

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-753

Relating to Exemptions under
Section 27156 of the Vehicle Code

UltraCarz International, Inc.
Series26a Dual Cell

The hydrogen generator device described herein does not qualify as a potential compliance option for the California Air Resources Board's in-use diesel fleet rules.

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-14-012;

IT IS ORDERED AND RESOLVED: That installation of the Series26a Dual Cell device, manufactured by UltraCarz International, Inc. (330 East Warm Springs Road, Suite 69, Las Vegas, Nevada 89119), has been found not to reduce the effectiveness of the applicable vehicle pollution control systems, and therefore, the Series26a Dual Cell device is exempt from the prohibitions in Section 27156 of the Vehicle Code for all 1960-2009 model year light/medium/heavy heavy-duty on-road diesel engines between 11.9 liters to 15.6 liters.

The Series26a Dual Cell device consists of a 1-gallon water reservoir, a dual cell electrolysis generator, various electrical components, electrical wiring and connectors, an electrolyte, and plastic supply hose for the hydrogen gas.

This Executive Order is based on emission test results using Heavy-Duty Federal Test Procedure Transient Cycle test, Euro III European Stationary Cycle test, and "Not-to-Exceed" test submitted by UltraCarz International, Inc. with the Series26a Dual Cell device.

If evidence provides the Air Resources Board with reasons to suspect that the Series26a Dual Cell device will affect the durability of the emission control system, UltraCarz International, 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 parts demonstrate adequate durability.

This Executive Order is valid provided that installation instructions for the Series26a Dual Cell device do not recommend tuning the vehicles to specifications different from those of the vehicle manufacturer.

Changes made to the design or operating conditions of the Series26a Dual Cell device, 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 Series26a Dual Cell device 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 Series26a Dual Cell device 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 shall not apply to any Series26a Dual Cell device 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 Series26a Dual Cell device 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 ULTRACARZ INTERNATIONAL, INC.'S SERIES26A DUAL CELL DEVICE.

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 4th day of November 2015.


Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

EVALUATION SUMMARY

Manufacturer Name: UltraCarz International, Inc.

Name of Device: Series26a Dual Cell

Background:

UltraCarz International, Inc. of 330 East Warm Springs Road, Suite 69, Las Vegas, Nevada 89119 has applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code for its Series26a Dual Cell device. The device is designed for all 1960-2009 model year (MY) light/medium/heavy heavy-duty on-road diesel engines between 11.9 liters to 15.6 liters.

Recommendation:

Grant exemption to UltraCarz International, Inc. as requested and issue Executive Order D-753.

Device Description:

The Series26a Dual Cell device produces hydrogen through an electrolysis process by supplying water from a reservoir containing distilled water and an activator (food grade phosphoric acid and acetic acid mixture) to electrolysis dry cells containing stainless steel plates that are supplied electricity from the vehicle's battery. The device consists of a 1-gallon water reservoir, a dual cell electrolysis generator (which contain the positive, negative, and neutral metal plates), various electrical components, electrical wiring and connectors, and reinforced PVC supply hose for the hydrogen gas. The device has a primary circuit (which powers the electrolysis generator) and a secondary circuit (which controls the primary circuit through the ignition switch) so that hydrogen gas is only produced when the engine is operating.

Discussion/Basis for the Recommendation:

This exemption is based on the following emission tests conducted on two heavy-duty diesel engines with UltraCarz International, Inc.'s Series26a Dual Cell device installed:

1. FTP transient cycle test on a 1999 MY Mack E7 Series 11.9 liter diesel engine.
2. FTP transient cycle, Euro III ESC 13-mode steady-state, and NTE tests on a 2007 MY Caterpillar C15 Series 15.1 liter diesel engine.

The emission test results are shown below:

Hot-Start FTP Transient Cycle Emission Test
1999 MY Mack E7 Series 11.9 liter Diesel Engine
Engine Family XMKXH11.9E54

	FTP Transient Cycle Emissions (grams/bhp-hr)			
	HC	NOx	CO	PM
FTP baseline results for engine	0.15	4.28	0.98	0.0609
FTP results w/ Series26a Dual Cell installed	0.16	4.41	0.87	0.0635
Percentage change	+6.7%	+3.0%	-11.2%	+4.3%

Hot-Start FTP Transient Cycle Emission Test
2007 MY Caterpillar C15 Series 15.1 liter Diesel Engine
Engine Family 7CPXH0928E1K

	FTP Transient Cycle Emissions (grams/bhp-hr)				
	NMHC	NOx	NMHC+NOx	CO	PM
FTP baseline results for engine	0.01	1.20	1.21	0.22	0.0037
FTP results w/ Series26a Dual Cell installed	0.01	1.20	1.21	0.22	0.0018
Percentage change	0%	0%	0%	0%	-51%

Euro III ESC 13-Mode Steady-State Emission Test
2007 MY Caterpillar C15 Series 15.1 liter Diesel Engine
Engine Family 7CPXH0928E1K

	Euro III ESC Emissions (grams/bhp-hr)				
	NMHC	NOx	NMHC+NOx	CO	PM
ESC Emission Standards	0.14	1.16	1.3	15.5	0.01
ESC Test results w/ Series26a Dual Cell Installed	0.03	0.90	0.93	0.24	0.002
Pass/Fail	Pass	Pass	Pass	Pass	Pass

NTE Emission Test
2007 MY Caterpillar C15 Series 15.1 liter Diesel Engine
Engine Family 7CPXH0928E1K

	NTE Emissions (grams/bhp-hr)				
	NMHC	NOx	NMHC+NOx	CO	PM
NTE Emission Standards	0.21	1.74	2.0	19.4	0.02
Point 1 NTE Test results w/ Series26a Dual Cell Installed	0.00	0.67	0.67	0.07	0.002
Point 2 NTE Test results w/ Series26a Dual Cell Installed	0.00	0.98	0.98	0.06	0.002
Point 3 NTE Test results w/ Series26a Dual Cell Installed	0.00	0.70	0.70	0.07	0.004
Pass/Fail	Pass	Pass	Pass	Pass	Pass

- Notes: 1. NTE Point 1 is 50% Torque/90% RPM
NTE Point 2 is 85% Torque/80% RPM
NTE Point 3 is 65% Torque/70% RPM
2. All testing was conducted at Olson-EcoLogic Engine Testing Laboratories in Fullerton, California

FTP transient cycle testing on the 1999 MY Mack E7 Series engine and 2007 MY Caterpillar C15 Series engine modified with the Series26a Dual Cell device did not cause emissions to exceed baseline by more than the allowed limits of 10 percent for

HC, NMHC, and NOx and 15 percent on CO and PM which is acceptable for exemption. Euro III ESC and NTE emission testing on the 2007 MY Caterpillar C15 Series engine modified with the Series26a Dual Cell device showed that the modified engine met the exhaust emission standards. Similar results are expected when UltraCarz International, Inc.'s Series26a Dual Cell device is used on the 1960-2009 MY light/medium/heavy heavy-duty on-road diesel engines between 11.9 liters to 15.6 liters as stated in this application.