California Environmental Protection Agency AIR RESOURCES BOARD	IHI SHIBAURA MACHINERY CORPORATION	EXECUTIVE ORDER U-R-026-0218 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)
2008	8H3XL2.00N84	1.496 and 1.995	Diesel	5000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Indirect Diesel Injection	Loader, Tractor and 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):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	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	--	--	4.7	1.2	0.23	4	5	7

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 8 day of January 2008.

Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Template

ATTACHMENT 1 OF 1

U-R-026-0218

[illegible]	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
8H3XL2.00N84	403C-15	HL28/2200J	28.0@2200	31.2+/-2.1	11.3+/-0.8	70.8@1800	33.5+/-2.7	9.9+/-0.8	IFI
8H3XL2.00N84	403C-15	HL33/2800	32.7@2800	30.0+/-1.8	14.4+/-0.8	70.8@1800	32.9+/-2.7	9.9+/-0.8	IFI
8H3XL2.00N84	403D-15	GK28/2200	27.8@2200	32.7+/-2.2	11.8+/-0.8	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	403D-15	GK28/2200J	28.0@2200	32.9+/-2.2	11.9+/-0.8	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	403D-15	GK30/2400	29.9@2400	33.5+/-2.2	13.2+/-0.9	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	403D-15	GK31/2600	31.4@2600	31.7+/-2.2	13.6+/-0.9	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
[illegible]	403D-15	GK32/3000	32.1@3000	28.8+/-1.5	14.2+/-0.7	58.6@2600	30.1+/-2.4	12.9+/-1.0	IFI
8H3XL2.00N84	403D-15	GK33/2800	32.7@2800	30.0+/-1.8	13.8+/-0.8	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	403D-15	GK34/3000	33.7@3000	29.6+/-1.8	14.6+/-0.9	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	C1.5	GK28/2200	27.8@2200	32.7+/-2.2	11.8+/-0.8	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	C1.5	GK28/2200J	28.0@2200	32.9+/-2.2	11.9+/-0.8	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	C1.5	GK30/2400	29.9@2400	33.5+/-2.2	13.2+/-0.9	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	C1.5	GK31/2600	31.4@2600	31.7+/-2.2	13.6+/-0.9	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
[illegible]	C1.5	GK32/3000	32.1@3000	28.8+/-1.5	14.2+/-0.7	58.6@2600	30.1+/-2.4	12.9+/-1.0	IFI
8H3XL2.00N84	C1.5	GK33/2800	32.7@2800	30.0+/-1.8	13.8+/-0.8	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	C1.5	GK34/3000	33.7@3000	29.6+/-1.8	14.6+/-0.9	70.8@1800	32.9+/-2.7	9.8+/-0.8	IFI
8H3XL2.00N84	N843-D	30D/2600	30.0@2600	29.5+/-1.8	12.6+/-0.8	69.7@1700	34.2+/-2.0	9.6+/-0.6	IFI
8H3XL2.00N84	N843-D	31D/2600	31.0@2600	31.4+/-1.6	13.4+/-0.7	70.1@1800	34.3+/-2.5	10.2+/-0.7	IFI
8H3XL2.00N84	N843-D	H-D-38SL	38.0@3200	33.5+/-2.2	17.7+/-1.2	71.8@1800	33.5+/-2.7	9.9+/-0.8	IFI
8H3XL2.00N84	N843-D-MC30	30D/2700	30.0@2700	28.9+/-1.8	12.9+/-0.8	67.1@1800	33.3+/-2.4	9.9+/-0.7	IFI
8H3XL2.00N84	N843H-C	35/3600	34.7@3600	27.8+/-1.4	16.5+/-0.8	57.7@2600	28.9+/-1.7	12.4+/-0.7	IFI
8H3XL2.00N84	N844-D	40/2800	40.0@2800	28.6+/-2.1	17.6+/-1.3	79.7@2200	28.3+/-1.8	13.7+/-0.9	IFI
8H3XL2.00N84	N844-D	40D/2600	40.0@2600	31.4+/-1.6	17.9+/-0.9	92.9@1800	35.2+/-2.4	13.9+/-0.9	IFI
8H3XL2.00N84	N844-D	46/L160	46.0@2900	32.0+/-2.2	20.4+/-1.4	97.0@1800	35.1+/-2.4	13.9+/-0.9	IFI
8H3XL2.00N84	S3L3	28/2500-Y311R	28.0@2500	27.6+/-1.9	11.4+/-0.8	64.9@1700	30.8+/-2.3	8.6+/-0.6	IFI
8H3XL2.00N84	S3L3	S3L3-Z311R	30.0@2500	32.0+/-2.2	13.2+/-0.9	69.3@1800	33.9+/-2.3	10.0+/-0.7	IFI
8H3XL2.00N84	S3L3	S3L3-Z311RH	30.0@2500	32.0+/-2.2	13.2+/-0.9	69.3@1800	33.9+/-2.3	10.0+/-0.7	IFI