

H - TESTS W/O CODES - GASOLINE

Article Text

1996 Volkswagen Golf

For Volkswagen Technical Site

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Thursday, August 19, 1999 11:38PM

ARTICLE BEGINNING

1996 ENGINE PERFORMANCE

Volkswagen Trouble Shooting - No Codes - Gasoline

Cabrio, Golf III, GTI, Jetta III, Passat

INTRODUCTION

Before diagnosing symptoms or intermittent faults, perform steps in appropriate articles;

F - BASIC TESTING - GASOLINE and

G - TESTS W/CODES - GASOLINE articles. Use this article to diagnose driveability problems existing when a hard Diagnostic Trouble Code (DTC) is not present.

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

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

NOTE: For specific testing procedures, see appropriate
I - SYSTEM/COMPONENT TESTS article. For specifications, see
D - ADJUSTMENTS or
C - SPECIFICATIONS article.

SYMPTOMS

SYMPTOM DIAGNOSIS

Symptom checks cannot be used properly unless problem is actually present while vehicle is being tested. To reduce diagnostic time, ensure battery voltage is okay and starter motor turns engine over before attempting to diagnose 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 size, as recommended by manufacturer. Ensure wheels rotate freely (brake drag or bad wheel bearings). Symptoms available for diagnosis include the following.

* Engine Does Not Start Or Is Difficult To Start When Cold

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- * 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

NOTE: When working on Motronic systems, use symptoms listed only as a diagnostic guide. Specific symptoms for Motronic systems are not available from manufacturer.

ENGINE DOES NOT START OR IS DIFFICULT TO START WHEN COLD

- * Check fuel quality.
- * Check fuel pump relay and fuel pump.
- * Check auxiliary air intake system.
- * Check fuel system acceleration enrichment circuits.
- * Check MAF sensor.
- * Check TP sensor plate rest position and idle circuit.
- * Check fuel system pressures.
- * Check fuel injection volume.
- * Check engine coolant temperature sensor.
- * Check ignition timing, spark plugs, distributor, secondary ignition wiring and coil.
- * Check CMP 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 regulator solenoid(s).
- * Check fuel system for leaks.
- * Check auxiliary air intake system.
- * Check idle speed.
- * Check fuel system acceleration enrichment circuits.
- * Check injector fuel pressure and volume.
- * Check TP sensor plate rest position and idle circuit.
- * Check sealing ring under control plunger.
- * Check fuel system pressure.
- * 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 regulator solenoid(s).

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- * Check auxiliary air intake system.
- * Check idle speed.
- * Check H02S control circuit.
- * Check cold-start valve.
- * Check injector fuel pressure and volume.
- * Check TP sensor.
- * Check fuel system differential and residual pressures.
- * 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 MAF sensor.
- * Check TP sensor plate rest position and idle circuit.
- * Check fuel system pressure.
- * Check idle switch.
- * Check engine coolant temperature sensor.

IDLE SPEED EXCEEDS SPECIFICATION

- * Check throttle cable adjustment.
- * Check fuel evaporative regulator solenoid(s).
- * Check auxiliary air intake system.
- * Check idle speed.
- * Check TP sensor.
- * 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 H02S control circuit.
- * Check fuel system acceleration enrichment circuits.
- * Check MAF sensor.
- * Check TP sensor.
- * Check fuel system pressure.
- * 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.

ENGINE STALLS WHILE DRIVING

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- * 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 MAF sensor lever adjustment and control plunger.
- * Check TP sensor.
- * Check fuel system pressure.
- * Check injector fuel pressure and volume.
- * Check full throttle switch.
- * Check intake air preheating system.
- * Check catalytic converter.
- * Check ignition timing.

ENGINE RUN-ON (DIESELING)

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

HIGH FUEL CONSUMPTION

- * Check fuel system for leaks.
- * Check H02S control circuit.
- * Check injector fuel pressure and volume.
- * Check MAF sensor.
- * Check TP sensor.
- * Check injector fuel pressure and volume.
- * Check full throttle switch.
- * Check intake air preheating system.
- * Check exhaust system for leaks (between cylinder and H02S).
- * Check ignition timing.

ENGINE KNOCK

- * Check knock sensor(s).
- * Check full throttle switch.
- * Check ignition timing.

ENGINE RUNS UNEVENLY OVER ENTIRE SPEED RANGE

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- * 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 computer setting a Diagnostic Trouble Code (DTC) which may help in diagnosis.

If problem vehicle does not produce a DTC, 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.

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 conditions creating intermittent fault, use 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 DTCs. Use test results to identify a faulty component or circuit.

END OF ARTICLE