

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-27-2  
Relating to Certification of New Off-Road Compression-Ignition Engines

LOMBARDINI S.R.L.

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 exhaust emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Pump, Compressor and Generator Set

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacements (Liters)</u>	<u>Durability Period (Hours)</u>	<u>Exhaust Emission Control Systems and Special Features</u>
1LBDL.916F69 (LDW FOCS)	0.611 and 0.916	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):

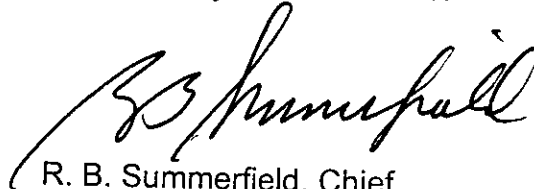
<u>Engine Power Rating (KW)</u>	<u>Emission Standard Category</u>		<u>Exhaust Emissions (g/kw-hr)</u>					<u>Smoke Opacity (%)</u>			
			<u>HC</u>	<u>NOx</u>	<u>NMHC</u>		<u>CO</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
					<u>± NOx</u>						
KW < 8	Tier 1	Standard	N/A	N/A	10.5	8.0	1.0	20	15	50	
8 ≤ KW < 19	Tier 1	Standard	N/A	N/A	9.5	6.6	0.80	20	15	50	
All Above		Certification	N/A	N/A	5.7	2.7	0.34	2	1	6	

BE IT FURTHER RESOLVED: That the listed engine models also comply with the amended "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 28<sup>th</sup> day of March 2001.



R. B. Summerfield, Chief  
Mobile Source Operations Division

# Engine Model Summary Form

ATTACHMENT

EO# U-R-27-2

Manufacturer: **Lombardini SRL**  
 Engine category: **Nonroad CI**  
 EPA Engine Family: **1LBDL916F69**  
 Mfr Family Name: **LDW FOCS**  
 Process Code: **New Submission**

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
	LDW 903	21.4@3600	16.0	19.7	11.8	39.8@2000	20.7	6.9	IDI ↓
	LDW 903	19.4@3000	14.5	19.4	9.7	39.8@2000	20.7	6.9	
	LDW 903/ L *	12.1@1800	9.0	18.0	5.4				
	LDW 602	14.2@3600	10.6	19.2	7.7	24.3@2200	20.5	5.0	
	LDW 602	12.5@3000	9.3	19.4	6.5	24.3@2200	20.5	5.0	
	LDW 602/ L *	7.9@1800	5.9	18.0	3.6				

\* Constant speed models

↑  
KW