

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-23-2
Relating to Certification of New Off-Road Compression-Ignition Engines

LISTER-PETTER INC.

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 set

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacement (liters)</u>	<u>Useful Life (hours)</u>	<u>Emission Control Systems and Special Features</u>
1L5XL1.86FWS	0.930, 1.395, and 1.860	3000	Indirect 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):

<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>		<u>Exhaust Emissions (g/kw-hr)</u>					<u>Smoke Opacity (%)</u>		
			<u>HC</u>	<u>NOx</u>	<u>NMHC+NOx</u>	<u>CO</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
8<KW<19	Tier 1	Standard	N/A	N/A	9.5	6.6	0.80	N/A	N/A	N/A
		Certification	--	--	7.4	1.3	0.42	--	--	--

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 16th day of January 2001.



R. B. Summerfield, Chief
Mobile Source Operations Division

Model Year: 2001
 Manufacturer: Lister-Petter
 Engine Family: 1L5XL1.86FWS

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 Revised: 11/6/2000
 E.O. Number: U-R-23-2.
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Small Off-Road Engine Model Summary Form

Units for Table: bhp

Worst Case?	47. Model Designation	48. Sales Code	49. Displ (cc)	50. Bore/Stroke	51. Ignition Timing	52. Max Power	53. Rated Speed (RPM)	54. Rated Torque	55. Torque Speed (RPM)	56. Emiss Control Sys
X	LPWS2 358	50-State	930	86/80mm	16° BTDC	12.1	^{KW} 9.1 1800	N/A	N/A	101 EM
	LPWS2 379	50-State	930	86/80mm	16° BTDC	12.1	9.1 1800	N/A	N/A	101 EM
	LPWS3 358	50-State	1395	86/80mm	16° BTDC	18.1	13.6 1800	N/A	N/A	101 EM
	LPWS3 379	50-State	1395	86/80mm	16° BTDC	18.1	13.6 1800	N/A	N/A	101 EM
	LPWS4 358	50-State	1860	86/80mm	16° BTDC	24.1	18.0 1800	N/A	N/A	101 EM
	LPWS4 379	50-State	1860	86/80mm	16° BTDC	24.1	18.0 1800	N/A	N/A	101 EM