

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-436-4  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

STILLEN SPORTPARTS  
HI-FLOW INTAKE 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 Hi-Flow Intake System, manufactured by DJ Motorsports (D-458) and marketed by Stillen Sportparts, 3176 Airway Avenue, Costa Mesa, California 92626 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 following General Motors vehicles: 1988-95 (p/n PAC001) and 1996-98 (p/n VOR002 & VOR002R) Suburban, Pick-up, Tahoe, & Yukon, equipped with Vortec 5.0 and 5.7 liter engines.

The Hi-Flow Intake System includes the following main components: cotton gauze open-element reusable air filter, intake system tubing, assorted brackets, and hardware.

This Executive Order is valid provided that the installation instructions for the Hi-Flow Intake 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 Hi-Flow Intake System, 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 Hi-Flow Intake System using any identification other than that shown in this Executive Order or marketing of the Hi-Flow Intake 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 Hi-Flow Intake 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 the use of the Hi-Flow Intake System may have on any warranty either expressed or implied by the vehicle manufacturer.

It has been determined that the Stillen Sportparts Hi-Flow Intake System 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 Stillen

Sportparts Hi-Flow Intake System 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 Stillen Sportparts Hi-Flow Intake 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 ARB with reason to suspect that the Hi-Flow Intake System will affect the durability of the emission control system, Stillen Sportparts 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.

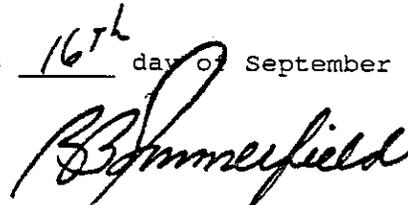
In addition to the foregoing, the ARB reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222, et seq.

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 STILLEN SPORTPARTS' HI-FLOW INTAKE 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 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 16<sup>th</sup> day of September 1998.



R. B. Summerfield, Chief  
Mobile Source Operations Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF STILLEN SPORTPARTS'  
HI-FLOW INTAKE 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 1998

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

Stillen Sportparts of 3176 Airway Avenue, Costa Mesa, California 92626 has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Hi-Flow Intake System designed for the following General Motors vehicles: 1988-95 (p/n PAC001) and 1996-98 (p/n VOR002 & VOR002R) Suburban, Pick-up, Tahoe, & Yukon, equipped with Vortec 5.0 and 5.7 liter engines.

Based on engineering evaluation and an examination of the On-Board Diagnostic II (OBD-II) system with the Hi-Flow Intake System installed, the staff concludes that the Stillen Sportparts Hi-Flow Intake System will not adversely affect exhaust emissions from vehicles for which the exemption is requested.

The staff recommends that Stillen Sportparts be granted an exemption as requested and that Executive Order D-436-4 be issued.

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CALIFORNIA CODE OF REGULATIONS

I. INTRODUCTION

Stillen Sportparts of 3176 Airway Avenue, Costa Mesa, California 92626 has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Hi-Flow Intake System designed for the following General Motors vehicles: 1988-95 (p/n PAC001) and 1996-98 (p/n VOR002 & VOR002R) Suburban, Pick-up, Tahoe, & Yukon, equipped with Vortec 5.0 and 5.7 liter engines.

II. CONCLUSIONS

Based on engineering evaluation and an examination of the On-Board Diagnostic II (OBD-II) system with the Hi-Flow Intake System installed, the staff concludes that Stillen Sportparts' Hi-Flow Intake System will not adversely affect exhaust emissions from the vehicles for which the exemption is requested.

III. RECOMMENDATION

The staff recommends that Stillen Sportparts be granted an exemption for their Hi-Flow Intake System for installation on the following General Motors vehicles: 1988-95 (p/n PAC001) and 1996-98 (p/n VOR002 & VOR002R) Suburban, Pick-up, Tahoe, & Yukon, equipped with Vortec 5.0 and 5.7 liter engines.

IV. HI-FLOW INTAKE SYSTEM DESCRIPTION

The Stillen Sportparts Hi-Flow Intake System has been specifically designed for installation on the following General Motors vehicles: 1988-95 (p/n PAC001) and 1996-98 (p/n VOR002 & VOR002R) Suburban, Pick-up, Tahoe, & Yukon, equipped with Vortec 5.0 and 5.7 liter engines. The system operates in conjunction with the original equipment manufacturer's (OEM) computer controlled fuel injection system and emission control system already certified with the stock engine, with the exception of the stock airbox and some intake tubing.

The intent of installing the Stillen Sportparts Hi-Flow Intake System is to increase its volumetric efficiency and 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 the Hi-Flow Intake System is less restrictive than the stock air filter. This allows more air to enter the engine, which is compensated by the vehicle engine control module with an increase in fuel flow, resulting in a higher power output.

The Hi-Flow Intake System consists of the following main components: cotton gauze open-element reusable air filter, intake system tubing, assorted brackets, and hardware. The filter element used in the Hi-Flow Intake System is an open-element, reusable cotton gauze unit, designed to be less restrictive than the stock air filter.

The installation of the kit does not require any major modifications to the stock motor, except for the modification of the factory air intake system to accommodate the Hi-Flow Intake System air filter and plumbing.

#### V. DISCUSSION OF THE HI-FLOW INTAKE SYSTEM

Similar systems have been tested and have shown to have only a slight influence on emissions, namely a marginal increase in NOx due to a leaning effect of the less restrictive intake system. The vehicle fuel system compensates for the lower restriction of the intake system, but there is usually a measurable (but not significant) increase in NOx. Certification emissions for this engine family were sufficiently below the standards (NOx in particular) to forego emissions testing for the Stillen Sportparts Hi-Flow Intake System. The evaporative emissions of the effected vehicles will not be a concern because the stock evaporative system is not directly affected by the installation of Hi-Flow Intake Kit. The only possible indirect influence to result from the lower restriction of the Hi-Flow Intake System would be a marginal decrease in manifold vacuum. However, at small throttle openings, the restriction presented by the throttle would outweigh any decrease in vacuum due to the less restrictive nature of the Hi-Flow Intake System. It is at low-throttle, high vacuum, driving conditions that the evaporative systems draw air through purge canisters for combustion in the engine.

Because the interaction with the stock GM OBD-II system was the only factor left unknown when installing the Hi-Flow Intake System on the

applicable vehicles, only OBD-II testing was required of Stillen Sportparts. A 1998 GM K-1500 Suburban 4WD with a 5.7L sequential multipoint fuel injected engine (WGMXA05.7186) was used for the evaluation of the Hi-Flow Intake System. The test vehicle was certified to medium-duty vehicle-3 low-emission vehicle standards and was equipped with OBD-II and an enhanced evaporative system. The dynamometer inertia weight and horsepower settings were 6,500-lbs and 16.1-hp, respectively. Testing consisted of two CVS-75 FTP's in the modified configuration to set all readiness codes. The ARB did not perform testing to confirm the test results submitted by the applicant.

Examination of the OBD II system showed the Stillen Sportparts Hi-Flow Intake System does not affect OBD II operation. Therefore, based on the test results, the staff concludes that the Stillen Sportparts Hi-Flow Intake System 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 Stillen Sportparts Hi-Flow Intake System 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.

Stillen Sportparts has submitted all the required information and fulfilled the requirements for an exemption.