

# **PAINLESS**<sup>®</sup>

## **PERFORMANCE PRODUCTS**

### **Trail Rocker Installation**



## **Instructions**

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

**w/ 1 5/8" & 1 3/4" Roll Bar Straps**

**For Installing Painless Part Number: 57102, 57105, & 57108**

**Manual #90635**

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





## **Painless Performance Products, LLC**

**2501 Ludelle Street**

**Fort Worth, TX 76105-1036**

**800-423-9696 phone – 817-244-4024 fax**

**Web Site: [www.painlessperformance.com](http://www.painlessperformance.com)**

**E-Mail: [painless@painlessperformance.com](mailto:painless@painlessperformance.com)**

If you have any questions concerning the installation of this product, feel free to call **Painless Performance Products'** tech line at 1-800-423-9696. Calls are answered from 8am to 5pm central time, Monday thru Thursday, 8am-4:30pm Friday, except holidays.

Here we have provided you with accurate instructions for the installation of this product. However, if you have comments/suggestions concerning these instructions, please call or email us (our contact information can be found at the top of this page or online at [www.painlessperformance.com](http://www.painlessperformance.com)). We sincerely appreciate your business.

**Painless Performance Products, LLC** shall in no event be liable in contract or tort (including negligence) for special, indirect, incidental, or consequential damages, such as but not limited to, loss of property, or any other damages, costs or expenses which might be claimed as the result of the use or failure of the goods sold hereby, except only the cost of repair or replacement.

**Should you damage or lose part of your manual, a full color copy of these instructions can be found online at [www.painlessperformance.com](http://www.painlessperformance.com)**

Installation Manual: **90635**

**1<sup>st</sup> Edition: Feb 2018**

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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. If you find that anything is missing or damaged, please contact the dealer where you obtained the kit or Painless Performance at (800) 423-9696.

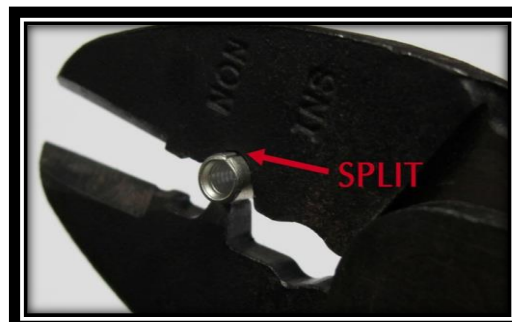
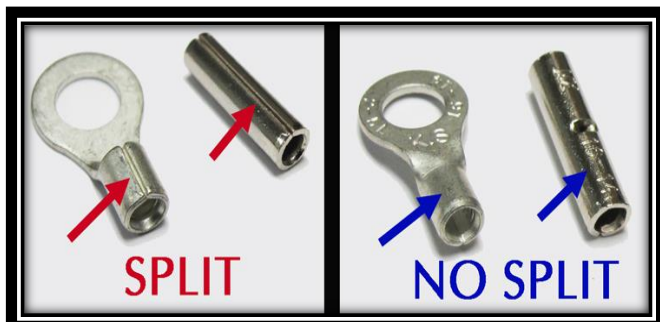
## The Painless Trail Rocker Kit should contain the following:

- 4, 6, or 8-Switch Customizable Trail Rocker Switch Panel.
- Powder-coated Switch Panel Box
- Roll Bar Straps: (2) 1 5/8" & (2) 1 3/4"
- Parts Kits
- Pre-Terminated Winch Wires.
  - 4 & 6 Switch Kits ONLY: Additional switch wires
- This manual: 90639



## 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

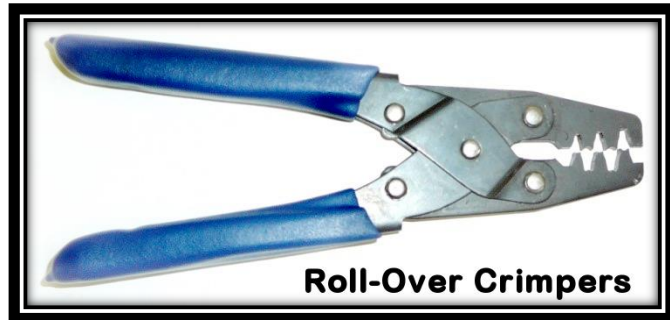
This installation primarily requires only basic hand tools that may include, but are not limited to:

1.  $\frac{7}{16}$ " combination wrench
2.  $\frac{7}{16}$ " socket and ratchet
3. Wire cutter / "dikes"
4. **Wire Crimping and Stripping Tools:**

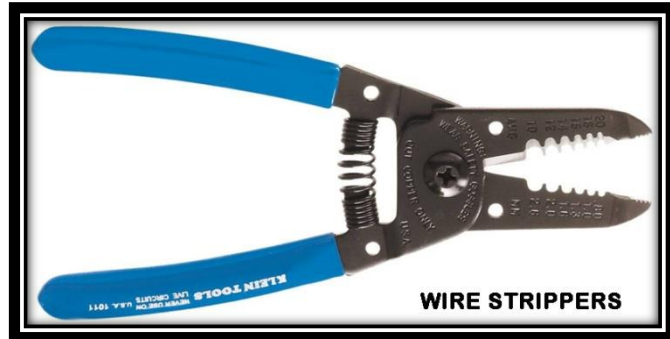
This style of hand crimper can be purchased from just about any local auto parts store, home improvement store or can also be purchased online. You will need this style of crimper to crimp the heat shrinkable and non-heat shrinkable, insulated terminals included in the small parts kit.



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:

**5. Electric Drill & Drill Bits:**

1. Electric Power Drill (suggest battery powered cordless for ease and maneuverability)
2. 1/4" drill bit

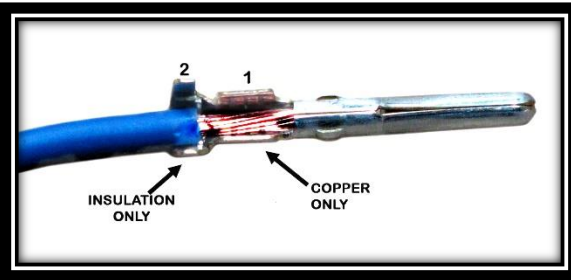
**6. Volt/Ohm Meter:**

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



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

# 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.

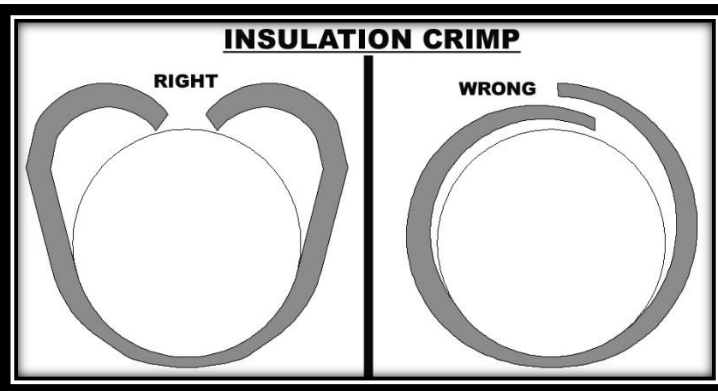
- Strip about  $\frac{3}{16}$ " of insulation off of the wire.



- 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.

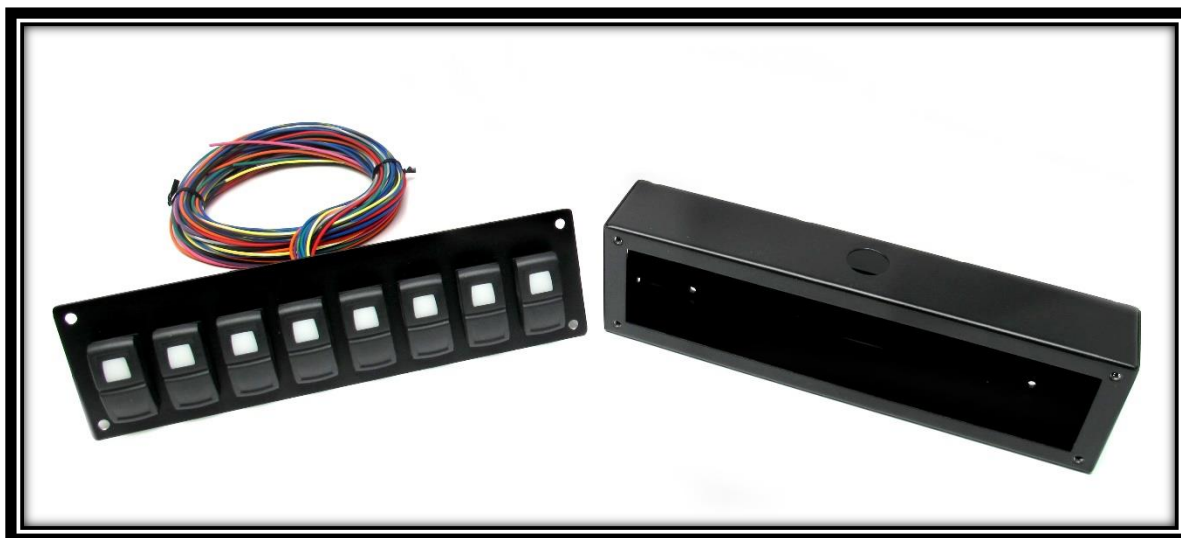


- With Strap 1 crimped, move onto crimping the insulation strap: Strap 2. Place Strap 2 into the appropriate jaw of the crimpers. This jaw will be larger than the one used to crimp the first strap. Crimp down on Strap 2 making sure the strap folds downward into the wire, and not overlapping itself. Refer to the drawing to the left. Overlapping could cause problems with the terminal fitting into the factory connector.



## SWITCH PANEL INSTALLATION

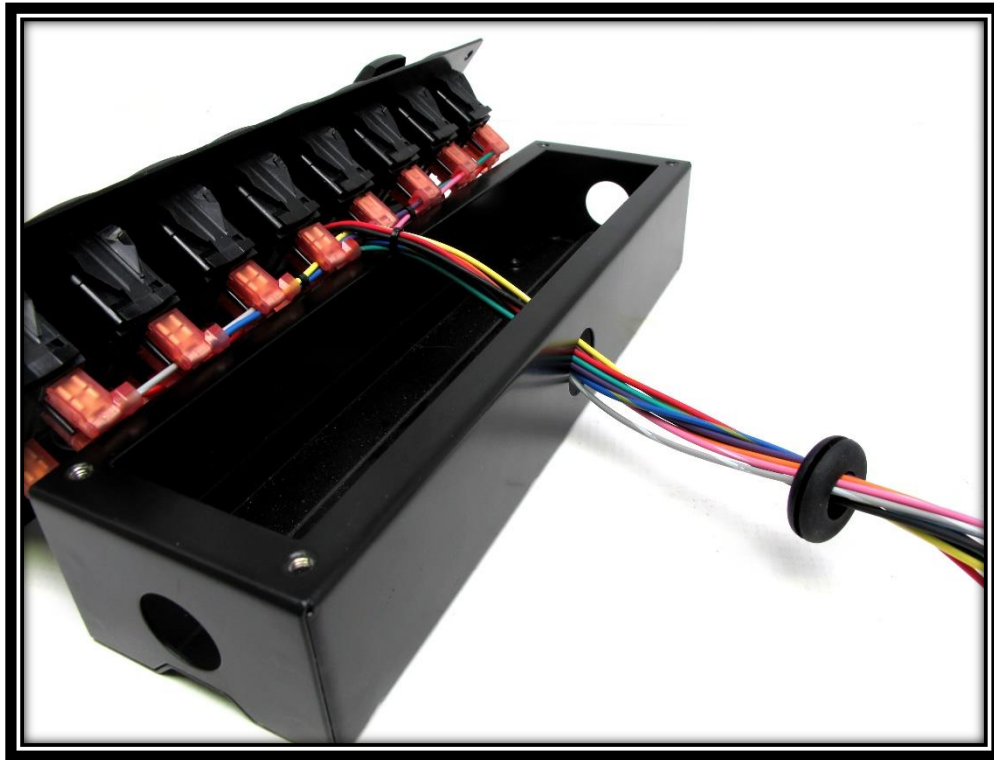
**Step 1:** First, prepare the **Switch Panel** for mounting into the **Switch Panel Box**.



**Step 2:** Now, decide which direction you want to run the **Switch Panel Wires**. The **Switch Panel Box** has 3 holes through which to route the wires.

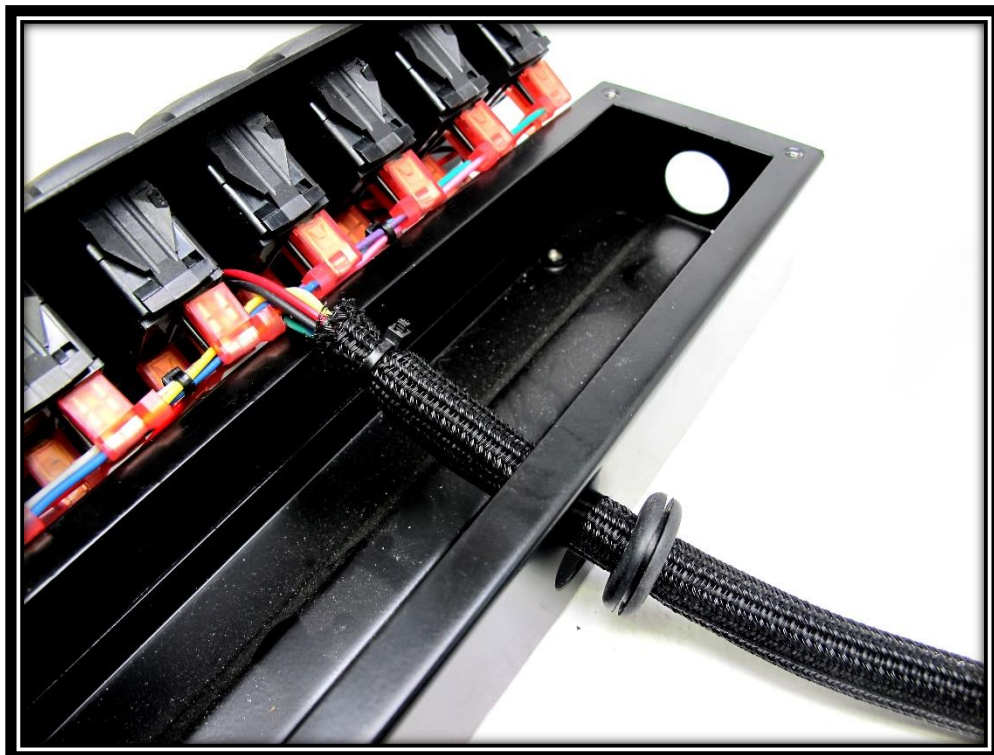


**Step 3: Run the Switch Panel Wires through one of the 3 openings and then through the rubber grommet found in the parts kit.**

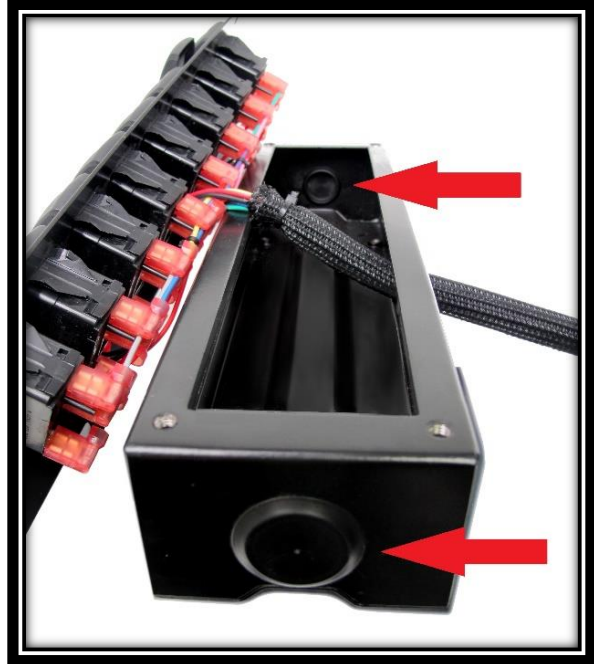


**Step 4: At this point, use the loom provided to cover the Switch Panel Wires. Run the loom over the wire, through the grommet, and into the box. You can secure the end of the loom with a zip-tie.**

**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 inside the base is secure.**



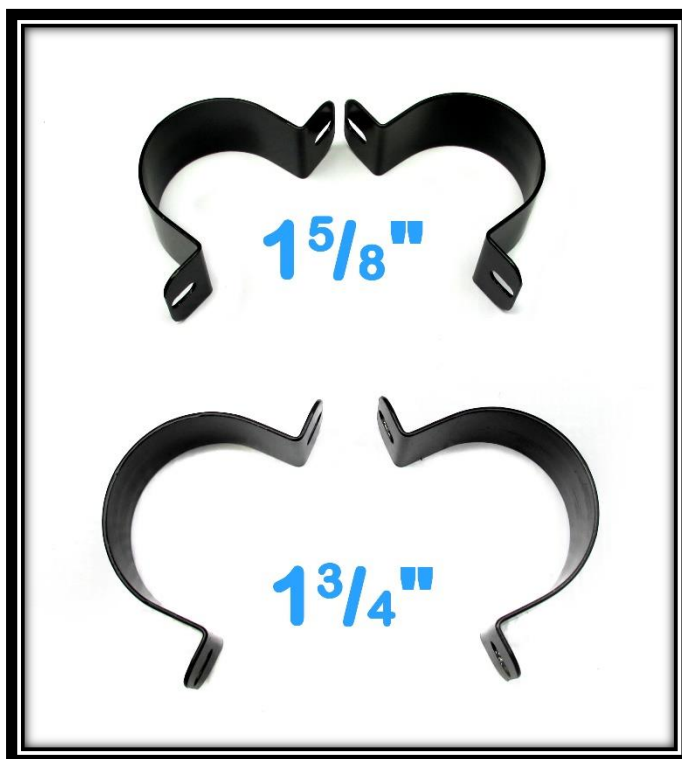
**Step 5:** Place the rubber grommet into the opening. Then, use the (2) **plastic plugs** provided in the parts kit, to close up the remaining holes.



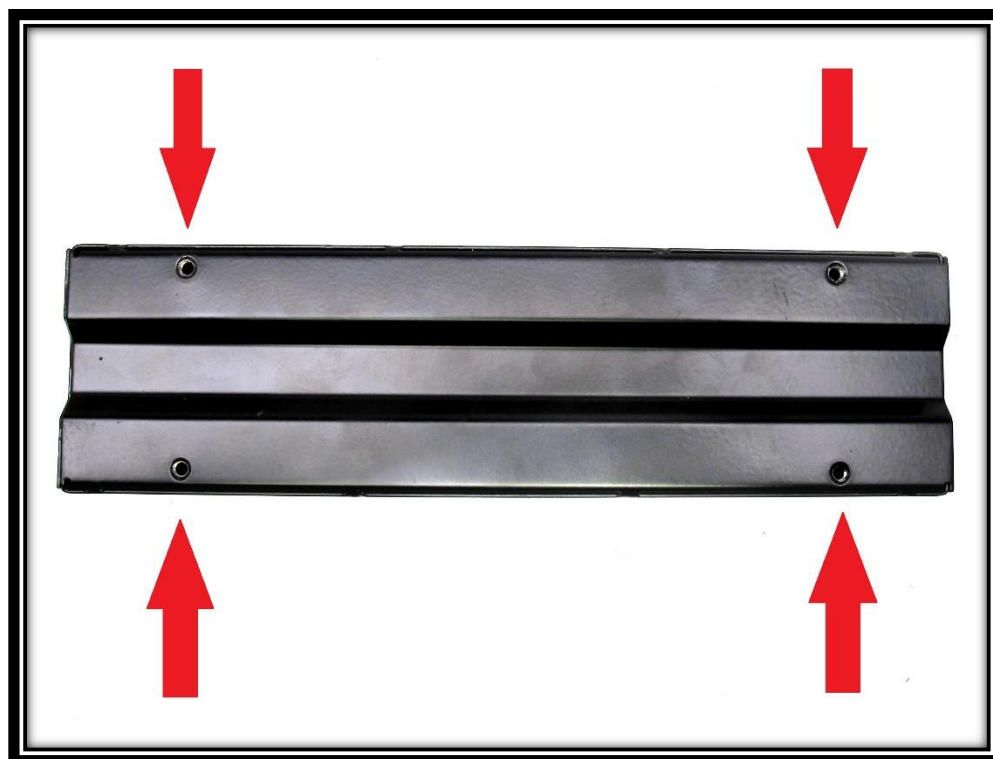
**Step 6:** Make sure the Switch Panel Box is properly covering the back of the Switch Panel, and use (4) **10 – 32 x 3/8” button head screws** and the **small hex key** provided in the parts kit to secure the panel to the box. Remember to start each screw into the threads and tighten evenly.



**Step 7:** Once you've selected where you'd like to mount your Trail Rocker Switch Panel, select the correct size Roll Bar Strap for your roll bar:  $1\frac{5}{8}$ " or  $1\frac{3}{4}$ ".



**Step 8:** Locate the 4 holes on the back of the Switch Panel Box. This is where you'll mount the Roll Bar Straps to the Switch Panel Box.



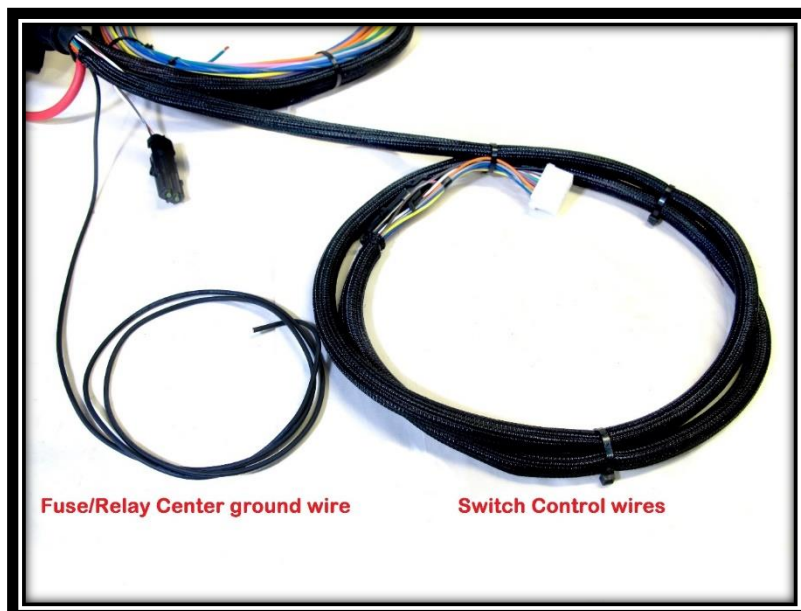
**Step 9:** Then, select **(4) #10 lock washers**, **(4) #10 flat washers**, and **(4) 10 – 32 x 3/8” button head screws** and the **small hex key** provided in order to mount the **Switch Panel**.



**Step 10:** Once, you've selected a spot to mount your **Trail Rocker Switch Panel**, use the hardware to mount the switch panel.

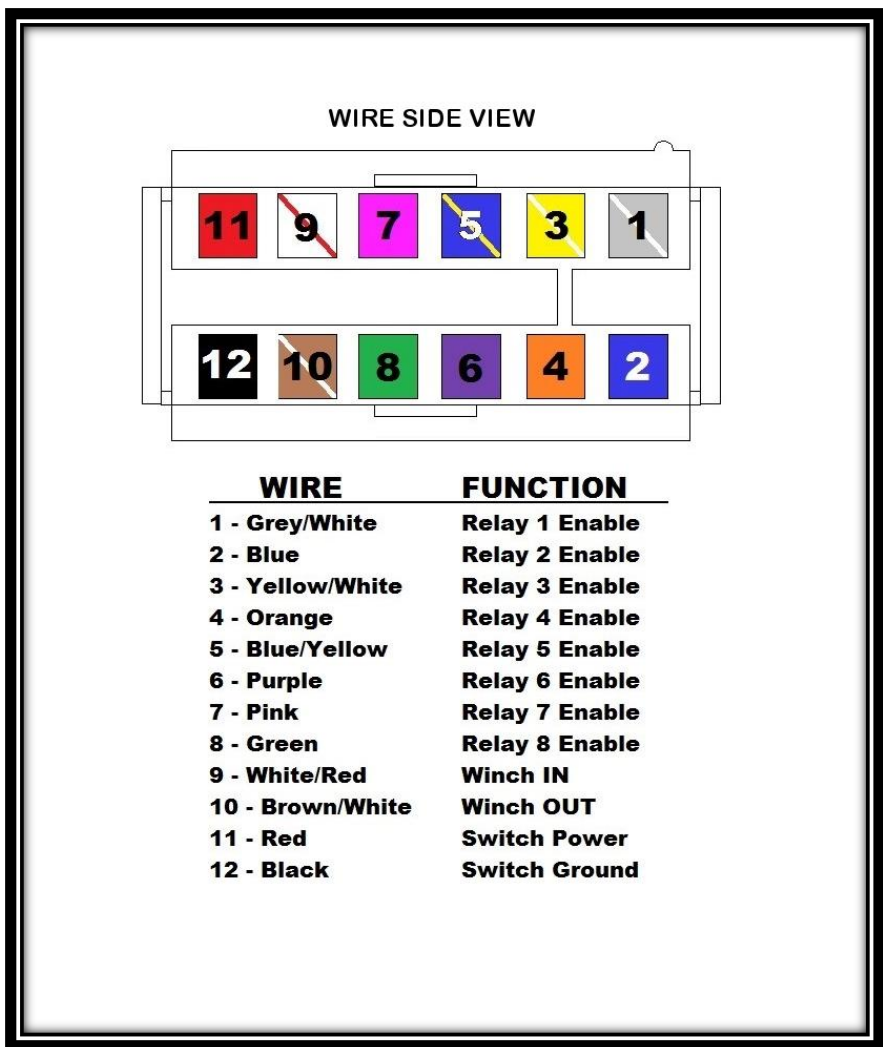


**Step 11: Route the Switch Panel Wires to the Switch Control Wires coming from your Trail Rocker Fuse/Relay Center\*. A 12-pin connector housing and terminals are provided in the parts kit in order to connect to these wires.**

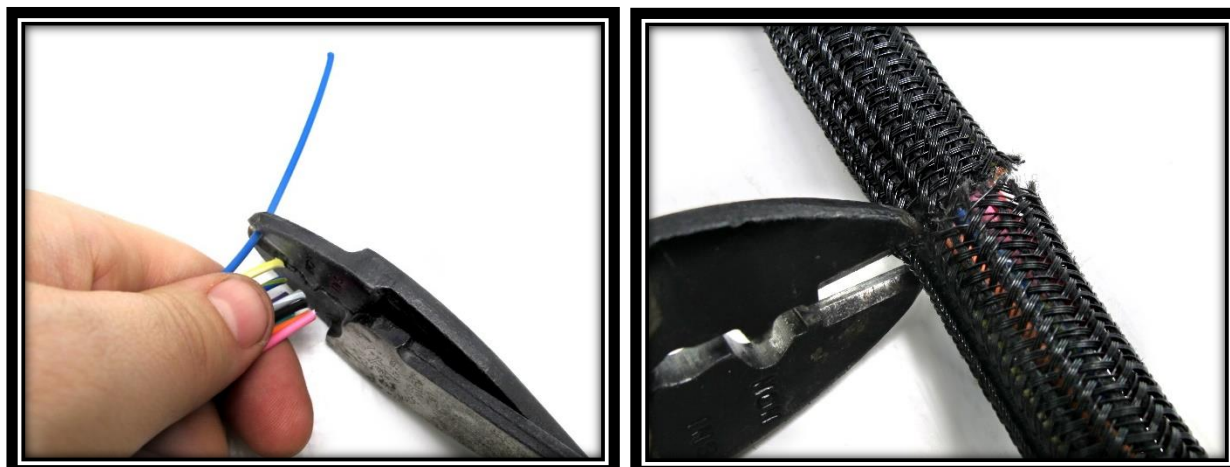


- \*Trail Rocker Fuse/Relay Center Part Numbers:**
1. Universal – 57100
  2. Jeep CJ – 57024
  3. Jeep TJ – 57042
  4. Jeep JK – 57005

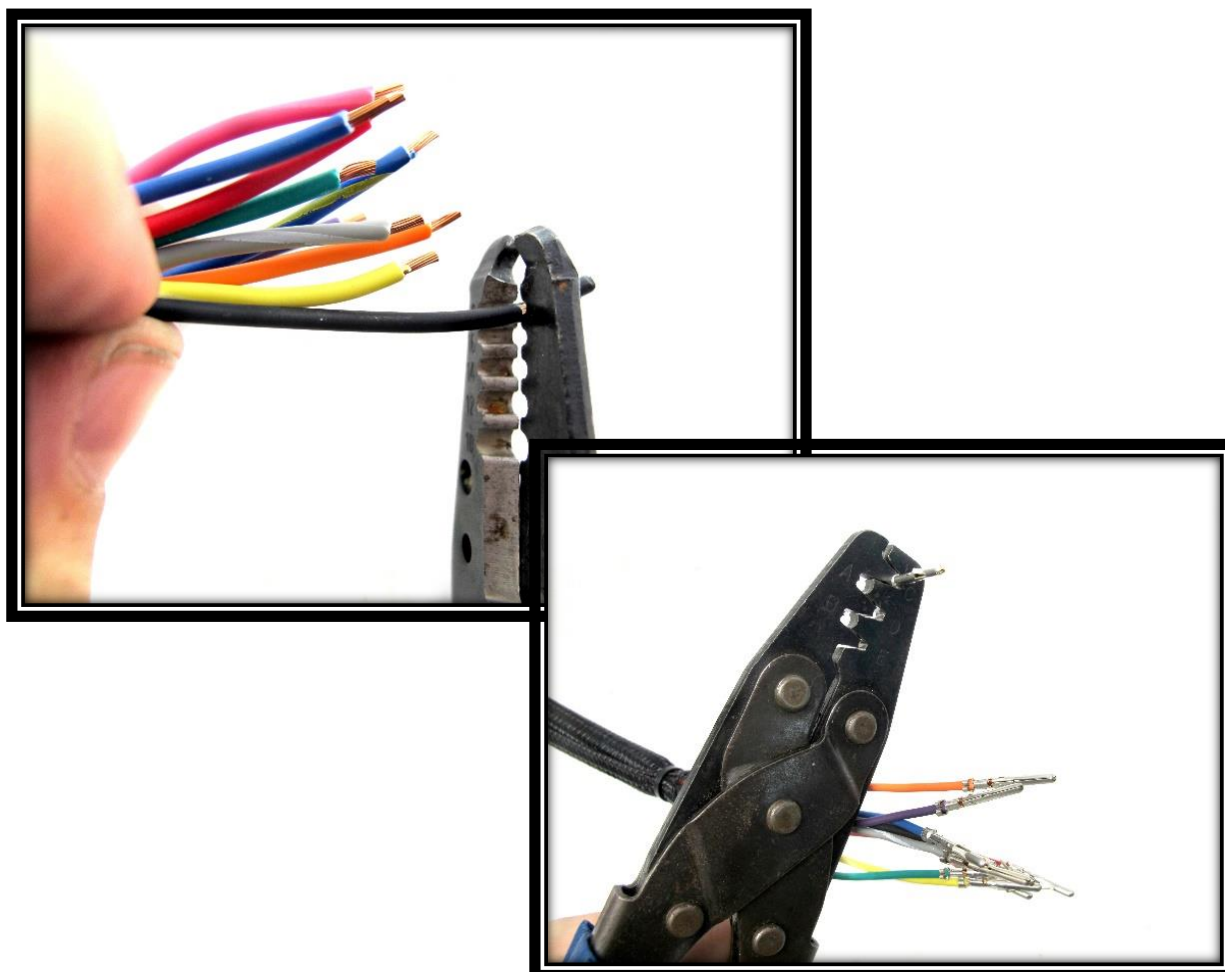
**Step 12: It may help to familiarize yourself with the wiring diagram below before connecting the wires from the Switch Panel to the 12-pin connector housing in Step 16.**



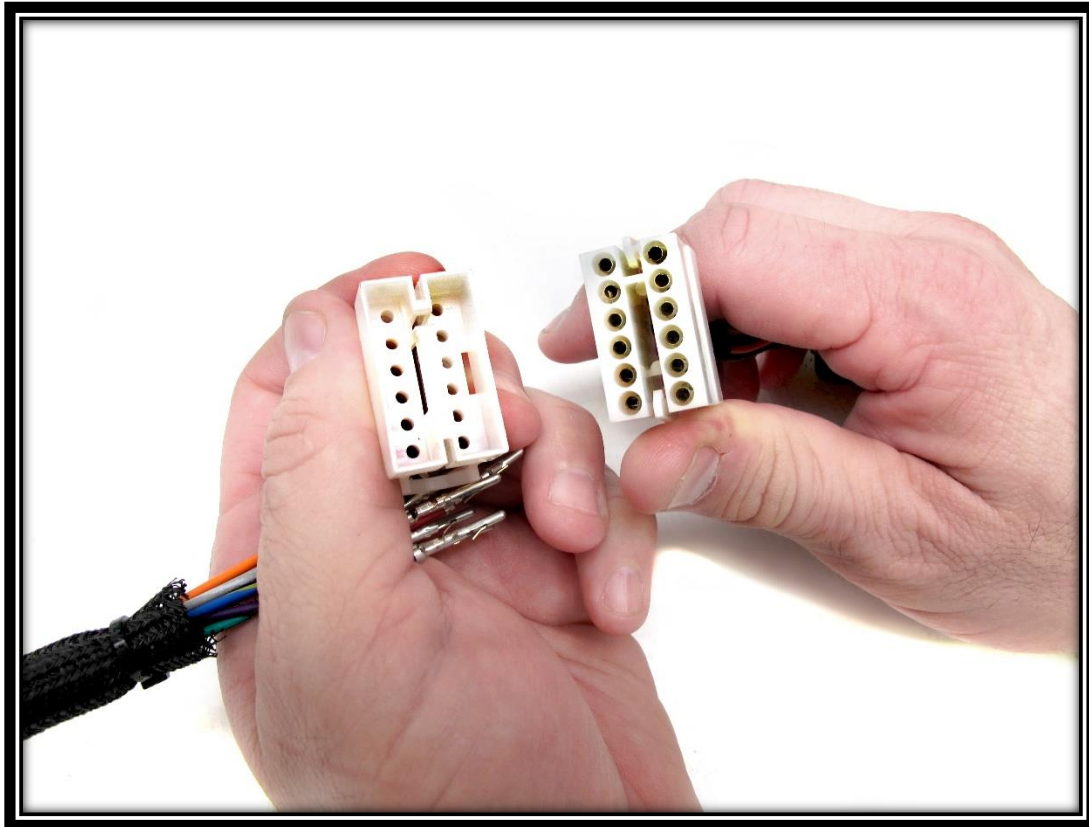
**Step 13:** After routing the **Switch Panel Wires** to the **Fuse/Relay Center's Switch Control Wires**, cut the **Switch Panel Wires** and loom to length. Secure the end of the loom with a zip-tie (provided) or a large piece of heat-shrink (not provided).



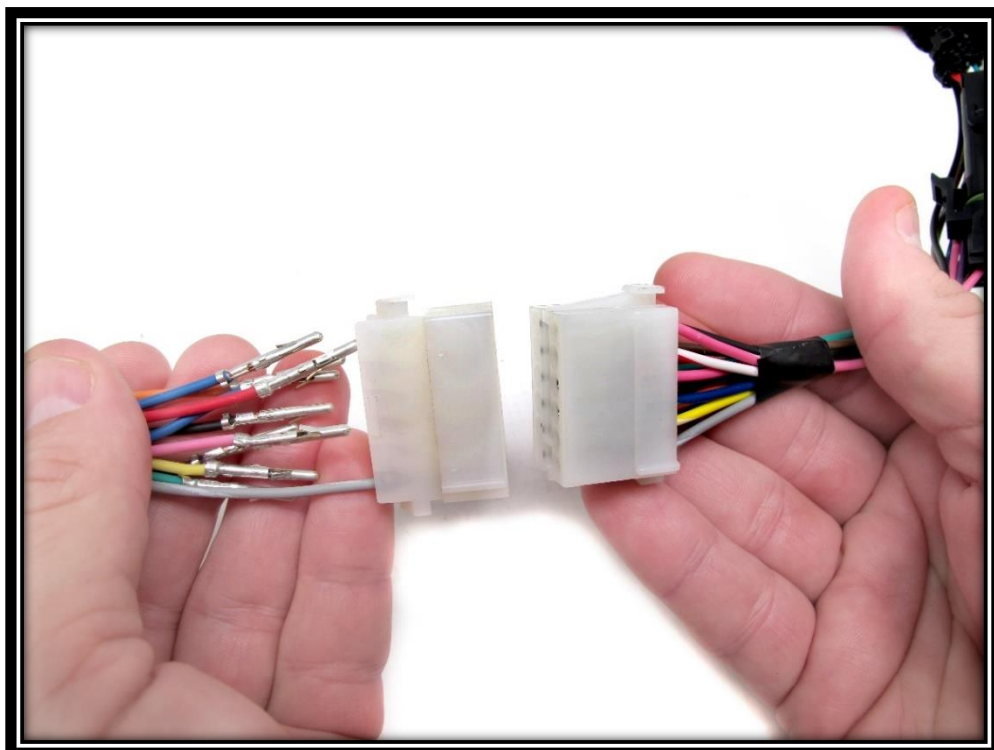
**Step 14:** Strip each of the **Switch Panel Wires**  $\frac{3}{16}$ "', and install a male pin terminal from the parts kit onto the end of each wire. See [page 7](#) for detailed instructions of how to properly crimp these terminals. We recommend [Painless #70900 Roll-Over Crimpers](#).



**Step 15:** Locate the **12-pin connector housing** included in the parts kit. Note the locating tab for orientation.

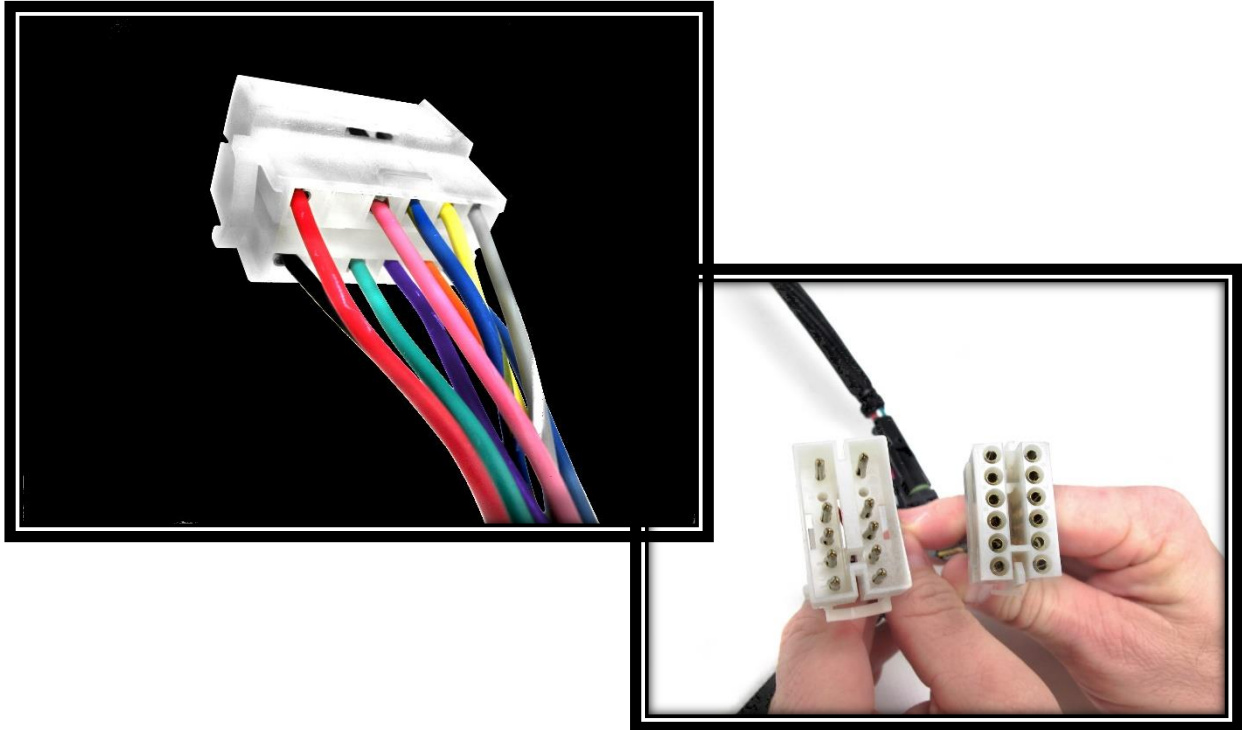


**Step 16:** Insert the newly pinned wires into the **12-pin connector housing**. Make sure, while inserting the pins, that once connected the wire color matches the one across from it. The diagram on [page 13](#) illustrates the pinout of the **12-pin connector housing** from the wire side.

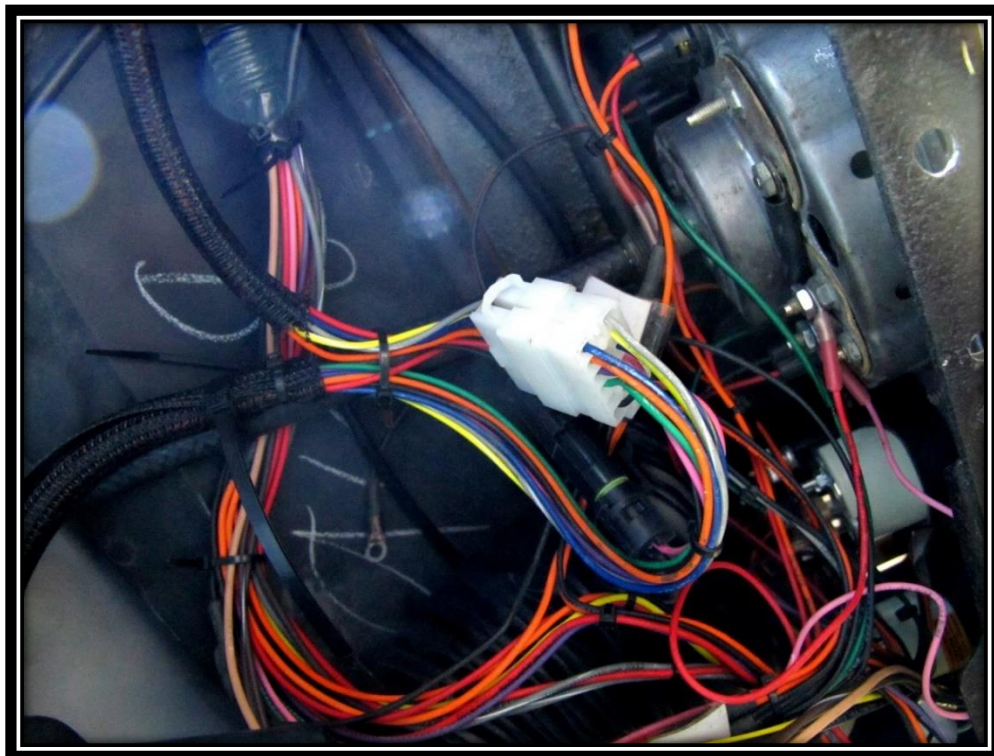




**Step 17:** Once completed, the connector should appear as it does below. The 2 empty cavities are for optional wench wires (see [page 21](#)).

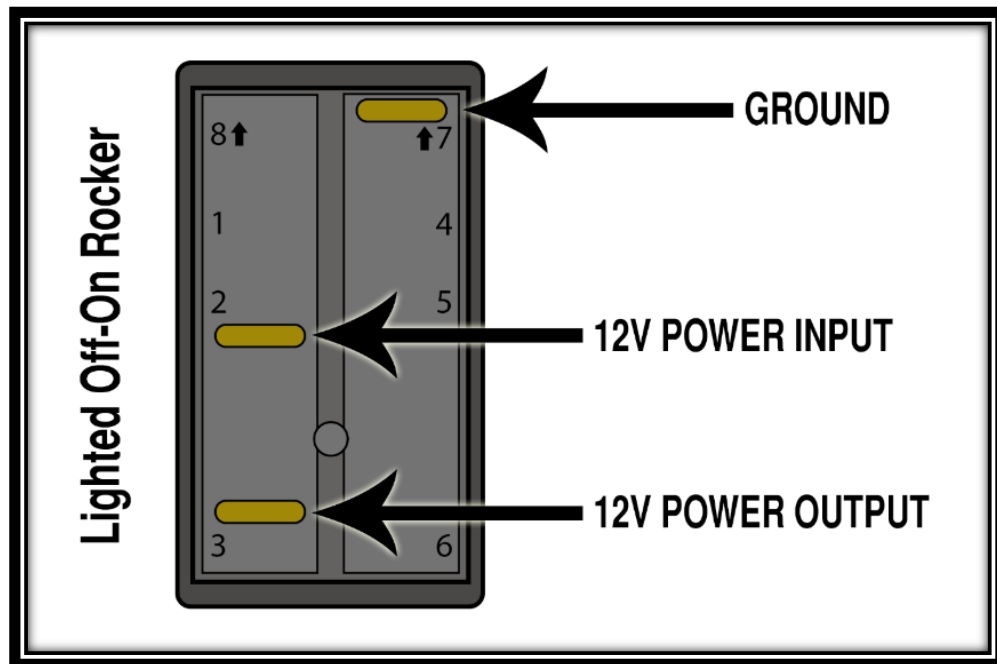


**Step 18:** Link the two connectors and join the wiring harness from the **Fuse/Relay Center** to the **Switch Panel**. Use [zip-ties](#) to secure the wires up under the dash and out of the way.



## SWITCH WIRING

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

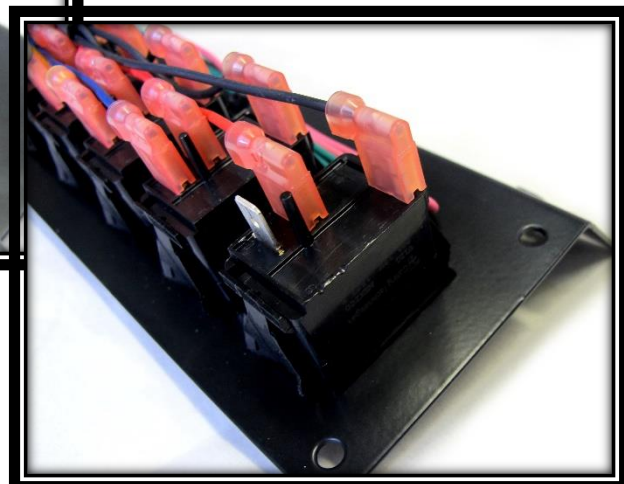
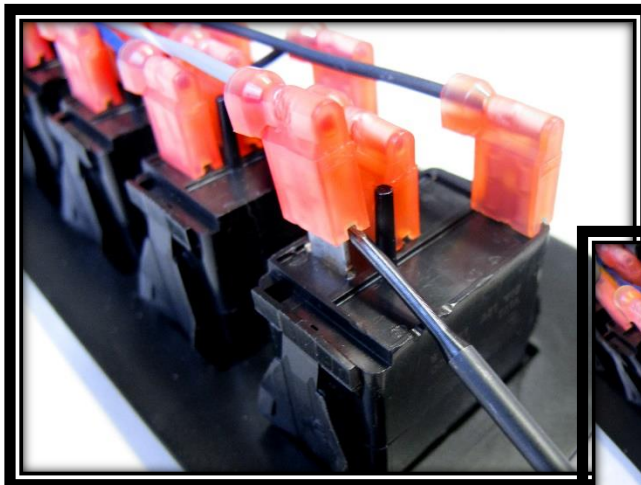


## DOUBLING SWITCH CONTROL WIRES

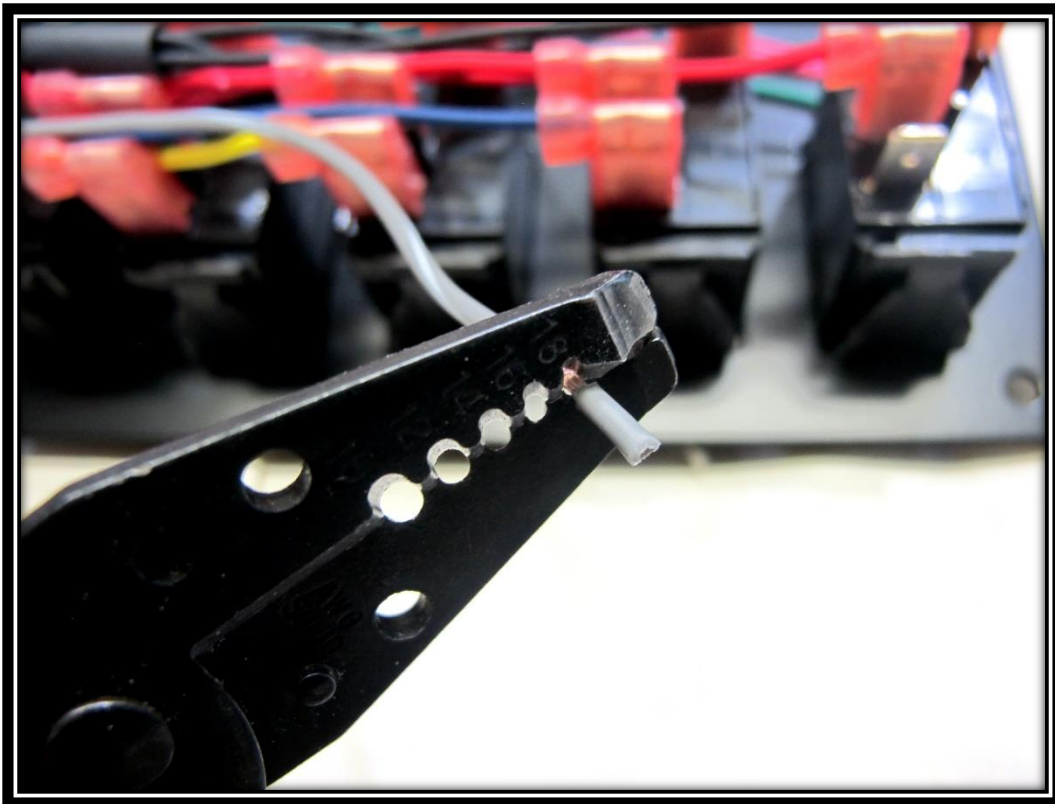
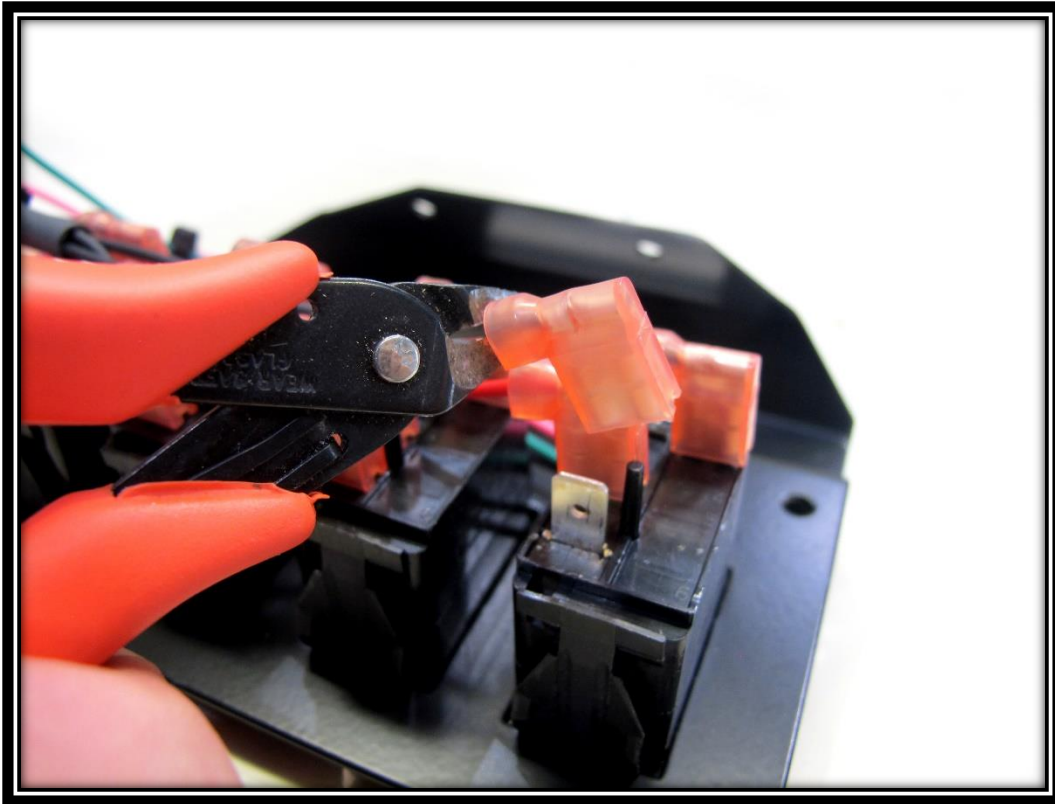
The Trail Rocker Fuse/Relay Center is capable of supporting 8 different accessories. Those who purchased a 4 or 6-switch panel may wish to control multiple accessories with a single switch. Steps 19-22 are optional and only for those who wish to control multiple functions for one switch. Provided in the kit are extra Switch Panel wires and some 16ga. – 14ga. terminals, similar to those shown below.



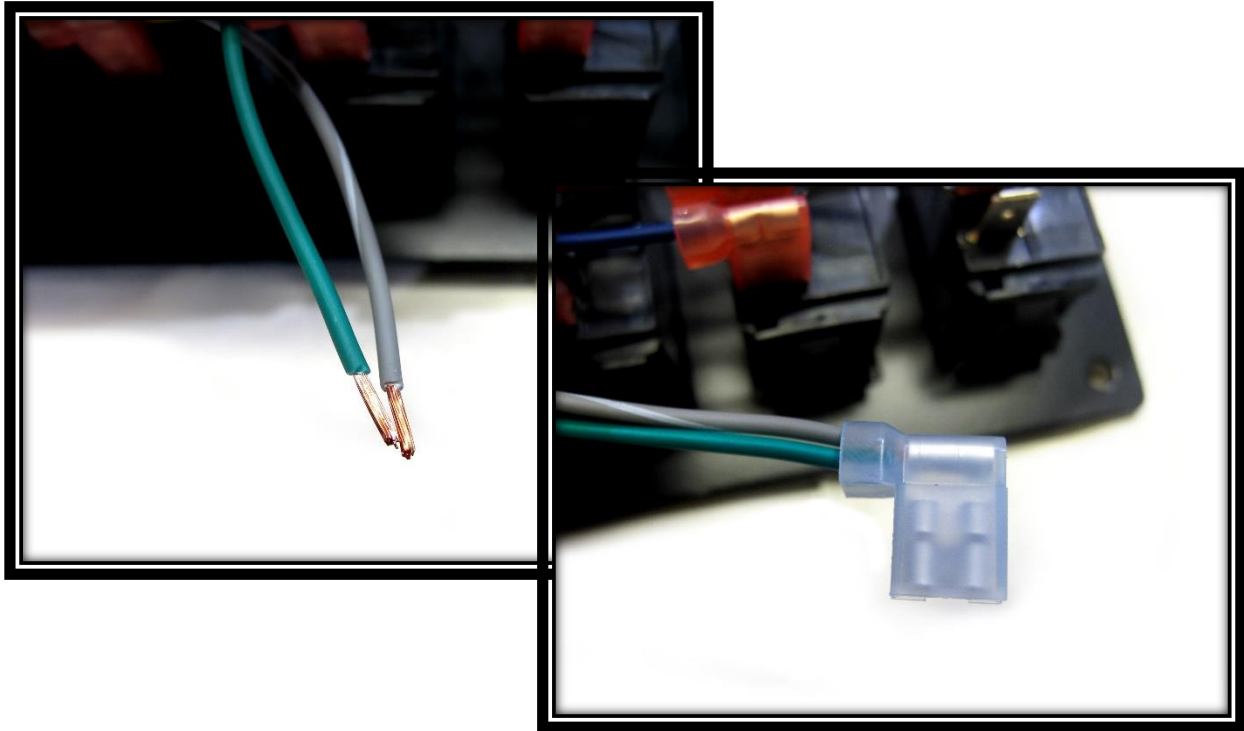
**Step 19:** Choose which switch you want to control multiple functions with, and disconnect the existing Switch Panel wire from the terminal on the bottom of the switch (terminal #3).



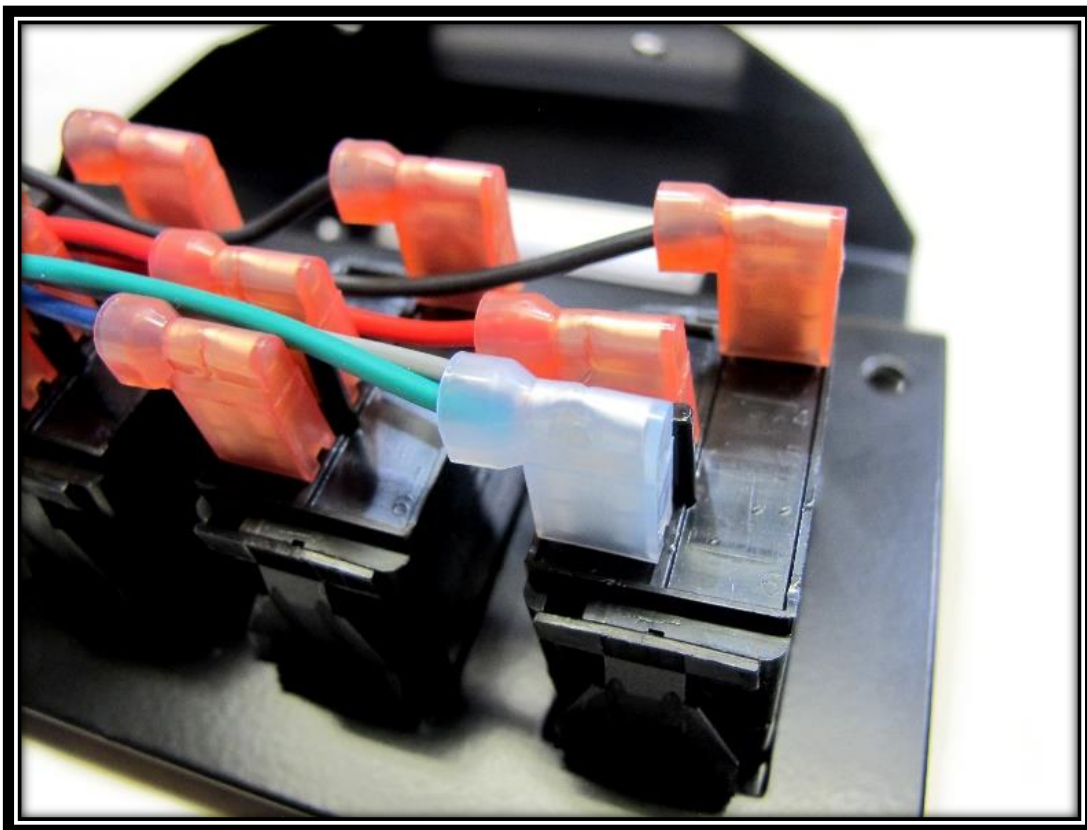
**Step 20:** With the **Switch Panel** wire removed from the switch, cut off the terminal, and strip the wire  $\frac{3}{8}$ ".



**Step 21:** 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 22:** 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**

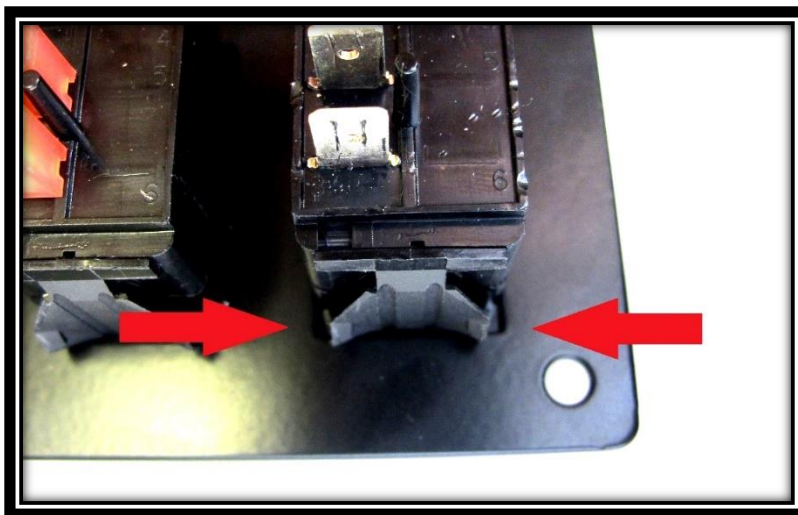
Separate from your Switch Panel wiring harness, there are 2 optional winch control wires: a **WHITE/RED** (IN) and a **BROWN/WHITE** (OUT). These wires control the in and out functions of a winch when they are installed.



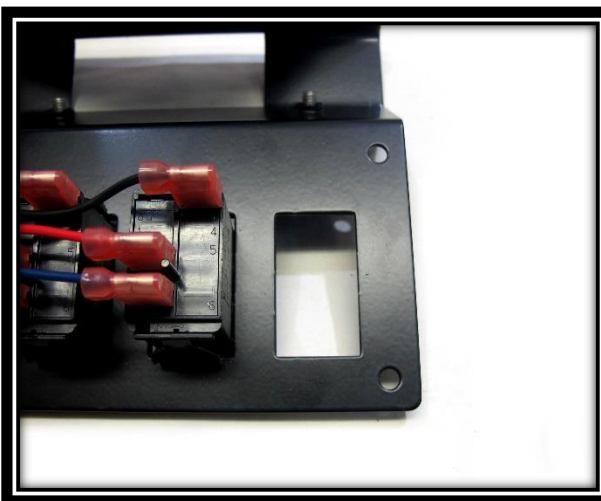
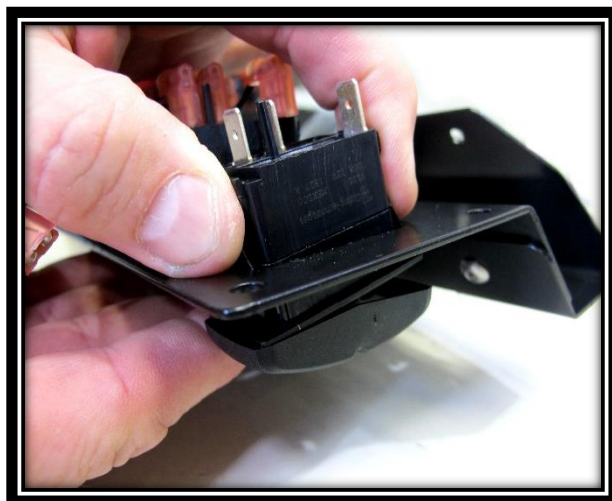
These control wires can be connected to a on-off-on, momentary contact, SPDT switch or a winch switch (not provided in the kit). If you do not have a winch switch, Painless offers a **Winch Control Add-on Kit** ([Painless Part #: 57150](http://www.painlessperformance.com), available online at [www.painlessperformance.com](http://www.painlessperformance.com)). **Steps 23 - 28** 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 23](#) will show how to connect to a standard SPDT switch.



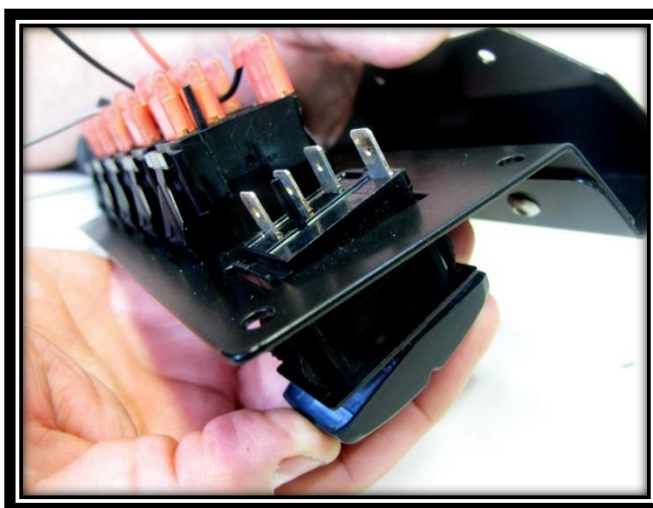
**Step 23:** Remove the switch panel faceplate, power, and ground wires from the switch you are replacing with the **Winch Control Add-on Switch**. Then, locate the tabs located at the top and bottom of the switch.



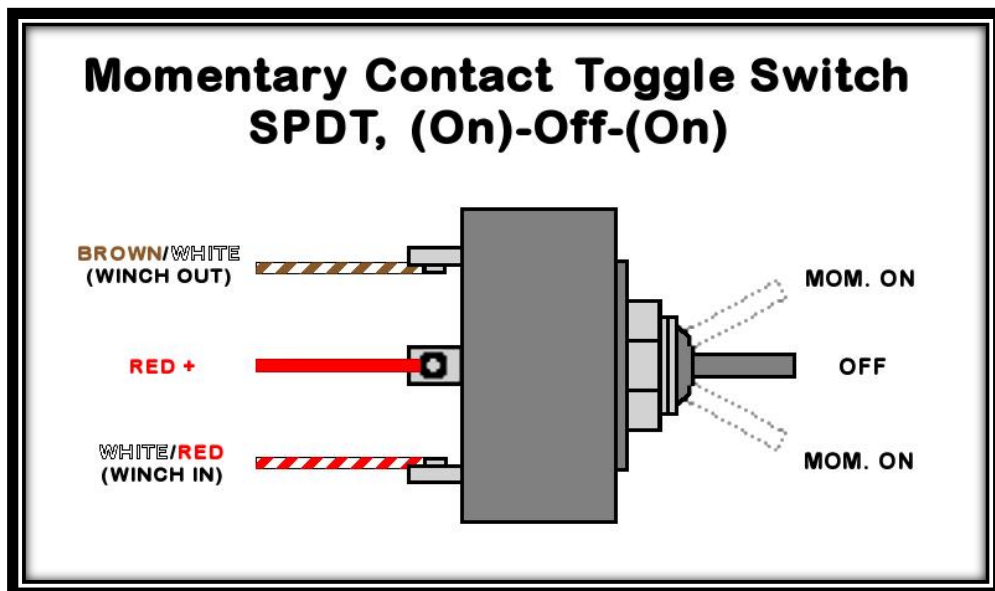
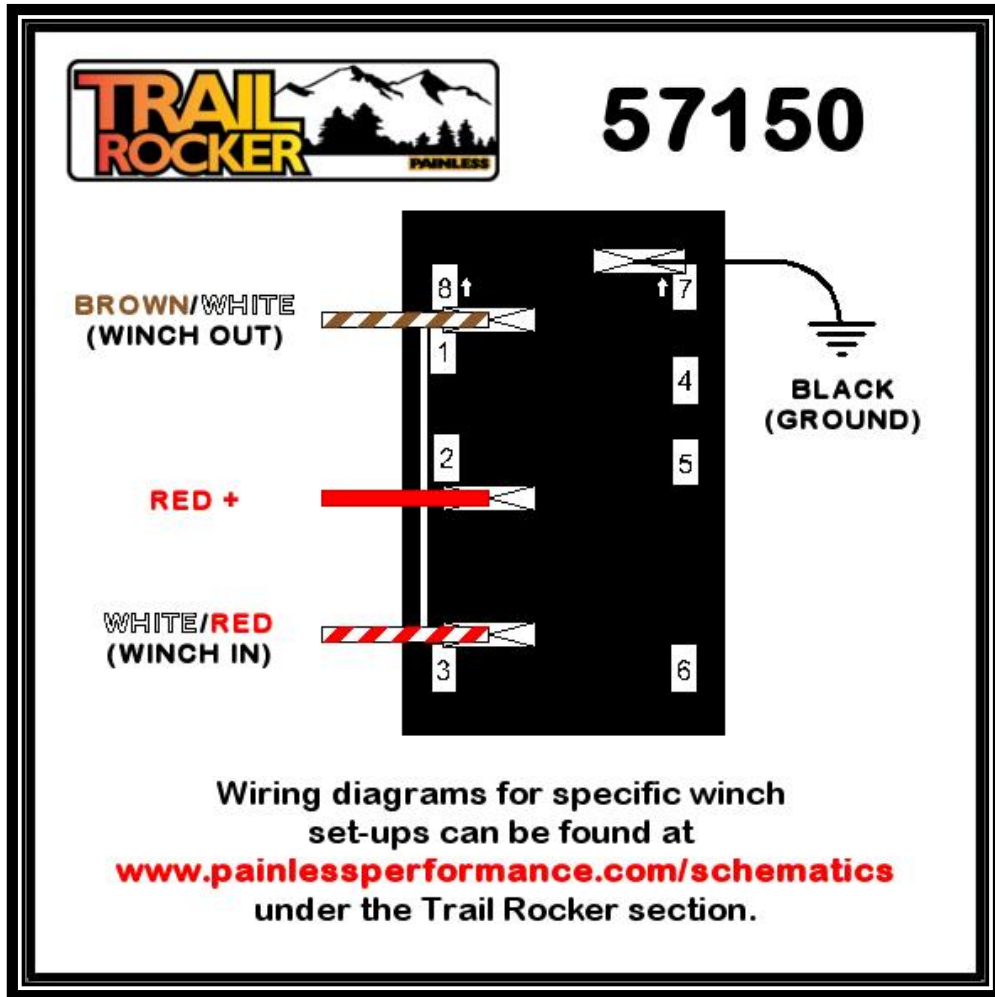
**Step 24:** These tabs lock the switch in place. To remove the switch, squeeze the tabs in and slide it out of the bracket.



**Step 25:** Insert the **Winch Control Add-on Switch** into the empty socket of the bracket.

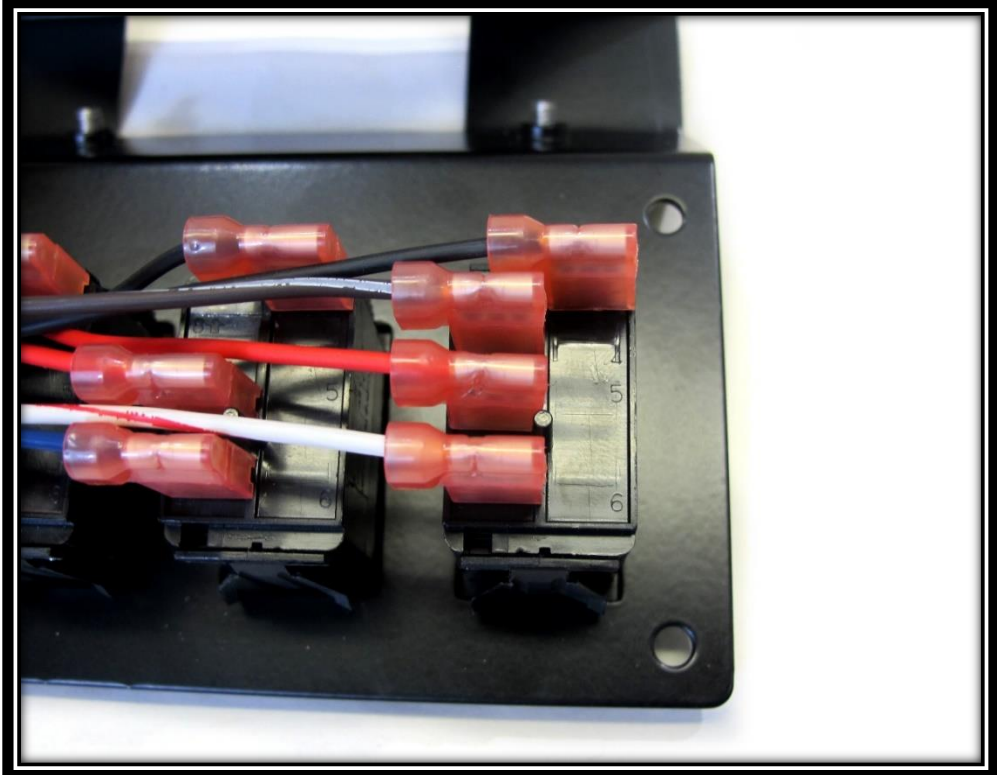
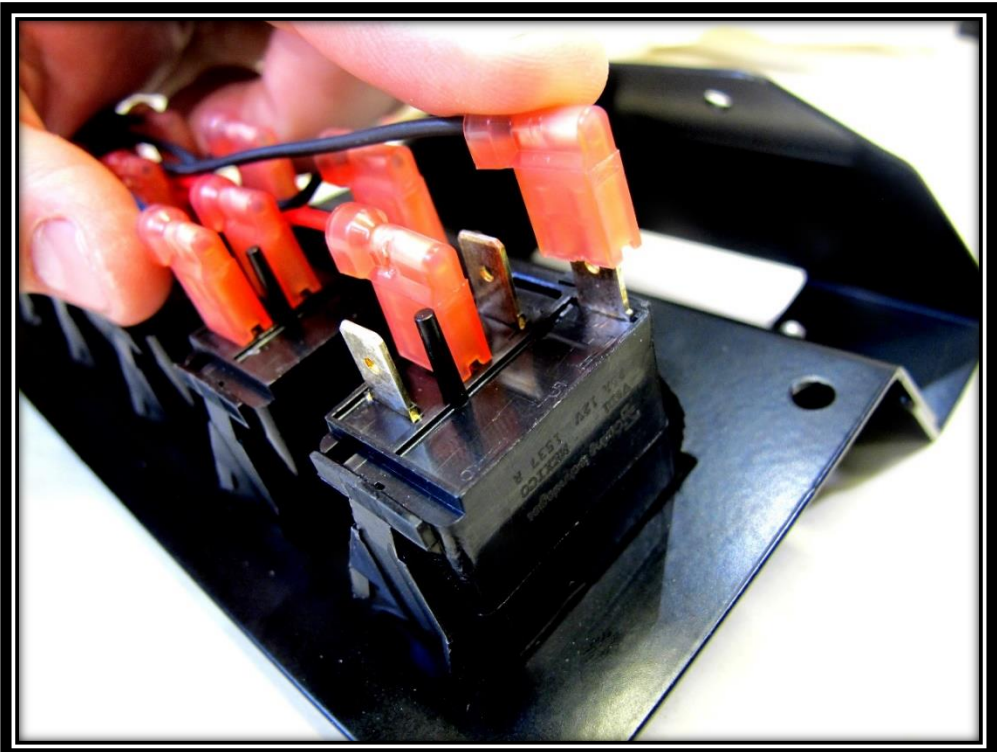


**Step 26:** Before connecting the wires to the **Winch Control Add-on Switch**, take time to familiarize yourself with the wiring diagram below.

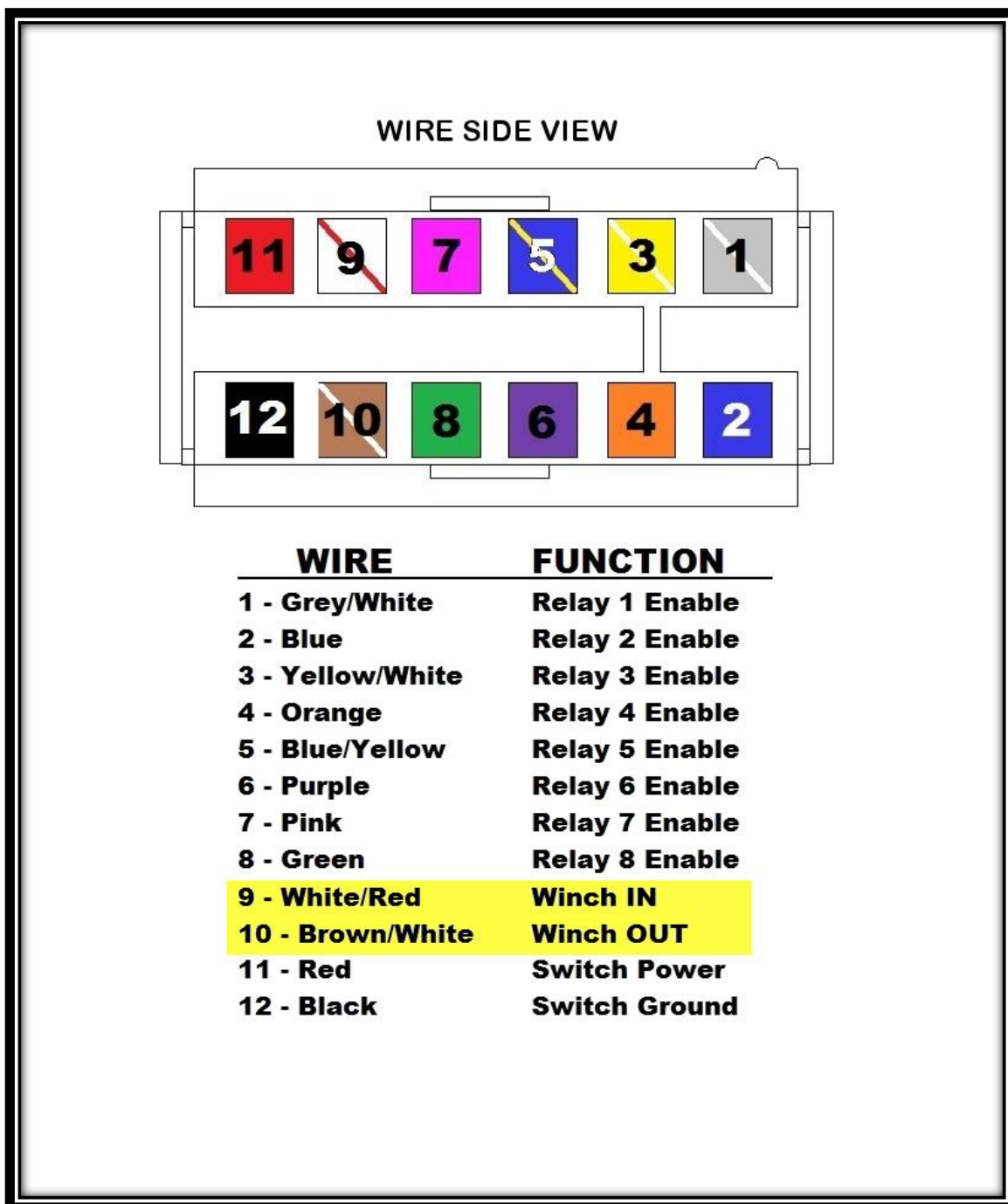




**Step 27: Reconnect the power, ground, and Switch Panel wires to the Winch Control Add-on Switch as seen below.**



**Step 28:** Strip and terminate the other ends of the wire as you did in Steps 14 – 16. And insert the **WHITE/RED** into slot **#9** of the **12-pin connector shell** and the **BROWN/WHITE** into slot **#10**.



# **Painless Performance Products LLC**

## **Limited Warranty and Return Policy**

Chassis harnesses, fuel injection harnesses, and Trail Rocker units are covered under a lifetime warranty.

All other products manufactured and/or sold by Painless Performance are warranted to the original purchaser to be free from defects in material and workmanship under normal use. Painless Performance will repair or replace defective products without charge during the first 12 months from the purchase date. No products will be considered for warranty without a copy of the purchase receipt showing the sellers name, address and date of purchase. You must return the product to the dealer you purchased it from to initiate warranty procedures.

**Painless Performance Products LLC**  
**2501 Ludelle Street**  
**Fort Worth, TX 76105**  
**Phone (817) 244-6212**