

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-473-5
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 1999 to 2001 model-year 4.6 liter Ford Mustang GT (p/n 178-607).

The Saleen Supercharger includes the following main components: water pump, intercooler; Eaton M-90 supercharger, 30 lb/hr fuel injectors, 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 8.5 psi at 5,800 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.

This Executive Order shall not apply to any Saleen Supercharger advertised, offered for sale, or sold with or installed on a new motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

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 system 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 emission results submitted by Saleen Performance in certifying their supercharged Mustang GT as a small volume new vehicle (Saleen S281 SC coupe, convertible, E.O. A-324-10, engine family 1S3XV04.6JDA, TLEV, PC). The final configuration of a 2001 Ford Mustang GT equipped with the Saleen Supercharger is the same as the Saleen S281 SC coupe, convertible. The certification emission results are shown below (in grams per mile):

50k	NMOG	CO	NOx	HCHO
Emission Level	0.111	1.0	0.1	0.0005
(w. DF applied)				
STD	0.125	3.4	0.4	0.015
100k	NMOG	CO	NOx	HCHO
Emission Level	0.143	1.4	0.2	0.001
(w. DF applied)				
STD	0.156	4.2	0.6	0.018

The certification emission test results submitted for new vehicle certification have been accepted as representative of emissions in the modified configuration. The certification emission test results were below the applicable certification standards. Examination of the OBD II system was not performed since Saleen Performance has demonstrated OBD II compliance during certification of the Saleen S281 SC coupe. Therefore, based on the test results, the staff concludes that the Saleen Supercharger meets the criteria for exempting general criteria 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.

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 17th day of April 2001.



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

April 2001

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 1999 to 2001 model-year 4.6 liter Ford Mustang GT (p/n 178-607). The 1999 4.6 liter Ford Mustang GT equipped with the Saleen Supercharger results in an engine identical that of the Saleen S281 SC coupe, convertible, which is a certified new vehicle by Saleen Performance.

Because Saleen Performance has certified the S281 SC coupe, convertible as a new vehicle, the certification test results have been accepted as the basis for comparison of emissions in the modified configuration with the applicable standards. An examination of the On-Board Diagnostic II (OBD II) system with the intercooled supercharger system installed was not performed since OBD II compliance was demonstrated during new vehicle certification. 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-473-5 be issued.

TABLE OF CONTENTS

	Page Number
SUMMARY	i
CONTENTS	ii
I. INTRODUCTION	1
II. CONCLUSION	1
III. RECOMMENDATION	1
IV. SALEEN SUPERCHARGER DESCRIPTION	1
V. DISCUSSION OF THE SALEEN SUPERCHARGER	2

EVALUATION OF SALEEN PERFORMANCE'S
SALEEN SUPERCHARGER
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 1999 to 2001 model-year 4.6 liter Ford Mustang GT's (p/n 178-607).

II. CONCLUSIONS

In lieu of emission testing and examination of the On-Board Diagnostic II (OBD II) system with the Saleen Supercharger installed, staff has accepted certification test results of the Saleen S281. The Saleen S281 SC coupe, convertible is a new vehicle certified by Saleen Performance and is equivalent to a 2001 4.6 liter Ford Mustang GT equipped with the Saleen Supercharger. 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 1999 to 2001 model-year 4.6 liter Ford Mustang GT's (p/n 178-607).

IV. SALEEN SUPERCHARGER DESCRIPTION

The Saleen Performance intercooled supercharger kit has been specifically designed for installation on the 1999 to 2001 model-year 4.6 liter Ford Mustang GT (p/n

178-607). 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 8.5 psi at 5,800 rpm. In addition to the forced induction provided by the supercharger, the system utilizes an intercooler, upgraded fuel injectors (30 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 supercharger kit 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

This Executive Order is granted based on emission results submitted by Saleen Performance in certifying their supercharged Mustang GT as a small volume new vehicle (Saleen S281 SC coupe, convertible, E.O. A-324-10, engine family

1S3XV04.6JDA, PC, TLEV). The final engine configuration of a 2001 Ford Mustang GT equipped with the Saleen Supercharger is the same as the engine of the Saleen S281 SC coupe, convertible produced by Saleen Performance as a new vehicle. Saleen Performance equips new 2001 Ford Mustang GT's with the Saleen Supercharger kits and sells them as new vehicles. The certification emission results are shown below (in grams per mile):

50k	NMOG	CO	NOx	HCHO
Emission Level	0.111	1.0	0.1	0.0005
(w. DF applied)				
STD	0.125	3.4	0.4	0.015
100k	NMOG	CO	NOx	HCHO
Emission Level	0.143	1.4	0.2	0.001
(w. DF applied)				
STD	0.156	4.2	0.6	0.018

The emission test results in the modified configuration were below the applicable certification standards. An examination of the On-Board Diagnostic II (OBD II) system with the intercooled supercharger system installed was not performed since OBD II compliance was demonstrated during new vehicle certification. Therefore, based on the test results, the staff concludes that the Saleen Supercharger meets the criteria for the exemption of general criteria 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.