



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)
2003	3YDXL1.64M3N	1.642	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	--	--	5.9	3.6	0.42	2	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 21ST day of March 2002.

Allen Lyons, Chief
New Vehicle/Engine Programs Branch

Engine Model Summary Form

Manufacturer: Yanmar Diesel Engine Co., Ltd.
 Engine category: Nonroad CI
 EPA Engine Family: 3YDXL1.64M3N
 Mfr Family Name: N/A
 Process Code: New Submission

ATTACHMENT

#0 U-R-028-0095

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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	3TNV88-VM2 (26.1 kw)	35.0/2800	32.5	15.0	79.5/1200	34.0	6.7	DP1

Engine Model Summary Form

Manufacturer: **Yanmar Co., Ltd.**
 Engine category: **Nonroad CI**
 EPA Engine Family: **3YDXL1.64M3N**
 Mfr Family Name:

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ATTACHMENT

Process Code: **Running Change Oct. 8, 2002**

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	3TNV88-VM21	35.0/2800	32.5	15.0	84.8/1500	38.0	9.4	EM PDI
N/A	3TNV88-K	34.7/2800	31.8	14.7	79.9/1200	34.9	6.9	EM
N/A	3TNV88-L	33.5/2700	31.8	14.2	81.5/1200	35.7	7.1	EM
N/A	3TNV88-M	32.3/2600	31.7	13.6	78.2/1100	34.7	6.3	EM
N/A	3TNV88-N	31.0/2500	31.5	13.0	78.2/1100	34.7	6.3	EM
N/A	3TNV88-P	29.8/2400	31.2	12.4	78.2/1100	34.7	6.3	EM
N/A	3TNV88-Q	28.4/2300	30.8	11.7	78.2/1100	34.7	6.3	EM
N/A	3TNV88-S	27.2/2200	30.3	11.0	77.1/1100	34.8	6.3	EM
N/A	3D88E-5M	32.3/2600	31.7	13.6	78.2/1100	34.7	6.3	EM
N/A	3D88E-5N	31.0/2500	31.5	13.0	78.2/1100	34.7	6.3	EM
N/A	3D88E-5P	29.8/2400	31.2	12.4	78.2/1100	34.7	6.3	EM
N/A	3D88E-5Q	28.4/2300	30.8	11.7	78.2/1100	34.7	6.3	EM
N/A	3D88E-5S	27.2/2200	30.3	11.0	77.1/1100	34.8	6.3	EM

Engine Model Survey Form

Manufacturer: **Yanmar Co., Ltd.**
 Engine category: **Nonroad CI**
 EPA Engine Family: **3YDXL1.64M3N**
 Mfr Family Name:

Process Code: **Running Change** *Mar. 11, 2003*

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ATTACHMENT

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	3CE1-K	34.7/2800	31.8	14.7	79.9/1200	34.9	6.9	EM DP
N/A	3CE1-L	33.5/2700	31.8	14.2	81.5/1200	35.7	7.1	EM
N/A	3CE1-M	32.3/2600	31.7	13.6	78.2/1100	34.7	6.3	EM
N/A	3CE1-N	31.0/2500	31.5	13.0	78.2/1100	34.7	6.3	EM
N/A	3CE1-P	29.8/2400	31.2	12.4	78.2/1100	34.7	6.3	EM
N/A	3CE1-Q	28.4/2300	30.8	11.7	78.2/1100	34.7	6.3	EM
N/A	3CE1-S	27.2/2200	30.3	11.0	77.1/1100	34.8	6.3	EM
N/A	3TNV88-XBV	31.0/2500	31.5	13.0	78.2/1200	35.4	7.0	EM

Engine Model Summary Form

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ATTACHMENT 4 OF 4

Manufacturer: Yanmar Co., Ltd.
 Engine category: Nonroad CI
 EPA Engine Family: 3YDXL1.64M3N
 Mfr Family Name:
 Process Code: Running Change

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	3TNV88-D	37.5/3000	32.5	16.1	81.8/1200	35.5	7.0	EM