California Environmental Protection Agency AIR RESOURCES BOARD	IHI SHIBAURA MACHINERY CORPORATION	EXECUTIVE ORDER U-R-026-0255 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)
2009	9H3XL2.22N4T	2.216	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Indirect Diesel Injection and Turbocharger, Smoke Puff Limiter (Some Models), Exhaust Gas Recirculation	Loader, Tractor

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
37≤KW<56	Tier 4 Interim	STD	N/A	N/A	4.7	5.0	0.30	20	15	50
		CERT	--	--	4.6	1.4	0.27	6	1	17

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 23rd day of December 2008

Raphael Susnowitz

for Annette Hebert, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 1

U-R-026-0255

Engine Model Summary Template

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
9H3XL2.22N4T	404D-22T	GP54/2400	53.6@2400	43.9+/-2.9	23.1+/-1.5	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC
9H3XL2.22N4T	404D-22T	GP54/2600	53.6@2600	40.2+/-2.5	23.0+/-1.4	134.2@1800	46.5+/-3.3	18.4+/-1.3	IFI,TC
9H3XL2.22N4T	404D-22T	GP54B/2400	53.6@2400	43.9+/-2.9	23.1+/-1.5	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC,SPL
9H3XL2.22N4T	404D-22T	GP54B/2600	53.6@2600	40.2+/-2.5	23.0+/-1.4	134.2@1800	46.5+/-3.3	18.4+/-1.3	IFI,TC,SPL
9H3XL2.22N4T	404D-22T	GP56/2600	55.7@2600	42.9+/-2.9	24.5+/-1.7	136.4@1800	47.0+/-3.6	18.6+/-1.4	IFI,TC
9H3XL2.22N4T	404D-22T	GP56B/2600	55.7@2600	42.9+/-2.9	24.5+/-1.7	136.4@1800	47.0+/-3.6	18.6+/-1.4	IFI,TC,SPL
9H3XL2.22N4T	404D-22T	GP58/2600	57.7@2600	44.2+/-3.1	25.2+/-1.8	136.2@1800	47.5+/-3.5	18.8+/-1.4	IFI,TC
9H3XL2.22N4T	404D-22T	GP58B/2600	57.7@2600	44.2+/-3.1	25.2+/-1.8	136.2@1800	47.5+/-3.5	18.8+/-1.4	IFI,TC,SPL
9H3XL2.22N4T	404D-22T	GP60/2800	59.9@2800	42.8+/-2.7	26.3+/-1.7	141.6@1800	49.9+/-3.7	19.7+/-1.5	IFI,TC
9H3XL2.22N4T	404D-22T	GP60B/2800	59.9@2800	42.8+/-2.7	26.3+/-1.7	141.6@1800	49.9+/-3.7	19.7+/-1.5	IFI,TC,SPL
9H3XL2.22N4T	404D-22T	GP61/3000	61.0@3000	41.1+/-2.0	27.1+/-1.3	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC
9H3XL2.22N4T	404D-22T	GP61B/3000	61.0@3000	41.1+/-2.0	27.1+/-1.3	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC,SPL
9H3XL2.22N4T	C2.2	GP54/2400	53.6@2400	43.9+/-2.9	23.1+/-1.5	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC
9H3XL2.22N4T	C2.2	GP54/2600	53.6@2600	40.2+/-2.5	23.0+/-1.4	134.2@1800	46.5+/-3.3	18.4+/-1.3	IFI,TC
9H3XL2.22N4T	C2.2	GP54B/2400	53.6@2400	43.9+/-2.9	23.1+/-1.5	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC,SPL
9H3XL2.22N4T	C2.2	GP54B/2600	53.6@2600	40.2+/-2.5	23.0+/-1.4	134.2@1800	46.5+/-3.3	18.4+/-1.3	IFI,TC,SPL
9H3XL2.22N4T	C2.2	GP56/2600	55.7@2600	42.9+/-2.9	24.5+/-1.7	136.4@1800	47.0+/-3.6	18.6+/-1.4	IFI,TC
9H3XL2.22N4T	C2.2	GP56B/2600	55.7@2600	42.9+/-2.9	24.5+/-1.7	136.4@1800	47.0+/-3.6	18.6+/-1.4	IFI,TC,SPL
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9H3XL2.22N4T	C2.2	GP60/2800	59.9@2800	42.8+/-2.7	26.3+/-1.7	141.6@1800	49.9+/-3.7	19.7+/-1.5	IFI,TC
9H3XL2.22N4T	C2.2	GP60B/2800	59.9@2800	42.8+/-2.7	26.3+/-1.7	141.6@1800	49.9+/-3.7	19.7+/-1.5	IFI,TC,SPL
9H3XL2.22N4T	C2.2	GP61/3000	61.0@3000	41.1+/-2.0	27.1+/-1.3	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC
9H3XL2.22N4T	C2.2	GP61B/3000	61.0@3000	41.1+/-2.0	27.1+/-1.3	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC,SPL
9H3XL2.22N4T	N844LT-D	55D/2700	55.0@2700	39.8+/-2.3	23.6+/-1.4	125.4@1800	44.5+/-3.1	17.6+/-1.2	IFI,TC
9H3XL2.22N4T	N844LT-D	60D/2800	60.0@2800	44.5+/-2.5	27.4+/-1.5	132.8@1800	46.7+/-3.1	18.5+/-1.2	IFI,TC
9H3XL2.22N4T	N844LT-D	60SL/2900	60.0@2900	42.2+/-1.8	26.9+/-1.1	128.3@1800	45.2+/-2.4	17.9+/-0.9	IFI,TC

Engine Model Summary Template

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
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9H3XL2.22N4T	404D-22T	GP61/3000	61.0@3000	41.1+/-2.0	27.1+/-1.3	139.4@1800	47.3+/-3.1	18.7+/-1.2	IFI,TC
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9H3XL2.22N4T	N844LT-D	55D/2700	55.0@2700	39.8+/-2.3	23.6+/-1.4	125.4@1800	44.5+/-3.1	17.6+/-1.2	IFI,TC
9H3XL2.22N4T	N844LT-D	60D/2800	60.0@2800	44.5+/-2.5	27.4+/-1.5	132.8@1800	46.7+/-3.1	18.5+/-1.2	IFI,TC
9H3XL2.22N4T	N844LT-D	60SL/2900	60.0@2900	42.2+/-1.8	26.9+/-1.1	128.3@1800	45.2+/-2.4	17.9+/-0.9	IFI,TC
9H3XL2.22N4T	N844LT-D	TT55A	55.0@2700	39.8+/-2.3	23.6+/-1.4	125.4@1800	44.5+/-3.1	17.6+/-1.2	IFI,TC