State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-21-55
Relating to Certification of New Heavy-Duty Motor Vehicle Engines

CUMMINS ENGINE COMPANY, 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 Cummins Engine Company, 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:

| Engine Family | Displacement Liters | (Cubic Inches) | Exhaust Emission Control Systems (Special Features) |
|---|---|---|---|
| LCE0239EAA2 (382) | 3.9 | (239) | Direct Injection - Diesel<br>Smoke Puff Limiter<br>(Turbocharger) |
| LCE0239FAA5 (383) | 3.9 | (239) | Direct Injection - Diesel<br>Smoke Puff Limiter<br>(Turbocharger)<br>(Aftercooler) |
| LCE0359EAA7 (402) | 5.9 | (359) | Direct Injection - Diesel<br>Smoke Puff Limiter<br>(Turbocharger) |
| LCE0359FAAX (403) | 5.9 | (359) | Direct Injection - Diesel<br>Smoke Puff Limiter<br>(Turbocharger)<br>(Aftercooler) |
| LCE0505EAA0 (412) | 8.3 | (505) | Direct Injection - Diesel<br>Smoke Puff Limiter<br>(Turbocharger) |
| LCE0505FAA3 (413) | 8.3 | (505) | Direct Injection - Diesel<br>Smoke Puff Limiter<br>(Turbocharger)<br>(Aftercooler) |

Engine models and codes are listed on attachments.

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

| Hydrocarbons gm/bhp-hr | Carbon Monoxide gm/bhp-hr | Nitrogen Oxides gm/bhp-hr | Particulates gm/bhp-hr |
|---|---|---|---|
| 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):

| Engine Family | | Hydrocarbons gm/bhp-hr | Nitrogen Oxides gm/bhp-hr | Particulates gm/bhp-hr |
|---|---|---|---|---|
| LCE0239EAA2 | (382) | 0.7 | 4.8 | 0.46 |
| LCE0239FAA5 | (383) | 0.4 | 4.4 | 0.45 |
| LCE0359EAA7 | (402) | 0.4 | 5.2 | 0.43 |
| LCE0359FAAX | (403) | 0.9 | 4.3 | 0.51 |
| LCE0505EAA0 | (412) | 0.5 | 5.1 | 0.54 |
| LCE0505FAA3 | (413) | 0.6 | 5.3 | 0.46 |

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 (Title 13, California Administrative Code, 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 1st day of June, 1989.

K. D. Drachand, Chief
Mobile Source Division

LHDD

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

Manufacturer Cummins Engine Company, Inc. Engine Family LCE0239EAA2(382)

Liter (CID) 3.9 (239) Eng. Type Inline 4

Emission Control Sys. and (Special Features) SPL, DI

| 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) |
|---|---|---|---|---|---|---|
| 4BT3.9 CPL0858 | Robert Bosch 3917530(12V) 3917531(24V) 3917532(12V) 3917533(24V) 3919401(12V) | Robert Bosch 3912468 3915792 3919744 3920012 | 105@2500 | 76.0 (42.7) | 265@1700 | 86.1 (32.9) |

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

LHDD

Manufacturer Cummins Engine Company, Inc. Engine Family LCE0239FAA5(383)

Liter (CID) 3.9 (239) Eng. Type Inline 4

Emission Control Sys. and (Special Features) SPL, DI

| 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) |
|---|---|---|---|---|---|---|
| 4BTA3.9 CPL0857 | Robert Bosch<br>3917535(12V)<br>3917536(24V)<br>3917537(12V)<br>3917538(24V)<br>3911240(12V)<br>3911241(24V)<br>3914886(12V)<br>3914887(24V)<br>3914932(12V)<br>3914933(24V)<br>3914845(12V)<br>3914846(24V)<br>3915523(12V)<br>3915524(24V)<br>3919403(12V) | 3912468<br>3915792<br>3919744<br>3920012 | 120@2500 | 86.3(48.5) | 302@1700 | 97.1(37.1) |

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

MHDD

Manufacturer Cummins Engine Company, Inc. Engine Family LCE0359EAA7 (402)

Liter (CID) 5.9 (359) Eng. Type Inline 6

Emission Control Sys. and (Special Features) SPL, DI

| 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) |
|---|---|---|---|---|---|---|
| 6BT5.9 CPL0804 | Robert Bosch 3917943 (12V) | Robert Bosch 3909522 | 160@2500 | 78.3(66.0) | 400@1700 | 82.0(47.0) |
| | 3916991 (12V) | 3915790 | | | | |
| | 3916992 (24V) | 3919347 | | | | |
| | 3916896 (12V) | 3919957 | | | | |
| | 3916897 (24V) | | | | | |
| 6BT5.9 CPL0804 | Robert Bosch 3917004 (12V) | Robert Bosch 3909522 | 145@2600 | 69.5(60.9) | 340@1700 | 70.1(40.2) |
| | 3917005 (24V) | 3915790 | | | | |
| | 3917006 (12V) | 3919347 | | | | |
| | 3917007 (24V) | 3919957 | | | | |

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

MHDD

Manufacturer Cummins Engine Company, Inc. Engine Family LCE0359FAAX(403)

Liter (CID) 5.9 (359) Eng. Type Inline 6

Emission Control Sys. and (Special Features) SPL, DI

| 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) |
|---|---|---|---|---|---|---|
| 6BTA5.9 CPL0856 | 3916994(12V)<br>3916995(24V)<br>3916996(12V)<br>3916997(24V) | 3912468<br>3915792<br>3919744<br>3920012 | 180@2500 | 87.2 (73.5) | 451@1700 | 96.1 (55.1) |

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E.O.# A-21-55
Page 1 of 1

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

MHDD

Manufacturer Cummins Engine Company, Inc. Engine Family LCE0505EAA0 (412)

Liter (CID) 8.3 (505) Eng. Type Inline 6

Emission Control Sys. and (Special Features) SPL, DI (TC)

| 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) |
|---|---|---|---|---|---|---|
| 6CT8.3 CPL0819 | Robert Bosch 3911352 3012645 3014299 | Robert Bosch 3911350 | 210@2200 | 110.7(82.1) | 605@1500 | 120.5(61.0) |
| CPL0955 | 3912636 | 3911350 | 210@2500 | 103.9(87.6) | 605@1500 | 124.1(62.8) |

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E.O.# A21-55
Page 1 of 1

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

MHDD

Manufacturer Cummins Engine Company, Inc. Engine Family LCE0505FAA3 (413)

Liter (CID) 8.3 (505) Eng. Type Inline 6

Emission Control Sys. and (Special Features) SPL, DI (TC, IC)

| 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) |
|---|---|---|---|---|---|---|
| 6CTA8.3 CPL 0893 | Robert Bosch 3910063 3915168 | Robert Bosch 3908513 | 250@2200 | 130.2(96.6) | 728@1500 | 148.9(75.3) |
| | 3915907 3908567 | 3908513 | 240@2200 | 125.1(92.8) | 645@1500 | 133.4(67.5) |
| | 3915581 3912640 | 3908513 | 235@2100 | 125.7(89.0) | 658@1500 | 131.5(66.5) |
| 6CTA8.3 CPL 1269 | Robert Bosch 3917889 | Robert Bosch 3908513 | 240@2400 | 120 (97.1) | 645@1500 | 129 (65.3) |

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