PAINLESS®
PERFORMANCE PRODUCTS

Trail Rocker Installation Instructions

2011-2018 Jeep Wrangler JK Dash Panel Trail Rocker

For Installing Painless Part Number: 57000 & 57001

Manual #90580

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

E-Mail: 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**).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

Installation Manual: **90580**

2nd Edition: April, 2017

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CONTENTS OF THE PAINLESS KIT

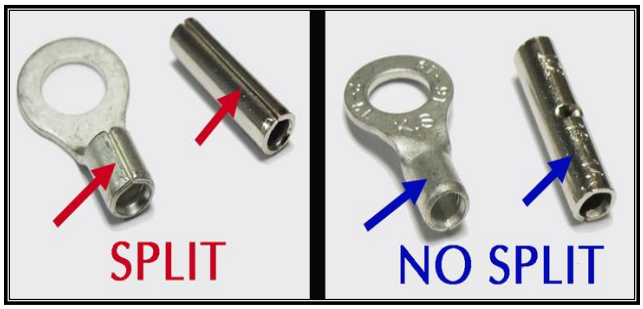
Refer to the **Contents Figure** (below) to take inventory. See that you have everything you're intended to have in this kit. If you find that anything is missing or damaged, please contact the dealer where you obtained the kit or Painless Performance at (800) 423-9696.

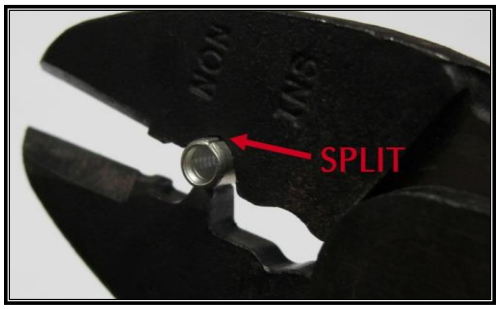
The Painless Trail Rocker Kit 57000 & 57001 should contain the following:

- **Fuse/Relay Center pre-installed to powder coated bracket**
- **Dash-mounted Switch Panel with 5 pre-installed switches**
- **Ignition Switch pigtail w/ weather-pack connector, (1) rubber grommet, and zip-ties**
- **Winch Pigtail and installation kit**
- **Parts Kits: (2) 1" Adel clamps, (1) ¾" Adel clamp, (3) ¼"-20 x ¾" stainless bolts, (3) ¼" flat washers, (3) ¼" nylon locking nuts, (10) un-insulated butt connectors, (10) pre-cut heat-shrink, (8) insulated wire caps, (3) ¼" piggyback terminal, (4) 30 amp ATO fuses, (1) 200 amp MIDI fuse, (1) M6-1.0 nut, (1) M6 lock washer, and (1) M6 flat washer.**
- **Power and Ground Terminal Kit: (1) pre-cut ¼" black heat shrink, (4") pre-cut ½" red heat shrink, (1) 16-14 ga. non-insulated ring terminal, (1) 6 ga. ¼" ring terminal, and (1) 6 ga. 5⁄16" ring terminal**
- **This manual (90580)**

SMALL PARTS

Included with the Painless harness are parts kits containing miscellaneous terminals, fuses, screws, and nuts. Many of the terminals are non-insulated and will require heat shrink to be applied after the terminal has been properly crimped. Heat shrink has been supplied. These non-insulated terminals allow you to keep a cleaner, more traditional look. When crimping these terminals, take notice to the split in the 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. Wrench sets SAE and Metric
2. Ratchet sets SAE and Metric
   a. ¼" Drive w/ an extension is recommended for some tight areas of the install.
3. Screwdrivers:
   a. (2) #2 Standard Length and Stubby Phillips Head
   b. #2 Flat (slot) Head
   c. #0 "Jewelers" Flat (slot) Head
4. Inch/Pound Torque Wrench
5. Diagonal Pliers or "dikes"
6. Wire Cutter/ 18-10 ga. Stripper
7. Hand Crimpers
8. Cable Cutters
9. Cable Crimping Tool
10. Hammer

In addition to these basic hand tools, you may need the following:

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. These two functions are the ability to read DC Voltage and electrical continuity or Ohms. They can be purchased from any home improvement store, local hardware store and electrical supply shop and online.

Heat Gun:

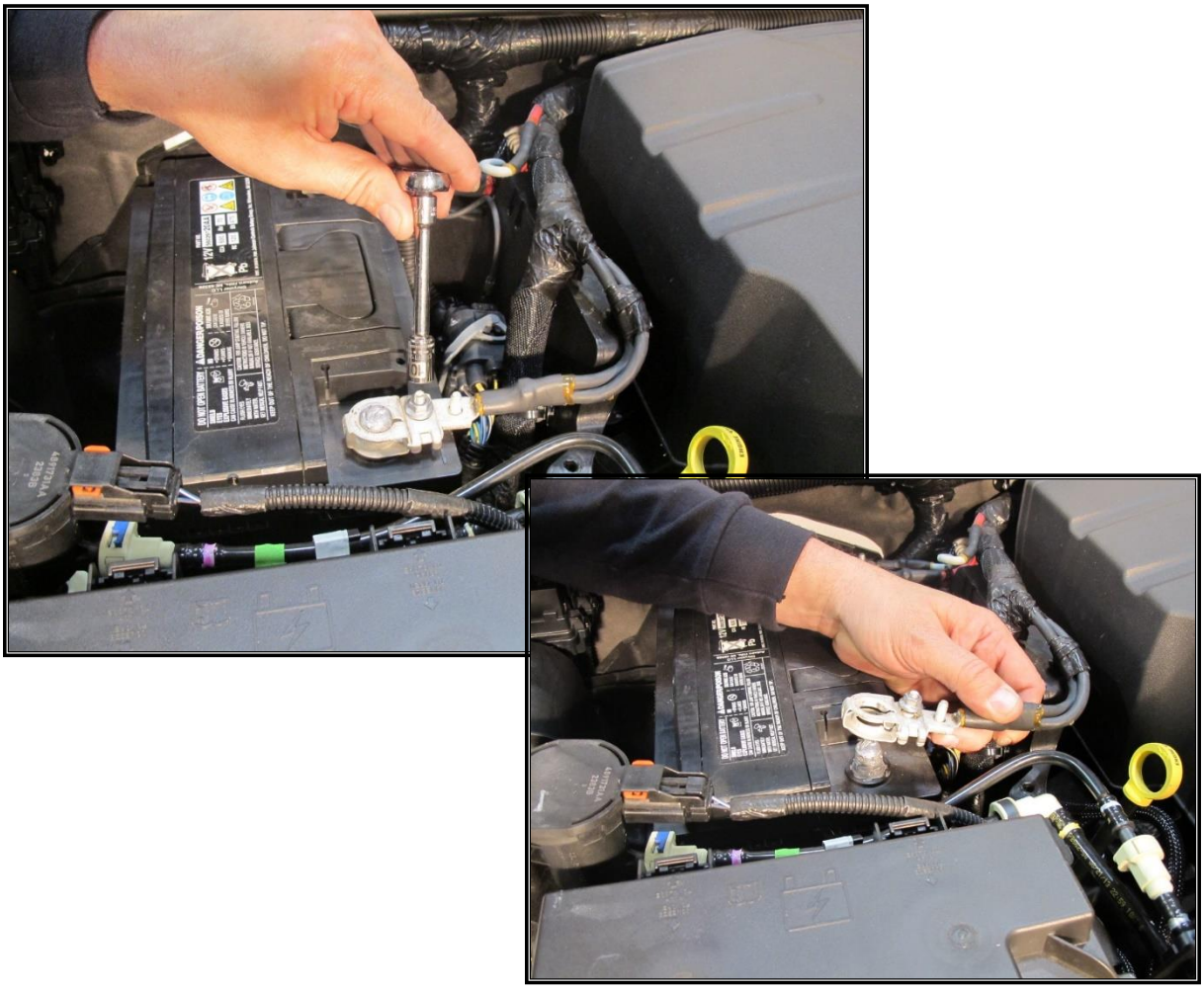
Very useful to shrink the heat-shrink found in the parts kit.

FUSE/RELAY CENTER INSTALLATION

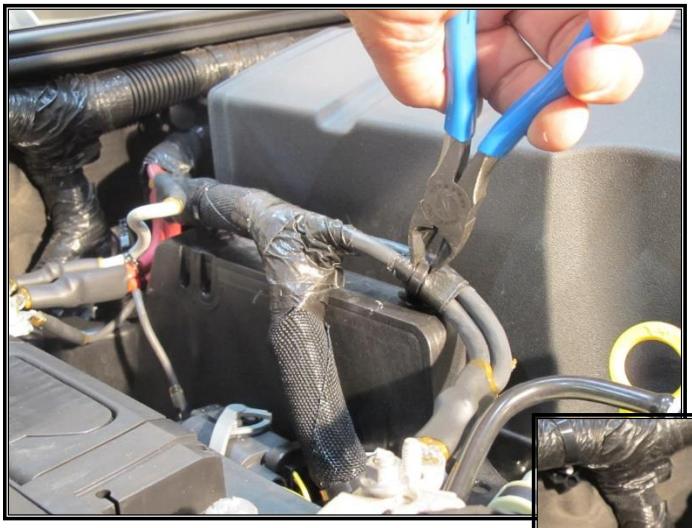
The following steps MUST be followed as they are printed. Do not move onto other parts of the installation out of sequence.

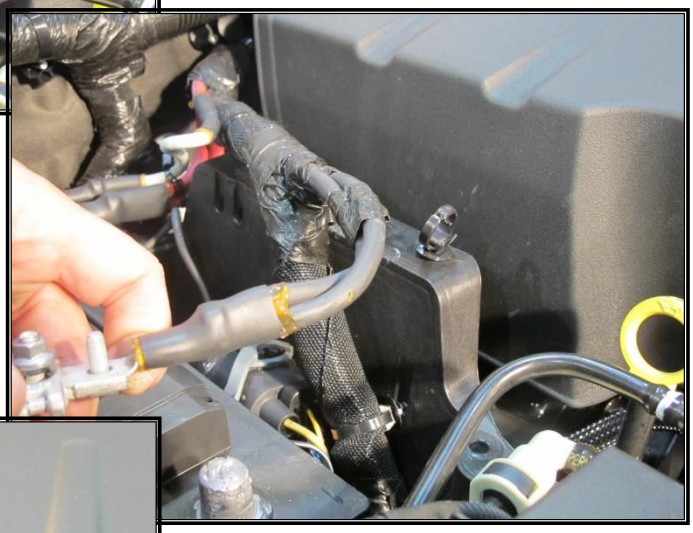
CAUTION: BEFORE THE INSTALLATION OF THIS PRODUCT, DISCONNECT THE POWER FROM YOUR VEHICLE BY REMOVING THE BATTERY CABLES FROM THE BATTERY. THE BATTERY SHOULD NOT TO BE RECONNECTED UNTIL INSTRUCTED

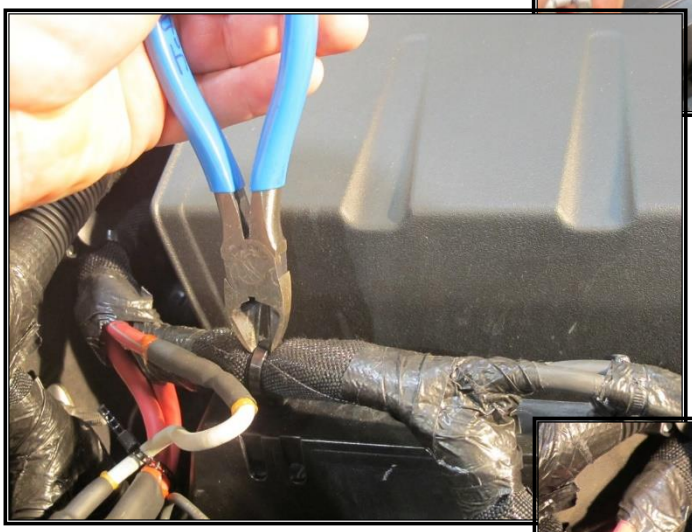
Step 1: Use a 10mm socket to remove the battery cables from the battery. For ease of installation, we also recommend removing the factory engine cover.

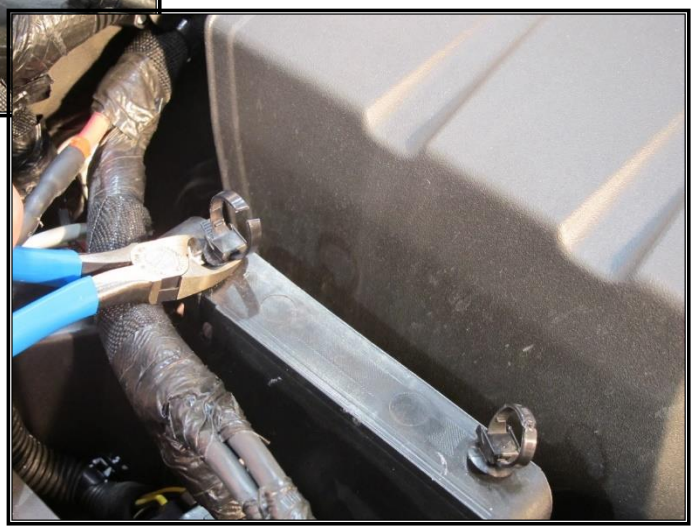


Step 2: Use wire cutters to cut the two **"Umbrella Style" zip-ties** on top of the battery tray that hold the factory wiring harness.

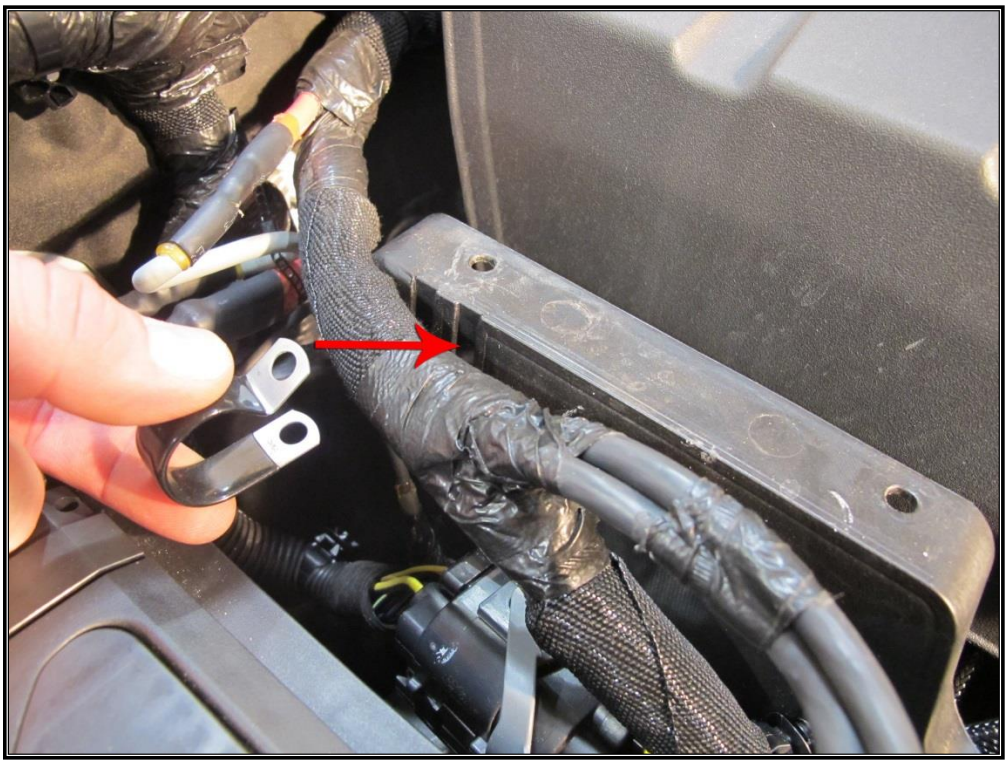




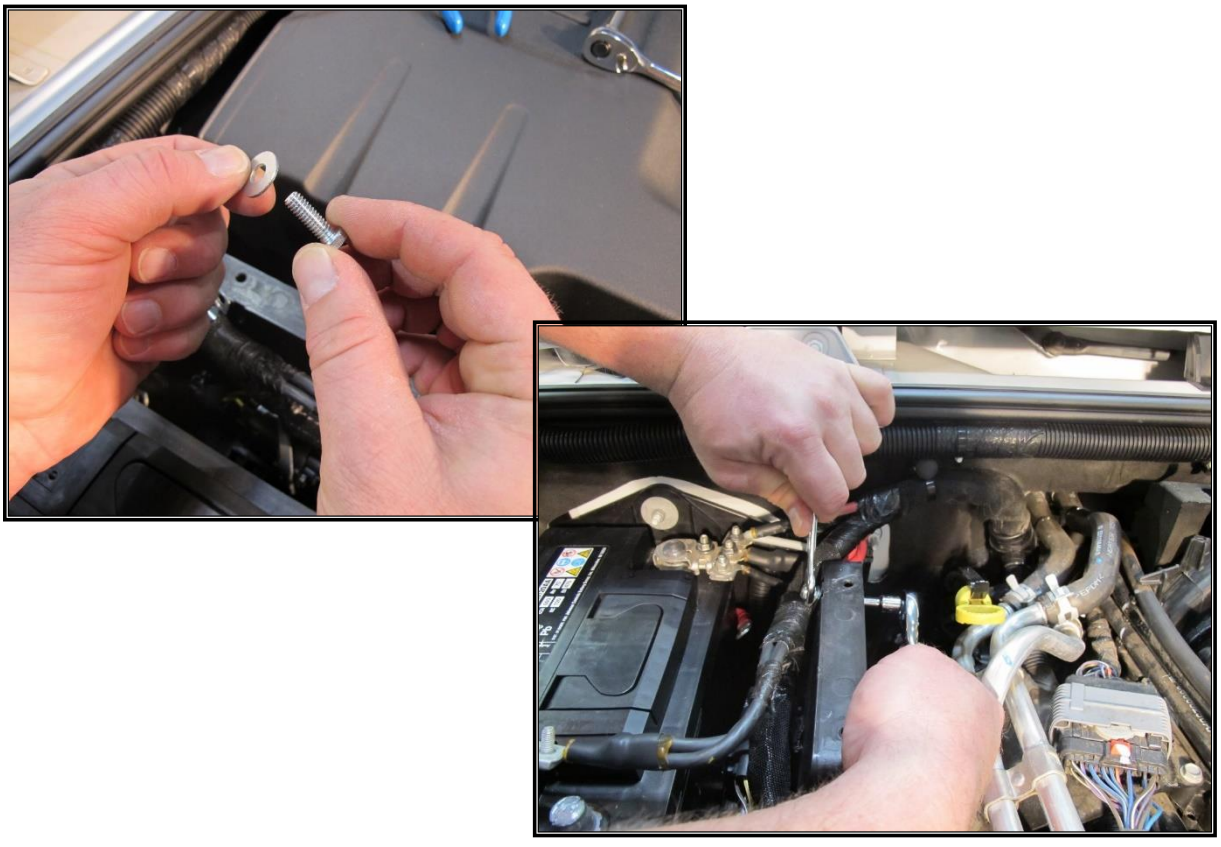




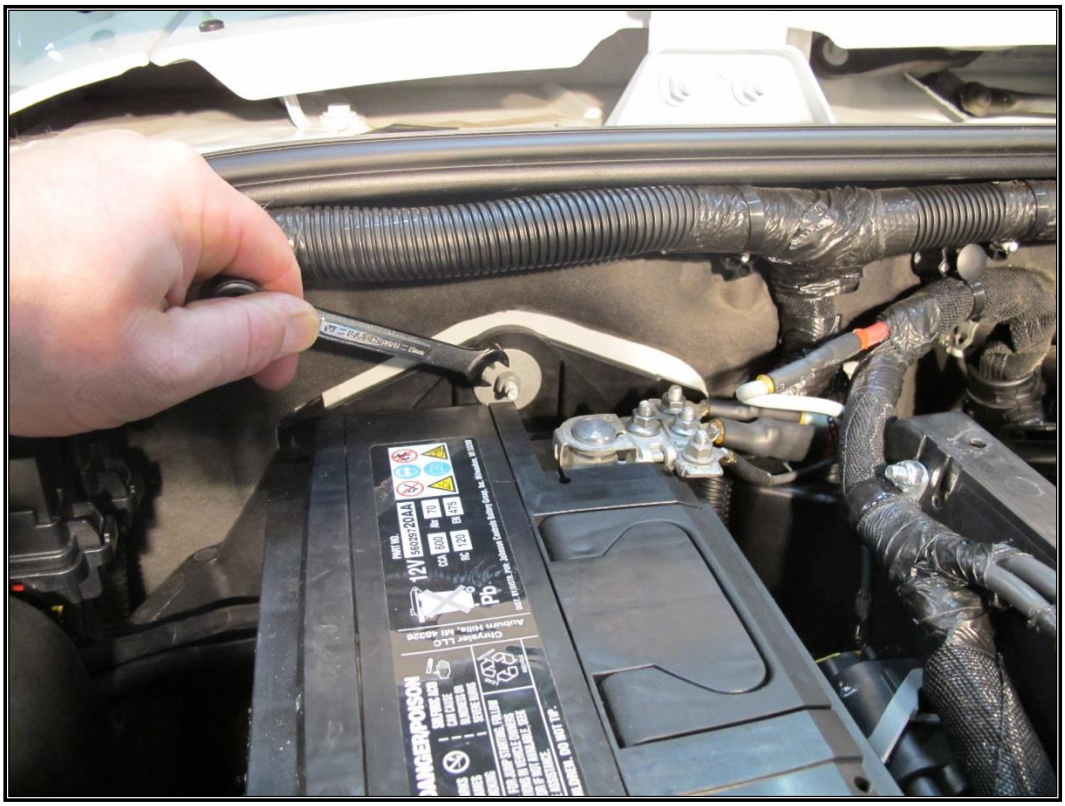
Step 3: Position (1) ¾" Adel clamp over the factory wiring harness.



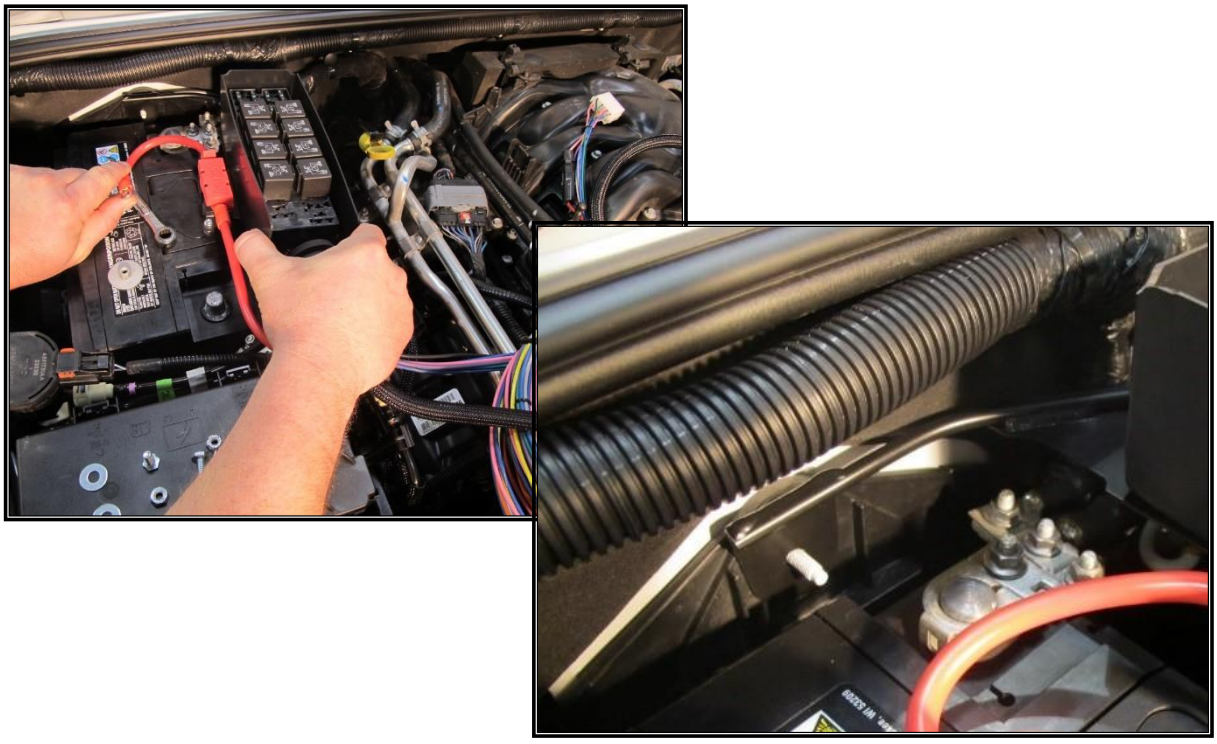
Step 4: Use a 7/16" wrench and socket to mount the Adel clamp to the inside wall of the **factory battery tray** with the supplied (1) ¼" - 20 Bolt, (1) flat washer, and (1) ¼" nylon locking nut.



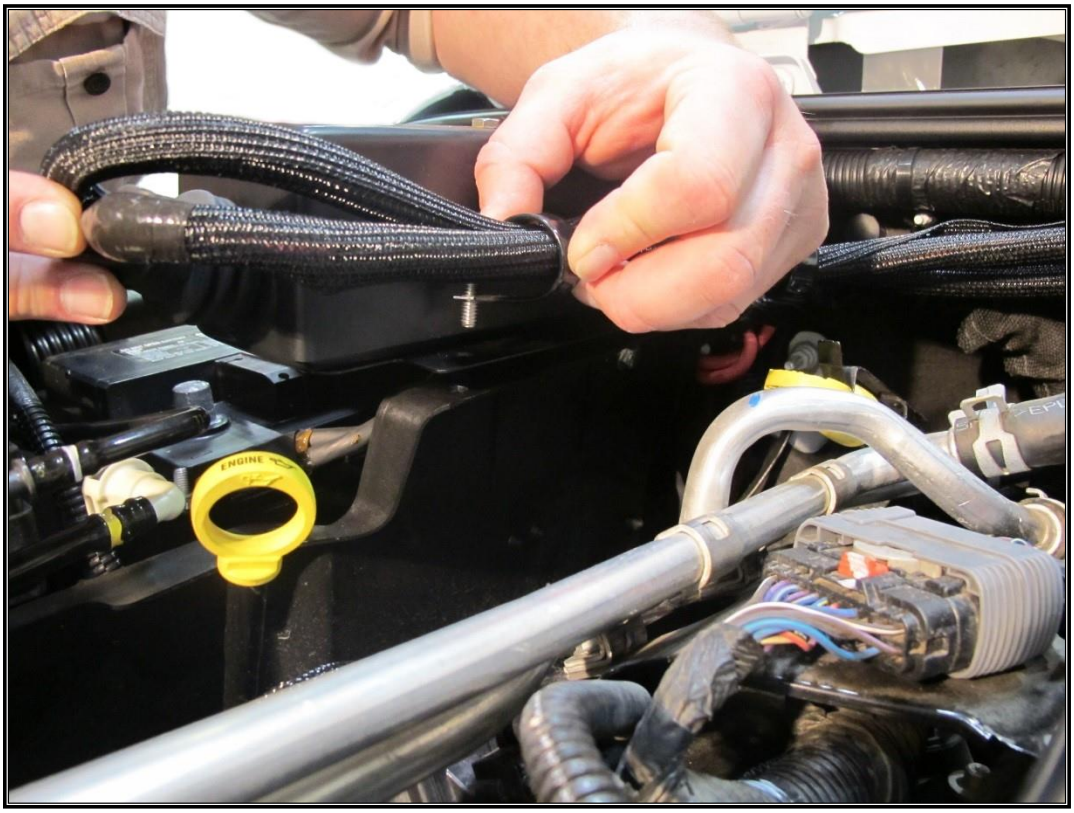
Step 5: Use a 10mm wrench or socket to remove the **factory battery tray mounting nut** from the stud on the firewall.



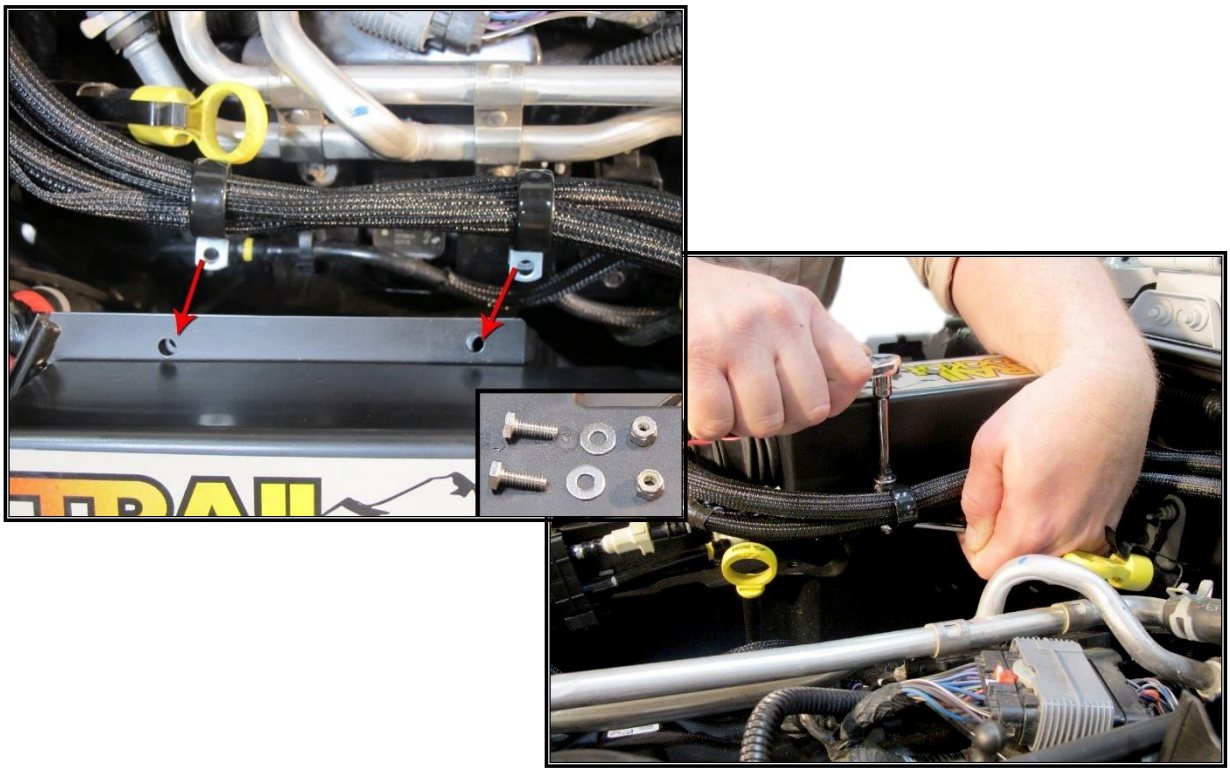
Step 6: Position the **Fuse/Relay Center mounting bracket** over the factory firewall mounted stud. Then, hand-tighten the **factory battery tray mounting nut** back onto the stud on the firewall.



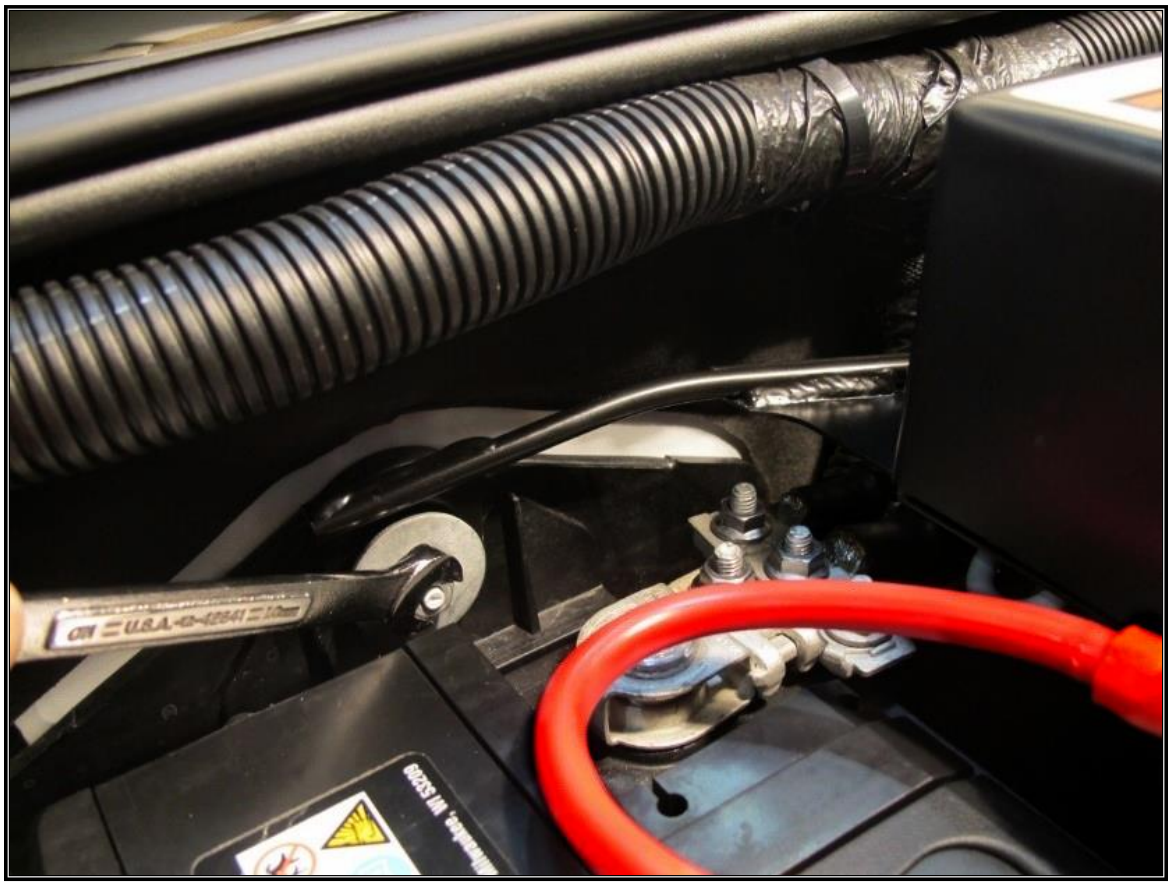
Step 7: Position (2) 1" Adel clamps over the **Trail Rocker control wires.**



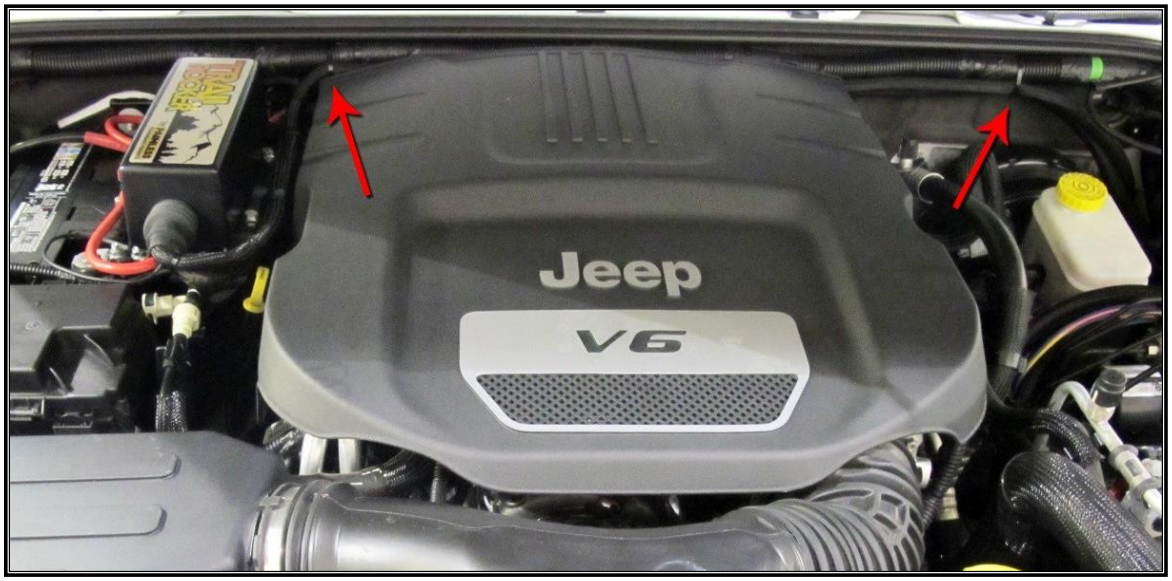
Step 8: Use the provided (2) ¼"-20 bolts, (2) flat washers, and (2) nylon locking nuts to mount the Adel clamps and the **Fuse/Relay Center bracket** to the factory battery tray as shown.



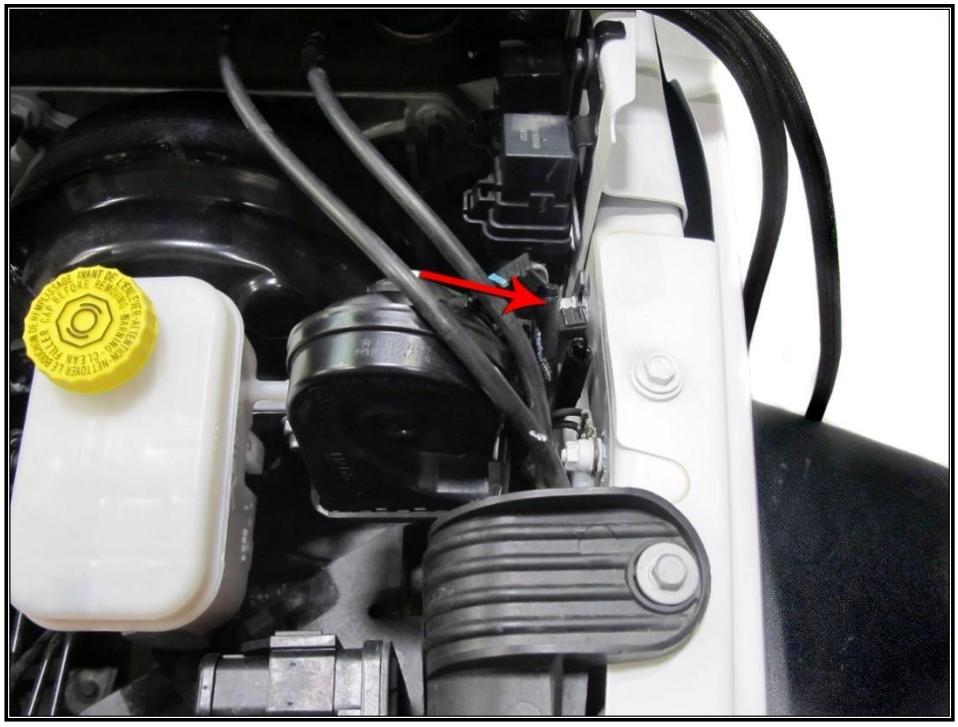
Step 9: Use a 10mm wrench or socket to tighten the **factory battery tray nut** to the stud on the firewall.



Step 10: Route the **Fuse/Relay Center control wires** across the firewall. Secure the **control wires** to the factory harness loom using zip-ties provided in the parts kit. You can now reinstall your engine cover.



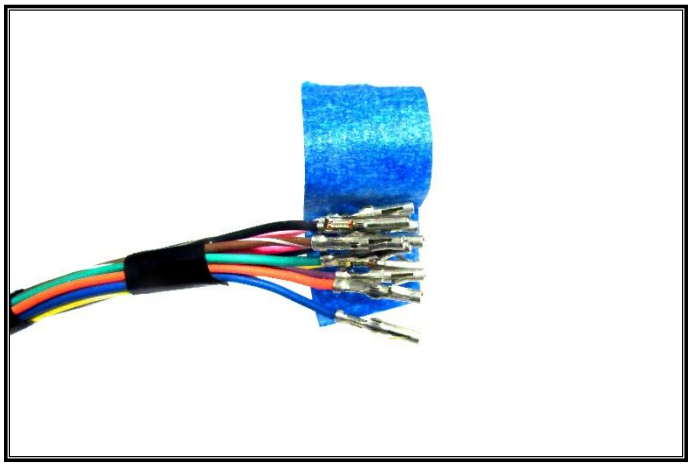
Step 11: On the driver side of the engine bay, locate the horn and remove it using a 10mm wrench or socket.

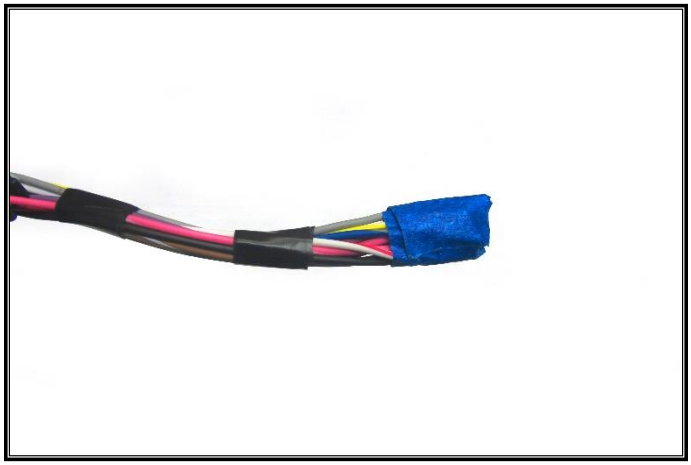


Step 12: With the horn removed, you can now access the pass-through on the firewall. This is your access point to route the **Switch Control wires** into the interior. **(Note: You may need to push open the factory carpet using your finger)**

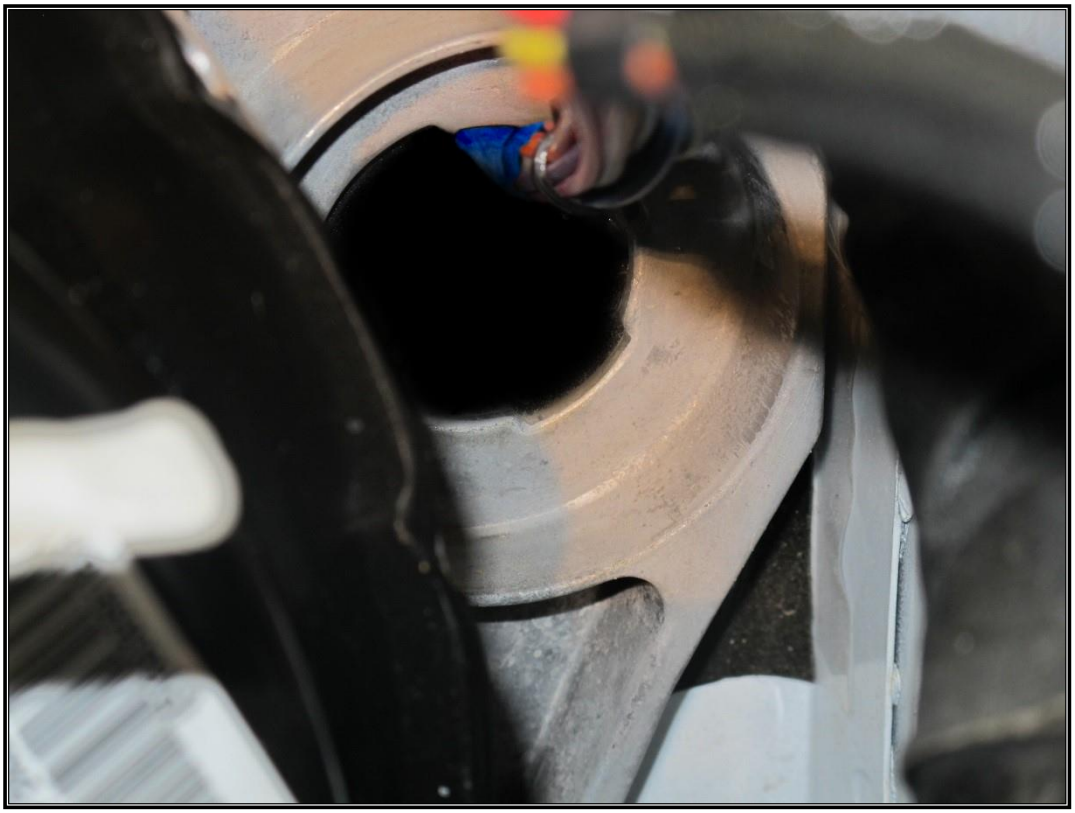
Step 13: Next, secure the loose ends of the **Switch Control wires** with a piece of masking tape. This step is necessary to insure ease when feeding the wire through the firewall on **Step 14**. Failing to tape the ends can cause the loose wires to catch on the internal structure of the dash.

WARNING: MAKE SURE YOUR SYSTEM IS NOT CONNECTED TO THE BATTERY! THESE WIRES ARE HOT WHEN THE TRAIL ROCKER HAS POWER AND WILL SHORT THE SYSTEM OUT IF THEY TOUCH AS SEEN IN THE IMAGES BELOW. AGAIN, DO NOT RECONNECT THE BATTERY UNTIL INSTRUCTED.



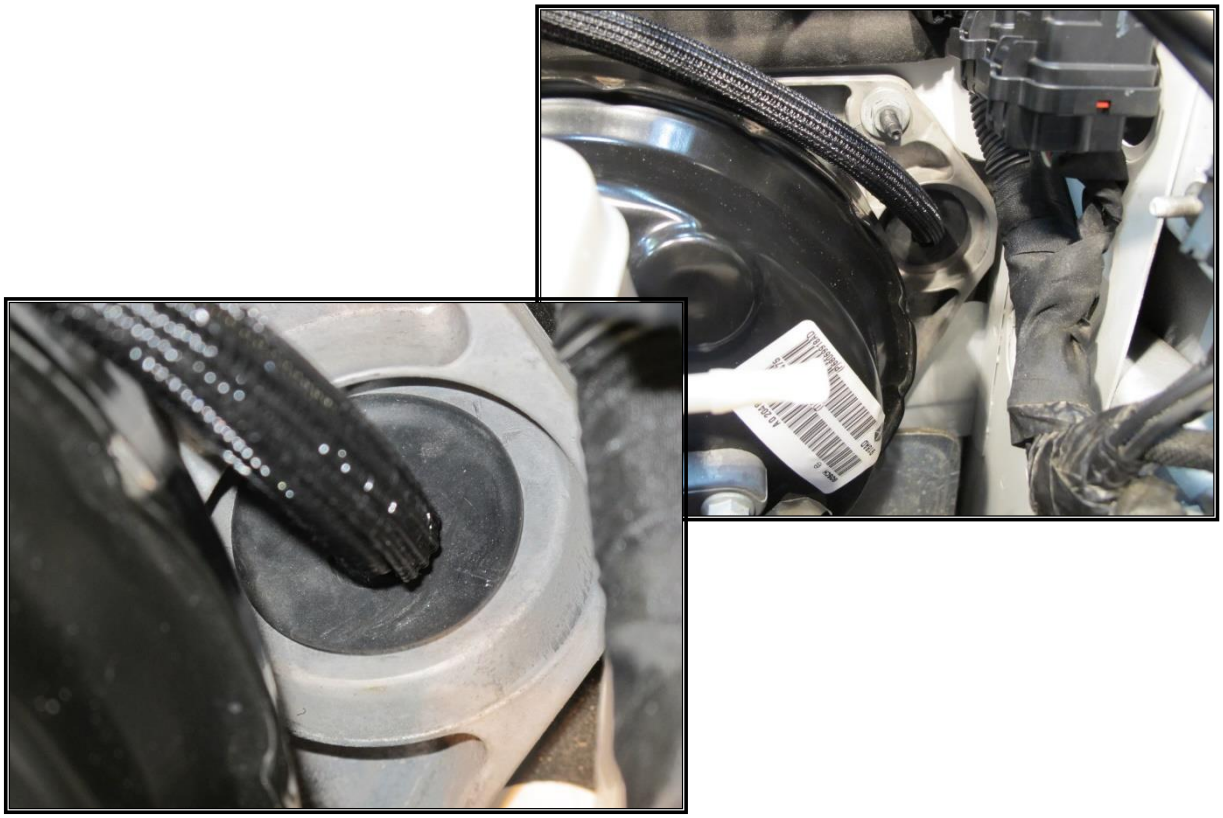


Step 14: Carefully route the **Switch Control wires** through the pass-through.

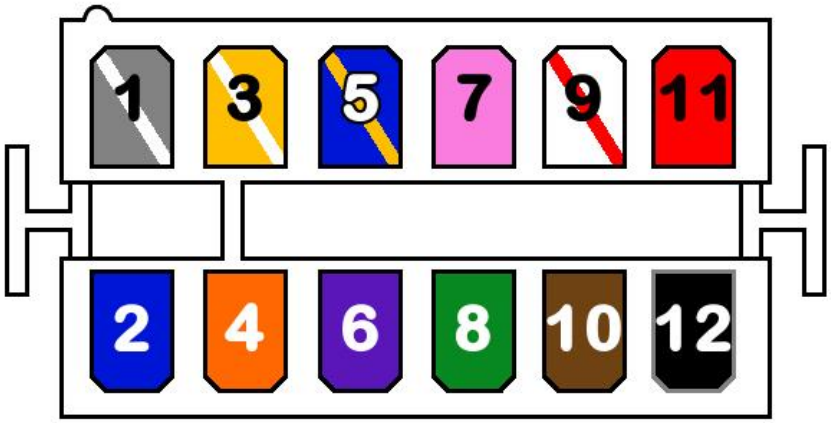


Step 15: Apply the provided rubber grommet over the **Switch Control wires** with the slit facing up.

Step 16: Push the rubber grommet into the firewall access hole as shown.



Step 17: On the interior, remove the tape and locate the **12-pin connector** shell in your parts kit. Then, connect the pinned wires from the **Fuse/Relay Center** using the diagram below. **NOTE**: The diagram below shows the connector from the wire side.

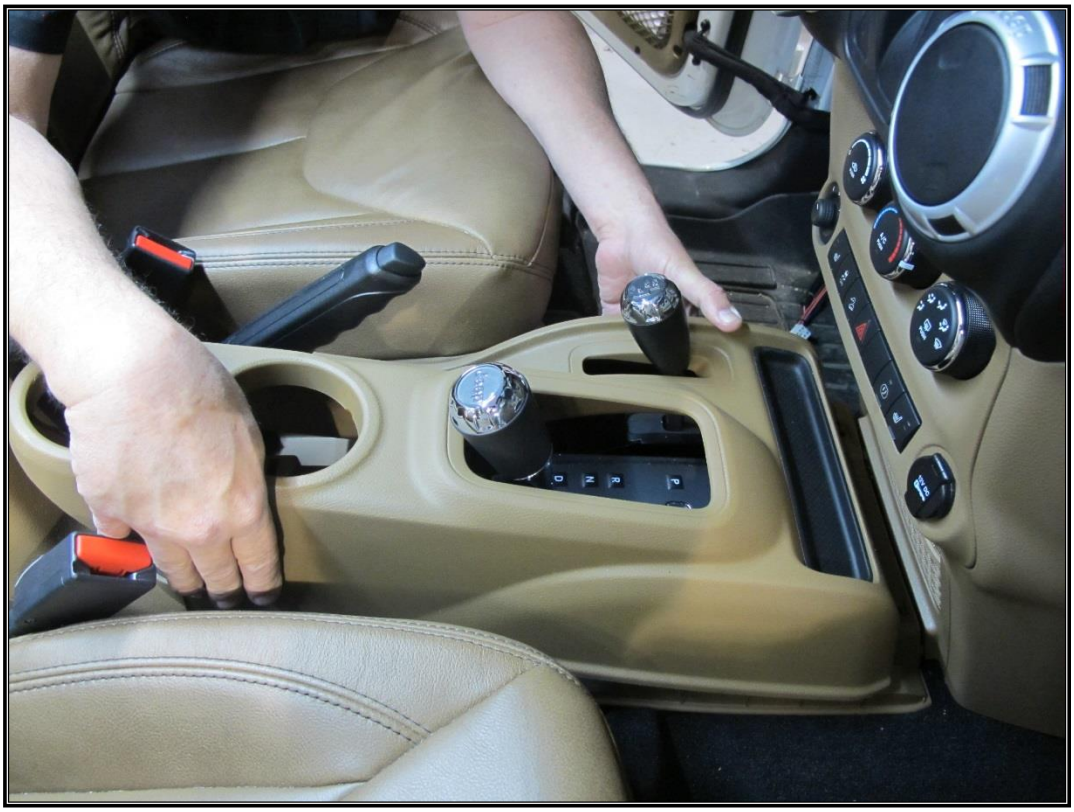


WIRE	FUNCTION
1 - Grey/White	Relay 1 Enable
2 - Blue	Relay 2 Enable
3 - Yellow/White	Relay 3 Enable
4 - Orange	Relay 4 Enable
5 - Blue/Yellow	Relay 5 Enable
6 - Purple	Relay 6 Enable
7 - Pink	Relay 7 Enable
8 - Green	Relay 8 Enable
9 - White/Red	Winch IN
10 - Brown/White	Winch OUT
11 - Red	Switch Power
12 - Black	Switch Ground

Now, move to **Step 18** on page 13 for the **Switch Panel** installation.

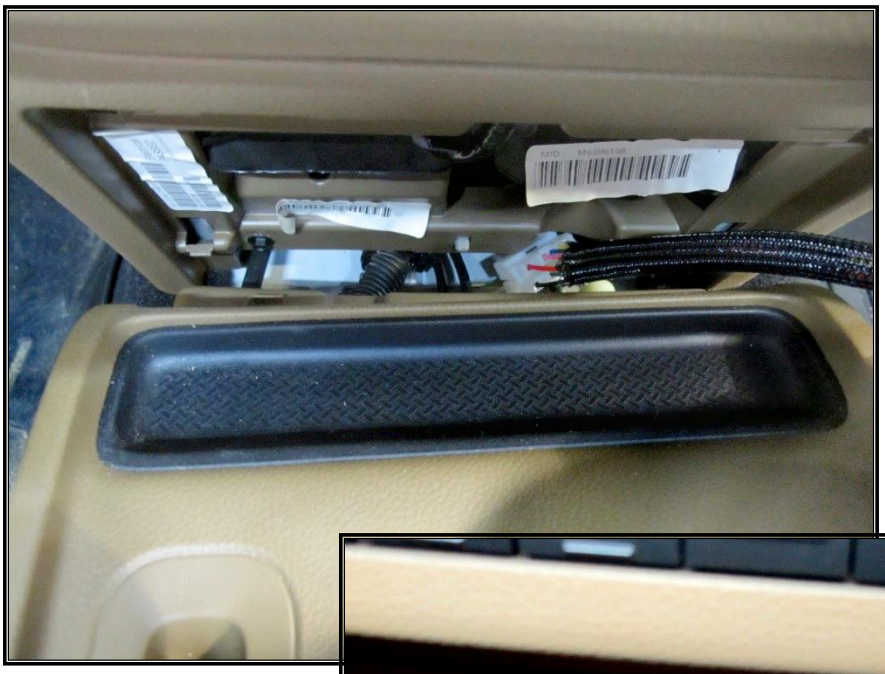
SWITCH PANEL INSTALLATION

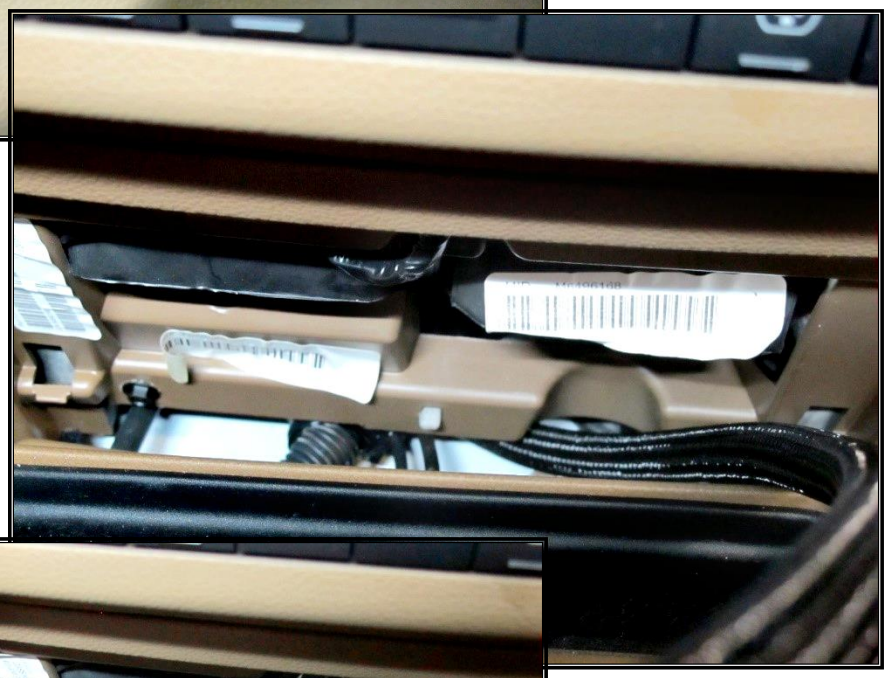
Step 18: In order to install the switch panel, you will need to reposition the **center console**. To do this, to pull up on it firmly. (There are no screws or bolts, only retainer clips.)

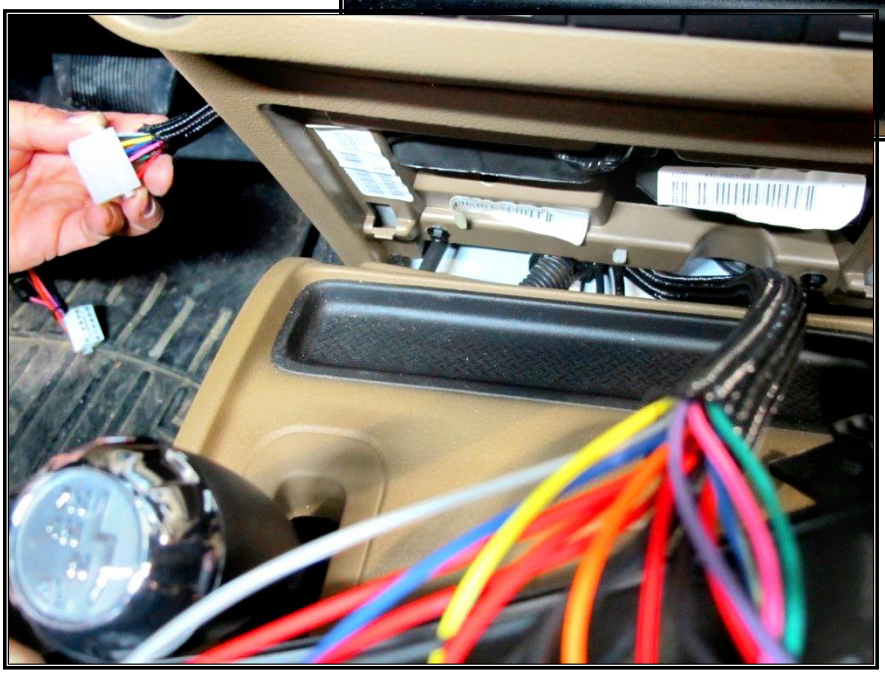


Step 19: Next remove the netted storage panel from the dash by using a pry tool, or carefully pulling on the netting.

Step 20: Now, install the **Trail Rocker switch panel** by routing the **control wire plug** through the **center console** as shown below.

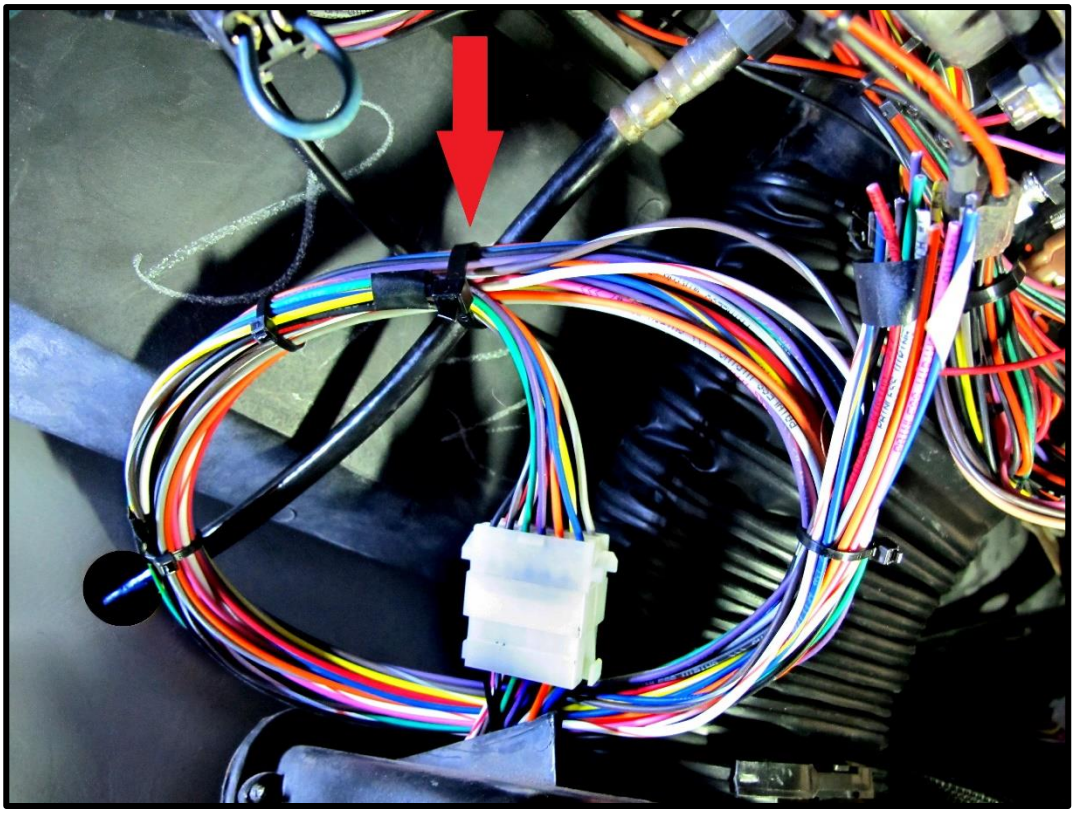






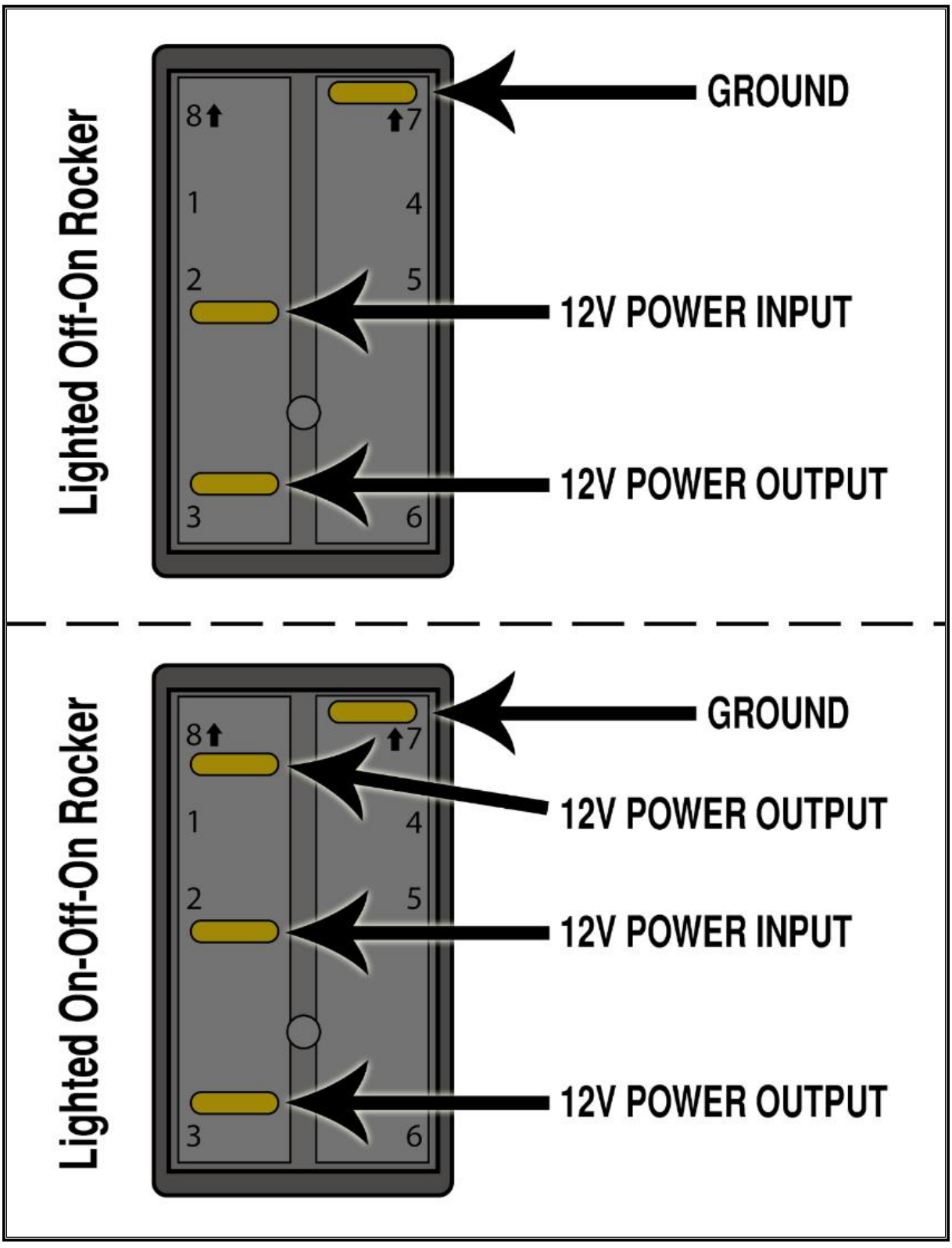
Step 21: With the **control wires** routed through, position and clip in the new **Trail Rocker switch panel**. Press down firmly to ensure the panel locks in place at the bottom. Finally, reattach the **center console**.

Step 22: Connect the **Switch Control pigtail** to the connector on the **Switch Control wires** you passed through the firewall in the previous section. Stow the wiring harness neatly away, and secure with a zip-tie if needed. If you are concerned about this connection being weatherproof, use the provided dielectric grease to fill each terminal of the **Switch Control wire connector.**



SWITCH WIRING

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

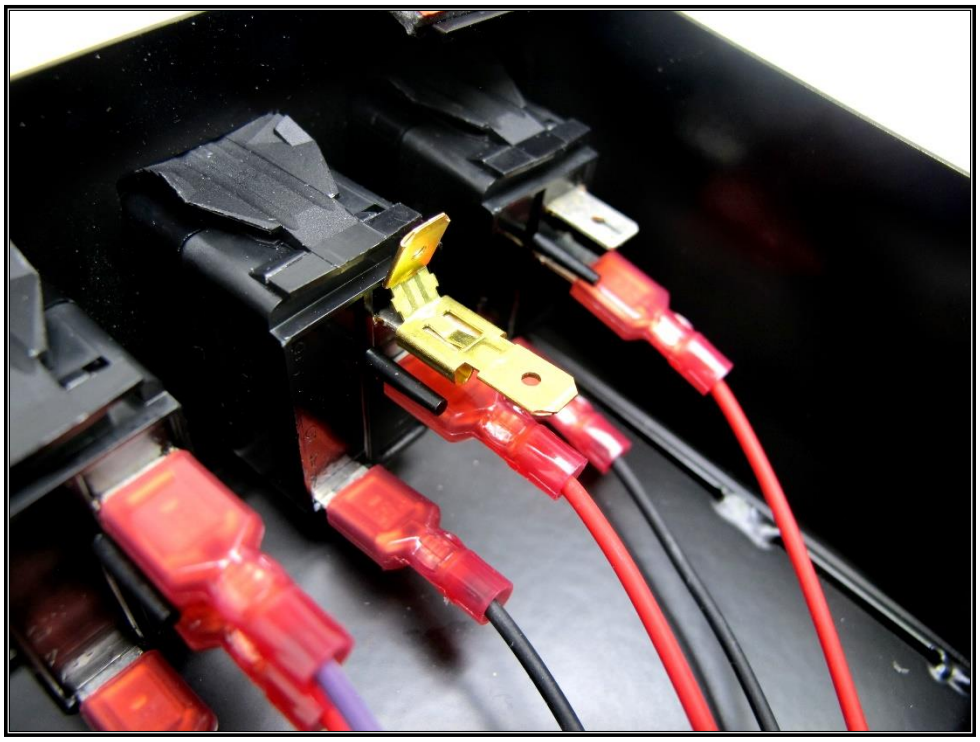


DOUBLING SWITCH CONTROL WIRES

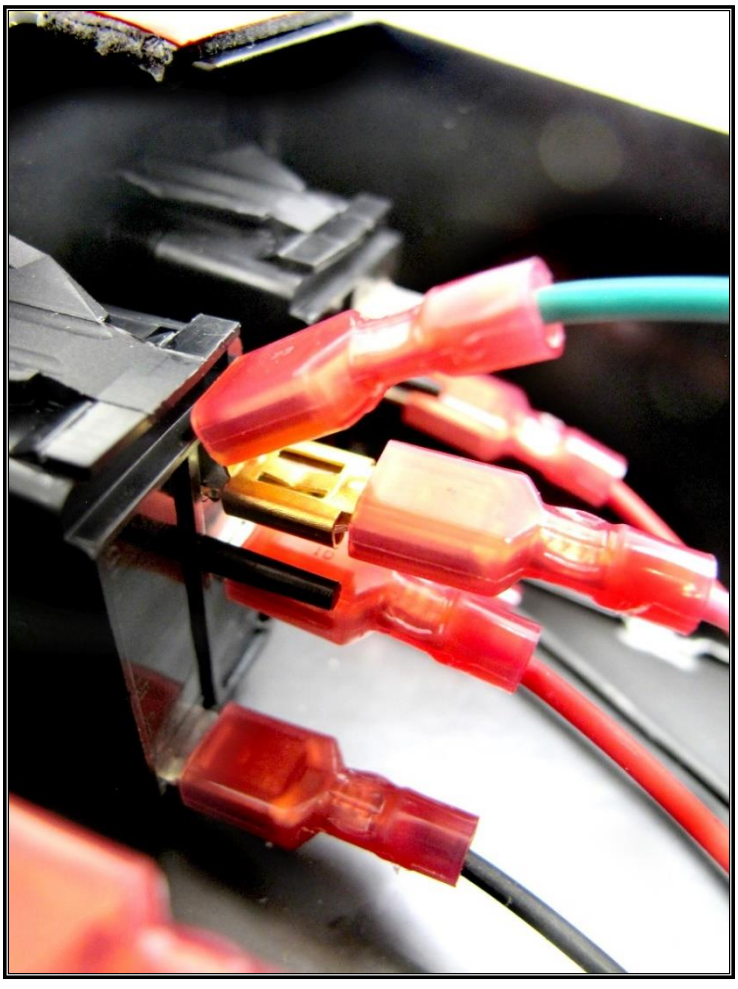
Steps 23 – 25 are optional and only for those who wish to control multiple functions for one switch. Provided in the kit are several piggyback terminals, like those shown below. These terminals provide you with two different options for doubling switch control wires.

Step 23: Choose which switch you want to control multiple functions with, and remove the existing **power output wire** from the terminal on the bottom of each switch (terminal #3).

Step 24: Place on the piggyback terminal.



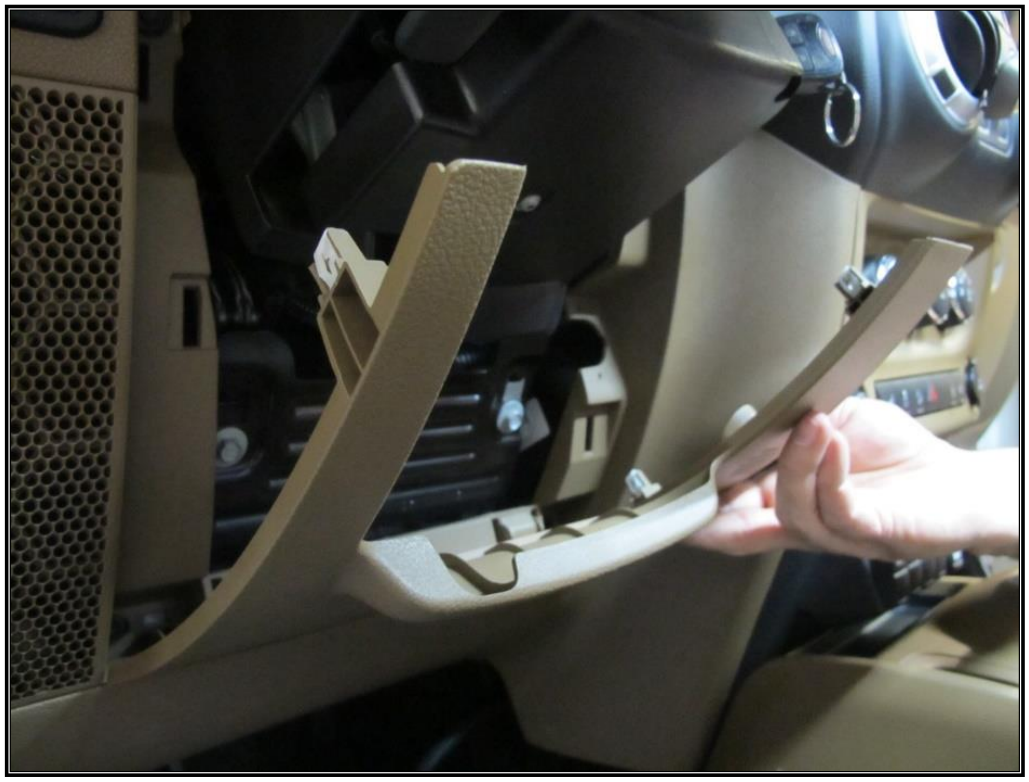
Step 25: Take the **power output wire** and an additional wire from the **Switch Control pigtail** and connect them to the piggyback terminal.



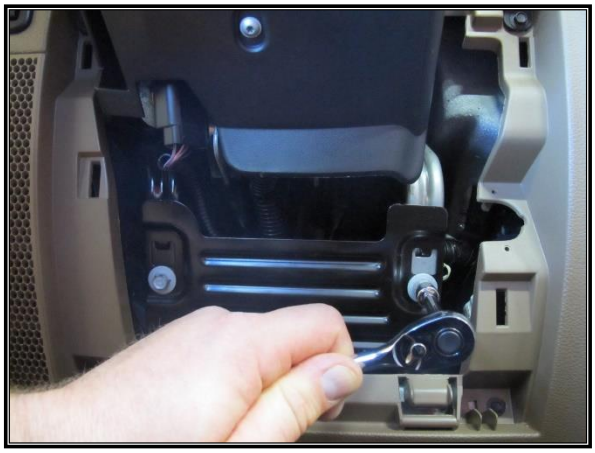
IGNITION SWITCH PIGTAIL INSTALLATION

THESE STEPS ILLUSTRATE HOW TO HOOK UP YOUR TRAIL ROCKER TO IGNITION SWITCHED POWER AND ARE COMPLETELY OPTIONAL. IF YOU WANT TO OPERATE YOUR SWITCHES WITH A CONSTANT POWER (AS SHIPPED), SKIP STEPS 26-43 AND MOVE ON TO THE RELAY OUTPUT WIRES SECTION ON PAGE 32.

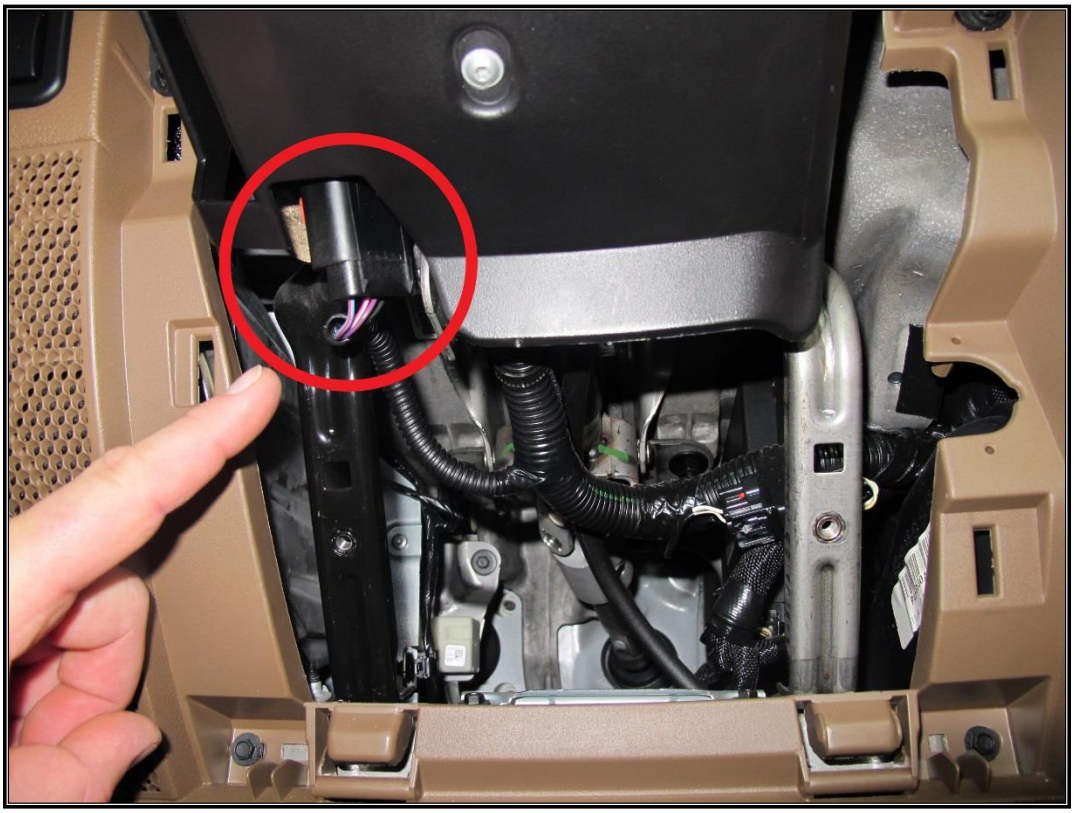
Step 26: Remove the panel below the steering column by carefully pulling from the top first.

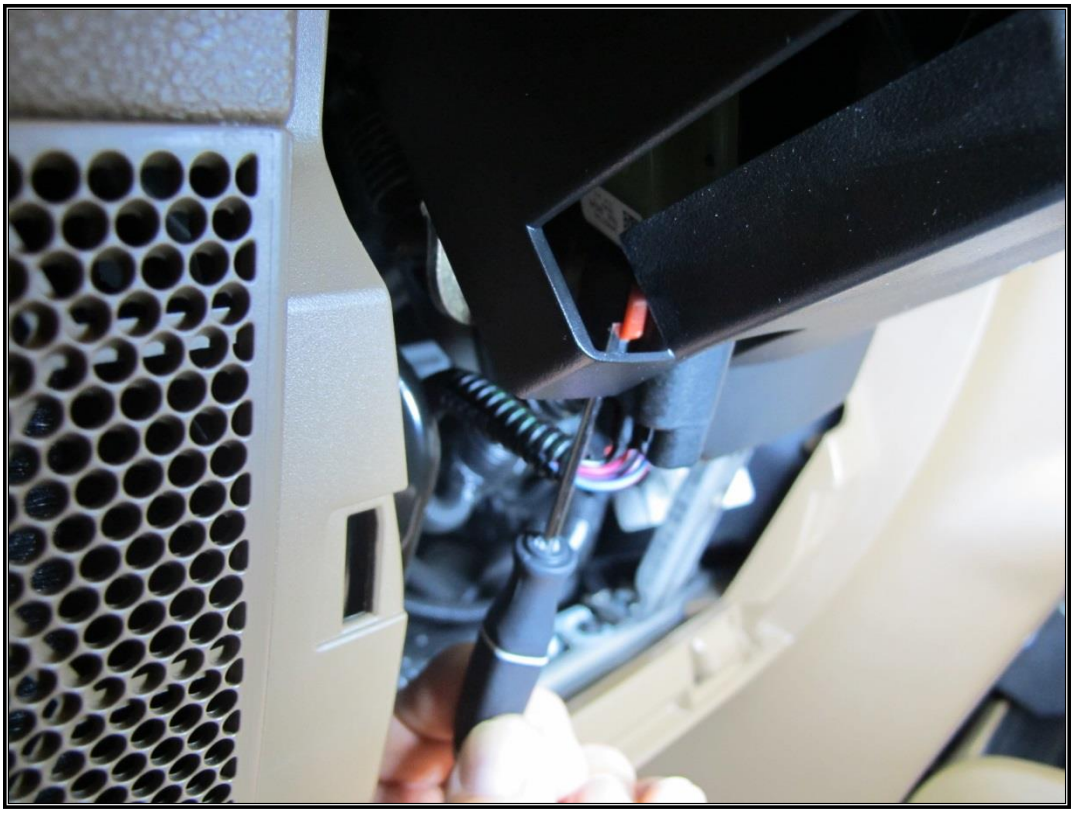


Step 27: With the plastic panel out of the way, use a 10mm socket or wrench to remove the 2 bolts holding the metal bracket in place.



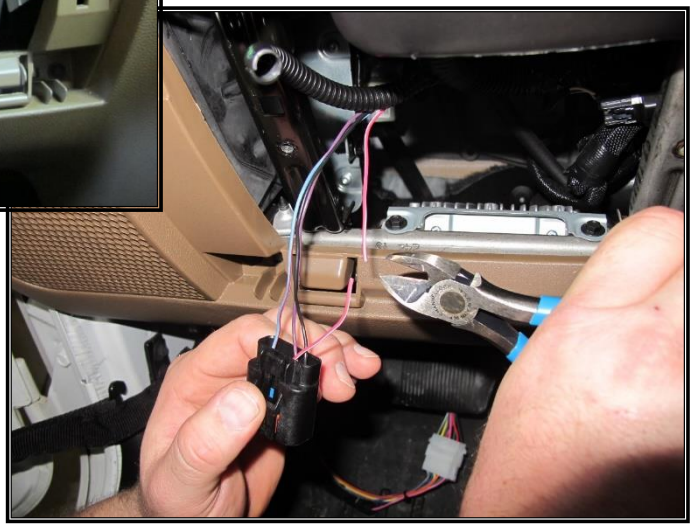
Step 28: Locate the **ignition switch connector** and remove it. To do this, use a **small flathead screwdriver** to unlock the orange clip on the side of the connector.



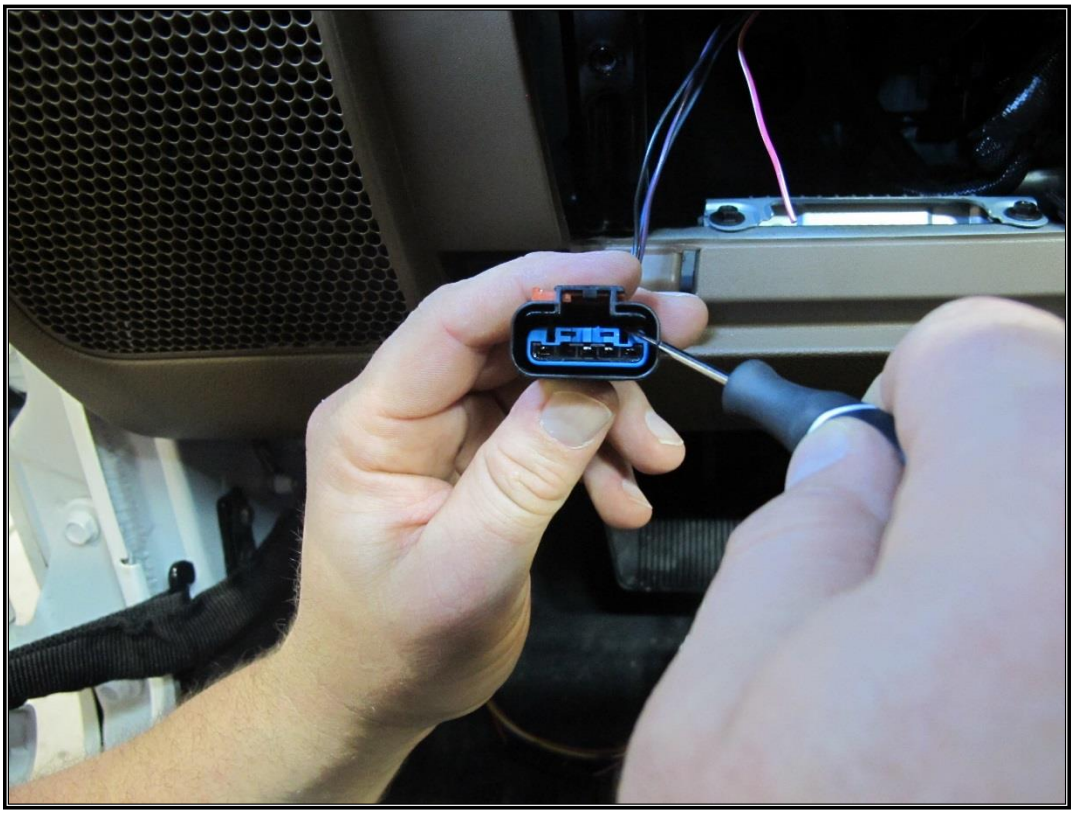


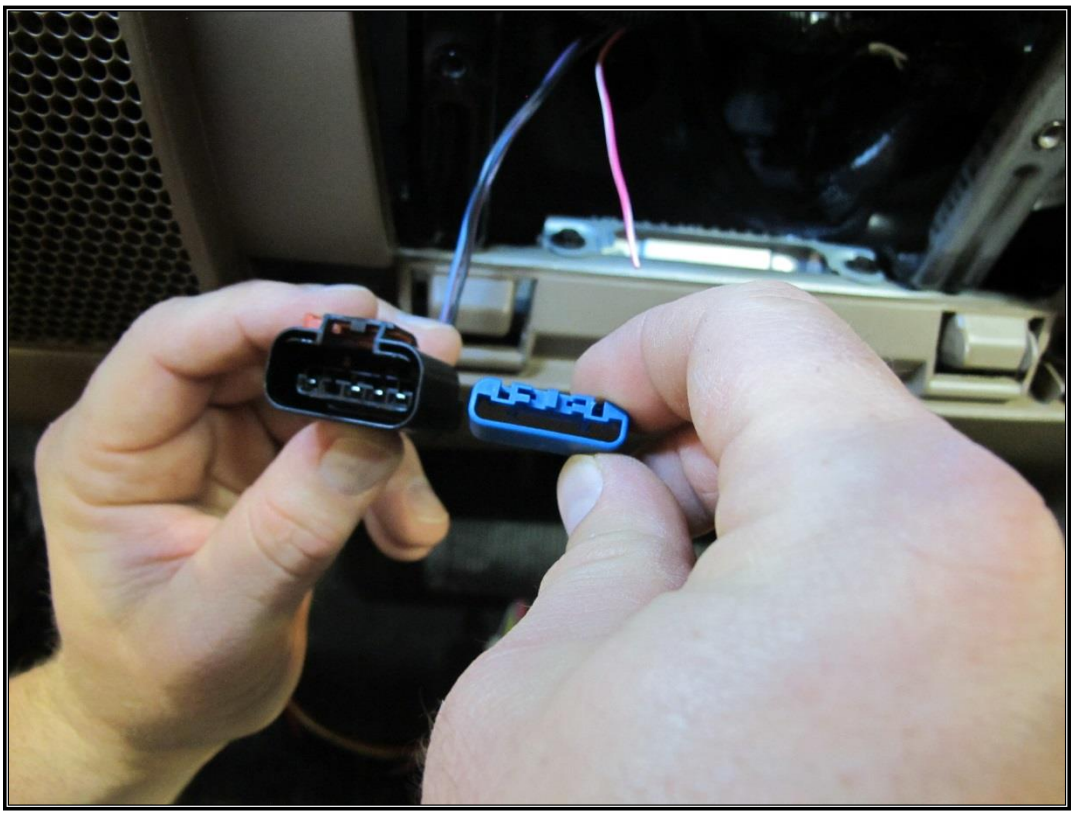
Step 29: With the orange clip unlocked, squeeze the bottom of the connector and disconnect it.

Step 30: Now, peel back the convoluted tubing covering the wires running to the **ignition switch connector.** Then, cut the Pink/White, 12V ignition wire about 2" from the connector.

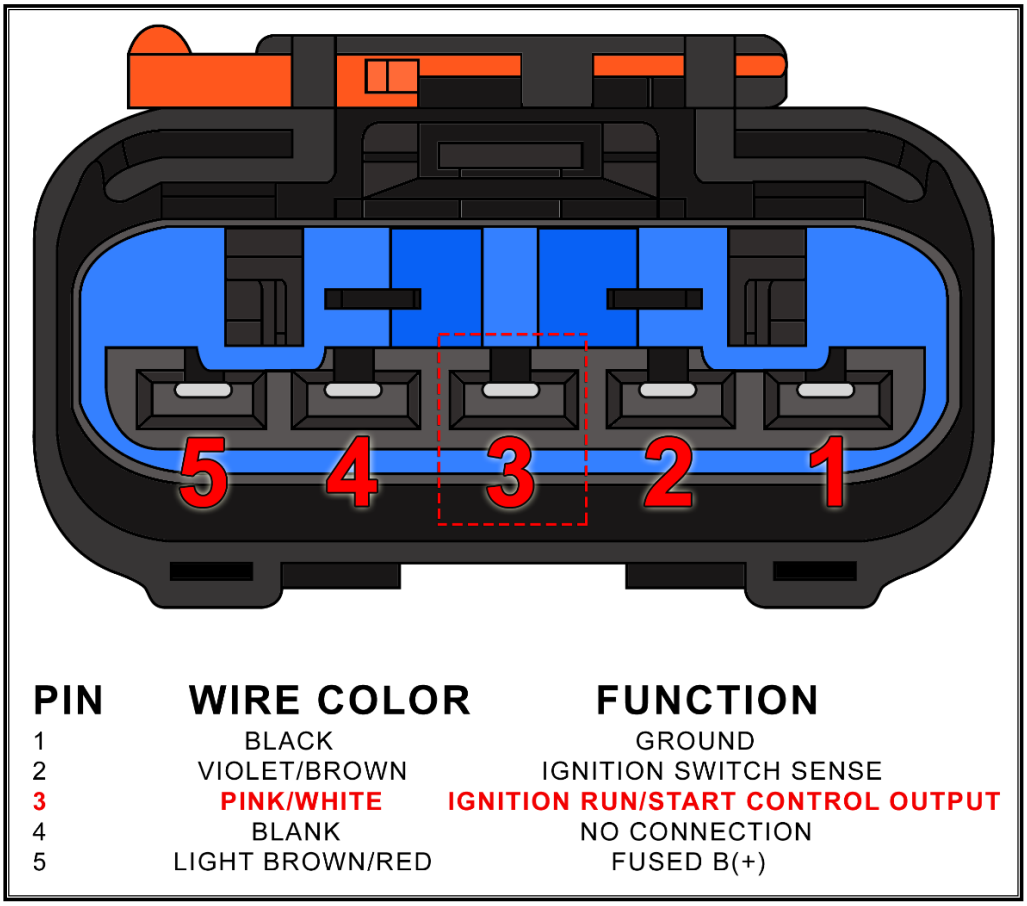


Step 31: Unpin the factory ignition switched 12V wire. To do this, first, use a small screwdriver or pick to remove the blue locking mechanism.



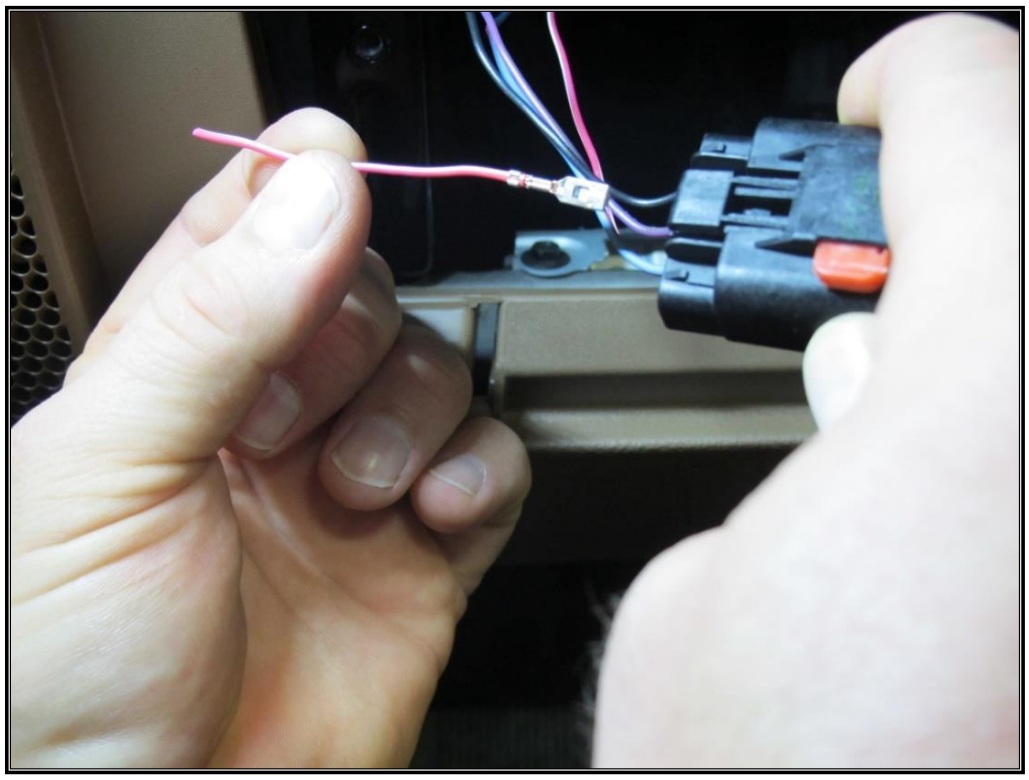


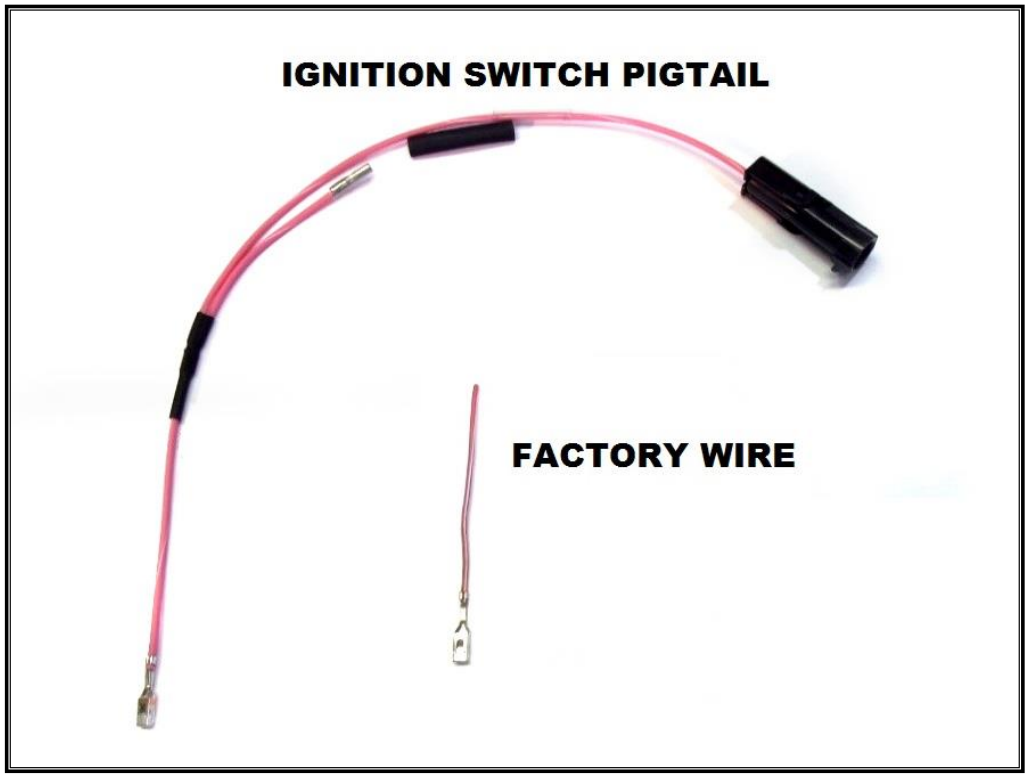
Step 32: With the blue lock removed, use a small screwdriver or pick to depress the lock underneath the middle terminal. (Pin 3 = Ignition Switched 12V)



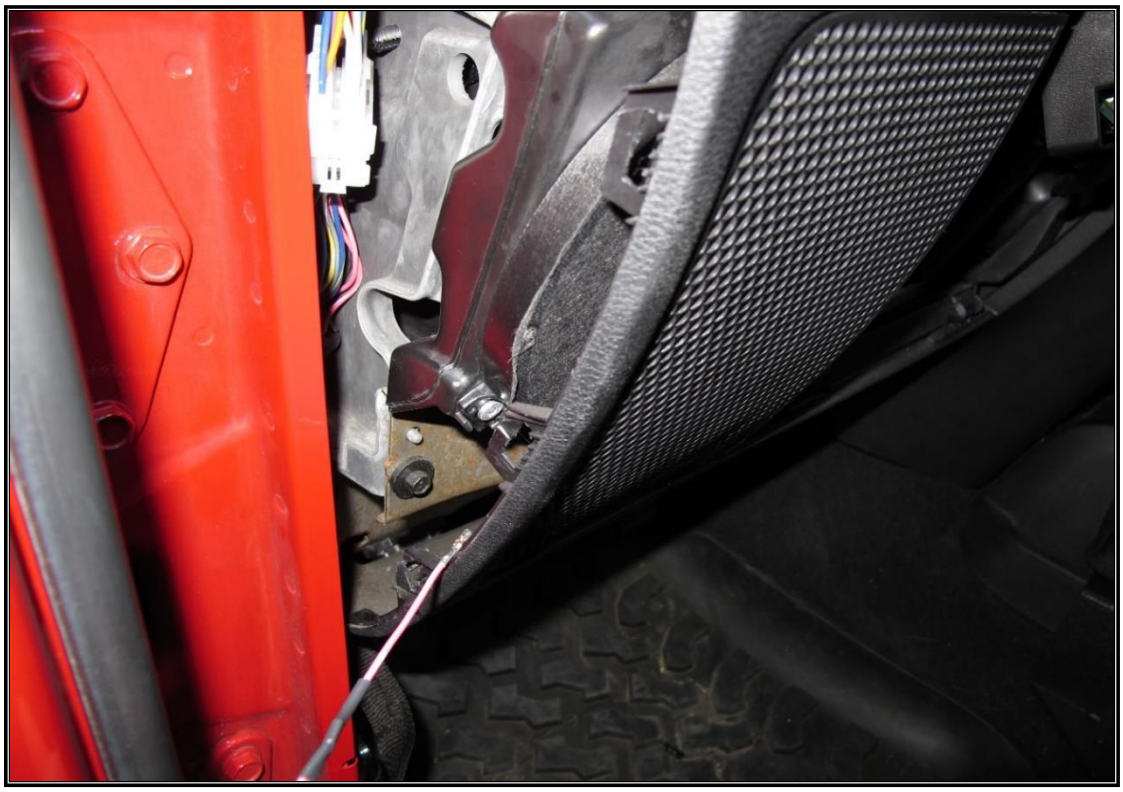
PIN	WIRE COLOR	FUNCTION
1	BLACK	GROUND
2	VIOLET/BROWN	IGNITION SWITCH SENSE
3	**PINK/WHITE**	**IGNITION RUN/START CONTROL OUTPUT**
4	BLANK	NO CONNECTION
5	LIGHT BROWN/RED	FUSED B(+)

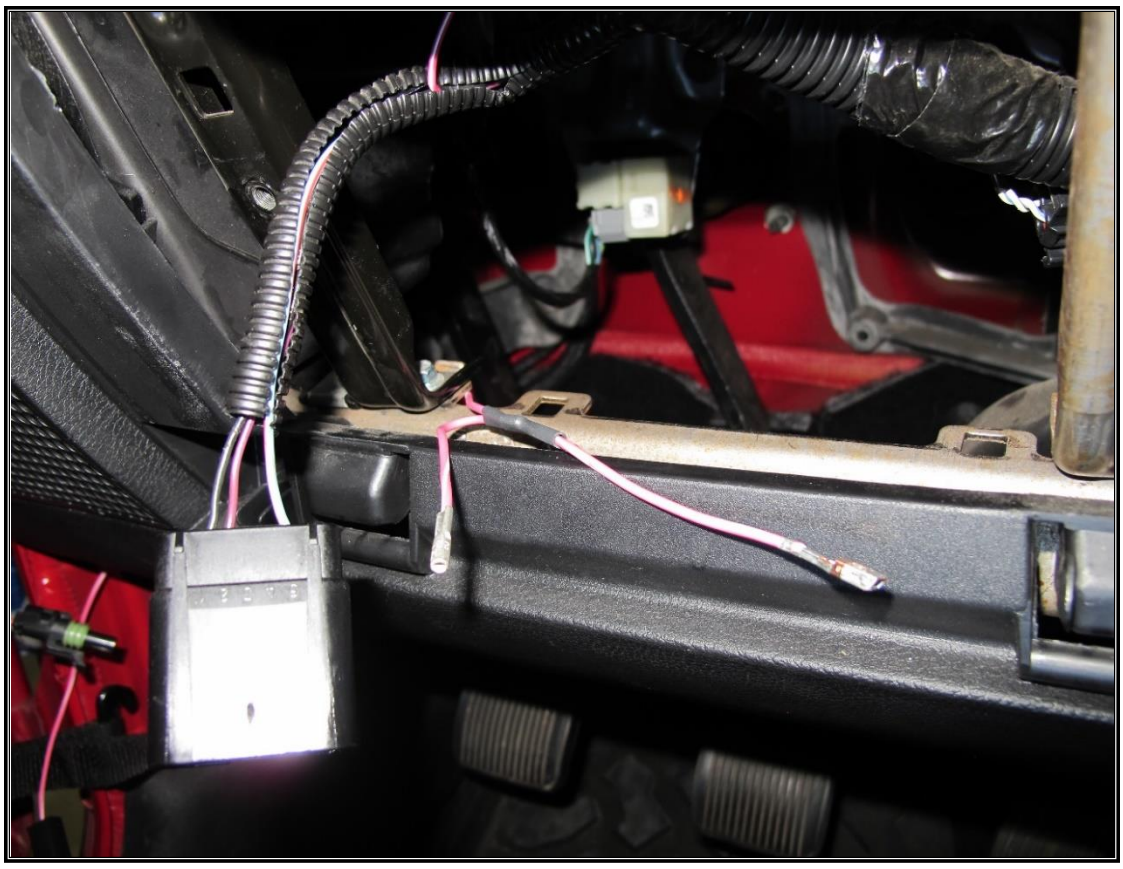
Step 33: With the terminal unlocked, pull the terminal out of the connector. Provided in your parts kit is a replacement ignition pigtail that will provide your **Trail Rocker** with ignition switched power while allowing you to terminate into the factory ignition switched 12V wire.



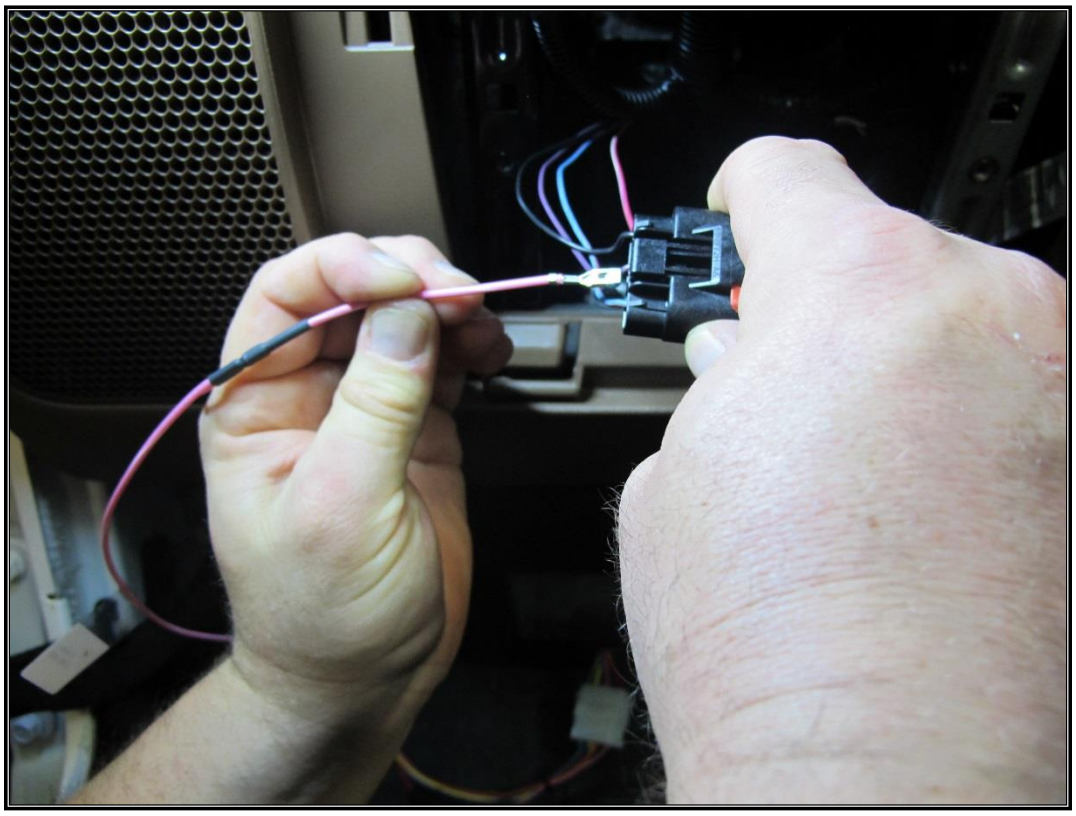


Step 34: Remove the driver side **dash access panel** and insert the new ignition pigtail thru the channel, to the center access, and route the ignition pigtail towards the factory ignition switch connector.

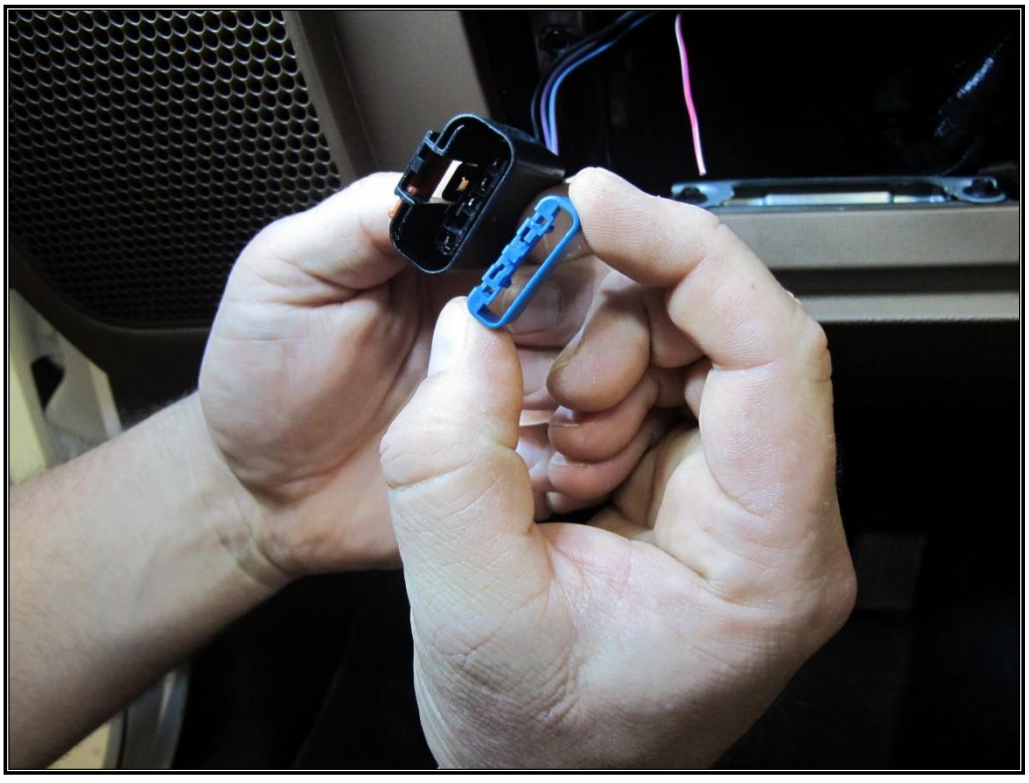




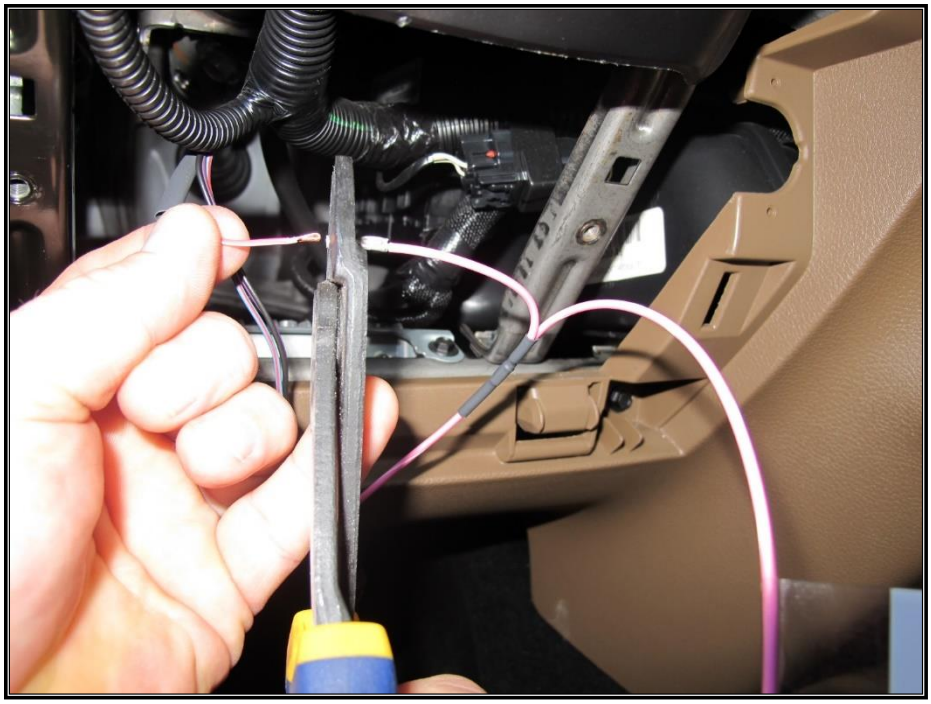
Step 35: Now, re-pin the factory ignition switch connector (Pin #3) with the new ignition pigtail.



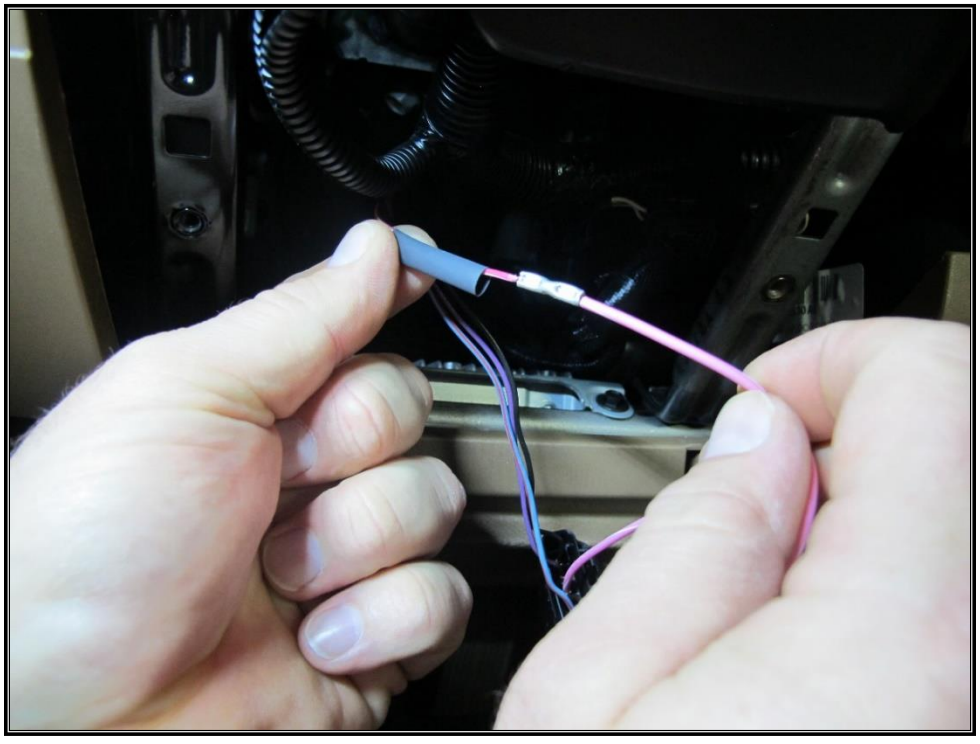
Step 36: With the ignition pigtail fastened, reinstall the blue locking mechanism.



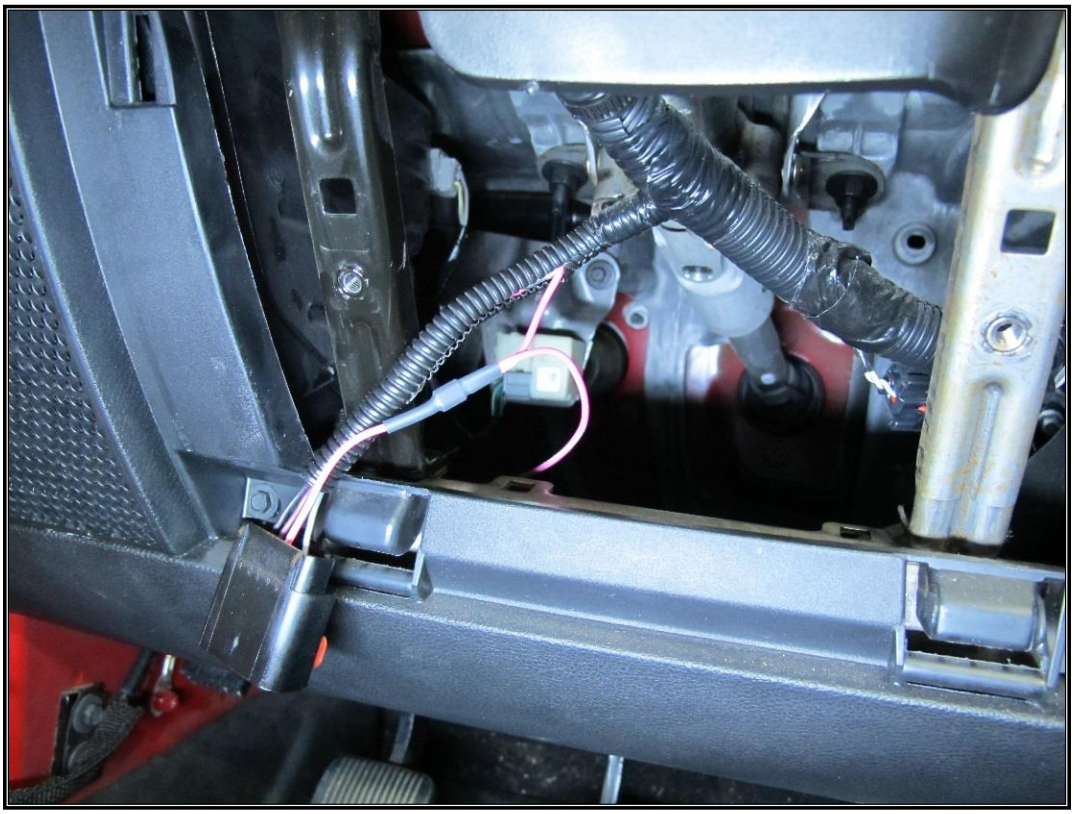
Step 37: Now, strip the factory pink/white, 22-gauge wire ⅜". Once stripped, fold the copper wire in half to ensure a tight connection to the butt connector. Then, slide a piece of heat shrink over the factory wire and crimp it into the open end of the butt connector on the ignition pigtail. (**NOTE: make sure the heat shrink is installed before crimping**).



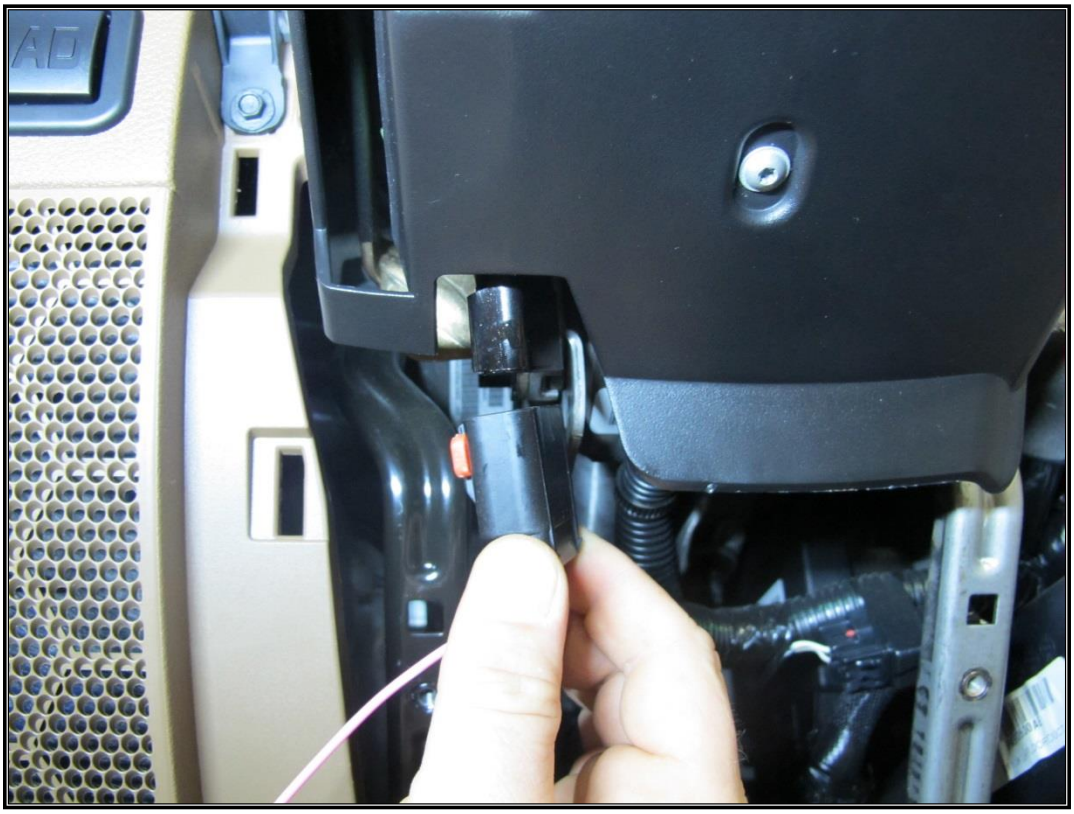
Step 38: After crimping, slide the heat shrink over the connection. Using a heat source, heat the heat shrink ensuring a tight wrap around the connector.



Step 39: Reinstall the factory convoluted tubing over the factory wire.

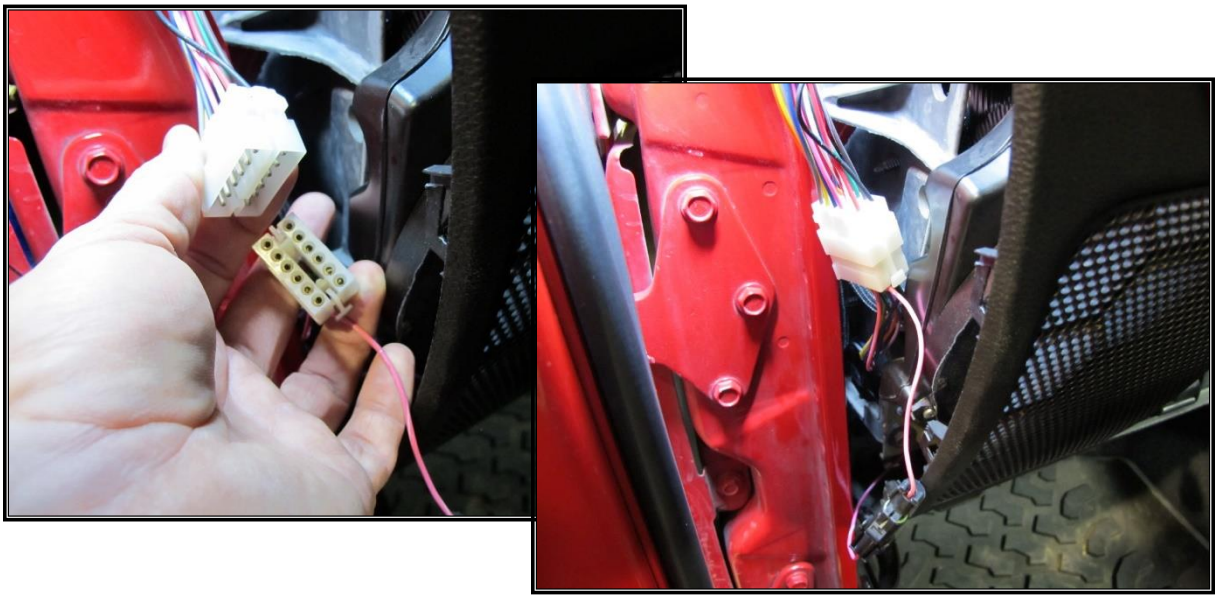


Step 40: Reinstall the factory ignition switch connector, and lock it into place.



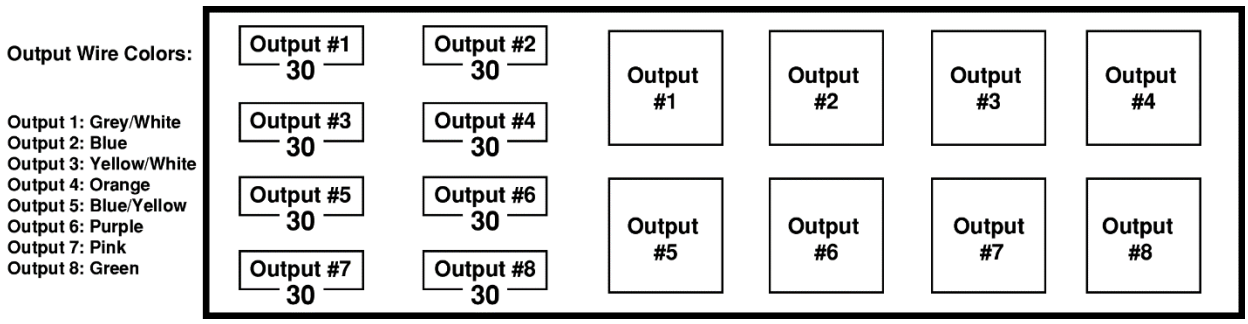
Step 41: Now, connect the weather pack connector from the ignition pigtail to the weather pack connector on the switch control wires coming from the **Fuse/Relay Center**. (Note: for ease of installation you may want to unplug the **Fuse/Relay Center's** switch control wire connector from the **Switch Control Panel**.)

Step 42: If you do disconnect the **Switch Control Panel** from the **Fuse/Relay Center's** switch control wire connector, reconnect them now. Stow the wiring harness neatly away, and secure with a zip-ties if needed.



Step 43: Reinstall the driver side access panel and then replace the metal bracket and plastic access panel beneath steering column.

RELAY OUTPUT WIRES

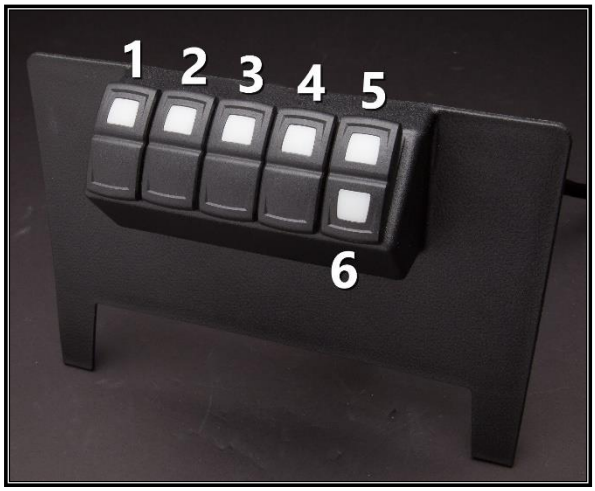


Route these wires to the location of your components. Ensure to route them safely, and avoid high heat areas, moving parts, and sharp edges. Painless recommends using grommets for any wires passing through metal to avoid wearing through the wire insulation and causing arcing. Make sure any accessories and/or components you install are properly grounded.

See **Steps 44 – 48** starting on page 32 for a common example on connecting the relay output wires to most accessories.

Relay Output Wire Color Diagram:

- Switch #1: Grey/White
- Switch #2: Blue
- Switch #3: Yellow/White
- Switch #4: Orange
- Switch #5: Blue/Yellow
- Switch #6: Purple



Extra Relay Output wires:

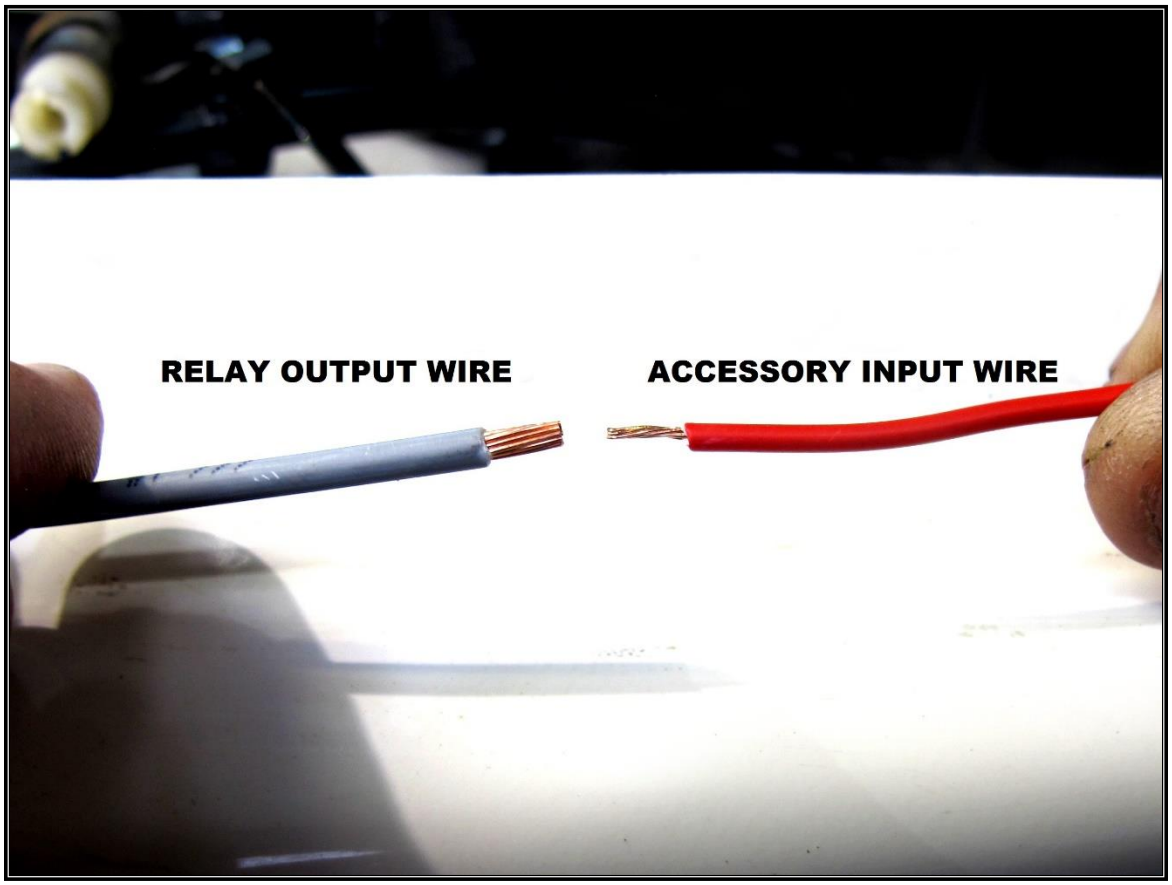
- Wire #7: Pink
- Wire #8: Green

Winch Control wires:

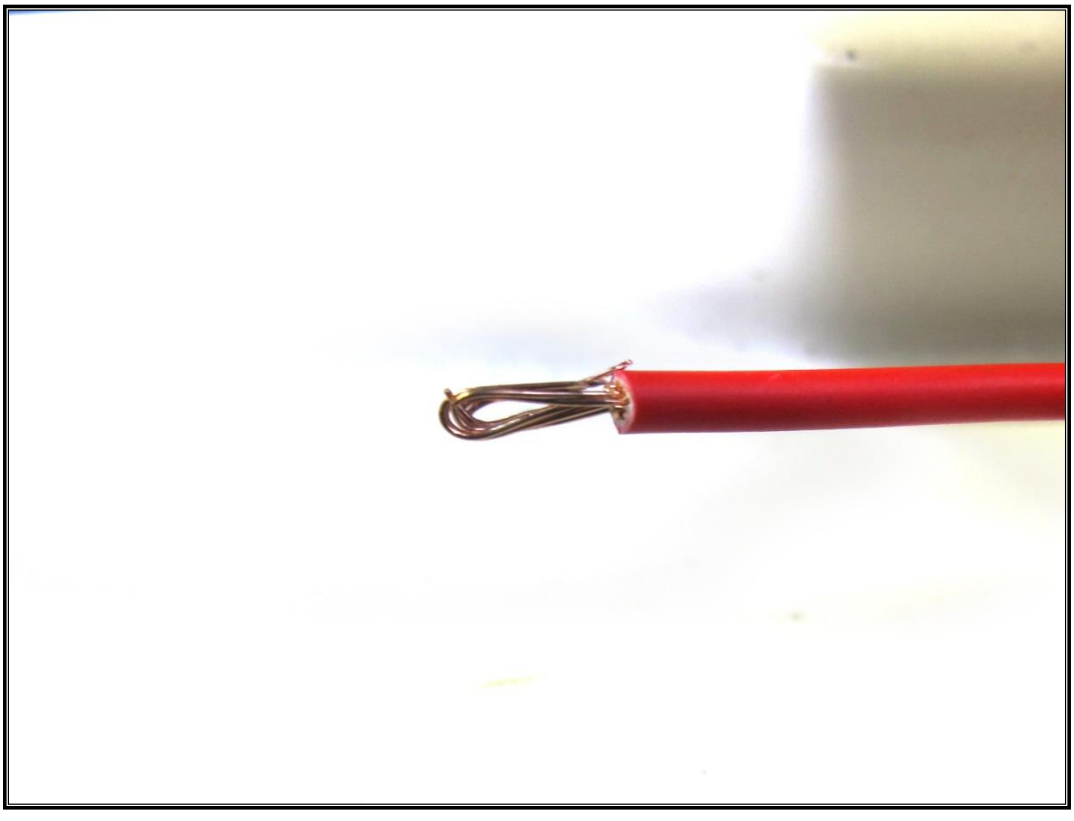
- Winch Control In: White/Red
- Winch Control Out: Brown/White

OPTIONAL: If you wish to use the two extra wires (#7 Pink and #8 Green), they will need to be wired into an additional switch. If you wish to double the switch control wires on a single switch, thus allowing you to control 2 accessories with 1 switch, then see pages 18 – 19 for a step-by-step tutorial on achieving this. For winch switch installation, see page 36.

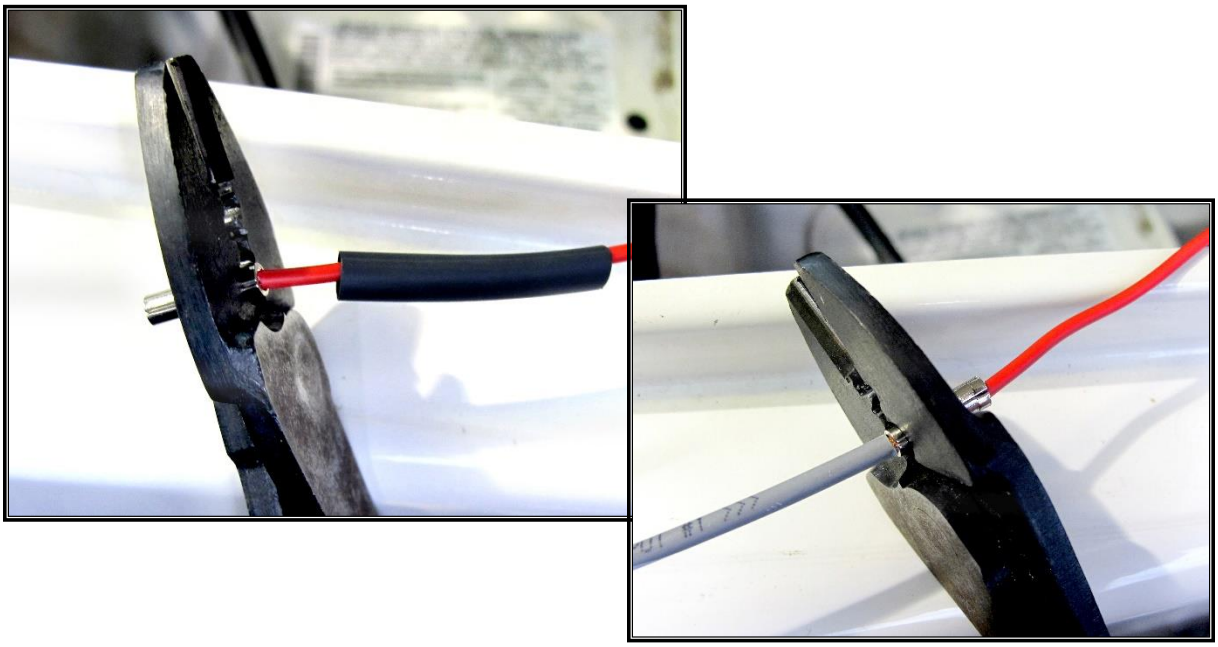
Step 44: Locate the **relay output** wire from the **Fuse/Relay Center** you wish to use. Then, locate the **input** wire on the accessory you are installing.



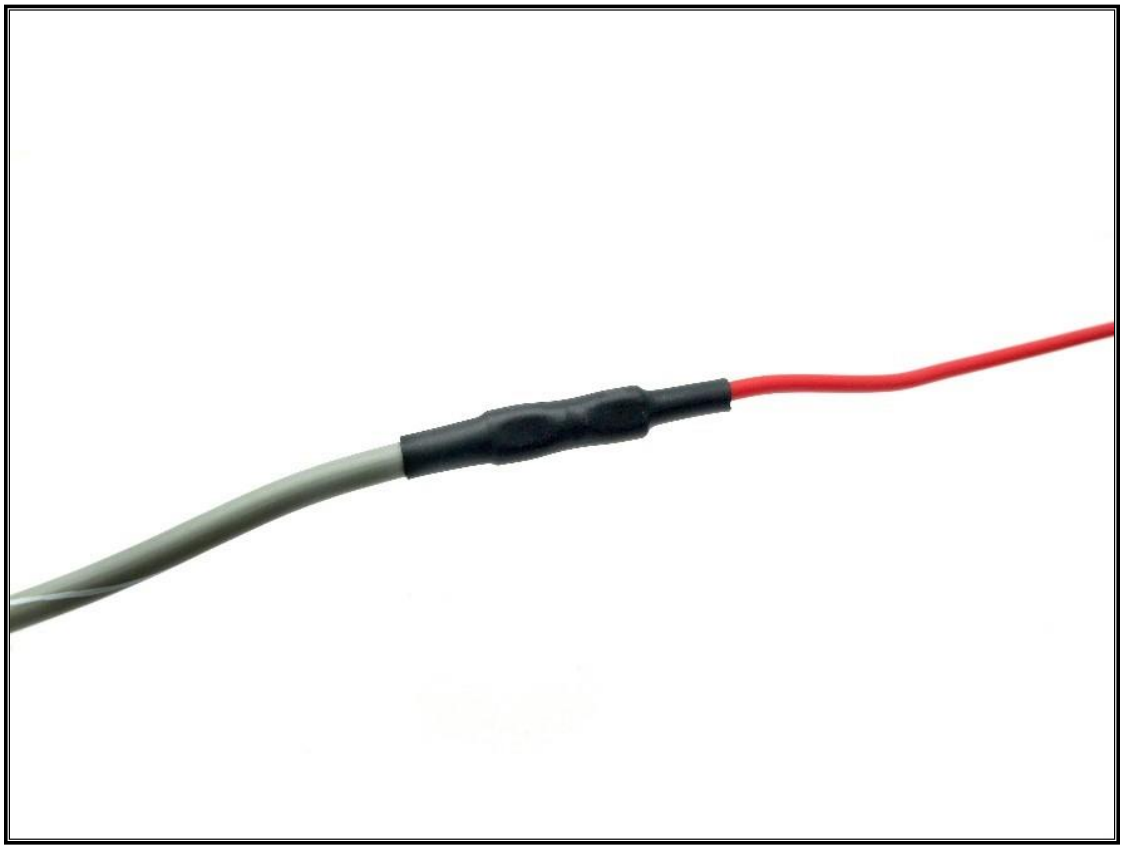
Step 45: Double up the accessory's **input** wire if necessary.



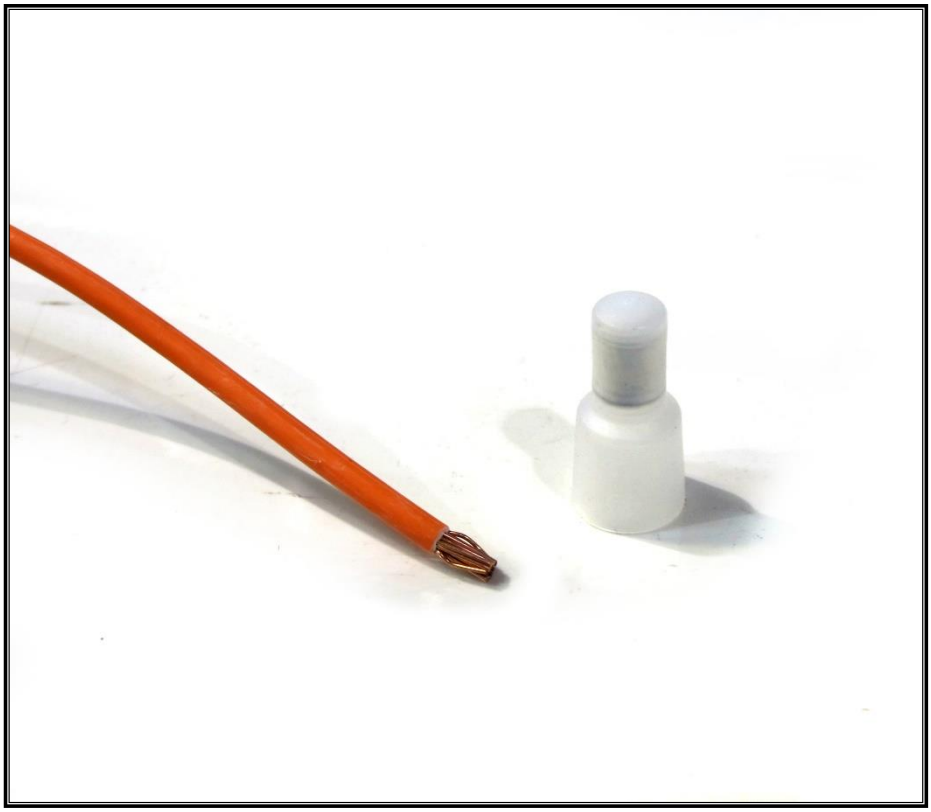
Step 46: Slide a piece of heat shrink from the included **parts kit** over the accessory wire. Then, use an un-insulated butt connector to crimp together the accessory wire with the relay output wire.

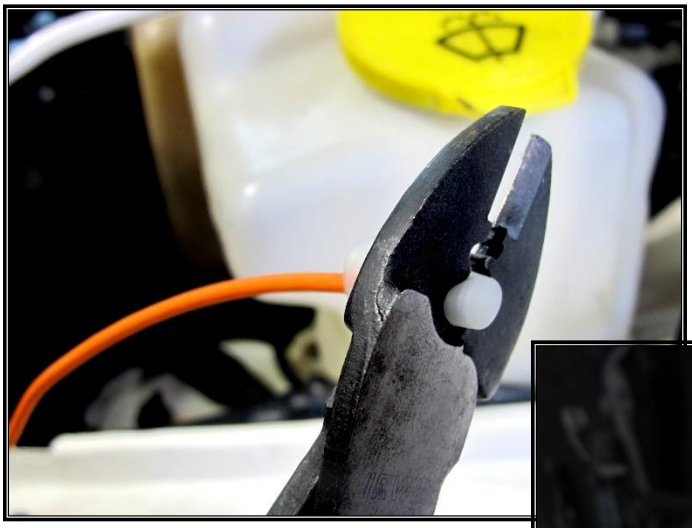


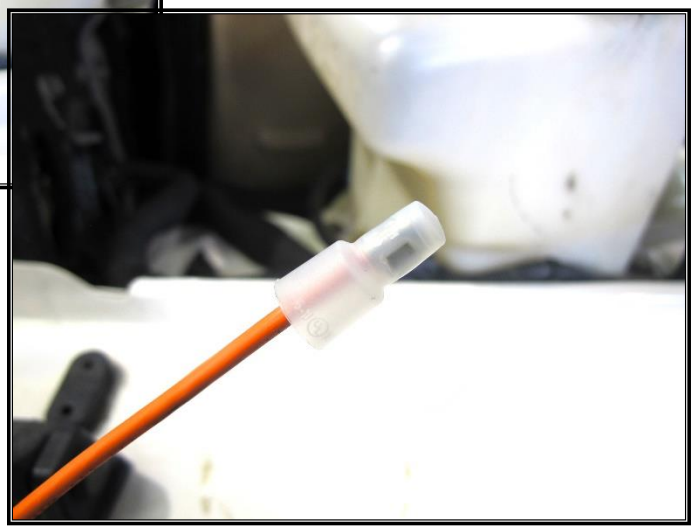
Step 47: Secure the heat-shrink over the connection.



Step 48: Cap all unused relay output wires by crimping on the provided insulated wire caps. Then store the extra wires out of the way in the most convenient way possible.





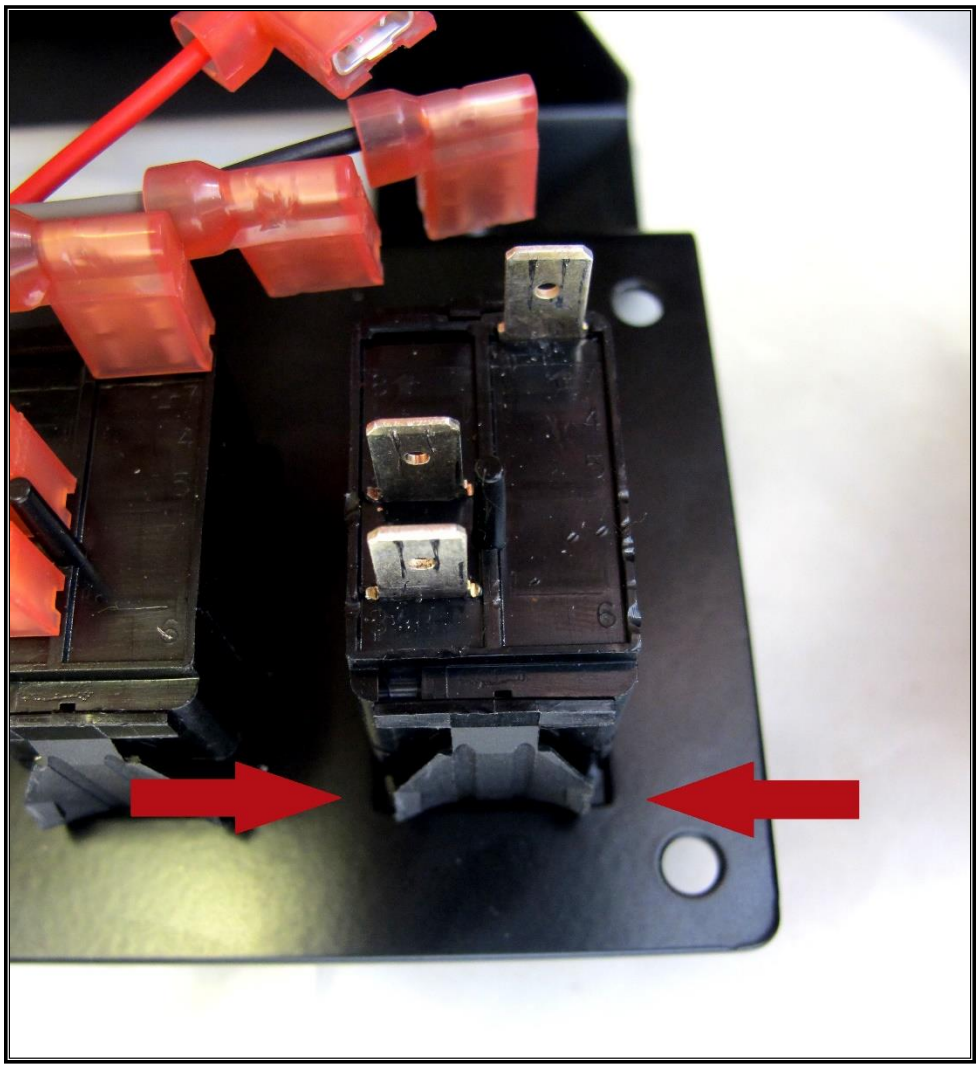


OPTIONAL: PAINLESS PART#: 57150 - WINCH CONTROL ADD-ON KIT

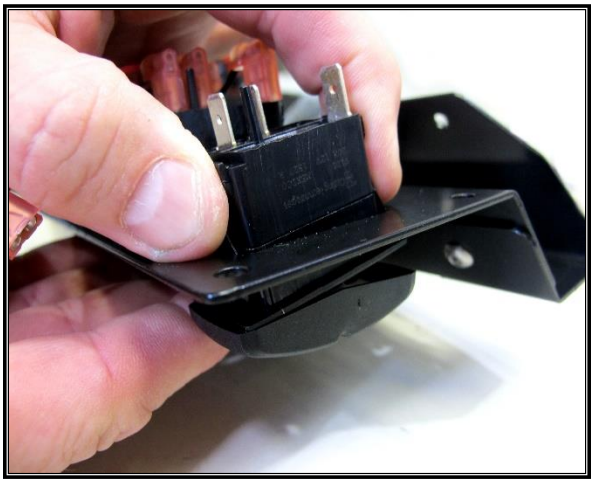
As part of your **Trail Rocker Switch Panel** wiring harness, there are 2 optional winch control wires: a WHITE/RED (IN) and a BROWN/WHITE (OUT). These wires control the in and out functions of a winch when it is installed.

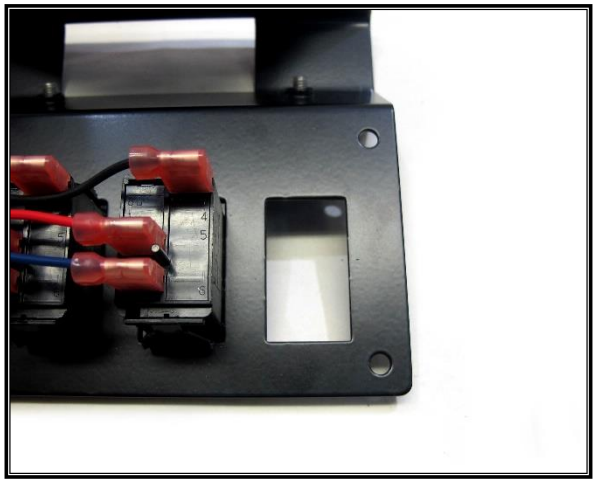
These control wires can be connected to a winch switch (not provided in the kit). If you do not have a winch switch, Painless offers a **Winch Control Add-on Kit** (Painless Part #: 57150, available online at **www.painlessperformance.com**). **Steps 49 – 53** show you how to install a **Winch Control Add-on Kit** to your **Trail Rocker Switch Panel** and connect the control wires to the switch.

Step 49: Remove the switch control, power, and ground wires from the switch you are replacing with the **Winch Control Add-on Kit**. Then, locate the tabs located at the top and bottom of the switch.

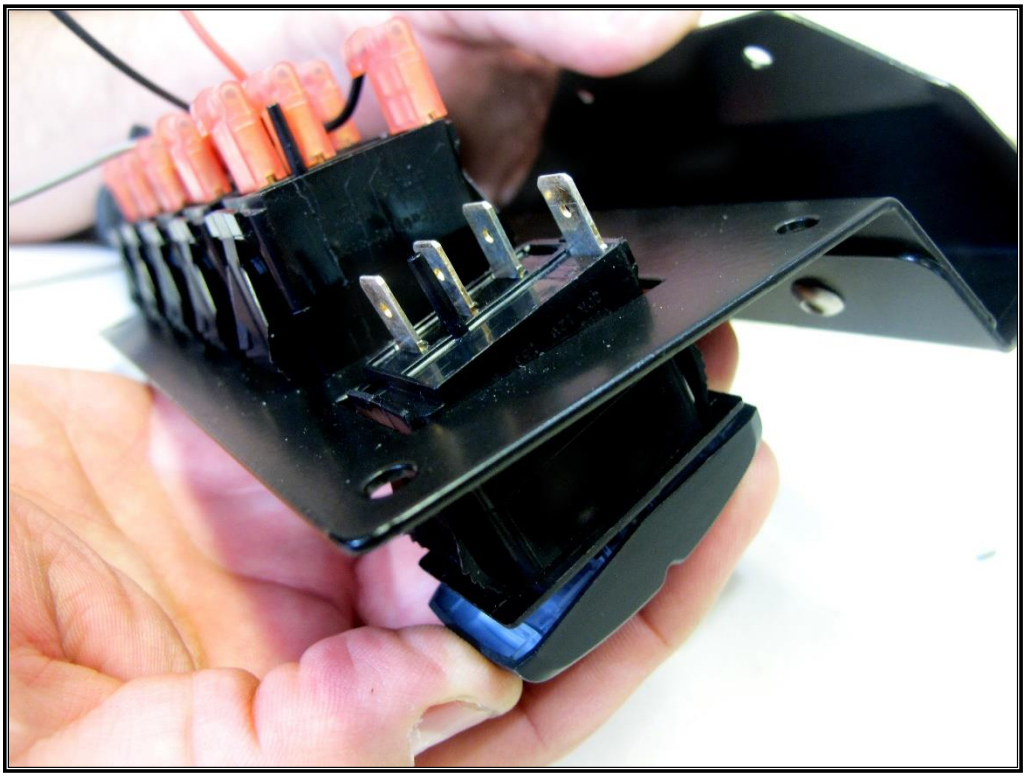


Step 50: These tabs lock the switch in place. To remove the switch, squeeze the tabs in and slide it out of the bracket.

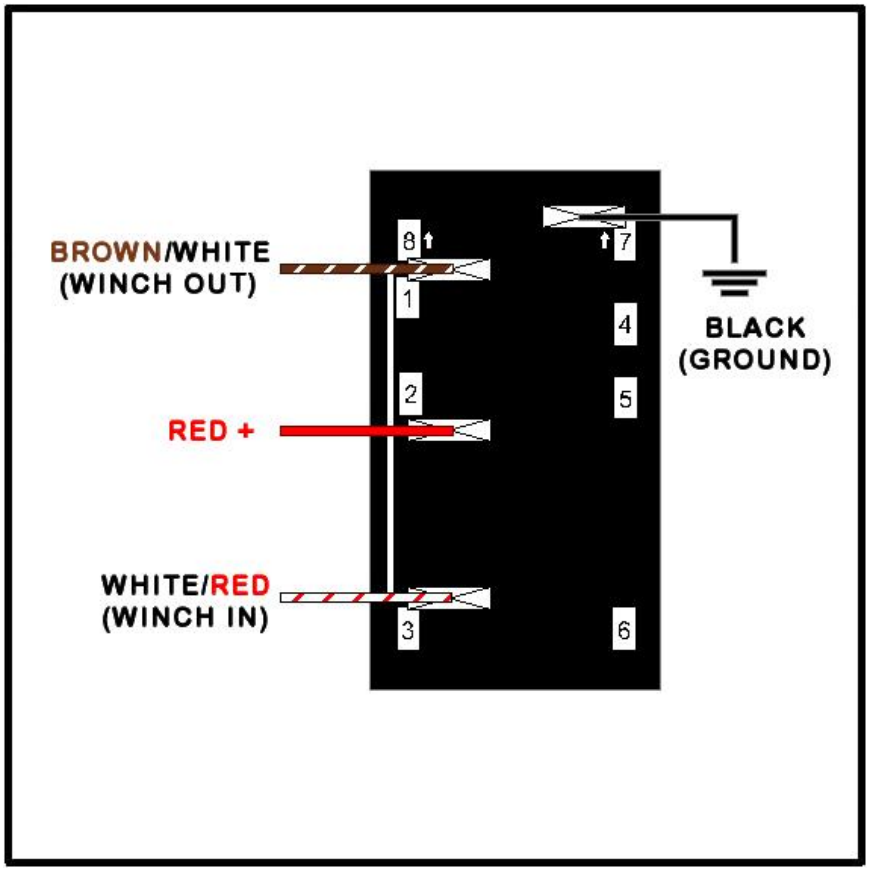




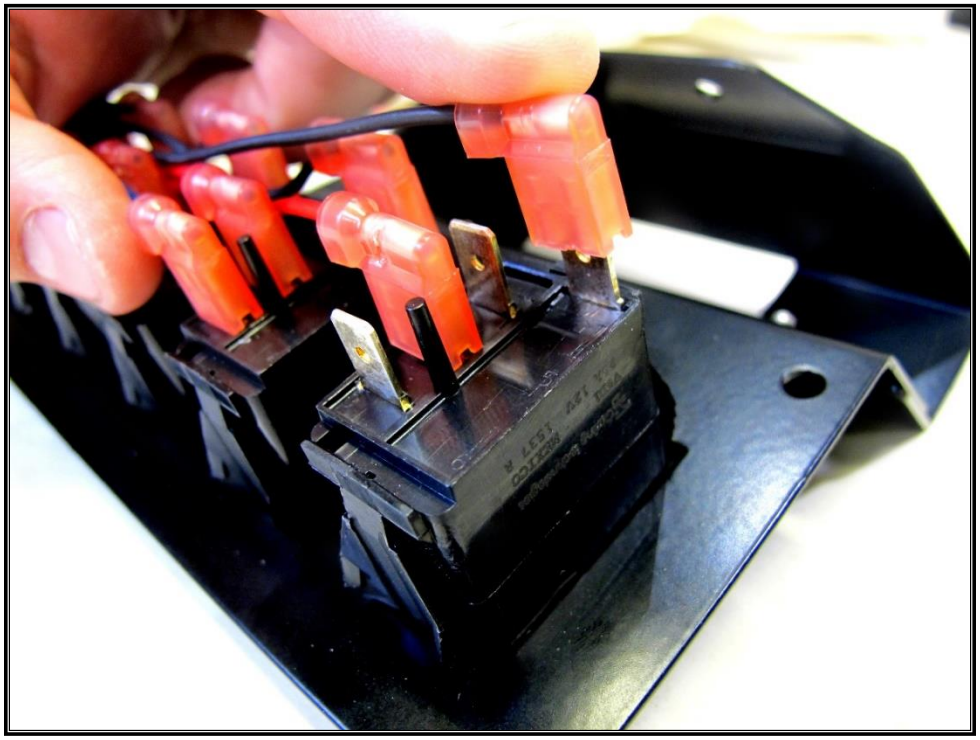
Step 51: Insert the **Winch Control Add-on Kit** into the empty socket of the bracket.

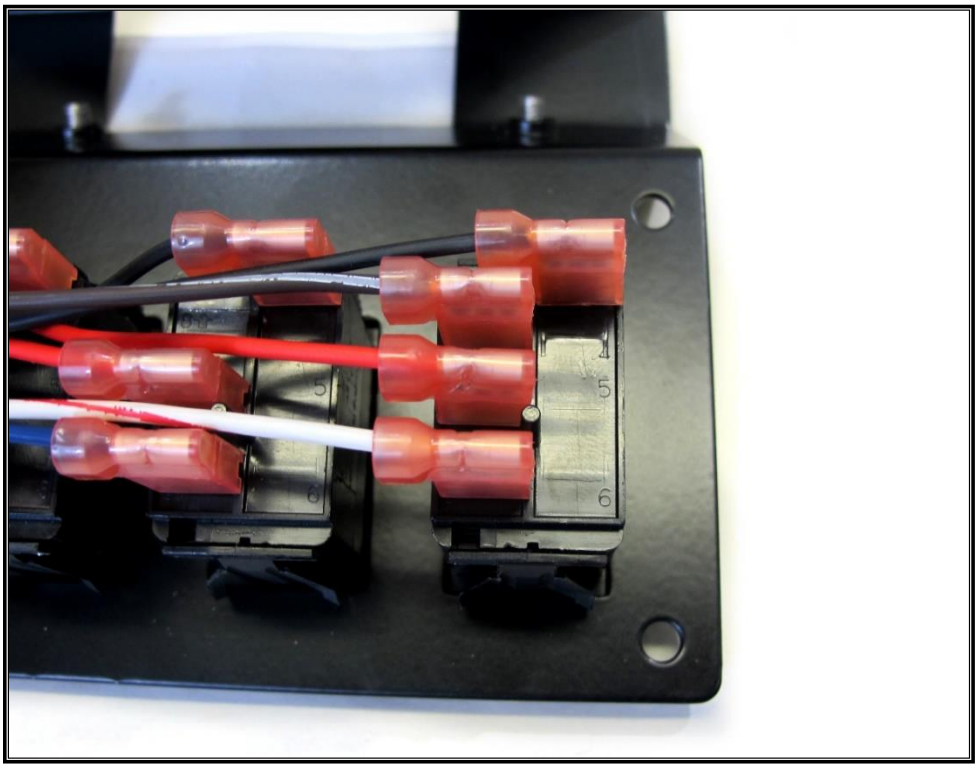


Step 52: Before connecting the wires to the **Winch Control Add-on Kit**, take time to familiarize yourself with the wiring diagram below.



Step 53: Reconnect the power, ground, and control wires to the **Winch Control Add-on Kit** as seen below.

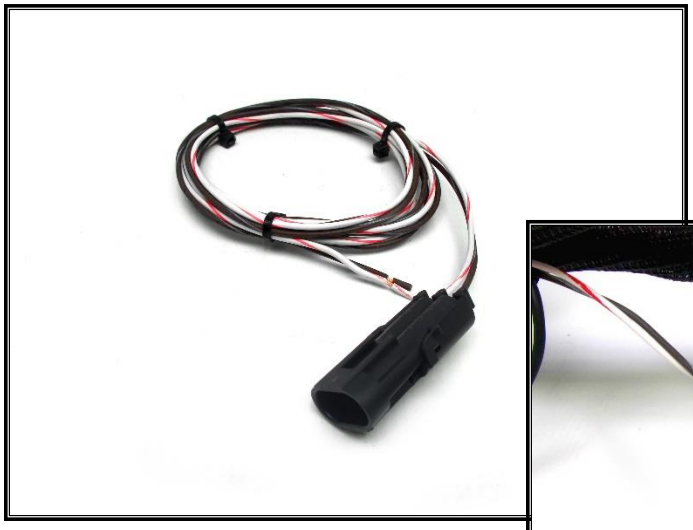


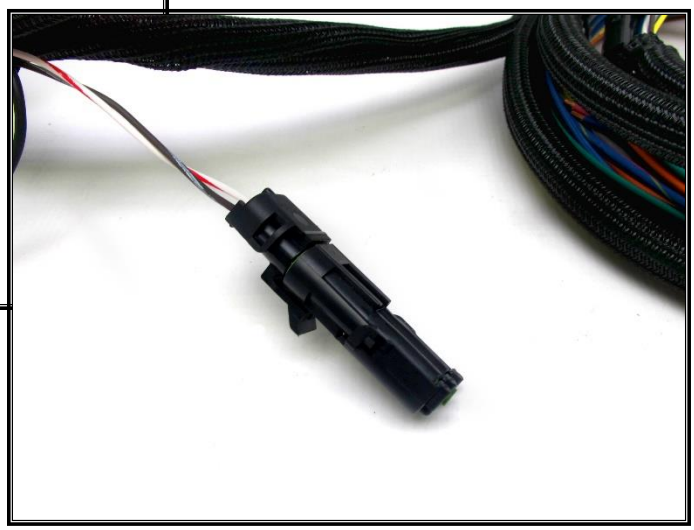


OPTIONAL: WINCH PIGTAIL

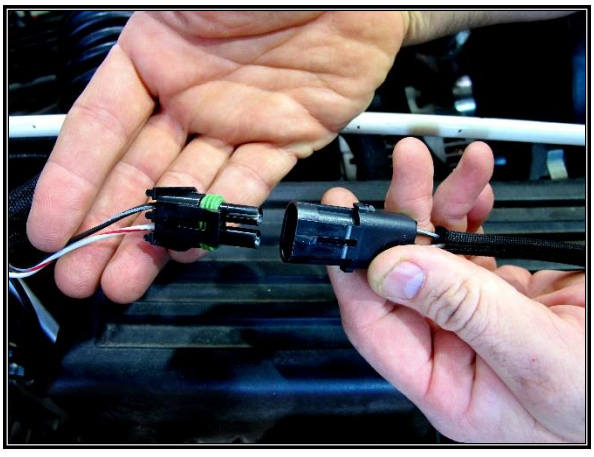
If you are hooking up your winch to your **Trail Rocker System**, read the following steps for attaching the included **winch pigtail**.

Step 54: Locate the winch pigtail included in your parts kit. Then locate the winch connector on your **Fuse/Relay Center**.





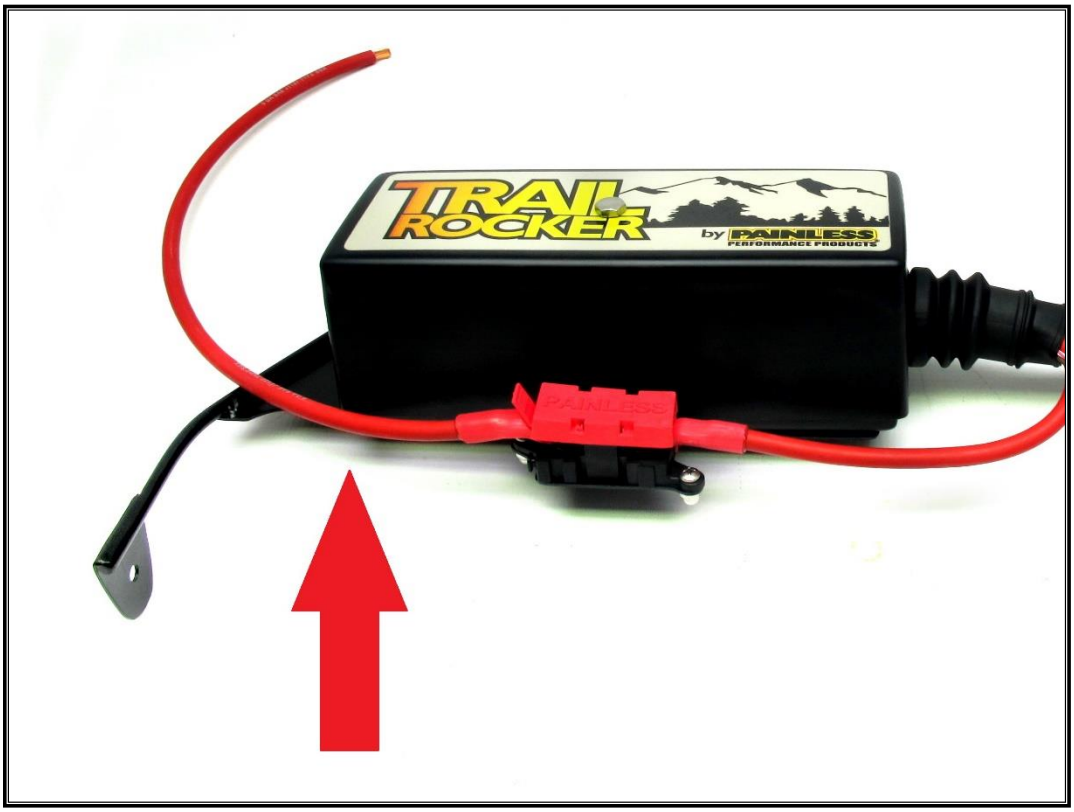
Step 55: Remove the cap from the winch connector on the **Fuse/Relay Center**. Then plug in the winch pigtail and route the wires safely to your winch.

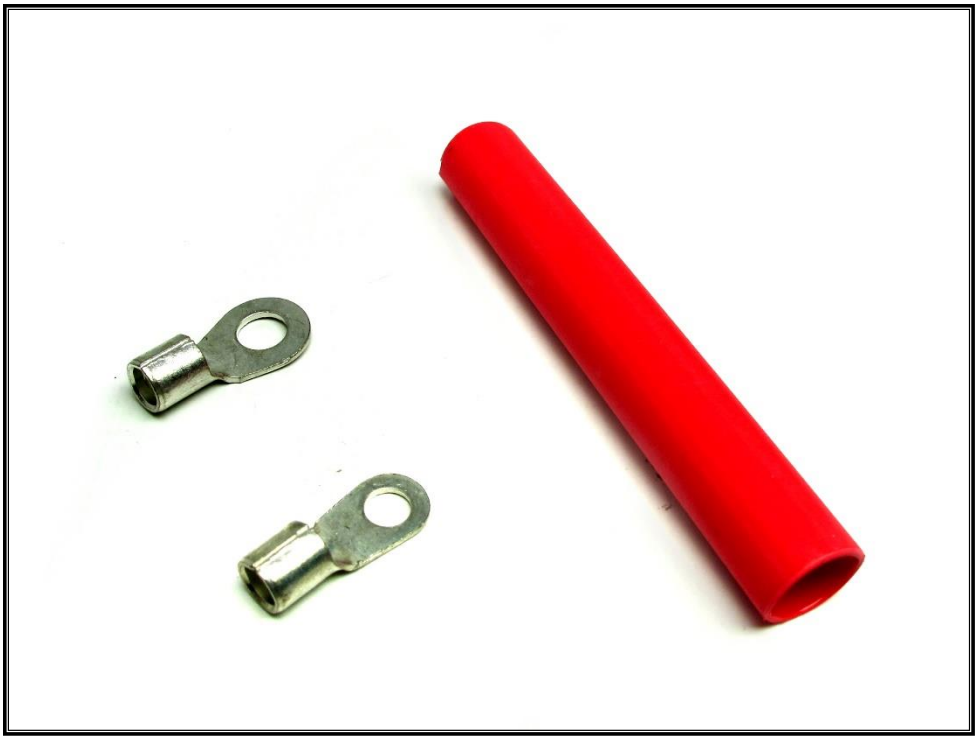


Wiring diagrams for specific winch set-ups can be found at **http://www.painlessperformance.com/schematics** under the **Trail Rocker** section.

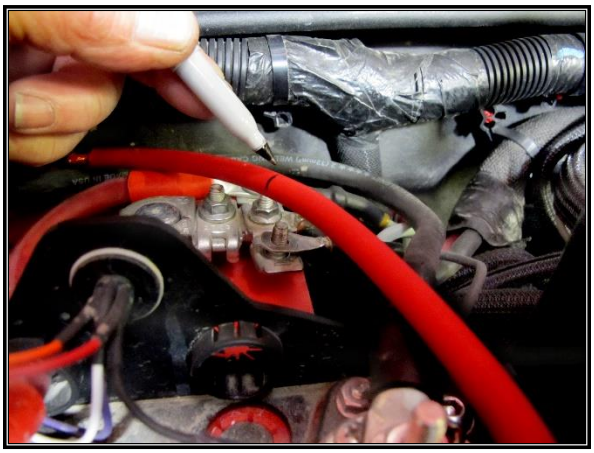
FINAL STEPS

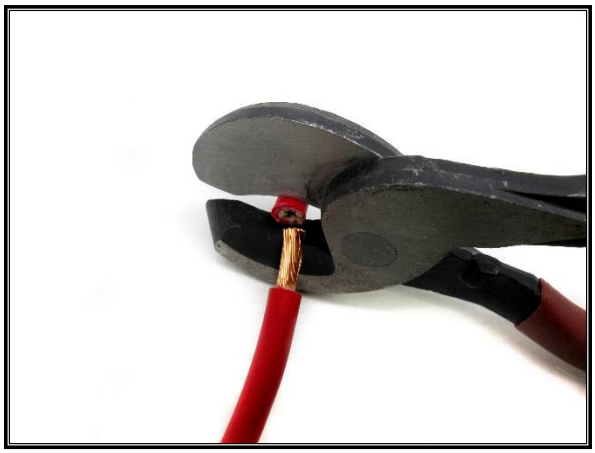
Step 56: After completing the previous installation steps, you may now reconnect your battery terminals. Locate the 6-gauge, unterminated, red cable coming from the **Fuse/Relay Center**, heat shrink, and the appropriate sized (for your particular application) non-insulated ring terminal.



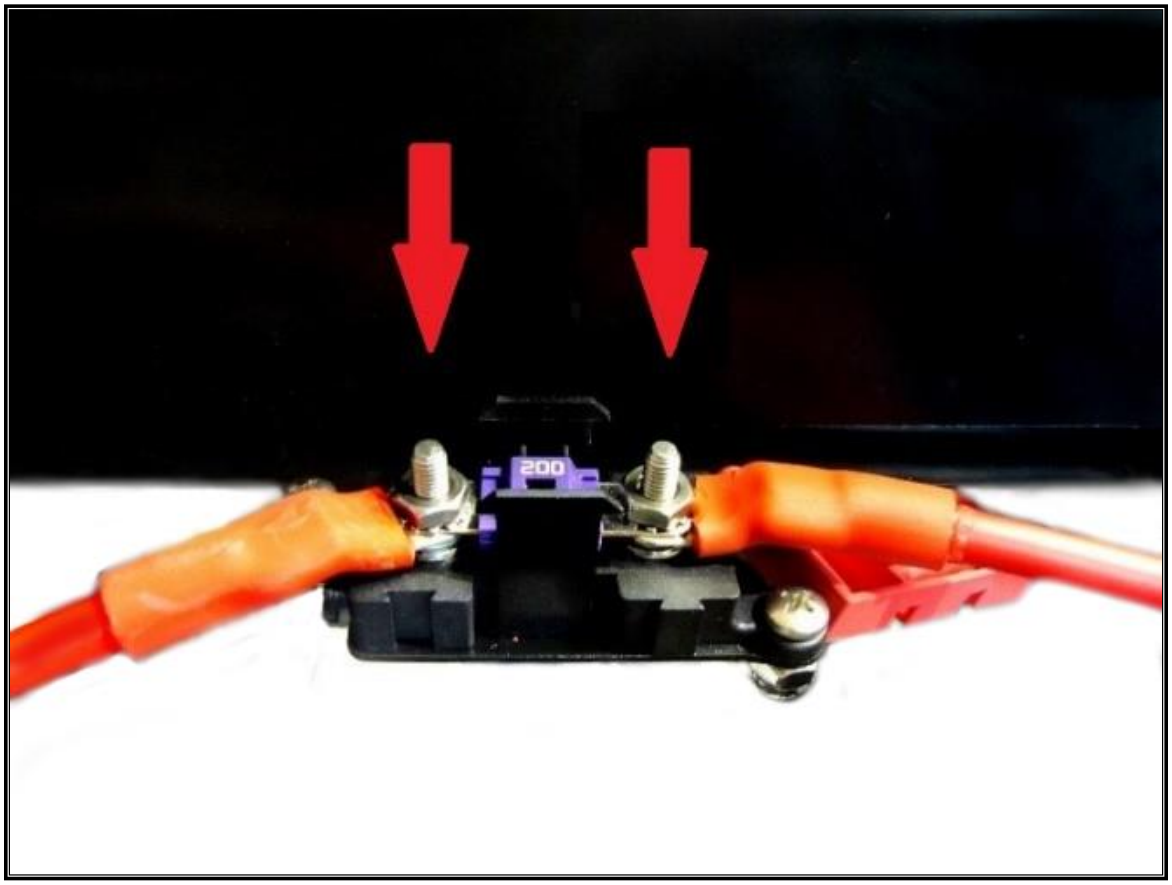


Step 57: Notice that the 6-gauge red cable does not have an eyelet on one end. This is so you can cut the cable to the length you need for your specific application. Mark the length you need to route the cable to the positive terminal. Cut and strip the wire about ½".

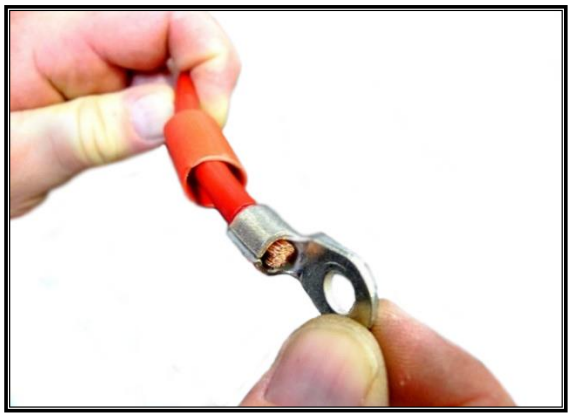


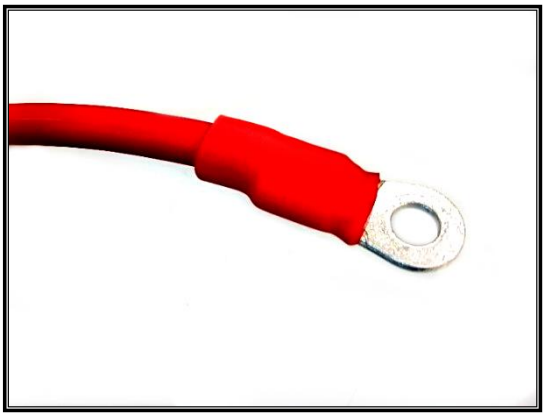


Step 58: Once the cable is stripped, remove it from the **Fuse/Relay Center** in order to crimp on the included ring terminal from your parts kit. To remove the cable lift up the fuse cover on the **Fuse/Relay Center bracket**. Then, remove the 2 nuts and 200-amp MIDI fuse holding the cable in place.

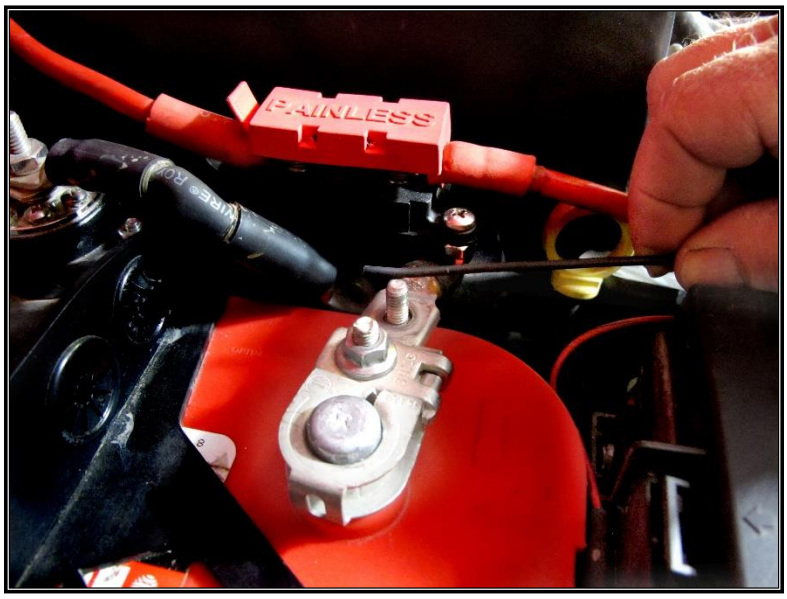


Step 59: These ring terminals can be difficult to crimp. It can be done with a chisel and hammer or with a hammer crimping tool like the one below. These crimping tools can be found at your local parts store or online. Once the terminal is crimped, secure it with about 1" of heat shrink.



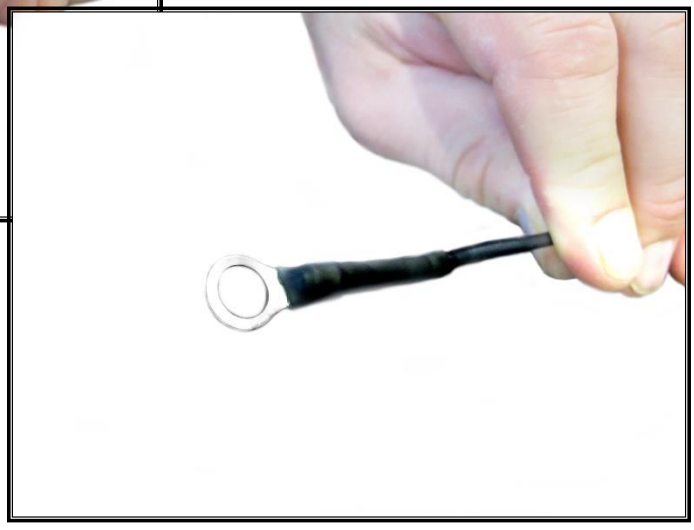


Step 60: Next, re-install the cable and 200-amp MIDI fuse to the **Fuse/Relay Center** and connect it to the positive battery terminal. Then, route the ground wire coming from the **Fuse/Relay Center** to the negative battery terminal.

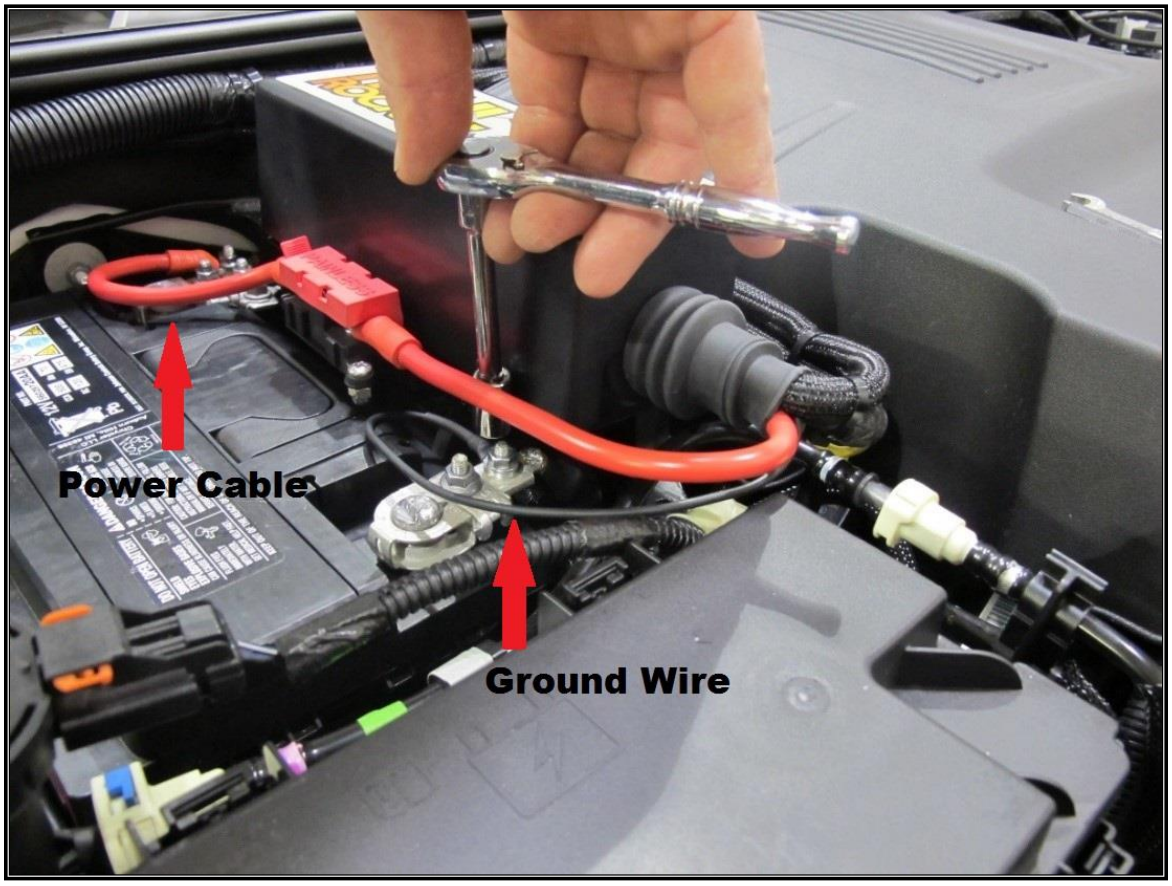


Step 61: Locate (1) ¼" black heat shrink and (1) 16-14 ga. non-insulated ring terminal. Strip the wire about ¼" and slide the heat shrink over it.

Step 62: Crimp on the ring terminal and secure it with the heat shrink.



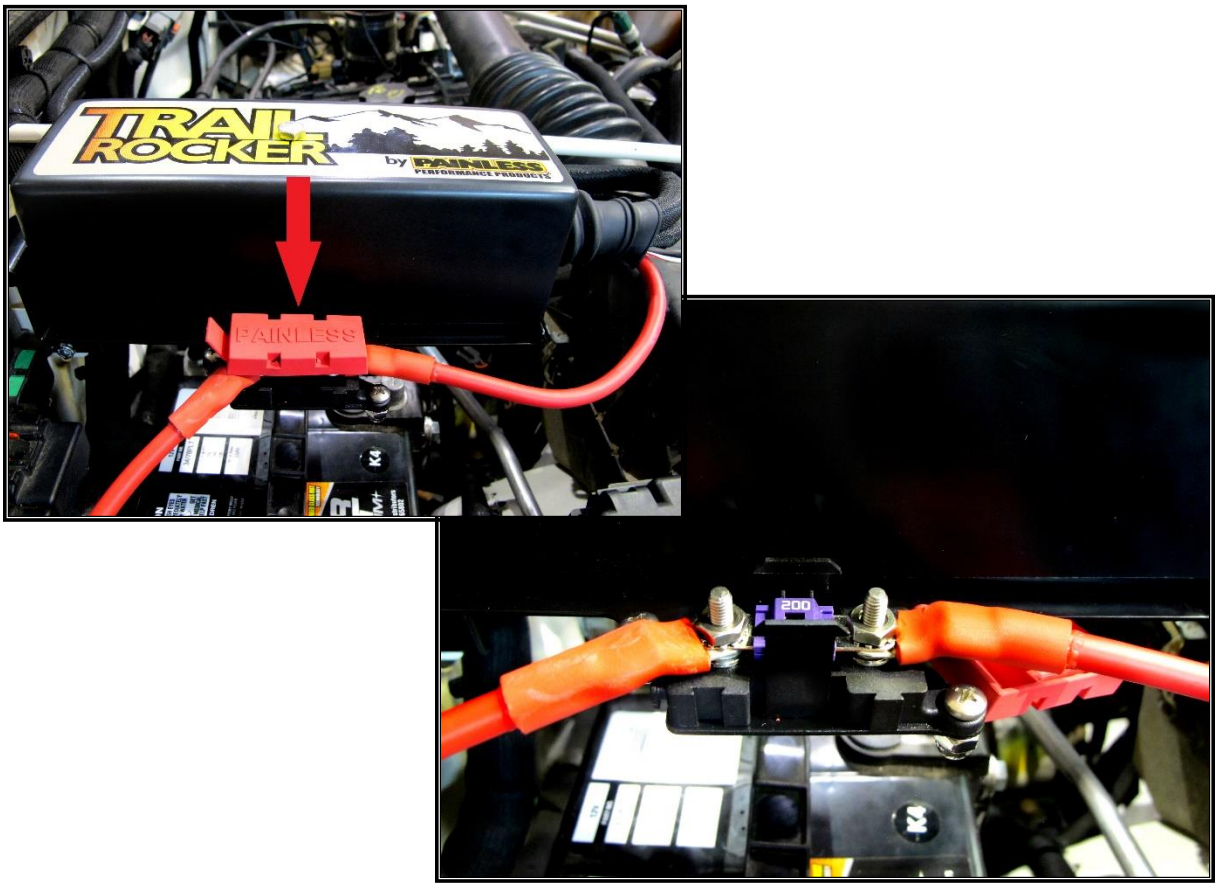
Step 63: Hook the terminals back up to your battery. Connect the red cable to the positive terminal and the ground wire to the negative terminal.



Step 64: With the battery connected, you can now test out and enjoy your new Trail Rocker!

FUSE PLACEMENT

The 200 amp midi fuse is located on the fuse block on the side of the **Fuse/Relay Center mounting bracket**.



The **Fuse/Relay Center** contains eight 30 amp ATO fuses, and can be accessed by removing the lid from the **Fuse/Relay Center**.

Trail Rocker Fuse Centers are equipped with 8 Indicator Fuses. These fuses are equipped with an LED light that will turns on when the fuse is blown, thus indicating when the fuse needs to be replaced.

Painless Performance 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