

These assembly instructions are for the KIT version of our T2-Switch, T3-Switch and T4-Switch products.

**We recommend that you read this document completely before assembling this product. This will help you to become more familiar with the assembly process and to identify any issues and solutions prior to the assembly**

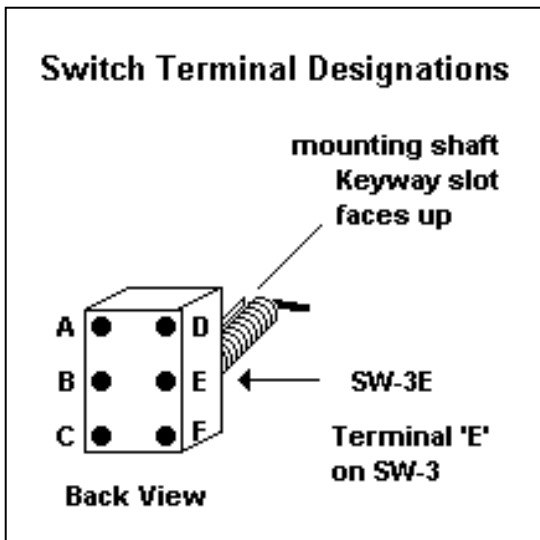
## This Product Contains The Following Items

- A zip bag labeled **KIT PARTS BAG A** that contains (depending on your ordered product) one of the following green printed circuit board types, and the additional enumerated items under the board types:
  - T2-Board – 0.937” wide x 1.50” long (2.38cm x 3.81cm)
  - T3-Board – 0.937” wide x 3.05” long (2.38cm x 7.75cm)
  - T4-Board – 0.937” wide x 3.05” long (2.38cm x 7.75cm)
  - 1 styrofoam block to hold switches during assembly procedure and help identify installation clearance
  - Labels to mark your pickup wires and input wires
  - 1 AweSome Musical Instruments headstock decal (*it’s OK to cover manufacturer’s logo with our decal*),
  - Drill Hole Template – a paper template that, together with the included styrofoam block, is used to both ensure clearance and locate hole position to be drilled for mounting your assembled switch product
- A zip bag labeled **KIT PARTS BAG B** with (depending on your ordered product) the following items:
  - Either 1, 2 or 3 DPDT (ON-ON) switches
  - Either 2, 3 or 4 DPDT (ON-OFF-ON) switches
  - Either 3 or 6 stainless steel finishing washers (1/4” inside diameter hole for switch mounting)
  - 1 Green solderless Terminal Strip (either 6-position, 8-position or 10-position)
  - 2” (5.08cm) length of 26 gauge bare copper wire, (*only included with KIT-T2 purchase*)
  - 6” (15.24cm), 7.5” (19.05cm) or 9” (22.86cm) **blue** insulated wire (used in Testing section)
  - 9” (22.86cm), 12” (30.48cm) or 15” (38.10cm) **red** insulated wire (may be needed during installation)
  - 9” (22.86cm), 12” (30.48cm) or 15” (38.10cm) **black** insulated wire (may be needed during installation)
  - 2 or 4 yellow solderless wire connectors (UY2) to extend pickup / input jack wire to terminal if needed
  - 1 red solderless wire connector (UR2) *if needed* to connect bridge ground wire to input jack ground wire
  - A length of Quad Eutectic solder (has a lower melting temperature 338F/170C than that of 60/40 solder)
  - 2 grey wire nuts (71B) to provide an easily removable connection to the instrument input jack
- PDF documents downloaded from our website Document Library: [www.AweSome-guitars.com](http://www.AweSome-guitars.com)
  - Pickup Switch Upgrade Kit Assembly Instructions (document #1) (*this document you are now reading*)
  - Pickup Switch Upgrade Testing Instructions (document #2) test assembled switch for correct operation
  - Installation Instructions (document #3) contains details about installing the product into your instrument
  - Applicable Switch Table (document #A, B, C) contains a summary of how to use the switches for each product to obtain 6, 35 or 68 pickup tones from your T2-Switch, T3-Switch or T4-Switch product

## Tools You Need To Assemble This Upgrade

- Soldering iron with fine point tip (25w – 30w maximum)
- Small needle nose pliers
- Small side cutters
- Exacto knife or suitable blade cutter
- Wire strippers

## SWITCH TESTING



Before you do anything, you should test the mini toggle switches that came with your kit and make sure that they function. We do not check every switch because it is neither practical nor cost effective. If you have received a defective switch we are happy to replace it. You should test the switches because **we do not warranty switches once they have been soldered.**

**Switch Testing:** (do this before you start assembling the product)

Before you start, use an ohmmeter to test the switches that were included with your **Pickup Switch Upgrade™** Kit. Check for correct continuity/open circuit result when testing switches.

**Note:** open-circuit = no electrical continuity,  
close-circuit = electrical continuity (typically 0.7 ohms or less).

*For DPDT (ON-OFF-ON) mini switches:*

Terminals "A" and "B" are close-circuit with switch "on" (down). Switch is open-circuit in opposite "on" and "off".  
Terminals "D" and "E" are close-circuit with switch "on" (down). Switch is open-circuit in opposite "on" and "off".  
Terminals "B" and "C" are close-circuit with switch "on" (up). Switch is open-circuit in opposite "on" and "off".  
Terminals "E" and "F" are close-circuit with switch "on" (up). Switch is open-circuit in opposite "on" and "off".

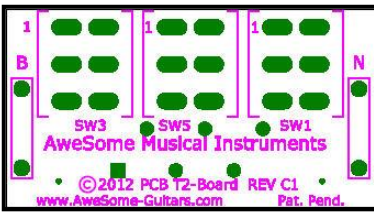
*For DPDT (ON-ON) mini switches:*

Terminals "A" and "B" are close-circuit with switch "on" (down). Switch is open-circuit in opposite position.  
Terminals "D" and "E" are close-circuit with switch "on" (down). Switch is open-circuit in opposite position.  
Terminals "B" and "C" are close-circuit with switch "on" (up). Switch is open-circuit in opposite position.  
Terminals "E" and "F" are close-circuit with switch "on" (up). Switch is open-circuit in opposite position.

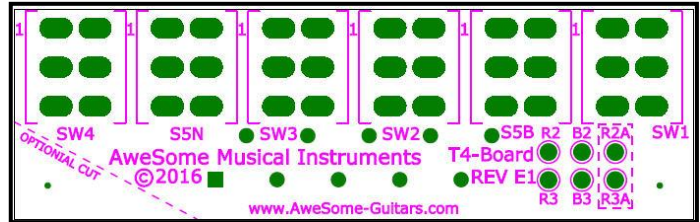
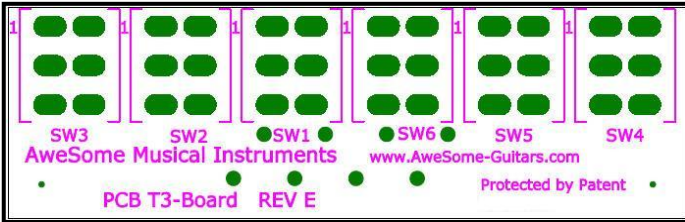
### **\*\*\* IMPORTANT SPECIAL NOTE FOR REV. C BOARDS \*\*\***

Our (Rev. C) printed circuit board contains elongated slots where the switch terminals are inserted. The high quality (red body only) switches we use have terminals that are a very tight fit. To minimize this, you may need to very slightly bend some of the mini toggle switch pins so they will more readily (although tightly) fit into the board. Very slightly bend switch terminals A and C towards terminal B. Very slightly bend switch terminals D and F towards terminal E. The switches can now be inserted into the Rev. C printed circuit board. Tip: You can use a "4-way" screwdriver with the bit removed to serve as a tool to push and "rock" the switch pins into the printed circuit board.

## ASSEMBLY (FOR REV C AND REV E BOARDS)



Note: Our REV A and REV B circuit boards have circular switch mounting holes. The REV C (and higher) circuit boards have slotted switch mounting holes, as illustrated to the left and below. The photos are of REV A assembled printed circuit boards and are used for general guidance.



### Step-1:

Put the printed circuit board onto a hard flat work surface in the orientation illustrated in the above picture.

### Step-2:

The following pictures show the REV A versions of the T2-Board (for 2-pickup coil instrument), T3-Board (for 3-pickup coil instrument) and T4-Board (for 4-pickup coil instrument) used to make a **Pickup Switch Upgrade**™ product. Populate the printed circuit board with the applicable switches. Orient the mounting shaft *key* (i.e., the “groove” running vertically in the mounting shaft threads) so they all face the same direction.

**Note:** The REV C boards require Force to insert the switch terminals to be flush with the bottom of the board.



The **T2-Switch KIT (KIT-T2)** uses three mini toggle switches. Two of the switches are ON-OFF-ON and go into the switch terminal pads labeled SW1 and SW3. Set these switches in the center (OFF) position. The other switch is an ON-ON switch and it goes into the switch terminal pad labeled SW5. Set this switch paddle to face towards the center of the printed circuit board.

**Also see the special jumper information in Step-7a for this board only.**



The **T3-Switch KIT (KIT-T3)** uses six switches. Three of the switches are ON-OFF-ON and go into the switch terminal pads labeled SW1, SW2 and SW3. Set these switches in the center (OFF) position. The other three switches are ON-ON and they go into the switch terminal pads labeled SW4, SW5 and SW6. Set these switch paddles to face towards the center of the printed circuit board.



The **T4-Switch KIT (KIT-T4)** uses six switches. Four of the switches are ON-OFF-ON and will go into the switch terminal pads now labeled SW1, SW2, SW3 and SW4. Set these switches in the center (OFF) position. The other two switches are ON-ON and they go into the switch terminal pads labeled S5N and S5B. Set these switch paddles to face towards the center of the printed circuit board.

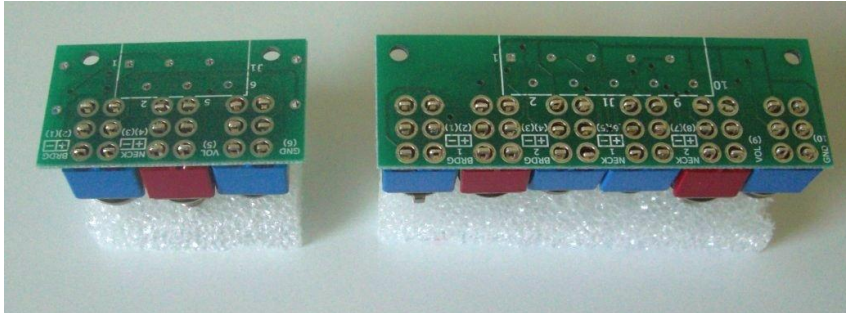
**Note: Mount switches on correct side of circuit board.**

**Special Switch Body Color Note:** Although the pictures show both blue body switches and red body switches (used with previous KIT products), all of our KIT products now contain only red body switches.

### Step-3:

Align the included *styrofoam block* so its perimeter is exactly over the printed circuit board perimeter and firmly press down to embed the switch paddles into the styrofoam. All switch paddles must be completely inserted into the styrofoam block up to the start of the threaded mounting shaft on the switches.

### Step-4:



Grab and hold the printed circuit board and styrofoam block as a complete unit (just like a sandwich), flip this assembly over and place it on a flat hard work surface. The styrofoam block will now be on the bottom, supporting both the switches and the printed circuit board.

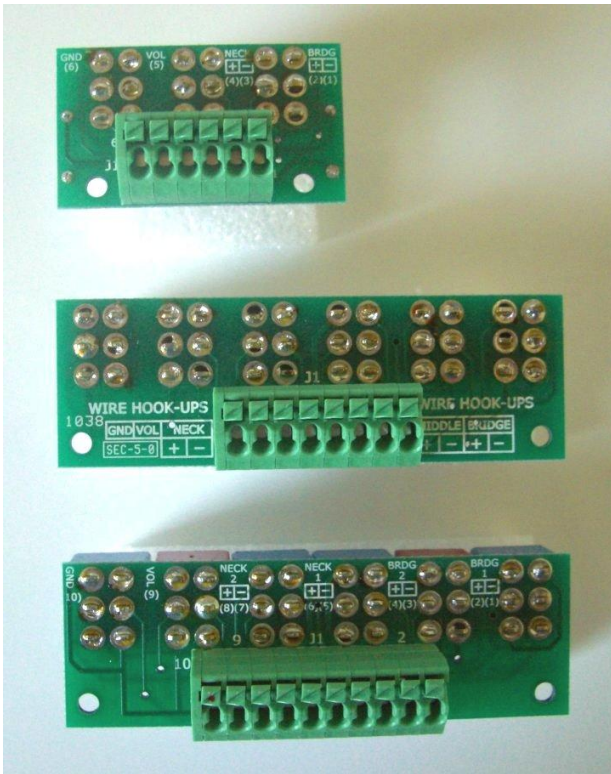
### Step-5:

Using a Low Wattage (25/30 watt maximum) soldering iron, use the included length of Cardas Quad Eutectic solder to "spot solder" each switch at diagonally adjacent terminals to *anchor* each switch to the printed circuit board. Continue soldering all six terminals of each switch, starting with the switch terminals that were not spot soldered. Work quickly as you spot solder to prevent switch damage caused by excessive heat from the soldering iron. The recommended switch terminal solder sequence going from switch to switch is A-F first for all switches, then B-D for all switches, followed by C-E. Refer to "Switch Terminal Designations" on page 2.

**WARNING:** When soldering the switch terminals to the circuit board, do not try to completely fill the terminal hole with solder or you will not have enough Quad Eutectic solder to solder all switch connections. Just solder each switch terminal enough to be "tacked" to the circuit board pad. If you *over solder* the terminals, this can also permanently damage the switch. Work quickly when soldering switches and terminal strip.

In addition, avoid using standard 60/40 solder because it has a higher melting temperature (370F/188C) than the melting temperature (338F/170C) of the Quad Eutectic solder. Although the Quad Eutectic solder has a higher cost, it also increases the successful assembly of your kit product.





### Step-6:

Remove but do not discard the styrofoam block. It will be used again during the Installation procedure (a separate download document).

Mount the included green 6-position, 8-position or 10-position *terminal strip* on the printed circuit board in the location shown within the rectangular line on the board. The correct orientation will have the green terminal strip **exactly** within the rectangular outline on the printed circuit board.

The square wire release buttons will be towards the center of the circuit board with the wire holes towards the edge of the circuit board.

Incorrect orientation is when the green terminal strip body overlaps the rectangular outline on the printed circuit board.

**WARNING:** Mount the *terminal strip* the same way shown in the illustrations or your product will not work.



### Step-7:

While holding the terminal strip and circuit board, flip the printed circuit board over and lay it down on the work surface.

Position the styrofoam block under the switch pins to support the assembly.

Verify that the green terminal strip is in firm contact with the printed circuit board.

Solder the 6, 8 or 10 connections of the green terminal strip to the printed circuit board.

It is helpful to first solder two diagonal pin ends to tack the terminal strip in place.

## Step-7a:

Special extra step for a T2-Switch product.



If you have purchased a T2-Switch (*KIT-T2*), use the included 2" (5.08cm) length of 26 gauge bare copper wire. Cut it in half equally and bend the ends to jumper each of the two connections labeled “**B**” and “**N**” (each within a white rectangular outline) as illustrated.

Solder both ends of these two connections. Cut off excess wire, making sure that no shorting occurs on board.

## Final Inspection

Make a final visual inspection of all soldered connections and make sure there are no unsoldered joints, cold solder joints or solder shorts.

Proceed to the **Pickup Switch Upgrade Testing Instructions** (this is document #2 and is downloaded from our website [www.AweSome-Guitars.com/docs](http://www.AweSome-Guitars.com/docs)) Document Library to confirm that correct results can be obtained from the assembled **Pickup Switch Upgrade**<sup>™</sup> product prior to installation.

**Note:** All of the information in this document is the confidential property of AweSome Musical Instruments and is made available for Pickup Switch Upgrade KIT customers only. It cannot be reproduced or used for any purpose except as expressly authorized in writing by AweSome Musical Instruments.