## KOMATSU LIMITED

EXECUTIVE ORDER U-R-005-0417 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-14-012;

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)		
2015	FKLXL15.2EDC	15.2	Diesel	8000		
	AL FEATURES & EMISSION	N CONTROL SYSTEMS	TYPICAL EQUIPMENT			
Ch: Dies	Electronic Direct Injection arge Air Cooler, Exhaust el Oxidation Catalyst, Per ontrol Module, Selective C and Ammonia Oxidati	Gas Recirculation, riodic Trap Oxidizer, Catalytic Reduction-Urea,	Loader, Dozer, Off-Road Truck			

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	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
POWER			нс	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	STD	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		CERT	0.02	0.14		0.04	0.000			

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

\_ day of September 2014.

Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

Attachment 1/1

## **Engine Model Summary Template**

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Engine Family	1.Engine Cod	le 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 torqu	9.Emission Control eDevice Per SAE J1930	
FKLXL15.2EDC	5C01	SAA6D140E-7	518@2000	274	180	1678@1400	333	154	EM,TC, CAC,EGR,ECM,PTOX,OC, SCR-U,AMOX,DFI	
FKLXL15.2EDC	5C05	SAA6D140E-7	360@1900	206	129	1353@1300	264	113	EM,TC, CAC,EGR,ECM,PTOX,OC, SCR-U,AMOX,DFI	
FKLXL15.2EDC	5C07	SAA6D140E-7	473@2000	255	168	1678@1400	333	154	EM,TC, CAC,EGR,ECM,PTOX,OC, SCR-U,AMOX,DFI	
FKLXL15.2EDC	<b>*</b> 5C02	SAA6D140E-7	357@1900	206	129	1331@1250	258	106	EM,TC, CAC,EGR,ECM,PTOX,OC, SCR-U,AMOX,DFI	
FKLXL15.2EDC	* 5C04	SAA6D140E-7	439@1800	254	151	1453@1400	287	132	EM,TC, CAC,EGR,ECM,PTOX,OC, SCR-U,AMOX,DFI	

\*: New ratings