

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-382  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

VOLKSWAGEN CANADA, INC.  
"NEW AFTERMARKET THREE-WAY CATALYTIC CONVERTER"

WHEREAS, Vehicle Code Sections 27156 and 38391, and Title 13, California Code of Regulations (hereafter "CCR") Section 2222(h), authorize the California Air Resources Board (ARB) and its Executive Officer to exempt new aftermarket catalytic converters from the prohibitions of Vehicle Code Section 27156.

WHEREAS, Volkswagen Canada, Inc. of 49 Truman Road, Barrie, Ontario, L4M 5P4, Canada, has applied to the ARB for exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 for their new aftermarket three-way catalytic converter (TWC) for the following application:

<u>Converter</u>	<u>Use</u>	<u>Part Number</u>	<u>Max. Eng.</u>	<u>Max. Test</u>
<u>Type</u>			<u>Size</u>	<u>Weight</u>
TWC	TWC	4001-4016, 4030, 4031, 4050 4060, 4061-4063, 4070, 4099	3.8L (231 CID)	4,250 lbs.

The catalyst can be used to replace non-functioning original equipment manufacturer (OEM) catalysts on vehicles that are no longer under vehicle manufacturer's emission control systems warranty, if the need for the replacement is established.

WHEREAS, pursuant to the authority vested in the Executive Officer by Health and Safety Code Section 39515 and in the Chief, Mobile Source Division by Health and Safety Code Section 39516 and Executive Order G-45-9, the ARB finds that the above aftermarket catalytic converter complies with the California Vehicle Code Section 27156 and Title 13, California Code of Regulations, Section 2222(h). Emission performance of the catalytic converter was based on durability mileage accumulation of 25,000 miles using the AMA durability driving schedule (Reference Appendix IV, Title 40, part 86, Code of Federal Regulations (June 28, 1977)).

IT IS HEREBY RESOLVED that the above catalytic converter is exempt from the prohibitions in Vehicle Code Section 27156 for installation on the approved application vehicles subject to the following conditions:

1. No changes are permitted to the converter as described in the application for exemption. Any changes to the converter or any of its components, and other factors addressed in this order must be evaluated and approved by the ARB prior to marketing in California.
2. Marketing of the converter using identifications other than those shown in the exemption application, and in this Executive Order, or marketing of the converter for application other than the ones listed in the submitted application catalog shall be prohibited unless prior approval is obtained from the ARB. Exemption of this product shall not be construed as an exemption to sell, offer for sale, or advertise any components of the converter as individual devices.

3. Any oral or written references to this Executive Order or its content by Volkswagen Canada, Inc., its principals, agents, employees, distributors, dealers, or other representatives must include the disclaimer that the Executive Order or the exemption it provides is not an endorsement or approval of any emissions reduction claims for the catalytic converter and is only a finding that the converter is exempt from the prohibitions of Vehicle Code Section 27156.
4. Upon installation, the catalytic converter must carry a manufacturer's warranty for 25,000 miles on the substrates and 50,000 miles or five years on the shell.

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 it, during 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 is made, after the hearing, that grounds for revocation exist.

Executed at El Monte, California, this 2<sup>nd</sup> day of August 1995.



for R.B. Summerfield  
Assistant Division Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF VOLKSWAGEN CANADA, INC. NEW AFTERMARKET THREE-WAY  
CATALYTIC CONVERTER FOR EXEMPTION FROM THE PROHIBITIONS IN  
VEHICLE CODE SECTION 27156, AND TITLE 13, CALIFORNIA  
CODE OF REGULATIONS, SECTION 2222(h)

August 1995

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CODE OF REGULATIONS, SECTION 2222(h)

by

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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

Volkswagen Canada, Inc. (VWC) of 49 Truman Road, Barrie, Ontario L4M 5P4, Canada, has applied for an exemption of their new aftermarket three-way catalytic converter (TWC) from the prohibitions in Vehicle Code Sections 27156 and 38391, in accordance with California regulations on new aftermarket catalytic converters. Two test catalysts were aged using 1979 GM passenger vehicles with engine displacement/equivalent test weight of 5.0L/4250 lbs. on AMA mileage accumulation route. The single substrate contains palladium and rhodium in the ratio of 12:1. The vehicle application limit for the catalyst is 3.8L/4250 lbs.

Emissions data submitted by the applicant show that the catalytic converter meets the requirements of Vehicle Code Section 27156 and Title 13, California Code of Regulations, Section 2222(h) for the stated application. Based on the above, the staff recommends that the exemption be granted as requested and that Executive Order D-382 be issued.

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VEHICLE CODE SECTION 27156, AND TITLE 13, CALIFORNIA  
CODE OF REGULATIONS SECTION 2222(h)

I. INTRODUCTION

Volkswagen Canada, Inc. (VWC) of 49 Truman Road, Barrie, Ontario L4M 5P4, Canada, has applied for an exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 for their new aftermarket three-way catalytic converter (TWC) in accordance with California regulations on new aftermarket catalytic converters. The new aftermarket TWC is intended for use on light-duty vehicles as shown below:

<u>Converter</u>			<u>Max. Eng.</u>	<u>Max. Veh.</u>
<u>Type</u>	<u>Use</u>	<u>Part Numbers</u>	<u>Size</u>	<u>Wt.</u>
TWC	TWC	4000-4016,4030,4031,4050 4060,4061-4063,4070,4099	3.8L	4,250 lbs.

Volkswagen Canada, Inc. will market the catalytic converter as a post-warranty replacement for applicable vehicles whose manufacturers' warranty has expired and the need for replacement of the original equipment manufacturer (OEM) catalytic converter has been established.

II. CONCLUSION

The applicant has submitted all the required information, and based on the submitted exhaust emissions test data, the staff concludes that the catalytic converter meets the criteria set forth in Vehicle Code Section 27156 and Title 13, California Code of Regulations, Section 2222(h) for the stated application.

III. RECOMMENDATION

Staff recommends that the exemption be granted as requested and that Executive Order No. D-382 be issued, permitting the advertisement, sale, and installation of the new aftermarket catalytic converter on applicable vehicles.

IV. DEVICE DESCRIPTION

VWC's new aftermarket TWC contains one substrate. The substrate is coated with palladium and rhodium in the ratio of 12:1. Air tube is not required on the converter. The substrate measures 101.6 mm in diameter and 76.2 mm in length, and has a total volume of 617.7 cubic centimeters. Degussa Catalyst, Limited of Canada is the catalyst supplier. The substrate is wrapped with compressed intumescent mat to prevent vibration and exhaust gases from by-passing the catalyst. The substrate is enclosed in a stainless steel shell using seam welding. A heat shield of aluminized steel is welded to the converter shell to protect the vehicle underbody from heat. The catalytic converter may be sold as a unit with installation instructions and in combination with other installation hardware as a kit. It is also sold with a warranty for 25,000 miles on the substrates and five years or 50,000 miles on the container or shell.

V. DEVICE EVALUATION

VWC submitted data from testing conducted by Roush Laboratories in Garden Grove, California. The two test catalysts were aged using two 1979 GM light-duty vehicles powered by a 5.0L engine and equipped with oxidation catalytic converter (OC). The mileage accumulation vehicles were ballasted in order to achieve an equivalent weight of 4,250 lbs. Emissions tests were then conducted on the following vehicle:

<u>Application</u>	<u>Emission Test Vehicle</u>	<u>Engine Size</u>	<u>ETW</u>
TWC	1994 Pontiac Bonneville	3.8L	4,250 lbs.

The Air Resources Board (ARB) did not conduct confirmatory tests on the new aftermarket TWC due to heavy workload at the ARB's Haagen-Smit Laboratory. The test results and conversion efficiencies for the converter are shown below:



Roush Laboratories, Garden Grove, California

	<u>Simulator</u>	<u>Cat.#37</u>	<u>TWC</u> <u>Cat.#39</u>	<u>Avg Eff.</u>
HC (g/mi)	1.832	0.293	0.278	84.4%
CO (g/mi)	12.728	2.767	1.959	81.4%
NOx(g/mi)	2.657	0.946	0.927	64.7%

The above conversion efficiencies meet the minimum requirements of the California regulations on new aftermarket catalytic converters.