

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-186-7
Relating to Exemptions Under Section 27156
of the Vehicle Code

HKS U. S. A., INC.
HKS SPORT TURBO UPGRADE SYSTEM

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 HKS Sport Turbo Upgrade System, manufactured by HKS USA, Inc. of 20312 Gramercy Place, Torrance, CA 90501, 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 following vehicles:

| <u>Model Year</u> | <u>Make</u> | <u>Model</u> | <u>Engine Size-Liter(CID)</u> | <u>Part Number</u> |
|-------------------|-------------|--------------|-------------------------------|--------------------|
| 1991-1992 | Toyota | MR2 Turbo | 2.0 (122) | 6045EC-11328P |
| 1990-1992 | Nissan | 300 ZX Turbo | 3.0 (183) | 6045EC-24751P |
| 1991-1992 | Mitsubishi | Eclipse | 2.0 (122) | 6045EC-47373N |
| 1991-1992 | Eagle | Talon | 2.0 (122) | 6045EC-47373N |
| 1991-1992 | Plymouth | Laser | 2.0 (122) | 6045EC-47373N |
| 1991-1992 | Mitsubishi | Galant VR4 | 2.0 (122) | 6045EC-47573P |

This Executive Order is valid provided that installation instructions for this turbocharger kit will not recommend tuning the vehicle to specifications different from those submitted by HKS USA, Inc.

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

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

This Executive Order is granted based on results from emissions tests if conducted in accordance with Cold-Start CVS-75 Federal Test Procedure. However, the ARB finds that reasonable grounds exist to believe that use of the Sport Turbo Upgrade System may adversely affect emissions of motor vehicles when operating under conditions outside the parameters of the previously prescribed test procedures. Accordingly, the ARB reserves the right to conduct additional emission tests, in the future, as such tests are developed, that will more adequately measure emissions from all cycle phases. If such test results demonstrate that the Sport Turbo Upgrade System adversely affect emissions during off-cycle conditions (defined as those conditions which are beyond the parameters of the Cold-Start CVS-75 Federal Test Procedure), this Executive Order shall be effectively rescinded as of the date the test results are validated. Further, if such test results or other evidence provides the ARB with reason to suspect that the Sport Turbo Upgrade System will affect the durability of the emission control system, HKS USA, Inc. shall be required to submit durability data to show that the durability of the vehicle emission control system is not, in fact, affected and/or that the add-on or modified part demonstrates adequate durability.

In addition to the foregoing, the ARB reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222, et seq.

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 THE HKS USA, INC. SPORT TURBO UPGRADE 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 communication.

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."

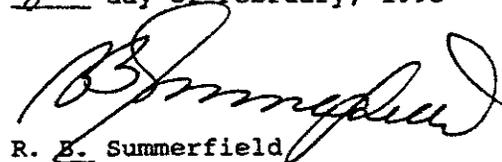
HKS USA, INC.
SPORT TURBO UPGRADE SYSTEM

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(Page 3 of 3)

Any apparent violation of the conditions of this Executive Order may result in its rescission or submission to the Attorney General of California for such action as he deems advisable.

The Bureau of Automotive Repair will be notified by copy of this order.

Executed at El Monte, California, this 8th day of February, 1993



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF HKS USA, INC.'S HKS SPORT TURBO UPGRADE SYSTEM
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE
CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS

February 1993

State of California
AIR RESOURCES BOARD

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FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE
CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS

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

SUMMARY

HKS USA, Inc., of 20312 Gramercy Place, Torrance, California 90501 has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for the HKS Sport Turbo Upgrade System. The HKS Sport Turbo Upgrade System is designed for installation on the following vehicles:

| <u>Model Year</u> | <u>Make</u> | <u>Model</u> | <u>Engine Size-Liter(CID)</u> | <u>Part Number</u> |
|-------------------|-------------|--------------|-------------------------------|--------------------|
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| 1991-1992 | Plymouth | Laser | 2.0 (122) | 6045EC-47373N |
| 1991-1992 | Mitsubishi | Galant VR4 | 2.0 (122) | 6045EC-47573P |

Based upon information submitted showing no significant increase in intake manifold pressure, and results from a previous comparative exhaust emission tests performed at an independent laboratory on a 1990 Nissan 300 ZX Twin Turbo equipped with Sport Turbo Upgrade System and other modifications, the staff concludes that HKS USA, Inc.'s HKS Sport Turbo Upgrade System will not adversely affect exhaust emission from vehicles for which an exemption is requested.

The staff recommends that HKS USA, Inc. be granted an exemption as requested and that Executive Order D-186-7 be issued.

TABLE OF CONTENTS

| | Page Number |
|---|-------------|
| SUMMARY | i |
| CONTENTS | ii |
| I. INTRODUCTION | 1 |
| II. CONCLUSION | 2 |
| III. RECOMMENDATION | 2 |
| IV. DESCRIPTION | 3 |
| V. SPORT TURBO UPGRADE SYSTEM KIT EVALUATION AND DISCUSSION | 4 |
| APPENDIX | 6 |
| APPENDIX A: TURBO SYSTEM DRAWINGS | |

EVALUATION OF HKS USA, INC.'S HKS SPORT TURBO UPGRADE SYSTEM
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE
CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
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I. INTRODUCTION

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HKS USA, Inc. submitted information showing no significant change in intake manifold pressure and data from a previous comparative exhaust emission tests conducted on a 1990 Nissan 300 ZX Twin Turbo at California Environmental Engineering, Anaheim, California.

II. CONCLUSION

Based on an engineering evaluation of information showing no significant increase in intake manifold pressure and the results from comparative exhaust emission tests performed at California Environmental Engineering on a 1990 Nissan 300 ZX Twin Turbo, equipped with Sport Turbo Upgrade System and other modifications, the staff concludes that HKS USA, Inc.'s HKS Sport Turbo Upgrade System will not adversely affect exhaust emissions from vehicles for which an exemption is requested.

III. RECOMMENDATION

The staff recommends that HKS USA, Inc. be granted an exemption for their HKS Sport Turbo Upgrade System for installation on the following vehicles:

| <u>Model Year</u> | <u>Make</u> | <u>Model</u> | <u>Engine Size-Liter(CID)</u> | <u>Part Number</u> |
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The staff also recommends that Executive Order D-186-7 be issued.

IV. DEVICE DESCRIPTION

The HKS Sport Turbo Upgrade is a replacement turbocharger for stock turbo vehicles. It has a larger compressor wheel, compressor housing, turbine wheel, turbine housing and larger wastegate area. It is designed to bolt directly onto the stock exhaust manifold.

The HKS Sport Turbo Upgrade System is designed for installation on the following vehicles:

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|-------------------|-------------|--------------|-------------------------------|--------------------|
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| 1991-1992 | Mitsubishi | Galant VR4 | 2.0 (122) | 6045EC-47573P |

The Sport Turbo Upgrade System consists of a turbocharger unit and installation hardware. The kit operates in conjunction with the original equipment manufacturer (OEM) computer controlled electronic port fuel injection and emission control systems already certified with the stock engine. The tune-up specifications remain the same.

The 300 ZX Sport Turbo Upgrade System replaces the stock Garrett Airesearch T-25 twin turbochargers with two Garrett Airesearch T-25 G twin turbochargers. Garrett manufactures all the rotating assemblies, turbine housing and wastegate swing valve while HKS manufactures the compressor housing for the modified turbocharger system. Appendix A illustrates the compressor housing and the turbocharger system. The modified turbochargers increase the

area ratios for the turbine and compressor from .58 to .64 and .42 to .80 respectively and increases the maximum boost from 8.5 psi to 14.3 psi.

The MR2 Sport Turbo Upgrade System replaces the OEM turbocharger with a Mitsubishi turbocharger model number TD05G. This turbocharger is built to HKS specifications and has a turbine inlet of 8 square centimeters.

The Mitsubishi Eclipse, Eagle Talon, Plymouth Laser, and the Mitsubishi Galant VR4 Sport Turbo Upgrade System replaces each respective OEM turbochargers with a Mitsubishi turbocharger model number TD05H. This turbocharger is built to HKS specifications and has a turbine inlet of 8 square centimeters. The Mitsubishi Galant VR4 Sport Turbo Upgrade System differs from the Eclipse/Talon/Laser Sport Turbo Upgrade System only in installation hardware.

V. SPORT TURBO UPGRADE SYSTEM EVALUATION AND DISCUSSION

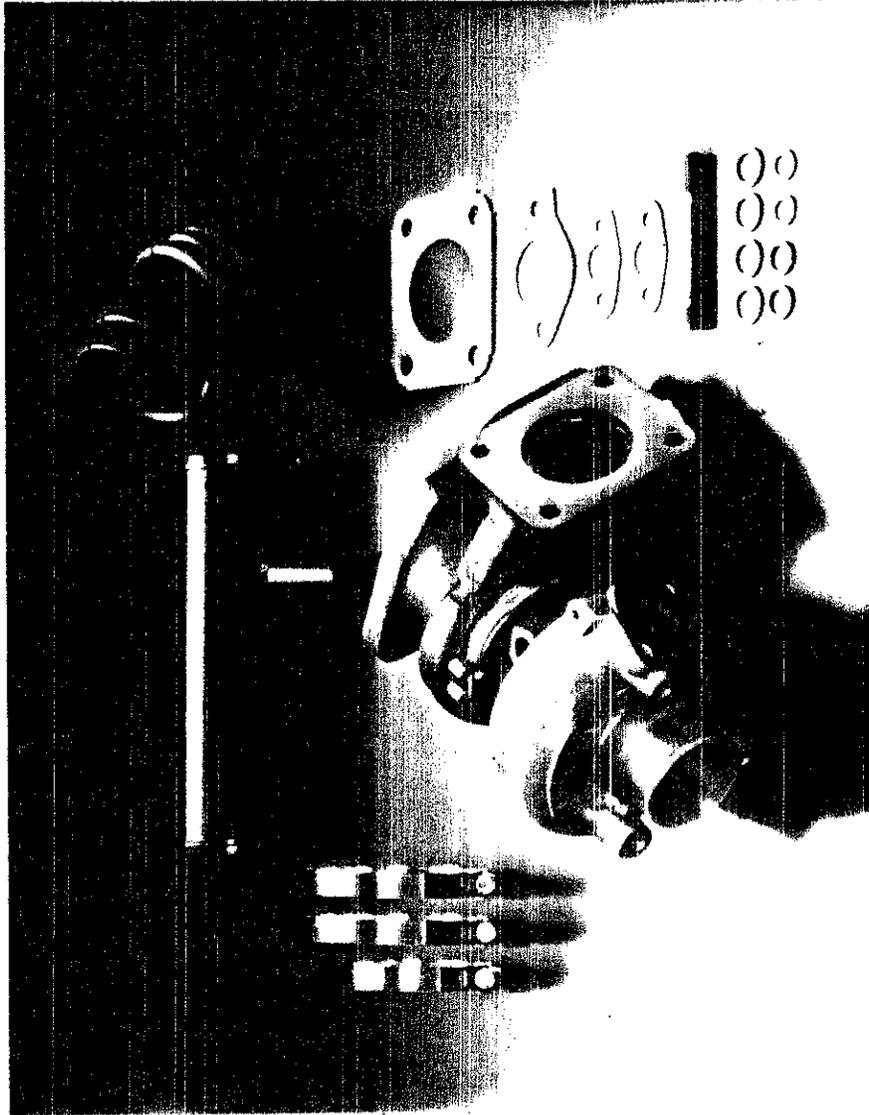
HKS USA, Inc. previously tested the Sport Turbo Upgrade System on a 1990 Nissan 300 ZX Twin Turbo with a 3.0 liter fuel-injected gasoline engine as part of the HKS Performance Package P/N SR71XX-90000X. The performance package consists of an exhaust system, T-25 G Sport Turbo Upgrade System, intercooler upgrades, Vein Pressure Converter, 485 ccpm fuel injectors, HKS Power Flow air filter system, electronic valve controller wastegate, spark plugs, oil cooler and boost gauge.

Comparative emissions tests demonstrated no significant increase in emissions over stock despite installation of the Sport Turbo Upgrade System and other modifications.

HKS USA, Inc. submitted intake manifold pressure traces obtained during exhaust emission tests showing both stock and Sport Turbo Upgrade System equipped intake manifold pressure levels. The traces indicated the intake manifold pressure remained below atmospheric pressure throughout the entire test

Appendix

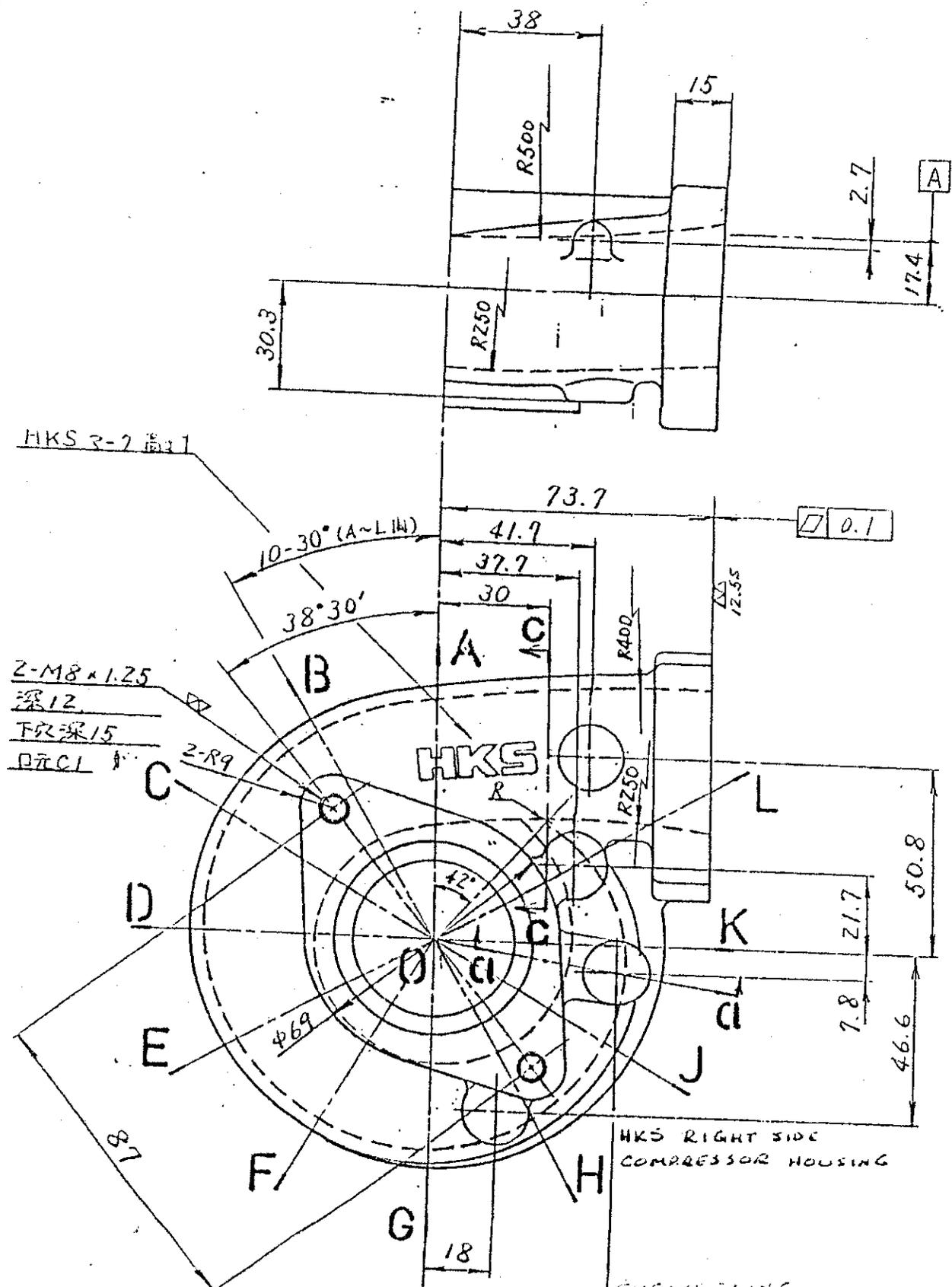
APPENDIX A



HKS Sport Turbo Upgrade
1991-92 Mitsubishi Eclipse

QUALITY/COST

(A) ~ (35S) ~ (12.5S) ~ (12.5S)



HKS 3-2 高31

Z-M8 x 1.25
深12
F深15
D元C1

2-R9

HKS RIGHT SIDE
COMPRESSOR HOUSING

ENGINEERING
DRAWING ED 2 A-1

FROM HKS

QUALIFIED

8

ED 2 A-1

12917 102604 12105 5882920466234 PAGE 11