State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-22-13
Relating to Certification of New Off-Road Compression-Ignition Engines

PERKINS ENGINES COMPANY LTD.

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-45-9;

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:

Model Year: 2001

Typical Equipment Usage: Crane, Loader and Tractor

Fuel Type: Diesel

Engine Family	Engine Displacement (liters)	Useful Life (hours)	Emission Control Systems and Special Features
1PKXL05.9YG1	5.9	8000	Direct Diesel Injection

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

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

Engine Power Rating (kw)	Emission Standard Category		Exhaust Emissions (g/kw-hr)					Smoke Opacity (%)		
			HC	NOx	NMHC+NOx	CO	PM	Accel	Lug	Peak
37≤KW<130	Tier 1	Standard	N/A	9.2	N/A	N/A	N/A	20	15	50
		Certification	--	8.3	--	--	--	5	6	6

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels— 1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

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 2425 and 2426).

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

Executed at El Monte, California this 22nd day of January 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

ATTACHMENT

Engine Model Summary Form

Manufacturer: **Perkins engines Company Ltd**

Engine category: **Nonroad CI**

EPA Engine Family: **1PKXL05.9YG1**

Mfr Family Name: **AS EPA**

Process Code: **New Submission**

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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
	1933/2000	102.6 @ 2000	59.2	38.7	291.3 @ 1400	63.0	28.8	NA
	1933/2100	104.6 @ 2100	58.2	39.9	291.3 @ 1400	63.0	28.8	NA
	1933/2200	105.9 @ 2200	56.5	40.6	291.3 @ 1400	63.0	28.8	NA
	1951/2500	114.7 @ 2500	54.0	44.4	276.6 @ 1800	62.5	36.9	DDI NA
	1951/2400	113.6 @ 2400	55.5	43.8	276.6 @ 1800	62.5	36.9	NA
	1951/2200	108.1 @ 2200	57.5	41.7	276.6 @ 1800	62.5	36.9	NA
	1951/2000	101.9 @ 2000	60.0	39.5	276.6 @ 1800	62.5	36.9	NA