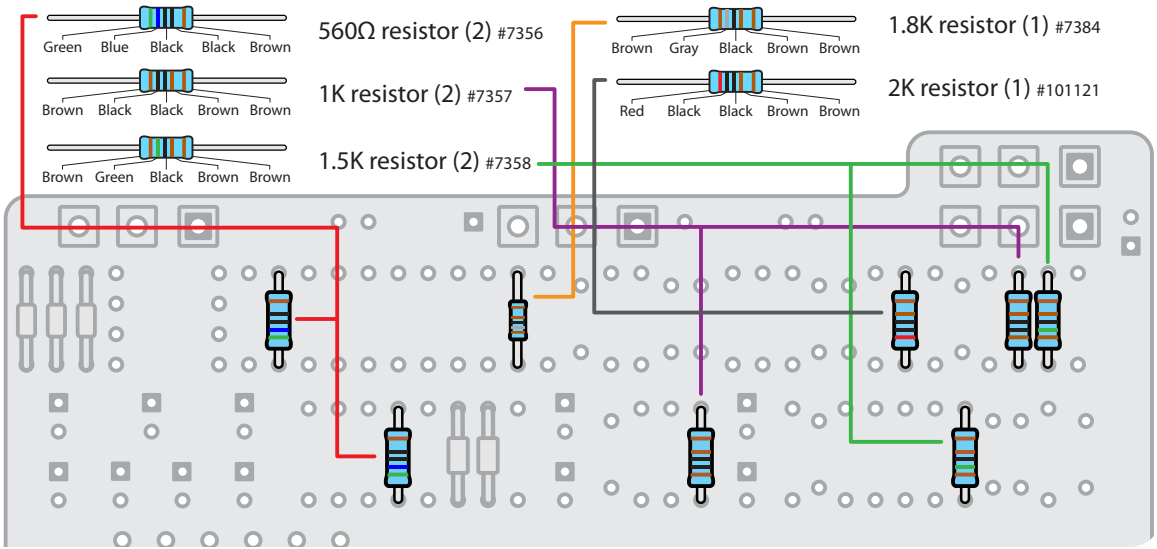
2 INSTALL 5 DIODES



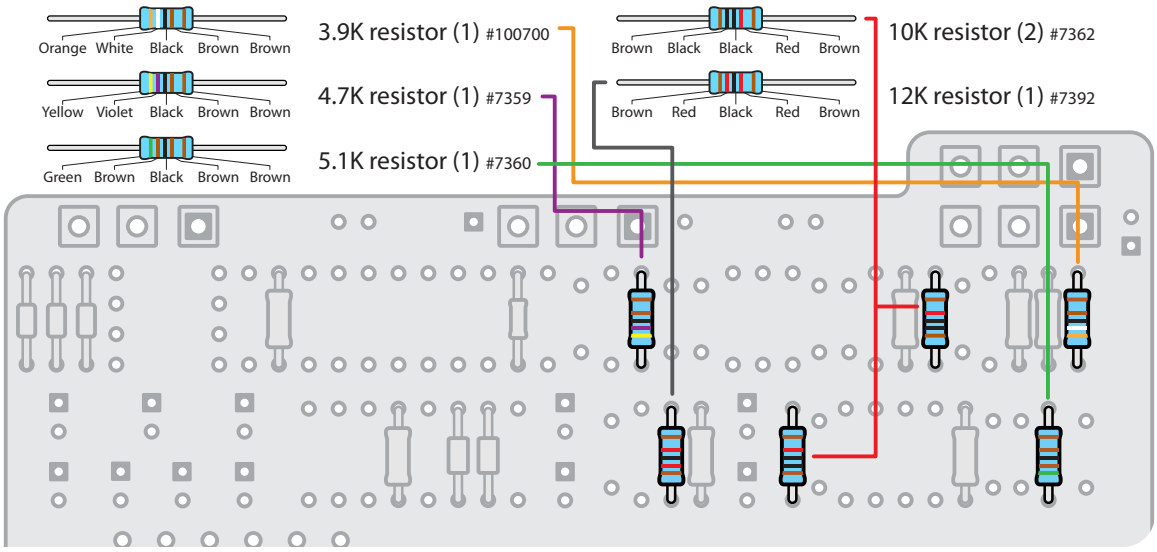
Note the stripe around one end of the diode. This marks the negative (minus) lead. On the PCB, the printed outline of the diodes also shows this stripe. Install each diode to match the direction shown. Place all diodes with the wires pointing down, through the component side.

3 INSTALL 31 RESISTORS

Next, we're going to add a bunch of resisitors to our PCB. Like in the previous step, you'll find an outline of each resistor and its value printed in their proper location on the PCB. Resistors are not polarized, so it doesn't matter which lead goes in which hole. Match resistors to the values on the PCB, a few at a time, and solder in place. Clip the leads close to the board, but not touching the board so you don't damage the solder pads.

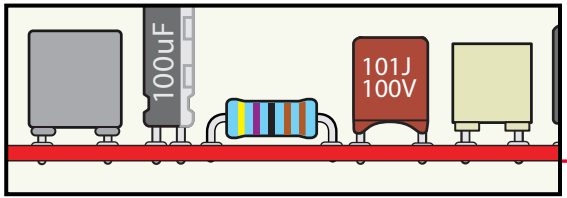


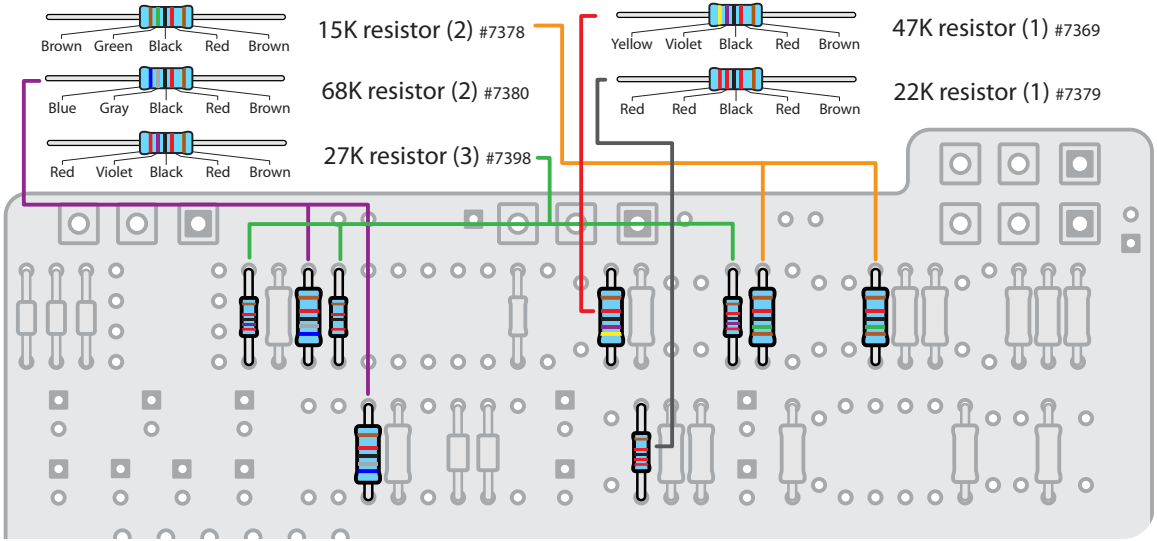
It's a great practice to always check your resistors on a multimeter to be sure they display the correct ohms before installing. In rare cases, a resistor might be labeled incorrectly or could be an open circuit and you wouldn't want to find that out post install!



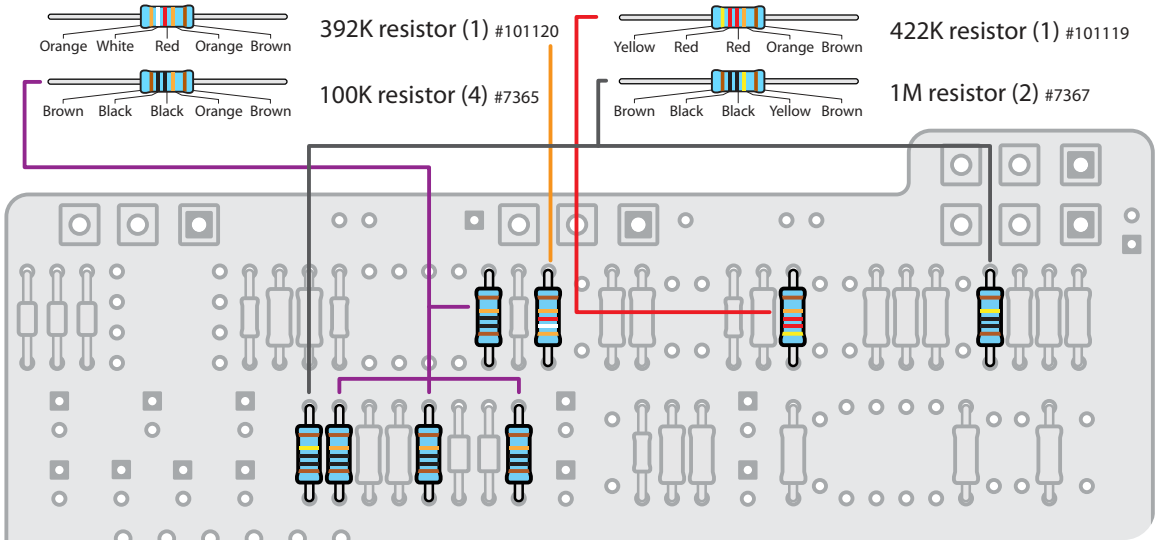
3 INSTALL 31 RESISTORS (CONT)

Resistors have a low profile, sitting closer to the board than taller components, so installing these now will make installing other parts easier later on.



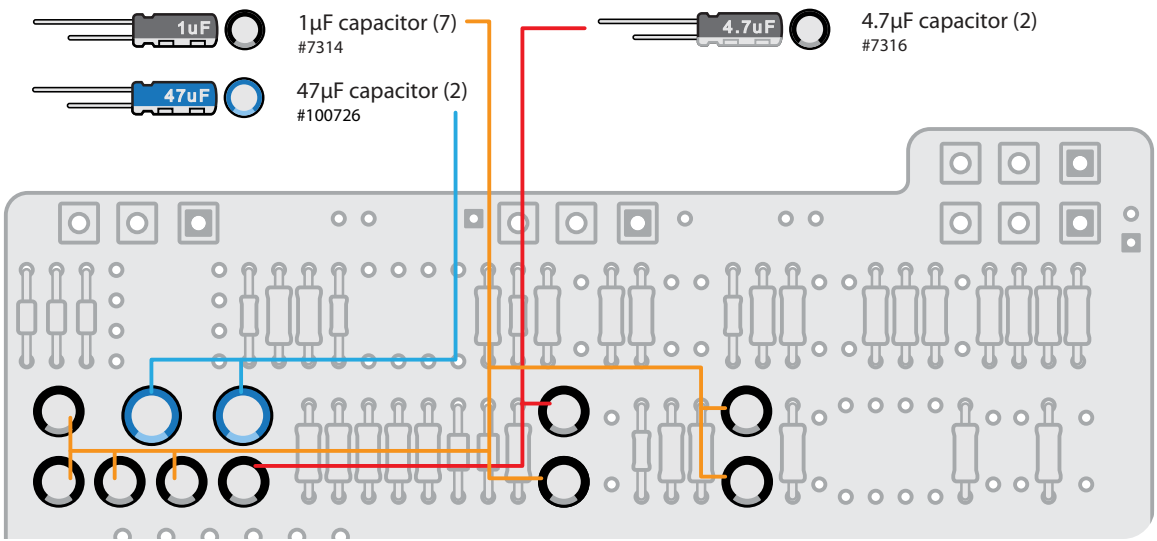


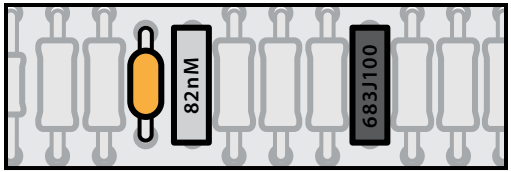
3 INSTALL 31 RESISTORS (CONT)



4 INSTALL 11 CAPACITORS

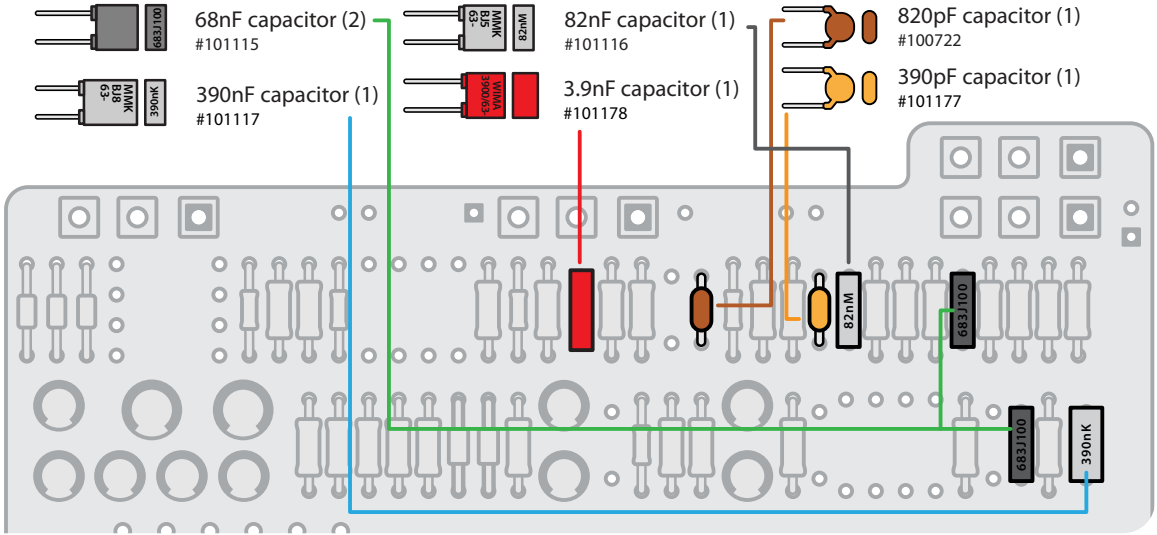
The three types of capacitors shown below are polarized and have to be installed in the correct orientation. Note the stripe running the length of each cap; this identifies the negative (minus) lead. On the circuit board, the circle for this cap's location has a round through hole on one side, and a square through hole on the other: insert the capacitors with their stripe facing the round hole side. (On polarized caps of this type, there's a second way to identify the negative lead: it is the shorter of the two leads).





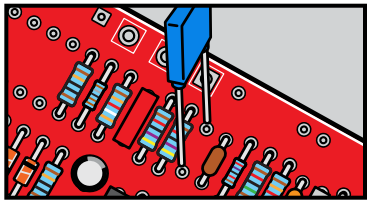
The remaining capacitors below are not polarized. However, best practice is to solder these caps in place with all text all facing the same direction.

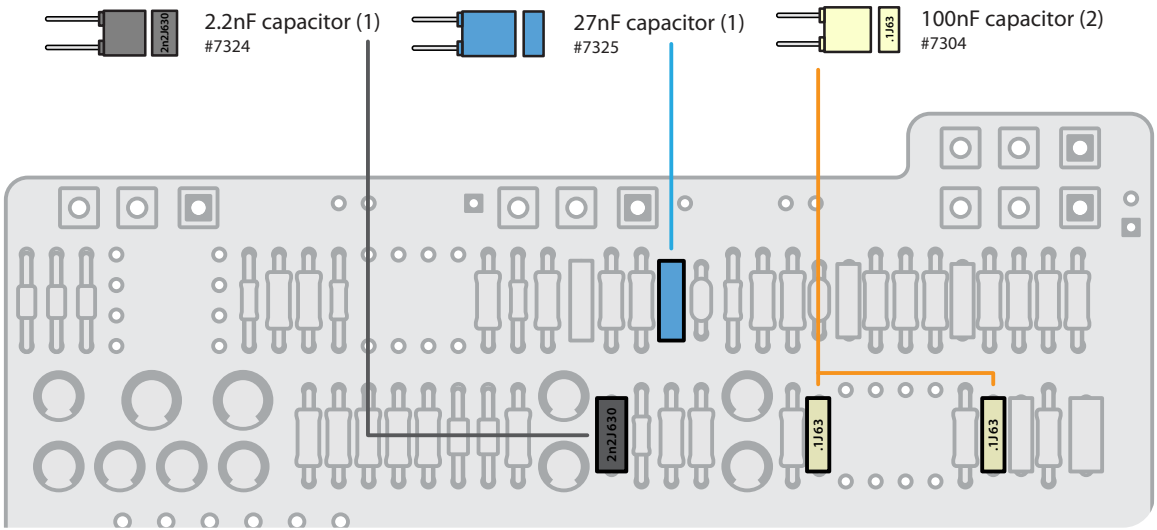
5 INSTALL 11 CAPACITORS

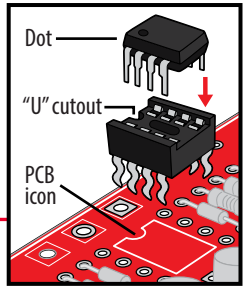


5 INSTALL 11 CAPACITORS (CONT)

Just like you installed the diodes and resistors, make sure you installed all capacitors through the component side, with the wires facing down through the PCB. Finally, solder from the back, the solder side and clip the leads close to the PCB.

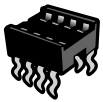






6 INSTALL IC SOCKETS AND CHIPS

Next, carefully snap three integrated circuit (IC) sockets onto the PCB. Make sure the u-shaped cutout matches the one on the PCB and that ALL of the legs have penetrated the PCB and none have folded under the part. Flip over the PCB and solder all of the sockets. Once cool, install the piggybacking charge pump and op-amp chips by snapping them into the sockets. Orienting the chips is critical. A small dot in the upper left corner on the IC sockets MUST be installed on the same end as the u-shaped cutout on the IC socket for proper orientation. Use the same care inserting the legs into the socket that you used when installing the socket on the board.

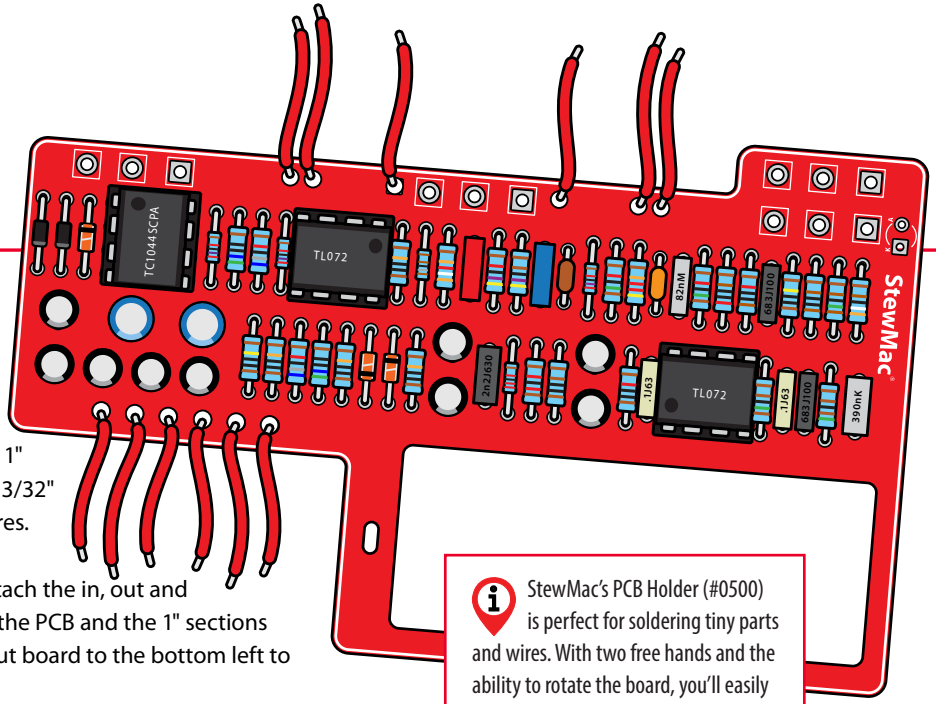


Integrated circuit socket (3)
#7484

TL072 1C (2)
#7444

TC1044 charge pump (1)
#100732

7 INSTALL 12 LEAD WIRES



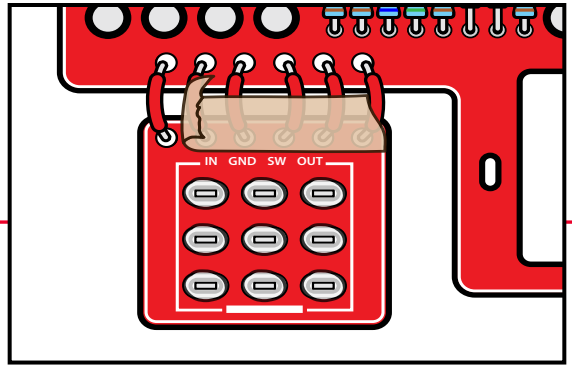
This kit comes with 24" of lead wire.

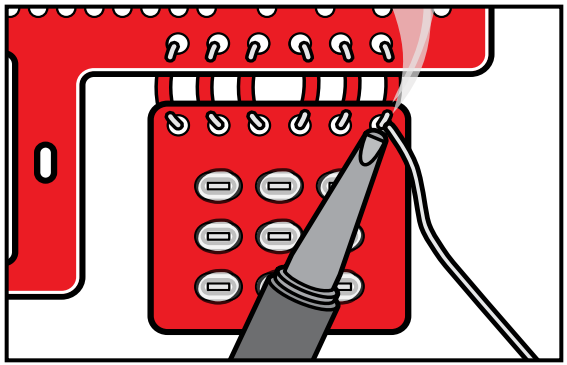
Cut the wire into six, 2" sections and six 1" sections. Strip around 3/32" off both ends of all wires.

The 2" sections will attach the in, out and DC jacks at the top of the PCB and the 1" sections will attach the breakout board to the bottom left to the PCB.

Insert the stripped ends of the wires into the holes on the component side of the PCB and solder them on the back.

StewMac's PCB Holder (#0500) is perfect for soldering tiny parts and wires. With two free hands and the ability to rotate the board, you'll easily find the perfect angle to work.





8 SOLDER BREAKOUT BOARD TO THE PCB

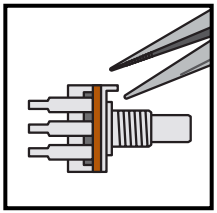
Now we're going to attach the breakout board to the PCB using the six, 3/4" wires you just installed in step seven. Have a small piece of masking tape on hand.

Align the PCB and breakout board component side up. Guide the leads of the wires coming from the PCB through the holes in the breakout board. Now tape the leads to the breakout board on the component side to prevent them from slipping out of the holes.

Carefully flip the PCB and breakout board over and solder the wires in place on the breakout board. Once the solder joints have cooled, remove the tape.

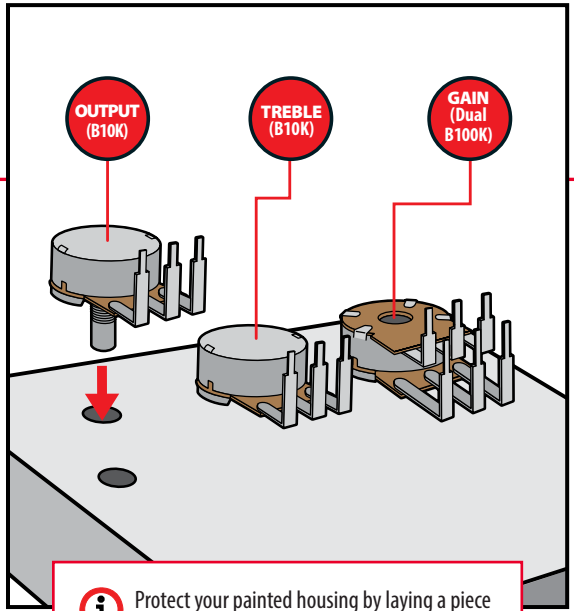
9 PREPPING POTS FOR INSTALL

Locate the three pots. If any pot has an index pin protruding from it, break it off with a pair of needle nose pliers. This will allow the pot to mount flush in the housing when it's finally installed.

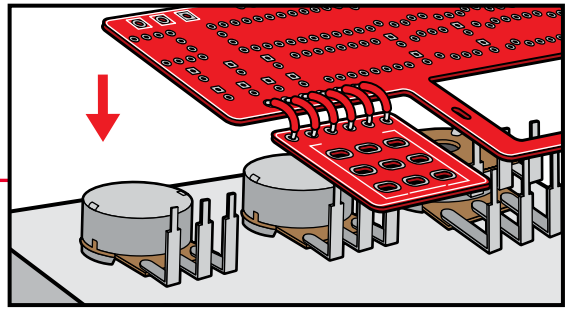


Remove the nuts and washers from the three pots and insert their threaded shafts into their coordinating holes on the OUTSIDE of the pedal housing. Reattach nuts and washers inside housing and lightly tighten.

Attaching the pots to the outside of the housing provides a temporary work space to keep things steady while soldering the PCB to the pots.

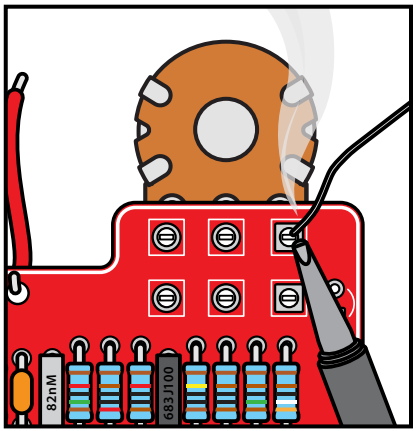


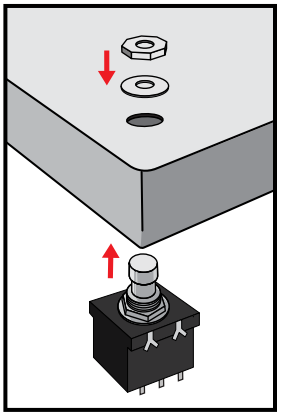
Protect your painted housing by laying a piece of paper or light cardboard with holes in it for the pots and footswitch on the housing before temporarily attaching the components.



10 SOLDER POTS TO PCB AND INSTALL FOOTSWITCH

Lay the PCB/breakout board component side up over the pots. Manuever the lugs of the pots and the PCB until the lugs of the pots slip into their appropriate holes in the PCB. Once all the lugs have popped through the two boards, solder them in place.





Remove the nuts and washers on the pots to free the PCB group of parts from the housing. Reattach the nuts and washers to pots to keep them from getting lost.

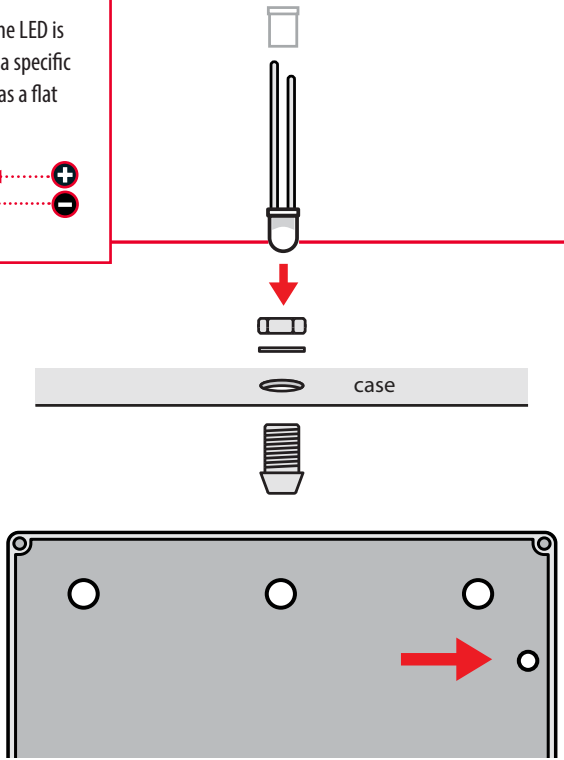
Next, remove the nuts and washers from the footswitch. Thread a nut to the bottom of the shaft and follow it with a locking washer. Insert the shaft into the footswitch hole from inside the housing oriented as shown. Add a washer and nut on the outside of the housing to lock it in place. Tighten securely.

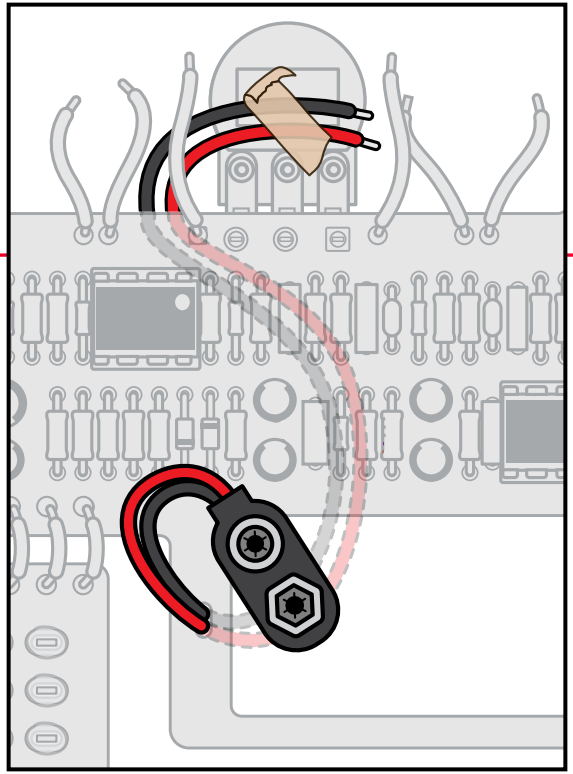
11 INSTALL 1 LED INDICATOR LIGHT

Like some of the caps and diodes, the LED is polarized and has to be installed in a specific direction. The negative lead of the diode has a flat edge and is shorter than the positive.

The LED mounting bezel consists of two main parts: A ring that the LED fits into, and a plastic plug that goes over the LED from the back side to keep it in place.

Install the mounting bezel through the front of the enclosure. From the inside, slip a lock washer and nut on and tighten it up using a 3/8" wrench. Insert the LED into the bezel so that the two leads are parallel with the right side of the housing and the longer lead is closest to the pots' holes. Feed the leads through the plastic plug, press the plug down until it's tight in the bezel. The LED will be held in place when you solder the leads to the switches and circuit board. For a more secure mount, you can run a bead of clear silicone adhesive around the plastic plug.





12 PREPARE THE BATTERY CLIP

Battery clip installation only applies to MODEL 12254

With the PCB/breakout board, pots assembled and free from the temporary workspace on the outside of the pedal housing, it's time prep the battery clip connection.

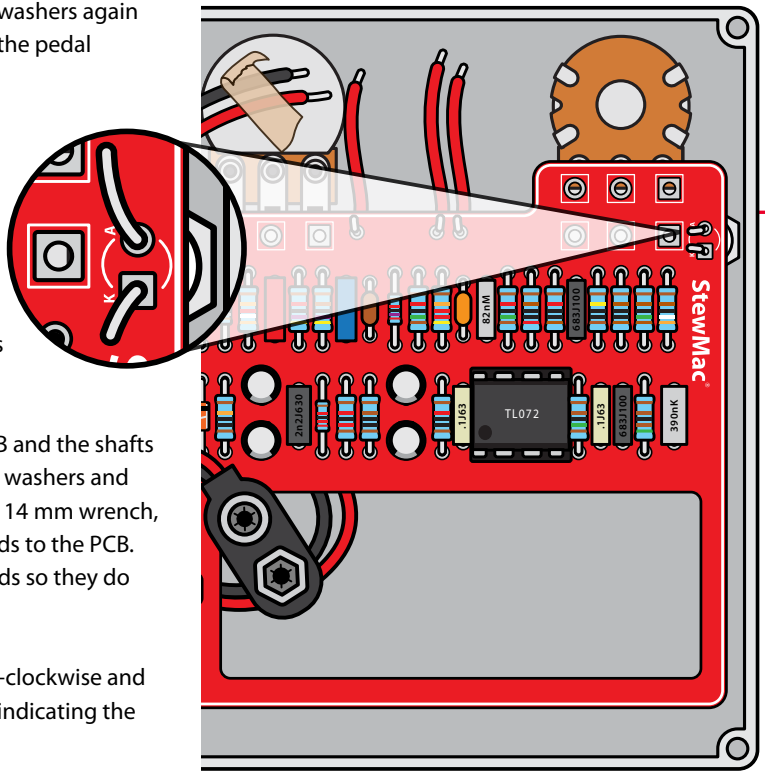
With the component side of the PCB board group facing up (breakout board should be in the lower left position), thread the two ends of the wire leads coming from the battery clip through the tiny hole to the left of the battery compartment opening in the PCB.

Guide the two leads under the PCB and temporarily tack the ends to the leads to the back of the center pot (tone) with a small piece of tape.

13 INSTALL INTO HOUSING

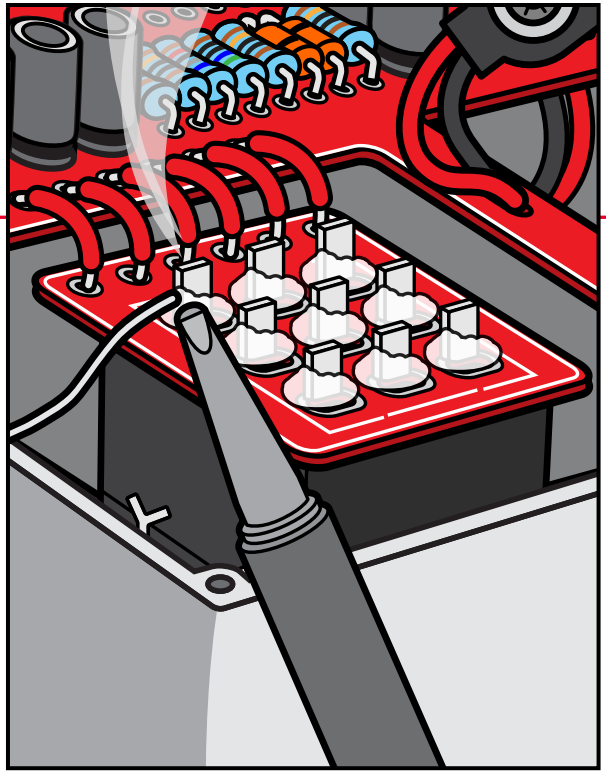
Remove the nuts and washers again from the pots and lay the pedal housing face down.

With the component side of the PCB group facing up, thread the longer positive lead of the LED up through the hole marked "**A**"and the shorter negative lead through the hole marked "**K**" while carefully inserting the shafts of the pots and foot switch into their holes.



Once the LED leads are through the PCB and the shafts of the pots are in their holes, attach the washers and nuts for the last time (promise). Using a 14 mm wrench, tighten the nuts and solder the LED leads to the PCB. Once the solder has cooled, clip the leads so they do not interfere with other components.

Twist the pot shafts all the way counter-clockwise and install the knobs pointing at "7 o'clock" indicating the "zero" position.



14 ATTACH THE FOOT SWITCH TO THE BREAKOUT BOARD

With the LED and pots soldered in place, the breakout board should come pretty close to perfectly aligning with the lugs of the footswitch.

Carefully maneuver the breakout board and footswitch until the lugs pop through the appropriate holes in the breakout board and the breakout board is flat against the footswitch.

Once the board is laying flat, solder the lugs to the breakout board.

15 INSTALL THE DC JACK

FOR MODEL 12254 (with battery option)

PLEASE NOTE: The DC jack and input jack are different for models 12250 and 12254, so choose step 15 and 16 according to your model.

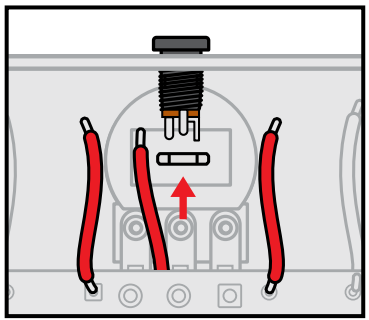
Remove the nut and insert the DC jack into the top of the housing.

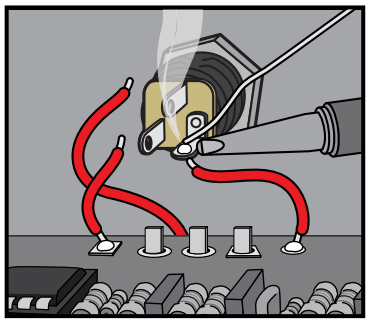
Using a 14mm wrench or needle nose pliers, reattach nut inside housing on threaded shaft being careful not to cross thread. Tighten nut just enough to allow the jack to rotate.

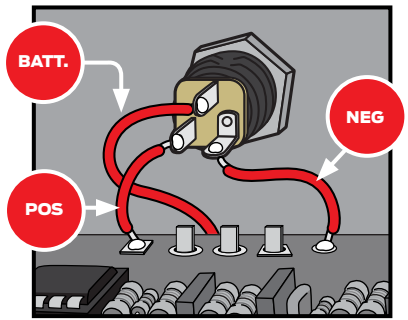
Solder the right wire on the PCB that's closest to the DC jack to the largest of the three lugs on the jack.

Rotate the jack slightly so that you have access to the lug furthest from the largest lug. To this lug you will attach the wire closest to the DC jack on the left coming from the PCB.

Finally, attach the red wire coming from the battery clip to the last lug on the DC jack. Once solder joints have cooled, tighten the nut with a pair of needle nose pliers. Do not over tighten because you could crack the DC bushing.





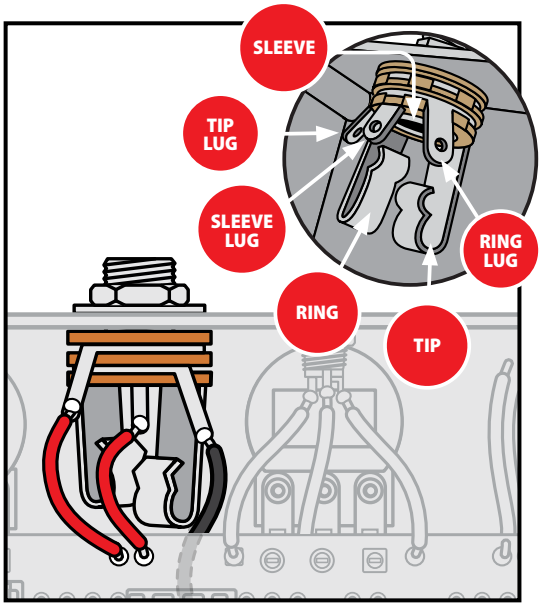


Model 12254 has the ability to run on either 9 Volt battery or an external power supply. The included stereo input jack acts as a switch for the battery if it is in place so that you do not drain power unless a cable is plugged in. Insert the input jack into the left side of the housing with the tip connection facing down, as shown in the diagram. Add the washer and thread the nut on to the shaft enough so that the pot can rotate freely.

16

INSTALL THE INPUT JACK

FOR MODEL 12254
(with battery option)



Orient the jack as shown in the diagram. Solder the wire on the left side of the PCB to the lug that corresponds with the tip connection. The tip lug should be the one closest to the outside wall of the enclosure.

Solder the wire on the right side of the PCB to the sleeve lug, which is the center lug of the three lugs as shown in the diagram.

Now, solder the black wire that is coming from the battery clip to the ring lug, which will be the right most lug.

Once the solder has cooled, orient the jack as shown in the diagram, make sure none of the connections on the jack are shorting to any other components, and tighten the nut on the jack.

15

INSTALL THE DC JACK

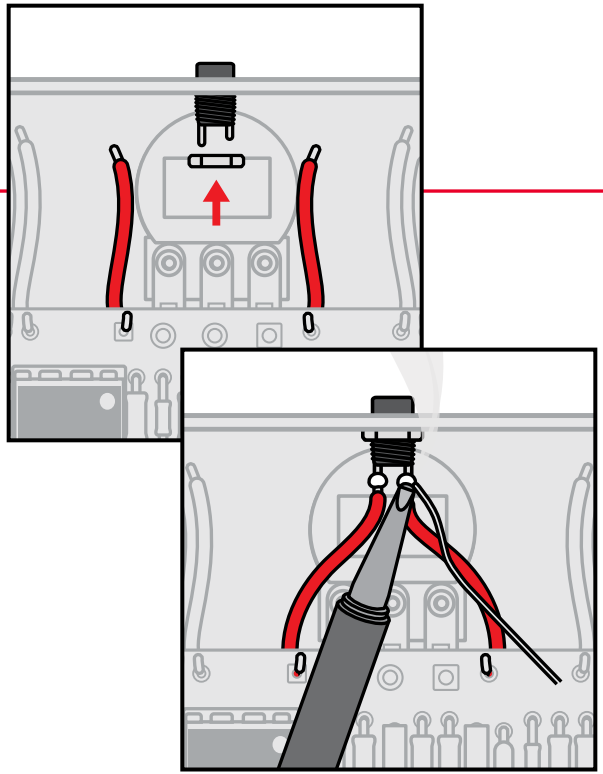
FOR MODEL 12250
(DC only)

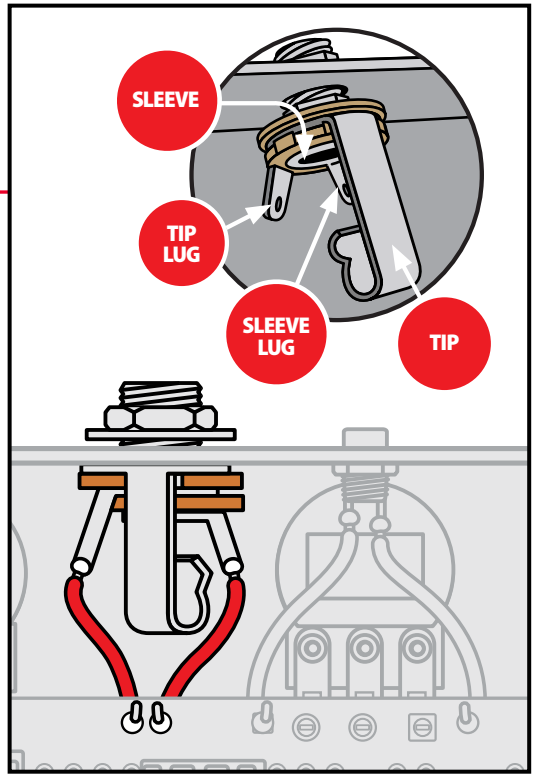
Insert the DC jack into the top of the housing making sure the longer of the two lugs is on the left. Using a 14mm wrench or needle nose pliers and 14mm nut, secure jack into housing just enough to allow the jack to rotate.

Solder the inside left wire to the longer lug of the DC jack.

Solder the inside right wire to the shorter lug of the DC jack.

Once solder joints have cooled, tighten the nut with a pair of needle nose pliers. Be careful not to tighten to tightly because you can crack the bushing of the jack.





16

INSTALL THE INPUT JACK

FOR MODEL 12250
(DC only)

Model 12250 comes with two mono jacks. One will be your input jack and the other your output jack. Insert the jack into the left side of the housing with the tip connection facing up, as shown in the diagram. Add the washer and thread the nut on to the shaft enough so that the pot can rotate freely.

Solder the right wire at the top of the PCB to the input jack lug that corresponds with the sleeve connection.
The sleeve lug should be the one closest to the DC jack.

Solder the 2" wire on the left side of the PCB to the lug of the input jack that corresponds with the tip connection.
The tip lug should be the one closest to the outside wall of the enclosure.

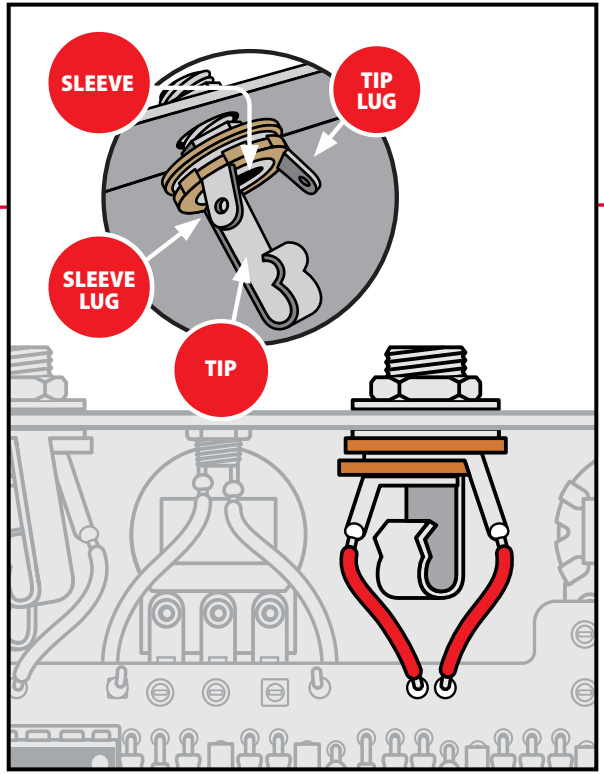
Once the solder has cooled, orient the jack as shown in the diagram, make sure none of the connections on the jack are shorting to any other components, and tighten the nut on the jack.

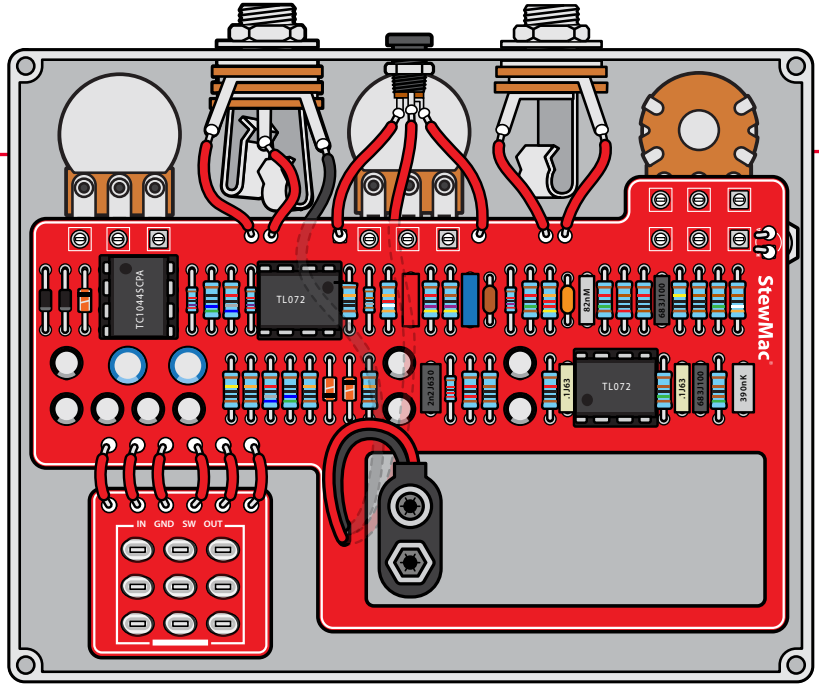
17 INSTALL THE OUTPUT JACK

Insert the output jack into the right side of the housing with the tip connection facing down, as shown in the diagram. Add the washer and thread the nut on to the shaft enough so that the jack can rotate freely. You may need to rotate the jack to provide easier access to setting the solder joints.

Solder the left wire at the top of the board to the output jack lug that corresponds with the sleeve connection. The sleeve lug should be the one closest to the DC jack.

Solder the 2″ wire on the right side of the PCB to the lug of the output jack that corresponds with the tip connection. The tip lug should be the one closest to the outside wall of the enclosure.





18 COMPLETED VIEW (with battery option)

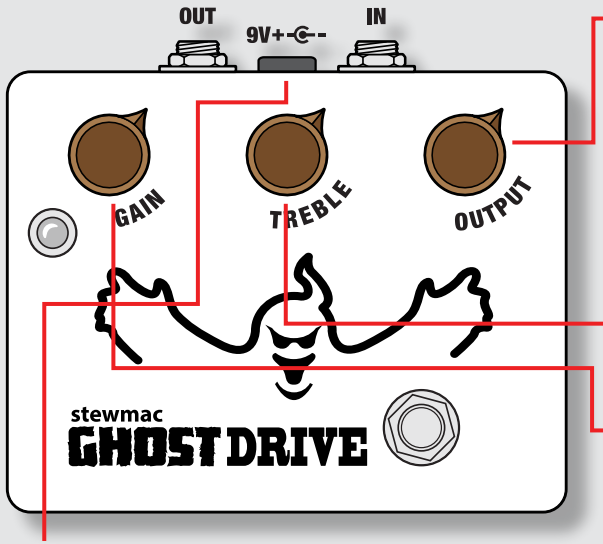
With the output jack secured, this is what your pedal should look like.

Congrats, on a job well done!

Now, simply attach the back of the pedal, pop on the knobs, plug this thing in and bend some tone!

If you are running on 9V battery, remember to remove your input cable when not playing, as it will drain the battery.

HERE'S HOW THE CONTROLS WORK



OUTPUT This controls the volume of the pedal. It can be used as a clean boost in low gain settings and it works great in conjunction with the gain control to dial in the sweet spot.

We suggest starting out with the Output at around the 1 o'clock position, Treble at 11 o'clock, then bring up the gain to taste!

TREBLE This controls the brightness of the tone of the pedal when turned clockwise.

GAIN This controls the amount of drive you hear from the pedal. The more you crank it, the more distorted the sound will be.

POWER Use a standard 9 volt DC power supply with a 2.1mm negative-center barrel (not included). We always recommend pedal-specific, transformer-isolated, wall-wart power supplies or supplies with separate isolated outputs. Some switching supplies, as well as some linear (non-switching) pedal power supplies can be noisy. Switching-type power supplies, daisychains, and non-pedal specific power supplies do not filter dirty power as well and let through unwanted noise. Do not run at higher than 9V DC voltages!

NOTES

Built to last a lifetime.

Our promise to you is simple and uncomplicated. If any of our products ever break, wear out, or fail to exceed your every expectation simply return it for a replacement. **Quality you can trust. For life.**

TECHNICAL SUPPORT:

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 #12250/#12254 Updated January, 2024