State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-425-27

Relating to Exemptions Under Section 27156
of the California Vehicle Code

Toyota Racing Development
TRD 2AZ-FE Supercharger 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 Section 39515 and Section 39516 of the Health and Safety Code and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the installation of the TRD 2AZ-FE Supercharger System, manufactured and marketed by Toyota Racing Development, 19001 South Western Avenue, Torrance, California, has been found not to reduce the effectiveness of the applicable vehicle pollution control systems and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 2005 through 2009 model year 2.4L Scion tC and 2008 and 2009 model year 2.4L Scion xB.

The TRD 2AZ-FE Supercharger System includes the following main parts: a Vortech V5F supercharger with a maximum boost of 7 pounds per square inch, a 2.8 inch diameter supercharger pulley and a stock crankshaft pulley, a by-pass valve, four replacement fuel injectors rated at 400 cubic centimeters per minute, an air filter lower housing and element, a replacement Toyota V6 hydrocarbon adsorber cartridge that is permanently attached to a replacement air cleaner lid, an air inlet trumpet diffuser, an air intake tubing, a 160 degree F thermostat, and a reprogrammed OEM ECU. The stock mass airflow sensor is retained.

This Executive Order is valid provided that the installation instructions for the TRD 2AZ-FE Supercharger System 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 TRD 2AZ-FE Supercharger System, as exempt by the Air Resources Board, which adversely affect the performance of the vehicle's pollution control system shall invalidate this Executive Order.

This Executive Order shall not apply to any TRD 2AZ-FE Supercharger System advertised, offered for sale, sold with, or installed on a new motor vehicle prior to or concurrent with transfer to an ultimate purchaser.

Marketing of the TRD 2AZ-FE Supercharger System using any identification other than that shown in this Executive Order or marketing of the TRD 2AZ-FE Supercharger 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.

This Executive Order does not constitute any opinion as to the effect the use of the TRD 2AZ-FE Supercharger System may have on any warranty either expressed or implied by the vehicle manufacturer.

This Executive Order is granted based on prior submitted emission test results in the modified configuration using the Cold-Start CVS-75 Federal Test Procedure, Supplemental Federal Test Procedure (US06/SC03), and an examination of the On-Board Diagnostic II (OBD II) system. A 2007 model year Scion tC with a 2.4 liter engine (7TYXV02.4BEA, LEV II ULEV, PC) was used for the evaluation of the supercharger kit. Results from emissions testing conducted at Quantum Technologies, Lake Forest, California, are shown below (in grams per mile with deterioration factors applied):

	CVS-75				US06/SC03	
	NMOG	CO	NOx	HCHO	NMHC+NOx	CO
Standards, 50k	0.040	1.7	0.05	0.008	0.14/0.20	8.0/2.7
Device 1st Test	0.022	0.4	0.03	0.000	0.11/0.04	4.7/0.19
Device 2nd Test	0.020	0.2	0.04	0.000		

Confirmatory testing at the Air Resources Board's Haagen-Smit Laboratory using the US06 tests are shown below:

Confirmatory Testing	US06	
	NMHC+NOx	CO
Standards	0.14	8.0
Test 1	0.08	6.0
Test 2	0.07	8.1
Average	0.075	7.05

The emission test results in the modified configuration were all below the applicable certification standards. Examination of the OBD II system showed the supercharger kit does not affect OBD II system operation.

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 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 THE TRD 2AZ-FE SUPERCHARGER 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.

Violation of any of the above conditions shall be grounds for revocation of this order. The order may be revoked only after a 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 is made after the hearing that grounds for revocation exist.

Executed at El Monte, California, this 8 day of July 2008

Annette Hebert, Chief
Mobile Source Operations Division