

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-18-52
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 Orders G-45-3 and G-45-4;

IT IS ORDERED AND RESOLVED: That 1989 model-year Volvo Car Corporation exhaust emission control systems are certified as described below for gasoline-powered passenger cars:

<u>Engine Family</u>	<u>Displacement Liters (Cubic Inches)</u>	<u>Exhaust Emission Control Systems (Special Features)</u>
KVV2.3V5FE8X	2.3 (141)	Exhaust Gas Recirculation Heated Oxygen Sensor Three-Way Catalyst (Electronic Port Fuel Injection) On-Board Diagnostics (Exempted)

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

The following are the emission standards for this engine family:

<u>Hydrocarbons (Grams per Mile)</u>	<u>Carbon Monoxide (Grams per Mile)</u>	<u>Nitrogen Oxides (Grams per Mile)</u>
0.41	7.0	0.4

The following are the certification emission values for this engine family:

<u>Hydrocarbons (Grams per Mile)</u>	<u>Carbon Monoxide (Grams per Mile)</u>	<u>Nitrogen Oxides (Grams per Mile)</u>
0.26	1.6	0.1

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with "California Evaporative Emission Standards and Test Procedures for 1978 and Subsequent Model Gasoline-Powered Motor Vehicles".

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" (Title 13, California Administrative Code, Section 2290) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed vehicle models also comply with the Board's high altitude requirements and highway emission standards 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 "California Motor Vehicle Tune-Up Label Specifications" (Title 13, California Administrative Code, Section 1965) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the vehicle models listed have been granted an exemption from compliance with the requirements of the "Malfunction and Diagnostic System for 1988 and Subsequent Model Year[s]..." (Title 13, California Administrative Code, Section 1968) for the aforementioned model year.

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 regulations (Title 13, California Administrative Code, 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.

Executed at El Monte, California this 26th day of August, 1988.


K. D. Drachand, Chief
Mobile Source Division

Manufacturer VOLVO CAR CORPORATION Engine Family KVV2.3V5FE8X
 Evaporative Family E2/E3 Engine Type L-4
 Liters (CID) 2.3 (141)

ABBREVIATIONS

Ignition System

CA-Centrifugal Advance
 ECU-Electronic Control Unit
 EI-Electronic Ignition
 ESAC-Electronic Spark Advance Control
 VA-Vacuum Advance
 VR-Vacuum Retard

Fuel System

CFI, EPFI, MPFI, SFI,
 DID, DIP, HOS, OS
 nV-nVenturi Carburetor
 VV-Variable Venturi Carburetor

Exhaust Emissions Control System

AIP-Air Injection - Pump
 AIV-Air Injection - Valve
 EGR-Exhaust Gas Recirculation
 EIC-Electronic Injection Control (Diesel Only)
 EM-Engine Modification
 SPL-Smoke Puff Limiter or Throttle Delay
 TOC-Trap Oxidizer, Continual
 TOP-Trap Oxidizer, Periodical
 DBC-Dual Bed Catalyst
 OC-Oxidation Catalyst
 TWC-Three-Way Catalyst
 WUOC-Warm-Up Oxidation Catalyst
 WUTWC-Warm-Up Three-Way Catalyst
 OS-Oxygen Sensor
 HOS-Heated Oxygen Sensor

Special Features

CFI-Central Fuel Injection or Throttle Body Injection
 EPFI-Electronic Port Fuel Injection
 MPFI-Mechanical Port Fuel Injection
 SFI-Sequential Fuel Injection
 DID-Diesel Injection-Direct
 DIP-Diesel Injection-Prechamber
 TC-Turbocharger
 SC-Supercharger
 IC-Intercooler or Aftercooler
 CCV-Combustion Chamber Valve
 OBD-On-Board Diagnostic

VEHICLE MODELS:

240 DL/GL
 Sedan, Wagon

740 GL
 Sedan, Wagon

Engine: Front X Mid. Rear
 Drive: FWD RWD X 4WD Full Time 4WD Part Time

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Passenger Cars Light-Duty Trucks _____ Medium-Duty Vehicles _____ Gas Diesel _____

Manufacturer Volvo Car Corporation Engine Family KVV2.3V5FE8X

Liter (CID) 2.3 (141) Eng. Type L-4

Emission Control Sys. (Special Features) HOS/TWC/EGR (EPFI/ECU/ESAC/Exempt OBD)

Engine codes	Vehicle Models (If Coded see attachment) (Dyno Hp)	Trans. Type	Equiv. Test Weight	Ign. System (ECU) Part No.	Fuel System Part No.	EGR Valve Part No.	Catalyst Part No.
FE8X:1	240 DL/GL Sedan (9.3) Wagon (9.7)	M5 M47	- 3250 3375	0227400140	(CU) 0280000556 (HOS) 0258003034 (AIR MASS) 0280212016	72040111 or 72040121	3 501 957
FE8X:2	240 DL/GL Sedan (9.3) Wagon (9.7)	A4 AW70	- 3250 3375	"	"	72040311 or 72040321	"
FE8X:3	740 GL Sedan (8.4) Wagon (9.1)	M5 M47	- 3250 3375	"	"	72040111 or 72040121	1 389 966
FE8X:4	740 GL Sedan (8.4) Wagon (9.1)	L4 AW70L	- 3250 3375	"	"	72040311 or 72040321	"

Comments: See page one for abbreviations and evaporative emission family identification. Please refer to manufacturer's HP list for correct dyno test HP settings based on model and equipment. If two test weights are listed, the lower weight will be used for testing.

Date of Issue _____

Revisions: