



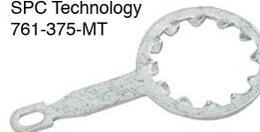
Pickup wiring a new and better way.

Since I design and build audio equipment, I have gone to the CES show in Las Vegas many times. On the flight out one time, the gentlemen sitting next to me was from the company CTS which makes potentiometers and used in almost every guitar brand. I asked about the practice of soldering to the back of pots for grounding and he said that that was a bad practice for two reasons. One those are soft carbon pots and two it would take excessive heat to solder to the back so getting a good connection would be really hard. He did say it would shield the pots from external noise.

So we have 3 things we need to do:

- a) Shield the pots from noise.
- b) Wire the grounds in a star pattern (more below).
- c) Carry out the design required for best sound.

SPC Technology
761-375-MT



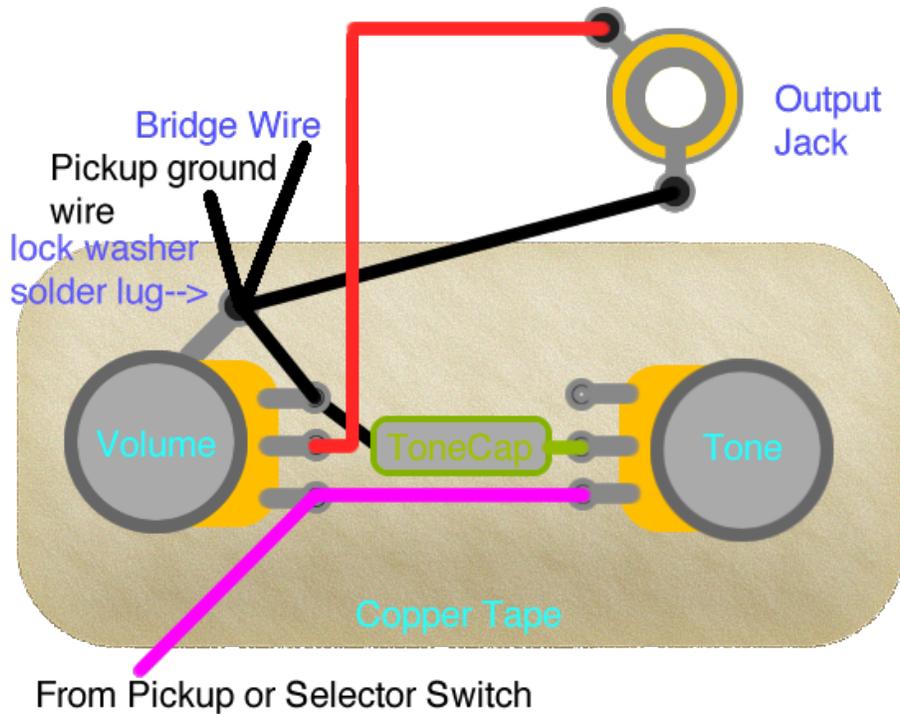
It has been common practice to shield the cavity of a guitar with copper tape. So that will be our shield. All pots at their chassis mounting point are metallic so this will carry out option (a). But let's not solder directly to the copper tape. Let's place a lock washer terminal between the volume control and the copper tape. That will be our star ground point as well as the ground point of the volume control.

In electronics we always talk about voltage across and current through. With high impedance circuits like the guitar we should always think about the loop between the guitar and the pedal board or amp. The current loop for a guitar is between the volume wiper and the volume ground. This is why that loop should go directly to the jack.

The star grounding between the volume ground and the lock washer terminal will give us ample place to wire the pickup grounds, the bridge wire and the tone cap ground. What I like to do is fish the ground lead of the tone cap through the volume control ground and then to the lock washer ground. This gives us a massive amount of room to solder the other ground wires too.

You will need the following: Tone & Volume pot, wire, output jack, tone cap, copper tape, lock washer solder lug, solder, soldering gun, wire clippers and needle nose pliers. Obviously a good working space for your guitar as you complete the work.

Resources located on the next page for the various items you need.



Directions, starting from a bare guitar with the pickup switch already wired:

- 1) Line the cavity of the guitar with the copper tape. Overlapping is fine and use a good xacto knife to cut the holes for the pots and switches if required. If you are doing this on a Tele style the brass plate is sufficient, but you can still line the cavity with copper tape.
- 2) Place the solder lug lock washer over the volume knob and place it accordingly. Make sure the lug is angled near the grounding point of the the volume control as shown above. Place the tone pot as shown above.
- 3) Wire through the ground (black) the tone cap through the ground on the volume control and the solder lug of the lock washer. Wire the other end of the tone cap to the wiper (center) terminal as show above. Solder in place the tone cap.
- 4) Solder the pickup ground and bridge wire ground to star ground created above.
- 5) Cut and strip a short piece of wire and solder (purple) at the tone pot. Then solder the other end and the wire from the pickup or selector switch to the first terminal of the volume control.
- 6) Wire the output jack positive (red) and negative (black), twisting is best!

SPC Technology [Lock Washer Solder Lug](#) is available at Newark Electronics:
[Copper tape](#), wire, solder, solder guns, tools and [pots](#) are available from DigiKey.
 The best tone caps are available from [V-Cap](#) and their ToneCap.

If you have questions don't hesitate to ask!
 Thanks Gordon