Komatsu Limited

EXECUTIVE ORDER U-R-005-0178 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) 8000		
2004	4KLXL11.0DD3	11.0	Diesel			
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION			
Direct Dies	sel Injection, Turbocharg	ger, Charge Air Cooler	Generator			

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		EXHAUST (g/kw-hr)				OPACITY (%)			
	STANDARD		НС	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK
130 < kW < 225	Tier 2	STD	N/A	N/A	6.6	3.5	0.20	N/A	N/A	N/A
225 < kW < 450	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	N/A	N/A	N/A
		CERT			5.7	0.5	0.12			

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 2003.

Allen Kons, Chief

Mobile Source Operations Division

Manufacturer: KOMATSULTD

Process Code: New Submission

EPA Engine Family: 4KLXL11.0DD3

SAA6D125E-2 Manufacturer Family Name:

7.Fuel Rate: 6.Torque @ RPM (SEA Gross) 5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only) mm/stroke @ peak HP 4.Fuel Rate:

8.Fuel Rate: 9.Emission Control (lbs/hr)@peak torque Device Per SAE J1930 EM AC EM DOIL 16 99 mm/stroke@peak t orque 183 142 1 694@1400 914@1500 113 98 (for diesel only) 258 129 3.BHP@RPM (SAE Gross) 322@2050 431@1800 234@2000 SAA6D125E-2 SAA6D125E-2 SAA6D125E-3 2.Engine Model 1.Engine Code 2C082C01 2G01