IHI SHIBAURA MACHINERY CORPORATION

EXECUTIVE ORDER U-R-026-0378 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 engine and emission control system 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	EH3XN2.22NLC	2.216	Diesel	5000		
	FEATURES & EMISSION		TYPICAL EQUIPMENT APPLICATION			
	Indirect Diesel Inje	ection	Marine Engine			

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, 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	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)				OPACITY (%)			
POWER CLASS			нс	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK
19 ≤ kW < 37	Tier 2	STD	N/A	N/A	7.5	5.5	0.60	N/A	N/A	N/A
	-	FEL	N/A	N/A	7.5	N/A	0.30	N/A	N/A	N/A
NEW WORLD		CERT	N/A	N/A	5.2	1.1	0.16			

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

BE IT FURTHER RESOLVED: That for the listed marine engine models which meet Tier 2 standards in 13 CCR, Section 2423 Table1, note1, the manufacturer has elected to comply with the more stringent particulate matter 0.30 g/kW-hr.

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 August 20

Frik White, Chief

Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Summary Template

U-R-026-0378 8/12/2013

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
EH3XN2.22NLC	404D-22	GN28/1500C	27.6@1500	34.0	11.2	N/A	N/A	N/A	IDI
EH3XN2.22NLC	404D-22	GN33/1800C	32.6@1800	32.4	12.8	N/A	N/A	N/A	IDI
EH3XN2.22NLC	C2.2	GN28/1500C	27.6@1500	34.0	11.2	N/A	N/A	N/A	IDI
EH3XN2.22NLC	C2.2	GN33/1800C	32.6@1800	32.4	12.8	N/A	N/A	N/A	IDI
EH3XN2.22NLC	N844L-D	32/1800C	31.5@1800	31.3	12.4	N/A	N/A	N/A	IDI