

VOLVO CAR CORPORATION

EXECUTIVE ORDER A-018-0135

New Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles

Pursuant to the authority vested in the Air Resources Board by Health and Safety Code (HSC), Div. 26, Part 5, Chap. 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 & 39516 and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED:

That the following exhaust and evaporative emission control systems produced by the manufacturer are certified as described below. Production vehicles shall be in all material respects the same as those for which certification is granted.

| MODEL YEAR | TEST GROUP VEHICLE TYPE | | EXHAUST EMISSION STANDARD CATEGORY | USEFU (mil | | IN- COMP (*=N/A or A/E=ex | MEDIATE USE LIANCE full In-use; h. / evap. late in-use) | FUEL TYPE | |
|-------------------|-------------------------|--------------------------------|---------------------------------------|---------------|------|------------------------------------|---|-----------|--|
| 2005 | 5VVXV02.9U1T | Passenger Car | Ultra Low Emission Vehicle (ULEV) | EXH / ORVR | EVAP | EXH | EVAP | Caralla | |
| ANACIA TVA INSTAN | | | 1 ' ' | 100K | | | * | Gasoline | |
| No. | ECS & | SPECIAL FEATURES | EVAPORATIVE | | | DISPLACEMENT (L) | | | |
| 1 | 2TWC, TWC, 2HAFS | , 2HO2S, SFI, 2TC, CAC, OBD(P) | 5VVXR0 | 133AAA | | | | | |
| • | | * | • | · | | | • | | |
| * | | * | • | | | 2.9 | | | |
| • | | * | • | | | • | • | | |

See the Attachment for Vehicle Models, Evaporative Family, Engine Displacement, Emission Control Systems, Phase-In Standards, OBD Compliance, Emission Standards and Certification Levels, and Abbreviations.

BE IT FURTHER RESOLVED:

That the exhaust and the evaporative emission standards and the certification emission levels for the listed vehicles are as listed on the Attachment. Compliance with the 50° Fahrenheit testing requirement may have been met based on the manufacturer's submitted compliance plan in lieu of testing. Any debit in the manufacturer's "NMOG Fleet Average" (PC or LDT) or "Vehicle Equivalent Credit" (MDV) compliance plan shall be equalized as required.

BE IT FURTHER RESOLVED:

That for the listed vehicle models, the manufacturer has attested to compliance with Title 13, California Code of Regulations, (13 CCR) Sections 1965 [emission control labels], 1968.2 [on-board diagnostic, full or partial compliance], 2035 et seq. [emission control warranty], 2235 [fuel tank fill pipes and openings] (gasoline and alcohol fueled vehicles only), and "High-Altitude Requirements" and "Inspection and Maintenance Emission Standards" (California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model PC, LDT and MDV).

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

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this

day of August 2004

Allen Lyons, Chief

Mobile Source Operations Division

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ATTACHMENT

EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

(For bi-, dual- or flexible-fueled vehicles, the STD and CERT in parentheses are those applicable to testing on gasoline test fuel.)

| | | @ RAF=* RAF = * | NMOG or | CH4=methane; NMOG=non-CH4 organic gas; NMHC=non-CH4 hydrocarbon; CO=carbon monoxide; NOx=oxides of nitrogen; HCHO=formaldehyde; PM=particulate matter; RAF=reactivity adjustment factor; 2/3 D [g/test]=2/3 day diurnal+ hot-soak; RL [g/mi]=running loss; ORVR [g/gallon dispensed]=on-board refueling vapor recovery; g=gram; mg=milligram | | | | | | | | | | | |
|--|-------------|--------------------|----------------|--|---------|------------------------------------|------------|-----------------------------------|------------------------------------|------------|-------------|--|-------|---------------------|-----------|
| CERT | STD | NMOG | NMHC | NMHC STD | HUCSUAK | r; RL [g/mi]≕rur ; K=1000 miles | ming ioss: | UKVK IQ/G | AUSID OOIIRI | ひらんけ まへいっか | hard rafius | dina venar ra | | am; mg=mill | igram |
| 0.024 | 0.049 | CERT [g/mi] | CERT [g/mi] | [g/mi] | C | O [g/mi] | N | Ox [g/mi] | H | CHO [mg/ | mi] | PM (g | | Hwy NO | Ox [g/mi] |
| | @ 50K | | [25] | | CERT | | CER | | | RT S | TD | CERT | STD | CERT | STD |
| | | 0.028 | ļ | 0.040 | 0.2 | 1.7 | 0.1 | 0.2 | 2 | * | 8. | _ • | * | 0.03 | 0.3 |
| | @ UL | 0.037 | | 0.055 | 0.3 | 2.1 | 0.1 | 0.3 | 3 | • | 11. | * | * | 0.04 | 0.4 |
| as the way to the factorial | @ 50°F & 4K | * | • | * | • | * | * | | | * | • | • | * | • | • |
| | [g/mi] | | | NMHC+NOx [g/mi] (composite) | | | | | C+NOx CO [g/mi]] [US06] [US06] | | | NMHC+NOx [g/mi] [SC03] | | CO [g/mi] [SC03] | |
| @ 20 | °F & 50K | | | CERT | STD | CERT | STD | CERT | STD | CERT | STD | CERT | STD | CERT | STD |
| ERT | 1.0 | SFTP @ 4 | 000 miles | * | | • | * | 0.05 | 0.14 | 0.2 | 8.0 | 0.005 | 0.20 | 0.05 | 2.7 |
| STD | 10.0 | SFTP | @ * miles | • | | * | * | • | | • | • | • | * | * | * |
| 3-Days Diurnal + Ho Evaporative Family (grams/test) @ | | | | | | | | Running Loss (grams/mile) @ UL | | | Re | On-Board Refueling Vapor Recovery (grams/galion) @ UL | | | |
| | CERT | | S | rD | CERT | | STD | CER | T | STD | | CERT | | STD | |
| | 5VVXR0133A | 5VVXR0133AAA | | 2 | 0 | 1.8 | | 2.5 | 0.00 | | 0.05 | | 0.004 | -+ | |

| (grams/test) @ UL | | (grams/test) @ UL | | | | On-Board Refueling Vapor Recovery (grams/gallon) @ UL | | |
|-------------------|-----------|----------------------------|-----------------------------|--|---|---|---|--|
| CERT | STD | CERT | STD | CERT | STD | CERT | STD | |
| 0.9 | 2.0 | 1.8 | 2.5 | 0.000 | 0.05 | 0.001 | 0.20 | |
| * | * | * | * | + | * | * | * | |
| * | • | * | * | * | * | * | * | |
| * | * | * | * | * | * | * | | |
| | (grams/te | (grams/test) @ UL CERT STD | (grams/test) @ UL (grams/te | (grams/test) @ UL (grams/test) @ UL CERT STD CERT STD | (grams/test) @ UL (grams/test) @ UL (grams/m CERT STD CERT STD CERT | (grams/test) @ UL (grams/test) @ UL (grams/mile) @ UL CERT STD CERT STD CERT STD | (grams/test) @ UL (grams/test) @ UL (grams/mile) @ UL Recovery (grams/test) @ UL CERT STD CERT STD CERT | |

* = not applicable; UL=useful life; PC=passenger car; LDT=light-duty truck; MDV=medium-duty vehicle; ECS= Emission Control System; STD= Standard; CERT= Certification; LVW=loaded vehicle weight; ALVW=adjusted LVW; LEV=low emission vehicle; TLEV=transitional LEV; ULEV=ultra LEV; SULEV=super ULEV; TWC=3-way catalyst; ADSTWC=adsorbing TWC; WU=warm-up catalyst; OC=oxidizing catalyst; O2S=oxygen sensor; HO2S=heated C2S; AFS/HAFS=air- fuel ratio sensor / heated AFS; EGR=exhaust gas recirculation; AlR=secondary air injection; PAIR=pulsed AIR; MFI= multiport fuel injection; SFI=sequential MFI; TBI=throttle body injection; DGI=direct gasoline fuel injection; TC/SC= turbo/super charger; CAC=charge air cooler; OBD (F)(P)=mill/partial on-board diagnostic; DOR=direct ozone reducing; prefix 2=parallel; (2) suffix=series; CNG/LNG= compressed/liquefied natural gas; LPG=liquefied petroleum gas; E55="85%" Ethanol Fuel;

2005 MODEL YEAR: VEHICLE MODELS INFORMATION

| MAKE | MODEL | EVAPORATIVE FAMILY | ECS NO. | ENGINE SIZE (L) | INTERMEDIATE IN-USE COMPLIANCE (*=N/A or full in-use; A/E=exh. / evap. intermediate in-use) | | PHASE-IN STD. | OBD II |
|-------|------------------|-----------------------|------------|-----------------------|---|------|------------------|---------|
| | | | | | EXH | EVAP | | |
| VOLVO | S80 T6 | 5VVXR0133AAA | 1 | 2.9 | * | * | SFTP | Partial |
| VOLVO | S80 T6 EXECUTIVE | 5VVXR0133AAA | 1 | 2.9 | + | • | SFTP | Partial |