

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-22-10
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: Generator

Fuel Type: Diesel

	Engine		
	Displacement	Useful Life	Emission Control Systems
<u>Engine Family</u>	<u>(liters)</u>	<u>(hours)</u>	<u>and Special Features</u>
1PKXL04.2AR1	4.232	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	Standard Certification	Exhaust Emissions (g/kw-hr)					Smoke Opacity (%)		
			HC	NOx	NMHC+NOx	CO	PM	Accel	Lug	Peak
37≤KW<130	Tier 1		N/A	9.2	N/A	N/A	N/A	N/A	N/A	N/A
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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: 1PKXL04.2AR1
 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
	5702/2000	73.9 @ 2000	66.2 @ 2000	29.0	205.8 @ 1400	67.4 @ 1400	20.5	NA
	5702/2100	77.4 @ 2100	65.4 @ 2100	30.1	205.8 @ 1400	67.4 @ 1400	20.5	NA
	5702/2200	78.2 @ 2200	63.7 @ 2200	30.7	205.8 @ 1400	67.4 @ 1400	20.5	NA
	1906/2000	76.0 @ 2000	66.2 @ 2000	29.0	211.7 @ 1400	67.4 @ 1400	20.5	NA
	1906/2100	79.8 @ 2100	65.4 @ 2100	30.1	211.7 @ 1400	67.4 @ 1400	20.5	NA
	1906/2200	80.6 @ 2200	63.7 @ 2200	30.7	211.7 @ 1400	67.4 @ 1400	20.5	NA
	5775/2300	81.8 @ 2300	63.3 @ 2300	31.9	215.4 @ 1400	67.4 @ 1400	20.5	NA
	5775/2400	83.5 @ 2400	62.6 @ 2400	31.8	215.4 @ 1400	67.4 @ 1400	20.5	NA
	1996/2300	85.4 @ 2300	63.3 @ 2300	31.9	221.3 @ 1400	67.4 @ 1400	20.5	NA
	1996/2400	85.8 @ 2400	62.6 @ 2400	31.8	221.3 @ 1400	67.4 @ 1400	20.5	NA
	5786/2400	84.5 @ 2400	62.6 @ 2400	31.8	217.5 @ 1400	67.4 @ 1400	20.5	NA
	5791/2400	81.8 @ 2400	62.6 @ 2400	31.8	212.0 @ 1400	67.4 @ 1400	20.5	NA
	5789/2100	76.4 @ 2100	65.4 @ 2100	30.1	212.4 @ 1400	67.4 @ 1400	20.5	DDI NA
	5790/2100	74.4 @ 2100	65.4 @ 2100	30.1	206.5 @ 1400	67.4 @ 1400	20.5	NA
	Caterpillar 3054	76.0 @ 2000	66.2 @ 2000	29.0	211.7 @ 1400	67.4 @ 1400	20.5	NA
	Caterpillar 3054	79.8 @ 2100	65.4 @ 2100	30.1	211.7 @ 1400	67.4 @ 1400	20.5	NA
	Caterpillar 3054	80.6 @ 2200	63.7 @ 2200	30.7	211.7 @ 1400	67.4 @ 1400	20.5	NA
	1992/2200	75.1 @ 2200	57.5 @ 2200	27.7	213.9 @ 1400	66.3 @ 1400	20.4	NA
	5772/2200	72.5 @ 2200	57.5 @ 2200	27.7	213.9 @ 1400	66.3 @ 1400	20.4	NA
	2049/1700	68.4 @ 1700	67.5 @ 2200	25.2	232.0 @ 1150	76.0 @ 1150	19.0	NA
	2049/1800	66.0 @ 1800	66.0 @ 1800	26.2	232.0 @ 1150	76.0 @ 1150	19.0	NA
	2046/1800	71.0 @ 1800	65.0 @ 1800	26.0	207.3 @ 1800	65.0 @ 1800	26.0	NA
	2046/1500	61.7 @ 1500	70.0 @ 1500	23.1	216.0 @ 1500	70.0 @ 1500	23.1	NA