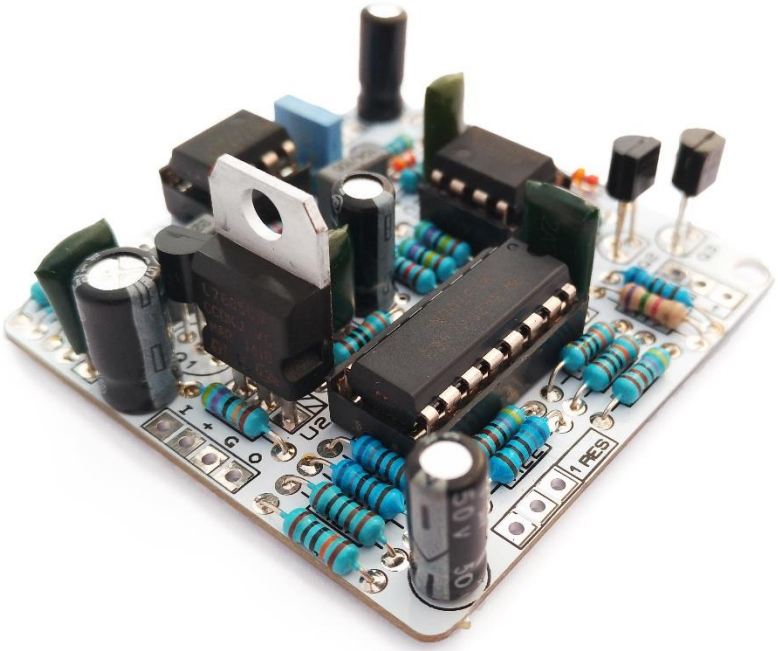
Kit Debugging Guide



Debugging Guide for Kits

Don’t worry if you’re facing some challenges with your kit — it’s all part of the learning process! Every builder has been there, especially when starting out, and with a little patience, you’ll soon have your pedal working perfectly.

We’ve put together this guide to walk you through the most common issues and help you troubleshoot effectively.

By carefully following the steps below, you’ll gather useful information, narrow down the possible causes, and move steadily towards completing your build. Let’s get started!

Below you'll find a quick reference chart listing the most common problems you might encounter while building your kit, along with their possible solutions.
This table is designed to help you quickly identify issues and guide you toward the appropriate troubleshooting steps. Use it as a first checkpoint whenever you run into any difficulties.

ISSUE	Check that…	Page
THE PEDAL DOESN'T WORK AT ALL, NOT EVEN IN BYPASS…	1. Jacks are working properly 2. 3PDT is working properly 3. Wires are not faulty	Section 1
THE PEDAL ONLY WORKS IN BYPASS MODE BUT NOT IN EFFECT MODE	1. The jacks you are using are STEREO and not MONO 2. Your battery plug is connected properly 3. Your DC jack is connected properly 4. Your board is getting power (battery/DC source are not faulty) 5. All the parts SEEM to be placed correctly 6. All the solder joints SEEM solid	Section 2
THERE IS SOUND COMING OUT BUT IT DOESN'T WORK AS EXPECTED	(E.g. a delay producing distorted sounds) There could be multiple issues, please check the detailed explanation.	Section 3

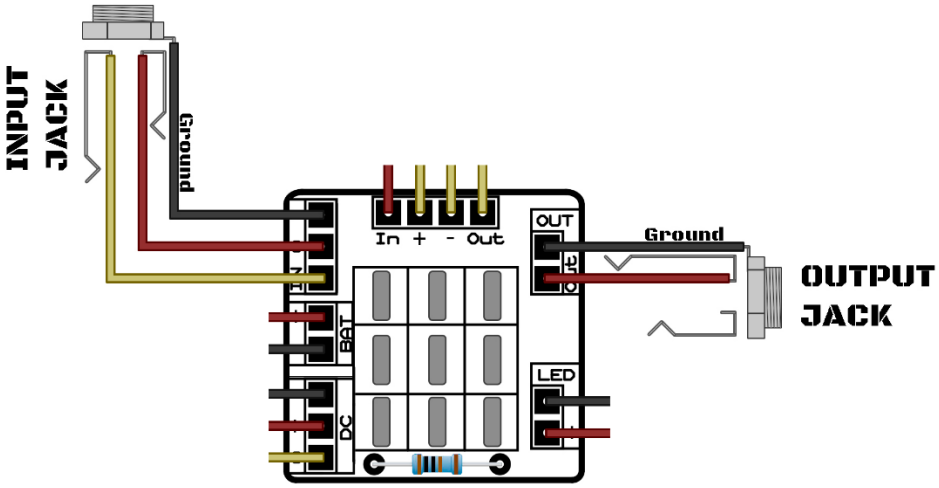
Section 1:

Pedal doesn't work at all

No matter what you do, your pedal shows no signs of life and doesn't even work on bypass. Nothing to worry about! This is actually an easy situation to tackle as it points to a handful of typical issues. The footswitch bypass physically isolates the in/out jacks from the effect, so if the kit is not working in bypass we need to check that…

1.Jacks are connected correctly

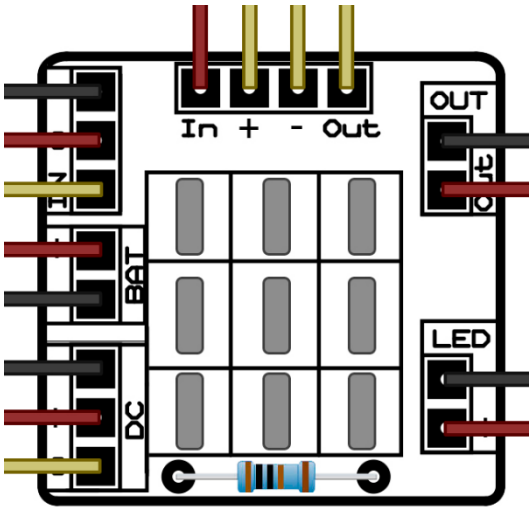
Check that the wires coming from the jack are connected to the correct spots on the 3PDT adapter board, and that the solder joints are solid. If you have access to a multimeter, check continuity to make sure the wires are properly soldered!



Check that you are plugging in the guitar jack all the way in. At the beginning, some jacks might be a bit hard until they soften after a few times!

2.3PDT IS CONNECTED CORRECTLY

Check that the 3PDT orientation is correct, as shown in the manual. Pay attention to the flat side of the lugs and make sure they are positioned correctly relative to the board!



Check that the 3PDT solder joints are solid. A good indicator is that solder joints should look shiny, not dull, and spread outward, as shown in the picture below. Avoid “balls” or blobs of solder, as they indicate a poor connection between the two parts.

3. WIRES ARE NOT DEFECTIVE

This one is not that common, but it could be that the wires are at fault. Because of this, if possible, always check continuity with a multimeter!

Checklist Section 1:

- ☐ Input jack wires connected correctly
- ☐ Output jack wires connected correctly
- ☐ Input/output jacks have solid solder joints
- ☐ 3PDT is oriented correctly
- ☐ 3PDT has solid solder joints
- ☐ Wires are not defective

Section 2:

The Pedal only works in Bypass

The issue here is that the pedal only works fine in bypass mode: you get your clean guitar sound, but it shuts down as soon as you try to engage the effect. Let's take a systematic approach to identify where the problem is hiding, so you can get your pedal functioning properly!

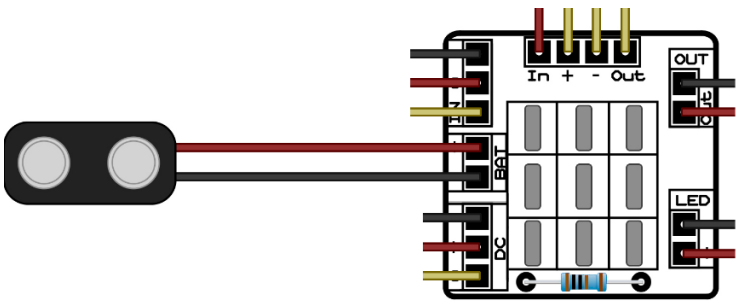
1. THE JACKS YOU ARE USING ARE STEREO

It's crucial that AT LEAST the input jack is stereo. Our kits feature an automatic switch-off function that disconnects the battery when you unplug the pedal to lengthen battery life and save power if you are using a DC power unit.

This feature makes use of both signal pins of a stereo jack, so if you use a mono jack you effect won't work. This also means that for all the tests you run you NEED to have a jack connected to the input jack. Otherwise the board won't get any power!

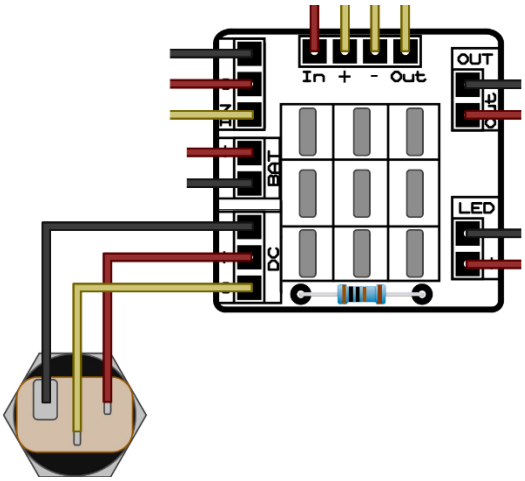
2. THE BATTERY PLUG IS CONNECTED CORRECTLY

Check that the battery connector is properly connected to the 3PDT adapter PCB, as shown in the image below:



3. THE DC JACK IS CONNECTED CORRECTLY

Be sure that the wires from the DC jack are connected to the right spots in the 3PDT adapter PCB:

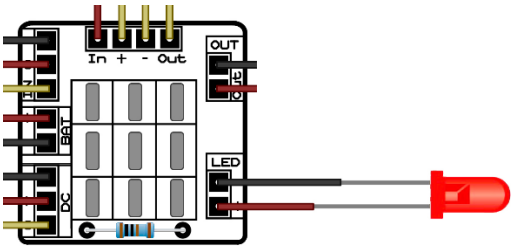


4. THE BOARD IS GETTING POWER

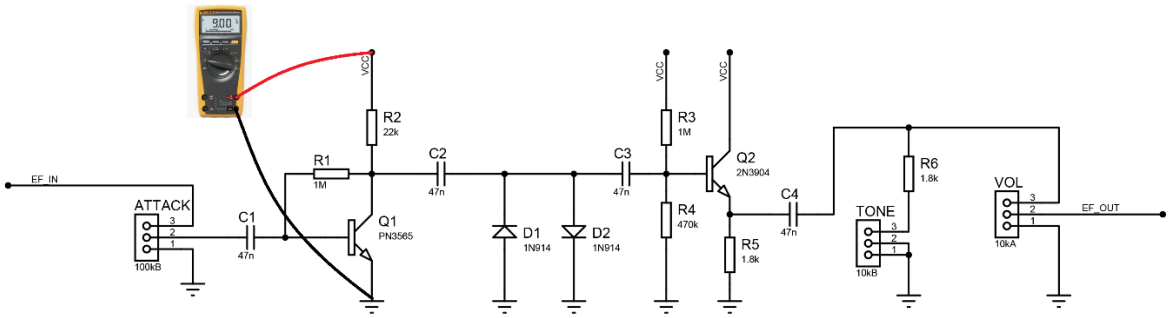
There is a quick way to check this: by design of our 3PDT adapter PCB, the LED should shine when the effect is engaged and should not shine when the effect is off.

If the LED is not shinning when the effect is engaged…

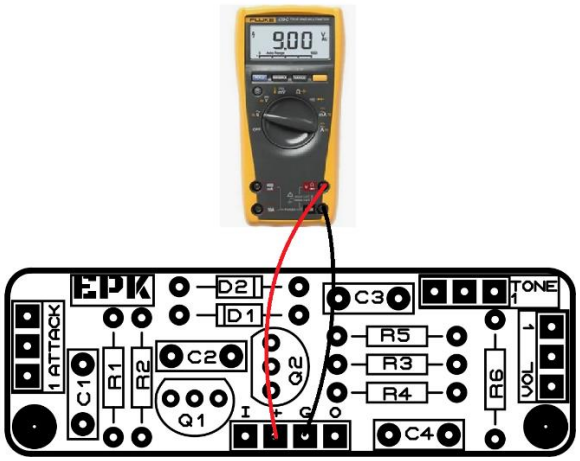
- Check that the LED polarity is correct. Remember that the long lug in the LED is the positive one, and the short one is the negative:



- If you have access to a multimeter, check that the board has power by checking the voltage between a point in your PCB that holds 9V and a ground point. This will depend on your kit, but here is an example with our Astrotone Fuzz Kit:



In our PCBs, the easiest way is to check between the “-” and “+”:



NOTE: you’ll never get perfect 9V, a small variation around that (e.g. 8.5V) is fine. This could be because of your DC unit not delivering exact 9V, your battery being slightly worn out… If you are getting less than 8V, you should be checking for issues.

Up to this point we should have cleared all the “hardware” issues (3PDT, jacks, DC…). Let’s go through a small recap checklist before we’re ready to move into all the electronic components!

Checklist Section 2a:

- ☐ AT LEAST the input jack is STEREO
- ☐ The Battery plug is connected properly
- ☐ The DC Jack is connected properly
- ☐ The PCB is getting power:
    - ☐ The LED shines when the effect is engaged
    - ☐ The board is getting 9V (multimeter check)

5. ALL THE PARTS *SEEM* CORRECTLY PLACED

If you're still not getting sound, we have to make sure that all the parts are placed correctly where they are supposed to, at least visually.

a. Resistors

Check that all the resistors are placed according to the manual. Some ones can be tricky to identify, so be sure to check the instructions for the specific kit where we show the appropriate color marking for each resistor in our kit.

You can also visit our guide on reading resistor values.

b. Capacitors

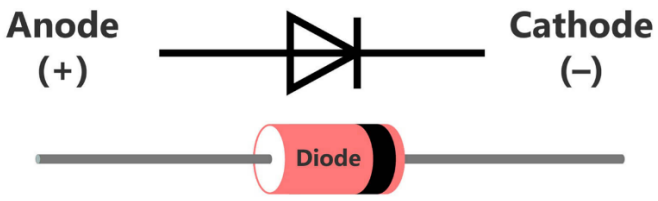
Check that the values are right, same as with resistors. Check our guide on reading capacitor values if you need help understanding how capacitor markings work!

For electrolytic capacitors, check also polarity. The long lug is the positive one, and should go to the "+" pin in the PCB.

c. LEDs & Diodes

For LEDs, as for electrolytic capacitors, the long lug marks the positive. Be sure to connect it to the "+" spot in the PCB!

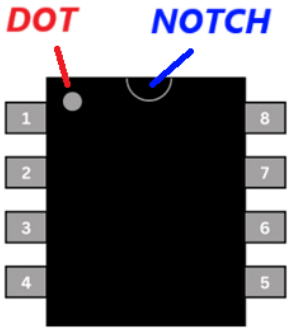
For Diodes, there is a small black section closer to one of the lugs. This is the negative lug:



d. Integrated Circuits (ICs)

ICs have their code printed into the back so you should be able to identify them easily (e.g. TL072, LM13700…). Double check that you are connecting the right IC to the right socket!

They have a marking to show the pin 1. The most common ones are a notch or a dot. The corresponding pin 1 will be shown in the PCB so be sure to connect it with the right orientation.



After you've double checked that the parts are correctly placed, go through all the solder joints as explained in the previous section. If possible, check them with a multimeter.

Checklist Section 2b:

- ☐ All the parts SEEM correctly placed:
  - ☐ Resistors have the right value and are in the right spot
  - ☐ Capacitors have the right value and are in the right spot
  - ☐ Electrolytic capacitors have the right polarity
  - ☐ LEDs and Diodes have the right polarity
  - ☐ Integrated Circuits have the right orientation
- ☐ All the solder joints look solid

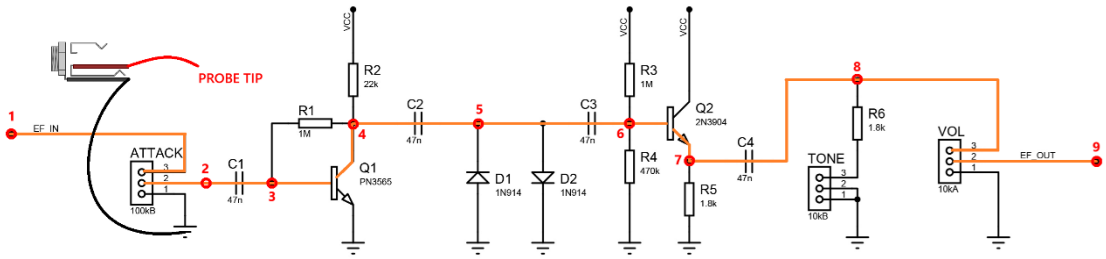
Section 3:

Pedal doesn’t work as expected

Now comes the tricky part: when the pedal doesn’t work as expected, we need to find out where the problem is. It could be something like a misplaced resistor causing the pedal to sound less distorted than it should, or a diode installed incorrectly, resulting in less clipping in an overdrive circuit.

For this, we are going to need a small tool: a jack (mono or stereo), with two wires, and connected to your amp or speaker. The wires are:

- **ground wire** (black in the picture) → connected to ground in the circuit all the times
- **probe tip wire** (red in the picture) → this one will be connected to different points in the circuit.

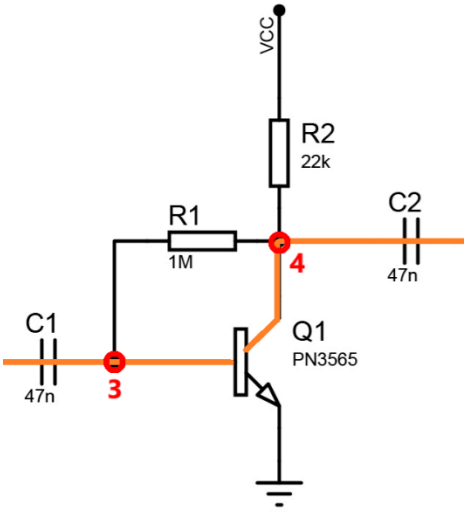


Now, we need to trace the path of the audio signal through the schematic (all schematics and pictures are included in each pedal’s manual). Some basic electronics knowledge will be helpful for this step, but in many cases, the process is relatively straightforward. In this example, the signal path is highlighted in orange.

Every time the signal path crosses a component, there is a potential for issues. These critical points are marked in red from 1 to 9. Your task now is to touch each of these points (from 1 to 9) while playing your instrument, and find where the signal stops.

Keep in mind that the signal might not sound as you would expect! In this fuzz pedal, for instance, during the early stages of the circuit, you won't hear the full fuzz effect — and that is completely normal.

Once you find a problematic point, you should inspect all the components around it. For example, if your signal stops at point 4:



The problem is most likely coming from one or more of the parts around this spot:

- C1 (should have been checked in the previous step)
- R1
- Q1
- R2
- C2

With a bit of experience, you'll be able to identify the culprits more easily. For now, start by checking all the ***active components*** first (such as transistors and integrated circuits — in this case, Q1), and then move on to the ***passive components*** (LEDs, capacitors, resistors, and diodes).

Checklist Section 3:

☐ All the possible problematic parts in the signal chain have been checked with the audio tool.

☐ The parts around the problematic point are right placed, with the correct value and orientation.

If everything has been checked carefully and the signal flows as expected, you should now be able to enjoy the sound of your fully working effect pedal!