

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 engines 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	2DWXL21.9AYA	21.9	Diesel	8000
<b>SPECIAL FEATURES &amp; EMISSION CONTROL SYSTEMS</b>			<b>TYPICAL EQUIPMENT APPLICATION</b>	
Direct Diesel Injection, Turbocharger, Smoke Puff Limiter, Charge Air Cooler			Generator Set, 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
KW > 560	Tier 1	STD	1.3	9.2	N/A	11.4	0.54	N/A	N/A	N/A
		CERT	0.04	8.2	--	0.9	0.09	--	--	--

**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<sup>th</sup> day of March 2002.



Allen Lyons, Chief  
 New Vehicle/Engine Programs Branch

# Engine Model Summary Form

Manufacturer: Daewoo Heavy Industries Co Ltd

Engine category: Nonroad CI

EPA Engine Family: 2DWXL21.9A YA

Mfr Family Name: P222LE

Process Code: New Submission

*attached log 1*

*DOT U-R-019-0060*

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
P222LE YOA	771@1500	265	263.2	2702@1500	265	263.2	DAE TC & CAC 5#L	
P222LE YOA	650871@1800	256	305.1	2546@1800	256	305.1	TC & CAC	
P222LE YOA	792@1800	233	277.7	2315@1800	233	277.7	TC & CAC	
P222LE YGA	771@1500	265	263.2	2702@1500	265	263.2	TC & CAC	
P222LE YGA	871@1800	256	305.1	2546@1800	256	305.1	TC & CAC	
P222LE YGA	792@1800	233	277.7	2315@1800	233	277.7	TC & CAC	
P222LE YOB	839@1800	245	292.0	2451@1800	245	292.0	TC & CAC	
P222LE YOB	755@1800	221	263.4	2206@1800	221	263.4	TC & CAC	
P222LE YOB	740@1500	252	250.3	2596@1500	252	250.3	TC & CAC	
P222LE YOB	497666@1500	228	226.4	2336@1500	228	226.4	TC & CAC	