

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-54-11
Relating to Exemptions under Section 27156
of the Vehicle Code

PRESTOLITE ELECTRICAL DIVISION OF ELTRA CORPORATION
"B.I.D." BREAKERLESS INDUCTIVE DISCHARGE IGNITION 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 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 "B.I.D." Breakerless Inductive Discharge Ignition System manufactured by the Prestolite Electrical Division, 511 Hamilton St., Toledo, Ohio 43694 has been found to not 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 1979 and older model motorcycles equipped with conventional lettering ignition systems as specified below.

<u>Kit Number</u>	<u>Motorcycle Model</u>
70-54	Suzuki Models 550, 750, 850 and 1000

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 PRESTOLITE "B.I.D." IGNITION SYSTEM.

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 26th day of December, 1979.

K.D. Drachand/RJK
K. D. Drachand, Acting Chief
Mobile Source Control Division

State of California
AIR RESOURCES BOARD

STAFF REPORT

December 4, 1979

Evaluation of the Prestolite Electrical
Division's "B.I.D." Ignition System for
Motorcycles in Accordance with Section
2222, Title 13 of the California
Administrative Code

I. Introduction

Prestolite Electrical Division of Eltra Corporation, 511 Hamilton Street, Toledo, Ohio 43694 has filed an application for an exemption from the prohibitions of the California Vehicle Code Section 27156 for its "B.I.D." electronic ignition kits for motorcycles.

Since motorcycles manufactured after January 1, 1978 are required to meet exhaust emission standards, the evaluation of the kits in this report is limited to 1978 and 1979 model motorcycles only. Air Resources Board procedure, "Criteria For Aftermarket Ignition System Modifications", adopted on November 4, 1977, has been used to evaluate the kits.

II. System Description and Function

The purpose of this aftermarket retrofit kit is to convert a conventional "Kettering" motorcycle ignition system to an electronic breakerless inductive discharge (B.I.D.) ignition system. The result is that the primary circuit is maintenance free after the

kit installation. Periodic point and condenser replacement would not be necessary. The system utilizes a resonant magnetic pick-up coil and a metallic plated "toothed" trigger wheel (reluctor) which is mounted concentric to the distributor shaft. The reluctor reduces the magnetic field strength in the pick-up intermittently when each tooth passes the coil. This is detected by a demodulator circuit. The output of the demodulator is then amplified to turn a power transistor on and off which interrupts the coil primary current flow, inducing a high voltage in the secondary coil. The vehicle application for the kit is as follows for 1979 and older model motorcycles.

<u>Kit Number</u>	<u>Motorcycle Model</u>
70-54	Suzuki 550, 750, 850 and 1000

III. System Evaluation

The applicant submitted bench test data for the above kits. A summary of the test results are given in the attached Table I.

IV. Discussion

The variability of the test data between the baseline and the device in the main, did not exceed permissible limits. The only exceptions were a 2.0° advance at 1800 RPM and a 31.3% increase in spark energy at 300 RPM. Based on engineering evaluation and previous experience, these variations should not effect emissions. The 2° advance was only at one point and the effect is negligible. The increase in spark energy would have no adverse effects unless it was due to excessive increase in voltage which might result in arcing in the ignition system. Since the increased voltage from 900 to 980 was still less than the OEM 1000 volts at 100 RPM, the system can tolerate the increased voltage.

V. Applicant's Claims

The applicant makes the following four benefit claims for the ignition kits:

1. Saves fuel because the bike is always tuned-up.
2. Saves maintenance because Prestolite's electronic ignition is composed of maintenance-free components.
3. Saves space because the electronic components are custom-engineered to replace existing parts.
4. Saves money because they'll never need an ignition tune-up again.

The applicant has submitted no data to substantiate the above claims. However, since the electronic ignition system replaces the points and condenser, there is no need for the usual replacement of these components. There is, therefore, some credence to their claims. However, they are somewhat exaggerated since even with electronic ignition systems some maintenance and an occasional tune-up is still required. The spark plugs need changing and the carburetor needs periodic servicing. Some fuel may be saved if the owner is in the habit of running his vehicle with worn points. Removing the points would help him conserve fuel.

VI. Conclusion and Recommendation

Based on the test data and other information submitted by the applicant, the staff is of the opinion that the Prestolite "B.I.D." Ignition System for motoryccles should have no adverse effects on emissions. The staff, therefore, recommends approval of Executive Order D-54-II.