

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-215-2
Relating to Exemptions Under Section 27156
of the Vehicle Code

EDELBROCK CORPORATION
TUBULAR EXHAUST SYSTEM

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 Section 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 Tubular Exhaust System (16 gauge) manufactured by Edelbrock Corporation of P. O. Box 2936, Torrance, California 90509-2936 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 those vehicle applications listed in Exhibit A, which is attached hereto and incorporated herein.

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different from those submitted by the device manufacturer.

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

This Executive Order does not constitute any opinion as to the effect that the use of this device 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 EDELBROCK CORPORATION'S TUBULAR EXHAUST SYSTEM.

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 communications.

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-215-1 is superseded and of no further force and effect.

Executed at El Monte, California, this ^{29th} day of July, 1992.


R.B. Summerfield
Assistant Division Chief
Mobile Source Division

Exhibit A

EDELBRUCK TUBULAR EXHAUST SYSTEMS

FORD/MERCURY/LINCOLN VEHICLES

Original

Vehicle Model	Year	Engine	Remarks
6845 1945 Ford/Mercury/Lincoln	86-92	5.0L V8	Fuel Injection

CAMARO IROC & Z28 and PONTIAC FIREBIRD FORMULA

Edelbrock		Vehicle Model	Year	Engine	Remarks
PN	PN				
6871	7971	Chevrolet Camaro and Pontiac Firebird	82-86	5.0L V8	Not for H.O. or TPI
6872	7972	Chevrolet Camaro IROC & Z28 and Pontiac Firebird Formula	86-90	5.7L V8	TPI (Single Cat.)
6873	7973	Chevrolet Camaro IROC and Pontiac Firebird Formula	1985	5.0L V8 5.7L	TPI (Single Cat.)
6874	7974	Chevrolet Camaro H.O. and Pontiac Firebird H.O.	83-85	5.0L V8	4-bbl. carburetor H.O.
6875	7975	Chevrolet Camaro RS and Pontiac Firebird Formula	88-92	5.0L V8	TBI (Single Cat.)
6875	7975	Chevrolet Camaro Z28/Conv. and Pontiac Firebird Formula	91-92	5.0L V8	TPI (Single Cat.)
6876	7976	Chevrolet Camaro and Pontiac Firebird	89-92	5.0L V8 5.7L	Dual Cat.
6878	7978	Chevrolet El Camino/Monte Carlo	83-88	5.0L V8 LG-4	Low output
6879	7979	Chevrolet El Camino/Monte Carlo	83-88	5.0L V8 L-69	High output

CHEVROLET BLAZER AND GMC JIMMY

Edelbrock		Vehicle Model	Year	Engine	Remarks
PN	PN				
6854	7954	P/U S-10 & S-15	88-92	4.3L V6	2W.D., Fuel Injection
6855	7955	Blazer S-10 & Jimmy S-15	88-92	4.3L V6	2W.D., Fuel Injection
6856	7956	P/U Blazer S-10 & Jimmy S-15	88-92	4.3L V6	4W.D., Fuel Injection
6834	7934	P/U S-10 & S-15	88-92	4.3L V6	2W.D., Fuel Injection
6835	7935	Blazer S-10 & Jimmy S-15	88-92	4.3L V6	2W.D., Fuel Injection
6836	7936	P/U Blazer S-10 & Jimmy S-15	88-92	4.3L V6	4W.D., Fuel Injection
6857	7957	K-5 Blazer/Jimmy	87-91	5.7L V8	4W.D., EFI w/o A.I.R.
6858	7958	K-5 Blazer/Jimmy	87-91	5.7L V8	4W.D., EFI w/ A.I.R.
6866	7966	Chev/GMC K-5 Blazer & Yukon	92	5.7L V8	4W.D., w/o A.I.R.

CHEVROLET AND GMC LIGHT DUTY TRUCKS/VEHICLES

Edelbrock

<u>PN</u>	<u>PN</u>	<u>Vehicle</u>	<u>Year</u>	<u>Engine</u>	<u>Remarks</u>
6866	7966	P/U 1500 & 2500 Series	88-92	5.0/5.7L V8	4W.D., EFI w/o A.I.R.
6867	7967	P/U 1500 & 2500 Series	88-92	5.0/5.7L V8	4W.D., EFI w/ A.I.R.
6864	7964	Suburban 1500 & 2500 Series	87-91	5.7L V8	4W.D., EFI w/o A.I.R.
6865	7965	Suburban 1500 & 2500 Series	87-91	5.7L V8	4W.D., EFI w/ A.I.R.
6824	7924	Suburban 1500 & 2500 Series	87-90	5.7L V8	2W.D., EFI w/o A.I.R.
6825	7925	Suburban 1500 & 2500 Series	87-90	5.7L V8	2W.D., EFI w/ A.I.R.
6826	7926	Suburban 1500 & 2500 Series	1991	5.7L V8	2W.D., EFI w/o A.I.R.
6888	7988	P/U 1500 & 2500 Series	88-92	4.3L V6	2W.D., EFI w/o A.I.R.
6889	7989	P/U 1500 & 2500 Series	88-92	4.3L V6	2W.D., EFI w/ A.I.R.
6890	7990	Astro & Safari Vans	86-91	4.3L V6	2W.D., EFI w/o A.I.R.
6891	7991	Astro & Safari Vans	86-91	4.3L V6	2W.D., EFI w/ A.I.R.

CHEVROLET/GMC 7.4L HEAVY DUTY VEHICLES

Edelbrock

<u>PN</u>	<u>PN</u>	<u>Vehicle Model</u>	<u>Year</u>	<u>Engine</u>	<u>Remarks</u>
6838	7938	Suburban 2500 Series	87-89	7.4 L V8	w/ A.I.R.
6839	7939	Suburban 2500 Series	90-92	7.4 L V8	w/o A.I.R.
6861	7961	Crew Cab 3500 Series	87-89	7.4 L V8	2 W.D. w/ A.I.R.
6862	7962	Crew Cab 3500 Series	87-89	7.4 L V8	4 W.D. w/ A.I.R.
6841	7941	Crew Cab 3500 Series	90-92	7.4 L V8	2 W.D. w/o A.I.R.
6842	7942	Crew Cab 3500 Series	90-92	7.4 L V8	4 W.D. w/o A.I.R.
6659		Crew Cab 3500 Series	92	7.4 L V8	w/o A.I.R.
6860	7960	Pick-up 1500 Series (454SS)	90	7.4 L V8	2 W.D., F.I. w/ A.I.R.
6859	7959	Pick-up 2500 & 3500 Series	88-92	7.4 L V8	2 W.D., F.I. w/o A.I.R.
6860	7960	Pick-up 2500 & 3500 Series	88-92	7.4 L V8	2 W.D., F.I. w/ A.I.R.
6659		Pick-up 2500 & 3500 Series	88-92	7.4 L V8	w/o A.I.R.
6660		Pick-up 2500 & 3500 Series	88-92	7.4 L V8	w/ A.I.R.
6660		Pick-up 1500 Series (454SS)	90	7.4 L V8	w/ A.I.R.
6663		Pick-up 1500 Series (454SS)	91-92	7.4 L V8	w/o A.I.R.
6640		Suburban 2500 Series	92	7.4 L V8	w/o A.I.R.

State of California
AIR RESOURCES BOARD

EVALUATION OF EDELBROCK CORPORATION'S TUBULAR EXHAUST SYSTEM
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS

July 1992

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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 the mention of trade names or commercial products constitute endorsement or recommendation for use.)

SUMMARY

Edelbrock Corporation (Edelbrock) of P. O. Box 2936, Torrance, California 90509-2936, has requested to update Executive Order D-215-1 which exempts Edelbrock's Tubular Exhaust System (TES) from the prohibitions of California Vehicle Code Section 27156. The existing Executive Order D-215-1 exempts Edelbrock's TES for installation on 1982 to 1992 General Motors vehicles with a 4.3, 5.0, 5.7 or 7.4 liter engine. The update is requested to reflect new part numbers added due to changes in extension pipe designs and new material used. Edelbrock also requested that 1986-92 Ford, Lincoln and Mercury vehicles equipped with a 5.0 liter fuel-injected engine be included in this exemption application.

Based on an engineering evaluation along with emission test results performed by Edelbrock at an independent laboratory, the staff concludes that Edelbrock's TES will not adversely affect exhaust emission from the vehicles for which an exemption is requested.

The staff recommends that Edelbrock be granted Executive Order D-215-2 allowing the installation of their TES on those vehicle applications listed in Appendix A.

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EVALUATION OF EDELBROCK CORPORATION'S TUBULAR EXHAUST SYSTEM FOR
EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE
WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

I. INTRODUCTION

Edelbrock Corporation (Edelbrock) of P. O. Box 2936, Torrance, California 90509-2936, has requested to update Executive Order D-215-1 which exempts Edelbrock's Tubular Exhaust System (TES) from the prohibitions of California Vehicle Code Section 27156. The existing Executive Order D-215-1 exempts Edelbrock's TES for installation on 1982 to 1992 General Motors vehicles with a 4.3, 5.0, 5.7 or 7.4 liter engine. The update is requested to reflect new part numbers added due to changes in extension pipe designs and the material used. Edelbrock also requested that 1986-92 Ford, Lincoln and Mercury vehicles equipped with a 5.0 liter fuel-injected engine be included in this exemption application.

Edelbrock claims no changes to the installation instructions or tune-up specifications are necessary for those vehicle applications requested in the update.

II. CONCLUSION

Based on an engineering evaluation along with emission test results performed by Edelbrock at an independent laboratory, the staff concludes that Edelbrock's TES, for applications shown in Appendix A will not adversely affect exhaust emissions.

III. RECOMMENDATION

The staff recommends that Edelbrock be granted Executive Order D-215-2 allowing the installation of their TES for the part nos. and vehicle applications listed in Appendix A.

IV. TUBULAR EXHAUST SYSTEM DESCRIPTION

The Edelbrock TES is an exhaust system designed to improve the gas dynamics of engine exhaust. It conducts exhaust gases through individual primary tubes from the cylinder heads to 4-into-1 collector on each side of the exhaust manifold, and then to a 2-into-1 collector which fits directly to the catalytic converter. The TES is functionally identical to the cast iron exhaust manifolds and tubular steel collector pipes of the OEM exhaust system. The difference is the design dimensions of the TES which optimizes the flow characteristics of the exhaust gases. TES provides for connection of all OEM emission control devices on the applicable vehicles at the required location. The manufacturer claims TES was designed to improve the flow of exhaust gases from the cylinder heads to the catalytic converter, thereby promoting improved volumetric and combustion efficiency.

The TES models are available both for vehicles with A.I.R. and without A.I.R. emission control system. The models with 7900 part number series are treated externally with aluminum based coating to prevent corrosion. The installation of the TES is done by fitting only and requires no welding, modifications or adjustments to the emission control system of the affected vehicles. Edelbrock supplies complete installation kits, including bolts, flanges, washers and gaskets. Appendix A contains the part numbers and applicable vehicles.

V. DISCUSSION

Edelbrock has requested an update to reflect new part numbers added due to changes in extension pipe designs and new material used. The new Edelbrock TES part numbers, applicable for the 4.3 L light-duty vehicles, the 5.0 L/5.7 L light-duty vehicles and the 5.0 L/5.7 L Camaro/Firebird, are required because the extension pipe attaching the header to the catalytic converter required some minor angle changes to clear certain chassis components. These exhaust headers use an identical configuration to those previously tested by Edelbrock in support of Executive Order D-215-1.

The new Edelbrock TES part numbers using the 6600 series number reflect a tubing material change to a 409 series stainless steel alloy. This same tubing alloy is used in the original equipment manufacturer's exhaust system. Edelbrock has deemed this material change is necessary on certain vehicle applications to ensure satisfactory exhaust system warranty.

Staff has concluded that the modifications due to the change in extension pipe design and the change in exhaust header material do not significantly alter the design of the previously exempted exhaust header, and no emission impact would be observed from these changes.

Edelbrock also requested the exemption to cover installation of TES on 1986-92 Ford, Mercury and Lincoln vehicles equipped with a 5.0 liter engine. A 1989 Ford Mustang with a 5.0 liter (302 CID) fuel injected gasoline engine was used for the evaluation of the Tubular Exhaust System. The dynamometer inertia weight and loading were 3750-lbs and 10.2-hp respectively.

Emission tests conducted by Milton Roy Company for Edelbrock consisted of one Cold-Start CVS-75 emission test in the unmodified (baseline) configuration and one Cold-Start CVS-75 emission test in the modified (header system installed) configuration. The ARB did not perform tests to confirm the test results submitted by the applicant. A summary of the test results is shown below in Table 1:

Table 1

CVS-75 Tests Conducted on a 1989 Ford Mustang
at an independent laboratory

	NMHC (gm/mi)	CO (gm/mi)	NOx (gm/mi)
Baseline	0.617	1.745	0.903
Device	0.481	1.157	0.856
Difference	0.136	0.588	0.047
% Difference	-22.0%	-33.7%	-5.2%

The 1989 Ford Mustang emission test data did not show an increase in exhaust emissions. Therefore, staff concludes that no emission impact would be observed on 1986-92 Ford, Mercury or Lincoln vehicles equipped with 5.0 liter engines when the TES is installed.

The staff recommends that Edelbrock be granted Executive Order D-215-2 allowing the installation of their TES for the part numbers and applications listed in Appendix A.

APPENDIX

Appendix A

EDELBRÖCK TUBULAR EXHAUST SYSTEMS

FORD/MERCURY/LINCOLN VEHICLES

Edelbrock

PN	PN	Vehicle Model	Year	Engine	Remarks
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6890	7990	Astro & Safari Vans	86-91	4.3L V6	2W.D., EFI w/o A.I.R.
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6841	7941	Crew Cab 3500 Series	90-92	7.4 L V8	2 W.D. w/o A.I.R.
6842	7942	Crew Cab 3500 Series	90-92	7.4 L V8	4 W.D. w/o A.I.R.
6659		Crew Cab 3500 Series	92	7.4 L V8	w/o A.I.R.
6860	7960	Pick-up 1500 Series (454SS)	90	7.4 L V8	2 W.D., F.I. w/ A.I.R.
6859	7959	Pick-up 2500 & 3500 Series	88-92	7.4 L V8	2 W.D., F.I. w/o A.I.R.
6860	7960	Pick-up 2500 & 3500 Series	88-92	7.4 L V8	2 W.D., F.I. w/ A.I.R.
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