## State of California AIR RESOURCES BOARD

## EXECUTIVE ORDER U-R-5-29 Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

## KOMATSU LTD.

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 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 Komatsu Ltd. 1998 model-year engines with rated power between 175 and 750 horsepower and exhaust emission control systems are certified as described below for use in heavy-duty offroad equipment:

Typical Equipment Usage: Loader, Grader

Fuel Type: Diesel

Engine Family		lacement <u>Cubic Inches</u>	Exhaust Emission Control Systems and Special Features		
WKLXL15.2EB1 (S6D140)	15.2	928	Turbocharger		

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 total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM) certification exhaust emission standards in grams per brake horsepower-hour (g/hp-h), and the opacity-of-smoke standards in percent (%) during acceleration (Accel), lugging (Lug), and peak (Peak) modes for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

<u>Exhaust_Emissions (q/hp-h)</u>			<u>Smoke Opacity (%)</u>			
<u>THC</u>	<u>C0</u>	<u>N0x</u>	<u>PM</u>	<u>Accel</u>	Luq	<u>Peak</u>
1.0	8.5	6.9	0.4	20	15	50

The THC, CO, NOx, and PM exhaust emissions certification values in grams per brake horsepower-hour and the opacity-of-smoke certification values in percent for this engine family are:

<u>Exhaust Emissions (g/hp-h)</u>			Smoke Opacity (%)			
<u>THC</u>	<u>co</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	Luq	<u>Peak</u>
0.2	0.5	5.9	0.1	15	5	34

BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "Emission Control Labels--1996 and Later Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year.

BE IT FURTHER RESOLVED: That for the listed engine models the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this  $\frac{14}{14}$  day of July 1999.

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

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## LARGE ENGINE MODEL SUMMARY

Manufacturer: KOMATSU LTD.

EPA Engine Family: WKLXL15.2EB1

e: ak 9. Emission Control Device Per SAE J1930		EM TC		EM TC	
8. Fuel Rate: (Ibs/hr)@peak torque		96	82	92	
<ol> <li>Fuel Rate: mm/stroke@peak torque</li> </ol>		208	178	199	
6. Torque @ RPM (SEA Gross)		1069 @ 1400	943 @ 1400	1024 @ 1400	
5. Fuel Rate: (Ibs/hr) @ peak HP	(in diesels any)	122	110	121	
4. Fuel Rate: mm/stroke @ peak HP	(for diesel uniy)	177	159	175	
3. Rated BHP@RPM (SAE Gross)		335 @ 2100	300 @ 2100	330 @ 2100	
1.Engine Code 2.Engine Model		S6D140E -2	S6D140E - 2	S6D140E - 2	
1.Engine Code		X 1	X	: EX	

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