

H - TESTS W/O CODES

1993 Nissan Sentra

1993 ENGINE PERFORMANCE
Nissan Trouble Shooting - No Codes

Altima, Maxima, NX, Pathfinder, Pickup,
Quest, Sentra, 240SX, 300ZX

INTRODUCTION

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

Before diagnosing symptoms or intermittent faults, perform steps in the articles shown below. Use these articles to diagnose driveability problems existing when a hard fault code is not present.

F - BASIC TESTING
G - TESTS W/ CODES

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 components for further diagnosis. A symptom should lead to a specific component test, 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.

The recommended procedures for each symptom will be indicated by numbers from one to 28 (and may also contain specific instructions related to that number). See SYMPTOM PROCEDURE DEFINITION. Not all recommended procedures apply to all vehicles.

SYMPTOMS

SYMPTOM DIAGNOSIS

NOTE: Recommended procedures for listed symptoms are given in numbers from 1 to 28. See SYMPTOM PROCEDURE DEFINITION.

Symptom checks cannot be used properly unless problem occurs while vehicle is being tested. To reduce diagnostic time, ensure steps in F - BASIC TESTING and/or appropriate information in G - TESTS W/CODES articles were performed before diagnosing a symptom. Following symptoms are available for diagnosis:

- * Hard Start/Will Not Start
- * High Idle
- * Unstable Idling
- * Hesitation
- * Poor Driveability
- * Engine Stall
- * Backfire

HARD START/WILL NOT START

Cold

6, 1, 26 (Pickup 2.4L), 5, 2, 4, 7, 17, 19, 18.

Normal Conditions

6, 1, 2, 4, 7, 10, 17, 19, 18, 20 (V6 except Maxima w/ DIS).

Hot

1, 15, 2, 4, 17, 19, 18.

HIGH IDLE

Warm

5, 8, 9, 21.

UNSTABLE IDLING

After Warm-Up

10, 25, 2, 4, 7, 1, 28, 8, 3, 12, 17, 18.

Hunting

13, 25, 7, 8, 10.

HESITATION

Cold

7, 8, 22, 23.

Under Normal Conditions

7, 28, 14, 8.

Hot

15, 14, 8 (NX and Sentra).

POOR DRIVEABILITY

Lack Of Power/Stumble

1, 8, 20 (V6 except Maxima with DIS).

Surge

28, 10, 18.

Detonation

8, 10, 11, 7.

ENGINE STALL

Cold

26 (Pickup 2.4L), 5, 25, 2, 4, 7, 1, 17, 19, 18.

Hot

15, 25, 2, 4, 1, 17, 19, 18, 20 (V6 except Maxima with DIS).

On Momentary Acceleration

27, 25, 2, 4, 1, 17, 19, 18.

After Deceleration

27, 3, 25, 2, 4, 1, 28, 17, 19, 18.

Acceleration Or Cruising

25, 2, 4, 1, 8, 17, 19, 18.

Heavy Electrical Load
6, 25, 2, 4, 1, 17, 19, 18.

While Turning
16, 25, 2, 4, 1, 17, 19, 18.

BACKFIRE

Intake
7, 8, 23.

Exhaust
24.

SYMPTOM PROCEDURE DEFINITION

Recommended procedures (specified numerically) are as follows. These steps help determine and rectify cause of specific symptom.

1
Ensure fuel pressure is within specification.

2
See appropriate INJECTOR MALFUNCTION diagnostic chart in I - SYS/COMP TESTS article.

3
Inspect throttle body ports and valves for deposits, wear and plugging. Clean or replace as necessary.

4
Check for spark using spark tester.

5
Check idle speed control circuit. See IDLE CONTROL SYSTEM in I - SYS/COMP TESTS article.

6
Ensure battery and charging system are okay.

7
Check spark plug for improper gap and fouling.

8
Ensure intake system does not have vacuum leaks.

9
Disconnect oxygen sensor connector(s). Run engine at 2000 RPM for 30 seconds. Return to idle. If idle RPM decreases, repair intake system air leak.

10
Check EGR control valve operation.

11
Check EGR control valve solenoid operation.

12
Ensure engine has adequate compression.

13

Disconnect exhaust gas sensor connector(s). If symptom is no longer present, check exhaust gas sensor operation. See appropriate G - TESTS W/ CODES article.

14

Disconnect and plug canister purge line. If symptom is no longer present, check purge and vacuum lines.

15

Disconnect vacuum hose from fuel pressure regulator. If symptom is no longer present, check for vapor-locked fuel.

16

Check fuel level.

17

Check ECM harness connector.

18

Try a known good ECM.

19

Check ECM power source and ground circuit. See appropriate ECM POWER SOURCE & GROUND diagnostic chart in appropriate I - SYS/COMP TESTS article.

20

Check timing belt for proper installation.

21

Check throttle linkage operation.

22

Try a known good airflow meter.

23

Check for intake valve deposits.

24

Check engine temperature sensor. See I - SYS/COMP TESTS article.

25

Perform power balance test.

26

Ensure fast idle cam holds throttle valve open.

27

With engine idling, disconnect AAC valve connector. If engine RPM does not decrease, check AAC valve circuit. See IDLE CONTROL SYSTEM in I - SYS/COMP TESTS article.

28

Check exhaust gas sensor operation. See G - TESTS W/ CODES article.

INTERMITTENTS

INTERMITTENT PROBLEM DIAGNOSIS

Intermittent fault testing requires duplicating circuit or

component failure to identify problem. These procedures may lead to 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 is on or engine is running. Ensure ignition is off or negative battery cable is disconnected when monitoring circuit resistance. Status changes on DVOM during test procedures indicate area of fault.

TEST PROCEDURES (ALTIMA, NX, QUEST, SENTRA, 240SX & 300ZX)

NOTE: For additional information on self-diagnostic system, see G - TESTS W/ CODES article.

Two different diagnostic modes are available through ECM. Mode I is used as a bulb check and malfunction warning. Mode II is self-diagnostic system, used to obtain trouble codes for component or circuit failures. Mode II also monitors air/fuel mixture ratio by using CHECK ENGINE light and Red LED on ECM.

Intermittent Simulation

To reproduce conditions creating an 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 self-diagnostic codes. Use test results to identify a faulty component or circuit.

TEST PROCEDURES (MAXIMA, PATHFINDER & PICKUP)

NOTE: For additional information on self-diagnostic system, see G - TESTS W/ CODES article.

Five different diagnostic modes are available through ECM. Diagnostic Modes I and II monitor air/fuel mixture ratio using LED inspection lights. Mode III is self-diagnostic system, used to obtain trouble codes for component or circuit failures. Mode IV monitors for malfunctions in system's on-off control switches. Mode V is real-time diagnostic system: it monitors system and its components during actual driving and is particularly sensitive to intermittent symptoms.

Mode V

Mode V detects problems when system is active. Red and Green LEDs on side of ECM will display malfunction code as soon as a malfunction is detected.

1) While operating vehicle in self-diagnostic Mode V, observe inspection lights. Operate vehicle under conditions in which malfunction or intermittent seems to occur.

2) If malfunction code is indicated, repair related circuit for intermittent problem. If no intermittent fault is indicated, go to INTERMITTENT SIMULATION.

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