

# H - TESTS W/O CODES - TURBO

1995 Volvo 850

1995 ENGINE PERFORMANCE  
Volvo - Trouble Shooting - No Codes

850 - Turbo

## INTRODUCTION

Before diagnosing symptoms or intermittent faults, perform steps in the F - BASIC TESTING - TURBO article and procedures in the G - TESTS W/CODES - TURBO article. Use this article to diagnose driveability problems existing when a hard fault code is not present.

NOTE: Some driveability problems may have been corrected by manufacturer with a revised computer control unit. Check with manufacturer for latest 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 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 testing procedures, refer to the I - SYSTEM/COMPONENT TESTS - TURBO article. For specifications, see the D - ADJUSTMENTS - TURBO article or the C - SPECIFICATIONS - TURBO article.

## SYMPTOMS

### SYMPTOM DIAGNOSIS

When a diagnostic code cannot be confirmed or problem cannot be confirmed in the F - BASIC TESTING - TURBO article, find basic symptom. For example, vehicle engine will not start. Appropriate heading matching vehicle symptom is DOES NOT START. Listed under DOES NOT START are more specific conditions. Find specific condition which best describes vehicle malfunction. Perform checks in order given. DO NOT skip steps.

NOTE: Even if a diagnostic code is not set, this article may refer you to a test procedure for a specific diagnostic code in the G - TESTS W/CODES - TURBO article.

### DOES NOT START

Engine Does Not Crank

- \* Check starter.
- \* Check starter relay.
- \* Check park/neutral or clutch start switch circuit.
- \* Check theft deterrent ECU.

No Initial Combustion

- \* Check fuel pump circuit.

- \* Check RPM sensor circuit.
- \* Check camshaft position sensor circuit.
- \* Check power stage circuit.
- \* Check MAF sensor circuit.
- \* Check ECT sensor circuit.
- \* Check fuel pressure.

## DIFFICULT TO START

### Difficult To Start Normally

- \* Check starter signal circuit.
- \* Check Idle Air Control (IAC) valve circuit.
- \* Check fuel pump control circuit.
- \* Check ignition coil resistance.
- \* Check distributor sensors.
- \* Check spark plugs.
- \* Check engine compression.
- \* Check fuel injector circuit.

### Difficult To Start When Cold

- \* Ensure battery is fully charged.
- \* Ensure spark plugs fire strong Blue/White spark.
- \* Check fuel pump fuse(s).
- \* Check in-line fuse to control unit (if applicable).
- \* Ensure ignition timing and fuel pressure are correct.
- \* Check fuel injectors.
- \* Ensure timing belt is not broken.
- \* Check ground connections on intake manifold for control unit and power stage.
- \* Ensure ignition coil resistance is correct.
- \* Ensure rotor, distributor and plug wires are okay.
- \* Check ignition control unit.
- \* Check coolant temperature sensor and connector.
- \* Check throttle switch and connector.
- \* Check fuel control unit.
- \* Check engine speed sensor or Hall Effect sensor (turbo).
- \* Ensure power stage receives signal from ignition control unit.
- \* Check airflow sensor (if applicable).

### Difficult To Start When Hot

- \* Ensure fuel pressure is correct.
- \* Check for gasoline in oil.
- \* Ensure fuel injectors are not leaking.
- \* Check ignition and sensor wires for proper connection.
- \* Ensure spark plugs are not fouled.
- \* Check ignition and coil circuit.
- \* Check engine speed sensor or Hall Effect sensor (turbo).
- \* Check throttle switch and connector.
- \* Check idle valve. Ensure airflow arrow points in correct direction.

## POOR DRIVEABILITY

### Poor Idling

- \* Check throttle switch and connection.
- \* Check coolant temperature sensor and connection.
- \* Check idle (air) valve.
- \* Check air temperature sensor and mass airflow meter.

- \* Check coolant temperature sensor.
- \* Ensure spark plugs are not fouled.
- \* Check ignition and sensor wires for proper connection.
- \* Check idle valve. Ensure airflow arrow points in correct direction.
- \* Check distributor.
- \* Check ignition and coil circuit.
- \* Check intake system.
- \* Check engine speed sensor or Hall Effect sensor (turbo).
- \* Check throttle switch and connector.

#### Hesitation/Poor Acceleration

- \* Defective airflow sensor.
- \* Defective rotor/distributor cap (if applicable).
- \* Damaged ignition wires.
- \* Blocked air cleaner/air intake.
- \* Uneven compression.
- \* Low fuel pressure.
- \* Blocked exhaust system.
- \* Faulty sensor signals.
- \* Faulty turbocharger (if applicable).
- \* Wastegate valve open (if applicable).

#### Hesitation - Coasting

- \* Check fuel injectors.
- \* Check ignition and sensor wires for proper connection.
- \* Check throttle switch and connector.
- \* Check engine speed sensor or Hall Effect sensor (turbo).
- \* Check for gasoline in oil.
- \* Check idle valve. Ensure airflow arrow points in correct direction.

#### Muffler Explosion (Backfire)

- \* Ensure ignition timing is correct.
- \* Ensure timing belt has not jumped.
- \* Check distributor.
- \* Check for gasoline in oil.
- \* Ensure fuel injectors are not leaking.
- \* Ensure spark plugs fire strong Blue/White spark.
- \* Check ignition and coil circuit.
- \* Check engine speed sensor.
- \* Check throttle switch and connector.
- \* Check exhaust system.

#### Engine Stall

- \* Check cold start injector (if applicable).
- \* Check coolant temperature sensor.
- \* Check ignition and sensor wires for proper connection.
- \* Check fuel injectors.
- \* Check throttle switch and connector.
- \* Check engine speed sensor or Hall Effect sensor (turbo).

#### Knocking

- \* Check ignition and coil circuit.
- \* Ensure spark plugs fire strong Blue/White spark.
- \* Check knock sensor.
- \* Check throttle switch and connector.
- \* Check ignition and coil circuit.

- \* Check engine speed sensor or Hall Effect sensor (turbo).

#### Engine Misfire

- \* Check fuel injectors.
- \* Check ignition and sensor wires for proper connection.
- \* Check ignition and coil circuit.
- \* Check for gasoline in oil.
- \* Check intake and exhaust system.
- \* Check throttle switch and connector.
- \* Check for vacuum leaks.
- \* Check engine speed sensor or Hall Effect sensor (turbo).

#### Insufficient Engine Power

- \* Check fuel injectors.
- \* Ensure fuel pressure is correct.
- \* Check airflow sensor (if applicable).
- \* Check for restricted exhaust.
- \* Check coolant temperature sensor.
- \* Check air temperature sensor.
- \* Check engine speed sensor.
- \* Check throttle switch and connector.
- \* Check ignition and coil circuit.
- \* Check engine speed sensor or Hall Effect sensor (turbo).
- \* Check intake and exhaust system.

#### Poor Fuel Economy

- \* Check for leaky fuel injectors.
- \* Ensure spark plugs are not fouled.
- \* Check for faulty oxygen sensor.
- \* Check throttle switch and connector.
- \* Check for poor wire connections and fouled spark plugs.
- \* Check engine speed sensor or Hall Effect sensor (turbo).
- \* Check for gasoline in oil.
- \* Check for malfunctioning intake system.

#### Excessive HC & NOx

- \* Check for gasoline in oil.
- \* Check for leaky fuel injectors.
- \* Check for faulty oxygen sensor.
- \* Check ignition and sensor wires for proper connection.
- \* Check engine speed sensor.
- \* Check throttle switch and connector.
- \* Check intake system.

## **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 fault code 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

Monitor circuit/component voltage or resistance while using the following procedures to simulate an intermittent fault. If engine is running, check for self-diagnostic codes. Use test results to identify a faulty component or circuit.

- \* Lightly vibrate component.
- \* Heat component.
- \* Wiggle or bend wiring harness.
- \* Spray component with water mist.
- \* Remove vacuum from component.
- \* Apply vacuum to component.