

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-289-3

Relating to Certification of New Heavy-Duty Motor Vehicle Engines

HERCULES ENGINE COMPANY

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 of the Health and Safety 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-45-3;

IT IS ORDERED AND RESOLVED: That the following Hercules Engine Company 1994 model diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 8,500 pounds:

Fuel Type: Compressed Natural Gas (CNG)

<u>Engine Family</u>	<u>Liters (Cubic Inches)</u>		<u>Exhaust Emission Control Systems and Special Features</u>
RHE5.6D9KORA	5.6	339	Engine Control Module Charge Air Cooler Turbocharger

Engine models and codes are listed on attachments.

The following are the certification emission standards for this engine family in grams per brake horsepower-hour:

<u>Non-Methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Particulates</u>
1.2	15.5	5.0	0.10

The following are the certification emission values for this engine family in grams per brake horsepower-hour:

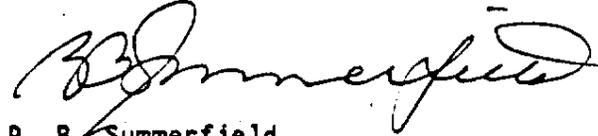
<u>Engine Family</u>	<u>Non-Methane Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Particulates</u>
RHE5.6D9KORA	0.9	2.8	2.0	0.10

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2035 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 30th day of March, 1993.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

199_4 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY OTTO-CYCLE ENGINES

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Manufacturer Hercules Engine Co. Engine Family RHE5.6D9KORA
 Liters (CID) 5.6 (339) Fuel Type Nat Gas (CNG) Engine Config. I6
 Exhaust ECS & Special Features (OC, TWC, MFI, etc.) TC; CAC; ECM
 (Use abbreviations per SAE J1930 MAY91)

Engine Model (Eng. Code)	Rated HP @ RPM	Ignition System or ECM/PCM P/N	Fuel System CARB/TBI/ Injtr + Pump P/N	EGR Valve P/N	Catalyst P/N
GTA 5.6 CNG	190 @ 2800	Note 1	Note 2	None	None

Notes:

- 1) Ignition system - P/N 40-2507202
 High Energy Capacitor Discharge
 - Distributorless (DLI)
 - Spark timing controlled by engine speed and manifold pressure
 - Manufactured by Altronic Inc.

- 2) Fuel System - 40-2506320
 Gaseous fuel injection system
 - Fuel introduced upstream of throttle body, but downstream of charge air cooler
 - Electronically controlled
 - Speed/density strategy
 - Inputs: manifold pressure, engine speed, intake air temp. fuel temp. and pressure, and barometer pressure
 - Developed by ORTECH International
 - Distributed by Stewart and Stevenson

Revisions: