State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-435
Relating to Exemptions Under Section 27156
of the Vehicle Code

T & T PERFORMANCE
"TBI RISER PLATE KIT"

WHEREAS, Vehicle Code Sections 27156 and 38391, and Title 13, California Code of Regulations (hereafter "CCR") Section 2222(e), authorize the California Air Resources Board (ARB) and its Executive Officer to exempt add-on and modified aftermarket devices from the prohibitions of Vehicle Code Section 27156.

WHEREAS, T & T Performance of 181 Industrial Way, P.O. Box 1994, Buellton, California 93427, has applied to the ARB for exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 for their TBI Riser Plate Kit for the following application:

Vehicle Model-year	Engine Displacement
1984 - 1995	4.3L (262 CID)
1986 - 1995	5.0L (302 CID)
1986 - 1995	5.7L (350 CID)
1987 - 1995	7.4L (454 CID)

WHEREAS, pursuant to the authority vested in the Executive Officer by Health and Safety Code Section 39515 and in the Chief, Mobile Source Operations Division by Health and Safety Code Section 39516 and Executive Order G-45-9, the ARB finds that the above add-on device complies with the California Vehicle Code Section 27156 and Title 13, California Code of Regulations. Emission performance of the TBI Riser Plate Kit was based on cold-start CVS-75 tests conducted at an independent vehicle test laboratory.

It has not been determined what effect use of the TBI Riser Plate Kit may have on any warranty, either expressed or implied, by the manufacturer or a motor vehicle on which the device is installed.

IT IS HEREBY RESOLVED that the above TBI Riser Plate Kit is exempt from the prohibitions in Vehicle Code Section 27156 for installation on the approved application vehicles subject to the following conditions:

1. No changes are permitted to the TBI Riser Plate Kit device as described in the application for exemption. Any changes to the TBI Riser Plate Kit or any of its components, and other factors addressed in this order must be evaluated and approved by the ARB prior to marketing in California.

2. Marketing of the TBI Riser Plate Kit using identification other than those shown in this Executive Order or marketing of the TBI Riser Plate Kit for application other than the one listed in this Executive 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 TBI Riser Plate Kit device as individual devices.

3. Any oral or written references to this Executive Order or its content by T & T Performance, 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 TBI Riser Plate Kit and is only a finding that the TBI Riser Plate Kit is exempt from the prohibitions of Vehicle Code Section 27156.

4. Should the installation of the TBI Riser Plate Kit on applicable vehicles be determined to result in unacceptable emission increase or cause adverse effect on pollution control systems of the vehicles, the ARB may require T & T Performance to conduct specific tests in order to determine the levels of emissions increase. Should such tests show excessive emission increase, T & T Performance may be required to cease and desist from marketing the device in California, and this exemption may be rescinded, in accordance with established procedures.

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 TBI RISER PLATE KIT.

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 10th day of July 1997.

R.B. Summerfield, Chief
Mobile Source Operations Division

State of California
AIR RESOURCES BOARD

EVALUATION OF T & T PERFORMANCE TBI RISER PLATE KIT FOR EXEMPTION FROM THE PROHIBITIONS IN VEHICLE CODE SECTION 27156, AND SECTION 2222 OF TITLE 13, CALIFORNIA CODE OF REGULATIONS

July 1997

EVALUATION OF T & T PERFORMANCE TBI RISER PLATE KIT FOR EXEMPTION FROM THE PROHIBITIONS IN VEHICLE CODE SECTION 27156, AND SECTION 2222 OF TITLE 13, CALIFORNIA CODE OF REGULATIONS

by

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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

T & T Performance of 181 Industrial Way, P.O. Box 1994, Buellton, California 93427, has applied for an exemption of their Throttle Body Injection Riser Plate Kit (TBI Riser Plate Kit), from the prohibitions in Vehicle Code (VC) Sections 27156 and 38391, in accordance with Section 2222 of Title 13, California Code of Regulations (CCR). The TBI Riser Plate Kit is designed for installation on General Motor (GM) C/K series Trucks, Vans, Blazer, and Suburban vehicles equipped with Throttle Body Injection (TBI), excluding those equipped with OBD II system. The vehicles include the following model-years and engine displacement:

Vehicle Model-year	Engine Displacement
1984 - 1995	4.3L (262 CID)
1986 - 1995	5.0L (302 CID)
1986 - 1995	5.7L (350 CID)
1987 - 1995	7.4L (454 CID)

The TBI Riser Plate Kit is designed to raise the TBI unit above the intake manifold. The applicant claimed that by raising the TBI unit off the intake manifold, the velocity of the air intake will be increased. The increase in velocity of the air intake will cause the atomization of the air-fuel mixture for more efficient combustion. The result will be increase in torque, horsepower, and reduction in emissions.

Tests conducted at an independent laboratory showed that the device has met the requirements under California procedures for VC Section 27156 exemption of add-on and modified parts. Based on the independent laboratory test results, the staff recommends that the exemption be granted as requested and that Executive Order No. D-435 be issued to enable T & T Performance to market the TBI Riser Plate Kit in California.

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I. INTRODUCTION

T & T Performance of 181 Industrial Way, P.O. Box 1994, Buellton, California 93427, has applied for an exemption from the prohibitions in Vehicle Code Sections 27156 and 38391 for their TBI Riser Plate Kit, in accordance with Section 2222 of Title 13, California Code of Regulations (CCR). The TBI Riser Plate Kit is an add-on spacer plate designed to raise the TBI unit above the intake manifold and increase the velocity of intake air to achieve better atomization of air-fuel mixture. The TBI Riser Plate Kit is designed for the following application:

Vehicle Model-year	Engine Displacement
1984 - 1995	4.3L (262 CID)
1986 - 1995	5.0L (302 CID)
1986 - 1995	5.7L (350 CID)
1987 - 1995	7.4L (454 CID)

II. CONCLUSION

The applicant has submitted data from testing conducted at the Automobile Club of Southern California (ACSC) Laboratory in Los Angeles, California. Based on the applicant's submitted exhaust emissions test data from ACSC, the staff concludes that the TBI Riser Plate Kit meets the criteria set forth in Vehicle Code Section 27156 and Title 13, California Code of Regulations, Section 2222 for the stated application.

III. RECOMMENDATION

Staff recommends that the exemption be granted as requested and that Executive Order No. D-435 be issued, permitting the advertisement, sale, and installation of the TBI Riser Plate Kit on applicable vehicles.

IV. DEVICE DESCRIPTION

T & T Performance's TBI Riser Plate Kit is an aluminum spacer plate designed to raise the TBI unit above the intake manifold about 1.300 inches. The TBI Riser Plate Kit consists of the aluminum spacer, two gaskets, mounting bolts, throttle linkage spacers, and fuel line fitting extensions. The applicant claimed that raising the TBI unit 1.300 inches above the intake manifold will increase the velocity of intake air; however, the increase in velocity was not specified quantitatively. The applicant further claimed that an increase in intake air velocity will result in better atomization of air-fuel charge and complete combustion. The installation of the device will, therefore, result in increased torque, horsepower, gas mileage, and emissions reduction. Test results from the ACSC laboratory and confirmatory tests conducted by the Air Resources Board (ARB) did not show sufficient consistency to confirm the applicant's claims.

V. DEVICE EVALUATION

T & T Performance submitted data from testing conducted by Automobile Club of Southern California Research Laboratory (ACSC), an independent private laboratory in Los Angeles, California. The test vehicle was a 1995 Chevrolet C1500 V6 Pickup Truck powered by a 4.3L engine. One cold-start CVS-75 test was performed in baseline configuration followed by one cold-start CVS-75 test with the TBI Riser Plate Kit installed (modified configuration). Upon completion of testing at the independent laboratory, the test vehicle was erroneously released to the applicant prior to confirmatory tests at the ARB. The applicant drove the truck about 140 miles to Buellton. In order for the ARB to perform confirmatory testing, the applicant drove the truck approximately 155 miles to ARB's Haagen-Smit Laboratory in El Monte, California, prior to the baseline test. One cold-start CVS-75 test was performed in baseline configuration, followed by two cold-start CVS-75 tests with TBI Riser Plate Kit installed. The two device tests were averaged and then used for comparison with the baseline test. Data from the tests are shown below.

ACSC Research Laboratory
Los Angeles, California

4.3L Chevrolet C1500 Pickup Truck

		NMHC	CO	NOx
Baseline Test	(g/mi)	0.266	2.227	0.633
Device Test	(g/mi)	0.361	2.806	0.623
Change	(g/mi)	+0.095	+0.579	-0.010
Change	(%)	+35.7	+26	-1.6

Haagen-Smit Laboratory
El Monte, California

Baseline	(g/mi)	0.303	4.061	0.714
Device Test 1	(g/mi)	0.423	4.685	0.668
Device Test 2	(g/mi)	0.421	4.888	0.722
Average of 1 & 2	(g/mi)	0.422	4.786	0.695
Change	(g/mi)	+0.119	+0.725	-0.019
Change	(%)	+39.3	+17.8	-2.7

Test results from ACSC show that the emission increases in HC and CO are below the acceptable maximum increase in 0.1 g/mi and 1.0 g/mi, respectively. Results from Haagen-Smit Laboratory show emission increase of HC of 0.119 g/mi, which is 0.019 g/mi above acceptable increase. However, staff believes that operation of the test vehicle for approximately 300 miles prior to the confirmatory tests may have contributed to the significant difference between the baseline and device HC emission levels. An appropriate procedure would have been to accumulate similar mileage prior to the device test. However, due to time constraints, the ARB cannot conduct the mileage accumulation. In view of the above, staff recommends that T & T Performance be granted a Vehicle Code Section 27156 Exemption based on test results from ACSC Research laboratory.