California Environmental Protection Agency AIR RESOURCES BOARD	KOMATSU LIMITED	EXECUTIVE ORDER U-R-005-0333 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)
2009	9KLXL0505AAE	8.3	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Modules	Crane, Loader, Tractor, Dozer, Pump and Compressor

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 STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW < 450	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	4.0	1.8	0.17	4	1	11

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 27th day of November 2008.

J. Lourenco

Annette Hebert, Chief
Mobile Source Operations Division

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Engine Model Summary Template

U-R-005-0333

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	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
9KLXL0505AAE	8539;FR91358	SAA6D114E-3	305@2200	159	118.2	1020@1500	208	105.2	DDI, ECM TC CAC
9KLXL0505AAE	8537;FR91497	SAA6D114E-3	207@1950	121	79.5	746@1450	166	81.3	ECM TC CAC
9KLXL0505AAE	8537;FR91699	SAA6D114E-3	207@1900	125	80.1	730@1450	151	73.8	ECM TC CAC
9KLXL0505AAE	2722;FR91356	SAA6D114E-3	260@1950	145	95.5	833@1450	180	88.2	ECM TC CAC
9KLXL0505AAE	2723;FR91711	SAA6D114E-3	232@2100	134	95.1	752@1450	169	82.6	ECM TC CAC
9KLXL0505AAE	8537;FR92057	SAA6D114E-3	197@1900	113	75.2	694@1425	146.5	70.4	"ECM, TC,
9KLXL0505AAE	3228:FR91497	SAA6D114E-3	207@1950	121	79.5	746@1450	166	81.3	ECM TC CAC
9KLXL0505AAE	3228:FR92959	SAA6D114E-3	220@2200	112.5	83.5	775@1450	172	84.3	"ECM,TC,CAC"
9KLXL0505AAE	3287;FR92870	SAA6D114E-3	260@1950	145	95.5	833@1450	180	88.2	ECM TC CAC
9KLXL0505AAE	3228;FR92959	SAA6D114E-3	220@1950	127	83.5	775@1450	172	84.3	ECM TC CAC
9KLXL0505AAE	8537;FR92057	SAA6D114E-3	197@1900	113	75.2	694@1450	151	70.4	ECM TC