Cummins Inc.

EXECUTIVE ORDER U-R-002-0278 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 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-02-003;

IT IS,ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)			
2005	5CEXL0359ABC	5.9	Diesel	8000			
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION				
Direct Diesel Injection, Turbocharger, Charge Air Cooler			Crane, Loader, Tractor, Dozer, Pump, Compressor				

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
CLASS			НС	NOx	NMHC+NOx	СО	РМ	ACCEL	LUG	PEAK
75 ≤ kW < 130	Tier 2	STD	N/A	N/A	6.6	5.0	0.30	20	15	50
130 ≤ kW < 225	Tier 2	STD	N/A	N/A	6.6	3.5	0.20	20	15	50
		CERT		-	6.0	0.9	0.16	12	1	29

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this ______ day of October 2004.

Allen Lyens, Chief

Mobile Source Operations Division

Engine Model Summary Form ATTACH HEUT Pg (of)

U-R-002-0278

Manufacturer: Cummins Inc.

Engine category: Nonroad CI

EPA Engine Family: 5CEXL0359ABC

Mfr Family Name: C403

Process Code: New Submission

9.Emission Control Device Per SAE J1930	DDI,TC,CAC →	DDI,TC,CAC	DDI,TC.CAC	DDI,TC,CAC	DDI.TC.CAC	DDI.TC.CAC	DDI,TC,CAC	
8.Fuel Rate: (lbs/hr)@peak torque	53.3	43.6	50.4	41.5	51.7	41.5	43.9	
7.Fuel Rate: mm/stroke@peak torque	105	96	. 100	82	102	88	93	
6.Torque @ RPM (SEA Gross)	547@1500	460@1500	522@1500	416@1500	495@1500	432@1400	463@1400	
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	9.69	55.3	66.5	58.2	65.8	49.9	54.6	
4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	101	84	66	78	100	74	81	
3.BHP@RPM (SAE Gross)	189@2050	150@1950	178@2000	145@2200	166@1950	128@2000	140@2000	
2.Engine Model	6B5.9	6B2.9	682.9	6B5.9	685.9	6B5.9	685.9	
1.Engine Code	2846;FR90652	2678;FR90650	8111;FR90649	8111;FR91001	8105;FR90997	8265;FR9903	8266;FR9904	