H - TESTS W/O CODES

1992 Infiniti G20

1992 ENGINE PERFORMANCE
Infiniti Trouble Shooting - No Codes

G20, M30, Q45

INTRODUCTION

Before diagnosing symptoms or intermittent faults, perform steps in F - BASIC TESTING and G - TESTS W/ CODES articles in the ENGINE PERFORMANCE Section. 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 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, system test or adjustment.

Use intermittent test procedures to locate driveability problems that do not occur while 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.

Recommended procedures for each symptom will be indicated by number(s) from 1 to 26. To reduce diagnostic time, check items in the order given. For definition of each procedure, refer to TROUBLE SHOOTING PROCEDURES. Not all recommended procedures apply to all vehicles.

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

SYMPTOMS

SYMPTOM DIAGNOSIS

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 G - TESTS W/ CODES articles in the ENGINE PERFORMANCE Section were performed before diagnosing a symptom. Following symptoms are available for diagnosis.

* Difficult To Start Or No Start
* High Idle
* Rough Or Unstable Idle
* Engine Hesitates Or Misses
* Engine Stalls
* Engine Lacks Power Or Stumbles
* Engine Knocks
* Engine Surges
* Backfire

DIFFICULT TO START OR NO START

Cold

Perform following trouble shooting steps in this order: 6, 1, 5, 2, 4, 7, 17, 19 and 18. See TROUBLE SHOOTING PROCEDURES.

Normal
Perform following trouble shooting steps in this order: 6, 1, 2, 4, 7, 10, 17, 19, 18 and 20. See TROUBLE SHOOTING PROCEDURES.

Hot
Perform following trouble shooting steps in this order: 1, 15, 2, 4, 17, 19, 18 and 20. See TROUBLE SHOOTING PROCEDURES.

HIGH IDLE

Warm
Perform following trouble shooting steps in this order: 5, 8, 13 and 21. See TROUBLE SHOOTING PROCEDURES.

ROUGH OR UNSTABLE IDLE

Cold
Perform following trouble shooting steps in this order: 13, 12, 7, 8 and 10. See TROUBLE SHOOTING PROCEDURES.

Hot
Perform following trouble shooting steps in this order: 10, 12, 2, 4, 7, 1, 13, 8, 3, 12, 17 and 18. See TROUBLE SHOOTING PROCEDURES.

ENGINE HESITATES OR MISSES

Cold
Perform following trouble shooting steps in this order: 7, 8, 22 and 23. See TROUBLE SHOOTING PROCEDURES.

Normal
Perform following trouble shooting steps in this order: 7, 13, 14 and 8. See TROUBLE SHOOTING PROCEDURES.

Hot
Perform following trouble shooting steps in this order: 15 and 14. See TROUBLE SHOOTING PROCEDURES.

ENGINE STALLS

Cold
Perform following trouble shooting steps in this order: 9, 12, 2, 4, 7, 1, 17, 19 and 18. See TROUBLE SHOOTING PROCEDURES.

Hot
Perform following trouble shooting steps in this order: 15, 12, 2, 4, 1, 17, 19, 18 and 20. See TROUBLE SHOOTING PROCEDURES.

Momentary Acceleration
Perform following trouble shooting steps in this order: 9, 12, 2, 4, 1, 17, 19 and 18. See TROUBLE SHOOTING PROCEDURES.

After Deceleration
Perform following trouble shooting steps in this order: 9, 3, 12, 2, 4, 1, 13, 17, 19 and 18. See TROUBLE SHOOTING PROCEDURES.

Acceleration Or Cruising
Perform following trouble shooting steps in this order: 12,

2, 4, 1, 8, 17, 19 and 18. See TROUBLE SHOOTING PROCEDURES.

Heavy Electrical Load
Perform following trouble shooting steps in this order: 12, 2, 4, 1, 17, 19 and 18. See TROUBLE SHOOTING PROCEDURES.

While Turning
Perform following trouble shooting steps in this order: 25, 12, 2, 4, 1, 17, 19 and 18. See TROUBLE SHOOTING PROCEDURES.

ENGINE LACKS POWER OR STUMBLES

Perform following trouble shooting steps in this order: 1, 8 and 20. See TROUBLE SHOOTING PROCEDURES.

ENGINE KNOCKS

Perform following trouble shooting steps in this order: 8, 10, 11, 7 and 26. See TROUBLE SHOOTING PROCEDURES.

ENGINE SURGES

Perform following trouble shooting steps in this order: 13, 10 and 18. See TROUBLE SHOOTING PROCEDURES.

BACKFIRE

Intake
Perform following trouble shooting steps in this order: 7, 8 and 23. See TROUBLE SHOOTING PROCEDURES.

Exhaust
Perform trouble shooting step 24. See TROUBLE SHOOTING PROCEDURES.

TROUBLE SHOOTING PROCEDURES

1) Ensure fuel pressure is within specification. See F - BASIC TESTING article in the ENGINE PERFORMANCE Section.
2) Test fuel injectors. See I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section.
3) Inspect throttle body ports and valves for deposits, wear and plugging. Clean or replace as necessary.
4) Check for spark using spark tester. See F - BASIC TESTING article in the ENGINE PERFORMANCE Section.
5) Check idle speed components. Refer to IDLE CONTROL SYSTEM in I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section.
6) Ensure battery is fully charged. Ensure battery maintains at least 9.6 volts during cranking.
7) Check spark plug for improper gap and fouling.
8) Ensure no vacuum leaks exist in intake system.
9) Check fast idle system components. See IDLE CONTROL SYSTEM in I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section. On Q45, ensure fast idle cam keeps cam follower lever fully released. If cam follower lever is not kept fully released, check adjustment. See D - ADJUSTMENTS article in the ENGINE PERFORMANCE Section.
10) Check EGR valve operation. See I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section.
11) Check EGR solenoid valve operation. See I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section.
12) Ensure engine has adequate compression. See F - BASIC TESTING article in the ENGINE PERFORMANCE Section.

13) Disconnect exhaust gas sensor, and monitor driveability. If driveability improves, replace sensor. If driveability does not improve, go to step 16).
14) Remove canister purge line from intake, and test drive vehicle.
15) Remove vacuum hose from fuel pressure regulator, and monitor for symptom change.
16) Enter self-diagnostic Mode II, and monitor exhaust gas sensor operation. See FEEDBACK SYSTEM under FUEL CONTROL in I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section.
17) Check ECU harness connector.
18) Substitute a known good ECU.
19) Check ECU power supply and ground circuit. See POWER CIRCUITS and GROUND CIRCUITS under ELECTRONIC CONTROL UNIT (ECU) in I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section.
20) Check timing belt for proper installation.
21) Check throttle linkage operation.
22) Substitute a known good airflow meter.
23) Check for intake valve deposits.
24) Check coolant (engine) temperature sensor. See COOLANT (ENGINE) TEMPERATURE SENSOR under ENGINE SENSORS & SWITCHES in I - SYS/COMP TESTS article in the ENGINE PERFORMANCE Section.
25) Check fuel level in tank.
26) Check for oil leaks into combustion chamber.

INTERMITTENTS

INTERMITTENT PROBLEM DIAGNOSIS

Intermittent fault testing requires duplicating circuit or component failure to identify problem. These procedures may lead to the computer setting 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 fault has been located.

Use a DVOM to pinpoint faults. When monitoring voltage, ensure ignition is in ON position, or engine is running. Ensure ignition 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

Two different diagnostic modes are available through ECCS. Diagnostic Mode I is used as a bulb check and as a malfunction warning. With ignition on and engine off, Mode II of self-diagnostic system is used for obtaining trouble codes for component or circuit failures. With engine running, Mode II is used for monitoring air/fuel mixture ratio by using Red LED on ECU or CHECK ENGINE light on dash panel.

NOTE: For additional information on self-diagnostic system, see G - TESTS W/ CODES article in the ENGINE PERFORMANCE Section.

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. Use test results to identify a faulty component or circuit.

On California vehicles, intermittent simulation may cause CHECK ENGINE light to flash if an intermittent condition is reproduced on following circuits.

* Code 12 - Airflow Meter Circuit
* Code 13 - Coolant (Engine) Temperature Sensor Circuit
* Code 14 - Vehicle Speed Sensor Circuit
* Code 33 - Exhaust Gas Sensor Circuit
* Code 35 - Exhaust Gas Temperature Sensor Circuit
* Code 43 - Throttle Position Sensor Circuit
* Code 51 - Injector Circuit