# California Environmental Protection Agency Chair Resources Board

#### JCB POWER SYSTEMS LTD.

EXECUTIVE ORDER U-R-049-0031-1 New Off-Road Compression-Ignition Engines Page 1 of 2 Pages

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)			
2013	DJCBL04.4TA9	4.4	Diesel	8,000			
	FEATURES & EMISSION		TYPICAL EQUIPMENT APPLICATION				
Ele Char	ectronic Direct Injection, ge Air Cooler, Electronic Exhaust Gas Recirc	Control Module,	Crane, Loader, Tractor, Dozer, Pump, Compressor, Forklift				

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			EX	(HAUST (g/kW-hi		OPACITY (%)			
POWER CLASS	STANDARD CATEGORY		NMHC	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK
56 ≤ kW < 130	Interim Tier 4/	OPTIONAL STD	0.19	3.4	N/A	5.0	0.02	N/A	N/A	N/A
	Alt NO <sub>x</sub>	CERT	0.13	3.0		1.1	0.02			

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has complied with the more stringent set of standards from the various power categories in conformance with Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C" adopted October 20, 2005.

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.

This Executive Order hereby supersedes Executive Order U-R-049-0031 dated August 9, 2012.

Executed at El Monte, California on this \_\_\_\_\_\_ day of December 2012.

Annette Hebert, Chief

Mobile Source Operations Division

### **Engine Model Summary Template**

# ATTACHMENT 1 OFZ

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque		9.Emission Control ueDevice Per SAE J1930
DJCBL04.4TA9	444 TA4i-68	D1	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	B1	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	B2	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	L1	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	C1	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	E1	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	J2	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	T	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	12	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	D1	108.6 @ 2200	) 83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	B1	108.6 @ 2200	) 83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	B2	108.6 @ 2200	) 83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	L1	108.6 @ 2200	83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	C1	108.6 @ 2200	83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	E1	108.6 @ 2200	) 83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	J2	108.6 @ 2200	93	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	11	108.6 @ 2200	) 83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	12	108.6 @ 2200	) 83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-93	D1	124.7 @ 2200	95	46.4	406 @ 1500	122	40.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-93	B1	124.7 @ 2200	95	46.4	406 @ 1500	122	40.7	DFI, ECM, EGR, TC, CAC

# Engine Model Summary Template ATTACHMENT 2 OF 2

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque		9.Emission Control ueDevice Per SAE J1930
DJCBL04.4TA9	444 TA4i-93	B1	124.7 @ 2200	95	46.4	406 @ 1500	122	40.7	DFI, ECM, EGR, TC, CAC
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DJCBL04.4TA9	444 TA4i-93	C1	124.7 @ 2200	95	46.4	406 @ 1500	122	40.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-93	E1	124.7 @ 2200	95	46.4	406 @ 1500	122	40.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-93	J2	124.7 @ 2200	95	46.4	406 @ 1500	122	40.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-93	11	124.7 @ 2200	95	46.4	406 @ 1500	122	40.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-93	12	124.7 @ 2200	95	46.4	406 @ 1500	122	40.7	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	V1	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-68	W1	91.2 @ 2200	72	35.2	319 @ 1500	100	33.3	DFI, ECM, EGR, TC, CAC
DJCBL04.4TA9	444 TA4i-81	V1	108.6 @ 2200	83	40.6	381 @ 1500	116	38.7	DFI, ECM, EGR, TC, CAC
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