

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-193-2  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

CAR SOUND EXHAUST SYSTEM, INC.  
"NEW AFTERMARKET TWO-WAY AND THREE-WAY CATALYTIC CONVERTERS"

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 of Vehicle Code Section 27156.

WHEREAS, Car Sound Exhaust System, Inc. of 16191 Phoebe Avenue, La Mirada, California 90638, has applied to the ARB for exemption from the prohibitions of Vehicle Code Section 27156 for their new aftermarket two-way (OC) and three-way (TWC) catalytic converters for the following applications:

<u>Converter Type</u>	<u>Series</u>	<u>Max. Engine Size</u>	<u>Max. Veh. Weight</u>
3-Way + OC (as OC)	700	5.0L (305 CID)	4,000 lbs.
3-Way + OC (as TWC)	700	5.0L (305 CID)	4,000 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 Air Resources Board finds that the above aftermarket catalytic converters comply with the California Vehicle Code Section 27156 and Title 13, California Code of Regulations, Section 2222(h).

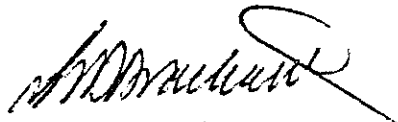
IT IS HEREBY RESOLVED that the above catalytic converters are exempt from the prohibitions of Vehicle Code Section 27156 for installation on the approved application vehicles subject to the following conditions:

1. No changes are permitted to the converters as described in the application for exemption. Any changes to the converters, applicable model year, or other factors addressed in this order must be evaluated and approved by the Air Resources Board prior to marketing in California.
2. Marketing of the converters using identifications other than those shown in the exemption application or marketing of the converters for applications other than those listed in the application catalog shall be prohibited unless prior approval is obtained from the Air Resources Board. Exemption of these products shall not be construed as an exemption to sell, offer for sale, or advertise any components of the converters as individual devices.

3. Any oral or written references to this Executive Order or its content by Car Sound Exhaust System, 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 converters and is only a finding that the converters are exempt from the prohibitions of Vehicle Code Section 27156.

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 24<sup>th</sup> day of January, 1990.



K. D. Drachand, Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF CAR SOUND EXHAUST SYSTEM, INC. NEW AFTERMARKET 700  
SERIES CATALYTIC CONVERTER FOR EXEMPTION, FOR 2-WAY AND 3-WAY  
APPLICATIONS, FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 AND  
TITLE 13, CALIFORNIA CODE OF REGULATIONS, SECTION 2222(h)

January, 1990

EVALUATION OF CAR SOUND EXHAUST SYSTEM, INC. NEW AFTERMARKET 700  
SERIES CATALYTIC CONVERTER FOR EXEMPTION, FOR 2-WAY AND 3-WAY  
APPLICATIONS, FROM THE PROHIBITIONS OF 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 TeIstar 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

Car Sound Exhaust System, Inc. (Car Sound) of 16191 Phoebe Avenue, La Mirada, California 90638, has applied for exemption to use their new 700 series aftermarket three-way plus oxidation (TWC + OC) catalytic converter for oxidation (OC) or two-way and three-way (TWC) applications, under the California regulations for new aftermarket catalytic converters. Car Sound plans to use the converter for oxidation and three-way applications on vehicles up to 5.0 liters and 4000 lbs.

Emissions data submitted 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 applications. Based on the above, the staff recommends that the exemption be granted as requested.

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EVALUATION OF CAR SOUND EXHAUST SYSTEM, INC. NEW AFTERMARKET 700  
SERIES CATALYTIC CONVERTER FOR EXEMPTION, FOR 2-WAY AND 3-WAY  
APPLICATIONS, FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 AND  
TITLE 13, CALIFORNIA CODE OF REGULATIONS, SECTION 2222(h)

I. INTRODUCTION

Car Sound Exhaust System, Inc. (Car Sound) of 16191 Phoebe Avenue, La Mirada, California 90638, has applied for an exemption to use their new aftermarket 700 series three-way plus oxidation (TWC + OC) catalytic converter, for oxidation and three-way applications, in accordance with the California regulations on new aftermarket catalytic converters. The intended converter applications are shown below:

<u>Type</u>	<u>Series No.</u>	<u>Engine Size</u>	<u>Max. Veh. Wt.</u>
OC	700	5.0L (305 CID)	4000 lbs
TWC	700	5.0L (305 CID)	4000 lbs

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

The staff recommends that the exemption be granted as requested and that Executive Order No. D-193-2 be issued, permitting the advertisement, sale and installation of the new aftermarket catalytic converter as oxidation and three-way converters on vehicles up to 5.0 liters and 4000 lbs.

#### IV. DEVICE DESCRIPTION

The Car Sound three-way plus oxidation substrates are coated with platinum, palladium and rhodium with no air injection incorporated between the reducing and oxidizing substrates. The substrates are enclosed in an outer shell or container of stainless steel. The converter uses materials and construction similar to the original equipment manufacturers. The catalytic converter is sold with installation instructions and kits as shown in the application catalog. It is also sold with a warranty for two years or 25,000 miles on the substrates and five years or 50,000 miles on the container or shell.

#### V. DEVICE EVALUATION

Car Sound submitted test data on the catalytic converter. The tests were conducted by Automotive Testing and Development Services, Inc. (ATDS), Huntington Beach, California. The mileage accumulation and test vehicle parameters for the converter applications are shown in the appendix. Two CVS-75 emission tests were conducted on each of the test vehicles with the converter installed and two CVS-75 tests were conducted with exhaust backpressure simulator. The same test procedure was used for both the oxidation and the three-way applications. The tests were conducted following the accumulation of 25,000 miles on each of the two test converters.

The vehicles used in the accumulation of 25,000 miles had an engine displacement of 5.0 liters and vehicle weight of 4000 lbs. Exemption for each converter application is limited to vehicles up to 5.0 liters and 4000 lbs. in order to conform to the "worst case" requirement of the California regulations. The test results and conversion efficiencies for the oxidation and three-way applications are shown below:



Oxidation (OC) Application

	<u>Simulator</u>	<u>Converter 1</u>	<u>Converter 2</u>	<u>Average Efficiency</u>
HC (g/mi)	2.118	0.252	0.272	87.6%
CO (g/mi)	27.866	0.734	0.862	97.2%

Three-way (TWC) Application

HC (g/mi)	2.463	0.189	0.194	92.2%
CO (g/mi)	16.416	1.287	1.364	92.0%
NOx(g/mi)	1.743	0.541	0.592	67.4%

All of the conversion efficiencies meet the requirements of the California regulations. The staff based the evaluation of the new aftermarket catalytic converter on the information submitted by Car Sound and on test data from Automotive Testing and Development Services, Inc.

APPENDIX

A	B	C	D
Converter Type	Aging Veh. Parameters	Test Veh. Parameters	Series No.
1. TWC + OC	a. 5.0L 4000 lbs.	5.7L 4000 lbs.	700
(as OC)	b. 5.0L 4000 lbs.		
2. TWC + OC	Same as 1B	5.0L 4000 lbs.	700
(as TWC)			

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EVALUATION OF CAR SOUND EXHAUST SYSTEM, INC. 300/500 SERIES NEW  
AFTERMARKET THREE-WAY PLUS OXIDATION CATALYTIC CONVERTER WITH TWO  
PRECATALYSTS FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION  
27156 AND TITLE 13, CALIFORNIA CODE OF REGULATIONS, SECTION 2222(h)

April, 1990

EVALUATION OF CAR SOUND EXHAUST SYSTEM, INC. 300/500 SERIES NEW  
AFTERMARKET THREE-WAY PLUS OXIDATION CATALYTIC CONVERTER WITH TWO  
PRECATALYSTS FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION  
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by

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