

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-5-79
Relating to Certification of New Off-Road Compression-Ignition Equipment Engines

KOMATSU LTD.

Pursuant to the authority vested in the Air Resources Board (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 exhaust emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Crane, Loader, Tractor, Dozer, Pump, Compressor and Generator

Fuel Type: Diesel

<u>Engine Family</u>	Engine Displacement (liters)	Useful Life (hours)	<u>Exhaust Emission Control Systems and Special Features</u>
1KLXL0239ABA	3.9	8000	Direct Diesel Injection Turbocharger Charge Air Cooler

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for total hydrocarbons (THC), carbon monoxide (CO), oxides of nitrogen (NOx), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423, as amended by Board approval on January 28, 2000):

<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>		<u>Exhaust Emissions (g/kw-hr)</u>				<u>Smoke Opacity (%)</u>		
			<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
37≤KW<75	Tier 1	Standard	N/A	N/A	9.2	N/A	20	15	50
75≤KW<130	Tier 1	Standard	N/A	N/A	9.2	N/A	20	15	50
All Above		Certification	--	--	8.2	--	13	2	31

BE IT FURTHER RESOLVED: That the listed engine models with rated power equal to or greater than 19 KW but less than 130 KW are **conditionally certified** to, and shall be required to comply with, all amendments to Title 13, California Code of Regulations, Sections 2420 through 2427 adopted by the Board on January 28, 2000 at its hearing "TO CONSIDER AMENDMENTS TO OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS: 2000 AND LATER EMISSION STANDARDS, COMPLIANCE REQUIREMENTS AND TEST PROCEDURES." The listed engine models comply with all such amendments, including, but not limited to:

- the amended "Emission Control Labels—1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year;
- the Board's amended emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426) for the listed engine models, as demonstrated by materials submitted by the manufacturer; and
- new California requirements for the Selective Enforcement Audit (SEA) for the listed engine models, as demonstrated by the manufacturer's submission of materials.

BE IT FURTHER RESOLVED: That the conditional certification described in the paragraph above is conditioned on the amendments being approved by the California Office of Administrative Law (OAL) pursuant to Government Code Section 11349.3, and where necessary, authorized by the Administrator of the U.S. Environmental Protection Agency (U.S. EPA) pursuant to Section 209(e)(2) of the Federal Clean Air Act. In the event that the OAL disapproves the amendments or the U.S. EPA decides not to authorize them, the conditional certification herein of the listed engine models with rated power equal to or greater than 19 KW but less than 130 KW shall be deemed null and void.

The conditional certification described herein is not conditioned on further U.S. EPA action on amendments determined by the Board to be within the scope of an existing U.S. EPA authorization.

Engines certified under this Executive Order must conform to the above requirements under Title 13, California Code of Regulations, Chapter 9, Article 4, and all other applicable California emission laws and regulations.

Executed at El Monte, California this 28th day of December 2000.



for R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: **Komatsu**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **1KLXL0239ABA**
 Mfr Family Name: **A382**
 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
2302;FR90029	S4D102E-1	110@2500	81	45.3	278@1500	84	28.3	DDI, TC, CAC
1967;FR90128	S4D102E-1	105@2400	77	41.7	280@1500	85	28.7	TC
1967;FR90131	S4D102E-1	95@2200	73	35.9	283@1500	83	28.1	TC
2148;FR90390	S4D102E-1	91@2300	68	35.2	246@1300	75	22.0	TC
2148;FR90646	S4D102E-1	90@2200	70	34.8	246@1300	77	22.6	TC
2148;FR90720	S4D102E-1	86@2200	65	32.2	246@1300	74	21.6	TC
2456;FR90391	S4D102E-1	86@1900	74	31.5	246@1300	78	22.9	TC
2457;FR90392	S4D102E-1	75@2350	56	29.7	218@1400	66	20.7	TC
2457;FR90395	S4D102E-1	79@2500	57	32.1	218@1400	66	20.7	TC
2359;FR90127	S4D102E-1	85@2500	60	33.9	239@1500	71	23.9	TC
2144;FR90309	S4D102E-1	93@2350	70	36.8	253@1600	75	27.1	TC
2681;FR90653	S4D102E-1	91 @ 2400	68	36.5	260 @ 1600	77	27.8	TC
2857;FR90733	S4D102E-1	110@2500	81	45.4	278@1500	84	28.4	TC
2944;FR90783	S4D102E-1	105 @ 2400	80	43.2	293 @ 1600	89	32.0	TC
8043;FR90844	S4D102E-1	105@2300	76	39.4	290@1500	87	29.3	TC

ATTACHMENT 1

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