 <b>AIR RESOURCES BOARD</b>	<b>YANMAR CO., LTD.</b>	<b>EXECUTIVE ORDER U-R-028-0444</b>
		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	9YDXL2.19K4N	2.190	Diesel	5000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection			Crane, Loader, Tractor, Dozer, Pump, Compressor, Excavator	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons 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):

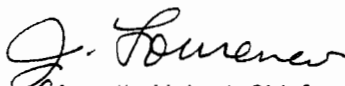
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
19 ≤ kW < 37	Tier 4 Interim	STD	N/A	N/A	7.5	5.5	0.30	20	15	50
		CERT	--	--	6.4	2.8	0.20	1	2	2

**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 11<sup>th</sup> day of December 2008.

  
 Annette Hebert, Chief  
 Mobile Source Operations Division

# Engine Model Summary Template

ATTACHMENT  
ED# V-R-028-0444

Engine Family	1 Engine Code	2 Engine Model	3.BHP@RPM (SAE Gross)	4 Fuel Rate: mm <sup>3</sup> /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 <sup>3</sup> /stroke@peak torque	8. Fuel Rate: (lbs/hr)@peak torque	9. Emission Control Device Per SAE J1930
9YDXL2 19K4N	N/A	3NNDP	48.8/3000	29.2	19.3	107.6/1000	35.2	7.8	EM DI
9YDAXL2 19K4N	N/A	3NND A	48.8/3000	29.2	19.3	106.2/1000	33.0	7.3	EM DI
9YDAXL2 19K4N	N/A	3NNKA	47.0/2800	29.0	17.9	106.9/1100	33.7	8.2	EM DI
9YDAXL2 19K4N	N/A	3NNLA	45.3/2700	28.8	17.1	107.0/1000	34.5	7.6	EM DI
9YDAXL2 19K4N	N/A	3NNMA	43.6/2600	29.4	16.9	107.0/1200	34.3	9.1	EM DI
9YDAXL2 19K4N	N/A	3NNNA	42.0/2500	29.3	16.2	107.1/1000	34.8	7.7	EM DI
9YDAXL2 19K4N	N/A	3NNPA	40.2/2400	28.6	15.1	106.0/1100	34.0	8.2	EM DI
9YDAXL2 19K4N	N/A	3NNQA	38.6/2300	28.4	14.4	107.0/1000	34.7	7.6	EM DI
9YDAXL2 19K4N	N/A	3NNSA	37.0/2200	28.2	13.7	107.0/1000	34.7	7.6	EM DI
9YDAXL2 19K4N	N/A	3NNVA	35.3/2100	28.3	13.1	107.0/1000	34.7	7.6	EM DI
9YDAXL2 19K4N	N/A	3NNWA	33.6/2000	28.5	12.6	105.9/1000	34.6	7.6	EM DI
9YDAXL2 19K4N	N/A	3NNPE	41.1/2400	29.9	15.8	106.0/1100	34.0	8.2	EM DI
9YDAXL2 19K4N	N/A	3NNKC	42.8/2800	27.3	16.8	95.1/1600	29.1	10.3	EM DI
9YDAXL2 19K4N	N/A	3NNLC	41.3/2700	26.8	15.9	94.8/1500	29.1	9.6	EM DI
9YDAXL2 19K4N	N/A	3NNKAE	47.0/2800	29.0	17.9	106.9/1100	33.7	8.2	ECM
9YDAXL2 19K4N	N/A	3NNDAE	48.8/3000	29.2	19.3	106.2/1000	33.0	7.3	ECM

36.4  
KW

28.1  
KW