***Introduction***

Thank you for purchasing this Unichip Plug-n-Play (PnP) kit. The Unichip system differs from run-of-the-mill "reflash" tuning products because it's a fully functional programmable tuning computer integrated into the vehicle's stock management system via the PnP harness.

The concept of a "piggy-back" tuning computer such as our legendary Unichip is that it intercepts signals from engine sensors, changes these signals according to timing and fuelling algorithms formulated by our tuners and then feeding the modified signals back to the vehicle's stock Engine Control Unit (ECU) to create the desired changes such as timing advancement and fueling manipulation.

The PnP harness connects between the stock vehicle sensor male and female connectors: we disconnect a stock connector, plug our connector into the sensor, then plug the stock connector into the back of our connector. Our highly dependable PnP harnesses comprise predominantly Original Equipment (OE) terminals and connectors and only the finest SAE specification wiring. Coated fiberglass heat shielding is used in heat sensitive areas.

In this Toyota Tundra 5.7L kit, the PnP harness ties into three engine sensors, namely the Throttle Body, the MAF sensor & the Crank sensor, so in each instance we'll disconnect the factory connectors from its sensor, plug the Unichip PnP harness male connectors into the sensors, then plug the stock connectors into the PnP harness female connectors.

The Unichip is powered from the vehicle's battery and "wakes up" and "falls asleep" according to the stock ECU cycle, which is not necessarily based upon when the ignition is turned on. At first glance the installation may seem a bit daunting but we assure you that if you carefully follow the instructions you will find it straight forward. Installation time should be about 25 minutes with approximately an extra 15 minutes if you choose to install the Flux2 Display as well.

Please carefully read the instructions completely before commencing the installation. Familiarize yourself with the relevant sensors according to the pictures and pay special attention to the correct routing of the PnP harness. Also pay careful attention to how the connectors are "unlocked" before they can be removed as none of the connectors are designed to merely "pull-off:" each one has a button or two which needs to be depressed before the connector will disconnect.

***Mapping***

Each kit is pre-programmed at the factory to suit specific bolt-on part configurations. Our tuners optimize tuning parameters carefully to maximize engine performance based on the various bolt-on parts. So if you select a map for instance for your Volant Cold Air Intake, rest assured that we have spent hours perfecting mapping for that exact

intake. You will notice that we do not need to know by brand which cat back exhaust you have, nor are we concerned with things that do not affect engine tuning such as throttle body spacers or larger tires.

When you order your PnP kit without the Flux2 Display, the kit will be programmed with two maps, usually a regular gas map and a premium map, both maps being optimized for the specific bolt on parts on your Toyota. You may switch between maps by means of our 2-way switch which is connected to the PnP harness' COMM port. The switch may be stowed in the engine compartment or you may route it into the cabin for ease of access. The position of the map switch relative to which map the particular position selects is discussed later on in the instructions. Should you upgrade the kit to our Flux2 Display, the Unichip in the kit will be programmed with 5 maps to suit bolt-on parts, typically: a low octane map, a mid-octane map, a premium map, a valet map, and an immobilizer map. The Flux2 display shows which map is selected and displays a brief description of the map.

Since the Unichip is a self-contained computer, it can be re-programmed an infinite amount of times. So should you add parts to your Toyota in the future, we can provide maps to suit. Should you decide to ever sell your Unichip PnP kit, it can be re-programmed to suit a new owner's specific vehicle.

***Expectations***

Your kit arrived programmed for the modifications specified on your order and will optimize engine performance. Although the Unichip functions the entire time the ignition key is on, it works the same way as the factory computer does… that is a partial throttle it is designed for fuel economy and heavy throttle for power. If you don't push the pedal, you won't feel much of a change because you have more throttle to use if you want more power.

Optimizing performance on a gasoline Otto-cycle engine is a precise process and will not produce the same sort of results as working with a turbo Diesel-cycle engine. With a TDi, you can just keep adding fuel and the engine makes more power until something breaks. With a gasoline engine, too little fuel causes a loss of power… and so does too much fuel. Adding too much ignition timing causes a loss of power… and so does too little ignition timing. Your engine will make more power with the Unichip, but it's not like you just bolted up a turbocharger.

***Warnings and Cautions***

Please pay very special attention to warnings, cautions & tips printed in red in these instructions. Even experienced mechanics occasionally "forget" to secure a wiring harness with a cable tie, or inadvertently leave a wrench or two under the hood after work has been completed!

Thanks again for purchasing the kit; we are sure that you will enjoy the benefits!

***Before you begin***

Please pull the packing checklist out of the kit's Welcome Pack and inventory and review the parts before starting to work. If you discover any missing parts, please contact Unichip of North America before installing the kit.

# Toyota Tundra MY07-12, Land Cruiser MY08-12, Sequoia MY07-12, Lexus LX570 MY08-12, 5.7L, NA and TRD SC Unichip PnP Installation Instructions

## and Warranty Information

1020192 v1.0, 12 Jun 2012

### Tools required

10mm socket, ratchet drive and long extension, small flashlight, Phillips screwdriver, small flat screwdriver, electrical insulation tape, and a small crescent wrench.

### Cautions

1. Do not work on a warm vehicle! You may be severely burnt on hot engine components, especially exhaust and cooling system components! Allow the vehicle at least an hour to cool down before beginning work.
2. Never lean over a running engine, even "just to have a look!"
3. Be extremely careful when working underneath a vehicle especially when it has been raised by a jack. Never work under a raised vehicle without correctly installed axel stands. Jacked up vehicles must be rested on sturdy axle stands placed correctly on the chassis.
4. Always work on a level, safe surface.
5. Carefully follow all instructions and heed all cautions and warnings contained in these instructions. If anything is unclear or if you need any help whatsoever, contact Unichip of North America.
6. Some connectors may have silicon paste residue on them; the past will not cause any issues.

### Installation Procedures

1. If vehicle is warm, wait at least one hour to allow vehicle to cool down before commencing work
2. Turn off ignition, remove key from ignition
3. Wait 10 minutes
4. (Remove engine cover by lifting front edge up, then pulling cover forwards clear off engine

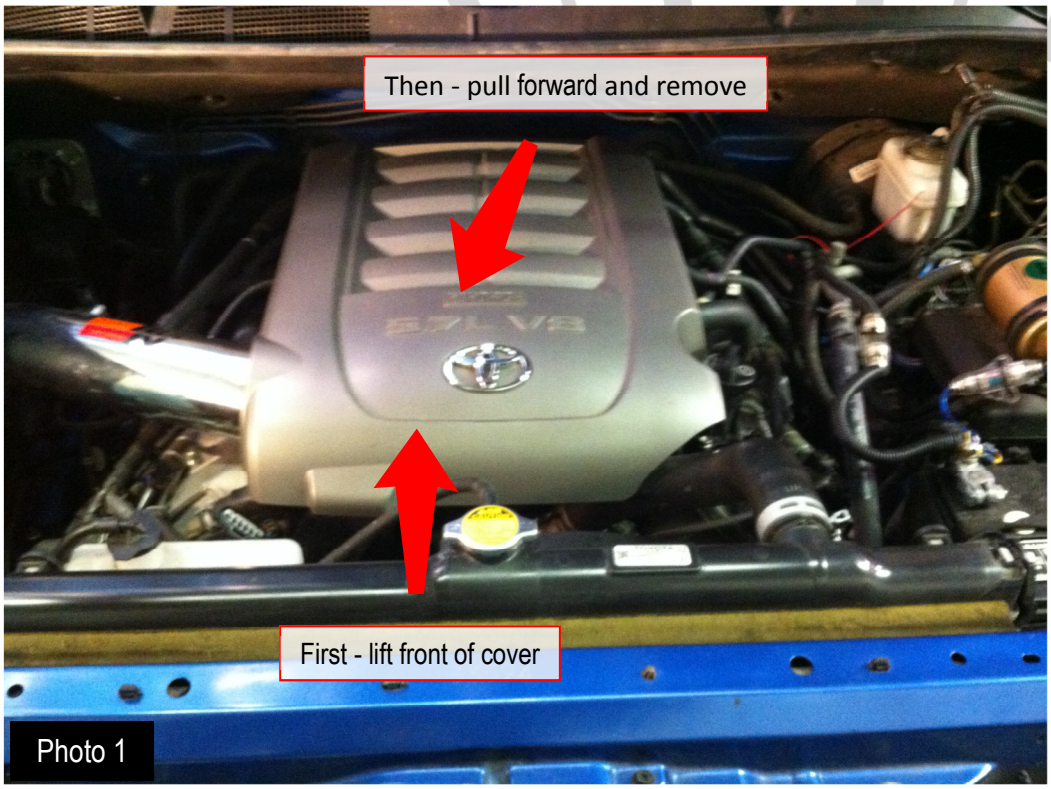



Photo 1

5. (Photo 2) Open fuse box.
6. Remove factory electrical tape from the wire channel.

***Note how the harnesses are taped to the plastic wire channel because you will re-tape it after the install***

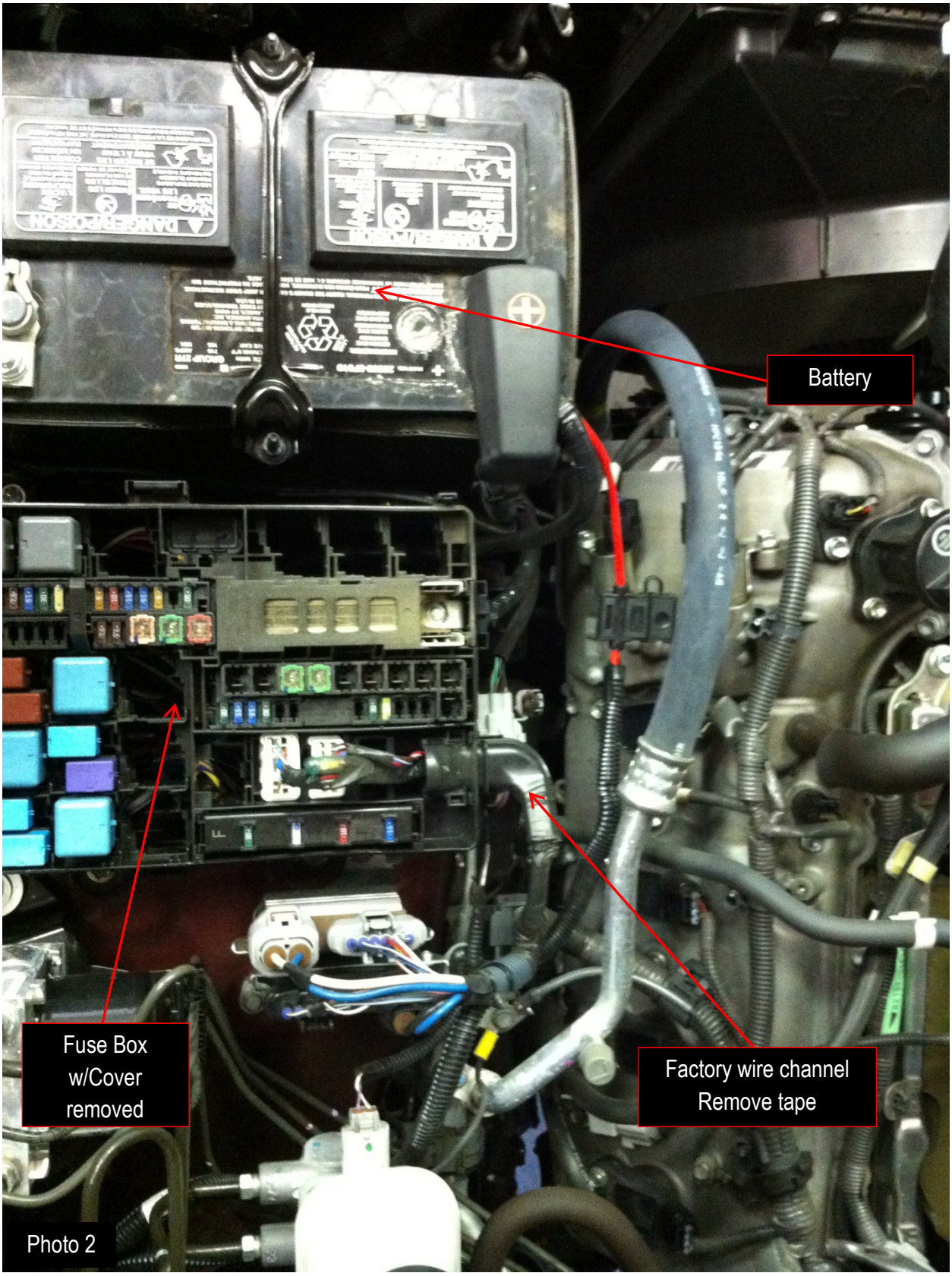



Photo 2

7. (Photo 3) Using the small flat screwdriver along the clips keeping it closed, carefully pry open the wire channel.
***Note: the wire channel is shown removed from the vehicle for clarity only.***

8. Remove wire channel from the factory harness and fuse box and set aside.

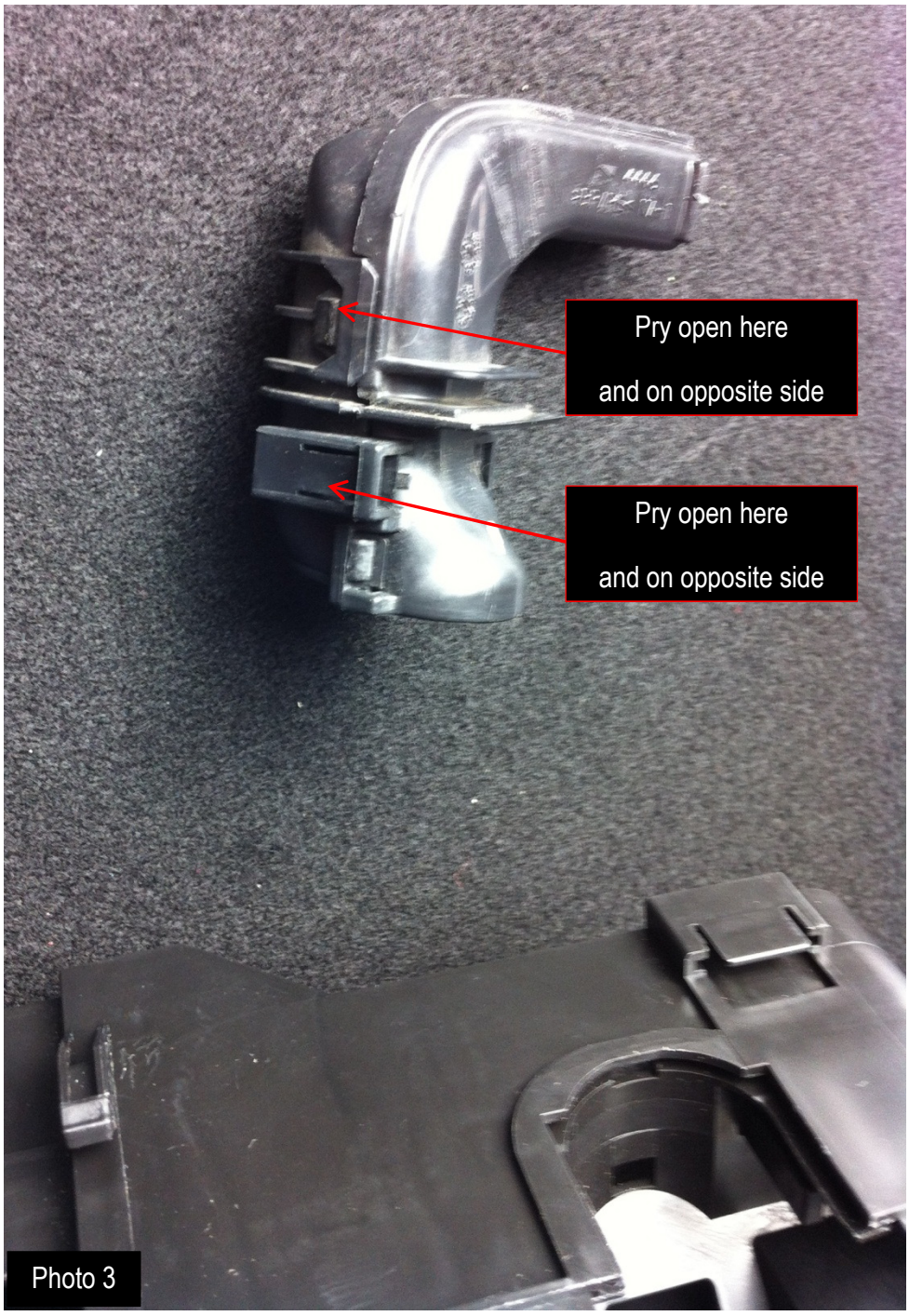
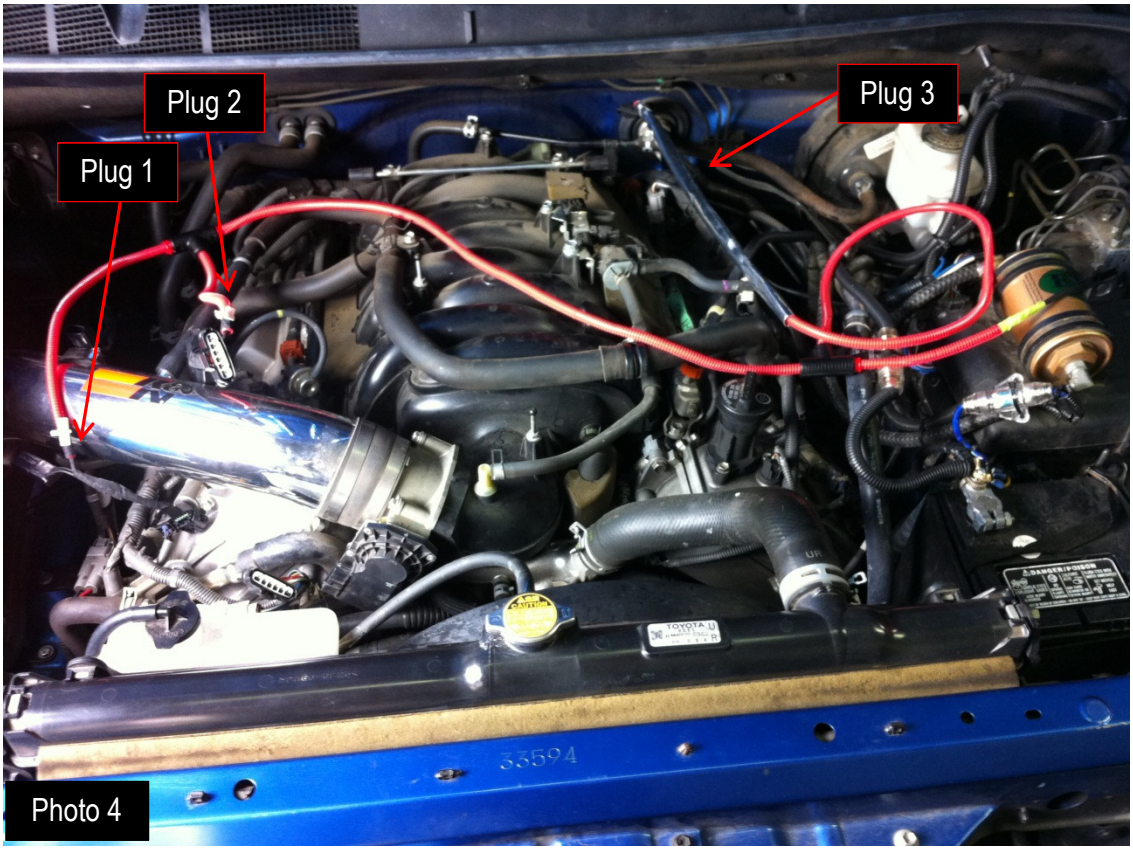


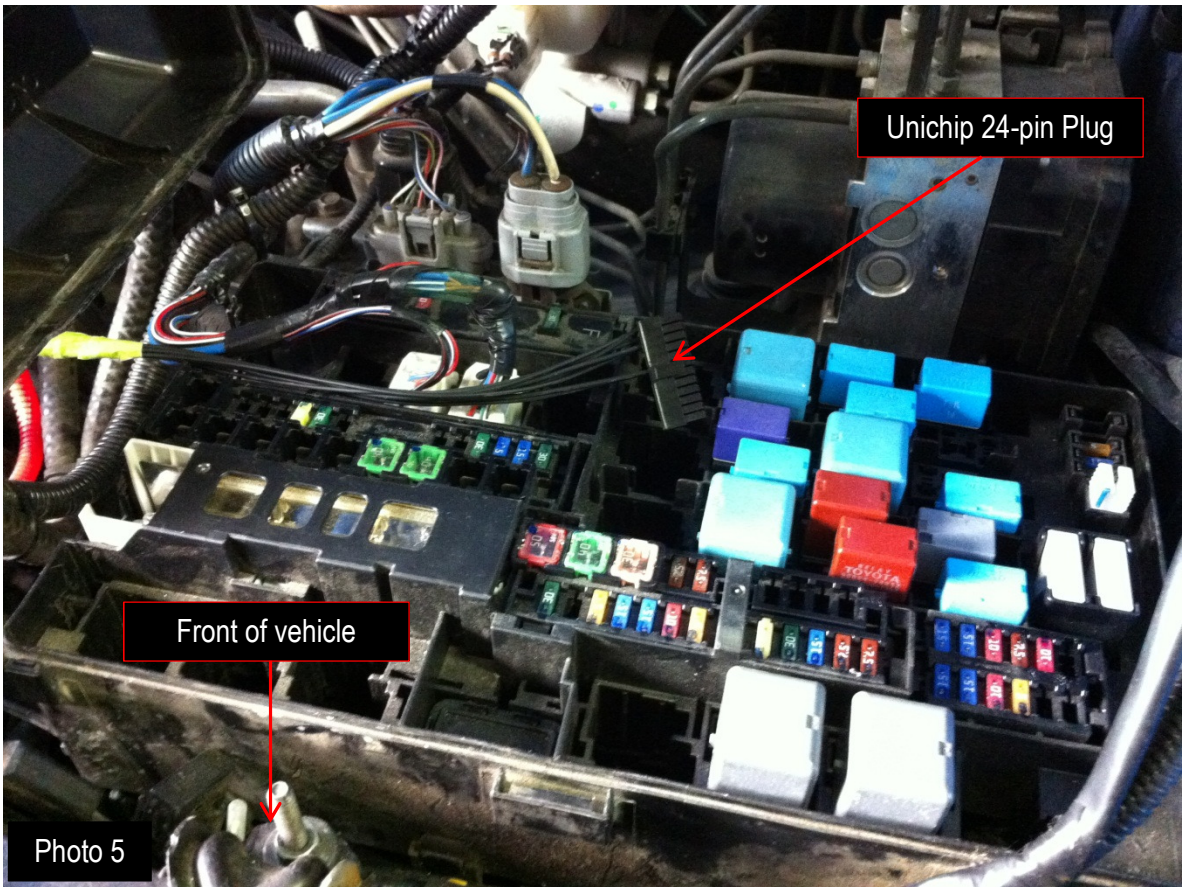

Photo 3

9. (Photo 4) Lay PnP harness on engine loosely.

***Note: The routing for the TRD Supercharger installation follows the same path even though the SC is on the engine.***

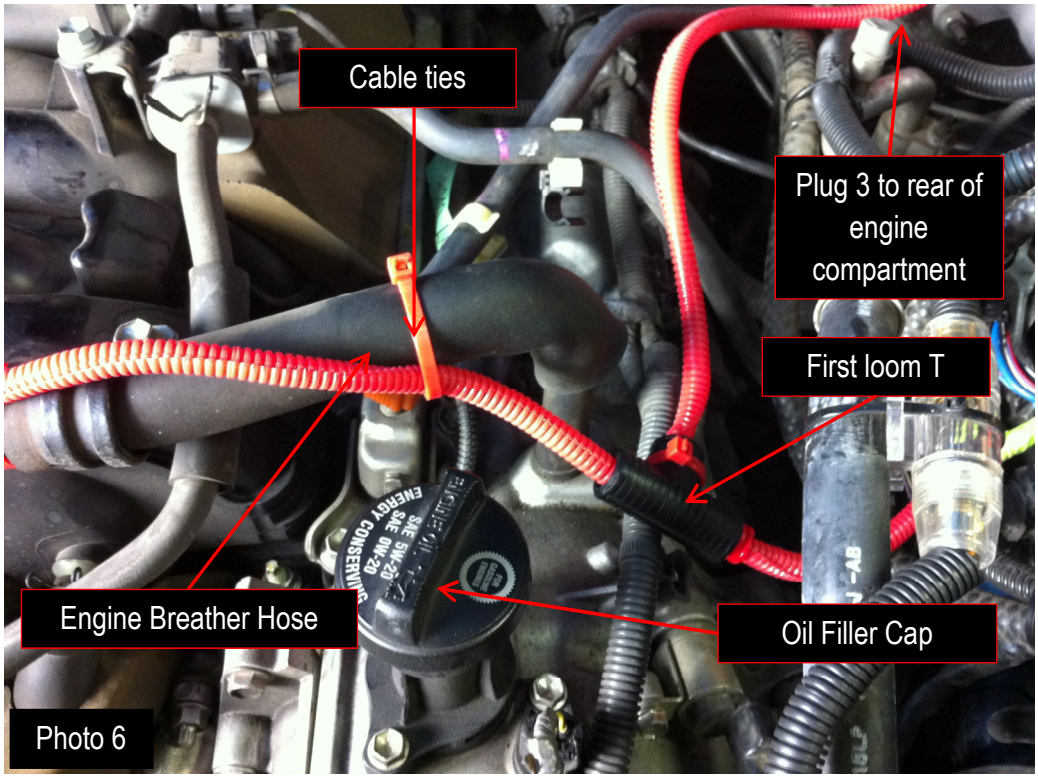


10. (Photo 5) Route the black 24-pin connector underneath the Air Conditioning lines on the driver's side of the engine and into fuse box.

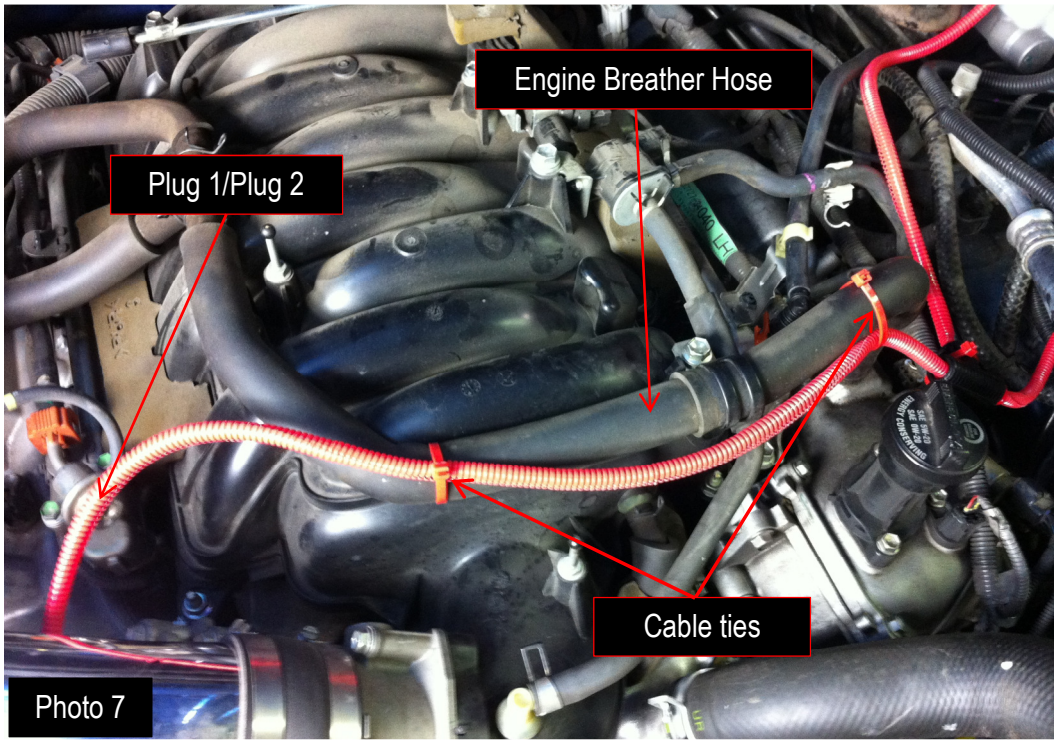


11. (Photo 6) Working back from the 24-pin Plug, find the first PnP T-connector and using a kit provided red cable tie, secure it to the main engine breather hose next to the oil filler cap and the factory convoluted tube running next to the breather hose.

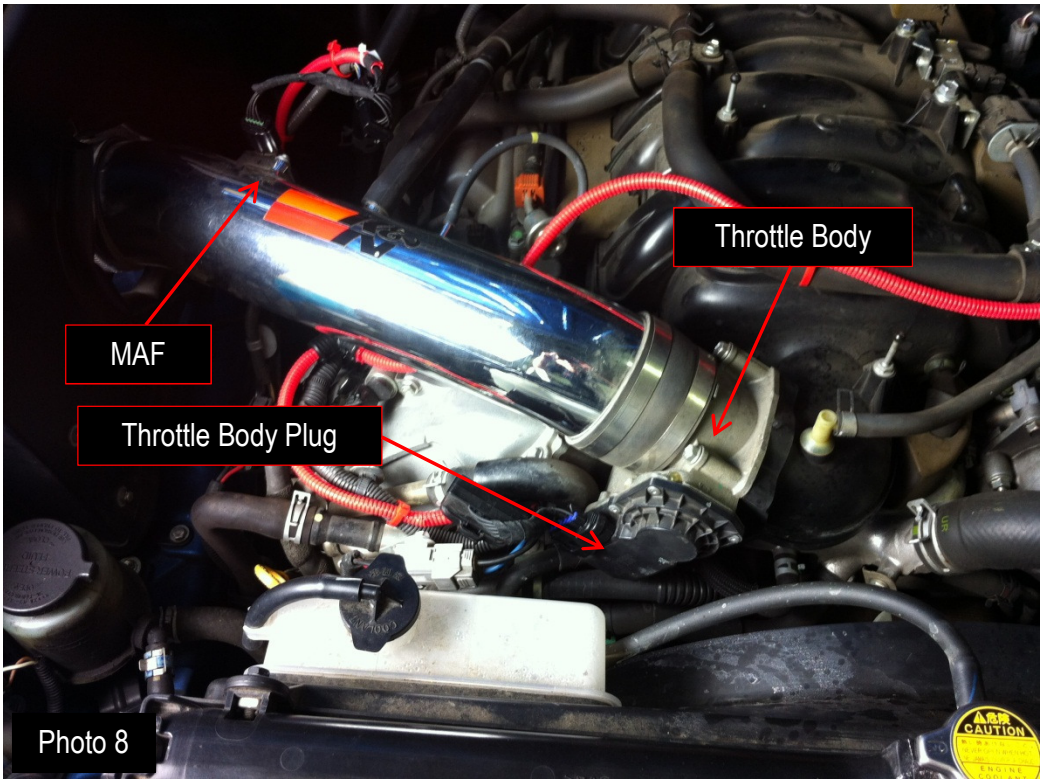
    ***Note that Plug 3 must remain routed to the rear of the engine bay.***



12. (Photo 7) Route Plug 1 and Plug 2 along the engine breather hose toward the passenger side the engine bay and use a kit provided cable tie to secure it.



13. (Photo 8) Install Plug 1
    a. Locate the Throttle Body where the intake tube joins the engine.
    b. Locate the factory Plug on the lower front side of the Throttle Body



c. (Photo 9) Press the Throttle Body Plug release tab and pull the plug straight out of the connector.

***Note for simplicity, the Plug 1 installation is show with the Throttle Body removed but it is not required or recommended to remove it for your installation.***

d. Insert PnP Plug 1's male end into the Throttle Body connector.

***Note: Press the male plug firmly in until you hear the release tab "click" in place.***

e. Insert the Factory Male Plug into PnP Plug 1's Female connector.

***Note: Press the male plug firmly in until you hear the release tab "click" in place.***

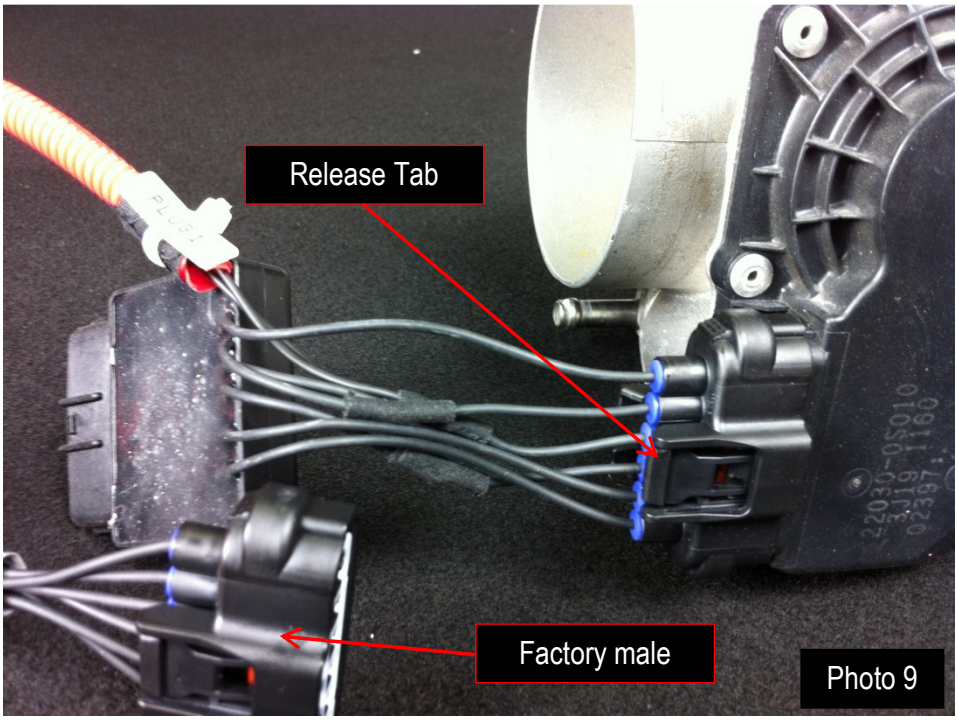



Photo 9

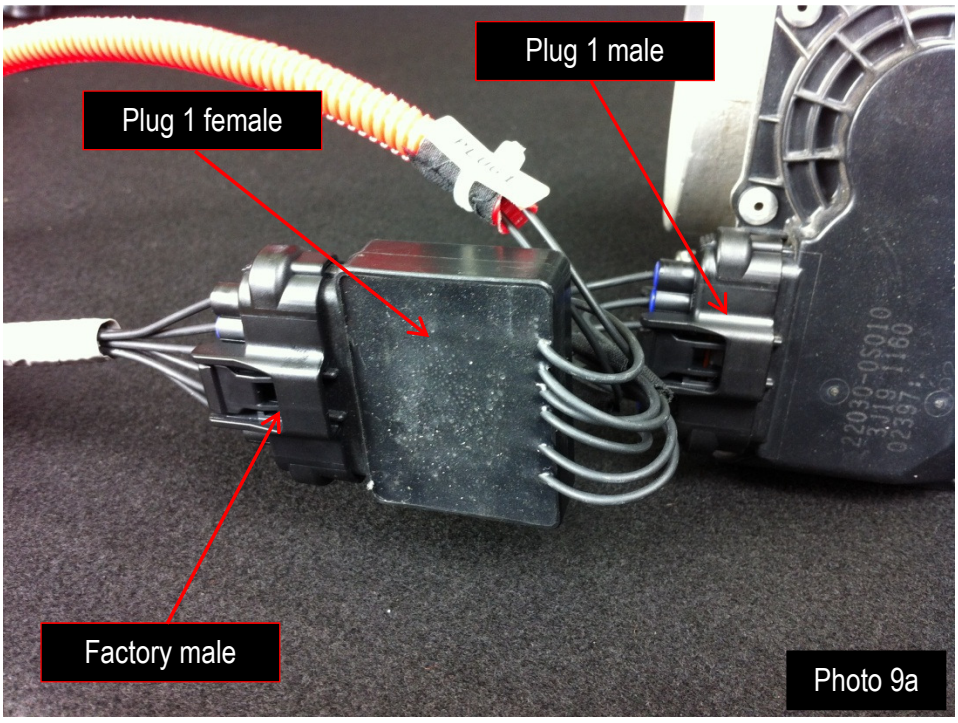
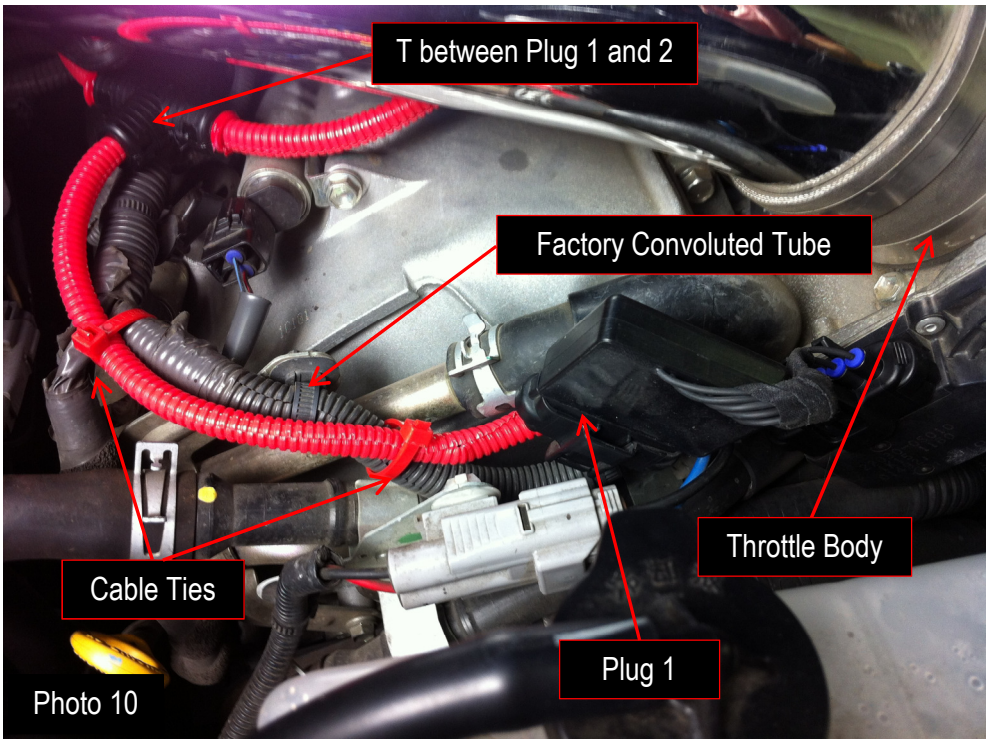



Photo 9a

f. (Photo 10) Using a kit supplied cable tie, secure the Plug 1 branch to the grey factory convoluted harness.



14. Install Plug 2
    a. (Photo 11) Locate the MAF Sensor on the intake tube

***Note: In the photo, the factory intake has been replaced with an aftermarket cold air intake system; the MAF sensor will be in approximately the same position regardless of what intake is on the truck***

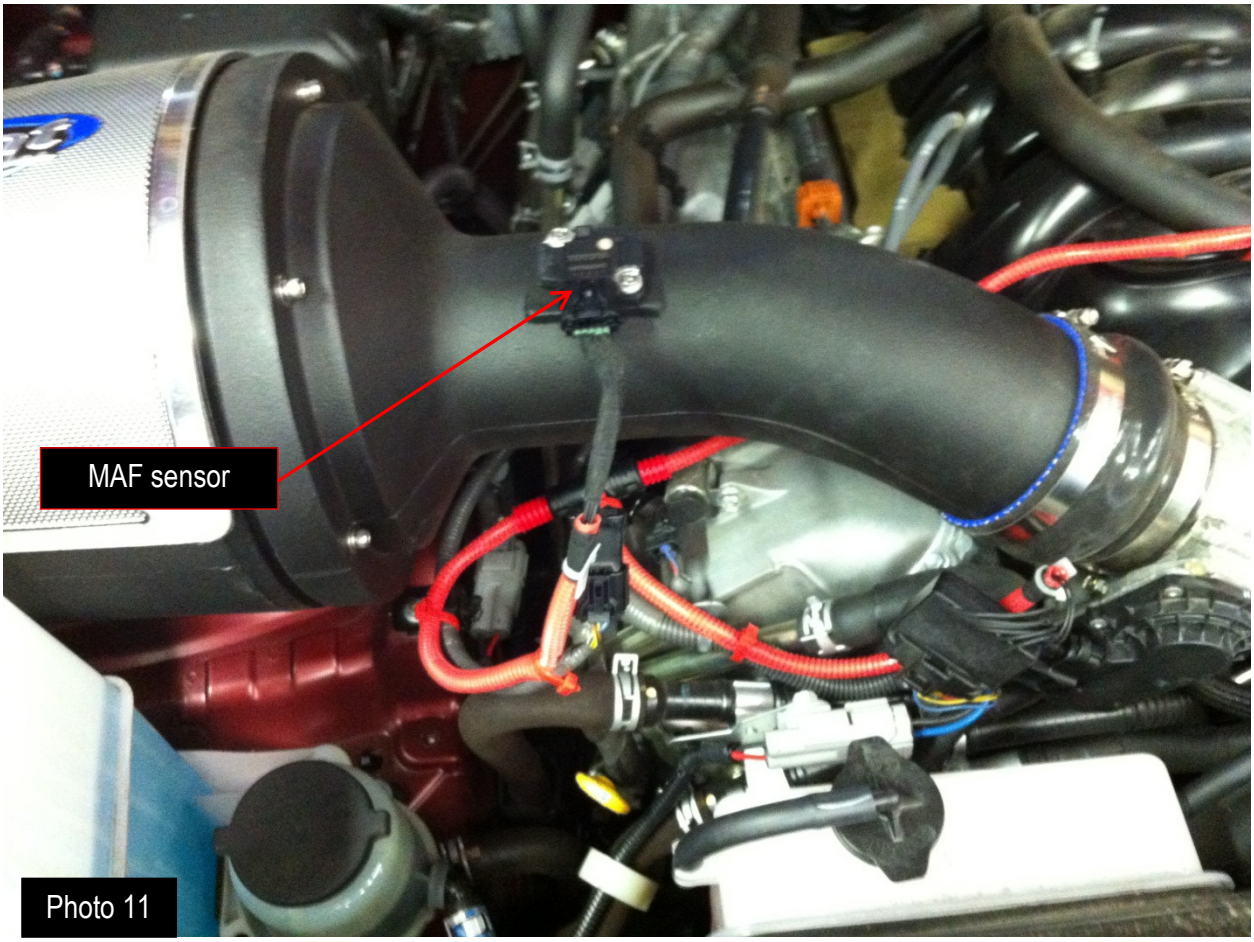



Photo 11

b. (Photo 12) Press the MAF Plug's release tab and remove the Plug from the MAF.

***Note for simplicity, the installation is show with the MAF sensor removed but it is not required or recommended to remove it for your installation.***

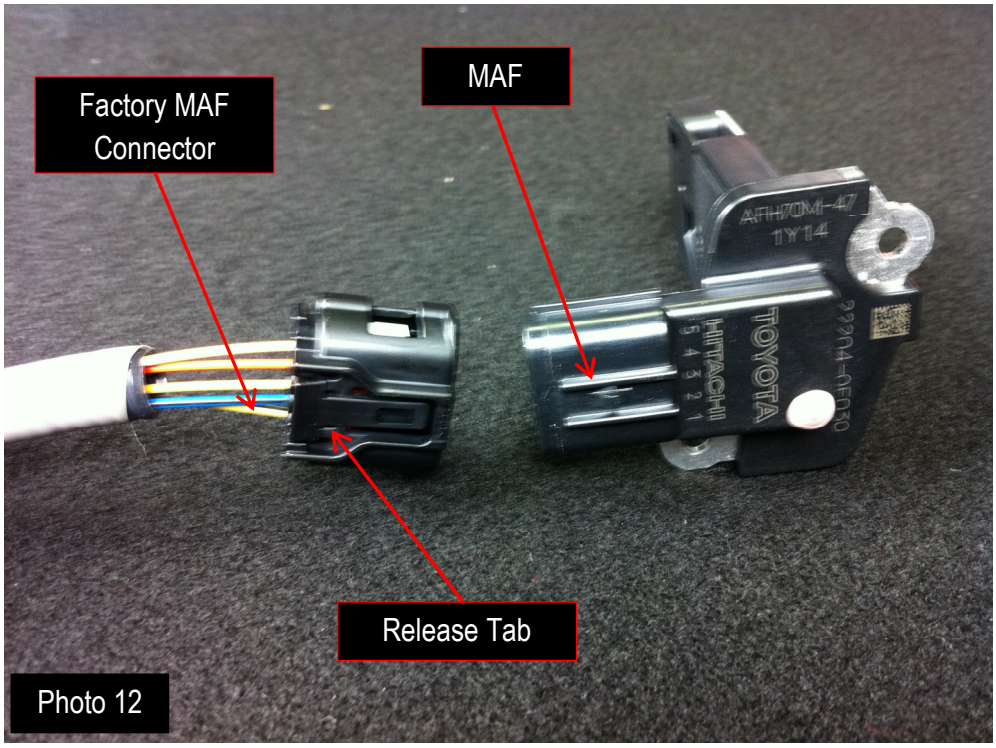
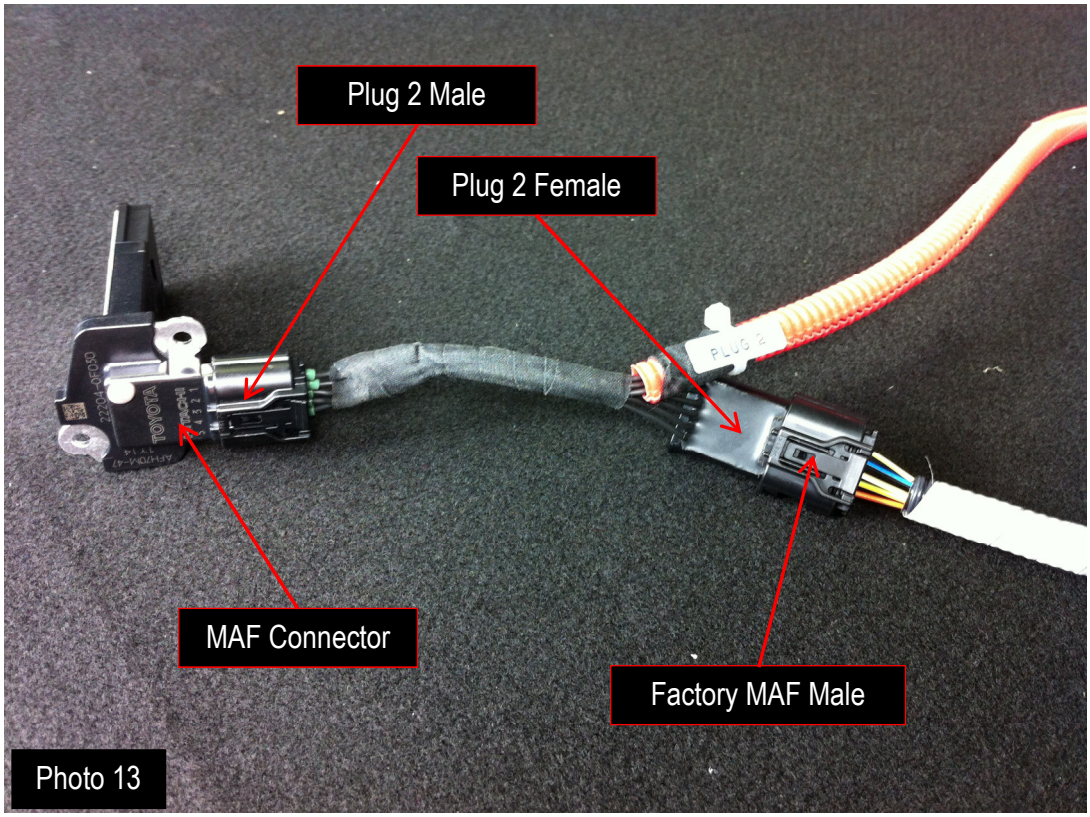


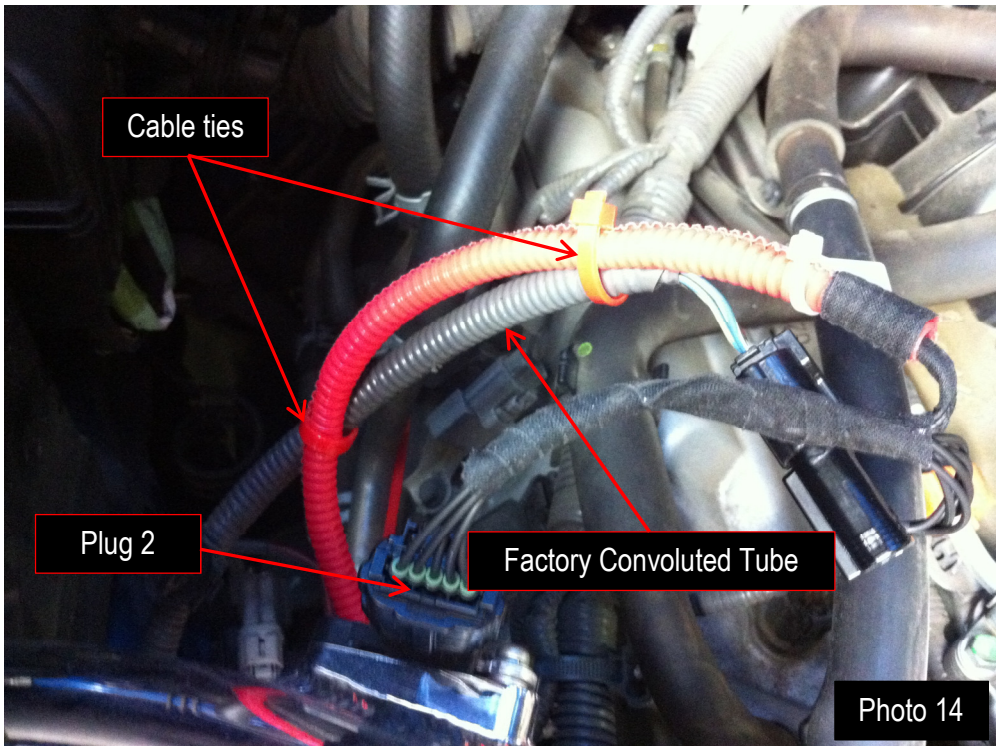

Photo 12

a. (Photo 13) Insert PnP Plug 2's male end into the MAF connector.
***Note: (1) Press the male plug firmly in until you hear the release tab "click" in place. (2) For simplicity, the installation is show with the MAF sensor removed but it is not required or recommended to remove it for your installation.***

b. Insert the factory Male Plug into PnP Plug 2's Female connector.
***Note: Press the male plug firmly in until you hear the release tab "click" in place.***



c. (Photo 14) Using kit supplied cable ties, secure the Plug 2 branch to the grey factory convoluted harness.



15. (Photo 15) Route Plug 3 toward back of engine and secure it to the factory harness with cable ties as you go. Route Plug 3 down to the bottom of the truck between the rear of the engine and firewall..

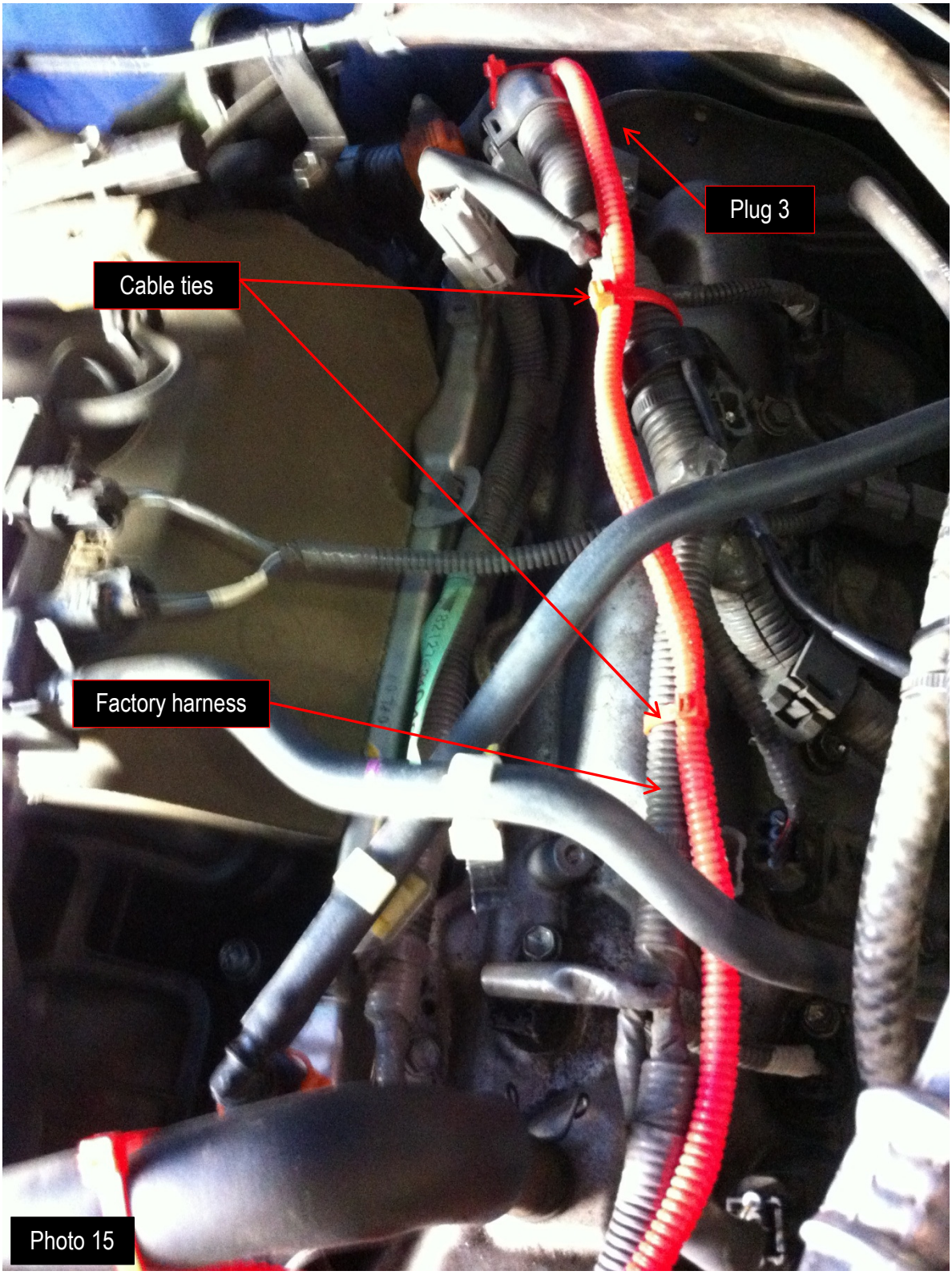



Photo 15

16. (Photo 16) Slide in under vehicle, locate Crank Position Sensor. It may be necessary to raise the vehicle off the ground.

***Warning: Always use Jack Stands whenever working underneath any vehicle with its tires raised off the ground. Ensure the Jack Stands are correctly positioned and secured in place before proceeding. Failure to properly support the vehicle may result in injury or death.***

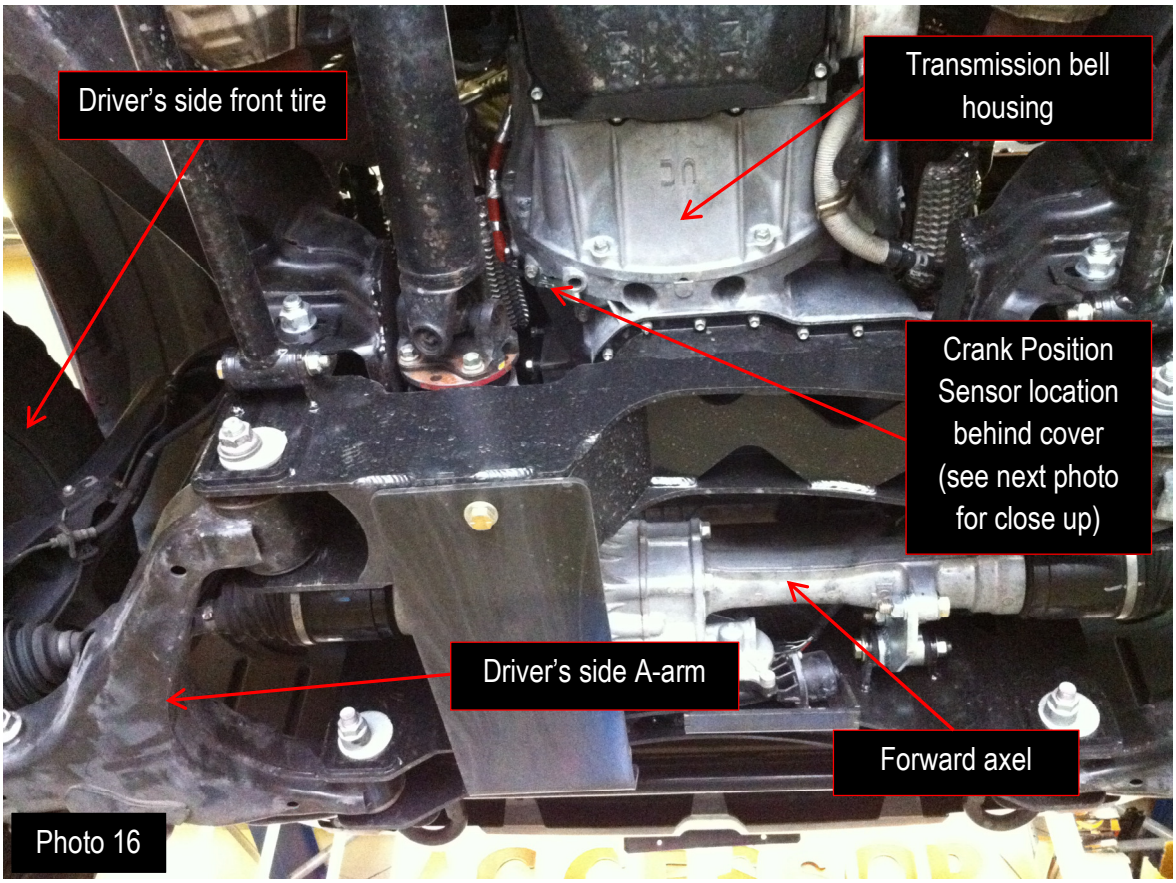



Photo 16

17. (Photo 17) Remove the Crank Position Sensor protective cover by removing the two bolts (use 10mm socket). Set the bolts and cover aside.

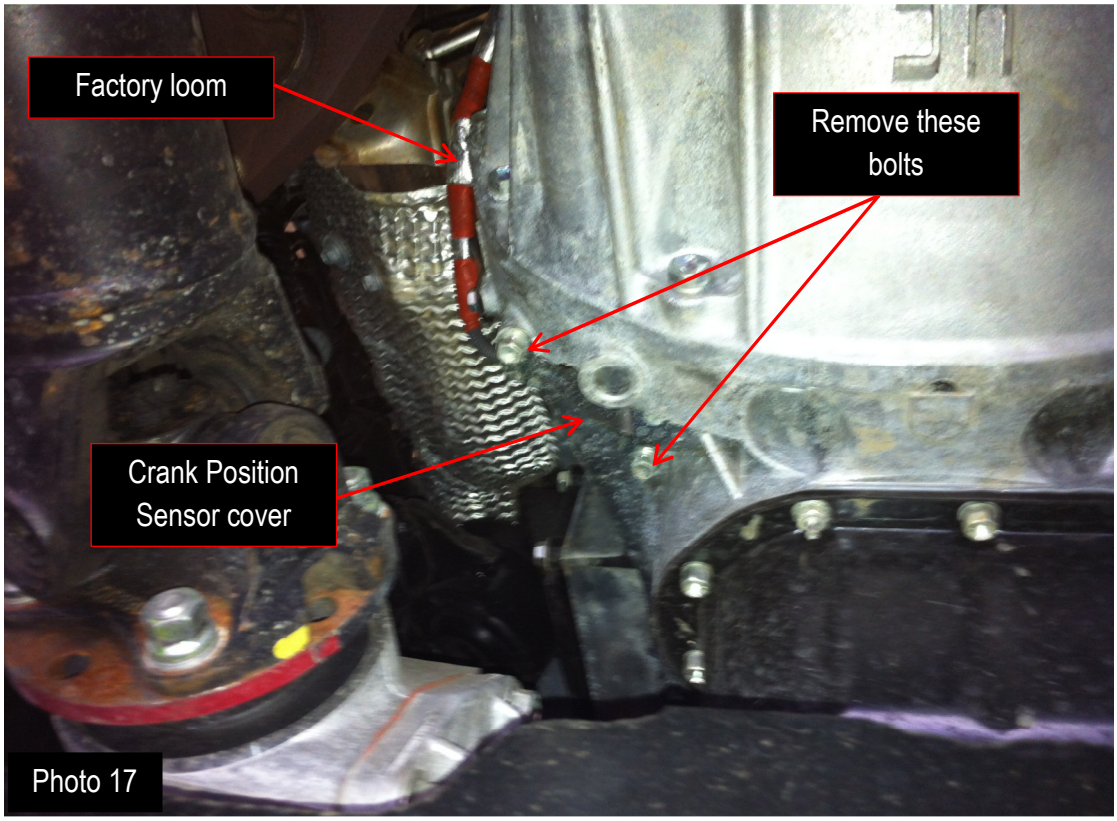



Photo 17

***18.*** (Photo 18) Route Plug 3 down to the Crank Position Sensor and secure the PnP loom to the factory Crank Position Sensor loom exactly as shown. ***Do not secure the PnP loom to the O2 Sensor loom.***

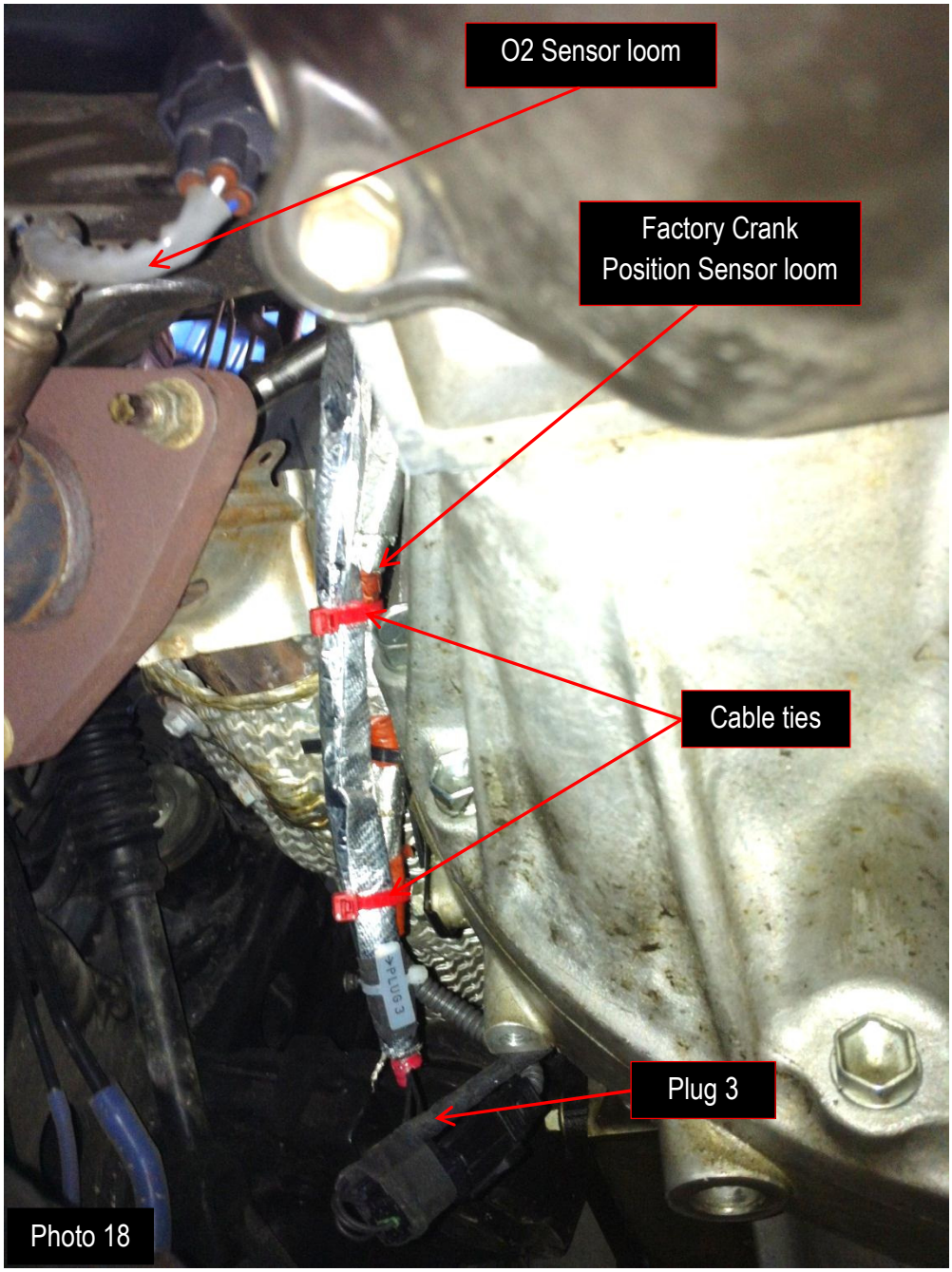
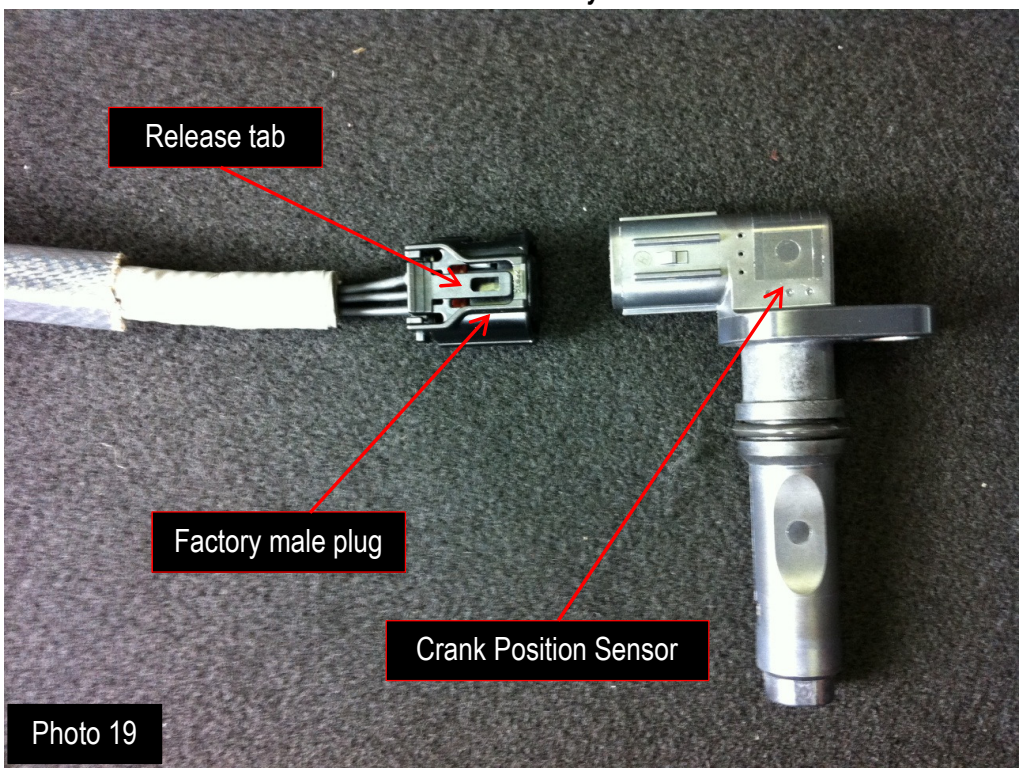
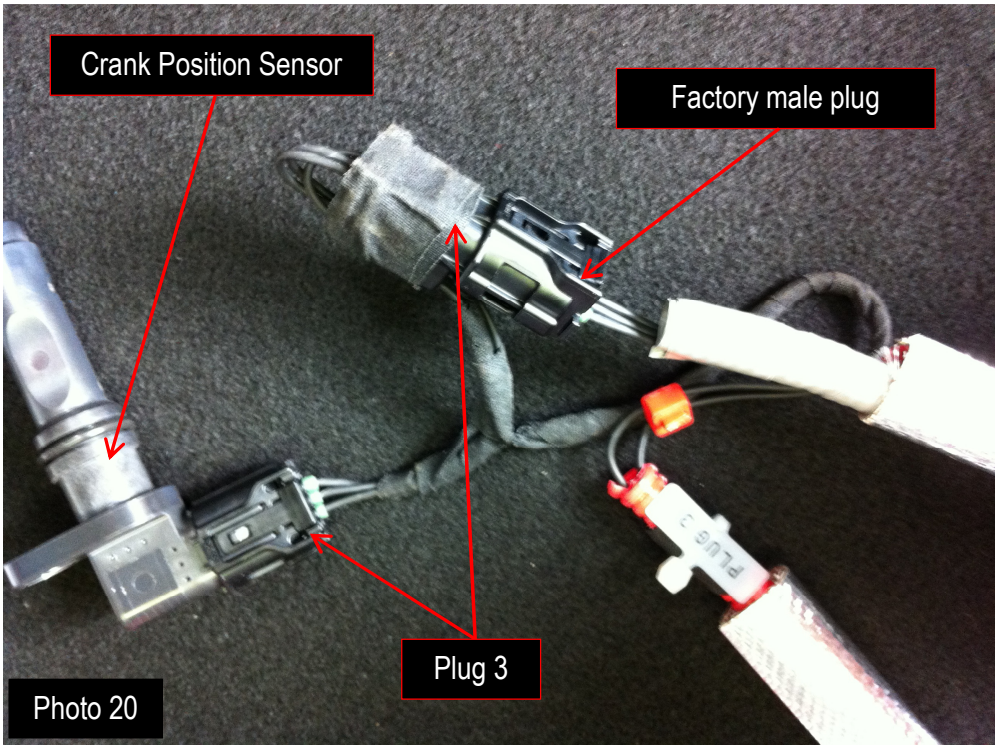



Photo 18

19. Install Plug 3
    a. (Photo 19) Press the release tab and remove the factory connector from the Crank Position Sensor.
    ***For simplicity, the installation is show with the Crank Position sensor removed but it is not required or recommended to remove it for your installation***




    b. (Photo 20) Connect the factory female plug into Plug 3's male connector and Plug 3's female connector into the Crank Position Sensor.

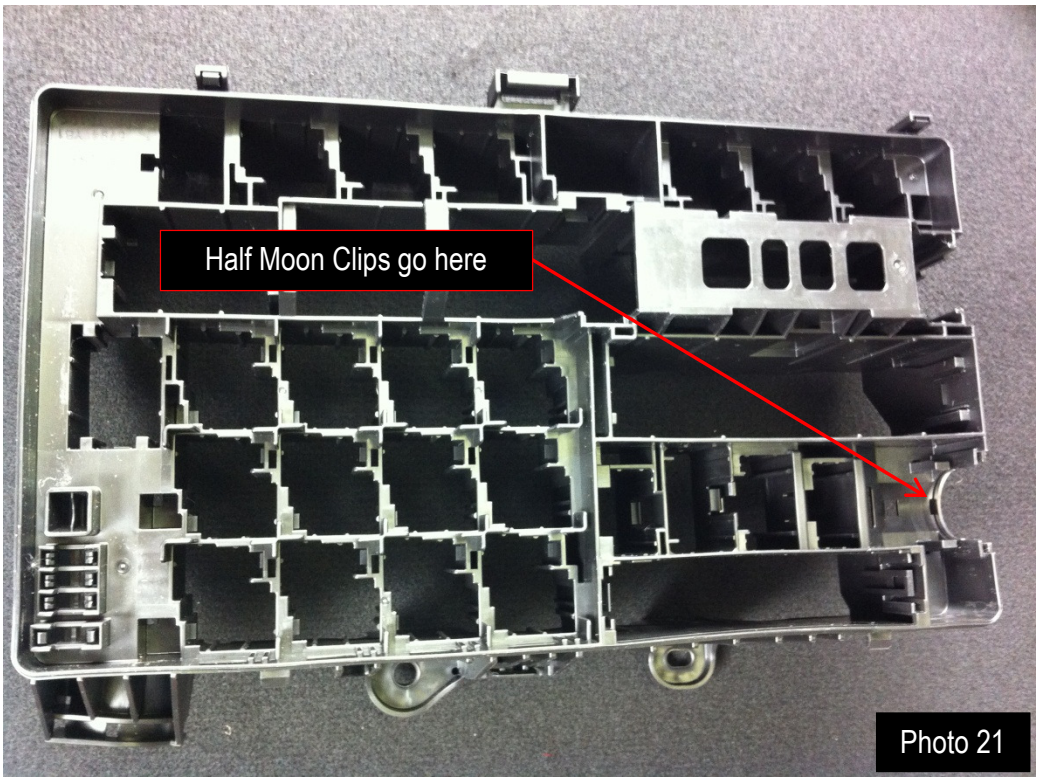


20. Re-install the Crank Position Sensor cover with the factory bolts and cable tie it to the cover.
21. Finalize the Plug 3 installation by carefully checking that the harness is clear of all hot components and rotating components.

***Caution: Failure to ensure the harness is correctly installed may lead to the loss of the Crank Position Sensor signal to the factory engine control module which will result in incorrect engine operation and engine fault codes.***

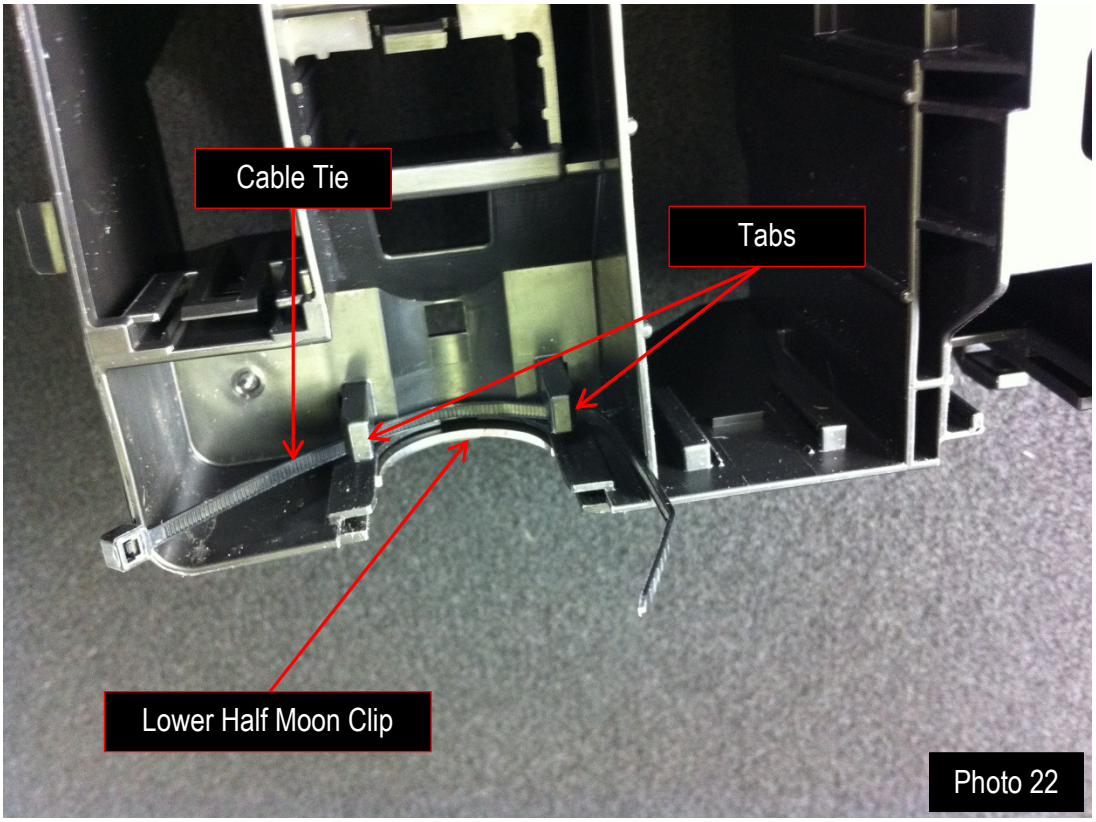
22. (Photo 21) Install bottom half-moon clip in fuse box in the slot where the factory wire channel was.

***For simplicity, the installation is show with the fuse box removed and without fuses installed but it is not required or recommended to remove it for your installation.***



23. (Photo 22) Install small cable tie between the end plate of the fuse box and the two tabs adjacent to the Half Moon Clip as shown.

***For simplicity, the installation is show with the fuse box removed and without fuses installed but it is not required or recommended to remove it for your installation.***



24. (Photo 23) Install bottom half of the kit supplied plastic wire channel

***For simplicity, the installation is show with the components removed but it is not required or recommended to remove it for your installation.***

25. Install Map A/B switch cable OR Flux2 FST10-UNI cable along factory wires and PnP wires

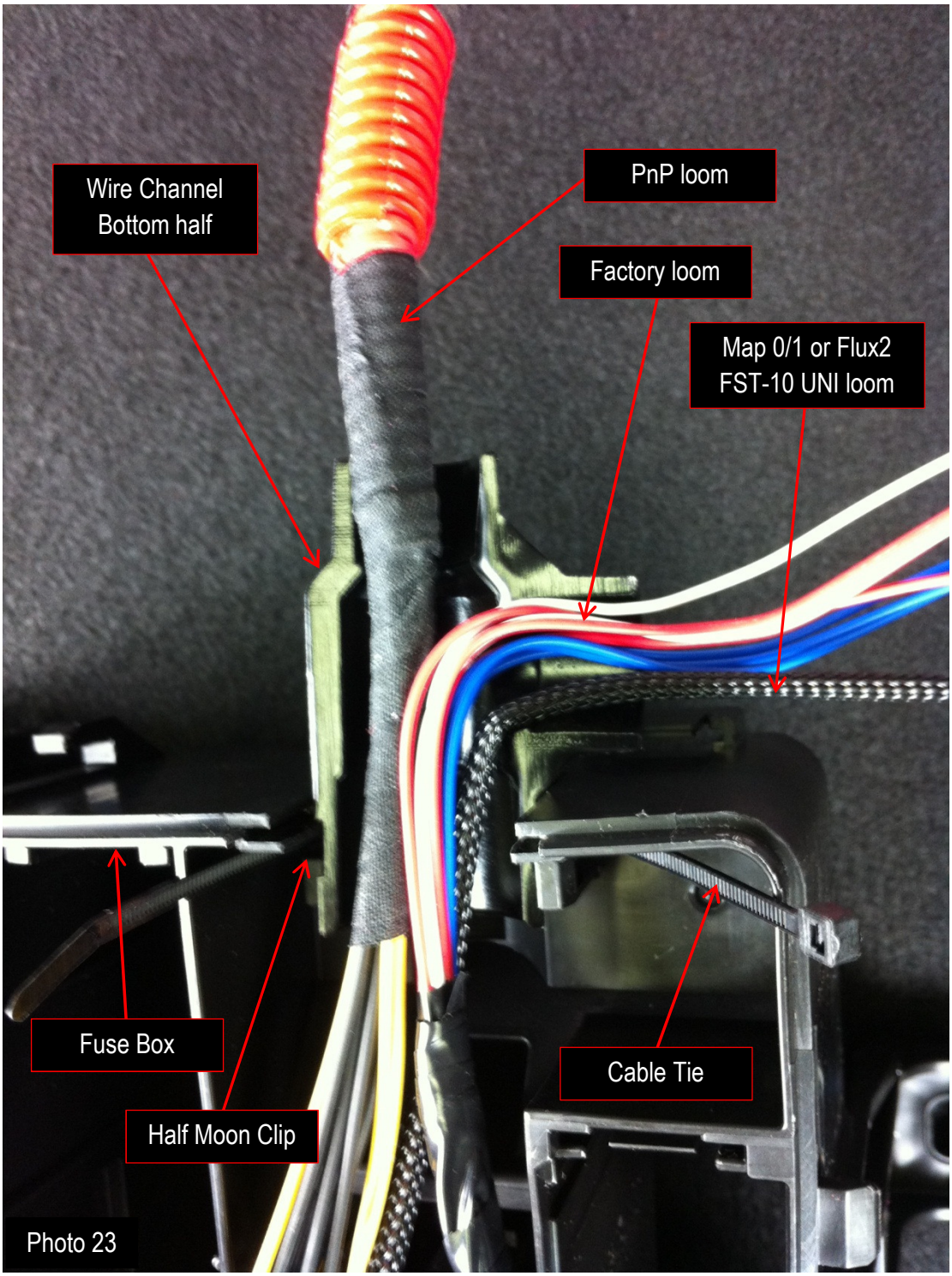


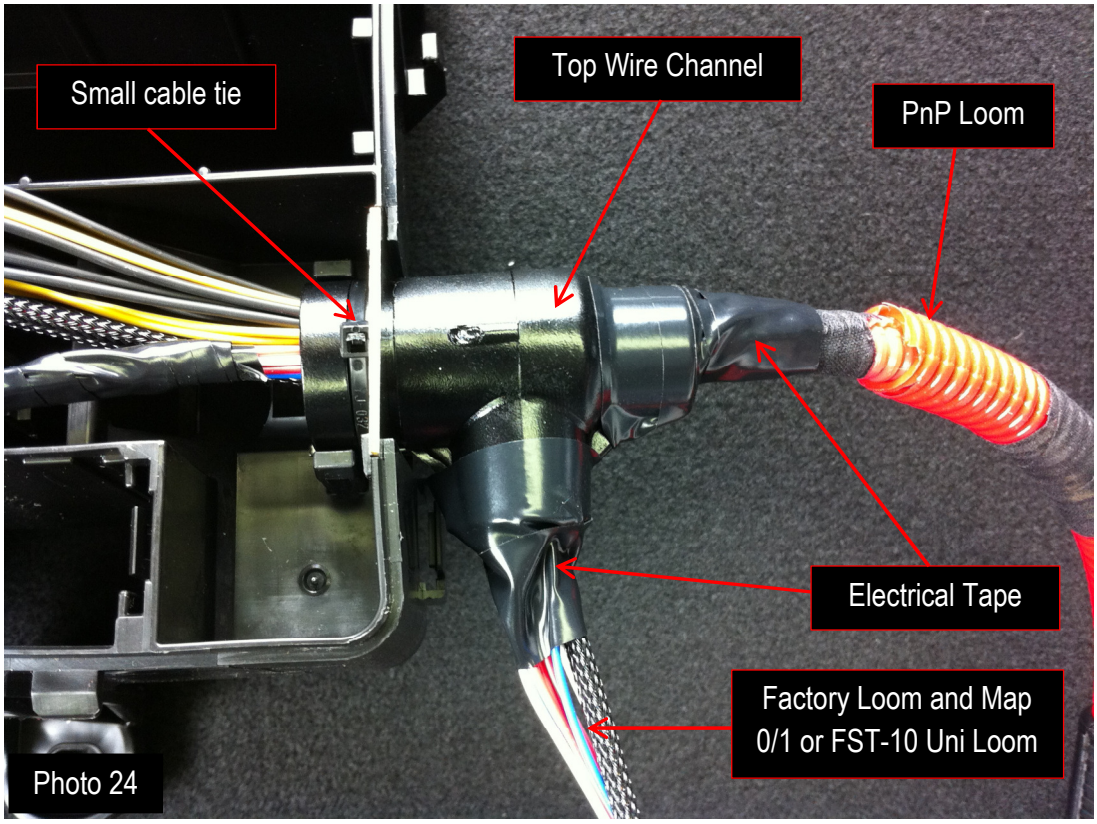

Photo 23

26. (Photo 24) Install kit supplied top wire channel and secure it to the bottom half with cable tie previously installed in the fuse box.

***Caution: Ensure no wires are pinched between the two wire channel haves. Failure to ensure all wires are clear may result in a cut or chaffed wire which could lead to serious electrical issues.***

***For simplicity, the installation is show with the fuse box removed and without fuses installed but it is not required or recommended to remove it for your installation.***

27. Use electrical tape to cover plastic wire channel and wires leading into and out of it, as they were stock.



28. (Photo 25) Install top Half Moon Clip… note that it is flat along its top edge.

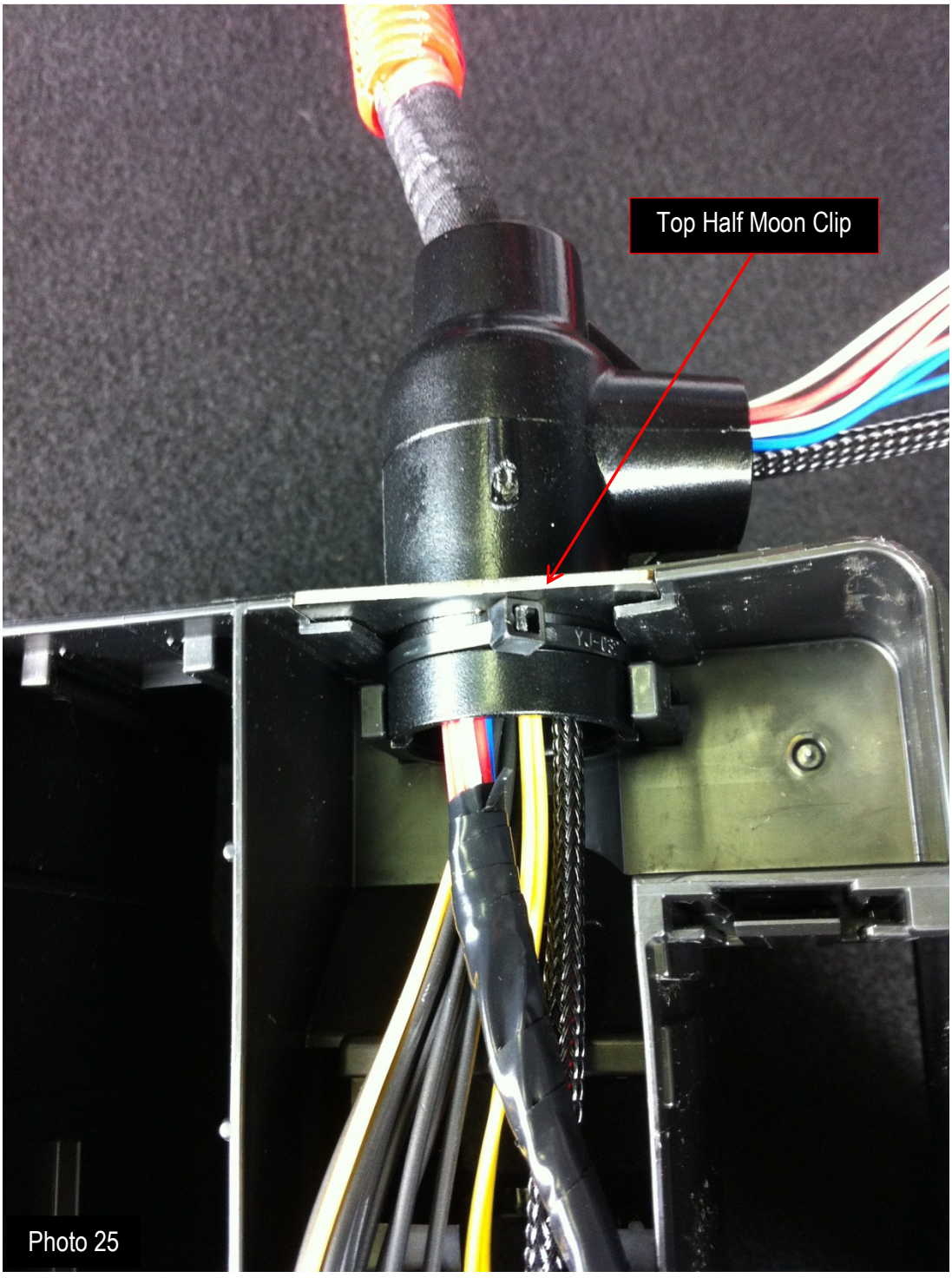



Photo 25

29. (Photo 26) Secure Unichip to Mount Bracket
    a. Position the Unichip Computer such that its Connectors are facing the two slots in the Mounting Bracket and the holes in the Computer's mounting tabs line up with the corresponding in the Mounting Bracket
    b. Insert one of the kit provided M4x12 machine screws from underneath the Mounting Bracket and through one of the Computer's mounting tab holes. Use a kit provided flat washer and Nylock nut to secure the machine screw.

***Caution: Screws must be inserted from the bottom of the bracket and facing "up" to preclude potential damage to the fuse box or electrical components.***

    c. Repeat with the other machine screw, washer, and Nylock nut on the other mounting tab and tighten.

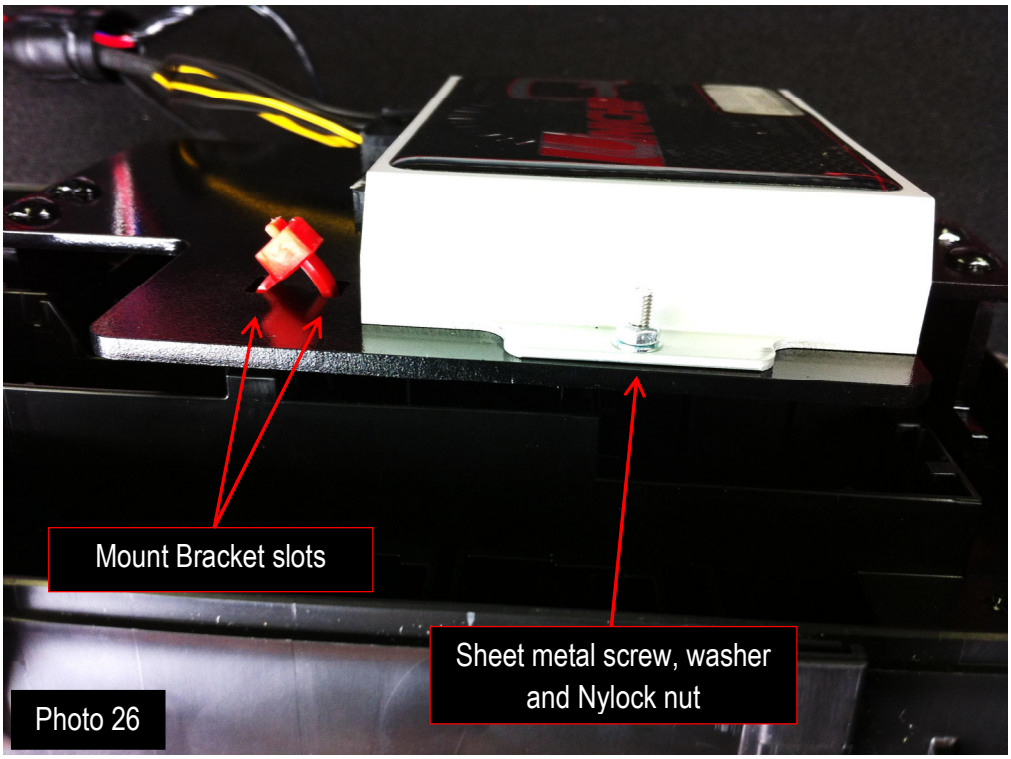
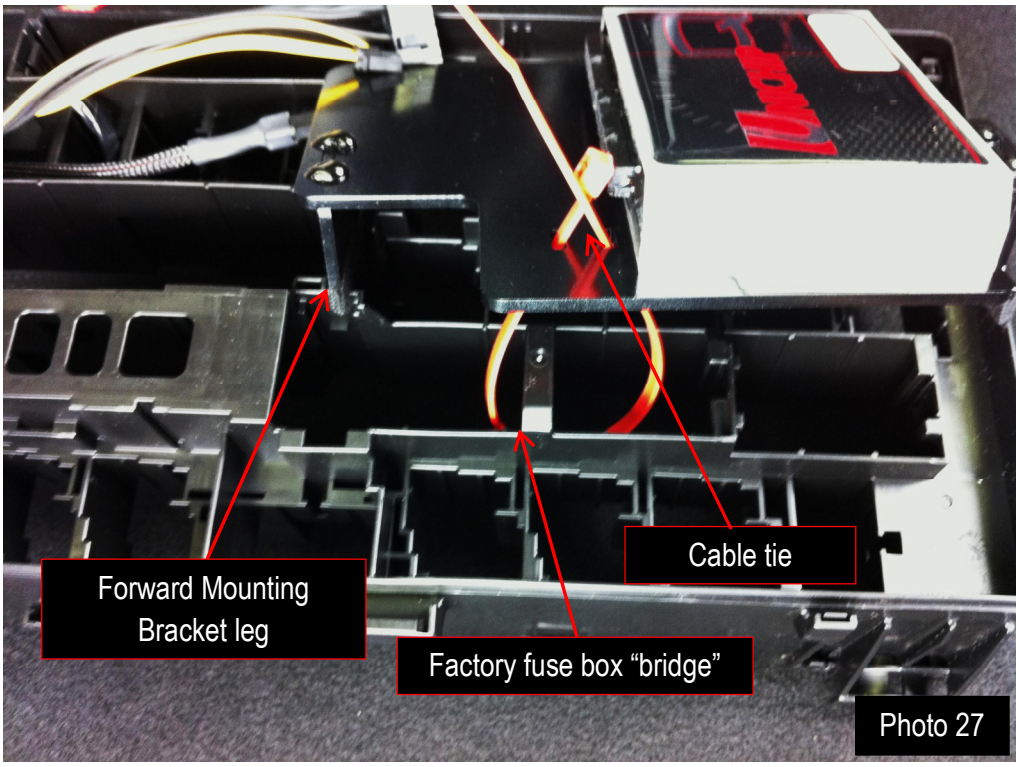



Photo 26

30. (Photo 27) Install Unichip mount bracket into fuse box
    a. Set the front leg of the Unichip Mounting Bracket into the open slot in the factory fuse box.
    b. Route a kit supplied cable tie through the forward slot in the Unichip Mounting Bracket, under the "bridge" on the factory fuse box, and up through the second Unichip Mounting Bracket slot. Pull the cable tie snug to secure the mounting bracket in place but be careful not to over tighten. The Mounting Bracket should not move freely but doesn't need to be rigidly in place.



31. For the basic kit:
    a. Connect Map 0/1 Switch 2-pin connector to the 2-pin COMM connector on the PnP harness. The 2-pin connector is adjacent to the 24-pin ***Unichip*** Plug.
    b. Position the Map 0/1 Switch such that it will no contact any hot or rotating components in the engine bay.
    c. Connect 24-pin connector to Unichip Computer.

| Switch | Mode | Function | Notes |
|---|---|---|---|
| ***Map 0/1*** | I | More aggressive ignition timing | Unless otherwise specified, for higher octane fuel |
| | 0 | Less aggressive ignition timing | Unless otherwise specified default operational setting |

32. For the Flux2 version of the kit:
    a. Connect the FST-10 harness' 24-pin and 6-pin connectors to the Unichip Computer.
33. Close fuse box
34. Re-fit engine cover and ensure the rear bracket is correctly positioned.

***Warning: Carefully inspect the engine bay and work space to ensure all tools are accounted for, all components are installed, and everything that all wires and components are clear of all hot and rotating components. Failure to ensure things are correctly finished may result in serious damage to either the vehicle or Unichip components.***

35. After double checking your installation, start the vehicle and verify normal starting and idle operation. If the vehicle is difficult to start, stalls, or runs abnormally at idle, turn off the ignition and check the installation again.
36. If the engine runs normally, your installation is complete… enjoy!

## Unichip Warranty Information

For 90 days following the original owner's purchase of a Unichip, Unichip of North America (UNA) warrants no other ECU product generates more power from a specific gasoline engine than a properly functioning, custom tuned Unichip in the specific vehicle for which it is tuned. If another ECU product generates more power from that engine within 90 days of the original owner's purchase of the Unichip, the original owner can contact their Unichip dealer for a refund of all Unichip parts, Unichip installation charges, and Unichip custom tuning. Shipping, testing, dynamometer costs and the cost of removing any UNA parts are specifically not covered by this warranty and will not be refunded to the owner.

To claim a refund, owners must provide dynamometer proof another ECU product produced more power when installed on the specific vehicle and that vehicle and all of its parts were in an identical condition other than the ECU enhancement. Three repeatable dynamometer tests must be performed using the Unichip and three repeatable tests using the other ECU product. The average of the three tests performed on each product shall constitute that product's score for determining power. The same technician, using the same dynamometer in an identical condition with the same settings, must perform all test runs. All environmental conditions including ambient and IAT temperature and pressure altitude and the vehicle's cooling system temperatures and drive train temperatures must also be identical for all six runs. IAT and Coolant temperature data logged information for each run is required. The vehicle must also use the same fuel for all six tests. UNA reserves the rights to, at UNA's exclusive discretion, re-tune the Unichip involved in a performance warranty claim at no cost to the customer making the claim or to provide a warranty refund; if after a retune, the Unichip still makes less power than another product, the owner will receive a refund IAW this warranty statement.

All UNA parts, including Unichip piggyback computers, driver modules, and harnesses also carry a limited warranty against manufacturer's defect. This warranty is valid for the original owner only, for one year from the date of purchase regardless of the installation date. UNA only warrants Unichip products sold by an authorized UNA reseller. If a UNA product is found

defective, the original purchaser may contact the reseller from whom they purchased the product for a replacement component at no cost. Shipping, testing, dynamometer costs, and the cost of removing any UNA parts are specifically not covered by this warranty and will not be refunded to the owner.

The above warranties are expressly made in lieu of any and all other warranties, express or implied, including any warranty on the engineering or design of the goods as well as the implied warranties of merchantability and fitness for a particular purpose.

Any and all warranties on the Unichip are void if: 1) the custom installation or custom tuning of the Unichip was performed by anyone other than a UNA qualified dealer or tuner, 2) anyone other than a qualified UNA tuner or dealer alters or modifies or attempts to alter or modify any of the electronic data within the Unichip or 3) the UNA product is used for anything other than its intended purpose or is physically or electrically damaged.

For all warranty claims, the product return shipping date stamp must be within the appropriate time limitation from the time of purchase. Additionally, proof of purchase in the form of either a properly completed warranty card or a sales receipt indicating both the date of sale and owners name is required and is the owner's responsibility. Customers with hard-wire installations are responsible for providing proof of when and where the installation was performed. Warranty claims will be denied if the customer cannot provide proof of purchase.

UNA is not liable for incidental, consequential, or punitive damages attributable directly or indirectly to the Unichip or UNA's actions or inactions with respect to the Unichip. UNA is also specifically not responsible or liable for damage of any kind: 1) to a vehicle into which UNA products are installed or 2) resulting from the use of a vehicle equipped with any UNA products.

UNA believes high performance driving should be confined to appropriate venues such as racetracks or organized closed course events such as Autocross competitions, and does not sanction or participate in any street racing or other illicit driving activity.