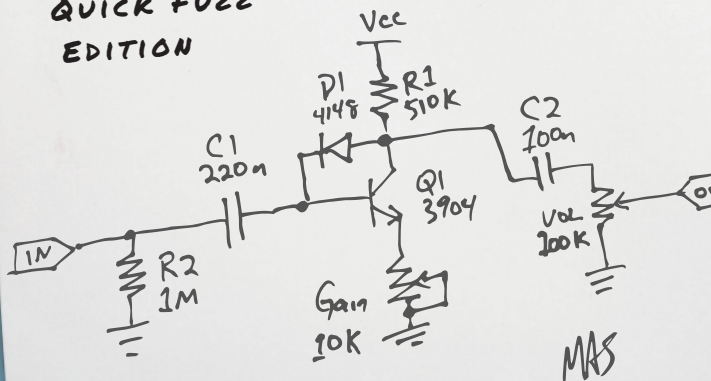


THE ULTIMATE

# BEGINNER PEDAL KIT

QUICK FUZZ  
EDITION



A Guide to  
Build Your Own DIY Guitar Pedal

MARK A. STRATMAN

MAS Effects

# The Ultimate Beginner Pedal Kit

## QuickFuzz Edition

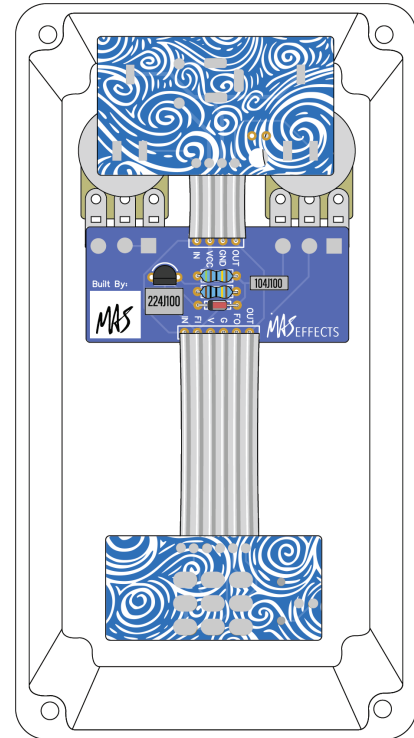
*A Guide To Build Your Own DIY Guitar Pedal*



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mark@mas-effects.com

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First paperback edition 2023



by Mark A. Stratman

## WHAT MAKES THIS KIT SPECIAL?

### Extremely affordable

DIY pedal building should be accessible to everyone, with a minimal base kit price and minimal tools needed.

### Most beginner-friendly

Your first pedal-building experience should be fun, relaxing, rewarding, and **SUCCESSFUL**

## Why so many DIY pedal projects fail

#1: Bad solder joints

#2: Misplaced components

#3: Off-board wiring mistakes

#4: Lack of documentation

## Why yours won't

We've designed a Soldering Practice Kit, along with a **HOW TO SOLDER** guide that will take you from absolute beginner to soldering expert in about an hour.

Unlike most kits, we pre-sort the components so you don't have to measure them or read complex color bands and unintuitive codes.

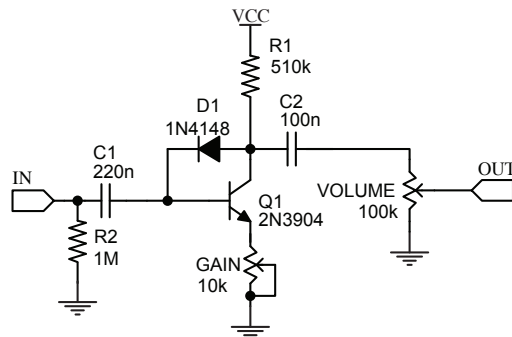
Instead of manually wiring the foot switch and jacks, we provide circuit boards and ribbon cables to make it foolproof.

This kit assumes **NO PRIOR KNOWLEDGE** or experience. This book will walk you through **EVERYTHING**.

## QUICK FUZZ ABOUT THE CIRCUIT

The circuit is a variation of one called the "Bazz Fuss" and is a popular DIY project for its low part count and dark, brutal sound. Its asymmetric clipping - different levels of distortion on the positive and negative sides of the signal - creates a richer sound than a simpler symmetric clipping arrangement.

Like some classic vintage fuzz pedals, it has a low input impedance that loads the guitar pickups, so it sounds best with your guitar plugged directly into it, at the beginning of the pedal chain.



Keep the pedal at the beginning of the chain for the best sounds. Putting it after any buffer can kill its signature tone.

This schematic is a drawing of all the components and how they are electrically connected.

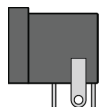
Not sure how to read a schematic? No worries, it's not necessary to build this kit!

If you want to learn, though, check out our free *HOW PEDALS WORK* book at [masfx.io](http://masfx.io). It will teach you about schematics, and much more.

# KIT CONTENTS

## AKA BILL OF MATERIALS (BOM)

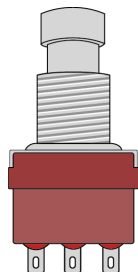
**NOTE:** Some parts are shown from multiple angles to help identify them; it's NOT an indication of quantity.



2.1mm DC power jack



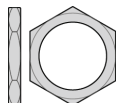
3-in-1 wrench



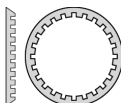
3PDT latching foot switch (color varies)



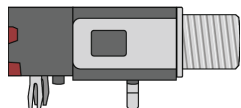
washer



(2) nuts



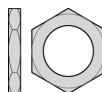
lock washer



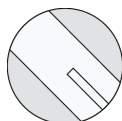
(2) phone jacks, 1/4"



washer



nut



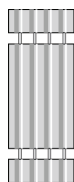
(2) knobs T18 push on, 6mm shaft (color varies)



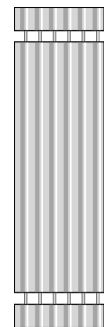
LED 3mm (color varies)



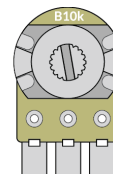
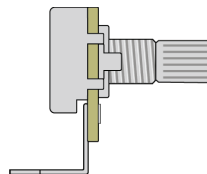
LED spacer



ribbon cable 1 inch 4 conductors



ribbon cable 2 inches 6 conductors



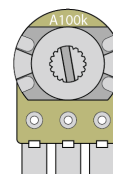
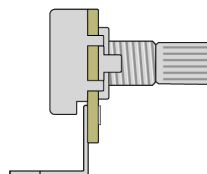
potentiometer 10kΩ (volume)



(2) nuts



(2) washers



potentiometer 100kΩ (gain)



(2) potentiometer dust covers (may be pre-installed)

## PRESORTED COMPONENTS



green, brown, black, orange, brown

R1 510 kΩ



brown, black, black, yellow, brown

R2 1 MΩ



yellow, violet, black, brown, brown

R3 4.7 kΩ

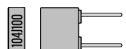


Q1 2N3904



224 followed by other letters/digits

C1 220 nF



104 followed by other letters/digits

C2 100 nF



D1 1N4148



D2 1N5817

Your kit also contains:

- 3 printed circuit boards (PCBs)
- Enclosure
- Face plate (if you chose a plain aluminum enclosure)
- This manual and other printed inserts
- A few fun pieces of swag
- A sturdy box you can hopefully reuse

## TOOLS

This kit is deliberately designed to MINIMIZE the investment you need to make in tools and materials.

### REQUIRED TOOLS

#### Soldering iron

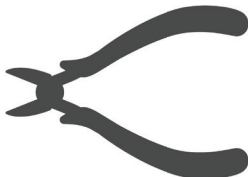


A soldering iron and solder are the main tools you'll need. We discuss recommendations in the free *How To Solder* book at [masfx.io](http://masfx.io). In short: buy an inexpensive iron from a marketplace (*Amazon, Ali, Ebay, etc.*). It'll get you through a handful of pedals before you decide whether it's worth upgrading. The quality won't make a difference if you're using good techniques.

#### Flush cutters

*Or diagonal cutters, or side cutters, or wire cutters.*

These are for snipping the excess leads after soldering.



#### Sponge

A damp cellulose kitchen sponge is needed to keep your soldering iron's tip clean. You can also use a brass soldering sponge, or even damp paper towels in a pinch. Avoid sponges that remain soft, like bath sponges.

### OPTIONAL TOOLS

- **Eye protection:** Bits of solder can fly a couple feet or more, and clipped leads from components can go flying as well.
- **Blue putty,** included with your free Practice Kit, or something else to hold the PCB while soldering to act as a third hand.
- **Needle nose pliers** to bend leads and pull them through the circuit board more easily.
- **Small fan** to blow flux fumes away from your face or a soldering fan with attached carbon filter to draw in fumes.
- **Multimeter** can help when things go really wrong, but that probably won't happen with this kit.

## SOLDERING PRACTICE KIT

### PREREQUISITE: Build the practice kit

#### The #1 DIY pedal problem is BAD SOLDER JOINTS.

We don't want you to destroy a perfectly good pedal kit while learning to solder, so we've provided you with a free Soldering Practice Kit. It's so important you can even get extras in our store for half price (at cost!) with code **MOREPRACTICE**.

#### Fun tri-color flashlight project

Not only does the kit give you a chance to solder many joints in a no-pressure project, but when you're ready, you can turn it into a working, multicolor flashlight key chain.

#### Get started now

1. Visit [masfx.io](http://masfx.io) and click the free *HOW TO SOLDER* guide
2. Grab the practice kit from your box
3. Reach out with any questions or problems along the way

## CHOOSE YOUR BUILD EXPERIENCE

### THIS PAPERBACK

This book will give the simplest experience for most people. It will walk you through building the pedal. It covers the most important steps, and provides tips and tricks that will help you have a fun and carefree build experience.

Supplement it with step-by-step videos when you want to see it in action.

### ONLINE BUILD GUIDE

A version of this book is also available online with the ability to toggle between COMPREHENSIVE and QUICK versions.

#### Comprehensive

- learn how the circuit works
- receive customization tips
- learn helpful information for future pedal builds, and more

#### Quick

- bare-bones instructions
- speediest build
- click “Quick” to see only the essential steps

**Videos** You can also find step-by-step videos online.

For VIDEOS or the ONLINE GUIDE, scan the code here or visit [masfx.io/quickfuzz](https://masfx.io/quickfuzz)



## GUARANTEED WORKING PEDAL

if

**You commit**

to first become proficient at soldering

then

**We commit**

to work with you until you have a functioning pedal

### How it works\*

1. Build the Soldering Practice Kit included with your pedal kit. Follow the *HOW TO SOLDER* guide available at [masfx.io](https://masfx.io).
2. Post pictures of the front and back of your practice kit to our forum at [masfx.io/forum](https://masfx.io/forum) and we'll help you make sure you're ready to build a top-notch pedal.
3. In the unlikely event you run into problems while building this kit, we will work with you until you have a functioning pedal.

\* Details in the comprehensive online book

# GETTING STARTED



**Stop: Did you post your practice kit?**

Post pictures of both sides of your practice kit to be eligible for the guarantee (previous page).

## If you need more help

If you run into any problems or have any questions, we have quite a few ways to get you back on track.



Visit [masfx.io/forum](https://masfx.io/forum)

You can post questions, images, or videos and get a response incredibly quickly.

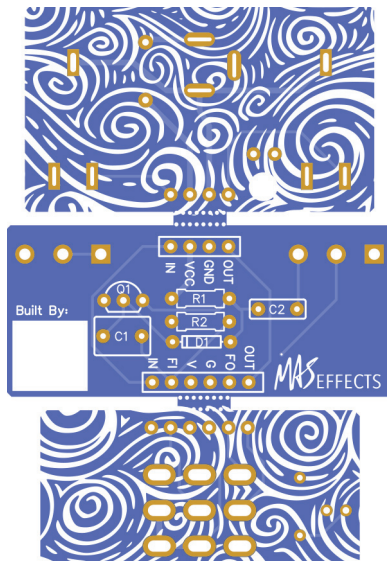


View step-by-step videos in the online version of this guide, at [masfx.io](https://masfx.io)



Email [help@mas-effects.com](mailto:help@mas-effects.com) if the forums don't work for you. This may be a bit slower, though.

## SEPARATE PCBs



*Snap!  
Don't cut.*

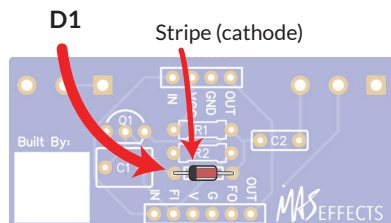
## Separate PCBs (Printed Circuit Boards)

Your pedal will use three (3) printed circuit boards (PCBs). They are manufactured as one unit, so the first thing you need to do is snap them apart.

You can use your hands to break them apart at the perforations. Two little tabs will probably still be attached. You do not need to remove them, but it will look nicer if you do. Line up your flush cutters with the perforations, apply firm pressure by squeezing the handles, and turn sideways to snap the tab off.

Breaking is easier and safer than trying to cut the PCB.

## BUILD THE MAIN PCB



Install and solder D1.

Diodes allow current to flow one way in a circuit. They are polarized, meaning their orientation matters. Ensure the side of the diode with the stripe is over the stripe drawn on the PCB. Bend its leads just like you did for the resistors in the practice kit, insert it into the PCB, then solder.

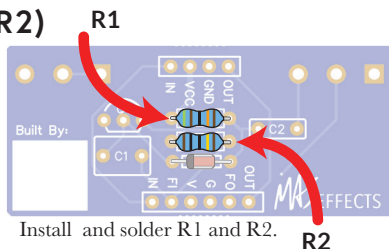
Clip the leads SAFELY, holding them as you snip. Wear safety glasses!

## RESISTORS (R1,R2)

Resistors limit the current flowing through them. The higher the resistance value, the less current will pass through it.

Resistors have no polarity, which means you can insert them in either direction (i.e., you can safely rotate 180°).

Install and solder resistors R1 and R2 then clip their leads.



Install and solder R1 and R2.

R2

## LEARNING MORE

### Reference designators

A reference designator is an identifier for a specific component in a circuit, and it consists of an alphabetic prefix indicating the component type and a number uniquely identifying a particular part in the circuit.

For example: R1 is resistor 1, C32 is capacitor 32, and D3 is diode 3.

Reference designators don't hold inherent significance. The numbers are arbitrary, and the prefixes aren't always used consistently. The important thing is that each part has its own designator that's unique to the circuit. A designator allows you to clearly communicate about a particular part between the PCB, on which you'll find the designator printed, as well as the Bill of Materials (BOM) and the schematic.

### Component placement

As a general rule, you will always place a component on the side of the PCB with the silk screen label (i.e., the writing printed on it) for that component.

The designator (e.g., "D1") will usually be printed, as well as an outline or other drawing to provide a visual reference. Place the component on top of this drawing.

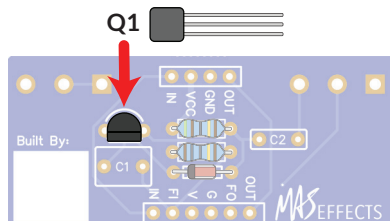
### Current?

Diodes block or allow current; resistors limit its flow. But what is current?

Visit [masfx.io](https://masfx.io) to read "How Pedals Work: Conceptual Basics for the Absolute Beginner" and learn the basics of circuits, what all these components are doing, and more.



## TRANSISTOR (Q1)

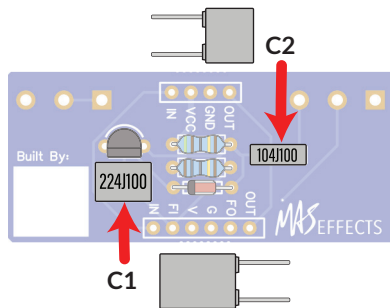


Install and solder Q1.

Transistors are amplifiers, used to increase the voltage range of a signal. Its 3 legs, the Emitter, Base, and Collector (E, B, C) need to be placed in the correct holes.

Match the shape of the transistor, Q1, to the shape drawn on the PCB, and install and solder it. Clip its leads.

## CAPACITORS (C1,C2)



Install and solder C1 and C2.

Capacitors store electrical charge, and as a result of their operation, they block DC signals and limit the frequencies of AC signals.

C1 and C2 are not polarized and can be inserted in either direction (i.e., you can safely rotate 180°).

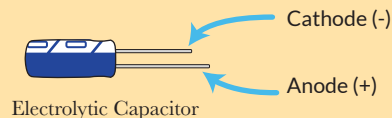
Install and solder them, then clip their leads.

## BUILD THE MAIN PCB (CONT)

### Capacitor Polarity For future reference

Some capacitors, most commonly electrolytic types, ARE polarized and must be inserted with the correct orientation. This isn't because polarization is desirable or called for by the circuit design, but rather simply as a consequence of the way they are constructed. AC circuits like pedals need to carefully account for the orientation of polarized capacitors to avoid damaging or destroying them.

You can always substitute a non-polarized (e.g., film type, or ceramic) for a polarized capacitor (e.g., electrolytic), but not the inverse. You should NOT use a polarized capacitor unless the schematic specifically calls for one.



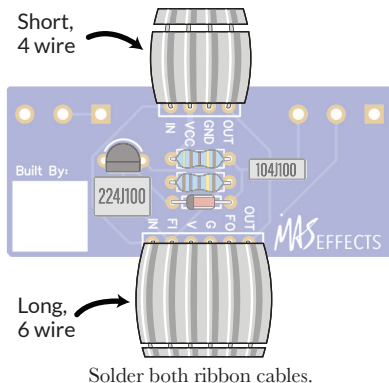
The *How Pedals Work* book at [masfx.io](http://masfx.io) covers this in greater detail, along with more information about types of capacitors, their operation, and their usage.

## RIBBON CABLE

Individual wires are most commonly used to connect the PCB to the jacks and foot switch, but sometimes, you'll find other connectors, such as this ribbon cable. Although more expensive, ribbon cables are a convenient way to keep the wiring tidy, prevent mistakes, and make the build process quicker and easier.

The insulation is pre-cut at both ends of the included ribbon cables. Pull it off one end. Leave the other end covered to prevent accidentally bending the wires while you work.

Insert the wires into the side of the PCB with the rectangle printed on it, as shown in this illustration. If your cable has a red stripe on one side, disregard it. We're not



using the stripe to signify anything so the ribbon can be inserted in either direction.

The ribbons will stick up on the same side as the rest of the components you have attached so far.

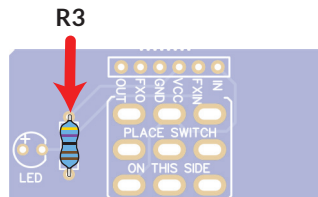
Turn the board over and solder each of the wires. Gravity should hold it in place, but if it doesn't want to sit flat, use a little blue putty from your practice kit to keep things where you want them.

## BUILD THE MAIN PCB (CONT)

## START THE FOOT SWITCH PCB

Find the foot switch PCB, which has a 3x3 grid of pads for the lugs on the foot switch.

We are going to start but NOT finish this PCB, so don't jump ahead! Namely, we aren't yet ready to attach the foot switch or the LED, and we'll instead attach those after they're mounted in the enclosure.



Install and solder R3.

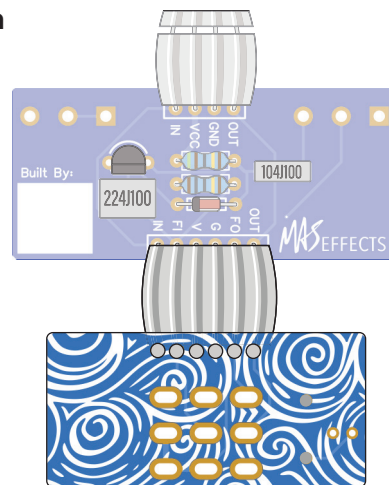
## Current limiting resistor (CLR) for LED

Solder R3 just as you did the resistors on the main PCB.

### Connect foot switch PCB to main PCB

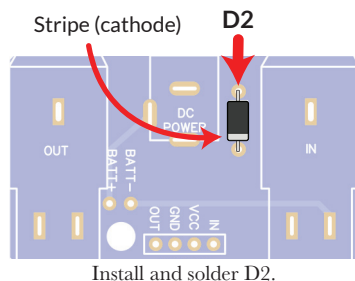
Remove the insulation from the end of the six wire ribbon cable and install the foot switch PCB onto it. Again, make sure the ribbon is inserted into the side with the rectangular box around the six solder pads. See the illustration for guidance.

Solder the foot switch PCB to the ribbon at each of the six pads.



Solder foot switch PCB to ribbon.

## START THE JACK PCB



Install and solder D2.

### DIODE (D2)

Just as we did with D1, bend its legs, line up the stripe on the diode with the stripe printed on the PCB, then install and solder D2 to the PCB.

Clip its leads.

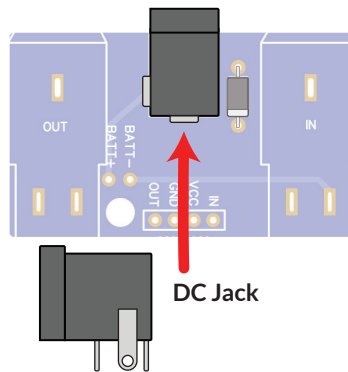
#### **i** What does it do?

*D2 provides some protection if a reversed power supply is used briefly. The pedal expects a center negative plug, but if you instead plug in a center positive, the diode will stop most of the reversed current, which might otherwise damage the pedal.*

## BATTERY (NOT INCLUDED)

Batteries have fallen out of favor for guitar pedals. In most circumstances, they're less convenient, more wasteful, and worse for the planet. In some cases, though, they are useful or even essential. For those rare cases, your jack PCB has the option to install a battery clip (not included). Visit the support forum ([masfx.io/forum](https://masfx.io/forum)) if you need help with this.

Otherwise, just ignore the “BATT+” and “BATT-” pads.



Install and solder DC jack.

## DC POWER JACK

By convention, pedals use a 2.1mm barrel connector for power, with a center negative supply.

Getting the polarity correct when wiring jacks is often a point of confusion and failure for many newcomers to DIY pedal building. Luckily, it's not a concern for this kit since the PCB takes care of it for you.

Insert the DC jack into the PCB and solder it into place. The holes are spaced to provide enough resistance to hold the jack, but if it wants to fall out, bend its lugs slightly so they grab onto the PCB more securely, or use some blue putty to hold it in place.

### Input and output jacks

Don't install these yet.

You'll find later, when you insert them into the enclosure, they sit at an angle due to the slope of the enclosure's wall. If you wait and tighten them against the enclosure before soldering them to the PCB, you'll avoid putting stress on the solder joints.

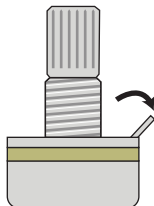
#### Need a power supply?



Look for a 9V center-negative DC supply with a 2.1mm barrel jack.

Most power plugs labeled for guitar pedals will fit these criteria.

## REMOVE ANTI-ROTATION TAB



Snap tab off.

Most potentiometers (often called “pots”) have an anti-rotation tab on them. The tab can sit in an additional hole in the enclosure next to the hole for the shaft, and it will prevent the potentiometer from turning. In practice, though, the hole is unsightly with smaller knobs, and the tab is unnecessary since a relatively snug nut on the outside of the potentiometer will keep it in place.

Instead, the most common way to deal with these tabs is to simply snap them off.

Grip the tab with your side cutters or pliers, and gently bend it to the side. It should break with very little force.

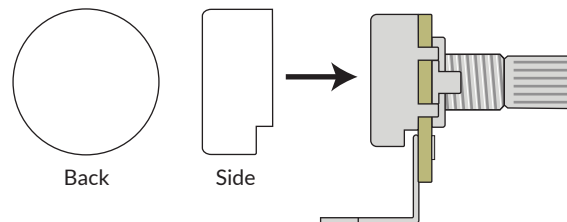
## STRAIGHTEN LEGS

If the legs are a bit crooked, straighten them by gently bending them back into place.

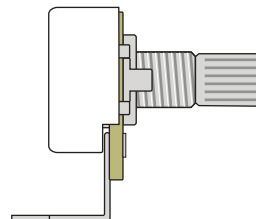
## INSTALL DUST COVERS

A dust cover is a plastic cap that can be pushed onto the back of potentiometer to help minimize dust getting into it. In a typical pedal with its mostly-sealed enclosure, it won't make much difference, but it certainly can't hurt.

To install it, line up the notched area to accommodate the legs of the potentiometer, and firmly press it into place.



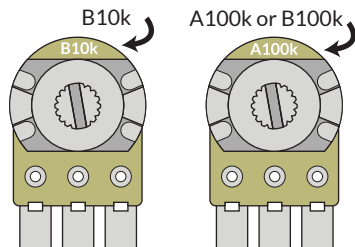
Align notch and press dust cover onto back of potentiometer.



Dust cover installed.

*You may have received one or both of your potentiometers with a dust cover already installed.*

# INSTALL POTENTIOMETERS



## Identify potentiometers

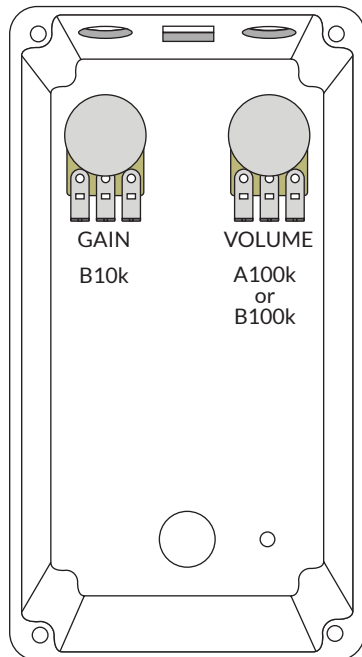
Look for writing above the shaft on the potentiometer to indicate its value. For this pedal, the values are:

- GAIN: B10k
- VOLUME: B100k or A100k

Depending on the design of your enclosure, it may have alternate labels. e.g., “LEVEL” for volume, or “DRIVE” for gain.

## Insert potentiometers

Use the image here, or refer to the printing on your enclosure to insert the potentiometers into the correct holes.

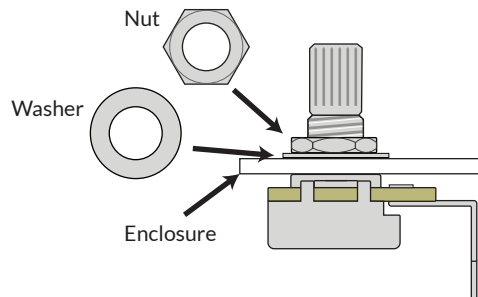


## INSTALL POTENTIOMETERS (CONT)

### Secure potentiometers

Secure the potentiometer on the outside by installing a washer followed by a nut. Use the provided wrench tool to tighten the nut.

Check that both potentiometers are straight and level, as shown in the picture to the left. If not, loosen the nut and hold them in place while tightening again.



Use the provided wrench to secure the nut over the washer.

If you're using solder with "no clean" flux, this step is optional. Otherwise, you need to remove the brown flux spots to prevent corrosion and unwanted side effects.

Use rubbing alcohol and an old toothbrush, a cloth, or even a paper towel to scrub the brown flux residue from the solder joints. A high concentration (e.g., 91% or higher) makes the job much quicker, but use what you have.

## Remove flux residue

## INSTALL MAIN PCB

Install the main PCB onto the 6 legs of the potentiometers. If they don't line up, loosen the nuts and make adjustments, then tighten them again. You may also need to bend the legs slightly to straighten them if they're crooked.

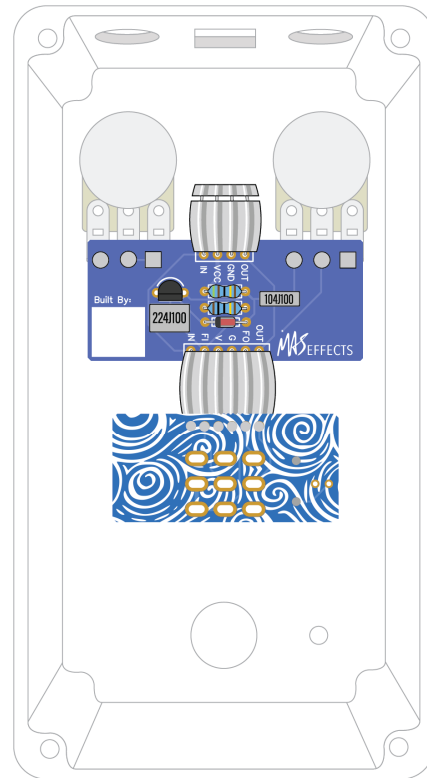
Ensure the nuts on the potentiometers are tight and the potentiometers don't want to rotate if you twist the shaft.

Solder the potentiometers to the PCB.

### TIPS:

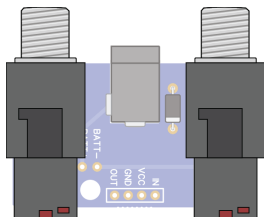
You'll find these require a bit more heat and solder than the earlier components. You don't have to adjust the iron's temperature to get more heat into the joint; instead, you'll simply hold it there for a beat longer, e.g., 2 seconds instead of 1.

Refer back to the *HOW TO SOLDER* guide at [masfx.io](http://masfx.io) for a reminder on good, dome-shaped joints. Ensure the iron's tip is heating both the pad and leg, and that solder is flowing across the pad and up the leg.



Solder main PCB to potentiometers.

## INSTALL JACK PCB



Snap jacks into PCB.  
Don't solder yet.

### Insert jacks into PCB (don't solder yet)

Scratch away some of the powder coat on the inside of the enclosure or the rim of the holes for one of the jacks. Use whatever metal tool you have available. A fork will work in a pinch. You want the metal threads on at least one of the jacks to touch the raw metal of the

enclosure. This connects the enclosure to all the other GND points in the circuit (the voltage we call 0V) and helps shield your pedal from electromagnetic interference, which can cause noise.

Gently insert the jacks into the PCB. Make sure they click into place. Don't solder them yet, though.

### Solder PCB to ribbon

Flip the circuit board over (swirly side up) and insert the ribbon cable into the 4 pads at the bottom. Just as with the other ribbon cable, it will be inserted into the side with the rectangular box printed around the pads.

Verify it looks like the illustration on the next page.

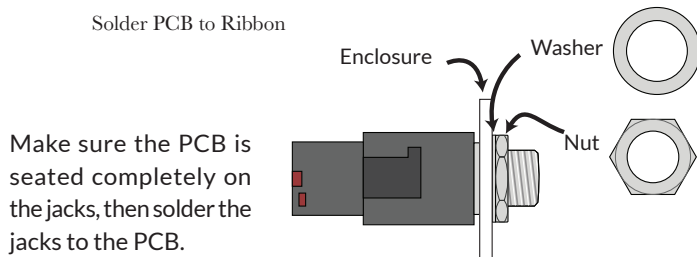
Solder each of the 4 wires.



Solder PCB to Ribbon

### Install, secure, then solder jacks

Push the jacks through the holes at the top of the enclosure. Secure the input and output jacks with a washer, followed by a nut. Tighten the nuts with the supplied wrench.

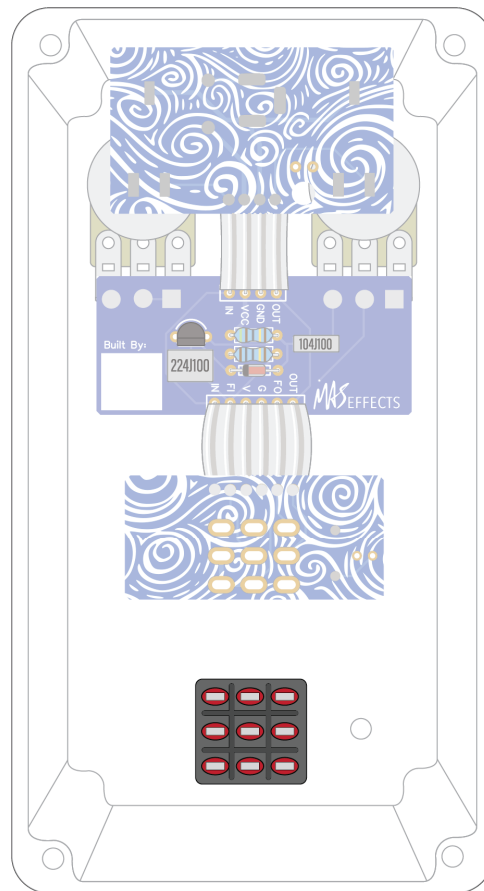
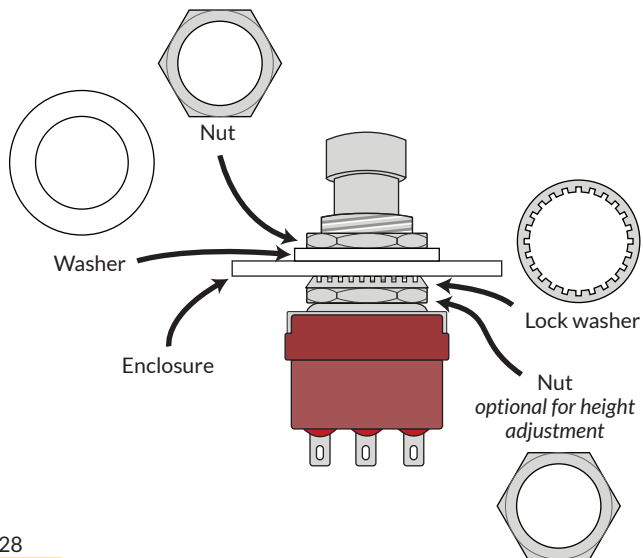


Make sure the PCB is seated completely on the jacks, then solder the jacks to the PCB.

Secure jacks, then solder them to PCB.

## MOUNT FOOT SWITCH

1. (Optional) For a short foot switch, first install a nut to limit its height. If you'd prefer a tall foot switch, you can omit this.
2. Next, put the lock washer, the one with teeth, on the foot switch.
3. Install the foot switch into the enclosure.
4. Place a smooth washer on the outside of the enclosure.
5. Secure the foot switch with a nut.
6. Tighten it with the provided wrench.



Mount foot switch and secure with hardware.

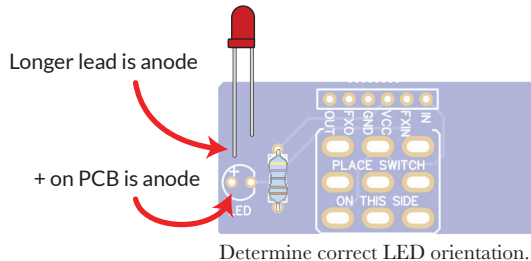


## TAKE NOTE LED POLARITY

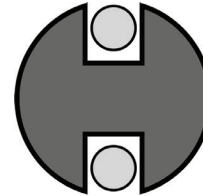
Orientation matters for LEDs (light emitting diodes). Just like other diodes, LEDs have polarity. Current only flows through them in one direction.

The longer lead, called an anode, goes on the positive side, which is marked with a “+” on the PCB.

The shorter lead, called a cathode, goes on the negative side, which is indicated on the PCB with a flat section of the LED outline. If you look closely at the LED itself, you’ll find it also has a flat side, which is useful for determining the polarity if its leads have been clipped.



## LED SPACER

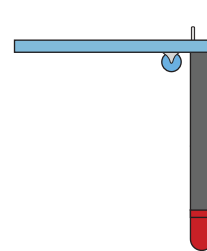


Bottom view of  
LED in spacer.

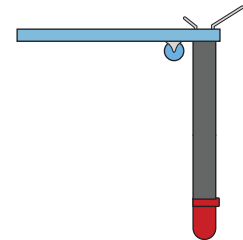
In your kit, you’ll find a black spacer tube, with two channels cut into it to hold the leads of the LED. This will hold the LED at the approximate height we want. It’s not necessary, but it helps make installation easier.

Slide the LED’s leads into the spacer.

Insert the LED into the foot switch PCB being sure to get the polarity correct.



Bend its leads to hold the LED in place. Do not solder it yet.



Place the foot switch PCB onto the foot switch, making sure it's resting firmly with the lugs sticking through the holes. If the PCB tends to move when you let go, use some blue putty (from your Soldering Practice Kit) to keep it in place.

Solder one lug, let it cool for about 5 seconds, then the PCB will be held firmly in place while you solder the rest of them.

If you're new to this, then allow 10 seconds to pass between each lug. Foot switch lugs require more heat than other joints you've done so far. That means you need

to ensure a VERY good wet layer of solder on the iron's tip to transfer heat, and give it at least 2 seconds to heat up. You may need to run the tip back and forth on the foot switch lug to get solder to flow across the entire pad.

Like most components, unfortunately, too much heat can damage it. Foot switches are particularly susceptible. The epoxy in the foot switch can melt, resulting in mechanical failures.

Watch the video at [masfx.io](https://masfx.io) to see what this process should look like.

## SOLDER LED

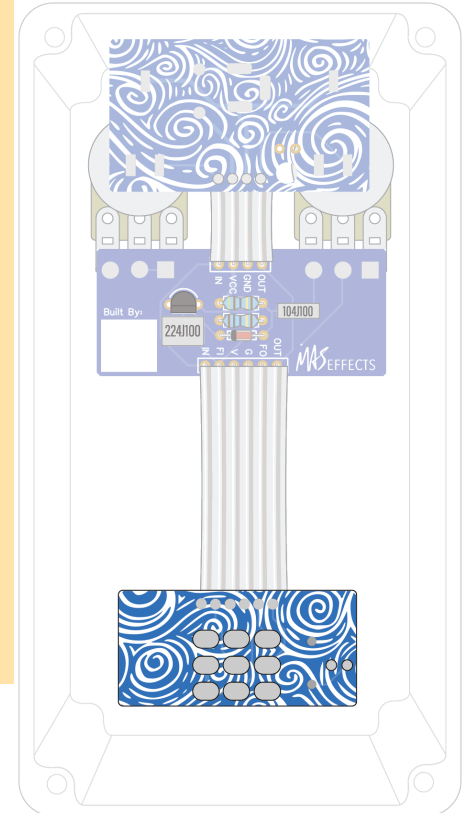
Now that the foot switch and PCB are secured in position, we can set the final position of the LED. Make sure the LED is seated in the hole on the face of the enclosure, then solder its two leads. Clip the excess.

### Time check!

Apply heat for no more than 3-5 seconds! If you can't get the solder joint done in that time:

1. Stop; remove heat
2. Allow the joint to cool for about 10-20 seconds
3. Tin your tip and ensure it's wet with solder, then touch it back to the joint. Make sure it's against both the foot switch lug and the pad
4. Apply more solder as needed

Stop after a few seconds. Repeat as needed.



Solder foot switch and LED.

Just as we did on page 24, clean flux as needed for all the joints we've soldered since then.

**Remove flux residue (again)**

## FINISHING AND FINAL TOUCHES

Sign your initials in the little white box on the PCB for a personal touch.

## DECORATE IF NEEDED

If you have the plain aluminum enclosure with no design, rather than a powder coated and UV-printed one, this would be a good time to decorate it. The guts of the pedal are designed for easy removal. Remove all the nuts and washers and pull everything out.

There are countless options to consider. Get creative! Pedal builders in the forum have loads of experience, so stop by for tips or inspiration.

### Decoration Ideas

- **Face plate:** Order a custom face plate, or use the one included in your kit. Just remove the nuts and washers from the potentiometers, place the face plate over them, then secure the nuts and washers back onto the pots.
- **Paint:** Spray paint, paint markers, or even brushed paint are all popular ways to decorate DIY pedals.
- **Water-slide decals:** You can get professional looking results with a little patience and good techniques.
- **Stickers:** Slap some stickers on it for some easy color and style.
- **Ink stamps:** Rubber stamps and solvent-based ink (e.g., StazOn) work great. Use acetone to erase and try again if you mess up.

## KNOBS

In this project, we used T18 knurled shaft potentiometers and corresponding 6mm shaft T18 knobs. These were chosen because they don't require any extra tools, like Allen wrenches or tiny screwdrivers. Instead, you can simply push down to install the knob.

For alignment: first twist the shaft of each potentiometer to the minimum or maximum setting. This gives you a reference when choosing the knob position. Next, push the knob on.

### Knobs too loose?



If the knob feels too loose, pull it back off and carefully. Gently pry the two halves of the shaft *slightly* apart, just a hair at a time. Moving it too far can snap it off.

## BACK PLATE

Use a Phillips head screwdriver (or a guitar pick) to attach the back plate.

- **Sharpie:** Permanent markers can work in a pinch. They won't be as vibrant as paint markers, but they get the job done.
- **Label maker:** Old-school punch type, or modern label printers give you quick and easy-to-read labels for your knobs.
- **Stamped letters:** Metal letter stamps, a 1x2x3 block (or other anvil), and a hammer will get you looking like Fairfield Circuitry in no time.
- **Newspaper and magazine clippings:** Bring back your inner 5-year-old with some scissors and a glue stick. If you want to get fancy, you can even use an epoxy coating (e.g., Mod Podge) to ensure it stands up to use and abuse.

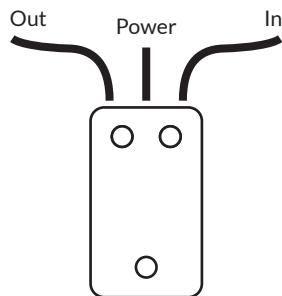
## HOOK IT UP

Plug in a 2.1mm, 9V, center negative power supply (not included) in the middle jack.

Plug a 1/4" TS (mono) instrument cable into your guitar, and plug the other end into the right input jack on the pedal.

Plug another 1/4" TS (mono) instrument cable into the left output jack of the pedal, and plug the other end into your amplifier.

Leave your other pedals out of the signal chain for now to remove any other variables.



### Use the correct power supply

9V Center Negative



If you fry your pedal with the wrong power supply, fixing it will be time consuming and may require ordering new parts.

We will replace any damaged parts at cost (no markup), but try to avoid it.

## TEST IT OUT

Turn the pedal's volume knob to the center position and give it a try. You should hear a clean signal when the LED is off (effect is bypassed), and a distorted sound when the LED is on.

### How does it sound?



1. Unplug power
2. Don't fret

## YOU WILL FIX IT WE WILL HELP



Visit the link below or scan the code here to see our interactive guide for troubleshooting your pedal. It will help you identify and fix the most common problems.

[masfx.io/quickfuzz/troubleshooting/](https://masfx.io/quickfuzz/troubleshooting/)

If those steps don't immediately reveal the problem, you can always get quick and personal help at our support forum:

[masfx.io/forum](https://masfx.io/forum)

## TIME TO CELEBRATE!

Congratulations! Enjoy making music with the pedal YOU built.



### DIY MERIT BADGE

You just earned your DIY Pedals MERIT BADGE! Wear or display it proudly!

(Tip: double-sided tape is great if you don't want to sew it)

## SHOW US YOUR PEDAL

We absolutely love to see completed builds. Head over to the forum and post a picture or two, or even a video.

**[masfx.io/forum](https://masfx.io/forum)**

## PS

Remember to keep the pedal at the beginning of the signal chain for the best sounds. Putting it after any buffers tends to kill its signature tone.

## WHAT'S NEXT?

After you've taken some time to enjoy and show off your new pedal, what's next?

### Want to build more?

Perhaps this kit sparked a new interest and you want to build more! Now that you have a bit of experience, there are many options to consider.

- **More kits:** This is the simplest, albeit most costly option. There are a good variety of pedal circuits available from a few great suppliers in addition to MAS Effects.
- **Off-the-shelf PCBs:** One of the most popular options for DIY pedal builders is to buy a PCB and independently source parts. This gives you a wide range of available circuits, and is fairly cost effective, but introduces the complexity of finding and selecting parts.
- **Scratch-built:** Building your own PCB on a prototyping board ("protoboard" or "stripboard") or etching copper clad gives you maximum flexibility and control and keeps costs extremely low. This is the most advanced option, but if you keep an attention to detail, you ARE equipped to do it.

Visit our forum at [masfx.io/forum](https://masfx.io/forum) to get personalized recommendations from pedal builders on where to go from here.

### Want to learn how pedals work?

That's another fantastic next step. Continue to the next page to begin that journey.

# HOW PEDALS WORK

# FULL SCHEMATIC

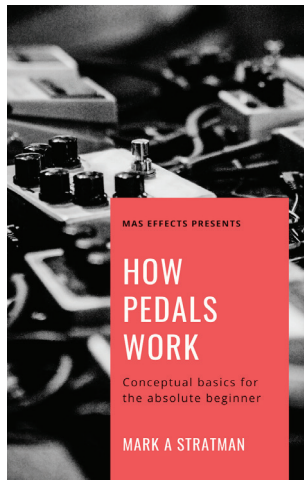
Perhaps you don't want to "paint by numbers," putting the pieces where you're told, but instead you want to understand what makes this and other pedals work.

## How Pedals Work: Conceptual Basics for the Absolute Beginner

Our book, *How Pedals Work*, available for purchase in print or free online at [masfx.io](http://masfx.io), will take you through all the common building blocks found in most guitar pedals.

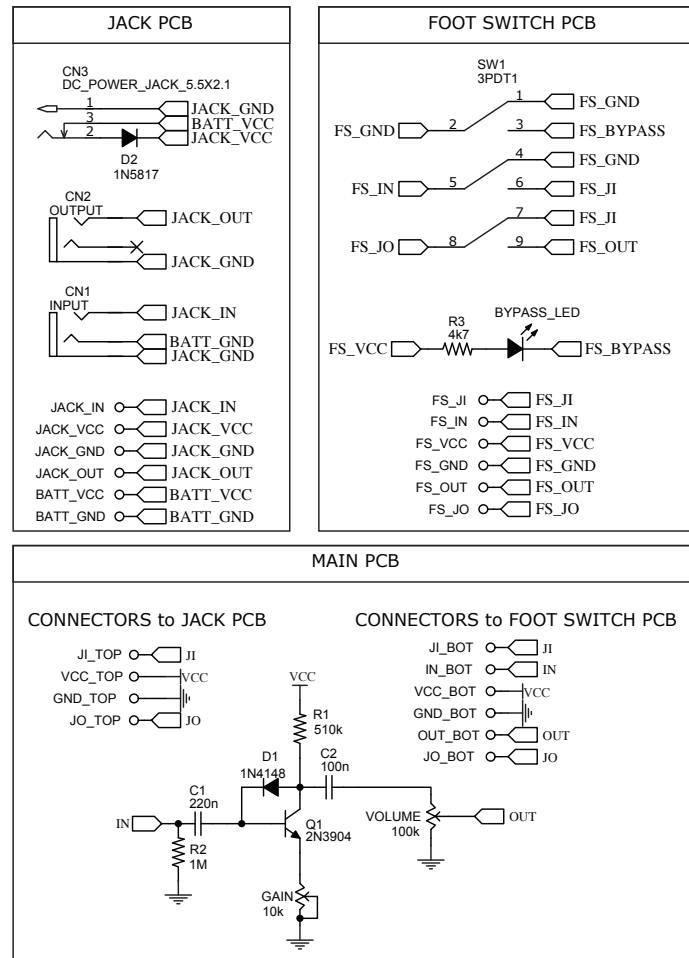
It assumes no prior knowledge and won't bog you down with math or gory details. Of course, you won't be a professional engineer after reading it, but you will learn to recognize parts of audio circuits and identify what they do.

You'll even be equipped to piece together a custom distortion, fuzz, or boost pedal.



## How this QuickFuzz pedal works

Once you know the basics, head over to the online COMPREHENSIVE version of this QuickFuzz book at [masfx.io/quickfuzz](http://masfx.io/quickfuzz) and you'll find a bonus chapter analyzing the QuickFuzz circuit and describing how it works.



# MAS

## EFFECTS

[mas-effects.com](https://mas-effects.com)

Visit **masfx.io** for a more enriching experience:

- Comprehensive QuickFuzz build guide
- Videos
- *How To Solder* book and videos
- *How Pedals Work* book

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