PERKINS ENGINES COMPANY LTD.

EXECUTIVE ORDER U-R-022-0066 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-02-003;

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)
2005	5PKXL04.4RK1	4.4	Diesel	8000
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT	APPLICATION
Direct Dies	sel Injection, Turbocharg and Engine Control I	er, Charge Air Cooler Module	Tractor and Industria	ıl Equipment

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 POWER	EMISSION STANDARD				XHAUST (g/kw-l	nr)		OF	PACITY (%	6)
CLASS	CATEGORY		нс	NOx	NMHC+NOx	co	PM	ACCEL	LUG	PEAK
75 <u><</u> KW<130	Tier 2	STD	N/A	N/A	6.6	5.0	0.30	20	15	50
		CERT			5.9	0.5	0.22	5	6	6

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

200

day of December 2004.

Allen Lyons, Chief

Mobile Source Operations Division

Engine Model Summary Form

U-R-022-0066

Perkins Engines Company Ltd acturer:

s category.

Nonroad Cl 5PKXL04.4RK1 ngine Family.

1104C-E44TA OR CATERPILLAR 3054 amily Name:

New Submission ss Code:

3 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)	mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
(ç	C 20	15.7	363 0 lbf ff @	107.0	33.3	ECM DDI TAA
37.4 (@ 2200	3 8	2.09	757		107.0	33.3	ECM DDI TAA
30.0 (a) 2200	3 :	2.06	- 1		96.5	29.8	ECM DDI TAA
23.3 @ 2200	\geq	92.0	- * + · ·	332.0 IDI 11 @	4420	346	FCM DDI TAA
39.5 @ 2200	Q	105.0	51.0		12.0	9. 20	
142.1 @ 2200	0	105.0	51.0	383.5 lbf ft @	1.12.0	2 10	
128.7 @ 2000	0	102.0	45.0	368.7 lbf ft @	109.0	33.7	
		80.8	39.3	343.0 lbf ft @	102.0	31.5	֓֞֞֞֜֞֜֞֞֜֞֜֞֜֞֜֞֜֞֜֞֜֞֜֞֜֞֜֞֜֞֜֞֜֞֝֓֓֓֞֝֜֝֡֡֝֓֡֝֝֡֝֡֝֡֝֡֝֡֝
(B)		80.8	39.3	337.0 lbf ft @	102.0	31.5	ה מ
) (G	്	88.4	42.9	370.3 lbf ft @	109.0	33.7	ה ה
(88.4	42.9	364.4 lbf ft @	109.0	33.7	֚֡֝֟֝֓֓֓֟֝֟֝֟֝֟֝֟֝֟֝֟֓֓֓֓֟֟֝֓֓֓֟֟֓֓֓֓֟֟֓֓֓֟֟֓֓֓֟֟֓֓֓֟֟֓֓֓֓֟֓
		84.3	40.9	353.3 lbf ft @	109.0	33.7	
) (· ~	84.3	40.9	347.4 lbf ft @	109.0	33.7	ב
9) (40.0	315.7 lbf ft @	94.0	29.0	
) (~~		40.0	309.8 lbf ft @	94.0	29.0	<u></u>
			43.5	368.7 lbf ft @	110.0	34.0	
3) (3) C		43.5	363.0 lbf ft @	110.0	34.0	2
3) (3	? ⊊		44.6	368.71bf ft @	109.0	33.7	<u>ק</u>
120.7 @ 2200			44.6	363.0 lbf ft @	109.0	33.7	
128.7 @ 2000	2 ⊆		45.0	368.7lbf ft @	109.0	33.7	
3) (6) (45.0	363.0 lbf ft @	109.0	33.7	ECM DDI TAA
3) () : (:		368 7lhf ft @	109 0	33.7	ECM DDI TAA
3)	\supseteq		0.00	300.7131 16 @	1000	33.7	ECM DDI TAA
139.5 @ 2200	8		20.0	363.0 IDT II @	0.00	- C - C - C - C - C - C - C - C - C - C	
114.7 @ 22	2200	86.5	42.0	368./lbi fi @	0.01	0.4.0	
22.0 @ 2200	200		43.5	368.7lbt ft @	107.0	22.2	
119.5 @ 2200	8	89.5	43,5	363.U lDf ft @	0.701	0.00	; }