

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-182-12
Relating to Exemptions Under Section 27156
of the Vehicle Code

WALKER MANUFACTURING
"THREE-WAY CATALYTIC CONVERTER"

WHEREAS, Vehicle Code Section 27156 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 in Vehicle Code Sections 27156 and 38391.

WHEREAS, Walker Manufacturing of 3901 Willis Road, Grass Lake, Michigan 49240, 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:

Type	Universal Assembly Numbers	Body Part numbers	Max. Eng. Size	Max. Veh. Wt.
TWC	15152, 15153, 15154, 15155 15160, 15161, 15162, 15163	615155 615161, 615162, 615163	4.9L EFI	4,500 lbs.

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-45-5, the ARB finds that the above aftermarket catalytic converter complies with the California Vehicle Code Sections 27156 and 38391, 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)).

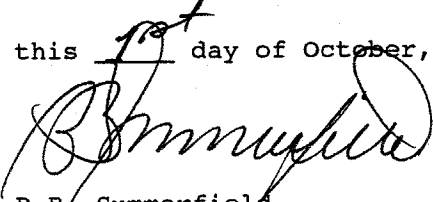
IT IS HEREBY RESOLVED that the above catalytic converter is exempt from the prohibitions in Vehicle Code Sections 27156 and 38391 for installation on applicable vehicles subject to the following conditions:

1. No changes are permitted to the catalytic converter as described in the application for exemption. Any changes to the catalytic converter or any of its components, applicable model year, or 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 or marketing of the catalytic converter for vehicle application other than the one listed in this order 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 catalytic converter as individual devices.

3. Any oral or written references to this Executive Order or its content by Walker Manufacturing, 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 catalytic converter is exempt from the prohibitions of Vehicle Code Sections 27156 and 38391.
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 12th day of October, 1993.


R.E. Summerfield
Assistant Division Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF WALKER MANUFACTURING 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)

October, 1993

EVALUATION OF WALKER MANUFACTURING 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)

by

Mobile Source Division

State of California
AIR RESOURCES BOARD
9528 Telstar Avenue
El Monte, CA 91731-2990

(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

Walker Manufacturing (Walker) of 3901 Willis Road, Grass Lake, Michigan 49240, 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. The new converter will be used on light-duty vehicles powered by a 4.9L or smaller fuel injected engine, and maximum equivalent test weight (ETW) of 4,500 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-182-12 be issued.

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EVALUATION OF WALKER MANUFACTURING 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)

I. INTRODUCTION

Walker Manufacturing (Walker) of 3901 Willis Road, Grass Lake, Michigan 49240, 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 fuel injected light-duty vehicles as shown below:

<u>Type</u>	<u>Universal Assembly Numbers</u>	<u>Body Part Numbers</u>	<u>Max. Eng. Size</u>	<u>Max. Veh. Wt.</u>
TWC	15152,15153,15154,15155 15160,15161,15162,15163	615155 615161,615162,615163	4.9L EFI	4,500 lbs.

The first four universal assembly numbers belong to the round shaped converter and correspond to body part numbers of 615155. The second universal assembly numbers belong to the oval shaped converter and correspond to body part numbers 615161, 615161, 615162, and 615163, respectively. The numbers also correspond to end pipe neck sizes of 1.75 inches, 2 inches, 2 1/4 inches, and 2 1/2 inches, respectively.

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 applications.

III. RECOMMENDATION

Staff recommends that the exemption be granted as requested and that Executive Order No. D-182-12 be issued, permitting the advertisement, sale and installation of the new aftermarket TWC.

IV. DEVICE DESCRIPTION

Walker's new aftermarket TWC substrate is coated with palladium only. No air tube is required for the TWC. The substrate is manufactured in both round and oval shapes to provide coverage for different exhaust configuration. The round substrate is 3.66 inches in diameter, 5 inches long, and has a total volume of 52.6 cubic inches. The oval substrate is 3.15 inches along the minor axis, 4.75 inches along the major axis, 4.3 inches long, and has a total volume of 54.8 cubic inches. Each substrate is enclosed in a stainless steel shell. The substrate is wrapped with compressed intumescent mat to prevent vibration and exhaust gases from bypassing the catalyst. A heat shield of aluminized steel is welded to the converter shell to protect the vehicle underbody from heat. The catalytic converter is sold as a unit with installation instructions and kits as shown in Walker's application catalog. 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

Walker submitted data from testing conducted by Automotive Testing and Development Services, Inc. (ATDS), Ontario, California. The two test converters were aged respectively on two 1992 Multipoint Electronic Fuel Injected (MPEFI) 4.9L Cadillac Seville STS. Emissions tests were conducted on a 1992 MPEFI 4.9L Cadillac Seville STS. The equivalent test weight for both mileage accumulation and emissions test vehicles was 4,500 lbs. Since Walker intended to market the converter in both round and oval shapes, one round shaped converter and one oval shaped converter were aged. Upon conclusion of testing at ATDS, the Air Resources Board (ARB) conducted

confirmatory tests with the two aged catalysts at Haagen-Smit Laboratory, El Monte, California. The converter failed to meet the minimum conversion efficiency of 70 percent for CO by 0.2 percent. Applicant expressed concern that the test vehicle was not operating properly during the tests at ARB, and requested that they be allowed to conduct a diagnostic check of the test vehicle. The test vehicle was found to be operating with a weak oxygen sensor. Upon request, the applicant was allowed to replace the faulty oxygen sensor and retest the vehicle at ATDS. The retest was observed by a staff of ARB. Results from the retest were then averaged with the first test results from ATDS. The test results and conversion efficiencies for the converter are shown below:

ATDS, Ontario, California

	<u>Test 1</u>			
	<u>Simulator</u>	<u>Round Cat.</u>	<u>Oval Cat.</u>	<u>Avg Eff.</u>
HC (g/mi)	2.663	0.521	0.497	80.8%
CO (g/mi)	26.870	7.014	7.249	73.4%
NOx(g/mi)	2.365	0.710	0.862	66.7%

	<u>Test 2</u>				<u>Combined Eff.(1 & 2)</u>
	<u>Simulator</u>	<u>Round Cat.</u>	<u>Oval Cat.</u>	<u>Avg Eff.</u>	
HC (g/mi)	3.113	0.606	0.584	80.8%	80.8%
CO (g/mi)	30.261	9.373	8.622	70.2%	71.8%
NOx(g/mi)	2.184	0.789	0.935	60.5%	63.6%

Haagen-Smit Laboratory, El Monte

	<u>Simulator</u>	<u>Round Cat.</u>	<u>Oval Cat.</u>	<u>Avg Eff.</u>
HC (g/mi)	3.315	0.606	0.575	82.2%
CO (g/mi)	29.847	9.185	8.827	69.8%
NOx(g/mi)	1.888	0.776	0.698	60.9%

The exemption of the Walker new TWC is based on the combined conversion efficiencies meeting the minimum requirements of 70 percent for HC and CO, and 60 percent for NOx.