## YANMAR CO., LTD.

EXECUTIVE ORDER U-R-028-0485 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)		
2010	AYDXL2.00K4T	1.995	Diesel	5,000		
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION			
Mechanical Direct Injection, Turbocharger			Crane, Loader, Tractor, Dozer, Pump, Compressor, Other Industrial Equipment			

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):

POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)				OPACITY (%)			
			нс	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
19 ≤ kW < 37	Tier 4 - Interim	STD	N/A	N/A	7.5	5.5	0.30	20	15	50
		CERT			6.0	1.3	0.18	2	1	3

**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 2009.

Annette Hebert, Chief

Mobile Source Operations Division

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U-R-028 MOL	11/5/04	8.Fuel Rate: 9.Emission Control (lbs/hr)@peak torqueDevice Per SAE J1930	EM DFI , TC	EM DFI	EM DFI	EM DFI
() - K		_	14.1	13.7	13.7	13.7
	ATTACHMENI	7.Fuel Rate: mm/stroke@peak torque	37.7	36.6	36.6	36.6
mplate		6.Torque @ RPM (SEA Gross)	121.3/1700	117.7/1700	117.7/1700	117.7/1700
ummary Te		5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	18.3	18.3	18.2	17.3
Engine Model Summary Template		4.Fuel Rate: 5.Fuel Rate: mm/stroke @ peak HP (lbs/hr) @ peak HP 6.Torque @ RPM (for diesel only) (SEA Gross)	32.0	32.0	33.0	32.8
En		3.BHP@RPM (SAE Gross)	48.5/2600	48.5/2600	48.1/2500	46.7/2400
		Engine Family 1.Engine Code 2.Engine Model	<b>3MTMP</b>	SMTMA	3MTNA.	3MTPA
		1.Engine Code	N/A	N/A	N/A	N/A
		Engine Family	AYDXL2.00K4T	AYDXL2.00K4T	AYDXL2.00K4T	AYDXL2.00K4T