State of California AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-5-7

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

KOMATSU AMERICA INTERNATIONAL COMAPANY

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 America International Company 1996 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Co

Construction Equipment

Fuel Type: Diesel

Engine Family	Liters (Cubic Inches)		Exhaust Emission Control Systems and Special Features		
TKL15.RZDARB (140)	15.2	(927)	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 total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matters (PM) certification exhaust emission standards, in grams per brake horsepower-hour (g/bhp-hr), and the opacity of smoke emission standards, in percent (%), during acceleration (Accel), lugging (Lug), and peak (Peak) modes, for this engine family are (Title 13, California Code of Regulations, Section 2423):

Exhaust Emissions (g/bhp-hr)			Smoke Opacity (%)			
THC	<u>co</u>	<u>NOx</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 emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

	Exhaust Emission (q/bhp-hr)				Smoke	Smoke Opacity (%)		
Engine Family	THC	<u>co</u>	<u>NOx</u>	<u>PM</u>	Accel	Lug	<u>Peak</u>	
TKL15.RZDARB (140)	0.2	0.3	5.4	0.2	15	4	29	

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, Section 2425 et seq.).

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

Executed at El Monte, California this

day of Bebruary 1996.

R. B. Summerfield
Assistant Division Chief
Mobile Source Division

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ManufacturerKOMATSU AMERICA INTE	ERNATIONAL COMPANY	Engine Family_	TKL15.RZDARB

Displacement:	15.2	<u>927</u> L	iters/Cubic Ir	iches Eng	Config: I	-6
All Codes in	Eng Fam: CA	49S 50S_	XX Cert	Test Procedu	ures: ARB_	EPA XX
Valves/Ports	per Cylinder_	2	_ Stro	kes per Comb	ustion Cycl	e 4-STROKE
Maximum Rated	Power:	350	_HP (<u>261</u>	KW)	@21	00 RPM
Ignition: Co	mpression <u>XX</u>	Comp	ression with G	low Plug	_	Spark
Fuel Type(s):	Dedicated X	Flex-Fuel	_ Dual-Fuel_	Die	sel <u>XX</u> M10	0 M85
	CNGL	IG LPG	Other (spe	cify)		
Diesel Cert F	uel: 40 CFR 8	36.1313-94 <u>XX</u>	Other (spe	ecify)		
Primary Servi	ce Equipment:	CONSTRUCTION	EQUIPMENT			
Exhaust ECS (e.g., MFI, TC,	CAC): TC	, CAC			
			(use abbreviat	ions per SAE	J1930 JUN9	3)
Engine Model (Eng Code)	Rated HP @ RPM	Fuel Rate @gRated HP mm / stroke (lbs/hr)	Fuel Pump & Injector Part No.	ECM/PCM Part No.	EGR Valve Part No.	PTOX / Catalytic Converter Part No.
S6D140E-2 (K4)	350 @ 2100	183 (219.6)	6211-72-9020 6211-12-3500		·	
)140E-2 (K5)	330 @ 1900	184 (190.8)	6211-72-1120			
Date Issued: Revisions:					- ·	