

G - TESTS W/CODES
Article Text
1993 Volkswagen EuroVan
For Volkswagen Technical Site
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Saturday, March 18, 2000 10:32PM

ARTICLE BEGINNING

1993 ENGINE PERFORMANCE
Volkswagen Self-Diagnostics

EuroVan

INTRODUCTION

If no faults were found while performing preliminary inspection procedures, proceed with self-diagnostics. If no fault codes or only pass codes are present after entering self-diagnostics, proceed to H - TESTS W/O CODES article for diagnosis by symptom (i.e., ROUGH IDLE, NO START, etc.).

NOTE: Scan Tester (VAG 1551) must be used to make full use of the self-diagnostic system capabilities.

SELF-DIAGNOSTIC SYSTEM DESCRIPTION

Hard Failures

Hard failures of monitored sensors and/or components, cause Malfunction Indicator Light (MIL) to come on and remain on until problem is repaired. If malfunction indicator CHECK ENGINE light comes on and remains on during vehicle operation, cause of malfunction must be determined.

If malfunctions are present for more than 5 seconds, they are stored as Diagnostic Trouble Codes (DTCs) and will be displayed as a permanent malfunction even though the malfunction is not occurring at the time DTCs are displayed. Malfunctions that affect oxygen sensor control can only be read accurately after a test drive of at least 5 minutes.

Intermittent Failures

If a malfunction occurs for a maximum of 5 seconds, they are stored and considered to be "sporadic" (intermittent failures). When displayed on scan tester, malfunctions will have "SP" (sporadic) code.

RETRIEVING CODES

NOTE: See ENTERING SELF-DIAGNOSTICS for additional scan tester operating instructions.

EuroVan (2.5L)

1) Connect Scan Tester (VAG 1551) to Data Link Connectors (DLC) located below A/C-heater control panel (in fold-down storage shelf in front of relay panel on EuroVan). See Fig. 1. Attach Black connector first, wait for VAG ON-BOARD DIAGNOSTIC display (VAG SELF-DIAGNOSIS on EuroVan), then connect White connector. DO NOT connect scan tester Blue connector.

2) Turn ignition on. Operate scan tester and observe display.

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Press "1" button to select RAPID DATA TRANSFER function. Press PRINT button to turn on printer. Indicator light on button should come on.

3) Press "0" and "1" buttons to select ENGINE ELECTRONICS function. Press "Q" button to enter input. Press right arrow button, then "0" and "2" buttons to select READ DTC MEMORY function. Press "Q" button to enter input.

4) Scan tester will display malfunction numbers (if any). If NO FAULTS (DTCs) RECOGNIZED is displayed, press right arrow button to return to RAPID DATA TRANSFER function.

5) If one or more DTCs are stored, look up DTCs and repair as necessary. After repairs, press "0" and "5" buttons to select ERASE DTC MEMORY function. Press "Q" button to enter input. After DTCs are erased, press right arrow button.

NOTE: On EuroVan, if ignition is turned off between reading and erasing DTC memory, DTC memory (fault codes) will not be erased.

6) Press "0" and "6" buttons to select END DATA TRANSFER function. Press "Q" button to enter input. Enter RAPID DATA TRANSFER function and test drive vehicle for at least 10 minutes (5 minutes on EuroVan).

7) During test drive, ensure that engine coolant temperature reaches 185°F (85°C). Ensure that accelerator pedal is momentarily, but completely pushed down (wide open throttle) at least once.

8) Ensure engine speed reaches at least 4600 RPM (3000 RPM on EuroVan). On Golf, GTI and Jetta, accelerate vehicle for 4 seconds with accelerator pedal pushed halfway down (transmission in 4th gear). On all models, select READ DTC MEMORY function once again to ensure DTCs (malfunctions) have been cleared (corrected).

ECM LOCATION

ECU/ECM LOCATION

AA

Application Location

EuroVan In Left Side Of Engine
Compartment, Behind Headlight

AA

TROUBLE CODE IDENTIFICATION

TROUBLE CODE IDENTIFICATION (EUROVAN) (1)

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DTC (2) System/ Possible
(Blink) Code Affected Circuit Cause/Repair

65535 (4444) No Fault
00518 (2212) Throttle Position Sensor Open Ckt;
Open/Short Ckt To
Ground Or Battery

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| | | | |
|----------------------------------|-------|-------|-------|
| 03 (Output Diagnostic Test Mode) | X | | |
| 04 (Initiate Basic Setting) | .. | | X |
| 05 (Erase DTC Memory) | | X | |
| 06 (End Data Transfer) | | X | X |
| 08 (Read Measurement Block) | | X | X |
| 09 (Read Individual | | | |
| 09 Measurements) | | X | X |

(1) - Press HELP button at any time to obtain additional scan tester operating instructions.

AA

OUTPUT CHECK DIAGNOSIS (OUTPUT DIAGNOSTIC TEST MODE)

NOTE: See ENTERING SELF-DIAGNOSTICS for additional scan tester operating instructions.

EuroVan (2.5L)

1) Connect Scan Tester (VAG 1551) to Data Link Connectors (DLC) located in fold-down storage shelf in front of relay panel. With scan tester in OUTPUT DIAGNOSTIC TEST MODE, the fuel pump relay, Idle Air Control (IAC) valve, and evaporative frequency (solenoid) valve may be actuated.

2) Press right arrow button to actuate fuel pump relay. Relay must click until test mode is switched to next output test by pressing the right arrow button. When actuating fuel pump relay, the fuel pump must also be running. If fuel pump relay does not actuate, test circuit using the J - PIN VOLTAGE CHARTS article in this section.

3) If fuel pump relay operates properly, press right arrow button to actuate IAC valve. IAC valve must click until test mode is switched to next output test by pressing the right arrow button.

4) If IAC valve does not actuate, connect Test Harness (VAG 1501) between IAC valve and wiring harness connector. See Fig. 2. Connect LED Tester (US 1115) between terminals No. 1 and 3 using jumper wires from Adapter Kit (VW 1594).

5) If LED tester blinks, replace IAC valve. If LED does not blink, test circuit using the J - PIN VOLTAGE CHARTS article in this section. If IAC valve and circuit are okay, replace ECM.

6) If IAC valve operates properly, press right arrow button to actuate evaporative frequency (solenoid) valve. If valve does not actuate, disconnect wiring harness connector from valve.

7) Connect LED tester between wiring harness connector terminals. If LED blinks, replace evaporative frequency (solenoid) valve. If LED does not blink, test circuit using the J - PIN VOLTAGE CHARTS article in this section. If evaporative frequency solenoid and circuit are okay, replace ECM.

8) With OUTPUT DIAGNOSTIC TEST MODE completed, select END DATA TRANSFER FUNCTION on scan tester. Turn ignition off. Disconnect scan tester. If ignition is not turned off before trying to re-start engine, the engine will not start, as the injectors and ignition transformer will not be actuated.

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1 Engine Coolant Temperature
2 Engine Speed
3 Throttle Angle
4 Engine Load

03
1 Engine Coolant Temperature
2 Engine Speed
3 Intake Air Temperature
4 Battery Voltage

04
1 Engine Coolant Temperature
2 Engine Speed
3 Ignition Timing
4 Engine Load

05
1 Engine Coolant Temperature
2 Engine Speed
3 Throttle Angle
4 Battery Voltage

AA

CLEARING CODES

See RETRIEVING CODES.

ECM LOCATION

ECU/ECM LOCATION

AA

Application Location

EuroVan In Left Side Of Engine
Compartment, Behind Headlight

AA

SUMMARY

If no hard fault codes (only "sporadic" codes) are present, driveability symptoms exist or intermittent codes exist, proceed to the H - TESTS W/O CODES article for diagnosis by symptom (i.e., ROUGH IDLE, NO START, etc.) or intermittent diagnostic procedures.

END OF ARTICLE