California Environmental Protection Agency AIR RESOURCES BOARD	Komatsu Limited	EXECUTIVE ORDER U-R-005-0120 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-45-9;

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)
2002	2KLXL0359AAA	5.9	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger	Crane, Loader, 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 CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37 ≤ KW < 130	Tier 1	STD	N/A	9.2	N/A	N/A	N/A	20	15	50
		CERT	--	5.7	--	--	--	3	2	5

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 13th day of December 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model Summary Form

U-R-005 0120

ATTACHMENT

Manufacturer: **Komatsu**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **2KLXL0359AAA**

Mfr Family Name: **A402**

Process Code: **New Submission**

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
1948;FR90377	S6D102E-1	152@2500	74	62.6	414@1600	83	44.6	DOI, TC
1948;FR90058	S6D102E-1	152@2500	74	62.6	414@1600	83	44.6	TC
1948;FR90059	S6D102E-1	148@2200	76	56.2	440@1600	89	47.9	TC
1948;FR90342	S6D102E-1	148@2200	76	56.2	440@1600	89	47.9	TC
2071;FR90060	S6D102E-1	140@2000	76	51.2	416@1600	82	44.2	TC
2071;FR90061	S6D102E-1	135@2200	70	52.1	419@1600	83	44.7	TC
2071;FR90103	S6D102E-1	118@2400	58	46.6	312@1600	63	33.2	TC
2071;FR90627	S6D102E-1	135@2400	64	51.7	364@1600	75	40.2	TC
2071;FR90628	S6D102E-1	130@2500	64	53.6	368@1600	73	39.4	TC
1902;FR90005	S6D102E-1	110@2400	55	44.6	340@1300	69	30.4	TC
2146;FR90424	S6D102E-1	136@2000	74	50.0	412@1350	84	38.1	TC
2146;FR90445	S6D102E-1	135@2400	68	54.8	366@1600	72	38.8	TC
2508;FR90500	S6D102E-1	126@2250	62	47.3	308@1600	56	33.3	TC
2550;FR90443	S6D102E-1	146@2200	75	54.5	424@1350	87	39.4	TC
2604;FR90555	S6D102E-1	111 @ 2400	53	43.2	309@1600	60	32.2	TC
2604;FR90556	S6D102E-1	145 @ 2500	68	57.4	391@1600	77	41.4	TC
2462;FR90805	S6D102E-1	118 @ 2400	58	47.0	322 @ 1600	62	33.5	TC
2071;FR90773	S6D102E-1	139 @ 2400	69	55.8	373 @ 1600	73	39.6	TC
2071;FR90774	S6D102E-1	128@2400	62	50.3	362@1500	69	35.1	TC
8065;FR90972	S6D102E-1	115@2400	56	45.7	340@1300	67	29.2	TC
8085;FR90993	S6D102E-1	115@2400	58	46.6	340@1300	67	29.4	TC