Hewitt Technologies Inc.

The Hewitt-Tech Secondary Air Injection System Bypass Kit

V5447H-4.7L Installation Instructions

Introduction:

The Secondary Air Injection System (SAIS) bypass module is used to prevent the operation of the SAIS that is found on Toyota/Lexus vehicles. By preventing the operation of the SAIS the trouble codes related to mechanical malfunctions of the SAIS can be cleared and prevented from returning. 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 Hewitt-Tech SAIS Bypass Kit and should always be installed with the bypass module. If you have any questions about the installation or use of this kit please visit us at: www.Hewitt-Tech.com to view our Trouble Codes and FAQ pages or use the "Contact Us" page to contact us directly.

Please note that it is illegal to remove, dismantle or otherwise cause to be inoperative any pollution control device required by federal or state law that is to be maintained in or on a motor vehicle; as such, the SAIS Bypass Kit is sold only to be installed on vehicles that are exempt from vehicle emission laws or that are intended for off-road use only. By installing or using the SAIS Bypass Kit the vehicle owner and or installer assume ALL risks associated with its use.

SAIS and Bypass Module Operation:

A failure of any component of the SAIS will generally set the check engine light (CEL) and cause the Engine Control Module (ECM) to store trouble codes. Many of these mechanical 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.

The SAIS Bypass Module prevents the SAIS from operating at a cold start by intercepting and altering the IAT signal. The Bypass Module is triggered when the vehicle ignition is first switched to the "ON" position and again whenever it senses a 5-12V signal on its starter relay input wire (energized only when the starter is engaged). The starter relay wire eliminates the need to crank the engine as soon as the ignition is turned "On". The starter relay is a mandatory connection on the V53H units.

Tools/Supplies Needed for Starter Relay Wire Connection:

- Wire Strippers /Cutters
- 10mm ratchet/nut driver
- Wire Loom and Mounting Supplies (optional)
- 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 hours

Installation Steps:

1) Remove the acorn nut and bolt shown in Figure 1 to remove the engine cover. Some vehicles may have a larger engine cover that has two recessed fasteners and may require removal of the oil filler cap to remove the engine cover.

Figure 1 – Intake/Cover Removal

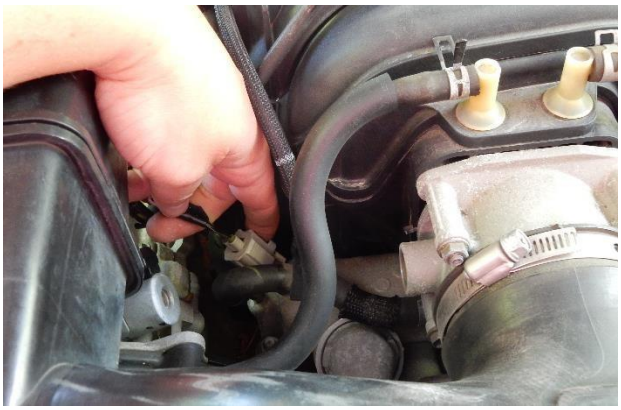

Figure 2 - Disconnect ECT Harness.

2) Disconnect the factory wire harness connector from the ECT Sensor by firmly depressing the locking tab and pull the connector off. Connect the factory ECT connector to one the module's ECT Harness (Grey Connectors). Now connect the module's ECT harness to the ECT Sensor.

3) Reinstall the engine cover.

4) Mount the bypass module to the back of the air chamber on the back of the intake tube as shown in Figure 3. The mounting tape is high quality 3-M Automotive Acrylic double sided adhesive but even it won't stick to a dirty or oily surface. Clean the mounting location with a bit of rubbing alcohol or solvent if needed and let dry. Peel the red backing film off of the adhesive and press the module firmly to the mounting surface.

Figure 3- Module Mounting Location

5) Route the bypass module's IAT harness (Black Connectors) to the front of the air box. Disconnect the IAT/MAF sensor and connect the module's IAT Harness to the factory connector and IAT/MAF sensor. Secure any loose harnesses out of the way with zip ties.

Figure 4 - Connect the IAT/MAF Sensor Harness

Figure 5 - IAT/MAF Harness Connected

6) Connect the starter relay wire to the module's ¼" quick disconnect terminal and route the wire along the engine wire harness to the fire wall and to the fuse box. The starter relay wire can be installed in wire loom or simply zip tied along the fire wall to an entry point in the fuse box. To get the starter relay wire into the fuse box a notch can be cut in the edge of the box or it can be routed through an existing hole.

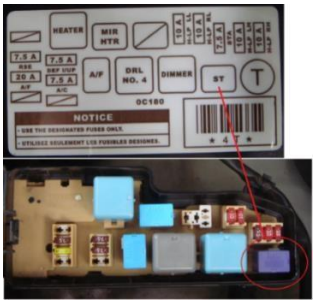

Figure 6 - Example Fuse/Relay Label and Starter Relay Location for a 4.7L Tundra DC – Location/Type May Vary

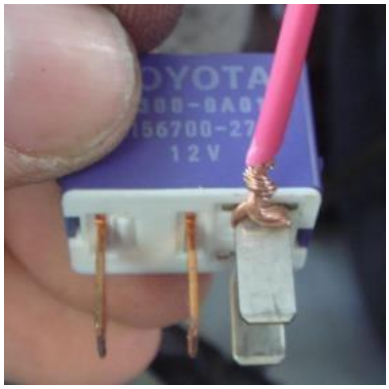

Figure 7 - Starter Signal Wire Taped onto ECU Leg of Starter Relay

7) Once the wire has been installed and routed into the box connect the end of the violet starter signal wire to the terminal as shown in Figure 7, excess wire can be cut off. **DO NOT** connect the starter signal wire to either of the larger copper terminals of the relay**.** Now, firmly seat the relay back in its socket (remember how hard it was to remove). Make sure the wire is not preventing it from seating completely and that the wire is not creating a short to another terminal. If the relay is not properly reinstalled it may cause intermittent starting problems. If the terminals seem loose when reinserting the relay, the socket terminals may need to be tightened by slightly pinching them more closed with a pair of needle nose pliers. Reinstall the fuse box lid.

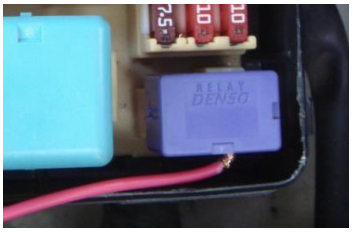

Figure 8 - Starter Relay Wire can now be routed through a hole in the box.

8) Install the exhaust block off plates according to the installation instructions that came in the kit.

9) Clear the engine trouble codes using an ODBII scanner. If you do not have access to an ODBII scanner you can reset the codes by removing the negative battery terminal and let the vehicle sit for a minute before reconnecting. If the battery method is used the engine may run rough or initially stall until it can rebuild the tuning data.
10) Congratulations! Once you have cleared the codes the secondary air system will no longer operate, and the bypass kit should prevent your trouble codes from coming back on and keep you out of limp mode.

If you have questions or trouble before, during or after installation please contact us directly
www.Hewitt-Tech.com
or call
Toll Free 844-307-7671