

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-45-9;

**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)
2002	2PKXL03.9AK1	3.99	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger and Smoke Puff Limiter			Agricultural Tractor and Industrial 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):

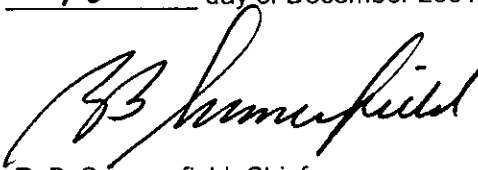
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
75≤KW<130	Tier 1	STD	N/A	9.2	N/A	N/A	N/A	20	15	50
		CERT	--	6.8	--	--	--	5	4	8

**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 18<sup>th</sup> day of December 2001.



R. B. Summerfield, Chief  
 Mobile Source Operations Division

# Engine Model Summary Form

U-R-022-0022

ATTACHMENT 1 OF 1

Manufacturer: Perkins Engines Company Ltd  
 Engine category: Nonroad CI  
 EPA Engine Family: 2PKXL03.9AK1  
 Mfr Family Name: AS EPA  
 Process Code: New Submission

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
1932/2000		99.6 @ 2000	88.0	38.3	297 @ 1400	92.0	30.5	SPL, TC, DI
1932/2100		99.8 @ 2100	86.0	39.3	297 @ 1400	92.0	30.5	SPL, TC, DI
1932/2200		100.0 @ 2200	83.0	39.8	297 @ 1400	92.0	30.5	SPL, TC, DI
5586/2000		99.6 @ 2000	88.0	38.3	297 @ 1400	92.0	30.5	SPL, TC, DI
5586/2100		99.8 @ 2100	86.0	39.3	297 @ 1400	92.0	30.5	SPL, TC, DI
5586/2200		100.0 @ 2200	83.0	39.8	297 @ 1400	92.0	30.5	SPL, TC, DI
1958/2000		92.5 @ 2000	73.0	32.6	264 @ 1400	79.0	24.6	SPL, TC, DI
1958/2100		92.5 @ 2100	72.5	34.0	264 @ 1400	79.0	24.6	SPL, TC, DI
1958/2200		91.8 @ 2200	71.0	34.9	264 @ 1400	79.0	24.6	SPL, TC, DI
5632/2000		89.8 @ 2000	73.0	32.6	264 @ 1400	79.0	24.6	SPL, TC, DI
5632/2100		90.5 @ 2100	72.5	34.0	264 @ 1400	79.0	24.6	SPL, TC, DI
5632/2000		89.8 @ 2000	71.0	34.9	264 @ 1400	79.0	24.6	SPL, TC, DI
1985/2400		107.8 @ 2400	80.0	42.6	290.6 @ 1400	93.0	28.9	SPL, TC, DI
1985/2300		105.5 @ 2300	81.0	41.4	290.6 @ 1400	93.0	28.9	SPL, TC, DI
1985/2200		102.6 @ 2200	82.0	40.1	290.6 @ 1400	93.0	28.9	SPL, TC, DI
1985/2100		99.6 @ 2100	83.0	38.8	290.6 @ 1400	93.0	28.9	SPL, TC, DI
1985/2000		96.3 @ 2000	85.0	37.7	277.0 @ 1600	91.0	32.3	SPL, TC, DI
1935/2000		102.0 @ 2000	88.0	39.0	277.0 @ 1600	91.0	32.3	SPL, TC, DI
1935/2100		104.6 @ 2100	87.0	40.5	277.0 @ 1600	91.0	32.3	SPL, TC, DI
1935/2200		106.6 @ 2200	86.0	42.0	277.0 @ 1600	91.0	32.3	SPL, TC, DI
1935/2300		107.6 @ 2300	85.0	43.5	277.0 @ 1600	91.0	32.3	SPL, TC, DI
1935/2400		107.9 @ 2400	84.0	44.8	277.0 @ 1600	91.0	32.3	SPL, TC, DI
Caterpillar		102.0 @ 2000	88.0	37.7	277.0 @ 1600	91.0	32.3	SPL, TC, DI
Caterpillar		104.6 @ 2100	87.0	40.5	277.0 @ 1600	91.0	32.3	SPL, TC, DI
Caterpillar		106.6 @ 2200	86.0	42.0	277.0 @ 1600	91.0	32.3	SPL, TC, DI
Caterpillar		107.6 @ 2300	85.0	43.5	277.0 @ 1600	91.0	32.3	SPL, TC, DI
Caterpillar		107.9 @ 2400	84.0	44.8	277.0 @ 1600	91.0	32.3	SPL, TC, DI
1948/2200		85.8 @ 2200	68.2	33.3	258.1 @ 1400	77.6	24.0	SPL, TC, DI
1948/2100		86.0 @ 2100	68.9	32.1	258.1 @ 1400	77.6	24.0	SPL, TC, DI
1948/2000		83.7 @ 2000	70.4	31.2	258.1 @ 1400	77.6	24.0	SPL, TC, DI
5616/2200		83.4 @ 2200	68.2	33.3	252.2 @ 1400	77.6	24.0	SPL, TC, DI
5616/2100		83.7 @ 2100	68.9	32.1	252.2 @ 1400	77.6	24.0	SPL, TC, DI