

## ISHIKAWAJIMA-SHIBAURA MACHINERY CO., LTD.

EXECUTIVE ORDER U-R-026-0076 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)
2003	3H3XL1.13MSL	1.13	Diesel	5000
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT APP	PLICATION
	Indirect Diesel Inje	ection	Loader	

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	EMISSION				EXHAUST (g/kw-ł	1r)		OF	ACITY (%	b)
POWER CLASS	STANDARD		нс	NOx	NMHC+NOx	со	РМ	ACCEL	LUG	PEAK
19 <u>&lt;</u> KW<37	Tier 1	פדצ	N/A	N/A	9.5	5.5	0.80	20	15	50
		CERT			5.5	2.1	0.58	8	8	12

**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 674 day of January 2003

Alleg Lyons, Chief

Mobile Source Operations Division

## Engine Model Summary Form

ATTACHMENT 1 OF 1

Manufacturer: Ishikawajima-Shibaura Machinery Co., Ltd.

Engine category: Nonroad Cl

EPA Engine Family. "3H3XL1.13MSL

Mfr Family Name: N/A

Process Code: New Submission

u-R-026-0076

1.Engine Code 2.	2.Engine Model	3.BHP@RPM (SAE Gross)	4.ruel Rate. mm/stroke @ peak HP (for diesel only)	(lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	mm/stroke@peak torque	8.Fuel Rate: 9.Emission Control (lbs/hr)@peak torque Device Per SAE J1930	9.Emission Control Device Per SAE J193
	KS26/3000	26.1@3000	24.1+/-1.2	11.9+/-0.6	49.3@2100	23.9+/-1.2	8.3+/-0.4	FI
3VE4CA01	29/3150	28,6@3150	24.4+/-1.5	12.7+/-0.8	52.4@2400	26.4+/-1.3	10.4+/-0.5	FI
3VE40A04	30/3450	30 0@3450	23,8+/-1.3	12.3+/-0.7	52.4@2400	26.4+/-1.3	10.4+/-0.5	<u> </u>
AND 41	HH26/3000	26.4@3000	24.6+/-1.5	12.2+/-0.7	49.3@2100	24:0+/-1.5	8.3+/-0.5	H
4030-11 S773L	26/3000	26.1@3000	24.1+/-1.2	11.9+/-0.6	49.3@2100	23.9+/-1.2	8.3+/-0.4	<u>II</u>
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