California Environmental Protection Agency California Environmental Protection Agency California Environmental Protection Agency

IHI SHIBAURA MACHINERY CORPORATION

EXECUTIVE ORDER U-R-026-0369 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)			
2013	DH3XL1.49TFV	1.496	1.496 Diesel				
	FEATURES & EMISSION (TYPICAL EQUIPMENT APPLICATION				
Indired Turboch	ct Diesel Injection, Engine arger, Exhaust Gas Reci Catalyst, Periodic Trap	Control Module, rculation, Oxidation Oxidizer	Loader, Tractor, Industrial Equipment				

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	EMISSION			E	XHAUST (g/kw-l		OPACITY (%)			
POWER	STANDARD CATEGORY		имнс	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
19 <u><</u> KW<37	Tier 4 Final	STD	N/A	N/A	4.7	5.5	0.03	N/A	N/A	N/A
		CERT			4.7	4.2	0.01			

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 April 2013

Annette Hebert, Chief

Mobile Source Operations Division

ATTACHMENT 1 OF 2

Engine Model Summary Template

U-R-026-0369 311312013

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
DH3XL1.49TFV	EL34/2400	403F-15T	33.8@2400	36.6	14.5	82.6@1800	39.6	11.7	EM;TDT. TC, EGR, ECM,
							00.0	44.7	PTOX, OC
DH3XL1.49TFV	EL36/2800	403F-15T	36.2@2800	36.9	17.0	82.6@1800	39.6	11.7	EM, 11, TC, EGR, ECM, PTOX, OC
		4005 455		00.4	40.0	00.004000	20.0	44.7	
DH3XL1.49TFV	EL37/3000	403F-15T	37.0@3000	36.4	18.0	82.6@1800	39.6	11.7	EM, ¼ , TC, EGR, ECM, PTOX, OC
5.1.5.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		24.5		20.0	44.5	00.004000	20.0	44.7	
DH3XL1.49TFV	EL34/2400	C1.5	33.8@2400	36.6	14.5	82.6@1800	39.6	11.7	EM, ii , TC, EGR, ECM, PTOX, OC
D. 100 (1 10 TE) (E1 00/0000	24.5		20.0	47.0	00.004000	20.6	44.7	
DH3XL1.49TFV	EL36/2800	C1.5	36.2@2800	36.9	17.0	82.6@1800	39.6	11.7	EM, M., TC, EGR, ECM, PTOX, OC
DH3XL1.49TFV	EL37/3000	C1.5	37.0@3000	36.4	18.0	82.6@1800	39.6	11.7	EM, TT, TC, EGR, ECM, PTOX, OC
									F10X, 0C
DH3XL1.49TFV	3T23-26	N843T-F	31.1@2600	32.9	14.1	82.6@1600	37.4	9.9	EM, ¹⁾ , ', TC, EGR, ECM, PTOX, OC
DH3XL1.49TFV	3T26-26	N843T-F	35.4@2600	36.7	15.9	82.6@1600	37.4	9.9	EM, 1), TC, EGR, ECM,
									PTOX, OC

ATTACHMENT 2 OF 2 Engine Model Summary Template

U-R-026-0369 3/13/2013

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 leDevice Per SAE J1930
DH3XL1.49TFV	3T25-26	N843T-F	33.0@2600	34.8	14.9	82.6@1600	37.4	9.9	EM, Tyr, TC, EGR, ECM,
									PTOX, OC
DH3XL1.49TFV	3T2 7- 28	N843T-F	36.2@2800	36.3	16.7	82.6@1600	37.4	9.9	EM, 11, TC, EGR, ECM,
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