

INSTRUMENT PANEL

1992 Infiniti G20

1992 SAFETY EQUIPMENT
Infiniti Instrument Panels

G20, M30, Q45

AIR BAG WARNING

WARNING: M30 and Q45 are equipped with Supplemental Restraint System (SRS). Observe following precautions before performing any repair. Disconnect and shield battery ground. WAIT at least 10 minutes. Disconnect SRS connector at control unit located behind center console. All SRS wiring harnesses and connectors are Yellow. DO NOT use electrical test equipment on these circuits. Use caution when working around steering column as air bag could deploy. To avoid injury from accidental air bag deployment, read and carefully follow all WARNINGS and SERVICE PRECAUTIONS.

NOTE: For information on air bag DIAGNOSIS & TESTING or DISPOSAL PROCEDURES, See appropriate AIR BAG article in the ACCESSORIES/SAFETY EQUIPMENT Section.

DESCRIPTION

The instrument cluster contains speedometer, tachometer, fuel gauge, coolant temperature gauge and warning indicators. G20 uses a speedometer cable with a speed sensor (reed switch type), which is built into the speedometer. M30 and Q45 use a permanent magnet, generator-type speed sensor located on the rear transmission extension and a speed sensor (reed switch type), which is built into the speedometer. On all models, instrument cluster can be removed with all gauges installed.

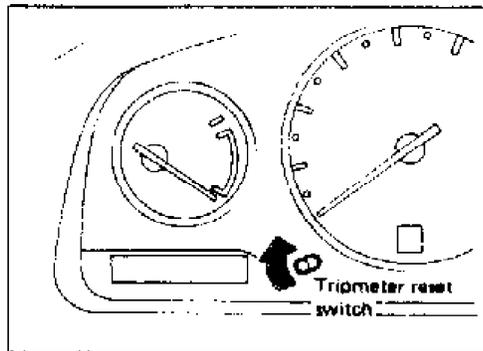
TROUBLE SHOOTING

DIAGNOSTIC INFORMATION DISPLAY

Q45

With ignition on, warning light information display located on left lower portion of instrument cluster will indicate OK for 8 seconds if no malfunction exists in monitored circuits. After 8 seconds, twin tripmeter will appear.

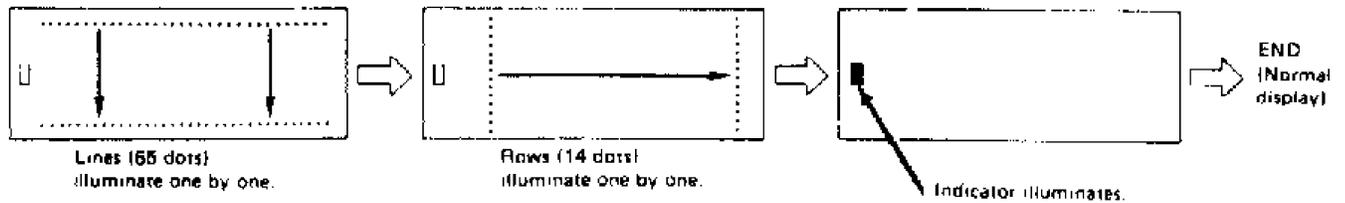
If any warning signal is detected, tripmeter will cease to appear and diagnostic information will be displayed. See Figs. 1-14. If more than one malfunction is detected, messages will be displayed at 8-second intervals. If a warning message is being displayed, tripmeter display can be obtained for 8 seconds by pushing trip reset switch.



Self-check

SEGMENT CHECK

While turning the tripmeter reset switch to the right, turn the ignition switch from "OFF" to "ON". The display starts automatically.



Priority	Item	Display	Priority	Item	Display
	(Starting message with no warning)	OK	5	Headlamp	HEADLAMP INOPERATIVE
	Twin tripmeter (Mile)	A: XXX. X MILE B: XXX. X MILE	6	Stop lamp	STOP LAMP INOPERATIVE
	Twin tripmeter (km)	A: XXX. X km B: XXX. X km	7	Tail lamp	TAIL LAMP INOPERATIVE
1	A/T	TRANSMISSION MALFUNCTION	8	Stop & Tail lamp system	TAIL/STOP LAMP INOPERATIVE
2	Doors	DOOR OPEN			
3	Washer liquid	A: XXX. X MILE LOW WASHER	9	Charging system	LOW BATTERY CHARGE
4	Fuel amount	A: XXX. X MILE LOW FUEL	10	Brake pads	BRAKE PADS WORN

Fig. 1: Diagnostic Warning Light Display (Q45)
Courtesy of Nissan Motor Co., U.S.A.

CIRCUIT DIAGRAM FOR QUICK PINPOINT CHECK

Trouble Diagnoses

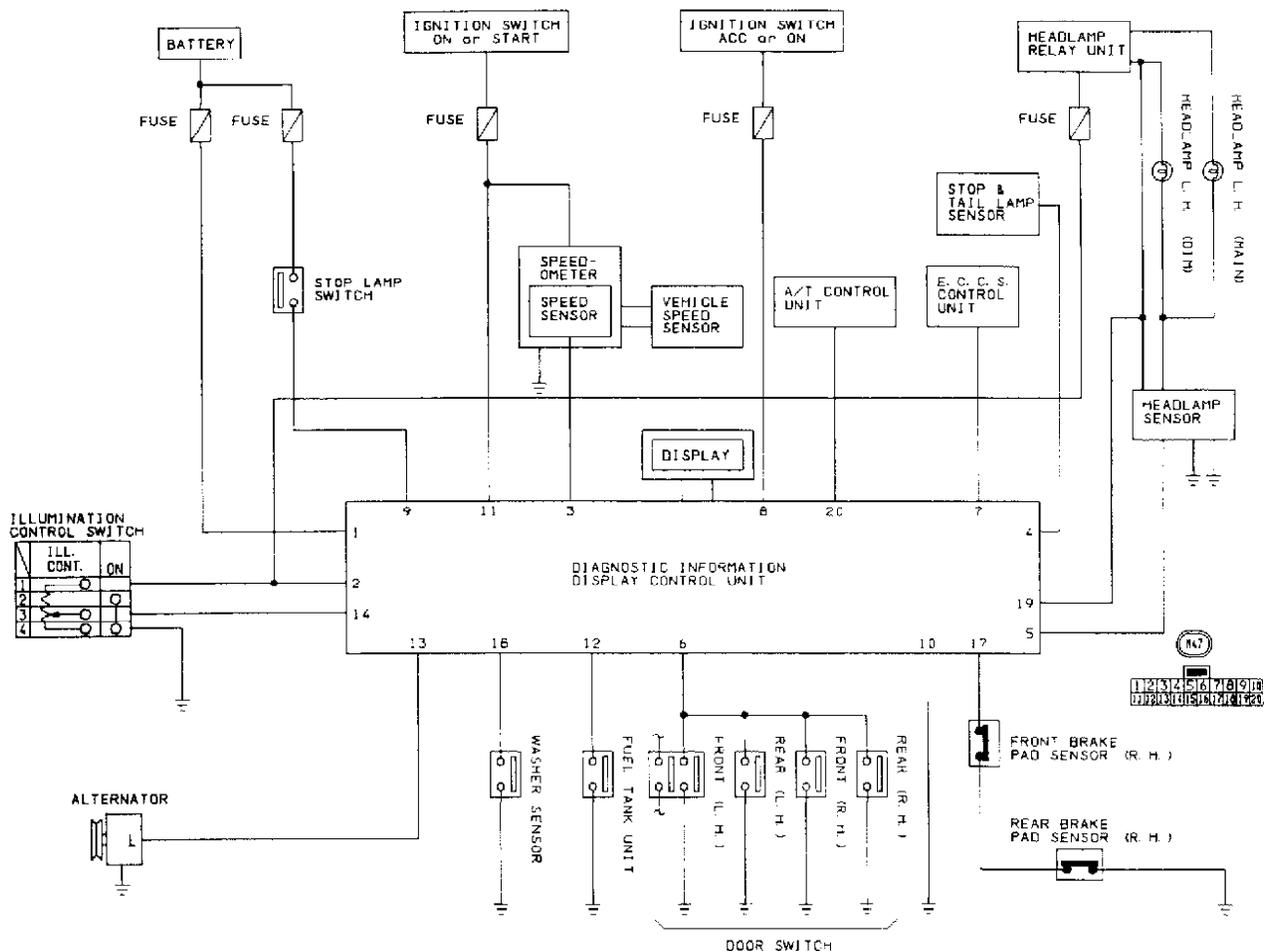
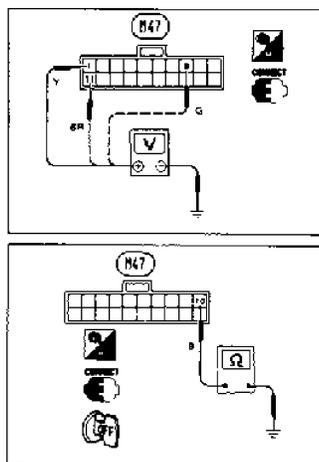


Fig. 2: Diagnostic Warning Light Wiring Schematic (Q45)
 Courtesy of Nissan Motor Co., U.S.A.



MAIN POWER SUPPLY AND GROUND CIRCUIT CHECK

Main power supply

Terminals	Ignition switch	OFF			ACC			ON		
		(+)	(-)		(+)	(-)		(+)	(-)	
①	Ground	Battery voltage			Battery voltage			Battery voltage		
⑧	Ground	0V			Battery voltage			Battery voltage		
⑩	Ground	0V			0V			Battery voltage		

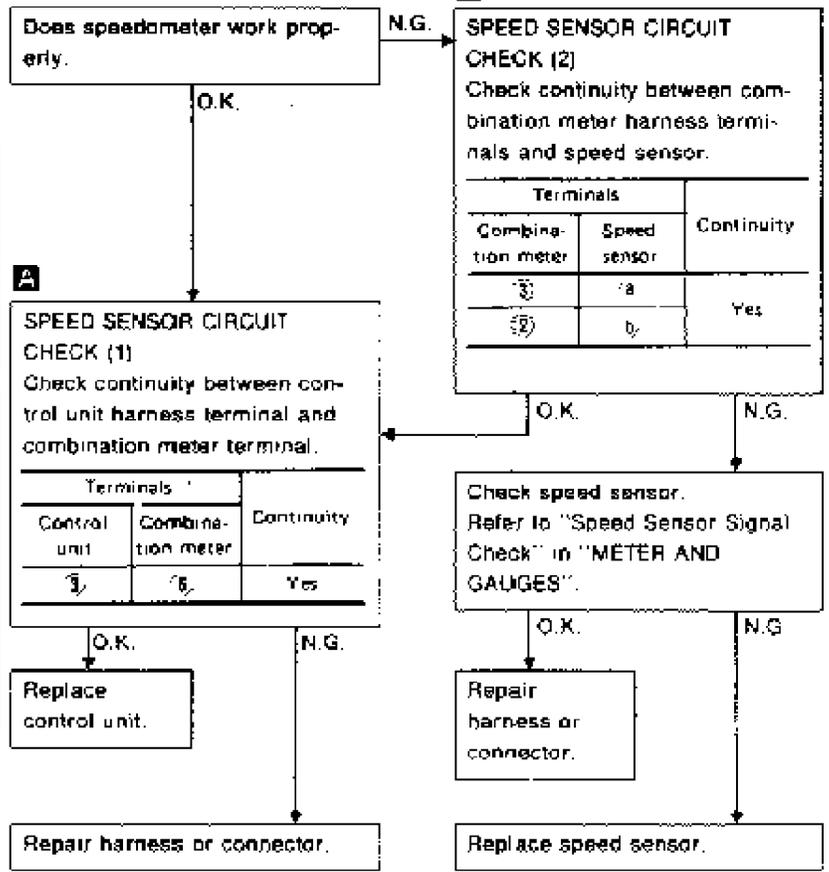
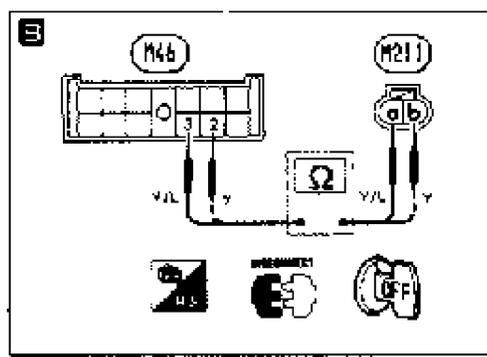
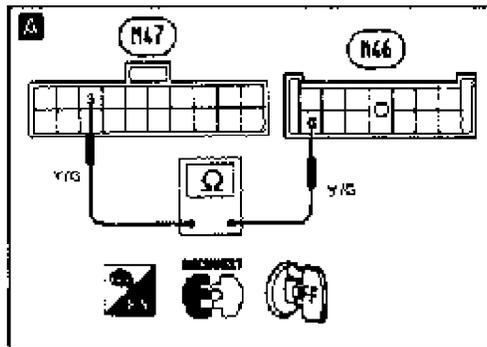
Ground circuit

Terminal	Continuity
⑩ - Ground	Yes

Fig. 3: Checking Main Power Supply (Q45)
 Courtesy of Nissan Motor Co., U.S.A.

SYMPTOM:

Twin tripmeter does not work. (Remains at "0" or some number and does not accumulate.)



SYMPTOM:

Twin trip meter is reset when ignition switch is turned off.

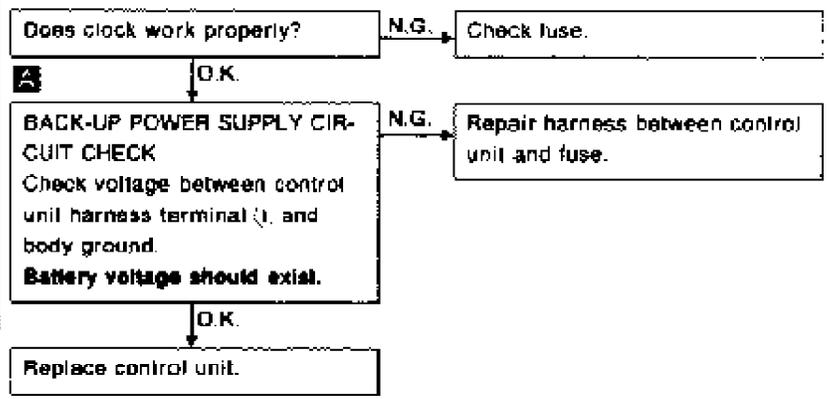
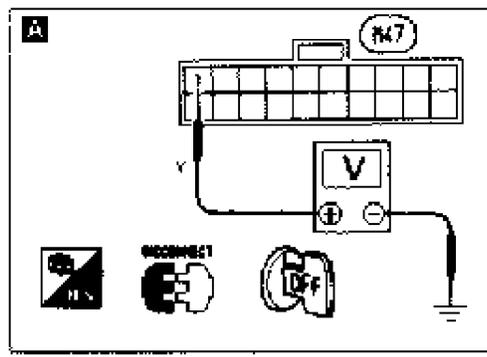
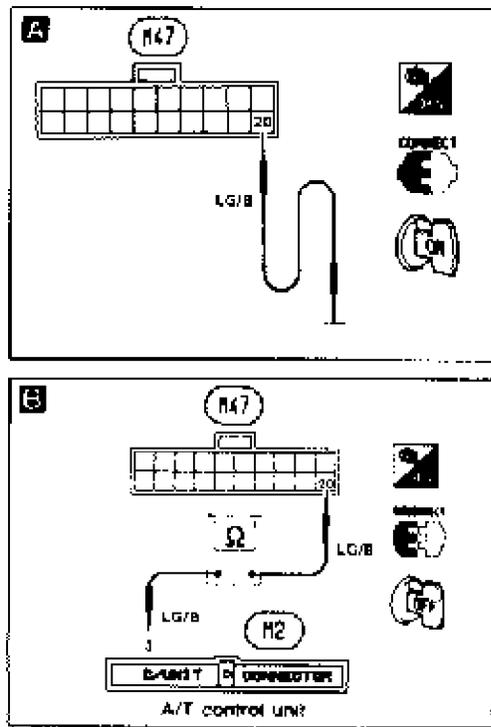


Fig. 4: Checking Ground Circuit & Tripmeter (Q45)
Courtesy of Nissan Motor Co., U.S.A.



Warning Display: TRANSMISSION MALFUNCTION

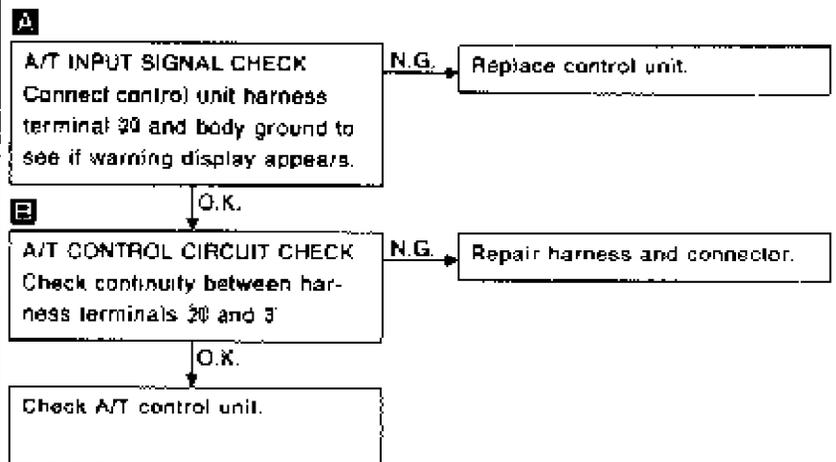


Fig. 5: Diagnosing Transmission Malfunction Warning Displays (Q45)
Courtesy of Nissan Motor Co., U.S.A.

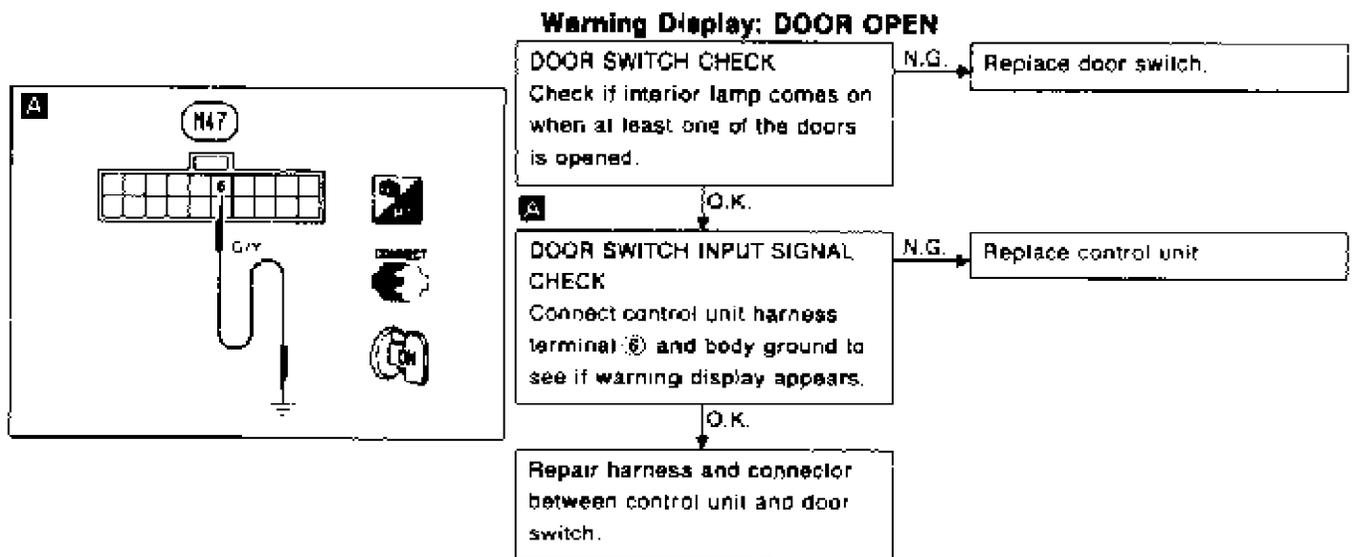


Fig. 6: Diagnosing Door Open Warning Displays (Q45)
Courtesy of Nissan Motor Co., U.S.A.

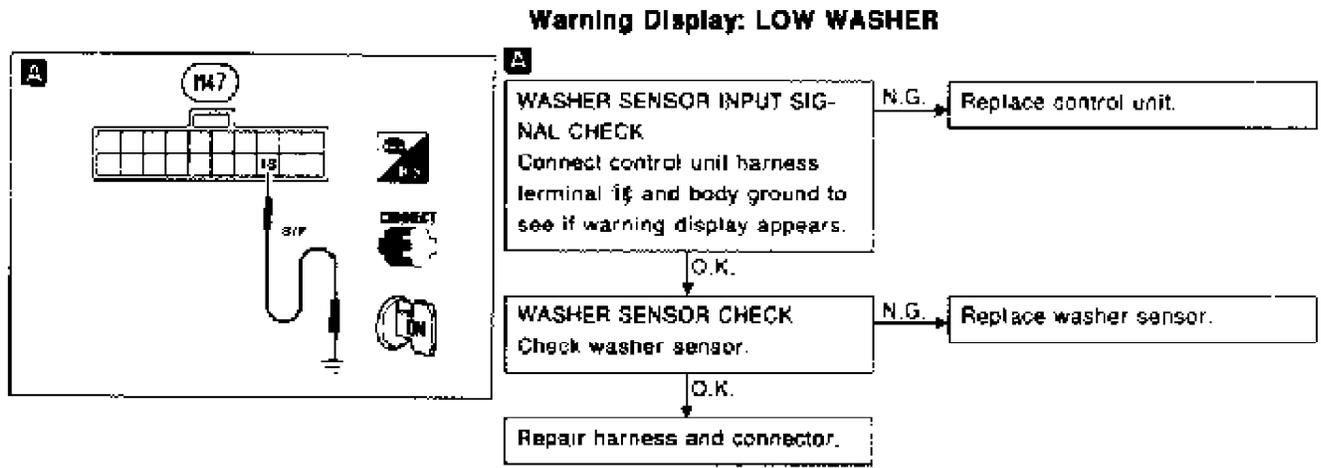


Fig. 7: Diagnosing Low Washer Warning Displays (Q45)
 Courtesy of Nissan Motor Co., U.S.A.

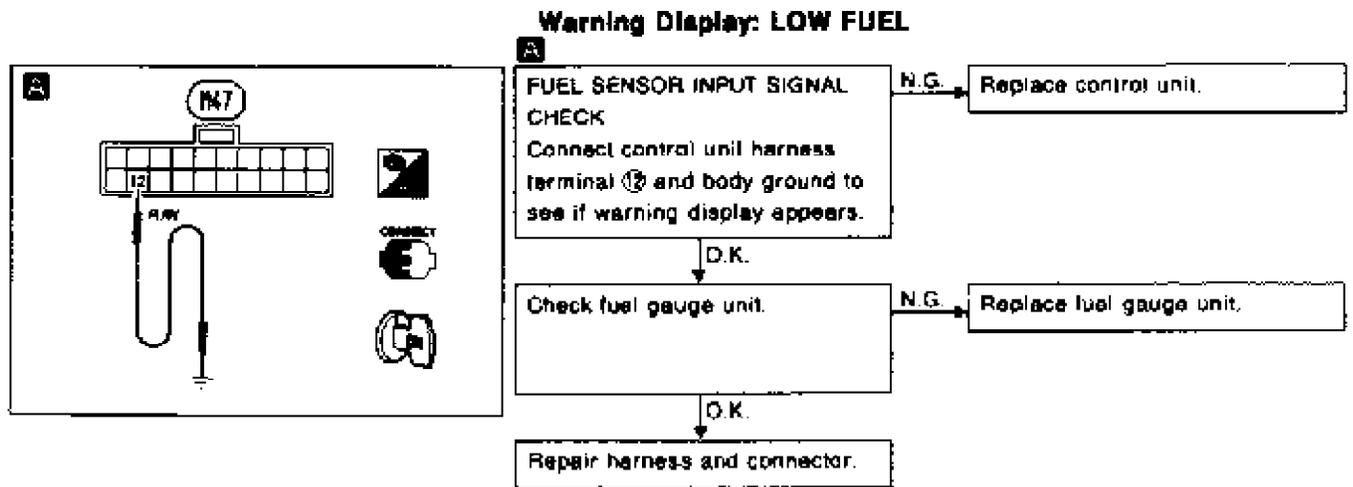


Fig. 8: Diagnosing Low Fuel Warning Displays (Q45)
 Courtesy of Nissan Motor Co., U.S.A.

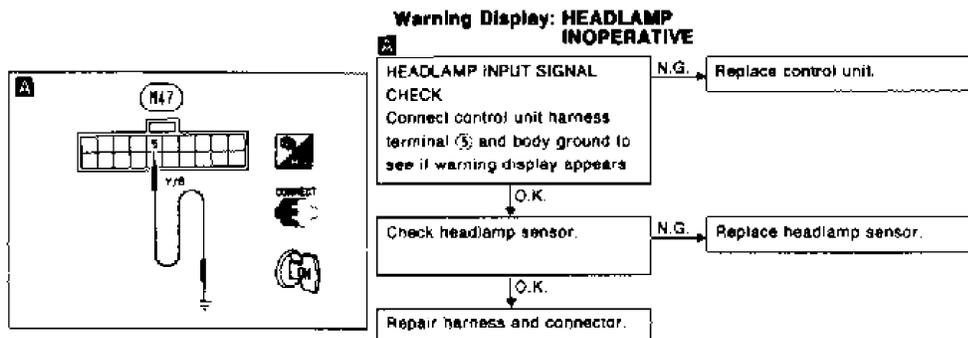


Fig. 9: Diagnosing Headlight Warning Displays (Q45)
 Courtesy of Nissan Motor Co., U.S.A.

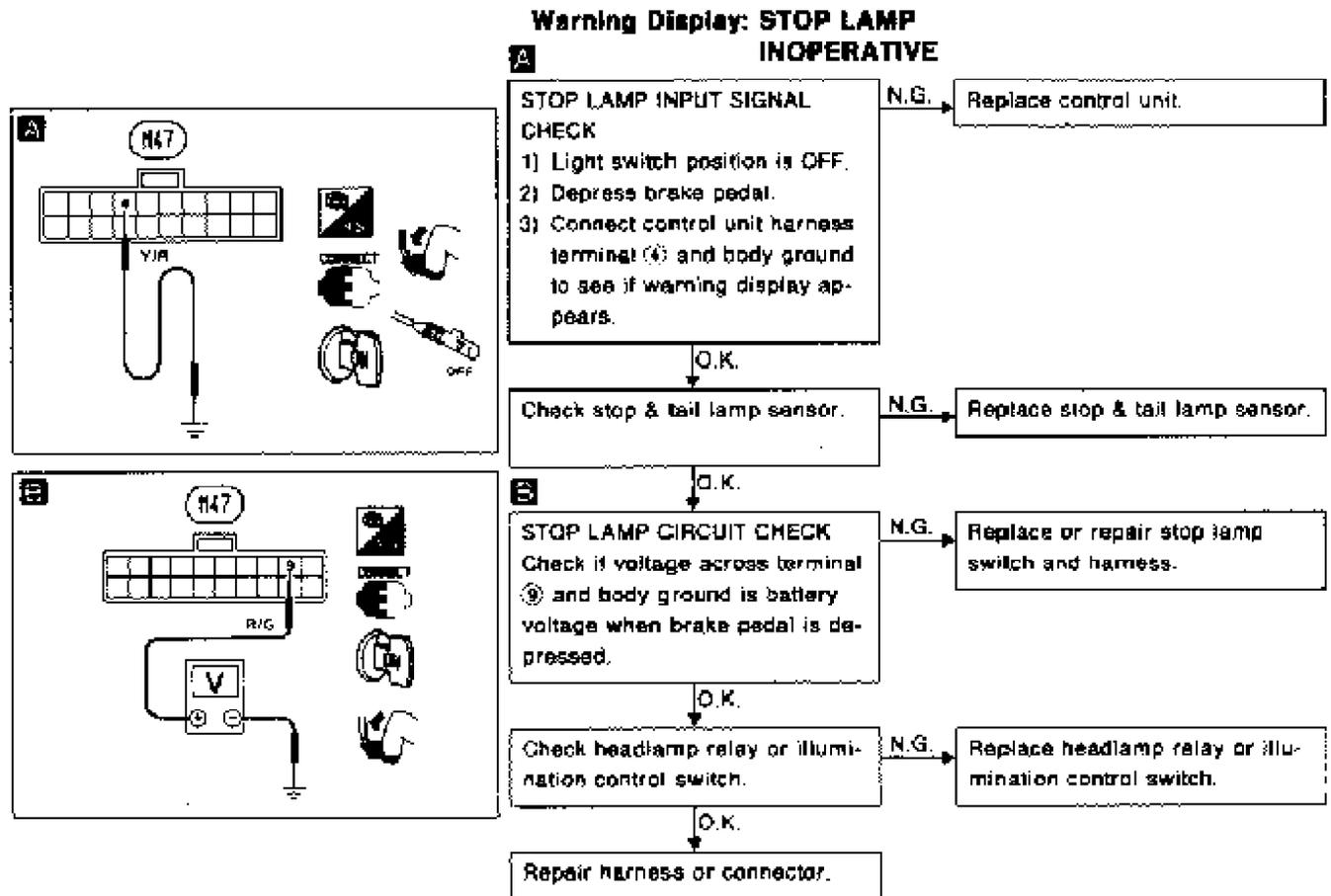


Fig. 10: Diagnosing Stoplight Warning Displays (Q45)
Courtesy of Nissan Motor Co., U.S.A.

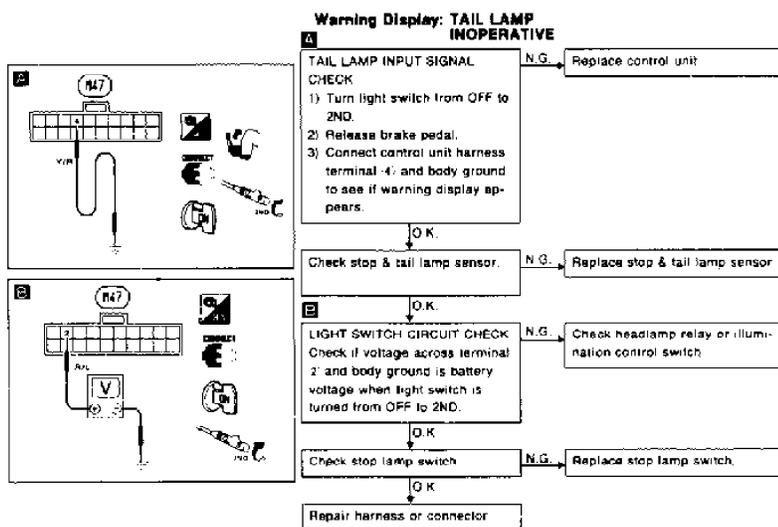


Fig. 11: Diagnosing Taillight Warning Displays (Q45)
Courtesy of Nissan Motor Co., U.S.A.

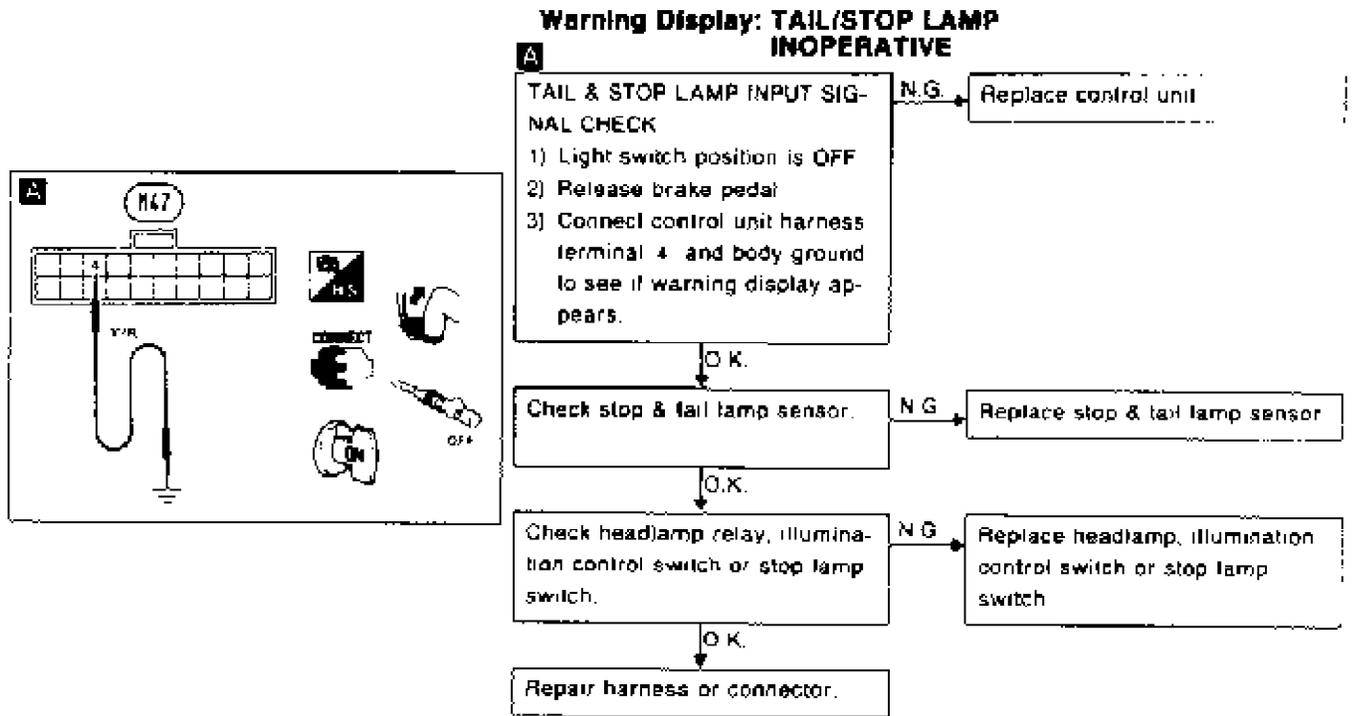


Fig. 12: Diagnosing Taillight/Stoplight Warning Displays (Q45)
 Courtesy of Nissan Motor Co., U.S.A.

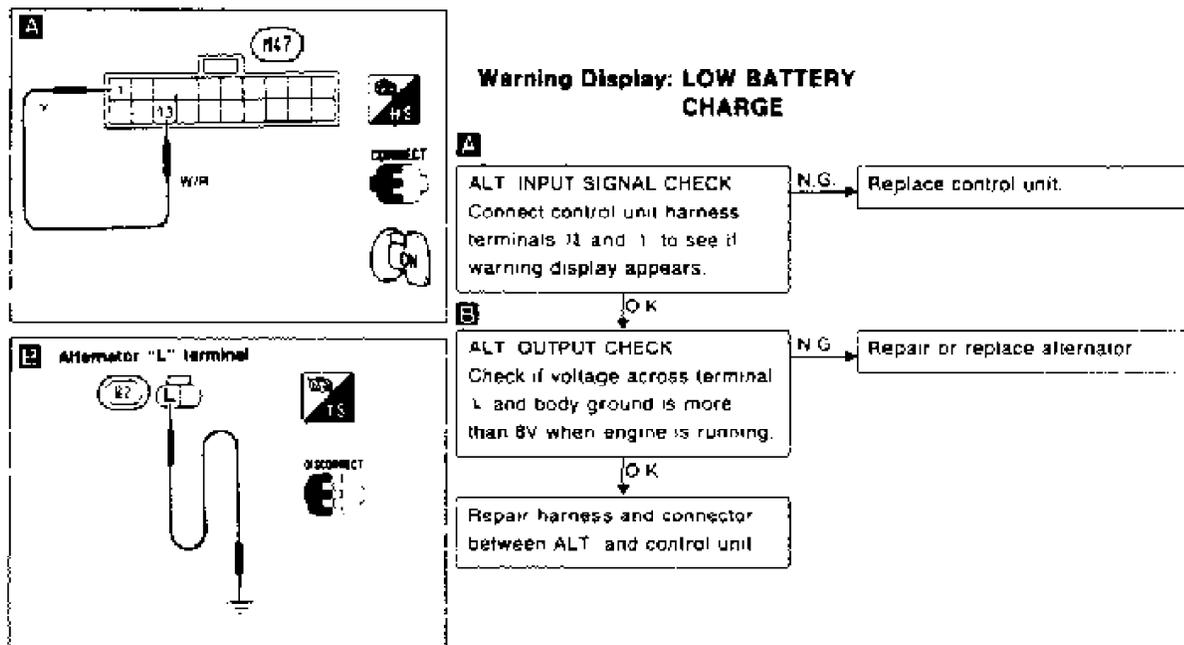
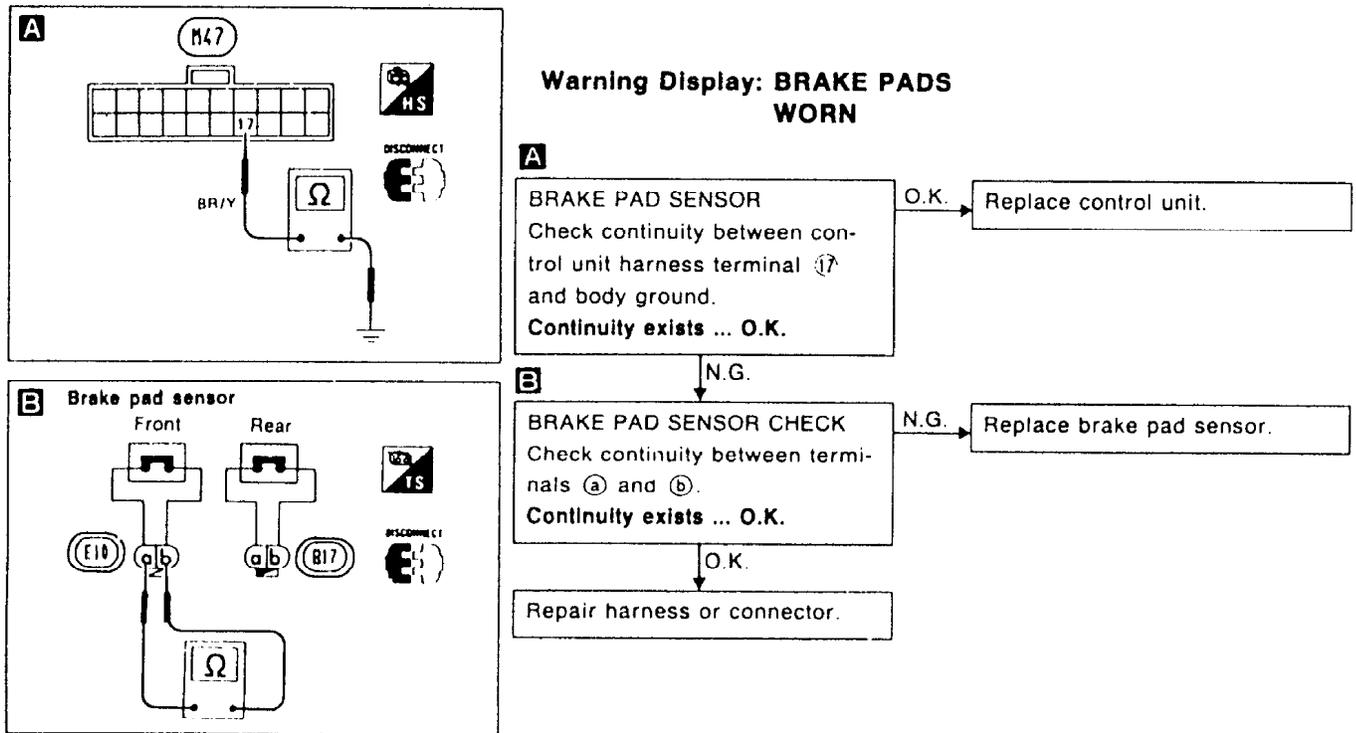


Fig. 13: Diagnosing Low Battery Charge Warning Displays (Q45)
 Courtesy of Nissan Motor Co., U.S.A.



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Fig. 14: Diagnosing Brake Pads Worn Warning Displays (Q45)
 Courtesy of Nissan Motor Co., U.S.A.

TESTING

FUEL GAUGE

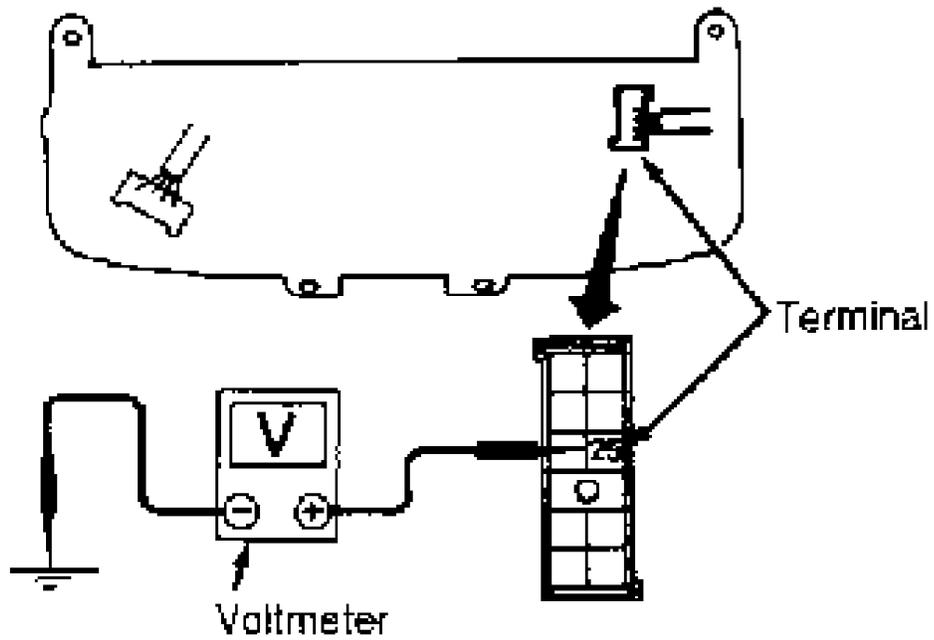
G20

1) To check power source, turn ignition on. Check voltage between terminal No. 25 and ground. See Fig. 15. If battery voltage is present, go to step 3).

2) If battery voltage is not present, check for blown fuse or fusible link. Check continuity between battery terminal and instrument cluster. Check battery circuit from ignition switch and relay. See appropriate chassis wiring diagram in the WIRING DIAGRAMS Section.

3) Turn ignition switch on. Connect a test light with 3.4 watt bulb between fuel gauge terminal "B(1)" and ground. See Fig. 16. If gauge needle does not move smoothly to FULL, replace gauge. If needle moves smoothly to FULL, check continuity between instrument cluster terminal No. 6 and ground. See Fig. 17.

4) If continuity is not present, repair or replace wire harness between instrument cluster and fuel tank sending unit. If continuity is present, test fuel tank sending unit. See FUEL TANK SENDING UNIT under TESTING.



NOTE: HARNESS SIDE OF CONNECTOR SHOWN.

Fig. 15: Rear View Of Instrument Cluster (G20)
 Courtesy of Nissan Motor Co., U.S.A.

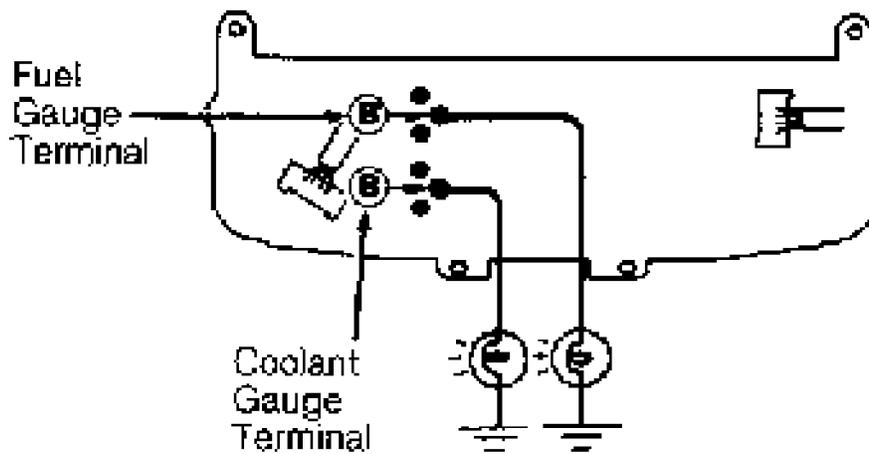


Fig. 16: Testing Fuel & Temperature Gauges (G20)
 Courtesy of Nissan Motor Co., U.S.A.

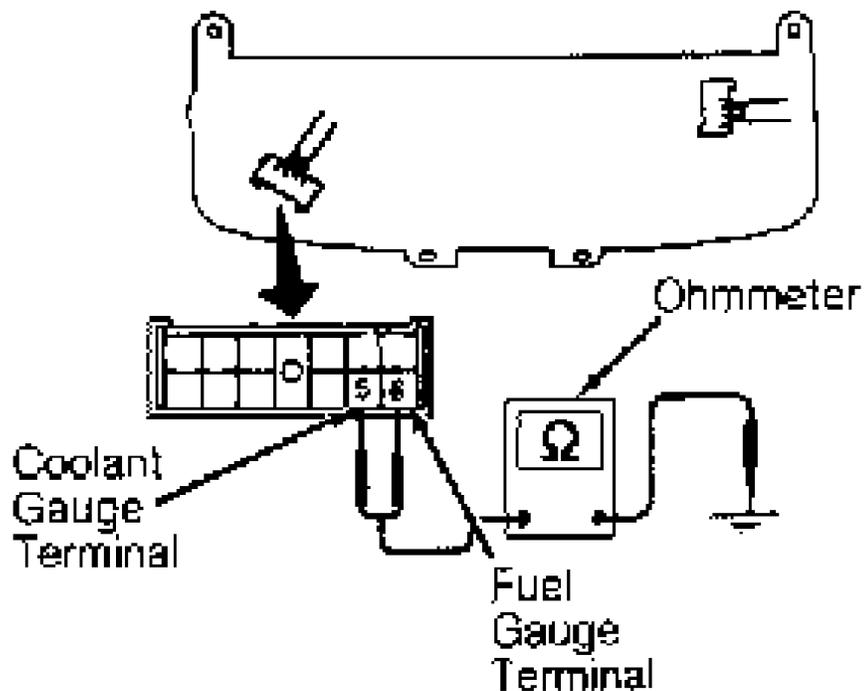


Fig. 17: Check Resistance Between Instr. Cluster Terminal & Ground (G20)
 Courtesy of Nissan Motor Co., U.S.A.

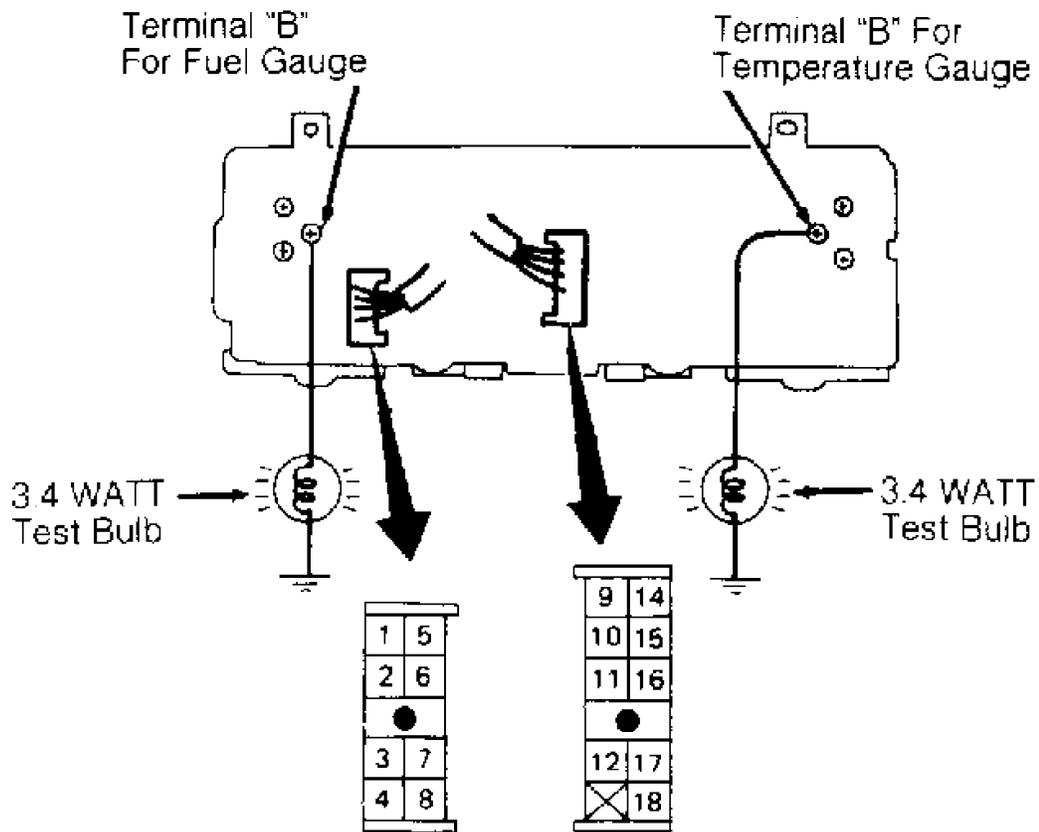
M30

1) To check power source, turn ignition on. Check voltage between terminal No. 14 and ground. See Fig. 18. If battery voltage is present, go to step 3).

2) If battery voltage is not present, check for blown fuse or fusible link. Check harness continuity between battery terminal and instrument cluster. Check battery circuit from ignition switch and relay. See appropriate chassis wiring diagram in WIRING DIAGRAMS.

3) Turn ignition on. Connect a jumper wire with a 3.4 watt light bulb between fuel gauge terminal "B" and ground. If gauge needle does not move smoothly from EMPTY to FULL, replace fuel gauge. If needle moves smoothly from EMPTY to FULL, check wire continuity between terminal No. 16 and ground.

4) If continuity is not present, repair or replace wire harness between instrument cluster and fuel tank sending unit. If continuity exists, test fuel tank sending unit. See FUEL TANK SENDING UNIT under TESTING.



NOTE: HARNESS SIDE OF CONNECTORS SHOWN.

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Fig. 18: Rear View Of Instrument Cluster (M30)
 Courtesy of Nissan Motor Co., U.S.A.

Q45

1) To check power source, turn ignition on. Check voltage between terminal No. 1 and ground. See Fig. 19. If battery voltage is present, go to step 3).

2) If battery voltage is not present, check for blown fuse or fusible link. Check continuity between battery terminal and instrument cluster. Check battery circuit from ignition switch and relay. See appropriate chassis wiring diagram in the WIRING DIAGRAMS Section.

3) Turn ignition on. Connect a jumper wire with a 3.4 watt light bulb between fuel gauge terminal "B" and ground for less than 10 seconds.

4) If fuel gauge needle does not move smoothly from EMPTY to FULL, replace fuel gauge. If needle moves smoothly from EMPTY to FULL, check wire continuity between terminal No. 28 and ground.

5) If continuity is not present, repair or replace wire harness between instrument cluster and fuel tank sending unit. If

continuity exists, test fuel tank sending unit. See FUEL TANK SENDING UNIT under TESTING.

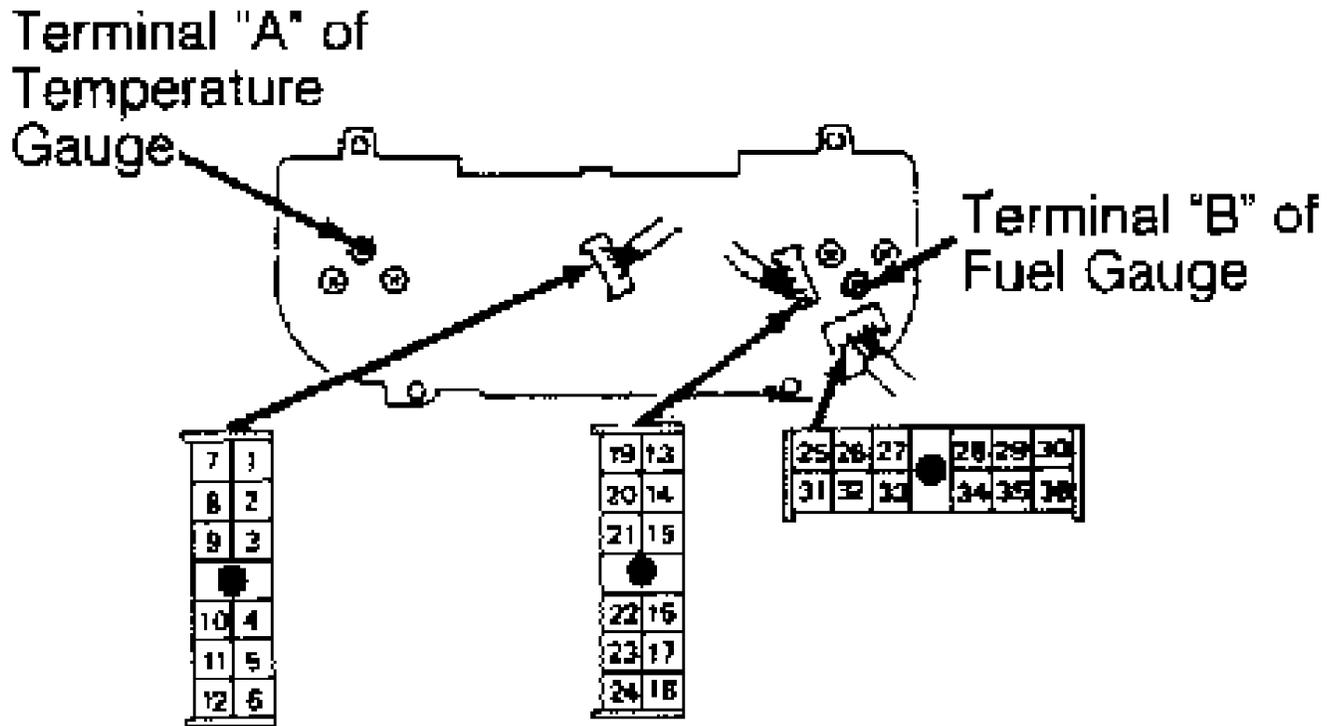


Fig. 19: Rear View Of Instrument Cluster (Q45)
 Courtesy of Nissan Motor Co., U.S.A.

FUEL TANK SENDING UNIT

- 1) Remove sending unit from fuel tank. Measure resistance between terminals "G" (+) and "E" (-) of sending unit connector. See Fig. 20.
- 2) Resistance values should change as position of fuel tank sending unit is changed. Resistance values should approximately equal those on FUEL TANK SENDING UNIT RESISTANCE (OHMS) table.

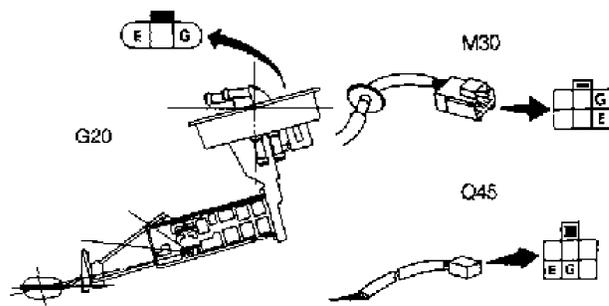


Fig. 20: Identifying Fuel Tank Sending Unit Connector Terminals
 Courtesy of Nissan Motor Co., U.S.A.

FUEL TANK SENDING UNIT RESISTANCE (OHMS) TABLE

Application	Full	Half	Empty
G20	4-6	27-34	73-85
M30	4-6	31-34	80-83
Q45	4-6	28-34	79-85

TEMPERATURE GAUGE

G20

1) To check power source, turn ignition on. Check voltage between terminal No. 25 and ground. See Fig. 15. If battery voltage is present, go to step 3).

2) If battery voltage is not present, check for blown fuse or fusible link. Check continuity between battery terminal and instrument cluster. Check battery circuit from ignition switch and relay. See appropriate chassis wiring diagram in the WIRING DIAGRAMS Section.

3) Turn ignition on. Connect a test light with a 3.4 watt bulb between temperature gauge terminal "B" and ground. See Fig. 16. If gauge needle does not move smoothly from COLD to HOT, replace gauge. If needle moves smoothly from COLD to HOT, check continuity between instrument cluster terminal No. 5 and ground.

4) If continuity is not present, check wiring. If continuity is present, test temperature gauge sending unit. See TEMPERATURE GAUGE SENDING UNIT under TESTING.

M30

1) To check power source, turn ignition on. Check voltage between terminal No. 14 and ground. See Fig. 18. If battery voltage is present, go to step 3).

2) If battery voltage is not present, check for blown fuse or fusible link. Check continuity between battery terminal and instrument cluster. Check battery circuit from ignition switch and relay. See appropriate chassis wiring diagram in the WIRING DIAGRAMS Section.

3) Turn ignition on. Connect a jumper wire with a 3.4 watt light bulb between fuel gauge terminal "B" and ground. If gauge needle does not move smoothly from COLD to HOT, replace temperature gauge. If needle moves smoothly from COLD to HOT, check wire continuity between terminal No. 6 and ground.

4) If continuity is not present, repair or replace wire harness between instrument cluster and temperature gauge sending unit. If continuity exists, test temperature gauge sending unit. See TEMPERATURE GAUGE SENDING UNIT under TESTING.

Q45

1) To check power source, turn ignition on. Check voltage between terminal No. 1 and ground. See Fig. 19. If battery voltage is present, go to step 3).

2) If battery voltage is not present, check for blown fuse or fusible link. Check continuity between battery terminal and instrument cluster. Check battery circuit from ignition switch and relay. See appropriate wiring diagram in the WIRING DIAGRAMS Section.

3) Turn ignition on. Connect a jumper wire with a 3.4 watt light bulb between temperature gauge terminal "A" and ground for less than 10 seconds.

4) If temperature gauge needle does not move smoothly from COLD to HOT, replace temperature gauge. If needle moves smoothly from COLD to HOT, check wire continuity between terminal No. 9 and ground.

5) If continuity is not present, repair or replace wire harness between instrument cluster and temperature gauge sending unit. If continuity exists, test temperature gauge sending unit. See TEMPERATURE GAUGE SENDING UNIT under TESTING.

TEMPERATURE GAUGE SENDING UNIT

Ensure continuity exists between body of sending unit and engine/chassis ground. Check resistance between temperature sending unit terminal and body ground. On G20, resistance should be 60-75 ohms at 149°F (65°C) and 21-24 ohms at 196°F (91°C). On M30 and Q45, resistance should be 70-90 ohms at 140°F (60°C) and 21-24 ohms at 212°F (100°C). Replace sending unit if resistance is not as specified.

OIL PRESSURE SWITCH

Ensure continuity exists between oil pressure switch body and engine/chassis ground. Check continuity between terminal of oil pressure switch and body ground. With engine running, oil pressure greater than 1.4-2.8 psi, continuity should not exist. With engine off, oil pressure less than 1.4-2.8 psi, continuity should exist. Replace oil pressure switch if continuity is not as specified.

SPEED SENSOR SIGNAL CHECK

G20

1) Disconnect speedometer cable from instrument cluster, and remove instrument cluster. Insert a small screwdriver into speedometer cable hole behind speedometer.

2) While slowly rotating sensor using screwdriver, use an ohmmeter to check continuity between terminals No. 14 and 15. See Fig. 21. Continuity should exist twice for each revolution. If continuity is not as specified, replace sensor as necessary.

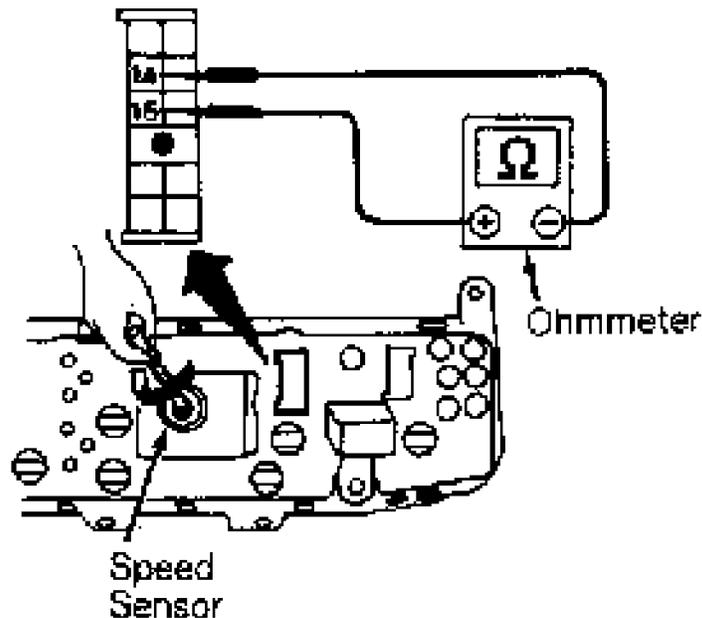


Fig. 21: Testing Speed Sensor Continuity (G20)
Courtesy of Nissan Motor Co., U.S.A.

M30

1) To check power source, turn ignition on. Check voltage

between terminal No. 14 and ground. See Fig. 18. If battery voltage is present, go to step 3).

2) If battery voltage is not present, check for blown fuse or fusible link. Check continuity between battery terminal and instrument cluster. Check battery circuit from ignition switch and relay. See appropriate chassis wiring diagram in the WIRING DIAGRAMS Section.

3) Check harness connector continuity between terminal No. 1 and ground. If continuity exists, go to next step. If continuity is not present, repair wire harness and/or connectors.

4) Check continuity between terminal No. 18 and speed sensor terminal "A". See Fig. 22. Check for continuity between terminal No. 15 and speed sensor terminal "B". If continuity exists, go to next step. If continuity is not present in either test, repair wire harness/connectors between speed sensor and instrument cluster.

5) Remove speed sensor from transmission. Turn speedometer pinion quickly and measure voltage across sensor terminals. Voltage should be approximately .5 volt alternating current. If voltage reading is okay, go to next step. If reading is incorrect, replace speed sensor.

6) Install speed sensor. Jack up one rear wheel. Turn ignition on. Turn rear wheel by hand and measure voltage between terminal No. 17 and ground. See Fig. 18. Needle of voltmeter should swing between ZERO volt and approximately .5 volt. If voltage reading is correct, replace speedometer.

Q45

1) To check power source, turn ignition on. Check voltage between terminal No. 1 and ground. See Fig. 19. If battery voltage is present, go to step 3).

2) If battery voltage is not present, check for blown fuse or fusible link. Check continuity between battery terminal and instrument cluster. Check battery circuit from ignition switch and relay. See appropriate chassis wiring diagram in the WIRING DIAGRAMS Section.

3) Check harness connector continuity between terminal No. 5 and ground. If continuity exists, go to next step. If continuity is not present, repair wire harness and/or connectors.

4) Check continuity between terminal No. 3 and speed sensor terminal "A". See Fig. 22. Check for continuity between terminal No. 2 and speed sensor terminal "B". If continuity exists, go to next step. If continuity is not present in either test, repair wire harness/connectors between speed sensor and instrument cluster.

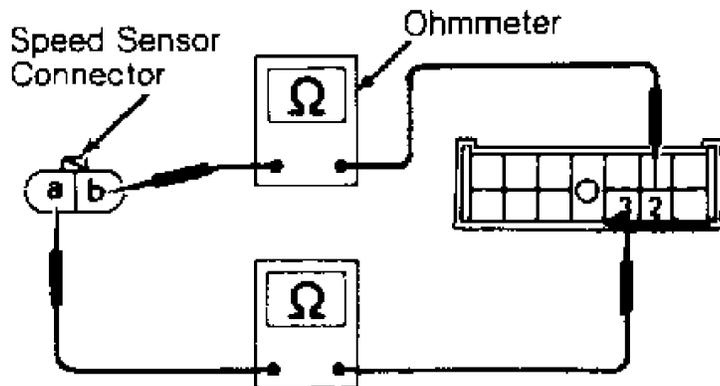


Fig. 22: Testing Speed Sensor Continuity (Q45 Shown; M30 Similar)
Courtesy of Nissan Motor Co., U.S.A.

5) Remove speed sensor from transmission. Turn speedometer pinion quickly and measure voltage across sensor terminals. Voltage

should be approximately .5 volt alternating current. If voltage reading is okay, go to next step. If reading is incorrect, replace speed sensor.

6) Install speed sensor. Jack up one rear wheel. Turn ignition on. Turn rear wheel by hand and measure voltage between terminal No. 6 and ground. See Fig. 19. Voltage should change between ZERO volt and approximately .5 volt. If voltage reading is correct, replace speedometer.

REMOVAL & INSTALLATION

INSTRUMENT CLUSTER

NOTE: For information on air bag DIAGNOSIS & TESTING or DISPOSAL PROCEDURES, See appropriate AIR BAG article in the ACCESSORIES/SAFETY EQUIPMENT Section

Removal & Installation

1) On M30 and Q45, ensure air bag system is disconnected. See all warnings and AIR BAG article in the ACCESSORIES/SAFETY EQUIPMENT Section.

2) On all models, disconnect battery negative cable. Remove steering wheel and steering wheel covers. Remove steering column bolts and lower steering column (if necessary).

3) Remove underneath dash panel covers as necessary.

Carefully remove cluster lid and instrument cluster. See Fig. 23, 24 or 25. To install, reverse removal procedure.

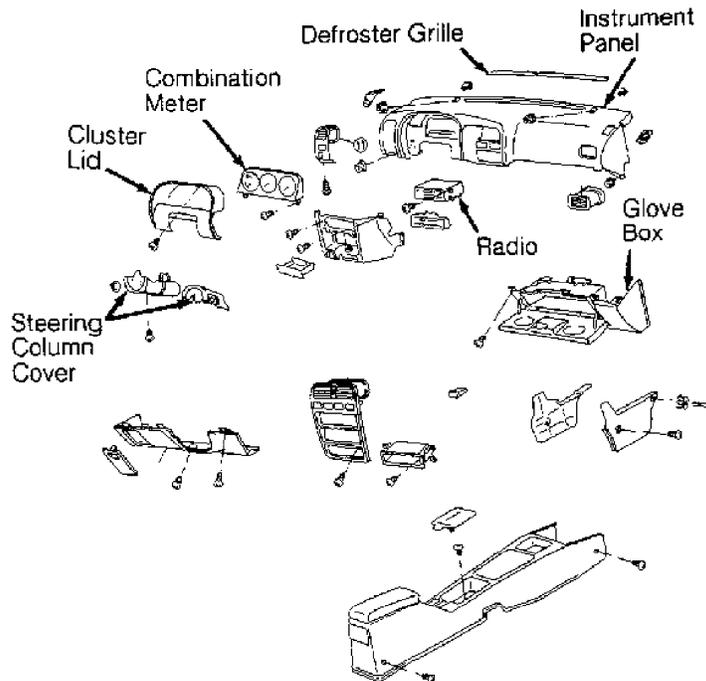


Fig. 23: Exploded View Of Instrument Panel (G20)
Courtesy of Nissan Motor Co., U.S.A.

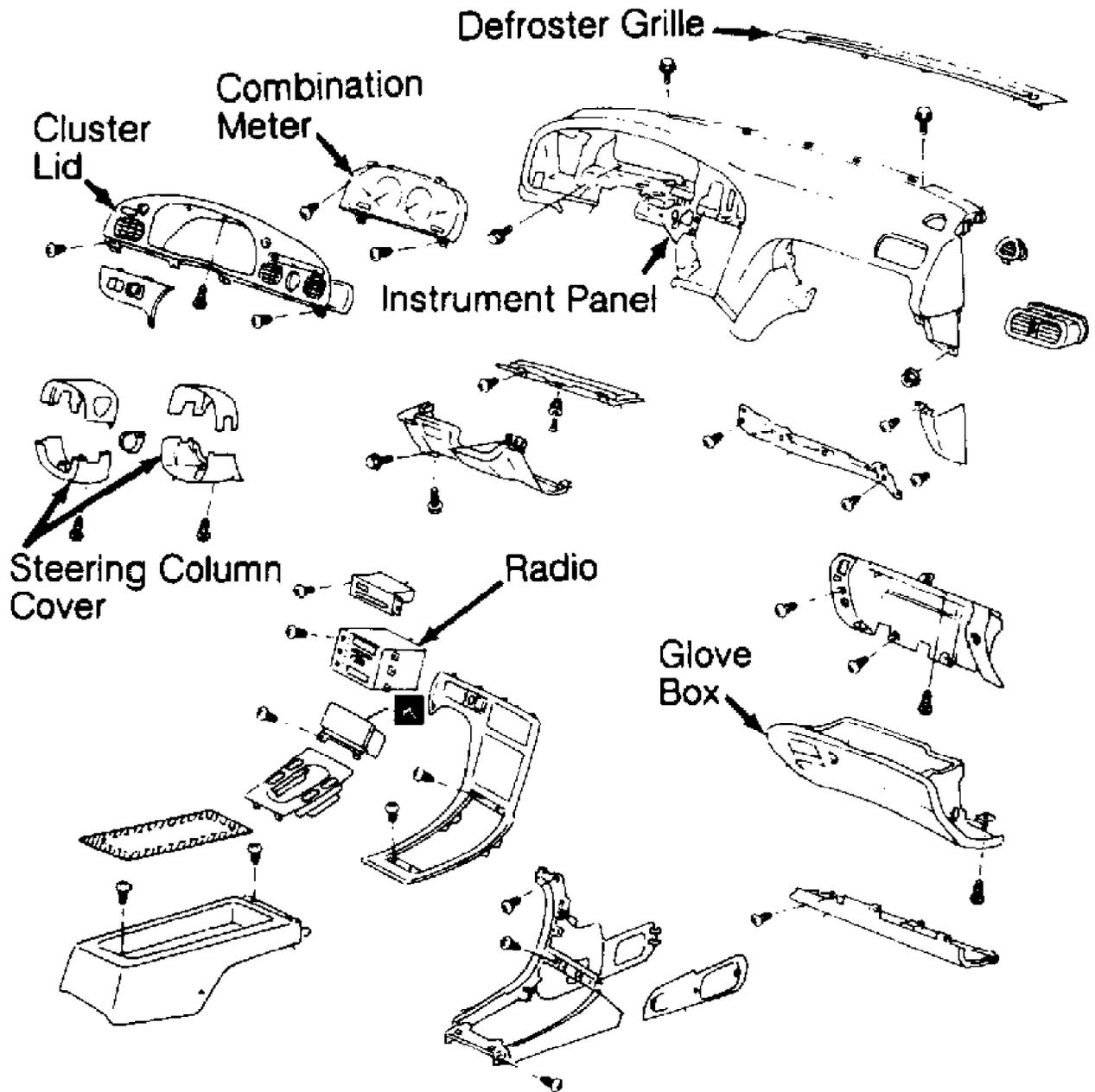


Fig. 25: Exploded View Of Instrument Panel (Q45)
 Courtesy of Nissan Motor Co., U.S.A.

WIRING DIAGRAMS

See appropriate chassis wiring diagram in the WIRING DIAGRAMS Section.