

Switching Harness Fabrication Instructions

Revised: December 30, 2009

READ THESE INSTRUCTIONS COMPLETELY before you do anything to understand what is required.

What You Need For This Product

You need the following tools to fabricate, test and install this Patented Pickup Switching Harness.

- Soldering iron (25watt max) with fine tip, low temperature rosin-core solder .022" diameter
- Wire cutters / Wire strippers
- Electric drill, 1/16" drill bit, 1/4" drill bit, center punch
- Small needle nose pliers
- Small Phillips screwdriver, small straight slot screwdriver
- 6" adjustable crescent wrench
- Ohmmeter to measure continuity

Bill of Materials for the KIT version of our Patented Pickup Switching Harness

Parts bags (HAR-KIT A, HAR-KIT B) with these items (if you did not buy our Kit, you need to assemble these items):

- 3 DPDT Phase (on-off-on) mini switches – 3 position
- 3 DPDT Connection (on-on) mini switches – 2 position
- 1 cardboard switching harness assembly card (used to hold switches in place during fabrication procedure)
- 8 labels to identify three pickup wire pairs and one IN wire pair
- 12 labels to identify designated switch bodies and identify switches mounted on your instrument
- 2" bare wire
- 24" Yellow insulated 26 gauge stranded wire
- 40" Red insulated 26 gauge stranded wire
- 40" Black insulated 26 gauge stranded wire
- 14" Blue insulated 26 gauge stranded wire
- 8 female DB pins
- 10 male DB pins
- 13.5" clear shrink tube (3/32" diameter)
- 1 metal washer

Do This First!

Refer to the instructions contained in the **Switching Harness Test Procedure** to test the switches that you received and confirm that they function correctly. We cheerfully replace defective switches that have not been soldered. Once soldered, the switches are no longer warranted. See "*Before You Start*", Note 3 on page 3 herein for reason. Additional switches are available for \$3.99 each + shipping (limit 3 per type).

Preparation

The Patented Pickup Switching Harness KIT requires you to fabricate the following items for assembly. You have received the exact amount of items (wire length, pins, etc.) to assemble this harness. **Make sure you measure accurately.** Prepare the following items to assemble the switching harness assembly.

Cut, strip off 3/16" insulation, tightly twist and tin the following wire colors. Also cut the shrink tube for the specified length and quantity.

3 – solid bare wires 3/8" long for connection switch (SW-4, SW-5, SW-6) jumpers

6 – yellow 4" long wires, stripped and tinned for extender connections

4 – red 5" long wires, stripped and tinned for "+" pickup and "+" input ^{1**}

1 – red 3" long wire, stripped and tinned for "+" input

4 – black 5" long wires, stripped and tinned for "-" pickup and "-" input ^{1**}

1 – black 3" long wire, stripped and tinned for "-" input

2 – blue 3" long wires, stripped and tinned for interconnections

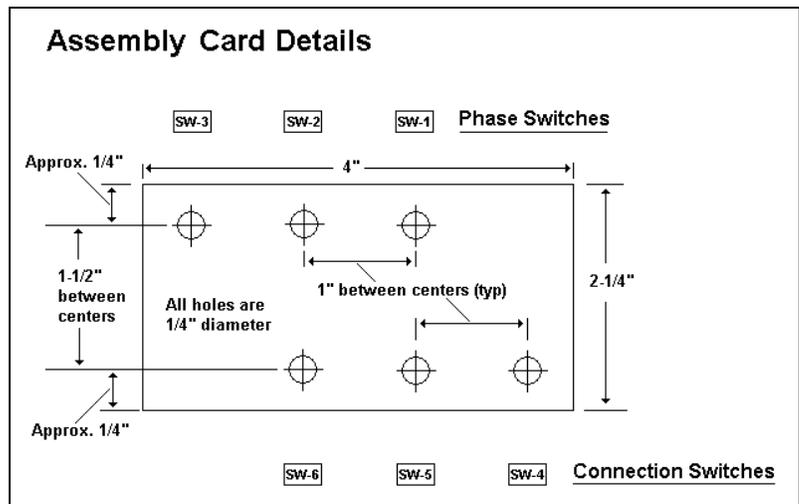
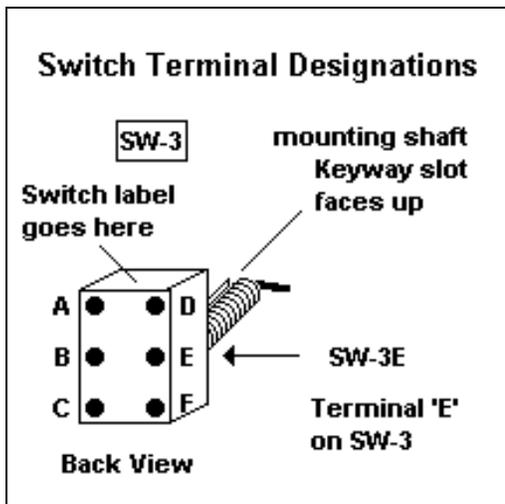
6 – blue 1-1/4" long wires, stripped and tinned for phase switch (SW-1, SW-2, SW-3) crossover jumpers

8 – female DB connectors

8 – pieces 3/4" long of clear shrink tube

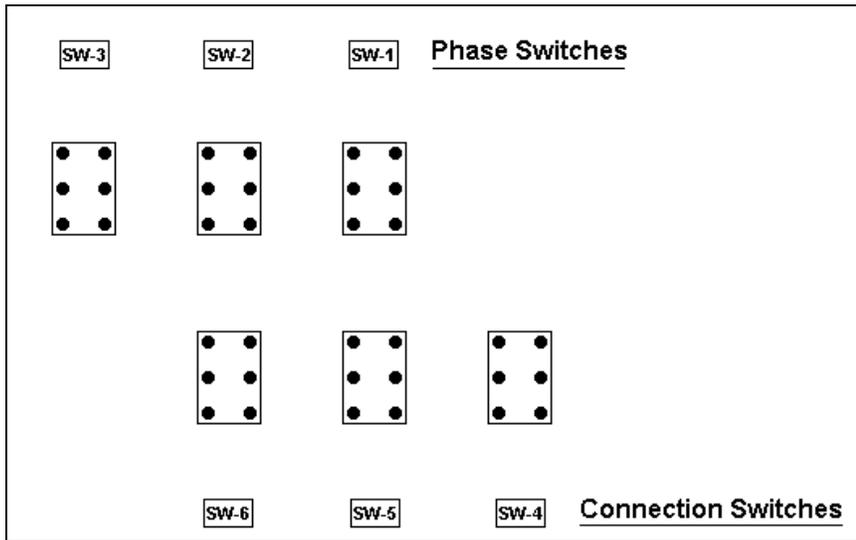
^{1**} A female DB connector is soldered onto the loose end of these wires after performing the test procedure.

The following pictures identify the *Switch Terminal Designations* that are used in these instructions as well as the location where the switch label is attached. Also pictured is the *Assembly Card Details* (this card is included with the Kit version of our Patented Pickup Switching Harness). This card is used to hold the switches in place while soldering the wires. If you are creating this harness from scratch, you need to make this *Assembly Card* from the grey cardboard that is on the back of a standard pad of paper. Make holes with 1/4" hand hole punch.



Information

The *Switching Harness Assembly Card* is designed to mount 2 groups of 3 switches in a staggered arrangement. It also provides enough wire to mount all the switches in-line or mounted as two vertical banks. All switches are to be mounted in the cardboard *Switching Harness Assembly Card* with the "keyway slot" of the mounting shaft facing *UP*. The switch terminals will be facing you when the switches are mounted. Here is an example of the switch designation and position for the switches.



Before you start...

Note 1: Do NOT solder connections until instructed to do so.

Note 2: In each step, the wire to be connected will be **illustrated in red** for the specific step. This is not to be confused with red wires that are actually used during the assembly procedure.

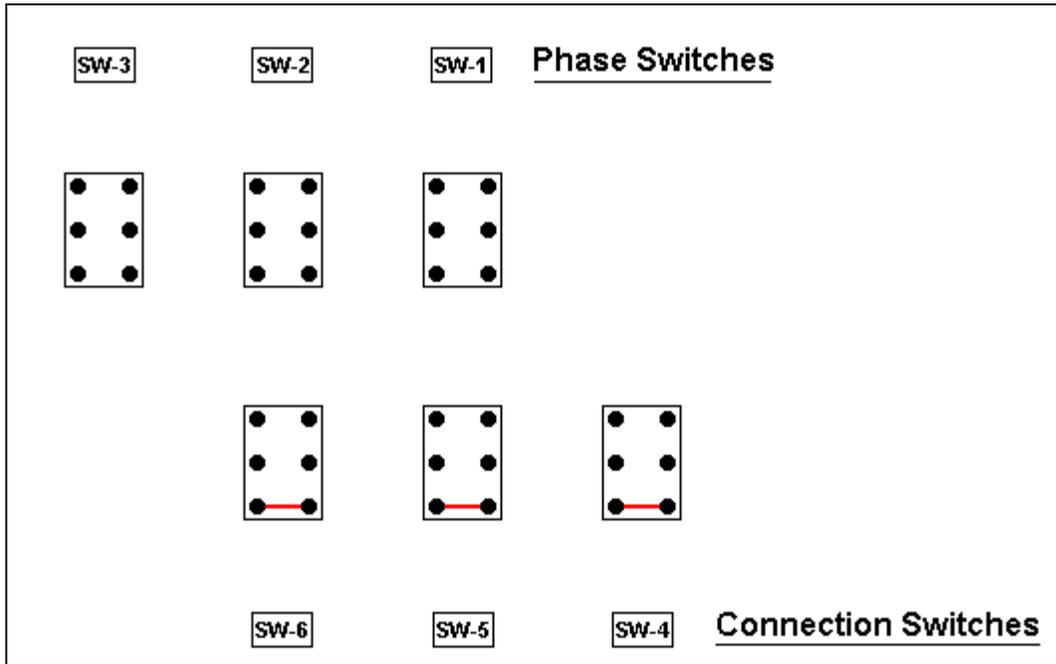
Note 3: Do NOT use a soldering iron with a higher wattage than 25 watts with a fine point tip. If you do, you run the risk of having switch terminals melt away from the plastic body of the switch. We do not warranty damage to switches caused by excessive heat. Work quickly when soldering switch terminals. You should also use a low temperature solder to help avoid switch terminal damage.

Step-1

- Mount 3 DPDT (on-off-on) Phase switches in each of the 3 holes in the top row of the cardboard *Switching Harness Assembly Card*. Tighten the switch lock nut just enough to prevent switch from easily rotating.
- Mount 3 DPTD (on-on) Connection switches in each of the 3 holes in the bottom row of the cardboard *Switching Harness Assembly Card*. Tighten the switch lock nut just enough to prevent switch from easily rotating.
- Attach the labels (SW-1, SW-2, SW-3, SW-4, SW-5, SW-6) on the top of each switch that correspond to the Switch designation of each. See the "Switch Terminals Designation" illustration on page 2.

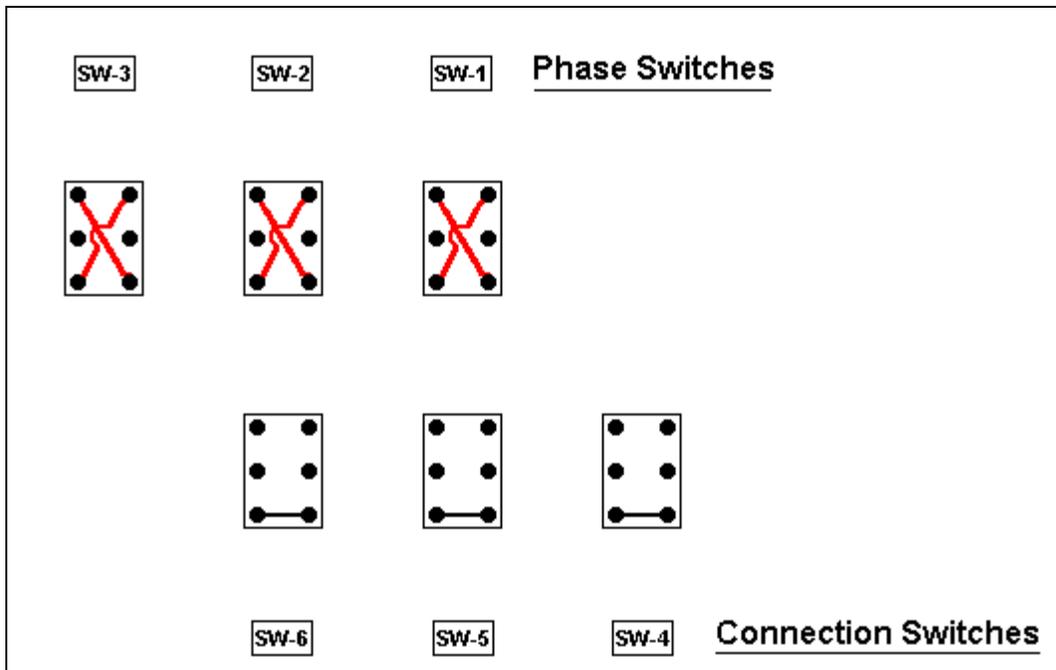
Step-2

Connect the 3/8" long BARE wires from terminal "C" to terminal "F" on each of the Connection Switches (SW-6, SW-5 and SW-4). Solder only these terminals on all Connection Switches.



Step-3

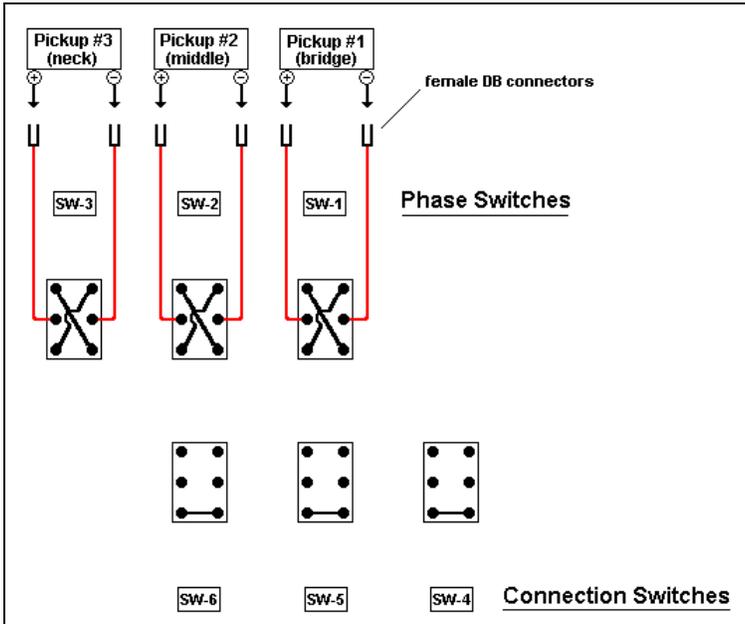
Connect the 1-1/4" long BLUE wires from terminal "A" to terminal "F" and from terminal "C" to terminal "D" on each of the Phase Switches (SW-3, SW-2 and SW-1). Solder ONLY terminals "A" and "D" of each Phase Switch.



Step-4

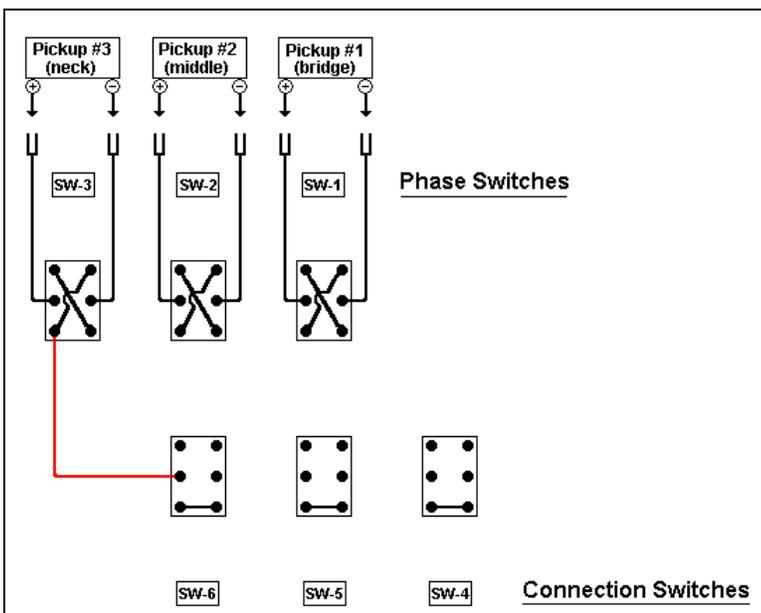
- Connect the 5" long **RED** wires to terminal "B" on each of the Phase Switches (SW-3B, SW-2B and SW-1B). Solder this terminal on all Phase Switches.
- Connect the 5" long **BLACK** wires to terminal "E" on each of the Phase Switches (SW-3E, SW-2E and SW-1E). Solder this terminal on all Phase Switches.

(note the location of the female DB connectors to be attached after performing the test procedure)



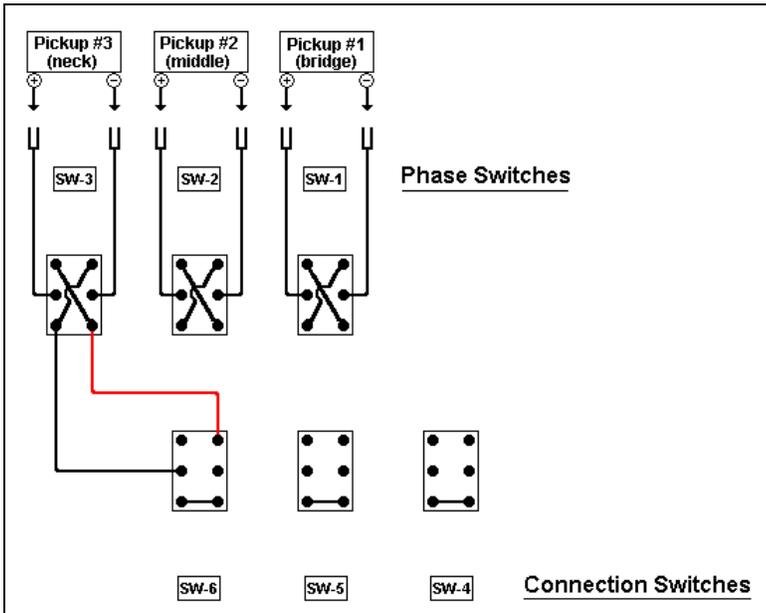
Step-5

Connect the 4" long **YELLOW** wire from terminal SW-3C to terminal SW-6B. Solder both of these connections.



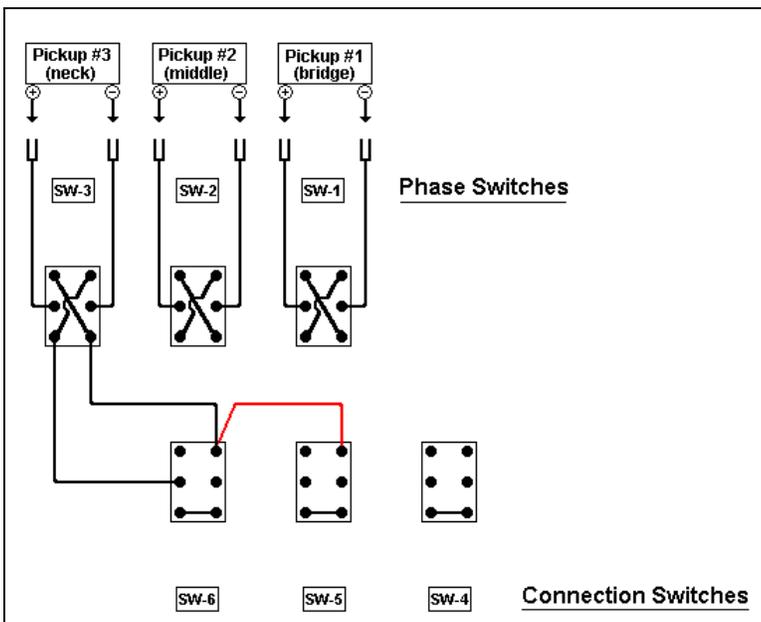
Step-6

Connect the 4" long YELLOW wire from terminal SW-3F to terminal SW-6D.
Do not solder either connection at this time.



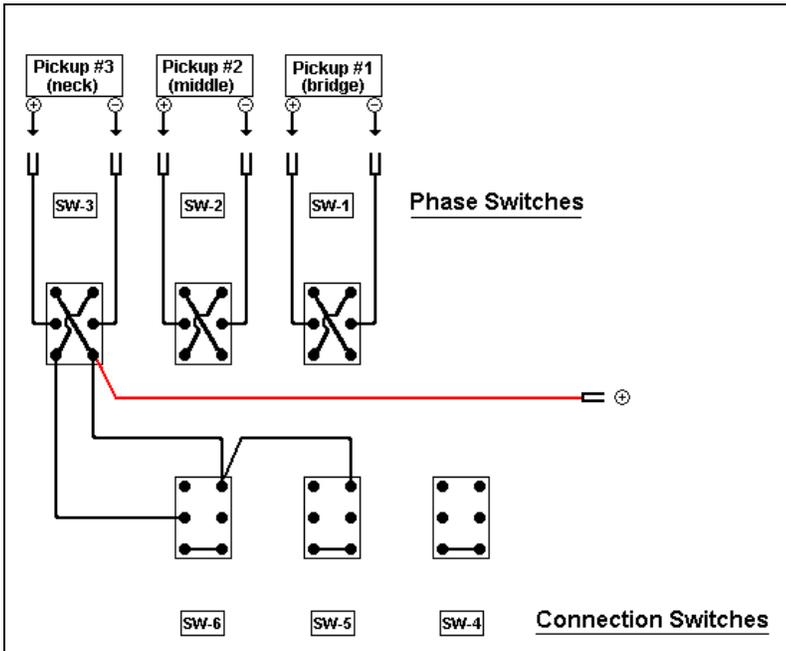
Step-7

Connect the 3" long RED wire from terminal SW-6D to terminal SW-5D.
Solder both of these connections.



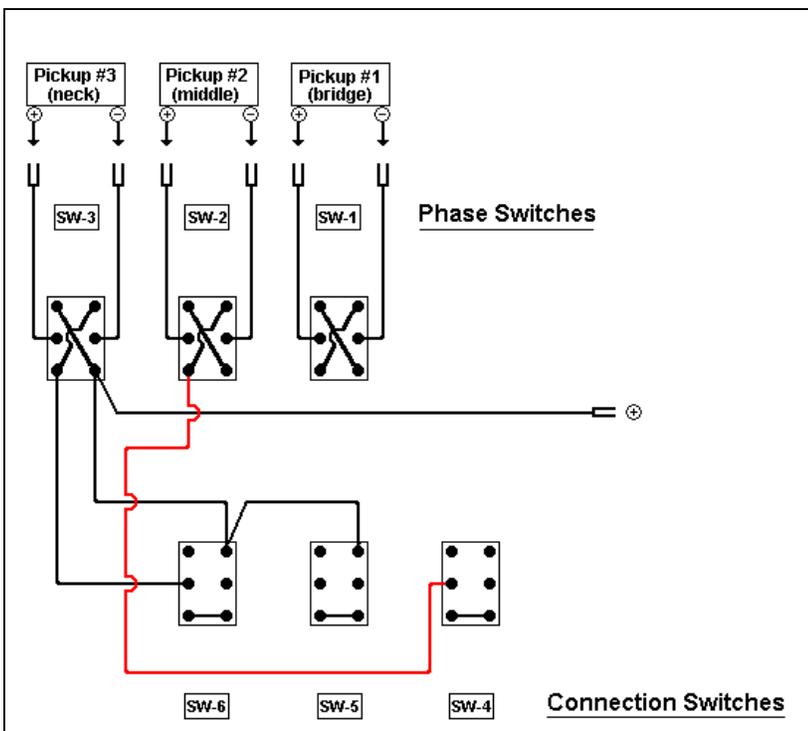
Step-8

Connect the 5" long RED wire to terminal SW-3F. Solder this connection.
(note the location of the female DB connectors to be attached after performing the test procedure)



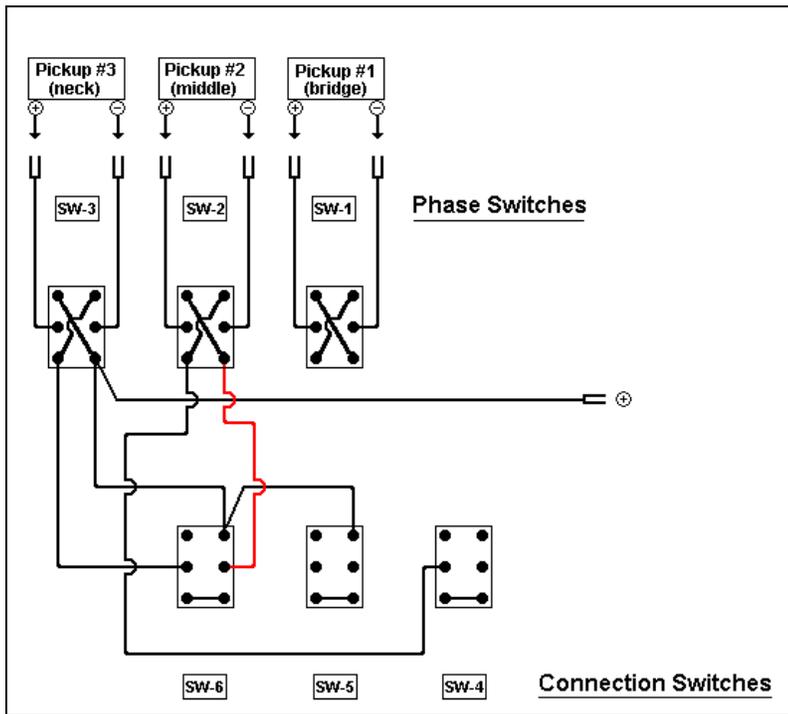
Step-9

Connect the 4" long YELLOW wire from terminal SW-2C to terminal SW-4B.
Solder both of these connections.



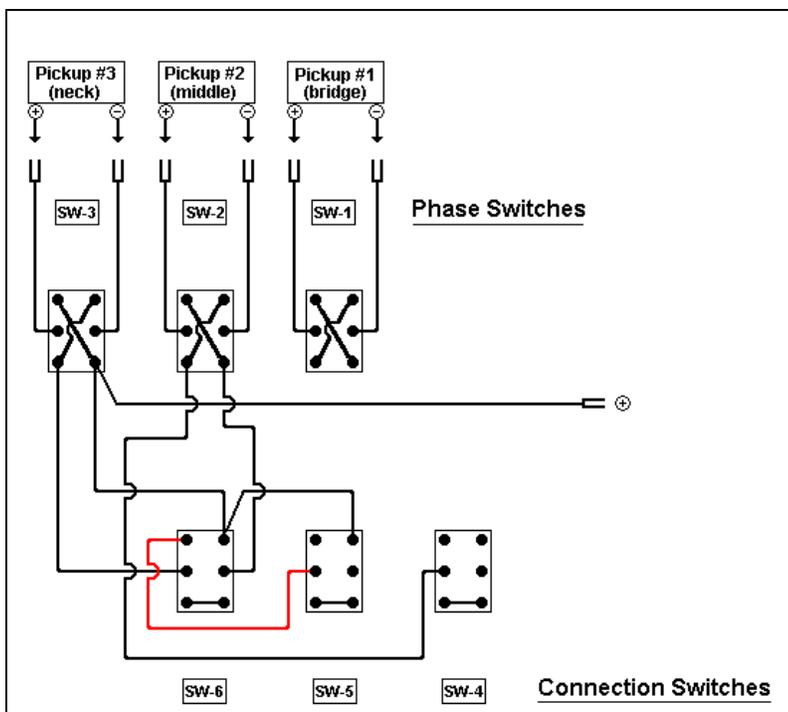
Step-10

Connect the 4" long YELLOW wire from terminal SW-2F and terminal SW-6E. Solder both of these connections.



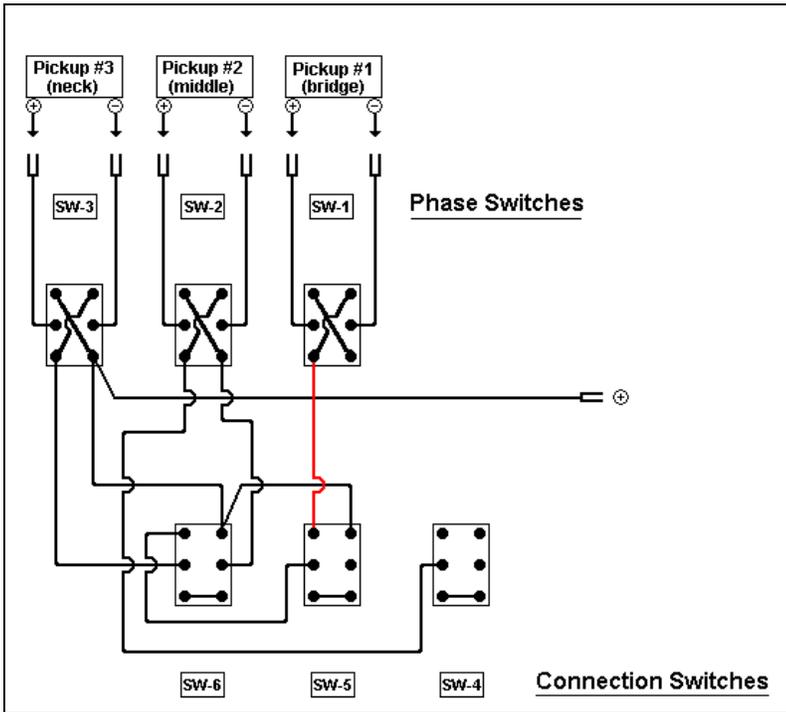
Step-11

Connect the 3" long BLUE wire from terminal SW-6A to terminal SW-5B. Solder both of these connections.



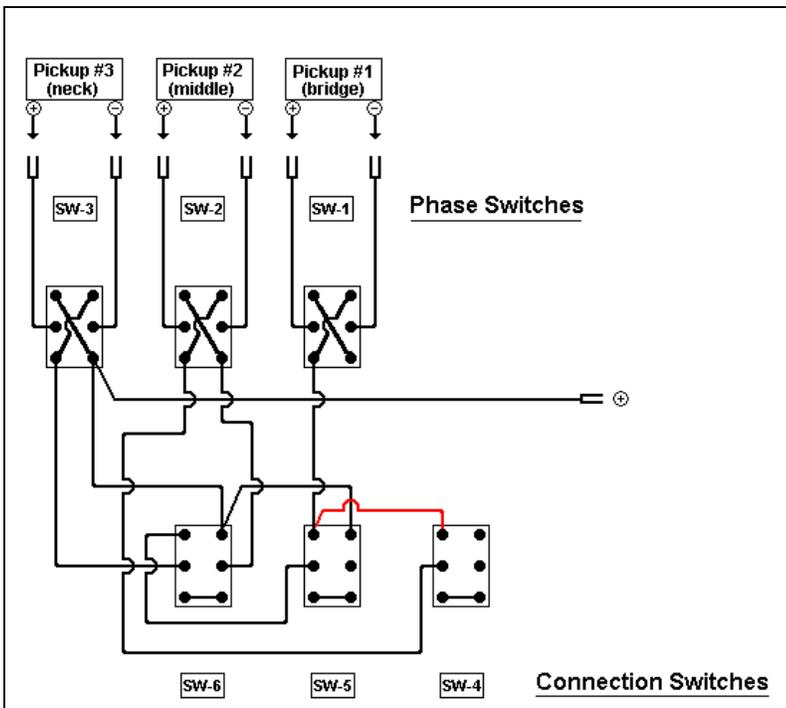
Step-12

Connect the 4" long YELLOW wire from terminal SW-1C to terminal SW-4A.
Do not solder either connection at this time.



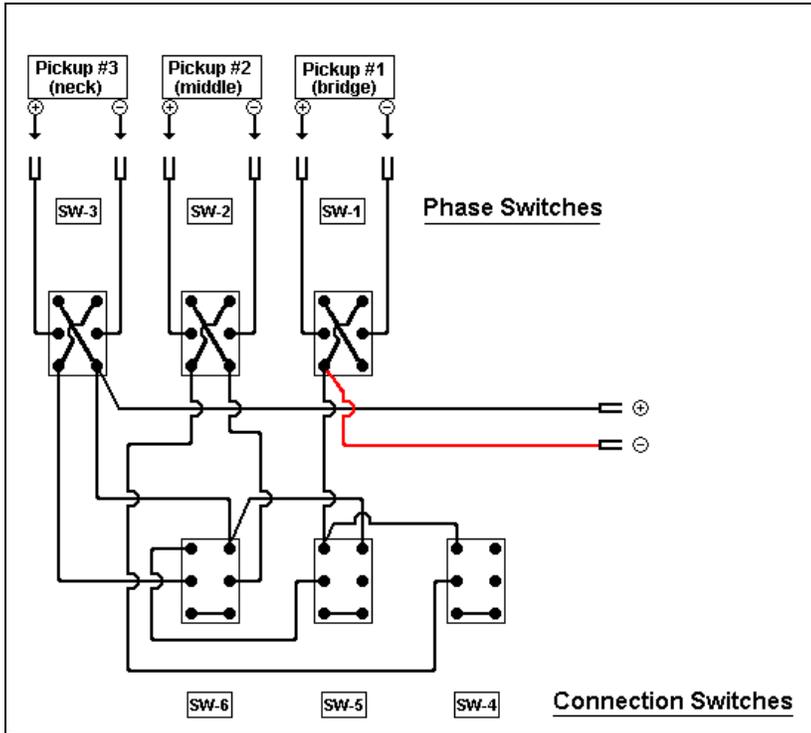
Step-13

Connect the 3" long BLACK wire from terminal SW-5A to terminal SW-4A.
Solder both these connections.



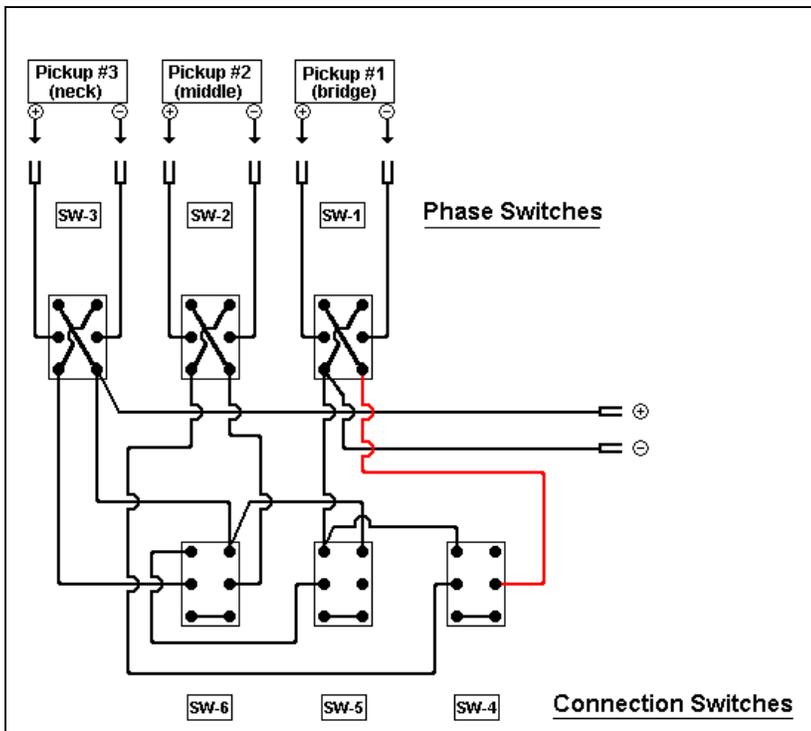
Step-14

Connect the 5" long BLACK wire to terminal SW-1C. Solder this connection.
(note the location of the female DB connectors to be attached after performing the test procedure)



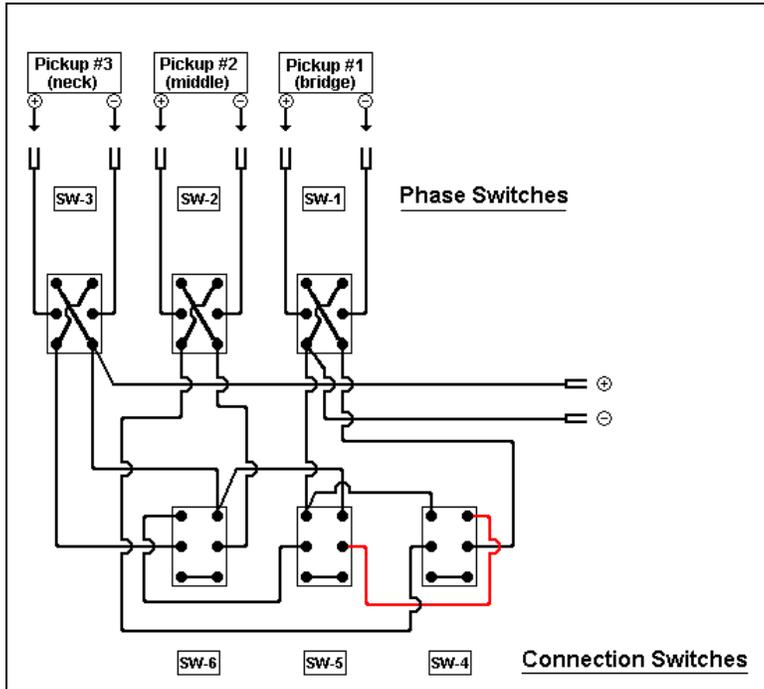
Step-15

Connect the 4" long YELLOW wire from terminal SW-1F to terminal SW-4E.
Solder both of these connections.

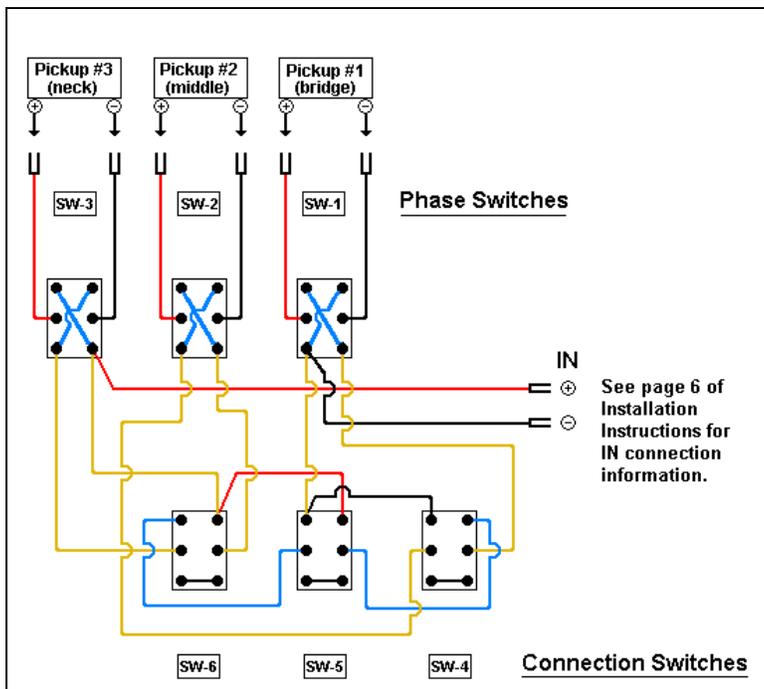


Step-16

Connect the 3" long **BLUE** wire from terminal SW-5E to terminal SW-4D.
Solder both connections.



This final view displays the actual wire colors used in fabricating the Switching Harness.



Step-17

Apply labels to the loose connection pairs.

Perform the **Switching Harness Testing Instructions** to confirm correct switching results.