

# **PAINLESS**<sup>®</sup>

## **PERFORMANCE PRODUCTS**

### **Trail Rocker Installation**



## **Instructions**

**4, 6, or 8-Switch Customizable Trail Rocker Switch Panel  
w/ Panel Mount**

**For Installing Painless Part Number: 57101, 57104, & 57107  
Manual #90634**

Painless Performance Products recommends you, the installer, read this installation manual from front to back before installing this harness.



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# CONTENTS OF THE PAINLESS KIT

Refer to the **Contents Figure** (below) to take inventory. See that you have everything you're intended to have in this kit.

## The Painless Trail Rocker Kit should contain the following:

- 4, 6, or 8-Switch Customizable Trail Rocker Switch Panel.
- Parts Kits
- Pre-Terminated Winch Wires.
- This manual: 90634
- 4 & 6 Switch Kits ONLY: Additional switch wires



## SMALL PARTS

Painless harnesses include parts kits that contain the terminals, fuses, screws, and nuts necessary for a professional installation. Many of the terminals are non-insulated and will require heat shrink to be applied after the terminal has been properly crimped. Waterproof heat shrink has been supplied. These non-insulated terminals allow you to make clean, weatherproof connections that look like a factory installed wiring system. When crimping these terminals, take special notice of the split in each terminal. Make sure the smooth side of the jaw on the crimper goes towards this split.

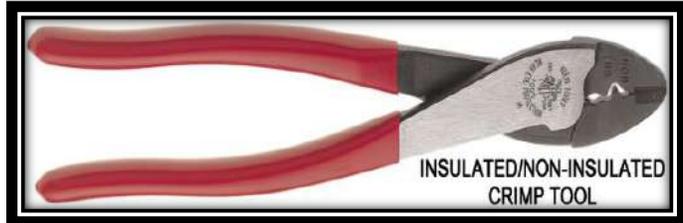


## **TOOLS NEEDED**

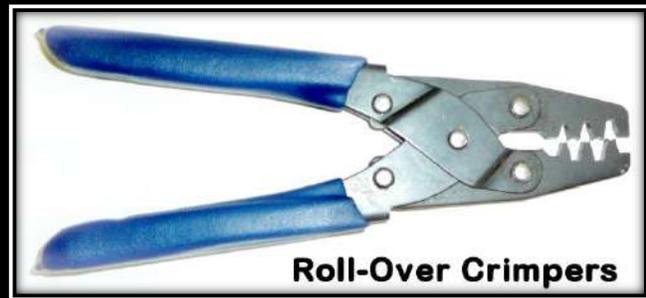
This installation primarily requires only basic hand tools that may include, but are not limited to:

1.  $\frac{3}{8}$ " combination wrench
2. Wire cutter / "dikes"
3. **Wire Crimping and Stripping Tools:**

This style of hand crimper can be purchased from just about any local auto parts store, home improvement store or can also be purchased online. You will need this style of crimper to crimp the heat shrinkable and non-heat shrinkable, insulated terminals included in the small parts kit.



Another style of crimpers are "Roll-Over Crimpers." These crimpers will crimp factory style, non-insulated terminals. Painless offers "Roll-Over Crimpers," such as those seen to the right, under Painless part #70900.



A good set of wire strippers are required to strip wire properly. This style of wire stripper is ideal for this harness install because of its ability to properly strip wire gauges 10 thru 20. These are available from just about any local auto part store, electrical supply shop, home improvement store or can be purchased online.



In addition to these basic hand tools, you will need, at least, the following:

**4. Electric Drill & Drill Bits:**

1. Electric Power Drill (suggest battery powered cordless for ease and maneuverability)
2.  $\frac{5}{32}$ " drill bit

**5. Volt/Ohm Meter:**

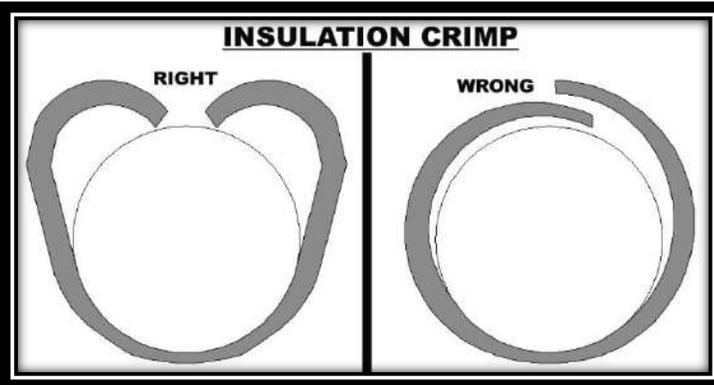
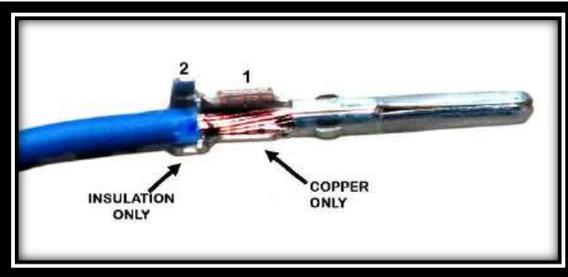
A Volt/Ohm meter is always a good tool to have on hand when installing any type of electrical component into a vehicle. The most basic meters provide the two functions required to diagnose electrical issues commonly seen during a harness install: voltage measurement and continuity testing. Voltage measurement is the ability to read DC voltage. Continuity testing allows you to test



**6. Heat Gun:** Needed to shrink the heat-shrink found in the parts kit.

**7. Cutting Tool:** A plasma cutter or cut-off wheel will be needed in order to create a hole in your mounting surface.

# INSTALLING FACTORY STYLE TERMINALS



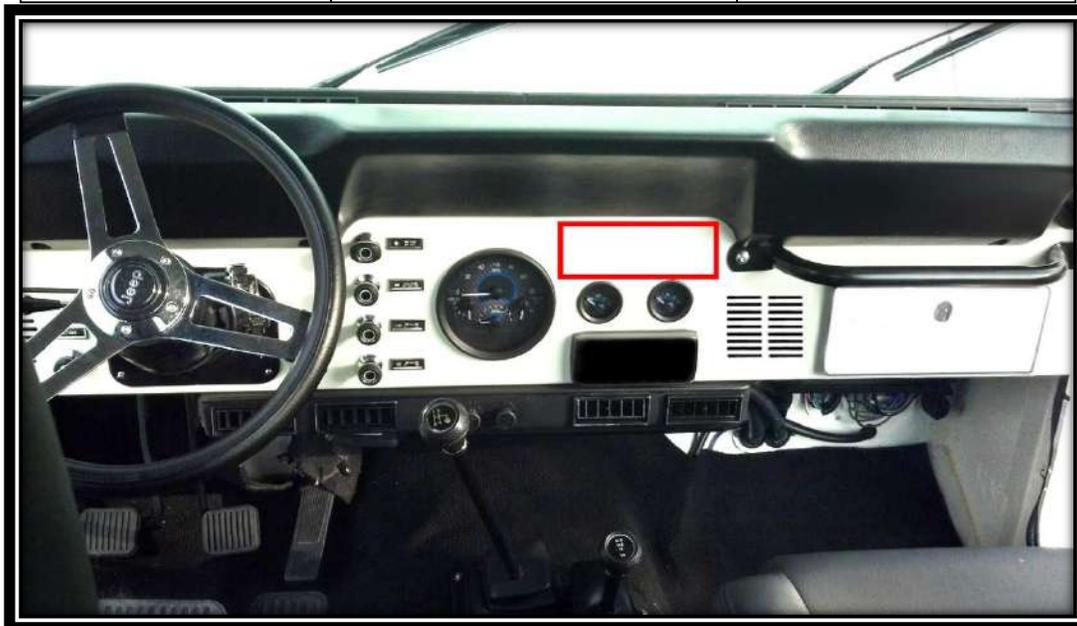
In the parts kit, you will see uninsulated male terminals. These terminals are for **12-pin connector shell** and require roll over crimpers.

- Strip about  $\frac{1}{4}$ " of insulation off of the wire.
- Insert the wire into the terminal. There are two terminal straps on the terminal. For instructional purposes, we will label them 1 and 2. Strap 1 crimps the exposed copper strands of the wire, while strap 2 crimps the wire insulation. Make your strip length long enough to ensure only copper strands are crimped by Strap 1 but short enough that only insulation is crimped by Strap 2. The photo to the left best demonstrates this.
- Using the appropriate jaw on the crimpers, crimp Strap 1. The appropriate jaw depends on the wire gauge as well as the terminal stiffness. If you are unsure which jaw to use, you can always start with the biggest and work your way down until you get a tight crimp.
- With Strap 1 crimped, move onto crimping the insulation strap: Strap 2. Place Strap 2 into the appropriate jaw of the crimpers. This jaw will be larger than the one used to crimp the first strap. Crimp down on Strap 2 making sure the strap folds downward into the wire, and not overlapping itself. Refer to the drawing to the left. Overlapping could cause problems with the terminal fitting into the factory connector.

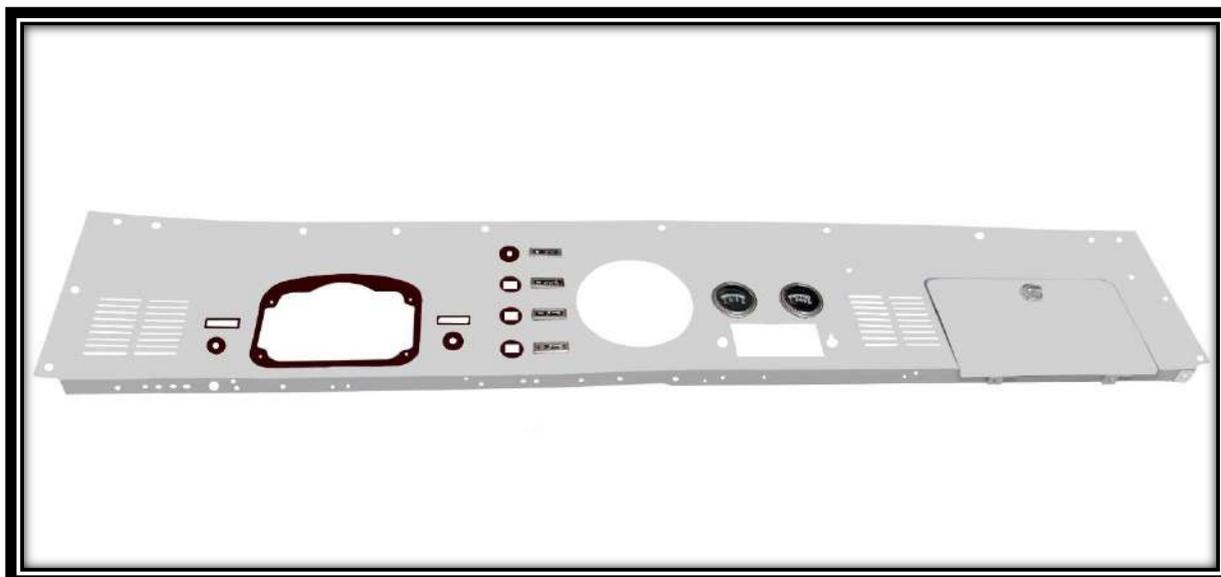
## **SWITCH PANEL INSTALLATION**

**Step 1:** First, locate where you want to mount your Trail Rocker Switch Panel. Be sure that you have plenty of room for the installation.

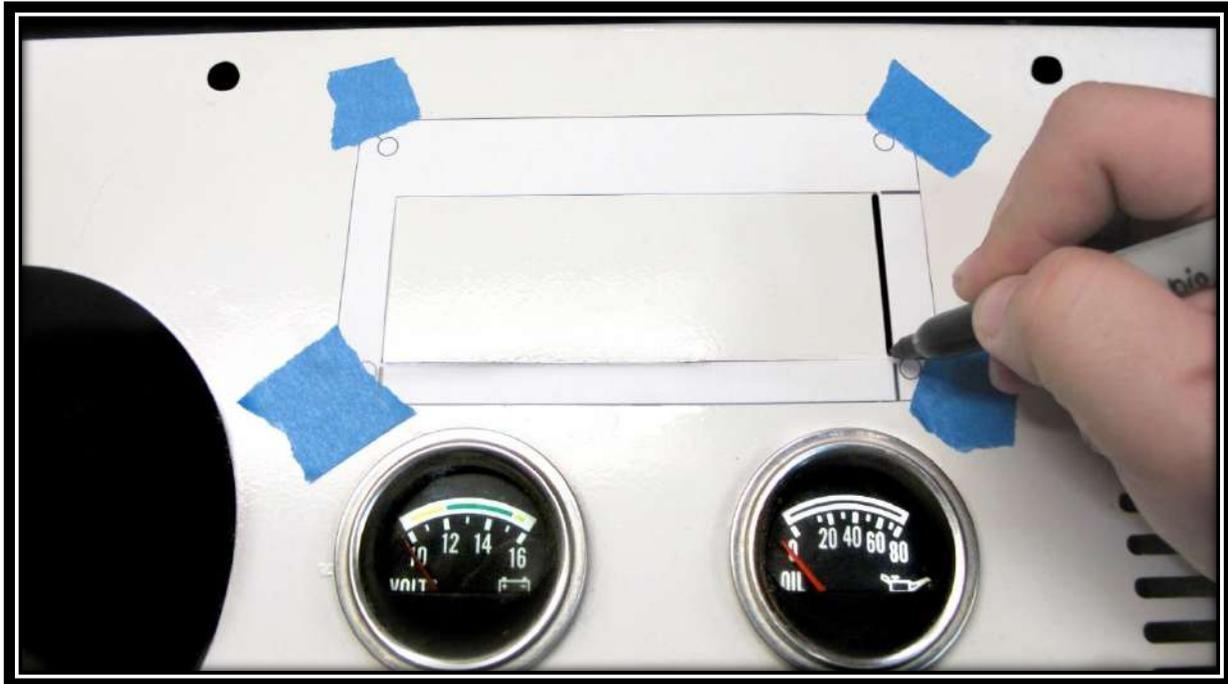
57101	8 Switch Panel	10.75" x 1.72"
57104	6 Switch Panel	7.33" x 1.72"
57107	4 Switch Panel	4.84" x 1.72"



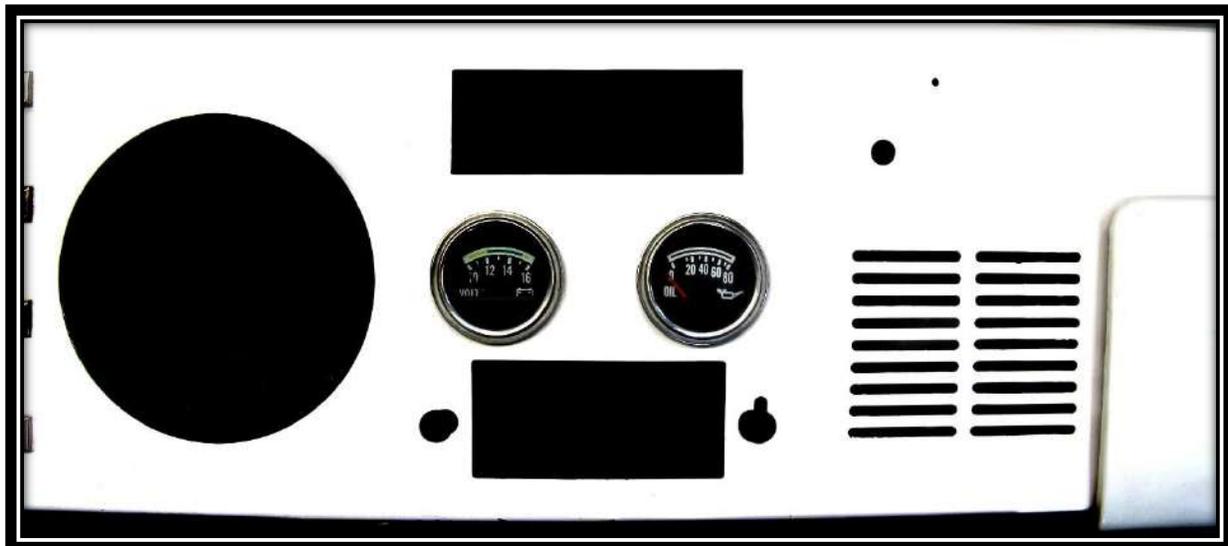
**Step 2:** For easier installation, Painless recommends removing the dash panel, or other surface, on which you're mounting the Trail Rocker Switch Panel. On some applications, this may not be possible. Therefore, be careful to pick a location that is deep enough to clear your switch panel's switch wiring.



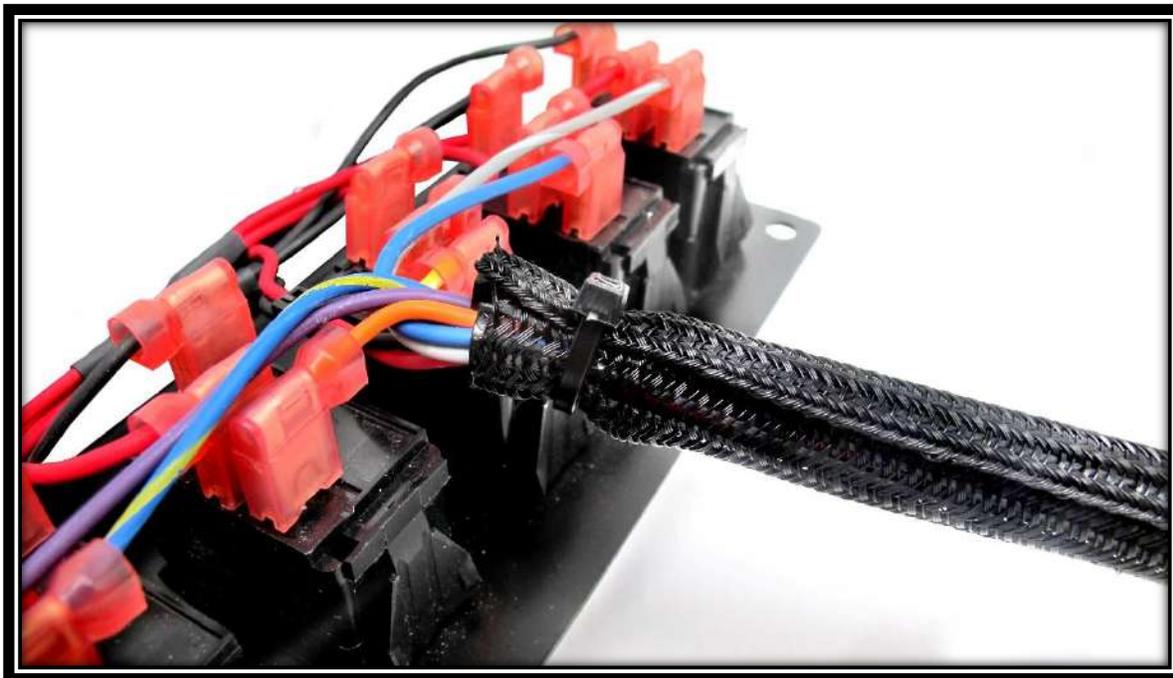
**Step 3:** Use the templates included with this kit to create the appropriate sized hole for your switch panel. To do this, cut out the pattern, tape it to your location, and trace it onto your mounting surface.



**Step 4:** Then, use your cutting tool to make the appropriate sized hole.



**Step 5:** Before mounting the Trail Rocker Switch Panel, you may wish to loom the **Switch Panel Wires**. Run the loom over the wire, and secure the end of the loom with a zip-tie. **Note: It isn't necessary to loom the entire wiring harness as you will cut these wires to length later. Simply loom a few feet and make sure the end near the switches is secure.**



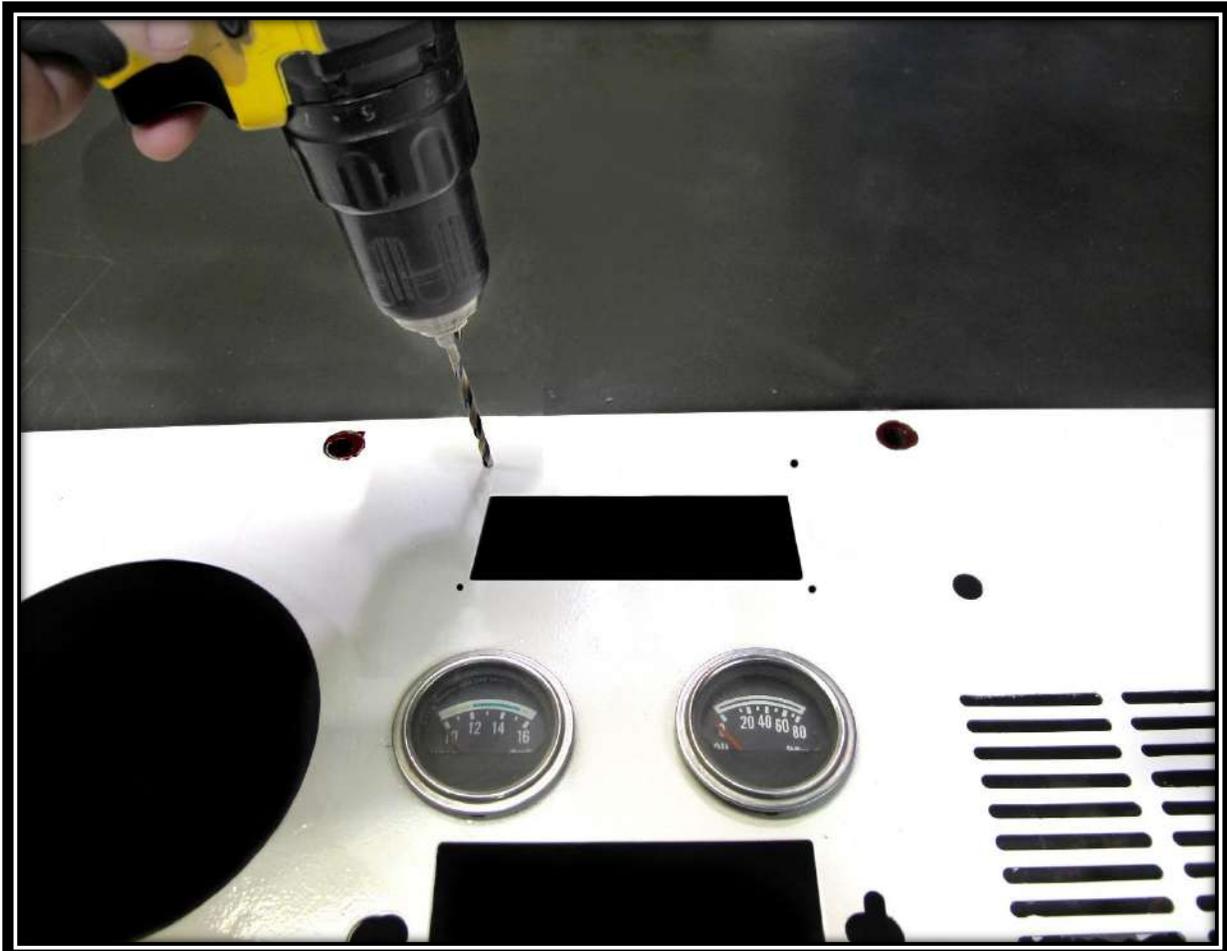
**Step 6:** The Switch Panel has a hole in each corner in order to mount it to your selected surface. As these holes are not likely to exist already, you'll need to drill them out



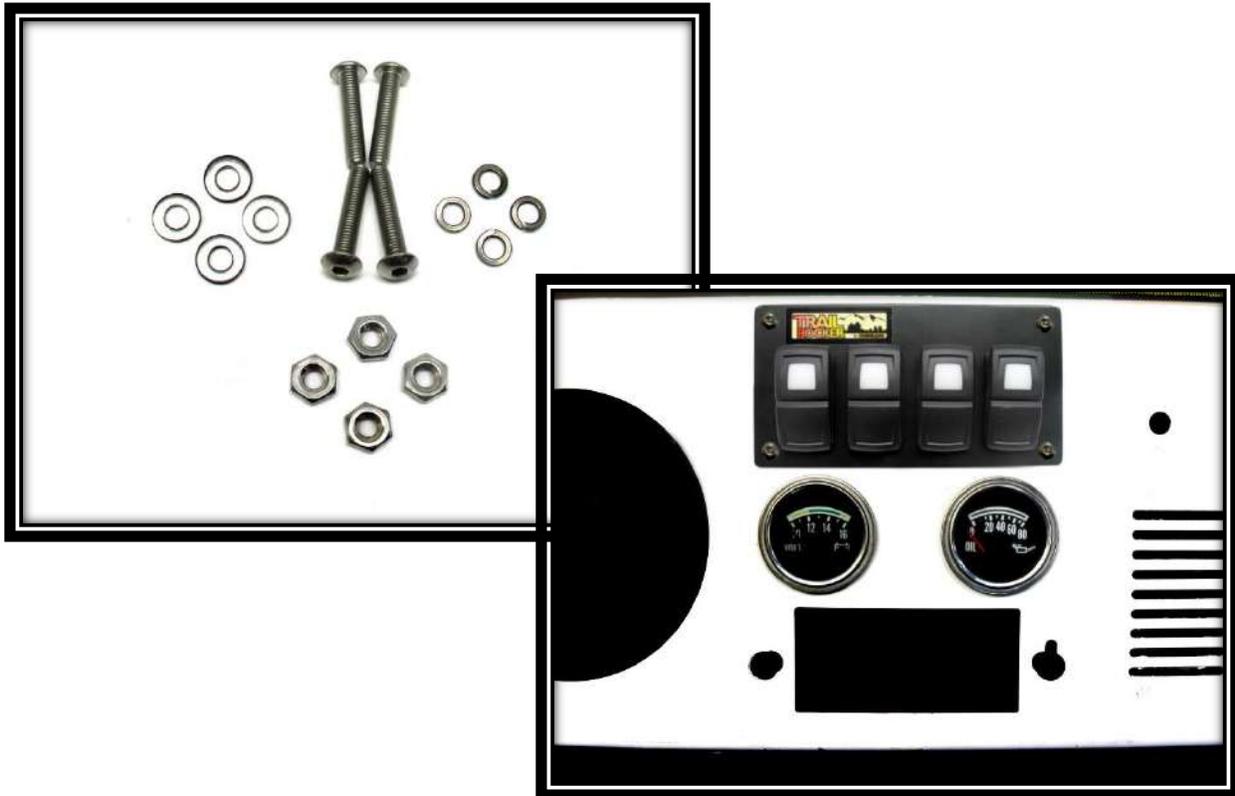
**Step 7:** Put the **Switch Panel** in place on the mounting surface, and use a sharpie to mark your drill points.



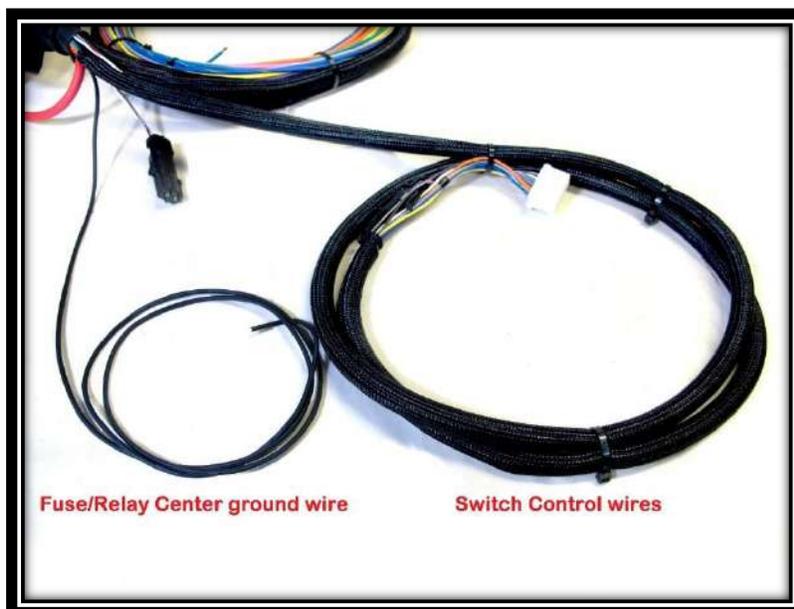
**Step 8:** Remove the **Switch Panel** and use a  $\frac{5}{32}$ " drill bit to create the (4) mounting holes.



**Step 9: Put Trail Rocker Switch Panel back in place and secure it to the mounting surface using (4) #10 lock washers, (4) #10 flat washers, (4) 10 – 32 hex nut, and (4) 10 – 32 x 1” button head screws. Use the small hex key provided in the parts kit and a 3/8” wrench to tighten the bolts down.**



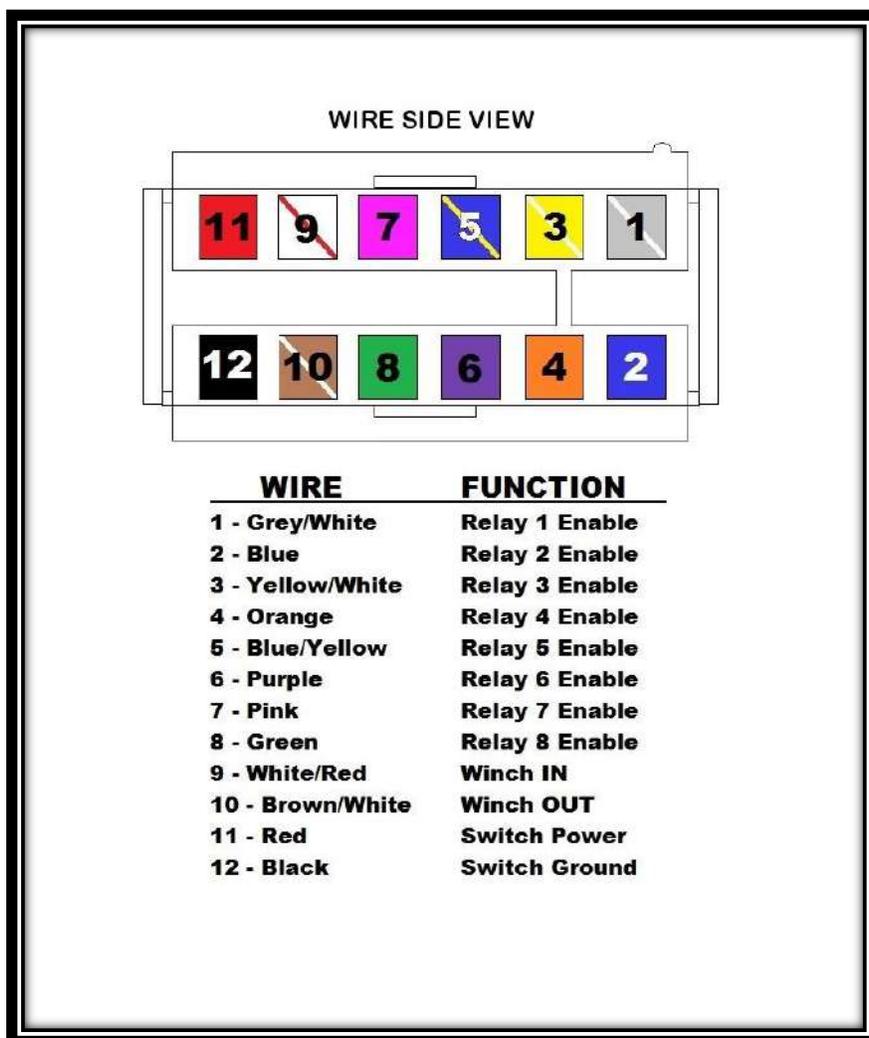
**Step 10: Route the Switch Panel Wires to the Switch Control Wires coming from your Trail Rocker Fuse/Relay Center\*. A 12-pin connector housing and terminals are provided in the parts kit in order to connect to these wires.**



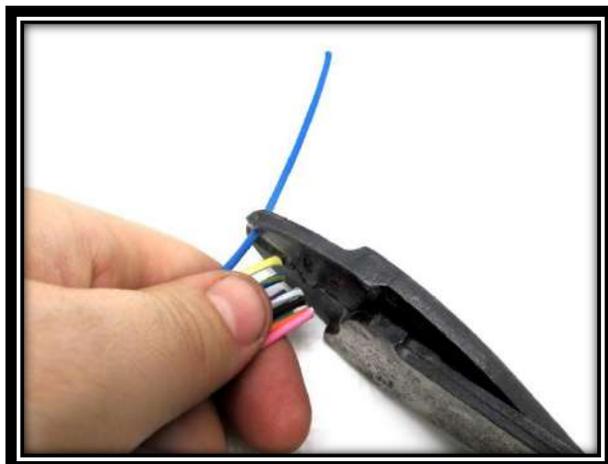
**\*Trail Rocker**  
**Fuse/Relay Center**  
**Part Numbers:**

1. Universal – 57100
2. Jeep CJ – 57024
3. Jeep TJ – 57042
4. Jeep JK – 57005

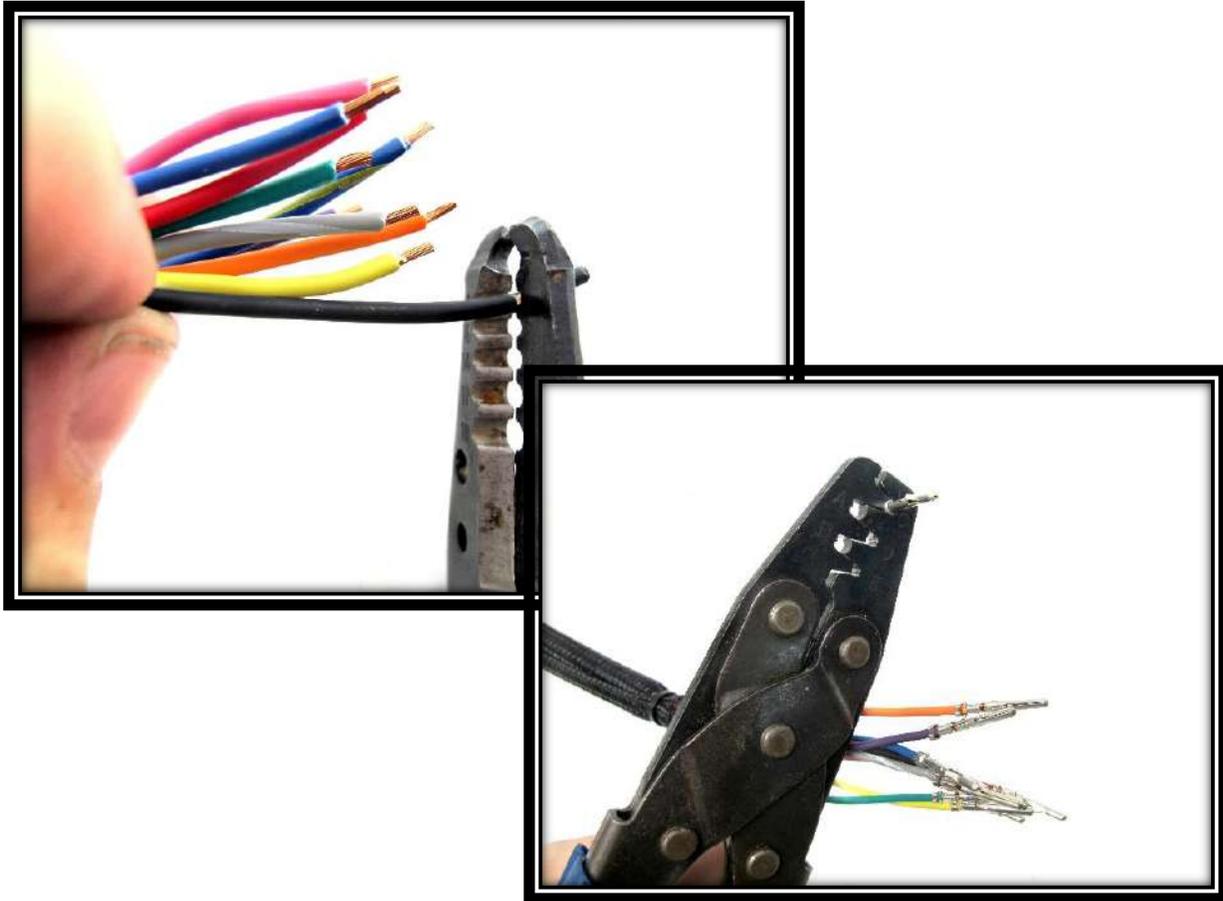
**Step 11:** It may help to familiarize yourself with the wiring diagram below before connecting the wires from the **Switch Panel** to the **12-pin connector housing** in **Step 15**.



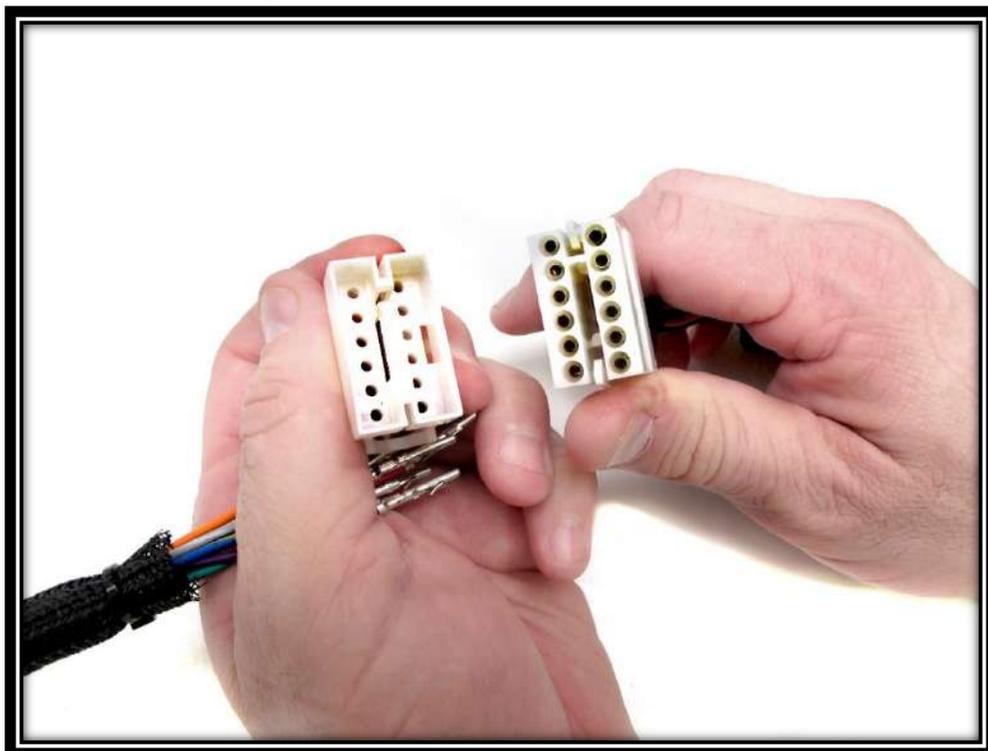
**Step 12:** After routing the **Switch Panel Wires** to the **Fuse/Relay Center's Switch Control Wires**, cut the **Switch Panel Wires** and loom to length. Secure the end of the loom with a zip-tie (provided) or a large piece of heat-shrink (not provided).



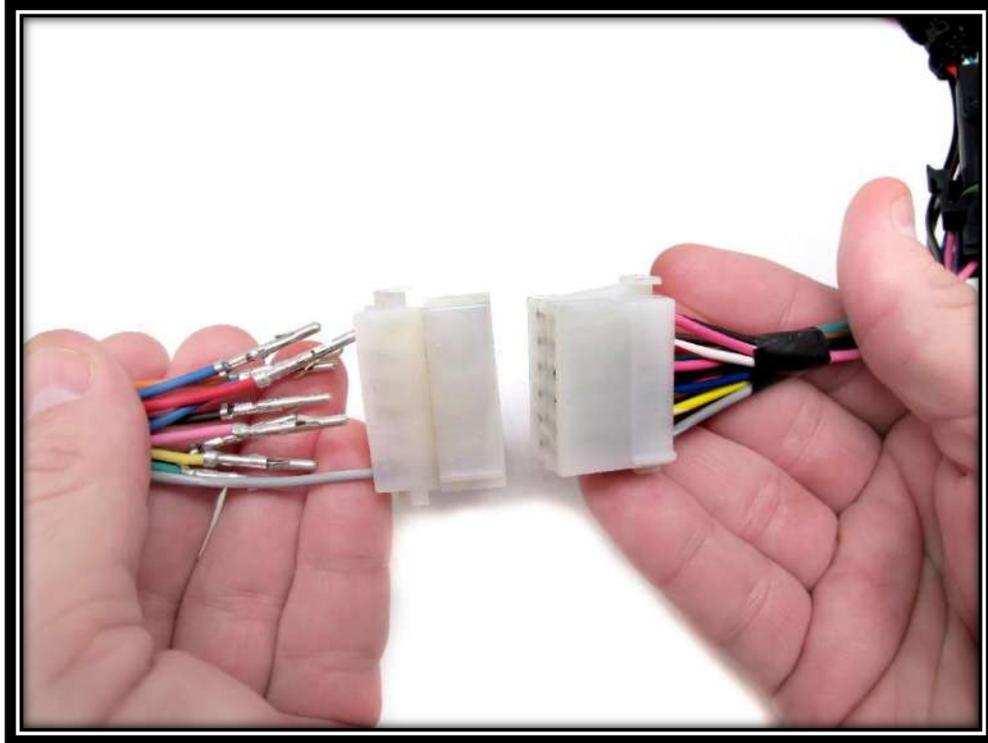
**Step 13:** Strip each of the **Switch Panel Wires**  $\frac{3}{16}$ ", and install a male pin terminal from the parts kit onto the end of each wire. See [page 4](#) for detailed instructions of how to properly crimp these terminals. We recommend [Painless #70900 Roll-Over Crimpers](#).



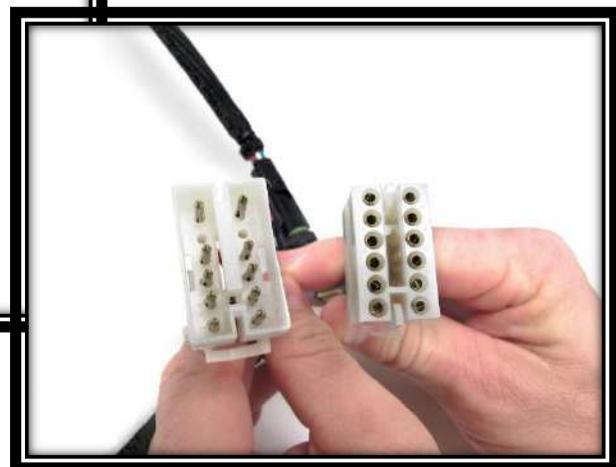
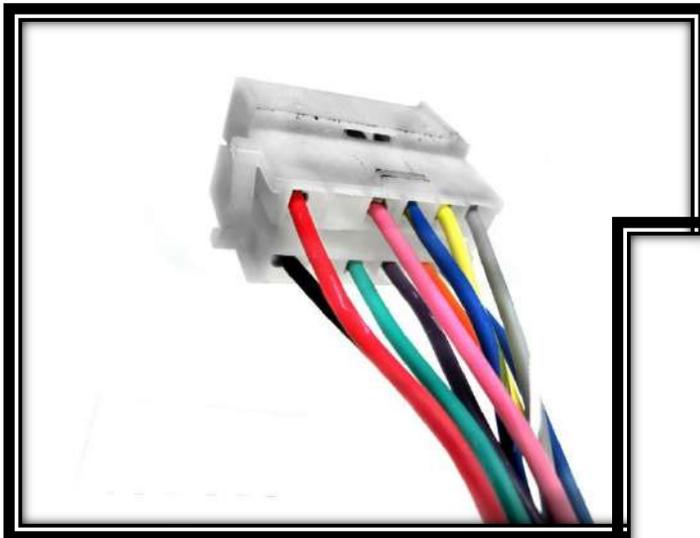
**Step 14:** Locate the **12-pin connector housing** included in the parts kit. Note the locating tab for orientation.



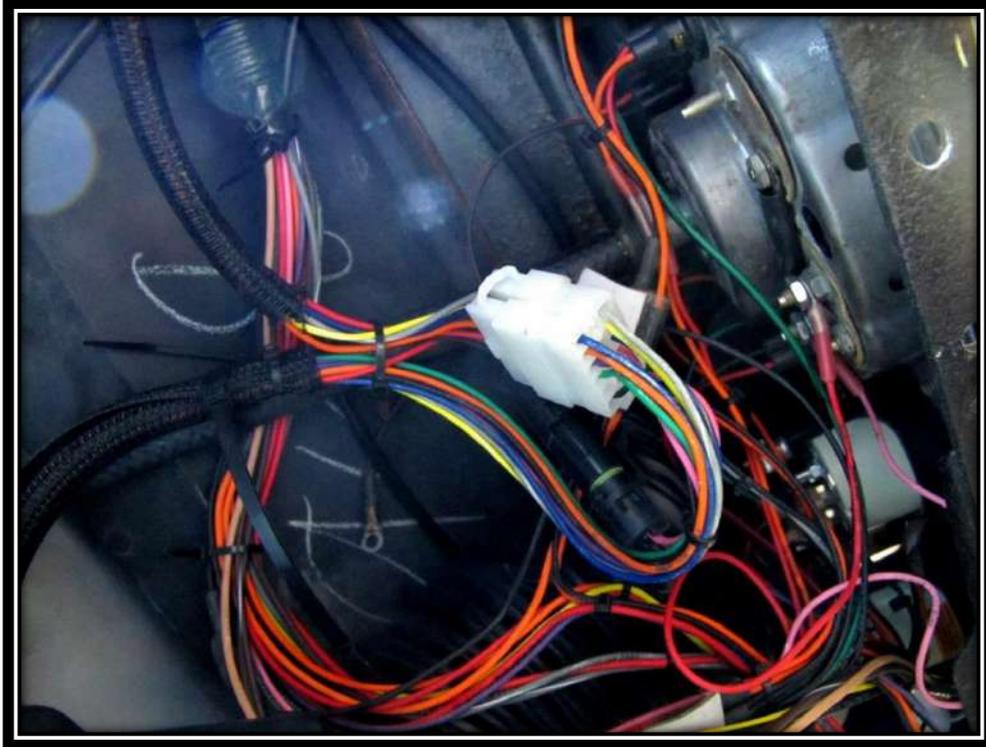
**Step 15:** Insert the newly pinned wires into the **12-pin connector housing**. Make sure, while inserting the pins, that once connected the wire matches the one across from it. The diagram on [page 11](#) illustrates the pinout of the **12-pin connector housing** from the wire side.



**Step 16:** Once completed, the connector should appear as it does below. The 2 empty cavities are for optional winch wires (see [page 17](#)).

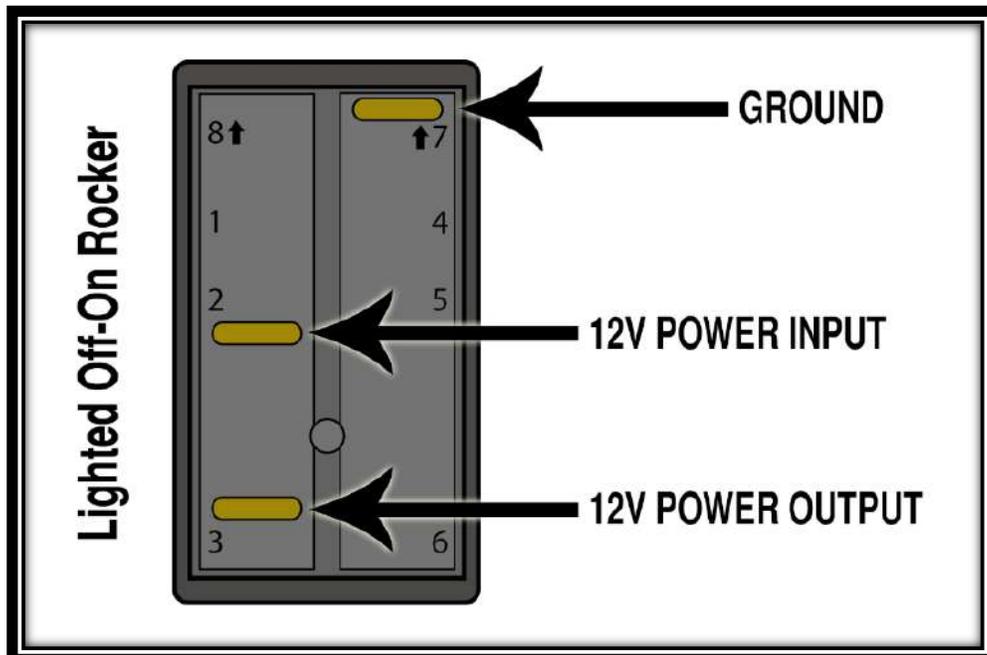


**Step 17:** Link the two connectors and join the wiring harness from the Fuse/Relay Center to the Switch Panel. Use zip-ties to secure the wires up under the dash and out of the way.



## **SWITCH WIRING**

The lighted rocker switches included in your kit are wired as shown in the diagram below.

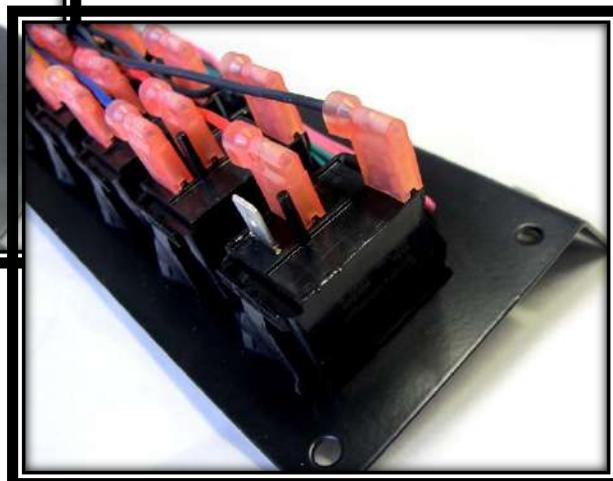
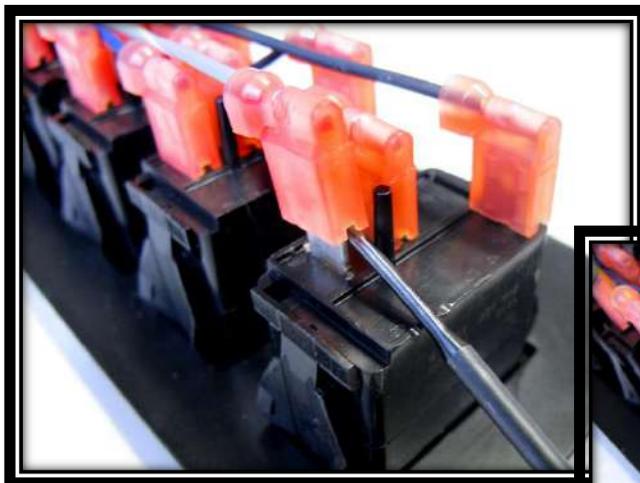


## DOUBLING SWITCH CONTROL WIRES

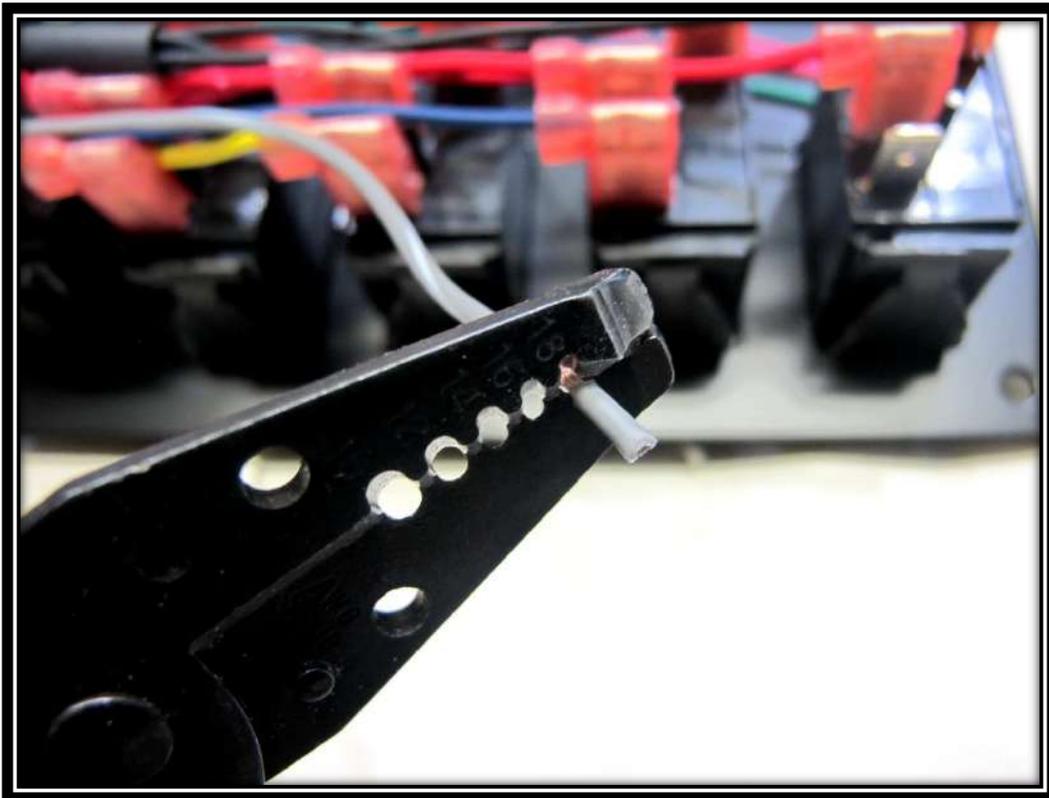
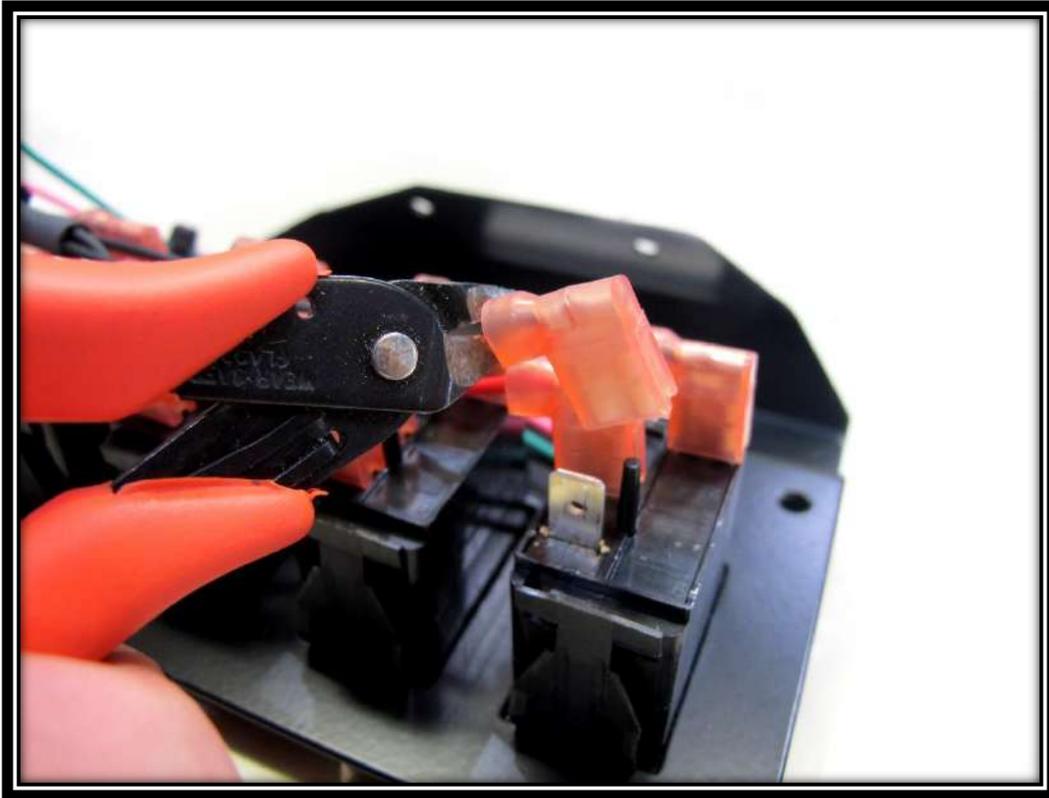
The Trail Rocker Fuse/Relay Center is capable of supporting 8 different accessories. Those who purchased a 4 or 6-switch panel may wish to control multiple accessories with a single switch. Steps 18 – 21 are optional and only for those who wish to control multiple functions for one switch. Provided in the kit are extra Switch Panel wires and some 16ga. – 14ga. terminals, similar to those shown below.



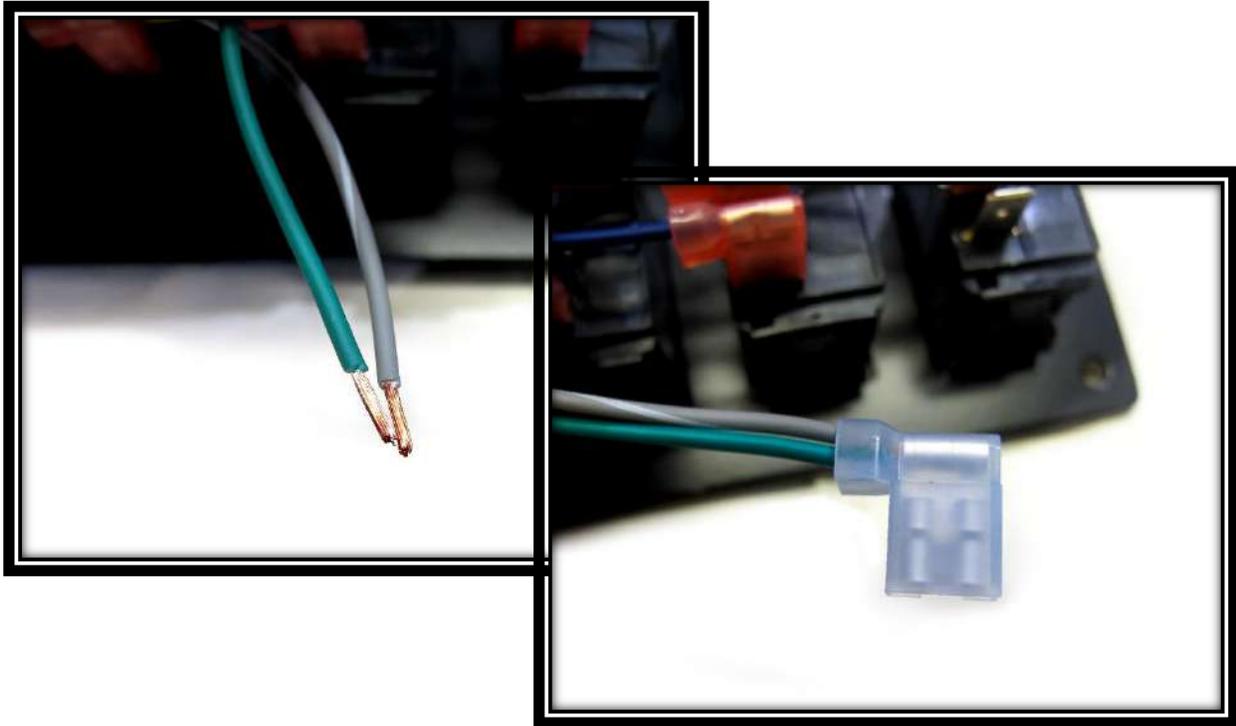
**Step 18:** Choose which switch you want to control multiple functions with, and disconnect the existing Switch Panel wire from the terminal on the bottom of the switch (terminal #3).



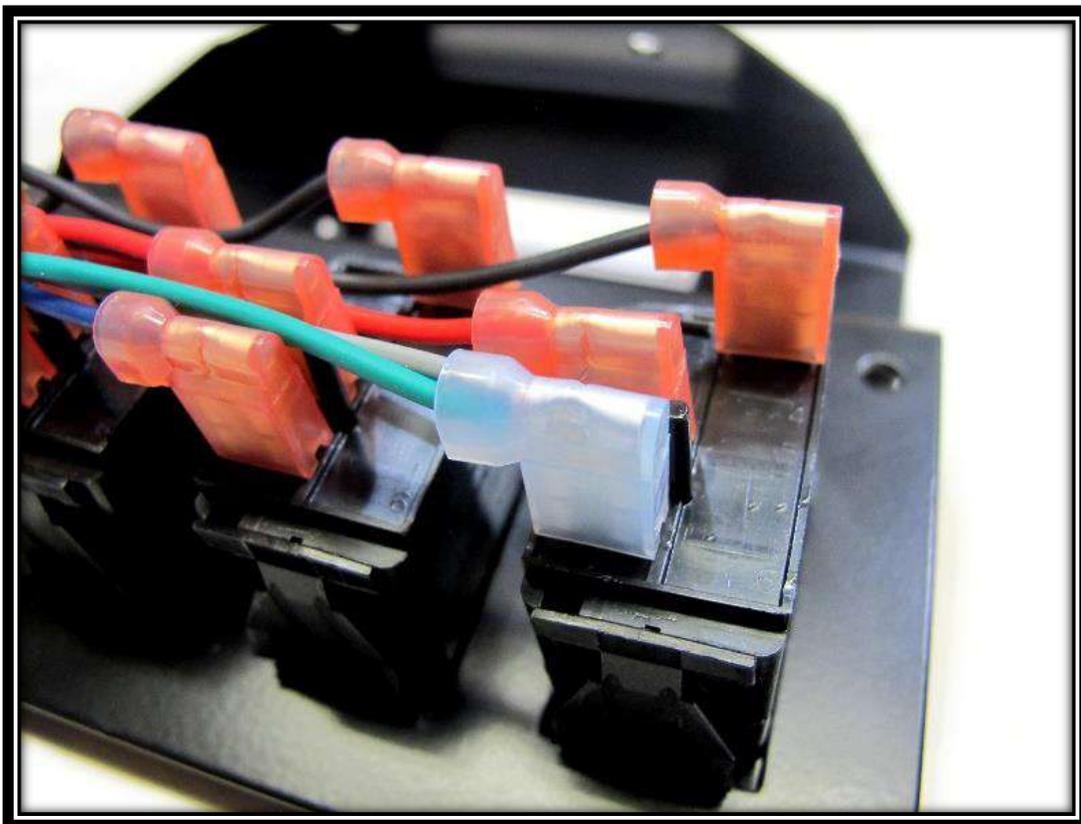
**Step 19:** With the **Switch Panel** wire removed from the switch, cut off the terminal, and strip the wire  $\frac{1}{4}$ ".



**Step 20:** Take the **Switch Panel** wire you just stripped and one of the additional **Switch Panel** wires included in the kit; then slide them together into a **16-14 ga. terminal** provided in the included parts kit.



**Step 21:** With both wires inside, crimp the terminal, and reconnect the doubled **Switch Panel** wires to the switch.



## **OPTIONAL: PAINLESS PART#: 57150 –**

### **WINCH CONTROL ADD-ON KIT**

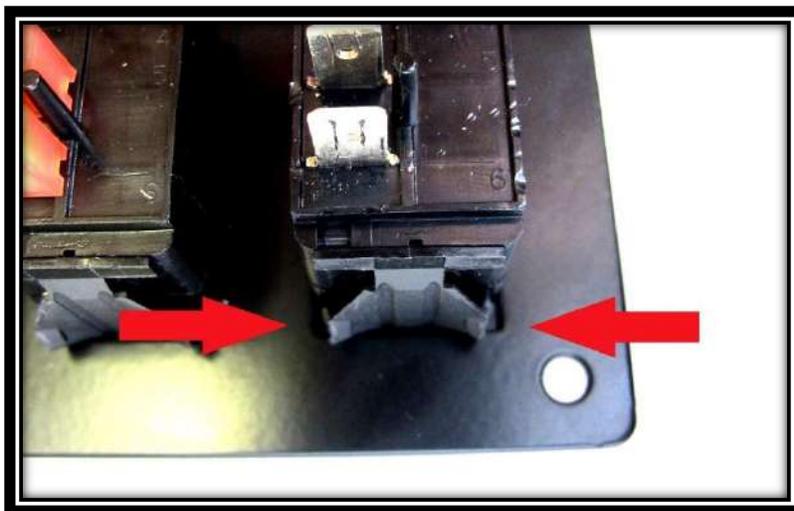
Separate from your **Switch Panel wiring harness**, there are 2 optional winch control wires: a **WHITE/RED (IN)** and a **BROWN/WHITE (OUT)**. These wires control the in and out functions of a winch when they are installed.



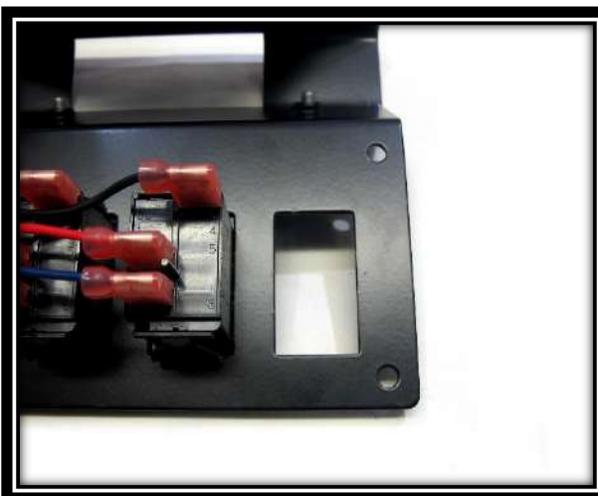
These control wires can be connected to a on-off-on, momentary contact, SPDT switch or a winch switch (not provided in the kit). **Steps 22 - 27** show you how to install a **Winch Control Add-on Kit** to your **Trail Rocker Switch Panel** and connect the control wires to the switch. The SPDT Wiring diagram on [page 19](#) will show how to connect to a standard SPDT switch.



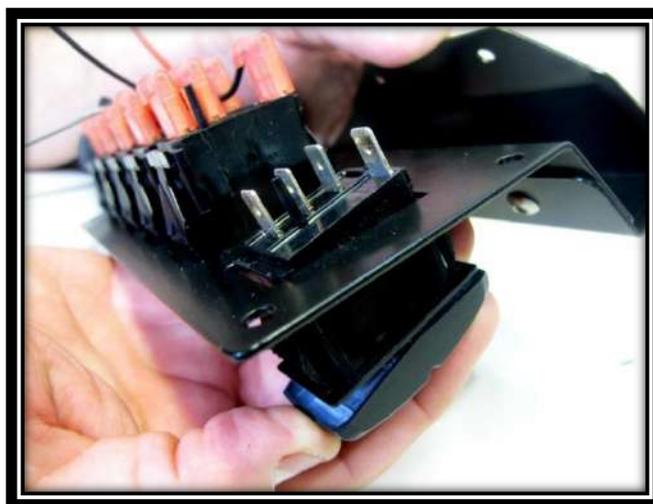
**Step 22:** Remove the switch panel faceplate, power, and ground wires from the switch you are replacing with the **Winch Control Add-on Switch**. Then, locate the tabs located at the top and bottom of the switch.



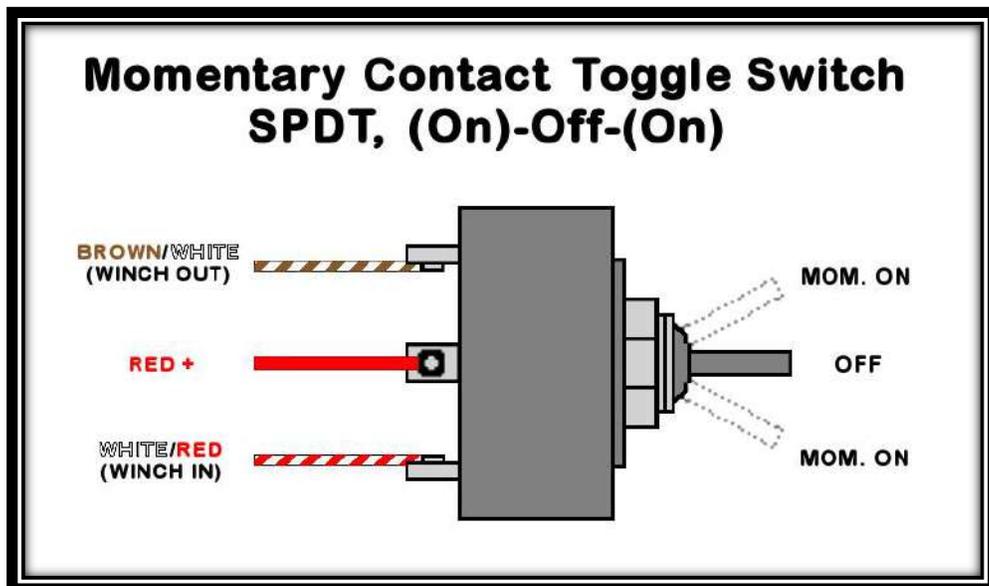
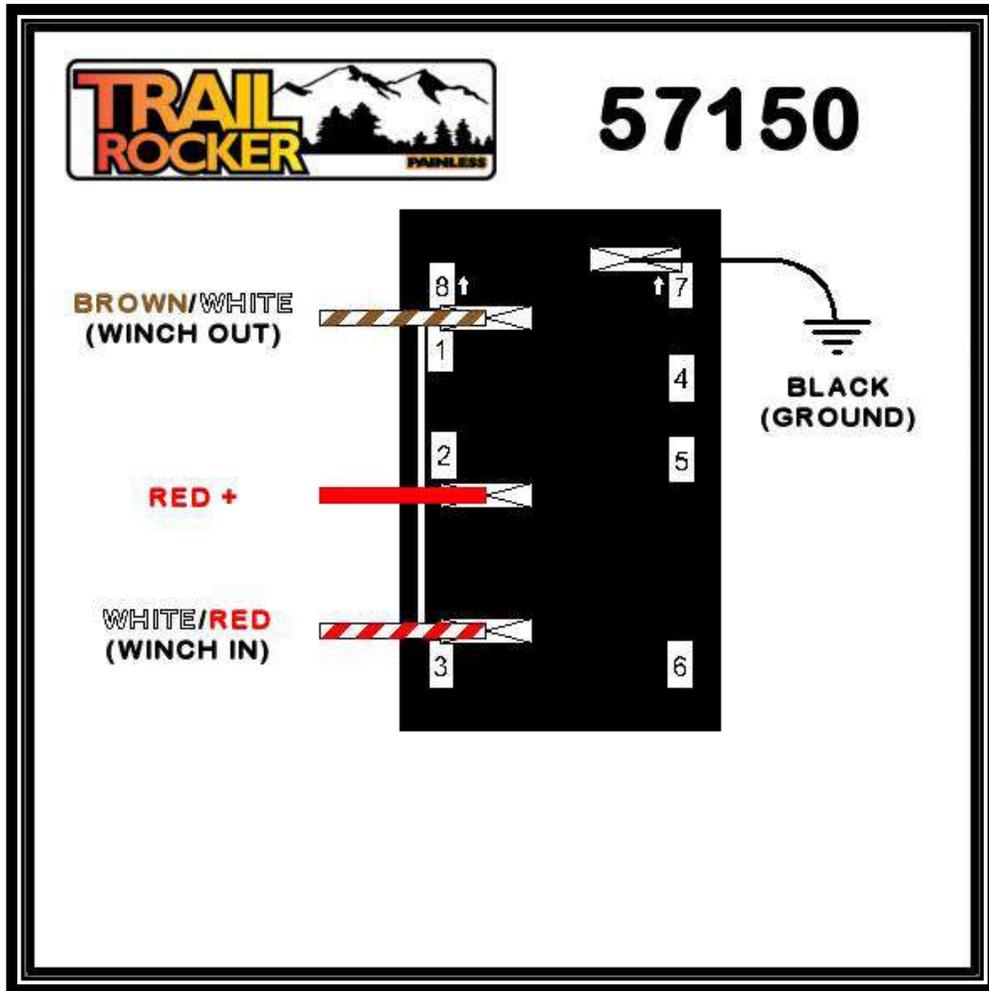
**Step 23:** These tabs lock the switch in place. To remove the switch, squeeze the tabs in and slide it out of the bracket.



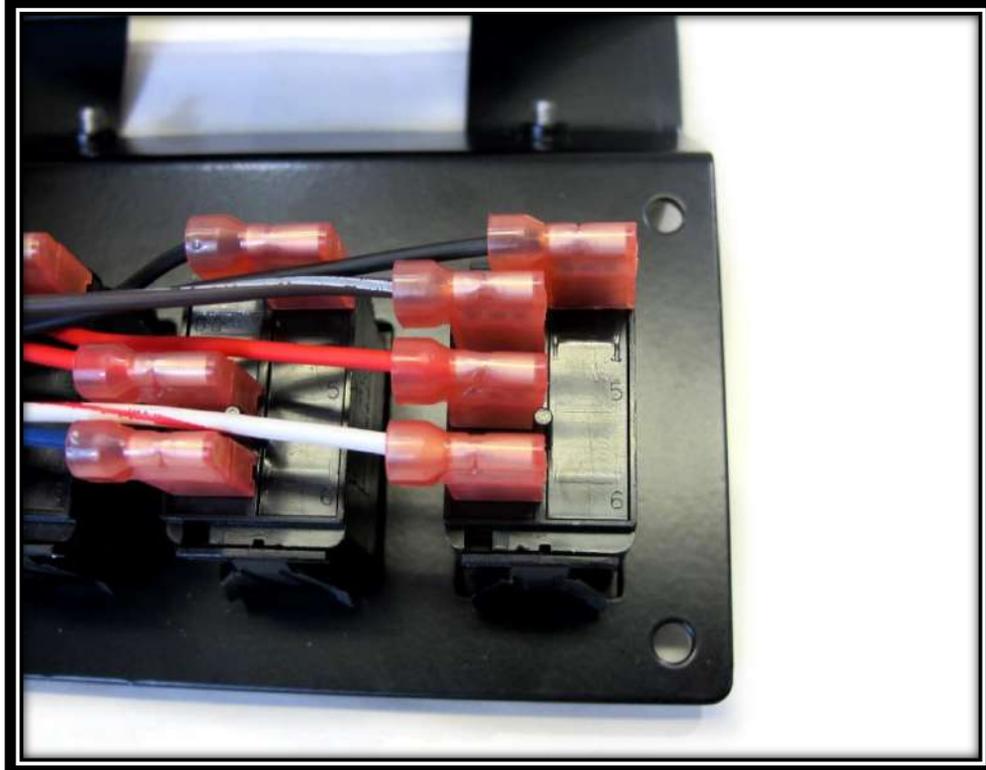
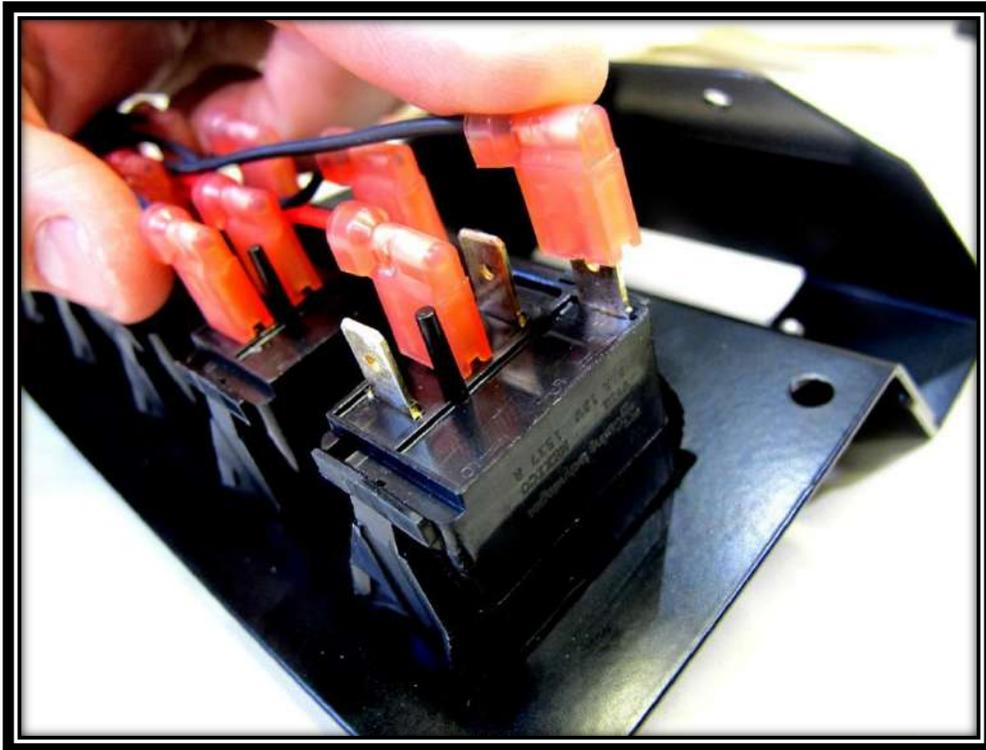
**Step 24:** Insert the **Winch Control Add-on Switch** into the empty socket of the bracket.



**Step 25:** Before connecting the wires to the **Winch Control Add-on Switch**, take time to familiarize yourself with the wiring diagram below.



**Step 26: Reconnect the power, ground, and Switch Panel wires to the Winch Control Add-on Switch as seen below.**



**Step 27:** Strip and terminate the other ends of the wire as you did in Steps 13 – 15. And insert the **WHITE/RED** into slot **#9** of the **12-pin connector shell** and the **BROWN/WHITE** into slot **#10**.

