## Komatsu Limited

EXECUTIVE ORDER U-R-005-0139

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)
2003	3KLXL0505ABD	8.3	Diesel	8000
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT A	PPLICATION
Direct Dies	el Injection, Turbocharg	er, Charge Air Cooler	Crane, Loaders, Tractor, Dozer	, Pump, 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	EMISSION STANDARD				XHAUST (g/kw-l	OPACITY (%)				
CLASS	CATEGORY		HC	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
130 <u>&lt;</u> KW < 225	Tier 2	STD	N/A	N/A	6.6	3.5	0.20	20	15	50
	<u> </u>	CERT			5.9	0.7	0.17	13	4	40

**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 November 2002.

Allen **Jo**ns, Chief

Mobile Source Operations Division

## Engine Model Summary Form ATIACINENT PS (of )

W-R-005-0139

Manufacturer: Komatsu

Engine category: Nonroad over 50 hp

EPA Engine Family. 3KLXL0505ABD

Mfr Family Name: G413

Process Code: Running Change

9 Q	DDI,TC,CAC *	DDI,16,0AG	DDI,TC,OAG	DDI,TC,CAC	DDI,TC,CAC	DDI,TC,CAC	DDI,TC,CAC	DDI,TC,CAC	DIM, I C, CAU
8.Fuel Rate: (lbs/hr)@peak torque	92.1	63.9	76.9	64.7	76.0	64.0	70.2	64.7	58.7
7.Fuel Rate: mm/stroke@peak torque	182	166	163	137	161	146	142	140	149
6.Torque @ RPM (SEA Gross)	922@1500	853@1500	825@1400	687@1400	798@1400	629@1300	714@1500	694@1400	730@1400
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	1.901	98.2	91.8	79.6	89,2	77.1	83.6	74.1	78.9
4.Fuei Rate: mm/stroke @ peak HP (for diesel only)	1.43	132	143	118	139	133	115	116	126
3.BHP@RPM (SAE Gross)	265@2200	250@2200	254@1900	203@2000	238@1900	170@1800	205@2200	197@1900	207@1900
2.Engine Model	\$446D114E-2	SAA6D114F-2	SAA6D114E-2	SAA6D114E-2	SAA6D114E2	SAA6D114E-2	SAA6D114E2	SAA6D114E-2	SAA6D114E2
1.Engine Code	B185,FR90882	2125-FRONBRA	8145 FR90998	8146-FR90999	8428 FR01945	A277.FR9925	2997 FR90895	8146;FR91261	8146;FR91262