State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-18-50
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:

Engine Family	Displacement Liters (Cubic Inches)	Exhaust Emission Control Systems (Special Features)
KVV2.3V5F874	2.3 (141)	Three-Way Catalyst Heated Oxygen Sensor No On-Board Diagnostics (Exempted) (Electronic Port Fuel Injection) (Turbocharger) (Intercooler)

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

The following are the emission standards for this engine family:

Hydrocarbons (Grams per Mile)	Carbon Monoxide (Grams per Mile)	Nitrogen Oxides (Grams per Mile)
0.41	7.0	0.7

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

Hydrocarbons (Grams per Mile)	Carbon Monoxide (Grams per Mile)	Nitrogen Oxides (Grams per Mile)
0.20	2.3	0.5

BE IT FURTHER RESOLVED: That the listed models are certified to the optional NOx emission standard thereby making the vehicle manufacturer subject to Section 1960.1.5 of Title 13, California Administrative Code which includes recall liability for emission control components up to 7 years or 75,000 miles if found defective by the Executive Officer.

BE IT FURTHER RESOLVED: That the vehicle manufacturer is certifying to the optional NOx standard by providing evidence that there are sufficient projected sales of vehicles certifying to the primary NOx emission standard, or is allowed a delay in implementation under small volume manufacturer provisions, or is allowed a delay in implementation under the "in lieu" standards, or is certifying passenger cars weighing more than 5250 lbs. loaded vehicle weight.

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 8th day of August, 1988.

K. D. Drachand, Chief
Mobile Source Division

E.O. # A-18-50

1989 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer Volvo Car Corporation

Engine Family KVV2.3V5F874

Evaporative Family 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:

740 Turbo Sedan, Wagon
760 Turbo Sedan, Wagon
780 Coupe

Engine: Front X Mid. ____ Rear ____

Drive: FWD ____ RWD X 4WD Full Time ____ 4WD Part Time ____

080187

AUG 3 1988

E.O. # A-18-50

19 89 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Passenger Cars X Light-Duty Trucks ____ Medium-Duty Vehicles ____ Gas X Diesel ____

Manufacturer Volvo Car Corporation Engine Family KVV2.3V5F874

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

Emission Control Sys. (Special Features) HOS/TWC (EPFI/TC/IC/ECU) (OBD Exempt)

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.
F874:1	740 Turbo Sedan (10.3) Wagon (9.1)	M4+OD M46	- 3375 3500	0 261 201012	(CU) 0280000541 (HOS) 0258003006 (AIR MASS) 0280212007	N/A	1326 481 or 1367 865
F874:2	740 Turbo Sedan (10.3) Wagon (9.1)	A4 AW71	- 3375 3500	"	"	"	"
	760 Turbo Sedan (8.9) Wagon (9.0)		- 3625 3625	"	"	"	"
	780 (9.1)		3750	"	"	"	"

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:

030186