

S3 Rickenbacker Upgrade Installation

Revised: November 8, 2022

Before you start, **read these instructions first** to understand what you need to do to install this product.

Assumptions

This upgrade is designed to use one Master Volume and Tone control for all your pickups. **Note:** *Active (uses batteries) or Pizeo pickups are not supported.*

Tools Needed

You may need one or more of the following tools (*not included with purchase*) to install this upgrade.

- Wire cutters / Wire strippers
- Regular pliers
- Small Phillips & straight slot screwdriver
- Ohmmeter to measure continuity
- Optional: Soldering iron (25/30 watt max.) with fine tip, rosin-core solder .022" dia.

Preamble

This **Rickenbacker** Upgrade will have you cutting existing wires on your instrument. You may need to make wire connections, increase the length of existing wires, and remove some wood in your instrument body cavity.

Because you will make changes to your instrument, you need to have a plan to install your product.

See the *Reference Drawing* on a later page of this document. Use a pencil to draw the original circuit of your instrument before proceeding. By recording where wires (*and their colors*) were removed from your instrument, you have a way to restore it to its original condition should it become necessary.

Since there is a large variation of pickup wiring that spans 50 years, you will need to draw your own pickup switch used in your original circuit

Adding Extra Wire

If your pickup or output jack wires are too short to easily reach the specified connection of the green terminal strip on the **Pickup Switch Upgrade™** circuit board, here is what to do. Measure out the needed length of the RED or BLACK in the included **PARTS BAG** to permit the wire to reach the applicable connection. A length of 3" (7.62cm) is budgeted for each wire extension. Insert the unstripped end of each wire into the 2-wire UY2 yellow/clear connector and clamp down using regular pliers.

Use pliers to squeeze the UY2 connector top button so it is flush with the body to create a permanent electrical connection. **Verify electrical continuity between the two pickup wires with an ohmmeter (some coil resistance will be present).** The 71B grey wire nuts are used to make the needed firm and insulated connection to the output jack wires, but let you disconnect the upgrade if needed.

Note: If either your pickup or output jack wires use a shielded/braided cable, you will need to solder black wire to the shielded/braided cable because the green terminal strip (J1) does not directly accept shielded cable.

RICKENBACKER UPGRADE

You have received an assembled and tested **Rickenbacker** Upgrade that is designed to install onto a your Rickenbacker guitar. It contains our S3-Switch and one master tone and volume control with *optional* matching knobs. In general, no soldering is needed to install this product. You will use your own pickups. The following items are included in a Parts Bag.

- An AweSome Musical Instruments headstock decal to apply to your instrument
- Several business cards to pass out to friends
- An equal length each of black and red insulated wire (to lengthen pickup and output jack wire if needed)
- 4 yellow/clear connectors (UY2) to make pickup wire extension connections if needed
- Optional Volume and Tone control knobs if needed
- 2 grey wire nuts (71B) to connect output jack wires to your upgrade

Preparation

Remove your existing pickguard attaching screws. Store them in a small bowl. Remove your lower pickguard. Document your existing wiring for your pickups and output jack (see *Preamble* on page 1) *before* you start.

Cut the **output jack** wires were they are attached to your original pickguard (*leave a 1/4" length connected to your stock pickguard.*) The wires stay on the output jack. Strip 3/8" insulation from each output jack wire.

Cut the **pickup wires** where they are attached to your original pickguard (*leave a 1/4" length connected to your stock pickguard.*) If needed, cut the bridge ground wire from your original pickguard (*leave a 1/4" length connected to your stock pickguard.*) Remove your original pickguard. Temporarily stow the pickup and output jack wires within the body cavity.

Confirm that the upgrade you received will lay completely flat with no interference by the wood body. If the upgrade lays flat, proceed to the next section, *Terminal Strip*, to continue with the upgrade process.

Terminal Strip

Here is how to attach wires to the **green** terminal strip (J1) that is on the printed circuit board. Use a small screwdriver or writing pen tip and press down on the square *release button* located directly above the wire hole. Hold the button down and insert the stripped wire completely into the wire connection hole and then release the button. Lightly tug on the wire to confirm it is firmly gripped by the Terminal Strip. A legend is printed on the circuit board with the name of each terminal strip wire hole from left to right. Attach each wire to the correct terminal strip hole. In all instances, connect the **GND** and **VOL** wires from the Volume/Tone control circuit displayed in **Figure 2** to the wire connection holes on the terminal strip.

S3-Switch (8-hole terminal strip): [GND] [VOL] [+]NECK[-] [+]MIDDLE[-] [+]BRIDGE[-]

Caution: Do not insert hard items in the wire holes because it will decrease reliable electrical connection.

Connecting Your Wires

There is no industry standard for pickup wire lead colors. More common color pairs are red/black, red/white, black/white and white/shield. You are advised to use consistency when connecting *your* pickup wire color pairs to the [+] and [-] pickup connections on the green terminal strip (J1).

Determine which wire color for each pickup coil will be attached to the applicable [+] and [-] green terminal strip connector on our circuit board. **Note:** If either your pickup or output wires use a shielded/braided cable, you will need to solder black wire to the shielded/braided cable because the green terminal strip (J1) does not directly accept shielded cable.

Determine if there is enough wire length from each pickup to *comfortably* reach the corresponding connectors on the green terminal strip on the **Pickup Switch Upgrade™** printed circuit board. If not, refer to the “*Adding Extra Wire*” topic (page 1 of this document).

Strip off 3/8” insulation from the end of each pickup wire and also the output jack wires then twist the exposed wire strands so they are tightly bound. Insert the wires of each pickup pair into the correct location on the green terminal strip (J1) using the process described in the above “*Terminal Strip*” topic. Attach the wires using either of the following instructions.

Use the two gray wire nuts (71B) to connect the wires labeled “OUTPUT JACK” to the wires on your instrument **output jack**. The red wire goes to the hot lead (normally red) on the output jack and the black wire goes to the ground lead on the output jack. You “screw on” the gray wire nuts by twisting them in a clockwise direction onto the wire pairs.

Note: If you have a ground wire coming from the bridge, connect it to ground lead on the output jack before screwing on the gray wire nut.

Connecting your pickups to our S3-Switch

Your instrument contains three single-coil pickups:

Connect your NECK pickup coil wire pair to the	[+] Coil-3 [-]	connections on the green terminal strip
Connect your MIDDLE pickup coil wire pair to the	[+] Coil-2 [-]	connections on the green terminal strip
Connect your BRIDGE pickup coil wire pair to the	[+] Coil-1 [-]	connections on the green terminal strip.

S3-Switch Use Summary

Here is a summary of switch use for this product (see **Figure 1** for switch identification).

The *T3Plus Switch* document will help you “map” the pickup tones you get from the S3-Switch. It is available for download from our website’s Document Library.

SW1, SW2 and SW3 are ON-OFF-ON switches that turn on individual pickups in normal or reverse phase
SW4, SW5 and SW6 are ON-ON switches that change select pickups from *parallel* to *series* connectivity

SW1 turns on the **bridge** pickup (Coil-1), either in normal phase (down), or reverse phase (up).
SW2 turns on the **middle** pickup (Coil-2), either in normal phase (down), or reverse phase (up).
SW3 turns on the **neck** pickup (Coil-3), either in normal phase (down), or reverse phase (up).

When all of the following switches are **down**, the pickups will be in a Parallel circuit.

SW4 when this switch is **up** it puts the **bridge** and **middle** pickups in series. Both pickups must be on.¹

SW5 when this switch is **up** it puts the **bridge** and **neck** pickups in series. Both pickups must be on.¹

SW6 when this switch is **up** it puts the **neck** and **middle** pickups in series. Both pickups must be on.¹

SW4+SW6 when these switches are **up**, all three pickups in *series*. All pickups must be on. SW5 has no effect.

¹ The remaining *non-series* pickup may be either off -or- on (either in regular or reverse phase).

Validating

Connect your instrument to an amplified source with the volume set to low. Turn the switches on and off as described in “Switch Identification and Use Summary” topic while gently tapping the magnet of the pickup coil that should be “on” with a small screwdriver to confirm pickup response. Also confirm the correct operation of the Volume and Tone controls.

Figure 1 – S3-Switch Identification

The following image shows how the switches are laid out for the upgrade.

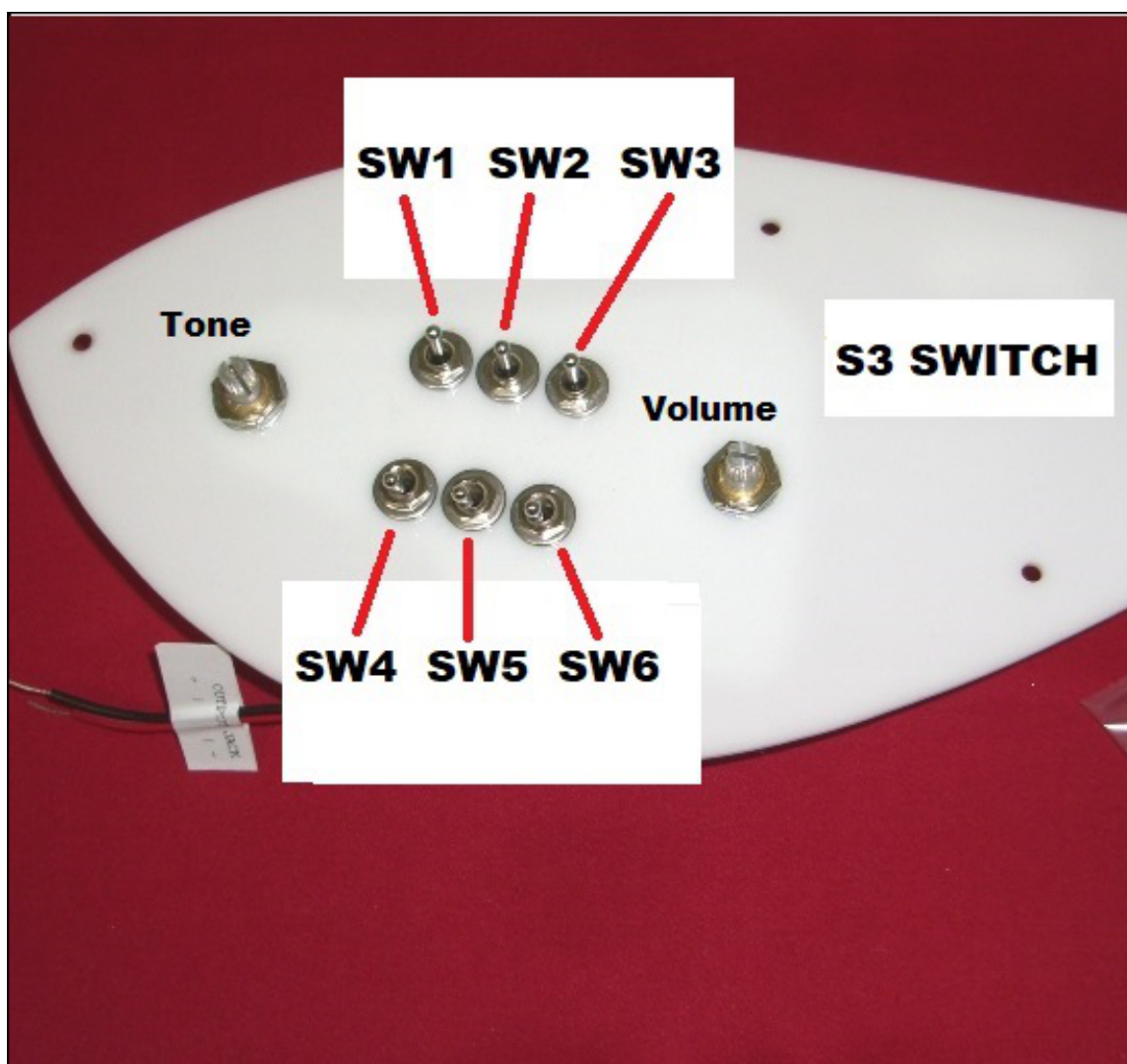
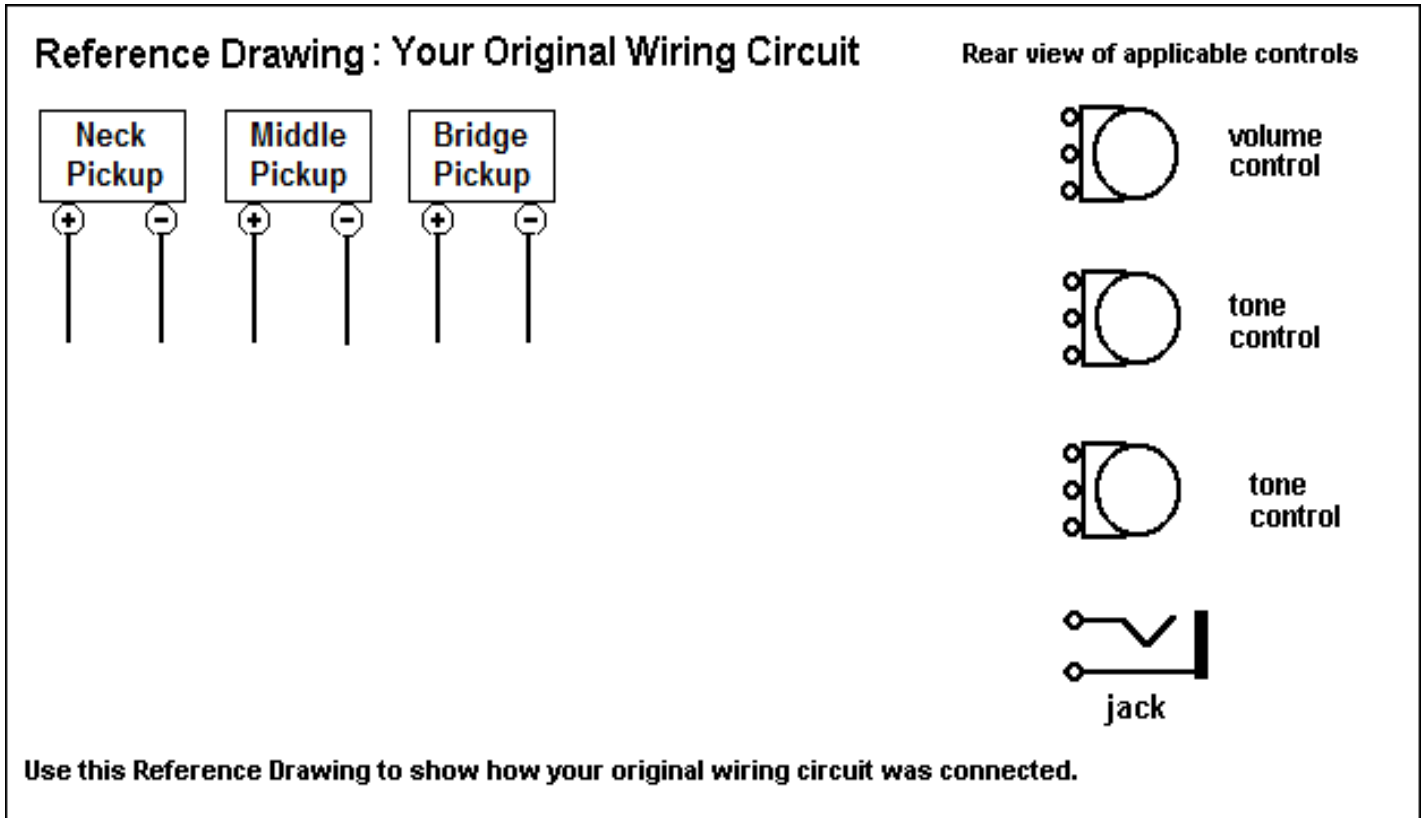


Figure 2 – Reference Drawings

Use the following image to document your instrument's original wiring. Be sure to identify wire colors where needed. Use a pencil when doing this. Draw additional controls as needed.



The following drawing identifies where to connect your pickups and output jack to your upgrade. The upgrade includes our VT-2 Volume-Tone Control assembly.

