## California Environmental Protection Agency Air Resources Board

YANMAR CO., LTD.

EXECUTIVE ORDER U-R-028-0649 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)		
2014	EYDXL1.64NDA	1.642	Diesel	5,000		
	FEATURES & EMISSION		TYPICAL EQUIPMENT APPLICATION			
Electronic	Direct Injection, Exhaus nic Control Module, Perio Oxidation Cataly	odic Trap Oxidizer,	Crane, Loader, Tractor, Dozer, Pump	, Compressor, Excavato		

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), oxides of nitrogen (NOx), or non-methane hydrocarbon 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):

POWER CLASS	EMISSION STANDARD CATEGORY			E	XHAUST (g/kW-h		OPACITY (%)			
			NMHC	NOx	NMHC+NOx	СО	PM	ACCEL	LUG	PEAK
19 ≤ kW < 37	Tier 4 Final	STD	N/A	N/A	4.7	5.5	0.03	N/A	N/A	N/A
		CERT			3.7	0.2	0.001			

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 2013.

Erik White, Chief

Mebile Source Operations Division

## **Engine Model Summary Template**

ATTACHMENT

U-R-028-0649 4/8/14

Engine Family	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		9.Emission Control eDevice Per SAE J1930
EYDXL1.64NDA	N/A	4KNDPC	38.9/3000	31.4	20.8	79.3/1950	34.8	11.2	ECU EM EGR DFI PTOX
EYDXL1.64NDA	N/A	4KNDAC	37.5/3000	30.2	20.0	77.5/1950	34.1	11.0	ECU EM EGR DFI PTOX
EYDXL1.64NDA	N/A	4KNKAC	34.9/2800	29.4	18.1	77.5/1820	34.0	10.2	ECU EM EGR DFI PTOX OC
EYDXL1.64NDA	N/A	4KNMAC	32.2/2600	28.7	16.4	77.5/1690	34.0	9.5	ECU EM EGR DFI PTOX OC
EYDXL1.64NDA	N/A	4KNNAC	30.8/2500	28.4	15.6	77.5/1625	33.4	9.0	ECU EM EGR DFI PTOX OC
EYDXL1.64NDA	N/A	4KNPAC	29.5/2400	28.2	14.9	76.8/1560	33.1	8.5	ECU EM EGR DFI PTOX OC