

Gen-II Secondary Air Injection System (SAIS) Bypass Kit

4.0L Tacoma Installation Instructions



Introduction:

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 the codes for a failed SAIS will cause the vehicle to enter “limp-mode” where the throttle is limited about 50% output 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 Gen-II units emulate operation of the SAIS and will allow you to clear your trouble codes/CEL and prevent the vehicle from entering limp mode. When installed the vehicle’s computer will think the system is operating correctly and you can remove most of the system if desired. The Gen-II SAIS bypass module installs by replacing the factory air injection control drivers (AID) and by connecting to the air switching valves (ASV) and/or their factory harnesses. With just the Gen-II unit and block off plates installed there is no longer a need for the air pumps, all the air tubes/plumbing or the factory air injection control drivers. The Gen-II unit and vehicle does however still require the two pressure sensors that are built into the air switching valves (1 each). If you have a damaged pressure sensor or wish to remove the air switching valves one Pressure Sensor Option(s) is needed to replace each air switching valve. Once an air switching valve is replaced with a PSO it is no longer needed and can be removed. 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.

Important: It is illegal to remove, dismantle or otherwise cause to be inoperative any pollution control device required by federal, state or local emissions law. The Gen-II bypass kits are sold for road or competition use only, no other applications are intended or implied. By installing or using this SAIS Bypass Kit the vehicle owner and installer acknowledge and assumes ALL risks associated with its use.

Needed for Installation:

- #2 Philips or Flat/Head Screwdriver
- 10mm ratchet/wrench
- Electrical tape
- Zip ties (optional)
- 0.5-1 hours



Installation Steps:

- 1) Open the hood and disconnect the negative battery terminal. This will reset the computer and trouble codes during installation. When resetting the computer this way, the engine may initially stall when first started and run rough until the computer has time to retune itself. This is perfectly normal and will correct itself in 5-10 minutes of idle or drive time.
- 2) Locate the air injection control driver (AID) in the engine bay. It is bolted to the inside of the passenger fender near the firewall.

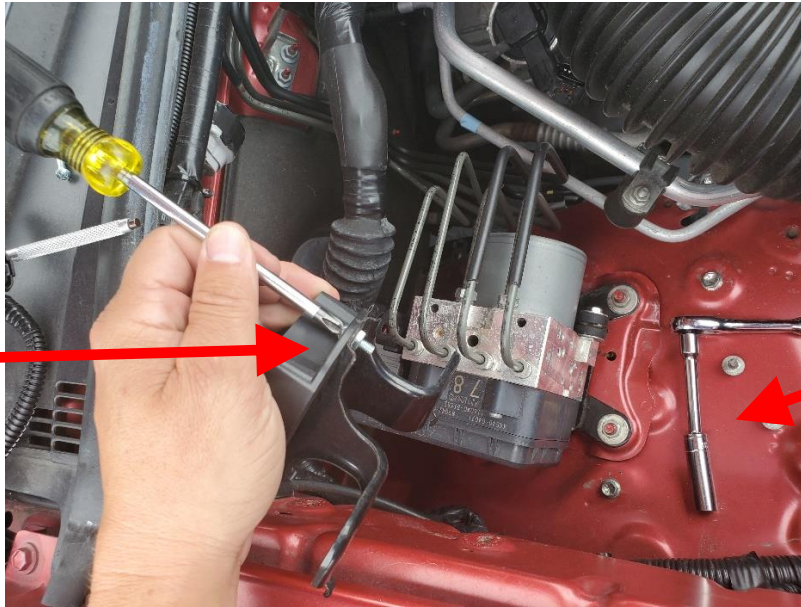


Figure 1 - Locate the Secondary Air Injection Control Driver1

- 3) Disconnect both connectors from the factory air injection control driver (AID). To prevent accidental contact with the +B terminal of the two-wire connector, securely cover it with electrical tape. Alternatively, the 50A Air Pump fuse can be removed, broken or cut to permanently remove power from the connector. The connector can also remain connected to the factory AID and it or the Gen-II unit can be secured in place by other means.
- 4) Unbolt the AID bracket from the fender. Unscrew the factory AID from the bracket and set aside. Use the included stainless hardware to mount the Gen-II unit to the bracket. There should be plenty of space between the bracket and the Gen-II unit but make sure you do not pinch or cut one of the unit's wires when mounting it to the bracket. The Gen-II custom enclosure mounts with the hex nuts in the nut wells and the screw going

through the bracket first (reverse of the screws and nuts shown on the non-custom enclosure shown in these instructions).

Note: An early production unit is shown in these instructions without the custom enclosure. It is the same unit but the custom enclosure of the full production version mounts with the screws and nuts reverse of what is shown. here mounted with the screws and nuts in the opposite direction than the custom enclosure.



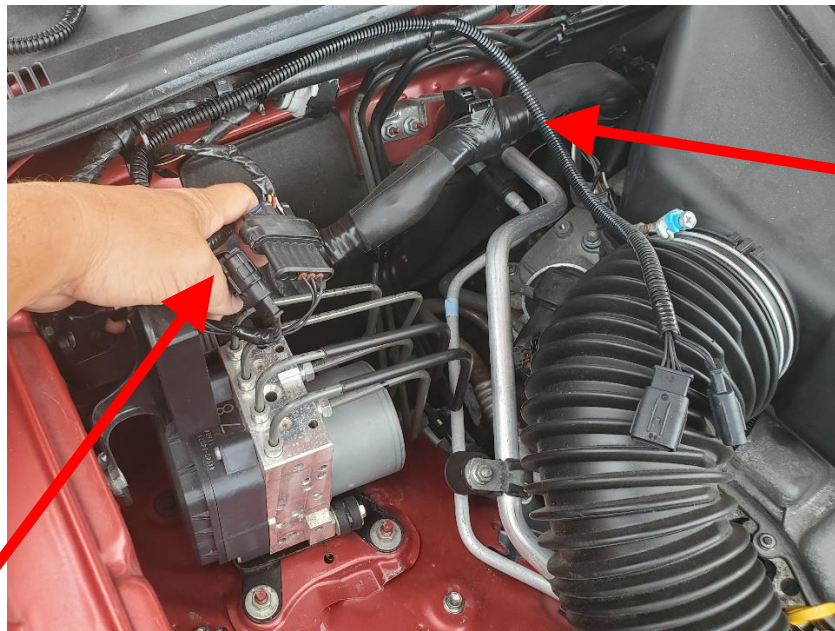
Note: The Secondary Air Pump was already Removed from this location. It is not needed after installation but can remain for appearances.

Figure 2 - Mounting the Gen-II Unit (non-custom enclosure unit shown)

- 5) Mount the bracket and Gen-II unit back in place. The HT of the Gen-II enclosure should be to the top with the wires and connectors point towards the firewall.



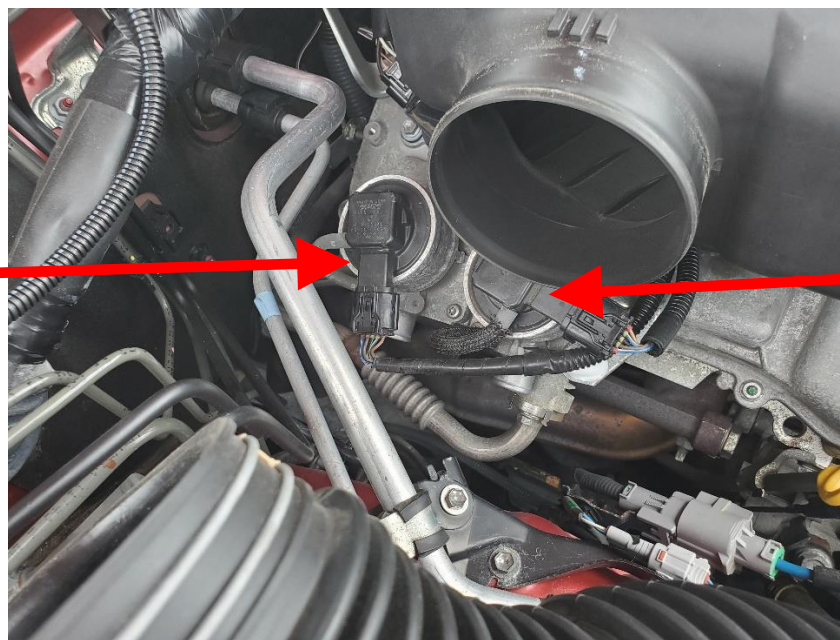
Figure 3 - Connect the wire harness to the Gen-II unit



Gen-II Harness

Figure 4 - Connect the harness to the Gen-II Unit and route to the ASVs

- 6) Connect the factory AID connector and the Gen-II harness to the Gen-II unit. Route the Gen-II harness towards the air switching valves. The Intake tube can be disconnected and pushed out of the way for easier access to the air switching valves but is not necessary and is done here to make it easier to see the ASVs and the connections needed.



Bank 1 Air
Switching Valve

Bank 2 Air
Switching Valve

Figure 5 - ASVs under intake tube

- 7) Disconnect the factory ASV harnesses from the ASVs and connect the Gen-II Harness to the factory air switching valves, Pressure Sensor Option or leave disconnected according to the following figures and descriptions.



Figure 6 - Gen-II ASV Harness

Always plugs into the factory harness that was connected to the Bank 1 ASV.

Plug into the Bank 1 ASV **OR** plug the Pressure Sensor option in here if both pressure sensors in the ASVs are damaged or if both ASVs are to be removed **OR** leave unconnected if just the Bank 1 ASV pressure sensor is damaged

Plug into the Bank 2 ASV **OR** leave unconnected if a Pressure Sensor Option is plugged into Bank 1 or the ASVs are to be removed.

Always plugs into the factory harness that was connected to the Bank 2 ASV.

Important! If you do not have damaged pressure sensors and you are not using a Pressure Sensor Option all connectors of the Gen-II harness will be connected. Both male five pin ASV connectors of the Gen-II harness will always connect to the factory ASV harness connectors. If your bank 1 or bank2 ASV has a damaged pressure sensor leave the ASV(s) with the damaged pressure sensor(s) disconnected from the Gen-II harness. In the case that both pressure sensors are damaged or you want to remove both ASVs from the vehicle you will need to plug a Pressure Sensor Option into the female Bank 1 connector of the Gen-II harness instead of the Bank 1 ASV and leave the Gen-II's connector for the bank 2 ASV disconnected. You can tape off the unused connector and zip-tie it out of the way. If you have a Pressure Sensor Option the vacuum nipple of the supplied sensor does not connect to anything and the two mounting holes of the sensor can be used to secure the sensor to prevent it from moving around. Ideally the vacuum nipple of the Pressure Sensor Option should be mounted downward.

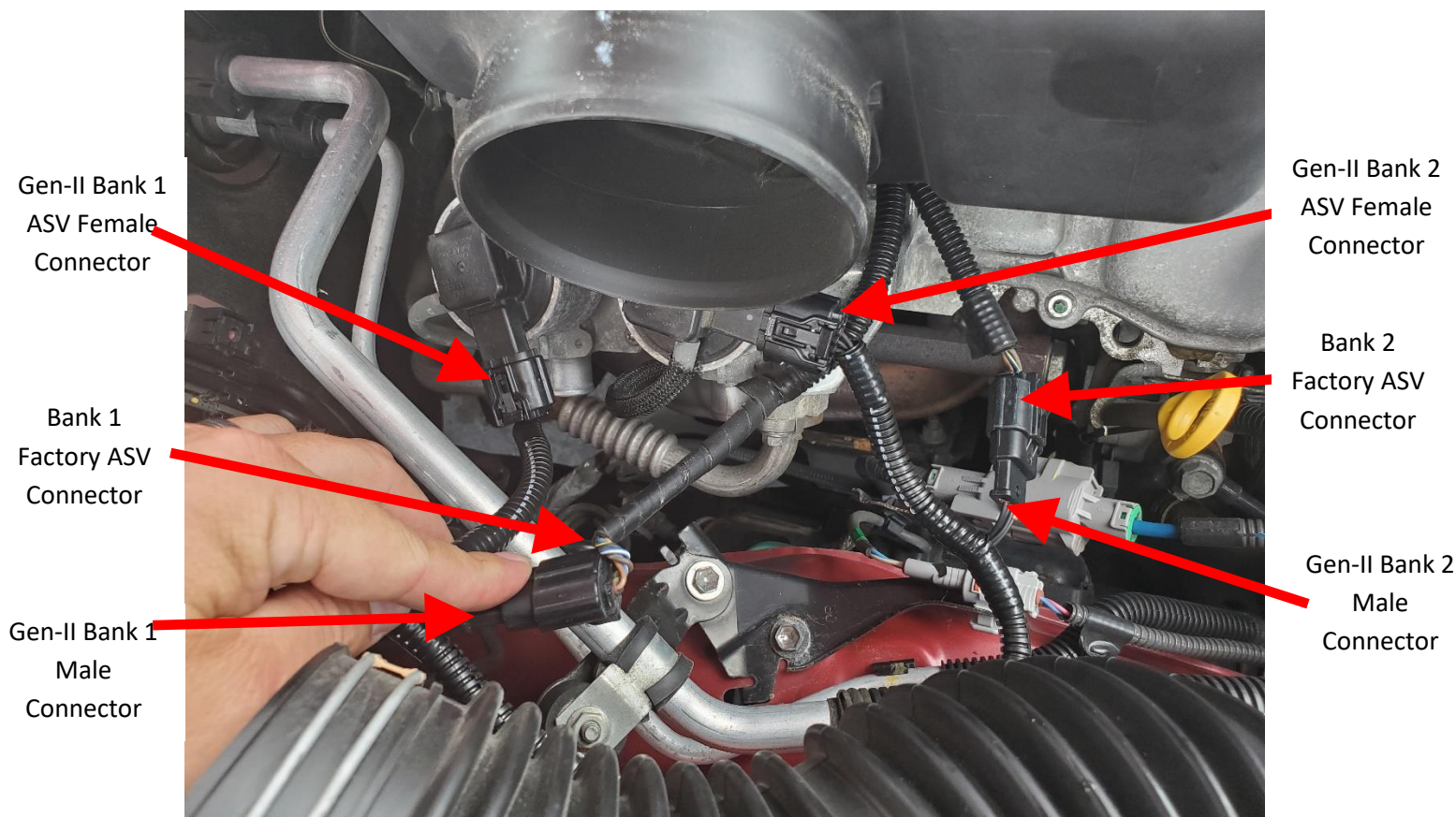
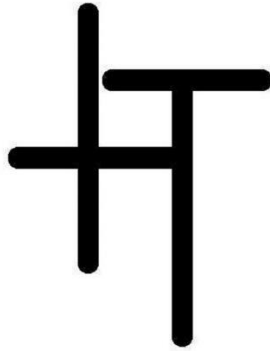


Figure 7 - Connecting to the bank 1 ASV and factory ASV harness

- 8) Use zip ties to secure the harness and Pressure Sensor Option if installed. You can now remove the secondary air pump and the air tubes if desired. Likewise, if a pressure sensor option was installed the air switching valves can now also be removed from the engine.
- 9) If you have not already installed the exhaust block off plates refer to the separate instruction to complete their installation before proceeding.
- 10) Reconnect the air tube to the air box and reconnect the negative battery terminal. You are now ready to start the engine. As mentioned in step one, disconnecting the negative battery terminal for longer than 2 minutes will also clear certain tuning information from the computer. This may cause the engine to stall on the first start and run rough or have an off idle speed until it is allowed to idle or is driven for 5-10 minutes, it is perfectly normal.
- 11) Once finished with installation there should be no CEL on for the secondary air injection system and there should be no Active or Pending trouble codes stored in the computer. Any Permanent trouble codes remaining in the computer will clear themselves the next time the secondary air injection system is commanded to run and the Gen-II unit completes its first operation. At this point the secondary air injection system emissions monitor should also show Ready or Complete.
- 12) Congratulations, your vehicle should now be out of limp mode and operate and perform like normal.



If you have any questions or trouble before, during or after installation please contact us directly by phone or email and we will be glad to help.

Toll Free 1-844-307-7671

Support@hewitt-tech.com

The products manufactured and sold by Hewitt Technologies Inc. including this kit are for off-road or competition use only, no other applications are intended or implied. Our bypass kits are not EPA/CARB certified and are not legal for street-use. The vehicle owner and installer acknowledge and assumes ALL risks associated with the purchase, installation and use of our products.