

## **KUBOTA CORPORATION**

EXECUTIVE ORDER U-R-025-0147 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 engines and emission control systems 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)					
2004	4KBXL02.4EAD	2.434	Diesel	8000					
	FEATURES & EMISSION		TYPICAL EQUIPMENT APPLICATION						
Е	Direct Diesel Injection, Tu Smoke Puff Limiter (Son	irbocharger, ne Models)	Other Industrial Ed	quipment					

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			E	XHAUST (g/kw-l		OPACITY (%)				
	STANDARD CATEGORY		HC	NOx	NMHC+Nox	co	PM	ACCEL	LUG	PEAK	
37 <u>&lt;</u> kW < 75	Tier 2	STD	N/A	N/A	7.5	5.0	0.40	20	15	50	
		CERT			6.2	1.3	0.34	8	2	28	

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 September 2003.

Allen Lyons, Chief

Mobile Source Operations Division

## Engine Model Surnary Form

Manufacturer: KUBOTA Corporation

Engine category: Nonroad CI

EPA Engine Family: 4KBXL02.4EAD

Mfr Family Name: N/A

Process Code: New Submission

Attachment pg 1 og 1

U-R-025-0147

-	X			 									<b>F</b>
9.Emission Control Device Per SAE J1930	too **	SPL +											
8.Fuel Rate: 9.Emission Control (lbs/hr)@peak torque Device Per SAE J1930	16.6	16.6					**************************************	THE					
7.Fuel Rate: mm/stroke@peak torque	49.5	49.5											
6.Torque @ RPM (SEA Gross)	160.9@1500	160.9@1500							 4.				
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	27.5	27.5				:							
4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	45.5	45.5											
3.BHP@RPM (SAE Gross)	66.0@2700	66.0@2700			1000					·	Andrewsky open (Marie Marie Constitute M		
2.Engine Model	V2403-M-DI-T-ES	V2403-M-DI-T-ES											
	XV2403-M-DI-T-ES01	V2403-M-DI-T-ES01b V2403-M-DI-T-ES											