

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-3-15

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

VOLVO CONSTRUCTION EQUIPMENT COMPONENTS AB

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 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 Volvo Construction Equipment Components AB, 1999 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Loader and other OEM equipment.

Fuel Type: Diesel

<u>Engine Family</u>	<u>Liters (Cubic Inches)</u>	<u>Exhaust Emission Control Systems and Special Features</u>
XV5XL12.0CE1 (TD122)	12.0 (736)	Turbocharger Charge Air Cooler Smoke Puff Limiter

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM) certification exhaust emission standards, in grams per brake horsepower-hour (g/bhp-hr), and the opacity of smoke emission standards, in percent (%), during acceleration (Accel), lugging (Lug), and peak (Peak) modes, for this engine family are (Title 13, California Code of Regulations, Section 2423):

<u>Exhaust Emissions (g/bhp-hr)</u>				<u>Smoke Opacity (%)</u>		
<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
1.0	8.5	6.9	0.4	20	15	50

The THC, CO, NOx and PM exhaust emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

<u>Exhaust Emission (g/bhp-hr)</u>				<u>Smoke Opacity (%)</u>		
<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
0.2	0.6	6.6	0.1	6	0	18

BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "Emission Control Labels--1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2425 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 16th day of March 1999.



R. B. Summerfield, Chief
Mobile Source Operations Division

60# 4-R-3-15

11/23/98

LARGE ENGINE MODEL SUMMARY

Manufacturer: **Volvo Construction Equipment** Process Code: *Canyover*

EPA Engine Family: **XV5XL12.0CE1** Manufacturer Family Name: **TD122**

I. 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	TD122KIE	381 @ 1800	229	134	1290 @ 1350	261	115	TC, CAC, EM, SPL
II	TD122KFE	389 @ 2100	212	145	1240 @ 1400	244	111	TC, CAC, EM, SPL
III	TD122KAE	328 @ 2100	171	117	1088 @ 1200	220	86	TC, CAC, EM, SPL
IV	TD122KHE	283 @ 2100	166	113	1165 @ 900	238	70	TC, CAC, EM, SPL
V	TD122KKE	318 @ 1700	205	113	1128 @ 270	232	96	TC, CAC, EM, SPL
VI	TD122KME	358 @ 2100	187	128	1595 @ 1100	239	85	TC, CAC, EM, SPL
VII	TD122KLE	327 @ 1900	194	120	1645 @ 1450	228	107	TC, CAC, EM, SPL