California Environmental Protection Agency AIR RESOURCES BOARD	YANMAR DIESEL ENGINE CO., LTD.	EXECUTIVE ORDER U-R-028-0064 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-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. 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)
2002	2YDXL2.00D4N	1.995	Diesel	5000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection	Crane, Loader, Tractor, Dozer, Pump, Compressor

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	--	--	8.5	4.6	0.71	5	6	6

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 29th day of November 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

ATTACHMENT

Engine Model Su' nary Form (Page 1 of 2)

EO V-R-028-0064

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

Engine category: **Nonroad CI**

EPA Engine Family: **2YDXL2.00D4N**

Mfr Family Name: **N/A**

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
N/A	4TNE84-EDM1	44.7/3000	25.9	17.1	93.8/1800	29.4	11.6	EM DDI
N/A	4TNE84-EJ	45.7/3000	26.8	17.7	92.9/1800	29.1	11.5	EM
N/A	4TNE84-EJS	45.7/3000	26.8	17.7	92.9/1800	29.1	11.5	EM
N/A	4TNE84-ESA01	45.7/3000	26.8	17.7	92.9/1800	29.1	11.5	EM
N/A	4TNE84-EAF	45.8/3000	27.7	18.2	92.9/1800	29.1	11.5	EM
N/A	4TNE84-EDS	42.9/2800	26.5	16.3	93.1/1700	29.2	10.9	EM
N/A	4TNE84-EMS	42.2/2700	28.3	16.8	93.1/1700	29.2	10.9	EM
N/A	4TNE84-EJTC4	39.9/2600	27.0	15.4	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTC4	44.1/2700	28.8	17.1	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTF4	39.9/2600	27.0	15.4	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTF4	44.1/2700	28.8	17.1	93.4/1600	29.3	10.3	EM
N/A	4TNE84-ERKB	38.0/2600	25.7	14.7	88.9/1600	28.1	9.9	EM
N/A	4TNE84-EMSA	44.6/2900	26.6	17.0	92.9/1800	29.3	11.6	EM
N/A	4TNE84-EYAS	45.7/3000	26.8	17.7	92.9/1800	29.1	11.5	EM
N/A	4TNE84-EJTC4	39.9/2600	27.0	15.4	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTC4	44.1/2700	28.8	17.1	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTF4	39.9/2600	27.0	15.4	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTF4	44.1/2700	28.8	17.1	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJK	39.4/2700	25.9	15.3	91.8/1600	29.0	10.2	EM
N/A	4TNE84-EJTC4	39.9/2600	27.0	15.4	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTC4	44.1/2700	28.8	17.1	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTF4	39.9/2600	27.0	15.4	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTF4	44.1/2700	28.8	17.1	93.4/1600	29.3	10.3	EM
N/A	4TNE84-ELAN	39.8/2800	26.1	16.0	89.7/1600	28.7	10.1	EM
N/A	4TNE84-ESA02	45.7/3000	26.8	17.7	92.9/1800	29.1	11.5	EM
N/A	4TNE84-ESA03	45.7/3000	26.8	17.7	92.9/1800	29.1	11.5	EM

ATTACHMENT

Engine Model Summary Form

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EO U-R-028-0064

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

Engine category: **Nonroad CI**

EPA Engine Family: **2YDXL2.00D4N**

Mfr Family Name: **N/A**

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
N/A	4TNE84-ESA04	45.7/3000	26.8	17.7	92.9/1800	29.1	11.5	EM DPI
N/A	4TNE84-ESA05	45.7/3000	26.8	17.7	92.9/1800	29.1	11.5	EM
N/A	4TNE84-EJT45	38.2/2600	25.9	14.8	89.7/1600	28.4	10.0	EM
N/A	4TNE84-EJT45	38.2/2600	25.9	14.8	89.7/1600	28.4	10.0	EM
N/A	4TNE84-EJT46	42.1/2600	28.5	16.3	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJT46	42.1/2600	28.5	16.3	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EJTLB	42.1/2600	28.5	16.3	93.4/1600	29.3	10.3	EM
N/A	4TNE84-EWA	42.9/2800	26.5	16.3	93.1/1800	29.2	11.5	EM
N/A	4TNE84-EMAX	42.9/2800	26.5	16.3	93.1/1800	29.2	11.5	EM

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Engine Model Summary Form

EO U-R-028-0064
Page 2

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

Engine category: **Nonroad CI**

EPA Engine Family: **2YDXL2.00D4N**

Mfr Family Name:

Process Code: **Running Change**

Dec. 12, 2001

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	4TNE84-EHIN	33.2/2200	26.2	12.6	93.1/1400	27.4	8.4	EM, PPI
	4TNE84-EDS	42.2/2800	26.1	16.0				DDI