

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-27-70

Relating to Certification of New Heavy-Duty Motor Vehicle Engines

MACK TRUCKS, INC.

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-45-9;

IT IS ORDERED AND RESOLVED: That the following 1997 model-year Mack Truck, Inc. diesel-cycle engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Fuel Type: Diesel

| <u>Engine Family</u> | <u>Engine Displacement Liters (Cubic Inches)</u> | <u>Exhaust Emission Control Systems and Special Features</u> |
|----------------------|--|--|
| VMK728EGDARA | 11.9 (728) | Turbocharger Charge Air Cooler Smoke Puff Limiter |

Engine models and codes are listed on attachments.

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

| <u>Hydrocarbons</u> | <u>Carbon Monoxide</u> | <u>Nitrogen Oxides</u> | <u>Particulates</u> |
|---------------------|----------------------------|----------------------------|---------------------|
| 1.3 | 15.5 | 5.0 | 0.10 |

The following are the certification exhaust emission values for this engine family in grams per brake horsepower-hour, except that compliance with the carbon monoxide exhaust emission standard has been demonstrated pursuant to Title 40, Code of Federal Regulations, Part 86, Subpart A, Section 86.091-23(c)(2)(i):


| <u>Engine Family</u> | <u>Hydrocarbons</u> | <u>Nitrogen Oxides</u> | <u>Particulates</u> |
|--------------------------|---------------------|----------------------------|---------------------|
| VMK728EGDARA | 0.01 | 4.1 | 0.09 |

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 15th day of January 1997.



R. B. Summerfield, Chief
Mobile Source Operations Division

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LARGE ENGINE MODEL SUMMARY

Manufacturer: MACK TRUCKS, INC

EPA Engine Family: VMK128 ESDARA Manufacturer Family Name: FAMILY 44

| Engine Code | Engine Model | BHP@RPM (SAE Gross) | Fuel Rate: min/stroke @ rated speed (for diesel only) | Fuel Rate: (lb/hr) @ rated speed (for diesels only) | Torque @ RPM (SEA Gross) | Fuel Rate: min/stroke @ max rated torque | Fuel Rate: (lb/hr) @ max rated torque | Emission Control Device Per SAE J1930 |
|-------------|--------------|------------------------|--|--|-----------------------------|--|---|--|
| N/A | E7-350 | 350 @ 1800 | 213.9 | 133.9 | 1277 @ 1250 | 236.4 | 102.8 | EM, P, C, A, D, S, P, L |
| N/A | E7-300 | 300 @ 1950 | 177.4 | 120.3 | 1083 @ 1200 | 197.7 | 82.5 | " |
| N/A | EM7-300 | 300 @ 1750 | 184.2 | 112.1 | 1425 @ 1020 | 261.6 | 92.8 | " |
| N/A | EM7-275 | 275 @ 1750 | 167.9 | 102.2 | 1305 @ 1020 | 238.7 | 84.7 | " |
| N/A | E7-250 | 250 @ 1950 | 147.4 | 100.0 | 975 @ 1200 | 178.2 | 74.4 | " |
| N/A | EM7-250 | 250 @ 1750 | 153.9 | 93.7 | 1190 @ 1020 | 219.3 | 77.8 | " |

B. Federal Codes