



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 like the legendary Unichip is it intercepts signals from engine sensors, changes these signals according to timing and fuelling algorithms formulated by our tuners and then feeds the modified signals back to the vehicle’s stock Engine Control Unit (ECU) to create the desired changes.

The PnP harness connects between the stock vehicle sensor male and female connectors: you disconnect the factory 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.

In this 2.5L kit, the PnP harness ties into three engine sensors, the Throttle Body sensor, the MAF sensor, and the Crank Position Sensor. At each, we’ll disconnect the factory connector from its sensor, plug the Unichip PnP harness male connector into the sensor, then plug the stock connector into the PnP harness female connector.

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 if you carefully follow the instructions you will find it straight forward. Installation time should be about 30 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 sensor’s locations and pay special attention to the correct PnP harness routing. 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 has a button or buttons that much be depressed to release the connector.

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. If you select a map for instance for your Takeda Cold Air Intake, we have spent hours perfecting mapping for that exact intake. You will notice 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 low octane map and a premium map, both optimized for the specific bolt on parts on your vehicle. You can switch

between maps by means of our 2-way switch connected to the PnP harness' **COMM** port. The switch may be stowed in the engine compartment. 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 is 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 displays the selected map and 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 vehicle 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 whenever the ignition key is on, it works the same way as the factory computer... at partial throttle it optimizes emissions and fuel economy and heavy throttle it maximizes power. If you don't push the pedal, you won't feel much of a change because you have more throttle available 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 TD, you 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.

While adding the Unichip isn't like bolting up a turbocharger, your engine will be optimally tuned and making as much power as it can.

Warnings and Cautions

Please give special attention to warnings, cautions, and 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. If you discover any missing parts, please contact Unichip of North America before installing the kit.



Camry MY10-14, 2.5L Unichip PnP Installation Instructions and Warranty Information

2620042 v1.1, 4 Nov 2013

Tools required

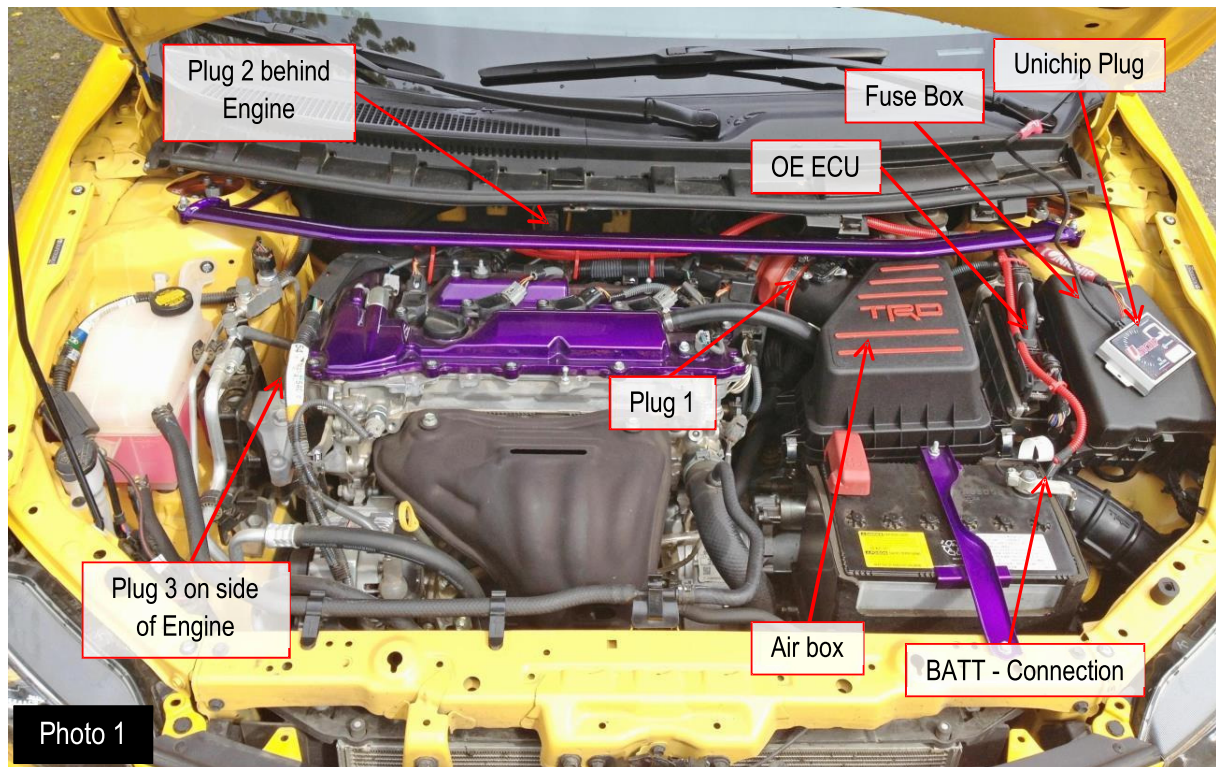
19 mm socket, 10mm socket, ratchet drive, small flashlight, side cutters, a floor jack, and a good jack stand.

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. Carefully follow all instructions and heed all cautions and warnings contained in these instructions. If you have any question or need any assistance, contact UNA.
4. Some connectors may have silicon paste residue on them; the paste will not cause any issues.
5. Always wear eye protection when working beneath a vehicle. Failing to do so may result in injury or blindness

Installation Procedures

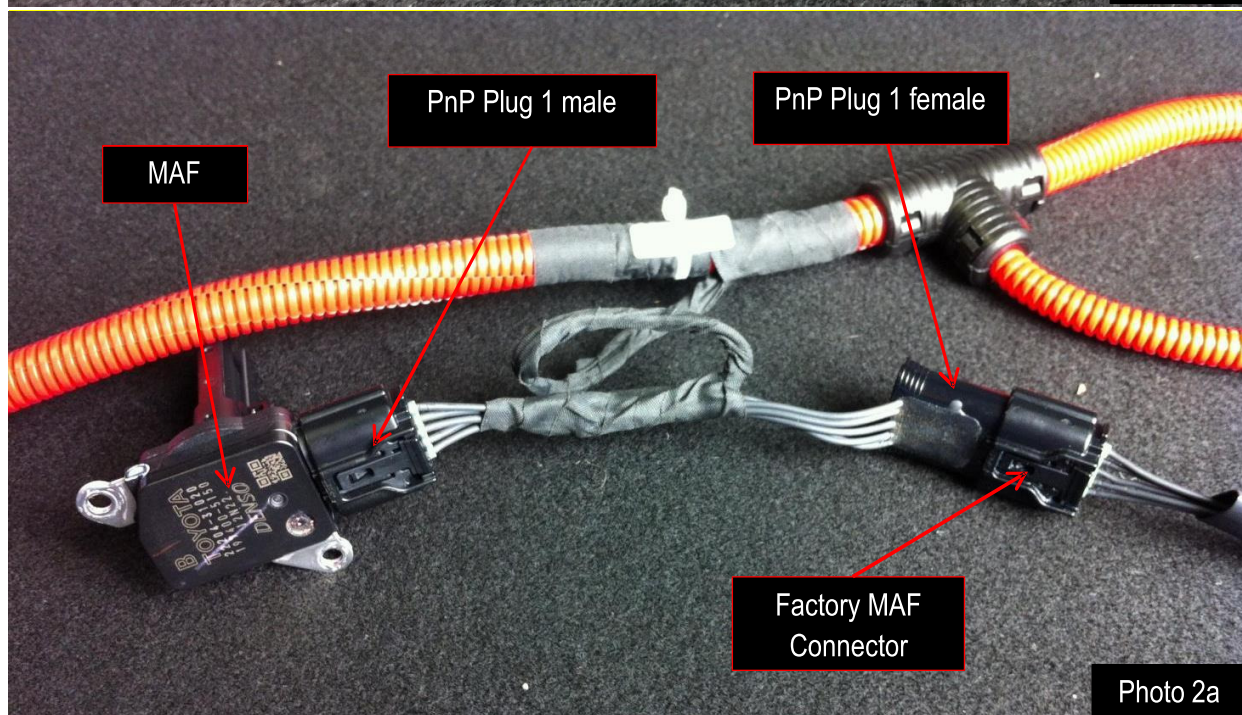
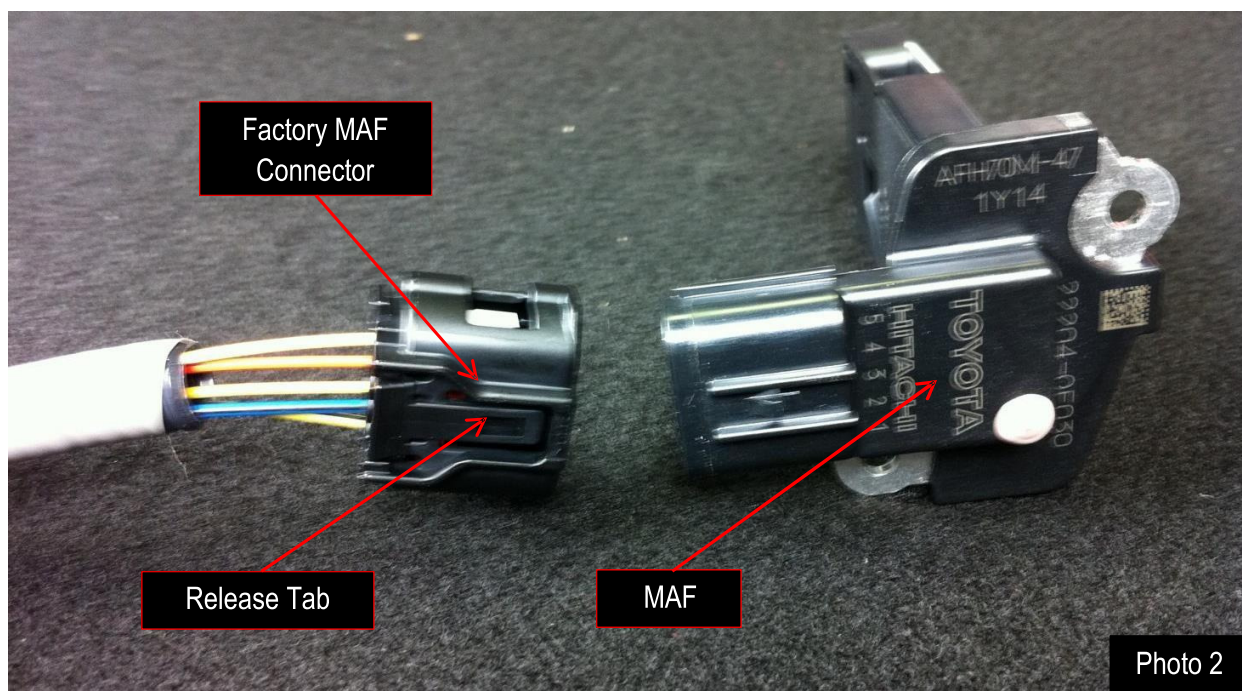
1. If vehicle is warm, wait at least one hour to allow vehicle to cool before commencing work.
2. Turn off ignition, remove key from ignition; wait 15 minutes before starting the installation.
3. (Photo 1) Lay the harness loosely on engine with the **BATT** – Plug near the battery at the front of driver's side of the engine bay, **Plug 1** just behind the Air Box on top of the intake tube, **Plug 2** near the throttle body behind the engine near the firewall in the center of the engine bay, and **Plug 3** near the passenger side fender.
4. Lower **Plug 3** down between the passenger side fender and the engine.



5. (Photo 2 & 2a) **Connect PnP Plug 1 to the MAF.**

Note: The MAF connectors are shown removed from the vehicle for clarity. There is no requirement to remove the part to do the installation.

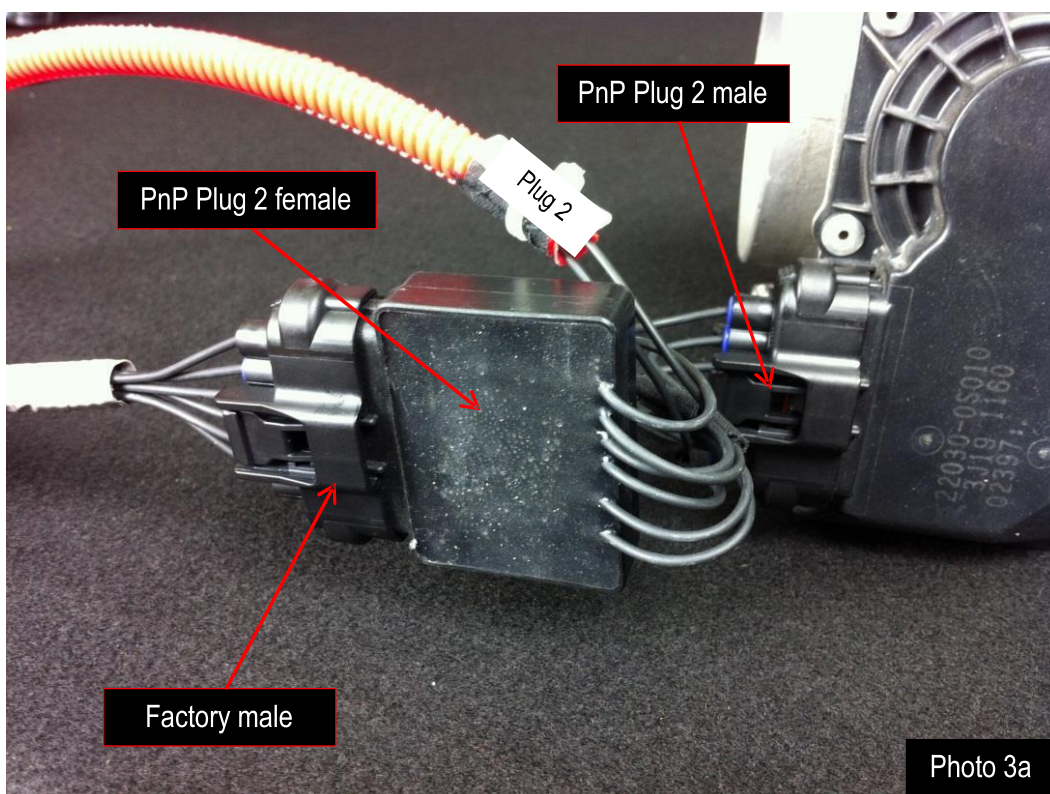
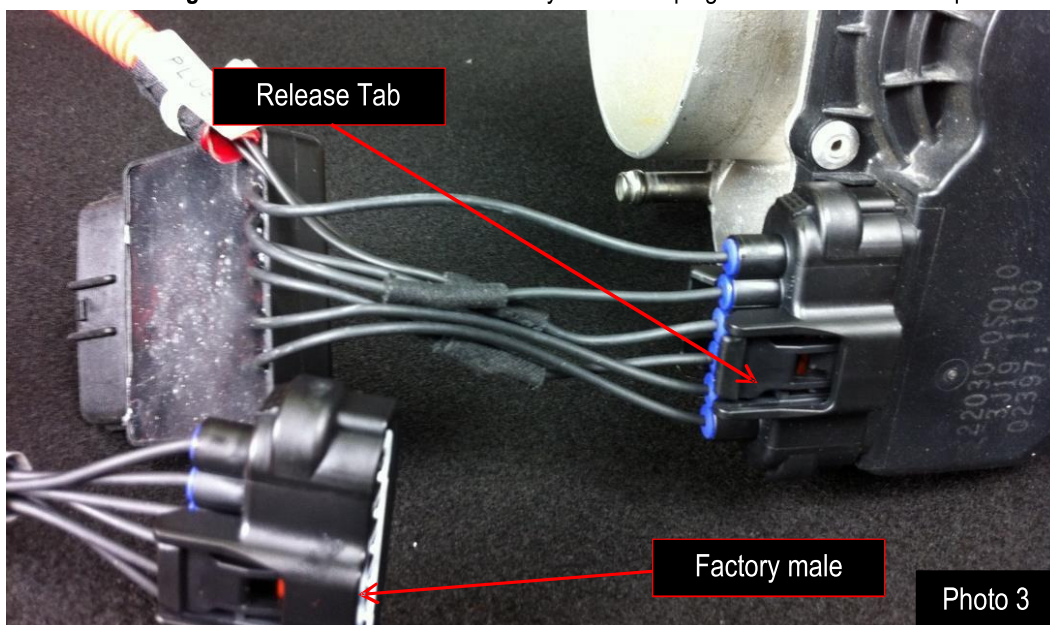
- Locate the factory MAF sensor on the intake tube just in front of the air box (See Photo 1)
- Press the release tab on the factory female MAF Plug and remove it from the MAF.
- Connect PnP **Plug 1** male Plug to the factory MAF and ensure it clicks in place.
- Connect PnP **Plug 1** female Plug to the factory male MAF connector and ensure it clicks in place.



6. (Photo 3 & 3a) **Connect PnP Plug 2 to the OE Throttle Position Sensor (TPS).**

Note: The TPS connectors are shown removed from the vehicle for clarity. There is no requirement to remove the part to do the installation.

- Locate the Throttle Body behind the engine where the intake tube joins the engine (see Photo 1)
- Locate the factory TPS connector on the Throttle Body. Press the release tab and disconnect the factory TPS connector from the Throttle body.
- Connect PnP **Plug 2's** male connector to the Throttle Body and ensure it clicks in place.
- Connect PnP **Plug2's** female connector to the factory male TPS plug and ensure it clicks in place.



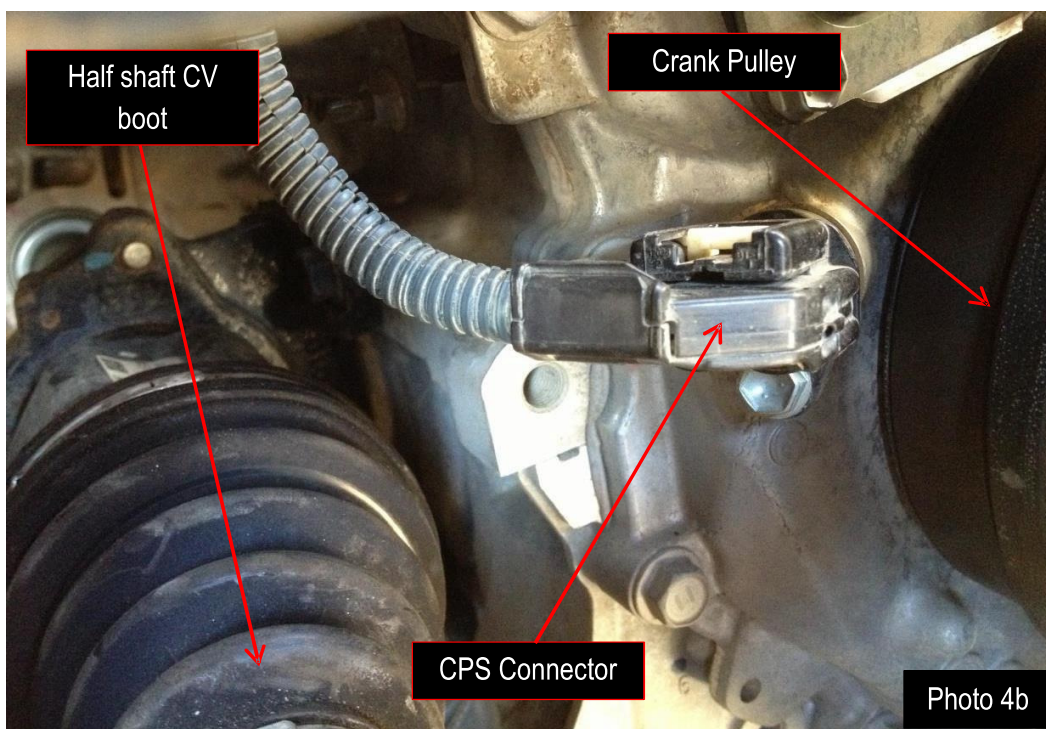
7. **Connect PnP Plug 3 to the OE Crank Position Sensor (CPS).**

- a. Loosen the wheel nuts on the passenger side front wheel.
- b. Raise the passenger side of the car, place a stand beneath the vehicle, and remove the front wheel.

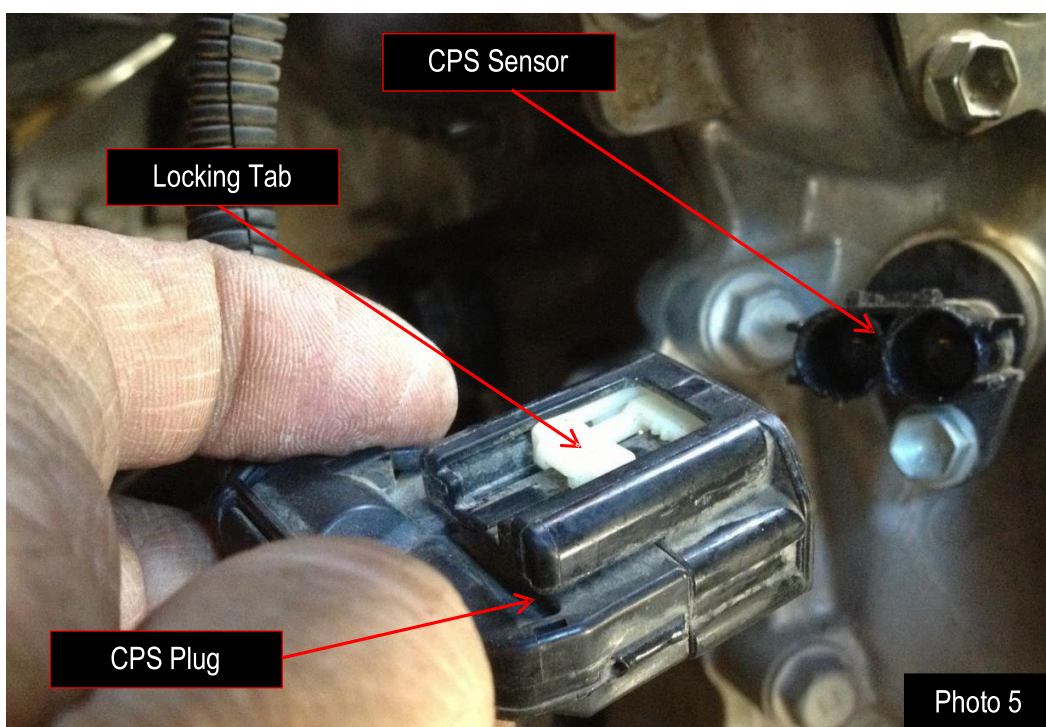
Note: (1) Always use safety glasses whenever working underneath a vehicle to prevent anything from dropping into your eyes. Failure to do so could result in serious eye injury or loss of vision. (2) Never work beneath a raised vehicle supported only by a floor jack. Jack failure or slipping could lead to severe injury or death.

- c. (Photo 4a & 4b) Locate the Crank Position Sensor by looking into the engine compartment through the opening just forward of the half shaft.

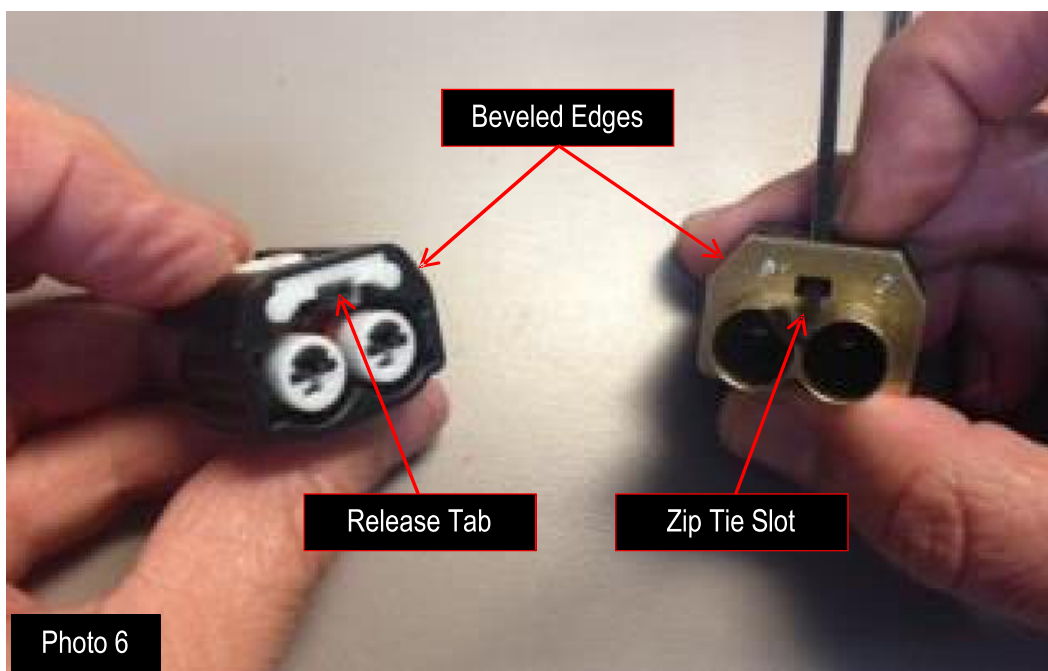




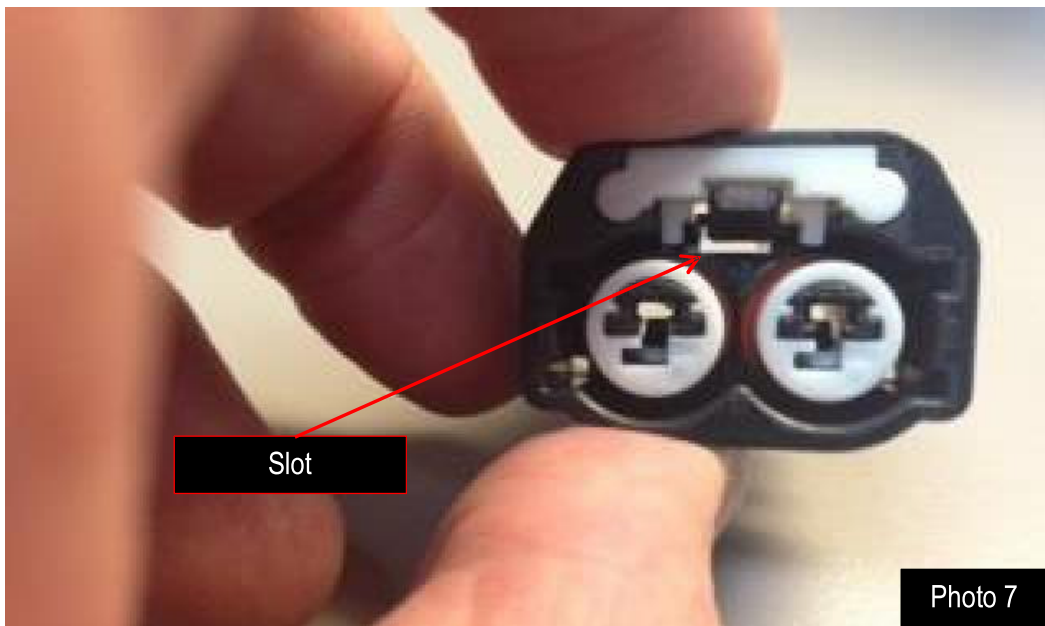
- d. (Photo 5) Press down and pull back on the white locking tab on the top of the CPS connector and disconnect the plug.



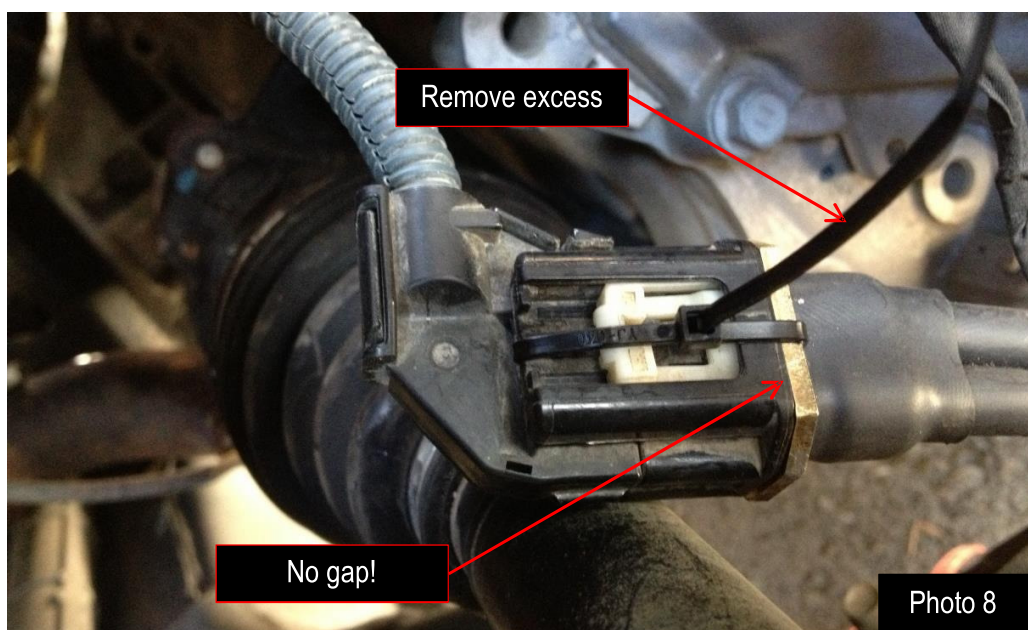
- e. (Photo 6) Correctly orientate the male half of PnP Plug 3 by ensuring the beveled edges of each face the same direction and the Zip Tie slot in the brass connector and the white release tab are both at the top.



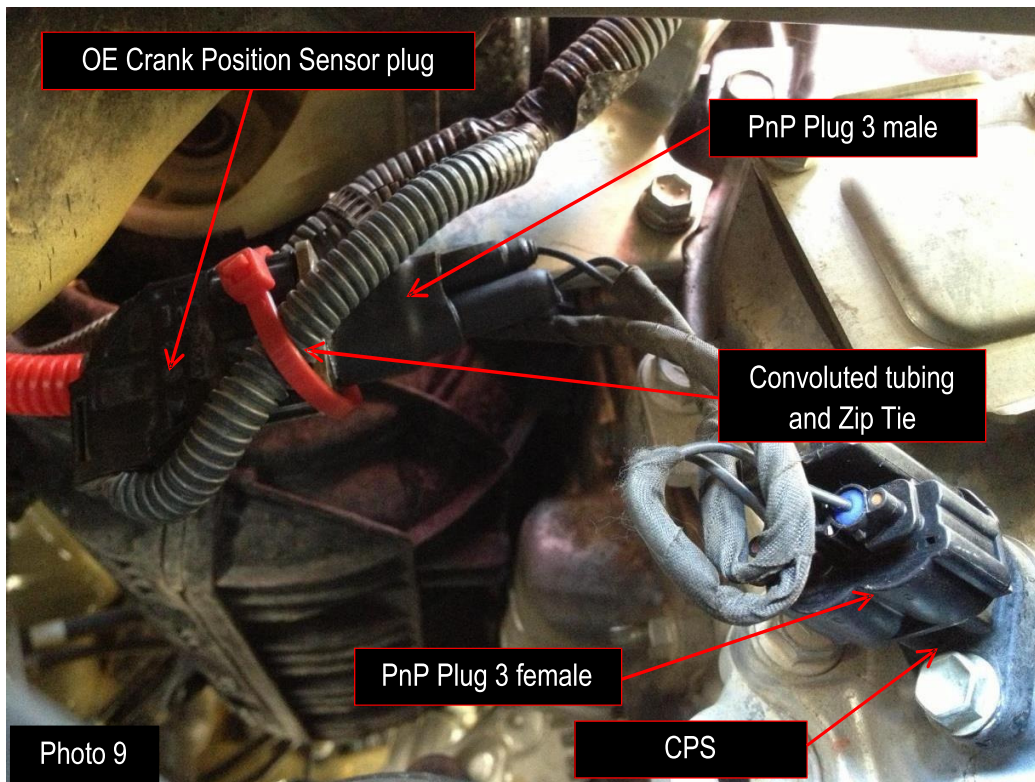
- f. (Photo 7) Insert the black Zip Tie from Plug 3's male connector completely through the slot underneath the white release tab so it comes out the other end of the plug.



- g. Connect the PnP male connector and the OE female connector.
- The plugs form a water/air tight connection so you must bleed the air out when connecting them. The best way to do so is by very slowly pressing the two connectors together and then holding them together for a few seconds.
 - If the connectors push back from each other when you release them, there is trapped air. Press them back together and hold again. When they no longer press away from each other when released, the air has correctly bled out.
- h. (Photo 8) Use the supplied small black Zip Tie to secure the two connectors together. Ensure there is no space between them. Trim the excess Zip Tie close to the lock.



8. (Photo 9) Use a kit provided red Zip Tie to secure the PnP male connector and OE plug to the OE gray convoluted tubing as show.



Warning: Failure to correctly secure the loom and plugs may result in severe damage to the components and could cause the engine to stall. You don't need to crush things so tightly that components break but absolutely ensure everything remains well clear of rotating and hot vehicle components.

9. Reinstall the wheel, remove the support stand, and lower the vehicle to the ground.
10. Torque the wheel nuts to the OE's recommended settings.

Warning: Failure to tighten the wheel nuts may result in loss of the wheel and loss of vehicle control.

11. (Photo 10) **Secure the BATT - connection.** Connect the small ring terminal to the negative battery terminal. Slide the BATT – Ring Terminal onto the same stud used to secure the OE battery terminal to the battery post, the use the kit supplied 6mm washer and Nylock nut to secure the terminal.



12. (Photo 11 & 11a) **Install the Unichip Computer.**

- a. Remove the protective plastic strip from one side of the kit supplied Velcro strip and firmly press the Velcro to the back of the Unichip Computer.
- b. Ensure the top of the OE fuse box cover is clean and free of grease and solvents.
- c. Remove the remaining plastic strip from the Velcro on the back of the Unichip Computer and position the Unichip on the fuse box cover as show (See Photo 1). Firmly press the Unichip Computer in place.
- d. Liberally apply the kit provided dielectric grease to both sides of the StS's **Unichip** 24-pin connector and to the Unichip Computer's 24-pin connector to provide improve water intrusion resistance.



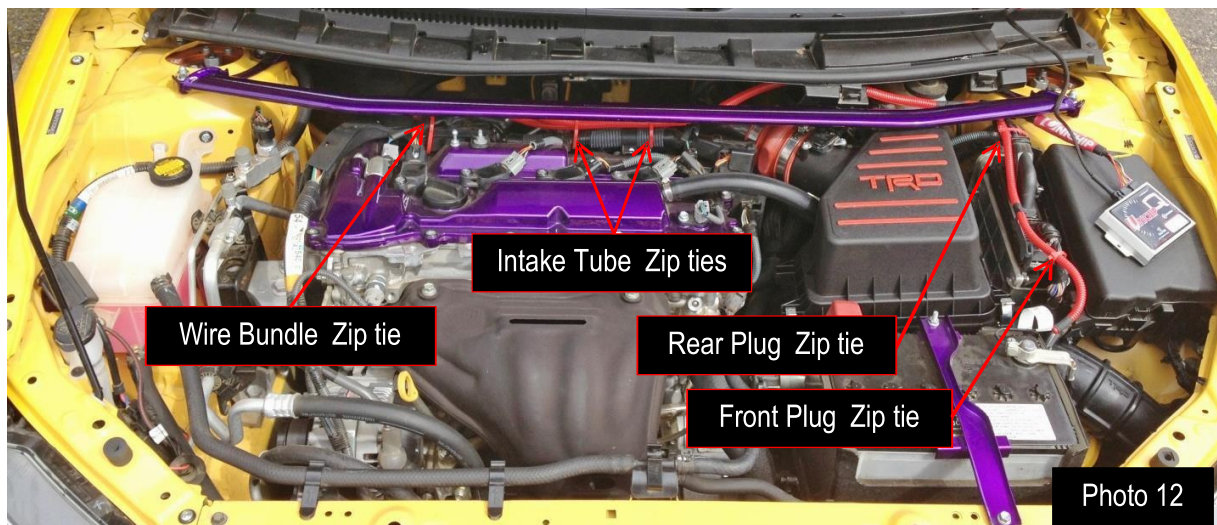
- e. Connect the black 24-pin StS Plug **Unichip** into the large Unichip Computer connector.



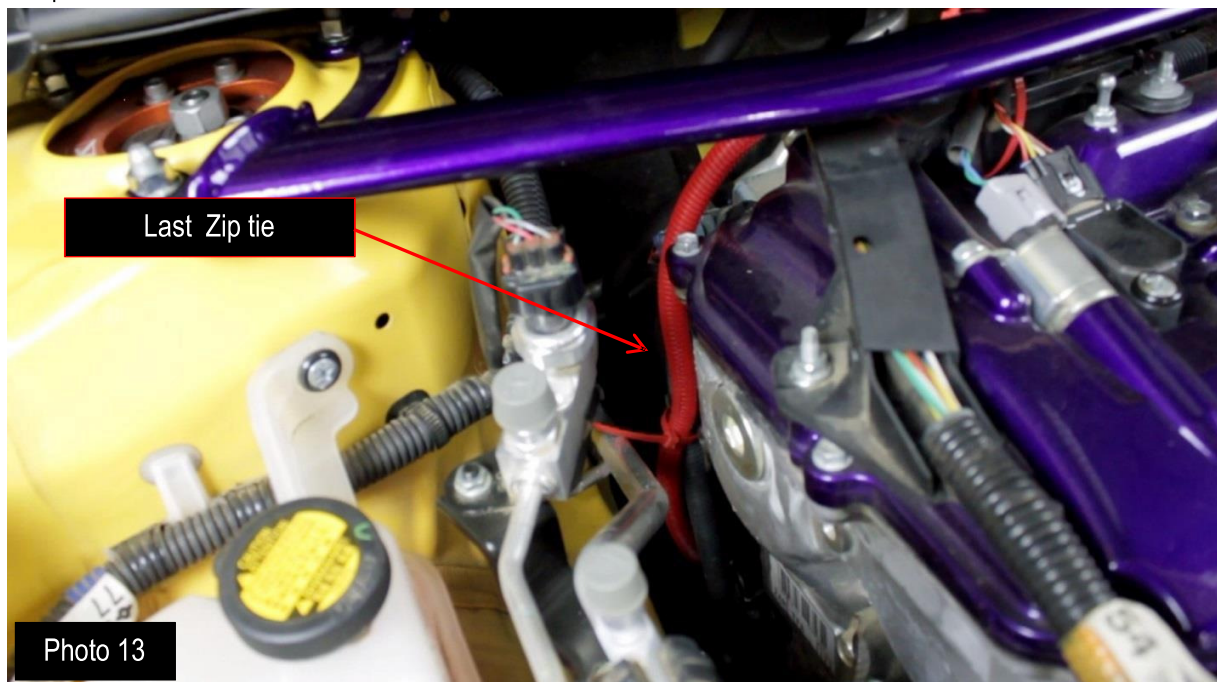
13. (Photo 12) **Secure the StS Harness.**

- a. Use a supplied large red Zip tie to secure the StS Harness to the forward most OE ECU plug wiring.
- b. Use another large red Zip tie to secure the StS Harness to the rear most OE ECU plug wiring.
- c. Route the StS Harness along the top of the factory intake tube behind the engine. Secure the StS Harness to the intake tube with two large red Zip Ties.
- d. Use another large red Zip Tie to secure the StS to the wiring bundle near the corner of the engine on the passenger's side of the engine compartment.

Warning: Ensure all of the harness slack is tightly secured to preclude the harness from contacting any rotating or hot components.



- e. (Photo 13) Use last large red Zip tie to secure the StS to the OE harness running to the bottom of the engine compartment.



14. **To install the basic version of the kit:**

- a. Connect the Map 0/1 Switch black 2-pin Molex plug to the StS's 2-pin **Comm** Connector.
- b. Position the Map0/1 Switch Loom as desired.

Note: Ensure the Map 0/1 Loom remains clear of hot engine components and hood and hinge operation.

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

- i. When the I portion of the rocker is flush with the switch body, the I map is selected.
- ii. The normal position for the *Map 0/1* switch is off (0), and unless you desire to run Map I, it should remain there. To change the switch position, turn off the ignition key before actuating the switch.
- iii. With the ignition key off and removed, *Map 0/1* switch's on (I) position selects timing Map 1. Using Map 1 may result in a CEL on some vehicles; the CEL results from that particular vehicle's increased sensitivity to detonation.

Note: (1) More is not always better... adding more timing can actually reduce power if your particular vehicle is sensitive to detonation. If the stock ECU detects detonation, it reduces timing to protect the engine. If you're truck doesn't seem to make more power than stock and you're running Map B, switch back to Map A and you will feel the power increase. This condition can and does occur even without a CEL.

15. 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.
16. 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.