State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-290-68

Relating to Certification of New Heavy-Duty Engines and Vehicles

DETROIT DIESEL CORPORATION

Pursuant to the authority vested in the Air Resources Board at Sections 43100, 43101, and 43102 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9; and

Pursuant to the December 15, 1998 Settlement Agreement between the Air Resources Board and Detroit Diesel Corporation and any modifications to the Settlement Agreement;

IT IS ORDERED AND RESOLVED: That the following 1999 model-year Detroit Diesel Corporation diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle-weight-rating (GVWR) over 14,000 pounds:

Fuel Type: Diesel

| Engine Family | Displacement Liters | Displacement Cubic Inches | Exhaust Emission Control Systems and Special Features |
|---|---|---|---|
| XDDXH12.7EGL (Series 60 12.7L) | 12.7 | 775 | Turbocharger<br>Charge Air Cooler<br>Electronic Control Module |

The engine models and codes are listed on attachments.

BE IT ORDERED AND RESOLVED: That the following are the certification exhaust emission standards for this engine family in grams per brake horsepower-hour under the Federal Test Procedure ("FTP") for Heavy-Duty Diesel Engines (Title 13, California Code of Regulations, Section 1956.8):

| | Total Hydrocarbons | Carbon Monoxide | Nitrogen Oxides | Particulate Matter |
|---|---|---|---|---|
| "FTP" | 1.3 | 15.5 | 4.0 | 0.10 |

BE IT FURTHER RESOLVED: That pursuant to the Settlement Agreement and any modifications thereof, the aforementioned engine family is also subject to the following emission standards, in grams per brake horsepower-hour, under the EURO III tests in the Settlement Agreement, and a "Not-to-Exceed" nitrogen oxides emission standard of 7.0 grams per brake horsepower-hour:

| | Total Hydrocarbons | Carbon Monoxide | Nitrogen Oxides | Particulate Matter |
|---|---|---|---|---|
| "EURO III" | 1.3 | 15.5 | 6.0 | 0.10 |

BE IT FURTHER RESOLVED: That the following are the certification exhaust emission values for this engine family in grams per brake horsepower-hour:

| | Total Hydrocarbons | Carbon Monoxide | Nitrogen Oxides | Particulate Matter |
|---|---|---|---|---|
| "FTP" | 0.1 | 0.7 | 3.9 | 0.10 |
| "EURO III" | 0.03 | 0.2 | 5.7 | 0.03 |

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, Sections 2035 et seq.).

BE IT FURTHER RESOLVED: That the aforementioned engine family has been conditionally certified subject to the following conditions:

1. The Settlement Agreement is in effect.
2. The Settlement Agreement has not become null and void under Settlement Agreement Paragraph 165.
3. Detroit Diesel Corp. is in compliance with all applicable certification requirements of the Settlement Agreement.

Engines certified under this Executive Order must conform to all applicable California emission regulations and to all applicable terms and conditions of the Settlement Agreement.

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 17th day of December 1998.

R. B. Summerfield, Chief
Mobile Source Operations Division

# LARGE ENGINE MODEL SUMMARY

1/7/99

A-290-68

Manufacturer: **Detroit Diesel Corporation** Process Code: **Running Change**

EPA Engine Family: **XDDXH12.7EGL** Manufacturer Family Name: **Series 60, 12.7L**

| 1.Engine Code | 2.Engine Model | 3.BHP@RPM (SAE Gross) | 4.Fuel Rate: mm/stroke @ peak HP (for diesel only) | 5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only) | 6.Torque @ RPM (SEA Gross) | 7.Fuel Rate: mm/stroke@peak torque | 8.Fuel Rate: (lbs/hr)@peak torque | 9.Emission Control Device Per SAE J1930 |
|---|---|---|---|---|---|---|---|---|
| 1063 | standard | 470@2100 | 229.6 | 160.3 | 1550@1200 | 277.6 | 110.8 | TC, ECM, CAC |
| 1060 | ratings | 430@2100 | 210.6 | 147.1 | 1550@1200 | 277.6 | 110.8 | (all ratings.) |
| 1061 | | 400@2100 | 194.0 | 135.5 | 1550@1200 | 277.6 | 110.8 | |
| 1062 | | 370@2100 | 179.1 | 125.1 | 1550@1200 | 277.6 | 110.8 | |
| 1058 | | 430@1800 | 226.0 | 135.3 | 1550@1200 | 277.6 | 110.8 | |
| 1056 | | 400@1800 | 209.7 | 125.5 | 1550@1200 | 277.6 | 110.8 | |
| 1059 | | 370@1800 | 193.3 | 115.7 | 1550@1200 | 277.6 | 110.8 | |
| 1057 | | 360@1800 | 187.9 | 112.5 | 1550@1200 | 277.6 | 110.8 | |
| 1064 | | 470@1800 | 248.2 | 148.6 | 1550@1200 | 277.6 | 110.8 | |
| 1052 | | 430@2100 | 209.4 | 146.2 | 1450@1200 | 259.1 | 103.4 | |
| 1053 | | 400@2100 | 194.0 | 135.5 | 1450@1200 | 259.1 | 103.4 | |
| 1054 | | 370@2100 | 179.1 | 125.1 | 1450@1200 | 259.1 | 103.4 | |
| 1049 | | 430@1800 | 226.0 | 135.3 | 1450@1200 | 259.1 | 103.4 | |
| 1050 | | 400@1800 | 209.7 | 125.5 | 1450@1200 | 259.1 | 103.4 | |
| 1051 | | 370@1800 | 193.3 | 115.7 | 1450@1200 | 259.1 | 103.4 | |
| 1055 | | 360@1800 | 187.9 | 112.5 | 1450@1200 | 259.1 | 103.4 | |
| 1065 | | 370/430-1800 | | | 1450@1200 | | | |
| 1066 | | 370/430-2100 | | | 1450@1200 | | | |
| 1067 | | 360/400-1800 | | | 1450@1200 | | | |
| 1069 | | 360/400-1800 | | | 1550@1200 | | | |
| 1071 | | 370/430-1800 | | | 1550@1200 | | | |
| 1072 | | 370/430-2100 | | | 1550@1200 | | | |
| 1073 | | 430/470-2100 | | | 1550@1200 | | | |
| 1074 | | 430/470-1800 | | | 1550@1200 | | | |
| 1090 | | 360@2100 | 179.1 | 125.1 | 1450@1200 | 259.1 | 103.4 | |
| 1091 | | 360@2100 | 179.1 | 125.1 | 1550@1200 | 277.6 | 110.8 | |
| 1092 | | 360/400-2100 | | | 1450@1200 | | | |
| 1093 | | 360/430-2100 | | | 1450@1200 | | | |
| 1094 | | 360/400-2100 | | | 1550@1200 | | | |
| 1095 | | 360/430-2100 | | | 1550@1200 | | | |
| 1070 | | 360/430-1800 | | | 1550@1200 | | | |

# LARGE ENGINE MODEL SUMMARY

12/1/98

A-290-68

Manufacturer: **Detroit Diesel Corporation** Process Code: **New Submission**

EPA Engine Family: **XDDXH12.7EGL** Manufacturer Family Name: **Series 60, 12.7L**

| 1.Engine Code | 2.Engine Model | 3.BHP@RPM (SAE Gross) | 4.Fuel Rate: mm/stroke @ peak HP (for diesel only) | 5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only) | 6.Torque @ RPM (SEA Gross) | 7.Fuel Rate: mm/stroke@peak torque | 8.Fuel Rate: (lbs/hr)@peak torque | 9.Emission Control Device Per SAE J1930 |
|---|---|---|---|---|---|---|---|---|
| 1042 | premium | 500@2100 | 250.6 | 175.0 | 1650@1200 | 302.2 | 120.6 | TC, ECM, CAC |
| 1043 | ratings | 470@2100 | 232.2 | 162.2 | 1650@1200 | 302.2 | 120.6 | (All ratings) |
| 1044 | | 430@2100 | 211.8 | 147.9 | 1650@1200 | 302.2 | 120.6 | |
| 1046 | | 500@2100 | 250.6 | 175.0 | 1550@1200 | 283.9 | 113.3 | |
| 1045 | | 470@2100 | 232.2 | 162.2 | 1550@1200 | 283.9 | 113.3 | |
| 1036 | | 500@2100 | 250.6 | 175.0 | 1450@1200 | 261.6 | 104.4 | |
| 1048 | | 470/500-2100 | | | 1550@1200 | | | |
| 1047 | | 430/500-2100 | | | 1650@1200 | | | |