

## PERKINS ENGINES COMPANY LTD.

EXECUTIVE ORDER U-R-022-0231-1 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-19-095:

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)			
2020	LPKXL03.6FX1	3.62	Diesel	8000			
SPECIAL	FEATURES & EMISSION C	ONTROLSYSTEMS	TYPICAL EQUIPMENT APPLICATION				
Ele Cha Diesel Oxio Gas Reci	ectronic Direct Injection, T arge Air Cooler, Engine Co lation Catalyst, Periodic T rculation, Selective Cataly Ammonia Oxidation C	rap Oxidizer, Exhaust rtic Reduction-Urea,	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	EMISSION			E	XHAUST (g/kw-	OPACITY (%)				
CLASS	STANDARD CATEGORY		NMHC	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
56 ≤ kW ≤ 130	Tier 4 Final	STD	0.19	0.40	N/A	5.0	0.02	N/A	N/A	N/A
		CERT	0.02	0.23		0.2	0.01			

**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 hereby supersedes Executive Order U-R-022-0231 dated December 2, 2019.

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 Monto, California on this

/74 day of May 2020

Allen Lyons, Chief

Emissions Certification and Compliance Division

## **Engine Model Summary Template**

Attachment page 1 of 2 EO#: U-R-022-0231-1 Date: 04/10/2020

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 torqu	9.Emission Control eDevice Per SAE J1930
LPKXL03.6FX1	5046/2200 Parent	904J- E36TADDS	134@2200	103.3	50.1	405.6@1500	119.3	39.4	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	4774/2400	904J- E36TADDS	74@2400	54.9	29.0	312.7@1200	99.4	32.9	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	4784/2400	904J- E36TADDS	100@2400	72.9	38.6	317.1@1500	96.0	31.7	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	4788/2400	904J- E36TADDS	110@2400	79.9	42.3	331.9@2400	100.0	33.1	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	4790/2400	904J- E36TADDS	115@2400	83.7	44.3	368.7@1500	110.0	36.4	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	4792/2400	904J- E36TADDS	121@2400	88.24	46.7	368.7@1500	110.0	36.4	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	4794/2400	904J- E36TADDS	100@2400	72.99	38.6	331.9@1500	100.0	33.1	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	4796/2400	904J- E36TADDS	94@2400	69.0	36.5	331.9@1500	100.0	33.1	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR

## **Engine Model Summary Template**

Attachment page 2 of 2 EO#: U-R-022-0231-1 Date: 04/10/2020

Date: 04/10/2020			4.Fuel Rate:	5.Fuel Rate:		7.Fuel Rate:			
Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	mm/stroke @ peak HP (for diesel only)	(lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	mm/stroke@peak torque		9.Emission Control Device Per SAE J1930
LPKXL03.6FX1	4798/2400	904J- E36TADDS	110@2400	79.9	42.3	368.7@1500	110	36.4	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	4836/2200	904J- E36TADDS	88@2200	68.5	33.2	331.9@1500	100	33.1	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	5044/2200	904J- E36TADDS	127@2200	91.1	44.2	390.9@1500	115.6	38.2	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR
LPKXL03.6FX1	6333/2200	904J- E36TADDS	134@2200	104.0	50.4	390.9@1500	116.5	38.5	DDI, TAA, ECM, DOC, SCR, AMOX, PTOX, EGR

TAA= TA +CAC