

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-374
Relating to Exemptions Under Section 27156
of the Vehicle Code

BASSANI MANUFACTURING
EQUAL LENGTH EXHAUST MANIFOLD ASSEMBLY

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 Equal Length Exhaust Manifold Assembly manufactured from 0.075 inch wall thickness steel tubing by Bassani Manufacturing of 160 East La Jolla Street, Placentia, California 92670, has been found not to reduce the effectiveness of the applicable vehicle pollution control system and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for the installation on the following Ford Motor Company motor vehicles:

<u>Part Number</u>	<u>Model Year</u>	<u>Vehicle Model</u>	<u>Engine Size</u>
5093	1986-93	Ford Mustang	5.0 liter
5094	1994-95	Ford Mustang	5.0 liter
50150	1987-95	Ford F150	5.0 liter
	1980-95	Ford Bronco	5.0 liter
58150	1987-95	Ford F150	5.8 liter
	1988-95	Ford Bronco	5.8 liter
58150L	1994-95	Ford F150 Lightning	5.8 liter
58150L-1	1994-95	Ford F150 Lightning	5.8 liter
58150S	1987-95	Ford F150	5.8 liter
	1988-95	Ford Bronco	5.8 liter

This Executive Order is valid provided that installation instructions for the Bassani Manufacturing Equal Length Exhaust Manifold Assembly will not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

Changes made to the design or operating conditions of the device, as exempt by the Air Resources Board, which adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of this device using any identification other than that shown in this

Executive Order or marketing of the 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.

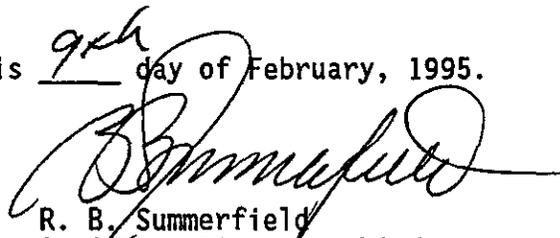
This Executive Order does not constitute any opinion as to the effect that the use of this device may have on any warranty either expressed or implied by the vehicle manufacturer.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF BASSANI MANUFACTURING'S EQUAL LENGTH EXHAUST MANIFOLD ASSEMBLY.

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 communication.

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 the order, in 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 after hearing that grounds for revocation exist.

Executed at El Monte, California, this 9th day of February, 1995.


R. B. Summerfield
Assistant Division Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF BASSANI MANUFACTURING'S
EQUAL LENGTH EXHAUST MANIFOLD ASSEMBLY
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS

February 1995

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AIR RESOURCES BOARD

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by

Mobile Source Division
State of California
Air Resources Board
9528 Telstar 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

Bassani Manufacturing of 160 East La Jolla Street, Placentia, California 92670 has applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Bassani Manufacturing Equal Length Exhaust Manifold Assembly. The Equal Length Exhaust Manifold Assembly is designed for installation on the following motor vehicles:

<u>Part Number</u>	<u>Model Year</u>	<u>Vehicle Model</u>	<u>Engine Size</u>
5093	1986-93	Ford Mustang	5.0 liter
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The Bassani Manufacturing Equal Length Exhaust Manifold Assembly includes exhaust manifolds which are designed to replace the original equipment manufacturer exhaust manifolds and provide for the connection of all emission control devices. The installation of the Bassani Manufacturing Equal Length Exhaust Manifold Assembly does not require any adjustments or modifications to the emission control systems of the applicable vehicles.

Based on the results from emission tests performed at an independent laboratory on a 1995 5.8 liter Ford F150 light duty truck, the staff concludes that Bassani Manufacturing's Equal Length Exhaust Manifold Assembly will not

adversely affect exhaust emissions from vehicles for which an exemption is requested.

The staff recommends that Bassani Manufacturing be granted an exemption as requested and that Executive Order D-374 be issued.

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III. RECOMMENDATION

The staff recommends that Bassani Manufacturing be granted an exemption for their Equal Length Exhaust Manifold Assembly for installation on those vehicles listed above. The staff also recommends that Executive Order D-374 be issued.

IV. DESCRIPTION OF THE BASSANI MANUFACTURING EQUAL LENGTH EXHAUST MANIFOLD ASSEMBLY

The Bassani Manufacturing Equal Length Exhaust Manifold Assembly is designed for installation on the vehicles listed above. The Equal Length Exhaust Manifold Assembly operates in conjunction with the original equipment manufacturer's (OEM) computer controlled fuel injection system and emission control systems.

The purpose of modifying the exhaust system of the engine is to increase the efficiency of exhaust gas scavenging which results in increased performance and fuel economy. As with the OEM exhaust system, Bassani Manufacturing's Equal Length Exhaust Manifold Assembly, routes exhaust gases from the engine to the OEM head pipes. The Equal Length Exhaust Manifold Assembly includes equal-length, "shorty" style headers that bolt-in without modification to the OEM head pipes.

The headers have a 4-into-1 configuration with four equal length primary tubes merged into a single collector. Part numbers 50150 and 58150 consist of primary tubes of 1.5 inch diameter, 0.075 inch wall thickness, 1008 ASTM513 carbon steel. Part numbers 5093 and 5094 consist of primary tubes of 1.625 inch diameter, 0.075 inch wall thickness, 1008 ASTM513 carbon steel. Part numbers 58150S and 58150L consist of stepped primary tubes of 1.5 and 1.625 inch diameter, 0.075 inch wall thickness, 1008 ASTM513 carbon steel. Part numbers 58150L-1 consists of primary tubes of 1.625 inch diameter, 0.075 inch wall thickness, 1008 ASTM513 carbon steel. The Bassani Manufacturing Equal

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I. INTRODUCTION

Bassani Manufacturing of 160 East La Jolla Street, Placentia, California 92670 has applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the Bassani Manufacturing Equal Length Exhaust Manifold Assembly. The Equal Length Exhaust Manifold Assembly is designed for installation on the following motor vehicles:

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Bassani Manufacturing has submitted test data from a 1995 Ford F150 light duty truck equipped with a 5.8 liter engine which was tested at California Environmental Engineering (CEE), Santa Ana, California.

II. CONCLUSION

Based on the results from emission testing performed at CEE on a 1995 Ford F150 light duty truck, the staff concludes that Bassani Manufacturing's Equal Length Exhaust Manifold Assembly will not adversely affect exhaust emissions from vehicles for which an exemption is requested.

Length Exhaust Manifold Assembly uses individual port flanges for each primary. The four primaries are welded into a collector formed from 3 inch diameter, 0.090 wall thickness steel tubing. The collector outlet diameter on all headers is 2 inches. The collector outlet is a duplicate of the factory ball-and-socket type utilizing fixed studs to ensure a no leak connection and complete interchangeability with the OEM exhaust. The standard finish on all headers is industrial chrome. Plasma aluminum spray coating and HPC high temperature coating are available as options to the chrome finish.

Installation of Bassani Manufacturing's Equal Length Exhaust Manifold Assembly does not alter the OEM location of the oxygen sensor and the catalyst. The tune-up specifications are also unaltered from the OEM tune-up specifications. All brackets, gaskets, hardware, and instructions are included with the header kits.

V. DISCUSSION OF THE BASSANI MANUFACTURING EQUAL LENGTH EXHAUST MANIFOLD ASSEMBLY

A 1995 Ford F150 truck equipped with a 5.8 liter gasoline engine certified to Tier 1 standards was used for the evaluation of the Equal Length Exhaust Manifold Assembly. The emission tests conducted by CEE consisted of three Cold Start CVS-75 Federal Test Procedures (FTP's) with the Equal Length Exhaust Manifold Assembly, part number 58150S, installed.

The Ford F150 was chosen as the most popular/worst case vehicle/engine application. The estimated test weight and horsepower setting were 5250 pounds and 15.4 horsepower respectively. The emission tests conducted by CEE for Bassani Manufacturing consisted of three cold start FTP's in the modified (Equal Length Exhaust Manifold Assembly installed) configuration. The test vehicle procured by CEE did not have the required minimum of 4,000 accumulated miles. CEE intended to demonstrate emission stability by testing at 2592 miles

(Test 1) and 3194 miles (Test 2). Test 1 was conducted immediately after the Equal Length Exhaust Manifold Assembly was installed. As a result, CEE claims the emissions were unstable because there was insufficient time for the vehicle's adaptive learn to adjust to the headers. As such the data from Test 1 were not used for the evaluation of the headers. A third test, Test 3, was conducted to back up the data from Test 2. The ARB did not perform any tests to confirm the test results submitted by the applicant. A summary of the test results is shown below:

Exhaust Emission Test Results
 On A 1995 Ford F150 Light Duty Truck
 Exhaust Emissions (gm/mi)

	<u>NMHC</u>	<u>CO</u>	<u>NOx</u>
Test 1 (2592 miles)	0.096	0.704	0.395
Test 2 (3194 miles)	0.136	0.862	0.211
Test 3 (3245 miles)	0.120	0.732	0.206
Average (Test 2 & Test 3)	0.128	0.797	0.209
50k Deterioration Factor (DF)	1.292	1.172	1.000
Average with DF applied	0.165	0.934	0.209
50k Standard	0.32	4.4	0.7

Test 2 and Test 3 were averaged and the 50,000 mile DF was applied to the average. The average results from the emission tests show the vehicle emissions with the Bassani Manufacturing Equal Length Exhaust Manifold Assembly installed did not exceed the test vehicle's "California Exhaust Emission Standard." Therefore, based on the test results, the staff concludes that the installation of Bassani Manufacturing's Equal Length Exhaust Manifold Assembly will not have an adverse effect on exhaust emissions on the vehicles for which exemption is requested.

Bassani Manufacturing has submitted all the required information and fulfilled the requirements for an exemption.