

## ISHIKAWAJIMA-SHIBAURA MACHINERY CO., LTD.

EXECUTIVE ORDER U-R-026-0155 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)				
2006	6H3XL.761E3V	0.507 & 0.761	Diesel	3000				
SPECIAL	FEATURES & EMISSION		TYPICAL EQUIPMENT APPLICATION					
	Indirect Diesel Inje	ection	Loader 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				E	XHAUST (g/kw-l		OPACITY (%)			
POWER CLASS	STANDARD		НС	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
8 <kw<19< td=""><td>Tier 2</td><th>STD</th><td>N/A</td><td>N/A</td><td>7.5</td><td>6.6</td><td>0.80</td><td>20</td><td>15</td><td>50</td></kw<19<>	Tier 2	STD	N/A	N/A	7.5	6.6	0.80	20	15	50
	J	CERT			5.5	3.8	0.30	12	6	23

**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  $2/\frac{JT}{}$  day of December 2005.

Rophael Susnowith

Mobile Source Operations Division

## ATTACHMENT 1 OF I

## **Engine Model Summary Form**

Ishikawajima-Shibaura Machinery Co., Ltd. Manufacturer:

Nonroad Cl Engine category:

EPA Engine Family: 6H3XL.761E3V

W-R-026-0155

Mfr Family Name: N/A

Process Code:

**New Submission** 

9.Emissi Device Pe	<u> </u>	<b>L</b>	4	Н.	<b>—</b>	<b>-</b>	<u> </u>	<b>_</b>	<u>_</u>	<u> </u>					<u>-</u>
8.Fuel Rate: (ibs/hr)@peak torque	9.0-/+8.5	3.7+/-0.2	3,7+/-0.2	3,7+/-0.2	5,2+/-0.3	5.2+/-0.3	5.2±/-0.4	5.4+/-0.4	5.8+/-0.6	5.8+/-0.6	6.6+/-0.5	7,2+/-0.5	7,2+/-0.6	4.7+/-0.3	6.2+/-0.5
7.Fuel Rate: mm/stroke@peak torque	17.6+/-1.7	16.6+/-1.0	16.6+/-1.0	16.6+/-1.0	18,1+/-1,2	18.1+/-1.0	15.8+/-1,1	16.4+/-1.2	17,6+/-1.7	17.6+1-1.7	17.3+/-1.3	18.2+/-1.3	18.2+/-1.3	16.6+/-1.2	14,9+/-(,3
6.Torque @ RPM (SEA Gross)	34.7@2000	21.9@2100	21.9@2100	21.9@2100	23.2@2600	23.2@2600	31.7@2000	33.6@2000	34.7@2000	34.7@2000	36.4@2300	37.2@2400	37.2@2400	31.7@1700	28.3@2500
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	2'0-/+6'2	5.0+/-0.3	5.3+/-0.4	5.3+/-0.4	.5:0-/+2:9	6.7+/-0.5	5.2+/-0.3	7.3+/-0.4	7,9+/-0.5	7.9+/-0.5	8.6+/-0.5	9.3+/-0.6	9'0-/+8'6	5.6+/-0.4	2'0-/+8'2
4.Fuel Rate: mm/stroke @ peak HP (for diesel only)		16 1+/-1 1	767#/217	16.1+/-1.1	17.0+/-1.2	17.0+/-1.2	14.5+/-0.7	15.9+/-1.0	16.0+/-1.1	16.0+/=1.1	. 15.3+/-1.0	15.7+/-1.0	15,7+/-1.0	14.7+/-1.0	13,9+/-1.0
3.BHP@RPM (SAE Gross)		11 0@2800	14 8@3000	.11.8@3000	13.7@3600	13.7@3600	12.1@2200	16.4@2800	17.7@3000	17.7@3000	19.4@3400	20.5@3600	20.5@3600	13.3@2300	16,5@3400
2.Engine Model	40/2000	10/30/00	HB   1/2000	HB12/3000C	HB14/3600	HB14/3600C	HD12/2200	HD16/2800	HD/8/3000	HD18/3000C	HD19/3400	HD21/3600	HD24/3600C	13/2300	47/3400-LS125
1 Fnaine Code		3 E6/L=DUM	402C-05	402C-05	4020-03	40203	4030-07	7020.07	400000	4000-01	4030-01	403C-07	7030-02	F8731-C	E673L-C