

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-22-14
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: Other Industrial Equipment

Fuel Type: Diesel

<u>Engine Family</u>	Engine Displacement (liters)	Useful Life (hours)	Emission Control Systems and Special Features
1PKXL05.9YH1	5.9	8000	Direct Diesel Injection Turbocharger Smoke Puff Limiter

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 (NO_x), or non-methane hydrocarbons plus oxides of nitrogen (NMHC+NO_x), 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	Standard Certification	Exhaust Emissions (g/kw-hr)					Smoke Opacity (%)		
			HC	NO _x	NMHC+NO _x	CO	PM	Accel	Lug	Peak
37≤KW<130	Tier 1		N/A	9.2	N/A	N/A	N/A	20	15	50
			--	7.8	--	--	--	6	3	11

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

A ATTACHMENT

Engine Model Summary Form

Manufacturer: **Perkins Engines Company Ltd.**
 Engine category: **Nonroad CI**
 EPA Engine Family: **1PKXL05.9YH1**
 Mr 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
	1947/2200	151.7 @ 2200	81.5	59.0	457.5 @ 1500	92.0	45.5	SPL, TC, DDI
	1947/2300	152.3 @ 2300	81.0	61.3	457.5 @ 1500	92.0	45.5	SPL, TC, DDI
	1929/2000	144.2 @ 2000	82.0	53.9	433.7 @ 1400	87.0	40.0	SPL, TC, DDI
	1929/2100	144.2 @ 2100	80.0	55.4	433.7 @ 1400	87.0	40.0	SPL, TC, DDI
	1929/2200	144.2 @ 2200	79.0	57.3	433.7 @ 1400	87.0	40.0	SPL, TC, DDI
	1929/2300	144.2 @ 2300	78.0	59.0	433.7 @ 1400	87.0	40.0	SPL, TC, DDI
	1941/2000	130.0 @ 2000	72.0	48.0	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	1941/2100	131.4 @ 2100	71.0	50.1	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	1941/2200	130.0 @ 2200	70.0	51.9	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	1941/2300	128.7 @ 2300	71.0	53.8	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	1931/2000	116.5 @ 2000	64.0	42.7	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	1931/2100	117.6 @ 2100	63.5	44.5	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	1931/2200	115.7 @ 2200	61.5	45.2	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	1931/2300	114.0 @ 2300	61.0	46.8	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	1983/1800	165.5 @ 1800	99.0	60.8	483.0 @ 1800	99.0	60.8	SPL, TC, DDI
	1940/2500	150.2 @ 2500	79.0	65.5	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
	1940/2400	148.2 @ 2400	78.5	62.3	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
	1940/2300	143.5 @ 2300	77.0	58.3	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
	1940/2200	138.8 @ 2200	78.0	58.0	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
	1939/2200	124.0 @ 2200	67.0	48.6	354.0 @ 1400	75.0	34.5	SPL, TC, DDI
	1939/2300	127.4 @ 2300	68.0	51.5	354.0 @ 1400	75.0	34.5	SPL, TC, DDI
	1939/2400	130.7 @ 2400	69.0	54.6	354.0 @ 1400	75.0	34.5	SPL, TC, DDI
	1939/2500	134.0 @ 2500	68.5	56.4	354.0 @ 1400	75.0	34.5	SPL, TC, DDI
	2047/2200	140.1 @ 2200	76.4	55.5	421.2 @ 1400	85.5	33.1	SPL, TC, DDI
	Caterpillar 3056	130.0 @ 2000	72.0	48.0	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	Caterpillar 3056	131.4 @ 2100	71.0	50.1	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	Caterpillar 3056	130.0 @ 2200	70.0	51.9	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	Caterpillar 3056	128.7 @ 2300	71.0	53.8	380.6 @ 1400	74.0	34.2	SPL, TC, DDI
	Caterpillar 3056	116.5 @ 2000	64.0	42.7	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
	Caterpillar 3056	117.6 @ 2100	63.5	44.5	341.5 @ 1400	65.5	30.6	SPL, TC, DDI

Caterpillar 3056	115.7 @ 2200	61.5	45.2	341.5 @ 1400	65.5	30.6	SPL, TC, DDI
Caterpillar 3056	114.0 @ 2300	61.0	46.8	341.5 @ 1400	65.5	30.6	SPL, DDI
Caterpillar 3056	150.2 @ 2500	79.0	65.5	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
Caterpillar 3056	148.2 @ 2400	78.5	62.3	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
Caterpillar 3056	143.5 @ 2300	77.0	58.3	396.1 @ 1200	86.0	34.0	SPL, TC, DDI
Caterpillar 3056	138.8 @ 2200	78.0	58.0	396.1 @ 1200	86.0	34.0	SPL, TC, DDI

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