

# Harnessed Bypass Module Installation Instructions

## The “Original Secondary Air Injection System Bypass Kit”

Applicable for Toyota/Lexus Vehicles



### Introduction:

A failure of any component of the Secondary Air Injection System (SAIS) will generally set the check engine light (CEL) and cause the Engine Control Module (ECM) to store trouble codes. Many of these failures will also cause the vehicle to enter “limp-mode” where throttle operation is limited to 50% to protect the engine from damage. *Before installing the bypass module, it is highly recommended to address any codes not related to the SAIS.*

This SAIS Bypass Module used to prevent the operation of the SAIS is found on Toyota/Lexus vehicles. By preventing the operation of the SAIS, certain trouble codes can be cleared and prevented from returning. Please check our [“Codes”](#) page for more details about the codes our SAIS Bypass kit can help with. In general, the bypass module cannot clear codes that are caused by electrical faults or circuit malfunctions which can be the result of an electrically damaged component or wiring. The exhaust block off plates are an integral part of the “Original SAIS Bypass Kit” and should always be installed with the bypass module.

Please note that per federal emissions law, some state, county or municipalities, it is illegal to remove, dismantle or otherwise cause to be inoperative a pollution control device that is required to be maintained in or on a motor vehicle. As such, the end use of this product is the sole responsibility of the vehicle owner. By installing this product, the vehicle owner assumes ALL risks associated with its use.

### Module Operation and the Starter Relay Sense Wire:

When the SAIS Bypass Module is triggered on a cold start (engine off for 7 hrs. or longer) it will prevent the SAIS from operating. The module must be triggered when the vehicle is cranking so it will actively prevent the system from running. The module is triggered for a moment when the vehicle’s ignition is first switched “ON” and then again anytime it senses 5-12V on the starter relay input wire. With the starter relay wire connected you can crank the vehicle at any time after the ignition has already been turned to “ON” and the module will be re-trigger for cranking. Without the starter relay wire, if you turn the vehicle to the “ON” position and wait you must first cycle the ignition “OFF” and then start directly from the “OFF” position to ensure the module is triggered through the “ON” to “Start” transition it is typically best just to install the starter relay wire and forget about it.

If you have questions or trouble before, during or after installation visit our [FAQ page](#) or contact us directly Toll Free at 844-307-7671 or by email at [Support@Hewitt-tech.com](mailto:Support@Hewitt-tech.com)

## Tools/Supplies Needed:

- Wire Strippers /Cutters for starter relay wire
- Wire Loom and Mounting Supplies
- Access to an OBDII Scanner to Reset any Trouble Codes/CEL and for troubleshooting (recommended)
- Good Quality Multi Meter or Test Light/Probe
- 0.5- 1.5 hours (total kit)

## Installation Steps:

1) Locate the Intake Air Temperature Sensor/Mass Air Flow Sensor (IAT/MAF Sensor). It is usually located at the front passenger side of the engine compartment. On some engines, it may be located underneath an engine cover or on the intake air tube going to the intake throttle body, remove the cover and reinstall when finished. The sensor on all vehicles will look like the one circled in red of Figure 1 regardless of location, for the 4.0L IAT/MAF sensor the sensor and bypass module harness connectors are a bit wider but still has 5 pins.

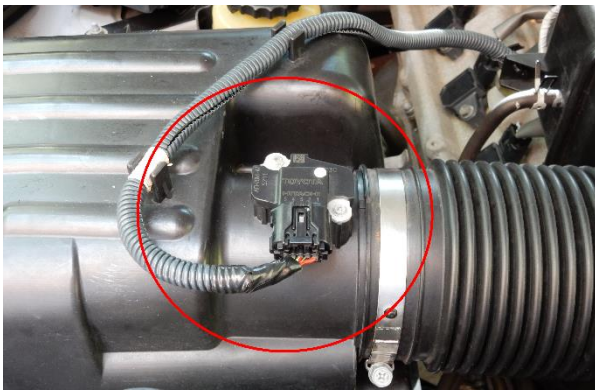


Figure 1 - IAT/MAF Sensor Location



Figure 2 - Disconnect MAF/IAT from factory harness

2) Disconnect the factory harness connector from the IAT/MAF sensor by firmly squeezing the connector's tab and pull the connector off.

3) Connect the bypass module's harness to the IAT/MAF sensor and then connect the factory harness to the bypass module's harness. The connectors can only be connected one way. When fully seated, the connectors should make a nice "click" sound.



Figure 3 - Connect the Female Module Connector to the MAF/IAT Sensor



Figure 4 - Module Harness Installed

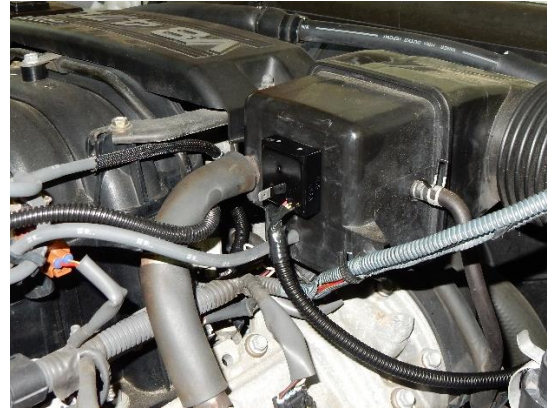


Figure 5 - Mounting Location Away from Heat and Moving Parts. Back of Air Resonance Chamber shown. Back of Air Box is Also a Great Location.

4) Choose a suitable mounting location. Do not mount the module to the engine block, cylinder head, valve cover or other surfaces that are exposed to high temperatures. Do not mount the module in a way that there will be stress placed on the wires or in a location that the wires/harness may contact moving parts such as accessory drive belts or the engine cooling fan (that isn't pretty!). The back of the air box or the back of the air resonance chamber on the intake runner are ideal locations.

5) The mounting tape is high quality 3-M Automotive Acrylic tape but even it won't stick well to a dirty or oily surface. If needed clean the mounting surface with a solvent and let dry. Peel the red backing film from the adhesive tape and press the module firmly to the mounting surface.

6) To install the starter relay wire, locate the starter relay in one of the under-hood fuse boxes. On most vehicles, the relay is the exact same violet relay as shown in the figures. It is usually labeled as ST or STA on the inside of the lid. On some Lexus vehicles and Land Cruisers the relay will may be a cube type with 4 terminals in a cross pattern if you have trouble identifying the correct terminal give us a call.

Carefully remove the relay by pulling the base of the relay straight up and out of the terminal sockets. Do not pull on the plastic top only! The relay can be very difficult to remove so take your time or use a tool that can get underneath the relay and pry straight out.

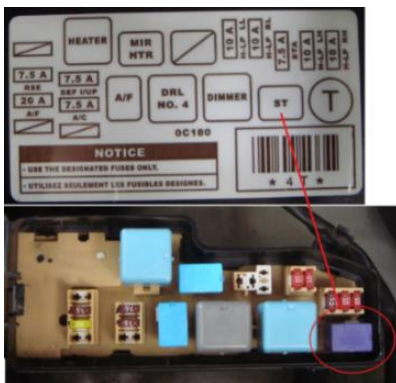


Figure 6 – Example Fuse/Relay Label and Starter Relay Location for a 4.7L 05 Tundra DC



Figure 7 - Starter Relay

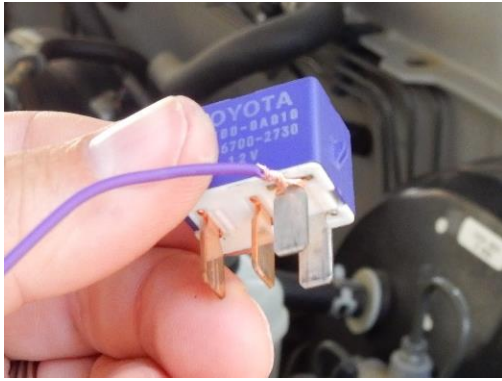


Figure 8 - Starter Signal Wire Taped onto Switched Leg of Starter Relay

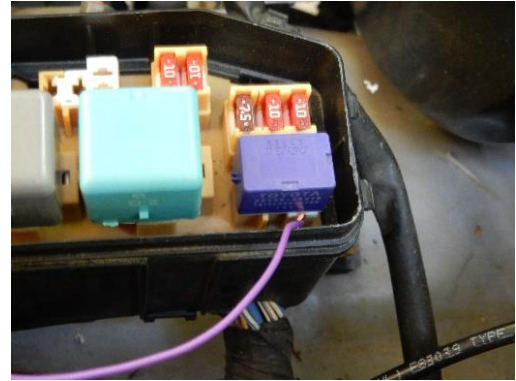


Figure 9 - Starter Relay Wire can now be routed through a hole in the box.

7) Strip the end of the starter relay wire that does not have a terminal on it and temporarily connect it to the terminal as shown in Figure 8. **DO NOT connect the starter signal wire to either of the larger copper terminals of the relay, they are for the starter solenoid and will damage the module.** Firmly seat the relay back in its socket and make sure the wire is not creating a short to another terminal. If the relay is not fully seated or the terminals seem loose when reinserting it, it may cause an intermittent or no crank condition. The terminal sockets can be tightened by slightly pinching them more closed with a pair of needle nose pliers.

8) Since connecting to the incorrect terminal may damage the bypass module and is not covered under our replacement warranty you will want to test it before connecting to the module. Use a Volt Meter or a Test Probe by connecting the positive lead of your tester to the 1/4" quick disconnect of the starter relay wire and the negative test lead to ground. There should be no voltage (<1V) present when the engine is off or running. Making sure the wire and harness are out of the way and crank the engine over. The Volt Meter or Test probe should ONLY show 5-12V DC (or light up) when the starter is engaged and cranking the engine over.

9) Disconnect the starter wire from the relay and fully connect it to the bypass module. Route the relay wire from the module towards the relay box. Routing the wire along the main harness to the firewall and around the back of the engine compartment is a convenient route and keeps the wire out of harm's way. While routing, you can also install it in split wire loom to give it a professional/factory look. Once you get it to the fuse box, cut your loom and relay wire to length. The wire can be routed into the box through an existing hole or you can create a hole or notch in the side of the fuse box. Once the wire is back in the fuse box reconnect it to the starter relay as previously tested. Use zip ties or electrical tape to secure the wire loom/starter relay wire through the engine compartment and close the fuse box.

10) Install the exhaust block off plates. Their installation is covered in a separate set of installation instructions for your specific engine that are included separately.

11) Clear your engine trouble codes using an OBDII scanner. Clearing the codes by disconnecting the battery will work but will also clear fuel trim data so the engine may run a little rough or stall until this information is rebuilt by the computer so a scanner is the preferred method.

12) Congratulations! If you have cleared the engine codes and no codes are set after 2 or more cold starts you have successfully bypassed operation of the SAIS and have saved a lot of money on a repair. Enjoy your Toyota again with confidence!

If you have questions or trouble before, during or after installation please contact us directly  
Toll Free 844-307-7671 or by email [Support@Hewitt-tech.com](mailto:Support@Hewitt-tech.com)