



YANMAR DIESEL ENGINE CO., LTD.

EXECUTIVE ORDER U-R-028-0047 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) 8000				
2002	2YDXL4.41E4T	4.412	Diesel					
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION					
[	Direct Diesel Injection, T	urbocharger	Crane, Loader, Tractor, Dozer, Pump, Compressor, Generator					

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	EMISSION	<del></del>		E	EXHAUST (g/kw-l	OPACITY (%)				
POWER CLASS	STANDARD	STD	HC N/A	NOx	NMHC+NOx	СО	PM	ACCEL 20	LUG 15	PEAK 50
75 ≤ KW < 130	Tier 1			9.2	N/A	N/A	N/A			
		CERT		7.8				8	5	17

**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

\_day of November 2001.

R. B. Summerfield, Chief

Mobile Source Operations Division

## Engine Model Sur lary Form

Manufacturer: Yanmar Diesel Engine Co.,Ltd.

Engine category: Nonroad CI

EPA Engine Famly. 2YDXL4.41E4T

Mfr Family Name: N/A

Process Code: New Submission

ATTACHMENT

FOU-R-028-0047

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9.Emission Control Device Per SAE J1930	DDI,TC	DDI, TC	DD1, TC	DD1, TC	DDI TC						
8.Fuel Rate: (lbs/hr)@peak torque	28.2	28.5	24.5	27.2	29.4						
7.Fuel Rate: mm/stroke@peak torque	85.5	81.2	79.9	82.4	83.7						
6.Torque @ RPM (SEA Gross)	307.1/1500	279.3/1600	282.9/1400	283.5/1500	287.9/1600						
5.Fuel Rale: (bs/hr) @ peak HP (for diesels only)	41.5	42.0	37.8	38.7	40.9						
4.Fuel Rate: mm/stroke @ peak HP (lb (for diesel only) (	75.4	76.5	78.1	76.7	74.5						
3.BHP@RPM mm/s (SAE Gross) (f	115,6/2500	117.1/2500	105.5/2200	108.2/2300	113.6/2500						
2.Engine Model	4TNE106T-VM	4TNF106T-SA	4TNF106T-TBL	S4D106-FY	4TNE106T-GE						
Engine Code	A/N	VIN	Φ/N	N/A	N/A						