

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-18-93-1  
Relating to Certification of New Motor Vehicles

VOLVO CAR CORPORATION

Pursuant to the authority vested in the Air Resources Board by the Health and Safety Code, Division 26, Part 5, Chapter 2; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That 1999 model-year Volvo Car Corporation exhaust emission control systems are certified as described below for passenger cars:

Emission Standard Category: Low-Emission Vehicle (LEV)

Fuel Type (Certification Fuel): Gasoline (Indolene)

Engine Family: XVVXV2.43PA2 Displacement: 2.3 Liters (142 Cubic Inches)  
2.4 Liters (149 Cubic Inches)

Exhaust Emission Control Systems & Special Features:

Sequential Multiport Fuel Injection  
Heated Oxygen Sensors (two)  
Three Way Catalytic Converter  
Turbocharger  
Charge Air Cooler

Vehicle models, transmissions, engine codes and evaporative emission control families are listed on attachments.

The LEV certification exhaust emission standards for this engine family in grams per mile are:

<u>Miles</u>	<u>Non-Methane Organic Gas</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Formaldehyde</u>	<u>Carbon Monoxide (20°F)</u>
50,000	0.075	3.4	0.2	0.015	10.0
100,000	0.090	4.2	0.3	0.018	n/a

The LEV certification exhaust emission values for this engine family in grams per mile are:

<u>Miles</u>	<u>Non-Methane Organic Gas</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Formaldehyde</u>	<u>Carbon Monoxide (20°F)</u>
50,000	0.048	1.1	0.03	0.001	4.8
100,000	0.052	1.2	0.04	0.001	n/a

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying the listed vehicle models to the aforementioned exhaust emission standards based on its submitted plan to comply with the fleet average NMOG exhaust mass emission requirements as set forth in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."

BE IT FURTHER RESOLVED: That under the submitted NMOG fleet average compliance plan, if the manufacturer incurs a NMOG debit for the aforementioned model year based on the projected NMOG fleet average exceeding the value required by the above-referenced standards and test procedures, all incurred NMOG debits by the manufacturer shall be equalized as required by the standards and test procedures.

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying the listed vehicle models to the running loss and useful life standards applicable to 1995 and subsequent model-year vehicles in the "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Motor Vehicles," and the listed vehicle models comply with those standards.

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" for the aforementioned model year (Title 13, California Code of Regulations, Section 2235).

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's high-altitude requirements and highway emission standards, and with the California Inspection and Maintenance emission standards in place at the time of certification, as stipulated in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."

BE IT FURTHER RESOLVED: That the vehicle manufacturer has demonstrated compliance with the exhaust emission standards at 50 degrees Fahrenheit as stipulated in "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles."

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the "Malfunction and Diagnostic System Requirements--1994 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines" (Title 13, California Code of Regulations, Section 1968.1) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the "California Motor Vehicle Emission Control and Smog Index Label Specifications" for the aforementioned model year (Title 13, California Code of Regulations, Section 1965).

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying the listed vehicle models to the "California Refueling Emission Standards and Test Procedures for the 1998 and Subsequent Model Motor Vehicles," Title 13, California Code of Regulations, Section 1978, and the listed models comply with those standards.

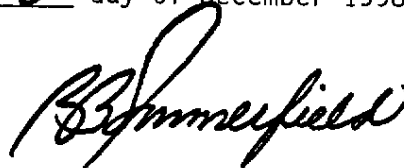
BE IT FURTHER RESOLVED: That for the listed vehicles, the manufacturer has submitted and the Executive Officer hereby approves the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2035 et seq.).

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

The Bureau of Automotive Repair will be notified by copy of this order and attachment.

Executive Order A-18-93 dated August 31, 1998, is superseded and replaced by Executive Order A-18-93-1.

Executed at El Monte, California this 3<sup>rd</sup> day of December 1998.



R. B. Summerfield, Chief  
Mobile Source Operations Division

1999 MODEL-YEAR AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

Manufacturer: VOLVO CAR CORP. Exh Eng Fam: XVVXV2.43PA2 Evap Fam: XVVXR0133PA1  
 All Engine Codes in Engine Family: CA 49S 50S X AB965, ORVR: YES X NO       
 Exh Std: CA Tier-1      TLEV      LEV X ULEV      SULEV     , US EPA Tier-1/NLEV X  
 Veh Class(es): PC X LDT1      LDT2      MDV1      MDV2      MDV3      MDV4      MDV5       
 Single Cert Std for Multi-Class Eng Fam: N/A (specify: N/A, LDT1, MDV1, MDV2, MDV3, MDV4)  
 Fuel Type(s): Dedicated X Flex-Fuel      Dual-Fuel      Bi-Fuel      Gasoline X Diesel       
 CNG      LNG      LPG      M85      Other (specify)       
 Emission Test Fuel(s): Indo X CBG      CNG      LPG      M85      Other (specify)       
 Diesel: 13 CCR 2282      40 CFR 86.113-90      40 CFR 86.113-94       
 Evaporative Emission Test Procedure: California      Federal X  
 Service Accum: Std AMA X Mod AMA      Mfr ADP      Other (specify)       
 Test Procedure: N/A      Std X Equip      R/L Test Proc: SHED      Pt Source X  
 Engine Configuration: I-5 Displacement: 2.3 / 2.4 Liters 142 / 179 Cubic Inches  
 Valves per Cylinder: 4 Rated HP: 236/190 @ 5700/5700 RPM  
 Engine: Front X Mid      Rear      Drive: FWD X RWD      4WD-FT      4WD-PT       
 Exhaust ECS (e.g., MFI, EGR, TC, CAC): SFI, HO2S(2), TWC, TC, CAC  
 (use abbreviations per SAE J1930 JUN93)

Engine Code (so list C.../ST/5OST)	Vehicle Models (if coded see attachment)	Trans. (M5, A4 etc.)	ETW or Test Wt.	DPA or RLHP	Ignition (ECM/PCM) Part No.	EGR System Part No.	Catalytic Converter Part No.
X53:1 (50st)	S70/V70/C70	M5	3625 3750 4000	6.5 6.9 7.1 7.4 7.5 7.6 7.8	9125601	N/A	9470013
X53:2 (50st)	S70/V70/C70	L4	3625 3750 4000	6.5 6.7 6.8 6.9 7.2 7.3 7.4 7.5 7.6 7.8	9125601	N/A	9470013
X56:2 (50st)	S70/V70/C70	L4	3625 3750 4000	6.5 6.6 6.8 6.9 7.5 7.6 7.7 7.8	9125601	N/A	9470013

Date Issued:                      Revisions: