

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-23-5  
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: Loader, tractor, pump and compressor

Fuel Type: Diesel

	Engine		
<u>Engine Family</u>	Displacement <u>(liters)</u>	Useful Life <u>(hours)</u>	Emission Control Systems and <u>Special Features</u>
1L5XL1.86LWS	1.395 and 1.860	5000	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):

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
19≤KW<37	Tier 1		N/A	N/A	9.5	5.5	0.80	20	15	50
			--	--	6.9	1.3	0.50	8	9	15

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 22<sup>nd</sup> day of January 2001.



R. B. Summerfield, Chief  
Mobile Source Operations Division

# Engine Model Summary Form

Attachment

ED#U-R-23-5

Manufacturer: **Lister-Petter**  
 Engine category: **Nonroad CI**  
 EPA Engine Family: **1L5XL1.86LWS**  
 Mfr Family Name: **ALPHA LPWS**  
 Process Code: **New Submission**

19<FW<37

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
50 State Code								
LPWS3	301	27.0 @ 3000	24	12.0	49.6 @ 2000	24	8.0	DI ↓ FI
LPWS3	302	29.6 @ 3000	26	13.0	54.6 @ 2000	26	8.7	
LPWS3	351	27.0 @ 3000	24	12.0	49.6 @ 2000	24	8.0	
LPWS3	352	29.6 @ 3000	26	13.0	54.6 @ 2000	26	8.7	
LPWS3	376	28.3 @ 2800	26	12.1	54.6 @ 2000	26	8.7	
LPWS4	301	36.0 @ 3000	24	16.0	65.7 @ 2000	24	10.6	
LPWS4	302	39.6 @ 3000	26	17.3	72.3 @ 2000	26	11.6	
LPWS4	351	36.0 @ 3000	24	16.0	65.7 @ 2000	24	10.6	
LPWS4	352	39.6 @ 3000	26	17.3	72.3 @ 2000	26	11.6	
LPWS4	376	37.7 @ 2800	26	16.2	72.3 @ 2000	26	11.6	
LPWS4	384	34.3 @ 2500	26	14.4	72.3 @ 2000	26	11.6	
LPWS4	311	37.7 @ 2800	26	16.2	72.3 @ 2000	26	11.6	

EPA cert No. L5X-NR3-01-03