California Environmental Protection Agency AIR RESOURCES BOARD	Komatsu Limited	EXECUTIVE ORDER U-R-005-0185 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)
2004	4KLXL23.2FD4	23.2	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Module	Generator and Other Industrial Equipment

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
kW > 560	Tier 1	STD	1.3	9.2	N/A	11.4	0.54	20	15	50
		CERT	0.2	7.5	--	1.0	0.10	16	2	31

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 3RD day of December 2003.

Allen Lyons, Chief
Mobile Source Operations Division

ATTACHMENT Pg 1 of 1

LARGE ENGINE MOL L SUMMARY

9/5/03

U-R-005-0185

Manufacturer: **KOMATSU LTD.** Process Code: **New Submission**

EPA Engine Family: **4KLXL23.2FD4** Manufacturer Family Name: **SAA6D170E-3**

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
2C08	SAA6D170E-3	950@2100	454	320	2897@1400	528	248	DDI, EM,ECM, TC, CAC
2C07	SAA6D170E-3	760@2100	363	256	2404@1300	439	191	EM,EC
2C10	SAA6D170E-3	900@2100	442	310	2700@1400	501	235	EM,EC
2C11	SAA6D170E-3	860@2100	423	296	2600@1400	484	226	EM,EC
2C12	SAA6D170E-3	800@2100	404	283	2440@1400	469	219	EM,EC
2G01	SAA6D170E-3	905@1800	497	296	---	---	---	EM,EC
2G02	SAA6D170E-3	850@1500	571	283	---	---	---	EM,EC
2G03	SAA6D170E-3	1135@1800	623	370	---	---	---	EM,EC
2G04	SAA6D170E-3	970@1500	645	320	---	---	---	EM,EC
2G05	SAA6D170E-3	1200@1800	659	392	---	---	---	EM,EC
2G06	SAA6D170E-3	1030@1500	674	335	---	---	---	EM,EC
2G07	SAA6D170E-3	1236@1800	688	409	---	---	---	EM,EC
2G08	SAA6D170E-3	1061@1500	700	348	---	---	---	EM,EC
2G09	SAA6D170E-3	1085@1800	580	346	---	---	---	EM,EC
2G10	SAA6D170E-3	1030@1500	646	322	---	---	---	EM,EC
CPL8353FR50003	QSK23-C	950@2100	454	320	2897@1400	528	248	EM,EC
CPL8353FR50001	QSK23-C	760@2100	363	256	2404@1300	439	191	EM,EC
CPL8353FR50019	QSK23-C	900@2100	442	310	2700@1400	501	235	EM,EC
CPL8353FR50021	QSK23-C	860@2100	423	296	2600@1400	484	226	EM,EC
CPL8353FR50023	QSK23-C	800@2100	404	283	2440@1400	469	219	EM,EC
CPL8352FR50007	QSK23-G1	905@1800	497	296	---	---	---	EM,EC
CPL8352FR50007	QSK23-G1	850@1500	571	283	---	---	---	EM,EC
CPL8352FR50009	QSK23-G2	1135@1800	623	370	---	---	---	EM,EC
CPL8352FR50009	QSK23-G2	970@1500	645	320	---	---	---	EM,EC
CPL8352FR50011	QSK23-G3	1200@1800	659	392	---	---	---	EM,EC
CPL8352FR50011	QSK23-G3	1030@1500	674	335	---	---	---	EM,EC
CPL8352FR50012	QSK23-G3A	1236@1800	688	409	---	---	---	EM,EC
CPL8352FR50012	QSK23-G3A	1061@1500	700	348	---	---	---	EM,EC
CPL8354FR50025	QSK23-G4	1085@1800	580	346	---	---	---	EM,EC
CPL8354FR50025	QSK23-G4	1030@1500	646	322	---	---	---	EM,EC