

I - SYSTEM/COMPONENT TESTS

1993 Nissan Sentra

1993 ENGINE PERFORMANCE
Nissan System & Component Testing

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

INTRODUCTION

Before testing separate components or systems, perform procedures in F - BASIC TESTING article. Since many computer-controlled and monitored components set a trouble code if they malfunction, also perform procedures in appropriate G - TESTS W/ CODES article.

NOTE: Testing individual components does not isolate shorts or opens. Perform all voltage tests with a Digital Volt-Ohmmeter (DVOM) with a minimum 10-megohm input impedance, unless stated otherwise in test procedure. Use ohmmeter to isolate wiring harness shorts or opens.

AIR INDUCTION SYSTEMS

POWER VALVE (MAXIMA)

System Test (VG30E)

1) Start engine and bring to normal operating temperature. Race engine a few times under no-load condition while observing power valve actuator rod. If power valve actuator rod does not move, go to next step. If power valve actuator rod moves, system is functioning properly at this time.

2) With engine running, measure voltage between ECM terminal No. 8 (Orange wire) and ground. With accelerator pedal released, battery voltage should be present. With accelerator pedal depressed, approximately one volt should be present. If voltage is not as specified, go to next step. If voltage is as specified, check actuator vacuum hose for damage and proper installation. Repair hose as necessary. Check surge tank for cracks or holes and repair as necessary. Check one-way valve for air leakage and repair as necessary.

3) Turn ignition off. Disconnect and inspect power valve control solenoid harness connector. Repair connector as necessary. Turn ignition on. Measure voltage between solenoid harness connector White/Blue wire and ground. Battery voltage should be present. If battery voltage is not present, turn ignition off and go to next step. If battery voltage is present, turn ignition off and go to step 5).

4) Disconnect one-pin connector containing White/Red wire at positive terminal of battery. Check continuity between White/Red wire of one-pin battery connector and solenoid harness connector White/Blue wire. Continuity should exist. If continuity does not exist, check Brown fusible link located in fusible link box next to battery. Check White/Blue wire between fusible link and solenoid harness connector for open or short. Repair circuit as necessary.

5) Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity of Orange wire between ECM terminal No. 8 and solenoid harness connector. Continuity should exist. If continuity does not exist, repair open or short in Orange wire. If continuity exists, check operation of power valve control solenoid. See CONTROL SOLENOID under POWER VALVE (MAXIMA).

System Test (VE30DE)

1) Start engine and bring to normal operating temperature. With engine running, measure voltage between ECM terminal No. 8 (Yellow/Black wire) and ground. With accelerator pedal released, battery voltage should be present. With accelerator pedal depressed, approximately zero volts should be present. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly at this time.

2) Turn ignition off. Disconnect and inspect power valve control solenoid harness connector. Repair connector as necessary. Turn ignition on. Measure voltage between solenoid harness connector Red/Black wire and ground. Battery voltage should be present. If battery voltage is present, turn ignition off and go to next step. If battery voltage is not present, repair harness or connectors as necessary.

3) Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity of Yellow/Black wire between ECM terminal No. 8 and solenoid harness connector. Continuity should exist. If continuity does not exist, repair harness or connectors as necessary. If continuity exists, check operation of power valve control solenoid. See CONTROL SOLENOID under POWER VALVE (MAXIMA).

Actuator

Disconnect vacuum hose from actuator, located on timing belt end of upper intake plenum. Apply and release vacuum at actuator diaphragm. If rod does not move, replace actuator.

NOTE: On some power valve control solenoids, port "C" may be a vent that is capped with a filter. Also, if solenoid does not respond as specified, perform test again, considering port "A" as port "B" and vice versa.

Control Solenoid

Disconnect vacuum lines and electrical connector from solenoid, located on timing belt end of engine, below power valve actuator. Apply vacuum to either port. Vacuum should hold. Apply battery voltage across solenoid connector terminals. Vacuum should NOT hold. Replace solenoid if it does not operate as specified.

Surge Tank & One-Way Check Valve

Apply vacuum to surge tank, mounted on firewall. Vacuum should hold. Apply vacuum to both sides of one-way check valve. Vacuum should hold in only one direction. Ensure valve is installed with holding side away from vacuum source.

SWIRL CONTROL VALVE (PICKUP 2.4L & 240SX)

System Test

1) Start engine and bring to normal operating temperature. Turn ignition off. After a few seconds, disconnect vacuum hose to swirl control valve actuator. Actuator is located near flywheel end of intake manifold. Restart engine and check vacuum at disconnected hose.

2) On Pickup, vacuum should exist at less than 3600 RPM and not exist at more than 3600 RPM. On 240SX, vacuum should exist at less than 2400 RPM and not exist at more than 2400 RPM. On all models, if vacuum does not exist as specified, leave engine running and go to next step. If vacuum exists as specified, system is functioning properly at this time.

3) On Pickup, measure voltage between ECM terminal No. 12 (Gray wire) and ground. On 240SX, measure voltage between ECM terminal No. 25 (Gray wire) and ground. On Pickup, zero volts should exist at

less than 3600 RPM and battery voltage should exist at more than 3600 RPM. On 240SX, zero volts should exist at less than 2400 RPM and battery voltage should exist at more than 2400 RPM.

4) On all models, if voltage is as specified, check vacuum hose and swirl control valve for clogging, cracks and proper connection and repair as necessary. If voltage is not as specified, turn ignition off. Disconnect and inspect swirl control valve solenoid connector, located under intake manifold on Pickup or rear of cylinder head on 240SX. Repair connector as necessary.

5) Turn ignition on. Measure voltage between solenoid connector Black/White wire (Pickup) or Brown wire (240SX) and ground. Battery voltage should exist. If battery voltage exists, go to next step. If battery voltage does not exist, check harness, connectors and fuse. Repair as necessary.

6) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity of Gray wire between ECM terminal No. 12 (Pickup) or terminal No. 25 (240SX) and solenoid harness connector. Continuity should exist. If continuity does not exist, repair harness or connector as necessary. If continuity exists, check operation of swirl control valve solenoid. See CONTROL SOLENOID under SWIRL CONTROL VALVE.

Actuator

Disconnect vacuum hose from actuator, located near flywheel end of intake manifold. Apply and release vacuum at actuator diaphragm. Replace actuator if rod does not move.

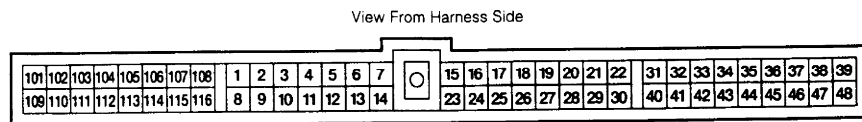
NOTE: On some swirl control valve solenoids, port "C" may be a vent that is capped with a filter. Also, if solenoid does not respond as specified, perform test again, considering port "A" as port "B" and vice versa.

Control Solenoid

1) Disconnect vacuum lines and electrical connector from solenoid, located near flywheel end of cylinder head. Remove solenoid. Apply vacuum to port "B" of solenoid. See Fig. 28. Vacuum should now be available at port "C", but not at port "A".

2) Apply battery voltage across solenoid connector terminals. Vacuum should now be available at port "A", but not at port "C". Replace solenoid if it does not operate as specified.

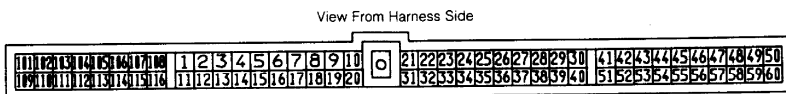
COMPUTERIZED ENGINE CONTROLS



93F179449

ALTIMA, NX, SENTRA, PATHFINDER, PICKUP, QUEST & 240SX

Fig. 1: ECM Harness Connectors (Exc. Maxima & 300ZX)
Courtesy of Nissan Motor Co., U.S.A.



93F179453

MAXIMA & 300ZX

Fig. 2: ECM Harness Connectors (Maxima & 300ZX)
Courtesy of Nissan Motor Co., U.S.A.

ECM Power & Ground Circuits (Altima)

1) Turn ignition on. Measure voltage between ground and ECM

harness connector terminals No. 38 (Orange wire) and No. 47 (Orange wire). See Figs. 1 and 2. ECM is located under center of instrument panel (connector is on passenger's side). Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Turn ignition off. Disconnect ECM harness connector. Check continuity between ground and ECM harness connector terminals No. 6 (Black wire), No. 13 (Black wire), No. 107 (Black wire), No. 108 (Black wire) and No. 116 (Black wire). See Figs. 1 and 2. Continuity should exist. If continuity does not exist, repair harness or connectors. If continuity exists, check ECM pin terminals for damage or connection of ECM harness connector.

3) Turn ignition off. Disconnect ECM harness connector. Disconnect ECM relay. ECM relay is located next to ECM. Check continuity between ECM relay harness connector Orange wire (terminal No. 3) and ECM harness connector terminals No. 38 (Orange wire) and No. 47 (Orange wire). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair harness or connectors.

4) Measure voltage between ground and ECM relay harness connector White wire (terminals No. 1 and 5). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check for open in harness or connectors. Check 25-amp fusible link. Check continuity between ECM relay harness connector White wire and battery.

5) Measure voltage between ground and ECM harness connector terminal No. 46 (White wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check for open in harness or connectors. Check 25-amp fusible link. Check continuity between ECM relay harness connector White wire and battery.

6) Check continuity between ground and ECM harness connector terminals No. 39 (Black wire) and No. 48 (Black wire). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair harness or connectors.

7) Check continuity between ECM harness connector terminal No. 4 (White/Green wire) and ECM relay harness connector White/Green wire (terminal No. 2). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair harness or connectors.

8) Turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 36 (Black/Red wire). Battery voltage should be present. If battery voltage is present, check ECM relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. If battery voltage is not present, check harness and connectors. Check continuity of Red/Black wire between ECM harness connector and ignition switch.

ECM Power & Ground Circuits (Maxima VG30E)

1) Turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 16 (Green/Orange wire). See Figs. 1 and 2. ECM is located under center of instrument panel (connector is on driver's side). Approximately one volt should be present. Measure voltage between ground and ECM harness connector terminals No. 49 (White/Black wire) and No. 59 (White/Black wire). Battery voltage should be present. If voltages are as specified, go to step 3). If voltages are not as specified, go to next step.

2) Turn ignition off. Disconnect ECM harness connector. Connect jumper wire between ground and ECM terminal connector No. 16 (Green/Orange wire). Turn ignition on. Check continuity between battery terminal harness connector (White/Red wire at battery positive terminal) and ECM harness connector terminals No. 49 (White/Black

wire) and No. 59 (White/Black wire). Continuity should exist. If continuity does not exist, check ECM relay. Relay is located in fusible link box next to battery. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion.

3) Turn ignition off. Disconnect ECM harness connector. Check continuity between ground and ECM harness connector terminals No. 10 (Black wire), No. 20 (Black wire), No. 50 (Black wire), No. 60 (Black wire), No. 107 (Black wire), No. 108 (Black wire) and No. 116 (Black wire). Continuity should exist. If continuity does not exist, check chassis and engine ground connections. If ground connections are okay, repair harness or connectors.

ECM Power & Ground Circuits (Maxima VE30DE)

1) Turn ignition on. Measure voltage between ground and ECM harness connector terminals No. 49 (Red/Green wire), No. 59 (Red/Green wire) and No. 109 (Red/Green wire). See Figs. 1 and 2. ECM is located under center of instrument panel (connector is on driver's side). Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Turn ignition off. Disconnect ECM harness connector. Check continuity between ground and ECM harness connector terminals No. 10 (Black wire), No. 20 (Black wire), No. 107 (Black wire), No. 108 (Black wire) and No. 116 (Black wire). Continuity should exist. If continuity does not exist, repair harness or connectors. If continuity exists, check ECM pin terminals and ECM harness connector terminals for damage or corrosion.

3) Turn ignition off. Disconnect ECM harness connector. Disconnect ECM (ECCS) relay. Relay is located in fusible link box next to battery. Check continuity between ECM harness connector terminals No. 49 (Red/Green wire), No. 50 (Red/Green wire) and No. 109 (Red/Green wire) and ECM relay connector terminal No. 5 (White/Black wire). See Fig. 2. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, check harness and connectors between ECM and ECM relay.

4) Measure voltage between ground and ECM relay harness connector terminals No. 2 (White/Blue wire) and No. 3 (White/Blue wire). See Fig. 2. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Brown fusible link. Check harness and connectors between ECM relay and battery.

5) Measure voltage between ground and ECM harness connector terminal No. 58 (White wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Brown fusible link. Check harness and connectors between ECM and battery.

6) Check continuity between ground and ECM harness connector terminals No. 50 (Black wire) and No. 60 (Black wire). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness or connectors.

7) Check continuity between ECM harness connector terminal No. 16 (White/Black wire) and ECM relay harness connector terminal No. 1 (White/Black wire). See Fig. 2. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness between ECM harness connector and ECM relay harness connector.

8) Turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 45 (White/Green wire). Battery voltage should be present. If battery voltage is present, check ECM relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. If battery voltage is not present, check harness and connectors. Check continuity of White/Green wire between ECM harness connector and

ignition switch.

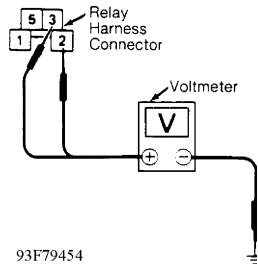


Fig. 3: ECM Relay Harness Connector Terminal ID
Courtesy of Nissan Motor Co., U.S.A.

ECM Power & Ground Circuits (NX & Sentra)

1) Start engine. If engine is running, go to next step. If engine will not start, turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 36 (Black/Yellow wire). Battery voltage should be present. If battery voltage is present, go to step 7). If battery voltage is not present, repair open in Black/Yellow wire (1.6L) or Black/Red wire (2.0L) between ECM harness connector and ignition switch.

2) Turn ignition off. Measure voltage between ground and ECM harness connector terminals No. 46 (White wire) and No. 109 (Orange/Blue wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check harness and connectors between ECM and battery. Check 25-amp fusible link.

3) Turn ignition on and off while measuring voltage between ground and ECM harness connector terminals No. 38 (Orange/Blue wire) and No. 47 (Orange/Blue wire). With ignition on and for a few seconds after turning ignition off, battery voltage should be present. A few seconds after turning ignition off, approximately zero volts should be present. If voltage is as specified, go to step 7). If battery voltage exists for more than a few seconds, check ECM relay. ECM relay is located next to ECM. See RELAYS under RELAYS & SOLENOIDS.

4) If battery voltage does not exist for a few seconds, disconnect ECM harness connector. Disconnect ECM relay. Check continuity between ECM harness connector terminals No. 38 (Orange/Blue wire) and No. 47 (Orange/Blue wire) and ECM relay harness connector terminal No. 5 (Orange/Blue wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Orange/Blue wire.

5) Measure voltage between ground and ECM relay harness connector terminals No. 1 (White wire) and No. 3 (White wire). See Fig. 3. Battery voltage should exist. If battery voltage exists, go to next step. If battery voltage does not exist, check harness and connectors.

6) Check continuity between ECM harness connector terminal No. 4 (White/Green wire) and ECM relay harness connector terminal No. 2 (White/Green wire). See Fig. 3. Continuity should exist. If continuity exists, check ECM relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, go to next step. If continuity does not exist, repair harness or connectors.

7) Turn ignition off. With ECM harness connector disconnected, check continuity between ground and ECM harness connector terminals No. 6, 13, 39, 48, 107, 108 and 116 (all wires are Black). Continuity should exist. If continuity exists, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. If continuity does not exist, repair harness or connectors.

ECM Power & Ground Circuits (Pickup 2.4L)

1) Turn ignition on. Measure voltage between ground and ECM harness connector terminals No. 38 (Black/White wire), No. 47 (Black/White wire) and No. 109 (Black/White wire). See Figs. 1 and 2. ECM is located under passenger's seat. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Turn ignition off. Disconnect ECM harness connector. Check continuity between ground and ECM harness connector terminals No. 6 (Black/Pink wire), No. 13 (Black/Pink wire), No. 107 (Black/Pink wire), No. 108 (Black/Pink wire) and No. 116 (Black/Pink wire). Continuity should exist. If continuity does not exist, repair harness or connectors. If continuity exists, check ECM pin terminals and ECM harness connector terminals for damage or corrosion.

3) Turn ignition off. Disconnect ECM harness connector. Disconnect ECM (ECCS) relay. Relay is located in relay box on right front inner fender panel. Check continuity between ECM harness connector terminals No. 38 (Black/White wire), No. 47 (Black/White wire) and No. 109 (Black/White wire) and ECM relay connector terminal No. 5 (Black/White wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, check harness and connectors between ECM and ECM relay.

4) Measure voltage between ground and ECM relay harness connector terminals No. 1 (White wire) and No. 3 (White wire). See Fig. 3. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Brown fusible link. Check harness and connectors between ECM relay and battery.

5) Check continuity between ground and ECM harness connector terminals No. 39 (Black wire) and No. 48 (Black wire). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness or connectors.

6) Check continuity between ECM harness connector terminal No. 4 (Blue/Red wire) and ECM relay harness connector terminal No. 2 (Blue/Red wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness between ECM harness connector and ECM relay harness connector.

7) Turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 36 (Black/White wire). Battery voltage should be present. If battery voltage is present, check ECM relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. If battery voltage is not present, check harness and connectors. Check continuity of White/Green wire between ECM harness connector and ignition switch.

ECM Power & Ground Circuits (Pathfinder & Pickup 3.0L)

1) Turn ignition on. Measure voltage between ground and ECM harness connector terminals No. 38 (Black/White wire), No. 47 (Black/White wire) and No. 109 (Black/White wire). See Figs. 1 and 2. ECM is located under passenger's seat. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Turn ignition off. Disconnect ECM harness connector. Check continuity between ground and ECM harness connector terminals No. 6 (Black wire), No. 13 (Black wire), No. 107 (Black wire), No. 108 (Black wire) and No. 116 (Black wire). Continuity should exist. If continuity does not exist, repair harness or connectors. If continuity exists, check ECM pin terminals and ECM harness connector terminals for damage or corrosion.

3) Turn ignition off. Disconnect ECM harness connector. Disconnect ECM (ECCS) relay. Relay is located in relay box on right front inner fender panel. Check continuity between ECM harness connector terminals No. 38 (Black/White wire), No. 47 (Black/White

wire) and No. 109 (Black/White wire) and ECM relay connector terminal No. 5 (Black/White wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, check harness and connectors between ECM and ECM relay.

4) Measure voltage between ground and ECM relay harness connector terminals No. 2 (White wire) and No. 3 (White wire). See Fig. 3. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Brown fusible link. Check harness and connectors between ECM relay and battery.

5) Check continuity between ground and ECM harness connector terminals No. 39 (Black wire) and No. 48 (Black wire). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness or connectors.

6) Check continuity between ECM harness connector terminal No. 4 (White/Red wire) and ECM relay harness connector terminal No. 1 (White/Red wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness between ECM harness connector and ECM relay harness connector.

7) Turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 36 (Black/White wire). Battery voltage should be present. If battery voltage is present, check ECM relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. If battery voltage is not present, check harness and connectors.

ECM Power & Ground Circuits (Quest)

1) Turn ignition on. Measure voltage between ground and ECM harness connector terminals No. 38 (Red/Black wire), No. 47 (Red/Black wire) and No. 109 (Red/Black wire). See Figs. 1 and 2. ECM is located behind glove box. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Turn ignition off. Disconnect ECM harness connector. Check continuity between ground and ECM harness connector terminals No. 6 (Black wire), No. 13 (Black wire), No. 107 (Black wire), No. 108 (Black wire) and No. 116 (Black wire). Continuity should exist. If continuity does not exist, repair harness or connectors. If continuity exists, check ECM pin terminals and ECM harness connector terminals for damage or corrosion.

3) Turn ignition off. Disconnect ECM harness connector. Disconnect ECM (ECCS) relay. Relay is located in fusible link box next to battery. Check continuity between ECM harness connector terminals No. 38 (Red/Black wire), No. 47 (Red/Black wire) and No. 109 (Red/Black wire) and ECM relay connector terminal No. 5 (Red/Black wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, check harness and connectors between ECM and ECM relay.

4) Measure voltage between ground and ECM relay harness connector terminals No. 1 (Red wire) and No. 3 (Red wire). See Fig. 3. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 25-amp fusible link. Check harness and connectors between ECM relay and battery.

5) Check continuity between ground and ECM harness connector terminals No. 39 (Black/Red wire) and No. 48 (Black/Red wire). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness or connectors.

6) Check continuity between ECM harness connector terminal No. 4 (White/Green wire) and ECM relay harness connector terminal No. 2 (White/Green wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness between ECM harness connector and ECM relay harness connector.

7) Turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 36 (Blue/Yellow wire). Battery voltage should be present. If battery voltage is present, check ECM relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. If battery voltage is not present, check harness and connectors. Check 10-amp fuse. Check harness and connectors between ECM and ignition switch.

ECM Power & Ground Circuits (240SX)

1) Turn ignition on. Measure voltage between ground and ECM harness connector terminals No. 38 (Black/White wire) and No. 47 (Black/White wire). See Figs. 1 and 2. ECM is located behind right front kick panel. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Turn ignition off. Disconnect ECM harness connector. Check continuity between ground and ECM harness connector terminals No. 6 (Black wire), No. 13 (Black wire), No. 107 (Black wire), No. 108 (Black wire) and No. 116 (Black wire). Continuity should exist. If continuity does not exist, repair harness or connectors. If continuity exists, check ECM pin terminals and ECM harness connector terminals for damage or corrosion.

3) Turn ignition off. Disconnect ECM harness connector. Disconnect ECM (ECCS) relay. Relay is located in relay box behind battery. Check continuity between ECM harness connector terminals No. 38 (Black/White wire) and No. 47 (Black/White wire) and ECM relay connector terminal No. 3 (Black/White wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, check harness and connectors between ECM and ECM relay.

4) Measure voltage between ground and ECM relay harness connector terminals No. 1 (Red wire) and No. 5 (Red wire). See Fig. 3. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Brown fusible link. Check harness and connectors between ECM relay and battery.

5) Check voltage between ground and ECM harness connector terminal No. 46 (Red wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check harness and connectors. Check Brown fusible link. Check harness between ECM and battery.

6) Check continuity between ground and ECM harness connector terminals No. 39 (Black wire) and No. 48 (Black wire). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness or connectors.

7) Check continuity between ECM harness connector terminal No. 4 (Red/Black wire) and ECM relay harness connector terminal No. 2 (Red/Black wire). See Fig. 3. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in harness between ECM harness connector and ECM relay harness connector.

8) Turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 36 (Black/Red wire). Battery voltage should be present. If battery voltage is present, check ECM relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. If battery voltage is not present, check harness and connectors between ECM and ignition switch.

ECM Power & Ground Circuits (300ZX)

1) Turn ignition on. Measure voltage between ground and ECM harness connector terminal No. 16 (Orange wire). See Figs. 1 and 2. ECM is located behind glove box. 0.8-1.0 volt should be present. Measure voltage between ground and ECM harness connector terminals No.

49 (White wire), No. 59 (White wire) and No. 109 (White wire). Battery voltage should be present. If voltages are as specified, go to step 3). If voltages are not as specified, go to next step.

2) Check ECM (ECCS) relay. Relay is located in fuse box at left front of engine compartment. See RELAYS under RELAYS & SOLENOIDS. Check Green fusible link. Fusible link is located in fusible link box next to battery. Check continuity between ECM relay and battery positive terminal. Check continuity of Orange wire between ECM harness connector terminal No. 16 and ECM relay.

3) Turn ignition off. Disconnect ECM harness connector. Check continuity between ground and ECM harness connector terminals No. 10 (Black wire), No. 20 (Black wire), No. 50 (Black wire), No. 60 (Black wire), No. 107 (Black wire), No. 108 (Black wire) and No. 116 (Black wire). Continuity should exist. If continuity does not exist, check chassis and engine ground connections. If ground connections are okay, repair harness or connectors.

Fail-Safe System Test (Maxima VG30E)

Disconnect crankshaft position sensor and attempt to start engine. If engine begins to run in a few seconds, system is functioning properly. If engine does not begin to run in a few seconds, failure to start may not be caused by crankshaft position sensor. Determine cause of problem using H - TESTS W/O CODES article.

Fail-Safe System Diagnosis (Maxima VG30E)

1) Turn ignition on. Perform MODE III (SELF-DIAGNOSTICS) under DUAL LED SYSTEM in G - TESTS W/CODES article. If Code 11 is present, check crankshaft position sensor. See CRANKSHAFT POSITION SENSOR under ENGINE SENSORS & SWITCHES. After making repairs, start engine to ensure CHECK ENGINE light is off.

2) If Code 11 is not present but CHECK ENGINE light is on, try to enter MODE III again. If unable to enter MODE III, replace ECM. If MODE III is entered and Code 11 is not present, check for short in CHECK ENGINE light circuit causing light to stay on.

ENGINE SENSORS & SWITCHES

NOTE: For ECM connector terminal identification, see appropriate articles below:

J - PIN VOLTAGE CHARTS
L - WIRING DIAGRAMS

Mass Airflow Sensor

Faults in mass airflow sensor circuit may set Code 12. To test system, see CODE 12 diagnostic procedures in G - TESTS W/ CODES article.

1) To test airflow sensor, warm engine to operating temperature. Pull rubber protector away from mass airflow sensor connector so terminals can be backprobed. At mass airflow sensor connector, measure voltage at Orange wire (Altima, NX and Sentra), or White/Blue (Quest), or White wire (all others).

2) If voltage is not as specified in MASS AIRFLOW SENSOR VOLTAGE TEST table, check for dust or foreign material in hot wire air passage of mass airflow sensor. If air passage is okay, replace mass airflow sensor.

NOTE: On 300ZX, measure voltage at White wire terminal closest to Orange wire terminal; other White wire is for power supply.

MASS AIRFLOW SENSOR VOLTAGE TEST TABLE (1)

Application	Volts With KOEO (2)	Volts At Idle
Altima	0.2	0.85-1.35
Maxima		
VG30E Engine	Less Than 0.5	1.0-1.3
VE30DE Engine	Less Than 1.0	0.8-1.5
NX & Sentra		
1.6L	Less Than 1.0	0.7-1.1
2.0L	Less Than 1.0	1.3-1.7
Pathfinder	Less Than 1.0	1.5-2.0
Pickup		
2.4L	(3)	(3)
3.0L	Less Than 1.0	1.5-2.0
Quest	0.5	1.0-1.7
240SX	0.2	1.0-1.4
300ZX	0.8	0.8-1.5

(1) - Values are approximate and vary with engine RPM.

(2) - Key On, Engine Off.

A/C Switch

See J - PIN VOLTAGE CHARTS article.

Air Temperature Sensor (Pickup 2.4L)

Faults in air temperature sensor circuit may set Code 41. To test system, see CODE 41 diagnostic procedures in G - TESTS W/CODES - 2.4L article.

To test sensor, disconnect sensor connector. Sensor is on air cleaner assembly. Measure resistance across sensor connector terminals. At 68°F (20°C), resistance should be about 2100-2900 ohms. At 176°F (80°C), resistance should be about 270-380 ohms. If resistance is not as specified, replace sensor.

Crankshaft Position Sensor

Faults in crankshaft position sensor circuit may set Code 11. To test system, see CODE 11 diagnostic procedures in G - TESTS W/CODES - 2.4L article.

Crankshaft position sensor is mounted on flywheel end of left cylinder head (Maxima VE30DE engine), or on front end of left cylinder head (300ZX). On all other vehicles, crankshaft position sensor is part of distributor.

1) To test crankshaft position sensor, remove crankshaft position sensor (or distributor). Leave wiring harness connected. On vehicles with distributor, disconnect secondary coil wire from distributor cap, and then connect wire to ground. On all vehicles, turn ignition on.

2) Connect logic probe or DVOM with an analog bar graph function to ground. While slowly rotating sensor shaft by hand, backprobe specified wire terminals of sensor connector. See CRANKSHAFT POSITION SENSOR VOLTAGE TEST table.

3) If voltage does not fluctuate between 0 and 5 volts, check for damaged or dirty signal plate in crankshaft position sensor, and for shorted or open harness. If harness and signal plate are okay, replace crankshaft position sensor.

NOTE: It is possible to measure crankshaft position sensor voltage with a conventional DVOM without bar graph function; however, it may be difficult to determine peak voltage signal due to averaging of signal.

Application	Wire Color		Wire Color
	(1 Degree Signal)	Degree Signal)	(120/180
Altima	Yellow	Blue	
Maxima	Green/Yellow	Green/Black	
NX & Sentra	Yellow	Blue	
Pathfinder & Pickup	Green/Black	Green/Yellow	
Quest	Red/Blue	Red/White	
240SX	(2) Black	White	
300ZX	Green/Yellow	Green/Black	

- (1) - This procedure may cause Codes 11 and/or 21 to set.
Erase codes when procedure is complete.
- (2) - Black wire at end of connector is for ground; measure voltage at other Black wire.

Knock (Detonation) Sensor

Faults in detonation sensor circuit may set Code 34. To test system, see CODE 34 diagnostic procedures in G - TESTS W/CODES - 2.4L article.

To test sensor, disconnect sensor connector. See DETONATION SENSOR LOCATION table. Check continuity between ground and sensor connector terminal. If there is no continuity, replace sensor. Check detonation sensor shield ground wire for continuity to ground. Ensure detonation sensor wire is not routed near spark plug wires or high-output electrical accessories. Discard any knock sensor which has been dropped or undergone shocks.

DETONATION SENSOR LOCATION TABLE

Application	Location
Altima & 240SX	On Right Side Of Cylinder Block, Below Intake Manifold
Maxima	
VG30E Engine	On Oil Filter Side Of Cylinder Block, Below Exhaust Manifold
VE30DE Engine	On Top Of Cylinder Block
NX & Sentra (2.0L)	On Intake Side Of Cylinder Block
Pathfinder, Pickup (3.0L) & Quest	On Top Of Cylinder Block
300ZX	On Top Of Cylinder Block

Engine (Coolant) Temperature Sensor

Faults in engine (coolant) temperature sensor circuit may set Code 13. To test system, see CODE 13 diagnostic procedures in appropriate G - TESTS W/ CODES article.

To test sensor, disconnect sensor connector. See ENGINE (COOLANT) TEMPERATURE SENSOR LOCATION table. Measure resistance across sensor connector terminals. If resistance is not as specified in ENGINE (COOLANT) TEMPERATURE SENSOR RESISTANCE table, replace sensor.

ENGINE (COOLANT) TEMPERATURE SENSOR LOCATION TABLE

Application	Location
Altima	At Right Rear Corner Of Cylinder Head
Maxima	

VG30E Engine	.....	On Coolant Inlet Housing
VE30DE Engine	.....	On Intake Manifold, At Flywheel-End Of Left Cylinder Head
NX & Sentra		
1.6L	.....	On Intake Manifold, At Timing Chain End Of Engine
2.0L	.....	At Front Of Engine, Above Oil Filter
Pathfinder & Pickup	.....	On Coolant Outlet Housing
Quest	.....	On Coolant Inlet Housing
240SX	.....	At Right Front End Of Cylinder Head
300ZX	.....	On Coolant Inlet Housing

ENGINE (COOLANT) TEMPERATURE SENSOR RESISTANCE TABLE

Temperature °F (°C)	Ohms
68 (20)	2100-2900
122 (50)	680-1000
176 (80)	300-330

NOTE: Oxygen sensor with a heater element is identified by 3-wire connector.

Oxygen Sensor (O2)

Faults in oxygen sensor circuit may set Code 33 (and/or Code 53 on 300ZX). To test system, see CODE 33 (and/or CODE 53) diagnostic procedures in G - TESTS W/ CODES article.

To test HEATER element of Heated Oxygen Sensor (HO2S), check resistance between outer 2 terminals of 3-wire connector. If resistance is not 3-1000 ohms, replace sensor.

Exhaust Gas Temperature Sensor (California)

Faults in exhaust gas temperature sensor circuit may set Code 35. To test system, see CODE 35 diagnostic procedures in appropriate G - TESTS W/ CODES article.

To test sensor, place sensor in boiling water at 212°F (100°C). Resistance at 212°F (100°C) should be 76,770-93,830 ohms. As temperature increases, sensor resistance should decrease. If resistance is not as specified, replace sensor.

Fuel Temperature Sensor (300ZX)

Faults in fuel temperature sensor circuit may set Code 42. To test system, see CODE 42 diagnostic procedures in G - TESTS W/ CODES article.

To test sensor, disconnect sensor connector. Sensor is on top center of engine, left of centerline. Measure resistance between sensor connector terminal and ground. See FUEL TEMPERATURE SENSOR RESISTANCE table. If resistance is not as specified, replace sensor.

FUEL TEMPERATURE SENSOR RESISTANCE TABLE (1)

Temperature °F (°C)	Ohms
68 (20)	2100-2900
122 (50)	680-1000
176 (80)	300-330

(1) - Measure resistance between sensor terminals.

Closed Throttle Position Switch System Test (Maxima VG30E)

1) Turn ignition on. Perform MODE IV (Switch Check) under DUAL LED SYSTEM in G - TESTS W/ CODES article. Red LED on ECM should turn on and off as accelerator pedal is depressed and released. If Red LED does not function as described, go to next step. If Red LED functions as described, system is functioning properly.

2) Turn ignition off. Disconnect and inspect closed throttle position switch harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary.

3) Check continuity of Green/Red wire between ECM terminal No. 54 and closed throttle position switch harness connector. Continuity should exist. Check continuity of Green/Yellow wire between ECM terminal No. 57 and closed throttle position switch harness connector. Continuity should exist.

4) If continuity does not exist, repair harness or connectors as necessary. If continuity exists, check closed throttle position switch for proper installation. See C - SPECIFICATIONS article. If switch is installed properly, test switch. See CLOSED THROTTLE POSITION SWITCH TEST under ENGINE SENSORS & SWITCHES.

Closed Throttle Position Switch System Test (Maxima VE30DE)

1) Start engine. Measure voltage between ECM terminal No. 54 (Green/Orange wire) and ground. Depress accelerator pedal. Voltage should be approximately zero volts. Release accelerator pedal. Battery voltage should be present. If voltage is not as specified, go to next step. If is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect closed throttle position switch harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between Green/Orange wire and ground. Continuity should exist. If continuity does not exist, repair harness or connector as necessary. If continuity exists, check closed throttle position switch for proper installation. See C - SPECIFICATIONS article. If switch is installed properly, test switch. See CLOSED THROTTLE POSITION SWITCH TEST under ENGINE SENSORS & SWITCHES. If switch is okay, inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary.

Closed Throttle Position Switch System Test
(Pathfinder & Pickup VG30E)

1) Turn ignition off. Disconnect and inspect closed throttle position switch harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Turn ignition on. Measure voltage between Pink wire and ground. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, repair harness or connector as necessary.

2) Turn ignition off. Check continuity between Blue/Yellow wire and ground. Continuity should exist. If continuity does not exist, repair harness or connector as necessary. If continuity exists, check closed throttle position switch for proper installation. See C - SPECIFICATIONS article. If switch is installed properly, test switch. See CLOSED THROTTLE POSITION SWITCH TEST under ENGINE SENSORS & SWITCHES. If switch is okay, inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary.

Closed Throttle Position Switch System Test (Quest)

1) Start engine. Measure voltage between ECM terminal No. 33 (Brown/Yellow wire) and ground. Depress accelerator pedal. Voltage should be approximately zero volts. Release accelerator pedal. Voltage

should be 8-10 volts. If voltage is not as specified, go to next step. If is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect closed throttle position switch harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Turn ignition on. Measure voltage between Brown/Yellow wire. Voltage should be 8-10 volts. If voltage is as specified, go to next step. If voltage is not as specified, repair harness or connectors as necessary.

3) Turn ignition off. Check continuity between Red/Yellow wire and ground. Continuity should exist. If continuity does not exist, repair harness or connector as necessary. If continuity exists, check closed throttle position switch for proper installation. See C - SPECIFICATIONS article. If switch is installed properly, test switch. See CLOSED THROTTLE POSITION SWITCH TEST under ENGINE SENSORS & SWITCHES. If switch is okay, inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary.

Closed Throttle Position Switch System Test (300ZX)

1) Turn ignition on. Measure voltage between ECM terminal No. 54 (Light Green/Red wire) and ground. Depress accelerator. Voltage should be approximately zero volts. Release accelerator pedal. Voltage should be 9-10 volts. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect closed throttle position switch harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary.

3) Check continuity of Light Green/Red wire between ECM terminal No. 54 and closed throttle position switch harness connector. Continuity should exist. Check continuity of Green/Red wire between ECM terminal No. 57 and closed throttle position switch harness connector. Continuity should exist.

4) If continuity does not exist, repair harness or connectors as necessary. If continuity exists, check closed throttle position switch for proper installation. See C - SPECIFICATIONS article. If switch is installed properly, test switch. See CLOSED THROTTLE POSITION SWITCH TEST under ENGINE SENSORS & SWITCHES.

Closed Throttle Position Switch Test

Check continuity between specified wire terminals of switch connector. See CLOSED THROTTLE POSITION SWITCH TEST table. There should be continuity with throttle valve fully closed, and no continuity with throttle valve off idle position. If continuity is not as specified, adjust switch. See C - SPECIFICATIONS article. If switch is adjusted properly, replace switch.

CLOSED THROTTLE POSITION SWITCH TEST TABLE

Application	Wire Colors
Maxima	
VG30E Engine	Green/Red & Green/Yellow
VE30DE Engine	Green/Orange & Gray/Blue
Pathfinder & Pickup (3.0L)	Blue/Yellow & Pink
Quest	Red/Yellow & Brown/Yellow
300ZX	Green/Red & Light Green/Red

Inhibitor Switch System Test (Altima)

1) Ensure inhibitor switch functions properly. See INHIBITOR SWITCH TEST (ALTIMA, NX 2.0L, SENTRA 2.0L, QUEST & 240SX). Disconnect

and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Turn ignition on. Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and ground. Move shift lever through gears. Continuity should exist ONLY in Park and Neutral. If continuity is not as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Turn ignition off. Disconnect inhibitor relay. Relay is located in relay box next to battery. Place shift lever in Neutral or Park. Turn ignition on. Measure voltage between inhibitor relay connector terminal No. 1 and ground. For terminal identification, see Fig. 3. Battery voltage should be present. If battery voltage is present, go to step 5). If battery voltage is not present, go to next step.

3) Turn ignition off. Disconnect and inspect inhibitor switch 8-pin harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Connector is located on side of transaxle. Turn ignition on. Measure voltage between inhibitor switch 8-pin harness connector terminal No. 3 and ground. For terminal identification, see Fig. 3. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check harness and connectors for open. Also check 10-amp fuse. Repair as necessary.

4) Turn ignition off. Check continuity between inhibitor relay connector No. 1 and inhibitor switch 8-pin harness connector terminal No. 6. Check continuity between inhibitor relay connector No. 1 and inhibitor switch 8-pin harness connector terminal No. 4. For terminal identification, see Fig. 3. Continuity should exist in both checks. If continuity does not exist, check harness and connectors for open. Repair as necessary. If continuity exists, check inhibitor switch. See INHIBITOR SWITCH TEST (ALTIMA, NX 2.0L, SENTRA 2.0L, QUEST & 240SX).

5) Turn ignition off. On vehicles equipped with cruise control, check continuity between inhibitor relay connector No. 2 and ground. Check continuity between inhibitor relay connector No. 7 and ground. On vehicles without cruise control, check continuity between inhibitor relay connector No. 2 and ground. Check continuity between inhibitor relay connector No. 5 and ground. For terminal identification, see Fig. 3. Continuity should exist in all checks. If continuity does not exist in any check, repair open in harness or connectors. If continuity exists in all checks, go to next step.

6) On vehicles equipped with cruise control, check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and inhibitor relay connector No. 6. On vehicles without cruise control, check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and inhibitor relay connector No. 3. For terminal identification, see Fig. 3. Continuity should exist in all checks. If continuity does not exist in any check, repair open in harness or connectors. If continuity exists in all checks, check inhibitor relay. See RELAYS under RELAYS & SOLENOIDS.

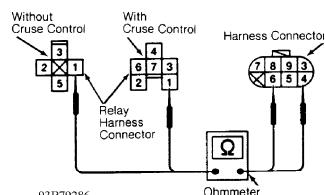


Fig. 4: Inhibitor Relay Connector & Switch Harness Connector Terminal ID (Altima)
Courtesy of Nissan Motor Co., U.S.A.

Inhibitor Switch Test (Altima, NX 2.0L, Sentra 2.0L, Quest

& 240SX)

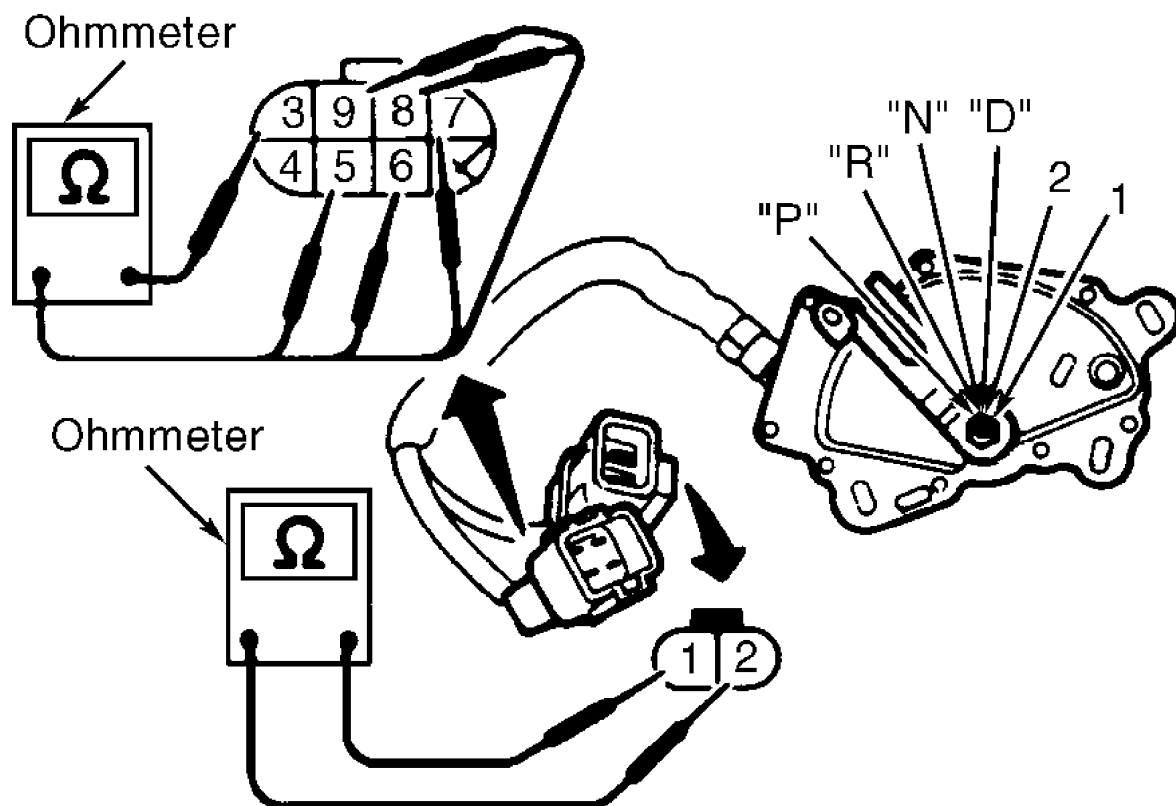
1) Disconnect and inspect inhibitor switch 8-pin and 2-pin harness connectors for pushed-out, bent, damaged or corroded terminals. Repair connector(s) as necessary. Connectors are located on side of transmission. Check continuity across terminals of inhibitor switch 2-pin connector. Continuity should exist ONLY in Park and Neutral. If continuity exists in any other position, replace inhibitor switch.

2) Using INHIBITOR SWITCH CONTINUITY (ALTIMA, NX 2.0L, SENTRA 2.0L, QUEST & 240SX) table, place shift lever in indicated position. Check continuity between terminals of inhibitor switch 8-pin connector listed in table. See Fig. 5. If switch does not function as indicated, replace switch.

INHIBITOR SWITCH CONTINUITY TABLE

(ALTIMA, NX 2.0L, SENTRA 2.0L, QUEST & 240SX)

Lever Position	Terminals No.
"P"	3 & 4
"R"	3 & 5
"N"	3 & 6
"D"	3 & 7
"2"	3 & 8
"1"	3 & 9



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Fig. 5: Inhibitor Switch Connector Terminal ID (Altima, NX & Sentra 2.0L, Quest & 240SX)

Courtesy of Nissan Motor Co., U.S.A.

1) Turn ignition off. Disconnect and inspect inhibitor switch 4-pin (contains Green/Black and Brown wires) harness connectors for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Connector is located at right top of bellhousing. Turn ignition on. Measure voltage between Green/Black wire of inhibitor switch 4-pin connector and ground. Battery voltage should be present.

2) If battery voltage is present, go to next step. If battery voltage is not present, turn ignition off. Check continuity between Green/Black wire of inhibitor switch harness connector and device side of 10-amp ENG CONT fuse. Continuity should exist. If continuity does not exist, check harness and connectors for open. Repair as necessary.

3) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 44 (Brown wire) and Brown wire of inhibitor switch 4-pin connector. Continuity should exist. If continuity does not exist, check harness and connectors for open. Repair as necessary. If continuity exists, check inhibitor switch. See INHIBITOR SWITCH TEST (MAXIMA VG30E).

Inhibitor Switch Test (Maxima VG30E)

Disconnect and inspect inhibitor switch 4-pin (contains Green/Black and Brown wires) harness connectors for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Connector is located at top right of bellhousing. Check continuity between Green/Black wire and Brown wire of inhibitor switch 4-pin connector. Continuity should exist ONLY in Park and Neutral. If continuity exists in any other position, replace inhibitor switch.

Inhibitor Switch Test (Maxima VE30DE, Pickup & 300ZX)

Disconnect and inspect inhibitor switch 8-pin harness connectors for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Connector is located on top of transaxle (Maxima) or on right side of engine (Pickup) or on left side of transmission (300ZX). Using INHIBITOR SWITCH CONTINUITY (MAXIMA VE30DE, PICKUP & 300ZX) table, check continuity between indicated pins of inhibitor switch 8-pin connector. See Fig. 6. If continuity does not exist as indicated, replace switch.

INHIBITOR SWITCH CONTINUITY TABLE (MAXIMA VE30DE, PICKUP & 300ZX)

Position	Terminals	Continuity
"P"	"A" & "B"	Yes
P	"A" & "F"	No
"N"	"A" & "B"	No
N	"A" & "F"	Yes
All Others	"A" & "B"	No
N	"A" & "F"	No

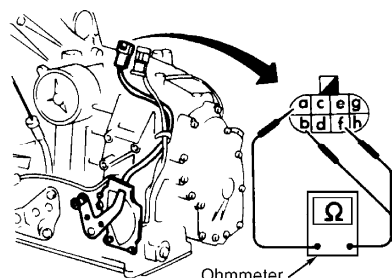


Fig. 6: Inhibitor Switch Connector Terminal ID (Maxima VE30DE Shown; Pickup & 300ZX Similar)

Courtesy of Nissan Motor Co., U.S.A.

Inhibitor Switch System Test (NX 1.6L & Sentra 1.6L)

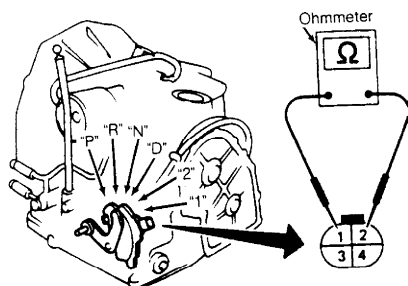
1) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and ground. Move shift lever through gears. Continuity should exist only in Neutral and Park. If continuity exists as specified, go to next step. If continuity does not exist as specified, check harness and connectors for open. Repair as necessary.

2) Disconnect and inspect inhibitor switch 4-pin harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Connector is located side of transaxle. Check continuity between Black wire of inhibitor switch 4-pin harness connector and ground. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, check harness and connectors for open. Repair as necessary.

3) Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and Brown/White wire of inhibitor switch 4-pin harness connector. Continuity should exist. If continuity exists, check inhibitor switch. See INHIBITOR SWITCH TEST (NX 1.6L & SENTRA 1.6L). If continuity does not exist, check harness and connectors for open.

Inhibitor Switch Test (NX 1.6L & Sentra 1.6L)

Disconnect and inspect inhibitor switch 4-pin harness connectors for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Connector is located side of transaxle. Check continuity between inhibitor switch connector terminals No. 1 and 2. See Fig. 7. Continuity should exist ONLY in Park and Neutral. If continuity exists in any other position, replace inhibitor switch.



93B79385

Fig. 7: Inhibitor Switch Connector Terminal ID (NX 1.6L & Sentra 1.6L)

Courtesy of Nissan Motor Co., U.S.A.

Inhibitor Switch System Test (NX 2.0L & Sentra 2.0L)

1) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Turn ignition on. Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and ground. Move shift lever through gears. Continuity should exist ONLY in Park and Neutral. If continuity is not as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Turn ignition off. Disconnect inhibitor relay. Relay is located in relay box next to battery. Place shift lever in Neutral or Park. Turn ignition on. Measure voltage between inhibitor relay connector terminal No. 1 and ground. See Fig. 8. Battery voltage should be present. If battery voltage is present, go to step 5). If battery voltage is not present, go to next step.

3) Turn ignition off. Disconnect and inspect inhibitor switch

8-pin harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Connector is located on side of transaxle. Turn ignition on. Measure voltage between inhibitor switch 8-pin harness connector terminal "D" and ground. For terminal identification, see Fig. 8. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check harness and connectors for open. Also check 10-amp fuse. Repair as necessary.

4) Turn ignition off. Check continuity between inhibitor relay connector No. 1 and inhibitor switch 8-pin harness connector terminal "F". Check continuity between inhibitor relay connector No. 1 and inhibitor switch 8-pin harness connector terminal "H". For terminal identification, see Fig. 8. Continuity should exist in both checks. If continuity does not exist, check harness and connectors for open. Repair as necessary. If continuity exists, check inhibitor switch. See INHIBITOR SWITCH TEST (ALTIMA, NX 2.0L, SENTRA 2.0L, QUEST & 240SX).

5) Turn ignition off. Check continuity between inhibitor relay connector No. 2 and ground. Check continuity between inhibitor relay connector No. 6 and ground. For terminal identification, see Fig. 8. Continuity should exist in all checks. If continuity does not exist in any check, repair open in harness or connectors. If continuity exists in all checks, go to next step.

6) Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and inhibitor relay connector No. 7. For terminal identification, see Fig. 8. Continuity should exist. If continuity does not exist, repair open in harness or connectors. If continuity exists, check inhibitor relay. See RELAYS under RELAYS & SOLENOIDS.

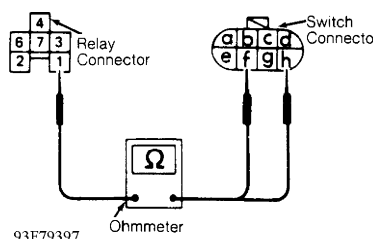


Fig. 8: Inhibitor Relay Connector & Switch Harness Connector
Terminal ID (NX 2.0L & Sentra 2.0L)
Courtesy of Nissan Motor Co., U.S.A.

Inhibitor Switch System Test (Pickup)

1) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Turn ignition on. Check continuity between ECM harness connector terminal No. 35 (Blue/Black wire) and ground. Move shift lever through gears. Continuity should exist ONLY in Park and Neutral. If continuity is not as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Turn ignition off. Disconnect inhibitor relay. Relay is located on left fender panel near activated carbon canister. Place shift lever in Neutral or Park. Turn ignition on. Measure voltage between inhibitor relay connector terminal No. 2 and ground. For terminal identification, see Fig. 9. Battery voltage should be present. If battery voltage is present, go to step 5). If battery voltage is not present, go to next step.

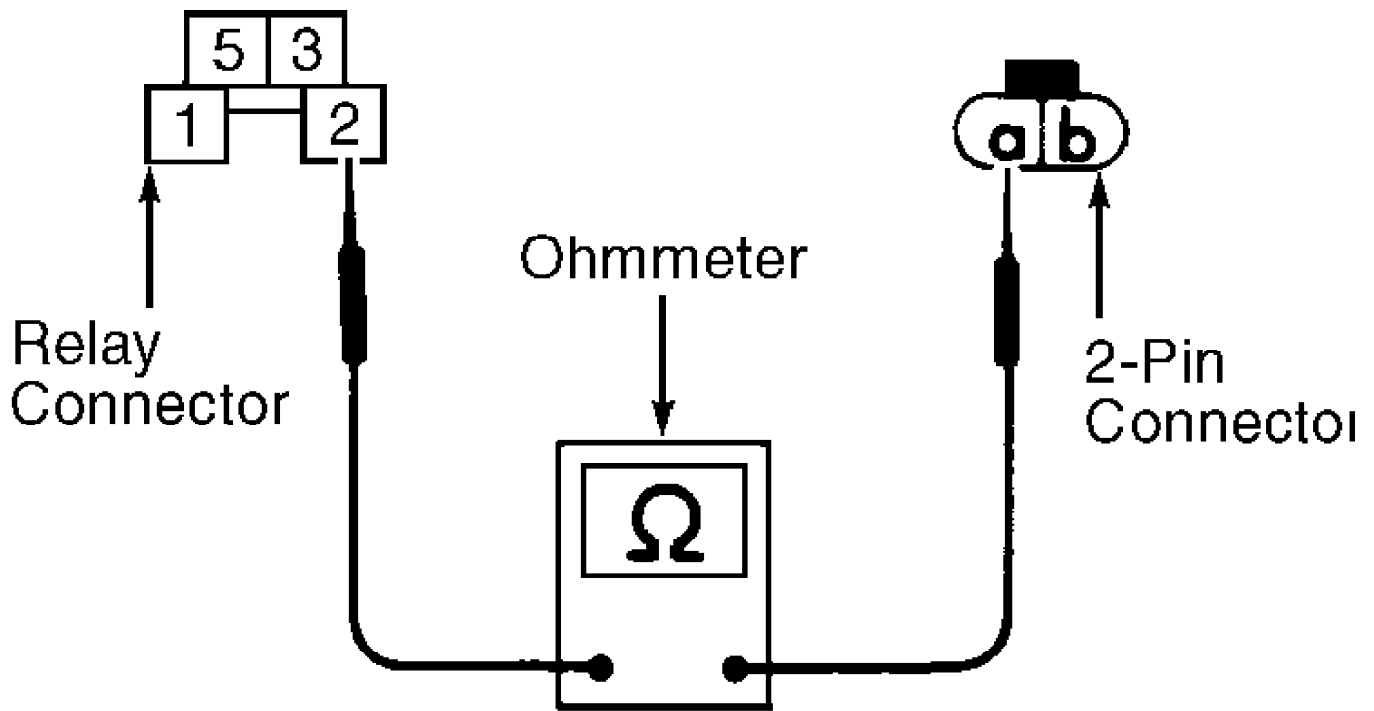
3) Turn ignition off. Disconnect and inspect inhibitor switch 2-pin harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Connector is located on side of transmission. Turn ignition on. Measure voltage between inhibitor switch 2-pin harness connector White/Black wire and ground. Battery voltage should be present. If battery voltage is present, go to next

step. If battery voltage is not present, check harness and connectors for open. Also check 10-amp fuse. Repair as necessary.

4) Turn ignition off. Check continuity between inhibitor relay connector No. 2 and inhibitor switch 2-pin harness connector Yellow wire. Continuity should exist. If continuity does not exist, check harness and connectors for open. Repair as necessary. If continuity exists, check inhibitor switch. See INHIBITOR SWITCH TEST (MAXIMA VE30DE, PICKUP & 300ZX).

5) Turn ignition off. Check continuity between inhibitor relay connector No. 1 and ground. Check continuity between inhibitor relay connector No. 5 and ground. For terminal identification, see Fig. 9. Continuity should exist in all checks. If continuity does not exist in any check, repair open in harness or connectors. If continuity exists in all checks, go to next step.

6) Check continuity between ECM harness connector terminal No. 35 (Blue/Black wire) and inhibitor relay connector No. 3. For terminal identification, see Fig. 9. Continuity should exist. If continuity does not exist, repair open in harness or connectors. If continuity exists, check inhibitor relay. See RELAYS under RELAYS & SOLENOIDS.



93H79407

Fig. 9: Inhibitor Relay Connector Terminal ID (Pickup)
Courtesy of Nissan Motor Co., U.S.A.

Inhibitor Switch System Test (240SX)

1) Ensure inhibitor switch functions properly. See INHIBITOR SWITCH TEST (ALTIMA, NX 2.0L, SENTRA 2.0L, QUEST & 240SX). Ensure ignition is off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Turn ignition on. Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and ground. Move shift lever through gears. Continuity should exist ONLY in Park and Neutral. If continuity is not as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect A/T control

harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and A/T control unit harness connector terminal No. 13 (Green/Orange wire). Continuity should exist. If continuity does not exist, repair open in Green/Orange wire. If continuity does not exist, recheck ECM and A/T control unit harness connectors and repair as necessary.

Inhibitor Switch System Test (300ZX)

1) Turn ignition on. Check voltage between ECM harness connector terminal No. 44 (Yellow/Blue wire) and ground. Move shift lever through gears. Zero volts should be present in Neutral and Park positions, and 8-9 volts should be present in all other positions. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Disconnect and inspect A/T control unit harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary.

3) Check continuity of Yellow/Blue wire between ECM harness connector terminal No. 44 and A/T control unit harness connector terminal No. 13. Continuity should exist. If continuity exists, check inhibitor switch. See INHIBITOR SWITCH TEST (MAXIMA VE30DE, PICKUP & 300ZX). If continuity does not exist, repair open in Yellow/Blue wire or connectors.

Neutral Position Switch System Test (Altima)

1) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and ground. Move shift lever through gears. Continuity should exist ONLY in Neutral. If continuity is not as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect Neutral position switch 4-pin harness connector for pushed-out, bent, damaged or corroded terminals. Connector is located on top of transaxle. Repair connector as necessary. Check continuity between Black wire of Neutral position switch 4-pin harness connector and ground. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire or connectors.

3) Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and Green/Orange wire of Neutral position switch 4-pin harness connector. Continuity should exist. If continuity exists, check Neutral position switch. See NEUTRAL POSITION SWITCH TEST (ALTIMA). If continuity does not exist, check harness and connectors for open. Repair as necessary.

Neutral Position Switch Test (Altima)

Disconnect Neutral position switch 4-pin harness connector located on top of transaxle. Check continuity between Green/Orange wire and Black wire of Neutral position switch 4-pin connector. Continuity should exist with transaxle in Neutral. Continuity should not exist in any other position. If Neutral position switch does not function as described, replace switch.

Neutral Position Switch System Test (Maxima VE30DE)

1) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 44 (Brown wire) and ground. Move shift lever through gears. Continuity should exist ONLY in Neutral. If continuity is not

as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect Neutral position switch 4-pin harness connector for pushed-out, bent, damaged or corroded terminals. Connector is located on top of transaxle. Repair connector as necessary. Check continuity between Black wire of Neutral position switch 4-pin harness connector and ground. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire or connectors.

3) Check continuity between ECM harness connector terminal No. 44 (Brown wire) and Brown wire of Neutral position switch 4-pin harness connector. Continuity should exist. If continuity exists, check Neutral position switch. See NEUTRAL POSITION SWITCH TEST (MAXIMA VE30DE). If continuity does not exist, check harness and connectors for open. Repair as necessary.

Neutral Position Signal (A/T Control Unit) Test (Maxima VE30DE & Quest)

1) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. On Maxima VE30DE, check continuity between ECM harness connector terminal No. 44 (Brown wire) and ground. On Quest, check continuity between ECM harness connector terminal No. 35 (Green/Black wire) and ground. On all models, move shift lever through gears. Continuity should exist ONLY in Neutral and Park. If continuity is not as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Disconnect and inspect A/T control unit harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. On Maxima VE30DE, check continuity of Brown wire between ECM harness connector terminal No. 44 and A/T control unit harness connector terminal No. 44. On Quest, check continuity of Green/Black wire between ECM harness connector terminal No. 35 and A/T control unit harness connector terminal No. 13. On all models, continuity should exist.

3) If continuity exists, check A/T control unit. See appropriate TRANSMISSION SERVICE & REPAIR article. Also check inhibitor switch. On Maxima VE30DE, see INHIBITOR SWITCH TEST (MAXIMA VE30DE, PICKUP & 300ZX). On Quest, see INHIBITOR SWITCH TEST (ALTIMA, NX 2.0L, SENTRA 2.0L, QUEST & 240SX). On all models, if continuity does not exist, check harness and connectors for open. Repair as necessary.

Neutral Position Switch Test (Maxima VE30DE)

Disconnect Neutral position switch 4-pin harness connector located on top of transaxle. Check continuity between Brown wire and Black wire of Neutral position switch 4-pin connector. Continuity should exist with transaxle in Neutral. Continuity should not exist in any other position. If Neutral position switch does not function as described, replace switch.

Neutral Position Switch System Test (NX & Sentra)

1) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and ground. Move shift lever through gears. Continuity should exist ONLY in Neutral. If continuity is not as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect Neutral position switch 2-pin harness connector for pushed-out, bent, damaged or corroded terminals. Connector is located on top of transaxle. Repair connector as necessary. Check continuity between Black wire of Neutral

position switch 2-pin harness connector and ground. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire or connectors.

3) Check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and Green/Orange wire of Neutral position switch 2-pin harness connector. Continuity should exist. If continuity exists, check Neutral position switch. See NEUTRAL POSITION SWITCH TEST (NX & SENTRA). If continuity does not exist, check harness and connectors for open. Repair as necessary.

Neutral Position Switch Test (NX & Sentra)

Disconnect Neutral position switch 2-pin harness connector located on top of transaxle. Check continuity between Neutral position switch 2-pin connector terminals. Continuity should exist with transaxle in Neutral. Continuity should not exist in any other position. If Neutral position switch does not function as described, replace switch.

Neutral Position Switch System Test (Pickup & 240SX)

1) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. On Pickup, check continuity between ECM harness connector terminal No. 35 (Blue/Black wire) and ground. On 240SX, check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and ground. On all models, move shift lever through gears. Continuity should exist ONLY in Neutral. If continuity is not as specified, go to next step. If continuity is as specified, system is functioning properly.

2) Disconnect and inspect Neutral position switch 2-pin harness connector for pushed-out, bent, damaged or corroded terminals. Connector is located on transmission tailshaft housing. Repair connector as necessary. Check continuity between Black wire of Neutral position switch 2-pin harness connector and ground. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire or connectors.

3) On Pickup, check continuity between ECM harness connector terminal No. 35 (Blue/Black wire) and Blue/Black wire of Neutral position switch 2-pin harness connector. On 240SX, check continuity between ECM harness connector terminal No. 35 (Green/Orange wire) and Green/Orange wire of Neutral position switch 2-pin harness connector. On all models, continuity should exist. If continuity exists, check Neutral position switch. See NEUTRAL POSITION SWITCH TEST (PICKUP, 240SX & 300ZX). If continuity does not exist, check harness and connectors for open. Repair as necessary.

Neutral Position Switch Test (Pickup, 240SX & 300ZX)

Disconnect Neutral position switch 2-pin harness connector located on top of transmission tailshaft housing. Check continuity between Neutral position switch 2-pin connector terminals. Continuity should exist with transmission in Neutral. Continuity should not exist in any other position. If Neutral position switch does not function as described, replace switch.

Neutral Position Switch System Test (300ZX)

1) Turn ignition on. Check voltage between ECM harness connector terminal No. 44 (Yellow/Blue wire) and ground. Move shift lever through gears. Zero volts should be present in Neutral and 8-9 volts should be present in all other positions. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Disconnect and inspect Neutral position

harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary.

3) Check continuity of Yellow/Blue wire between ECM harness connector terminal No. 44 and Neutral position switch harness connector. Continuity should exist. If continuity exists, check Neutral position switch. See NEUTRAL POSITION SWITCH TEST (PICKUP, 240SX & 300ZX). If continuity does not exist, repair open in Yellow/Blue wire or connectors.

Power Steering Pressure Switch System Test (Altima, NX, Sentra, Pickup 2.4L & 240SX)

1) Start engine and bring to operating temperature. Measure voltage between ECM harness connector terminal No. 43 and ground. For wire color, see ECM CONNECTOR TERMINAL NO. 43 WIRE COLOR table. Turn steering wheel quickly; approximately zero volts should be present. When steering wheel is not being turned, 7-9 volts should be present. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect power steering pressure switch harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between power steering pressure switch harness connector Black wire and ground. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire or connectors.

3) Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 43 and appropriate wire at power steering pressure switch harness connector. Continuity should exist. If continuity exists, check power steering pressure switch. See POWER STEERING PRESSURE SWITCH TEST. If continuity does not exist, repair open in appropriate wire or connectors.

ECM CONNECTOR TERMINAL NO. 43 WIRE COLOR TABLE

Model	Wire Color
Altima	Green/Yellow
NX & Sentra	Light Green/Black
Pickup 2.4L	Green
240SX	Brown

Power Steering Pressure Switch System Test (Maxima & 300ZX)

1) Start engine and bring to operating temperature. Measure voltage between ECM harness connector terminal No. 34 (Green wire) and ground. Turn steering wheel quickly; approximately zero volts should be present. When steering wheel is not being turned, 4-6 volts (Maxima) or 8-9 volts (300ZX) should be present. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect power steering pressure switch harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between power steering pressure switch harness connector Black wire and ground. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire or connectors.

3) Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 34 (Green wire) and power steering pressure switch harness connector

Green wire. Continuity should exist. If continuity exists, check power steering pressure switch. See POWER STEERING PRESSURE SWITCH TEST. If continuity does not exist, repair open in Green wire or connectors.

Power Steering Pressure Switch System Test (Pathfinder, Pickup 3.0L & Quest)

1) Start engine and bring to operating temperature. Measure voltage between ECM harness connector terminal No. 12 and ground. For wire color, see ECM CONNECTOR TERMINAL NO. 12 WIRE COLOR table. Turn steering wheel quickly; 0-2 volts should be present. When steering wheel is not being turned, 4.8-4.9 volts should be present. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect and inspect power steering pressure switch harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between power steering pressure switch harness connector Black wire and ground. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire or connectors.

3) Disconnect and inspect ECM harness connector for pushed-out, bent, damaged or corroded terminals. Repair connector as necessary. Check continuity between ECM harness connector terminal No. 12 and appropriate wire of power steering pressure switch harness connector. Continuity should exist. If continuity exists, check power steering pressure switch. See POWER STEERING PRESSURE SWITCH TEST. If continuity does not exist, repair open in appropriate wire or connectors.

ECM CONNECTOR TERMINAL NO. 12 WIRE COLOR TABLE

Model	Wire Color
Pathfinder & Pickup 3.0L	Red/Black
Quest	Pink

Power Steering Pressure Switch Test

Disconnect switch connector. Switch is attached to power steering high pressure hose. Check resistance between switch connector terminals. On 300ZX, replace switch if resistance is not 2-3 ohms. On all others, start engine. Replace switch if continuity is not as specified in POWER STEERING PRESSURE SWITCH (EXCEPT 300ZX) table.

POWER STEERING PRESSURE SWITCH TABLE (EXCEPT 300ZX)

Condition	Continuity
Steering Unloaded (Not Turning Steering Wheel)	No
Steering Loaded (Turning Steering Wheel)	Yes

NOTE: On Maxima, Pathfinder, Pickup 3.0L and 300ZX, perform Throttle Position Sensor (TPS) test at connector farthest from TPS, not at connector which terminates directly at TPS.

Throttle Position Sensor (TPS)

Faults in TPS circuit may set Code 43. To test system, see CODE 43 diagnostic procedures in G - TESTS W/ CODES article.

1) To test TPS, disconnect TPS connector. TPS is mounted on side of throttle body. While opening and closing throttle, check resistance across specified wire terminals of TPS connector. See THROTTLE POSITION SENSOR RESISTANCE TEST table. If resistance value

does not change smoothly, replace TPS.

2) If resistance is not as specified, check harness. If harness is okay, adjust TPS. See D - ADJUSTMENTS article. If resistance is still not as specified after adjustment, replace TPS.

THROTTLE POSITION SENSOR RESISTANCE TEST TABLE

Application	Terminals (Wire Colors)	Ohms
Altima	Black & White	2.0-10.0
Maxima		
VG30E Engine	Black & White	1.0-9.0
VE30DE Engine	Black/White & White	1.0-9.0
NX & Sentra		
1.6L	Gray & White	0.5-4.0
2.0L	Black & White	1.0-10.0
Pathfinder & Pickup		
2.4L	Black/Green & White	(1)
3.0L	Black & White	1.0-9.0
Quest	White/Black & Red	1.0-9.0
240SX	Black & White	2.0-10.0
300ZX	Black & White	1.0-9.0

(1) - Specification is not available from manufacturer.
Ensure resistance value changes when opening & closing throttle.

Vehicle Speed Sensor (Altima, Maxima, NX, Sentra, Quest, 240SX & 300ZX)

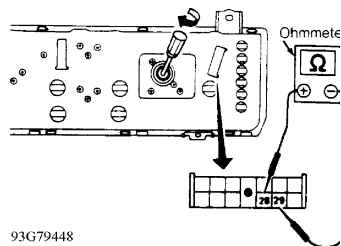
Faults in vehicle speed sensor circuit may set Code 14. To test system, see CODE 14 diagnostic procedures in G - TESTS W/ CODES article.

To test sensor, remove vehicle speed sensor from transmission. While rotating sensor shaft by hand, check AC voltage across sensor connector terminals. If about .5 volt AC is not present, replace sensor.

Vehicle Speed Sensor (Pathfinder & Pickup)

Faults in vehicle speed sensor circuit may set Code 14. To test system, see CODE 14 diagnostic procedures in G - TESTS W/ CODES article.

To test sensor, remove instrument cluster (sensor is a reed switch inside cluster). While slowly rotating speedometer drive receptacle, check continuity between terminals of instrument cluster connector. See Fig. 10. If continuity does not exist twice for each revolution, replace speedometer assembly.



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Fig. 10: Testing Vehicle Speed Sensor (Pathfinder & Pickup)
Courtesy of Nissan Motor Co., U.S.A.

RELAYS & SOLENOIDS

RELAYS

A variety of relays are used and can be tested 2 different ways. The following relays can be tested using an ohmmeter and remotely supplied power and ground circuits:

- * Electronic Control Module (ECM or ECCS) relay.
- * Fuel pump relay.
- * Main relay.
- * Radiator/condenser (cooling) fan relay.
- * Mixture heater relay.
- * Neutral/inhibitor relay.

Safety relays can be tested using an ohmmeter, voltmeter and remotely supplied power and ground circuits. All testing procedures require proper identification of relay internals. See WIRING DIAGRAMS article.

Except Safety Relay

Turn ignition on. Ensure power to relay exists. Turn ignition off. Disconnect connector from relay being tested. Using ohmmeter, check for relay winding continuity across appropriate relay terminals. See WIRING DIAGRAMS article to identify proper relay terminals (wire colors) for testing. Energize relay and check continuity of relay output circuit.

* EXAMPLE: Maxima Fuel Pump Relay

1) Turn ignition on. Ensure battery voltage exists at Blue wire of fuel pump relay. See Fig. 11. If battery voltage is not present at Blue wire, check for a blown 10-amp power fuse or an open circuit between fuse and relay.

2) Turn ignition off. Unplug fuel pump relay. Check for continuity across Blue wire and Blue/White wire terminals. If continuity does not exist, relay is defective. If continuity exists, connect ohmmeter leads across Orange wire and Black wire terminals. Energize relay by applying battery voltage to Blue wire terminal and ground to Blue/White wire terminal. Ensure continuity exists while relay is energized.

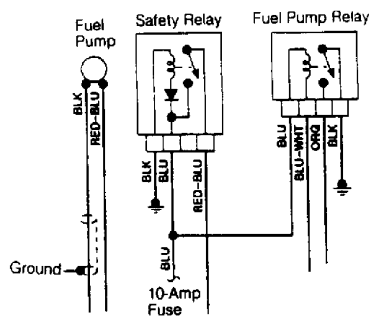


Fig. 11: Testing Maxima Fuel Pump & Safety Relays
Courtesy of Nissan Motor Co., U.S.A.

Safety Relay

Turn ignition on and ensure power to relay exists. Turn ignition off. Disconnect safety relay connector. Using an ohmmeter, check one-way internal diode in safety relay by checking for continuity in both directions. Energize relay and check for voltage signal on relay output circuit.

* EXAMPLE: Maxima Safety Relay

1) Turn ignition on. Using a voltmeter, check for battery voltage at Blue wire of safety relay. See Fig. 11. If voltage is not present, check for blown 10-amp fuse or open circuit between fuse and relay.

2) Turn ignition off. Disconnect safety relay connector. Using ohmmeter, check for continuity across relay's Black wire and Blue wire terminals. Reverse ohmmeter leads. Continuity should only exist in one direction. Connect voltmeter positive lead to Red/Blue wire terminal. Connect negative voltmeter lead to Black wire terminal.

Apply battery voltage to Blue wire terminal and ground to Black wire terminal. Voltmeter should show battery voltage while relay is energized.

SOLENOIDS

Air Injection Valve Control Solenoid

See AIR INJECTION under EMISSION SYSTEMS & SUB-SYSTEMS.

EGR Control Solenoid

See EXHAUST GAS RECIRCULATION (EGR) under
EMISSION SYSTEMS & SUB-SYSTEMS.

Fast Idle Control Device (FICD) Solenoid

See FAST IDLE CONTROL DEVICE (FICD) under IDLE CONTROL SYSTEM

Power Valve Control Solenoid

See POWER VALVE under AIR INDUCTION SYSTEMS.

Pressure Regulator Vacuum Relief (PRVR) Control Solenoid

See FUEL DELIVERY under FUEL SYSTEM.

Swirl Control Valve Control Solenoid

See SWIRL CONTROL VALVE under AIR INDUCTION SYSTEMS.

Valve Timing Control (VTC) Solenoid System Test

(Maxima VE30DE)

1) Raise and support front of vehicle. Start engine. Place gear selector in any gear except Neutral (M/T) or Neutral or Park (A/T). Measure voltage between ground and ECM harness connector terminal No. 113 (Yellow/Green wire). See Figs. 1 and 2. ECM is located under center of instrument panel (connector is on driver's side). At idle, battery voltage should be present. Quickly depress and release accelerator pedal. Voltage should be 0.2-0.5 volt. If voltage is not as specified, go to step 3). If voltage is as specified, go to next step.

2) Stop engine. Connect jumper wire between ground and ECM harness connector terminal No. 113 (Yellow/Green wire). Start engine. Improper idle condition should occur. If improper idle condition occurs, system is functioning properly. If improper idle condition does not occur, check VTC solenoid. See VALVE TIMING CONTROL (VTC) SOLENOID TEST.

3) Disconnect both VTC solenoid harness connectors. VTC solenoids are located on flywheel end of each cylinder head. Turn ignition on. Measure voltage between ground and each VTC solenoid harness connector Red/Black wire. Battery voltage should be present.

If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse. Check harness continuity between VTC solenoids and fuse. Repair or replace as necessary.

4) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 113 (Yellow/Green wire) and each VTC harness connector Yellow/Green wire. Continuity should exist. If continuity exists, check VTC solenoid. See VALVE TIMING CONTROL (VTC) SOLENOID TEST. If solenoid is okay, check ECM and harness terminals for damage or corrosion. Repair as necessary. If continuity does not exist, repair open in Yellow/Green wire or connectors.

Valve Timing Control (VTC) Solenoid System Test (NX 1.6L & Sentra 1.6L)

1) Connect jumper wire between ground and ECM harness connector terminal No. 12 (Green/White wire). See Figs. 1 and 2. ECM is located under center of instrument panel. Start engine. Improper idle condition should occur. If improper idle condition occurs, system is functioning properly. If improper idle condition does not occur, go to next step.

2) Raise and support front of vehicle. Start engine. Place gear selector in any gear except Neutral (M/T) or Neutral or Park (A/T). Measure voltage between ground and ECM harness connector terminal No. 12 (Green/White wire). At idle, battery voltage should be present. Quickly depress and release accelerator pedal. Approximately zero volts should be present. If voltage is not as specified, check VTC solenoid. See VALVE TIMING CONTROL (VTC) SOLENOID TEST. If voltage is as specified, go to next step.

3) Turn ignition off. Disconnect VTC solenoid harness connector. VTC solenoid is located on cylinder head, right of intake manifold. Turn ignition on. Measure voltage between ground and VTC solenoid harness connector White/Green wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse. Check harness continuity between VTC solenoid and fuse. Repair or replace as necessary.

4) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 12 (Green/White wire) and VTC harness connector Green/White wire. Continuity should exist. If continuity exists, check VTC solenoid. See VALVE TIMING CONTROL (VTC) SOLENOID TEST. If solenoid is okay, check ECM and harness terminals for damage or corrosion. Repair as necessary. If continuity does not exist, repair open in Green/White wire or connectors.

Valve Timing Control (VTC) Solenoid System Test (300ZX)

1) Turn ignition on. Measure voltage between ground and each VTC solenoid harness connector Black/Red wire. VTC solenoids are located on flywheel end of each cylinder head. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Check Green fusible link, located in fusible link box near battery. Check 10-amp fuse in relay box, located at left front corner of engine compartment. Check harness continuity between VTC solenoids and ignition switch. Check harness continuity between ignition switch and battery positive terminal. If continuity does not exist, repair circuit as necessary.

3) Turn ignition off. Disconnect ECM harness connector. Disconnect VTC solenoid harness connectors. Check continuity between ECM harness connector terminal No. 113 (Green/Black wire) and VTC harness connector Green/Black wire. See Figs. 1 and 2. Continuity should exist. If continuity exists, check VTC solenoid. See VALVE TIMING CONTROL (VTC) SOLENOID TEST. If continuity does not exist, repair or replace harness or connectors as necessary.

Valve Timing Control (VTC) Solenoid Test

VTC solenoids are located on rear corner of each cylinder head. To test solenoid, apply battery voltage across solenoid terminals. Replace solenoid if it does not operate.

Wastegate Valve Control Solenoid System Test (300ZX Turbo)

1) Turn ignition on. Measure voltage between ground and each wastegate valve control solenoid harness connector Black/Red wire. Solenoids are located below right and left intake manifold collector. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Turn ignition off. Check Green fusible link, located in fusible link box near battery. Check 10-amp fuse in relay box, located at left front corner of engine compartment. Check harness continuity between wastegate valve control solenoids and ignition switch. Check harness continuity between ignition switch and battery positive terminal. If continuity does not exist, repair circuit as necessary.

3) Turn ignition off. Check continuity between ECM harness connector terminal No. 25 (Sky Blue wire) and each wastegate valve control solenoid harness connector Sky Blue wire. See Figs. 1 and 2. Continuity should exist. If continuity exists, check solenoid. See WASTEGATE VALVE CONTROL SOLENOID TEST (300ZX TURBO). If continuity does not exist, repair or replace harness or connectors as necessary.

Wastegate Valve Control Solenoid Test (300ZX Turbo)

To test solenoid, apply vacuum to either port on valve. If vacuum does not hold, replace solenoid. If vacuum holds, apply battery voltage across solenoid terminals. If vacuum holds, replace solenoid.

FUEL SYSTEM

FUEL DELIVERY

NOTE: For fuel system pressure testing, see FUEL PRESSURE under FUEL SYSTEM in F - BASIC TESTING article.

Start Signal

If ECM receives incorrect start (cranking) signal, fuel delivery system may not operate properly. See START SIGNAL under IGNITION SYSTEMS.

Fuel Pressure Regulator

Connect fuel pressure gauge. Disconnect vacuum hose from fuel pressure regulator. Plug hose end. Connect hand-held vacuum pump to fuel pressure regulator. Start engine. Gradually apply vacuum to fuel pressure regulator. Compare fuel pressure to regulated pressure in FUEL PRESSURE table in F - BASIC TESTING article. If pressure is not as specified, replace fuel pressure regulator.

Pressure Regulator Vacuum Relief (PRVR) Control Solenoid System Test (300ZX)

1) Turn ignition on. Measure voltage between ground and PRVR control solenoid harness connector Black/Red wire. PRVR solenoid is located above front branch of left exhaust manifold (non-turbo) or near brake master cylinder (turbo). Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Turn ignition off. Check Green fusible link, located in fusible link box near battery. Check 10-amp fuse in relay box, located at left front corner of engine compartment. Check harness continuity between PRVR control solenoid and ignition switch. Check harness

continuity between ignition switch and battery positive terminal. If continuity does not exist, repair circuit as necessary.

3) Turn ignition off. Check continuity between ECM harness connector terminal No. 111 (Yellow wire) and PRVR control solenoid harness connector Yellow wire. See Figs. 1 and 2. Continuity should exist. If continuity exists, check solenoid. See PRESSURE REGULATOR VACUUM RELIEF (PRVR) CONTROL SOLENOID TEST (300ZX). If continuity does not exist, repair or replace harness or connectors as necessary.

Pressure Regulator Vacuum Relief (PRVR) Control Solenoid Test (300ZX)

1) To test solenoid, disconnect vacuum lines and electrical connector from solenoid. Remove solenoid. Apply vacuum to port "B" of solenoid. See Fig. 28. Vacuum should now be available at port "C", but not at port "A".

2) Apply battery voltage across solenoid connector terminals. Vacuum should now be available at port "A", but not at port "C". Replace solenoid if it does not operate as specified.

Fuel Pump System Test (Altima)

1) Turn ignition on. With fingers, pinch fuel feed hose at fuel filter. Fuel pressure pulsation should be felt for 5 seconds after ignition is turned on. If pulsation is not felt, go to next step. If pulsation is felt, system is functioning properly.

2) Turn ignition off. Disconnect fuel pump relay. Fuel pump relay is located in relay box next to battery. Turn ignition on. Measure voltage between ground and fuel pump relay harness connector terminals No. 1 (Blue/Black wire) and No. 3 (Blue/Black wire). See Fig. 12. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 15-amp fuse in main fuse box. Check harness continuity between fuse and fuel pump relay. Repair or replace as necessary.

3) Turn ignition off. Disconnect fuel pump harness connector, located under rear seat. Check continuity between ground and fuel pump harness connector Black wire. Check continuity between fuel pump relay harness connector terminal No. 5 (Black/Red wire) and fuel pump harness connector Black/Red wire. Continuity should exist in both checks. If continuity exists in both checks, go to next step. If continuity does not exist, repair appropriate harness or connectors.

4) Ensure ignition is off. Disconnect ECM harness connector. ECM is located under center of instrument panel (connector is on passenger's side). Check continuity between ECM harness connector terminal No. 104 (Black/Yellow wire) and fuel pump relay harness connector No. 2 (Black/Yellow wire). See Figs. 1, 2 and 12. Continuity should exist. If continuity exists, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check fuel pump. See FUEL PUMP TEST. If continuity does not exist, check harness between ECM and relay. Repair harness and connectors as necessary.

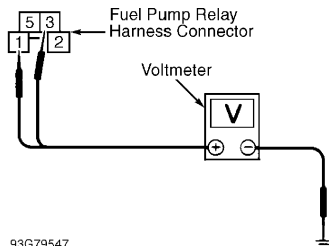


Fig. 12: Testing Fuel Pump System (Altima)
Courtesy of Nissan Motor Co., U.S.A.

Fuel Pump System Test (Maxima VG30E)

Fault in fuel pump circuit may set Code 22. To test system,

see CODE 22 diagnostic procedures in G - TESTS W/CODES article.

Fuel Pump System Test (Maxima VE30DE)

1) Turn ignition on. Listen for fuel pump operating sound. Fuel pump should operate for 5 seconds after ignition is turned on. If operating sound is not heard, go to next step. If operating sound is heard, system is functioning properly.

2) Turn ignition off. Disconnect fuel pump relay. Fuel pump relay is located inside trunk trim, near striker. Turn ignition on. Measure voltage between ground and fuel pump relay harness connector terminals No. 2 (Blue wire) and No. 3 (Blue wire). See Fig. 13. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse in main fuse box. Check harness continuity between fuse and fuel pump relay. Repair or replace as necessary.

3) Turn ignition off. Disconnect fuel pump harness connector, located under rear seat cushion. Check continuity between ground and fuel pump harness connector terminal "a" (Black wire). Check continuity between fuel pump relay harness connector terminal No. 5 (Red/Blue wire) and fuel pump harness connector terminal "c" (Red/Blue wire). See Fig. 13. Continuity should exist in both checks. If continuity exists in both checks, go to next step. If continuity does not exist in either check, repair appropriate harness or connectors.

4) Ensure ignition is off. Disconnect ECM harness connector. ECM is located under center of instrument panel (connector is on driver's side). Check continuity between ECM harness connector terminal No. 18 (Brown/Yellow wire) and fuel pump relay harness connector No. 1 (Blue/White wire). See Figs. 1, 2 and 13. Continuity should exist. If continuity exists, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check fuel pump. See FUEL PUMP TEST. If continuity does not exist, check harness between ECM and relay. Repair harness and connectors as necessary.

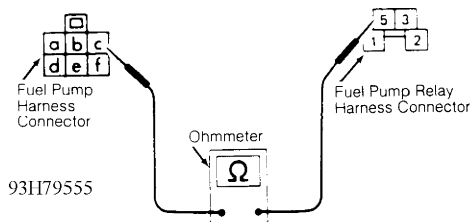


Fig. 13: Testing Fuel Pump System (Maxima VE30DE)
Courtesy of Nissan Motor Co., U.S.A.

Fuel Pump System Test (NX & Sentra)

1) Turn ignition on. With fingers, pinch fuel feed hose at fuel filter. Fuel pressure pulsation should be felt for 5 seconds after ignition is turned on. If pulsation is not felt, go to next step. If pulsation is felt, system is functioning properly.

2) Turn ignition off. Disconnect fuel pump relay. Fuel pump relay is located in relay box next to battery. Turn ignition on. Measure voltage between ground and fuel pump relay harness connector terminals No. 2 (Brown wire) and No. 3 (Brown wire). For connector identification, see Fig. 12. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 15-amp fuse in main fuse box. Check harness continuity between fuse and fuel pump relay. Repair or replace as necessary.

3) Turn ignition off. Disconnect fuel pump harness connector, located under rear seat. Check continuity between ground and fuel pump harness connector Black wire. Check continuity between fuel pump relay harness connector terminal No. 5 (Black/Red wire) and fuel pump harness connector Black/Red wire. Continuity should exist in both checks. If continuity exists in both checks, go to next step. If

continuity does not exist, repair appropriate harness or connectors.

4) Ensure ignition is off. Disconnect ECM harness connector. ECM is located under center of instrument panel. Check continuity between ECM harness connector terminal No. 104 (Black/Yellow wire) and fuel pump relay harness connector No. 1 (Black/Yellow wire). For terminal identification, see Figs. 1, 2 and 12. Continuity should exist. If continuity exists, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check fuel pump. See FUEL PUMP TEST. If continuity does not exist, check harness between ECM and relay. Repair harness and connectors as necessary.

Fuel Pump System Test (Pathfinder & Pickup)

1) Turn ignition on. Listen for fuel pump operating sound. Fuel pump should operate for 5 seconds after ignition is turned on. If operating sound is not heard, go to next step. If operating sound is heard, system is functioning properly.

2) Turn ignition off. Disconnect fuel pump relay. Fuel pump relay is located in relay box on right front inner fender panel. Turn ignition on. Measure voltage between ground and fuel pump relay harness connector terminals No. 2 (Black/White wire) and No. 3 (Black/White wire). For connector identification, see Fig. 12. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse in main fuse box. Check harness continuity between fuse and fuel pump relay. Repair or replace as necessary.

3) Turn ignition off. Disconnect fuel pump harness connector, located under vehicle on right frame rail. Check continuity between ground and fuel pump harness connector Black wire. Check continuity between fuel pump relay harness connector terminal No. 5 (White/Blue wire) and fuel pump harness connector White/Blue wire. Continuity should exist in both checks. If continuity exists in both checks, go to next step. If continuity does not exist in either check, repair appropriate harness or connectors.

4) Ensure ignition is off. Disconnect ECM harness connector. ECM is located under passenger's seat. Check continuity between ECM harness connector terminal No. 104 (White/Red wire on Pickup 2.4L or Red/Blue wire on Pathfinder and Pickup 3.0L) and fuel pump relay harness connector No. 1 (White/Red wire on Pickup 2.4L or Red/Blue wire on Pathfinder and Pickup 3.0L). For terminal identification, see Figs. 1, 2 and 12. Continuity should exist. If continuity exists, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check fuel pump. See FUEL PUMP TEST. If continuity does not exist, check harness between ECM and relay. Repair harness and connectors as necessary.

Fuel Pump System Test (Quest)

1) If engine cranks but does not start, check inertia switch. Inertia switch is located behind driver's kick panel and is accessible through hole in kick panel. If gasoline smell is present, locate and repair cause of smell before resetting inertia switch.

2) Turn ignition on. With fingers, pinch fuel feed hose at fuel filter. Fuel pressure pulsation should be felt for 5 seconds after ignition is turned on. If pulsation is not felt, go to next step. If pulsation is felt, system is functioning properly.

3) Turn ignition off. Disconnect fuel pump relay. Fuel pump relay is located in relay box in front of battery. Turn ignition on. Measure voltage between ground and fuel pump relay harness connector terminals No. 1 (Black/Red wire) and No. 3 (Black/Red wire). For connector identification, see Fig. 12. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 15-amp fuse in main fuse box. Check harness continuity between fuse and fuel pump relay. Repair or replace as necessary.

4) Turn ignition off. Disconnect fuel pump harness connector, located next to spare tire. Check continuity between ground and fuel pump harness connector Black/White wire. Check continuity between fuel pump relay harness connector terminal No. 5 (Light Green/Red wire) and fuel pump harness connector Light Green/Red wire. Continuity should exist in both checks. If continuity exists in both checks, go to next step. If continuity does not exist in either check, repair appropriate harness or connectors.

5) Ensure ignition is off. Disconnect ECM harness connector. ECM is located behind glove box. Check continuity between ECM harness connector terminal No. 104 (Blue/Red wire) and fuel pump relay harness connector terminal No. 2 (Blue/Red wire). For terminal identification, see Figs. 1, 2 and 12. Continuity should exist. If continuity exists, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check fuel pump. See FUEL PUMP TEST. If continuity does not exist, check harness between ECM and relay. Repair harness and connectors as necessary.

Fuel Pump System Test (240SX)

1) Turn ignition on. Listen for fuel pump operating sound. Fuel pump should operate for 5 seconds after ignition is turned on. If operating sound is not heard, go to next step. If operating sound is heard, system is functioning properly.

2) Turn ignition off. Disconnect fuel pump relay. Fuel pump relay is located in fuse box next to battery. Turn ignition on. Measure voltage between ground and fuel pump relay harness connector terminals No. 1 (Black/White wire) and No. 5 (Black/White wire). For terminal identification, see Fig. 13. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse in main fuse box. Check harness continuity between fuse and fuel pump relay. Repair or replace as necessary.

3) Turn ignition off. Disconnect fuel pump harness connector, located under rear seat. Check continuity between ground and fuel pump harness connector terminal "a" (Black wire). Check continuity between fuel pump relay harness connector terminal No. 3 (Black/Yellow wire) and fuel pump harness connector terminal "c" (Black/Yellow wire). For terminal identification, see Fig. 13. Continuity should exist in both checks. If continuity exists in both checks, go to next step. If continuity does not exist, repair appropriate harness or connectors.

4) Ensure ignition is off. Disconnect ECM harness connector. ECM is located behind passenger's kick panel. Check continuity between ECM harness connector terminal No. 104 (Black/Pink wire) and fuel pump relay harness connector No. 2 (Black/Pink wire). See Figs. 1, 2 and 13. Continuity should exist. If continuity exists, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check fuel pump. See FUEL PUMP TEST. If continuity does not exist, check harness between ECM and relay. Repair harness and connectors as necessary.

Fuel Pump System Test (300ZX)

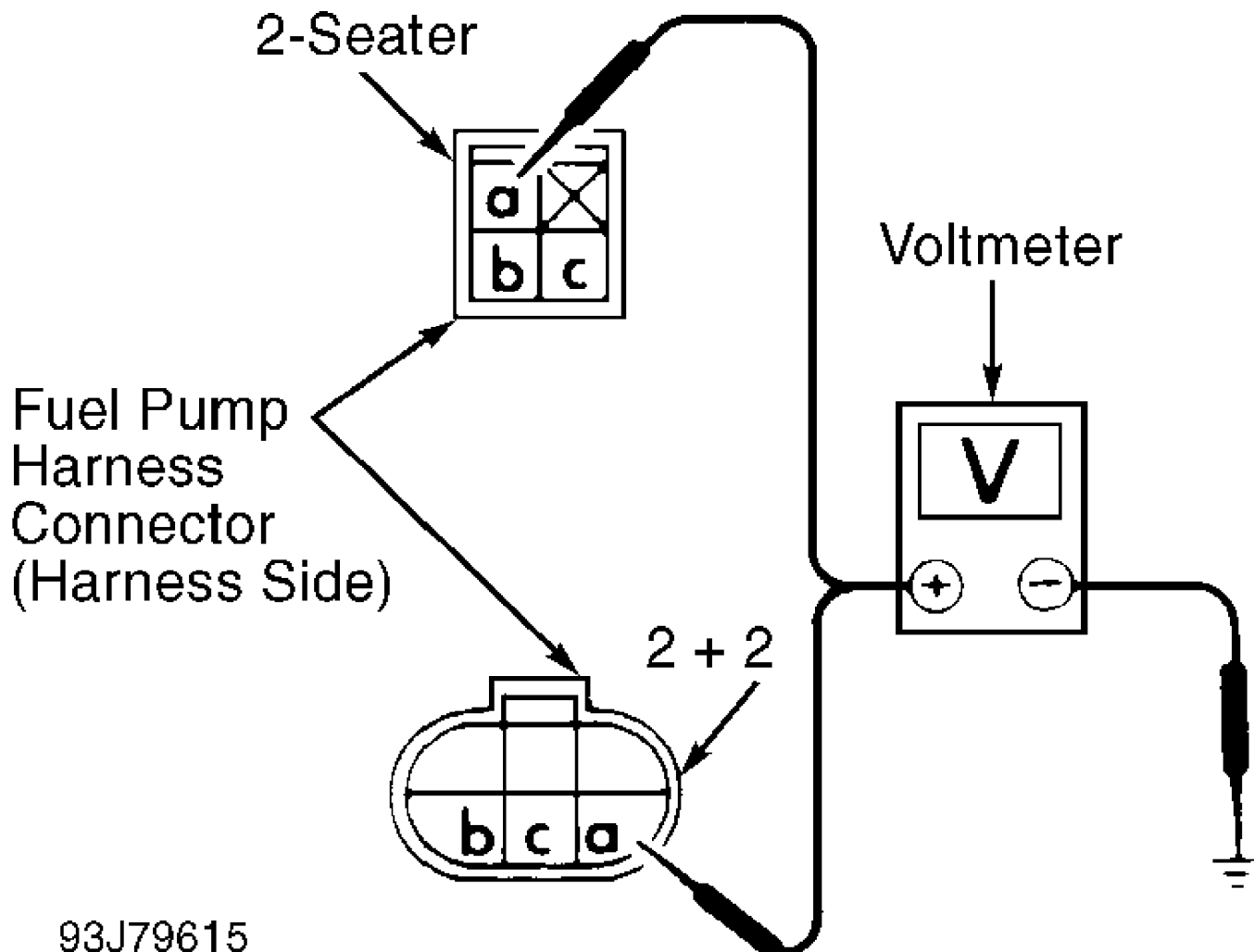
1) With connector connected, measure voltage between ground and fuel pump harness connector terminal "a" (Orange wire). See Fig. 14. Connector is located under rear seat. Turn ignition on. Battery voltage should be present for one second after ignition is turned on. If voltage is as specified, go to step 3). If voltage is not as specified, go to next step.

2) Turn ignition off. Check Green fusible link located in fusible link holder next to battery. Check harness continuity between battery positive terminal and fuel pump relay (White/Black wire). Check harness continuity between fuel pump relay and fuel pump (Orange wire). Check harness continuity between fuel pump relay and ECM harness connector terminal No. 18 (Black/Pink wire). Continuity should

exist in all checks. If continuity does not exist, repair appropriate harness or connector. If continuity exists, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS.

3) Measure voltage between ground and fuel pump harness connector terminal "b". See Fig. 14. Start engine. Battery voltage should be present for 30 seconds after starting engine. After 30 seconds, voltage should be 3-6 volts with engine idling. If voltage is as specified, system is functioning properly. If voltage is not as specified, go to next step.

4) Check harness continuity between fuel pump and fuel pump control module (White wire). Fuel pump control module is located behind trim panel next to left rear seat. Check harness continuity between ECM harness connector terminal No. 104 (Black/Pink wire) and fuel pump control module. See Figs. 1 and 2. Continuity should exist in all checks. If continuity does not exist, repair appropriate harness or connector. If continuity exists, check fuel pump. See FUEL PUMP TEST.



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Fig. 14: Testing Fuel Pump System (300ZX)
Courtesy of Nissan Motor Co., U.S.A.

Fuel Pump Test

To test fuel pump, disconnect fuel pump connector, accessible through trunk (Maxima and 300ZX), under rear seat (Altima, NX and Sentra) or under vehicle body (Pathfinder, Pickup, Quest and 240SX).

At fuel pump connector, check resistance between wire terminals specified in FUEL PUMP RESISTANCE TEST table. If resistance is not as specified, replace fuel pump.

FUEL PUMP RESISTANCE TEST TABLE

Application	(1) Terminals (Wire Colors)	(2) Ohms
Altima	Black & Black/Red	0.5
Maxima	Black & Red/Blue	0.5
NX & Sentra	Black & Black/Red	0.7
Pathfinder	Black & White/Blue	1.5
Pickup		
2.4L	Black & White/Blue	(3)
3.0L	Black & White/Blue	1.5
Quest	Black/White & Light Green/Red	0.7
240SX	Black & Black/Yellow	0.5
300ZX	Orange & White	0.5

(1) - If more than one Black wire is used at fuel pump connector, check resistance between wire specified in table and both Black wires at connector.

(2) - Values are approximate.

(3) - Ensure continuity exists.

Fuel Pump Relay

See RELAYS under RELAYS & SOLENOIDS.

FUEL CONTROL

Start Signal

If ECM receives incorrect start (cranking) signal, fuel control system may not operate properly. See START SIGNAL under IGNITION SYSTEM.

Feedback System (Maxima VG30E, Pathfinder & Pickup)

1) Ensure ignition timing and idle speed are adjusted. See D - ADJUSTMENTS article. Warm engine to operating temperature. Run engine unloaded at 2000 RPM for 2 minutes. Green LED on ECM should flash at least 5 times during a 10-second period. If LED flashes less than 5 times, replace exhaust gas (oxygen) sensor. If LED does not flash, check exhaust gas (oxygen) sensor circuit.

2) Race engine 2-3 times, and allow it to idle. Enter self-diagnostic Mode II. See G - TESTS W/ CODES article. With engine running unloaded at 2000 RPM, Green and Red LEDs on ECM should flash simultaneously more than 5 times during 10-second period. If LED does not respond as described, perform IDLE MIXTURE adjustment procedure in D - ADJUSTMENTS article.

Feedback System (Altima, Maxima VE30DE, NX, Sentra, Quest, 240SX & 300ZX)

Ensure ignition timing and idle speed are adjusted. See D - ADJUSTMENTS article. Warm engine to operating temperature. Run engine unloaded at 2000 RPM for 2 minutes. Enter self-diagnostic Mode II. See G - TESTS W/ CODES article. If Red LED on ECM (or CHECK ENGINE light) does not flash at least 5 times in a 10-second period, perform IDLE MIXTURE adjustment procedure in D - ADJUSTMENTS article.

Fuel Injector System Test (Altima)

1) With engine running, measure voltage between ground and ECM harness connector terminals No. 101 (Brown wire), No. 103

(Brown/Yellow wire), No. 110 (Brown/White wire), and No. 112 (Brown wire). ECM is located under center of instrument panel. See Figs. 1 and 2. Battery voltage should be present. If battery voltage is not present, go to next step. If battery voltage is present, system is functioning properly.

2) Turn ignition off. Disconnect each injector harness connector. Measure voltage between ground and each injector harness connector White wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 75-amp fusible link and 10-amp fuse located in engine compartment fuse box. If 75-amp fusible link and 10-amp fuse are okay, repair or replace harness or connectors.

3) Ensure ignition is off. Disconnect ECM harness connector. Measure voltage between ground and ECM harness connector terminal No. 109 (White wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 25-amp fuse, located in fuse box in engine compartment. If 25-amp fuse is okay, repair or replace harness or connectors.

4) Check continuity between ECM harness connector terminals No. 101 (Brown wire), No. 103 (Brown/Yellow wire), No. 110 (Brown/White wire), and No. 112 (Brown wire) and corresponding injector harness connector wire color. Continuity should exist. If continuity exists, check injector. See FUEL INJECTOR TEST. If injector is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair or replace as necessary. If continuity does not exist, repair or replace harness or connectors.

Fuel Injector System Test (Maxima)

Fault in the fuel injector circuit may set Code 51. To test system, see CODE 51 diagnostic procedures in G - TESTS W/ CODES article.

Fuel Injector System Test (NX & Sentra)

1) With engine running, listen for clicking sound at each injector. If clicking sound is present at each injector, system is functioning properly. If clicking sound is not present, go to next step.

2) Turn ignition off. Disconnect each injector harness connector. Measure voltage between ground and each injector harness connector White wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 25-amp fusible link located in fuse, fusible link and relay box next to battery. If 25-amp fusible link is okay, repair or replace harness or connectors.

3) Ensure ignition is off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminals No. 101 (White/Black wire), No. 103 (Green/Black wire), No. 110 (Yellow/Black wire), and No. 112 (Blue/Black wire) and corresponding injector harness connector wire color. ECM is located under center of instrument panel. See Figs. 1 and 2. Continuity should exist. If continuity exists, check injector. See FUEL INJECTOR TEST. If injector is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair or replace as necessary. If continuity does not exist, repair or replace harness or connectors.

Fuel Injector System Test (Pathfinder & Pickup 3.0L CA)

Fault in the fuel injector circuit may set Code 51. To test system, see CODE 51 diagnostic procedures in G - TESTS W/ CODES article.

Fuel Injector System Test (Pathfinder & Pickup 3.0L Fed.)

1) With engine running, measure voltage between ground and ECM harness connector terminals No. 101 (White wire), No. 103

(White/Red wire), No. 105 (White/Green wire), No. 110 (Yellow wire), No. 112 (White/Blue wire) and No. 114 (White/Black wire). ECM is located under passenger seat. See Figs. 1 and 2. Battery voltage should be present. If battery voltage is not present, go to next step. If battery voltage is present, system is functioning properly.

2) Turn ignition off. Disconnect each injector harness connector. Disconnect ECM harness connector. Measure voltage between ground and each injector harness connector White/Red wire. Measure voltage between ground and ECM harness connector terminal No. 46 (White/Red wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Brown fusible link connected to positive battery post. If fusible is okay, repair or replace harness or connectors.

3) Check continuity between ECM harness connector terminals No. 101 (White wire), No. 103 (White/Red wire), No. 105 (White/Green wire), No. 110 (Yellow wire), No. 112 (White/Blue wire) and No. 114 (White/Black wire) and corresponding injector harness connector wire color. Continuity should exist. If continuity exists, check injector. See FUEL INJECTOR TEST. If injector is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair or replace as necessary. If continuity does not exist, repair or replace harness or connectors.

Fuel Injector System Test (Pickup 2.4L)

1) With engine running, measure voltage between ground and ECM harness connector terminals No. 101 (White/Black wire), No. 103 (White/Red wire), No. 110 (White/Blue wire), and No. 112 (White/Green wire). ECM is located under passenger seat. See Figs. 1 and 2. Battery voltage should be present. If battery voltage is not present, go to next step. If battery voltage is present, system is functioning properly.

2) Turn ignition off. Disconnect each injector harness connector. Disconnect ECM harness connector. Measure voltage between ground and each injector harness connector White wire. Measure voltage between ground and ECM harness connector terminal No. 46 (White wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Brown fusible link connected to positive battery post. If fusible is okay, repair or replace harness or connectors.

3) Check continuity between ECM harness connector terminals No. 101 (White/Black wire), No. 103 (White/Red wire), No. 110 (White/Blue wire), and No. 112 (White/Green wire) and corresponding injector harness connector wire color. Continuity should exist. If continuity exists, check injector. See FUEL INJECTOR TEST. If injector is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair or replace as necessary. If continuity does not exist, repair or replace harness or connectors.

Fuel Injector System Test (Quest - California)

Fault in the fuel injector circuit may set Code 51. To test system, see CODE 51 diagnostic procedures in G - TESTS W/ CODES article.

Fuel Injector System Test (Quest Non-California)

1) With engine running, measure voltage between ground and ECM harness connector terminals No. 101 (Green/Orange wire), No. 103 (Green/Red wire), No. 105 (Yellow/Green wire), No. 110 (Green wire), No. 112 (Yellow/Purple wire) and No. 114 (Gray/Blue wire). ECM is located behind glove box. See Figs. 1 and 2. Battery voltage should be present. If battery voltage is not present, go to next step. If battery voltage is present, system is functioning properly.

2) Turn ignition off. Disconnect each injector harness connector. Disconnect ECM harness connector. Measure voltage between

ground and each injector harness connector Yellow wire. Measure voltage between ground and ECM harness connector terminal No. 46 (Yellow wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 25-amp fusible link located in fusible link box next to battery. If fusible is okay, repair or replace harness or connectors.

3) Check continuity between ECM harness connector terminals No. 101 (Green/Orange wire), No. 103 (Green/Red wire), No. 105 (Yellow/Green wire), No. 110 (Green wire), No. 112 (Yellow/Purple wire) and No. 114 (Gray/Blue wire) and corresponding injector harness connector wire color. Continuity should exist. If continuity exists, check injector. See FUEL INJECTOR TEST. If injector is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair or replace as necessary. If continuity does not exist, repair or replace harness or connectors.

Fuel Injector System Test (240SX)

1) With engine running, measure voltage between ground and ECM harness connector terminals No. 101 (White/Black wire), No. 103 (Green/Black wire), No. 110 (Yellow/Black wire), and No. 112 (Blue/Black wire). ECM is located behind passenger side kick panel. See Figs. 1 and 2. Battery voltage should be present. If battery voltage is not present, go to next step. If battery voltage is present, system is functioning properly.

2) Turn ignition off. Disconnect each injector harness connector. Disconnect ECM harness connector. Measure voltage between ground and each injector harness connector Red wire. Measure voltage between ground and ECM harness connector terminal No. 109 (Red wire). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Brown fusible link located in fuse and fusible link box behind battery. If fusible is okay, repair or replace harness or connectors.

3) Check continuity between ECM harness connector terminals No. 101 (White/Black wire), No. 103 (Green/Black wire), No. 110 (Yellow/Black wire), and No. 112 (Blue/Black wire) and corresponding injector harness connector wire color. Continuity should exist. If continuity exists, check injector. See FUEL INJECTOR TEST. If injector is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair or replace as necessary. If continuity does not exist, repair or replace harness or connectors.

Fuel Injector System Test (300ZX - California)

Fault in the fuel injector circuit may set Code 51. To test system, see CODE 51 diagnostic procedures in G - TESTS W/ CODES article.

Fuel Injector System Test (300ZX - Non-California)

Fault in the fuel injector circuit will not set Code 51. To test system, see CODE 51 diagnostic procedures in G - TESTS W/ CODES article.

Fuel Injector Test

Check resistance across injector connector terminals. If resistance is not as specified in INJECTOR RESISTANCE SPECIFICATIONS table, replace injector. If resistance is okay, remove injector. If nozzle is clogged, replace injector.

INJECTOR RESISTANCE SPECIFICATIONS TABLE

Application	Ohms
Altima	11
Maxima	10-14

NX & Sentra	
1.6L	About 10
2.0L	10-14
Pathfinder	10-14
Pickup	
2.4L	10-15
3.0L	10-14
Quest	10-14
240SX	11
300ZX	10-14

IDLE CONTROL SYSTEM

Start Signal

If ECM receives incorrect start (cranking) signal, idle control system may not operate properly. See START SIGNAL under IGNITION SYSTEM.

NOTE: Altima and Maxima use a thermal-mechanical device. See AIR REGULATOR TEST (ALTIMA & MAXIMA).

Air Regulator System Test (NX & Sentra)

1) Start engine and bring to operating temperature.

Disconnect Auxiliary Air Control (AAC) valve harness connector. Pinch air regulator hose closed. Engine RPM should not drop. If RPM drops, go to next step. If RPM does not drop, system is functioning properly.

2) Turn ignition off. Disconnect air regulator harness connector. Measure voltage between ground and air regulator harness connector Black/Red wire. Turn ignition on. Battery voltage should be present for 5 seconds after ignition is turned on. If voltage is as specified, go to next step. If voltage is not as specified, check continuity of Black/Red wire between air regulator harness connector and fuel pump relay. Repair or replace harness or connectors as necessary. If continuity is okay, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS.

3) Turn ignition off. Check continuity between ground and air regulator harness connector Black wire. Continuity should exist. If continuity exists, check air regulator. See AIR REGULATOR TEST (EXCEPT ALTIMA & MAXIMA). If continuity does not exist, repair open in Black wire.

Air Regulator System Test (Pathfinder, Pickup 3.0L, Quest, 240SX & 300ZX)

1) Turn ignition on. Pinch fuel feed hose with fingers to feel fuel pulsations or listen for fuel pump operating sound. Fuel pump should operate for 5 seconds after ignition is turned on. If fuel pump does not operate, See FUEL PUMP under FUEL DELIVERY SYSTEM. If fuel pump operates, go to next step.

2) Turn ignition off. Disconnect air regulator harness connector. Measure voltage between ground and air regulator harness connector White/Blue wire (Pathfinder and Pickup 3.0L), Blue/Red wire (Quest), Black/Pink wire (240SX), or Orange wire (300ZX).

3) Turn ignition on. Battery voltage should be present for 5 seconds after ignition is turned on. If voltage is as specified, go to next step. If voltage is not as specified, check continuity of White/Blue wire (Pathfinder and Pickup 3.0L), Blue/Red wire (Quest), Black/Pink wire (240SX), or Orange wire (300ZX) between air regulator harness connector and fuel pump relay. Repair or replace harness or connectors as necessary. If continuity is okay, check fuel pump relay. See RELAYS under RELAYS & SOLENOIDS.

4) Turn ignition off. Check continuity between ground and air

regulator harness connector Black wire. Continuity should exist. If continuity exists, check air regulator. See AIR REGULATOR TEST (EXCEPT ALTIMA & MAXIMA). If continuity does not exist, repair open in Black wire.

Air Regulator Test (Altimax & Maxima)

Remove air regulator from engine. Check airflow through air regulator while immersed in cold or hot water. Air should flow freely at 68°F (20°C). Almost no air should flow at 176°F (80°C). If air regulator does not operate as described, replace unit.

Air Regulator Test (Except Altimax & Maxima)

Measure resistance across air regulator connector terminals. If resistance is not about 70-80 ohms, replace air regulator. If resistance is okay, ensure air passage is not obstructed.

Auxiliary Air Control (AAC) Valve System Test (Altimax & 240SX) -

1) Start engine and bring to operating temperature. Check idle speed. See C - SPECIFICATIONS article. Adjust idle speed if necessary. See D - ADJUSTMENTS article.

2) Check for stored codes. See RETRIEVING CODES in appropriate G - TESTS W/ CODES article. If Code 43 is present, repair cause of Code 43 before continuing. If Code 43 is not present, disconnect throttle position sensor harness connector. If idle speed does not drop, go to next step. If idle speed drops, system is functioning properly.

3) Turn ignition off. Disconnect AAC valve harness connector. Turn ignition on. Measure voltage between ground and AAC valve harness connector Yellow wire (Altimax) or Red/Green wire (240SX). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse and 75-amp fusible link located in engine compartment fuse box. If fuse and fusible link are okay, repair or replace harness or connectors between AAC valve and fuse box.

4) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 113 (Sky Blue wire) and AAC valve harness connector Sky Blue wire (Altimax) or Red/White wire (240SX). Continuity should exist. If continuity exists, check AAC valve. See AUXILIARY AIR CONTROL (AAC) VALVE TEST (EXCEPT MAXIMA VG30E). If AAC valve is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors.

Auxiliary Air Control (AAC) Valve System Test (NX, Sentra, Pathfinder & Pickup)

1) Start engine and bring to operating temperature. Check idle speed. See SERVICE & ADJUSTMENTS SPECIFICATIONS article. Adjust idle speed if necessary. See D - ADJUSTMENTS article.

2) Disconnect AAC valve harness connector. Idle speed should drop. If idle speed drops, system is functioning properly. If idle speed does not drop, turn ignition off. With AAC valve harness connector disconnected, turn ignition on.

3) Measure voltage between ground and AAC valve harness connector White/Green wire (NX 1.6L and Sentra 1.6L), Red/Black wire (NX 2.0L and Sentra 2.0L) or Black/White wire (Pathfinder and Pickup). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse located in fuse and relay box under left instrument panel. If fuse is okay, repair or replace harness or connectors between AAC valve and fuse box.

4) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 113 (Sky Blue

wire on NX and Sentra), Orange wire (Pathfinder and Pickup 3.0L) or (White/Green wire on Pickup 2.4L) and corresponding wire of AAC valve harness connector. Continuity should exist. If continuity exists, check AAC valve. See AUXILIARY AIR CONTROL (AAC) VALVE TEST (EXCEPT MAXIMA VG30E). If AAC valve is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors.

Auxiliary Air Control (AAC) Valve System Test (Quest & 300ZX)

1) Start engine and bring to operating temperature. Check idle speed. See SERVICE & ADJUSTMENTS SPECIFICATIONS article. Adjust idle speed if necessary. See D - ADJUSTMENTS article.

2) Disconnect AAC valve harness connector. Idle speed should drop. If idle speed drops, system is functioning properly. If idle speed does not drop, turn ignition off. With AAC valve harness connector disconnected, turn ignition on.

3) Measure voltage between ground and AAC valve harness connector White/Red wire (Quest) or Black/Red wire (300ZX). Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check harness and connectors between AAC valve harness connector and ignition switch for open. Repair or replace as necessary.

4) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 113 (Sky Blue wire on Quest or Green/Blue wire on 300ZX) and corresponding wire of AAC valve harness connector. Continuity should exist. If continuity exists, check AAC valve. See AUXILIARY AIR CONTROL (AAC) VALVE TEST (EXCEPT MAXIMA VG30E). If AAC valve is okay, check ECM pin terminals and ECM harness connector terminals for damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors.

Auxiliary Air Control (AAC) Valve Test (Except Maxima VG30E)

To test AAC valve, check resistance across AAC valve connector terminals. If resistance is not approximately 10 ohms, replace AAC valve. Ensure plunger does not stick and plunger spring is not broken.

NOTE: On Maxima VG30E, AAC valve is a stepper motor with multiple sets of windings.

Auxiliary Air Control (AAC) Valve System Test (Maxima VG30E)

1) Start engine and bring to operating temperature. Turn diagnostic test mode selector on ECM fully clockwise. ECM is located under center of instrument panel. Turn air conditioner switch on. Engine speed should drop. Go to next step.

2) Turn air conditioner switch off. Turn diagnostic mode selector on ECM fully counterclockwise. Turn air conditioner switch on. Engine speed should not change. If engine speed dropped in step 1) and did not change in step 2), system is functioning properly. If not, go to next step.

3) Turn air conditioner switch off. Measure voltage between ground and ECM harness connector terminals No. 4 (Yellow/Black wire), No. 5 (Yellow/Red wire), No. 14 (Yellow wire) and No. 15 (Yellow/Blue wire). See Figs. 1 and 2. Race engine under no-load. Voltage should change when racing engine. Stop engine and turn ignition on.

4) Measure voltage between ground and ECM harness connector terminals No. 4 (Yellow/Black wire), No. 5 (Yellow/Red wire), No. 14 (Yellow wire) and No. 15 (Yellow/Blue wire). Battery voltage should be present. If voltage is not as specified, go to next step. If voltage is as specified, ensure ECM harness connector is connected properly.

5) Turn ignition off. Disconnect AAC valve harness connector.

Turn ignition on. Measure voltage between ground and AAC harness connector terminal White/Black wire (2 wires). Battery voltage should be present. If battery voltage is present, go to step 7). If battery voltage is not present, go to next step.

6) Turn ignition off. Ensure AAC valve harness connector is disconnected. Turn ignition on. Check continuity between AAC valve harness connector White/Black wire and battery positive White/Red wire. Continuity should exist. If continuity does not exist, check Brown fusible link located in fusible link and relay box next to battery. Repair or replace as necessary. Check ECM (ECCS) relay located in fusible link and relay box next to battery. See RELAYS under RELAYS & SOLENOIDS. Repair/replace as necessary. If ECM relay and Brown fusible link are okay, repair open in harness. See WIRING DIAGRAMS article.

7) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 4 (Yellow/Black wire) and AAC valve harness connector Yellow/Black wire. Check continuity between ECM harness connector terminal No. 5 (Yellow/Red wire) and AAC valve harness connector Yellow/Red wire. Check continuity between ECM harness connector terminal No. 14 (Yellow wire) and AAC valve harness connector Yellow wire.

8) Check continuity between ECM harness connector terminal No. 15 (Yellow/Blue wire) and AAC valve harness connector Yellow/Blue wire. Continuity should exist in all checks. If continuity does not exist, repair open in appropriate wire. If continuity exists, check AAC valve. See AUXILIARY AIR CONTROL (AAC) VALVE TEST (MAXIMA VG30E).

Auxiliary Air Control (AAC) Valve Test (Maxima VG30E)

Check resistance between terminals No. 1 and 2; 2 and 3; 4 and 5; and 5 and 6 of AAC valve connector. See Fig. 15. If resistance is not 27-40 ohms at 68°F (20°C), replace AAC valve.

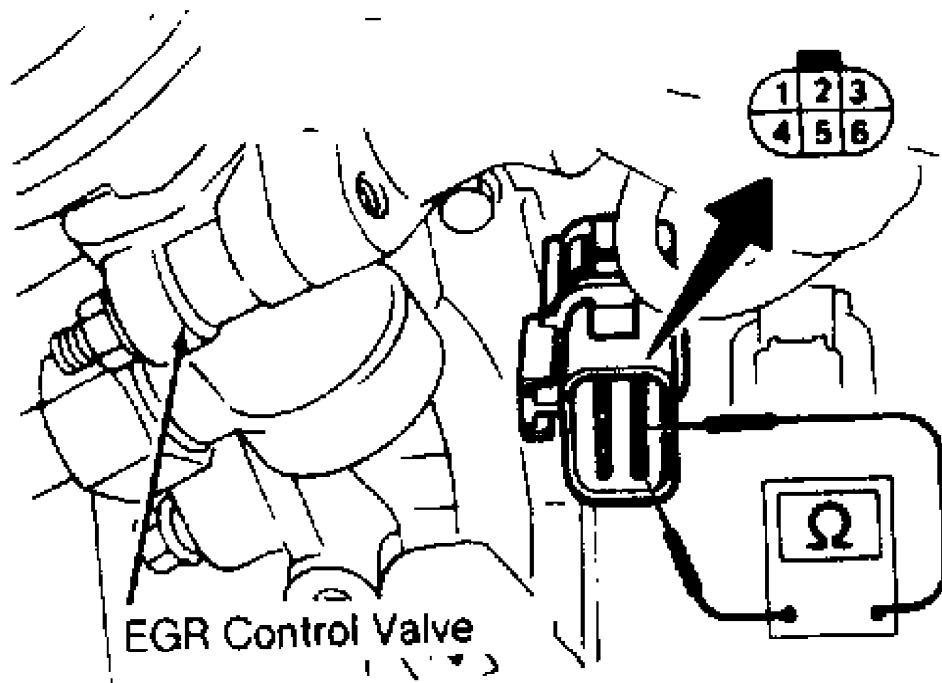


Fig. 15: AAC Valve Connector Terminal ID (Maxima)
Courtesy of Nissan Motor Co., U.S.A.

NOTE: Diagnostic procedures for Fast Idle Control Device (FICD) systems on Altima, Maxima, NX, Pathfinder, Pickup, Sentra

and 240SX are not available from manufacturer.

Fast Idle Control Device (FICD) System Test (Quest)

1) Start engine and warm to operating temperature. Check idle speed. See C - SPECIFICATIONS article. Adjust idle speed if necessary. See D - ADJUSTMENTS article. Turn air conditioning and blower fan switches on. Idle speed should increase. If idle speed does not increase, go to next step. If idle speed increases, system is functioning properly.

2) Ensure air conditioner compressor is functioning. If compressor is not functioning, repair air conditioner system as necessary. If compressor is functioning, turn ignition off. Disconnect FICD relay. Relay is located in relay box on right front inner fender rail.

3) Turn ignition on. Measure voltage between ground and FICD relay harness connector terminals No. 2 (Blue wire) and No. 5 (Blue wire). For connector identification, see Fig. 12. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse located in main fuse box under left side of instrument panel. If fuse is okay, repair open in harness between fuse and FICD relay.

4) Turn ignition off. Disconnect FICD solenoid harness connector. Check continuity between ground and FICD solenoid harness connector Black wire. Check continuity between FICD solenoid harness connector Blue/Yellow wire and FICD relay harness connector terminal No. 3 (Blue/Yellow wire). Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Blue/Yellow wire or connectors.

5) Turn ignition on. Measure voltage between ground and FICD relay harness connector terminal No. 1 (White/Red wire). With air conditioner switch on and fan switch in any position except off, less than 2.3 volts should be present. With air conditioning switch off, 7-9 volts should be present. If voltage is as specified, go to next step. If voltage is not as specified, repair open in White/Red wire between FICD relay harness connector and air conditioner system.

6) Check FICD relay. See RELAYS under RELAYS & SOLENOIDS. If relay is okay, check FICD solenoid. See FAST IDLE CONTROL DEVICE (FICD) TEST. If FICD solenoid is okay, check ECM and ECM harness connector terminal No. 41 (White/Red wire) for correct installation, damage or corrosion. Repair or replace as necessary.

Fast Idle Control Device (FICD) System Test (300ZX)

1) Turn ignition on. With FICD solenoid connected, measure voltage between ground and FICD solenoid harness connector terminal Black/Red wire. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, check Green fusible link located in fusible link holder next to battery. Replace fusible link as necessary.

2) Check 10-amp fuse located in fuse and relay box at left front corner of engine compartment. Replace if necessary. If Green fusible link and 10-amp fuse are okay, repair open in Black/Red wire between FICD relay harness connector and FICD solenoid harness connector.

3) Ensure ignition is off. Disconnect ECM harness connector. ECM is located behind glove box. Check continuity between ECM harness connector terminal No. 33 (Red wire) and FICD solenoid harness connector Red wire. See Figs. 1 and 2. Continuity should exist. If continuity exists, check FICD solenoid. See FAST IDLE CONTROL DEVICE (FICD) TEST. If continuity does not exist, repair open in Red wire between ECM harness connector and FICD solenoid harness connector.

Fast Idle Control Device (FICD) Test

Apply battery voltage across solenoid terminals. If solenoid

does not operate, check for sticking plunger or broken spring. If plunger and spring are okay, replace solenoid.

IGNITION SYSTEMS

NOTE: For basic ignition checks, see F - BASIC TESTING article.

POWER TRANSISTOR

Maxima (VE30DE Engine)

1) Disconnect power transistor connector. Check continuity between terminal "d" and terminals "a", "b", "c", "e", "f" and "g" of power transistor connector (check with polarity in one direction, and then with polarity in opposite direction). See Figs. 16-18. If there is no continuity regardless of ohmmeter test lead polarity, replace power transistor.

2) If there is continuity, connect ohmmeter positive lead to terminal "d" and negative lead to terminals No. 1, 2, 3, 4, 5 and 6. If there is no continuity, replace power transistor. If there is continuity, reverse ohmmeter test lead polarity, checking continuity between the same terminals.

3) If there is continuity, replace power transistor. If there is no continuity, check continuity between the following terminals, noting ohmmeter test lead polarity:

- * "a" (+) and No. 1 (-).
- * "b" (+) and No. 2 (-).
- * "c" (+) and No. 3 (-).
- * "e" (+) and No. 4 (-).
- * "f" (+) and No. 5 (-).
- * "g" (+) and No. 6 (-).

4) If there is no continuity, replace power transistor. If there is continuity, reverse ohmmeter test lead polarity and check continuity between terminals listed in previous step. If there is continuity, replace power transistor. If there is no continuity, power transistor is okay.

Maxima (VG30E Engine)

1) Disconnect power transistor connector. See Figs. 16-18. At power transistor connector, check continuity between the following terminals, noting ohmmeter test lead polarity:

- * "a" (+) and "b" (-).
- * "a" (+) and "c" (-).

2) If there is no continuity, replace power transistor. If there is continuity, reverse ohmmeter test lead polarity and check continuity between terminals listed in previous step. If there is continuity, replace power transistor. If there is no continuity, power transistor is okay.

Altima, NX, Sentra, Pathfinder, Pickup, Quest & 240SX

1) Disconnect power transistor connector. See Figs. 16-18. At power transistor connector, check continuity between the following terminals, noting ohmmeter test lead polarity:

- * "a" (+) and "b" (-).
- * "a" (+) and "c" (-).

2) If there is continuity, replace power transistor. If there is no continuity, reverse ohmmeter test lead polarity and check

continuity across terminals listed in previous step. If there is no continuity, replace power transistor. If there is continuity, power transistor is okay.

300ZX

1) Disconnect power transistor connector. Connect ohmmeter positive lead to terminal "g" and negative lead to terminals "a", "b", "c", "d", "e" and "f" of power transistor connector. See Figs. 16-18. If there is continuity, replace power transistor.

2) If there is no continuity, reverse ohmmeter test lead polarity and check continuity between terminals listed in previous step. If there is no continuity, replace power transistor. If there is continuity, check continuity between terminal "g" and terminals No. 1, 2, 3, 4, 5 and 6 (check with polarity in one direction, and then with polarity in opposite direction).

3) There should be continuity regardless of ohmmeter test lead polarity. If there is no continuity, replace power transistor. If there is continuity, check continuity between the following terminals, noting ohmmeter test lead polarity:

- * "a" (+) and No. 1 (-).
- * "b" (+) and No. 2 (-).
- * "c" (+) and No. 3 (-).
- * "d" (+) and No. 4 (-).
- * "e" (+) and No. 5 (-).
- * "f" (+) and No. 6 (-).

4) If there is no continuity, replace power transistor. If there is continuity, reverse ohmmeter test lead polarity and check continuity between terminals listed in previous step. If there is continuity, replace power transistor. If there is no continuity, power transistor is okay.

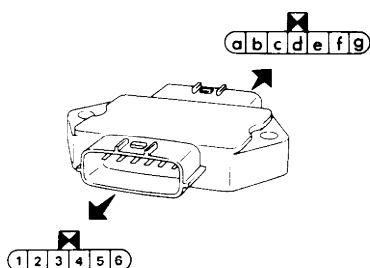


Fig. 16: Power Transistor Connector Terminal ID (Maxima VE30DE)
Courtesy of Nissan Motor Co., U.S.A.

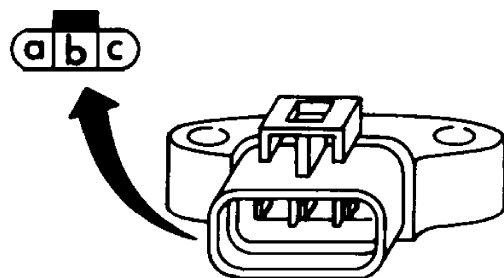
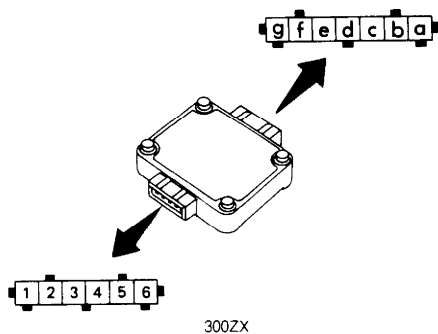


Fig. 17: Power Transistor Connector Terminal ID (Except 300ZX)
Courtesy of Nissan Motor Co., U.S.A.



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300ZX

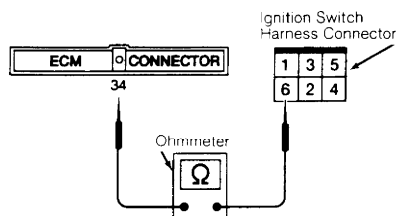
Fig. 18: Power Transistor Connector Terminal ID (300ZX)
Courtesy of Nissan Motor Co., U.S.A.

START SIGNAL

Start Signal System Test (Altima)

1) Locate ECM harness connector. ECM is located under center of instrument panel (connector is on passenger's side). Measure voltage between ground and ECM harness connector terminal No. 34 (Green/Black wire). See Figs. 1 and 2. Turn ignition switch to START position. Battery voltage should be present in start position ONLY. Zero volts should be present in any other ignition switch position. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect ECM harness connector. Disconnect ignition switch harness connector. Check continuity between ECM harness connector terminal No. 34 (Green/Black wire) and ignition switch harness connector terminal No. 6 (Black/Yellow wire). See Fig. 19. Continuity should exist. If continuity exists, check ECM and ECM harness connector terminals for correct installation, damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors between ignition switch and ECM harness connector.



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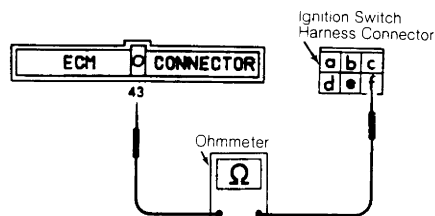
Fig. 19: Testing Start Signal (Altima)
Courtesy of Nissan Motor Co., U.S.A.

Start Signal System Test (Maxima)

1) Locate ECM harness connector. ECM is located under center of instrument panel (connector is on driver's side). Measure voltage between ground and ECM harness connector terminal No. 43 (Green/White wire). See Figs. 1 and 2. Turn ignition switch to START position. Battery voltage should be present in start position ONLY. Zero volts should be present in any other ignition switch position. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect ECM harness connector. Disconnect ignition switch harness connector. Check continuity between ECM harness connector terminal No. 43 (Green/White wire) and ignition switch harness connector terminal "f" (Green/Red wire). See Fig. 20. Continuity should exist. If continuity exists, check ECM and ECM

harness connector terminals for correct installation, damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors between ignition switch and ECM harness connector.



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Fig. 20: Testing Start Signal (Maxima)
Courtesy of Nissan Motor Co., U.S.A.

Start Signal System Test (NX & Sentra)

1) Locate ECM harness connector. ECM is located under center of instrument panel (connector faces to rear of vehicle). Measure voltage between ground and ECM harness connector terminal No. 34 (Purple wire). See Figs. 1 and 2. Turn ignition switch to START position. Battery voltage should be present in start position ONLY. Zero volts should be present in any other ignition switch position. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 34 (Purple wire) and ignition switch harness connector terminal "f" (Black/Yellow wire). See Fig. 20. Continuity should exist. If continuity exists, check ECM and ECM harness connector terminals for correct installation, damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors between ignition switch and ECM harness connector.

Start Signal System Test (Pathfinder & Pickup)

1) Locate ECM harness connector. ECM is located under passenger's seat. Measure voltage between ground and ECM harness connector terminal No. 34 (Black/Yellow wire). See Figs. 1 and 2. Turn ignition switch to START position. Battery voltage should be present in start position ONLY. Zero volts should be present in any other ignition switch position.

2) If voltage is not as specified, repair open in Black/Yellow wire between ECM and ignition switch. If voltage is as specified, check ECM and ECM harness connector terminals for correct installation, damage or corrosion. Repair as necessary.

3) Turn ignition on. Perform Mode IV (switch check). See G - TESTS W/ CODES article. Ensure Red LED is on while ignition switch in START position. If Red LED is on, system is functioning properly. If Red LED is not on, repeat step 1).

Start Signal System Test (Quest)

1) Locate ECM harness connector. ECM is located behind glove box. Measure voltage between ground and ECM harness connector terminal No. 34 (Blue/Black wire). See Figs. 1 and 2. Turn ignition switch to START position. Battery voltage should be present in start position ONLY. Zero volts should be present in any other ignition switch position. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 34 (Blue/Black wire) and ignition switch harness connector terminal "f" (Red/Green wire). See Fig. 21.

Continuity should exist. If continuity exists, check ECM and ECM harness connector terminals for correct installation, damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors between ignition switch and ECM harness connector. Check 10-amp fuse located in fuse box under left instrument panel. Repair or replace as necessary.

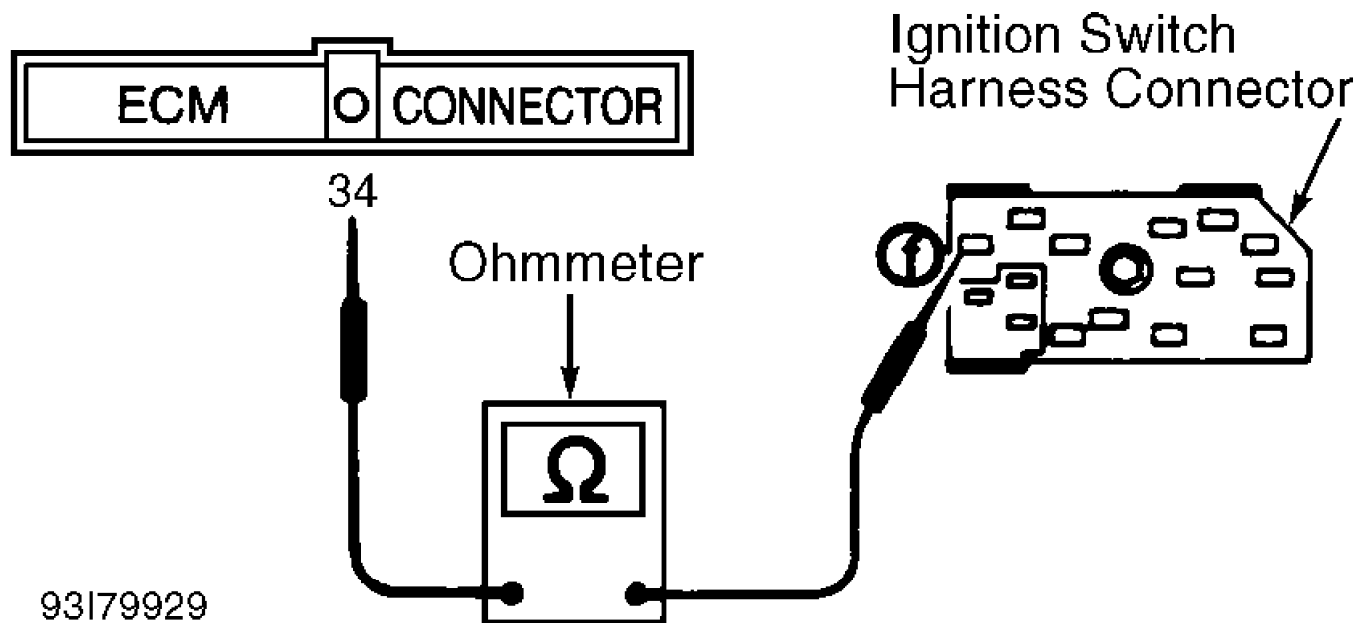


Fig. 21: Testing Start Signal (Quest)
Courtesy of Nissan Motor Co., U.S.A.

Start Signal System Test (240SX)

1) Locate ECM harness connector. ECM is located behind passenger side kick panel. Measure voltage between ground and ECM harness connector terminal No. 34 (Orange wire). See Figs. 1 and 2. Turn ignition switch to START position. Battery voltage should be present in start position ONLY. Zero volts should be present in any other ignition switch position. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect ECM harness connector. Disconnect ignition switch harness connector. Check continuity between ECM harness connector terminal No. 34 (Orange wire) and ignition switch harness connector terminal "f" (Black/Yellow wire). For ignition switch connector identification, see Fig. 20. Continuity should exist. If continuity exists, check ECM and ECM harness connector terminals for correct installation, damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors between ignition switch and ECM harness connector. Check 10-amp fuse located in fuse box under left instrument panel. Repair or replace as necessary.

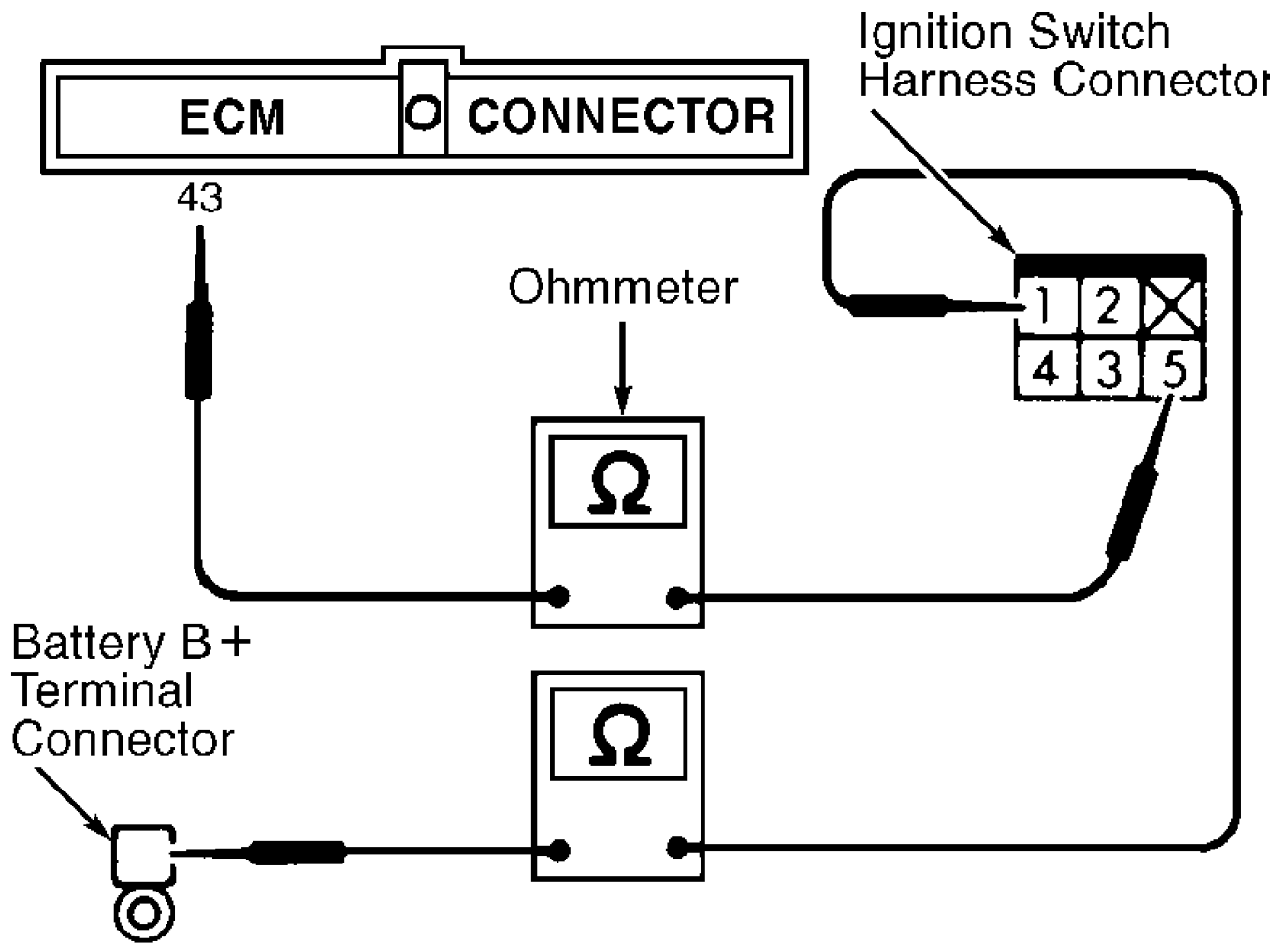
Start Signal System Test (300ZX)

1) Locate ECM harness connector. ECM is located below glove box. Measure voltage between ground and ECM harness connector terminal No. 43 (Black/Yellow wire). See Figs. 1 and 2. Turn ignition switch to START position. Battery voltage should be present in start position ONLY. Zero volts should be present in any other ignition switch position. If voltage is not as specified, go to next step. If voltage is as specified, system is functioning properly.

2) Turn ignition off. Disconnect ECM harness connector. Disconnect ignition switch harness connector. Disconnect battery B +

terminal connector at battery (White wire). Check continuity between ECM harness connector terminal No. 43 (Black/Yellow wire) and ignition switch harness connector terminal No. 5 (Black/Yellow wire). See Fig. 22. Continuity should exist. If continuity exists, check ECM and ECM harness connector terminals for correct installation, damage or corrosion. Repair as necessary. If continuity does not exist, repair open in harness or connectors between ignition switch and ECM harness connector.

3) Check continuity between ignition switch harness connector terminal No. 1 (White wire) and battery B + terminal connector at battery (White wire). See Fig. 22. Continuity should exist. If continuity does not exist, repair open in harness or connectors between ignition switch and battery B + terminal connector at battery (White wire). Check Green fusible link located in fusible link holder next to battery. Check 10-amp fuse located in fuse box under left instrument panel. Repair or replace as necessary.



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Fig. 22: Testing Start Signal (300ZX)
Courtesy of Nissan Motor Co., U.S.A.

TIMING CONTROL SYSTEMS

Timing Advance

Ignition timing advance is controlled by the ECM based upon

sensor input signals. If timing problems are experienced, inspect input signals for proper operation. See PIN VOLTAGE CHARTS article. Inputs that affect timing include the following:

- * Crank angle sensor.
- * Airflow meter.
- * Engine (coolant) temperature sensor.
- * Idle switch.
- * Start (cranking) signal.
- * Battery voltage.

Detonation (Knock) Retard

Faults in detonation retard circuit may set Code 34. To test system, see CODE 34 diagnostic procedures in G - TESTS W/ CODES article. To test knock (detonation) sensor, see ENGINE SENSORS & SWITCHES.

EMISSION SYSTEMS & SUB-SYSTEMS

CANISTER PURGE SYSTEM

Carbon Canister

Remove hoses from carbon canister. Blow air into canister ports as shown. See Fig. 23. Air should pass through vent and purge lines, but should not pass through vacuum lines.

Fuel Tank Vacuum Relief Valve

Valve is located in fuel tank filler cap. Wipe cap clean to prevent inhaling fuel vapors. Find a way to safely apply light vacuum to cap on side of cap that faces fuel tank. A slight resistance accompanied by clicks indicates the valve is okay. By applying more vacuum, resistance should no longer be felt and clicks should no longer be heard. If valve does not operate as specified, replace fuel tank filler cap.

Fuel Vapor Check Valve

Disconnect hoses from fuel vapor check valve. Apply light air pressure to fitting on side of valve that leads to fuel tank. Resistance should be felt, but some air should flow out of fitting that leads to carbon canister. Apply light air pressure to fitting that leads to carbon canister. Air should flow freely through valve. If valve does not operate as described, replace valve.

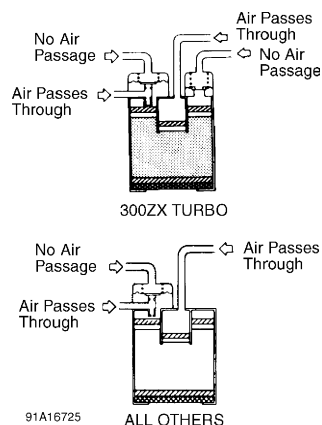


Fig. 23: Testing Carbon Canister Purge Valves
Courtesy of Nissan Motor Co., U.S.A.

EXHAUST GAS RECIRCULATION (EGR)

Start Signal

If ECM receives an incorrect start (cranking) signal, EGR control solenoid may not operate properly. See START SIGNAL under IGNITION SYSTEMS.

EGR Function (Altima & 240SX - California)

Faults in EGR function circuit may set Code 32. To test function, see CODE 32 diagnostic procedures in G - TESTS CODES article.

EGR System Test (Altima & 240SX - Non-California)

1) Start engine and bring to operating temperature. Using a mirror or finger, ensure EGR valve plunger moves up and down as engine is accelerated from idle to 2000 RPM and back to idle. If plunger does not move up and down, go to next step. If plunger moves up and down, system is functioning properly.

2) Disconnect vacuum hose from EGR valve. Vacuum should not be present at idle. Vacuum should be present at 2000 RPM. If vacuum is not present as described, go to next step. If vacuum is present as described, check EGR valve. See EGR VALVE. Check EGR backpressure transducer. See EGR BACKPRESSURE TRANSDUCER (EGR-BPT). Replace malfunctioning components.

3) Measure voltage between ground and ECM harness connector terminal No. 105 (Light Green wire). See Figs. 1 and 2. ECM is located under center of instrument panel (connector is on passenger's side) on Altima or behind passenger side kick panel on 240SX. Start engine. At idle, zero volts should be present. At 2000 RPM, battery voltage should be present. If voltage is not as specified, go to next step. If voltage is as specified, check vacuum hose for clogging, cracks and proper connection. Replace hose as necessary.

4) Turn ignition off. Disconnect EGR and canister control solenoid harness connector. Solenoid is located near EGR-BPT on Altima or rear of cylinder head on 240SX. Turn ignition on. Measure voltage between ground and EGR and canister control solenoid harness connector Green/Yellow wire (Altima) or Brown wire (240SX). Battery voltage should be present. If battery voltage is present, go to step 6).

5) If battery voltage is not present, check 10-amp fuse located in fuse box under left instrument panel on Altima or in relay box next to battery on 240SX. Replace fuse if necessary. If fuse is okay, repair open in Green/Yellow wire (Altima) or Brown wire (240SX) between fuse and solenoid.

6) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 105 (Light Green wire) and EGR and canister control solenoid harness connector Light Green wire. Continuity should exist. If continuity exists, check solenoid valve. See EGR CONTROL SOLENOID. Replace solenoid as necessary. If solenoid is okay, check ECM and ECM harness connector for damage or improper connection. If continuity does not exist, repair open in Light Green wire.

EGR Function (Maxima - California)

Faults in EGR function circuit may set Code 32. To test function, see CODE 32 diagnostic procedures in G - TESTS W/ CODES article.

EGR System Test (Maxima VE30DE - Non-California)

1) Start engine and bring to operating temperature. Check ECM for stored codes. See RETRIEVING CODES in G - TESTS W/ CODES article. If Code 12 is present, repair cause of Code 12 before continuing. Using a mirror or finger, ensure EGR valve plunger moves up and down as engine is accelerated from idle to 2000 RPM and back to idle. If

plunger does not move up and down, go to next step. If plunger moves up and down, system is functioning properly.

2) Disconnect vacuum hose from EGR valve. Vacuum should not be present at idle. Vacuum should be present at 2000 RPM. If vacuum is not present as described, go to next step. If vacuum is present as described, check EGR valve. See EGR VALVE. Replace EGR valve as necessary.

3) Measure voltage between ground and ECM harness connector terminal No. 102 (Yellow/Black wire). See Figs. 1 and 2. ECM is located under center of instrument panel (connector is on driver's side). Start engine. At idle, zero volts should be present. At 2000 RPM, battery voltage should be present. If voltage is not as specified, go to next step. If voltage is as specified, check vacuum hose for clogging, cracks and proper connection. Replace hose as necessary.

4) Turn ignition off. Disconnect EGR control solenoid harness connector. Solenoid is located near EGR valve. Turn ignition on. Measure voltage between ground and EGR control solenoid harness connector Red/Black wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse located in fuse box under left instrument panel. Replace fuse if necessary. If fuse is okay, repair open in Red/Black wire between fuse and solenoid.

5) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 102 (Yellow/Black wire) and EGR control solenoid harness connector Yellow/Black wire. Continuity should exist. If continuity exists, check solenoid valve. See EGR CONTROL SOLENOID. Replace solenoid as necessary. If solenoid is okay, check ECM and ECM harness connector for damage or improper connection. If continuity does not exist, repair open in Yellow/Black wire.

EGR System Test (Maxima VG30E - Non-California)

Use Code 32 diagnostic procedures. See CODE 32 diagnostic procedures in G - TESTS W/ CODES article.

EGR Function (NX & Sentra - California)

Faults in EGR function circuit may set Code 32. To test function, see CODE 32 diagnostic procedures in G - TESTS W/ CODES article.

EGR System Test (NX & Sentra - Non-California)

1) Start engine and bring to operating temperature. Check ECM for stored codes. See RETRIEVING CODES in G - TESTS W/ CODES article. If Code 12 is present, repair cause of Code 12 before continuing. Using a mirror or finger, ensure EGR valve plunger moves up and down as engine is accelerated from idle to 2000 RPM and back to idle. If plunger does not move up and down, go to next step. If plunger moves up and down, system is functioning properly.

2) Disconnect vacuum hose from EGR valve. Vacuum should not be present at idle and above 4000 RPM. Vacuum should be present at 2000 RPM. If vacuum is not present as described, go to next step. If vacuum is present as described, check EGR valve. See EGR VALVE. Check EGR backpressure transducer. See EGR BACKPRESSURE TRANSDUCER (EGR-BPT). Replace malfunctioning components.

3) Measure voltage between ground and ECM harness connector terminal No. 105 (Red/Blue wire 1.6L or Gray wire 2.0L). See Figs. 1 and 2. ECM is located under center of instrument panel. Start engine. At 4000 RPM, voltage should be 0.6-0.8 volt. At 2000 RPM, battery voltage should be present. If voltage is not as specified, go to next step. If voltage is as specified, check vacuum hose for clogging, cracks and proper connection. Replace hose as necessary.

4) Turn ignition off. Disconnect EGR and canister control

solenoid harness connector. Solenoid is located near EGR valve. Turn ignition on. Measure voltage between ground and EGR and canister control solenoid harness connector White/Green wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse located in fuse box under left instrument panel. Replace fuse if necessary. If fuse is okay, repair open in White/Green wire between fuse and solenoid.

5) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 105 (Red/Blue wire on 1.6L or Gray wire on 2.0L) and EGR and canister control solenoid harness connector (Red/Blue wire on 1.6L or Gray wire on 2.0L). Continuity should exist. If continuity exists, check solenoid valve. See EGR CONTROL SOLENOID. Replace solenoid as necessary. If solenoid is okay, check ECM and ECM harness connector for damage or improper connection. If continuity does not exist, repair open in Red/Blue wire on 1.6L or Gray wire on 2.0L.

EGR Function (Pathfinder & Pickup - California)

Faults in EGR function circuit may set Code 32. To test function, see CODE 32 diagnostic procedures in G - TESTS W/ CODES article.

EGR System Test (Pathfinder & Pickup - Non-California)

1) Start engine and bring to operating temperature. Check ECM for stored codes. See RETRIEVING CODES in G - TESTS W/ CODES article. If Code 12 is present, repair cause of Code 12 before continuing. Using a mirror or finger, ensure EGR valve plunger moves up and down as engine is accelerated from idle to 2000 RPM and back to idle. If plunger does not move up and down, go to next step. If plunger moves up and down, system is functioning properly.

2) Disconnect vacuum hose from EGR valve. Vacuum should not be present at idle. Vacuum should be present at 2000 RPM. If vacuum is not present as described, go to next step. If vacuum is present as described, check EGR valve. See EGR VALVE. Check EGR backpressure transducer. See EGR BACKPRESSURE TRANSDUCER (EGR-BPT). Replace malfunctioning components.

3) Measure voltage between ground and ECM harness connector terminal No. 102 (Blue/White wire on Pathfinder and Pickup 3.0L) or terminal No. 105 (White/Blue wire on Pickup 2.4L). See Figs. 1 and 2. ECM is located under passenger's seat. Start engine. At idle, zero volts should be present. At 2000 RPM, battery voltage should be present. If voltage is not as specified, go to next step. If voltage is as specified, check vacuum hose for clogging, cracks and proper connection. Replace hose as necessary.

4) Turn ignition off. Disconnect EGR control solenoid harness connector. Solenoid is located near EGR valve. Turn ignition on. Measure voltage between ground and EGR control solenoid harness connector Black/White wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 15-amp fuse located in fuse box under left instrument panel. Replace fuse if necessary. If fuse is okay, repair open in Black/White wire between fuse and solenoid.

5) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 102 (Blue/White wire on Pathfinder and Pickup 3.0L) or terminal No. 105 (White/Blue wire on Pickup 2.4L) and corresponding wire of EGR control solenoid harness connector. Continuity should exist. If continuity exists, check solenoid valve. See EGR CONTROL SOLENOID. Replace solenoid as necessary. If solenoid is okay, check ECM and ECM harness connector for damage or improper connection. If continuity does not exist, repair open in Blue/White wire on Pathfinder and Pickup 3.0L or White/Blue wire on Pickup 2.4L.

EGR Function (Quest - California)

Faults in EGR function circuit may set Code 32. To test function, see CODE 32 diagnostic procedures in G - TESTS W/ CODES article.

EGR System Test (Quest - Non-California)

1) Start engine and bring to operating temperature. Check ECM for stored codes. See RETRIEVING CODES in G - TESTS W/ CODES article. If Code 12 is present, repair cause of Code 12 before continuing. Using a mirror or finger, ensure EGR valve plunger moves up and down as engine is accelerated from idle to 2000 RPM and back to idle. If plunger does not move up and down, go to next step. If plunger moves up and down, system is functioning properly.

2) Disconnect vacuum hose from EGR valve. Vacuum should not be present at idle. Vacuum should be present at 2000 RPM. If vacuum is not present as described, go to next step. If vacuum is present as described, check EGR valve. See EGR VALVE. Replace EGR valve as necessary.

3) Measure voltage between ground and ECM harness connector terminal No. 102 (Gray wire). See Figs. 1 and 2. ECM is located behind glove box. Start engine. At idle, zero volts should be present. At 2000 RPM, battery voltage should be present. If voltage is not as specified, go to next step. If voltage is as specified, check vacuum hose for clogging, cracks and proper connection. Replace hose as necessary.

4) Turn ignition off. Disconnect EGR control solenoid harness connector. Solenoid is located below throttle body. Turn ignition on. Measure voltage between ground and EGR control solenoid harness connector White/Red wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, repair open in White/Red wire between solenoid and ignition switch.

5) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 102 (Gray wire) and EGR control solenoid harness connector Gray wire. Continuity should exist. If continuity exists, check solenoid valve. See EGR CONTROL SOLENOID. Replace solenoid as necessary. If solenoid is okay, check ECM and ECM harness connector for damage or improper connection. If continuity does not exist, repair open in Gray wire.

EGR Function (300ZX - California)

Faults in EGR function circuit may set Code 32. To test function, see CODE 32 diagnostic procedures in G - TESTS W/ CODES article.

EGR System Test (300ZX - Non-California)

Use Code 32 diagnostic procedures. See CODE 32 diagnostic procedures in G - TESTS W/ CODES article.

EGR Backpressure Transducer (EGR-BPT)

Plug one port of EGR backpressure transducer (EGR-BPT) and apply vacuum to other port. See Figs. 24 and 25. Vacuum should NOT hold. Apply light pressure to bottom port (DO NOT apply more pressure than is necessary to cause vacuum to hold). If vacuum does not hold with pressure applied, replace EGR-BPT valve.

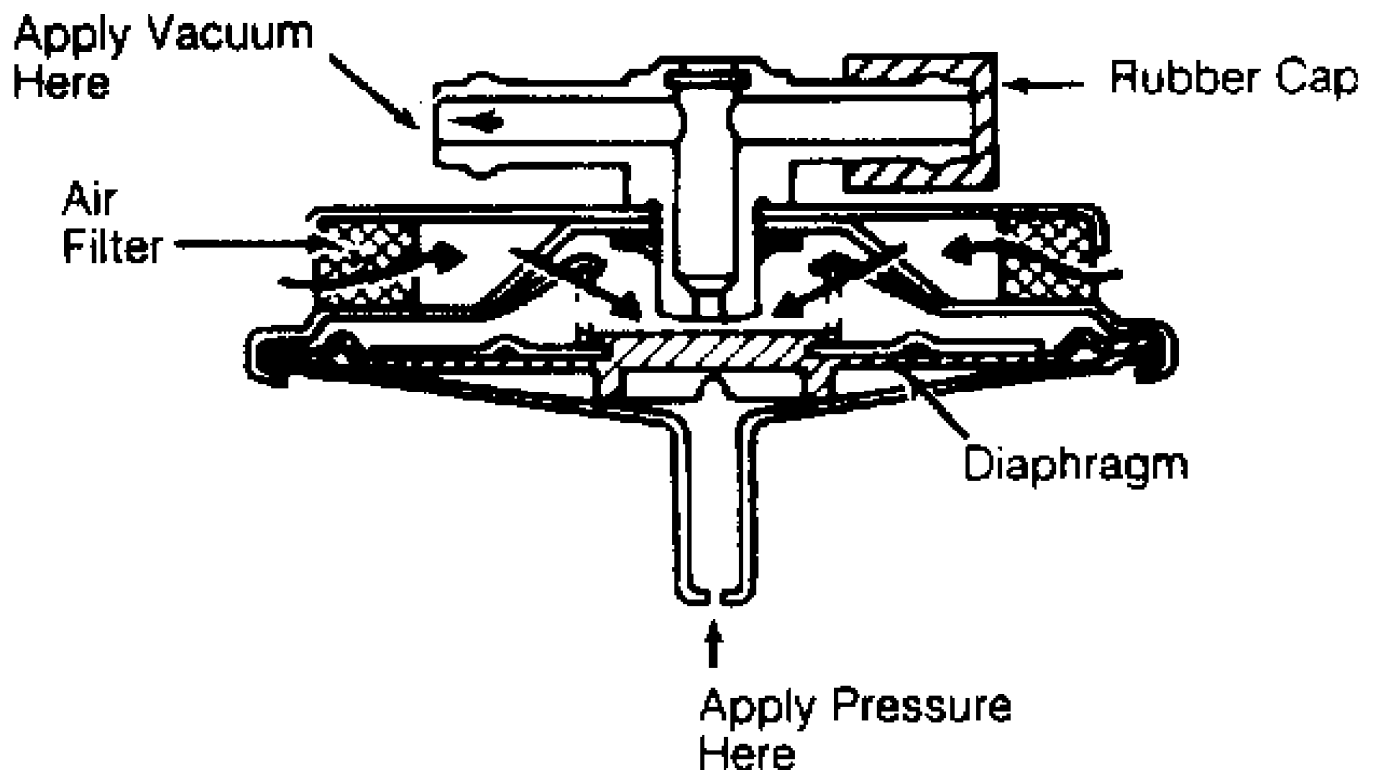


Fig. 24: Cross-Sectional View Of EGR Backpressure Transducer (EGR-BPT)
 Courtesy of Nissan Motor Co., U.S.A.

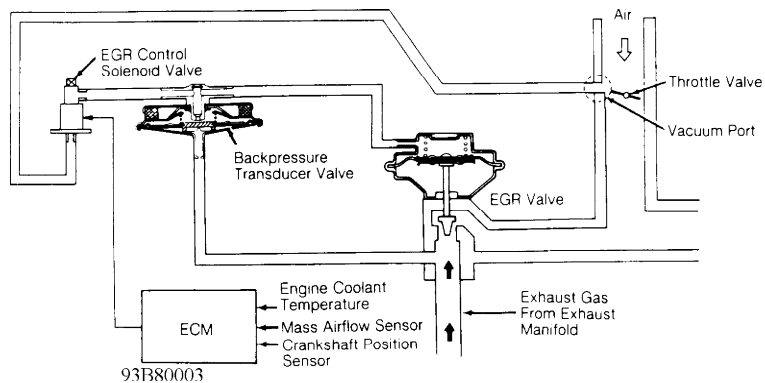


Fig. 25: Backpressure EGR System Diagram (Typical)
 Courtesy of Nissan Motor Co., U.S.A.

EGR Valve

Using a hand-held vacuum pump, apply vacuum to EGR valve diaphragm. See Fig. 26. Replace EGR valve if pintle does not open.

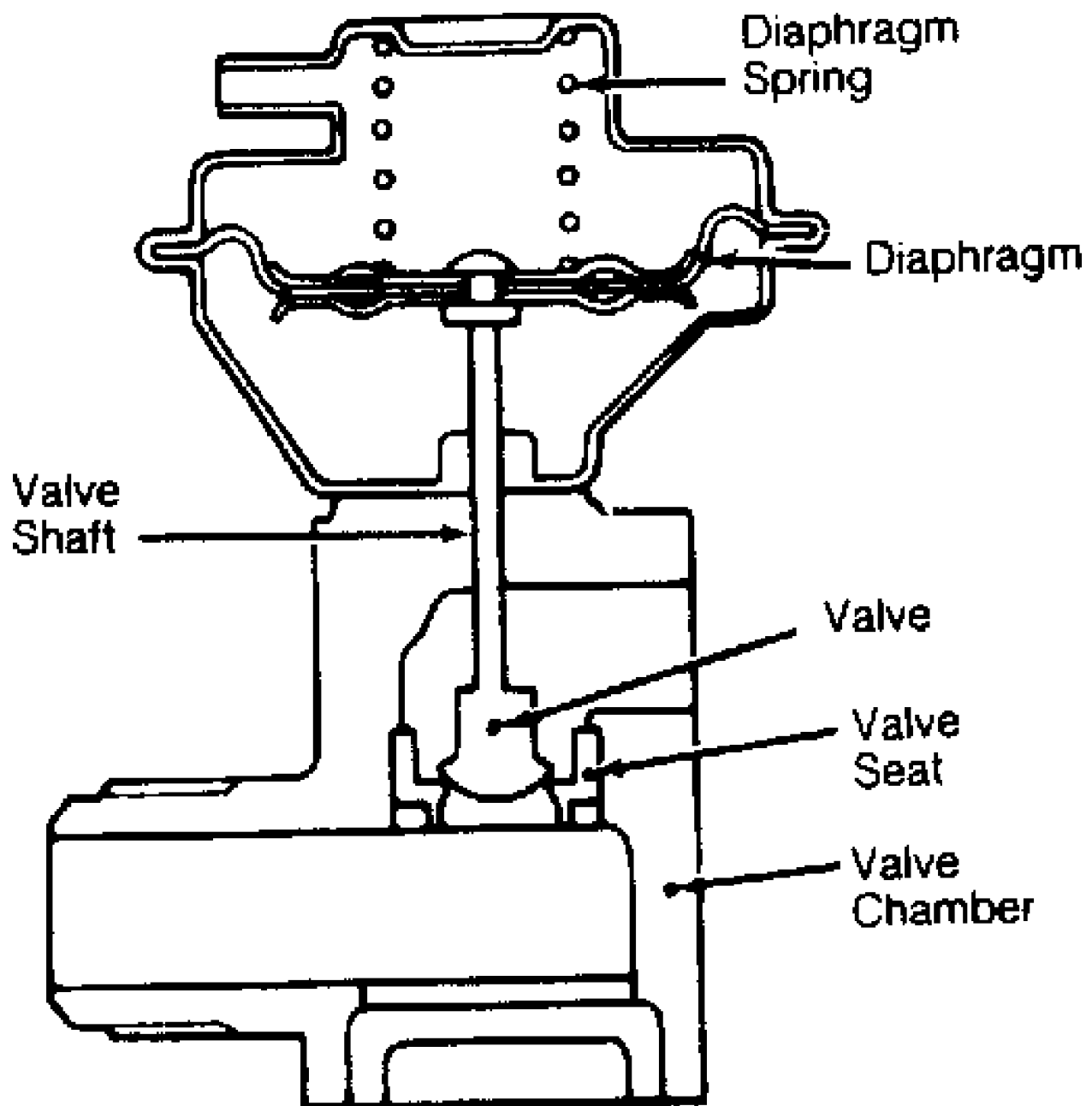


Fig. 26: Cross-Sectional View Of Typical EGR Valve
Courtesy of Nissan Motor Co., U.S.A.

NOTE: On some EGR control solenoids, port "C" may be a vent that is capped with a filter. Also, if solenoid does not respond

as specified, perform test again, considering port "A" as port "B" and vice versa.

EGR Control Solenoid

1) Disconnect vacuum lines and electrical connector from solenoid. Remove solenoid. Using hand-held vacuum pump, apply vacuum to port "B" of solenoid. See Fig. 28. Vacuum should now be available at port "C", but not at port "A".

2) Apply battery voltage across solenoid connector terminals, ensuring polarity is correct to prevent solenoid damage. Vacuum should now be available at port "A", but not at port "C". Replace solenoid if it does not operate as specified.

PULSED SECONDARY AIR INJECTION (PAIR)

Pulsed Secondary Air Injection (PAIR) System Test (NX & Sentra 2.0L)

1) Start engine and warm to operating temperature. Enter self-diagnostic Mode II. See G - TESTS W/ CODES article. Run engine at approximately 2000 RPM for 2 minutes under no-load. Ensure Red LED on ECM or CHECK ENGINE light flashes more than 5 times during a 10 second period with engine running at 2000 RPM. If Red LED or CHECK ENGINE light does not flash as described, see FEEDBACK SYSTEM under FUEL CONTROL. If Red LED or CHECK ENGINE light flashes as described, go to next step.

2) Release accelerator pedal and let engine idle. Disconnect PAIR valve inlet hose (top hose). Listen to PAIR valve operating sound. With engine idling and during deceleration, PAIR valve should operate. When accelerator pedal is depressed, PAIR valve should not operate. If PAIR valve does not operate as described, go to next step. If PAIR valve operates as described, system is functioning properly.

3) Disconnect vacuum hose at PAIR valve. With engine idling and during deceleration, vacuum should exist. When accelerator pedal is depressed, vacuum should not exist. If vacuum does not exist as described, go to next step. If vacuum exists as described, check PAIR valve. See PULSED SECONDARY AIR INJECTION (PAIR) VALVE TEST.

4) Locate ECM harness connector. ECM is located under center of instrument panel (connector faces to rear of vehicle). Measure voltage between ground and ECM harness connector terminal No. 102 (Pink wire). See Figs. 1 and 2. With engine idling and during deceleration, 0.6-0.8 volt should be present. When accelerator pedal is depressed, battery voltage should be present. If voltage is not as described, go to next step. If voltage is as described, check vacuum hose for clogging, cracks and proper connection.

5) Turn ignition off. Disconnect PAIR control solenoid harness connector. Solenoid is attached to bracket next to EGR backpressure transducer. Turn ignition on. Measure voltage between ground and PAIR control solenoid harness connector White/Green wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse located in fuse box under left of instrument panel. Replace fuse as necessary. If fuse is okay, repair open in Green/White wire between PAIR control solenoid and fuse.

6) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 102 (Pink wire) and PAIR control solenoid harness connector Pink wire. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Pink wire between ECM and PAIR control solenoid.

7) Check PAIR control solenoid. See PULSED SECONDARY AIR INJECTION (PAIR) CONTROL SOLENOID TEST. Replace solenoid as necessary. If solenoid is okay, check ECM and ECM harness connector terminals for damage, corrosion and proper connection. Repair or replace as

necessary.

Pulsed Secondary Air Injection (PAIR) System Test (Pickup 2.4L)

1) Start engine and warm to operating temperature. Enter self-diagnostic Mode II. See G - TESTS W/ CODES article. Run engine at approximately 2000 RPM for 2 minutes under no-load. Ensure Green LED on ECM flashes more than 5 times during a 10 second period with engine running at 2000 RPM. If Green LED does not flash as described, see FEEDBACK SYSTEM under FUEL CONTROL under FUEL SYSTEM. If Green LED flashes as described, go to next step.

2) Release accelerator pedal and let engine idle. Disconnect PAIR valve inlet hose (top hose). Listen to PAIR valve operating sound. With engine idling, PAIR valve should operate. When accelerator pedal is depressed, PAIR valve should not operate. If PAIR valve does not operate as described, go to next step. If PAIR valve operates as described, system is functioning properly.

3) Disconnect vacuum hose at PAIR valve. PAIR valve is located in left front corner of engine compartment. With engine idling, vacuum should exist. When accelerator pedal is depressed, vacuum should not exist. If vacuum does not exist as described, go to next step. If vacuum exists as described, check PAIR valve. See PULSED SECONDARY AIR INJECTION (PAIR) VALVE TEST.

4) Locate ECM harness connector. ECM is located under passenger's seat. Measure voltage between ground and ECM harness connector terminal No. 102 (Light Green wire). See Figs. 1 and 2. With engine idling, zero volts should be present. When accelerator pedal is depressed, battery voltage should be present. If voltage is not as described, go to next step. If voltage is as described, check vacuum hose for clogging, cracks and proper connection.

5) Turn ignition off. Disconnect PAIR control solenoid harness connector. Solenoid is located next to PAIR valve. Turn ignition on. Measure voltage between ground and PAIR control solenoid harness connector Black/White wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse located in fuse box under left of instrument panel. Replace fuse as necessary. If fuse is okay, repair open in Black/White wire between PAIR control solenoid and fuse.

6) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 102 (Light Green wire) and PAIR control solenoid harness connector Light Green wire. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Light Green wire between ECM and PAIR control solenoid.

7) Check PAIR control solenoid. See PULSED SECONDARY AIR INJECTION (PAIR) CONTROL SOLENOID TEST. Replace solenoid as necessary. If solenoid is okay, check ECM and ECM harness connector terminals for damage, corrosion and proper connection. Repair or replace as necessary.

Pulsed Secondary Air Injection (PAIR) System Test (240SX)

1) Start engine and warm to operating temperature. Run engine at approximately 2000 RPM for 2 minutes under no-load. Release accelerator pedal and let engine idle. Disconnect PAIR valve inlet hose (top hose). Listen to PAIR valve operating sound. With engine idling and during deceleration, PAIR valve should operate. When accelerator pedal is depressed, PAIR valve should not operate. If PAIR valve does not operate as described, go to next step. If PAIR valve operates as described, system is functioning properly.

2) Disconnect vacuum hose at PAIR valve. PAIR valve is located at left side of engine compartment, near brake master cylinder. With engine idling and during deceleration, vacuum should exist. When accelerator pedal is depressed, vacuum should not exist.

If vacuum does not exist as described, go to next step. If vacuum exists as described, check PAIR valve. See PULSED SECONDARY AIR INJECTION (PAIR) VALVE TEST.

3) Locate ECM harness connector. ECM is located behind passenger side kick panel. Measure voltage between ground and ECM harness connector terminal No. 102 (Pink wire). See Figs. 1 and 2. With engine idling and during deceleration, zero volts should be present. When accelerator pedal is depressed, battery voltage should be present. If voltage is not as described, go to next step. If voltage is as described, check vacuum hose for clogging, cracks and proper connection.

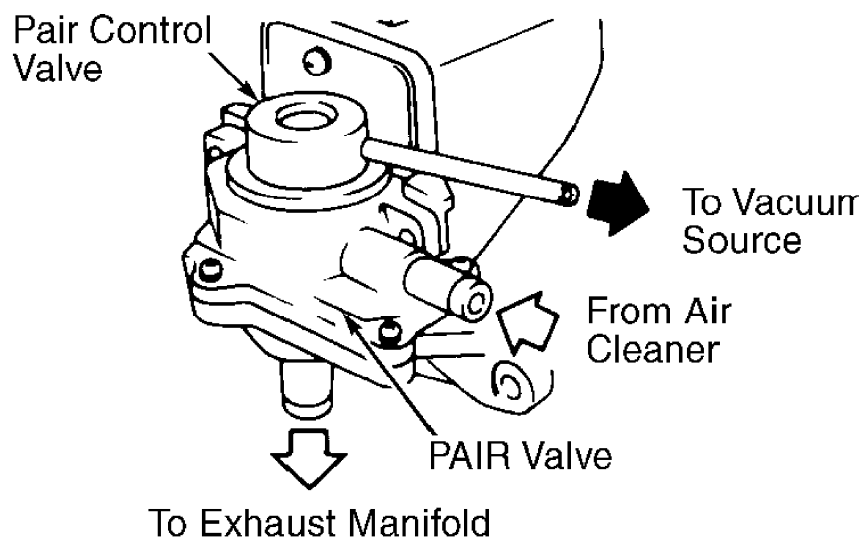
4) Turn ignition off. Disconnect PAIR control solenoid harness connector. Solenoid is located next to PAIR valve. Turn ignition on. Measure voltage between ground and PAIR control solenoid harness connector Brown wire. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check 10-amp fuse located in relay box next to battery. Replace fuse as necessary. If fuse is okay, repair open in Brown wire between PAIR control solenoid and fuse.

5) Turn ignition off. Disconnect ECM harness connector. Check continuity between ECM harness connector terminal No. 102 (Pink wire) and PAIR control solenoid harness connector Pink wire. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Pink wire between ECM and PAIR control solenoid.

6) Check PAIR control solenoid. See PULSED SECONDARY AIR INJECTION (PAIR) CONTROL SOLENOID TEST. Replace solenoid as necessary. If solenoid is okay, check ECM and ECM harness connector terminals for damage, corrosion and proper connection. Repair or replace as necessary.

Pulsed Secondary Air Injection (PAIR) Valve Test

Apply vacuum to PAIR valve diaphragm. See Fig. 27. Apply light air pressure to air cleaner side of PAIR valve. Air should flow toward exhaust manifold side. Air should NOT flow in opposite direction. If PAIR valve does not operate as described, replace valve.



93G80024

Fig. 27: Typical Pulsed Secondary Air Injection Valve
Courtesy of Nissan Motor Co., U.S.A.

NOTE: On some Pulsed Secondary Air Injection (PAIR) control solenoids, port "C" may be a vent that is capped with a

filter. Also, if solenoid does not respond as specified, perform test again, considering port "A" as port "B" and vice versa.

Pulsed Secondary Air Injection (PAIR) Control Solenoid Test

1) Disconnect vacuum lines and electrical connector from solenoid. Remove solenoid. Connect hand-held vacuum pump to vacuum port "B" of solenoid. See Fig. 28. Apply vacuum. Vacuum should now be available at port "C", but not at port "A".

2) Apply battery voltage across solenoid connector terminals, ensuring polarity is correct to prevent solenoid damage. Vacuum should now be available at port "A", but not at port "C". Replace solenoid if it does not operate as specified.

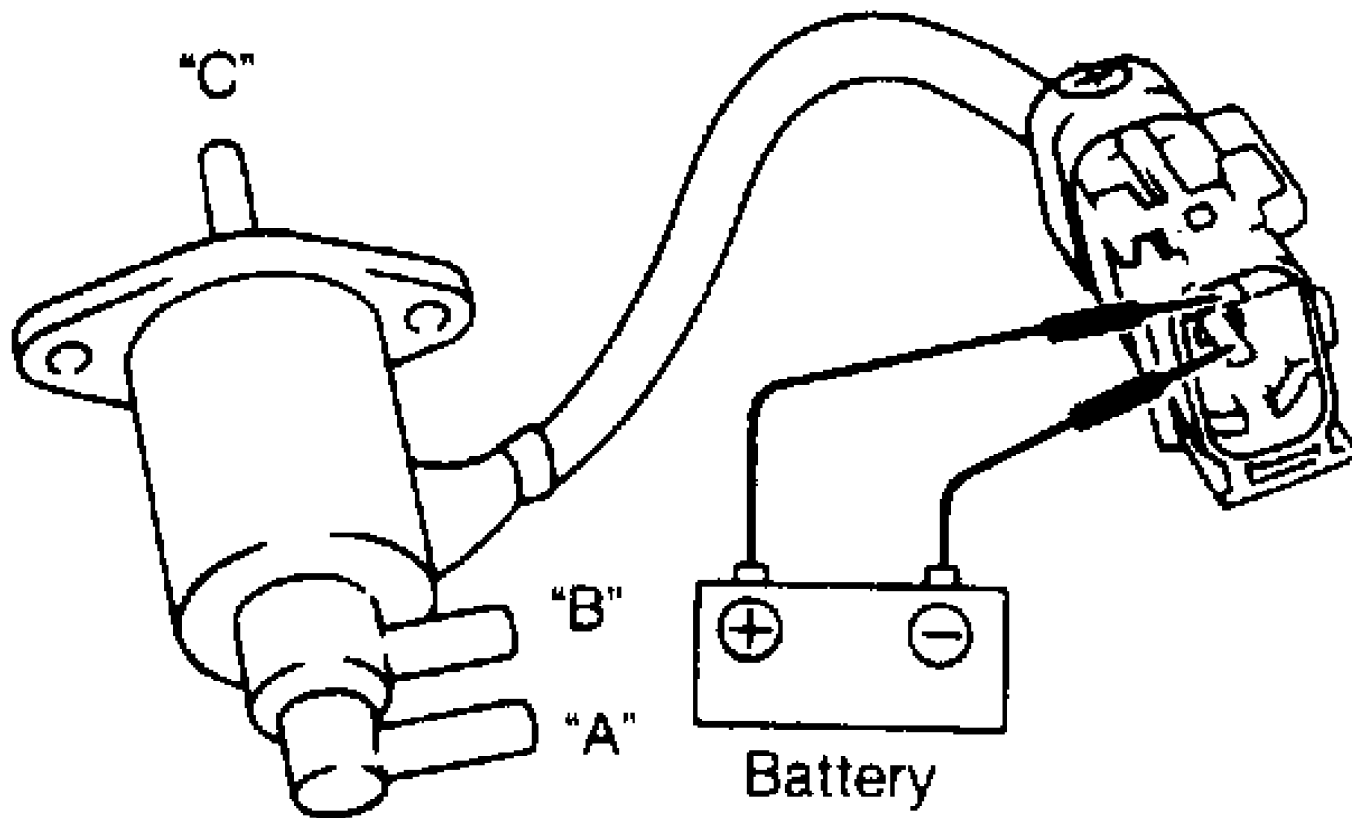


Fig. 28: Typical Control Solenoid (EGR, PAIR, PRVR & SCV)
Courtesy of Nissan Motor Co., U.S.A.

POSITIVE CRANKCASE VENTILATION (PCV)

With engine idling, disconnect ventilation hose from PCV valve. If a hissing noise and strong vacuum are not present at hose end, check hose and hose connections for leaks or obstructions. Repair or replace as necessary.

MISCELLANEOUS CONTROLS

NOTE: Although some of the controlled devices listed here are not technically engine performance components, they can affect driveability if they malfunction.

CONDENSER COOLING FAN (240SX)

The ECM controls condenser cooling fan based on vehicle speed, engine coolant temperature and A/C switch position. Compare cooling fan operation with operation specified in A/C SWITCH ON OR OFF (240SX) table. If cooling fan does not operate as specified, see CONDENSER (COOLING) FAN CONTROL TEST.

A/C SWITCH ON OR OFF TABLE (240SX)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 212 (100)	12 Or Less	(1)
Greater Than 212 (100)	12 Or Less	On
Less Than 212 (100)	12-49	Off
Greater Than 212 (100)	12-49	On
Less Than 212 (100)	50 Or More	Off
Greater Than 212 (100)	50 Or More	On

(1) - Fan is off with A/C switch off. Fan is on with A/C switch on.

Condenser (Cooling) Fan Control Test

1) Start engine and warm to operating temperature. Set temperature lever to full cold. Turn A/C switch on. Turn fan switch on. Run engine at idle with A/C on for several minutes. Ensure condenser fan operates. If fan does not operate, go to next step. If fan operates, system is functioning properly.

2) Turn A/C and fan switches off. Turn ignition off. Disconnect condenser fan relay. See Figs. 29 and 30. Turn ignition on. Measure voltage between ground and condenser fan relay harness connector terminals No. 2 (Blue/Orange wire) and No. 3 (Black/White wire). Battery voltage should be present. If battery voltage is present, go to step 4). If battery voltage is not present, go to next step.

3) Check Gray and Green fusible links located in fuse and relay box next to battery. Replace fusible links as necessary. Check 10-amp fuse located in fuse box under left side of instrument panel. Replace fuse as necessary. If fusible links and 10-amp fuse are okay, repair open in harness or connectors.

4) Turn ignition off. Disconnect condenser fan motor harness connector. Check continuity between condenser fan motor harness connector terminal "a" (Brown/White wire) and condenser fan relay harness connector terminal No. 5 (Brown/White wire). See Figs. 29 and 30. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Brown/White wire.

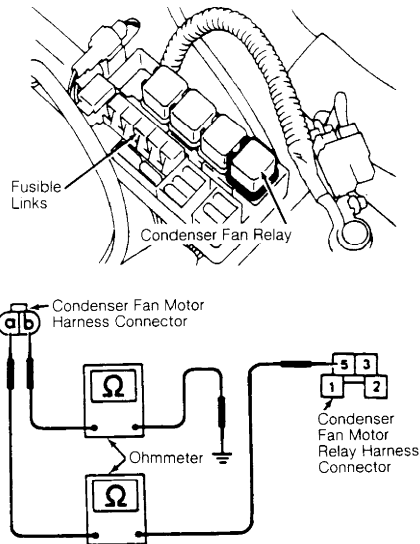
5) Check continuity between ground and condenser fan motor harness connector terminal "b" (Black wire). See Figs. 29 and 30. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Black wire.

6) Disconnect ECM harness connector. ECM is located behind passenger side kick panel. Check continuity between ECM harness connector terminal No. 9 (Orange/Blue wire) and condenser fan relay harness connector terminal No. 1 (Orange/Blue wire). See Figs. 1 and 26. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Orange/Blue wire.

7) Check condenser fan relay. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, check condenser fan motor. See CONDENSER FAN MOTOR TEST. Replace fan motor as necessary. If fan motor is okay, inspect ECM and ECM harness connector terminals for damage, corrosion and improper connection. Repair as necessary.

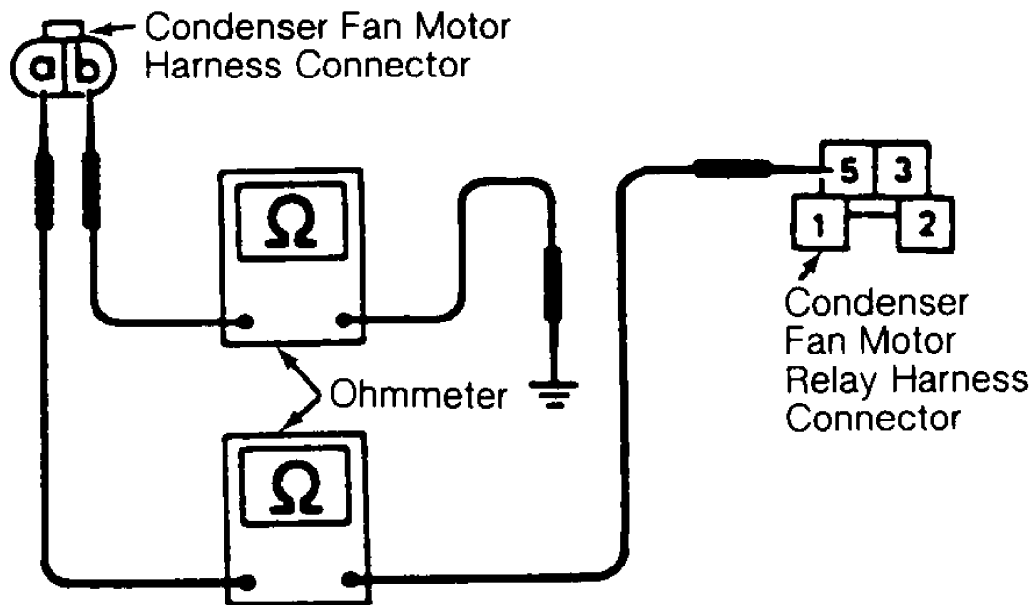
Condenser Fan Motor Test

Apply battery voltage across fan motor connector terminals. Fan motor should operate. If fan motor does not operate, replace fan motor.



93B80060

Fig. 29: Location Condenser Fan Circuit (240SX)
Courtesy of Nissan Motor Co., U.S.A.



93C80061

Fig. 30: Testing Condenser Fan Circuit (240SX)
Courtesy of Nissan Motor Co., U.S.A.

RADIATOR COOLING FANS (EXCEPT 240SX)

The ECM controls radiator cooling fan(s) based on vehicle speed, engine coolant temperature and A/C switch position. The following tables list correct cooling fan operation based on certain conditions. See appropriate A/C SWITCH ON or A/C SWITCH OFF table. If cooling fan does not operate as specified, see appropriate RADIATOR (COOLING) FAN CONTROL TEST. Tests are not available for Pathfinder and Pickup.

A/C SWITCH ON TABLE (ALTIMA)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 221 (105)	11 Or Less	(1) Low
Greater Than 221 (105)	11 Or Less	(1) High
Any Temperature	11 Or Less	(2) High
Less Than 212 (100)	12-50	Low
Greater Than 212 (100)	12-50	High
Less Than 203 (95)	51 Or More	Off
203-212 (95-100)	51 Or More	Low
212-221 (100-105)	51 Or More	High

(1) - With A/C triple-pressure switch off.

(2) - With A/C triple-pressure switch on.

A/C SWITCH OFF TABLE (ALTIMA)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 203 (95)	11 Or Less	Off
203-221 (95-105)	11 Or Less	Low
Greater Than 221 (105)	11 Or Less	High
Less Than 203 (95)	12 Or More	Off
203-212 (95-100)	12 Or More	Low
Greater Than 212 (100)	12 Or More	High

A/C SWITCH ON TABLE (MAXIMA VE30DE ENGINE)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 203 (95)	49 Or Less	Low
	50 Or More	Off
203-212 (95-100)	All Speeds	Low
212-221 (100-105)	12 Or Less	Low
	12 Or More	High
Greater Than 221 (105)	All Speeds	High

A/C SWITCH OFF TABLE (MAXIMA VE30DE ENGINE)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 203 (95)	All Speeds	Off
203-212 (95-100)	11 Or Less	Off
	12 Or More	Low
212-221 (100-105)	11 Or Less	Low
	12 Or More	High
Greater Than 221 (105)	All Speeds	High

A/C SWITCH ON TABLE (MAXIMA VG30E ENGINE)

Engine Coolant Temp. °F (°C)	(1) Cooling Fan Speed	Relay No. (Off Or On)
Less Than 201 (94)	(2) Low ..	1 (On), 2 & 3 (Off)
203-219 (95-104)	(3) High	1, 2 & 3 (On)
Greater Than 221 (105) ..	High	1, 2 & 3 (On)

- (1) - Radiator cooling fans will operate at high speed if engine (coolant) temperature sensor is defective.
(2) - The radiator cooling fan should be off when vehicle speed is greater than 50 MPH.
(3) - The radiator cooling fan should be on low speed when vehicle speed is less than 12 MPH.
-

A/C SWITCH OFF TABLE (MAXIMA VG30E ENGINE)

Engine Coolant Temp. °F (°C)	Cooling Fan Speed	Relay No. (Off Or On)
Less Than 205 (96)	Off	1, 2 & 3 (Off)
207-223 (97-106)	(1) Low ..	1 (On), 2 & 3 (Off)
Greater Than 225 (107) ...	High	1, 2 & 3 (On)

- (1) - The radiator cooling fan should be off when vehicle speed is less than 12 MPH.
-

A/C SWITCH ON TABLE (NX & SENTRA - 1.6L)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 202 (94)	50 Or More	Off
	49 Or Less	Low
203-210 (95-99)	All Speeds	Low
Greater Than 212 (100)		
Automatic Transmission ...	All Speeds	High
Manual Transmission	All Speeds	Low

A/C SWITCH OFF TABLE (NX & SENTRA - 1.6L)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 195 (90)	All Speeds	Off
196-201 (91-94)	12 Or More	Off
	11 Or Less	Low
203-210 (95-99)	50 Or More	Off
	49 Or Less	Low
Greater Than 212 (100)		
Automatic Transmission ...	All Speeds	High
Manual Transmission	All Speeds	Low

A/C SWITCH ON TABLE (NX & SENTRA - 2.0L A/T)

Engine Coolant	Vehicle	(1) Radiator
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Temp. °F (°C)	Speed MPH	Fan
Less Than 202 (94)	50 Or More	Off
	49 Or Less	Low
203-210 (95-99)	All Speeds	Low
212-219 (100-104)	11 Or Less	Low
	12 Or More	High
Greater Than 220 (105)	All Speeds	High

(1) - Radiator cooling fan will operate at high speed if engine (coolant) temperature sensor is defective.

A/C SWITCH OFF TABLE (NX & SENTRA - 2.0L A/T)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 202 (94)	All Speeds	Off
203-210 (95-99)	All Speeds	Low
212-219 (100-104)	11 Or Less	Low
	12 Or More	High
Greater Than 221 (105)	All Speeds	High

A/C SWITCH ON TABLE (NX & SENTRA - 2.0L M/T)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 202 (94)	50 Or More	Off
	49 Or Less	On
203 (95) Or More	All Speeds	On

A/C SWITCH OFF TABLE (NX & SENTRA - 2.0L M/T)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 202 (94)	All Speeds	Off
203-210 (95-99)	11 Or Less	Off
	12 Or More	On
Greater Than 212 (100)	All Speeds	On

A/C SWITCH ON TABLE (QUEST)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
Less Than 201 (94)	68 Or Less	Low
Less Than 201 (94)	68 Or More	Off
203 (95)-219 (104)	11 Or Less	Low
203 (95)-219 (104)	12 Or More	High
Greater Than 221 (105)	All Speeds	High

A/C SWITCH OFF TABLE (QUEST)

Engine Coolant Temp. °F (°C)	Vehicle Speed MPH	Radiator Fan
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Less Than 201 (94)		All Speeds		Off
203 (95)-210 (99)		All Speeds		Low
212 (100)-219 (104)		11 Or Less		Low
212 (100)-219 (104)	.....	12 Or More	.....	High
Greater Than 221 (105)	....	All Speeds	.....	High

A/C SWITCH ON TABLE (300ZX TURBO)

Engine Coolant Temp. °F (°C)		Vehicle Speed MPH		Radiator Fan
Less Than 201 (94)	.....	24 Or Less	.....	Off
More Than 203 (95)	.....	24 Or Less	.....	On
Less Than 219 (104)	.....	25 Or More	.....	Off
More Than 221 (105)	.....	25 Or More	.....	On

A/C SWITCH ON TABLE (300ZX NON-TURBO)

Engine Coolant Temp. °F (°C)		Vehicle Speed MPH		Radiator Fan
Less Than 192 (89)	.....	24 Or Less	.....	Off
192 (89)-210 (99)	.....	24 Or Less	.....	Low
More Than 212 (100)	.....	24 Or Less	.....	High
Less Than 219 (104)	.....	25 Or More	.....	Off
More Than 221 (105)	.....	25 Or More	.....	On

A/C SWITCH OFF TABLE (300ZX TURBO & NON-TURBO)

Engine Coolant Temp. °F (°C)		Radiator Fan
Less Than 219 (104)	.....	Off
More Than 221 (105)	.....	On

Radiator (Cooling) Fan Control Test (Altima With A/C)

1) Start engine and warm to operating temperature. Set temperature lever to full cold. Turn A/C switch on. Turn fan switch on. Run engine at idle with A/C on for several minutes. Ensure radiator fan operates at low speed. If radiator fan does not operate at low speed, go to RADIATOR (COOLING) FAN LOW SPEED CONTROL TEST (ALTIMA). If radiator fan operates at low speed, go to next step.

2) Turn A/C and fan switches off. Turn ignition off. Disconnect engine coolant temperature sensor harness connector. Start engine and ensure radiator fan operates at high speed. If radiator fan does not operate at high speed, see RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (ALTIMA). If radiator fan operates at high speed, system is functioning properly.

Radiator (Cooling) Fan Control Test (Altima Without A/C)

1) Start engine and warm to operating temperature. Ensure radiator fan operates at low speed. If radiator fan does not operate at low speed, go to RADIATOR (COOLING) FAN LOW SPEED CONTROL TEST (ALTIMA). If radiator fan operates at low speed, go to next step.

2) Turn ignition off. Disconnect engine coolant temperature sensor harness connector. Start engine and ensure radiator fan operates at high speed. If radiator fan does not operate at high speed, see RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (ALTIMA). If radiator fan operates at high speed, system is functioning properly.

Radiator (Cooling) Fan Low Speed Control Test (Altima)

1) Turn ignition off. Disconnect radiator fan relay No. 1. See Figs. 31-33. Turn ignition on. Measure voltage between ground and radiator fan relay No. 1 harness connector terminals No. 1 (White/Blue wire) and No. 3 (Green/Yellow wire). See Figs. 31-33. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

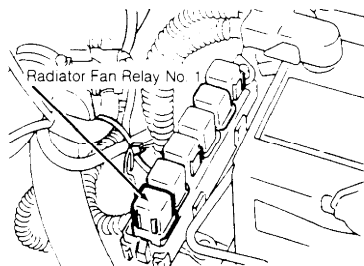
2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check 30-amp and 75-amp fusible links located in fusible link and fuse box left of battery. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in harness or connectors.

3) Turn ignition off. Disconnect radiator fan motor No. 1 and radiator fan motor No. 2 harness connectors. Check continuity between radiator fan motor No. 1 harness connector terminal "a" (White/Black wire) and radiator fan relay No. 1 harness connector terminal No. 5 (White/Black wire). Check continuity between radiator fan motor No. 2 harness connector terminal "e" (White/Black wire) and radiator fan relay No. 1 harness connector terminal No. 5 (White/Black wire). See Figs. 31-33.

4) Check continuity between radiator fan motor No. 1 harness connector terminal "d" (Black wire) and ground. Check continuity between radiator fan motor No. 2 harness connector terminal "h" (Black wire) and ground. See Figs. 31-33. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

5) Disconnect ECM harness connector. ECM is located under center of instrument panel (connector is on passenger's side). Check continuity between ECM harness connector terminal No. 9 (Light Green/Red wire) and radiator fan relay No. 1 harness connector terminal No. 2 (Light Green/Red wire). See Figs. 1, 2 and 31-33. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Light Green/Red wire or connectors between ECM and relay.

6) Check radiator fan relay No. 1. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, check fan motors. See RADIATOR FAN MOTOR TEST. Replace motor as necessary. If fan motor is okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.



93I80026

Fig. 31: Location Of Radiator Fan Relay No. 1 (Altima)
Courtesy of Nissan Motor Co., U.S.A.

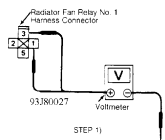


Fig. 32: Testing Radiator Fan Low Speed Circuit (Step 1)
Courtesy of Nissan Motor Co., U.S.A.

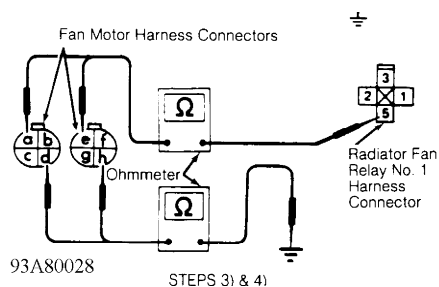


Fig. 33: Testing Radiator Fan Low Speed Circuit (Steps 3 & 4)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan High Speed Control Test (Altima)

1) Turn ignition off. Disconnect radiator fan relay No. 2 and No. 3. See Figs. 34-36. Turn ignition on. Measure voltage between ground and radiator fan relay No. 2 and No. 3 harness connector terminals No. 1 (Green/Yellow wire) and No. 3 (White/Green wire). See Figs. 34-36. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

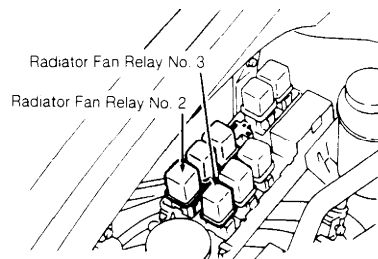
2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check 30-amp and 75-amp fusible links located in fusible link and fuse box left of battery. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in harness or connectors.

3) Turn ignition off. Disconnect radiator fan motor No. 1 and radiator fan motor No. 2 harness connectors. Check continuity between radiator fan motor No. 1 harness connector terminal "b" (White/Yellow wire) and radiator fan relay No. 2 harness connector terminal No. 5 (White/Yellow wire). Check continuity between radiator fan motor No. 2 harness connector terminal "f" (White/Blue wire) and radiator fan relay No. 3 harness connector terminal No. 5 (White/Blue wire). See Figs. 34-36.

4) Check continuity between radiator fan motor No. 1 harness connector terminal "c" (White/Green wire) and radiator fan relay No. 2 harness connector No. 6 (White/Green wire). Check continuity between radiator fan motor No. 2 harness connector terminal "g" (White/Red wire) and radiator fan relay No. 2 harness connector No. 6 (White/Red wire). Check continuity between radiator fan relay No. 2 and No. 3 harness connector terminal No. 7 (Black wire) and ground. See Figs. 34-36. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

5) Disconnect ECM harness connector. ECM is located under center of instrument panel (connector is on passenger's side). Check continuity between ECM harness connector terminal No. 10 (Light Green wire) and radiator fan relays No. 2 and No. 3 harness connector terminal No. 2 (Light Green wire). See Figs. 1, 2 and 34-36. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Light Green wire or connectors between ECM and relays.

6) Check radiator fan relays No. 2 and No. 3. See RELAYS under RELAYS & SOLENOIDS. Replace relay(s) as necessary. If relays are okay, check fan motor(s). See RADIATOR FAN MOTOR TEST. Replace motor(s) as necessary. If fan motors are okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.



93F80031

Fig. 34: Location Of Radiator Fan Relays No. 2 & 3 (Altima)
Courtesy of Nissan Motor Co., U.S.A.

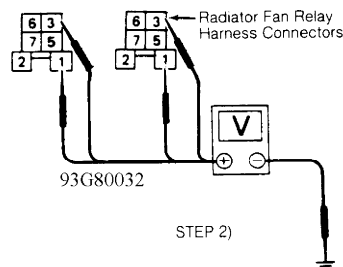
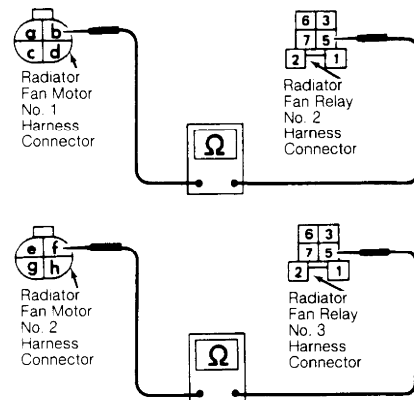


Fig. 35: Testing Radiator Fan High Speed Circuit (Step 2)
Courtesy of Nissan Motor Co., U.S.A.



93H80033 STEPS 3) & 4)

Fig. 36: Testing Radiator Fan High Speed Circuit (Steps 3 & 4)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan Control Test (Maxima VE30DE With A/C)

1) Start engine and warm to operating temperature. Set temperature lever to full cold. Turn A/C switch on. Turn fan switch on. Run engine at idle with A/C on for several minutes. Ensure radiator fan operates at low speed. If radiator fan does not operate at low speed, go to RADIATOR (COOLING) FAN LOW SPEED CONTROL TEST (MAXIMA VE30DE). If radiator fan operates at low speed, go to next step.

2) Turn A/C and fan switches off. Turn ignition off. Disconnect engine coolant temperature sensor harness connector. Start engine and ensure radiator fan operates at high speed. If radiator fan does not operate at high speed, see RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (MAXIMA VE30DE). If radiator fan operates at high speed, system is functioning properly.

Radiator (Cooling) Fan Control Test (Maxima VE30DE W/O A/C)

1) Start engine and warm to operating temperature. Ensure radiator fan operates at low speed. If radiator fan does not operate

at low speed, go to RADIATOR (COOLING) FAN LOW SPEED CONTROL TEST (MAXIMA VE30DE). If radiator fan operates at low speed, go to next step.

2) Turn ignition off. Disconnect engine coolant temperature sensor harness connector. Start engine and ensure radiator fan operates at high speed. If radiator fan does not operate at high speed, see RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (MAXIMA VE30DE). If radiator fan operates at high speed, system is functioning properly.

Radiator (Cooling) Fan Low Speed Control Test (Maxima VE30DE)

1) Turn ignition off. Disconnect radiator fan relay No. 1. See Figs. 37-39. Turn ignition on. Measure voltage between radiator fan relay No. 1 harness connector terminals No. 2 (White/Red wire) and No. 3 (White/Blue wire). See Figs. 37-39. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check Blue and Red fusible links located in fusible link and fuse box at engine side of battery. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in harness or connectors.

3) Turn ignition off. Disconnect radiator fan motor No. 1 and radiator fan motor No. 2 harness connectors. Check continuity between radiator fan motor No. 1 harness connector terminal "a" (White/Green wire) and radiator fan relay No. 1 harness connector terminal No. 5 (White/Green wire). Check continuity between radiator fan motor No. 2 harness connector terminal "e" (White/Green wire) and radiator fan relay No. 1 harness connector terminal No. 5 (White/Green wire). See Figs. 37-39.

4) Check continuity between radiator fan motor No. 1 harness connector terminal "d" (Black wire) and ground. Check continuity between radiator fan motor No. 2 harness connector terminal "h" (Black wire) and ground. See Figs. 37-39. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

5) Disconnect ECM harness connector. ECM is located under center of instrument panel (connector is on driver's side). Check continuity between ECM harness connector terminal No. 19 (Light Green/Red wire) and radiator fan relay No. 1 harness connector terminal No. 1 (Light Green/Black wire). See Figs. 1, 2 and 37-39. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Light Green/Red or Light Green/Black wire (wire changes color at 8-pin harness connector) or connectors between ECM and relay.

6) Check radiator fan relay No. 1. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, check fan motors. See RADIATOR FAN MOTOR TEST. Replace motor as necessary. If fan motor is okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.

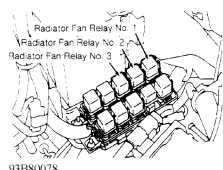


Fig. 37: Location Of Radiator Fan Relay Nos. 1, 2 & 3 (Maxima)
Courtesy of Nissan Motor Co., U.S.A.

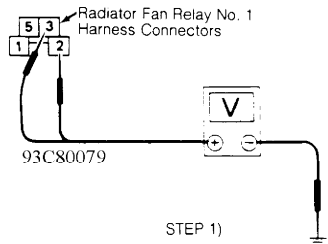


Fig. 38: Testing Radiator Fan Low Speed Circuit (Step 1)
Courtesy of Nissan Motor Co., U.S.A.

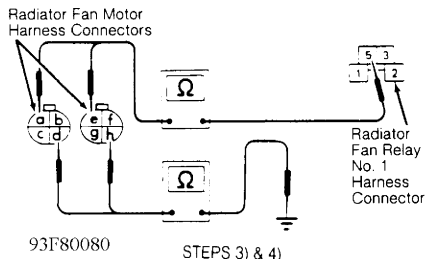


Fig. 39: Testing Radiator Fan Low Speed Circuit (Steps 3 & 4)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan High Speed Control Test (Maxima VE30DE)

1) Turn ignition off. Disconnect radiator fan relay No. 2 and No. 3. See Figs. 40 and 41. Turn ignition on. Measure voltage between ground and radiator fan relay No. 2 and No. 3 harness connector terminals No. 1 (White/Red wire) and No. 6 (White/Blue wire). See Figs. 40 and 41. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check Blue and Red fusible links located in fusible link and fuse box at engine side of battery. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in harness or connectors.

3) Turn ignition off. Disconnect radiator fan motor No. 1 and radiator fan motor No. 2 harness connectors. Check continuity between radiator fan motor No. 1 harness connector terminal "b" (White/Yellow wire) and radiator fan relay No. 2 harness connector terminal No. 7 (White/Yellow wire). Check continuity between radiator fan motor No. 2 harness connector terminal "f" (White/Blue wire) and radiator fan relay No. 3 harness connector terminal No. 5 (White/Blue wire). See Figs. 40 and 41.

4) Check continuity between radiator fan motor No. 1 harness connector terminal "c" (White/Green wire) and radiator fan relay No. 2 harness connector No. 3 (White/Black wire). Check continuity between radiator fan motor No. 2 harness connector terminal "g" (White/Red wire) and radiator fan relay No. 2 harness connector No. 3 (White/Red wire). Check continuity between radiator fan relay No. 2 and No. 3 harness connector terminal No. 5 (Black wire) and ground. See Figs. 40 and 41. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

5) Disconnect ECM harness connector. ECM is located under center of instrument panel (connector is on driver's side). Check continuity between ECM harness connector terminal No. 6 (Light Green/Black wire) and radiator fan relays No. 2 and No. 3 harness connector terminal No. 2 (Light Green/Red wire). See Figs. 1, 2 and 40 and 41. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Light Green/Black

or Light Green/Black wire (wire changes color at 8-pin harness connector) or connectors between ECM and relays.

6) Check radiator fan relays No. 2 and No. 3. See RELAYS under RELAYS & SOLENOIDS. Replace relay(s) as necessary. If relays are okay, check fan motor(s). See RADIATOR FAN MOTOR TEST. Replace motor(s) as necessary. If fan motors are okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.

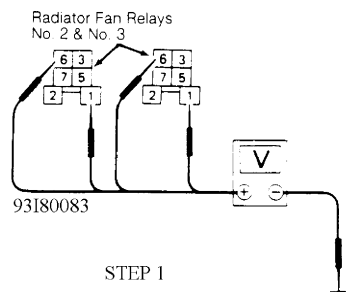


Fig. 40: Testing Fan High Speed Circuit (Maxima VE30DE, Step 1)
Courtesy of Nissan Motor Co., U.S.A.

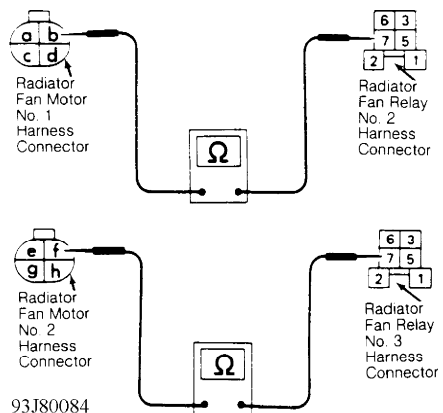


Fig. 41: Testing Fan High Speed Circuit (Maxima VE30DE, Step 2)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan Control Test (Maxima VG30E With A/C)

1) Start engine and warm to operating temperature. Set temperature lever to full cold. Turn A/C switch on. Turn fan switch on. Run engine at idle with A/C on for several minutes. Ensure radiator fan operates at low speed. If radiator fan operates at low speed, go to RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (MAXIMA VG30E). If radiator fan does not operate at low speed, go to next step.

2) Turn ignition off. Disconnect radiator fan relay No. 1. For relay location, See Figs. 37-39. Connect jumper wire between radiator fan relay No. 1 harness connector terminals No. 3 (White/Blue wire) and No. 5 (White/Green wire). Disconnect both radiator fan motor harness connectors. Turn ignition on.

3) Measure voltage between ground and each radiator fan motor harness connector terminal "a" (White/Green wire). See Figs. 42 and 43. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Gray in-line fusible link located near positive battery terminal. Replace as necessary. Check Red fusible link located in fusible link box at engine side of battery. Replace as necessary. If both fusible links are okay, repair open in White/Blue wire or connectors between relay and fusible link.

4) Check radiator fan relay No. 1. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, turn ignition off. Disconnect jumper wire installed in step 2). Disconnect ECM harness connector. ECM is located under center of instrument panel (connector is on driver's side). Check continuity between ECM harness connector terminal No. 19 (Light Green/Black wire) and radiator fan relay No. 1 harness connector terminal No. 1 (Light Green/Black wire). See Figs. 1, 2 and 42 and 43. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Light Green/Black wire.

5) Check continuity between ground and each radiator fan motor harness connector terminal "d" (Black wire). Continuity should exist. If continuity exists, replace appropriate radiator fan motor. If continuity does not exist, repair open in Black wire.

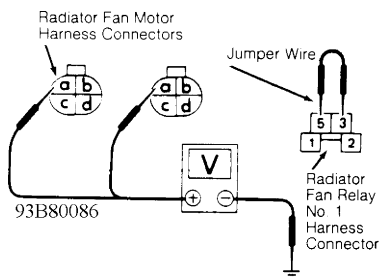


Fig. 42: Testing Radiator Fan Low Speed Circuit (Maxima VG30E, Step 1)

Courtesy of Nissan Motor Co., U.S.A.

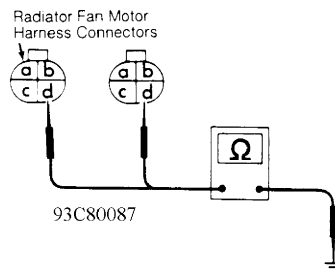


Fig. 43: Testing Radiator Fan Low Speed Circuit (Maxima VG30E, Step 2)

Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan High Speed Control Test (Maxima VG30E)

1) Start engine. Disconnect engine coolant temperature sensor harness connector. Both radiator fan should operate at high speed. If fans do not operate at high speed, go to next step. If both fans operate at high speed, system is functioning properly.

2) Turn ignition off. Disconnect radiator fan relays No. 2 and No. 3. For relay location, See Figs. 37-39. Connect jumper wire between radiator fan relay No. 2 and No. 3 harness connector terminals No. 6 (White/Blue wire) and No. 7 (relay No. 2 is White/Yellow wire and relay No. 3 is White/Blue wire). Disconnect both radiator fan motor harness connectors. Turn ignition on.

3) Measure voltage between ground and each radiator fan motor harness connector terminal "b" (fan No. 1 is White/Yellow wire and fan No. 2 is White/Blue wire). See Figs. 44 and 45. Battery voltage should be present. If battery voltage is present, go to next step. If battery voltage is not present, check Gray in-line fusible link located near positive battery terminal. Replace as necessary. Check Red fusible link located in fusible link box at engine side of battery. Replace as necessary. If both fusible links are okay, repair open in appropriate wire or connectors between relay and fusible link or between relay and

fan motor.

4) Turn ignition off. Disconnect jumper wire installed in step 2). Connect jumper wire between radiator fan relay No. 2 and No. 3 harness connector terminals No. 3 (relay No. 2 is White/Black wire and relay No. 3 is White/Red wire) and No. 5 (Black wire). Check continuity between ground and each radiator fan motor harness connector terminal "c" (fan No. 1 is White/Black wire and fan No. 2 is White/Red wire). See Figs. 44 and 45. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in appropriate wire or connector.

5) Disconnect jumper wire installed in step 4). Reconnect both radiator fan motor harness connectors. Disconnect ECM harness connector. ECM is located under center of instrument panel (connector is on driver's side). Check continuity between ECM harness connector terminal No. 6 (Light Green/Red wire) and radiator fan relays No. 2 and No. 3 harness connector terminal No. 2 (Light Green/Red wire). See Figs. 1, 2 and 44 and 45. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Light Green/Red wire.

6) Turn ignition off. Check radiator fan relays No. 2 and No. 3. See RELAYS under RELAYS & SOLENOIDS. Replace relay(s) as necessary. Check fan motors No. 1 and No. 2. See RADIATOR FAN MOTOR TEST. Replace fan motor(s) as necessary.

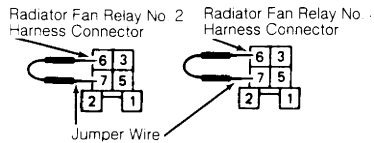


Fig. 44: Testing Radiator Fan Low Speed Circuit (Maxima VG30E, Step 1)
Courtesy of Nissan Motor Co., U.S.A.

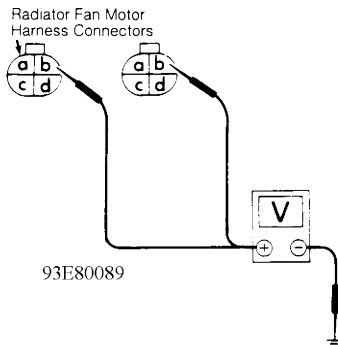


Fig. 45: Testing Radiator Fan Low Speed Circuit (Maxima VG30E, Step 2)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan Control Test (NX & Sentra 1.6L A/T With A/C)

1) Start engine and warm to operating temperature. Set temperature lever to full cold. Turn A/C switch on. Turn fan switch on. Run engine at idle with A/C on for several minutes. Ensure radiator fan operates at low speed. If radiator fan does not operate at low speed, go to RADIATOR (COOLING) FAN LOW SPEED CONTROL TEST (NX & SENTRA - 1.6L A/T). If radiator fan operates at low speed, go to next step.

2) Turn A/C and fan switches off. Turn ignition off. Disconnect radiator fan relay No. 1. Start engine and idle until engine temperature is above 221°F (105°C). Ensure radiator fan operates at high speed. If radiator fan does not operate at high

speed, see RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (NX & SENTRA - 1.6L A/T). If radiator fan operates at high speed, system is functioning properly.

Radiator (Cooling) Fan Control Test (NX & Sentra 1.6L A/T Without A/C)

1) Start engine and warm to operating temperature. Ensure radiator fan operates at low speed during warm-up. If radiator fan does not operate at low speed, go to RADIATOR (COOLING) FAN LOW SPEED CONTROL TEST (NX & SENTRA - 1.6L A/T). If radiator fan operates at low speed, go to next step.

2) Turn ignition off. Disconnect radiator fan relay No. 1. Start engine and idle until engine temperature is above 221°F (105°C). Ensure radiator fan operates at high speed. If radiator fan does not operate at high speed, see RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (NX & SENTRA - 1.6L A/T). If radiator fan operates at high speed, system is functioning properly.

Radiator (Cooling) Fan Low Speed Control Test (NX & Sentra 1.6L A/T)

1) Turn ignition off. Disconnect radiator fan relay No. 1. See Figs. 51-53. Turn ignition on. Measure voltage between ground and radiator fan relay No. 2 harness connector terminals No. 2 (White/Green wire) and No. 5 (Black/White wire). See Figs. 46 and 47. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check 30-amp fusible link located in fusible link and fuse box next to battery. Check Gray in-line fusible link near battery positive terminal. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in harness or connectors.

3) Turn ignition off. Disconnect radiator fan motor No. 1 and radiator fan motor No. 2 harness connectors. Check continuity between radiator fan motor No. 1 harness connector terminal "a" (Brown/White wire) and radiator fan relay No. 1 harness connector terminal No. 3 (Brown/White wire). Check continuity between radiator fan motor No. 2 harness connector terminal "a" (Brown/White wire) and radiator fan relay No. 1 harness connector terminal No. 3 (Brown/White wire). See Figs. 46 and 47.

4) Check continuity between radiator fan motor No. 1 harness connector terminal "d" (Black wire) and ground. Check continuity between radiator fan motor No. 2 harness connector terminal "h" (Black wire) and ground. See Figs. 46 and 47. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

5) Disconnect ECM harness connector. ECM is located under center of instrument panel. Check continuity between ECM harness connector terminal No. 9 (Blue wire) and radiator fan relay No. 1 harness connector terminal No. 1 (Blue wire). See Figs. 1, 2 and 46 and 47. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Blue wire or connectors between ECM and relay.

6) Check radiator fan relay No. 1. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, check fan motors. See RADIATOR FAN MOTOR TEST. Replace motor as necessary. If fan motor is okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.

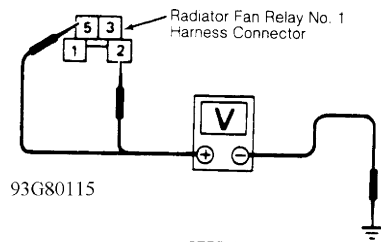


Fig. 46: Testing Radiator Fan Low Speed Circuit (Step 1, NX & Sentra 1.6L A/T)
Courtesy of Nissan Motor Co., U.S.A.

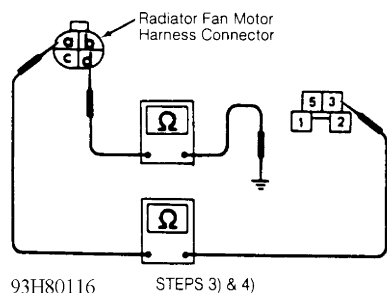


Fig. 47: Testing Radiator Fan Low Speed Circuit (Step 3 & 4 NX & Sentra 1.6L A/T)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan High Speed Control Test (NX & Sentra 1.6L A/T)

1) Turn ignition off. Disconnect radiator fan relay No. 2. See Figs. 51-53. Turn ignition on. Measure voltage between ground and radiator fan relay No. 1 harness connector terminals No. 1 (White/Green wire) and No. 3 (Black/White wire). See Figs. 48-50. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check 30-amp fusible link located in fusible link and fuse box next to battery. Check Gray in-line fusible link near battery positive terminal. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in harness or connectors.

3) Turn ignition off. Disconnect radiator fan motor No. 1 and radiator fan motor No. 2 harness connectors. Check continuity between radiator fan motor No. 1 harness connector terminal "b" (Brown wire) and radiator fan relay No. 2 harness connector terminal No. 5 (Brown wire). Check continuity between radiator fan motor No. 2 harness connector terminal "b" (Brown wire) and radiator fan relay No. 2 harness connector terminal No. 5 (Brown wire). See Figs. 48-50.

4) Check continuity between radiator fan motor No. 1 harness connector terminal "c" (Red wire) and radiator fan relay No. 2 harness connector No. 6 (Red wire). Check continuity between radiator fan motor No. 2 harness connector terminal "c" (Red wire) and radiator fan relay No. 2 harness connector No. 6 (Red wire). Check continuity between radiator fan relay No. 2 harness connector terminal No. 7 (Black wire) and ground. See Figs. 48-50. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

5) Disconnect ECM harness connector. ECM is located under center of instrument panel. Check continuity between ECM harness connector terminal No. 10 (Blue/Black wire) and radiator fan relay No. 2 harness connector terminal No. 2 (Blue/Black wire). See Figs. 1, 2

and 48-50. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Blue/Black wire or connectors between ECM and relay.

6) Check radiator fan relay No. 2. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, check fan motor(s). See RADIATOR FAN MOTOR TEST. Replace motor(s) as necessary. If fan motors are okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.

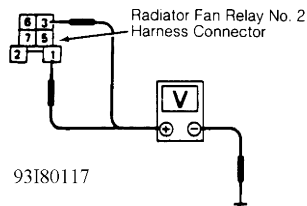


Fig. 48: Testing Radiator Fan High Speed Circuit (NX & Sentra 1.6L A/T)

Courtesy of Nissan Motor Co., U.S.A.

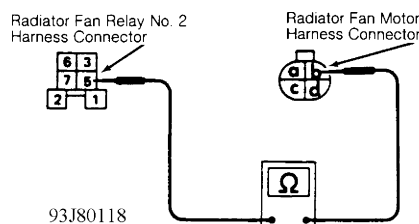


Fig. 49: Testing Radiator Fan High Speed Circuit (Step 1)
STEP 1)
Courtesy of Nissan Motor Co., U.S.A.

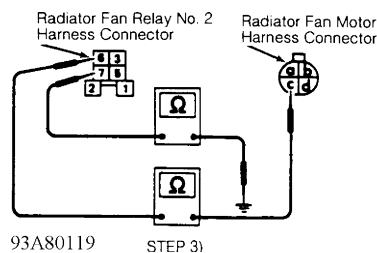


Fig. 50: Testing Radiator Fan High Speed Circuit (Step 3)
STEP 3)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan Control Test (NX & Sentra 1.6L M/T & 2.0L M/T)

1) For vehicles equipped with A/C, start engine and warm to operating temperature. Set temperature lever to full cold. Turn A/C switch on. Turn fan switch on. Run engine at idle with A/C on for several minutes. Ensure radiator fan operates. If radiator fan does not operate, turn A/C and fan switches off. Go to step 3). If radiator fan operates, system is functioning properly.

2) For vehicles without A/C, start engine. Keep engine speed at approximately 2000 RPM until engine is warmed up. Radiator fan should begin to operate during warm-up. If radiator fan does not operate, go to next step. If radiator fan operates, system is functioning properly.

3) Turn ignition off. Disconnect radiator fan relay No. 1. See Figs. 51-53. Turn ignition on. Measure voltage between ground and radiator fan relay No. 1 harness connector terminals No. 2 (White/Green wire) and No. 5 (Black/White wire). See Figs. 51-53. Battery voltage should be present. If battery voltage is present, go

to step 5). If battery voltage is not present, go to next step.

4) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check 30-amp fusible link located in fusible link and fuse box next to battery. Check Gray in-line fusible link near battery positive terminal. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in harness or connectors.

5) Turn ignition off. Disconnect radiator fan motor No. 1 and radiator fan motor No. 2 harness connectors. Check continuity between radiator fan motor No. 1 harness connector terminal "a" (Brown/White wire) and radiator fan relay No. 1 harness connector terminal No. 3 (Brown/White wire). Check continuity between radiator fan motor No. 2 harness connector terminal "a" (Brown/White wire) and radiator fan relay No. 1 harness connector terminal No. 3 (Brown/White wire). See Figs. 51-53.

6) Check continuity between radiator fan motor No. 1 harness connector terminal "b" (Black wire) and ground. Check continuity between radiator fan motor No. 2 harness connector terminal "b" (Black wire) and ground. See Figs. 51-53. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

7) Disconnect ECM harness connector. ECM is located under center of instrument panel. Check continuity between ECM harness connector terminal No. 9 (Blue wire) and radiator fan relay No. 1 harness connector terminal No. 1 (Blue wire). See Figs. 1, 2 and 51-53. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Blue wire or connectors between ECM and relay.

8) Check radiator fan relay No. 1. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, check fan motors. See CONDENSER FAN MOTOR TEST. Replace motor as necessary. If fan motor is okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.

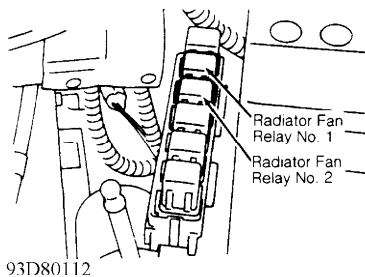


Fig. 51: Radiator Fan Relays (NX & Sentra 1.6L & 2.0L M/T)
Courtesy of Nissan Motor Co., U.S.A.

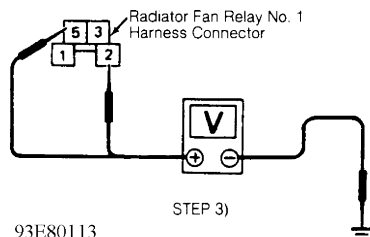


Fig. 52: Testing Radiator Fan Circuit (Step 3)
Courtesy of Nissan Motor Co., U.S.A.



Radiator (Cooling) Fan Control Test (NX & Sentra 2.0L A/T With A/C)

2) Turn A/C and fan switches off. Turn ignition off.

Radiator (Cooling) Fan Low Speed Control Test (NX & Sentra 2.0L A/T)

2) Check 10-amp fuse located in fuse box under left

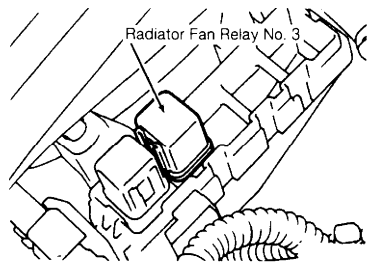
3) Turn ignition off. Disconnect radiator fan motor No. 1 and fan motor No. 2 harness connectors. Check continuity between fan motor No. 1 harness connector terminal "a" (Brown/White) and radiator fan relay No. 1 harness connector terminal No. 5 (White wire). Check continuity between radiator fan motor No. 2 harness connector terminal "e" (Brown wire) and radiator fan relay No. 1 harness connector terminal No. 7 (Brown wire). See Figs. 54-56.

5) Disconnect ECM harness connector. ECM is located under instrument panel. Check continuity between ECM harness terminal No. 9 (Blue wire) and radiator fan relay No. 1

harness connector terminal No. 2 (Blue wire). See Figs. 1, 2 and 54-56. Continuity should exist. If continuity exists, go to next step. If

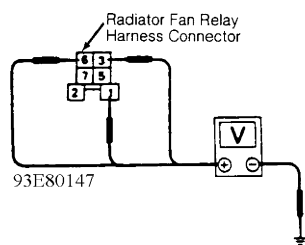
continuity does not exist, repair open in Blue wire or connectors between ECM and relay.

6) Check radiator fan relay No. 1. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, check fan motors. See RADIATOR FAN MOTOR TEST. Replace motor as necessary. If fan motor is okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.



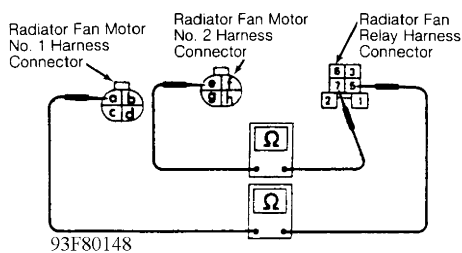
93D80146

Fig. 54: Radiator Fan Relay No. 3 (NX & Sentra 2.0L A/T)
Courtesy of Nissan Motor Co., U.S.A.



STEP 1)

Fig. 55: Testing Radiator Fan Relay (Step 1)
Courtesy of Nissan Motor Co., U.S.A.



STEPS 3) & 4)

Fig. 56: Testing Radiator Fan Relay (Steps 3 & 4)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan High Speed Control Test (NX & Sentra 2.0L A/T)

1) Turn ignition off. Disconnect radiator fan relays No. 2 and No. 3. See Figs. 51-56 Turn ignition on. Measure voltage between ground and radiator fan relays No. 2 and No. 3 harness connector terminals No. 1 (White/Green wire) and No. 3 (Black/White wire). See Figs. 48-50. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check 30-amp fusible link located in fusible link and fuse box next to battery. Check Blue in-line fusible link near battery positive terminal. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in appropriate harness or connectors.

3) Turn ignition off. Disconnect radiator fan motor No. 1 and radiator fan motor No. 2 harness connectors. Check continuity between

radiator fan motor No. 1 harness connector terminal "b" (Brown wire) and radiator fan relay No. 2 harness connector terminal No. 5 (Brown wire). Check continuity between radiator fan motor No. 1 harness connector terminal "c" (Red wire) and radiator fan relay No. 2 harness connector No. 7 (Red wire). Check continuity between radiator fan relay No. 2 harness connector terminal No. 6 (Black wire) and ground. See Figs. 57 and 58.

4) Check continuity between radiator fan motor No. 2 harness connector terminal "f" (Brown/White wire) and radiator fan relay No. 3 harness connector terminal No. 5 (Brown/White wire). Check continuity between radiator fan motor No. 2 harness connector terminal "g" (Red wire) and radiator fan relay No. 3 harness connector No. 7 (Red wire). Check continuity between radiator fan relay No. 3 harness connector terminal No. 6 (Black wire) and ground. See Figs. 57 and 58. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

5) Disconnect ECM harness connector. ECM is located under center of instrument panel. Check continuity between ECM harness connector terminal No. 10 (Blue/Black wire) and radiator fan relays No. 2 and No. 3 harness connector terminal No. 2 (Blue/Black wire). See Figs. 1, 2 and 57 and 58. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Blue/Black wire or connectors between ECM and relay(s).

6) Check radiator fan relays No. 2 and No. 3. See RELAYS under RELAYS & SOLENOIDS. Replace relay(s) as necessary. If relays are okay, check fan motor(s). See RADIATOR FAN MOTOR TEST. Replace motor(s) as necessary. If fan motors are okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.

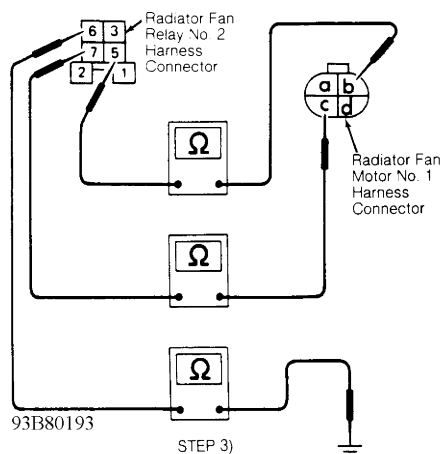


Fig. 57: Testing Radiator Fan High Speed Circuit (Step 3, NX & Sentra 2.0L A/T)
Courtesy of Nissan Motor Co., U.S.A.

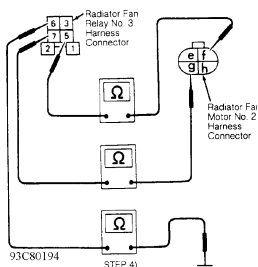


Fig. 58: Testing Radiator Fan High Speed Circuit (Step 4, NX & Sentra 2.0L A/T)

Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan Control Test (Quest With A/C)

1) Start engine and warm to operating temperature. Set temperature lever to full cold. Turn A/C switch on. Turn fan switch on. Run engine at idle with A/C on for several minutes. Ensure radiator fan operates at low speed. If radiator fan does not operate at low speed, go to RADIATOR (COOLING) FAN LOW SPEED CONTROL TEST (QUEST). If radiator fan operates at low speed, go to next step.

2) Turn A/C and fan switches off. Turn ignition off. Disconnect radiator fan relays No. 1 and No. 2. See Figs. 59 and 60. Start engine and idle until engine temperature is above 221°F (105°C). Ensure radiator fan operates at high speed. Reconnect radiator fan relay No. 2. Disconnect radiator fan relay No. 3. Start engine and idle until engine is above 221°F (105°C). Ensure radiator fan operates at high speed. If radiator fan does not operate at high speed in either test, see RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (QUEST). If radiator fan operates at high speed, system is functioning properly.

Radiator (Cooling) Fan Control Test (Quest Without A/C)

1) Start engine and run at 2000 RPM until operating temperature is reached. Ensure radiator fan operates at low speed during warm-up. If radiator fan does not operate at low speed, go to RADIATOR (COOLING) FAN LOW SPEED CONTROL TEST (QUEST). If radiator fan operates at low speed, go to next step.

2) Turn A/C and fan switches off. Turn ignition off. Disconnect radiator fan relays No. 1 and No. 2. See Figs. 59 and 60. Start engine and idle until engine temperature is above 221°F (105°C). Ensure radiator fan operates at high speed. Reconnect radiator fan relay No. 2. Disconnect radiator fan relay No. 3. Start engine and idle until engine is above 221°F (105°C). Ensure radiator fan operates at high speed. If radiator fan does not operate at high speed in either test, see RADIATOR (COOLING) FAN HIGH SPEED CONTROL TEST (QUEST). If radiator fan operates at high speed, system is functioning properly.

Radiator (Cooling) Fan Low Speed Control Test (Quest)

1) Turn ignition off. Disconnect radiator fan relay No. 1. See Figs. 59 and 60. Turn ignition on. Measure voltage between ground and radiator fan relay No. 1 harness connector terminals No. 2 (Blue wire) and No. 3 (Blue/Yellow wire). See Figs. 59 and 60. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

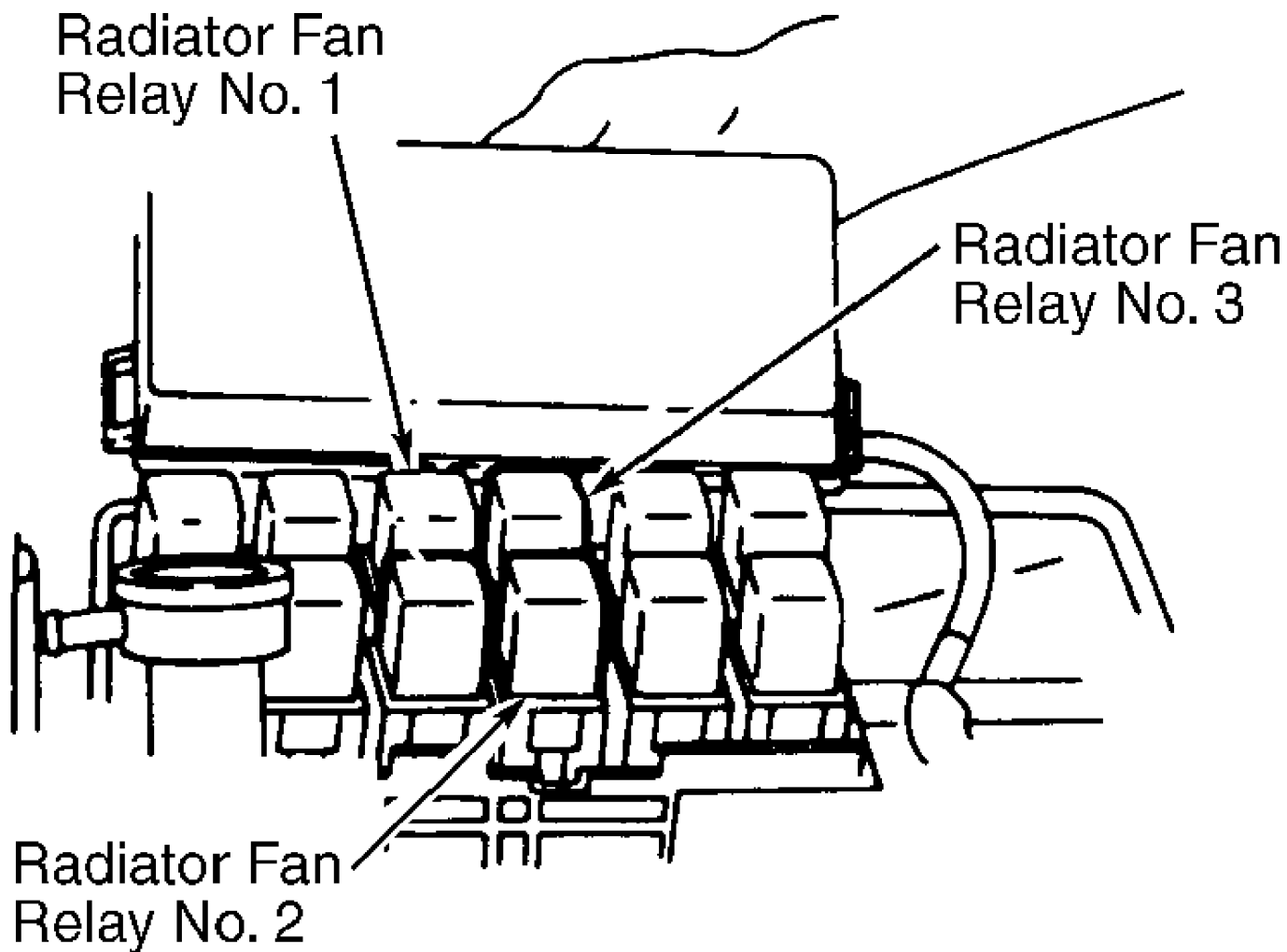
2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check 120-amp and 65-amp fusible link located in fusible link and fuse box next to battery. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in appropriate harness or connectors.

3) Turn ignition off. Disconnect radiator fan motor harness connectors. Check continuity between radiator fan motor harness connector terminal "b" (Blue/White wire) and radiator fan relay No. 1 harness connector terminal No. 5 (Blue/White wire). Check continuity between radiator fan motor harness connector terminal "c" (Black wire) and ground. See Figs. 59 and 60. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

4) Disconnect ECM harness connector. ECM is located behind glove box. Check continuity between ECM harness connector terminal No. 9 (Blue/Orange wire) and radiator fan relay No. 1 harness connector terminal No. 1 (Blue/Orange wire). See Figs. 1, 2 and 59 and 60. Continuity should exist. If continuity exists, go to next step. If

continuity does not exist, repair open in Blue/Orange wire or connectors between ECM and relay.

5) Check radiator fan relay No. 1. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary. If relay is okay, check fan motors. See RADIATOR FAN MOTOR TEST. Replace motor as necessary. If fan motor is okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.

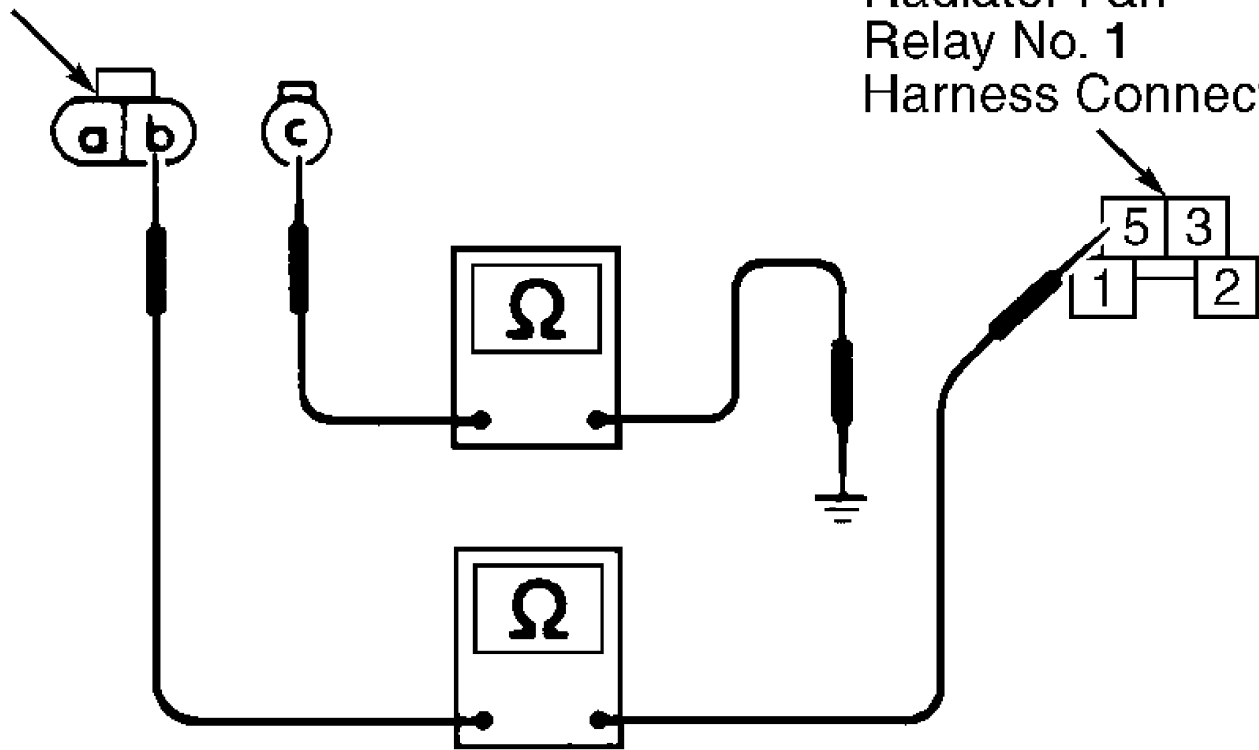


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Fig. 59: Radiator Fan Relays (Quest)
Courtesy of Nissan Motor Co., U.S.A.

Radiator Fan Motor Harness Connectors

Radiator Fan Relay No. 1 Harness Connectors



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Fig. 60: Testing Radiator Fan Low Speed Circuit (Quest)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan High Speed Control Test (Quest)

1) Turn ignition off. Disconnect radiator fan relay No. 2. See Figs. 59 and 60. Turn ignition on. Measure voltage between ground and radiator fan relay No. 2 harness connector terminals No. 2 (Blue wire) and No. 3 (Blue/Yellow wire). See Fig. 61. Battery voltage should be present. If battery voltage is present, go to step 3). If battery voltage is not present, go to next step.

2) Check 10-amp fuse located in fuse box under left instrument panel. Replace fuse as necessary. Check 120-amp and 65-amp fusible link located in fusible link and fuse box next to battery. Replace fusible link(s) as necessary. If fuse and fusible links are okay, repair open in appropriate harness or connectors.

3) Turn ignition off. Disconnect radiator fan relay No. 3. See Fig. 61. Check continuity between radiator fan relay No. 2 harness connector terminals No. 2 (Blue wire) and radiator fan relay No. 3 harness connector terminals No. 2 (Blue wire). Check continuity between radiator fan relay No. 2 harness connector terminals No. 3 (Blue/Yellow wire) and radiator fan relay No. 3 harness connector terminals No. 3 (Blue/Yellow wire). Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

4) Disconnect radiator fan motor harness connector. Check continuity between radiator fan motor harness connector terminal "a" (Blue/Red wire) and radiator fan relay No. 2 harness connector terminal No. 5 (Blue/Red wire). Check continuity between radiator fan

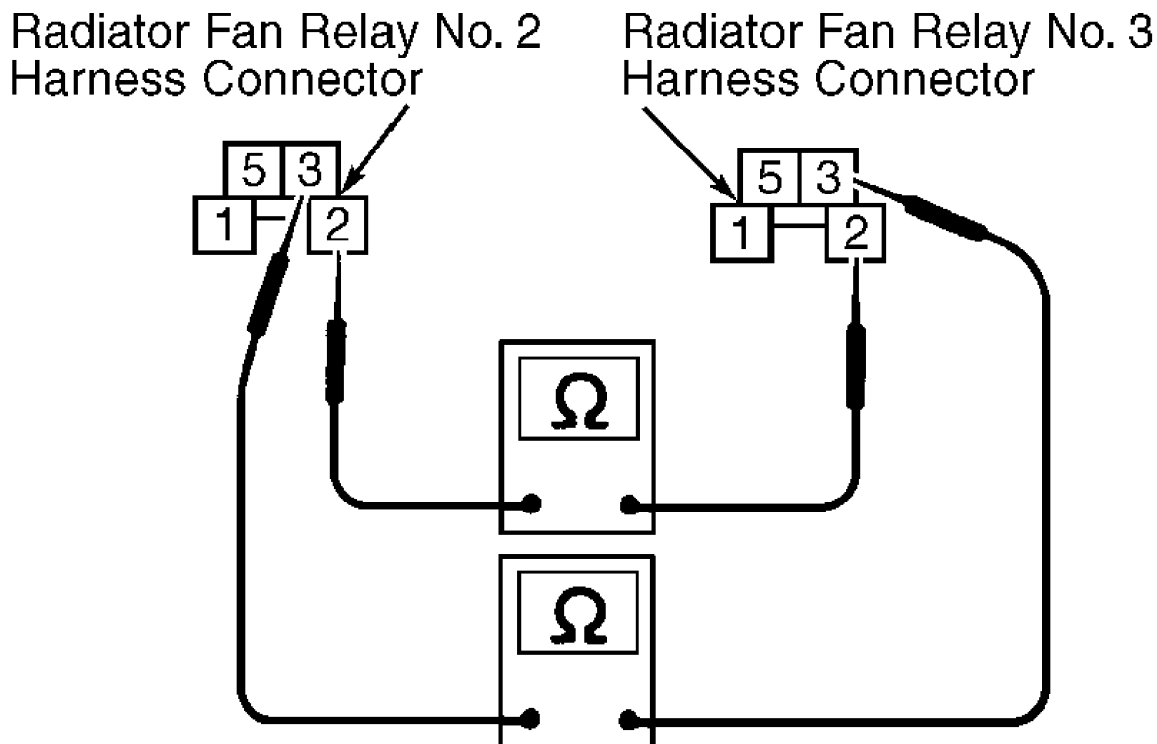
motor harness connector terminal "c" (Black wire) and ground. See Figs. 59 and 60. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in appropriate wire or connector.

5) Check continuity between radiator fan relay No. 2 harness connector terminal No. 5 (Blue/Red wire) and radiator fan relay No. 3 harness connector terminal No. 5 (Blue/Red wire). See Fig. 61. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Blue/Red wire or connectors.

6) Disconnect ECM harness connector. ECM is located behind glove box. Check continuity between ECM harness connector terminal No. 10 (Brown/White wire) and radiator fan relay No. 2 harness connector terminal No. 1 (Brown/White wire). See Figs. 1, 2 and 61. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Brown/White wire or connectors between ECM and relay.

7) Check continuity between radiator fan relay No. 2 harness connector terminal No. 1 (Brown/White wire) and radiator fan relay No. 3 harness connector terminal No. 1 (Brown/White wire). See Fig. 61. Continuity should exist. If continuity exists, go to next step. If continuity does not exist, repair open in Brown/White wire or connectors.

8) Check radiator fan relays No. 2 and No. 3. See RELAYS under RELAYS & SOLENOIDS. Replace relay(s) as necessary. If relays are okay, check fan motor(s). See RADIATOR FAN MOTOR TEST. Replace motor(s) as necessary. If fan motors are okay, check ECM and ECM harness connector for damage, corrosion or improper connection. Repair as necessary.



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Fig. 61: Testing Radiator Fan High Speed Circuit (Quest)
Courtesy of Nissan Motor Co., U.S.A.

Radiator (Cooling) Fan Control Test (300ZX)

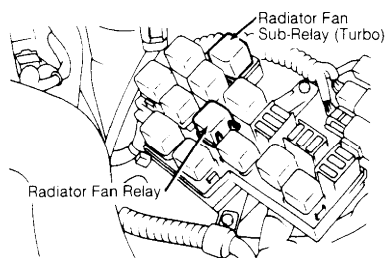
1) Turn ignition off. Disconnect radiator fan relay. Turn

ignition on. Measure voltage between radiator fan relay terminals "b" (Purple wire) and "d" (Green/White wire). See Figs. 62 and 63. Battery voltage should be present. If battery voltage is present, go to step 4). If battery voltage is not present, go to next step.

2) Check Green, Red and Blue fusible links located in fusible link box next to battery. Replace fusible link(s) as necessary. Check 10-amp fuse located in relay box at left front corner of engine compartment. Replace fuse as necessary. If fusible links and 10-amp fuse are okay, disconnect battery (B +) connector (White wire). Check harness continuity between B + terminal at battery and fan relay harness connector terminal "b". See Figs. 62 and 63.

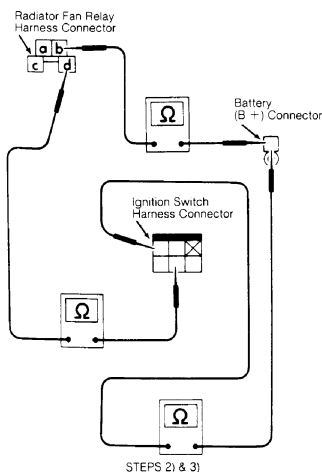
3) Check harness continuity between B + terminal at battery and ignition switch. Check harness continuity between ignition switch and radiator fan relay harness connector terminal "d". See Figs. 62 and 63. Continuity should exist in all checks. If continuity exists in all checks, go to next step. If continuity does not exist in any check, repair open in appropriate wire or connector.

4) Install jumper wire between radiator fan relay harness connector terminals "a" and "b". See Figs. 62 and 63. Radiator fan motor should operate. If radiator fan motor does not operate, repair open in Green wire between fan motor and relay harness connector "a". If Green wire is okay, remove jumper wire. Disconnect radiator fan motor connector. Apply battery voltage across fan motor connector terminals. If fan motor does not operate, replace motor. If fan motor operates, check radiator fan relay. See RELAYS under RELAYS & SOLENOIDS. Replace relay as necessary.



93G80230

Fig. 62: Radiator Fan Relays (300ZX)
Courtesy of Nissan Motor Co., U.S.A.



93H80231

Fig. 63: Testing Radiator Fan Circuit (300ZX)
Courtesy of Nissan Motor Co., U.S.A.

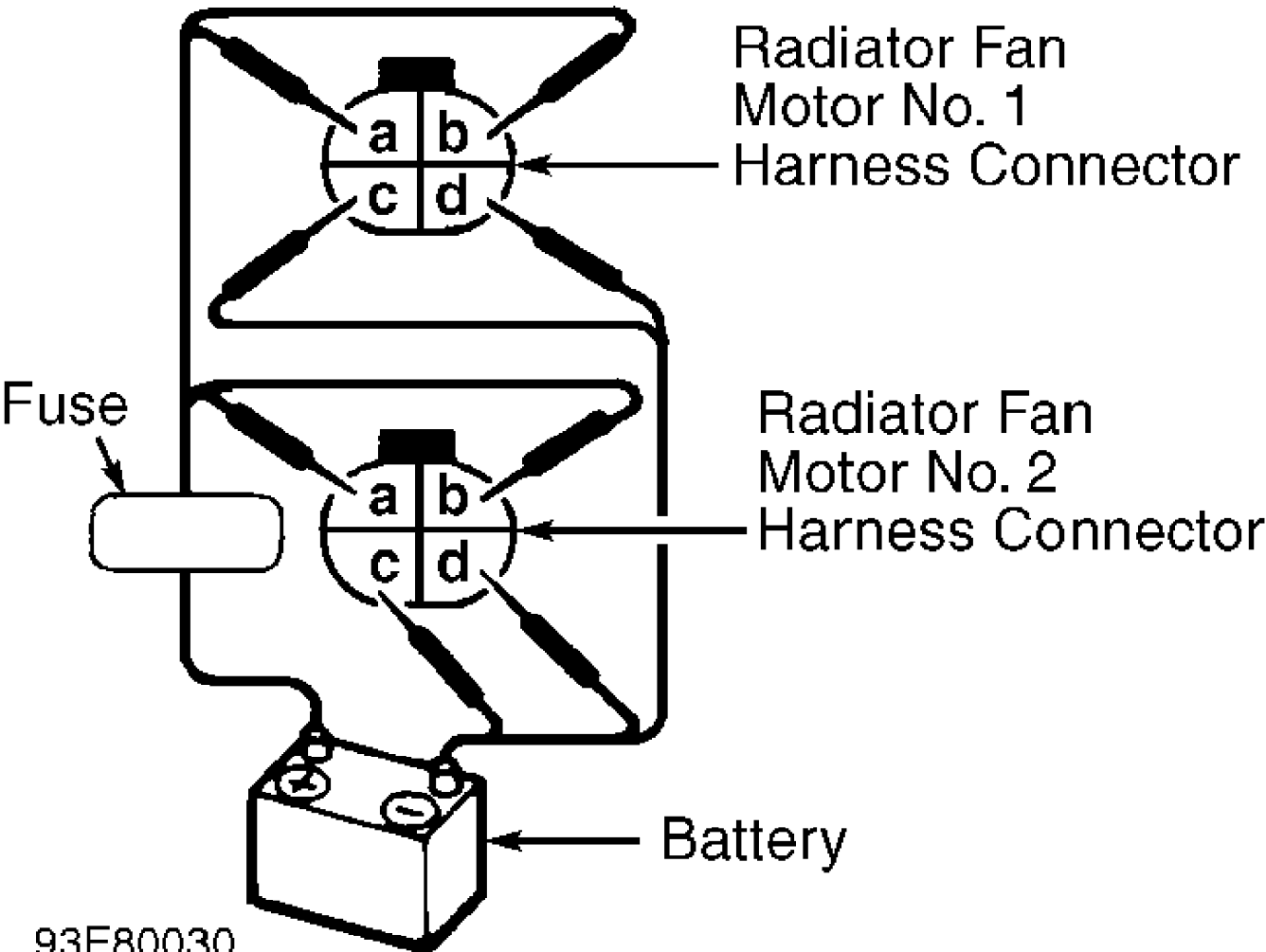
Radiator Fan Motor Test

Disconnect fan motor harness connector(s). Apply battery

across fan motor terminals and observe motor operation. See Fig. 64.
See FAN MOTOR OPERATION TEST table. If motor does not operate as indicated, replace motor.

FAN MOTOR OPERATION TEST TABLE

Motor Number	Motor Speed	Battery Positive (+)	Battery Negative (-)
1	Low	"b"	"c"
1	High	"a" & "b"	"c" & "d"
2	Low	"b"	"c"
2	High	"a" & "b"	"c" & "d"



93E80030

Fig. 64: Testing Radiator Fan Motors
Courtesy Of Nissan Motor Co., U.S.A.