KUBOTA Corporation

EXECUTIVE ORDER U-R-025-0487 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)	
2011	BKBXL02.2FCC	1.647, 2.197	Diesel	5000	
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION		
Ele	Indirect Diesel Inject ctronic Control Module (S	ction, Some Models)	Compressor, Generator Set, We	elder, Refrigeration Unit	

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-hr)				OPACITY (%)		
CLASS	POWER STANDARD CLASS CATEGORY		нс	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
19 ≤ kW < 37	Tier 4 Interim	STD	N/A	N/A	7.5	5.5	0.30	N/A	N/A	N/A
		CERT			5.2	1.0	0.22			

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 2010.

Annette Hebert, Chief

Mobile Source Operations Division

Engine Model Summary Form

KUBOTA Corporation	Nonroad Cl	
Manufacturer:	Engine category:	

EPA Engine Family: BKBXL02.2FCC

Mfr Family Name: N/A

New Submission Process Code:

Attachment page 1 of

				(104 0-1×-0 へ)	Date: (2/02/2010	Complete: 11/29/20
						1
•		•	-			
•	•	•	٠			
•	•	•	1			
	·		·			
	,	·				
						_
						\ J
						7
				11		/
n a	n a	7) \(\times\)	7) \(\triangle \)	~ <u>~</u>		<i>√</i> 2
J A J	J A J	J A J	J Å J	()	· .<	\sim
Š Š Š	S & S	Š Š Š	S & S		77	مثند
Š Ž Ś	S Z Ś	S Z Ś	Š Ž Š	ৰ ৷	(S)	۲
Š Ž Š	Š Ž Š	Š Ž Š	Š Š	-12	∞ /	بخا
# 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	# 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		# 2 0 m			
* C C	* 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	* Orte	* Z Z		٠,	•
\$ 0 pte :	S Date:	\$ 0 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	\$ 0° 4° 4° 6° 6° 6° 6° 6° 6° 6° 6° 6° 6° 6° 6° 6°			(0)
Corple:	Corple:	Cowle:	Comple:			
Confe	Confe	Date:	Conster	$\overline{}$		
Confet	Cowlete	Orte: Complete	Confet.		_	S.
Conter. Complete	Coxe.	Complete	Cowlete	3		
Complete	Complete	Cowlete	Cowlete	١.	- 0	• • •
Cowlete:	Complete:	Complete:	Complete:	~~	Λ	
(50 * 0-1) Date: 12 Complete:	Complete:	10 # 0-1 Date: 12	(50 * 0-1) Date: 13 Complete:	\sim	7	
Cowlete:	(Cowelete:	10 * 0-4 Date: 14	(50 * 0-4 Date: 17 Complete:			
Cowlete:	Cowlete:	Complete:	Cowlete:	à.	_	
\ \frac{1}{2} \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \fra	\ \frac{1}{2} \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \fra	\(\frac{1}{2} \)	\(\frac{1}{2} \)		`	
\ \frac{1}{2} \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \fra	\ \frac{1}{2} \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \fra	\(\frac{1}{2} \)	\(\frac{1}{2} \)	ريد		
\ \frac{1}{2} \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \fra	\ \frac{1}{2} \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \fra	\(\frac{1}{2} \)	\(\frac{1}{2} \)	\sim	\sim	
\ \frac{1}{2} \ \ \frac{1}{2} \ \ \ \frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \frac{1}{2} \ \ \frac{1}{2} \ \ \ \frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	' \	\sim	_
\ \frac{1}{2} \ \ \frac{1}{2} \ \ \ \frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \frac{1}{2} \ \ \frac{1}{2} \ \ \ \frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	~/"		_
\ \frac{1}{2} \ \ \frac{1}{2} \ \ \ \frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \frac{1}{2} \ \ \frac{1}{2} \ \ \ \frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	()	Λ	
\ \frac{1}{2} \ \ \frac{1}{2} \ \ \ \frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	ハ	١ ١	£)
\ \frac{1}{2} \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \fra	\ \frac{1}{2} \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \ \frac{1}{2} \ \fra	\(\frac{1}{2} \)	\(\frac{1}{2} \)		-	Λ
\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	1	_	
\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	`		v
\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}		- •	(d
\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	_	Λ	_
\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2}	\(\frac{1}{2} \) \(\frac{1} \) \(\frac{1}{2})	7	
\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	-	Y	_
\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\) \(\frac{1}2\	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Ţ	Δ	_
1-K-02/0 (4/04/8 (8: = /29/	1-K-02/0 (4/04/8 (8: = /29/	1/20-4-0 1/20/4 1/20/4	1/20-4-0 1/20/4 1/20/4	سا		-
1-K-02/0 (4/04/8 (8: = /29/	1-K-02/0 (4/04/8 (8: = /29/	1/20-4-0 1/20/4 1/20/4	1/20-4-0 1/20/4 1/20/4	, C	,	/1
1-K-02/0 (4/04/8 (8: = /29/	1-K-02/0 (4/04/8 (8: = /29/	1/20-4-0 1/20/4 1/20/4	1/20-4-0 1/20/4 1/20/4	Ε	1.0	7
1-K-02/0 (4/04/8 (8: = /29/	1-K-02/0 (4/04/8 (8: = /29/	1/20-4-0 1/20/4 1/20/4	1/20-4-0 1/20/4 1/20/4		~	Ų
1-K-02/0 (4/04/8 (8: = /29/	1-K-02/0 (4/04/8 (8: = /29/	1/20-4-0 1/20/4 1/20/4	1/20-4-0 1/20/4 1/20/4			\sim
1-K-02/0 (4/04/8 (8: = /29/	1-K-02/0 (4/04/8 (8: = /29/	1/20-4-0 1/20/4 1/20/4	186-8-10 18/0/81 18/0/81			

	77	·			>
8.Fuel Rate: 9.Emission Control (bs/hr)@peak torque Device Per SAE J1930	EM	EM, Electronic	EM	EM	EM, Electronic
8.Fuel Rate: (lbs/hr)@peak torque	A/N	N/A	N/A	N/A	N/A
7.Fuel Rate: mm/stroke@peak torque	N/A	N/A	N/A	N/A	N/A
6.Torque @ RPM (SEA Gross)	N/A	A/A	A/A	N/A	N/A
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	11.1	11.1	15.5	15.3	15.3
4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	36.7	36.7	38.6	37.9	37.9
3.BHP@RPM (SAE Gross)	27.1@1800	27.1@1800	37.1@1800	36.1@1800	36.1@1800
2.Engine Model	D1703-M-BG-ET	D1703-M-BG-ET	V2203-M-BG-ET	V2203-M-BG-ET	V2203-M-BG-ET
1.Engine Code	D1703-M-BG-ET01	D1703-M-BG-ET01e	V2203-M-BG-ET01	V2203-M-BG-ET02	V2203-M-BG-ET02e