

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-236-1  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

AUTOMOTIVE PERFORMANCE SYSTEMS  
NEUSPEED PERFORMANCE CHIP

Pursuant to the authority vested in the Air Resources Board ("ARB") 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 Neuspeed Performance Chip manufactured by Automotive Performance Systems 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 the following applications:

1990-1992 Volkswagen Passat, Jetta II and Golf GTI equipped with a 2.0 liter 16 valve engine.

1990-1992 Volkswagen Corrado equipped with the supercharged 1.8 liter 8 valve manual transmission engine.

This Executive Order is valid provided that installation instructions for this Neuspeed Performance Chip 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 ARB, 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 a kit as an individual device.

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

This Executive Order is granted based on results from emissions tests 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 Neuspeed Performance Chip 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 Neuspeed Performance Chip adversely affects 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 Neuspeed Performance Chip will affect the durability of the emission control system, Automotive Performance Systems 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 ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF AUTOMOTIVE PERFORMANCE SYSTEMS' NEUSPEED PERFORMANCE CHIP.

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."

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.

Executed at El Monte, California, this 29<sup>th</sup> day of February, 1992.



R. B. Summerfield  
Assistant Division Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF AUTOMOTIVE PERFORMANCE SYSTEMS, INC.  
NEUSPEED PERFORMANCE CHIP FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE  
CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF  
THE CALIFORNIA CODE OF REGULATIONS

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AIR RESOURCES BOARD

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

SUMMARY

Automotive Performance Systems, Inc. (Automotive Performance Systems) has applied for an exemption from the prohibitions of Vehicle Code Section 27156 for their Neuspeed Performance Chip for installation on 1990-92 Corrado, Passat, Jetta, and Golf GTI with 1.8 & 2.0 liter gasoline engines. Automotive Performance Systems has submitted a completed application and all the required information, as well as exhaust emissions test data performed at Milton Roy Company which show that the Neuspeed Performance Chip does not have any adverse effect on the exhaust emissions of the affected vehicles.

Based on the submitted information and the results of the emissions test performed at Milton Roy Company, the staff concludes that the installation of Automotive Performance Systems' Neuspeed Performance Chip will not adversely affect exhaust emissions on the specified vehicles when tested in accordance with Cold Start CVS-75 Federal Test Procedure.

The staff recommends Automotive Performance Systems, Inc. be granted an exemption as requested and that Executive Order D-236-1 be issued.

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EVALUATION OF AUTOMOTIVE PERFORMANCE SYSTEMS, INC. NEUSPEED PERFORMANCE CHIP  
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

Automotive Performance Systems, Inc. of 1464 N. Hundley St., Anaheim, CA 92806, has applied for an exemption from the prohibitions of Vehicle Code Section 27156 for their Neuspeed Performance Chip for installation on 1990-92 Corrado, Passat, Jetta, and Golf GTI with 1.8 & 2.0 liter gasoline engines. Automotive Performance Systems has submitted a completed application and all the required information, as well as exhaust emissions test data performed at Milton Roy Company on a 1990 1.8 liter Volkswagen Corrado.

II. CONCLUSIONS

Based on the submitted information and the results from exhaust emissions test performed at Milton Roy Company, the staff concludes that Automotive Performance Systems' Neuspeed Performance Chips will not adversely affect exhaust emissions from the specified vehicles when tested in accordance with Cold Start CVS-75 Federal Test Procedure (FTP).

III. RECOMMENDATION

The staff recommends that Automotive Performance Systems, Inc. be granted an exemption as requested and that Executive Order D-236-1 be issued.

IV. NEUSPEED PERFORMANCE CHIP DESCRIPTION

Many computer controlled vehicles are equipped with an electronic control unit (ECU) which are programmed using a prom. Signals detected by the vehicle's sensors are fed directly into the ECU where they are analyzed

and compared to the operational data programmed inside the prom. The prom sends out appropriate adjustments in the engine operation in response to any changing conditions. For example, a prom will adjust timing and fuel delivery when a vehicle is subjected to additional load. Thus, by modifying data in the prom, spark timing and fuel delivery can be adjusted.

Automotive Performance Systems' Neuspeed Performance Chip modifies the timing curve and revolution limiter (increase of 300 over OEM) of both turbo and non-turbo Volkswagen passenger cars. On turbo applications, there is also an increase in fuel delivery under boost conditions. All modifications are effected by full throttle condition; therefore, the performance chip monitors and modifies the vehicle operation under open-loop modes.

Automotive Performance Systems claims these modifications translate to an increase in torque and horsepower. No modifications have been conducted on the Neuspeed Performance Chip that would affect throttle response and driveability, under closed-loop conditions (normal day-to-day driving). The manufacturer claims that modifications under full-throttle operation offer enhanced performance and acceleration. Automotive Performance Systems does not recommend the use of any particular fuel to obtain optimum performance or avoid knocking which may be caused by advanced or retarded timing.

Installation instructions, included with the chip, is shown in the Appendix.

#### V. DISCUSSION OF THE NEUSPEED PERFORMANCE CHIP

A 1990 1.8 liter Volkswagen Corrado equipped with a supercharger and intercooler, was selected as the test vehicle to evaluate the effect of the Neuspeed Performance Chip on tailpipe emissions and to confirm that it is not functioning under closed-loop conditions. The test program consisted of

one CVS-75 FTP (cold start) test on the Corrado in the modified configuration and evaluated against its emission standards. The results of the exhaust emission test performed at Milton Roy Company are shown in Table 1.

Table 1

Exhaust Emissions Test Results from  
Milton Roy Company  
On The 1990 Volkswagen Corrado  
Exhaust Emissions (gm/mi)

<u>Test Mode</u>	<u>HC</u>	<u>CO</u>	<u>NOx</u>
Device	0.305	4.544	0.154
Standards	0.41	7.0	0.7
Deterioration Factors	1.0	1.0	1.0
Difference	-0.105	-2.456	-0.546

The results at Milton Roy Company indicate that the exhaust emissions of the 1990 Volkswagen Corrado with the Automotive Performance Systems Neuspeed Performance Chip installed are well below the emission standards for that engine family. This demonstrates that the installation of the Automotive Performance Systems' Neuspeed Performance Chip on the applicable vehicles will not adversely affect the exhaust emissions when tested in accordance with the CVS-75 FTP.

Automotive Performance Systems submitted all the required information and fulfilled the requirements for an exemption.

**APPENDIX**

# NEUSPEED®

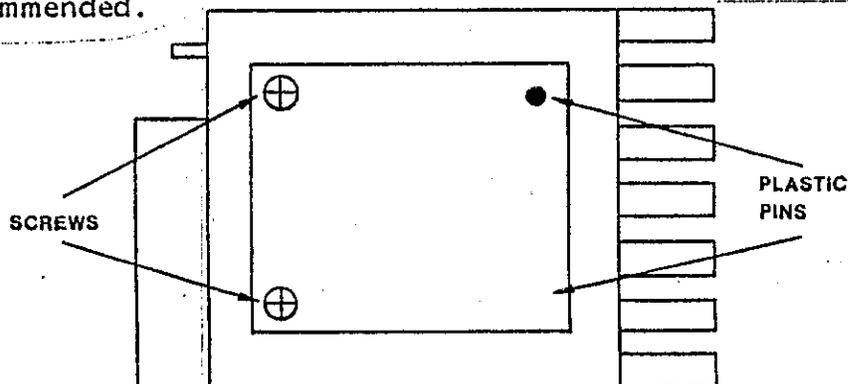
## NEUSPEED P-CHIP FOR CORRADO 1.8 1990-UP, MANUAL TRANSMISSIONS ONLY INSTALLATION INSTRUCTIONS

The Electronic Control Unit (ECU) is located near the windshield wiper motor on passenger side of vehicle.

### CAUTION - CAUTION - CAUTION

Extreme care must be taken when handling the P-CHIP! DO NOT stand on carpet or wear shoes or clothing that can cause static electricity. Any current, no matter how slight will ruin the P-CHIP.

1. Unclip and remove interior air intake screen.
2. Remove nut on ECU bracket, disconnect manifold sensing line, electrical connector and remove ECU with bracket from vehicle.
3. Remove ECU bracket.
4. Remove the three screws around plug connector.
5. Remove the four screws around aluminum end cover and pull apart.
6. Remove plastic shield on top side.
7. Remove two screws and two plastic pins located per diagram. Squeeze plastic expansion tabs to unhook upper circuit board, and turn over upper circuit board.
8. Remove five screws on tin cover.
9. NOTE NOTCH ON END OF P-CHIP! Using a small screw driver, carefully and evenly pry-up and remove factory chip.
10. Replace with NEUSPEED P-CHIP, making sure that notch on end of P-CHIP aligns with notch on receptacle. Carefully align ALL pins into receptacle, and press into position.
11. Assemble ECU in reverse of disassembly.
12. NOTE: ALL factory tune-up specifications remain the same. Premium fuel is recommended.



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