

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-27-57
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</u> <u>Liters (Cubic Inches)</u>		<u>Exhaust Emission Control Systems</u> <u>(Special Features)</u>
LMT0672FAA3	11	(672)	(Turbocharger) (Charge Air Cooler) (Smoke Puff Limiter)
LMT0672FAB4	11	(672)	(Turbocharger) (Charge Air Cooler) (Smoke Puff Limiter)
LMT0672FAC5	11	(672)	(Turbocharger) (Charge Air Cooler) (Smoke Puff Limiter)
LMT0672FAD6	11	(672)	(Turbocharger) (Charge Air Cooler) (Smoke Puff Limiter)
LMT0728FAA8	11.9	(728)	(Turbocharger) (Charge Air Cooler) (Smoke Puff Limiter)
LMT0728FAB9	11.9	(728)	(Turbocharger) (Charge Air Cooler) (Smoke Puff Limiter)
LMT0998FAA0	16.4	(998)	(Turbocharger) (Charge Air Cooler) (Smoke Puff Limiter)

Engine models and codes are listed on attachments.

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

Hydrocarbons <u>gm/bhp-hr</u>	Carbon Monoxide <u>gm/bhp-hr</u>	Nitrogen Oxides <u>gm/bhp-hr</u>	Particulates <u>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>	Hydrocarbons <u>gm/bhp-hr</u>	Nitrogen Oxides <u>gm/bhp-hr</u>	Particulates <u>gm/bhp-hr</u>
LMT0672FAA3	0.1	5.6	0.51
LMT0672FAB4	0.5	4.6	0.53
LMT0672FAC5	0.5	5.6	0.40
LMT0672FAD6	0.4	5.8	0.37
LMT0728FAA8	0.1	4.9	0.47
LMT0728FAB9	0.1	5.2	0.41
LMT0998FAA0	0.5	5.3	0.32

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 (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 28th day of December, 1989.


K. D. Drachand, Chief
Mobile Source Division

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

HMDD

(13)

Manufacturer Mack Trucks, Inc. Engine Family LMT0672FAA3

liter (CID) 11 (672) Eng. Type 6 Cylinder In-Line

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

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)
EM6-300	Bosch 5175-P4	Bosch 321-P2	300@2100	170.9 (120.0)	1155 @ 1260	218.3 (92.0)

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

HHDD

Manufacturer Mack Trucks, Inc. Engine Family LMTO672FAB4 (14)
 Liter (CID) 11 (672) Eng. Type 6 Cylinder In-Line
 Emission Control Sys. and (Special Features) (Turbocharger, Charge Air Cooler, SPL)

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)
<i>EC</i> E6-350	AMBAC 5168-P18	AMBAC 39-P21	350 @ 1800	199.3 (120.0)	1277 @ 1250	243.5 (101.8)
<i>EC</i> -350	Bosch 5173-P14	Bosch 318-P8	350 @ 1800	199.3 (120.0)	1277 @ 1250	239.9 (100.3)
EMC6-300L	Bosch 5181-P2	Bosch 318-P8	300 @ 1750	183.5 (107.4)	1425 @ 1020	277.6 (94.7)
EM6-275L	Bosch 5173-P22	Bosch 318-P8	275 @ 1750	162.1 (94.9)	1305 @ 1020	248.0 (84.6)
<i>EM</i> E6-270	Bosch 5173-P30	Bosch 321	270 @ 2100	142.2 (99.9)	960 @ 1260	177.0 (74.6)
<i>EM</i> 26-250L	Bosch 5173-P32	Bosch 318-P8	250 @ 1750	148.3 (86.8)	1160 @ 1020	226.9 (77.4)

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19_90 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

HHDD

Manufacturer Mack Trucks, Inc. Engine Family LMT0672FA05 (22)

Liter (CID) 11 (762) Eng. Type 6 Cylinder In-Line

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

Engine Model	Fuel Injection Pump Mfr. Part Number 313GC	Injector Mfr. Part Number 114GC	Maximum Rated HP at RPM	Fuel Rate mm ³ /stroke (lbs/Hr)	Maximum Rated Torque at RPM	Fuel Rate mm ³ /stroke (lbs/Hr)
<i>EM6</i> EM6-300L	Bosch 5181-P14	Bosch 318-P9	300 @ 1750	187.1 (109.5)	1425 @ 1020	279.9 (95.5)
<i>EM6</i> -275L	Bosch 5181-P6	Bosch 318-P9	275 @ 1750	166.8 (97.6)	1305 @ 1020	251.8 (85.9)
EM6-250L	Bosch 5181-P4	Bosch 318-P9	250 @ 1750	154.3 (90.3)	1160 @ 1020	230.4 (78.6)

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HEAVY-DUTY DIESEL ENGINES

H4102

Manufacturer Mack Trucks, Inc. Engine Family LMT0672FAD6 (23)

liter (CID) 11 (672) Eng. Type 6 Cylinder In-Line

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

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)
E6-350	AMBAC 313GC	AMBAC 114GC				
E6-350	AMBAC 5181-P10	AMBAC 39-P21	350 @ 1800	207.0 (124.6)	1277 @ 1250	245.2 (102.5)
E6-350	Bosch 5187-P2	Bosch 318-P9	350 @ 1800	199.3 (120.0)	1277 @ 1250	242.1 (101.2)

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

HHDD

Manufacturer Mack Trucks, Inc. Engine Family LMTO728FAA8 (17)
 Liter (CID) 11.9 (728) Eng. Type 6 Cylinder In-Line
 Emission Control Sys. and (Special Features) (Turbocharger, Charge Air Cooler, SPL)

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 5185-P10	Bosch 323	300 @ 1750	178.9 (104.7)	1425 @ 1020	259.7 (88.6)
EM7-275	Bosch 5185-P22	Bosch 323	275 @ 1750	162.5 (95.1)	1305 @ 1020	236.9 (80.8)
EM7-250	Bosch 5179-P26	Bosch 323	250 @ 1750	146.9 (86.0)	1160 @ 1020	216.9 (74.0)

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HEAVY-DUTY DIESEL ENGINES

HKDD

Manufacturer Mack Trucks, Inc. Engine Family LMT0728FAB9 (18)

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

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

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 5185-P6	Bosch 323	400 @ 1800	233.2 (140.4)	1460 @ 1250	265.3 (110.9)
E7-350	Bosch 5185-P2	Bosch 323	350 @ 1800	198.3 (119.4)	1277 @ 1250	228.9 (95.7)
E7-300	Bosch 5185-P14	Bosch 323	300 @ 1700	174.1 (99.0)	1112 @ 1200	209.3 (84.0)

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HEAVY-DUTY DIESEL ENGINES

HHDD

Manufacturer Mack Trucks, Inc. Engine Family LMT0998FAAO (10)

Liter (CID) 16.4 (998) Eng. Type 8 Cylinder

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

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)
E9-500	Bosch 5180-P2	Bosch 332	500@1900	236.5 (184.0)	1660@1300	265.6 (141.4)
E9-450	Bosch 5180-P4	Bosch 332	450@1900	215.8 (167.9)	1495@1300	241.2 (128.4)

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