State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-422
Relating to Exemptions Under Section 27156
of the Vehicle Code

EN-OVATION TECHNOLOGY, INC.
ENVIRONMENTAL VALVE

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 Environmental Valve (En-Valve) manufactured by En-0vation Technology, Inc. of 963 E. Detroit Street, Chandler, Arizona 85225, 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 installation on 1994 and older model-year gasoline vehicles excluding those vehicles certified with the On-Board Diagnostic II (OBD II) system.

This exemption shall not apply to any device, apparatus, or mechanism advertised, offered for sale or sold with, or installed on, a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

This Executive Order is valid provided that the installation instructions for this device will not recommend tuning the vehicle to specifications different from those submitted by the system manufacturer.

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

Marketing of this device using any 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 Air Resources Board.

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

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 EN-OVATION TECHNOLOGY, INC.'S ENVIRONMENTAL VALVE.

No claims 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 20th day of March 1997.

R. B. Summerfield, Chief
Mobile Source Operations Division

State of California
AIR RESOURCES BOARD

EVALUATION OF EN-OVATION TECHNOLOGY, INC'S. ENVIRONMENTAL VALVE (EN-VALVE) DEVICE FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

March, 1997

State of California
AIR RESOURCES BOARD

EVALUATION OF EN-OVATION TECHNOLOGY, INC'S ENVIRONMENTAL VALVE (EN-VALVE) DEVICE FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

by

Mobile Source Operations Division

State of California
Air Resources Board
9528 Telstar Avenue
El Monte, CA 91734-8001

(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

En-Ovation Technology, Inc. of 963 E. Detroit Street, Chandler, Arizona 85225, has applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code for the Environmental Valve (En-Valve) The device is designed for installation on 1994 and older model-year gasoline vehicles excluding those vehicles certified with the On-Board Diagnostic II (OBD II) system.

En-Ovation Technology, Inc. has submitted a complete application with all the required information. This device is used in place of the PCV valve to filter crankcase emissions by removing all blowby from the crankcase and allows the engine to run at a leaner air/fuel mixture. Based on emission testing performed on two vehicles (a 1993 Honda Accord and a 1994 Chevrolet Pick-up) by En-Ovation Technology, Inc., the staff believes that the En-Ovation device will not have any adverse effects on the exhaust emissions from gasoline vehicles excluding those vehicles certified with the On-Board Diagnostic II (OBD II) system.

The staff recommends that the En-Valve device be exempted from the prohibitions in Vehicle Code Section 27156 and that Executive Order D-422 be issued.

TABLE OF CONTENTS

		Page Number
SUMMARY		i
CONTENTS		ii
I.	INTRODUCTION	1
II.	CONCLUSION	1
III.	RECOMMENDATION	1
IV.	DEVICE DESCRIPTION	2
V.	DISCUSSION	2
APPENDIX		4
	INSTALLATION INSTRUCTIONS	

EVALUATION OF EN-OVATION TECHNOLOGY, INC.'S ENVIRONMENTAL VALVE DEVICE 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

En-Ovation Technology, Inc. of 963 E. Detroit Street, Chandler, Arizona 85225, has applied for an exemption from the prohibitions of Vehicle Code Section (VC) 27156 for the Environmental Valve (En-Valve) device which is designed for installation on 1994 and older model-year gasoline powered vehicles excluding those vehicles certified with the On-Board Diagnostic II (OBD II) system. The applicant submitted installation instructions and specifications of the device for our evaluation.

II. CONCLUSIONS

Based on the emission test results performed on a 1993 Honda Accord and a 1994 Chevrolet pick-up truck along with information submitted, the staff has determined the En-Valve will not have any adverse effects on the exhaust emissions from gasoline vehicles excluding those vehicles certified with the On-Board Diagnostic II (OBD II) system.

III. RECOMMENDATION

The staff recommends that En-Ovation Technology, Inc. be granted an exemption from the prohibitions in California Vehicle Code Section 27156 for the En-Valve device and that Executive Order D-422 be issued.

IV. DEVICE DESCRIPTION

The En-Valve is an add-on device used with the PCV system to filter crankcase emissions. The En-Valve is a plastic cylindrical device approximately 2 inches long with a 1 inch outer diameter. The En-Valve replaces the original equipment PCV valve. The device has two chambers separated by a flexible fluorocarbon disk that acts as a valve and creates a two to three inch vacuum in the crankcase. The applicant claims this removes all blowby and allows the engine to run at a leaner air-fuel mixture. This constant vacuum is created by disconnecting and capping the PCV fresh air hose inlet located near the air filter. The device is completely automatic and has no adjustments. It opens, modulates and closes according to the blowby that is present in the crankcase. The applicant claims that the En-Valve has the capacity to breathe five times more in volume than the original PCV valve when needed. Installation instructions are shown in the Appendix.

V. DISCUSSION

En-Ovation Technology, Inc. claims that using their device creates a certain amount of vacuum in the crankcase and crankcase reservoir. As long as this vacuum is present no blowby exist in the crankcase regardless of the condition or operating mode of the engine. The applicant states this creates a much cleaner crankcase environment for a cleaner burning engine and more efficient air/fuel mixture by eliminating the presence of blowby. The applicant further states that the removal of this blowby allows the engine to run more efficiently and helps reduce exhaust emissions. The Air Resources Board did not perform tests to confirm these claims.

Two vehicles were selected to evaluate the En-Ovation Technology, Inc.'s En-Valve device. A 1994 Chevrolet pick-up truck with a 4.3L engine and a 1993 Honda Accord with a 2.2L engine.

One cold-start CVS-75 Federal Test Procedure (FTP) was conducted on each vehicle to determine emissions of hydrocarbons (HC), carbon monoxide (CO) and oxides of nitrogen (NOx). The emission test were conducted at Environmental Testing Corporation in Orange, California. The Air Resources Board did not perform confirmatory testing. A summary of the test results are shown below:

Environmental Testing Corporation
(Based on Cold-Start CVS-75 FTP)

On a 1994 Chevrolet Pick-up with a 4.3L Engine
Exhaust Emission Test Results (gm/mi)

	Non-Methane Hydrocarbons	Carbon Monoxide	Nitrogen Oxides
With Device	0.198	4.824	0.586
1994 Standard	0.50	9.0	1.0

Exhaust Emission Test Results
On a 1993 Honda Accord with a 2.2L Engine

With Device	0.112	1.680	0.180
1993 Standard	0.25	3.4	0.4

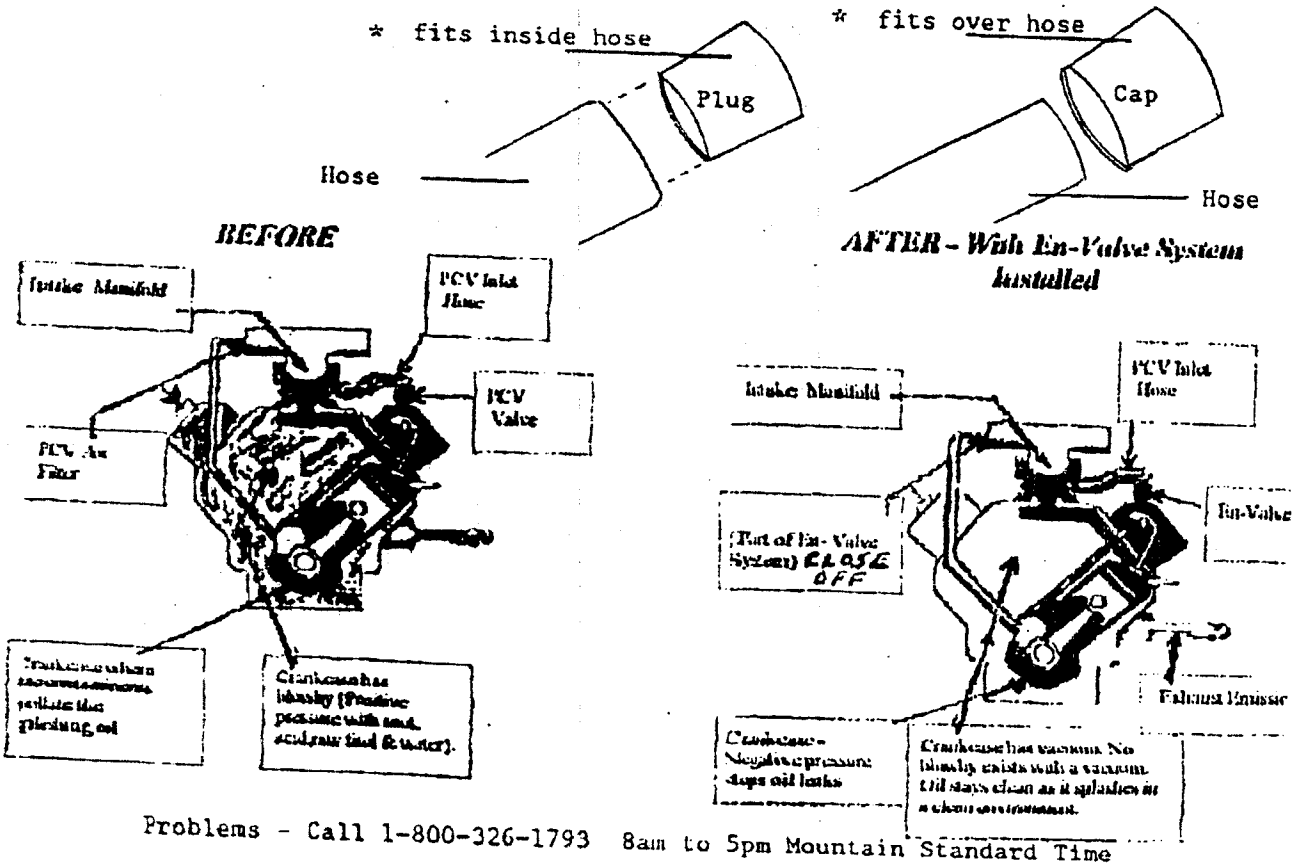
The test results from the exhaust emission tests show that the two vehicles with the En-Valve are below the new vehicle standards for the model years indicated. Therefore, based on the test results, the staff concludes that the installation of En-Ovation Technology, Inc.'s En-Valve will not have an adverse effect on exhaust emissions on the vehicles for which the exemption is requested. En-Ovation Technology, Inc. has submitted all the required information and fulfilled the requirements for an exemption.

APPENDIX

INSTALLATION INSTRUCTIONS

1. Remove PCV valve and install EN-VALVE in its place. PCV valve is usually located on one of the rocker covers. On Chrysler Products, use plastic adapter provided in between EN-VALVE and grommet in rocker cover. On some Cadillac, Buick and Pontiac, PCV valve in located in valve lifter housing.
2. Locate PCV fresh air hose (usually found on opposite rocker cover) and disconnect hose from either the filter or the pipe nipple. Install one of the plug / cap units provided* to block all air from passing through PCV fresh air hose. It is important that this system creates a vacuum in the crankcase and blocking the fresh air hose is a must.
3. To be sure that a vacuum exists in the crankcase, a balloon is also included in the kit. To check for proper vacuum, install the balloon over the oil dipstick tube (dipstick removed for the test). If the balloon is collapsed when engine is started, system is OK.

- * each cap/plug serves a dual purpose. It is ½"- 5/8" - ¾" on the inside for use as a cap. It is ½ -9/16",or 5/8"- 11/16",or ¾"-13/16" use as a plug. This combination of sizes covers any PCV fresh air hose/pipe configuration.



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