

# 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide



## iWire Fuel Pump Hardwire Kit Installation Instructions

2002-2007 Subaru WRX  
2004-2007 Subaru STi  
2004-2008 Forester  
Pre 2002 Will Need Custom Kit

Thank you for purchasing the iWire Plug and Play Fuel Pump Hardwire Kit! These instructions are designed to make the installation process as easy as possible. Please read and follow them carefully. **We suggest reading the entire guide all the way through before beginning installation of this product.** This manual was created using a 2002 WRX so there may be variations between models and years. If you have any questions during installation, please call your local professional or iWire.

**This kit is designed to modify the electrical and fuel systems in your Subaru. Working around electricity and fuel vapors can be dangerous and even deadly if proper care is not taken. While iWire takes pride in making our products as simple as possible to use, we still recommend that a professional, qualified technician perform the installation. Any modification to a vehicle that exceeds the original manufacturer specifications (which includes OEM fuel tank connections) carries an inherent risk of mechanical failure that could result in damage to life or property. iWire is not responsible for any damages that may occur. By purchasing this product, you agree to these terms of sale.**

# 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

## What's included:

1. Battery to Circuit Breaker Sub Harness
2. Circuit breaker
3. Battery Cable to Hardwire Module
4. Hardwire Module
5. Hardware Kit
6. Ground Terminal
7. Fuel Pump Controller Jumper Harness
- a. White connector with Orange wire for Secondary Pump Expansion (stays open for single pump kits)
8. Ground and Power Wires for Fuel Pump
9. Red Trigger Wire (add-a-fuse in hardware kit)
10. Ground and Power Wires for Fuel Pump (length and terminals may change based on car model and year)
  - a. If Bypass Connector purchased, use supplemental instructions for install

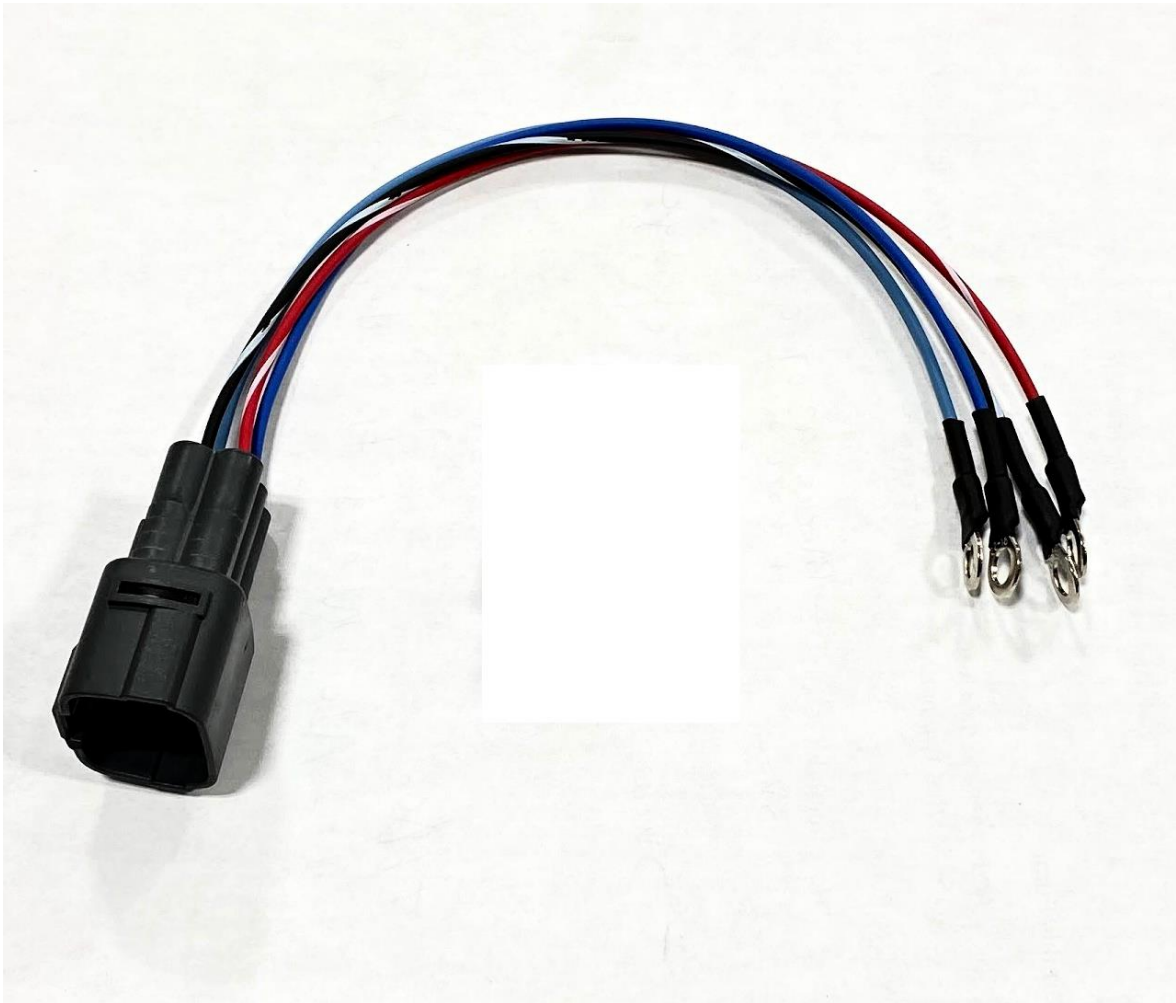


# 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

## Radium Hanger Single Pump Kit:

### What's Included

1. Fuel Tank Stock Connector Jumper
2. All Pieces from Main Kit



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## Radium Hanger Double Pump Kit:

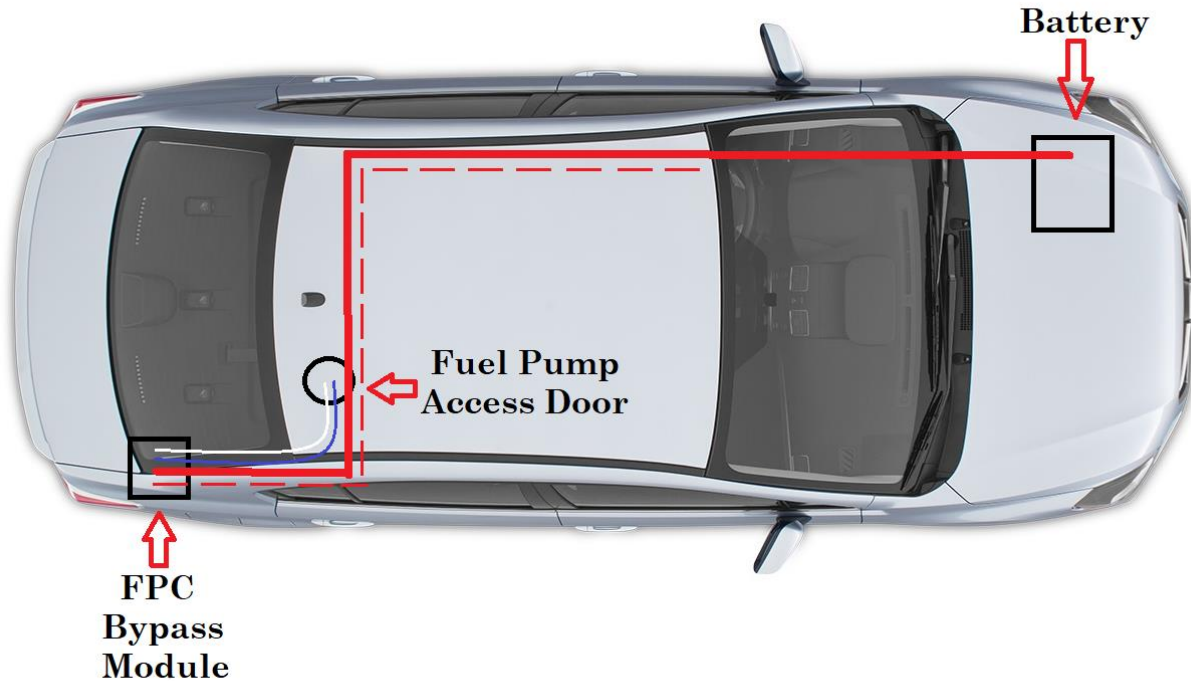
### What's Included

1. Radium Pressure Switch Connector (Pressure Switch not supplied with kit)
2. Secondary Pump Relay
3. Grey Second Pump Power Wire
4. White connector with Orange Wire to tie into single pump harness
5. Black Ground wire for Secondary Pump
6. Fuel Tank Stock Connector Jumper
7. All Pieces from Main Kit



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## Section 1: Installation Overview



**Large Red:** Power wire from battery positive terminal

**Dotted Red:** 12V Key on power source (connect to fusebox with add-a-fuse)

**White:** Output wire from iWire fuel pump bypass module to fuel pump plug

**Blue:** Ground wire from FPC to fuel pump plug

**What it does:** The iWire Fuel Pump Hardwire Kit modifies the original fuel pump control system to allow the pump to run at maximum flow for high-output applications that require additional fuel. The kit works by increasing the voltage to the power side of the pump while still leaving the ground side in place thus keeping the OEM low (33%), medium (66%), and high (99%) settings. iWire upgrades the grounding side of the controller to maximize the grounding capabilities of the FPC to ensure the best possible performance.

**Tools needed:** 10mm socket or box wrench, 12mm socket or box wrench, 13mm socket or box wrench, flathead screwdriver, box cutter or knife, pick tool for electrical connector pins, wire stripper, heat gun, jack stand



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## Section 2: Battery/Engine Bay

Before installing the iWire Fuel Pump Controller Kit, disconnect the negative terminal from your vehicle's battery. This is a very important step to ensure your safety while installing the kit.



Remove the washer fluid tank by first unscrewing two 10mm bolts at the top of the tank. Then disconnect the green electrical connector and the washer fluid line from the bottom of the tank and remove it from the engine bay.

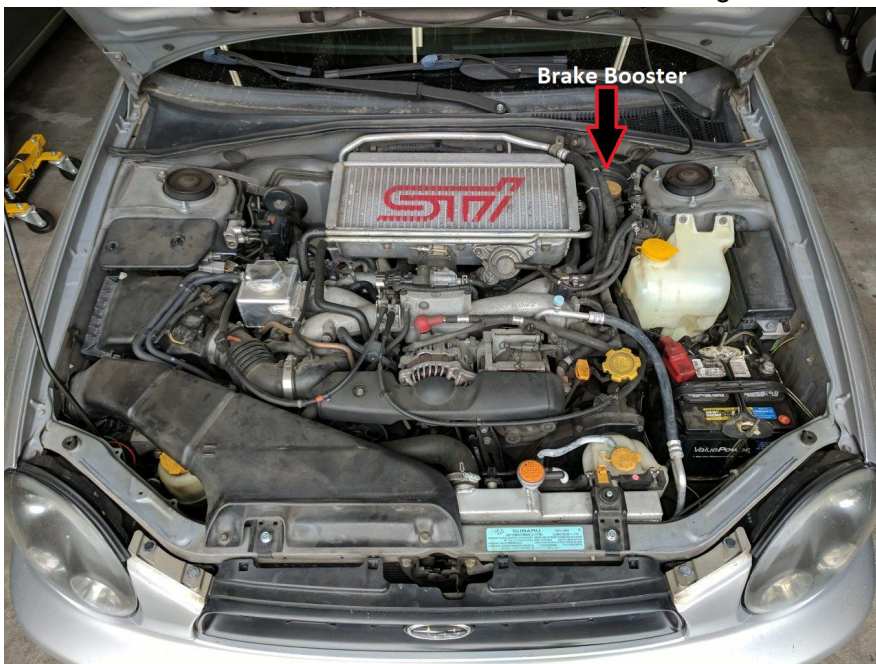


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Locate the hole in the vehicle's firewall just behind the brake and clutch pedals. Cut a ¼ inch slit in the rubber grommet that plugs this hole and feed the power wire through the slit. One end of the Red power wire is covered in a protective Black Raychem DR25 sleeve which can be identified by the writing on the sleeve. This is the end that should be run through the firewall and into the engine bay. **NOTE: Now would be a good time to run the small Black pressure switch wire through the grommet with the Red main power wire for your secondary pump if you have a double pump kit.**

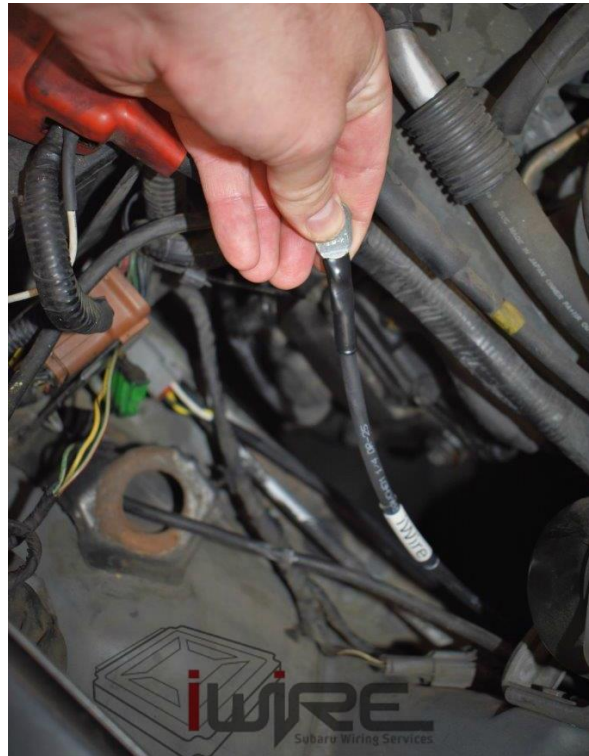
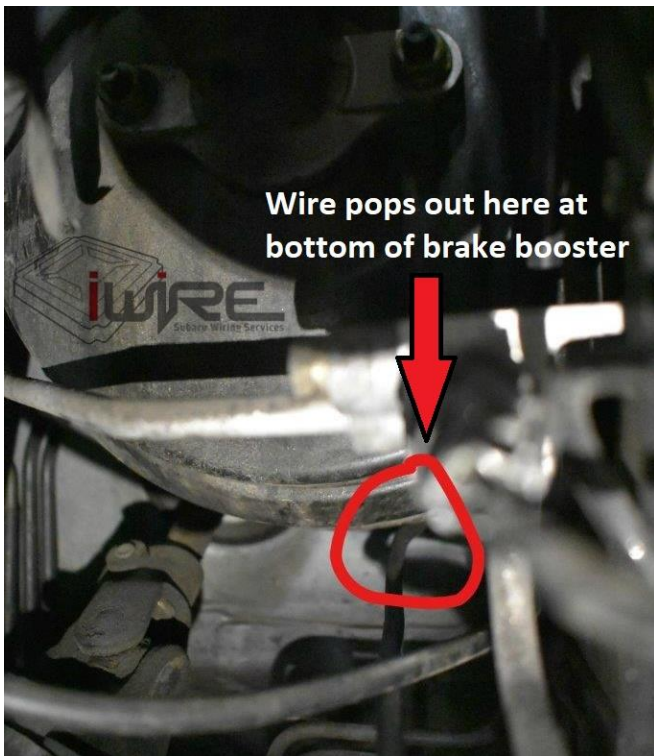


The wire should now be visible from inside the engine bay. Look for it just below the brake booster. Carefully reach underneath the brake booster and feel for the ring terminal that is pushed through the firewall grommet.



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Pull the Red power wire through the firewall carefully, making sure to keep the rubber grommet in its proper place, until there is enough length to reach the positive terminal on the battery. **DO NOT CONNECT THE WIRE TO THE BATTERY YET.**

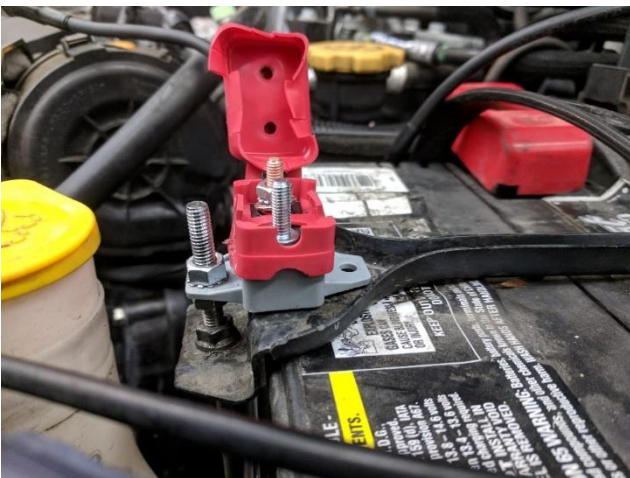




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## Section 3: Secure the Circuit Breaker (CB) to the Battery Post

Thread nylon lock nut onto the battery tie down bolt until it matches the height of the battery tie down. Then slide CB on top. Screw on the lock nut until tight with circuit breaker. **Do not over tighten this.**



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Attach long battery wire going to the module in the back to the Silver colored side of the post.

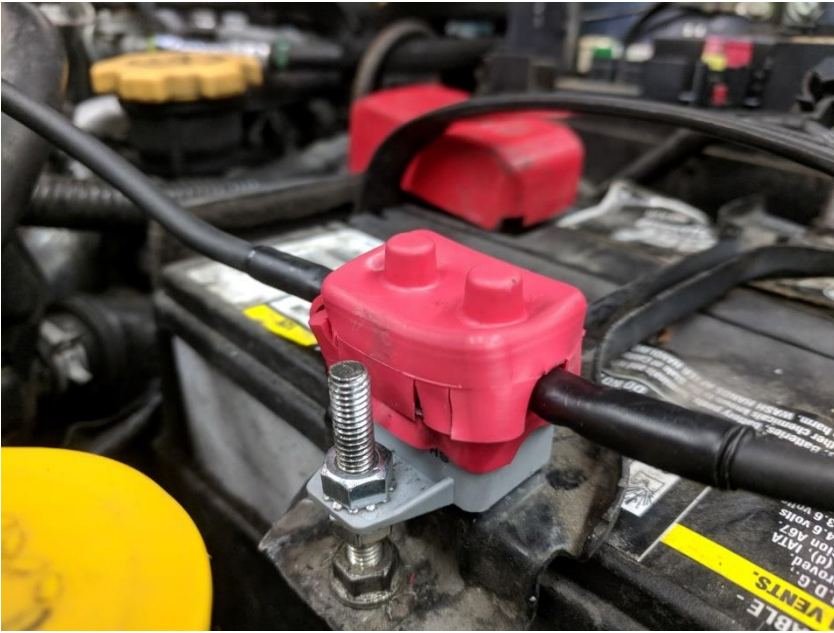


Attach short wire that will go to the positive side of the terminal to the Copper colored post. **DO NOT HOOK TO BATTERY YET**



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Push Red boot down to cover exposed terminals





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## Section 4: Running the Large Red Power Wire to Rear of Car

Remove trim from driver's front door sill. First, unscrew the plastic retaining clip located next to the dead pedal.



Use a flathead screwdriver to pry out the body clip holding the trim to the front of the door sill. Then simply pull up on the trim and it will unclip.





## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

This will expose the edge of the carpet and provide a way to run the Red power wire to the rear of the car.



Move to the back of the car, and remove the rear lower seat cushion. This is held in by two 12mm bolts: one below each rear seat.



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Remove rear door sill trim and b-pillar trim (below driver's seat belt) from driver's side.



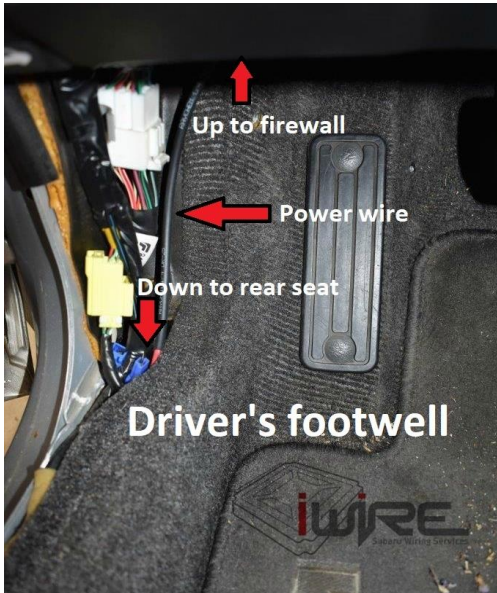
One plastic plug holds the door sill trim, and the other holds the b-pillar trim. Pry each out with a flathead screwdriver.





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Run Red power wire along driver's side door sill to reach the rear of the car. Run the wire along the gap exposed between the carpet and the metal edge of the door sill. Make sure the wire isn't stuck on any sharp edges and won't get pinched when the trim is reinstalled.



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Now the Red power wire needs to run along the reinforcement bar under the rear seat. Loosely secure the wire to the bar with cable ties and ensure wire is tucked safely out of the way. Don't pull the cable ties tight yet. The ability to adjust the wire until the very end of the install helps ensure a proper fit.





# 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

## Section 5: Installing Fuel Pump Bypass Module in Trunk of Car

Remove rear seatback by unscrewing the 12mm bolts at the bottom of the seatback.



Remove the passenger-side rear seat back support bracket and the attached trim. Unscrew 12mm bolts and use a flathead screwdriver to remove body clips.



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Remove the bottom carpet in trunk area. Just pull up on it gently and lift.



Unscrew the plastic nut that holds the trunk liner to plastic trim near the trunk latch.



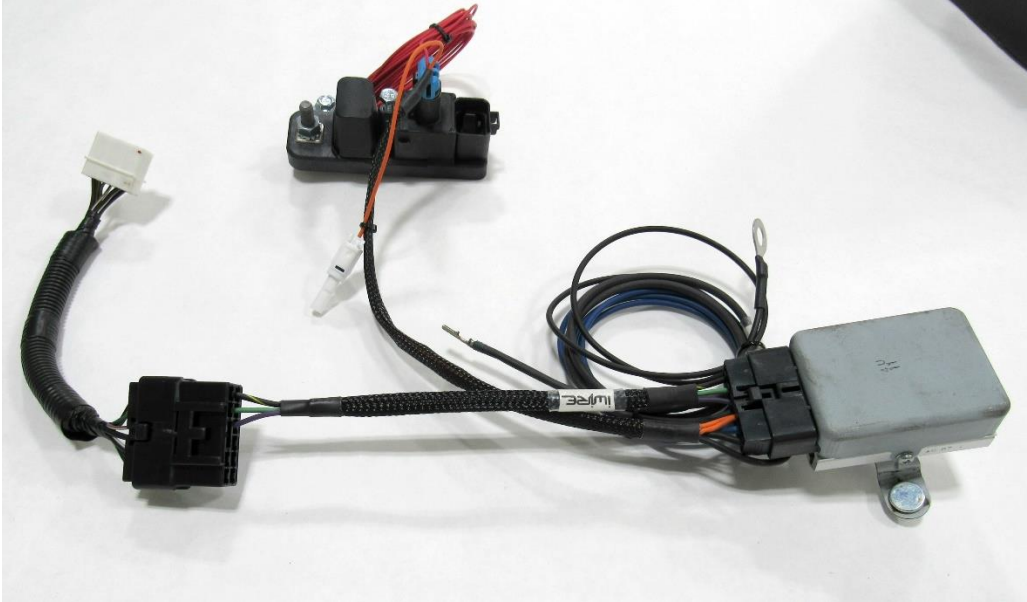
The side trim is secured by body clips that can be removed with a flathead screwdriver.



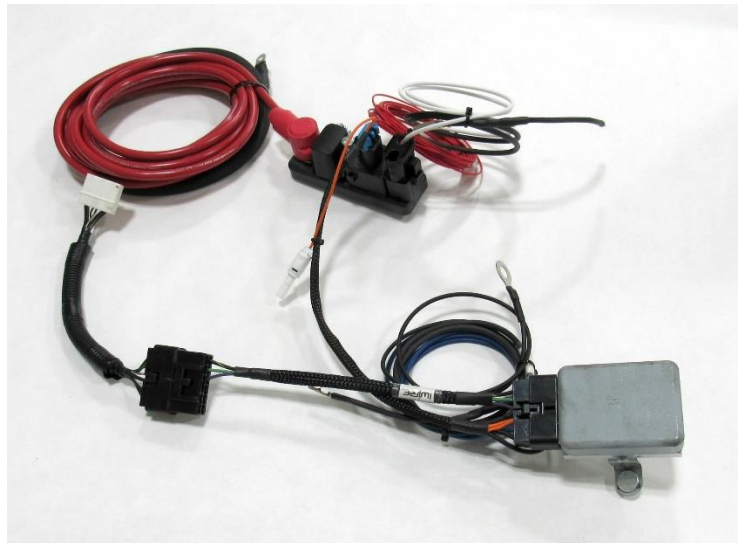
# 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

## Section 5 continued: Installing Fuel Pump Bypass Module

Plug FPC jumper harness in between FPC and original FPC connector. The original FPC is inside the passenger rear quarter panel. **For 2 pump kits: You will need to add in the yellow wire and orange wire from the secondary pump kit. (instructions below)**



Below shows the final layout of plugs as they attach to the module. While this is shown outside the car to make it easier to understand, it will be done inside the car.

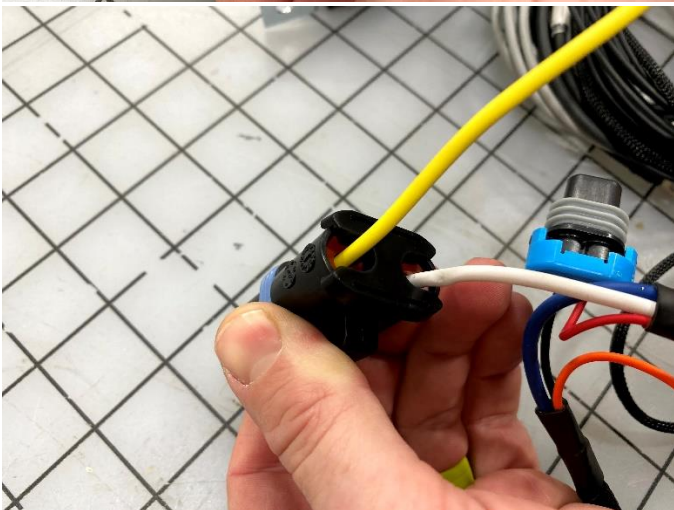
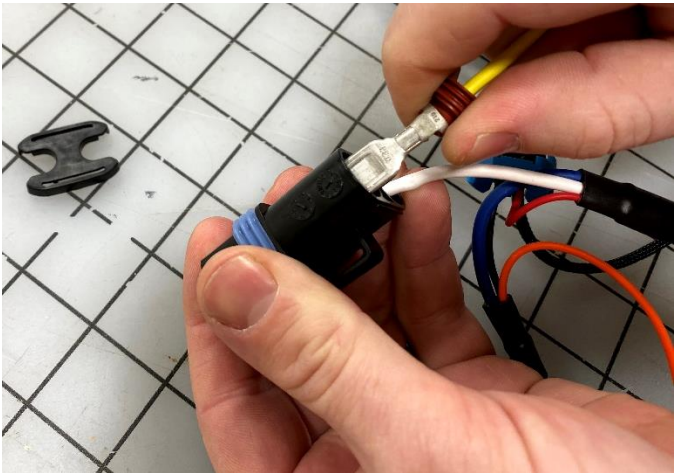
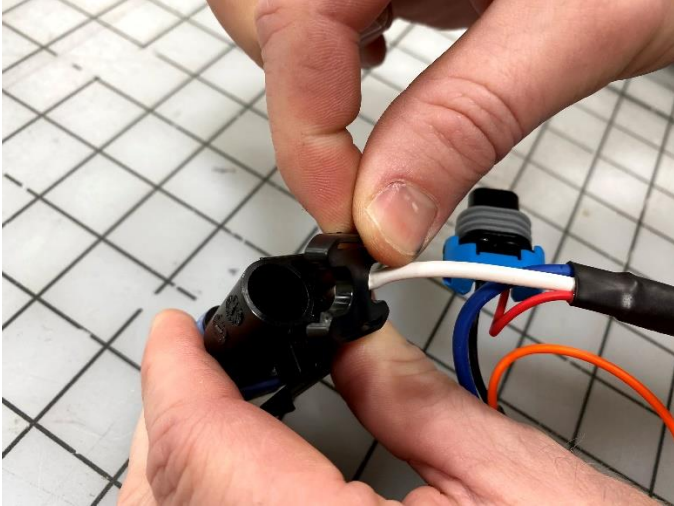




## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

This section is for two pump kits only. Single pump radium kits can skip to the next step of mounting the module.

Add in the Yellow precrimped wire to the empty spot on the large 2 pin Black connector. You will need to remove the Black lock from the back of the connector.

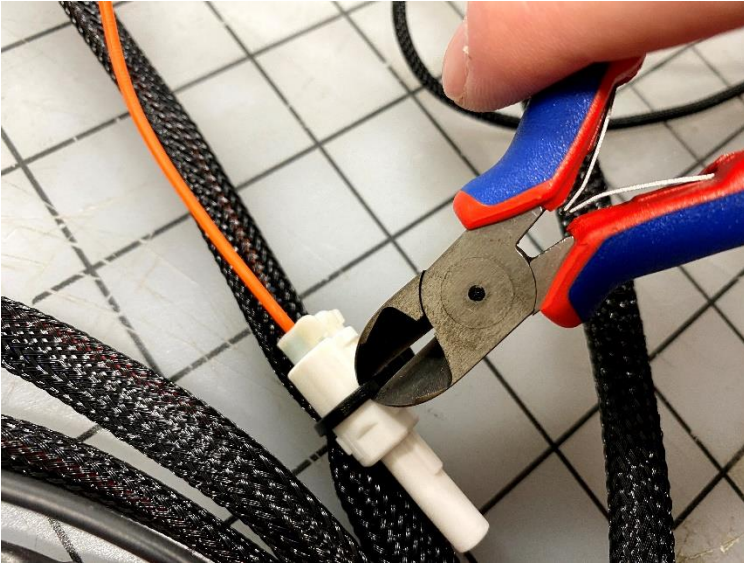




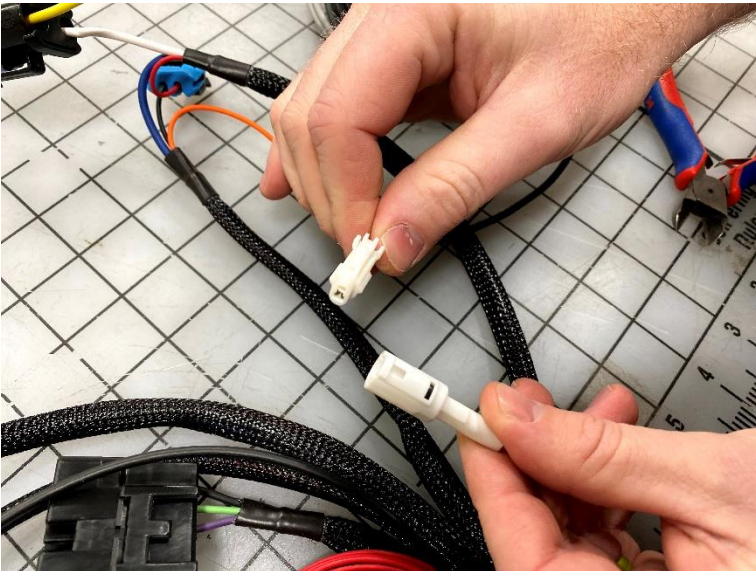
## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Add in the Orange wire from the secondary pump kit to the main fuel pump bypass kit.

Cut the zip tie to free the White single wire connector.

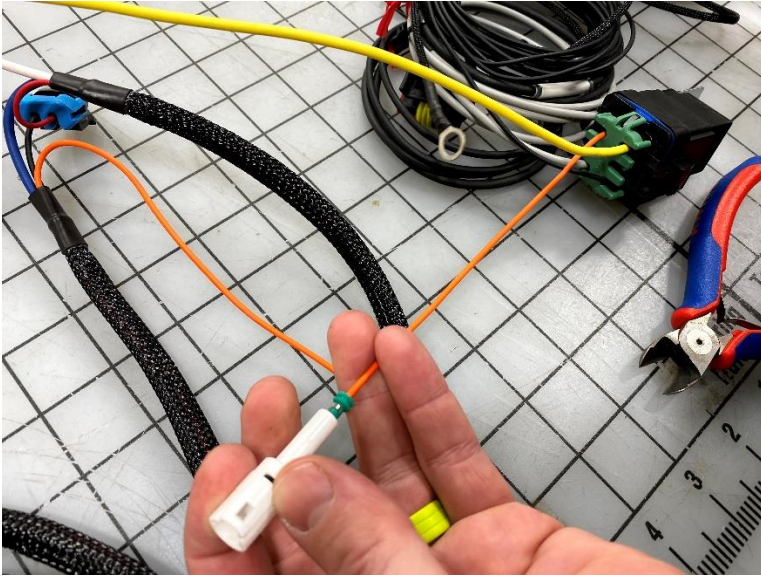


Unplug the connector so the receptacle housing is free.

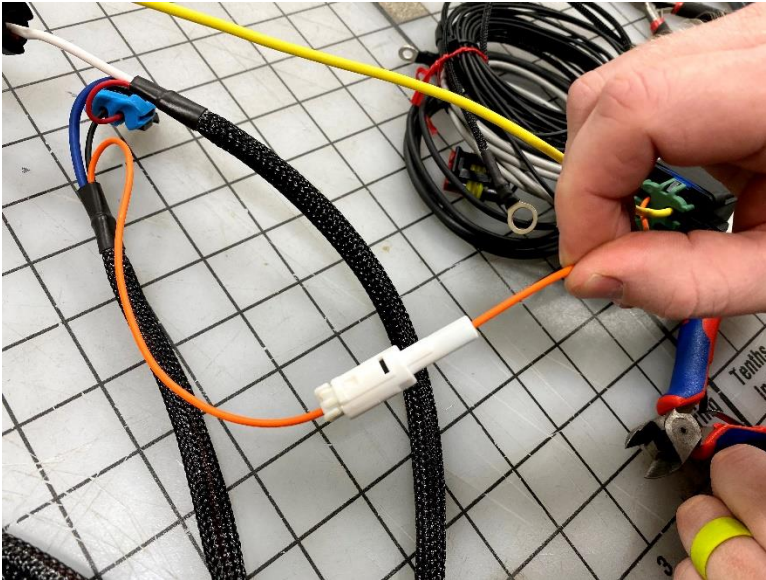


## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Insert precrimped terminal from the Orange wire from the large black relay into the housing.



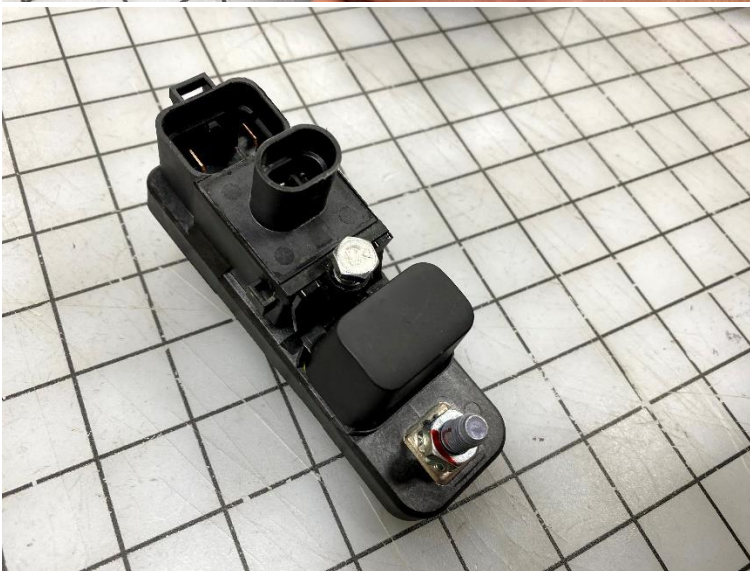
Connect receptacle back to plug it was plugged into.





## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Add in 30 AMP fuse for secondary pump



## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Single pump kits continue here - The picture below shows the completed mounting and routing.



**Ground the ring terminal to the chassis. An empty bolt spot would work like this. Just make sure to sand the paint away to ensure the best grounding possible!**



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Install FPC bypass module on passenger side of trunk using supplied hardware. Use the short bolt, the large washer, a lock washer, and a nut to secure the bracket to the sheet metal inside the trunk. There should already be a hole available to put the bolt through, but one can be drilled if needed. The bracket will space the module away from the body of the car, allowing for easier installation and connection of wires. Secure the module to the bracket with the long bolt, a lock washer, and a nut. The bolt heads and nuts are 10mm.



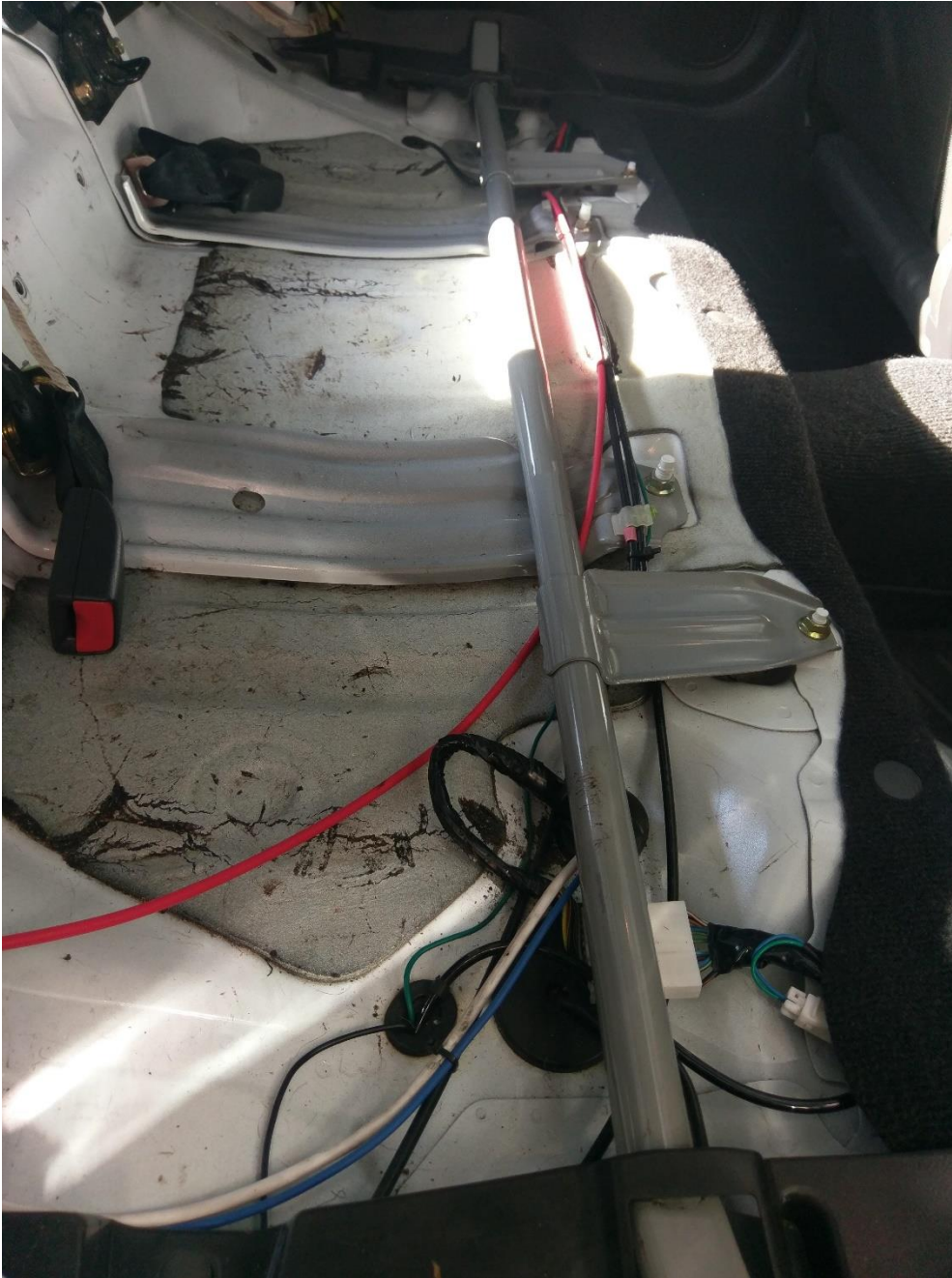
Run the Red power wire through provided Red rubber boot and attach ring terminal to the stud on the module. Secure ring terminal with the included 13mm nut.



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## Section 6: Fuel Tank Modification

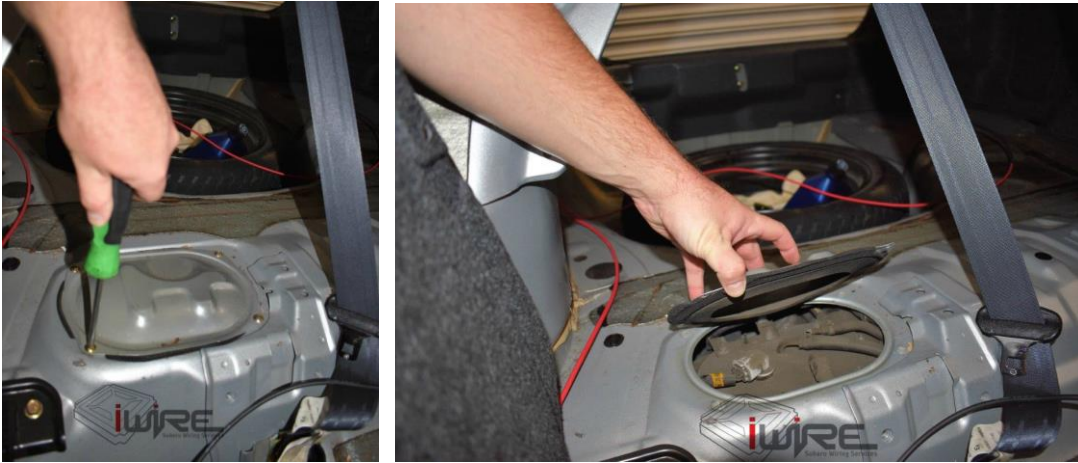
Run the White and Blue wires from the module to the back seat.





## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Remove the 4 Phillips head screws that secure the fuel pump access door.



Locate the rubber grommet underneath the passenger-side rear seat. It will be somewhat tucked away underneath the support bar, but there are wires running through it. Pop this grommet out and use a blade to cut a 1/2" slit in the rubber for wires to pass through.



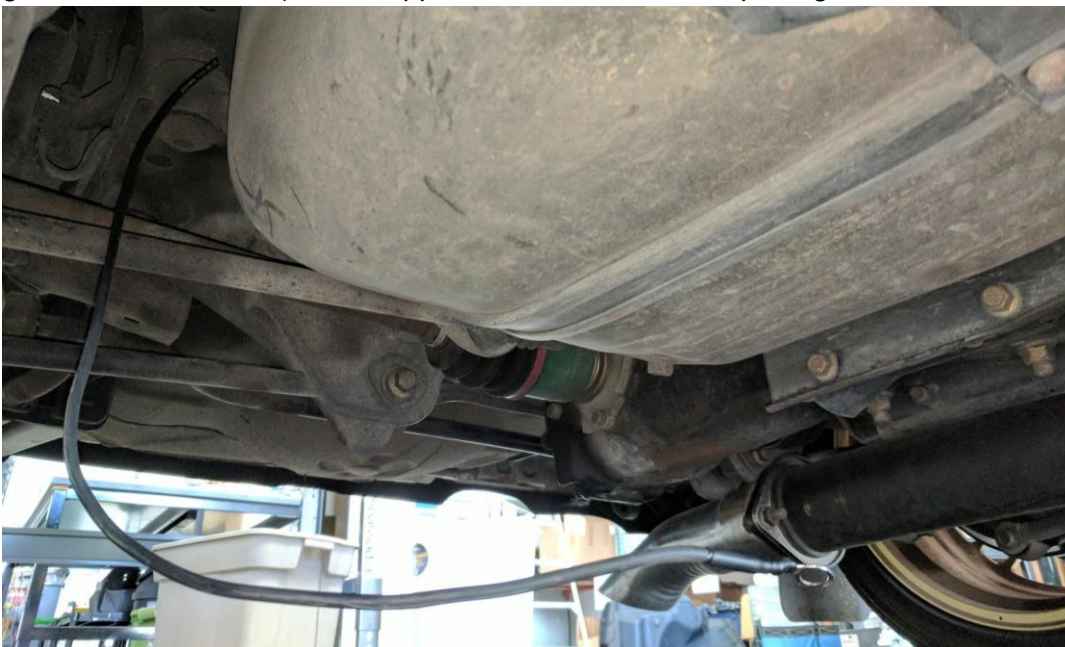


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Feed the White power wire along with the Blue ground wire through the newly cut grommet until it is visible underneath the car. **For Radium Kits these wires will look slightly different and have ring terminals on them.**

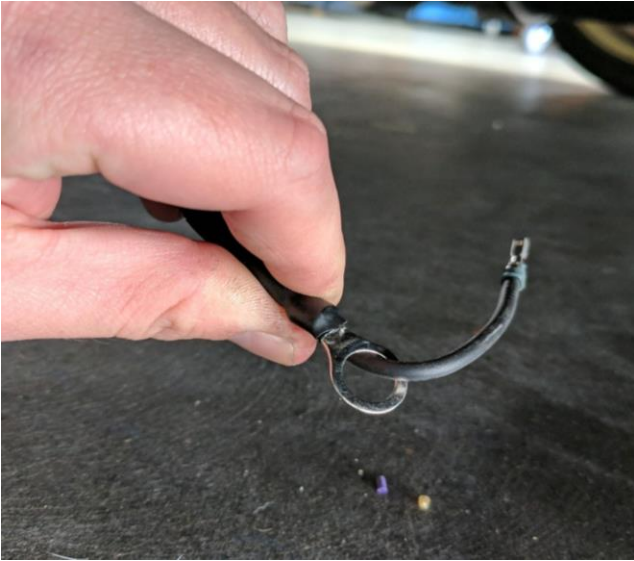


The next step is tricky and may take a few tries to complete properly. Be patient. We took another wire with a ring terminal attached to it (for two pump kits you can use the secondary pump ground wire to do this). We dropped this down from the opening above the fuel hanger.



## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Then we bent the stock terminal slightly so we could hook it to the ring terminal.



Slowly pull the wires up and out of the fuel pump access door.



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When this step is finished, the pinned end of both the White Power Wire and Blue Ground wire will be accessible inside the fuel pump access door. Both wires should run under the car and back into the car's interior through the grommet under the rear seat. **For Radium Kits these wires will look slightly different and have ring terminals on them.**



Once both wires are inside the fuel pump access door, you will connect them to the radium hanger as shown below.



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## Section 7: Connector Fuel Tank Jumper to Radium Hanger

You can route the additional power and ground wires (Grey and Black) for the secondary pump in the same way as the primary pump wires (Black and White).

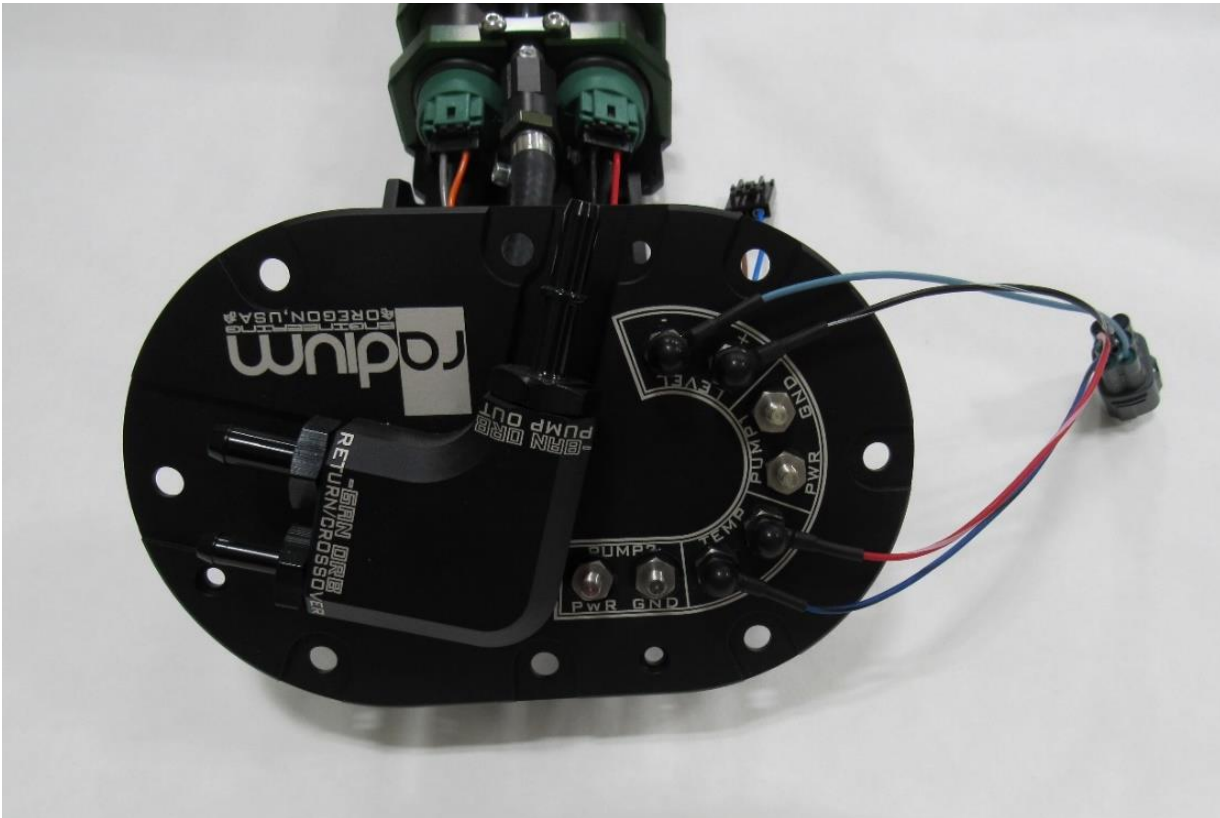
Connect the Black Jumper (small sub harness with ring terminals) – Pump 2 Negative

Plug matching Grey 6 Pin jumper into the stock harness and attach ring terminals to Radium Hanger.

6 pin Grey Jumper harness – Note positive and negative wire order do not matter

- Fuel Level -> Light Blue and Black with White Stripe
- Fuel Temperature -> Blue with Black Stripe and Red with White Stripe

Secure the ring terminals from the supplied fuel tank jumper to the corresponding studs on the Radium hanger. Fuel Level and Fuel Temp wires connected.



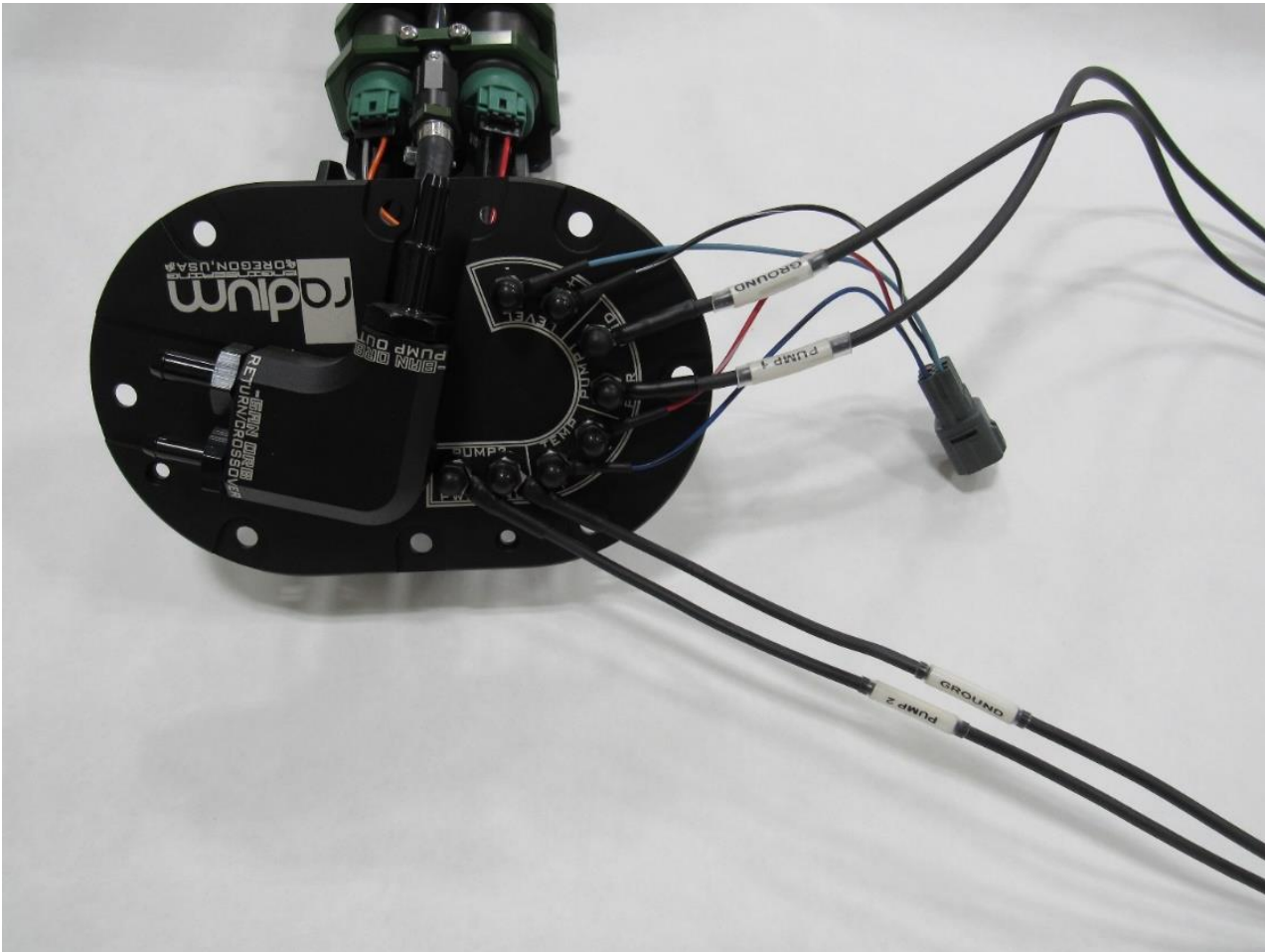
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Connect the Power and Ground Wires from the main harness:

White – Pump 1 Positive

Blue – Pump 1 Negative

Grey – Pump 2 Positive



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Attach Black ground wire terminal for secondary pump to the crash bar

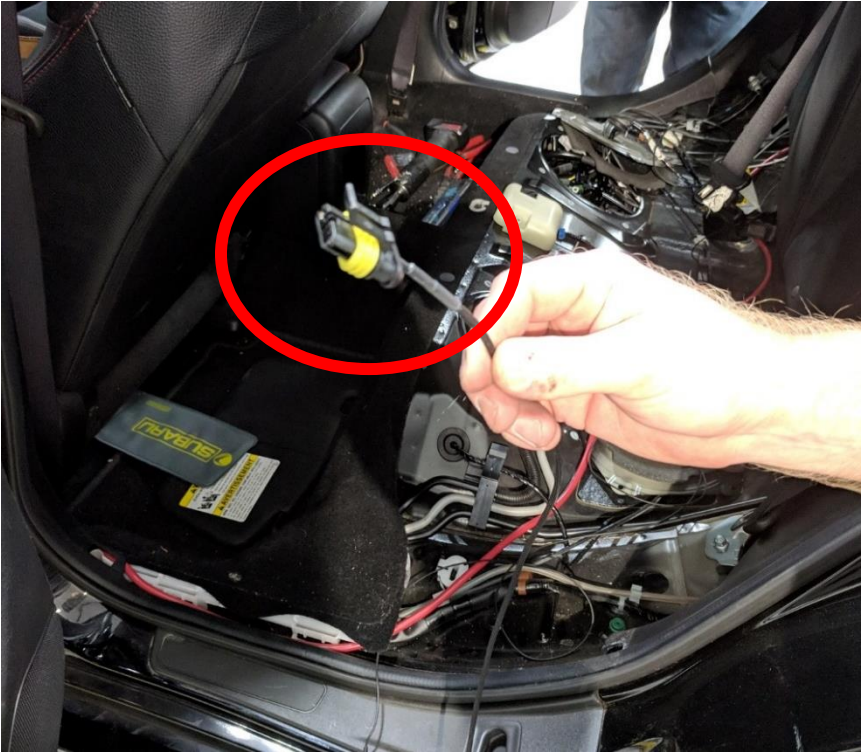




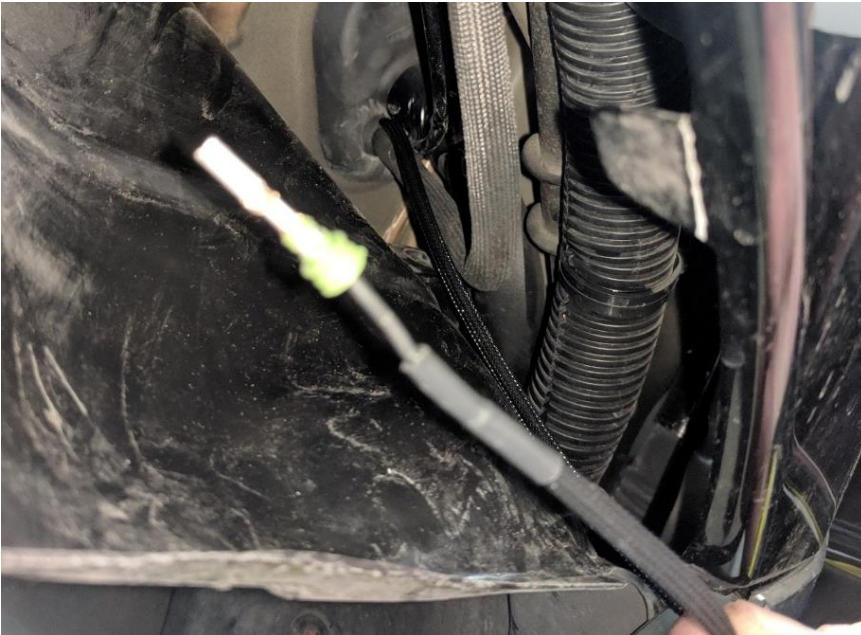
# 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

## Section 8: Running the Secondary Pump Wiring (Skip this section for Single Pump Kits and go to Section 9)

Hopefully the wire for the secondary pump pressure switch was run at the same time as the battery cable. If not, no worries it can run parallel with the battery cable into the engine bay.



It's best to depin the terminal from the housing. It's the same process as the fuel tank connector.



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Radium pressure switch connector coming from the same place as the battery cable in the engine bay.



## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Ground wire for Radium Pressure Switch connector.





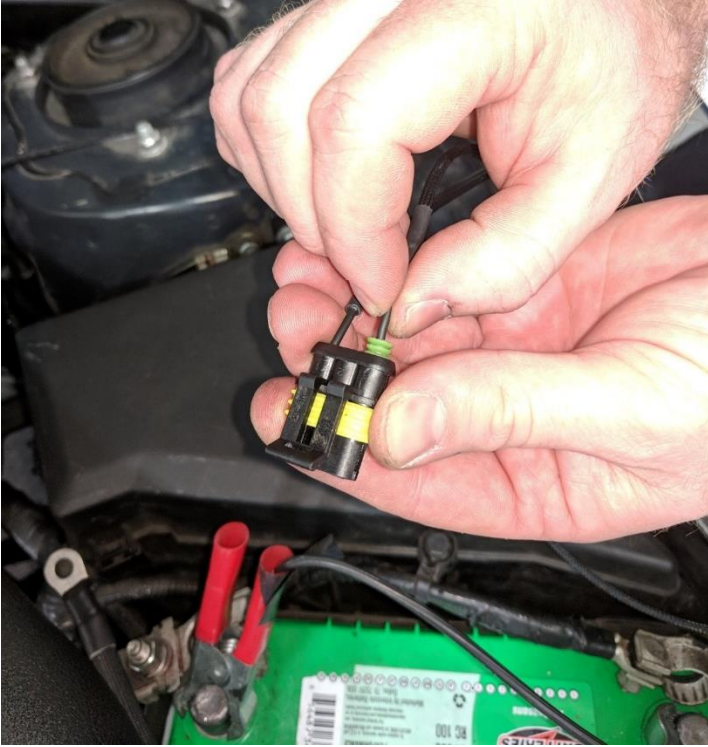
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Ground the ring terminal to a solid metal location like the strut tower bolt.

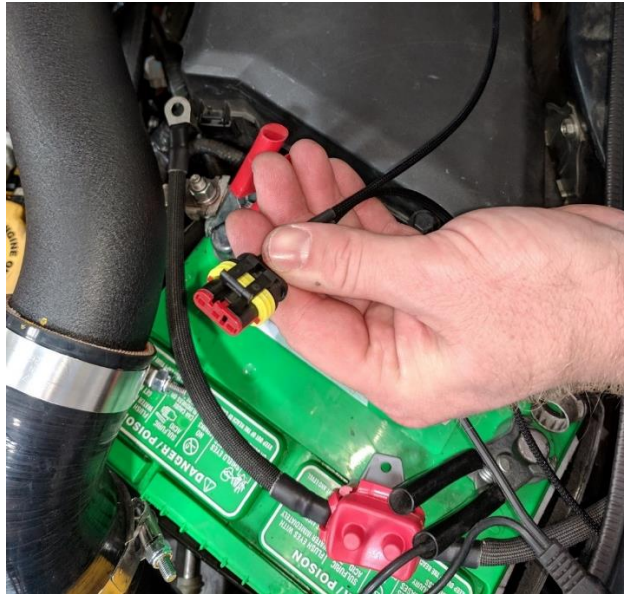


## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Insert wire from cable you ran from the rear of your car into the empty slot on the Radium Pressure Switch connector.



Insert Red lock into Radium Pressure Switch connector.





## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Plug connector into the Radium Pressure Switch Sensor. Install the Radium Pressure Switch Sensor in the engine bay following Radium's instructions.



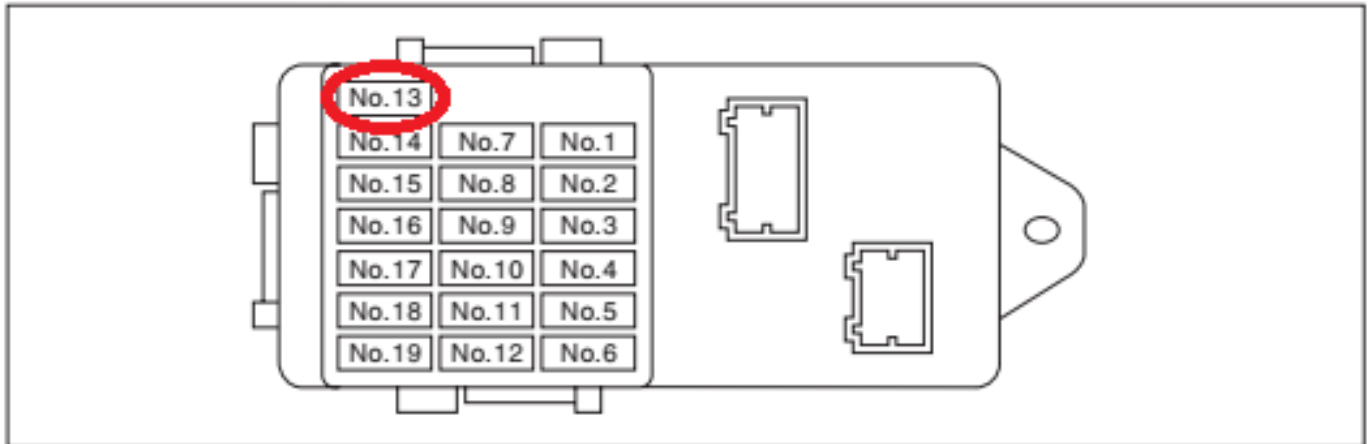


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Section 9: Getting key on power to the Red relay trigger wire. Fuse choice will depend on vehicle. If you are not sure which to tie into, please ask us! You will tie into the in cabin fuse box which is located on the driver side of the car under the dash.

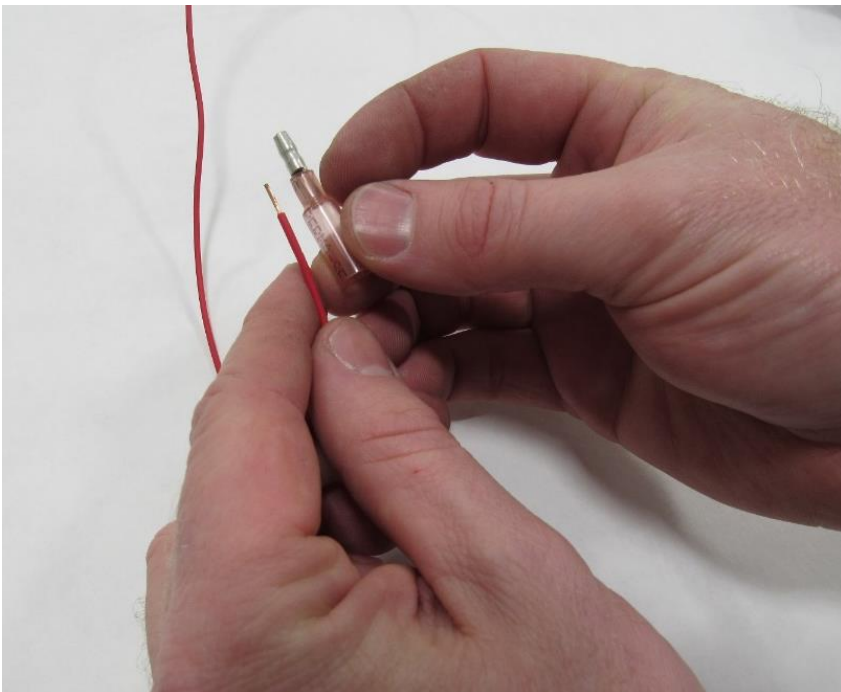
We suggest tying into fuse #13 for 1999-2007 cars (picture below). Please note: any key on power fuse will work for this. Accessory power or battery power tie ins will not work and could damage your vehicle so please pick a KEY ON POWER SOURCE to tie into.

FUSE & RELAY BOX (F/B)



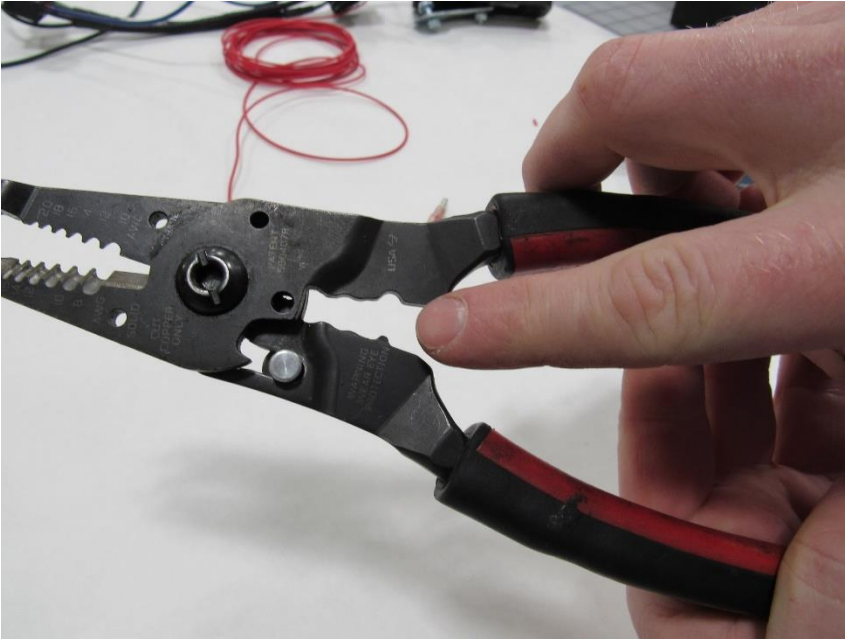
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Run the thin Red wire to the front fuse box on the driver's side. Route it like the Large Red Battery Cable up to the front of the cabin. Once routed you can cut the Red wire to length. Leave a little spare length so the wire is not overly tight once installed. From there strip enough wire so that just a touch can be seen coming out of the metal part of the terminal.

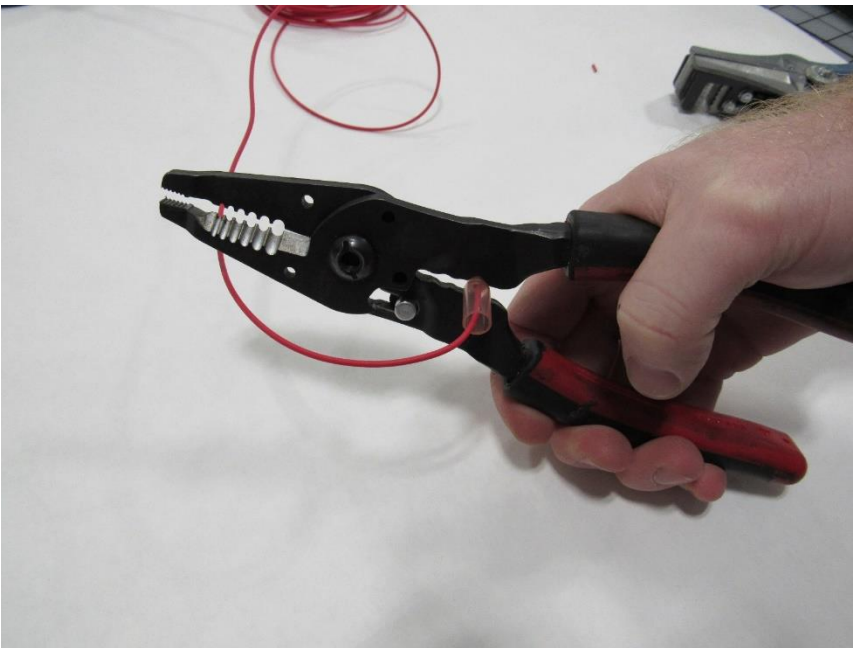


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Insert the wire into the terminal and crimp with the back end of any basic stripper tool.



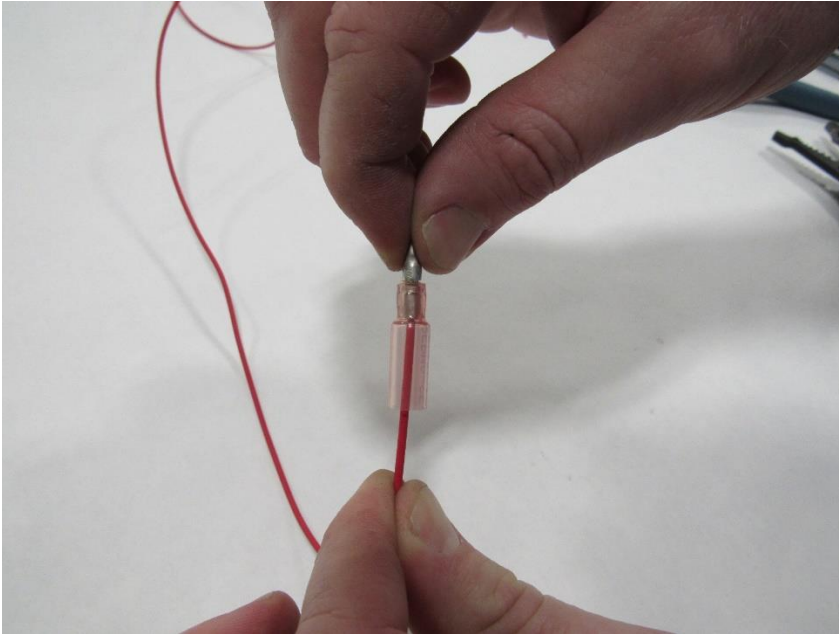
Push down hard.



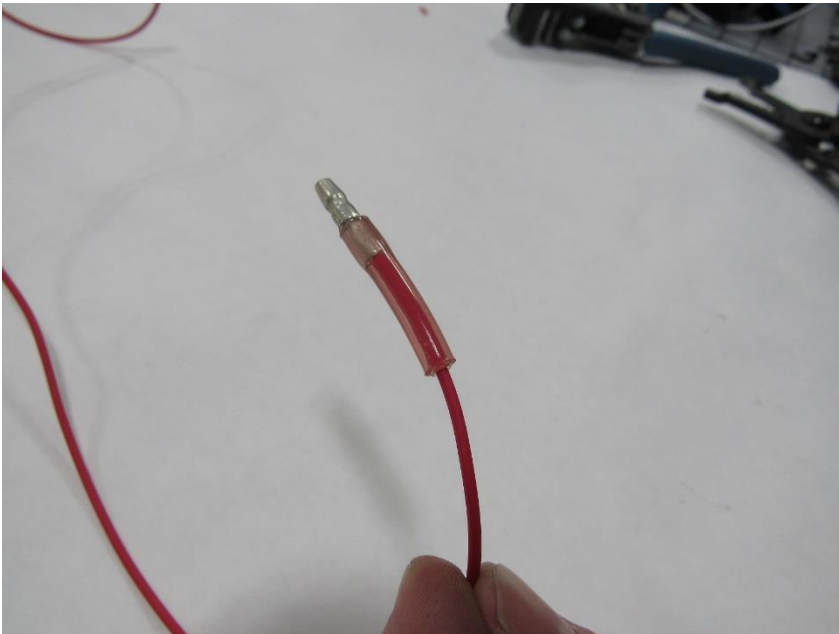


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Tug gently to confirm the wire does not pull out.

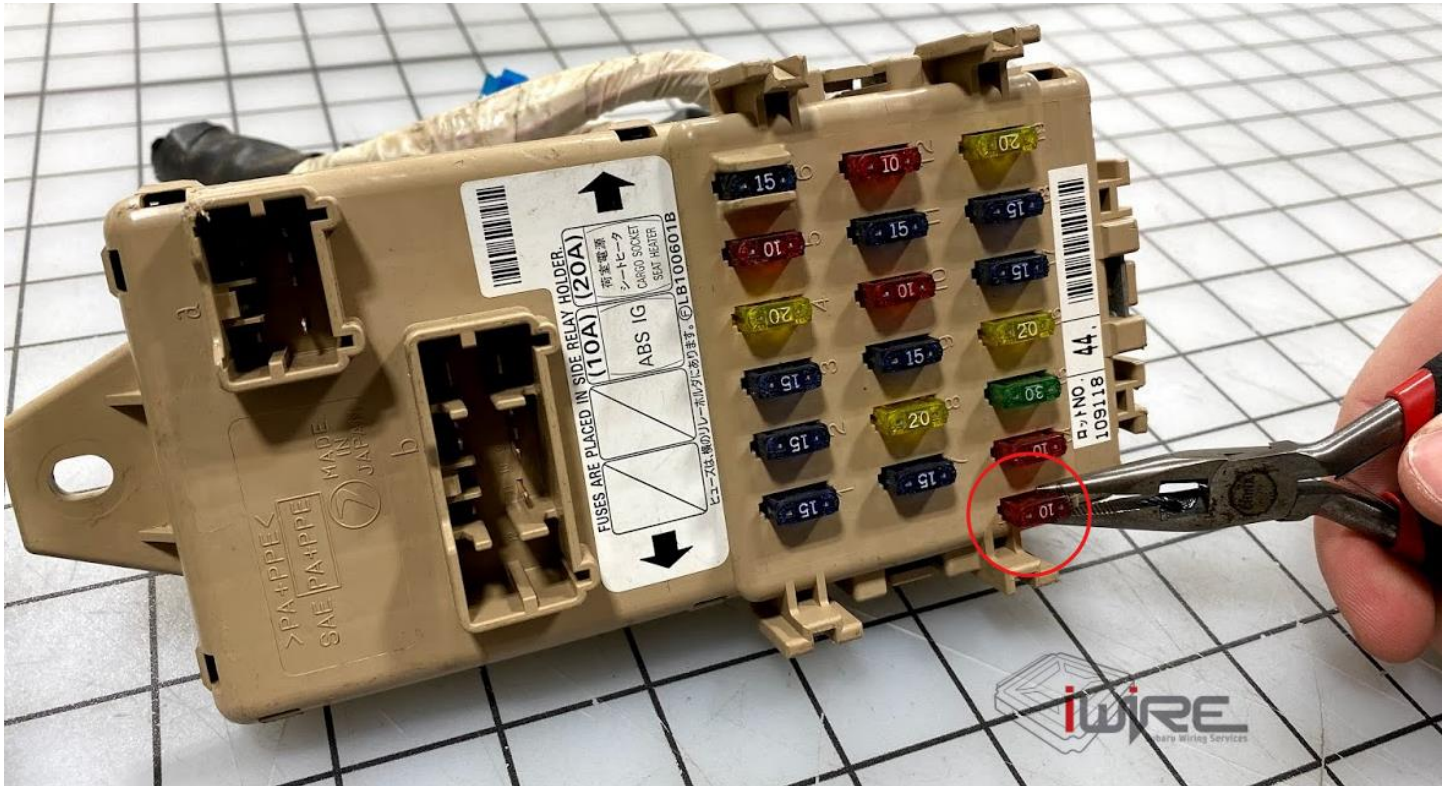


Heat up the shrink tube until it is clear without any bubbles.



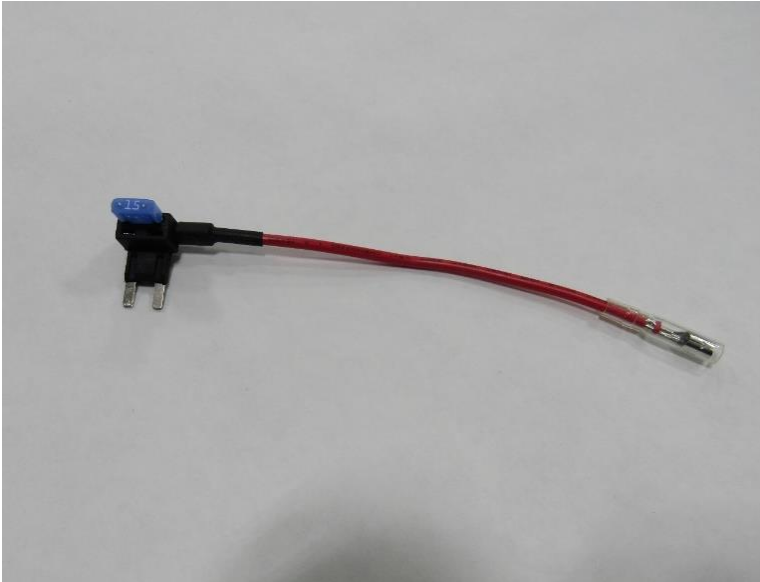
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Gently remove the fuse from #13 using a pair of pliers. This will be done inside the car cabin.

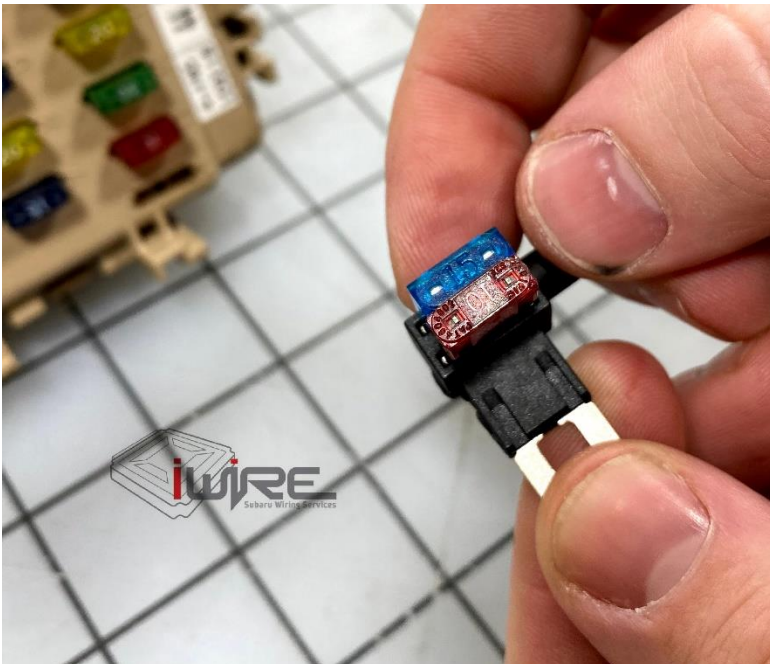


## 2002-2007 iWire Radium Fuel Pump Hardwire Kit Installation Guide

Insert fuse removed from the fuse box into the add a fuse provided in your FPC Hardwire Kit. If you do not do this step the wiring kit will not work. **YOU HAVE TO ADD IN THE FUSE YOU REMOVED FROM THE FUSE BOX TO THE ADD-A-FUSE PROVIDED BY IWIRE.**



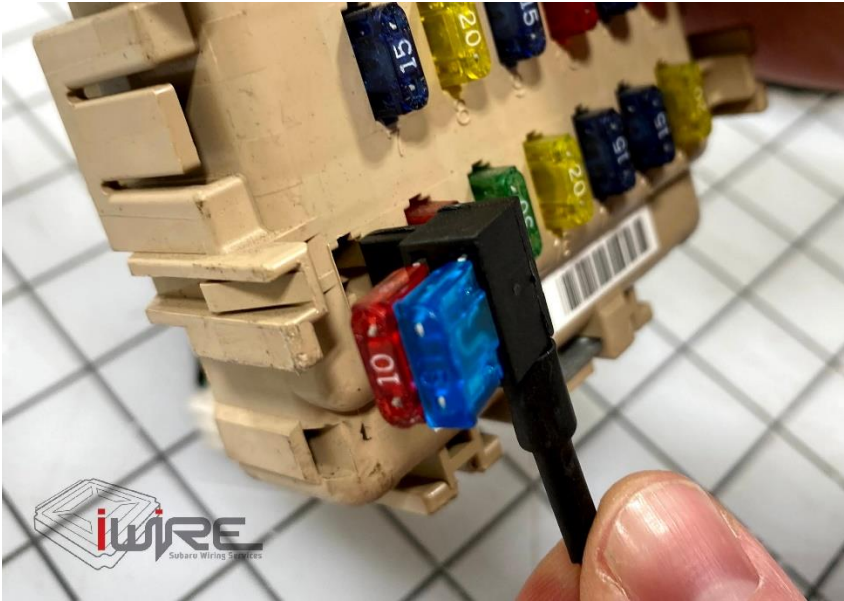
Insert fuse from fuse box into the add a fuse from the iWire kit.



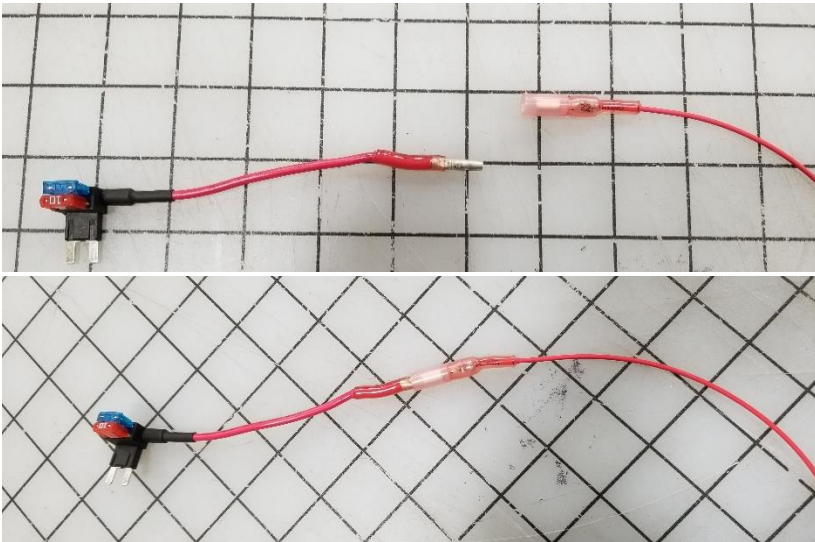


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Insert the add a fuse back into the fuse box where you removed the original fuse (fuse #13 location).



Connect add a fuse to Red terminal you crimped earlier.



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## Section 10: Reconnecting Battery/Power

Before completing the next step, **be sure you have disconnected the negative terminal from your car's battery, and that it remains disconnected. Also be careful not to short the battery terminals with a metal tool or with your body.** Attach the Red power wire that runs through the firewall to the positive terminal on the battery. There is a stud underneath the red boot on the battery's positive terminal where the power wire ring terminal can be bolted on. There will already be one or more wires connected to this stud. Simply remove the nut holding them on and slip the power wire ring terminal over the stud. Now thread the nut back on over the ring terminal and tighten it down. Finally, slide the red boot back in place over any exposed metal.



Reconnect the negative terminal on the battery. Now it is time to test the system.

To test system, insert the key into the ignition, and turn it to the "ON" position. **Do not fully start the car.** The fuel pump should turn on and then shut back off. If this is the case, now start the car. Congratulations! The installation is almost complete.

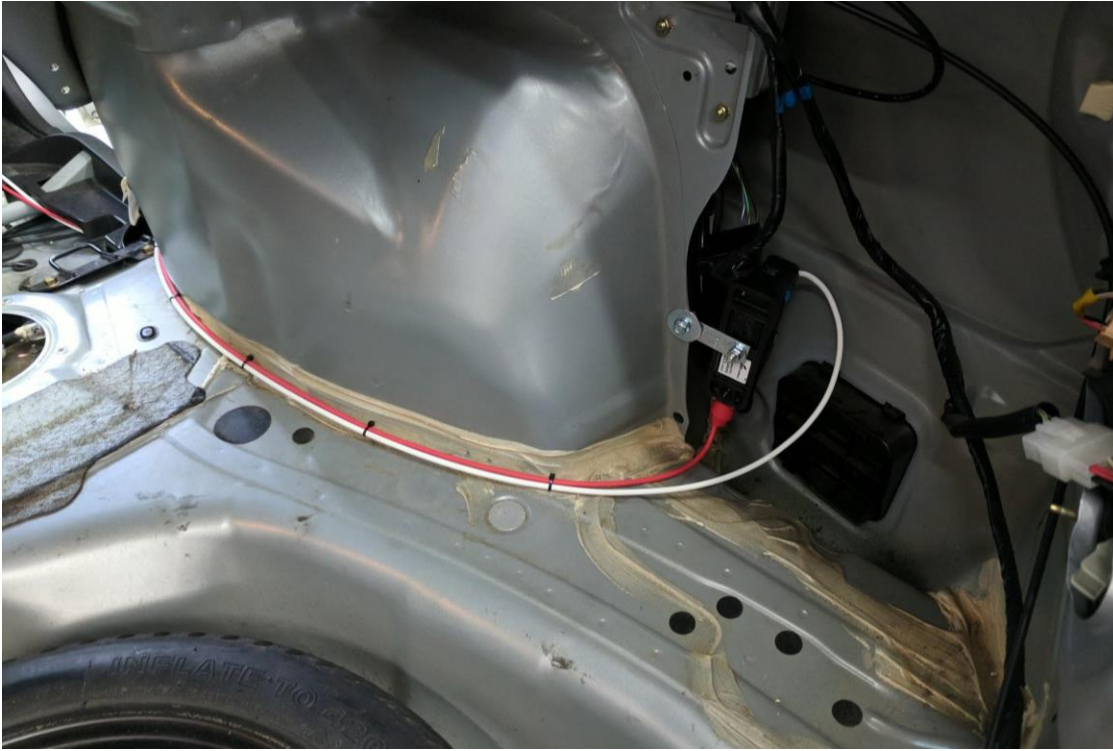
### **Troubleshooting:**

*If the fuel pump did not prime or the car did not start (or the car started, but the engine stopped soon thereafter) there are a few things that should be checked. Make sure that all plugs are securely plugged into the module, the fuel pump connector is plugged into the fuel pump, and that the power wire is securely fastened with bolts on the studs at the battery and the fuel pump controller bypass module. Check that the ground wire ring terminal is making good metal to metal contact. Make sure there are two fuses in the add a fuse in the fuse box.*

Once you are able to turn the car to the "ON" position and hear the fuel pump turn on, turn the car off and reinstall everything removed during the install process.

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Go back to the trunk area and secure all wiring so that it is running out of the way and won't move or get caught on anything in the car. Tighten down any cable ties that were left loose. Use additional cable ties to keep the wires neatly tucked together on the side of the trunk.



As always, installation is the reverse of removal, but here's the order just in case you need a hand getting everything right.

Reinstall, in order:

Rear seat back support bracket and attached trunk-cabin separator trim

Trunk liner

Rear seat back (being careful to attach loops at the top of the rear seatback to the hooks on the chassis)

Rear driver's side door sill trim

B-pillar trim

Front driver's side door sill trim

Rear seat bottom

Washer tank in engine bay

**Thank you for purchasing the iWire Fuel Pump Hardwire Kit! We hope you enjoy our product. If you have any questions or feedback please email us at [sales@iwireservices.com](mailto:sales@iwireservices.com)**