

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-126-10

Relating to Exemptions Under Section 27156  
of the Vehicle Code

General Motors Service Parts Operation  
ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Section 39515 and Section 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the installation of the ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2, manufactured and marketed by General Motors Service Parts Operation has been found not to reduce the effectiveness of the applicable vehicle pollution control system and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 2004 through 2006 model year Chevrolet Cobalt and Saturn ION/Redline vehicles equipped with a supercharged 2.0L engine.

The ECOTEC Supercharger Upgrade Kit, Stage 1 includes the following main parts: A set of 5.3 grams/second fuel injectors to replace the stock 4.35 grams/second injectors and a new fuel calibration that is downloaded onto the stock ECU by a General Motors dealer. The new fuel calibration has no user adjustments. The ECOTEC Supercharger Upgrade Kit, Stage 2, includes all components of Stage 1 and a 77.9 mm diameter supercharger pulley. No changes are made to the stock air box or thermostat. Maximum boost produced by the Stage 2 kit is 14.5 pounds per square inch. Maximum boost pressure produced by the Stage 1 kit is the same as stock (12.5 pounds per square inch).

This Executive Order is valid provided that the installation instructions for the ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2, will not recommend tuning the vehicle to specifications different from those of General Motors Service Parts Operation.

Changes made to the design or operating conditions of the supercharger, as exempt by the Air Resources Board, which adversely affect the performance of the vehicle's pollution control system shall invalidate this Executive Order.

This Executive Order shall not apply to any General Motors Service Parts Operation's ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2, advertised, offered for sale, sold with, or installed on a new motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

Marketing of the ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2, using any identification other than that shown in this Executive Order or marketing of the ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2, for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board. Exemption of the ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2, shall not be construed as exemption to sell, offer for sale, or advertise any component of the kit as an individual device.

This Executive Order does not constitute any opinion as to the effect the use of the ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2, may have on any warranty either expressed or implied by the vehicle manufacturer.

This Executive Order is granted based on submitted emissions test data generated on a 2005 model year General Motors 2.0L supercharged Saturn Ion Redline (test group 5GMXV02.0018), certified to the Ultra Low Emission Vehicle (ULEV) emission standards with the ECOTEC Supercharger Upgrade Kit, Stage 2 installed. Testing consisted of a Cold-Start CVS-75 Federal Test Procedure (FTP) and the Supplemental Federal Test Procedure (SFTP US06 and SCO3) test cycles. Results are in grams per mile with assigned deterioration factors added to CVS-75 FTP results. Emission levels of the modified vehicle met the applicable emission standards.

	CVS-75 FTP				US06/SCO3	
	NMOG	CO	NOx	HCHO	NMHC+NOx	CO
Standards	0.100	3.4	0.14	0.015	0.14/0.20	8.0/2.7
w/ Device	0.050	0.8	0.06	0.001	0.07/0.04	1.8/0.3

This Executive Order is also based on an On-Board Diagnostic II (OBD II) test conducted on the same test vehicle. Test data showed that the ECOTEC Supercharger Upgrade Kit, Stage 2 when installed on the vehicle did not affect the ability to perform OBD II monitoring.

The Air Resources Board reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222, et seq.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF GENERAL MOTORS SERVICE PARTS OPERATION'S ECOTEC SUPERCHARGER UPGRADE KIT, STAGE 1 AND STAGE 2.

No claim of any kind, such as "Approved by the Air Resources Board", may be made with respect to the action taken herein in any advertising or other oral or written communication.

Violation of any of the above conditions shall be grounds for revocation of this order. The order may be revoked only after a ten-day written notice of intention to revoke the order, in which period the holder of the order may request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within ten days of receipt of the request and the order may not be revoked until a determination is made after the hearing that grounds for revocation exist.

Executed at El Monte, California, this 7th day of February 2006



Allen Lyons, Chief

Mobile Source Operations Division

## EVALUATION SUMMARY

Manufacturer Name: General Motors Service Parts Operation

Name of Device: ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2

Background:

General Motors Service Parts Operation has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for their ECOTEC Supercharger Upgrade Kit, Stage 1 and Stage 2, designed for 2004 through 2006 model year Chevrolet Cobalt and Saturn ION/Redline vehicles equipped with a supercharged 2.0L engine.

Recommendation:

Grant exemption to General Motors Service Parts Operation as requested and issue Executive Order D-126-10.

Device Description:

The ECOTEC Supercharger Upgrade Kit was designed to be installed on 2004 through 2006 model year Chevrolet Cobalt and Saturn ION/Redline vehicles equipped with a supercharged 2.0L engine. The intent of installing the ECOTEC Supercharger Upgrade Kit is to increase the power output from the engine. The power increase is due to the increase in air induction, accompanied by fuel enrichment through use of higher flow fuel injectors and a new fuel calibration.

The ECOTEC Supercharger Kit comes in two versions, Stage 1 and Stage 2. Stage 1 includes the following main parts: A set of 5.3 grams/second fuel injectors to replace the stock 4.35 grams/second injectors and a new fuel calibration that is downloaded to the stock ECU by a General Motors dealer. The new fuel calibration has no user adjustments. The ECOTEC Supercharger Upgrade Kit, Stage 2, includes all components of Stage 1, a 77.9 mm diameter supercharger pulley and a high flow air filter cartridge in the stock air box. Maximum boost produced by the Stage 2 kit is 14.5 pounds per square inch. Maximum boost pressure produced by the Stage 1 kit is same as stock (12.5 pounds per square inch).

Discussion/Basis for the Recommendation:

A 2005 model year General Motors 2.0L supercharged Saturn Ion Redline was used for the evaluation of the ECOTEC Supercharger Upgrade Kit. The test vehicle (test group 5GMXV02.0018) was certified to the passenger car Ultra Low Emission Vehicle emission standards and was equipped with On-Board Diagnostic (OBD) II system. Testing consisted of one Cold-Start CVS-75 Federal Test Procedure (FTP) and the Supplemental Federal Test Procedure (US06 and SCO3) test cycles in the modified configuration (Stage 2 Kit installed) to set all readiness codes and measure emissions. The ARB did not perform testing to confirm the test results submitted by the applicant.

Results from emissions testing conducted at Roush Emissions Laboratory, 12249 Levan Road, Livonia, Michigan 48150, are shown below (in grams per mile with assigned deterioration factors added to CVS-75 FTP results):

	CVS-75 FTP				US06/SCO3	
	NMOG	CO	NOx	HCHO	NMHC+NOx	CO
Standards	0.100	3.4	0.14	0.015	0.14/0.20	8.0/2.7
w/ Device	0.050	0.8	0.06	0.001	0.07/0.04	1.8/0.3

NMOG and HCHO for the Saturn Ion Redline were calculated using the following conversion factors for the vehicle: NMOG/NMHC=1.04 and HCHO/NMHC= 0.02. Measured values were NMHC 0.043, CO 0.73, NOx 0.055. 50K assigned additive deterioration factors used were NMOG 0.0052, CO 0.10, NOx 0.007 and HCHO 0.00051. Vehicle test weight and horse power coefficients were 3375 lbs. and 36.4, 0.4884, 0.01749 respectively.

The emission test results in the modified configuration were below the applicable certification emission standards. All OBD II system readiness indicators were set and no diagnostic trouble codes were triggered. Therefore, based on the test results, the staff concludes that the ECOTEC Supercharger Upgrade Kit (Stage 1 and Stage 2) meets the criteria for exemption of general criteria parts.