

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-167
Relating to Exemptions under Section 27156
of the Vehicle Code

HEDMAN HEDDERS
EXHAUST HEADER PART NO. 69097

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 exhaust header, part No. 69097, manufactured by Hedman Headers 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 1978-1982 model-year Chevrolet 2-WD pick-up trucks with a California certified engine displacement between 305 and 400 cubic inches, excluding those catalyst equipped vehicles using feedback controls.

This Executive Order is valid provided that installation instructions for this exhaust header, part No. 69097, 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 exhaust header, part No. 69097, 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 exhaust header, part No. 69097, using an identification other than that shown in this Executive Order or marketing of this exhaust header, part No. 69097, 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 exhaust header shall not be construed as an exemption to sell, offer for sale, or advertise any component of a exhaust header as an individual device.

This Executive Order does not constitute any opinion as to the effect that the use of this exhaust header, part No. 69097, 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 HEDMAN HEDDERS EXHAUST HEADER PART NO. 69097.

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.

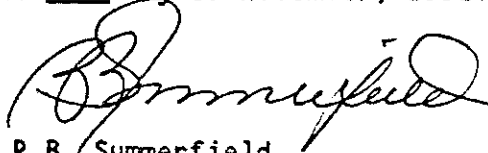
Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

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.

Executed at El Monte, California, this 13th day of November, 1991.



R.B. Summerfield
Assistant Division Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF HEDMAN MANUFACTURING'S TUBULAR EXHAUST MANIFOLD SYSTEM
MODEL NO. 89461 FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS

November 1991

State of California
AIR RESOURCES BOARD

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by

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State of California
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

Hedman Manufacturing (Hedman) of 9599 W. Jefferson Blvd. Culver City, CA. 90232 has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Tubular Exhaust Manifold System, Model No. 89461. The Tubular Exhaust Manifold System is designed for installation on 1987-1992 Ford electronic fuel injected (EFI) trucks powered by a 7.5 liter gasoline V-8 engine.

Hedman has submitted a completed application and all the required information including comparative exhaust emissions test data from an independent laboratory which shows that the Tubular Exhaust Manifold System does not have any adverse effects on the emissions of the applicable vehicles.

The staff recommends that Hedman be granted an exemption as requested and that Executive Order D-167-1 be issued for their Tubular Exhaust Manifold System, Model No. 89461.

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I. INTRODUCTION

Hedman Manufacturing (Hedman) of 9599 W. Jefferson Blvd. Culver City, CA. 90232 has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Tubular Exhaust Manifold System, Model No. 89461. The Tubular Exhaust Manifold System is designed for installation on 1987-92 Ford electronic fuel injected (EFI) trucks powered by a 7.5 liter gasoline V-8 engine. Hedman has submitted a completed application and all the required information including comparative exhaust emissions test data performed at Milton Roy Company.

II. CONCLUSIONS

Based on submitted data from emissions testing performed at an independent laboratory, the staff concludes that the Tubular Exhaust Manifold System does not have any adverse effects on emissions of the applicable vehicles.

III. RECOMMENDATION

The staff recommends that Hedman be granted an exemption as requested and that Executive Order D-167-1 be issued for their Tubular Exhaust Manifold System, Model No. 89461.

IV. TUBULAR EXHAUST MANIFOLD SYSTEM DESCRIPTION

The Hedman Tubular Exhaust Manifold System is designed for installation on 1987-92 Ford trucks powered by a 7.5 liter (460 CID) fuel injected gasoline engines. The Hedman Tubular Exhaust Manifold System consists of exhaust manifolds and pre-catalyst piping. As with the original equipment

manufacturer's (OEM) exhaust system, the function of Hedman's system is to route exhaust gases from the two exhaust manifolds of the engine into a common pipe which then feeds to the catalytic converter. Each cylinder has a 1.75" diameter tube that combines with the adjacent tube into a 2" diameter tube. On each side of the engine, these two 2" tubes combine into a 2.25" diameter tube. Finally all the exhaust gases are then routed into a 3" tube which feeds into the pre-catalyst piping. All tubes are comprised of #16 gage steel.

The purpose of Hedman Manufacturing exhaust system is to enhance the exhaust flow through the use of steel tubing with mandrel type bending methods used. The manufacturer claims, use of mandrel-type bending method prevents the tubing from being crushed or reduced in size during the bending of the tubing, thereby allowing the engine to work more efficiently.

The system operates in conjunction with the OEM computer controlled electronic port fuel injection and emission control systems already certified with the stock engine. Installation of the Hedman's exhaust system does not alter the OEM location of the oxygen sensor and catalyst where applicable. The tune-up specifications also remain the same.

V. DISCUSSION OF THE TUBULAR EXHAUST MANIFOLD SYSTEM

A 1991 Ford F-250 pick-up truck with a 7.5 liter (460 CID) fuel injected gasoline engine was used for the evaluation of the Tubular Exhaust Manifold System, Model No. 89461. The dynamometer inertia weight and loading used were 7000 lbs. and 18.2 hp. respectively.

Comparative emissions tests conducted by Milton Roy Laboratory for Hedman consisted of one Cold-Start CVS-75 emission test in the unmodified (baseline) configuration, followed by one Cold-Start CVS-75 emission test

in the modified (header system installed) configuration. The Air Resources Board (ARB) did not perform tests to confirm the test results submitted by the applicant.

The following are the emissions test results from testing conducted at Milton Roy Company.

Independent Laboratory:

Milton Roy Company, 1238 West Grove Ave., Orange, CA 92665-4134

Data

	HC	CO	NOx
Baseline	0.661	10.120	6.568
W/Device	0.742	9.872	7.060
Difference	0.080	-0.200	0.490

The differences between the device emission test results and baseline emission test results submitted by the applicant were within the allowed limits of 0.1 gm/mile or 10 percent of baseline HC, 1.0 gm/mile or 15 percent of baseline CO and .1 gm/mile or 10 percent of baseline NOx as specified in the "Procedures for Exemption of Add-On and Modified Parts." Based on the test results, the staff concludes that the installation of the Tubular Exhaust Manifold System will not have an adverse effect on exhaust emissions of the affected vehicles. Hedman Manufacturing submitted all the required information and fulfilled the requirements for exemption.

APPENDIX



PART #89461
2 S 4 WHEEL DRIVE 460 FORD W/ F.I.

C A U T I O N !

THIS IS A CUSTOM DESIGNED EXHAUST HEDDER SYSTEM, DESIGNED TO FIT THIS PARTICULAR APPLICATION(S). DO NOT BEND, BANG, CUT, DENT, DRILL, OR HEAT ANY PORTION OF THIS HEDDER! ANY ALTERATION OTHER THAN THOSE SUGGESTED IN THIS INSTRUCTION SHEET WILL VOID THE HEDMAN LIFETIME WARRANTY!

TO PREVENT EXHAUST LEAKS, YOU SHOULD INSTALL YOUR HEDDERS WITH HEDMAN FLANGE GASKETS ONLY!

BEFORE STARTING INSTALLATION:

It is necessary to raise the vehicle at least 36 inches from the ground. A floor hoist is recommended. If none available, use a hydraulic jack with jack stands. Do not use a bumper jack!

INSTALLATION INSTRUCTIONS:

- Disconnect battery to prevent electrical system damage.

LEFT SIDE

1. Remove spark plug wires, oil dip stick tube, and EGR tube fitting.
2. Remove stock exhaust manifolds. Soak EGR elbow with penetrant (WD40 etc) and remove from manifold.
3. With gasket in place, install hedder from below and start all bolts and tighten evenly.
4. Re-install dip stick tube, EGR elbow, EGR tube, and spark plug wires. It may be necessary to bend oil dip stick tube, brake, or fuel lines for adequate clearance. Use a spacer and the stock studs for the dip stick tube.

RIGHT SIDE

6. Remove spark plug wire and exhaust manifold.
7. With gasket in place, install hedder and start all hedders bolts, most restricted first, and tighten all bolts evenly.
8. Check all lines, wires, hoses, etc. for sufficient clearance.
9. Use a spacer and stock stud to bolt the two brackets to the head.
10. Unplug and carefully remove the oxygen sensor from the stock headpipe using a 7/8" box wrench. Install in the new manifold extension pipe.
11. Remove the hanger from the stock pipe and use with the new pipe.
12. Using clamps, flanges, gaskets, bolts, and nuts provided, install extension pipe.
13. Plug in oxygen sensor wire. Make sure it snaps into plug.
14. Connect battery, start engine and check for leaks or strange noises.
15. Take vehicle for test drive allowing engine to reach normal temperature after test drive, re-tighten all hedder bolts.



PARTS KIT FOR #89461

1	Instruction Sheet
1	Catalytic Converter Gasket
2	3" Collector Flange Gaskets
2	Flange Gaskets
2	UC 214 Clamps
2	3" Collector Flanges
1	3" X 2½" OD Reducer
6	3/8 - 16X1" Bolts
6	3/8 - 16 Nuts
3	3/8 ID X ½ OD X 1.900 Spacers
16	3/8 - 16X1" Hedder Bolts
1	Left Side Crossover Pipe
1	Right Side Extension Pipe
1	Right Side Manifold
1	Left Side Manifold
16	3/8 Lock Washers
1	Dip Stick Bracket