

Solstice, Sky, Cobalt and HHR LNF Turbo Upgrade Kit (19212670)

Specifications Part Number 19212711

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This publication provides general information on components and procedures that may be useful when installing or servicing a Solstice, Sky, Cobalt or HHR Turbo Upgrade Kit. Please read this entire publication before starting work. Also, please verify that all of the components listed in the Package Contents section below were shipped in the kit.

The information below is divided into the following sections: package contents, component information, and installation instructions.

It is not the intent of these specifications to replace the comprehensive and detailed service practices explained in the GM service manuals. For detailed installation instructions please look to the service manual for you specific vehicle.

GM service manuals are available from:

Helm Incorporated
PO Box 07130
Detroit, MI 48207

For information about warranty coverage, please contact your local GM Performance Parts dealer.

Observe all safety precautions and warnings in the service manuals when installing a Solstice, Sky, Cobalt or HHR Turbo Upgrade Kit in any vehicle. Wear eye protection and appropriate protective clothing. Support the vehicle securely with jack stands when working under or around it. Use only the proper tools. Exercise extreme caution when working with flammable, corrosive, and hazardous liquids and materials. Some procedures require special equipment and skills. If you do not have the appropriate training, expertise, and tools to perform any part of this conversion safely, this work should be done by a professional.

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Package contents:

Item	Description	Quantity	GM Part Number
1	TMAP Sensor	2	55206797
2	TMAP Sensor, Bolt	1	11589015
3	TMAP Sensor, O-ring	2	12626998
4	Label, Premium Fuel	1	12602863
5	Label, Certification	1	12626987
6	Connector Pigtail	2	88988320
7	Instructions	1	19212711

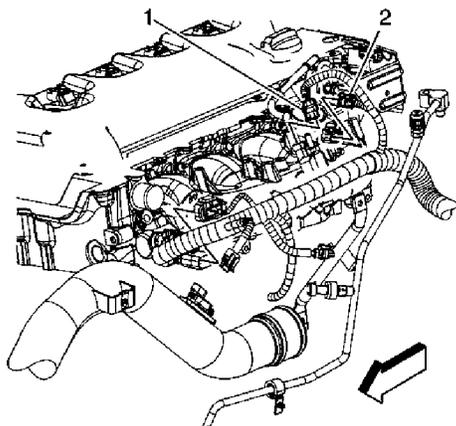
Component Information:

The LNF Turbo Upgrade Kit was designed by GM to be a true performance bolt on kit. When this package is properly installed, it looks like original factory equipment. The fact that the parts have been designed to GM Standards ensures a quality product. All of the fasteners required for installation are included in the package. The Electronic Control Module (ECM) calibration is a key factor in both performance and drivability. This Turbo kit has its own unique specific calibration designed specifically for each LNF Turbo engine, used in the Sky, Solstice, Cobalt and HHR. The package has been calibrated to GM standards, and the package is emission legal in all 50 states. As part of the calibration process for this package, the LNF Turbo engine was tested on a dynamometer to develop the base fueling and spark requirements. All of this testing is necessary to develop a package that meets GM standards for performance, drivability, and durability.

Installation Instructions

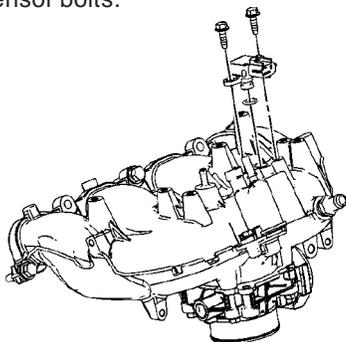
1. Disconnect the engine wiring harness electrical connector (2) from the manifold absolute pressure (MAP) sensor.

FIGURE 1



2. Remove MAP sensor bolts.

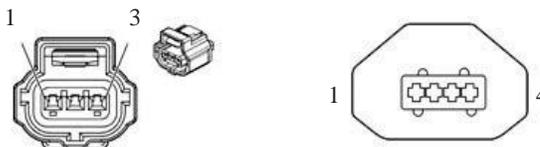
FIGURE 2



3. Remove the MAP sensor and O-ring seal from the intake manifold.
4. Replace MAP sensor connector with the new stage kit connector, shown in figure 3. Rewire connector using the following instructions along with figures 4 and 5.

Production MAP Connector

Kit TMAP Connector



Solstice/Sky Production MAP to New TMAP (Intake Manifold)

Production Wire Color	Production Terminal Location	New Wire Color	New Terminal Location
Gray	A/1	White	3
Tan	B/2	White	1
Light Green	C/3	White	4

HHR SS/Cobalt SS Production MAP to New TMAP (Intake Manifold)

Production Wire Color	Production Terminal Location	New Wire Color	New Terminal Location
Gray	A/1	White	3
Orange/Black	B/2	White	1
Light Green	C/3	White	4

* Pin # 2 is not used and white wire needs to be taped back

NOTE: See connector for pin cavity markings

FIGURE 3

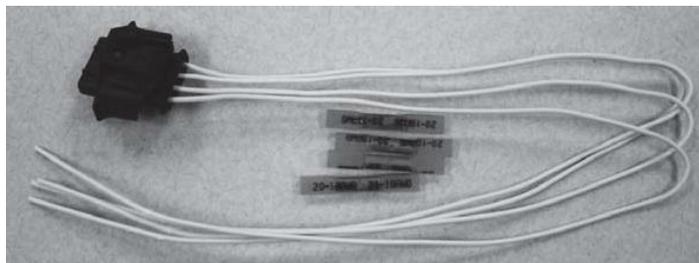


FIGURE 4: PRODUCTION MAP

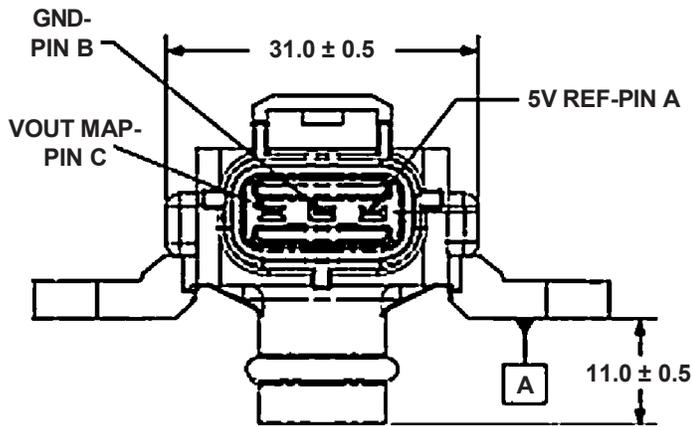
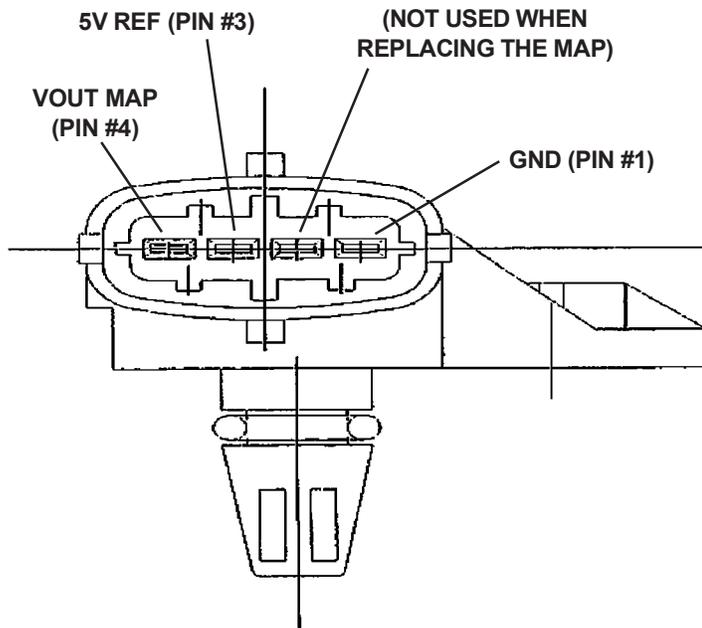
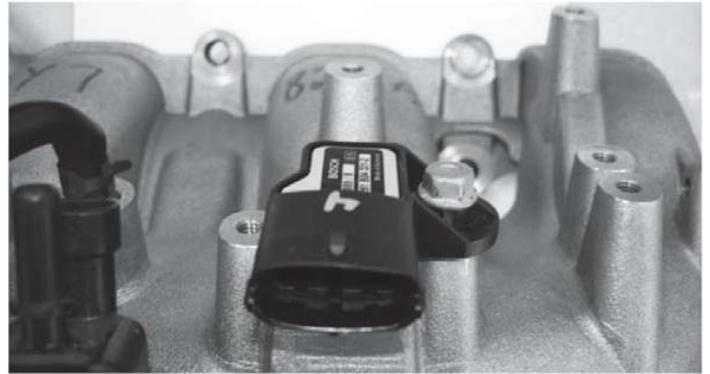


FIGURE 5: NEW STAGE KIT TMAP SENSOR



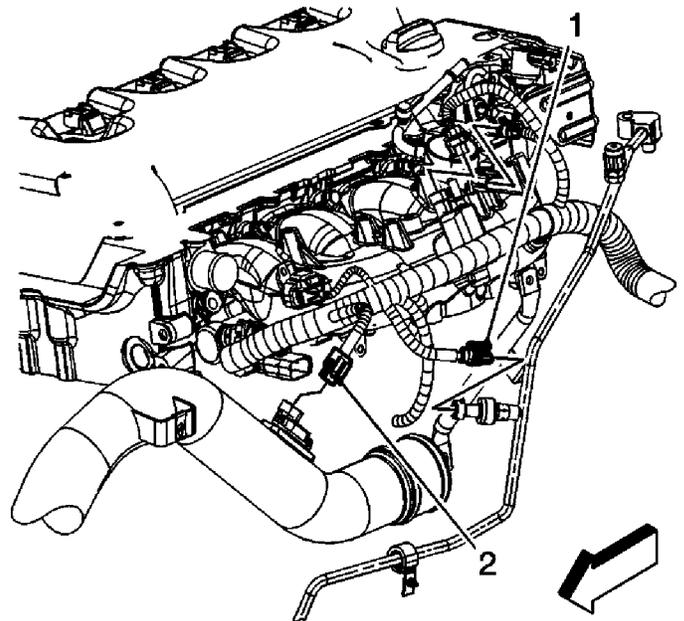
5. Make sure that the green O-ring from the production MAP sensor is no longer attached to the mounting surface. Put the new O-ring on the new TMAP sensor. Both are provided in the kit. Lubricate O-ring with clean engine oil before installation.
6. Install new TMAP sensor into the intake manifold using only the right bolt as seen in figure 6. The TMAP sensor may need to be tipped slightly to start hold down bolt. Bolt needs to be tightened to $10 \text{ N}\cdot\text{m}$ (89 lb in). It is recommended to use Red Loctite 262 to help secure the bolt. It is very important that the bolt does not loosen up.

FIGURE 6



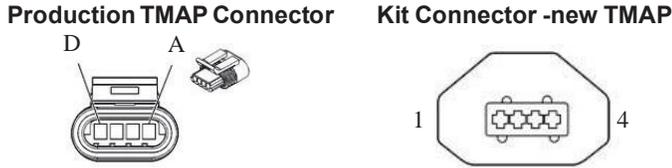
7. Connect the GMPP connector to the TMAP sensor.
8. Disconnect the engine wiring harness electrical connector (2) in figure 7 from the intake air pressure and temperature sensor.
9. Remove TMAP sensor bolts and then remove sensor from intake housing. Make sure to also remove o-ring from sensor or housing.

FIGURE 7



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10. Replace TMAP sensor connector with the new stage kit connector, shown in figure 3, which is supplied in the kit. Rewire connector using the following instructions along with figures 8 and 9.



Solstice/Sky Production TMAP to New TMAP (Inlet Air Duct)

Production Wire Color	Production Terminal Location	New Wire Color	New Terminal Location
Tan	A	White	1
Light Blue	B	White	2
Gray	C	White	3
Purple	D	White	4

HHR SS/Cobalt SS Production TMAP to New TMAP (Inlet Air Duct)

Production Wire Color	Production Terminal Location	New Wire Color	New Terminal Location
Gray	A	White	1
Light Blue	B	White	2
Tan	C	White	3
Purple	D	White	4

NOTE: See connector for pin cavity markings

FIGURE 8: PRODUCTION TMAP

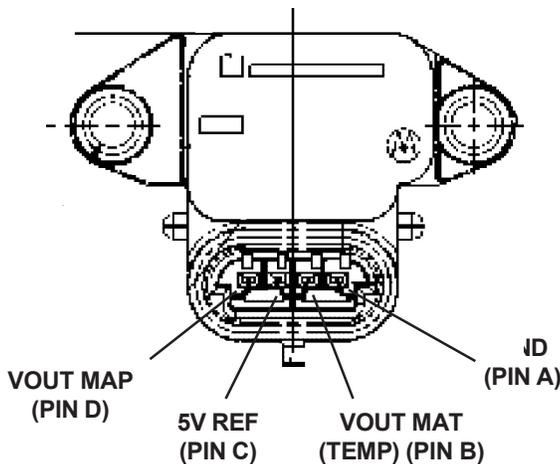
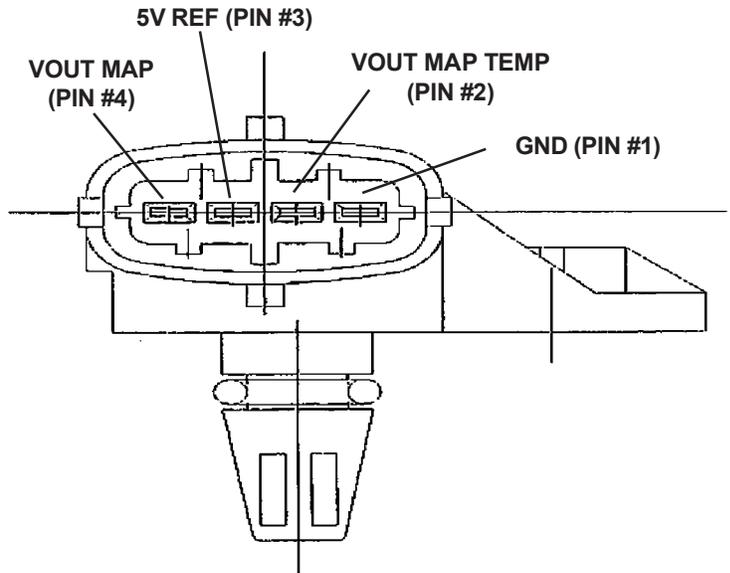
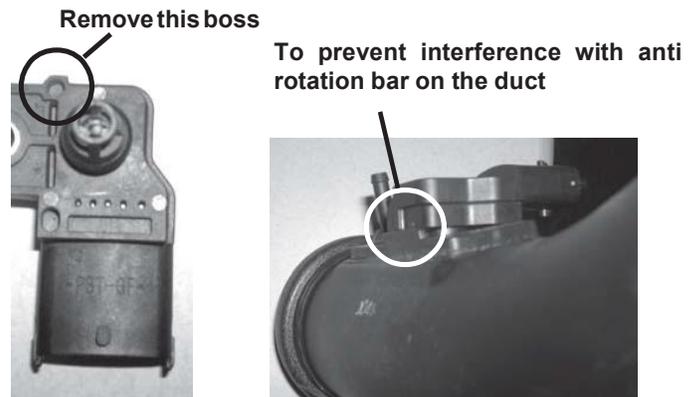


FIGURE 9: NEW STAGE KIT TMAP SENSOR



11. Make sure that the green O-ring from the production MAP sensor is no longer attached to the mounting surface. Put the new O-ring on the new TMAP sensor. Both are provided in the kit. Lubricate O-ring with clean engine oil before installation.
12. Install new TMAP sensor into the intake housing using only one of the bolts as seen in figure 7. For the Solstice and Sky use one of the original hold down bolts. For the HHR and Cobalt use the bolt that is provided with the kit. The TMAP sensor may need to be tipped slightly to start hold down bolt. Bolt needs to be tightened to 2.5 N·m (22 lb in). It is recommended to use Red Loctite 262 to help secure the bolt. It is very important that the bolt does not loosen up. **Note: When installing Power Upgrade Kit part number 19212670 on the HHR SS and Cobalt SS, the TMAP for the fresh air duct between the intercooler and the engine must be trimmed. See figure 10.**
13. Connect the engine wiring harness electrical connector to the TMAP sensor.
14. Place the Premium Fuel Required label on the inside of the fuel filler door as seen in figure 11.

FIGURE 10



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FIGURE 11



15. Place the Emission Certification Label next to the current Emission Certification Label under the hood as seen in figure 12.

FIGURE 12



16. Flash the new engine calibration into the ECM.

Calibration Information

Your vehicle must be taken to your GM Dealer to have the new calibration flashed into your ECM. You will ask for your calibration by part number depending on what vehicle you have installed the Turbo Upgrade Kit. To get your calibration you will need the serial number for your kit, which is located on the outside of the box as well as your authorization code located on page 1 of your I-sheets. Ask for one of the following part numbers. We do not recommend that the vehicle be driven to the dealership to be flashed after the new sensors have been installed. However, if this does occur please ignore all codes until the new calibration is received.

<u>Model Year</u>	<u>Vehicle Model</u>	<u>Engine (L)</u>	<u>Calibration P/N</u>
2007	Pontiac Solstice / Sky, automatic transmission	2.0	12625958
2007	Pontiac Solstice / Sky, manual transmission	2.0	12625959
2008	Pontiac Solstice / Sky, automatic transmission, without electronic vacuum pump for brake-assist	2.0	12625952
2008	Pontiac Solstice / Sky, manual transmission, without electronic vacuum pump for brake-assist	2.0	12625954
2008	Pontiac Solstice / Sky, automatic transmission, with electronic vacuum pump for brake-assist	2.0	12625951
2008	Pontiac Solstice / Sky, manual transmission, with electronic vacuum pump for brake-assist	2.0	12625953
2008	Chevrolet HHR SS, automatic transmission without electronic vacuum pump for brake-assist	2.0	12625956
2008	Chevrolet HHR SS, manual transmission	2.0	12625957
2008	Chevrolet HHR SS, automatic transmission with electronic vacuum pump for brake assist	2.0	12632388
2008	Chevrolet Cobalt SS	2.0	12625955
2009	Pontiac Solstice / Sky, automatic transmission	2.0	12633830
2009	Pontiac Solstice / Sky, manual transmission	2.0	12633831
2009	Chevrolet HHR SS, automatic transmission without electronic vacuum pump for brake assist	2.0	12633786
2009	Chevrolet HHR SS, automatic transmission with electronic vacuum pump for brake assist	2.0	12633832
2009	Chevrolet HHR SS, manual transmission	2.0	12633787
2009	Chevrolet Cobalt SS	2.0	12633785
2010	Chevrolet HHR SS, automatic transmission	2.0	12637246
2010	Chevrolet HHR SS, manual transmission	2.0	12637247
2010	Chevrolet Cobalt SS	2.0	12637248

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