

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-316  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

NEW DIMENSIONS, INC.  
STAGE I AND STAGE II TURBOCHARGER KITS

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 Stage I and Stage II turbocharger kits, manufactured by New Dimensions, Inc. of 2240 De La Cruz Blvd., Santa Clara, California 95050, have been found not to reduce the effectiveness of the applicable vehicle pollution control system and, therefore, are exempt from the prohibitions of Section 27156 of the Vehicle Code for the 1985-1987 Volkswagen Golf GTI and Jetta GLI vehicles.

This Executive Order is valid provided that installation instructions for this turbocharger will not recommend tuning the vehicle to specifications different from those submitted by New Dimensions, Inc.

Changes made to the design or operating conditions of the turbocharger, as exempt by the Air Resources Board, which adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of this turbocharger using any identification other than that shown in this Executive Order or marketing of this turbocharger 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 the turbocharger shall not be construed as exemption to sell, offer for sale, or advertise any component of the kit as an individual device.

This Executive Order does not constitute any opinion as to the effect the use of this turbocharger 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 CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF NEW DIMENSIONS, INC.'S TURBOCHARGER KITS.

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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.

Violation of any of the above conditions shall be grounds for revocation of this order. The order may be revoked only after ten day written notice of intention to revoke the order, in which period the holder of the order may request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within ten days of receipt of the request and the order may not be revoked until a determination after hearing that grounds for revocation exist.

Executed at El Monte, California, this 13<sup>th</sup> day of April, 1993.



R. B. Summerfield  
Assistant Division Chief  
Mobile Source Division

*Original*

State of California  
AIR RESOURCES BOARD

EVALUATION OF NEW DIMENSIONS, INC.'S TURBOCHARGER KITS  
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE  
CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE  
CALIFORNIA CODE OF REGULATIONS

April 1993

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AIR RESOURCES BOARD

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by

Mobile Source Division  
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Air Resources Board  
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(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

New Dimensions, Inc., of 2240 De La Cruz Blvd., Santa Clara, California 95050 has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Stage I and Stage II turbocharger kits. The turbocharger kits are designed for installation on 1985-1987 Volkswagen Golf GTI and Jetta GLI vehicles.

Based on the results from emission tests performed at an independent laboratory and confirmatory tests performed at the Air Resources Board's (ARB) Haagen-Smit Laboratory on a 1986 Volkswagen Jetta GL, the staff concludes that New Dimensions, Inc.'s Stage I and Stage II turbocharger kits will not adversely affect exhaust emission from vehicles for which an exemption is requested.

The staff recommends that New Dimensions, Inc. be granted an exemption as requested and that Executive Order D-316 be issued.

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I. INTRODUCTION

New Dimensions, Inc. of 2240 De La Cruz Blvd, Santa Clara, California 95050 has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code for the New Dimensions, Inc.'s Stage I and Stage II turbocharger kits. The turbocharger kits are designed for installation on 1985-1987 model-year Volkswagen Golf GTI and Jetta GLI vehicles.

New Dimensions, Inc. has submitted data from testing on a 1986 Volkswagen Jetta GLI vehicle at Milton Roy Company, Orange, California. The Air Resources Board (ARB) also conducted a confirmatory test at the Haagen-Smit Laboratory.

II. CONCLUSIONS

Based on the results from emission tests performed at Milton Roy Laboratory and confirmatory tests at the ARB's Haagen-Smit Laboratory on a Volkswagen Jetta GLI vehicle, the staff concludes that New Dimensions, Inc.'s Stage I and Stage II turbocharger kits will not adversely affect exhaust emissions from vehicles for which an exemption is requested.

III. RECOMMENDATION

The staff recommends that New Dimensions, Inc. be granted an exemption for their Stage I and Stage II turbocharger kits for installation on 1985-1987 model-year Volkswagen Golf GTI and Jetta GLI vehicles. The staff also recommends that Executive Order D-316 be issued.

IV. DEVICE DESCRIPTION

The New Dimensions, Inc.'s Stage I and Stage II turbocharger kits are designed for installation on 1985-1987 model-year Volkswagen Golf GTI and Jetta GLI vehicles. The Stage I and Stage II turbocharger kits both consist of a Warner-ISHI RHB5 turbocharger with an area ratio of 0.59, boost gauge, exhaust manifold, exhaust muffler system and miscellaneous fittings. In addition, the Stage II turbocharger kit also includes an intercooler, fuel injector and micro-fueler.

The purpose of the New Dimensions, Inc.'s Stage I and Stage II turbochargers is to increase the power output of the engine by compressing the intake charge to above atmospheric pressure, thereby, increase the volumetric efficiency of the engine. The increased pressure causes a greater charge density, allowing more air into the chamber for combustion. Since the air flow is increased, more fuel is needed to maintain proper air-fuel ratios. The New Dimensions, Inc. Stage II turbocharger includes an additional fuel injector to provide additional fuel needed during boost. The additional fuel injector is mounted in the throttle-body inlet casting and is controlled by the micro-fueler. Lubrication of the turbocharger is provided by engine oil. The lubricating oil is then routed back to the engine oil pan through an oil drain line. No emission control components are removed during turbocharger kit installation.

V. TURBOCHARGER KIT SYSTEM EVALUATION AND DISCUSSION

A 1986 Volkswagen Jetta GLI vehicle equipped with a 1.8 liter fuel injected gasoline engine was used for the evaluation of the Stage I and Stage II turbocharger kits. The dynamometer inertia weight and loading were 2625-lbs and 7.0-hp respectively.



Emission tests conducted by Milton Roy Company for New Dimensions, Inc. consisted of one Cold-Start CVS-75 emission test in the the modified (Stage II turbocharger kit installed) configuration. Confirmatory tests were conducted at the ARB's Haagen-Smit Laboratory. A summary of the test results is shown below:

Exhaust Emissions Test Results  
On A 1986 Volkswagen Jetta GLI  
(Milton Roy Company)

Test Mode	Exhaust Emissions (gm/mi)		NOx
	THC	CO	
Device	.291	2.291	.523
Standard	.41	7.0	.7

Exhaust Emissions Test Results  
On A 1986 Volkswagen Jetta GLI  
(ARB's Haagen-Smit Laboratory)

Test Mode	Exhaust Emissions (gm/mi)		NOx
	NMHC	CO	
Device	.379	2.983	.567
Standard	.41	7.0	.7

Results from the emission tests conducted at Milton Roy Laboratory and the confirmatory tests conducted at Haagen-Smit Laboratory show the vehicle emissions with the New Dimensions, Inc.'s Stage II turbocharger kit installed were within the applicable emission standards. Based on the test results, the staff concludes that the installation of New Dimensions, Inc.'s turbocharger kits did not have an adverse effect on exhaust emissions of the affected vehicles. New Dimensions, Inc. submitted all the required information and fulfilled the requirements for exemption.