

## H - TESTS W/O CODES

### Article Text

1993 Volkswagen Passat

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Wednesday, March 22, 2000 10:17PM

## ARTICLE BEGINNING

1993 ENGINE PERFORMANCE

Volkswagen Trouble Shooting - No Codes

Cabriolet, Corrado SLC, EuroVan, Fox

Golf, GTI, Jetta, Passat GL, Passat GLX

## INTRODUCTION

### PRELIMINARY INFORMATION

Before diagnosing symptoms or intermittent faults, perform steps in the F - BASIC TESTING article in this section. Use this article to diagnose driveability problems existing when a hard fault code is not present or vehicle is not equipped with a self-diagnostic system.

NOTE: Some driveability problems may have been corrected by manufacturer with a revised computer calibration chip or computer control unit. Check with manufacturer for latest chip or computer application.

Symptom checks can direct the technician to malfunctioning component(s) for further diagnosis. A symptom should lead to a specific component, system test or an adjustment.

Use intermittent test procedures to locate driveability problems that DO NOT occur when the vehicle is being tested. These test procedures should also be used if a soft (intermittent) trouble code was present, but no problem was found during self-diagnostic testing.

NOTE: For specific test procedures, see the I - SYS/COMP TESTS article in this section. For adjustment procedures, see the appropriate D - ADJUSTMENTS article. For Engine Performance related specifications, see appropriate C - SPECIFICATIONS article in this section. See the following menus:

### C - SPECIFICATIONS ARTICLES MENU

NOTE: For the appropriate C - SPECIFICATIONS article, go to:

- \* For Cabriolet, see: C - SPECIFICATIONS
- \* For Corrado SLC, see: C - SPECIFICATIONS
- \* For EuroVan, see: C - SPECIFICATIONS
- \* For Fox, see: C - SPECIFICATIONS
- \* For Golf, GTI, Jetta, see: C - SPECIFICATIONS
- \* For Passat, see: C - SPECIFICATIONS

### D - ADJUSTMENTS ARTICLES MENU

NOTE: For the appropriate D - ADJUSTMENTS article, go to:

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- \* For Cabriolet, see: D - ADJUSTMENTS
- \* For Corrado SLC, see: D - ADJUSTMENTS
- \* For EuroVan, see: D - ADJUSTMENTS
- \* For Fox, see: D - ADJUSTMENTS
- \* For Golf, GTI, Jetta, see: D - ADJUSTMENTS
- \* For Passat GL 2.0L 4-Cylinder, see: D - ADJUSTMENTS - 4-CYL
- \* For Passat GLX 2.8L VR6, see: D - ADJUSTMENTS - VR6

## I - SYS/COMP TESTS ARTICLES MENU

NOTE: For the appropriate I - SYS/COMP TESTS article, go to:

- \* For Cabriolet, see: I - SYSTEM/COMPONENT TESTS
- \* For Corrado SLC, see: I - SYSTEM/COMPONENT TESTS
- \* For EuroVan, see: I - SYSTEM/COMPONENT TESTS
- \* For Fox, see: I - SYSTEM/COMPONENT TESTS
- \* For Golf, GTI, Jetta, see: I - SYSTEM/COMPONENT TESTS
- \* For Passat GL 2.0L 4-Cylinder, see:  
I - SYSTEM/COMPONENT TESTS - 4-CYL
- \* For Passat GLX 2.8L VR6, see:  
I - SYSTEM/COMPONENT TESTS - VR6

## SYMPTOMS

### SYMPTOM DIAGNOSIS

Symptom checks cannot be used properly unless the problem is actually happening while the vehicle is being tested. To reduce diagnostic time, ensure battery voltage is okay and starter motor turns engine over before attempting to diagnose a symptom.

Check engine mechanical condition (compression pressure, valve timing, etc.), wiring harness and connections (terminals not corroded or pushed back), and vacuum hose (not disconnected or leaking).

Also check for correct tire sizes, as recommended by manufacturer. Ensure wheels rotate freely (brake drag or bad wheel bearings). Ensure no speed reducing accessories are installed. Symptoms available for diagnosis include the following.

- \* Engine Does Not Start Or Is Difficult To Start When Cold
- \* Engine Does Not Start Or Is Difficult To Start When Warm
- \* Uneven Idle Or No Idle With Cold Engine Or During Warm-Up
- \* Engine Starts But Stalls
- \* Idle Speed Exceeds Specification
- \* Poor Acceleration With Cold Engine Or During Warm-Up
- \* Engine Stalls While Driving
- \* Poor Performance
- \* Engine Run-On (Dieseling)
- \* High Fuel Consumption
- \* Engine Knock
- \* Engine Runs Unevenly Over Entire Speed Range

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NOTE: Symptoms listed are for CIS-E Motronic system. When working on Digifant and Motronic systems, use symptoms listed only as a diagnostic guide. A list of specific symptoms for Digifant and Motronic systems is not available from manufacturer.

#### ENGINE DOES NOT START OR IS DIFFICULT TO START WHEN COLD

- \* Check for insufficient fuel in tank.
- \* Check fuel pump relay and fuel pump.
- \* Check fuel system for leaks.
- \* Check auxiliary air intake system.
- \* Check fuel system after-start, acceleration enrichment and warm-up circuits.
- \* Check cold-start valve.
- \* Check airflow sensor lever adjustment and control plunger.
- \* Check sensor plate rest position and idle circuit.
- \* Check fuel system differential and residual pressures.
- \* Check fuel injection volume.
- \* Check engine coolant temperature sensor.
- \* Check ignition timing, spark plugs, distributor, secondary ignition wiring and coil.
- \* Check Hall Effect sensor.
- \* Check ignition coil power output stage.

#### ENGINE DOES NOT START OR IS DIFFICULT TO START WHEN WARM

- \* Check radiator cooling fan after-run circuit.
- \* Check fuel pump check valve.
- \* Check fuel evaporative frequency solenoid(s).
- \* Check fuel system for leaks.
- \* Check auxiliary air intake system.
- \* Check idle speed.
- \* Check fuel system after-start, acceleration enrichment and warm-up circuits.
- \* Check cold-start valve.
- \* Check injector fuel pressure and volume.
- \* Check sensor plate rest position and idle circuit.
- \* Check sealing ring under control plunger.
- \* Check fuel system differential and residual pressures.
- \* Check engine coolant temperature sensor.
- \* Check ignition timing, spark plugs, distributor, secondary ignition wiring and coil.

#### UNEVEN IDLE OR NO IDLE WITH COLD ENGINE OR DURING WARM-UP

- \* Check fuel evaporative frequency solenoid(s).
- \* Check fuel system for leaks.
- \* Check auxiliary air intake system.
- \* Check idle speed.
- \* Check oxygen sensor control circuit.

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- \* Check cold-start valve.
- \* Check injector fuel pressure and volume.
- \* Check throttle potentiometer.
- \* Check fuel system differential and residual pressures.
- \* Check idle switch.
- \* Check engine coolant temperature sensor.
- \* Check exhaust system.
- \* Check ignition timing and spark plugs.

#### ENGINE STARTS BUT STALLS

- \* Check fuel pump relay and fuel pump.
- \* Check auxiliary air intake system.
- \* Check idle speed.
- \* Check fuel system after-start, acceleration enrichment and warm-up circuits.
- \* Check airflow sensor lever adjustment and control plunger.
- \* Check sensor plate rest position and idle circuit.
- \* Check fuel system differential and residual pressures.
- \* Check idle switch.
- \* Check engine coolant temperature sensor.

#### IDLE SPEED EXCEEDS SPECIFICATION

- \* Check throttle cable adjustment.
- \* Check fuel evaporative frequency solenoid(s).
- \* Check auxiliary air intake system.
- \* Check idle speed.
- \* Check throttle potentiometer.
- \* Check idle switch.
- \* Check engine coolant temperature sensor.
- \* Check throttle body basic adjustment.
- \* Check ignition timing.

#### POOR ACCELERATION WITH COLD ENGINE OR DURING WARM-UP

- \* Check fuel pump.
- \* Check auxiliary air intake system.
- \* Check oxygen sensor control circuit.
- \* Check fuel system after-start, acceleration enrichment and warm-up circuits.
- \* Check airflow sensor lever adjustment and control plunger.
- \* Check throttle potentiometer.
- \* Check fuel system differential and residual pressures.
- \* Check injector fuel pressure and volume.
- \* Check idle switch.
- \* Check engine coolant temperature sensor.
- \* Check throttle body basic adjustment.
- \* Check exhaust system.
- \* Check ignition timing, spark plugs, distributor, secondary ignition wiring and coil.

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#### ENGINE STALLS WHILE DRIVING

- \* Check fuel pump.
- \* Check auxiliary air intake system.
- \* Check injector fuel pressure and volume.
- \* Check idle and full throttle switches.
- \* Check intake air preheating system.
- \* Check ignition timing, spark plugs, distributor, secondary ignition wiring and coil.

#### POOR PERFORMANCE

- \* Check fuel pump.
- \* Check throttle cable adjustment.
- \* Check auxiliary air intake system.
- \* Check airflow sensor lever adjustment and control plunger.
- \* Check throttle potentiometer.
- \* Check fuel system differential and residual pressures.
- \* Check injector fuel pressure and volume.
- \* Check full throttle switch.
- \* Check mass airflow sensor (if equipped).
- \* Check intake air preheating system.
- \* Check catalytic converter.
- \* Check ignition timing.

#### ENGINE RUN-ON (DIESELING)

- \* Check fuel evaporative frequency solenoid(s).
- \* Check fuel system for leaks.
- \* Check cold-start valve.
- \* Check injector fuel pressure and volume.
- \* Check airflow sensor lever adjustment and control plunger.

#### HIGH FUEL CONSUMPTION

- \* Check fuel system for leaks.
- \* Check oxygen sensor control circuit.
- \* Check cold-start valve.
- \* Check injector fuel pressure and volume.
- \* Check airflow sensor lever adjustment and control plunger.
- \* Check throttle potentiometer.
- \* Check injector fuel pressure and volume.
- \* Check full throttle switch.
- \* Check mass airflow sensor (if equipped).
- \* Check intake air preheating system.
- \* Check exhaust system for leaks (between cylinder and oxygen (O2) sensor).
- \* Check ignition timing.

#### ENGINE KNOCK

- \* Check knock sensors (if equipped).

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- \* Check full throttle switch.
- \* Check ignition timing.

#### ENGINE RUNS UNEVENLY OVER ENTIRE SPEED RANGE

- \* Check auxiliary air intake system.
- \* Check injector fuel pressure and volume.
- \* Check ignition timing, spark plugs, distributor, secondary ignition wiring and coil.

## INTERMITTENTS

### INTERMITTENT PROBLEM DIAGNOSIS

Intermittent fault testing requires duplicating circuit or component failure to identify the problem. These procedures may lead to the computer setting a fault code (on some systems) which may help in diagnosis.

If problem vehicle does not produce fault codes, monitor voltage or resistance values using a DVOM while attempting to reproduce conditions causing intermittent fault. A status change on DVOM indicates a fault has been located.

Use a DVOM to pinpoint faults. When monitoring voltage, ensure ignition switch is in ON position or engine is running. Ensure ignition switch is in OFF position or negative battery cable is disconnected when monitoring circuit resistance. Status changes on DVOM during test procedures indicate area of fault.

### TEST PROCEDURES

#### Intermittent Simulation

To reproduce the conditions creating an intermittent fault, use the following methods:

- \* Lightly vibrate component.
- \* Heat component.
- \* Wiggle or bend wiring harness.
- \* Spray component with water.
- \* Remove/apply vacuum source.

Monitor circuit/component voltage or resistance while simulating intermittent. If engine is running, monitor for self-diagnostic codes. Use the test results to identify a faulty component or circuit. For system or component testing refer to the appropriate I - SYS/COMP TESTS article in this section. See the menu below:

- \* For Cabriolet, see: I - SYSTEM/COMPONENT TESTS
- \* For Corrado SLC, see: I - SYSTEM/COMPONENT TESTS
- \* For EuroVan, see: I - SYSTEM/COMPONENT TESTS
- \* For Fox, see: I - SYSTEM/COMPONENT TESTS
- \* For Golf, GTI, Jetta, see: I - SYSTEM/COMPONENT TESTS
- \* For Passat GL 2.0L 4-Cylinder, see:

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I - SYSTEM/COMPONENT TESTS - 4-CYL

\* For Passat GLX 2.8L VR6, see:

I - SYSTEM/COMPONENT TESTS - VR6

**END OF ARTICLE**