

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-644

Relating to Exemptions Under Section 27156  
of the California Vehicle Code

Thunder Heart Performance Corporation  
Thunder Max

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 Thunder Max, manufactured and marketed by Thunder Heart Performance Corporation, P.O. Box 76, 120 Industrial Drive, White House, Tennessee 37188, 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 the following fuel injected Harley Davidson motorcycles with 88 or 96 cubic inch engine that is not originally equipped with an oxygen sensor:

P/N 309-370 - 2001 to 2005 model year

P/N 309-373 - 2006 model year, excluding Dyna models with engine family  
6HDXC1.55AES.

The Thunder Max includes the following main components: Replacement ECU, two Bosch heated oxygen sensors, and a sensor control module. Each oxygen sensor is installed in the head pipe 4 to 6 inches from the cylinder head, similar in location and orientation as the late-model Harley Davidson motorcycles equipped with oxygen sensors. User adjustments on ECU can only be made on non-emission related parameters, and on air/fuel ratio and spark settings at high throttle conditions only. The Thunder Max is designed to replace the stock open loop fuel controller with a feedback controlled fueling system using the stock fuel injectors

This Executive Order is valid provided that the installation instructions for the Thunder Max 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 Thunder Max, as exempt by the Air Resources Board, which adversely affect the performance of the vehicle's pollution control system shall invalidate this Executive Order.

Marketing of the Thunder Max using any identification other than that shown in this Executive Order or marketing of the Thunder Max 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 Thunder Max may have on any warranty either expressed or implied by the vehicle manufacturer.

This Executive Order is granted based on submitted exhaust emissions test data generated on a 2008 model year 96 cubic inch Harley Davidson Softail motorcycle, modified with the Thunder Max. Test results showed that exhaust emission levels met the applicable emission standards when tested using the Cold-Start CVS-75 Federal Test Procedure (FTP). Results from emission testing conducted at Ecologic Engine Testing Laboratories located in Fullerton, California, are shown below, with deterioration factors (df) applied.

|                    | CVS-75 (gm/km) |    |
|--------------------|----------------|----|
|                    | HC+NOx         | CO |
| Standards          | 0.6            | 12 |
| Device Test w/ dfs | 0.4            | 6  |

Similar effect on motorcycle emissions is expected with the installation of the Thunder Max on the motorcycles listed in this Executive Order.

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 THUNDER MAX.

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 23 day of September 2008.



Annette Herbert, Chief  
Mobile Source Operations Division