

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-161-14  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

GALE BANKS ENGINEERING  
TURBOCHARGER SYSTEM MODEL NO. 6.9F

Pursuant to the authority vested in the Air Resources 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 add-on Turbocharger System Model 6.9F manufactured by Gale Banks Engineering of 546 Duggan Avenue, Azusa, CA 91702, using a Rotomaster Turbocharger Model No. T04B or a Schwitzer/Banks Turbocharger Model No. T04B25 with an A/R ratio of 1.0 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 the following vehicles:

1. 1983-1987 model year Ford Motor Company vehicles powered by a 6.9 liter Navistar International heavy-duty diesel engine and
2. 1988-1990 model year Ford Motor Company vehicles powered by a 7.3 liter Navistar International heavy-duty diesel engine.

Modifications to the OEM emission related parts due to the installation of the turbocharger system include replacement of the air cleaner assembly, a new 3" low-restriction muffler, and a 3" diameter exhaust pipe.

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 installation instructions for this turbocharger system 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 turbocharger system, 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 system using an identification other than that shown in this Executive Order or marketing of this system 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 turbocharger system shall not be construed as 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 turbocharger system 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 GALE BANKS ENGINEERING TURBOCHARGER SYSTEM MODEL 6.9F FOR INSTALLATION ON FORD MOTOR COMPANY VEHICLES POWERED BY A 6.9 OR A 7.3 LITER NAVISTAR INTERNATIONAL HEAVY-DUTY DIESEL ENGINE.

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.

Executive Order D-161-11, dated October 27, 1988, is superseded and of no further force and effect.

Executed at El Monte, California, this 9th day of August, 1989.



K. D. Drachand, Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF GALE BANKS ENGINEERING'S ADD-ON TURBOCHARGER SYSTEM MODEL 6.9F  
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156  
IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE  
CALIFORNIA ADMINISTRATIVE CODE

August 1989

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AIR RESOURCES BOARD

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by

Mobile Source Division  
State of California  
Air Resources Board  
9528 Telstar Avenue  
El Monte, CA 91731

(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

Gale Banks Engineering (Banks) has requested an update to Executive Order D-161-11, which exempts their Turbocharger System Model 6.9F for the following vehicles:

1. 1983-1987 model year Ford vehicles powered by a 6.9L Navistar International heavy-duty diesel engine and
2. 1988-1989 model year Ford vehicles powered by a 7.3L Navistar heavy-duty diesel engine.

Banks has requested that the exemption be updated to include the 1990 model year Ford vehicles powered by a 7.3L Navistar heavy-duty diesel engine.

Because there is no emissions related difference between the 1989 and the 1990 model year versions of the 7.3L Navistar heavy-duty diesel engine and no modifications have been made to the Turbocharger System Model 6.9F, the staff believes that the add-on turbocharger system will have no adverse effect on exhaust emissions from the engine for which the exemption update is requested.

The staff recommends that Banks be granted an update as requested and that Executive Order D-161-14 be issued.

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I. INTRODUCTION

Gale Banks Engineering (Banks) of 546 Duggan Avenue, Azusa CA 91702, has requested an update to Executive Order (E.O.) D-161-11 dated October 27, 1988. E.O. D-161-11 exempted their Turbocharger System Model 6.9F from the prohibitions in Vehicle Code Section 27156 for the following vehicles:

1. 1983-1987 model year Ford vehicles powered by a 6.9L Navistar International heavy-duty diesel engine and
2. 1988-1989 model year Ford vehicles powered by a 7.3L Navistar International heavy-duty diesel engine.

Banks has requested that the exemption be updated to include the 1990 model year Ford vehicles powered by a 7.3L Navistar heavy-duty diesel engine.

II. CONCLUSIONS

Because there is no emissions related difference between the 1989 and the 1990 model year versions of the 7.3L Navistar heavy-duty diesel engine and no modifications have been made to the Turbocharger System Model 6.9F, the staff believes that the add-on turbocharger system will have no adverse effect on exhaust emissions from the engine for which the exemption update is requested.

III. RECOMMENDATION

The staff recommends that Banks be granted an update as requested and that Executive Order D-161-14 be issued.

IV. TURBOCHARGER KIT DESCRIPTION AND OPERATION

The purpose of the Banks turbocharger system is to increase the power output of the engine by compressing the intake charge to pressures above that

of the atmosphere. This increased pressure allows a greater charge density to enter the combustion chamber and increases the volumetric efficiency of the engine. The maximum fuel delivery is slightly increased to maintain proper air-fuel ratios when the turbocharger is providing positive manifold pressure (boost). Maximum positive manifold pressure is limited to 7 psi by the size of the turbine and the compressor. The maximum engine speed is regulated by the original equipment manufacturer (OEM) fuel injection governor. Controlling the maximum engine speed also controls the maximum turbine speed and corresponding boost pressure.

The major components of the kit include a 1.0 A/R ratio Rotomaster Model No. T04B or a Schwitzer/Banks Model No. T04B25 turbocharger, custom intake and exhaust tubing, air cleaner assembly, brackets, hoses and the hardware necessary to complete the installation. Modification to the OEM emission related parts due to the installation of the turbocharger system include replacement of the air cleaner assembly and replacement of the OEM exhaust system with a 3" diameter exhaust system.

#### V. DISCUSSION

The applicant is making available the add-on Turbocharger System Model 6.9F for the 1990 model year Ford vehicles powered by a 7.3L Navistar heavy-duty diesel engine. The applicant claims that no modifications to the system are necessary for installation on 1990 model year applicable vehicles. Certification documents show that the 1990 model year 7.3L Navistar heavy-duty diesel engine is carried over from the previous year for which the turbocharger system has been exempt.

The staff believes that the add-on turbocharger system will have no adverse effect on the vehicles/engines for which the exemption update is requested and that no additional testing is required.