

	YANMAR CO., LTD.	EXECUTIVE ORDER U-R-028-0571 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)
2012	CYDXL1.11X3N	1.116	Diesel	5,000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Indirect Diesel Injection			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 hydrocarbon (HC), 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	OPTIONAL STD	EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
8 ≤ kW < 37	Interim Tier 4		N/A	N/A	7.5	5.5	0.30	20	15	50
		CERT	--	--	5.6	0.9	0.22	3	4	4

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.

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 1 day of December 2011.


 Annette Hebert, Chief
 Mobile Source Operations Division

Engine Model Summary Template

ATTACHMENT

U-R-028-0571

11/16/11

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
CYDXL1.11X3N	N/A	3TNV76-VM21	26.5/3000	23.8	11.8	51.6/1800	24.3	7.2	EM IFI
CYDXL1.11X3N	N/A	3TNV76-A	29.1/3600	21.8	13.0	48.1/2400	22.4	8.9	EM IFI
CYDXL1.11X3N	N/A	3TNV76-B	28.4/3400	22.9	12.9	48.1/2400	22.4	8.9	EM IFI
CYDXL1.11X3N	N/A	3TNV76-C	26.7/3200	22.3	11.8	48.2/2300	22.6	8.6	EM IFI
CYDXL1.11X3N	N/A	3TNV76-D	25.7/3000	23.6	11.7	50.0/2000	24.1	8.0	EM IFI
CYDXL1.11X3N	N/A	3CB1-A	29.1/3600	21.8	13.0	48.1/2400	22.4	8.9	EM IFI
CYDXL1.11X3N	N/A	3CB1-B	28.4/3400	22.9	12.9	48.1/2400	22.4	8.9	EM IFI
CYDXL1.11X3N	N/A	3CB1-C	26.7/3200	22.3	11.8	48.2/2300	22.6	8.6	EM IFI
CYDXL1.11X3N	N/A	3CB1-D	25.7/3000	23.6	11.7	50.0/2000	24.1	8.0	EM IFI
CYDXL1.11X3N	N/A	3TNV76-XJLT	23.7/3200	20.0	10.6	45.2/2300	20.9	7.9	EM IFI
CYDXL1.11X3N	N/A	3TNV76-XNSV	25.7/3000	23.6	11.7	50.0/2000	24.1	8.0	EM IFI
CYDXL1.11X3N	N/A	3TNV76-XMHS	25.7/3000	23.6	11.7	50.0/2000	24.1	8.0	EM IFI
CYDXL1.11X3N	N/A	3TNV76-XGZ	25.7/3000	23.6	11.7	50.0/2000	24.1	8.0	EM IFI