

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-10-480
Relating to Certification of New Heavy-Duty Motor Vehicle Engines

FORD MOTOR COMPANY

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 Ford Motor Company 1991 model-year diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

| <u>Engine Family</u> | <u>Displacement Liters (Cubic Inches)</u> | <u>Exhaust Emission Control Systems (Special Features)</u> |
|----------------------|---|--|
| MFM07.8FPK8 | 7.8/6.6 (474/401) | (Turbocharger) (Charge Air Cooler) |

Engine models and codes are listed on attachments.

The following are the certification emission standards for this engine family:

| <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 | 5.0 | 0.25 |

The following are the certification emission values for this engine family:

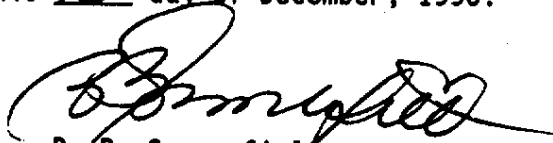
| <u>Engine Family</u> | <u>Hydrocarbons gm/bhp-hr</u> | <u>Carbon Monoxide gm/bhp-hr</u> | <u>Nitrogen Oxides gm/bhp-hr</u> | <u>Particulates gm/bhp-hr</u> |
|----------------------|-----------------------------------|--|--------------------------------------|-----------------------------------|
| MFM07.8FPK8 | 0.3 | 1.8 | 4.8 | 0.22 |

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 10th day of December, 1990.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

E.O.# A-10-480

1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer Ford Motor Company Engine Family MFM07.8FPK8 (L7.8PK8)
 Evaporative Family Not Applicable Engine Type I-6
 Liters (CID) 6.6L (401), 7.8L (474)

ABBREVIATIONS:

| <u>Ignition System</u> | <u>Exhaust Emissions Control System</u> | <u>Fuel System</u> |
|--------------------------------|---|--|
| DLI-Distributorless Ignition | AIR-Secondary Air Injection | DI-Direct Injection (Diesel) |
| EI-Electronic Ignition | ECTS-Engine Coolant Temp Sensor | EIC-Electronic Injection Control (Diesel) |
| PCME-Powertrain Control Module | EGR-Exhaust Gas Recirculation | IC-Intercooler or Aftercooler |
| | EM-Engine Modification | IDI-Indirect Diesel Injection |
| | HO2S-Heated Oxygen Sensor | MPI-Multipoint Electronic Fuel Injection |
| | KS-Knock Sensor | SC-Supercharged |
| | MAP-Manifold Absolute Pressure Sensor | SMPI-Sequential Multipoint Electronic Fuel Injection |
| | OC-Oxidation Catalyst | TAA-Turbocharged, Air to Air (Diesel) |
| | O2S-Oxygen Sensor | TAW-Turbocharged, Air to Air to Water (Diesel) |
| | SABV-Secondary Air Bypass Valve | TBI-Throttle Body Electronic Fuel Injection |
| | SASV-Secondary Air Switching Valve | |
| | SPL-Smoke Puff Limiter | |
| | TOC-Trap Oxidizer: Continuous | |
| | TOP-Trap Oxidizer: Periodic | |
| | TPS-Throttle Position Sensor | |
| | TWC-Three Way Catalyst | |
| | TWC+OC-Three Way Catalyst Plus Oxidation Catalyst | |
| | WUOC-Warm Up Oxidation Catalyst | |
| | WUTWC-Warm Up Three Way Catalyst | |

Special Features

MIL-Malfunction Indicator Light
 OBD-On Board Diagnostics

VEHICLE MODELS: Reference page 20.17.02.00-2.

Engine Family: M7.8PK8

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|------------|----------|---------------|--|--|--|--|--|
| Issue Date | 11-21-90 | 20.17.02.00-1 | | | | | |
| Revised | | | | | | | |

1991 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL ENGINES

Manufacturer Ford Motor Company Engine Family MFM07.8FPK8 (M7.8PK8)

Liter (CID) 7.8L (474 CID), 6.6L (401 CID) Eng. Type I6

Emission Control Sys. (Special Features) DID, TC, IC

| Engine Code | Fuel Injection Pump Mfr. P/N (-9A543-) | Fuel Injector Mfr. P/N (-9F593-) | Rated HP at RPM | Fuel Rate at Rated HP (cmm/stroke) | Particulate Trap/Catalyst Mfr. P/N |
|-------------|--|----------------------------------|-----------------|------------------------------------|------------------------------------|
| 1-80J-R00 | FOHN-GA | E9HN-EB | 165 @ 2550 | 88 | N/A |
| 1-80B-R00 | E9HN-EB | E9HN-EB | 170 @ 2600 | 88 | N/A |
| 1-80A-R00 | E9HN-SA | E9HN-EB | 185 @ 2400 | 97 | N/A |
| 1-85H-R00 | E9HN-KA | FOHN-AA | 190 @ 2300 | 106 | N/A |
| 1-85G-R00 | E9HN-LA | FOHN-BA | 210 @ 2300 | 114 | N/A |
| 1-85F-R00 | E9HN-PA | FOHN-BA | 215 @ 2000 | 124 | N/A |
| 1-85E-R00 | E9HN-NA | FOHN-BA | 225 @ 2300 | 122 | N/A |
| 1-85D-R00 | E9HN-MA | FOHN-CA | 240 @ 2300 | 129 | N/A |
| 1-85C-R00 | E9HN-TA | FOHN-DA | 270 @ 2300 | 144 | N/A |
| 1-85C-R10 | E9HN-TA | FOHN-DA | 270 @ 2300 | 144 | N/A |

Engine Family: M7.8PK8

20.17.02.00-2

Date of Issue: 11-21-90
Revisions: 8-15-91