

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-78-1
Relating to Exemptions under Section 27156
of the Vehicle Code

STARLITE PRODUCTS CO.
STARLITE SELF-CLEANING CRANKCASE SMOG CONTROL DEVICE

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 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 Starlite Self-Cleaning Crankcase Smog Control Device manufactured by Starlite Products Co. of 220 E. Foothill Blvd., P.O. Box 1046, Monrovia, CA 91016, 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 1974 model-year and earlier gasoline operated vehicles equipped with PCV valves.

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different from those submitted by the device 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 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 Air Resources Board. Exemption of a kit shall not be construed as an exemption to sell, offer for sale, or advertise any component of a kit as an individual device.

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 THE STARLITE SELF-CLEANING CRANKCASE SMOG CONTROL DEVICE.

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CRANKCASE SMOG CONTROL DEVICE

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No claim of any kind, such as "Approved by Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communication.

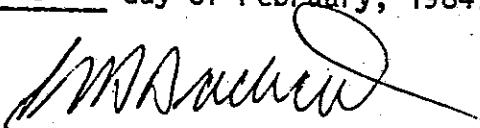
Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

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 will be submitted to the Attorney General of California for such action as he deems advisable.

Executed at El Monte, California, this 6th day of February, 1984.


K. D. Drachand, Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF STARLITE PRODUCT COMPANY'S STARLITE SELF-CLEANING
CRANKCASE SMOG CONTROL DEVICE FOR EXEMPTION FROM THE PROHIBITIONS
OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222,
TITLE 13 OF THE CALIFORNIA ADMINISTRATIVE CODE

JANUARY, 1984

Issue Date: January, 1984

EVALUATION OF STARLITE PRODUCT COMPANY'S STARLITE SELF-CLEANING
CRANKCASE SMOG CONTROL DEVICE FOR EXEMPTION FROM THE PROHIBITIONS
OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222,
TITLE 13 OF THE CALIFORNIA ADMINISTRATIVE CODE

by

Mobile Source Division

State of California
Air Resources Board
9528 Telstar Avenue
El Monte, CA 91770

(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

Starlite Products Co. of Monrovia, California applied for exemption from the prohibitions of Section 27156 of the California Vehicle Code for their Starlite Self-Cleaning Crankcase Smog Control device. The applicant has requested that exemption be granted for all 1974 and earlier model-year gasoline operated vehicles equipped with PCV valves.

The Starlite Self-Cleaning Crankcase Smog Control device is intended as a direct replacement for the existing PCV valve on the vehicles requested.

The ARB conducted comparative emission and fuel economy tests on the device using a 1973, 6-cylinder, 258 CID, AMC Hornet test vehicle supplied by the applicant.

Based upon the test results and the test vehicle operating condition, the ARB staff found that the Starlite Self-Cleaning Crankcase Smog Control device has no effect on emissions and fuel economy of the test vehicle, and therefore recommended that the ARB Executive Order D-78-1 be issued.

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State of California
AIR RESOURCES BOARD

January, 1984

Staff Report

Evaluation of Starlite Products Company's Starlite Self-Cleaning
Crankcase Smog Control Device for Exemption from the Prohibitions
of Vehicle Code Section 27156 in Accordance with Section 2222,
Title 13 of the California Administrative Code

I. INTRODUCTION

Starlite Products Co., of 220 East Foothill Boulevard, P.O. Box 1046, Monrovia, CA 91016, has submitted an application requesting an exemption from the prohibitions of Section 27156 of the California Vehicle Code for its Starlite Self-Cleaning Crankcase Smog Control device. The device is designed for installation on all 1974 and earlier model-year gasoline operated vehicles equipped with positive crankcase ventilation (PCV) valves.

II. CONCLUSION

The test results show that the emission levels of the 1973 test vehicle were typical of old in-use vehicle. The use of the Starlite Self-Cleaning Crankcase Smog Control device had no adverse effect on vehicular emissions.

III. RECOMMENDATION

Based on the information submitted and the results from the ARB's confirmatory testing, the staff recommends that the Board exempt the Starlite Self-Cleaning Crankcase Smog Control device from the prohibitions of Vehicle Code Section 27156. The staff, therefore, recommends the issuance of Executive Order D-78-1.

IV. DEVICE DESCRIPTION

The device (Figure 1) is designed to replace the positive crankcase ventilation (PCV) valve on 1974 and earlier model vehicles. The applicant claims that this device also works as a self-cleaning filter operated automatically by the moving lever arm that responds to stop and go motion of the vehicle. A coil spring is positioned inside the device housing. The coils are separated by a number of ribbon spacers or shims sufficient in thickness to provide space for the crankcase fumes to pass through. The fumes are then recirculated through the carburetor in the same manner as with presently installed PCV valve. Snap-on orifices with openings varying in size are available. To determine the correct size of orifice, thereby providing proper engine crankcase ventilation, the oil filler cap is removed and the amount of fumes being emitted from the oil filler pipe opening is observed. A snap-on orifice with a suitable size is chosen for the device. The orifice will allow all the crankcase fumes (blow-by gas) to be drawn into the intake manifold without overflow from the oil filler pipe opening.

The applicant supplies four orifices with each device. The sizes are as follows: 3/32 in., 1/8 in., 5/32 in., and 3/16 in. in diameter. The applicant recommended that, to double check that the proper orifice size has been selected, the palm of the hand should be placed over the oil filler pipe opening and noting the presence of vacuum effect (suction) during engine idling condition.

V. EMISSION AND FUEL ECONOMY TEST

The applicant procured a test vehicle and requested the ARB to provide the emission and fuel economy tests for the device.

The comparative emission tests (baseline versus with-device tests) were conducted in accordance with the cold-start CVS-75 test procedure; then the test data was recalculated to obtain the CVS-72 test results. The baseline tests were run with the vehicle engine set as close as possible to the manufacturer's specifications. A 1973, 6-cylinder, 258 CID, AMC Hornet with automatic transmission and 180,071 miles on its odometer was used for the device evaluation.

VI. TEST RESULTS

The test results are shown in the following tables:

Table 1
CVS-72 Test

<u>Test Condition</u>	<u>Exhaust Emissions, gm/mi</u>			<u>Fuel Economy MPG</u>
	<u>HC</u>	<u>CO</u>	<u>NOx</u>	
Baseline	4.64	72.28	1.63	14.01
Device Test	3.66	35.01	2.09	14.65

Table 2
Highway Fuel Economy Test

<u>Test Condition</u>	<u>Exhaust Emissions, gm/mi</u>			<u>Fuel Economy MPG</u>
	<u>HC</u>	<u>CO</u>	<u>NOx</u>	
Baseline	2.42	48.16	2.33	21.60
Device Test	1.83	28.68	2.33	20.70

NOTE: California exhaust emission standard (CVS-72) for 1973 passenger vehicles are given as follows:

HC = 3.2 grams/mile
CO = 39.0 grams/mile
NOx = 3.0 grams/mile

VII. DISCUSSION OF TEST RESULTS

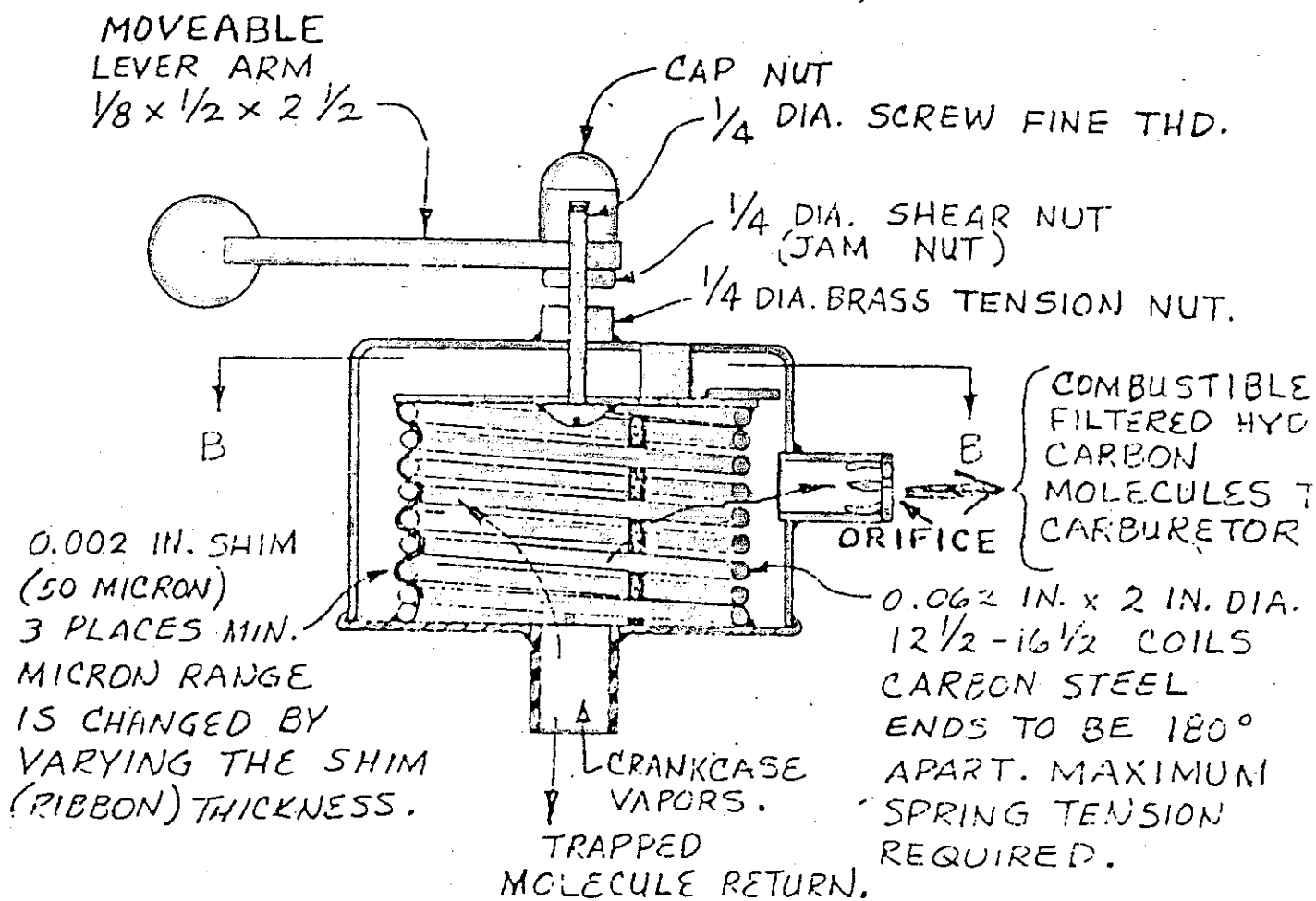
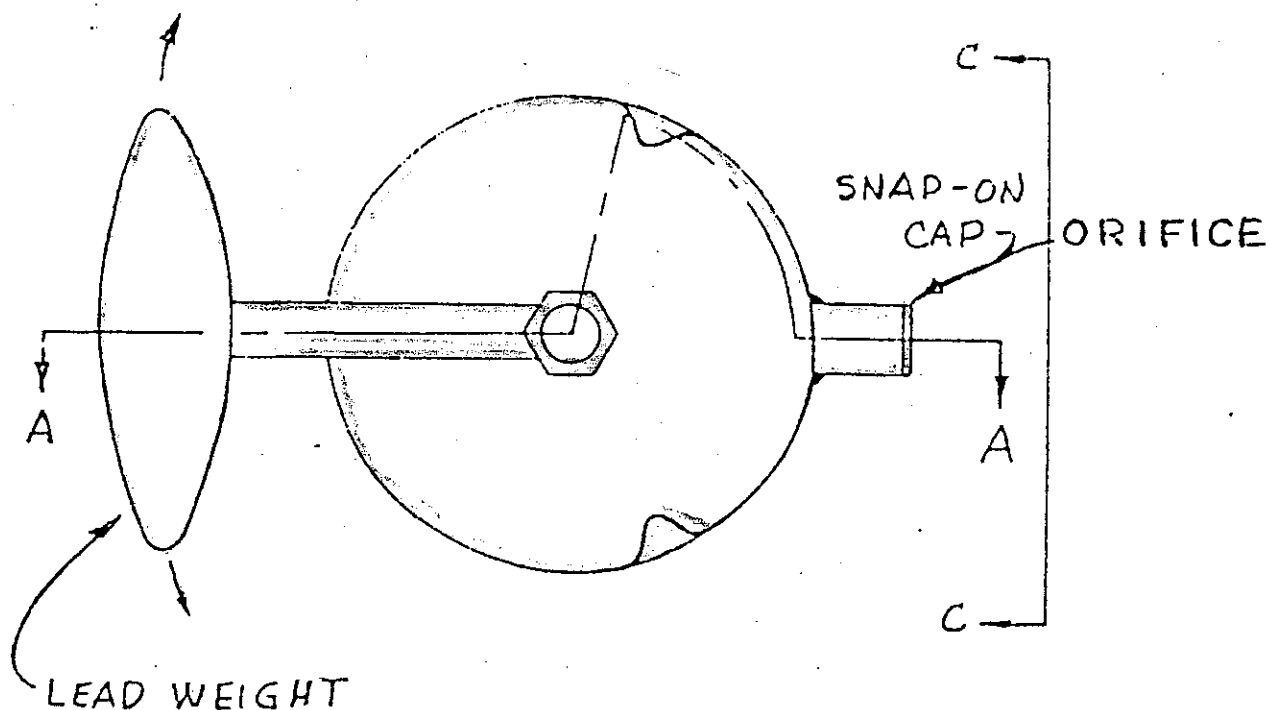
Starlite Products Co., submitted several testimonials concerning the performance of the Starlite Self-Cleaning Crankcase Smog Control device.

The applicant spent some time looking for a suitable test vehicle to no avail. Finally, the ARB agreed to test the only one which was available to the applicant. The vehicle was pre-checked, pre-conditioned and tested for emissions and fuel economy both on baseline and with-device installed configuration.

Since the test vehicle did not have an OEM carburetor, the baseline test was not valid. The with-device test data indicate that the emissions were typical of a used 1973 vehicle. The use of the Starlite Self-Cleaning Crankcase Smog Control device appeared to have little effect on emissions and fuel economy of a typical in-use vehicle.

APPENDIX

DEVICE ASSEMBLY DETAIL



VIEW A-A

U.S. Patent No.
378498 3494339