

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-215-8
Relating to Exemptions Under Section 27156
of the Vehicle Code

EDELBROCK CORPORATION
Performer ECU Calibration Chip

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

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-5;

IT IS ORDERED AND RESOLVED: That the installation of the Performer ECU Calibration Chip manufactured by Edelbrock Corporation of 2700 California St., P.O. Box 2936, Torrance, California 90503-2936, has been found not to reduce the effectiveness of required motor vehicle pollution control devices and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 1988 to 1994 General Motors trucks equipped with a 4.3L engine as listed in Exhibit A.

This Executive Order is valid provided that installation instructions for the Performer ECU Calibration Chip will not recommend tuning the vehicle to specifications different from those submitted by the manufacturer.

Changes made to the design or operating conditions of the device, as exempted by the ARB, that adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of this device using an identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the ARB.

This Executive Order does not constitute any opinion as to the effect the use of this device may have on any warranty either expressed or implied by the vehicle manufacturer.

This Executive Order is granted based on results from emissions tests conducted in accordance with Cold-Start CVS-75 Federal Test Procedure. However, the ARB finds that reasonable grounds exist to believe that use of the Performer ECU Calibration Chip may adversely affect emissions of motor vehicles when operating under conditions outside the parameters of the previously prescribed test procedures. 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 Performer ECU Calibration Chip adversely affect 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 Performer ECU Calibration Chip will affect the durability of the emission control system, Edelbrock Corporation 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 EDEL Brock CORPORATION'S PERFORMER ECU CALIBRATION CHIP.

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.

Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

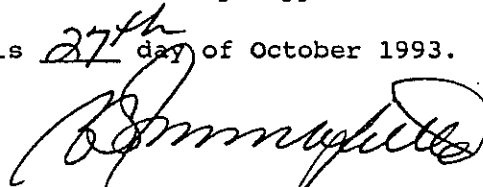
Section 43644 of the Health and Safety Code provides as follows:

"43644, (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the state board for certification of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been certified by the state board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this subdivision is a misdemeanor."

Any apparent violation of the conditions of this Executive Order may result in its rescission or submission to the Attorney General of California for such action as he deems advisable.

The Bureau of Automotive Repair will be notified by copy of this order.

Executed at El Monte, California, this 27th day of October 1993.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

Exhibit A

EDELBROCK CORP.
GM VEHICLE APPLICATION LIST

Performer Pro Chip P/N	Year	Model	Engine	Trans.	Cyl.
1301	1988	C/K Pick-Up	4.3L	Auto	6
1302	1988	C/K Pick-Up	4.3L	Std.	6
1301	1988	Astro/Safari	4.3L	Auto	6
1302	1988	Astro/Safari	4.3L	Std.	6
1301	1989	C/K Pick-Up	4.3L	Auto	6
1302	1989	C/K Pick-Up	4.3L	Std.	6
1303	1989	S10/S15 Pick-Up, Blazer	4.3L	Auto	6
1304	1989	S10/S15 Pick-Up, Blazer	4.3L	Std.	6
1301	1989	Astro/Safari	4.3L	Auto	6
1302	1989	Astro/Safari	4.3L	Std.	6
1301	1990	C/K Pick-Up	4.3L	Auto	6
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1303	1990	S10/S15 Pick-Up, Blazer	4.3L	Auto	6
1304	1990	S10/S15 Pick-Up, Blazer	4.3L	Std.	6
1305	1990	Astro/Safari	4.3L	Auto	6
1306	1990	Astro/Safari	4.3L	Std.	6
1303	1991	C/K Pick-Up	4.3L	Auto	6
1304	1991	C/K Pick-Up	4.3L	Std.	6
1305	1991	S10/S15 Pick-Up, Blazer	4.3L	Auto	6
1306	1991	S10/S15 Pick-Up, Blazer	4.3L	Std.	6
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1305	1992	Astro/Safari	4.3L	Auto	6
1306	1992	Astro/Safari	4.3L	Std.	6
1307	1993	C/K Pick-Up	4.3L	Auto	6
1308	1993	C/K Pick-Up	4.3L	Std.	6
1309	1993	S10/S15 Pick-Up, Blazer	4.3L	Auto	6
1310	1993	S10/S15 Pick-Up, Blazer	4.3L	Std.	6
1311	1993	Astro/Safari	4.3L	Auto	6
1312	1993	Astro/Safari	4.3L	Std.	6
1313	1994	C/K Pick-Up	4.3L	Auto	6
1314	1994	C/K Pick-Up	4.3L	Std.	6
1315	1994	S10/S15 Pick-Up, Blazer	4.3L	Auto	6
1316	1994	S10/S15 Pick-Up, Blazer	4.3L	Std.	6
1317	1994	Astro/Safari	4.3L	Auto	6
1318	1994	Astro/Safari	4.3L	Std.	6

State of California
AIR RESOURCES BOARD

EVALUATION OF EDELBROCK CORPORATION'S PERFORMER ECU CALIBRATION CHIP
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF
THE CALIFORNIA CODE OF REGULATIONS

October 1993

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by

Mobile Source Division
9528 Telstar Avenue
El Monte, CA 91731-2990

(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 the mention of trade names or commercial products constitute endorsement or recommendation for use.)

SUMMARY

Edelbrock Corporation has applied for an exemption from the prohibitions of Vehicle Code Section 27156 for their Performer ECU Calibration Chip. The Performer ECU Calibration Chip is a programmable read only memory (PROM) computer chip for installation on 1988 to 1994 General Motors trucks powered by a 4.3L gasoline engine. Edelbrock Corporation has submitted a completed application and all the required information, as well as exhaust emissions test data performed at the Edelbrock Emissions Laboratory.

Based on the submitted information and results of the emissions tests performed at the Edelbrock Emissions Laboratory, the staff concludes that the installation of Edelbrock Corporation's Performer ECU Calibration Chip will not adversely affect exhaust emissions on the specified vehicles.

The staff recommends Edelbrock Corporation be granted an exemption as requested and that Executive Order D-215-8 be issued.

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EVALUATION OF EDELBROCK CORPORATION'S PERFORMER ECU CALIBRATION CHIP FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

I. INTRODUCTION

Edelbrock Corporation of 2700 California St., Torrance, California 90509-2936, applied for an exemption from the prohibitions of Vehicle Code Section 27156 for their Performer ECU Calibration Chip. The Performer ECU Calibration Chip is a programmable read only memory (PROM) computer chip, for installation on 1988 to 1994 General Motors trucks powered by a 4.3L gasoline engine. Edelbrock Corporation has submitted a completed application and all the required information, as well as exhaust emissions test data performed at the Edelbrock Emissions Laboratory on a 1990 4.3L General Motors S-10 Blazer.

II. CONCLUSION

Based on the submitted information and the results from exhaust emissions test performed at the Edelbrock Emissions Laboratory, the staff concludes that Edelbrock Corporation's Performer ECU Calibration Chip will not adversely affect exhaust emissions from vehicles for which the exemption is requested.

III. RECOMMENDATION

The staff recommends that Edelbrock Corporation be granted an exemption as requested and that Executive Order D-215-8 be issued.

IV. PERFORMER ECU CALIBRATION CHIP DESCRIPTION

Many computer controlled vehicles are equipped with an electronic control unit (ECU). The ECU incorporates a programmable read only memory (PROM) computer chip which contains the operational data needed for proper engine operation. Engine sensors such as temperature, vacuum, and oxygen are fed directly into the ECU where they are analyzed and compared to the

operational data programmed inside the PROM. The PROM sends out signals for appropriate adjustments to be made in the engine's operation in response to any changing conditions. For example, a PROM will make adjustments to the spark and fuel delivery sequence of the engine according to its programming. Thus, by modifying data in the PROM, spark timing and fuel delivery can be adjusted.

Edelbrock Corporation's Performer ECU Calibration Chip modifies the spark tables and fuel curves of the original equipment manufacturer's (OEM) PROM under full and part throttle operation. Therefore, the PROM monitors and modifies the vehicle operation under all modes (open & closed loop). Edelbrock Corporation does not recommend the use of premium octane fuel to obtain optimum performance and avoid knocking which may be caused by advanced timing. Application list is shown in Appendix A.

V. DISCUSSION OF THE PERFORMER ECU CALIBRATION CHIP

A 1990 4.3L General Motors S-10 Blazer, was used as the test vehicle to evaluate the effect of the Performer ECU Calibration Chip on tailpipe emissions. The test program consisted of one (cold start) CVS-75 FTP on the vehicle in the modified configuration. The results of the exhaust emissions test performed at the Edelbrock Emissions Laboratory are shown in Table 1.

Table 1

CVS-75 TEST RESULTS

(Edelbrock Emissions Laboratory)

	<u>HC</u>	<u>CO</u>	<u>NOx</u>
	(grams/mile)		
Device	0.25	2.25	0.45
Standards	0.50	9.0	1.0
Deterioration factor (D.F.)	1.081	1.450	1.0
D.F. adjusted	0.27	3.26	0.45

The CVS-75 emissions test results at Edelbrock Emissions Laboratory indicate that the HC, CO and NOx emissions of the vehicle, with the Performer PROM chip installed, are below the emission standards set for that engine family. The Air Resources Board did not conduct confirmatory testing to validate the emission test results submitted by Edelbrock Corporation.

Edelbrock Corporation has submitted all the required information and fulfilled the requirements for an exemption.

Appendix A

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