California Environmental Protection Agency AIR RESOURCES BOARD	YANMAR CO., LTD.	EXECUTIVE ORDER U-R-028-0128 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)
2003	3YDXL2.19E4N	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 1	STD	N/A	N/A	9.5	5.5	0.80	20	15	50
		CERT	--	--	8.7	3.7	0.38	5	7	10

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 20TH day of December 2002.

Raphael Susnowitz

for Allen Lyons, Chief
Mobile Source Operations Division

Engine Model S mary Form

Manufacturer: **Yanmar Co.,Ltd.**

Engine category: **Nonroad CI**

EPA Engine Family: **3YDXL2.19E4N**

Mfr Family Name: **N/A**

Process Code: **New Submission**

ATTACHMENT

EO U-R-028-0128

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
N/A	4TNE88-EDM1	46.3/2800	28.8	17.7	106.5/1680	32.7	12.1	EM
N/A	4TNE88-EHYS	40.9/2500	28.3	15.5	102.6/1500	32.4	10.7	EM
N/A	4D88E-1FC	47.4/2800	30.1	18.5	98.0/1800	30.1	11.9	EM
N/A	4TNE88-EJKM	43.7/2700	29.2	17.3	99.8/1700	32.0	11.9	EM
N/A	4TNE88-EPD	39.7/2400	29.5	15.5	102.6/1600	31.7	11.1	EM
N/A	4TNE88-ERKB	44.9/2600	31.1	17.8	102.3/1600	31.7	11.1	EM
N/A	4TNE88-EJTF4	46.1/2700	30.5	18.1	103.1/1700	32.6	12.2	EM
N/A	4TNE88-ENSW	40.2/2400	30.0	15.7	103.6/1600	32.0	11.2	EM
N/A	4TNE88-ENSR	31.5/1900	29.5	12.3	103.0/1300	31.8	9.1	EM
N/A	4TNE88-EYE	41.3/2500	29.4	16.2	103.2/1600	31.9	11.2	EM DJ
N/A	4TNE88-EJTF4	46.1/2700	30.5	18.1	103.1/1700	32.6	12.2	EM
N/A	4TNE88-EVN	43.7/2600	30.0	17.1	103.2/1600	32.0	11.3	EM
N/A	4TNE88-EJTF4	46.1/2700	30.5	18.1	103.1/1700	32.6	12.2	EM
N/A	4D88E-FYE	38.5/2300	29.8	15.1	103.5/1400	32.4	10.0	EM
N/A	4TNE88-ELAN	45.2/2800	29.6	18.2	101.7/1600	31.6	11.1	EM
N/A	4TNE88-EBE1	44.4/2600	30.4	17.4	103.1/1600	31.9	11.2	EM
N/A	4TNE88-EBE2	44.4/2600	30.4	17.4	103.1/1600	31.9	11.2	EM
N/A	4D88E-1FD (36)	48.3/2800	30.7	18.9	98.0/1800	30.1	11.9	EM
N/A	4TNE88-EJT47	46.0/2600	31.6	18.0	104.4/1600	32.6	11.5	EM
N/A	4TNE88-EWA	47.0/2800	30.8	18.9	103.1/1800	31.9	12.6	EM
N/A	4TNE88-EWA2	47.0/2800	30.8	18.9	103.1/1800	31.9	12.6	EM
N/A	4TNE88-EBEN	39.6/2400	29.4	15.5	102.2/1600	31.6	11.1	EM
N/A	4TNE88-EKO	47.5/2800	31.1	19.1	104.4/1800	32.4	12.8	EM
N/A	4TNE88-EBP	41.5/2500	29.6	16.2	102.7/1600	31.8	11.2	EM
N/A	4TNE88-ENKR	39.6/2400	29.4	15.5	102.2/1600	31.6	11.1	EM