



# Toyota Tundra 4.7L, Land Cruiser, Sequoia, 4Runner MY01-04, TRD SC Unichip PnP Installation Instructions and Warranty Information

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## Tools Required

10mm wrench, 12mm wrench, Medium Phillips head screwdriver, Medium Awl, 3/16" Allen key, Small flashlight, Spray lubricant

*Notes: (1) TRD Supercharger 2UZ-FE kits were produced in two versions. The original kits trucks have a single (9<sup>th</sup>) additional injector while later kits have two (9<sup>th</sup> and 10<sup>th</sup>) additional injectors. This PnP includes a y-cable to drive both of the injectors on the new kits; the y-cable is not required for the single additional injector early SC kits.*

*(2) All plugs in this installation are locking units keyed to only fit into the correct connector. Each ECU connector has a small release tab which must be depressed to remove the plug and which should audibly "click" when inserted correctly – both into the ECU and PnP harness.*

*(3) If a plug is difficult to remove, try pushing it back in and then pull it back out. DO NOT FORCE THE PLUGS OUT OR IN.*

*(4) UNA recommends using the highest octane fuel available in your area and installing a set of Denso Iridium IK22 spark plugs (one heat range colder than stock).*

*(5) The Unichip PnP completely replaces the TRD piggyback computer and wiring harness. You can either leave the TRD and wires in place or remove it as desired.*

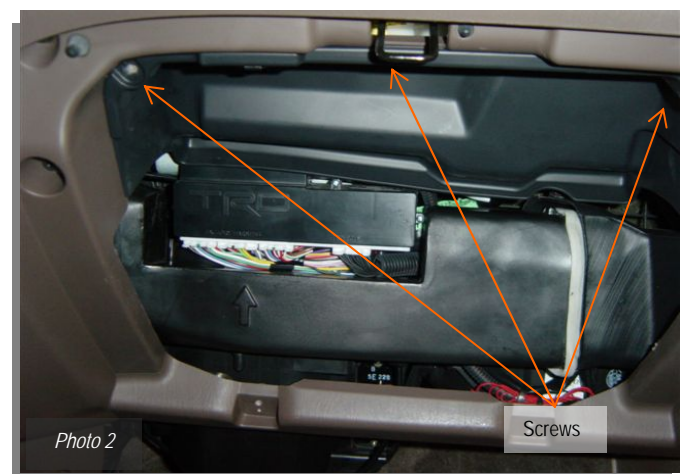
*(6) Just to the left of the connectors on the PnP harness, there is a small red panel containing three DIP switches which are covered with black liquid plastic. The switches must be correctly positioned for the truck to run normally. From left to right, the switches should be 1 – Off (down), 2 – On (up), 3 – Off (down).*

### 1. Disconnect the truck's battery

- Using a 10mm wrench, disconnect the truck's battery at the negative terminal in the engine compartment.

### 2. Expose the ECU behind the passenger's side glove compartment.

- (Photo 1)* Remove the glove box. Using the Phillips head screwdriver, remove the two screws along the lower edge securing the glove compartment.
- (Photo 2)* Remove the panel behind the glove box. Using the Phillips screwdriver, remove the three screws securing the panel.

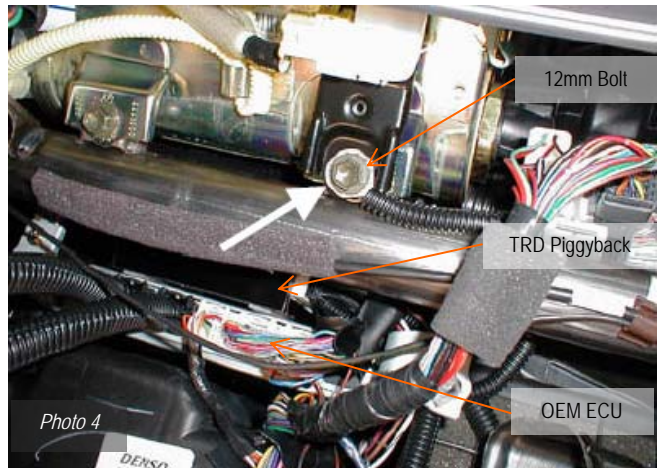


- iii. (Photo 3) *Remove the air vent tube.* Slide the tube towards the driver's side to release it; pull the right side of the tube out and remove it.



### 3. (Photo 4) *Disconnect the TRD piggyback computer*

- i. Locate the OEM ECU and TRD piggyback attached to the top of it.
- ii. Remove the OEM plugs 3, 4, and 5 from the TRD piggyback and remove the TRD piggyback plugs from the OEM ECU. **Do not force the Plugs**; see the notes for hints on removing stubborn plugs.
- iii. Remove the TRD breakout box with OEM Plugs 1 and 2.
- iv. Locate the 12mm bolt securing the TRD piggyback grounding wire and remove it. Set the bolt aside; you will connect the PnP harness grounding wire to the same bolt.
- v. Remove the TRD piggyback from on top of the OEM ECU. Unplug the remaining plugs from the TRD piggyback and remove the module.
- vi. The TRD wiring harness leads and plugs can either be left in the car (recommended) or can be removed by cutting them.



### 4. *Remove the ECU.*

*Note: Some trucks have a slightly different ECU mount. See the addendum for details*

- i. (Photo 5) Remove the last two OEM Plugs from the ECU. **Do not force the Plugs**; see the notes for hints on removing stubborn plugs.
- ii. Remove the 2 machine screws located on the bracket securing the ECU.
- iii. Gently lower the ECU being careful not to pull on the plugs or wiring harness.





## 5. (Photo 6) Install the PnP harness.

Notes: (1) The ECU is shown removed for clarity but you do not have to remove the ECU to install the PnP kit.

(2) The ECU and PnP will not fit back into the opening if they're put together. If you remove the ECU to position the PnP, remove the PnP and install them one at a time.

(3) An earlier 5-plug version of harness is shown in Photo 5; it is functionally identical to the current 4-Plug version

- i. Separate the supplied Velcro strip and place one piece of it onto the bottom (larger, non-beveled surface) of the PnP case.
- ii. Place the other Velcro piece on the center of the ECU near the connector side.
- iii. Slide the PnP case sideways into the slot above the OEM ECU. Position it immediately above the empty ECU connectors aligned with the forward edge of the ECU as you look at it. Firmly press the PnP onto the ECU to secure the Velcro strips.
- iv. Again working left to right, install the OEM Plugs into the corresponding PnP connectors. The Plugs are keyed to only fit into the correct connector. **Do not force the Plugs.**
- v. Starting with **Plug 1** in the left most OEM ECU connector, install the PnP Plugs.

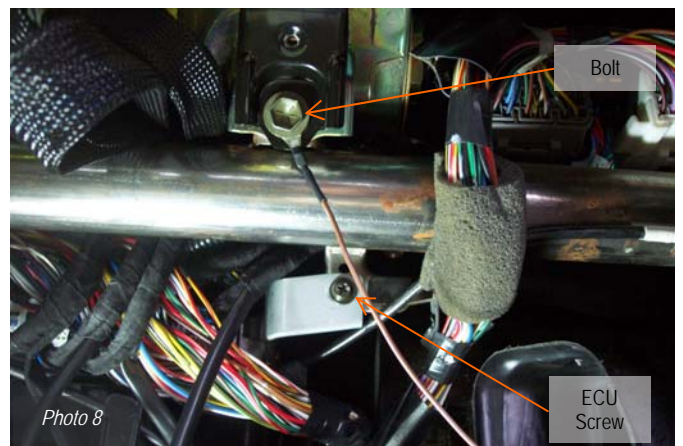
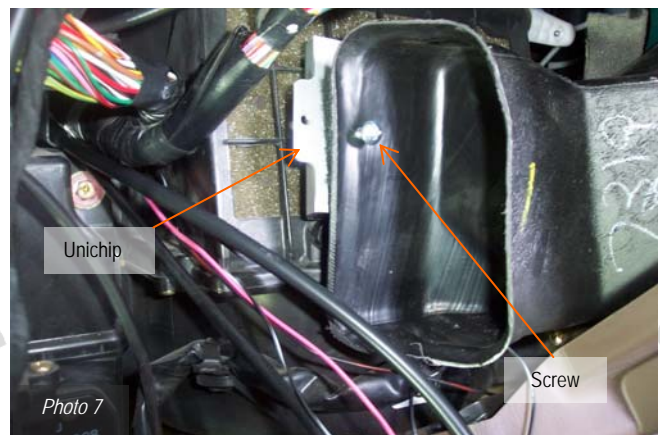
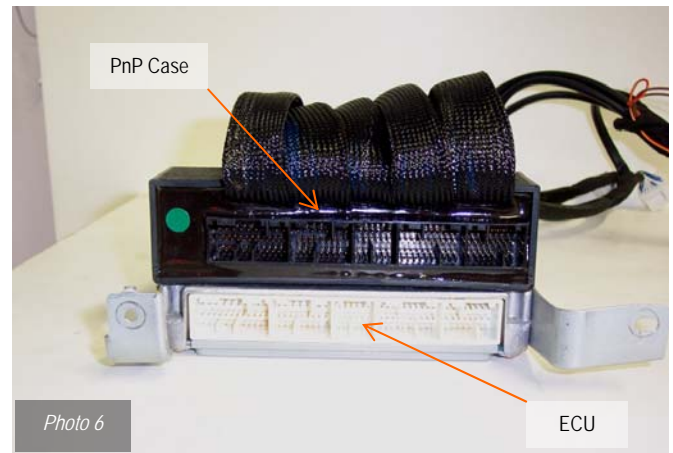
## 6. Remount the ECU.

- i. Using the OEM machine screws, reinstall the ECU.

## 7. (Photo 7) Install the Unichip computer.

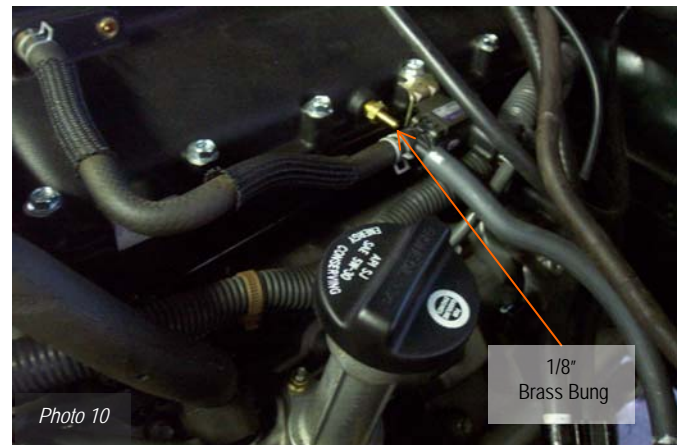
- i. Locate the section of the vent tube on the right side of the glove box opening.
- ii. Install the provided sheet metal screw into the rear wall of the tube approximately one-third of the way from the top.
- iii. Place the Unichip computer, with the Molex connector facing up, behind the vent tube with the rear of the computer against the tube. Line up the hole on the left most mounting tab with the screw and tighten it gently.
- iv. Place the plug labeled **Unichip** into the 18-pin connector on the Unichip computer. The locking tab computer should align with the locking clip on the plug.

8. (Photo 8) **Ground the PnP harness.** Place the grommet on the PnP's brown grounding wire over the 12mm bolt removed in Step 3 and re-secure it.



9. (Photo 9) **Install the engine compartment loom.** Working from inside the engine compartment, locate the rubber grommet covering the *main engine wiring harness on the passenger's side rear firewall near the top.*

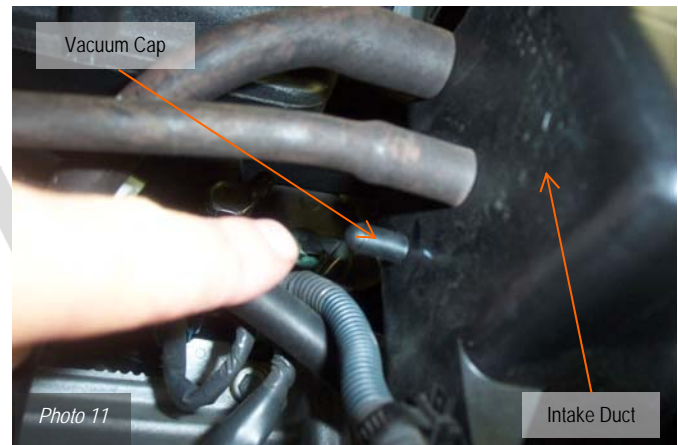
- a. Puncture a hole in the grommet with the medium awl.
- b. Generously apply spray lubricant to the kit supplied insertion tool and push it halfway through the hole. Leave the tool installed.
- c. (Photo 10) Remove the brass Allen Screw on the driver's side of the Supercharger.
- d. Thread the supplied 1/8" brass bung into the SC port. Tighten the bung to 10 lb-ft.
- e. Connect the end of the supplied vacuum line labeled **Boost Port** to the 1/8" brass bung.



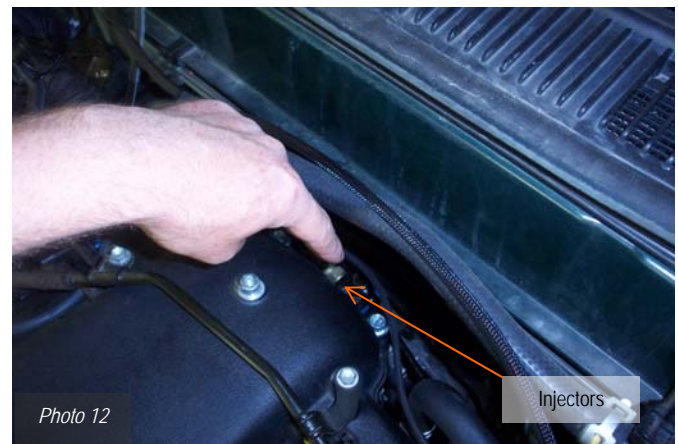
- f. (Photo 11) Remove the OEM fuel pressure regulator vacuum line from the "box" on the rear side of the intake ducting. Connect the OEM vacuum line to the open port on T-connector on the supplied vacuum line.
- g. Place the supplied vacuum cap on the intake duct vacuum port.

*Note: Use caution not to pinch the vacuum line or the Unichip will not receive correct boost information. If the line becomes blocked, fuel and timing modifications will not be correct and engine damage may result.*

- h. Insert the vacuum line labeled **Turbo** through the insertion tool and into the passenger compartment.
- i. Working inside the passenger compartment, slide the wires labeled Pop-Off Valve and Fuel Injector Plug through the insertion tool into the engine compartment.



10. **Attach the Engine Compartment connectors.** (Photo 12) Locate the 9<sup>th</sup> and 10<sup>th</sup> fuel injectors mounted on the rear center portion of the SC case. Disconnect the TRD connector from the injectors. As with the TRD Piggyback, the OE connectors can be left in the truck if desired.





- a. Attach the kit supplied plug from the bag labeled **Additional Injector** to the wire labeled **Additional Injector**.

*Note: Polarity is immaterial and the connector can not be attached "upside down"*

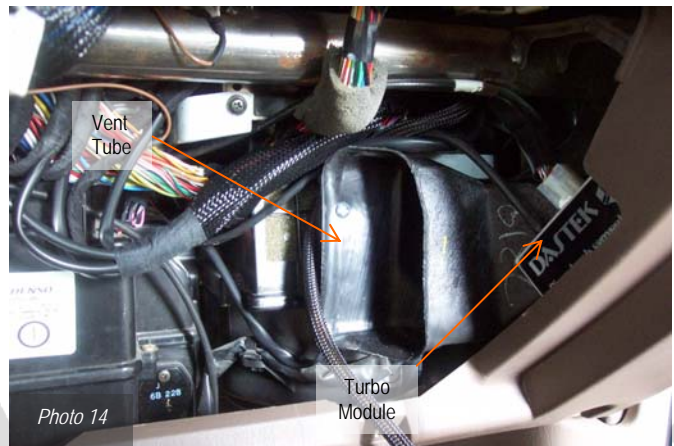
- b. Clip the PnP wire labeled **Additional Injector** to the 9<sup>th</sup> & 10<sup>th</sup> injector.
- c. (Photo 13) Locate the Pop-off valve on the rear passenger side of the SC. Remove the TRD connector from the valve; you can either leave the connector in the car or remove it as desired.
- d. Attach the kit supplied plug from the bag labeled **Pop-off Valve** to the PnP wire labeled **Pop-Off Valve**.
- e. Clip the PnP wire labeled **Pop-off Valve** to the Pop-off Valve.



*Note: Polarity is immaterial and the connector can not be attached "upside down"*

#### 11. (Photo 14) Install the Turbo Module.

- i. Place the provided 3-inch Velcro strip onto the Turbo Module's back side. Place the vacuum line labeled **Turbo Module** onto the Turbo Module's black nipple.
- ii. Remove the protective strip from the Velcro and mount the Turbo Module against the vent tube to the right side where the tube bends aft.
- iii. Test the installation to verify vacuum system integrity.
  - a. Start the truck.
  - b. Remove the vacuum line from the Turbo Module and press it against your hand to verify suction.
  - c. Reinstall the vacuum line onto the Turbo Module.



#### 12. Route the Accessory Cable.

- i. The loom with switches labeled Power Cut and Map A/B can be routed where ever desired, but should be placed where it can be accessed. You can simply loop the loom and leave it under the carpet pad or can permanently mount the switches as desired. See section 16 for a description of the switches.

#### 13. Test start the vehicle.

- i. Temporarily reconnect the battery to test start the truck and verify all connections are correct before reassembling the heater duct and glove box.
- ii. Disconnect the battery again before reassembling the truck.

#### 14. Replace the vent tube.

#### 15. Replace the glove box.

#### 16. Reconnect the battery.

## 17. Accessory Cable Functionality

Switch	Mode	Function	Notes
<b>ECU Pwr</b>	1	ECU backup power enabled	Normal operational setting
	0	ECU backup power disabled	To clear CEL's or dump ECU fuel trims
<b>Map A/B</b>	1 (LED on)	More aggressive ignition timing	Unless otherwise specified, for higher octane fuel
	0 (LED off)	Less aggressive ignition timing	Unless otherwise specified Default operational setting

- iii. The normal position for **ECU Power** Switch is on ( 1 ) and for the **Map A/B** switch is off ( 0 ) and unless you are either resetting the ECU or desire to run Map B, these switches should remain in these positions. To change either switch, turn off the ignition key before actuating the switch.
- iv. With the ignition key off and removed, selecting the on ( 1 ) position on the **Map A/B** switch selects timing Map B, which can be verified by illumination of the red LED when the vehicle is started. Using Map B will result in a CEL on approximately thirty percent of vehicles; the CEL results from that particular vehicle's increased sensitivity to detonation. If Map B produces a CEL in your vehicle, select reselect Map A and use the ECU power cut switch to clear the CEL as outlined below.

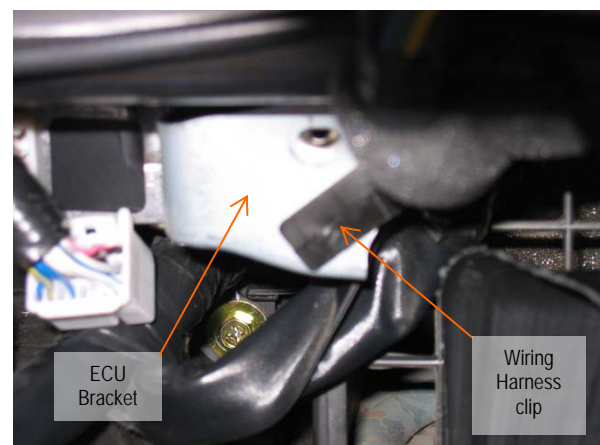
*Note: (1) More is not always better... adding more timing can actually reduce power in a particular vehicle if that vehicle is sensitive to detonation. If the stock ECU detects detonation, it will reduce timing to protect the engine; if you're truck doesn't seem to be making more power than stock and 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.*

- v. To reset the ECU long and short term fuel corrections or to clear a CEL, with the ignition key off and removed, select the off ( 0 ) position on the **ECU Pwr** Switch and leave it in that position for a minimum of ten minutes. After ten minutes, turn the Pwr Cut switch to the off position ( 1 ) then start the car and the CEL should be gone. Additionally, the same procedure resets any ECU fuel learning.

*Note: (1) When you removed battery power from the vehicle like you did when installed the PnP kit, the "learning" maintained in the ECU's volatile memory is erased. All vehicles, but especially modified vehicles, will take several trips to again run smoothly. This is normal and results not from anything in the Unichip PnP kit, but rather because the battery was disconnected.*

*(2) Always keep the ECU Power switch in the on ( 1 ) position during normal operations. If you leave the ECU Power Cut switch in the off ( 0 ) position, the ECU's volatile memory is erased every time you turn off the vehicle which means it may never learn to run smoothly.*

**Addendum.** The truck had a slightly different wiring harness bracket on the ECU mounting bracket which is often modified when the TRD SC is installed. The unmodified wiring harness bracket on these vehicles is connected to the right side of the ECU bracket with a plastic clip. If you choose to remove the ECU to perform the install with one of these trucks, use a screw driver to go behind the ECU mounting bracket and carefully pop the clip out.



## 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.

