

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-21-228

Relating to Certification of New Heavy-Duty Engines and Vehicles

CUMMINS ENGINE COMPANY, INC.

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 Cummins Engine Company, Inc. and any modifications to the Settlement Agreement;

IT IS ORDERED AND RESOLVED: That the following 1999 model-year Cummins Engine Company, Inc. 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

<u>Engine Family</u>	<u>Displacement Liters</u>	<u>Cubic Inches</u>	<u>Exhaust Emission Control Systems and Special Features</u>
XCEXH0661MAH (353Q)	10.8	661	Turbocharger Charge Air Cooler 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):

	<u>Total Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Particulate Matter</u>
"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:

	<u>Total Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Particulate Matter</u>
"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:

	<u>Total Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Particulate Matter</u>
"FTP"	0.2	0.9	3.7	0.08
"EURO III"	0.1	0.3	5.5	0.04

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.).

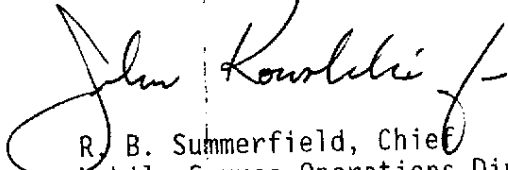
BE IT FURTHER RESOLVED: That the aforementioned engine family has been conditionally certified subject to the following conditions:

1. The Settlement Agreement is in effect.
2. The Settlement Agreement has not become null and void under Settlement Agreement Paragraph 165.
3. Cummins Engine Co., Inc. 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 21st day of December 1998.


R. B. Summerfield, Chief
Mobile Source Operations Division

LARGE ENGINE MODEL SUMMARY

EO A-21-228

Manufacturer: Cummins Engine Company, Inc. Process Code: New Submission

EPA Engine Family: XCEXH0661MAH Manufacturer Family Name: 353Q

1. Engine Code	2. Engine Model	3. BHP@RPM (SAE Gross)	4. Fuel Rate: mm ³ /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 ³ /stroke@peak torque	8. Fuel Rate: (lbs/hr)@peak torque	9. Emission Control Device Per SAE J1930
CPL2608,2612	ISM 450	450@1800	249	151	1450@1200	259	105	ECM, TC, CAC
FR2571	ISM 450	450@1800	249	151	1450@1200	259	105	ECM, TC, CAC
FR2572	ISM 400	400@1800	213	129	1450@1200	259	105	ECM, TC, CAC
FR2469	ISM 400	400@1800	213	129	1350@1200	245	99	ECM, TC, CAC
FR2688	ISM 400	400@1800	213	129	1450@1200	259	105	ECM, TC, CAC
FR2446	ISM 400	400@1800	213	129	1450@1200	259	105	ECM, TC, CAC
FR2663	ISM 410	410@1800	219	133	1450@1200	259	105	ECM, TC, CAC
FR2470	ISM 370	385@1800	203	123	1350@1200	245	99	ECM, TC, CAC
FR2449	ISM 370	385@1800	203	123	1350@1200	245	99	ECM, TC, CAC
FR2611	ISM 370	385@1800	203	123	1350@1200	245	99	ECM, TC, CAC
FR2574	ISM 370	370@1800	194	118	1450@1200	259	105	ECM, TC, CAC
FR2576	ISM 370	370@1800	194	118	1350@1200	245	99	ECM, TC, CAC
FR2575	ISM 370ESP	370@1800	194	118	1350@1200	245	99	ECM, TC, CAC
FR2452	ISM 350	365@1800	191	116	1350@1200	245	99	ECM, TC, CAC
FR2471	ISM 350	365@1800	191	116	1350@1200	245	99	ECM, TC, CAC
FR2579	ISM 350	350@1800	181	110	1350@1200	245	99	ECM, TC, CAC
FR2577	ISM 350ESP	350@1800	181	110	1350@1200	245	99	ECM, TC, CAC
FR2580	ISM 335V	350@1800	181	110	1450@1200	259	105	ECM, TC, CAC
FR2612	ISM 335VSP	350@1800	181	110	1350@1200	245	99	ECM, TC, CAC
FR2472	ISM 330	340@1800	176	107	1350@1200	245	99	ECM, TC, CAC
FR2582	ISM 330	330@1800	171	104	1350@1200	245	99	ECM, TC, CAC
FR2660	ISM 370ST1	370@1800	194	118	1350@1200	245	99	ECM, TC, CAC
FR2658	ISM 330ST1	370@1800	171	118	1350@1200	245	99	ECM, TC, CAC
FR2810	ISM 400ST1	400@1800	213	129	1350@1200	245	99	ECM, TC, CAC