## California Environmental Protection Agency Air Resources Board

## **KUBOTA Corporation**

EXECUTIVE ORDER U-R-025-0623 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)						
2014	EKBXL02.4GND	1.826, 2.435	Diesel 5000							
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION							
Electronic Electroni	c Direct Injection, Exhaus c Control Module, Diesel Periodic Trap Oxid	Oxidation Catalyst,	Loader, Tractor, Pump, Compressor and Other Industrial Equipment							

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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		П	E	XHAUST (g/kW-l		OPACITY (%)				
POWER CLASS	STANDARD CATEGORY		ИМНС	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK	
19 <u>&lt;</u> kW < 37	Tier 4 Final	STD	N/A	N/A	4.7	5.5	0.03	N/A	N/A	N/A	
		CERT	,		3.1	0.04	0.001				

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 December 2013.

Erik White, Chief

Mobile Source Operations Division

## **Engine Model Summary Form**

KUBOTA Corporation

New Submission

Process Code:

EKBXL02.4GND Nonroad CI

> EPA Engine Family: Mfr Family Name:

Engine category:

Manufacturer:

N/A

E0# U-R-025-0623 Date: 11/22/2013

Attachment page 1 of

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9.Emission Control Device Per SAE J1930	EM, DFI, EGR, ECM, PTOX, DC	EM, DFI, EGR, ECM, PTOX,	EM, DFI, EGR, ECM, PTOX.	EM, DFI, EGR, ECM, PTOX,	EM, DFI, EGR, ECM, PTOX.	EM, DFI, EGR, ECM, PTOX.	EM, DFI, EGR, ECM, PTOX,			t Fuel Injection	>										
8.Fuel Rate: (lbs/hr)@peak torque	9.8	9.8	9.2	9.2	9.8	8.5	14.5	13.6	11.4	12.9	12.9	11.4	12.3			I= Direct					
7.Fuel Rate: mm/stroke@peak torque	36.7	36.7	36.7	36.7	36.7	31.7	40.5	38.1	31.8	38.5	38.5	31.8	34.4			P/A					
6.Torque @ RPM (SEA Gross)	84.2@1600	84.2@1600	84.2@1500	84.2@1500	84.2@1600	73.9@1600	126.1@1600	116.1@1600	98.5@1600	116.1@1500	116.1@1500	98.5@1600	106.2@1600								
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	14.9	14.7	13.2	12.0	14.5	13.4	19.2	18.6	16.1	17.4	15.8	17.0	18.0								
4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	33.0	33.7	32.7	32.6	32.0	29.5	31.8	32.0	27.7	32.5	32.2	28.2	31.0	-							
3.BHP@RPM (SAE Gross)	37.0@2700	35.7@2600	33.0@2400	30.4@2200	35.8@2700	32.5@2700	48.3@2700	48.3@2600	40.9@2600	45.1@2400	41.2@2200	41.2@2700	44.9@2600								
2.Engine Model	D1803-CR-EF	D1803-CR-EF	D1803-CR-EF	D1803-CR-EF	D1803-CR-EF	D1803-CR-EF	V2403-CR-EF														
1.Engine Code	D1803-CR-EF01	D1803-CR-EF02	D1803-CR-EF03	D1803-CR-EF04	D1803-CR-EF05	D1803-CR-EF06	V2403-CR-EF01	V2403-CR-EF02	V2403-CR-EF03	V2403-CR-EF04	V2403-CR-EF05	V2403-CR-EF06	V2403-CR-EF07								