

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-206  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

IVECO TRUCKS OF NORTH AMERICA, INC.  
8060.24 Heavy-Duty Diesel Engine Design Modification Package

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 engine design modification package for 1983 model year 8060.24 Iveco Trucks heavy-duty diesel engine has been found not to reduce the effectiveness of required motor vehicle pollution control devices. The modification will consist of replacing the original fuel injectors and spring valve caps, retarding the static injection timing and resetting the low fuel pump setting. This modification (parts replacement and adjustments) is hereby exempt from the prohibitions of Vehicle Code Section 27156.

This Executive Order is valid provided that installation instructions for this engine design modification package 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 engine design modification package 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 modification package using an identification other than that shown in this Executive Order or marketing of this modification package 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 the use of this modification package 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 IVECO DIESEL TRUCK ENGINE DESIGN MODIFICATION PACKAGE.

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

Executed at El Monte, California, this 12<sup>th</sup> day of October, 1990.



R. B. Summerfield  
Assistant Division Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

Evaluation of Iveco Trucks of North America, Inc. Engine Design Modification  
Package for 1983 Model Year 8060.24 Heavy Duty Diesel Engine for  
Exemption From the Prohibitions in Vehicle Code Section 27156 in Accordance  
with Section 2222, Title 13, of the California Code of Regulations

October 1990

Evaluation of Iveco Trucks of North America, Inc. Engine Design Modification  
Package for 1983 Model Year 8060.24 Heavy Duty Diesel Engine For Exemption  
From the Prohibitions in Vehicle Code Section 27156 in Accordance with  
Section 2222, Title 13, of the California Code of Regulations

by

Mobile Source Division

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Date of Issue: October 1990

(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

Iveco Trucks of North America, Inc. (IVECO) has applied for an exemption from the prohibitions of Vehicle Code Section 27156 for their Engine Design Modification Package designed to improve the 1983 Iveco 8060.24 model heavy-duty diesel engines by using components from the 1989-1990 California certified configuration. The purpose of this modification, according to IVECO is to improve fuel economy and reduce visible exhaust smoke levels.

The staff reviewed IVECO'S certification documents to ensure that the components used in the engine modification are those parts used in 1989-1990 California certified engines. Based on the submitted information, staff recommends that IVECO be granted an exemption and that Executive Order D-206 be issued.

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EVALUATION OF IVECO TRUCKS OF NORTH AMERICA, INC. ENGINE DESIGN MODIFICATION PACKAGE FOR 1983 MODEL YEAR 8060.24 HEAVY DUTY DIESEL ENGINE FOR EXEMPTION FROM THE PROHIBITIONS IN VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS.

I. INTRODUCTION

Iveco Trucks of North America, Inc. (IVECO), of 777 American Drive, Bensalem, Pennsylvania 19020 has requested an exemption from the prohibitions of California Vehicle Code Section 27156 for an engine design modification program. IVECO proposes to offer an engine design modification package which will improve the 1983 model 8060.24 heavy-duty diesel engine by utilizing some components of the 1989-1990 California certified 8060.25 and 8060.45 engines. The purpose of the modification, according to IVECO, is to improve fuel economy and reduce visible exhaust smoke levels. IVECO submitted information on the proposed modifications and emission test results which show emission levels at original certification and after the engine design modification was implemented.

II. CONCLUSIONS

Based on the information submitted, staff has determined that the parts to be used in the engine modification are those designated for use on 1989-1990 California certified engines. These newer engines conform to emission standards more stringent than the 1983 model engine. The emission test data submitted by IVECO show the emission levels of 1983 models with the engine design modification package installed are well below the California emission standards for the 1983 model year. Since the modification will upgrade the performance and emission levels of the 1983 8060.24 California certified engines, staff concludes there will be no adverse effect on emissions from the modification as proposed by IVECO.

### III. RECOMMENDATION

The staff is of the opinion that the IVECO engine design modification proposed for its 1983 model year 8060.24 engine will not have any adverse effect on emissions. The staff, therefore, recommends that Executive Order No. D-206 be adopted.

### IV. 8060.24 Engine Modification Description

Under its engine design modification package, IVECO proposes to replace certain 1983 OEM engine parts with components utilized on 1989-1990 model year California certified engines. The parts that will be used in the engine modification are fuel injectors (part number 4842812) and spring valve caps (part number 98427044). The spring valve caps will only be used on those engines equipped with piston part number 4828905 as part of improvement B stated in IVECO'S letter. Piston part number 4828905 is used on engines that have been rebuilt and have had the original pistons replaced. Engines equipped with the original pistons (part number 4801962) will not require the spring valve cap replacement. Along with these part replacements, static injection timing will be retarded from 17 degrees to 15 degrees BTDC and the low fuel pump will be reset from 40.5 to 32.7 (cc/1000 strokes) to reduce exhaust smoke emissions.

### V. DISCUSSION

Per Air Resources Board (ARB) engine change policy (ARB Mail Out No. 81-040) pertaining to heavy-duty vehicles, an engine which is rebuilt to non-OEM configuration must be reviewed by the ARB and receive a written exemption prior to rebuild.

IVECO has submitted the following test data to show that the engine modification will have no adverse effects on emissions.



Summary of Emissions Test Results

|        | <u>Original<br/>Certification</u> | <u>After<br/>Improvement A</u> | <u>After<br/>Improvement B</u> | <u>1983<br/>Limits<br/>California</u> |
|--------|-----------------------------------|--------------------------------|--------------------------------|---------------------------------------|
| HC     | 0.81                              | 0.42                           | 0.42                           | 1.0                                   |
| CO     | 2.61                              | 1.72                           | 3.49                           | 25.0                                  |
| NOx    | 4.59                              | 4.58                           | 4.46                           | 5.0                                   |
| HC+NOx | 5.40                              | 5.00                           | 4.88                           | 6.0                                   |

Staff has reviewed the parts list and compared it with IVECO'S 1989-1990 certification documents. The components used in the engine modification were determined to be parts used in 1989-1990 California certified engines. Therefore, the staff is of the opinion that there will be no adverse effect on emissions from use of IVECO'S engine design modification package.