

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-31-18
Relating to Certification of New Motor Vehicle Heavy-Duty Engines

HINO MOTORS, LTD.

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 Hino Motors, Ltd. 1987 model-year diesel engines have shown compliance with the transient test procedure and standards and are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating greater than 8500 pounds:

<u>Engine Family</u>	<u>Displacement Cubic Inches (Liters)</u>	<u>Exhaust Emission Control Systems (Special Features)</u>
HHM0038EAA7	234 (3.8)	Engine Modification (Diesel Injection-Direct) (Turbocharger)

Engine models and codes are listed on attachments.

The following are the certification emission values for these engine families:

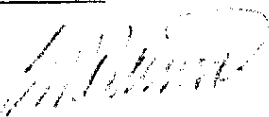
<u>Engine Family</u>	<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Nitrogen Oxides gm/bhp-hr</u>
HHM0038EAA7	0.6	1.7	4.5

BE IT FURTHER RESOLVED: That the Executive Officer has been provided all material required to demonstrate certification compliance with the Board's emission control system warranty regulations (Title 13, California Administrative Code, Section 2036).

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.

Executed at El Monte, California this 23rd day of September, 1986.


K. D. Drachand, Chief
Mobile Source Division

17.00.00.00

Sheets added by Requirement of Rule MAC84-02 & other Information

17-6-3

01.00.00

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Manufacturer HINO MOTORS, LTD. Engine Family HHM0038EAA7
 Evaporative Family _____ Engine Type L-4, 4 Stroke Cycle, TC
 Liters (CID) 3.839 (234)

ABBREVIATIONS

Ignition System

CA-Centrifugal Advance
 EEC-Electronic Engine Control
 EI-Electronic Ignition
 ESAC-Electronic Spark Advance Control
 VA-Vacuum Advance
 VR-Vacuum Retard

Exhaust Emissions Control System

AIP-Air Injection-Pump
 AIV-Air Injection-Valve
 CL-Closed Loop
 EGR-Exhaust Gas Recirculation
 EM-Engine Modification
 OC-Oxidation Catalyst System
 SPL-Smoke Puff Limiter or Throttle Delay
 TOC-Trap Oxidizer, Continual
 TOP-Trap Oxidizer, Periodical
 TR-Thermal Reactor
 TWC-Three-Way Catalyst System

Special Features

CCV-Combustion Chamber Valve
 CFI-Central Fuel Injection
 DID-Diesel Injection-Direct
 DIP-Diesel Injection-Prechamber
 EFI-Electronic Fuel Injection
 IC-Intercooler or aftercooler
 MFI-Mechanical Fuel Injection
 TC-Turbocharger

Fuel System

CFI, CL, DID, DIP, EFI, MFI
 nV-nVenturi Carburetor

VEHICLE MODELS:

Line: Front x Mid. _____ Rear _____

Drive: FWD _____ RWD x 4WD Full Time _____ 4WD Part Time _____

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HEAVY-DUTY DIESEL ENGINES

Manufacturer HINO MOTORS, LTD. Engine Family HHM0038EAA7
 Liter (CID) 3.839 (234) Eng. Type L-4, 4 Stroke Cycle, Turbocharged
 Emission Control Sys. and (Special Features) _____ Engine Modification (TC)(PID)

Engine Model	Fuel Injection Pump Mfr. Part Number	Injector Mfr. Part Number	Maximum Rated HP at RPM	Fuel Rate mm ³ /stroke (lbs/Hr)	Maximum Rated Torque at RPM	Fuel Rate mm ³ /stroke (lbs/Hr)
04C-TC	Diesel Kiki 22000-5520	Diesel Kiki 23600-1880	120@ 3,200	71 (49.5)	246@ 2,000	77 (33.5)

Date of Issue August 1, 1986 Revisions: