

2002-2007 iWire 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 a 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.

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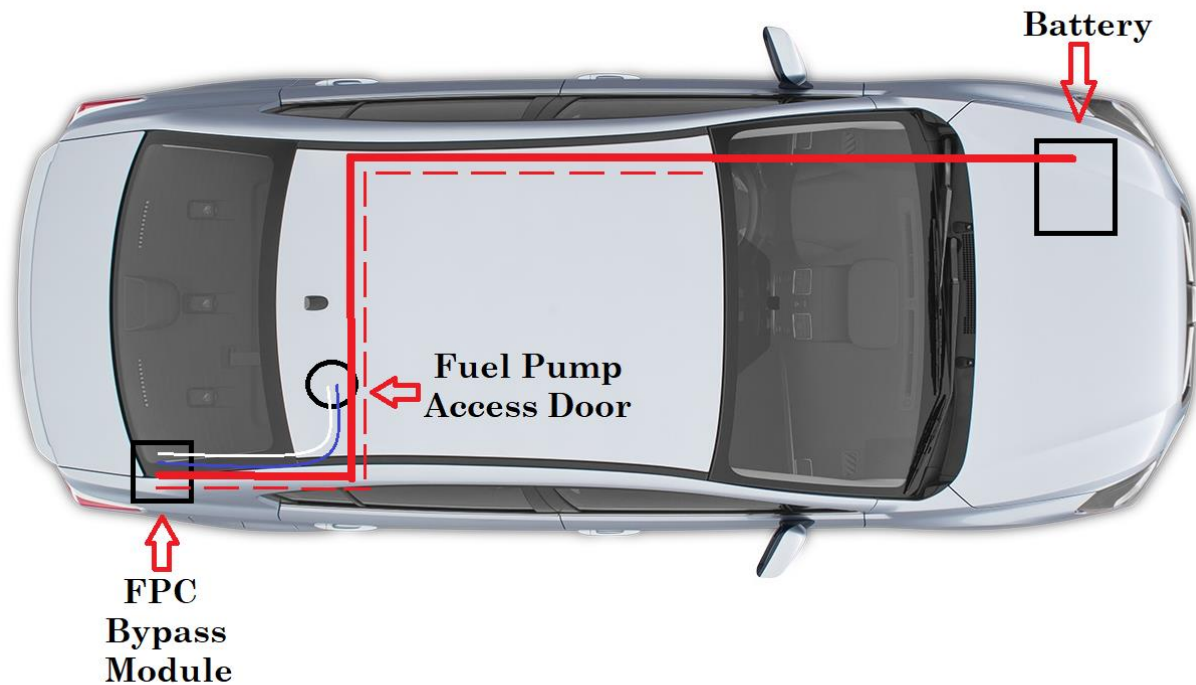
What's included:

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
1. White connector with Orange wire for Secondary Pump Expansion (stays open for single pump kits)
8. Ground and Power Wires for the 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)
11. Stud Bypass 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

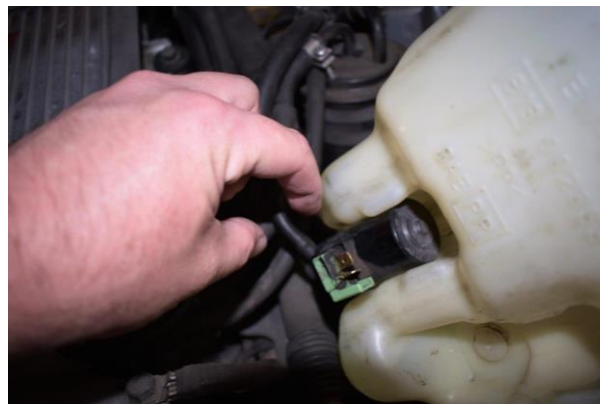
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Section 2: Battery/Engine Bay

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: If you have a 2-pump kit now would be a good time to run the small Black pressure switch wire through the grommet with the Red main power wire. See Secondary Pump Install Guide for more info on the pressure switch.**

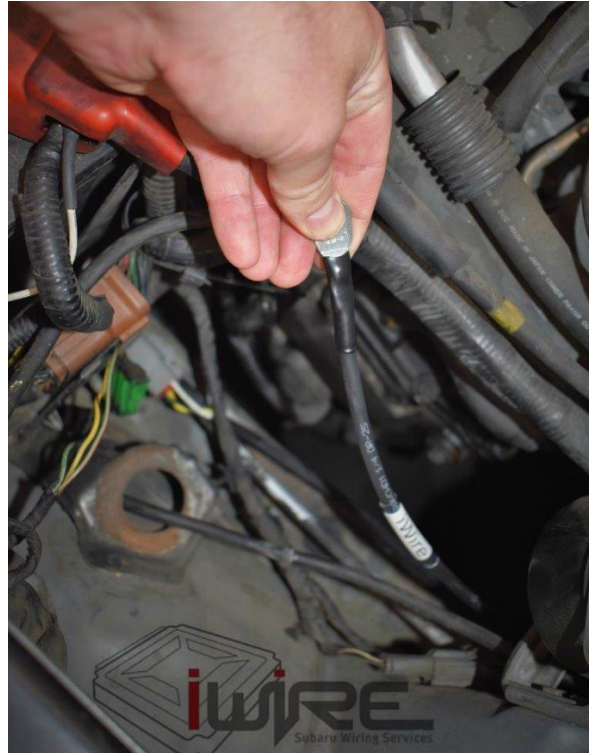
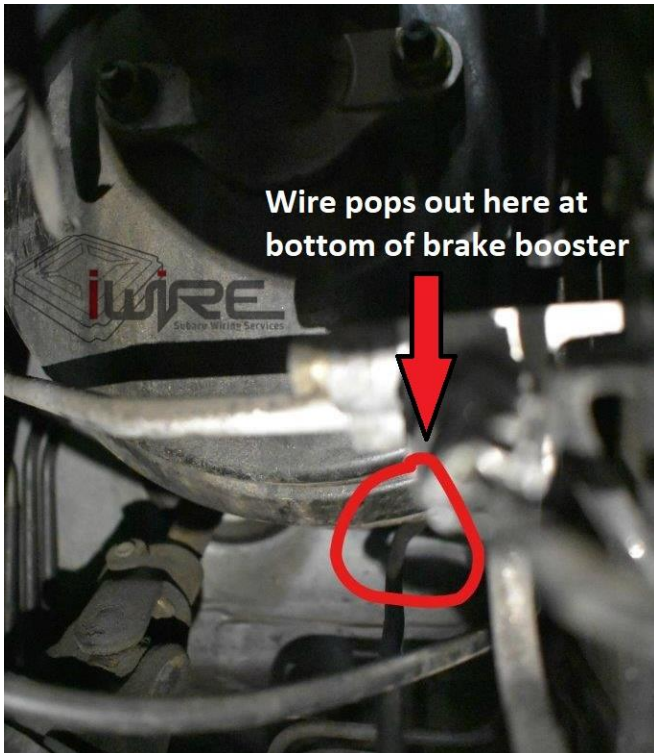


The wire should now be visible from inside the engine bay. Look for it just below the brake booster. Carefully reach underneath the brake booster and feel for the ring terminal that is pushed through the firewall grommet.



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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 the 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 the circuit breaker. **Do not over-tighten this.**



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

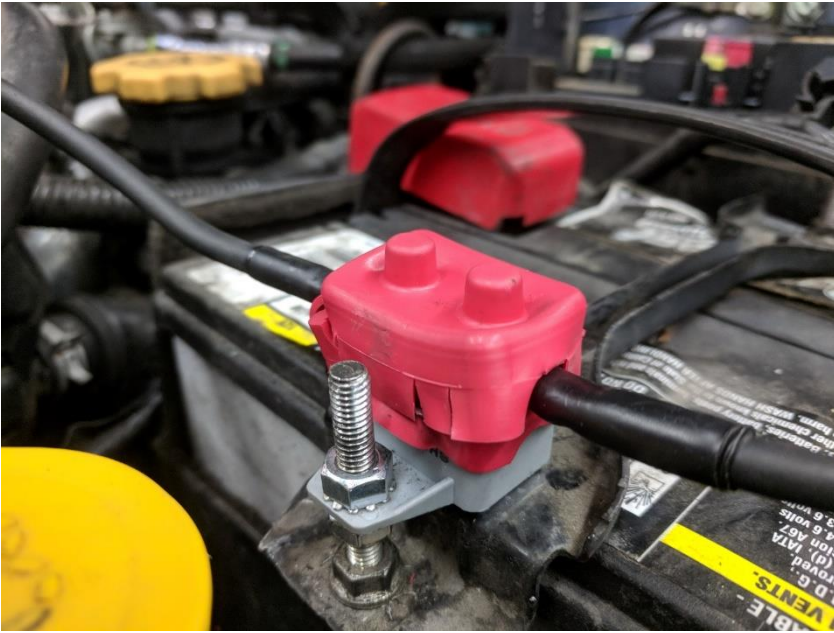


Attach the short wire that will go to the positive side of the terminal to the Copper colored post. **DO NOT HOOK TO BATTERY YET**



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Push the Red boot down to cover exposed terminals



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

Remove trim from the 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.



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

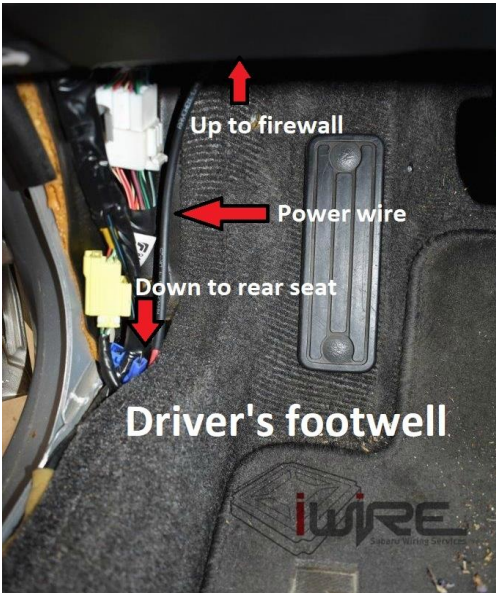


One plastic plug holds the door sill trim, and the other holds the B-pillar trim. Pry each out with a flathead screwdriver.



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Run the Red power wire along the 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 the 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 installation helps ensure a proper fit.



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

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



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



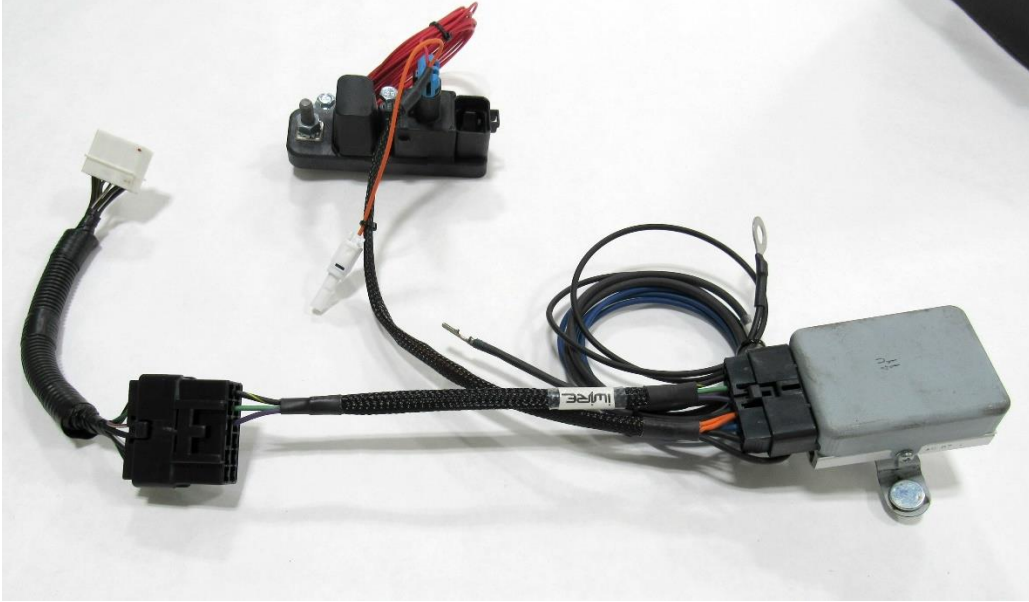
The side trim is secured by body clips that can be removed with a flathead screwdriver.



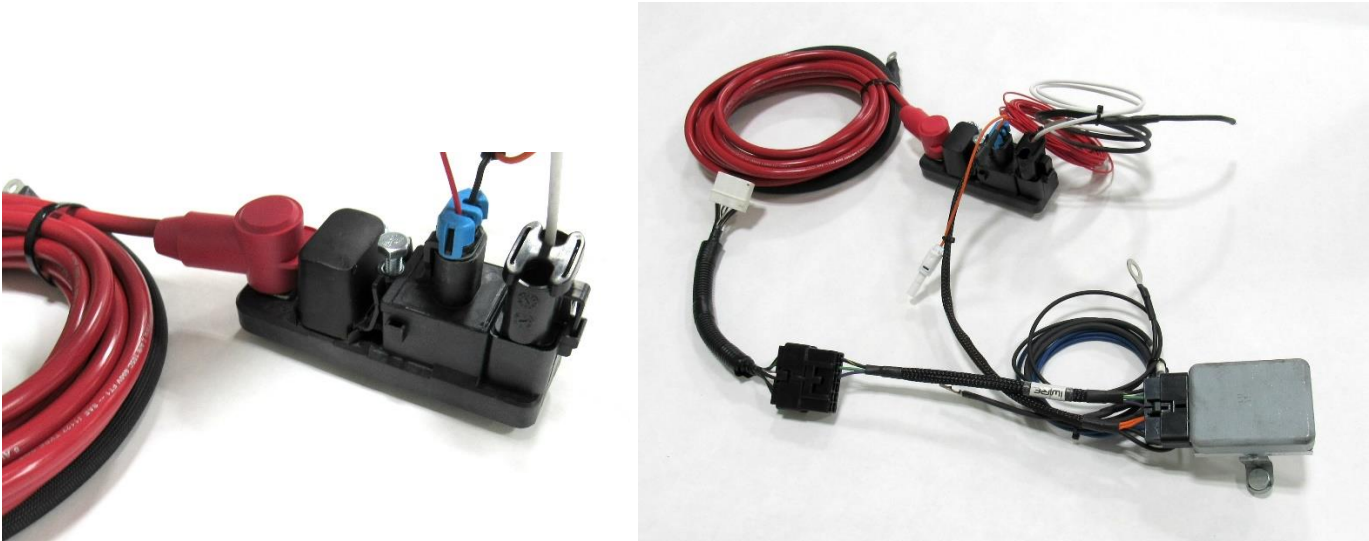
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Section 5 continued: Installing Fuel Pump Bypass Module

Plug the FPC jumper harness in between the FPC and the original FPC connector. The original FPC is inside the passenger rear quarter panel. **Please note that the white plug with orange wire will stay loose if you are doing a single pump install. Just leave this plug zip-tied as is. It is designed for future upgrades to a double pump kit.**

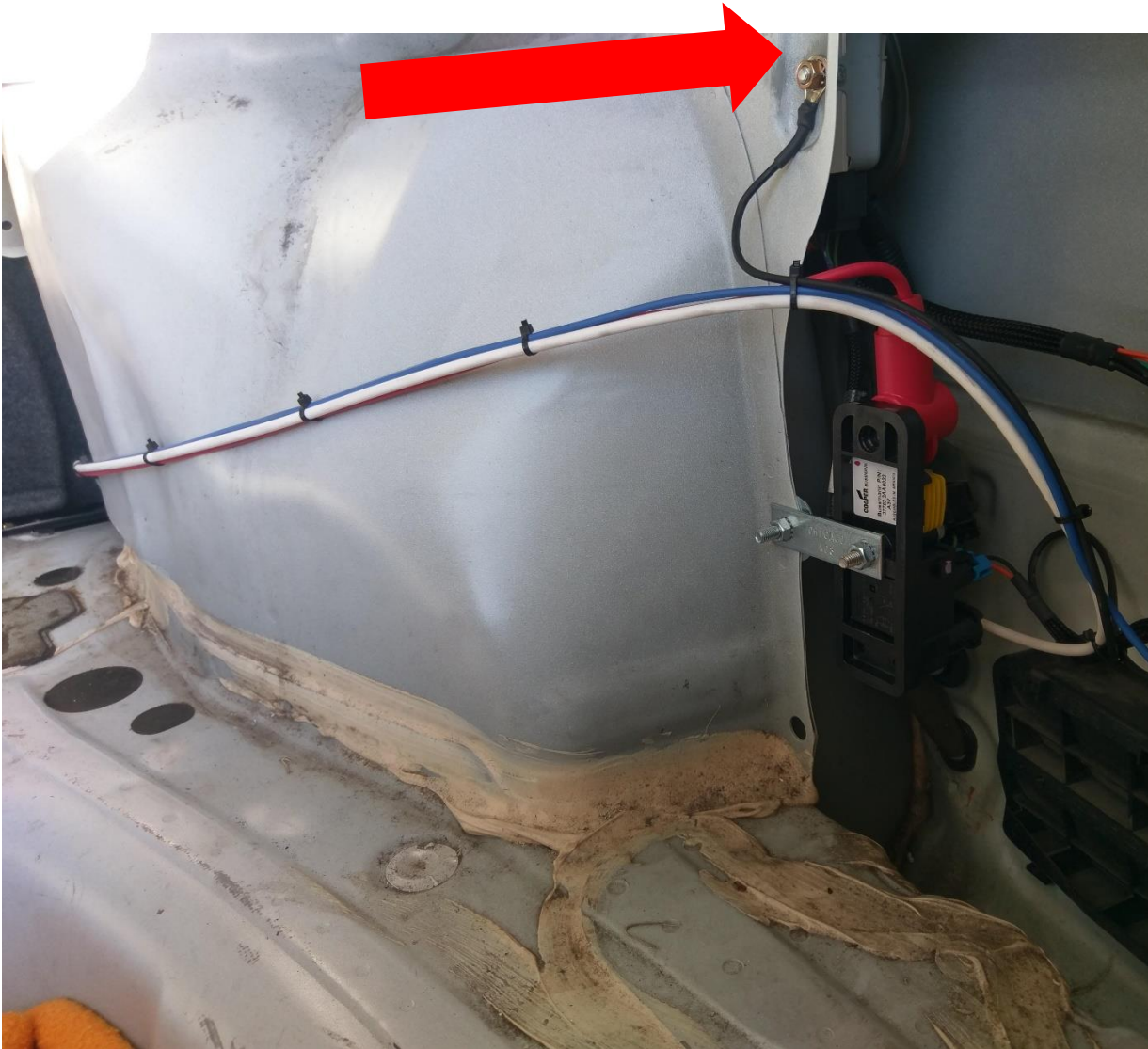


Below shows the final layout of plugs as they attach to the module. While this is shown outside the car to make it easier to understand, it will be done inside the car.



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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 the FPC pump bypass module on passenger side of the 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 the provided Red rubber boot and attach the ring terminal to the stud on the module. Secure the ring terminal with the included 13mm nut.



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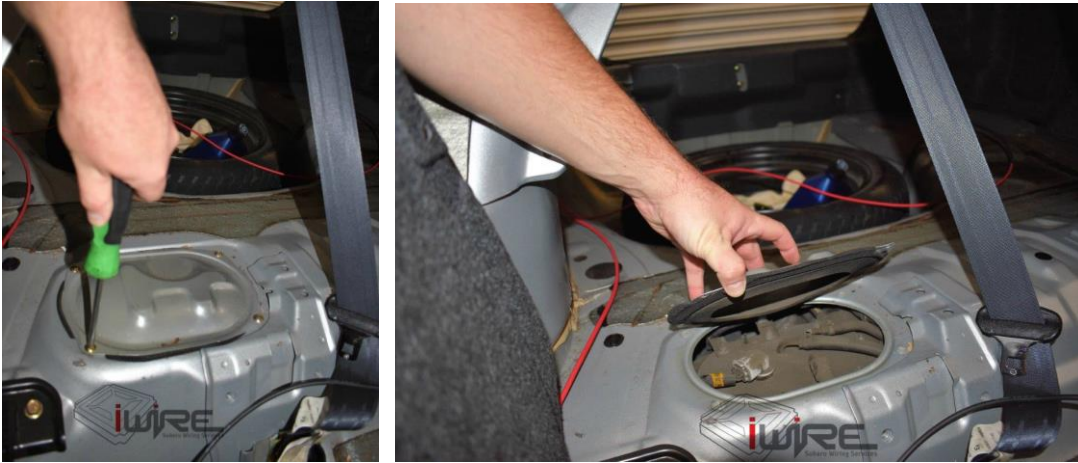
Section 6: Fuel Tank Modification

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



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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 wires are 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. **(Wires may look slightly different if you have our Bypass Stud Kit but you will still complete the following steps to get the wiring to the fuel pump access door.)**



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. We dropped this down from the opening above the fuel hanger.



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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 or ring terminal ends 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.



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STUD BYPASS INSTALLATION INTO HANGER

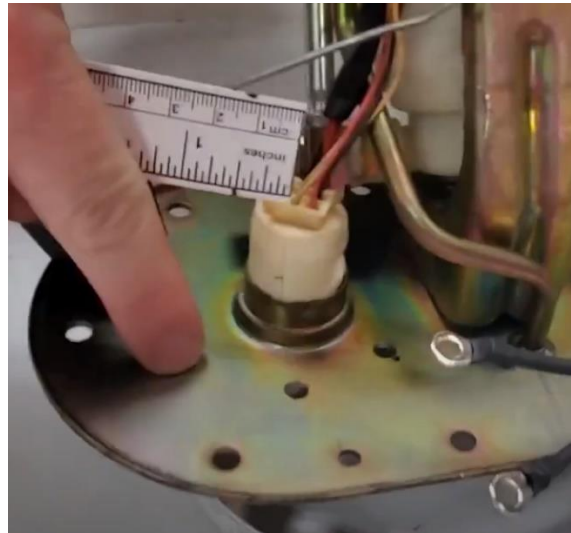
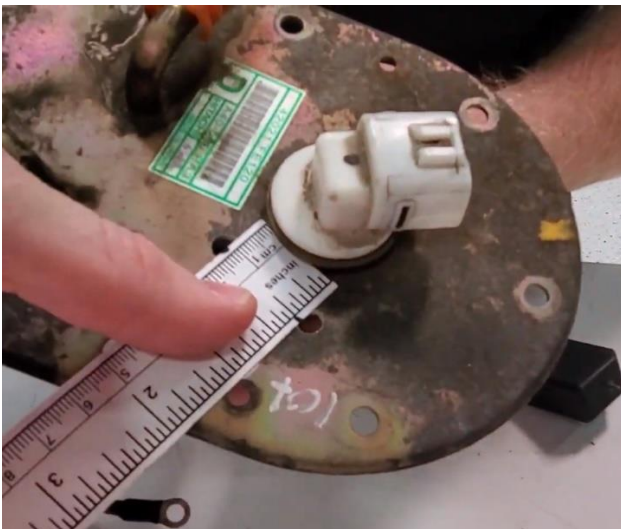
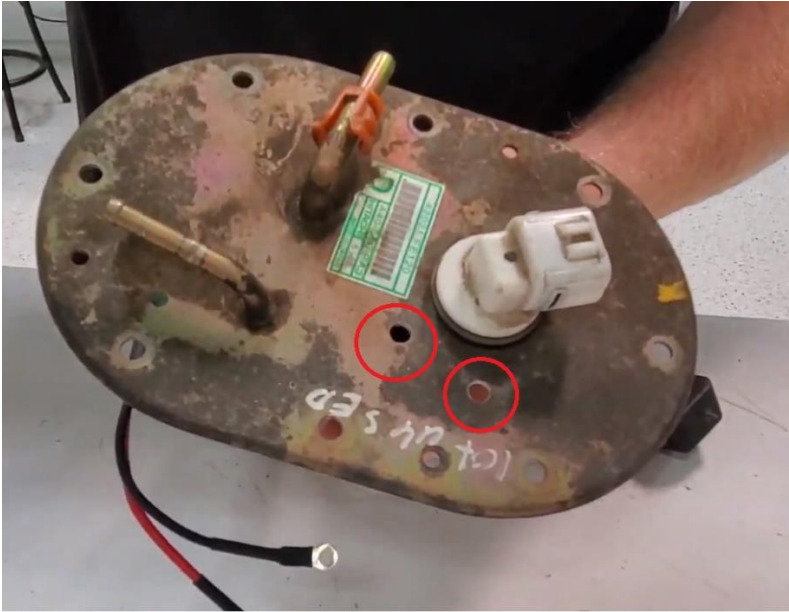
Please note: For metal fuel pump hangers the thin Black wire on the in-tank jumper harness will be trimmed as close to the terminal as you can.



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Step 1: Drill holes into the hanger for the stud kit.

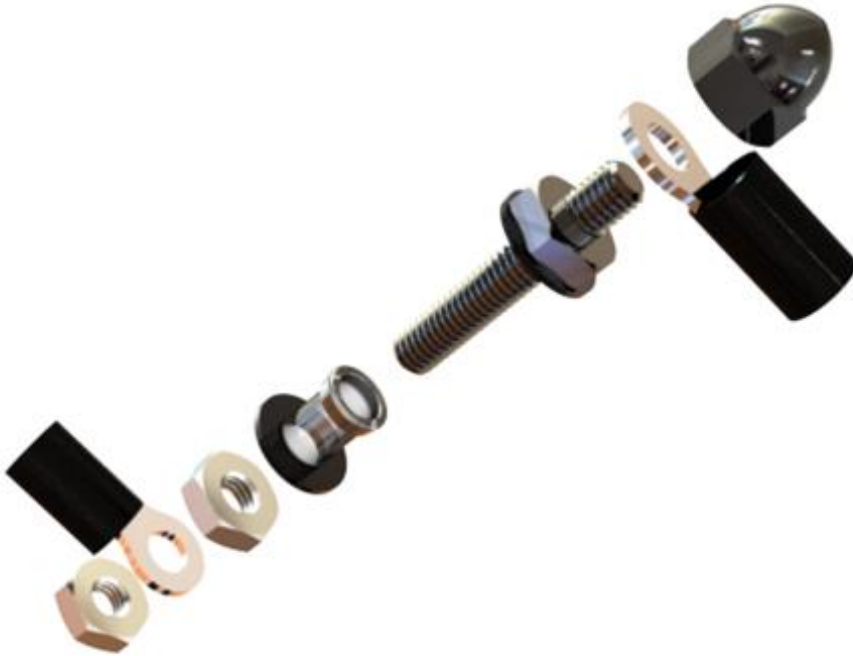
Drill a small pilot hole. Then use a 15/64th drill bit to make the holes for the stud kit. We recommend measuring 1/2 inch or so from the OEM connector. Just need to keep the holes/stud kit away from the factory connector. Make sure the holes stay inside the line where the tank edge is.



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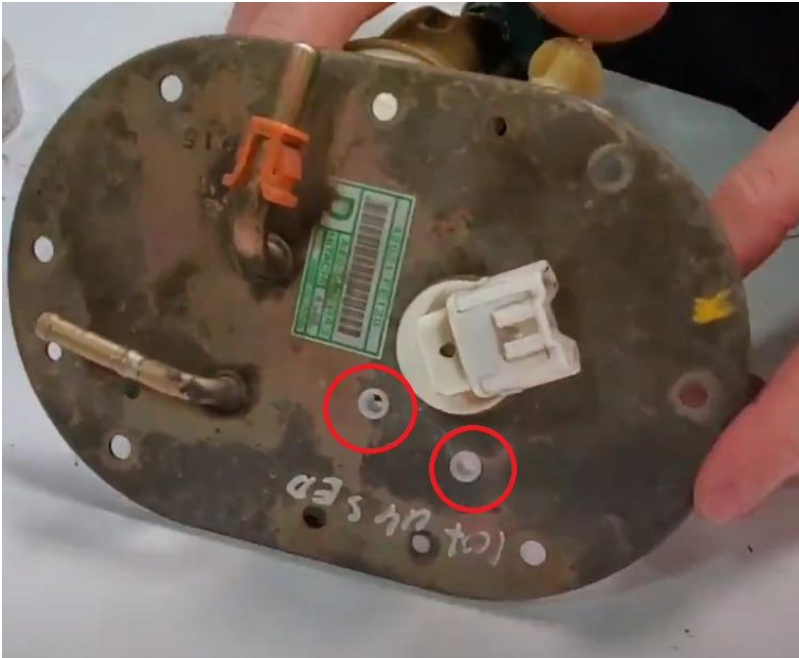
Step 2: Install the Stud Kit Through the Hanger

Below is an overview of how all of the pieces will go together. It is **VERY IMPORTANT** that these pieces be installed in this order. You can damage the wiring kit and your car if this is not done properly.



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First, install the clear plastic insulator pieces into the holes drilled into the hanger.

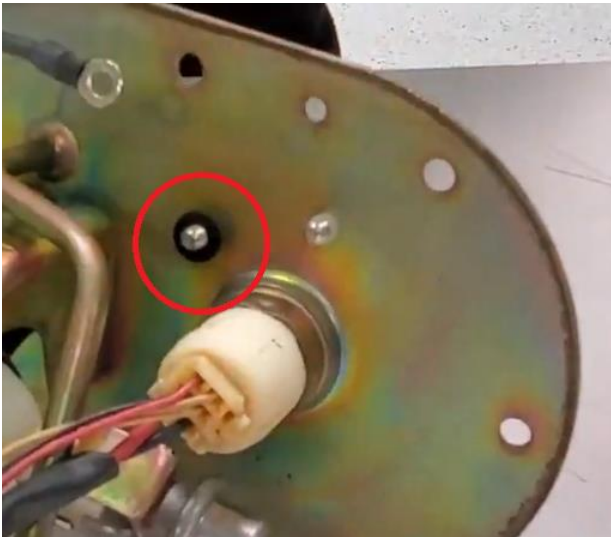


Next, insert the metal stud into the insulator. You want to make sure that the washer is in between the metal stud and insulator. **YOU DO NOT WANT THE METAL OF THE HANGER TOUCHING THE METAL OF THE STUD!**



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Once inserted into the insulator in the hanger, place the second washer on the back side so that the two washers sandwich the insulator into place.



Next, you'll put the locking nut on the underside of the hanger (the side of the hanger that goes into the gas tank) and tighten it into place. This is done to make sure the insulator is compressed properly. Tighten it into place with a 10 mm socket. **This might seem a little redundant since we will take the locking nut back off but trust us, this is worth it!**

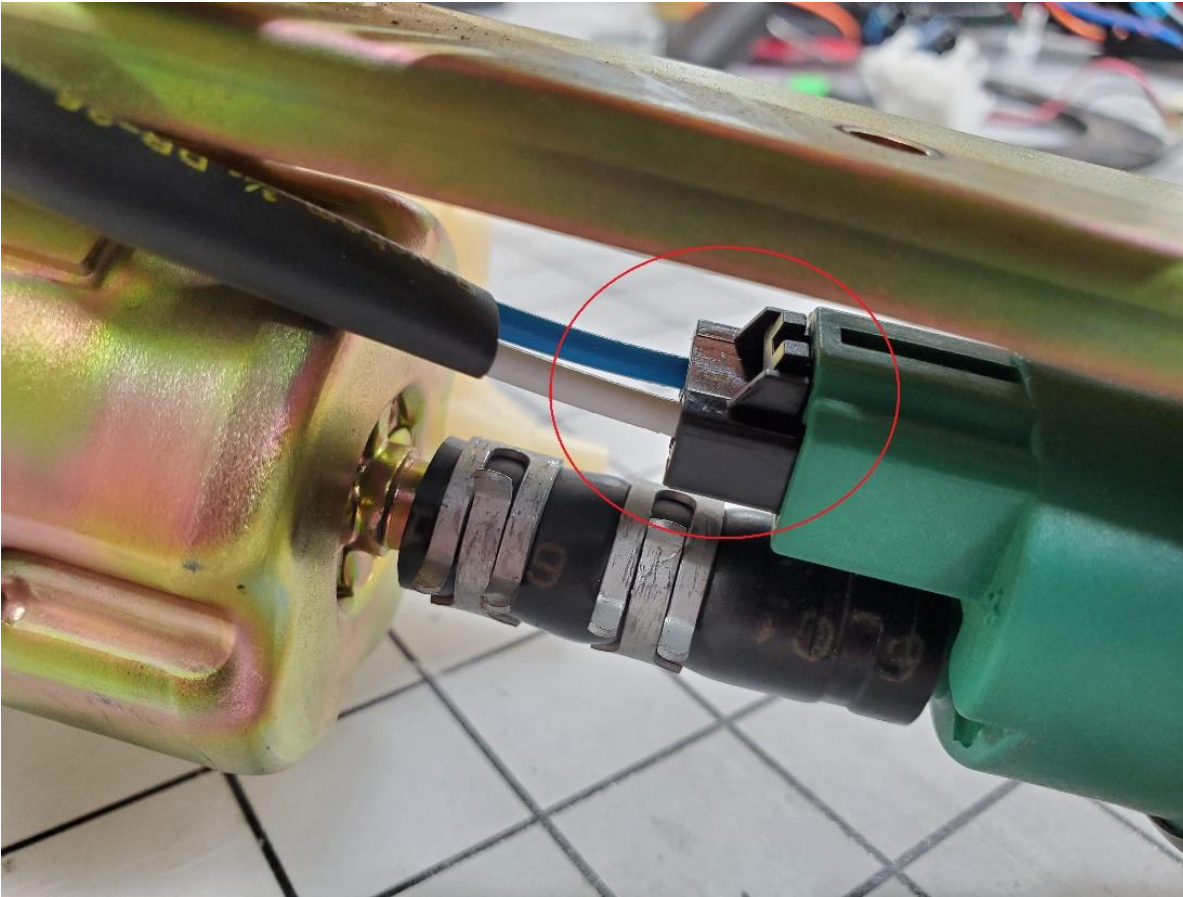


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Step 3: Hooking Up Wiring to Stud Kit

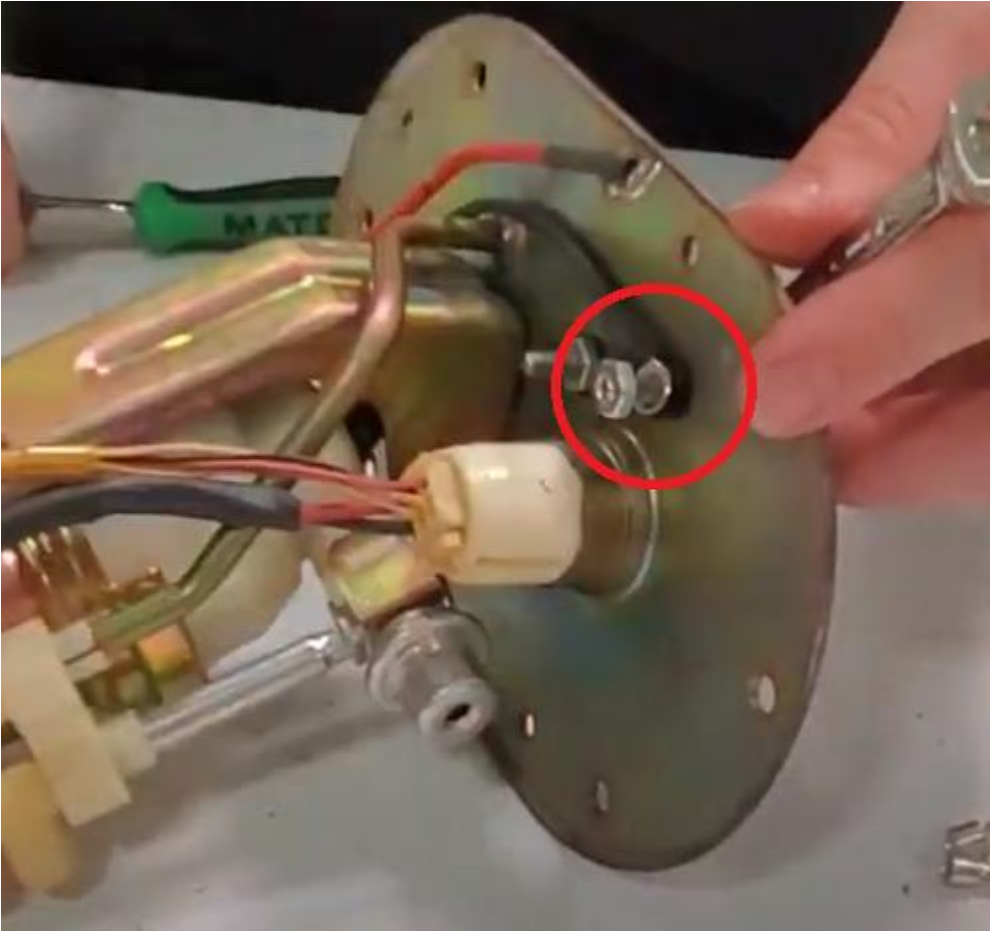
Once the locking nut has been fully tightened, untighten it to remove the locking nut. Make sure to leave the washer in place.

Unplug the original harness to the fuel pump and plug in the 2-pin black connector from the iWire FPC Hardwire Kit into the fuel pump.



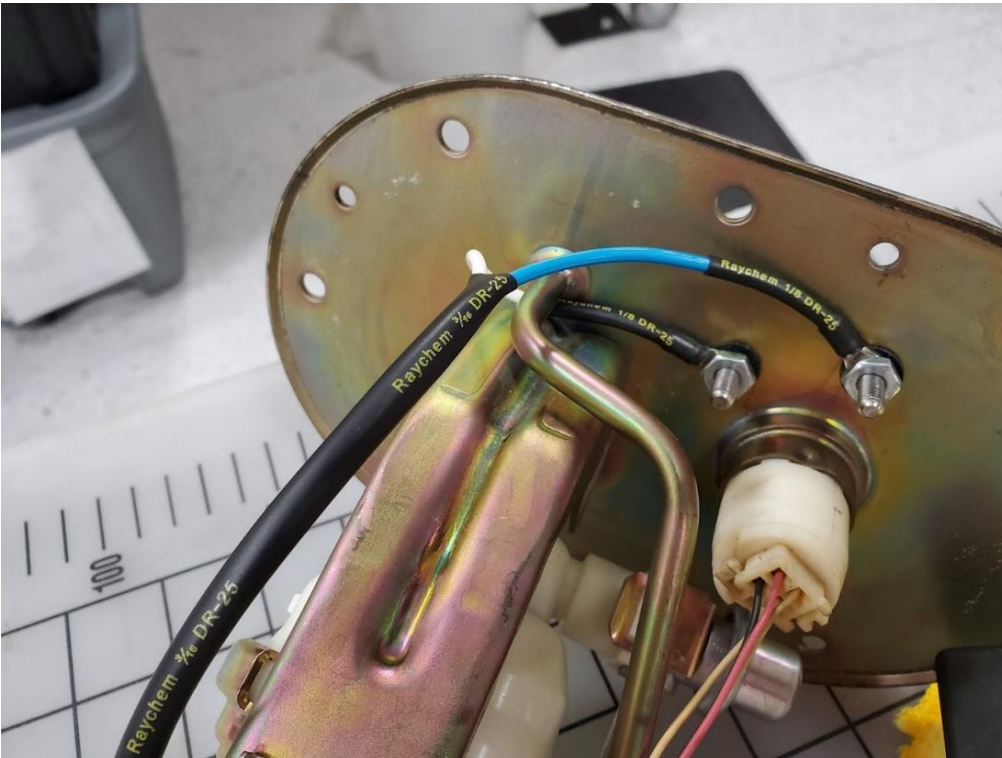
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Place the ring terminal from the iWire FPC Hardwire Kit (with the OEM Fuel Pump Connector on the other end) one on each stud on top of the washer. Color order doesn't matter here. You'll just make sure that Blue touches Blue and White touches White on the same stud. Put the locking nut back onto the stud and tighten it, making sure the ring terminal is in place.



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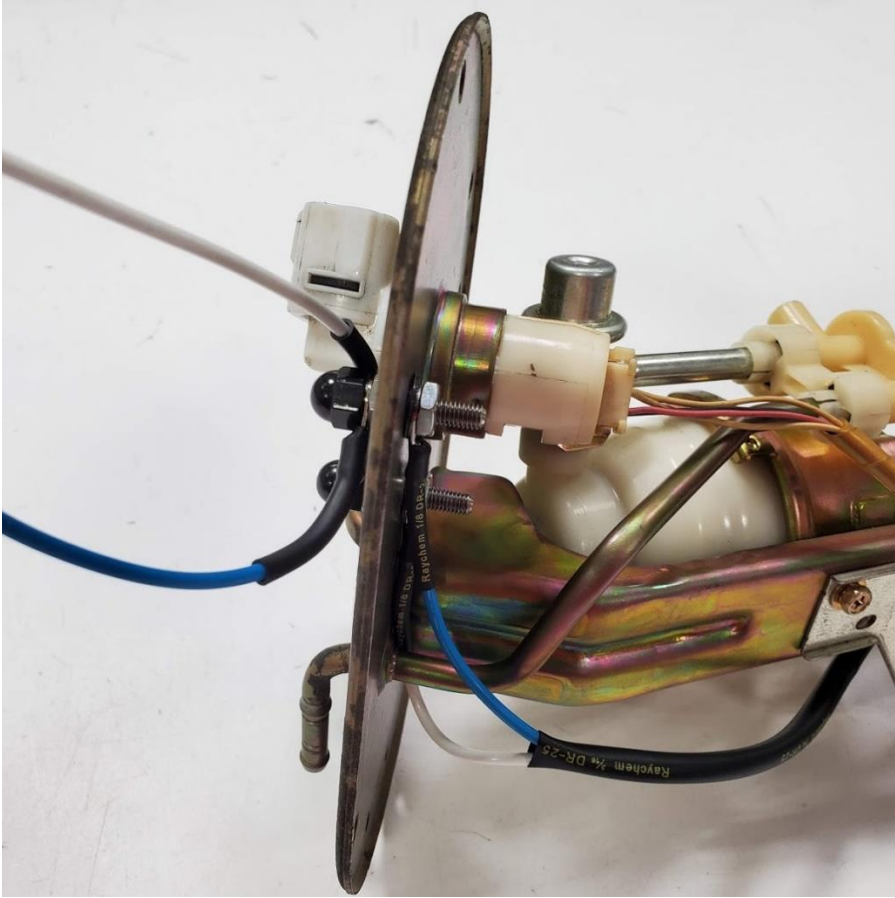
Make sure to route the wire so that it stays within the line of the fuel pump hanger, so it goes into the tank once you put the hanger back in and does not get pinched.



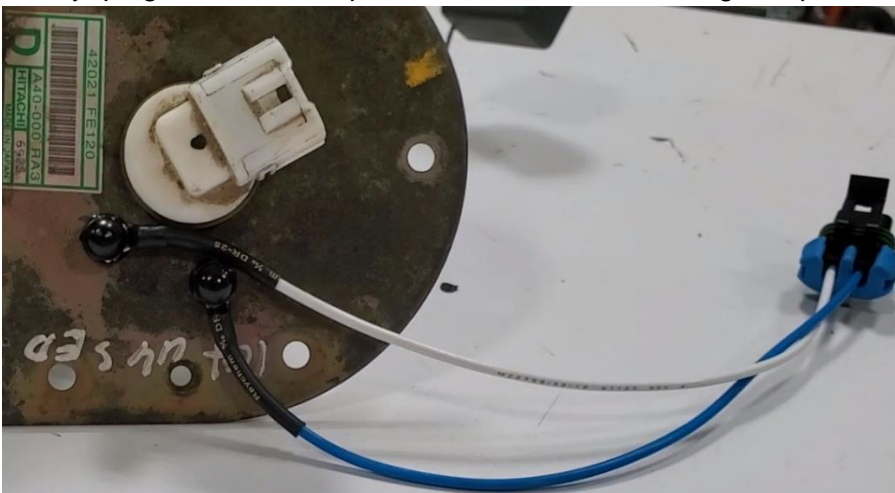
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Once the underside of the hanger is complete, flip over the assembly. You'll install the two ring terminals from the main jumper of the iWire FPC Hardwire Kit. **Make sure that the Blue wire is connected to the stud with the Blue wire on it underneath, and make sure White matches up to White.**

Use the provided Black acorn nut to secure the top ring terminal into place. The acorn nuts are insulated and nonconductive which is VERY IMPORTANT to make sure this kit works properly. Be careful to not overtighten these.



Finally, plug in the black 2-pin connector to the matching receptacle on the main harness.



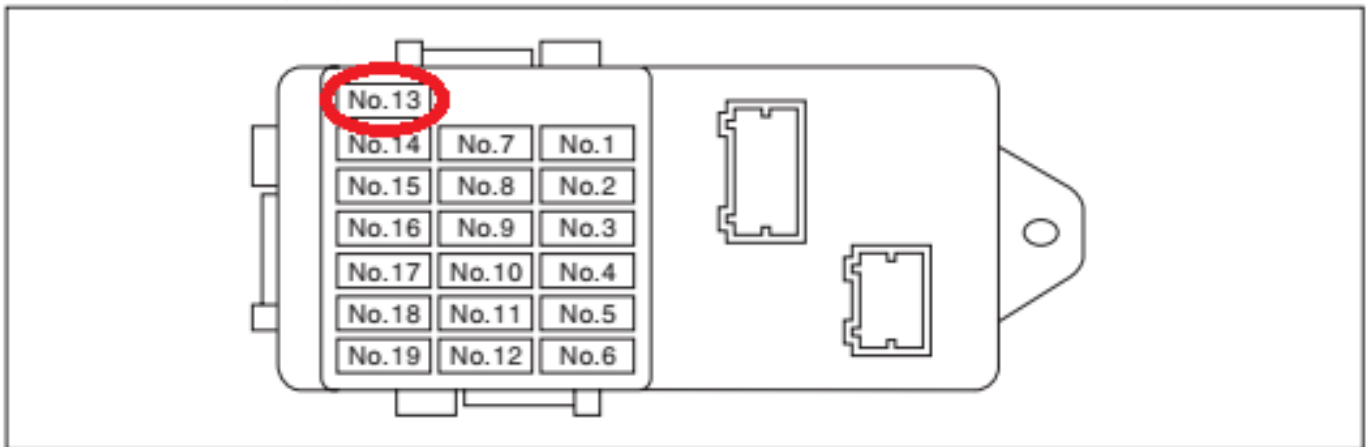
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Section 7: Getting “key on” power to the Red relay trigger wire. Fuse choice will depend on the vehicle. If you are not sure which to tie into, please ask us! You will tie it into the in-cabin fuse box which is located on the driver's side of the car under the dash.

We suggest tying into fuse #13 for 2002-2007 Impreza models (picture below). Please note that 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.

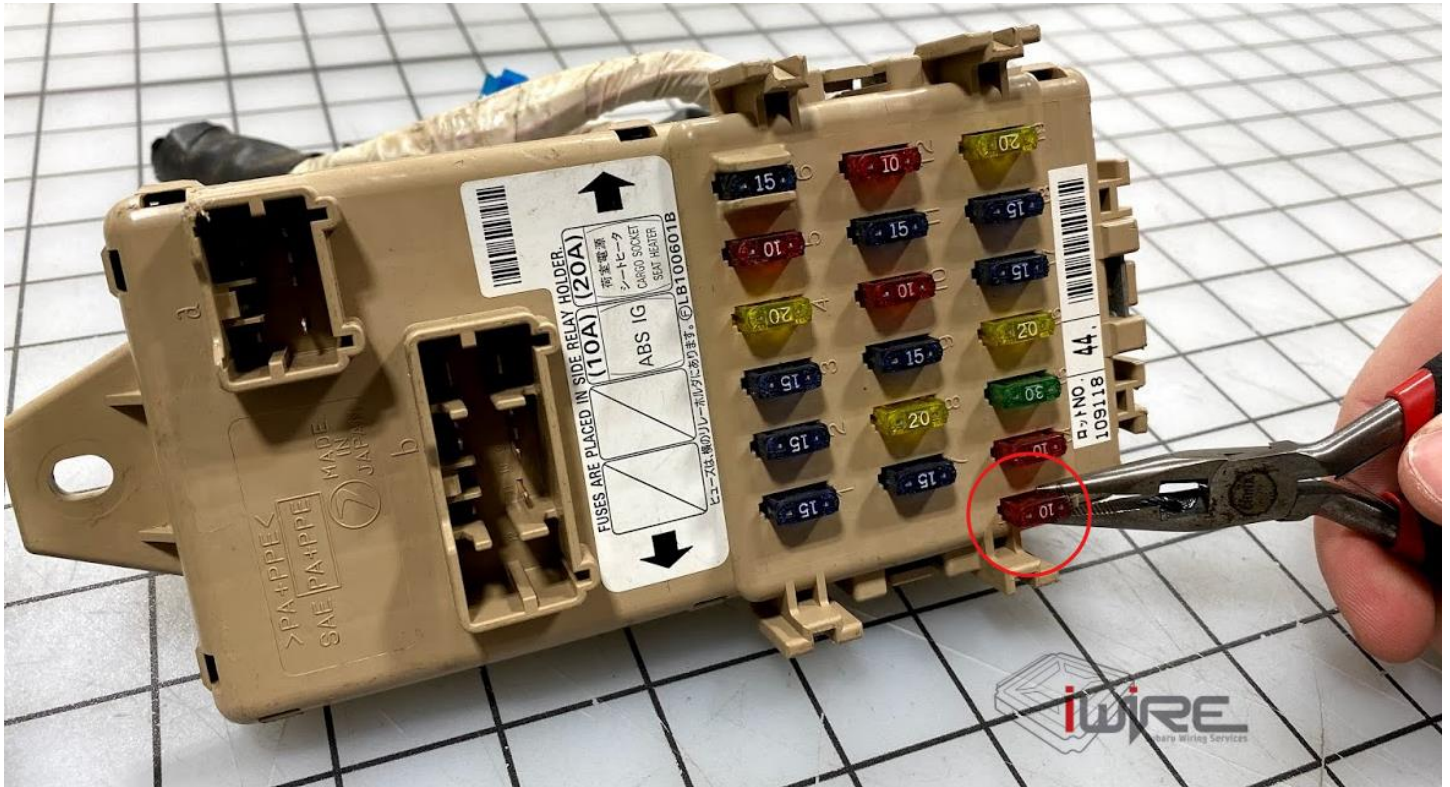
FOR 2004+ FXT USE FUSE 14
FOR 98-01 IMPREZA USE FUSE 14

FUSE & RELAY BOX (F/B)



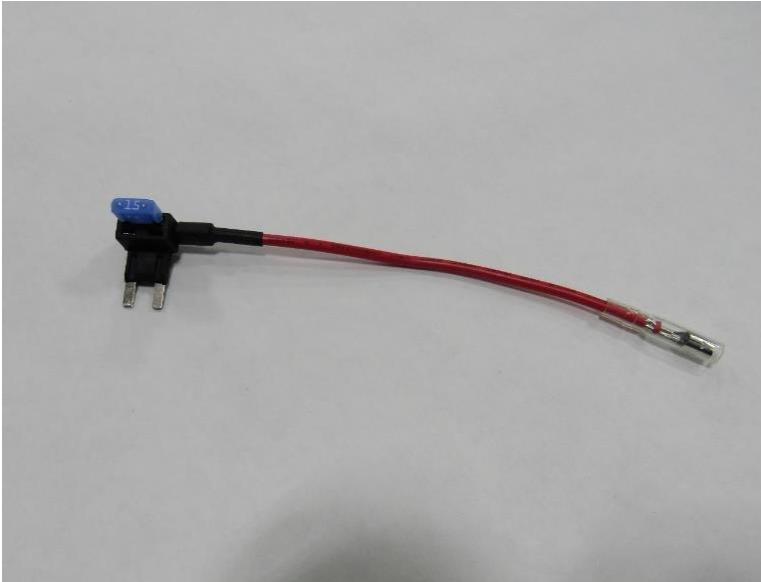
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Gently remove the fuse from #13 (or 14 depending on the model) using a pair of pliers. This will be done inside the car cabin.

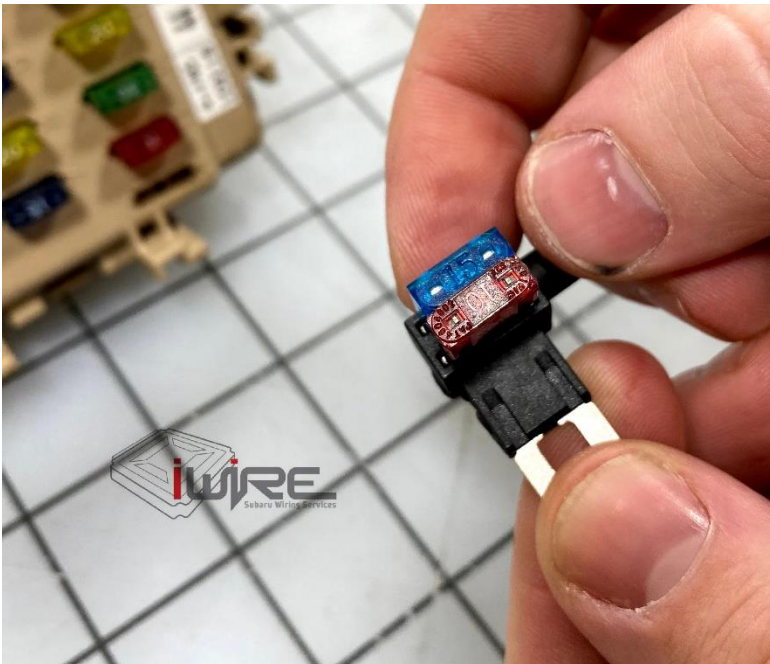


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Insert the fuse removed from the fuse box into the add a fuse provided in your FPC Hardwire Kit. If you do not do this step the wiring kit will not work. **YOU HAVE TO ADD IN THE FUSE YOU REMOVED FROM THE FUSE BOX TO THE ADD-A-FUSE PROVIDED BY IWIRE.**

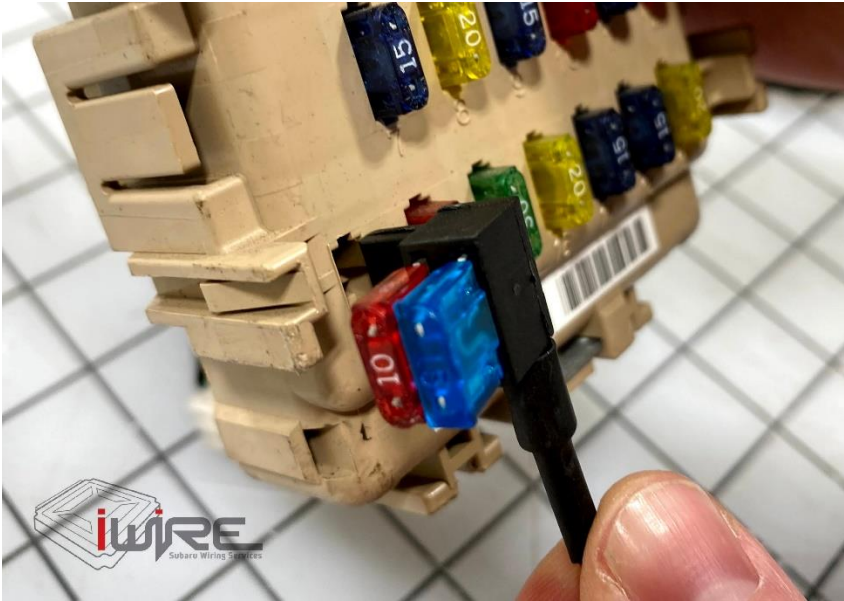


Insert fuse from fuse box into the add-a-fuse from the iWire kit.

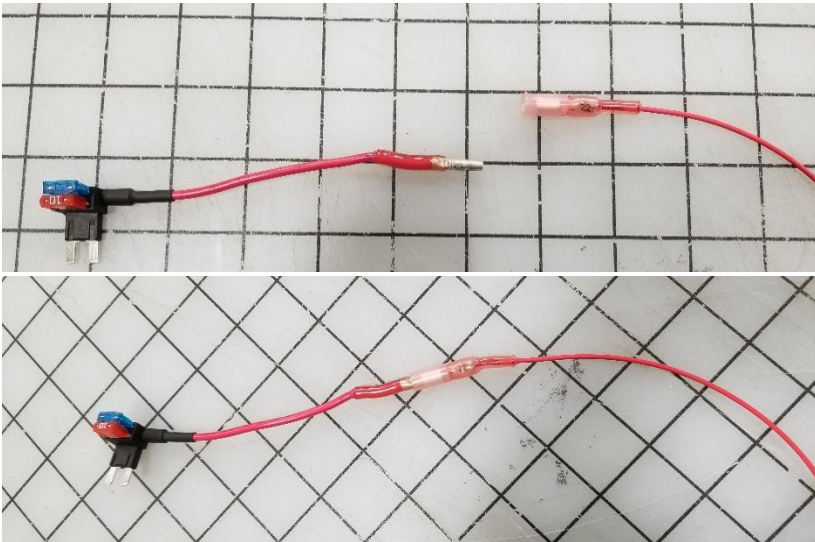


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Insert the add-a-fuse back into the fuse box where you removed the original fuse (fuse #13 location).



Connect the add-a-fuse to Red terminal you inserted earlier.



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Section 8: 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 the 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.

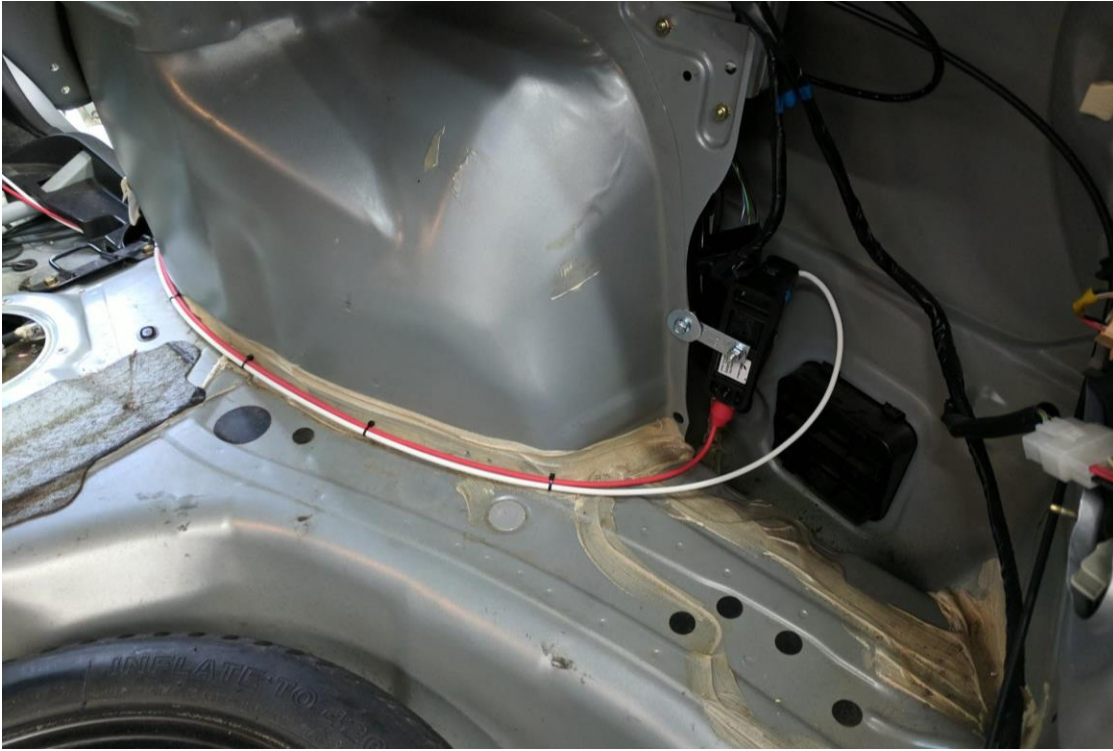
Troubleshooting:

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 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 can turn the car to the "ON" position and hear the fuel pump turn on, turn the car off and reinstall everything removed during the installation 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:

The 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 the 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