State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-232-13
Relating to Certification of New Heavy-Duty Motor Vehicle Engines

RENAULT VEHICULES INDUSTRIELS

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 Renault Vehicules Industrielis 1989 model-year diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 8,500 pounds:

Engine Family	Displacement Liters	(Cubic Inches)	Exhaust Emission Control Systems (Special Features)
KRE0335FPA7	6.2	(377)	(Direct Injection) (Turbocharger) (Charge Air Cooler) (Smoke Puff Limiter)
KRE0538FAA8	8.8	(538)	(Direct Injection) (Turbocharger) (Charge Air Cooler) Engine Modification

Engine models and codes are listed on attachments.

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

Hydrocarbons gm/bhp-hr	Carbon Monoxide gm/bhp-hr	Nitrogen Oxides gm/bhp-hr	Particulates gm/bhp-hr
1.3	15.5	6.0	0.60

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

Engine Family	Hydrocarbons gm/bhp-hr	Carbon Monoxide gm/bhp-hr	Nitrogen Oxides gm/bhp-hr	Particulates gm/bhp-hr
KRE0335FPA7	0.8	2.4	5.9	0.36
KRE0538FAA8	0.8	1.8	4.9	0.41

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 Code of Regulations, 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 and attachments.

Executed at El Monte, California this 12th day of January, 1989.

K. D. Drachand, Chief
Mobile Source Division

E.O N°. A-232-13

1989 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

Manufacturer RENAULT VEHICULES INDUSTRIELS Engine Family KRE0335FPA7

Liter (CID) 6.174 (377) Engine-Type In-line 6

Emission Control Sys. and (Special Features) (SPL) (TC) (IC) (DI)

Engine Model	Fuel Injection Pump Mfr. Part Number	Injector Mfr. Part Number	Maximum Rated HP at RPM	Fuel Rate mm3/stroke (lbs/Hr)	Maximum Rated Torque at RPM	Fuel Rate mm3/stroke (lbs/Hr)
MIDR060226I	R. Bosch Gmbh 5000 676 339	R. Bosch Gmbh 5000 676 305	180 2500	79 (64.1)	427 1500	84 (41.95)

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1989 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

Manufacturer RENAULT VEHICULES INDUSTRIELS Engine Family KRE0538FAA8

Liter (CID) 8.8 (538) Engine-Type In-line 6

Emission Control Sys. and (Special Features) EM (TC) (IC) (DI)

Engine Model	Fuel Injection Pump Mfr. Part Number	Injector Mfr. Part Number	Maximum Rated HP at RPM	Fuel Rate mm3/stroke (lbs/Hr)	Maximum Rated Torque at RPM	Fuel Rate mm3/stroke (lbs/Hr)
MIDR062030C	R. Bosch Gmbh 5000 681 197	R. Bosch Gmbh 5000 785 794	204 2300	108 (32)	488 1500	104 (51.4)

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