



California Environmental Protection Agency
AIR RESOURCES BOARD

DETROIT DIESEL CORPORATION

EXECUTIVE ORDER U-R-007-0085
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 engines and emission control systems 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)
2004	4DDXL08.5YJD	8.5	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Engine Control Module, Turbocharger, Charge Air Cooler			Crane, Loader, Tractor, Pump, Compressor, Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons 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 CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW < 225	Tier 2	STD	N/A	N/A	6.6	3.5	0.20	20	15	50
225 ≤ kW < 450	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		CERT	--	--	6.4	1.2	0.15	19	3	37

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 23RD day of December 2003.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: Detroit Diesel Corporation
 Engine category: Nonroad CI
 EPA Engine Family: 4DDXL08.5YJD
 Mfr Family Name: SERIES 50 (TIER 2)
 Process Code: New Submission

EO#U-R-007-0085

ATTACHMENT

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
5444	Series 50	350 @ 2200 350 @ 1800	278.8 319.4	136.0 127.5	1050 @ 1350 1050 @ 1350	314.5 314.5	94.1 94.1	EC TAA (all ratings)
5445		(361 kW) 315 @ 2200 315 @ 1800	258.0 292.1	125.8 116.6	1050 @ 1350 1050 @ 1350	312.4 312.4	93.5 93.5	DDI, ECM, TC/CAC (ALL MODELS)
5446		350 @ 2100 350 @ 1800	285.5 319.1	132.9 127.3	1050 @ 1350 1050 @ 1350	313.7 313.7	93.9 93.9	
5447		315 @ 2100 315 @ 1800	261.9 292.5	121.9 116.7	1050 @ 1350 1050 @ 1350	313.1 313.1	93.7 93.7	
5449		300 @ 2100 300 @ 1800	249.4 279.4	116.1 111.5	1000 @ 1350 1000 @ 1350	298.1 298.1	89.2 89.2	
5450		275 @ 2100 275 @ 1800	229.8 255.0	107.0 101.8	900 @ 1350 900 @ 1350	268.4 268.4	80.3 80.3	
5451		250 @ 2100 250 @ 1800 (79.6 kW)	209.9 229.7	97.7 91.7	800 @ 1350 800 @ 1350	242.1 242.1	72.5 72.5	
5452	Series 50	350 @ 1800	315.1	125.8	NA	NA	NA	
5453	Constant speed	315 @ 1800	285.6	114.0	NA	NA	NA	
5454	V	250 @ 1800	229.4	91.5	NA	NA	NA	