California Environmental Protection Agency AIR RESOURCES BOARD	YANMAR CO., LTD.	EXECUTIVE ORDER U-R-028-0150 New Off-Road Compression-Ignition Engines
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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	3YDXL0.31D1N	0.306	Diesel	3000		
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION			
Direct Diesel Injection			Pump, Compressor, Generator Set			

The engine models and codes are attached.

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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	11.0 ⁻ -	EXHAUST (g/kw-hr)					OPACITY (%)		
POWER CLASS			нс	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK
kW < 8	Tier 1	STD	N/A	N/A	10.5	8.0	1.0	N/A	N/A	N/A
		CERT			8.9	6.8	0.7			

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 _____232 day of December 2002.

Raphael Susravit

MAllen Lyons, Chief Mobile Source Operations Division

Engine Model ? mmary Form

Manufacturer:Yanmar Co.,Ltd.Engine category:Nonroad ClEPA Engine Famiy:3YDXL0.31D1NMfr Family Name:N/AProcess Code:New Submission

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ATTACHMENT

EO U-R-028-0150

1.Engine Code	.' 2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rato: inm/stroke @ peak HP (for diesel only)	5.Fuel Rato; (lbs/hr) @ peak HP (for diesels onty)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torquo	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
N/A	LTOEE-DE1	6.6/3600	37. States 16.1	3.2	9.5/2700		······································	Store EM
N/A	L70EE-DE	6.4/3600	14.3	.2.8	9,2/2700	13.0	1.9	EM EM
N/A 💝	KALL70EE-D	6.4/3600	14.3 (in 14.3	2.8		13:0,17:5,	1.9	MAN WEMEN
N/A	L70EE-DG	6,4/3600	14,3	2.8	9.2/2700	. 13.0	1.9	EM
N/A 2	WL70EE-DEG41405	, 6,4/3600 ₁ , .	ji	AV 2.8	P. 19.2/2700	<u></u>	5.00 1.9	EM P
N/A	L70EE-DP	6.4/3600	14.3	2.8	9.2/2700	13.0	1.9	EM
A DEN/A STRAT	L70EE-DEP	. 6.4/3600	14.3	. 1/15, 2,8 [#1]	9.2/2700	13.0	1.9	EM EM
N/A	L70EE-DWKPA	5,9/3300	12.7	2.5	9.5/2700	13.9	2.1	EM
N/A)	L70EE,DEPCO	6,4/3600	14.3	2,8	9.2/2700	13.0	1.9	EM
N/A	L70EE-DEVBO	6.4/3600	14.3 14.3	2.8	9.2/2700	13.0	1.9	EM DD
N/A	HL70EE-DEKR	6.4/3600	14.3	2.8	9.2/2700	13.0 Min	Kels / 1.9	EM
N/A	L70EE-DVAH	6.4/3600	14.3	2.8	9,2/2700	13.0	1.9	EM
IN/A	L70EE DEGMO	6.4/3600	, 14.3	2.8	9.2/2700	C. 13.0	a) a 1.9 a 1.5 a	EM
,N/A	L70ECE-DEGM	6.4/3600	14.3	2.8	9.2/2700	13.0	1.9	EM
N/A (A)	L70EE-DEGMA	6,4/3600	14.3	2.8	9.2/2700	13.0	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	EM
N/A	L70ECE-DEGM	6.4/3600	14.3	2.8	9.2/2700	13.0	1.9	EM
N/A	L70EE-DEG6N	6.4/3600	<u>()</u> () 14.3	2.8	9.2/2700	13.0	1.9 Mater	EM
N/A	L70EE-DEGY6	6.4/3600	14.3	2.8	9.2/2700	13.0	1.9	EM
N/A	L70EE-DEGYS	6.4/3600	14.3	2.8	9.2/2700	13.0		Man Andrew Constant
N/A	L70EE-DB	6.4/3600	14.3	2.8	9.2/2700	13.0	1.9	EM
N/A	L70ÈE-DEB	3 6.4/3600	14.3	2.8 jan	9.2/2700	13.0 ¹	1:9 Josef 1:	EMA I
N/A	L70EE-DP5	6.4/3600	14.3	2.8	9.2/2700	13.0 ^b	1.9	EM
J. MA	LTOEE-DEGLE	6.4/3600	<u>14.3</u>	4 2.8		生。他也。13.0,他们	1.9	EM
N/A	L70EE-DGLE	6.4/3600	14.3	2.8	9.2/2700	13.0	9 mars 1.9	EM
ANA STATE	LTOEE-DGMO	6.4/3600	(14,3 L)	1,12.8		Sil; \$13.01//**	AN 1.9 AN AN	EM EM
N/A N/A	L70ECE-DGM	6.4/3600	14,3 <u>1</u>	2.8	9.2/2700 - S	13.0	1.9	EM V

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Manufacturer:	Yanmar Co.,Ltd.						
Engine category:	Nonroad CI				A		
EPA Engine Family:	3YDXL0.31D1N					MENT 2	
Mfr Family Name:	· · · · · · · · · · · · · · · · · · ·	L		60#	U-R-OZ	8-0150	
Process Code:	Running Change		·	EU			
		\mathcal{A}					
1.Engine Code	2.Engine Model	3.8HP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP	5.Fuel Rate: (lbs/hr) @ peak HP	6.Torque @ RPM	7.Fuel Rate: mm/stroke@peak	8.Fuel R

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1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	mm/stroke @ peak HP (for diesel only)	(lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	mm/stroke@peak torque	8.Fuel Rate: (lhs/hr)@neak torque	9.Emission Control Device Per SAE J1930
N/A	L70EE-DPKOT	6.4/3600	14.3	2.8	,,	13,0	1,9	EM
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Manufacturer:	Yanmar Co.,Ltd.							
Engine category:	Nonroad Cl			A7	74CHMENT ()# U-R- 028	3)		
EPA Engine Family:	3YDXL0.31D1N			EC	# U-R- 028	3-0150		
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 lorque	9.Emission Control Device Per SAE J1930
Contraction of the second s	FLAFF-PELION	6.4/3600	14.3	2.8	9.2/2700	13.0	1.9	40 (*) EM