California Environmental Protection Agency Air Resources Board	YANMAR CO., LTD.	EXECUTIVE ORDER U-R-028-0738 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)
2016	GYDXL2.09TDA	2.091	Diesel	8,000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Direct Injection, Turbocharger, Exhaust Gas Recirculation, Electronic Control Module, Periodic Trap Oxidizer, Oxidation Catalyst	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
19 ≤ kW < 56	Tier 4 Final	OPTIONAL STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A
		CERT	--	--	3.4	0.1	0.001	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has complied with the more stringent set of standards from the various power categories in conformance with Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C" adopted October 20, 2005 and last amended October 25, 2012.

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 12th day of November 2015.

M. Fuentes

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

Engine Model Summary Template

ATTACHMENT

U-R-028-0738
10/28/15

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
GYDXL2.09TDA	N/A	4RTDPC	61.7/3000	36.7	24.3	129.0/1950	40.8	17.5	ECU EM EGR DFI TC PTOX OC
GYDXL2.09TDA	N/A	4RTDAC	59.0/3000	35.3	23.3	124.0/1950	39.3	16.9	ECU EM EGR DFI TC PTOX OC
GYDXL2.09TDA	N/A	4RTKAC	55.0/2800	34.8	21.5	124.0/1820	39.0	15.6	ECU EM EGR DFI TC PTOX OC
GYDXL2.09TDA	N/A	4RTLAC	53.6/2700	34.4	20.5	124.0/1755	38.8	15.0	ECU EM EGR DFI TC PTOX OC
GYDXL2.09TDA	N/A	4RTMAC	51.0/2600	33.9	19.4	124.0/1690	38.7	14.4	ECU EM EGR DFI TC PTOX OC
GYDXL2.09TDA	N/A	4RTNAC	49.6/2500	33.6	18.5	124.0/1625	38.6	13.8	ECU EM EGR DFI TC PTOX OC
GYDXL2.09TDA	N/A	4RTPAC	48.3/2400	33.9	17.9	125.0/1560	39.1	13.4	ECU EM EGR DFI TC PTOX OC