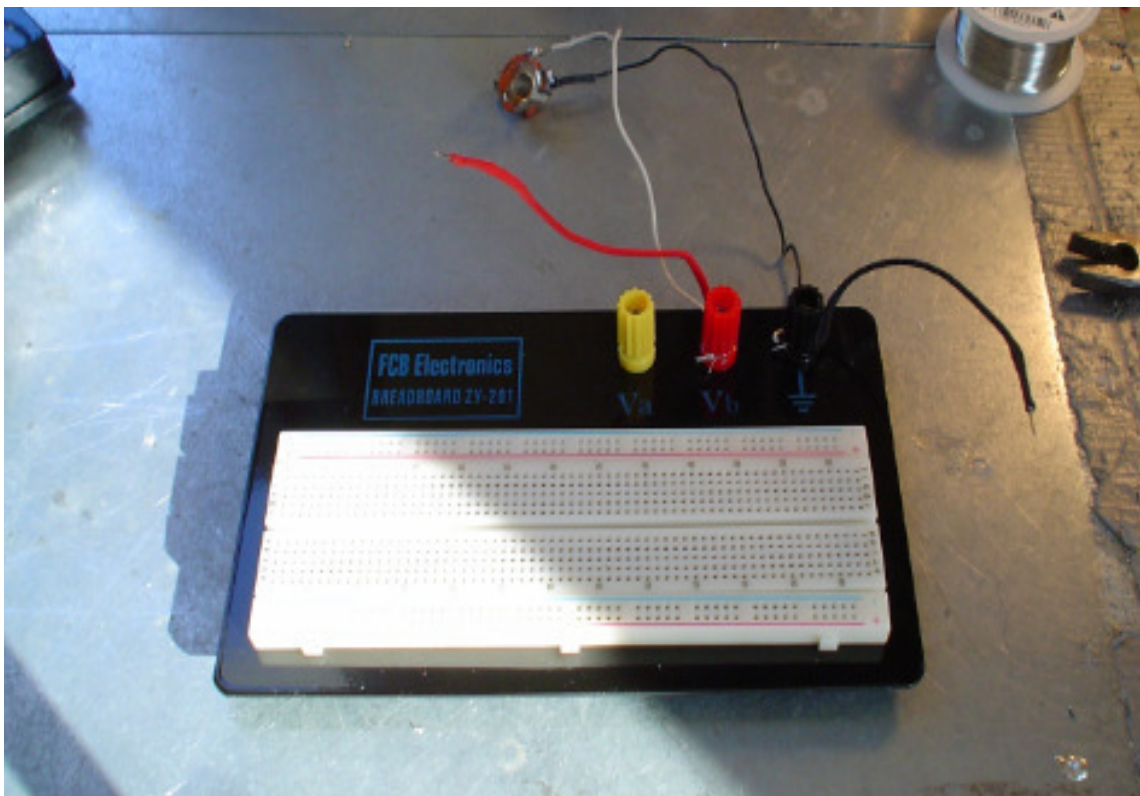
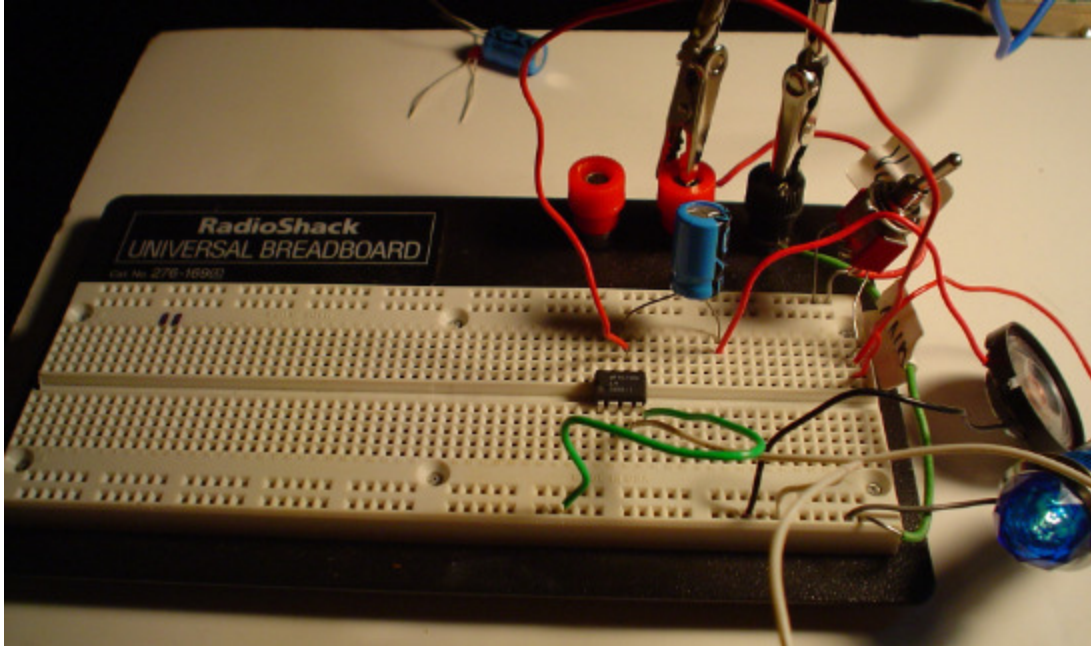


DESIGNING YOUR OWN GUITAR WIRING

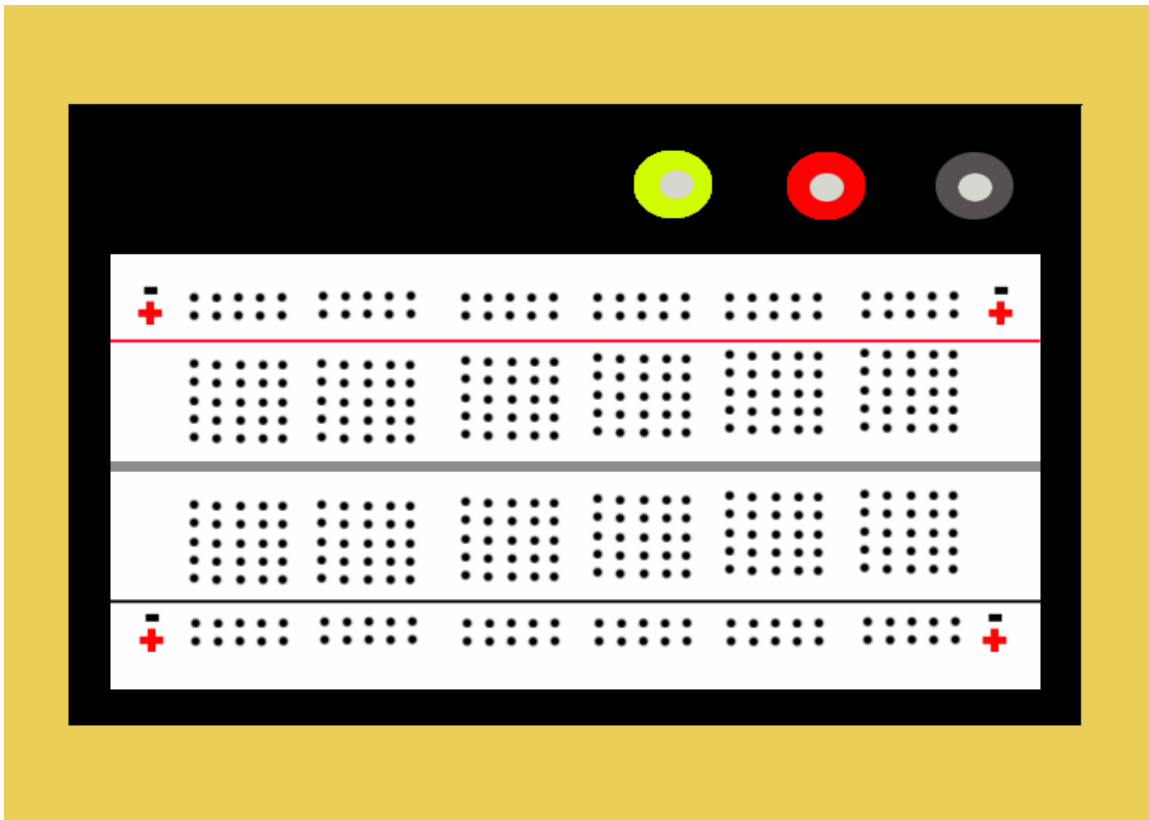
You don't need a bunch of extra guitars lying around to create your own wiring designs. And you don't even need a bunch of parts. All you need is a few pots, switches, wire, an output jack, and a solderless breadboard, which is a device used to build an electrical circuit. But instead of soldering all of connections together, you just plug wires into the holes on the board to complete a circuit. Inside the holes are bronze clips that hold the wires in place. Below is a picture of a breadboard. The power source, an output jack in this case, gets connected to a red and black posts, which then sends the power to the breadboard through a red and black wire.



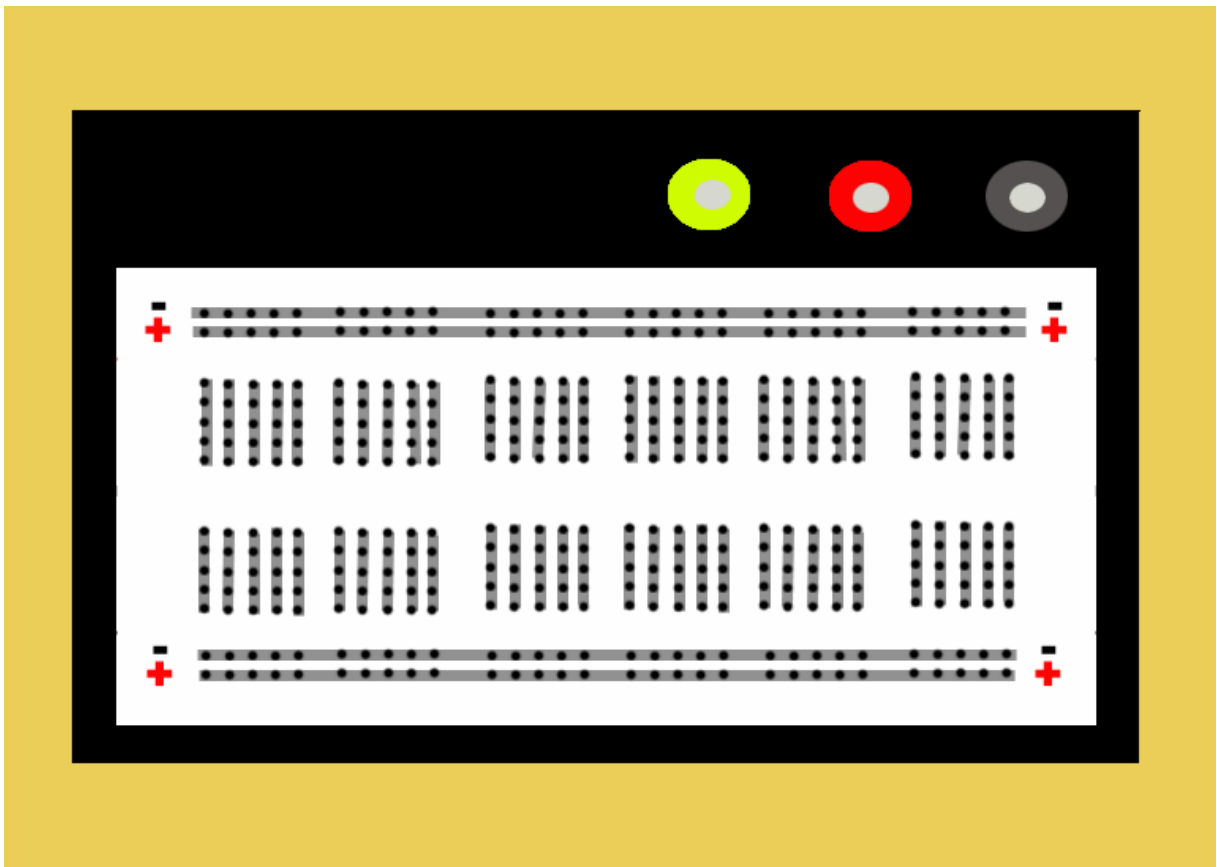
Here is a mini amplifier, built on a breadboard.



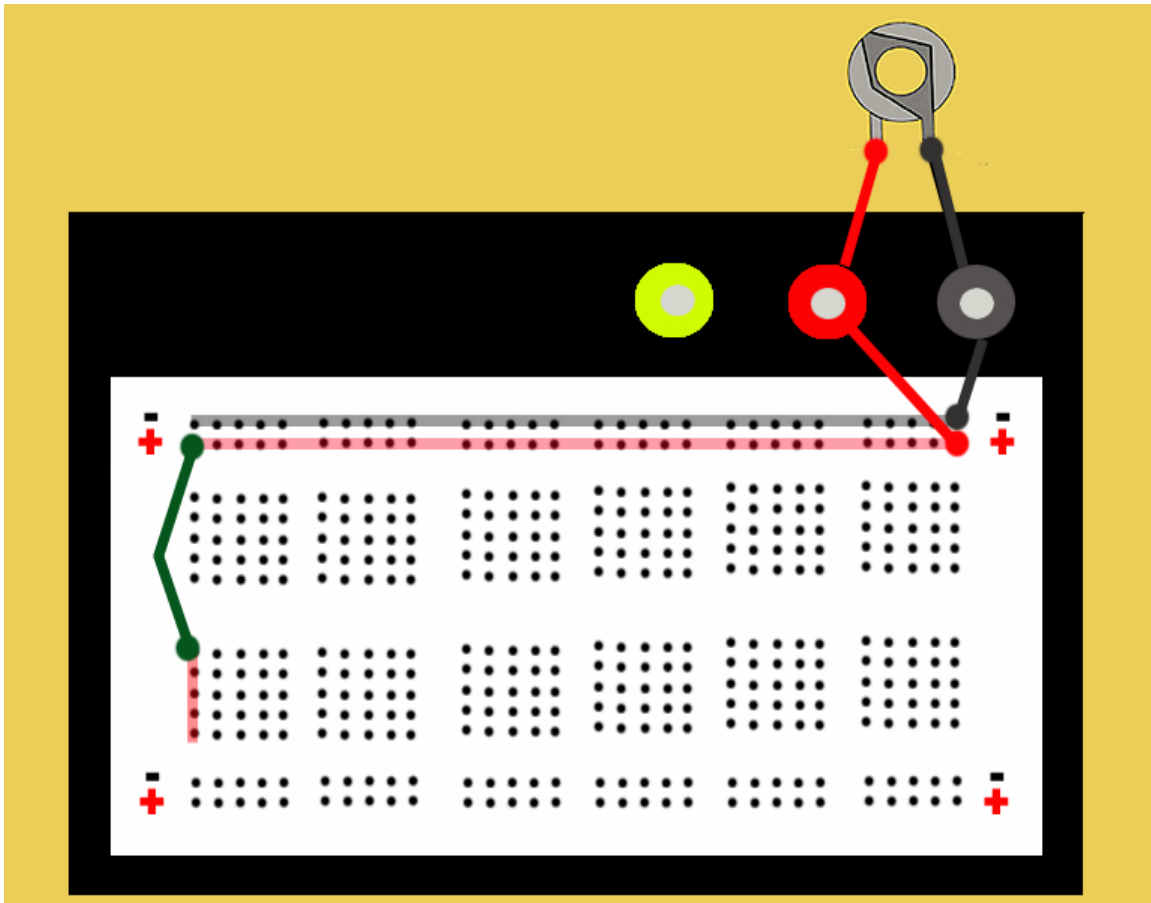
The typical breadboard has 2 sections, consisting of terminal strips and bus strips. The terminal strips go up and down, and the bus strips go left and right.



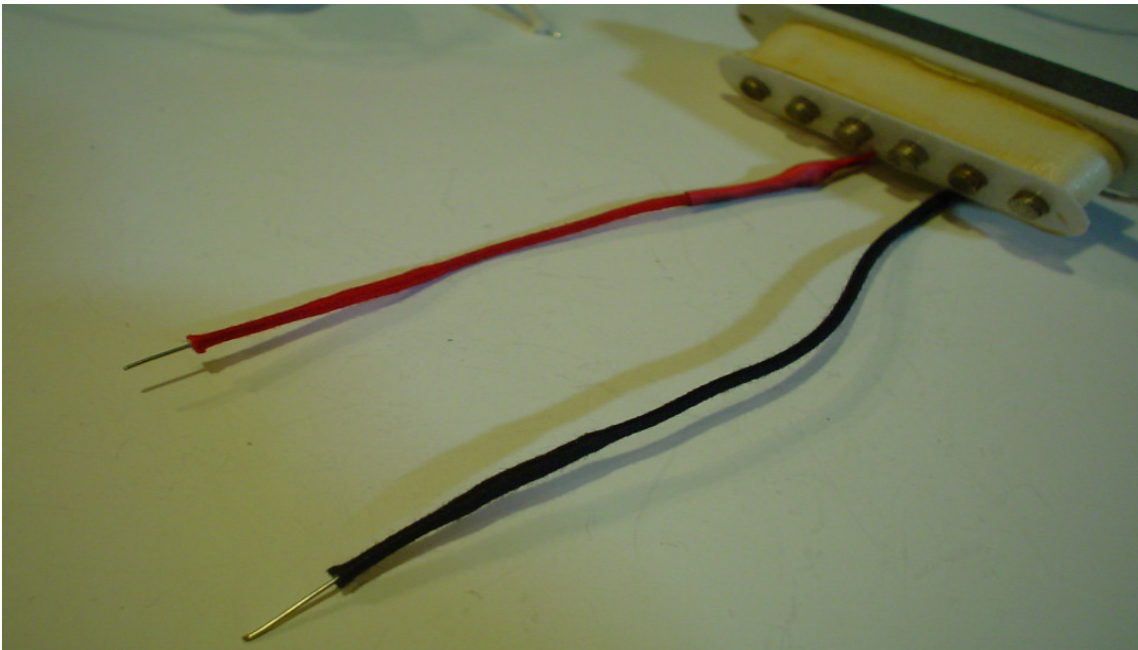
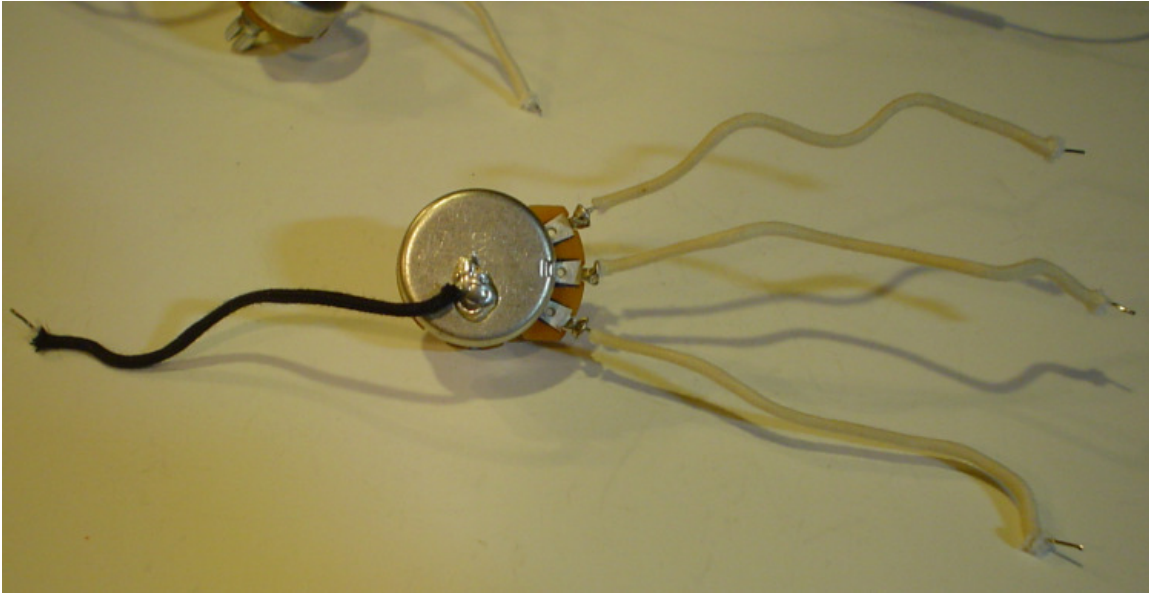
his next picture shows how the strips are connected to one another, and are marked with a grey line. So everything touching the grey line is connected. The bus strips (around 65 holes per row) on the top and bottom are normally used as the source for the hot and ground wires. The terminal strips, which connect the components together, are made up of vertical columns, each having 5 holes.



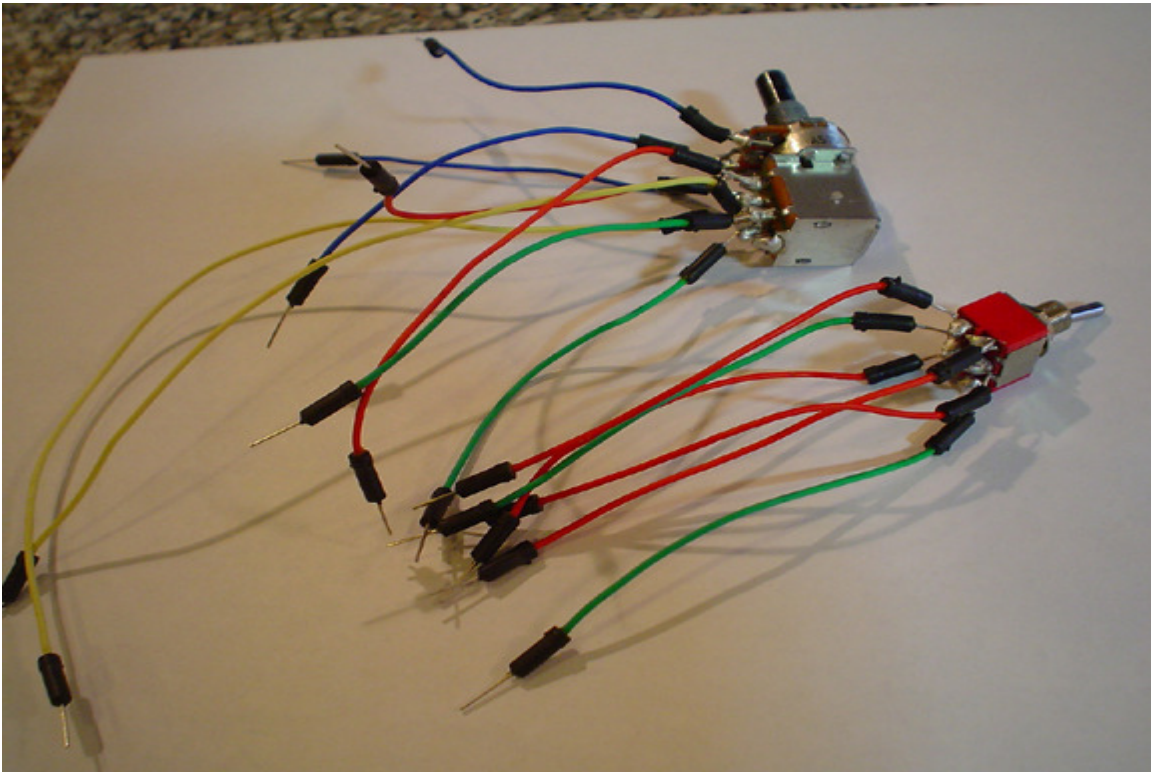
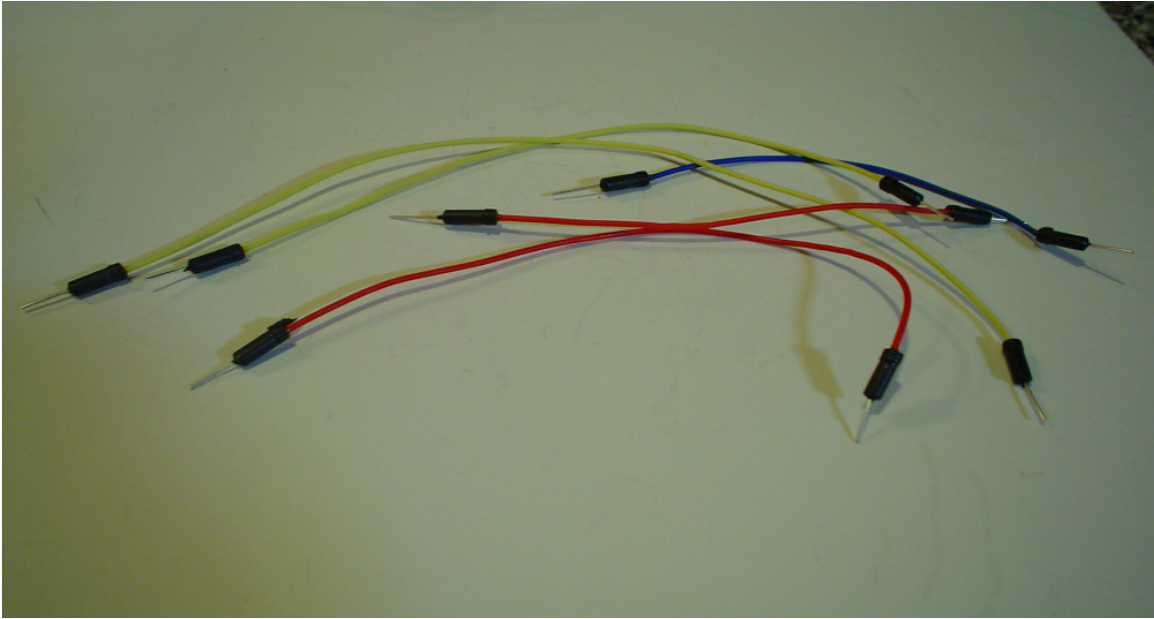
Lets add a power source to the breadboard. The output jack sends the hot and ground signals to the pots (red is hot, black is ground). Then send the wires to the hot and ground bus strips. So now the signals go all the way across the breadboard through two rows. One for ground, and one for the hot signal. A jumper wire is added to send the hot signal from the hot bus strip to a terminal column. This sends power to the 5 vertical holes located in that column.



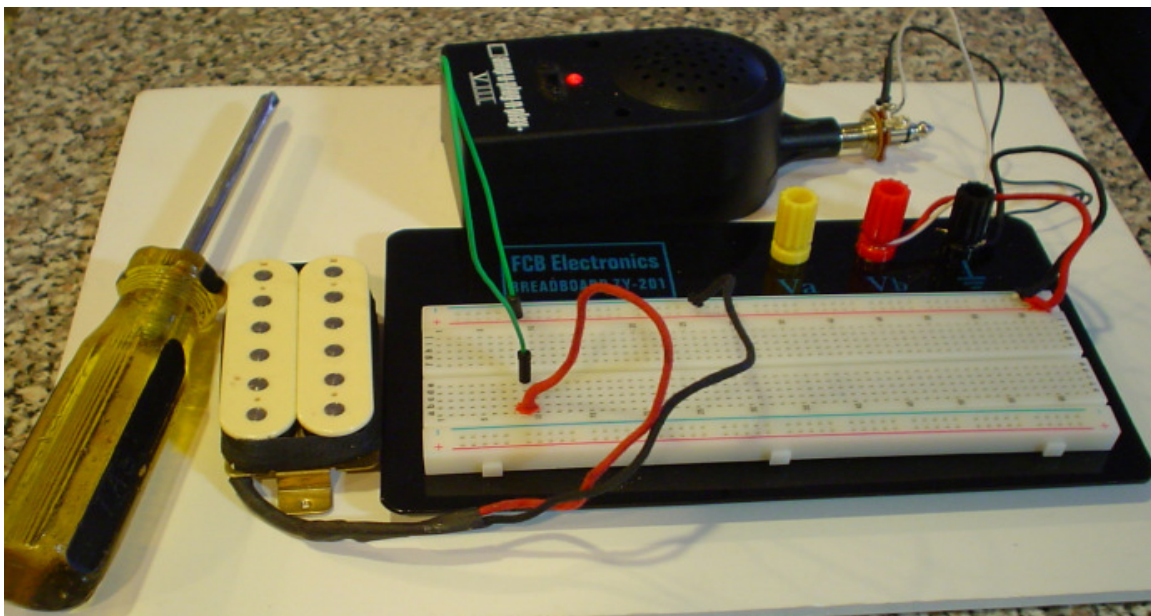
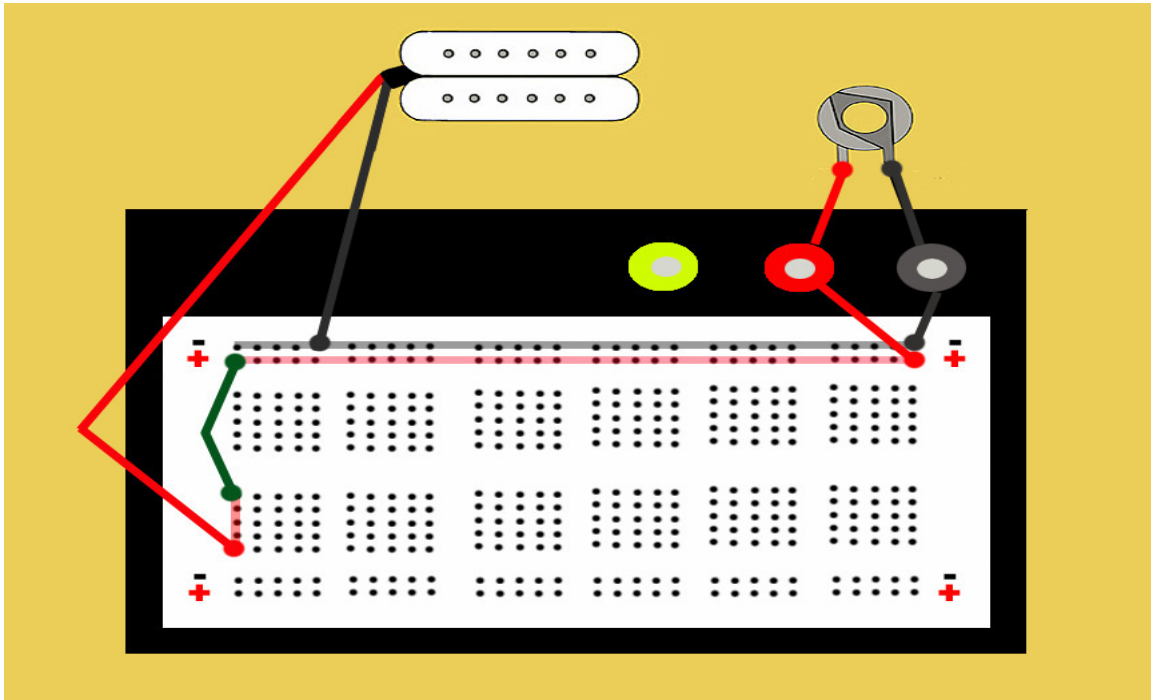
In order to add components to the bread board, you will need to solder wires to every lug on your potentiometers and switches. Also add a ground wire to the potentiometer cases, and 3-way switch. You are going to want to use the thicker vintage wire, which can easily be pushed into the breadboard holes.



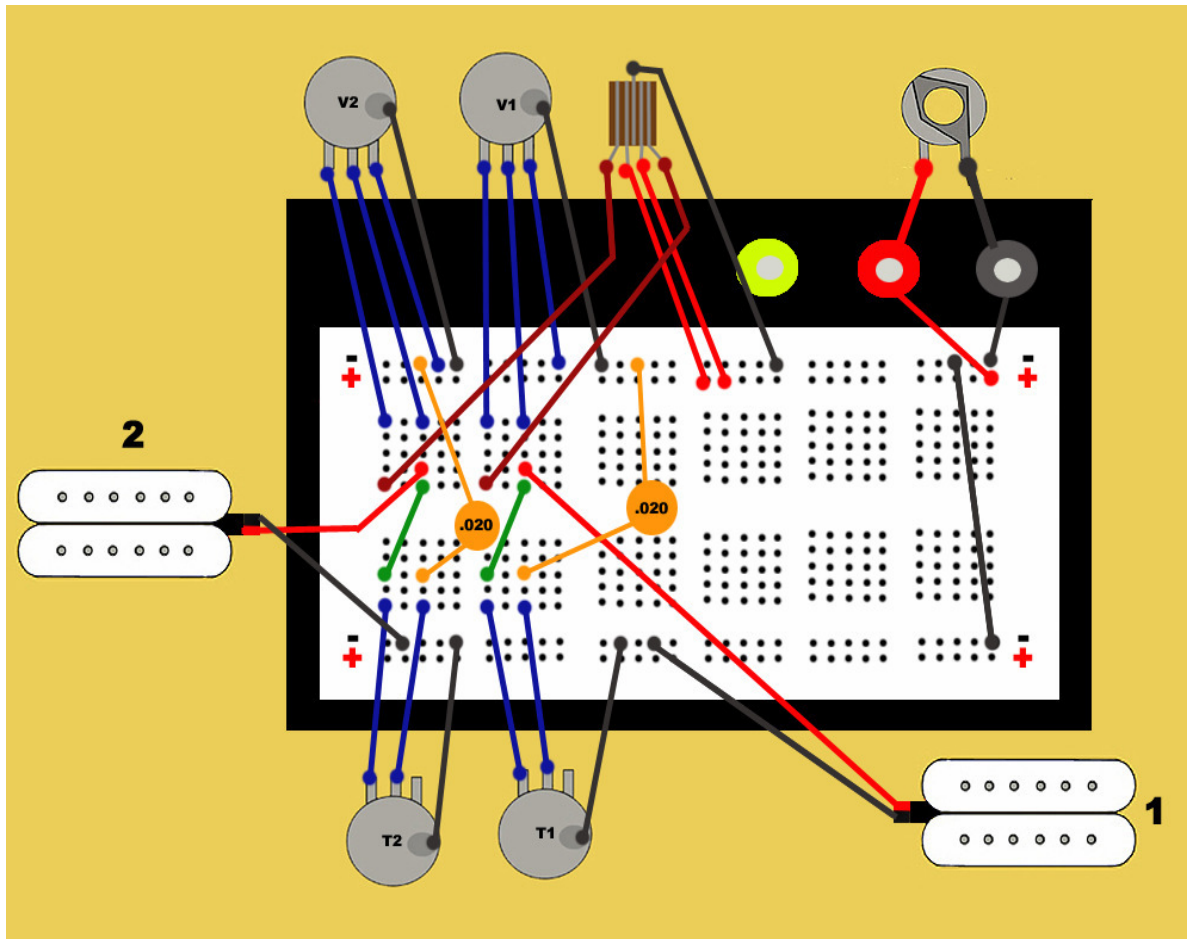
Here is a picture of the breadboard jumper wires. Usually these wires will come with your breadboard kit. They are very easy to install into the breadboard holes. Below is a push pull pot and mini toggle switch with jumper wires soldered to each lug.



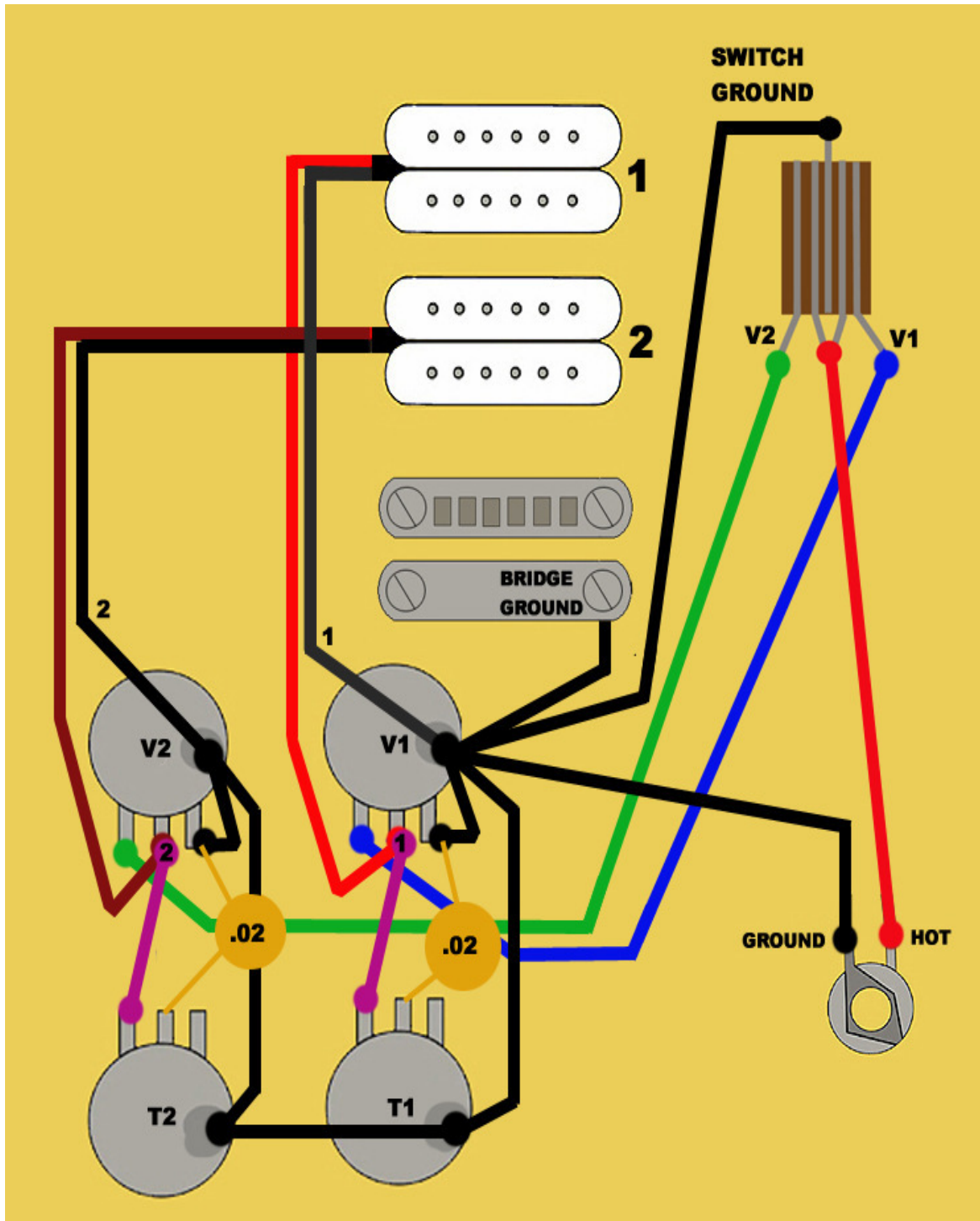
Back to the breadboard wiring. If we add a pickup to the breadboard and plug an amplifier into the output jack, we complete the circuit. The pickup works! Tap the pickup with a screwdriver to confirm that the pickup is on. You will hear a loud pop, just like when you tap a microphone to see if it is working.



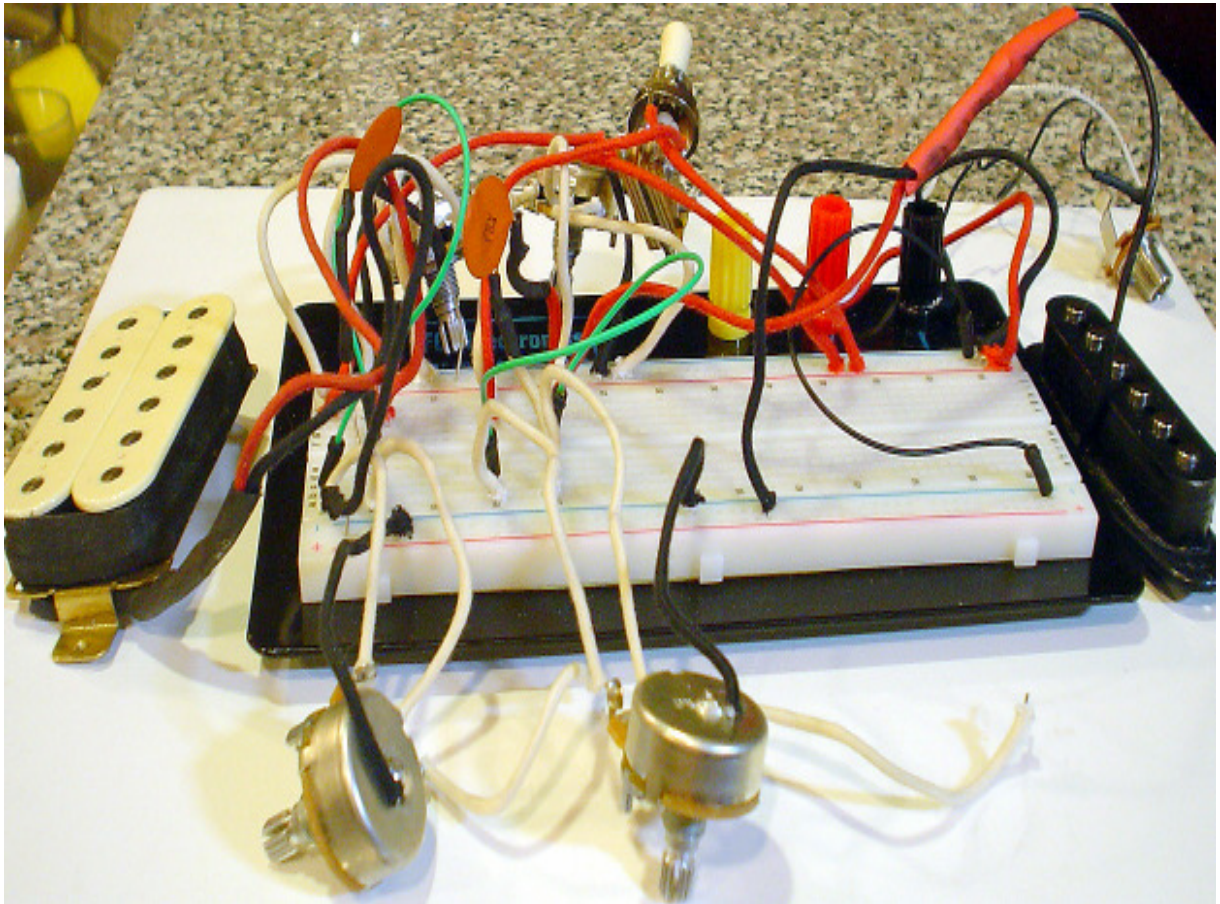
You are probably now getting the hang of how a breadboard works. It just allows you to make quick connections to the hot and ground signals, which is great for testing out new wirings. So let's look at a real Les Paul wiring recreated on a breadboard. Remember, the top two and bottom two horizontal rows send the signal down the length of the breadboard. The rest of the terminal strips connect the groups of 5 vertical holes together.



Here is a Les Paul wiring diagram for the breadboard wiring on the previous page. This wiring allows both pickups to have independent volume controls when both pickups are turned on.



Here is the complete breadboard wiring using two 2-wire pickups.



Here is an easy way to use the breadboard to modify your guitar's sound. Solder extra long wires to one of your favorite pickups and connect it to the breadboard using a Les Paul wiring setup. Now use the breadboard to test out a bunch of different capacitors: wax, paper, oil, polypropylene, ceramic, etc. After you inserted the capacitor you are testing into the breadboard, grab a pickup that's plugged into the breadboard and put it next to the strings on a guitar. Strum the guitar and listen to the characteristics of each capacitor that you test out. You can also do this with different types pickups to help you determine what sounds you like: hot pickups, vintage pickups, low impedance pickups, ceramic magnet pickups, alnico magnet pickups, active pickups, noiseless pickups, PAF clones, etc.



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