

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-473-1
Relating to Exemptions Under Section 27156
of the Vehicle Code

SALEEN PERFORMANCE
SALEEN SUPERCHARGER

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-45-9;

IT IS ORDERED AND RESOLVED: That the installation of the Saleen Supercharger, manufactured and marketed by Saleen Performance, 9 Whatney, Irvine, California 92618, has been found not to reduce the effectiveness of the applicable vehicle pollution control systems and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for the 1996 through 1998 4.6 liter Ford Mustang GT (p/n 178-553).

The Saleen Supercharger includes the following main components: water pump, intercooler, Eaton M-90 supercharger, 24 lb/hr fuel injectors, throttle cable, modified engine control unit, assorted brackets, and hardware. The diameter of the drive pulley is 167 mm (6.54 inches), and the supercharger pulley diameter is 74 mm (2.90 inches). Maximum boost is 8 psi at 6,000 rpm, boost pressure is 5-6 psi between 3,000 and 5,000 rpm.

This Executive Order is valid provided that the installation instructions for the Saleen Supercharger will not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Changes made to the design or operating conditions of the Saleen 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.

Marketing of the Saleen Supercharger using any identification other than that shown in this Executive Order or marketing of the Saleen Supercharger 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 Saleen Supercharger 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 Saleen Supercharger may have on any warranty either expressed or implied by the vehicle manufacturer.

This Executive Order is granted based on emissions in the modified configuration using the Cold-Start CVS-75 Federal Test Procedure and examination of the On-Board Diagnostic II (OBD II) system. Results from emissions testing conducted at the Mercedes-Benz Service Corporation Test Lab, of Ann Arbor, Michigan, are shown below (in grams per mile):

Raw Emission Level	NMHC 0.082	CO 1.081	NOx 0.070
50k	NMHC	CO	NOx
DF	1.382	1.602	1.396
Emission Level (w. DF applied)	0.113	1.732	0.098
STD	0.25	3.4	0.4
100k	NMHC	CO	NOx
DF	1.796	2.255	1.827
Emission Level (w. DF applied)	0.147	2.438	0.128
STD	0.31	4.2	0.6

The emission test results in the modified configuration were below the applicable certification standards as in accordance with the "Procedures for Exemption of Add-On and Modified Parts". Examination of the OBD II system showed the Saleen Supercharger does not affect OBD II operation. Therefore, based on the test results, the staff concludes that the Saleen Supercharger meets the criteria for exempting general criteria parts as specified in the "Procedures for Exemption of Add-On and Modified Parts". However, the ARB finds that reasonable grounds exist to believe that use of the Saleen Supercharger may adversely affect emissions of motor vehicles when operating under conditions outside the parameters of the CVS-75 Federal Test Procedure. Accordingly, the ARB reserves the right to conduct additional emission tests, in the future, as such tests are developed, that will more adequately measure emissions from all cycle phases. If such test results demonstrate that the Saleen Supercharger adversely affects emissions during off-cycle conditions (defined as those conditions which are beyond the parameters of the Cold-Start CVS-75 Federal Test Procedure), this Executive Order shall be effectively rescinded as of the date the test results are validated. Further, if such test results or other evidence provides the ARB with reason to suspect that the Saleen Supercharger will affect the durability of the emission control system, Saleen Performance shall be required to submit durability data to show that the durability of the vehicle emission control system is not, in fact, affected and/or that the add-on or modified part demonstrates adequate durability.

In addition to the foregoing, the ARB 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 SALEEN PERFORMANCE'S SALEEN SUPERCHARGER.

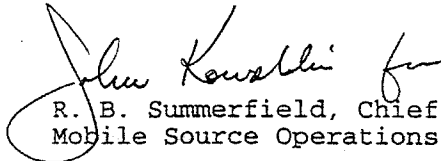
No claim of any kind, such as "Approved by the Air Resources Board", may be made with respect to the action taken herein in any advertising or other oral or written communication.

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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 after hearing that grounds for revocation exist.

Executed at El Monte, California, this 4th day of August 1999.


R. B. Summerfield, Chief
Mobile Source Operations Division

State of California
AIR RESOURCES BOARD

EVALUATION OF SALEEN PERFORMANCE'S
SALEEN SUPERCHARGER
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS

August 1999

by

Mobile Source Operations Division
9528 Telstar Avenue
El Monte, CA 91731

(This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.)

SUMMARY

Saleen Performance of 9 Whatney, Irvine, California 92618, has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Saleen Supercharger designed for the 1996 through 1998 4.6 liter Ford Mustang GT (p/n 178-553).

Based on comparison of emissions in the modified configuration with the applicable standards and an examination of the On-Board Diagnostic II (OBD II) system with the intercooled supercharger system installed, the staff concludes that the Saleen Supercharger will not adversely affect exhaust emissions from vehicles for which the exemption is requested.

The staff recommends that Saleen Performance be granted an exemption as requested and that Executive Order D-473-1 be issued.

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FOR AN EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS

I. INTRODUCTION

Saleen Performance of 9 Whatney, Irvine, California, has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Saleen Supercharger designed for the 1996 through 1998 4.6 liter Ford Mustang GT (p/n 178-553).

II. CONCLUSIONS

Based on emission testing, and examination of the On-Board Diagnostic II (OBD II) system with the Saleen Supercharger installed, the staff concludes that Saleen Performance's Saleen Supercharger will not adversely affect exhaust emissions from the vehicles for which the exemption is requested.

III. RECOMMENDATION

The staff recommends that Saleen Performance be granted an exemption for their Saleen Supercharger for installation on the 1996 through 1998 4.6 liter Ford Mustang GT (p/n 178-553).

IV. SALEEN SUPERCHARGER DESCRIPTION

The Saleen Performance intercooled supercharger kit has been specifically designed for installation on the 1996 through 1998 4.6 liter Ford Mustang GT (p/n 178-553). The diameter of the drive pulley is 167 mm (6.54 inches), and the supercharger pulley diameter is 74 mm (2.90 inches). Maximum boost is 8 psi at 6,000 rpm, boost pressure is 5-6 psi between 3,000 and 5,000 rpm. In addition to the forced induction provided by the supercharger, the system utilizes an intercooler, upgraded fuel injectors (24 lb/hr versus 19 lb/hr stock), and a modified engine control unit.

The intent of installing the Saleen Supercharger is to increase power output at particular engine loads and throttle openings. At heavy

engine loads and increased throttle openings, the airflow into the engine is increased because of the compression of intake air due to the intercooled supercharger. This allows more air to enter the engine, which is compensated by the modified vehicle engine control module with an increase in fuel flow through the upgraded fuel injectors, resulting in a higher power output. Intake air density (and potential power output) is further increased by the intercooler which cools the compressed intake air after being heated from compression in the supercharger.

The installation of the kit requires modification to the stock intake and ignition systems to accommodate components of the Saleen Supercharger. Additional equipment installed during the installation include the: intercooler, supercharger, water pump (for the intercooler), intercooler water recovery tank, upgraded fuel injectors, fuel rail, upgraded engine control module, and other assorted brackets and hardware.

V. DISCUSSION OF THE SALEEN SUPERCHARGER

Emissions were measured in the modified configuration for comparison to the applicable certification standards. Since the Saleen Supercharger utilizes a modified engine control unit and upgraded injectors, a significant increase in emissions could have resulted. However, since Saleen Performance opted to test against the applicable emission standards, it was not possible to quantify any emissions increases due to the Saleen Supercharger. Also, it should be noted that the driving conditions likely to require additional fuel to be provided by the modified engine control unit and upgraded fuel injectors may not be present in the CVS-75 FTP.

A 1998 Ford Mustang GT with a 4.6L sequential multipoint fuel injected engine (WFMXV04.6DAA) was used for the evaluation of the Saleen Supercharger. The test vehicle was certified to passenger car Tier-1 standards and was equipped with OBD II and an enhanced evaporative system. The dynamometer inertia weight and horsepower settings were 3,750-lbs and

"Procedures for Exemption of Add-On and Modified Parts". However, the ARB finds that reasonable grounds exist to believe that use of the Saleen Supercharger may adversely affect emissions of motor vehicles when operating under conditions outside the parameters of the previously prescribed test procedure. Accordingly, the ARB reserves the right to conduct additional emission tests in the future, as such tests are developed.

Saleen Performance has submitted all the required information and fulfilled the requirements for an exemption.