California Environmental Protection Agency AIR RESOURCES BOARD	Lombardini A KOHLER Company	EXECUTIVE ORDER U-R-027-0106 New Off-Road Compression-Ignition Engines

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-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2009	9LBDL1.37SF1	1.0284, 1.3712	Diesel	3000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Indirect Diesel Injection	Loaders, Tractor, Dozer, Pump, Compressor, Generator Set, and Other Industrial Equipment

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
8 ≤ kW < 19	Tier 4	STD	N/A	N/A	7.5	6.6	0.40	20	15	50
		CERT	--	--	5.2	2.5	0.22	8	6	16

BE IT FURTHER RESOLVED: That certification to the standards in 13 CCR 2423(b)(1)(B) -Table 1b listed above has been permitted pursuant to Endnote 3 of the same table.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 26TH day of December 2008.

Raphael Susnowitz

for Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Template

Attachment, page 1 of 2

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Engine Family	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
9LBDL1.37SF1		LDW 1003 or LDW 1003/B1	24.1@3000	21.0	10.47	46.5@2100	22.0	7.67	IDI
9LBDL1.37SF1		LDW 1003	24.8@3300	20.5	11.24	45.7@2100	21.5	7.52	IDI
9LBDL1.37SF1		LDW 1003	13.4@1800	19.0	5.69	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		LDW 1003	11.1@1500	20.5	5.11	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		LDW 1003	22.1@2800	20.5	9.55	44.3@2000	21.5	7.14	IDI
9LBDL1.37SF1		LDW 1003	20.8@2600	20.5	8.86	44.3@1800	21.5	6.44	IDI
9LBDL1.37SF1		LDW 1003	18.8@2400	20.5	8.18	44.3@1800	21.5	6.44	IDI
9LBDL1.37SF1		LDW 1003	16.8@2200	20.5	7.50	44.3@1800	21.5	6.44	IDI
9LBDL1.37SF1		LDW 1404	24.8@2400	20.2	10.76	55.7@2000	20.7	9.17	IDI
9LBDL1.37SF1		LDW 1404	18.2@1800	19.5	7.78	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		KDW 1003 or KDW 1003/B1	24.1@3000	21.0	10.47	46.5@2100	22.0	7.67	IDI
9LBDL1.37SF1		KDW 1003	24.8@3300	20.5	11.24	45.7@2100	21.5	7.52	IDI
9LBDL1.37SF1		KDW 1003	13.4@1800	19.0	5.69	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		KDW 1003	11.1@1500	20.5	5.11	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		KDW 1003	22.1@2800	20.5	9.55	44.3@2000	21.5	7.14	IDI

Engine Model Summary Template

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Attachment, page 2 of 2

Engine Family	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
9LBDL1.37SF1		KDW 1003	20.8@2600	20.5	8.86	44.3@1800	21.5	6.44	IDI
9LBDL1.37SF1		KDW 1003	18.8@2400	20.5	8.18	44.3@1800	21.5	6.44	IDI
9LBDL1.37SF1		KDW 1003	16.8@2200	20.5	7.50	44.3@1800	21.5	6.44	IDI
9LBDL1.37SF1		KDW 1404	24.8@2400	20.2	10.76	55.7@2000	20.7	9.17	IDI
9LBDL1.37SF1		KDW 1404	18.2@1800	19.5	7.78	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		LDW 1003 or LDW 1003/E4	25.2@3600	20.0	11.97	45.7@2100	21.5	7.52	IDI
9LBDL1.37SF1		LDW 1003	22.5@2850	20.5	9.72	44.3@1600	21.5	5.71	IDI
9LBDL1.37SF1		LDW 1003	22.1@2800	20.5	9.55	44.3@1800	21.5	6.44	IDI
9LBDL1.37SF1		LDW 1003GE	14.5@1800	20.5	6.13	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		LDW 1404GE	19.6@1800	21.0	8.38	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		KDW 1003 or KDW 1003/E4	25.2@3600 18.79kw	20.0	11.97	45.7@2100	21.5	7.52	IDI
9LBDL1.37SF1		KDW 1003	22.5@2850	20.5	9.72	44.3@1600	21.5	5.71	IDI
9LBDL1.37SF1		KDW 1003	22.1@2800	20.5	9.55	44.3@1800	21.5	6.44	IDI
9LBDL1.37SF1		KDW 1003GE	14.5@1800	20.5	6.13	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI
9LBDL1.37SF1		KDW 1404GE	19.6@1800	21.0	8.38	FIXED SPEED	FIXED SPEED	FIXED SPEED	IDI