CALIFORNIA AIR RESOURCES BOARD	YANMAR CO., LTD.	EXECUTIVE ORDER U-R-028-0808 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-14-012;

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)
2018	JYDXL1.64NMA	1.642	Diesel	3,000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Mechanical Direct Injection, Exhaust Gas Recirculation, Electronic Control Module	Crane, Loader, Tractor, Dozer, Pump, Compressor, Excavator

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):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
8 ≤ kW < 19	Tier 4 Final	STD	N/A	N/A	7.5	6.6	0.40	20	15	50
		CERT	--	--	6.2	3.4	0.17	1	1	1

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 26th day of October 2017.

M. Kwok

FOR Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

ATTACHMENT 1 OF 1

Engine Model Summary Template

U-R-028-0808

10/10/17

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	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
JYDXL1.64NMA	N/A	4HNSPE1	24.4/2200	25.9	9.4	69.0/1300	28.6	6.1	ECU EM EGR DFI
JYDXL1.64NMA	N/A	4HNPAE1	24.4/2400	24.0	9.5	66.4/1300	27.5	5.9	ECU EM EGR DFI
JYDXL1.64NMA	N/A	4HNQAE1	24.4/2300	25.0	9.5	66.4/1300	27.5	5.9	ECU EM EGR DFI
JYDXL1.64NMA	N/A	4HNSAE1	24.4/2200	25.9	9.4	66.4/1300	27.5	5.9	ECU EM EGR DFI

Part Number Summary Template

Engine Family	Engine Code	Engine Model	Injection Pump	Injector	Turbo Charge	Electronic Control Module	After Treatment Device (Specify)	Smoke Puff Limiter	Sensor Assemblies	
									Description	Part Number
JYDXL1.64NMA	N/A	4HNSPE1	C101	729017-53100	N/A	129927-75102	N/A	N/A	ECT Sensor	129927-44900
JYDXL1.64NMA	N/A	4HNPAE1	C101	729017-53100	N/A	129927-75102	N/A	N/A	ECT Sensor	129927-44900
JYDXL1.64NMA	N/A	4HNQAE1	C101	729017-53100	N/A	129927-75102	N/A	N/A	ECT Sensor	129927-44900
JYDXL1.64NMA	N/A	4HNSAE1	C101	729017-53100	N/A	129927-75102	N/A	N/A	ECT Sensor	129927-44900