

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-385
Relating to Exemptions Under Section 27156
of the Vehicle Code

ROAD/RACE AUTOSPORT
EVOLUTION AIR FILTER SYSTEM

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 EVOLution Air Filter System (an open element air cleaner) marketed by Road/Race Autosport, 10543 Humbolt Street, Los Alamitos, CA 90720 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 the following vehicle applications: 1993-95 Chevrolet Camaros and Pontiac Firebirds equipped with either a 4.3 or 5.7 liter engine

This Executive Order is valid provided that the installation instructions for the EVOLution Air Filter System 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 EVOLution Air Filter System, as exempt by the Air Resources Board, which adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of the EVOLution Air Filter System using any identification other than that shown in this Executive Order or marketing of the EVOLution Air Filter System 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 EVOLution Air Filter System 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 that the use of the EVOLution Air Filter System may have on any warranty either expressed or implied by the vehicle manufacturer.

This Executive Order is granted based on an evaluation of emissions impact if emissions tests were conducted in accordance with Cold-Start CVS-75 Federal Test Procedure. However, the Air Resources Board finds that reasonable grounds exist to believe that use of the EVOLution Air Filter System may adversely affect emissions of motor vehicles when operating under

conditions outside the parameters of the previously prescribed test procedures. Accordingly, the Air Resources Board 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 EVolution Air Filter System 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 Air Resources Board with reason to suspect that the EVolution Air Filter System will affect the durability of the emission control, Road/Race Autosport shall be required to submit durability data to show that the durability of the vehicle emissions control system is not, in fact, affected and/or that the add-on or modified part demonstrates adequate durability.

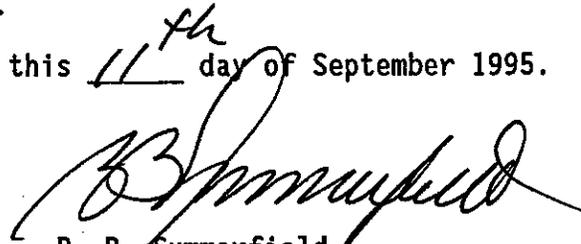
In addition to the foregoing, the Air Resources Board reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 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 ROAD/RACE AUTOSPORT'S EVOLUTION AIR FILTER SYSTEM.

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 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 ^{11th} day of September 1995.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

**State of California
AIR RESOURCES BOARD**

**EVALUATION OF ROAD/RACE AUTOSPORT'S EVOLUTION AIR FILTER SYSTEM
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS**

September 1995

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AIR RESOURCES BOARD

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by

Mobile Source Division
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(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

Road/Race Autosport of 10543 Humbolt Street, Los Alamitos, California 90720 has applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the EVolution Air Filter System (open element air cleaner) designed for the late model General Motors vehicles.

Based on an engineering evaluation of the EVolution Air Filter System, the staff concludes that the EVolution Air Filter System will not adversely affect exhaust emission from vehicles for which the exemption is requested.

The staff recommends that Road/Race Autosport be granted an exemption as requested and that Executive Order D-385 be issued.

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I. INTRODUCTION

Road/Race Autosport of 10543 Humbolt Street, Los Alamitos, California 90720 has applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the EVOLution Air Filter System (open element air cleaner) designed for late model General Motors vehicles.

II. CONCLUSIONS

Based on an engineering evaluation of the EVOLution Air Filter System, the staff concludes that Road/Race Autosport's EVOLution Air Filter System will not adversely affect exhaust emissions from the vehicles for which the exemption is requested.

III. RECOMMENDATION

The staff recommends that Road/Race Autosport be granted an exemption for their EVOLution Air Filter System for installation on 1993-95 Chevrolet Camaros and Pontiac Firebirds equipped with either a 4.3 or 5.7 liter engine. The staff also recommends that Executive Order D-385 be issued.

IV. EVOLUTION AIR FILTER SYSTEM DESCRIPTION

The EVOLution Air Filter System is an open element air filtering system which includes an open element air filter and all the necessary mounting brackets, bolts, screws, and nuts for installation. According to Road/Race Autosport, the EVOLution Air Filter System is designed to be less restrictive than the OEM air filtering system, allowing the engine to have a better throttle response as well as more power throughout the RPM band. The EVOLution Air Filter System does not require the relocation or modification of any of the OEM emission control components.

The EVOLution Air Filter System uses a filter made of foam sandwiched between two layers of wire mesh screen in a curved disk type configuration. The filter is placed in the same location as the original air box. The EVOLution Air Filter System does not defeat any emission control devices required by the manufacturer nor does it alter or circumvent the vehicle's on-board diagnostic system or tune-up specifications.

V. DISCUSSION OF THE EVOLUTION AIR FILTER SYSTEM

The Road/Race Autosport's EVOLution Air Filter System is designed for installation on 1993-95 Chevrolet Camaros and Pontiac Firebirds equipped with either a 4.3 or 5.7 liter engine.

An engineering evaluation was conducted on the EVOLution Air Filter System to determine if the installation of the air filter would have an impact on emissions. The evaluation concentrated on two areas, evaporative emissions and the mass air flow sensor.

Since the EVOLution Air Filter System replaces a closed air cleaner housing with an open element filter, the ARB was concerned that gasoline vapors could escape from the manifold, through the open element filter, into the atmosphere. The vehicles for which exemption is requested are equipped with electronic fuel injection, which is designed to eliminate potential gasoline vapor leaks. During static condition, the fuel injectors are designed to operate by an electromagnet that pulls the injector open against the fuel flow. The ARB has previously reviewed tests conducted on various fuel injector sizes in which fuel flow and pressure were simultaneously increased. The tests showed that as pressure is increased, the fuel injectors tend to hydraulically lock. This condition causes the injector to be more difficult to open and reduces leaks. In addition, fuel injected vehicles use intake manifolds which are designed to flow air in only one direction, inward to the intake valve.

Furthermore, the design of the EVolution Air Filter System does not alter the location of the evaporative emissions components or hoses. With these findings, staff concludes there will be no adverse impact on evaporative emissions due to the use of an open element air cleaner.

The mass air flow sensor that is used on these engines is located directly in front of the throttle body and assists the vehicle's computer in fuel calculations. The installation of the EVolution Air Filter System is designed to be installed in the same location as the factory air filter box which is located three feet from the throttle body. Laminar flow would be maintained at this distance causing no variations in air flow characteristics or affecting the ability of the mass air flow sensor to measure the correct quantity of air.

Road/Race Autosport has submitted all the required information and has fulfilled the requirements for an exemption.