



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;

Pursuant to the December 15, 1998 Settlement Agreement (SA) between ARB and the Manufacturer, and any modifications thereof to the Settlement Agreement;

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)
2005	5VSXL12.1CE3	12.1	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Module, Smoke Puff Limiter, Exhaust-Gas Recirculation			Loader, Other 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 (NO_x), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NO_x), 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	NO _x	NMHC+NO _x	CO	PM	ACCEL	LUG	PEAK
130 ≤ kW < 225	Tier 2	STD	N/A	N/A	6.6	3.5	0.20	20	15	50
225 ≤ kW < 450	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		CERT	--	--	3.9	0.8	0.17	7	1	15

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 28th day of April 2005.


Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

EO# U-R-003-0041

Manufacturer: **Volvo Construction Equipment AB**
 Engine category: **Nonroad CI**
 EPA Engine Family: **5V5XL12.1CE3**
 Mfr. Family Name: **D12**
 Process Code: **Running Change**

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
I	D12DABE3	375 @ 1900	221 ± 4 %	140 ± 4 %	1550 @1200	311 ± 4 %	124 ± 4 %	EM,ECM,TC,CAC,EGR
II	D12DAAE3	375 @ 1900	219 ± 4 %	139 ± 4 %	1440 @ 1200	292 ± 4 %	117 ± 4 %	EM,ECM,TC,CAC,EGR
III	D12DLBE3	331 @ 1900	189 ± 4 %	120 ± 4 %	1300 @ 1400	263 ± 4 %	123 ± 4 %	EM,ECM,TC,CAC,EGR
IV	D12DEAE3	320 @ 1900	213 ± 4 %	128 ± 4 %	1180 @ 1350	260 ± 4 %	117 ± 4 %	EM,ECM,TC,CAC,EGR
VI	D12DEBE3	265 @ 1700	189 ± 4 %	107 ± 4 %	1087 @ 1275	227 ± 4 %	96 ± 4 %	EM,ECM,TC,CAC,EGR
X	D12DLAE3	286 @ 1900	169 ± 4 %	107 ± 4 %	1181 @ 1400	242 ± 4 %	113 ± 4 %	EM,ECM,TC,CAC,EGR
X	D12DLDE3	261 @ 1900	165 ± 4 %	105 ± 4 %	1055 @ 1400	215 ± 4 %	100 ± 4 %	EM,ECM,TC,CAC,EGR

x Added models