

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-9-2
Relating to Exemptions under Section 27156
of the Vehicle Code

BALL-MATIC CORPORATION
"BALL-MATIC AIR INJECTOR"

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 39023 of the Health and Safety Code;

IT IS ORDERED AND RESOLVED: That the installation of the "Ball-Matic Air Injector" device manufactured and marketed by Ball-Matic Corporation of 874 North Main Street, Orange, California 92668 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 1975 and older model-year vehicles.

This device consists of an air modulating valve with a filter and is inserted between the PCV valve and the intake manifold. The valve permits a small amount of additional air to enter the PCV line. This device can be identified by the name "Ball-Matic Air injector" permanently stamped at the bottom of the device housing.

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

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 "BALL-MATIC AIR INJECTOR" DEVICE.

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 unlawful, untrue or misleading advertising, and Section 17534 makes violation punishable as a misdemeanor.

Sections 39130 and 39184 of the Health and Safety Code provide as follows:

"39130. No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for certification of a device, represent, any device as a motor vehicle pollution control device unless that device has been certified by the 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 section is a misdemeanor."

"39184. (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for accreditation 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 accredited by the board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as an accredited device which, in fact, is not an accredited 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.

Executive Order D-9-1, dated September 3, 1974, is superseded and of no further force and effect.

Executed at Sacramento, California, this 22nd day of September, 1975.

Original signed by:
WILLIAM H. LEWIS, JR.
Executive Officer

State of California

AIR RESOURCES BOARD

September 10, 1975

Staff Report

Evaluation of the Ball-Matic Corporation
"Ball-Matic Air Injector" device for Compliance
with the Requirements of Section 27156 of the
California Vehicle Code

I. Introduction

The Ball-Matic Corporation of 1429 Palo Loma, Orange, California 92668 has submitted an application requesting an extension of a previously granted exemption from the prohibitions of Section 27156 of the California Vehicle Code for the "Ball-Matic Air Injector" for 1975 and older model-year vehicles. Section 27156 of the Vehicle Code prohibits the advertisement, sale, and installation of any device or mechanism which reduces the effectiveness of the motor vehicle emission control system.

The Air Resources Board (ARB) staff had evaluated this device previously (Staff Report dated August 16, 1974) and found the device had no adverse effects on the emission control system. Executive Order D-9-1 was issued on September 3, 1975 to Ball-Matic Corporation for its "Ball-Matic Air Injector" for 1974 and older model-year vehicles.

II. System Description and Function

The "Ball-Matic" device consists of a filter, plastic ball, spring, and a metal housing with ports used to insert the device between the PCV valve and carburetor. The name "Ball-Matic Air Injector" is printed

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on a durable label pasted to the bottom of the device housing. According to the applicant, this device is designed to improve fuel economy and engine performance.

The device has a modulating poppet which meters the quantity of air bleed into the engine. Engine manifold vacuum determines the degree of poppet opening. Maximum air flow occurs at low vacuum (high speed and wide open throttle) and minimum flow occurs at high vacuum (idle and deceleration). When the engine is not operating, the poppet is in the open position.

III. System Evaluation

A. Air Resources Board Laboratory Data

In order to determine the effect of this device on the 1975 model-year vehicles equipped with catalytic converters the laboratory performed CVS-75 emission tests on four vehicles. The vehicles chosen all had small engines since these are most susceptible to the "air bleed" type of add-on devices. In addition the standards for the 1975 model vehicles are much more stringent than those for the 1975 models. The leaning effect during normal operation, cold starts and on NOx emissions were additional factor for consideration.

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The emission results of these tests are as follows:

<u>Vehicle</u>	<u>Emissions (grams/mile)</u>						<u>Fuel Economy miles/gal</u>		
	<u>Baseline</u>			<u>With Device</u>			<u>Baseline</u>	<u>With Device</u>	
	<u>HC</u>	<u>CO</u>	<u>NOx</u>	<u>HC</u>	<u>CO</u>	<u>NOx</u>			
1975 Ford Pinto	(1)	0.3	2.6	2.0	0.3	2.6	2.1	18.0	17.8
	(2)	0.2	2.4	1.1	0.2	3.0	1.1	13.6	14.7
	(2)	0.2	2.9	1.0	0.3	3.7	1.0	13.8	13.8
1975 Datsun		0.3	3.0	2.0	0.3	1.5	1.7	20.1	22.2
1975 Vega		0.4	6.9	1.6	0.5	6.2	1.6	17.2	17.0
Overall Averages		0.3	4.0	1.5	0.3	3.4	1.5	16.5	17.1

- (1) License # 194LVF
- (2) License # 195LVF (2 tests)

These results are within experimental variations although some anomalies were apparent. The average of all available data indicated there was no significant effect on emissions with the device.

The Laboratory also performed a flow test on the device using an engine dynamometer (See Appendix). The maximum flow rate was 0.1 cubic feet per minute at 2 inches of Mercury intake manifold vacuum. This flow has previously been determined to have a negligible effect on exhaust emissions on older model vehicles and also appears to have a negligible effect on the 1975 models.

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IV. Conclusions and Recommendations

The staff is of the opinion that the installation of this device would not affect the performance of the emission control system. Therefore, the staff recommends that the Ball-Matic Corporation exemption from the provisions of Section 27156 of the Vehicle Code be extended to include the 1975 model year vehicles.