

ISHIKAWAJIMA-SHIBAURA MACHINERY CO., LTD.

EXECUTIVE ORDER U-R-026-0066 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	3H3XL1.13SLV	1.131	Diesel							
	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION							
	Indirect Diesel Inje	ection	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	EMISSION STANDARD	-			EXHAUST (g/kw-l		OPACITY (%)					
CLASS	CATEGORY		нс	NOx	NMHC+NOx	co	РМ	ACCEL	LUG	PEAK		
8 <u><</u> KW<19	Tier 1	STD	N/A	N/A	9.5	6.6	0.80	20	15	50		
		CERT			4.9	1.6	0.32	10	9	16		

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 January 2003.

Allen Lyons, Chief

Mobile Source Operations Division

Engine Model Summary Form

U-R-0066

ATTACHMENT 1 OF 1

Manufacturer: Ishikawajima-Shibaura Machinery Co., Ltd.

Engine category: Nonroad CI

EPA Engine Family. 3H3XL1.13SLV

Mfr Family Name: N/A

Process Code: New Submission

	1		1		• :	٠٠.	· - 	1,,11	16 m	1 m			-,- "	·	tions.	7. 3			şu.		тци. При	i a	17.25	11.		→
8.Fuel Rate: 9.Emission Control (lbs/hr)@peak torque Device Per SAE J1930											7			1									1			
Cont			;																			-				
sion -	三	正	正	正	正	王										1							İ			
:miss					,																					
9.E Jevic																										
J en																		-					1			
torq	ان.	4.	5.	5.	5.	4.							-	-												
al Ra peak	7.1+/-0.3	7.7+/-0.4	8.3+/-0.5	8.3+/-0.5	8.3+/-0.5	8.4+/-0.4						Ì														
3.Fuc	7.1	7.7	8.3	8.3	8.3	8.4									:											
} { bs/f		ļ																								
																							1			
7.Fuel Rate: mm/stroke@peak torque	1.2	23.3+/-1.3	24.0+/-1.5	1.5	1.5	1.3																				
el Ra ke@ rque	25.4+/-1.2	3+/-	+0	24:0+/-1.5	24.0+/-1.5	25.6+/-1.3														A1 1444000 / 14410						
7.Fue 1/stro to	25.	23.	24.	24.0	24.0	25.											1			[
m m																										
							w.		٠.										2				•			
RPM S)	8	8	8	8	8	8				-																
@ F	48.2@1700	47.9@2000	49.3@2100	49.3@2100	49.3@2100	50.0@2000																				
rque EA (3.2(7.9(9.3	9.3(9.3(0.0	•																			
6.Torque @ RPM (SEA Gross)	4	4	4	4	4	2(15. 13.																			
							. :																			
분술			,,	7	ω	2																				
Rate peak	10.4	-0.6	-0.6	/-0.	/-0	./-0																				
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	8.1+/0.4	8.5+/-0.6	9.4+/-0.6	10.3+/-0.7	11.3+/-0.8	10.4+/-0.5	, i L														·					
5.F os/hr (for c	8	8	6	۲	-	1(
								-																		
ス エ	2	π	5		·.	~													·							
tate: pea only	22.4+/-1.2	23.4+/-1.6		-1.7	-1.7	24.4+/-1.3																				
4.Fuel Rate: stroke @ pea or diesel onl	4+1	.4+	23.8+/-1.	24.1+/-1	24.5+/-1.	4+																				
4.F	22	23	23	24	24	24					7 : :								,							
4.Fuel Rate: mm/stroke @ peak HP (for diesel only)																										
RPM SSS)	200	200	400	009	800	009																				
<u>@</u>	62	@2	@	@	@2	@																				
3.BHP@RPM (SAE Gross)	19.4@2200	19.7@2200	21.6@2400	23.2@2600	24.8@2800	24.0@2600																				
()		_	L/I	(1	.,	.,																				
<u> </u>	-																									
lode		8	8	8	8	8																				
ē Z	20(1/22	/24	3/26	3/28	./26																				
2.Engine Model	19/2200	HH20/2200	HH22/2400	HH23/2600	HH25/2800	TC24/2600	14						1													
2.E		I	工	I	I	F																				
ode	_								1											i i			ļ		-	
ပ	2A0	11.	11	17	7	3														1						
1.Engine Code	3YE1PA01	403C-11	403C-11	403C-11	403C-11	S773L	11/24																			
<u>п</u>	3	4	4	4	4																					
•	L.	<u> </u>	1		<u> </u>	L			<u> </u>	<u> </u>		İ		ļ			<u> </u>	<u> </u>		<u> </u>		<u></u>	}			<u></u>