

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-27-58
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-45-3;

IT IS ORDERED AND RESOLVED: That the following Mack Trucks, Inc. 1990 model-year diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 8,500 pounds:

| <u>Engine Family</u> | <u>Displacement Liters (Cubic Inches)</u> | | <u>Exhaust Emission Control Systems and Special Features</u> |
|----------------------|---|-------|--|
| LMT0728FACX (19) | 11.9 | (728) | Turbocharger Charge Air Cooler |
| LMT0728FADO (20) | 11.9 | (728) | Turbocharger Charge Air Cooler / ECM |
| LMT0728FAE1 (21) | 11.9 | (728) | Turbocharger Charge Air Cooler / ECM |

Engine models and codes are listed on attachments.

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

| <u>Hydrocarbons gm/bhp-hr</u> | <u>Carbon Monoxide gm/bhp-hr</u> | <u>Nitrogen Oxides gm/bhp-hr</u> | <u>Particulates gm/bhp-hr</u> |
|-----------------------------------|--|--------------------------------------|-----------------------------------|
| 1.3 | 15.5 | 6.0 | 0.60 |

The following are the certification emission values for these engine families, except that compliance with the carbon monoxide emission standard has been demonstrated pursuant to the Code of Federal Regulations, Title 40, Part 85, Subpart A, Section 86.088-23(c)(2)(1):

| <u>Engine Family</u> | <u>Hydrocarbons gm/bhp-hr</u> | <u>Nitrogen Oxides gm/bhp-hr</u> | <u>Particulates gm/bhp-hr</u> |
|----------------------|-----------------------------------|--------------------------------------|-----------------------------------|
| LMT0728FACX | 0.2 | 5.5 | 0.50 |
| LMT0728FADO | 0.0(0.03) | 4.5 | 0.50 |
| LMT0728FAE1 | 0.1 | 4.4 | 0.45 |

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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 provisions (Health and Safety Code Section 43205.5 and 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 15TH day of August, 1990.


R. B. Summerfield
Assistant Division Chief
Mobile Source Division

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1990 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

Manufacturer Mack Trucks, Inc. Engine Family (19) LMT0728FACX

Liter (CID) 11.9 (728 CID) Eng. Type 6 Cylinder In-Line

Emission Control Sys. and (Special Features) Turbocharger Charge Air Cooler

| 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) |
|--------------|--------------------------------------|---------------------------|-------------------------|--|-----------------------------|--|
| E7-300 | Bosch 5185-P18 | Bosch 323 | 300 @ 1950 | 165.9 (108.2) | 1083 @ 1200 | 198.6 (79.7) |
| E7-250 | Bosch 5185-P26 | Bosch 323 | 250 @ 1950 | 140.5 (91.6) | 975 @ 1200 | 181.1 (72.7) |

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1990 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

Manufacturer Mack Trucks, Inc. Engine Family (20) LMT0728 FADO

Liter (CID) 11.9 (728 CID) Eng. Type 6 Cylinder In-Line

Emission Control Sys. and (Special Features) Turbocharger Charge Air Cooler

| 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) |
|--------------|--------------------------------------|---------------------------|-------------------------|--|-----------------------------|--|
| EM7-300 | Bosch 5183-P2 | Bosch 323 | 300 @ 1750 | 174 .1 (101.9) | 1425 @ 1020 | 269.7 (92.0) |

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1990 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

Manufacturer Mack Trucks, Inc. Engine Family (21) LMT0728FAE1
Liter (CID) 11.9(728 CID) Eng. Type 6 Cylinder In-Line
Emission Control Sys. and (Special Features) Turbocharger Charge Air Cooler

| 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) |
|--------------|--------------------------------------|---------------------------|-------------------------|--|-----------------------------|--|
| E7-400 | Bosch 5183-P2 | Bosch 323 | 400 @ 1800 | 227.1 (136.7) | 1460 @ 1250 | 278.9 (116.6) |
| E7-350 | Bosch 5183-P2 | Bosch 323 | 350 @ 1800 | 192.2 (115.7) | 1277 @ 1250 | 236.6 (98.9) |

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