



PERKINS ENGINES COMPANY LTD.

EXECUTIVE ORDER U-R-022-0217  
New Off-Road  
Compression-Ignition Engines

Pursuant to the authority vested in California 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 engines and emission control systems 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)
2019	KPKXL04.4MU1	4.4	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Engine Control Module, Exhaust Gas Recirculation, Diesel Oxidation Catalyst, Selective Catalytic Reduction-Urea, Ammonia Oxidation Catalyst			Crane, Loaders, Tractor, Dozer, Pump, Compressor, Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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 (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
75 ≤ kW < 130	Tier 4 Final	STD	0.19	0.40	N/A	5.0	0.02	N/A	N/A	N/A
		CERT	0.01	0.28	--	0.03	0.02	--	--	--

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 4 day of October 2018.

Annette Hebert, Chief  
Emissions Compliance, Automotive Regulations and Science Division

ATTACHMENT 9 OF 2

EO # U-R-022-0217

DATE 07/27/2018

**Engine Model Summary Template**

Engine Family	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
KPKXL04.4MU1	Cert Test 1 *	4068/2200	174@2200	133	64	553@1400	162	50	DDI TAA ECM DOC EGR SCR AMOX EPR
* TESTED ENGINE									
KPKXL04.4MU1	1	4068/2200	174@2200	133	64	553@1400	162	50	DDI TAA ECM DOC EGR SCR AMOX EPR
KPKXL04.4MU1	2	4070/2200	157@2200	125	60	504@1400	148	45	DDI TAA ECM DOC EGR SCR AMOX EPR
KPKXL04.4MU1	3	4186/2200	150@2200	119	57	479@1400	139	43	DDI TAA ECM DOC EGR SCR AMOX EPR
KPKXL04.4MU1	4	3992/2200	141@2200	116	56	465@1400	136	42	DDI TAA ECM DOC EGR SCR AMOX EPR

ATTACHMENT 2 OF 2

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KPKXL04.4MU1	Cert Test 5 *	4526/1800	173@1800	154	61	505@1800	154	61	DDI TAA ECM DOC EGR SCR AMOX EPR
		*TESTED ENGINE							
KPKXL04.4MU1	5	4526/1800	173@1800	154	61	505@1800	154	61	DDI TAA ECM DOC EGR SCR AMOX EPR

TAA = TC + CAC