State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-607

Relating to Exemptions under
Section 27156 of the Vehicle Code

MAZDASPEED Performance Accessories
Intake Systems

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-02-003;

IT IS ORDERED AND RESOLVED: That installation of the Intake Systems, manufactured for MAZDASPEED Performance Accessories (27100 International Drive, Flat Rock, Michigan 48134-9400) by Advanced Engine Management, Inc. (2205 126th Street, Unit A, Hawthorne, California 90250), has been found not to reduce the effectiveness of the applicable vehicle pollution control systems, and therefore, the Intake Systems are exempt from the prohibitions in Section 27156 of the California Vehicle Code for installation on the following vehicles:

Intake System Part Number	Vehicle Application	Engine
GRMS-8M-D30	2006 Mazda MX-5	2.0 liter
GRMS-8M-H32	2006 Mazda Mazdaspeed 6	2.3 liter turbocharged
GRMS-8M-K30	2004-2005 Mazda RX-8	1.3 liter
GRMS-8M-L30	2004-2005 Mazda 3	2.3 liter
GRMS-8M-H31	2003-2006 Mazda 6	3.0 liter
GRMS-8M-H30	2005-2006 Mazda 6 (manual transmission only)	2.3 liter (excludes LEV II SULEVs)

The Intake Systems include an open-element air filter, filter sock (some systems), aluminum intake pipes, and mounting hardware.

This Executive Order is based on engineering evaluation and Cold-Start CVS-75 Federal Test Procedure and On-Board Diagnostic II System testing conducted by MAZDASPEED Performance Accessories with the Intake System.

If evidence provides the Air Resources Board with reasons to suspect that the Intake Systems will affect the durability of the emission control system, MAZDASPEED Performance Accessories 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 parts demonstrate adequate durability.

This Executive Order is valid provided that installation instructions for the Intake Systems do not recommend tuning the vehicle to specifications different from those of the vehicle manufacturer.

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

Marketing of the Intake Systems using identification other than that shown in this Executive Order or for an application other than that listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board.

Exemption of the Intake Systems shall not be construed as exemption to sell, offer for sale, or advertise any component of the system as an individual device.

This Executive Order shall not apply to any Intake Systems advertised, offered for sale, sold with, or installed on a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

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

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.

In addition to the foregoing, the Air Resources Board 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 California Code of Regulations, Title 13, 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 MAZDASPEED PERFORMANCE ACCESSORIES' INTAKE SYSTEMS.

Violation of any of the above conditions shall be grounds for revocation of this Executive Order. The Executive Order may be revoked only after a ten-day written notice of intention to revoke the Executive Order, in which period the holder of the Executive 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 Executive Order may not be revoked until a determination is made after the hearing that grounds for revocation exist.

Executed at El Monte, California, this 28th day of April 2006.

J. Lorenzo

for Allen Lyons, Chief
Mobile Source Operations Division

EVALUATION SUMMARY

Manufacturer Name: MAZDASPEED Performance Accessories

Name of Device: Intake Systems

Background:

MAZDASPEED Performance Accessories (MAZDASPEED) of 27100 International Drive, Flat Rock, Michigan 48134-9400 has applied for exemption of its Intake Systems from the prohibitions in Section 27156 of the California Vehicle Code. The Intake Systems are manufactured by Advanced Engine Management, Inc. (AEM) of 2205 126th Street, Unit A, Hawthorne, California 90250, and they will be marketed by MAZDASPEED. They are designed for various 2003 through 2006 model-year Mazda passenger cars. These vehicles are subject to the following standards and regulations:

1. LEV II ULEV or higher Federal Test Procedure (FTP) exhaust emission standards
2. Supplemental Federal Test Procedure (SFTP) exhaust emission standards
3. LEV II or enhanced evaporative emission standards
4. On-Board Diagnostic II (OBD II) System regulations

Recommendation:

Grant exemption to MAZDASPEED as requested and issue Executive Order D-607.

Device Description:

The Intake Systems in this application are similar in design and function as AEM's Cold Air Systems previously exempted under D-392 series Executive Orders. The system is designed to increase the vehicle's power output by introducing cooler air drawn from outside of the engine compartment into the engine. The system consists of an open-element air filter (designed to be less restrictive than the stock air filter), filter sock (some systems) (slides over the air filter and is used to prevent water sprays from saturating the air filter), air intake pipes, and mounting brackets/hardware. The system replaces the stock air filter, filter housing, resonator (permanently removed), and the air inlet tube.

Discussion/Basis for the Recommendation:

This exemption is based on the following:

1. SFTP and OBD II System tests on a 2003 USEPA Bin 8 (ARB-equivalent ULEV) 2.0 liter Ford Focus (D-392-21)
2. SFTP and OBD II System tests on a 2001 ULEV 2.0 liter Volkswagen Jetta (D-392-21)
3. SFTP and OBD II System tests on a 2003 LEV 3.0 liter Lexus IS300 (D-392-21)
4. Engineering evaluation of the impact on SFTP emissions

The SFTP certification levels of many of the vehicles in the application are low (less than 40 percent of the standard); however, some of the vehicles have certification levels higher than 40 percent of the standard (e.g. 43 percent for NMHC+NOx and 51 percent for CO). Through testing, AEM had previously shown that its intake systems do not cause the vehicles to exceed the SFTP standards (items 1 through 3 above). These tests were conducted on vehicles with certification levels higher than those of the Mazda vehicles in this application. Based on these tests, the vehicles in this application are not expected to exceed the SFTP standards when operated with the intake systems. Testing also showed no adverse impact on the vehicles' OBD II Systems.

5. FTP and OBD II System tests on a 2006 LEV II ULEV 2.0 liter Mazda MX-5 (D-607)

To determine the impact on FTP emissions and OBD II System, MAZDASPEED was required to conduct testing. Test results are summarized below:

		CVS-75 FTP Emissions (grams/mile)				
		NMHC	NMOG	CO	NOx	HCHO
Test 1	Test Results	0.0277	0.0288[1]	0.3179	0.0439	0.0005[2]
	With 50,000-Mile DF	--	0.032	0.4	0.05	0.0005
	With 120,000-Mile DF	--	0.038	0.6	0.05	0.0005
Test 2	Test Results	0.0216	0.0225[1]	0.3638	0.0193	0.0004[2]
	With 50,000-Mile DF	--	0.026	0.5	0.02	0.0004
	With 120,000-Mile DF	--	0.032	0.6	0.03	0.0004
	50,000-Mile DF	--	0.0036	0.09	0.004	0.000[3]
	120,000-Mile DF	--	0.009	0.24	0.011	0.000[3]
	50,000-Mile Standards	--	*0.040*	*1.7*	*0.05*	*0.008*
	120,000-Mile Standards	--	0.055	2.1	0.07	0.011
	50,000-Mile Mazda	--	0.032	0.4	0.03	--[4]
	120,000-Mile Mazda	--	0.038	0.6	0.03	--[4]

Notes:
Test vehicle – test group 6TKXV02.05EA (LEV II ULEV); evaporative family 6TKXR0125PMA (LEV II evap.); odometer reading 7,137 miles
Testing laboratory – Automotive Testing and Development Services, Inc. (ATDS) in Ontario, California.

1 Mazda's NMOG/NMHC ratio of 1.04 was used to calculate NMOG.
2 HCHO/NMHC ratio was not available for the test vehicle. The ratio for a 2003 2.3 liter Mazda 6 (test group 3TKXV02.3EJ1; ULEV) was used to calculate HCHO. A ratio of 0.016583 was used.
3 Deterioration factors (DF) for HCHO was not available for the test vehicle. The 50,000- and 100,000-mile HCHO DFs for a 2003 2.3 liter Mazda 6 (test group 3TKXV02.3EJ1; ULEV) was used for this evaluation. The 50,000- and 100,000-mile HCHO standards for the DF vehicle are 0.008 and 0.011, respectively.
4 Mazda was allowed to state HCHO emission compliance based on historical data and did not submit any test results.

Because the test vehicle is a very low-emitting vehicle and conventional CVS sampling system was used, ATDS was required to perform duplicate FTPs. NMHC and NOx emissions varied more than 20 and 50 percent, respectively; however, all deteriorated emissions were below the standards. Testing showed that FTP emissions of the modified vehicle do not exceed the applicable emission standards. Also, ATDS reported that all OBD II System readiness indicators set to complete with no diagnostic trouble codes when the vehicle was received for testing and at the completion of the two FTP tests. Similar results are expected when any of the intake systems are used. Based on this, MAZDASPEED's Intake Systems are not expected to have any adverse impact on the emissions or the OBD II Systems of any of the vehicles included in the application.