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I N F I N I T I®

I 30

MODEL A33 SERIES



I N F I N I T I®

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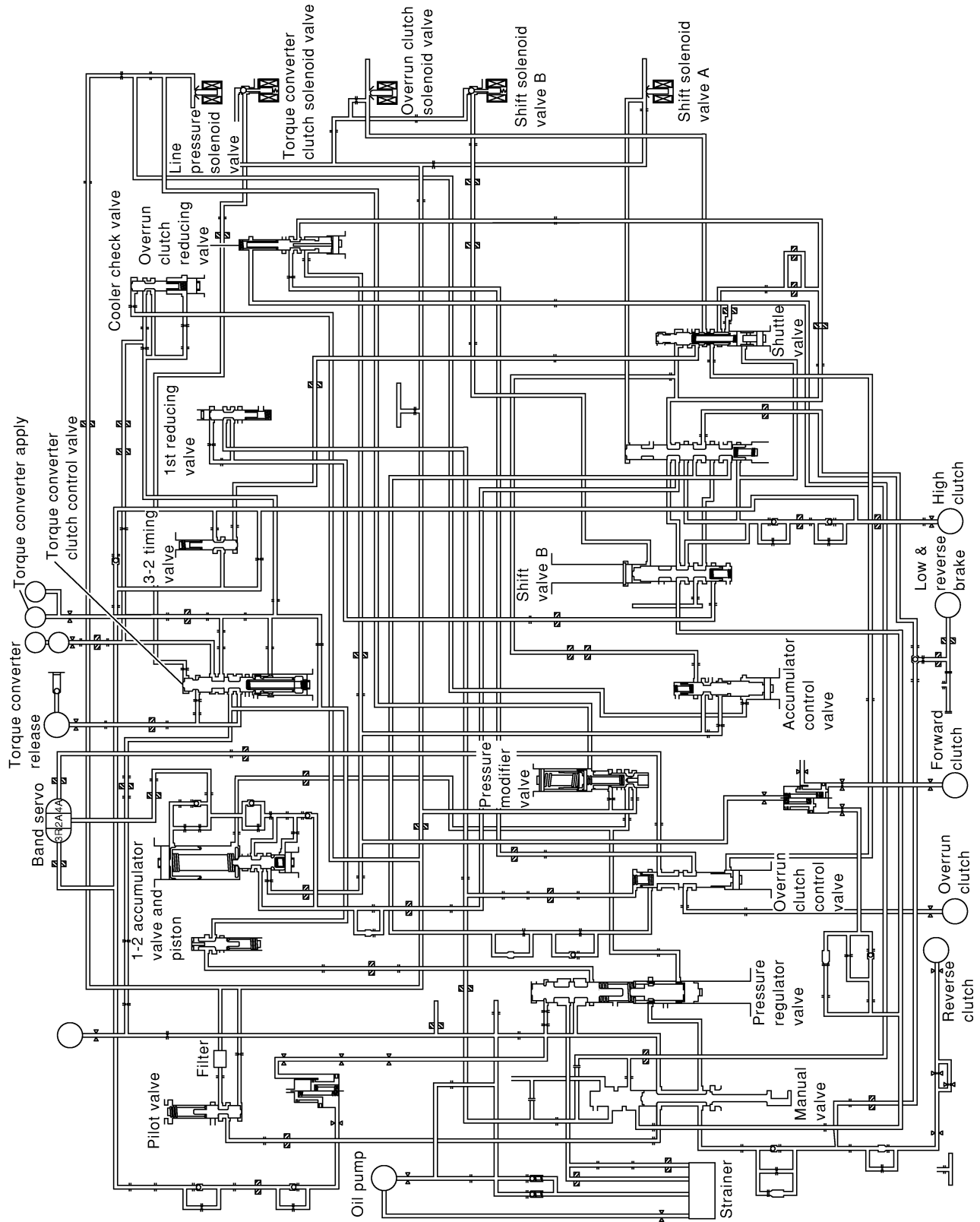
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OVERALL SYSTEM

Hydraulic Control Circuit

Hydraulic Control Circuit

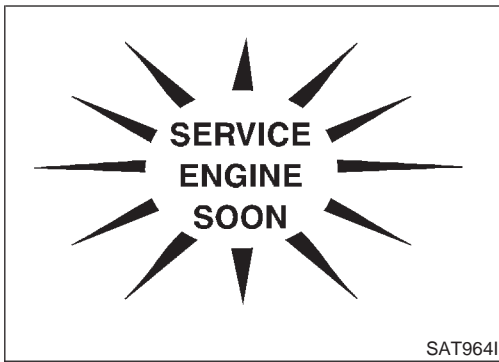
NHAT0012



SAT578J

ON BOARD DIAGNOSTIC SYSTEM DESCRIPTION

Malfunction Indicator Lamp (MIL)



Malfunction Indicator Lamp (MIL)

=NHAT0021

1. The malfunction indicator lamp will light up when the ignition switch is turned ON without the engine running. This is for checking the lamp.
 - If the malfunction indicator lamp does not light up, refer to EL-159, "WARNING LAMPS". (Or see EC-699, "MIL & Data Link Connectors".)
2. When the engine is started, the malfunction indicator lamp should go off. If the lamp remains on, the on board diagnostic system has detected an emission-related (OBD-II) malfunction. For detail, refer to EC-69, "ON BOARD DIAGNOSTIC SYSTEM DESCRIPTION".

CONSULT-II

NHAT0022

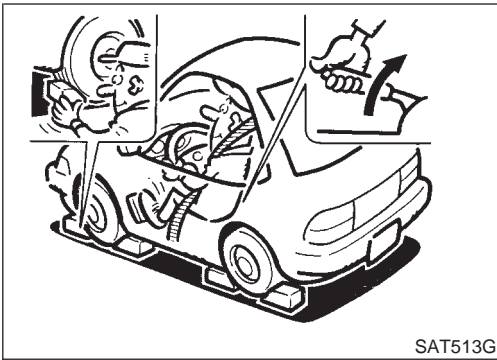
After performing "SELF-DIAGNOSTIC PROCEDURE (WITH CONSULT-II)" (AT-41), place check marks for results on the "Diagnostic Worksheet", AT-57. Reference pages are provide following the items.

NOTICE:

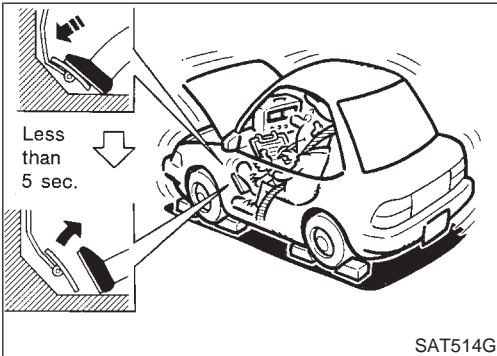
- 1) The CONSULT-II electrically displays shift timing and lock-up timing (that is, operation timing of each solenoid). Check for time difference between actual shift timing and the CONSULT-II display. If the difference is noticeable, mechanical parts (except solenoids, sensors, etc.) may be malfunctioning. Check mechanical parts using applicable diagnostic procedures.
- 2) Shift schedule (which implies gear position) displayed on CONSULT-II and that indicated in Service Manual may differ slightly. This occurs because of the following reasons:
 - Actual shift schedule has more or less tolerance or allowance,
 - Shift schedule indicated in Service Manual refers to the point where shifts start, and
 - Gear position displayed on CONSULT-II indicates the point where shifts are completed.
- 3) Shift solenoid valve "A" or "B" is displayed on CONSULT-II at the start of shifting. Gear position is displayed upon completion of shifting (which is computed by TCM).
- 4) Additional CONSULT-II information can be found in the Operation Manual supplied with the CONSULT-II unit.

TROUBLE DIAGNOSIS — BASIC INSPECTION

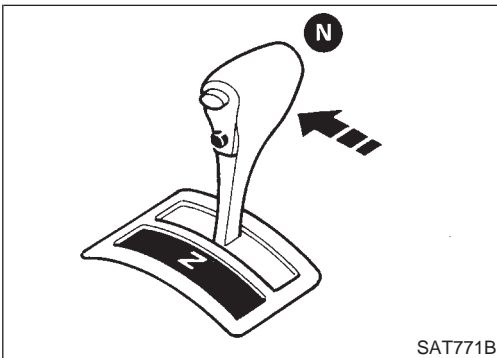
Stall Test (Cont'd)



SAT513G



SAT514G



SAT771B

3. Set parking brake and block wheels.
4. Install a tachometer where it can be seen by driver during test.
 - It is good practice to mark the point of specified engine rpm on indicator.
5. Start engine, apply foot brake, and place selector lever in D position.
6. Accelerate to wide open throttle gradually while applying foot brake.
7. Quickly note the engine stall revolution and immediately release throttle.
 - During test, never hold throttle wide open for less than 5 seconds.

Stall revolution:
2,150 - 2,450 rpm
8. Move selector lever to N position.
9. Cool off ATF.
 - Run engine at idle for at least one minute.
10. Repeat steps 5 through 9 with selector lever in 2, 1 and R positions.

JUDGEMENT OF STALL TEST

NHAT0027S02

The test result and possible damaged components relating to each result are shown in the illustrations on next page. In order to pinpoint the possible damaged components, follow the "WORK FLOW CHART" shown in AT-60.

NOTE:

Stall revolution is too high in D, 2 or 1 position:

- Slippage occurs in 1st gear but not in 2nd and 3rd gears. Low one-way clutch slippage
- Slippage occurs in the following gears:
1st through 3rd gears in D position and engine brake functions with overdrive control switch set to OFF.
1st and 2nd gears in 2 position and engine brake functions with accelerator pedal released (fully closed throttle). Forward clutch or forward one-way clutch slippage

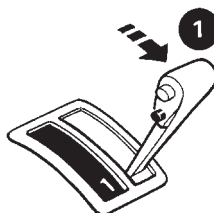
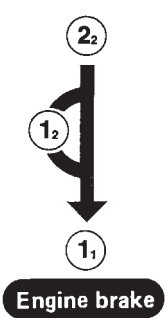
Stall revolution is too high in R position:

- Engine brake does not function in 1 position. Low & reverse brake slippage
- Engine brake functions in 1 position. Reverse clutch slippage

Stall revolution within specifications:

- Vehicle does not achieve speed of more than 80 km/h (50

Road Test (Cont'd)

6	CHECK ENGINE BRAKE	
Does vehicle decelerate by engine brake?		
<div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p style="text-align: center; margin-top: 10px;">Yes or No</p>		
SAT778B		
Yes	▶	<ol style="list-style-type: none"> 1. Stop vehicle. 2. Perform self-diagnosis. Refer to TCM Self-diagnostic Procedure (No Tools), AT-49.
No	▶	Go to “20. Vehicle Does Not Decelerate By Engine Brake”, AT-262. Continue ROAD TEST.

DTC P0705 PARK/NEUTRAL POSITION SWITCH

Diagnostic Procedure

Diagnostic Procedure

NHAT0036

1	INSPECTION START	
Do you have CONSULT-II?		
Yes or No		
Yes	▶	GO TO 2.
No	▶	GO TO 6.

2	CHECK PARK/NEUTRAL POSITION (PNP) SWITCH CIRCUIT (With CONSULT-II)															
<p> With CONSULT-II</p> <ol style="list-style-type: none"> Turn ignition switch to ON position. (Do not start engine.) Select "ECU INPUT SIGNALS" in "DATA MONITOR" mode for "A/T" with CONSULT-II. Read out P, R, N, D, 2 and 1 position switches moving selector lever to each position. Check the signal of the selector lever position is indicated properly. 																
<table border="1" style="margin: auto;"> <thead> <tr> <th colspan="2">DATA MONITOR</th> </tr> <tr> <th>MONITORING</th> <th></th> </tr> </thead> <tbody> <tr> <td>PN POSI SW</td> <td>OFF</td> </tr> <tr> <td>R POSITION SW</td> <td>OFF</td> </tr> <tr> <td>D POSITION SW</td> <td>OFF</td> </tr> <tr> <td>2 POSITION SW</td> <td>ON</td> </tr> <tr> <td>1 POSITION SW</td> <td>OFF</td> </tr> </tbody> </table>			DATA MONITOR		MONITORING		PN POSI SW	OFF	R POSITION SW	OFF	D POSITION SW	OFF	2 POSITION SW	ON	1 POSITION SW	OFF
DATA MONITOR																
MONITORING																
PN POSI SW	OFF															
R POSITION SW	OFF															
D POSITION SW	OFF															
2 POSITION SW	ON															
1 POSITION SW	OFF															
SAT643J																
OK or NG																
OK	▶	GO TO 7.														
NG	▶	GO TO 3.														

3	DETECT MALFUNCTIONING ITEM																						
<p>Check the following item:</p> <ul style="list-style-type: none"> Park/neutral position (PNP) switch Check continuity between terminals 1 and 2 and between terminals 3 and 4, 5, 6, 7, 8, 9 while moving manual shaft through each position. 																							
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p>PNP switch harness connector</p> <p>View with air cleaner box removed</p> </div> <div style="flex: 1; text-align: center;"> <p>1,(3) 2,(4,5,6,7,8,9)</p> </div> <div style="flex: 1;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Lever position</th> <th colspan="2">Terminal No.</th> </tr> </thead> <tbody> <tr> <td>P</td> <td>3 - 7</td> <td>1 - 2</td> </tr> <tr> <td>R</td> <td>3 - 8</td> <td></td> </tr> <tr> <td>N</td> <td>3 - 9</td> <td>1 - 2</td> </tr> <tr> <td>D</td> <td>3 - 6</td> <td></td> </tr> <tr> <td>2</td> <td>3 - 5</td> <td></td> </tr> <tr> <td>1</td> <td>3 - 4</td> <td></td> </tr> </tbody> </table> </div> </div>			Lever position	Terminal No.		P	3 - 7	1 - 2	R	3 - 8		N	3 - 9	1 - 2	D	3 - 6		2	3 - 5		1	3 - 4	
Lever position	Terminal No.																						
P	3 - 7	1 - 2																					
R	3 - 8																						
N	3 - 9	1 - 2																					
D	3 - 6																						
2	3 - 5																						
1	3 - 4																						
SAT615J																							
OK or NG																							
OK	▶	GO TO 5.																					
NG	▶	GO TO 4.																					

DTC P0731 A/T 1ST GEAR FUNCTION

Diagnostic Trouble Code (DTC) Confirmation Procedure (Cont'd)

a 1st trip DTC other than P0731 is shown, refer to applicable “TROUBLE DIAGNOSIS FOR DTC”.

- 6) Stop vehicle.
- 7) Follow the instruction displayed. (Check for normal shifting referring to the table below.)

Vehicle condition	Gear on actual transmission shift pattern when screen is changed to 1 → 2 → 3 → 4
No malfunction exists.	1 → 2 → 3 → 4
Malfunction for P0731 exists.	2 → 2 → 3 → 3
	4 → 3 → 3 → 4

- 8) Make sure that “OK” is displayed. (If “NG” is displayed, refer to “DIAGNOSTIC PROCEDURE”.)
 Refer to “DIAGNOSTIC PROCEDURE”, AT-130.
 Refer to shift schedule, AT-384.

WITH GST

Follow the procedure “With CONSULT-II”.

NHAT0215S02

DTC P0734 A/T 4TH GEAR FUNCTION

Diagnostic Procedure (Cont'd)

4	CHECK VALVE OPERATION
<p>1. Remove control valve assembly. Refer to AT-282.</p> <ul style="list-style-type: none"> ● Shift solenoid valve A ● Shift solenoid valve B <p>2. Check solenoid valve by listening for its operating sound while applying battery voltage to the terminal and ground.</p>	
OK or NG	
OK	▶ GO TO 5.
NG	▶ Replace solenoid valve assembly.

SAT620J

5	CHECK CONTROL VALVE
<p>1. Disassemble control valve assembly. Refer to AT-314.</p> <p>2. Check to ensure that:</p> <ul style="list-style-type: none"> ● Valve, sleeve and plug slide along valve bore under their own weight. ● Valve, sleeve and plug are free from burrs, dents and scratches. ● Control valve springs are free from damage, deformation and fatigue. ● Hydraulic line is free from obstacles. 	
OK or NG	
OK	▶ GO TO 6.
NG	▶ Repair control valve.

SAT367H

6	CHECK SHIFT UP (D₃ TO D₄)
Does A/T shift from D ₃ to D ₄ at the specified speed?	
OK or NG	
OK	▶ GO TO 11.
NG	▶ Check control valve again. Repair or replace control valve assembly.

DTC P0745 LINE PRESSURE SOLENOID VALVE

Diagnostic Procedure (Cont'd)

3	CHECK POWER SOURCE AND DROPPING RESISTOR CIRCUIT
<p>1. Turn ignition switch to OFF position. 2. Disconnect TCM harness connector. 3. Check resistance between terminal 4 and TCM harness connector terminal 2.</p>	
<p style="text-align: right;">Resistance: 11.2 - 12.8Ω</p>	
SAT631J	
OK or NG	
OK	▶ GO TO 5.
NG	▶ GO TO 4.

4	DETECT MALFUNCTIONING ITEM
<p>Check the following items:</p> <ul style="list-style-type: none"> ● Dropping resistor ● Check resistance between two terminals. 	
SAT933IB	
Resistance: 11.2 - 12.6Ω	
<ul style="list-style-type: none"> ● Harness for short or open between TCM terminal 2 and terminal cord assembly (Main harness) 	
OK or NG	
OK	▶ GO TO 5.
NG	▶ Repair or replace damaged parts.

5	CHECK POWER SOURCE CIRCUIT
<p>1. Turn ignition switch to OFF position. 2. Check continuity between sub-harness connector terminal 4 and TCM harness connector terminal 1. Refer to wiring diagram — AT — LPSV. Continuity should exist. If OK, check harness for short to ground and short to power. 3. Reinstall any part removed.</p>	
OK or NG	
OK	▶ GO TO 6.
NG	▶ Repair open circuit or short to ground or short to power in harness or connectors.

DTC P1760 OVERRUN CLUTCH SOLENOID VALVE

Diagnostic Trouble Code (DTC) Confirmation Procedure

DIAGNOSIS SYSTEM SELECTION
A/T
ENGINE

SAT580J

DIAGNOSIS MODE SELECTION
WORK SUPPORT
SELF DIAGNOSIS
DATA MONITOR
FUNCTION TEST
DTC WORK SUPPORT

SAT617J

Diagnostic Trouble Code (DTC) Confirmation Procedure

NHAT0245

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

If "DIAGNOSTIC TROUBLE CODE CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 5 seconds before conducting the next test.

TESTING CONDITION:

Always drive vehicle on a level road to improve accuracy of test.

After the repair, perform the following procedure to confirm the malfunction is eliminated.

WITH CONSULT-II

NHAT0245S01

- 1) Turn ignition switch ON and select "DATA MONITOR" mode for "ENGINE" with CONSULT-II.
- 2) Start engine.
- 3) Accelerate vehicle to a speed of more than 10 km/h (6 MPH) with D position (O/D ON).
- 4) Release accelerator pedal completely with D position (O/D OFF).

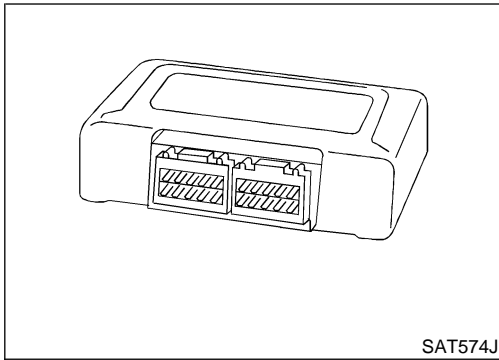
WITH GST

NHAT0245S02

Follow the procedure "With CONSULT-II".

DTC CONTROL UNIT (EEP ROM)

Description



SAT574J

Description

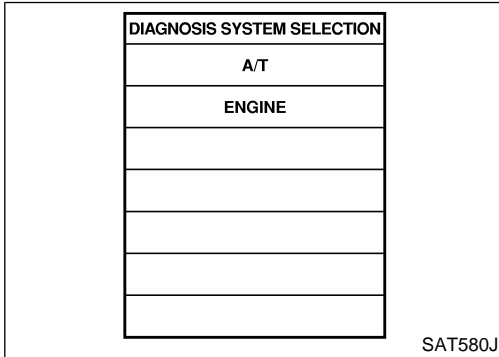
The TCM consists of a microcomputer and connectors for signal input and output and for power supply. The unit controls the A/T. NHAT0199

On Board Diagnosis Logic

Diagnostic trouble code CONTROL UNIT (EEP ROM) with CONSULT-II is detected when TCM memory (EEP ROM) is malfunctioning. NHAT0260

Possible Cause

Check TCM. NHAT0270



SAT580J

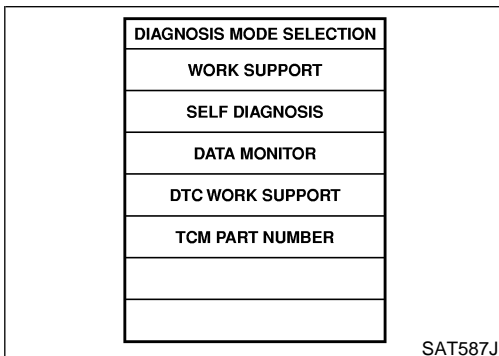
Diagnostic Trouble Code (DTC) Confirmation Procedure

NOTE:

If "DTC Confirmation Procedure" has been previously conducted, always turn ignition switch "OFF" and wait at least 5 seconds before conducting the next test. NHAT0261

WITH CONSULT-II

- 1) Turn ignition switch "ON" and select "DATA MONITOR" mode for A/T with CONSULT-II. NHAT0261S01
- 2) Start engine.
- 3) Run engine for at least 2 seconds at idle speed.



SAT587J

TROUBLE DIAGNOSES FOR SYMPTOMS

8. Vehicle Cannot Be Started From D₁

8. Vehicle Cannot Be Started From D₁

=NHAT0095

SYMPTOM:

Vehicle cannot be started from D₁ on Cruise test — Part 1.

1	CHECK SYMPTOM	
Is "6. Vehicle Does Not Creep Backward In R Position" OK?		
Yes or No		
Yes	▶	GO TO 2.
No	▶	Go to "6. Vehicle Does Not Creep Backward In R Position", AT-231.

2	CHECK SELF-DIAGNOSTIC RESULTS	
Does self-diagnosis show damage to vehicle speed sensor-A/T (revolution sensor), shift solenoid valve A, B or vehicle speed sensor-MTR after cruise test?		
SAT934FB		
Yes or No		
Yes	▶	Check damaged circuit. Refer to "DTC P0720, P0750, P0755 or VHCL SPEED SEN-MTR", AT-115, 174, 179 or 205.
No	▶	GO TO 3.

3	CHECK THROTTLE POSITION SENSOR	
Check throttle position sensor. Refer to EC-189, "DTC P0120 Throttle Position Sensor".		
SAT641J		
OK or NG		
OK	▶	GO TO 4.
NG	▶	Repair or replace throttle position sensor.

TROUBLE DIAGNOSES FOR SYMPTOMS

18. A/T Does Not Shift: D₃ → 2₂, When Selector Lever D → 2 Position

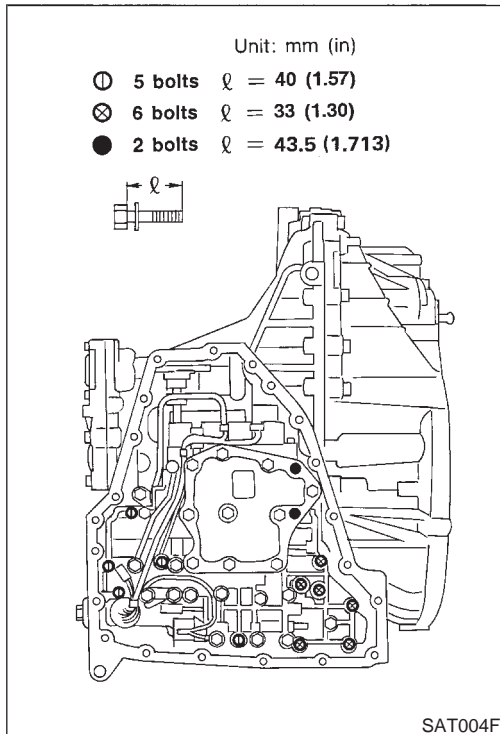
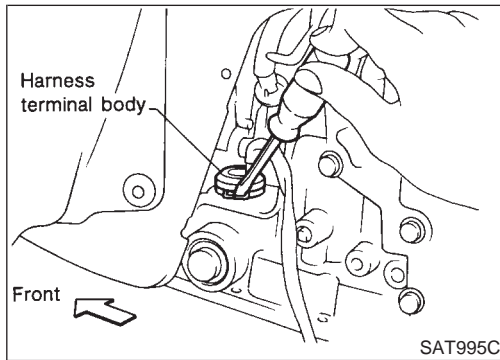
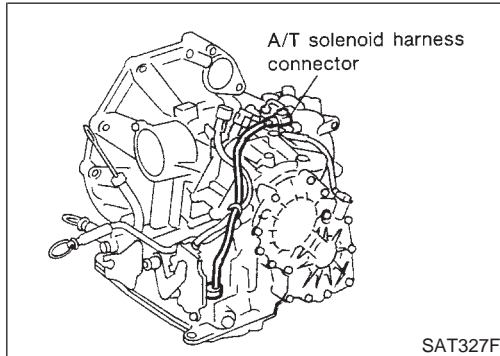
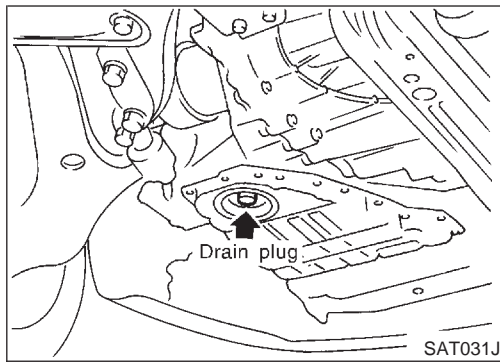
18. A/T Does Not Shift: D₃ → 2₂, When Selector Lever D → 2 Position

=NHAT0105

SYMPTOM:

A/T does not shift from D₃ to 2₂ when changing selector lever from D to 2 position.

1	CHECK PARK/NEUTRAL POSITION (PNP) SWITCH CIRCUIT
<p><input type="checkbox"/> With CONSULT-II Does "ECU INPUT SIGNALS" in "DATA MONITOR" show damage to park/neutral position (PNP) switch circuit?</p>	
<p><input checked="" type="checkbox"/> Without CONSULT-II Does self-diagnosis show damage to park/neutral position (PNP) switch circuit?</p> <div style="text-align: center; margin: 20px 0;"> <pre> graph TD Start[Self diagnosis Start] --- Light[Light] Light --- ODOFF[O/D OFF] ODOFF --- Shade[Shade] </pre> </div> <p style="text-align: right;">SAT367J</p>	
Yes or No	
Yes	▶ Check park/neutral position (PNP) switch circuit. Refer to "DTC P0705", AT-103.
No	▶ Go to 9. A/T Does Not Shift: D ₁ → D ₂ Or Does Not Kickdown: D ₄ → D ₂ , AT-241.



Control Valve Assembly and Accumulators

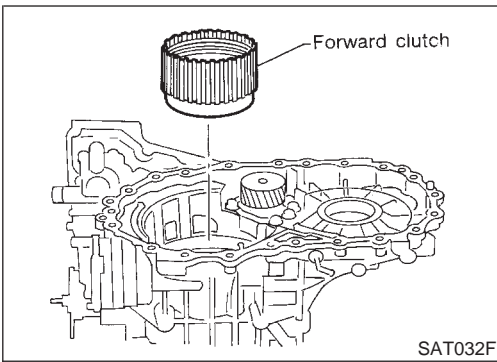
NHAT0114

REMOVAL

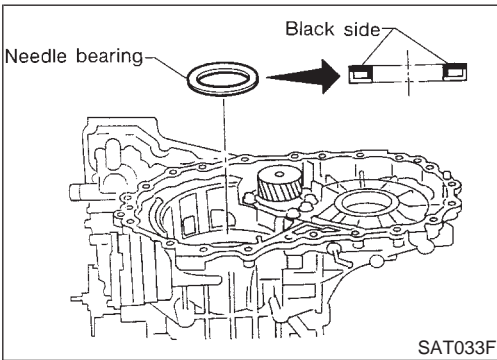
NHAT0114S01

1. Drain ATF from transaxle.
 2. Remove oil pan and gasket.
 3. Disconnect A/T solenoid harness connector.
 4. Remove stopper ring from terminal cord assembly harness terminal body.
 5. Remove terminal cord assembly harness from transmission case by pushing on terminal body.
 6. Remove control valve assembly by removing fixing bolts I, X and ●.
- Bolt length, number and location are shown in the illustration.
- **Be careful not to drop manual valve and servo release accumulator return spring.**
7. Disassemble and inspect control valve assembly if necessary. Refer to AT-314.

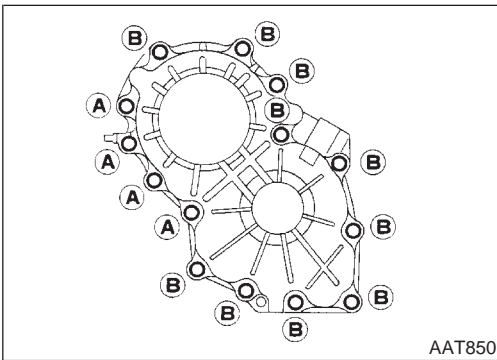
DISASSEMBLY



37. Remove forward clutch assembly from transmission case.



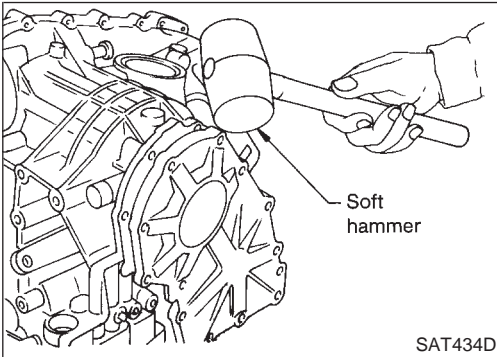
38. Remove needle bearing from transmission case.



39. Remove output shaft assembly according to the following procedures.

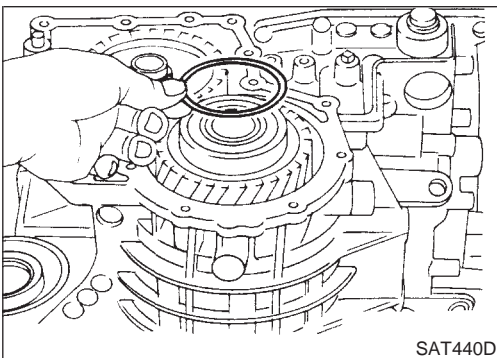
a. Remove side cover bolts.

- Do not mix bolts A and B.
- Always replace bolts A as they are self-sealing bolts.



b. Remove side cover by lightly tapping it with a soft hammer.

- Be careful not to drop output shaft assembly. It might come out when removing side cover.



c. Remove adjusting shim.

REPAIR FOR COMPONENT PARTS

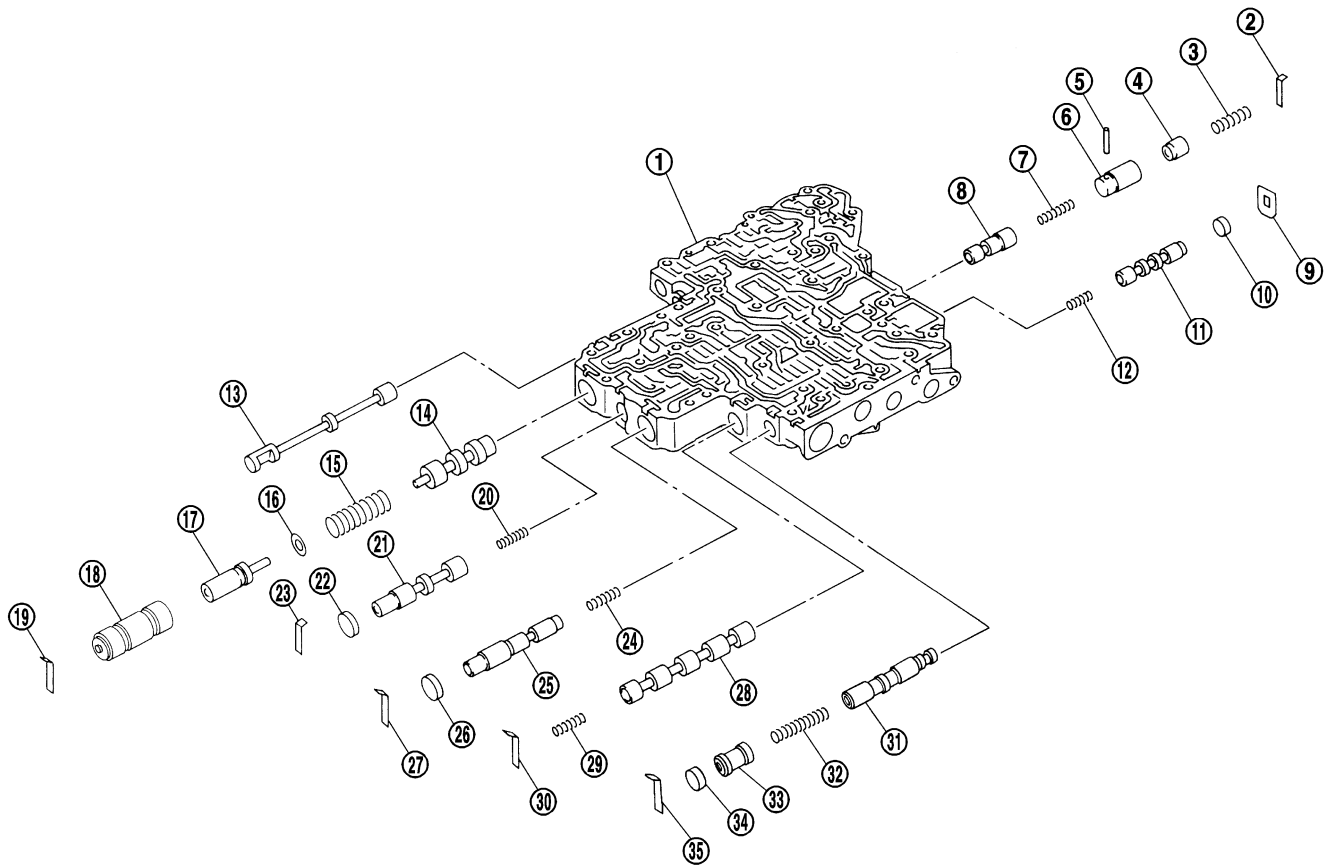
Control Valve Lower Body

Control Valve Lower Body COMPONENTS

Apply ATF to all components before installation.

=NHAT0141

SEC. 317



SAT773J

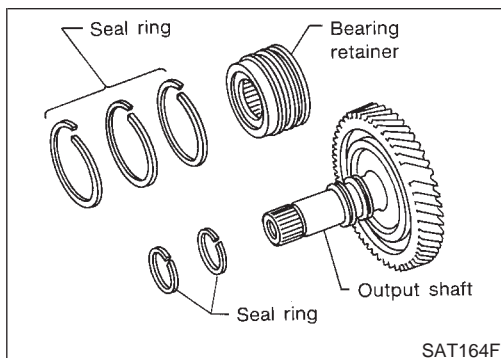
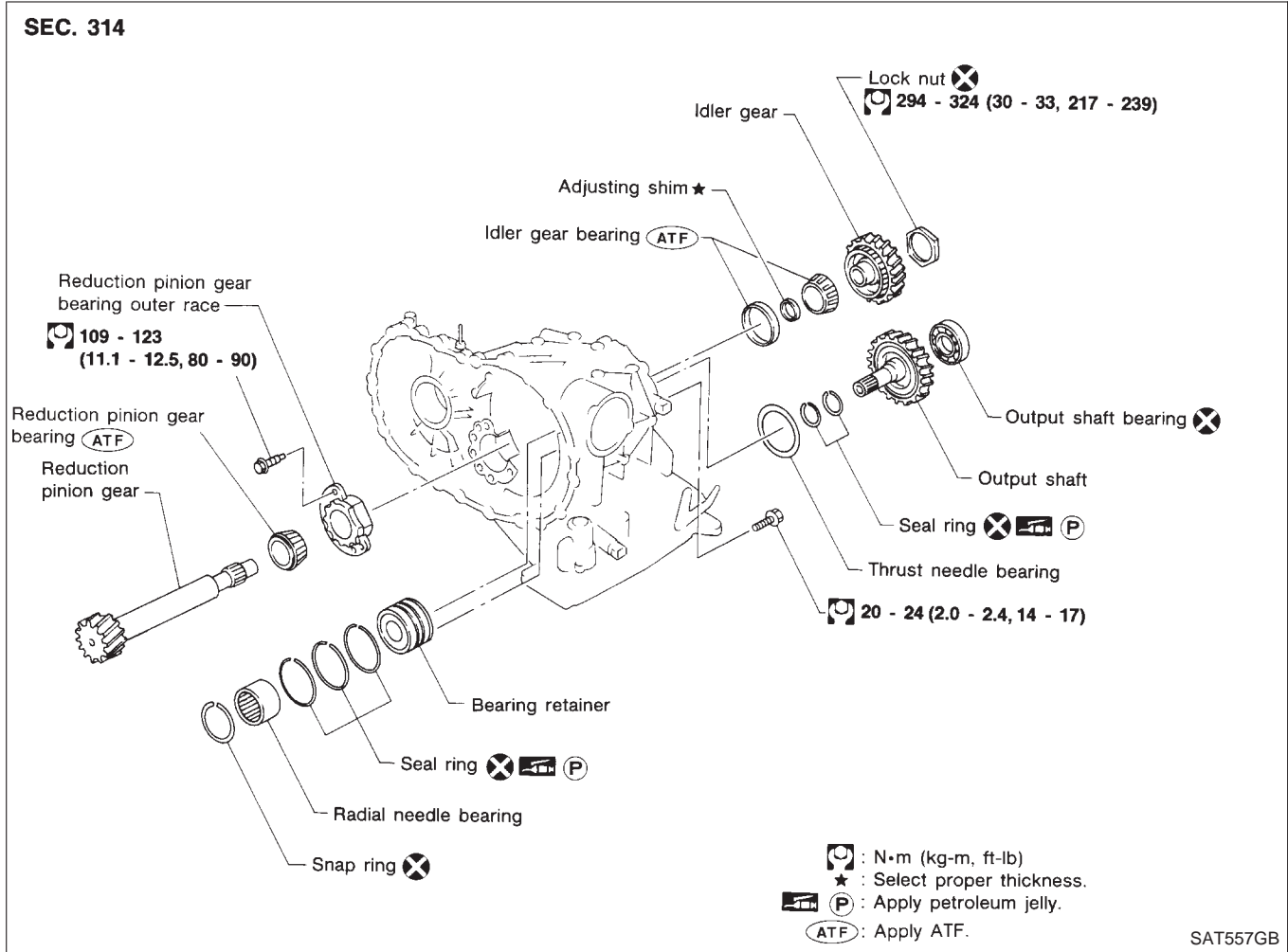
- | | | |
|----------------------------|----------------------------------|-------------------------------|
| 1. Lower body | 13. Manual valve | 25. Accumulator control valve |
| 2. Retainer plate | 14. Pressure regulator valve | 26. Plug |
| 3. Return spring | 15. Return spring | 27. Retainer plate |
| 4. Piston | 16. Spring seat | 28. Shift valve A |
| 5. Parallel pin | 17. Plug | 29. Return spring |
| 6. Sleeve | 18. Sleeve | 30. Retainer plate |
| 7. Return spring | 19. Retainer plate | 31. Shuttle valve |
| 8. Pressure modifier valve | 20. Return spring | 32. Return spring |
| 9. Retainer plate | 21. Overrun clutch control valve | 33. Plug |
| 10. Plug | 22. Plug | 34. Plug |
| 11. Shift valve B | 23. Retainer plate | 35. Retainer plate |
| 12. Return spring | 24. Return spring | |

REPAIR FOR COMPONENT PARTS

Output Shaft, Idler Gear, Reduction Pinion Gear and Bearing Retainer

Output Shaft, Idler Gear, Reduction Pinion Gear and Bearing Retainer COMPONENTS

NHAT0165



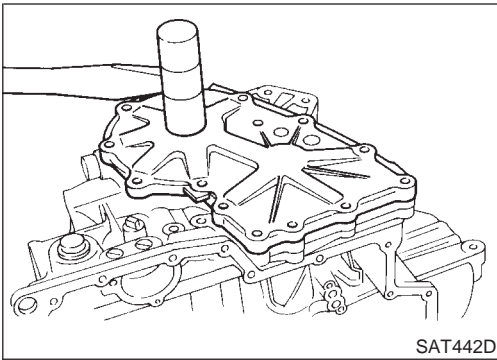
DISASSEMBLY

1. Remove seal rings from output shaft and bearing retainer.

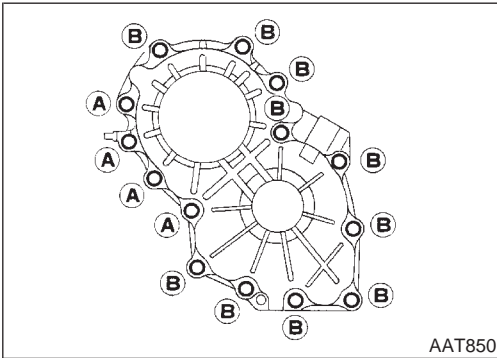
NHAT0166

ASSEMBLY

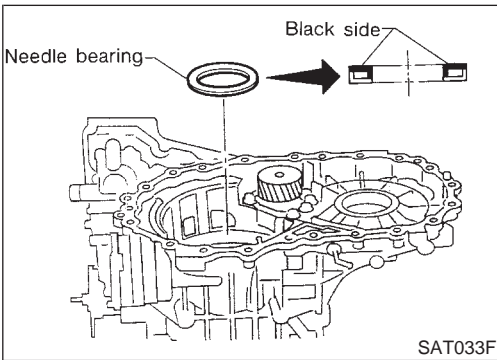
Assembly (2) (Cont'd)



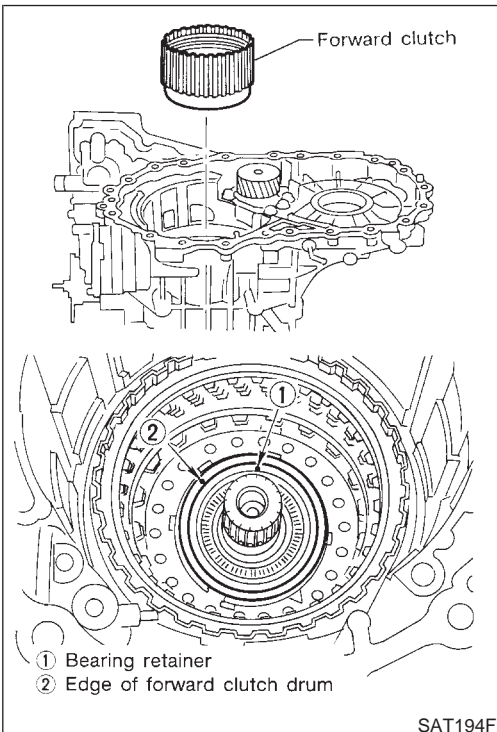
2. Set side cover on transmission case.
 - Apply locking sealant to the mating surface of transmission case.



3. Tighten side cover fixing bolts to specified torque. Refer to AT-288.
 - Do not mix bolts A and B.
 - Always replace bolts A as they are self-sealing bolts.

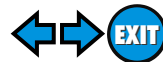


4. Remove paper rolled around bearing retainer.
5. Install thrust washer on bearing retainer.
 - Apply petroleum jelly to thrust washer.



6. Install forward clutch assembly.
 - Align teeth of low & reverse brake drive plates before installing.
 - Make sure that bearing retainer seal rings are not spread.
 - If forward clutch assembly is correctly seated, points 1 and 2 are at almost same level.

SERVICE DATA AND SPECIFICATIONS (SDS)



Output Shaft (Cont'd)

END PLAY

NHAT0194S02

Output shaft end play mm (in)	0 - 0.15 (0 - 0.0059)
-------------------------------	-----------------------

OUTPUT SHAFT ADJUSTING SHIMS

NHAT0194S03

Thickness mm (in)	Part number*
0.80 (0.0315)	31438-80X60
0.84 (0.0331)	31438-80X61
0.88 (0.0346)	31438-80X62
0.92 (0.0362)	31438-80X63
0.96 (0.0378)	31438-80X64
1.00 (0.0394)	31438-80X65
1.04 (0.0409)	31438-80X66
1.08 (0.0425)	31438-80X67
1.12 (0.0441)	31438-80X68
1.16 (0.0457)	31438-80X69
1.20 (0.0472)	31438-80X70

*: Always check with the Parts Department for the latest parts information.

Bearing Retainer

NHAT0195

SEAL RING CLEARANCE

NHAT0195S01

Bearing retainer seal ring clearance mm (in)	Standard	0.10 - 0.30 (0.0039 - 0.0118)
	Allowable limit	0.30 (0.0118)

Total End Play

NHAT0196

Total end play mm (in)	0.25 - 0.55 (0.0098 - 0.0217)
------------------------	-------------------------------

BEARING RACE FOR ADJUSTING TOTAL END PLAY

NHAT0196S01

Thickness mm (in)	Part number*
0.8 (0.031)	31435-80X00
1.0 (0.039)	31435-80X01
1.2 (0.047)	31435-80X02
1.4 (0.055)	31435-80X03
1.6 (0.063)	31435-80X04
1.8 (0.071)	31435-80X05
2.0 (0.079)	31435-80X06
0.9 (0.035)	31435-80X09
1.1 (0.043)	31435-80X10
1.3 (0.051)	31435-80X11
1.5 (0.059)	31435-80X12
1.7 (0.067)	31435-80X13
1.9 (0.075)	31435-80X14

*: Always check with the Parts Department for the latest parts information.

Reverse Clutch End Play

NHAT0197

Reverse clutch end play mm (in)	0.55 - 0.90 (0.0217 - 0.0354)
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THRUST WASHERS FOR ADJUSTING REVERSE CLUTCH DRUM END PLAY

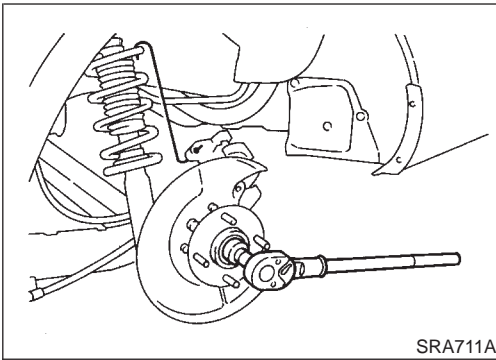
NHAT0197S01

Thickness mm (in)	Part number*
0.80 (0.0315)	31508-80X13
0.95 (0.0374)	31508-80X14
1.10 (0.0433)	31508-80X15
1.25 (0.0492)	31508-80X16
1.40 (0.0551)	31508-80X17
1.55 (0.0610)	31508-80X18
1.70 (0.0669)	31508-80X19
1.85 (0.0728)	31508-80X20

*: Always check with the Parts Department for the latest parts information.

REAR AXLE

Wheel Hub (Cont'd)

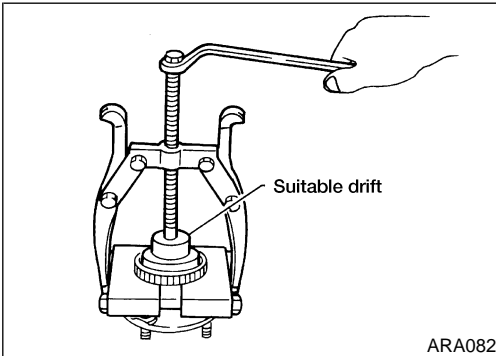


1. Remove brake caliper assembly.
2. Remove wheel bearing lock nut.
3. Remove brake rotor.
4. Remove wheel hub bearing from spindle.

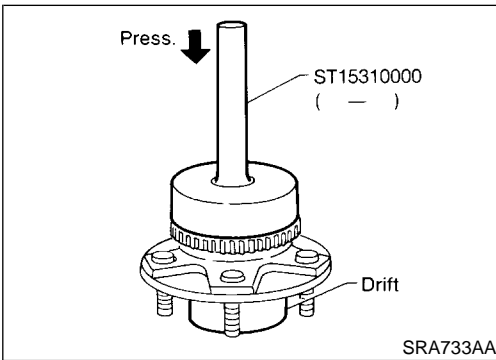
Brake hose does not need to be disconnected from brake caliper.

Suspend caliper assembly with wire so as not to stretch brake hose.

Be careful not to depress brake pedal, or piston will pop out. Make sure brake hose is not twisted.



5. Remove the sensor rotor using suitable puller, drift and bearing replacer.

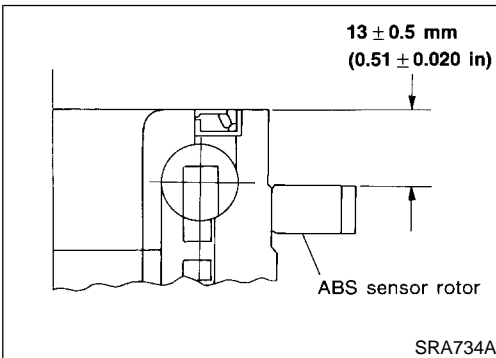


INSTALLATION

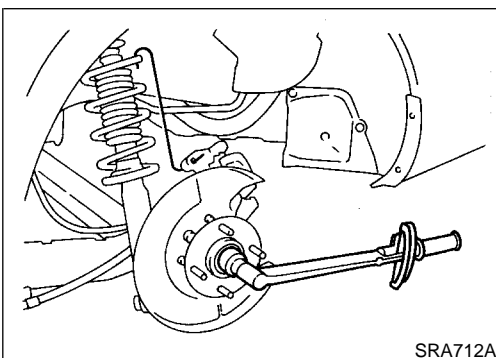
NHAX0030

- With vehicles equipped with ABS, press-fit ABS sensor rotor into wheel hub bearing using a drift.

Do not reuse ABS sensor rotor. When installing, replace it with a new one.



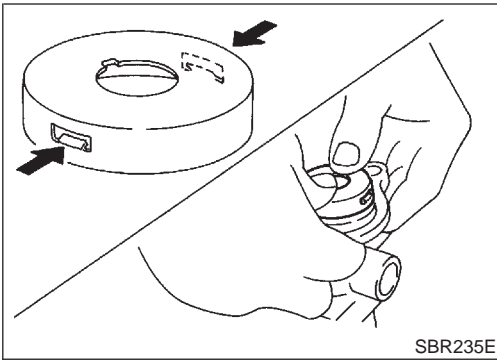
- Press-fit ABS sensor rotor as far as the location shown in figure at left.



- Install wheel hub bearing.
- Tighten wheel bearing lock nut.
Before tightening, apply oil to threaded portion of rear spindle.
Do not reuse wheel bearing lock nut.
⚙️ : 187 - 254 N-m (19 - 26 kg-m, 138 - 188 ft-lb)
- Check that wheel bearings operate smoothly.

MASTER CYLINDER (NABCO)

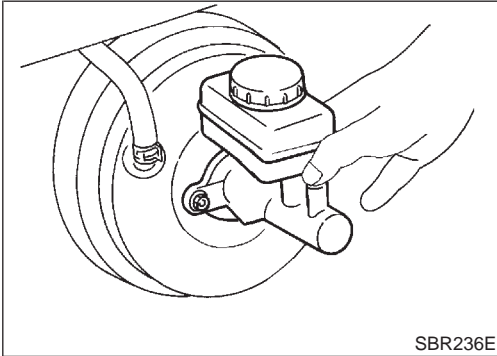
Assembly (Cont'd)



SBR235E

5. Install stopper cap.

Before installing stopper cap, ensure that claws are bent inward.



SBR236E

Installation

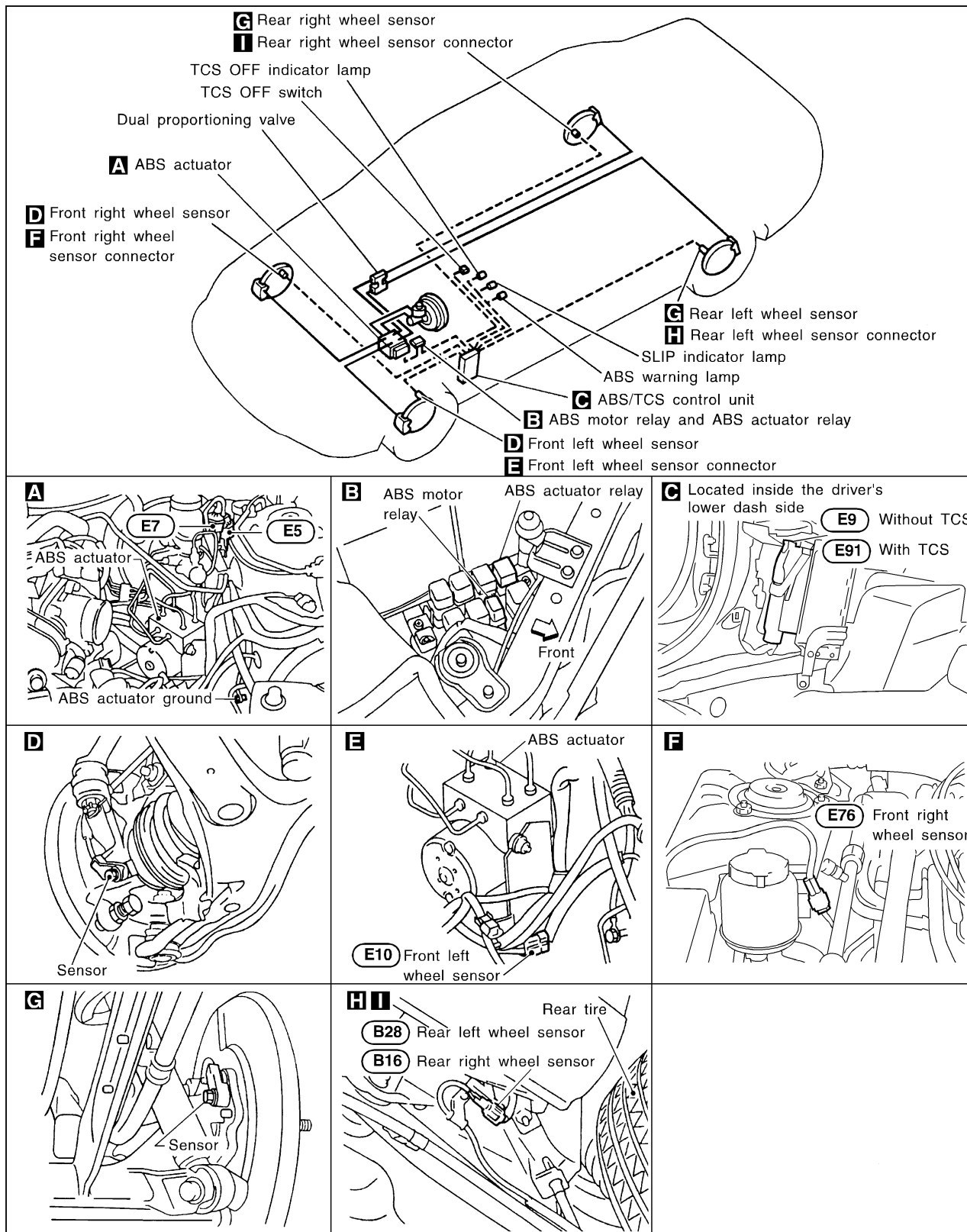
NHBR0099

CAUTION:

- Refill with new brake fluid "DOT 3".
 - Never reuse drained brake fluid.
1. Place master cylinder onto brake booster and secure mounting nuts lightly.
 2. Torque mounting nuts.
 - ☞ : 12 - 15 N·m (1.2 - 1.5 kg-m, 9 - 11 ft-lb)
 3. Fill up reservoir tank with new brake fluid.
 4. Plug all ports on master cylinder with fingers to prevent air suction while releasing brake pedal.
 5. Have driver depress brake pedal slowly several times until no air comes out of master cylinder.
 6. Fit brake lines to master cylinder.
 7. Tighten flare nuts.
 - ☞ : 15 - 18 N·m (1.5 - 1.8 kg-m, 11 - 13 ft-lb)
 8. Bleed air from brake system.

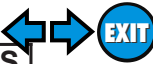
Component Parts and Harness Connector Location

NHBR0053



TROUBLE DIAGNOSIS — GENERAL DESCRIPTION

ABS/TCS



Malfunction Code/Symptom Chart (Cont'd)

Code No. (No. of SLIP indicator flashes)	Malfunctioning part	Warn- ing lamp	Indicator		Fail- safe	Refer- ence Page
		ABS	TCS OFF	SLIP		
SLIP indicator stays on when engine is running	Control unit power supply circuit Warning lamp bulb circuit Control unit or control unit connector Solenoid valve relay stuck Power supply for solenoid valve relay coil	ON	ON	ON	X*6	—
SLIP indicator does not come on when engine is running	Fuse, warning lamp bulb or warning lamp circuit Control unit	ON	ON	ON	X	—
Poor acceleration	TCM is the cause of the symptom.	OFF	OFF	OFF	—	BR-112

X: Available —: Not available

*1: Fail-safe operation does not activate. A signal from control unit suspends TCS and ABS control operation. Brakes operate conventionally. After specified power supply voltage resumes, TCS OFF indicator and ABS warning lamp go out, allowing for TCS and ABS control operation.

*2: If a wheel or wheels spin on bad or slippery road surfaces for a period of approximately 10 to 80 seconds, the ABS warning lamp and the TCS OFF indicator lamp light. But this is not a malfunction. When the ignition switch is turned "ON" after a shorted wheel sensor circuit has been repaired, the ABS warning lamp and the TCS OFF indicator lamp light. Drive the vehicle at about 30 km/h (19 MPH) to ensure these lamps go out within 1 minute.

*3: When the BATTERY VOLTAGE [ABNORMAL] code No. appears on the display, it does not indicate a malfunction related to the ABS/TCS control unit. Do not replace the ABS/TCS control unit even if the code No. appears.

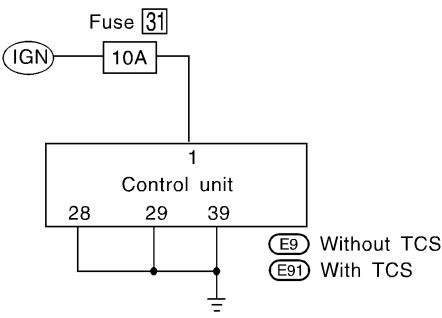
*4: The BATTERY VOLTAGE [ABNORMAL] code No. can sometimes appear when the ABS motor ground circuit is loose or disconnected. When it does, always check the ground circuit for improper installation.

*5: Only the SLIP indicator lamp goes out depending on the type of ECM malfunction.

*6: If failure occurs in self-diagnostic check terminal (terminal No. 9 of data link connector) circuit and/or TCS operation (SLIP indicator) circuit, fail-safe operation will not activate.

Control Unit DIAGNOSTIC PROCEDURE Malfunction code No. 71

NHBR0068
NHBR0068S01

1	INSPECTION START
ABS control unit power supply and ground circuit inspection	
	
SBR337EA	
▶	GO TO 2.

2	CHECK CONNECTOR
1. Disconnect control unit connector. Check terminals for damage or loose connections. Then reconnect connectors. 2. Carry out self-diagnosis again.	
Does warning lamp activate again?	
Yes	▶ GO TO 3.
No	▶ INSPECTION END

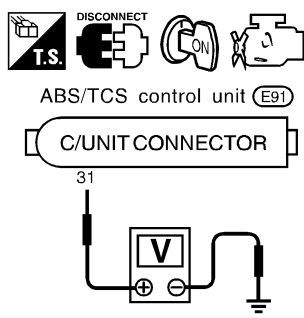
3	CHECK ABS CONTROL UNIT POWER SUPPLY CIRCUIT
Check voltage. Refer to "3. CHECK ABS CONTROL UNIT POWER SUPPLY CIRCUIT" in "Low Voltage", BR-84.	
Does battery voltage exist when ignition switch is turned ON?	
Yes	▶ GO TO 4.
No	▶ Repair.

4	CHECK WARNING LAMP INDICATION
Does warning lamp indicate code No. 71 again?	
Yes	▶ Replace control unit.
No	▶ Inspect the system according to the code No.

TROUBLE DIAGNOSES FOR SYMPTOMS

9. TCS OFF Indicator Lamp Does Not Come On When Ignition Switch Is Turned On (Cont'd)

2	CHECK FUSE	
Check 10A fuse No. 30 for control unit. For fuse layout, refer to EL-10, "POWER SUPPLY ROUTING".		
Is fuse OK?		
Yes	▶	GO TO 3.
No	▶	Replace fuse.

3	CHECK CONTROL UNIT POWER SUPPLY CIRCUIT	
1. Install 10A fuse. 2. Disconnect connector from control unit. 3. Check voltage between control unit connector terminal 31 and ground after turning ignition switch "ON".		
 <p style="text-align: center;">SBR353EA</p>		
Does battery voltage exist?		
Yes	▶	GO TO 5.
No	▶	GO TO 4.

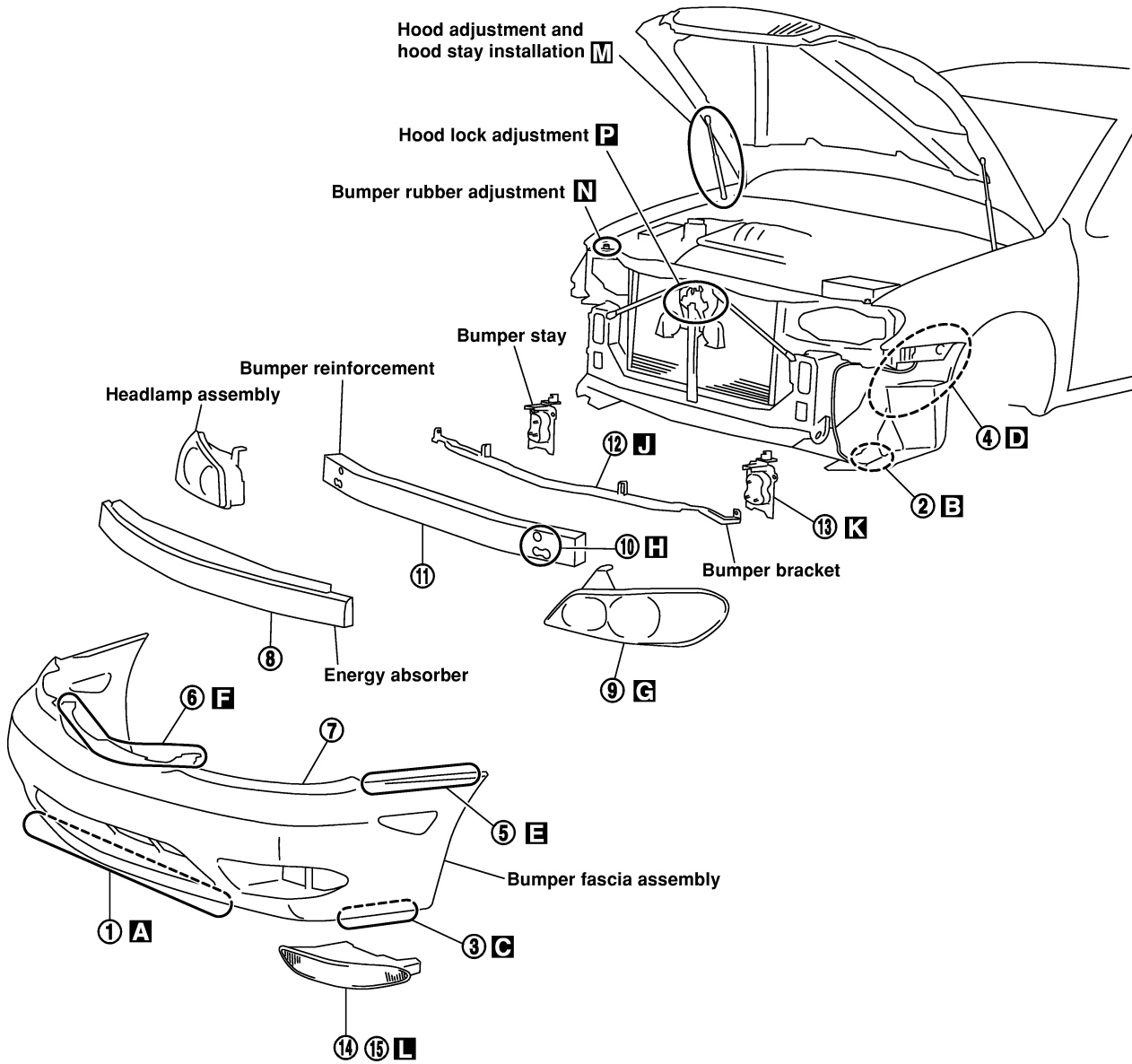
4	CHECK INDICATOR LAMP	
Check indicator lamp bulb.		
Is indicator lamp bulb OK?		
Yes	▶	Repair harness and connectors between control unit connector terminal 31 and fuse box (including combination meter).
No	▶	Replace bulb.

5	CHECK CONNECTOR	
1. Disconnect connector from control unit. Check terminals for damage or loose connection. Then reconnect connector. 2. Carry out self-diagnosis again.		
Does warning lamp activate again?		
Yes	▶	Check items the self-diagnosis detected as faulty.
No	▶	INSPECTION END

BODY FRONT END

Removal and Installation (Cont'd)

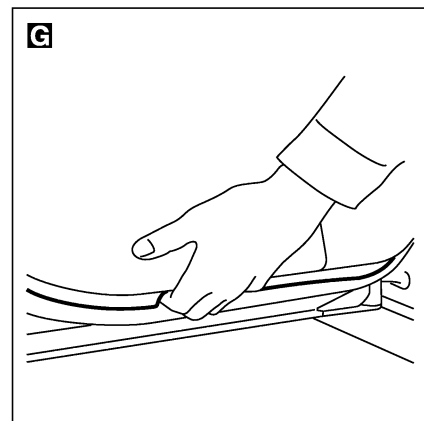
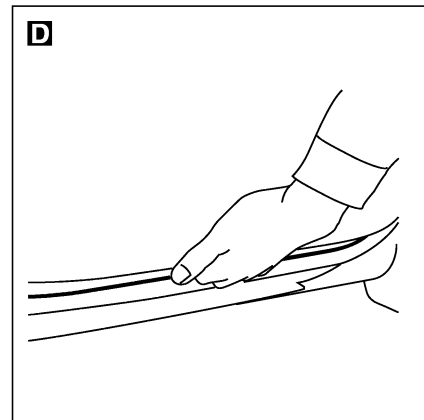
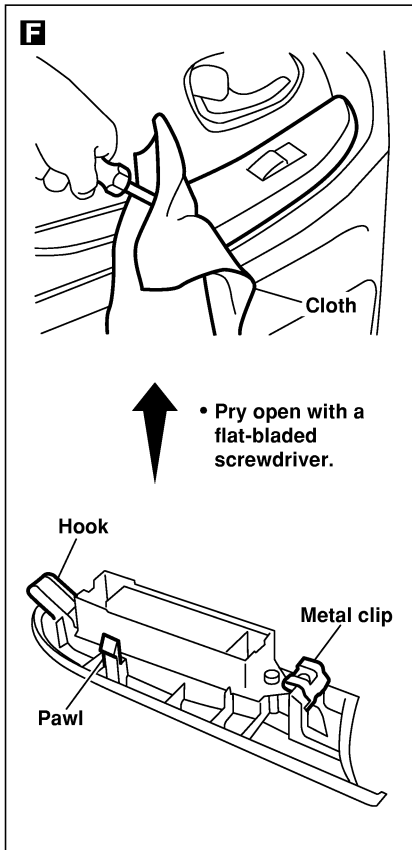
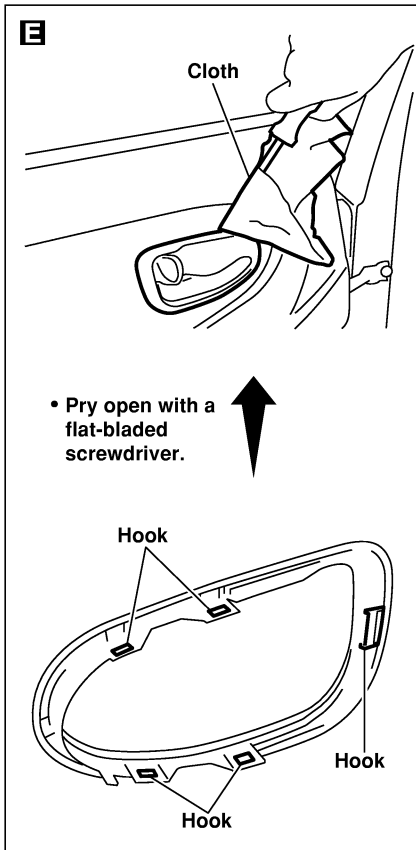
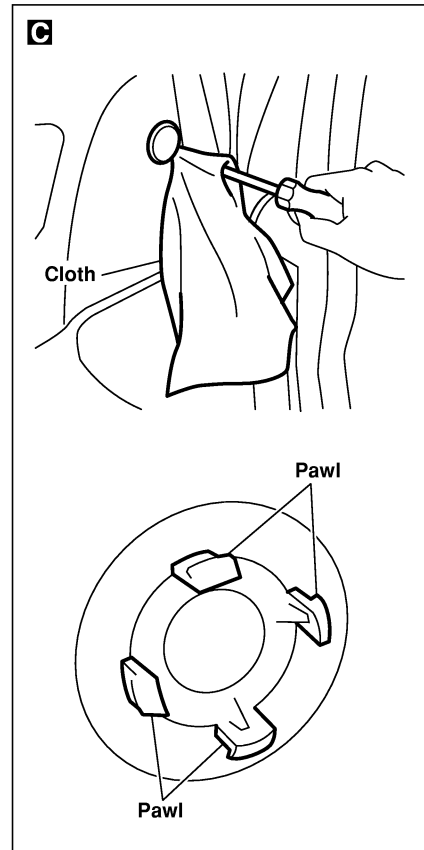
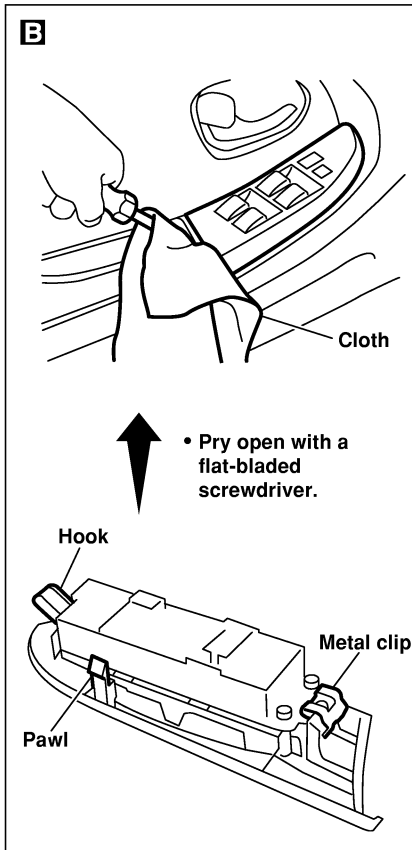
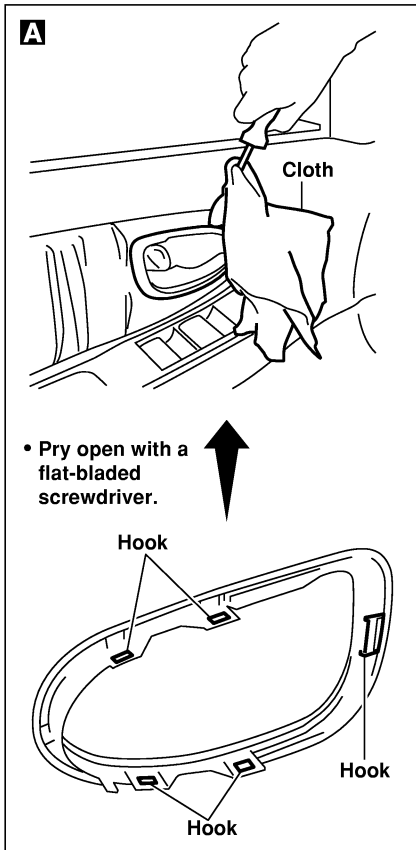
SEC. 260•261•262•620•630•650



- H** : 21 - 26 (2.1 - 2.7, 16 - 19)
- K** : 21 - 26 (2.1 - 2.7, 16 - 19)
- M** : 11 - 14 (1.1 - 1.5, 8 - 10)
- P** : 21 - 26 (2.1 - 2.7, 16 - 19)
- Ⓒ** : N•m (kg-m, ft-lb)

DOOR TRIM

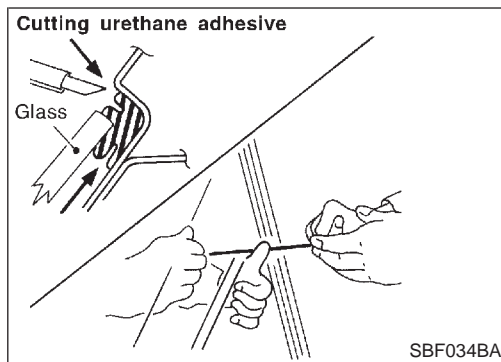
Removal and Installation (Cont'd)



SBT873

WINDSHIELD AND WINDOWS

Removal and Installation



Removal and Installation

NHBT0023

REMOVAL

NHBT0023S01

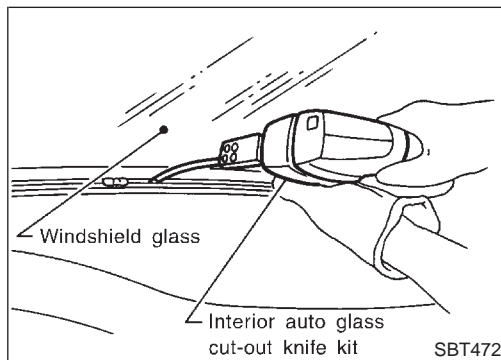
After removing moldings, remove glass using piano wire or power cutting tool and an inflatable pump bag.

WARNING:

When cutting the glass from the vehicle, always wear safety glasses and heavy gloves to help prevent glass splinters from entering your eyes or cutting your hands.

CAUTION:

- Be careful not to scratch the glass when removing.
- Do not set or stand the glass on its edge. Small chips may develop into cracks.



INSTALLATION

NHBT0023S02

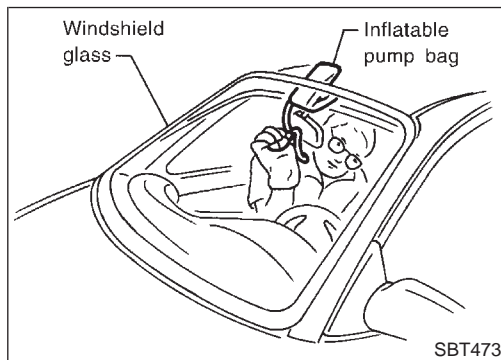
- Use a genuine Nissan Urethane Adhesive Kit or equivalent and follow the instructions furnished with it.
- While the urethane adhesive is curing, open a door window. This will prevent the glass from being forced out by passenger compartment air pressure when a door is closed.
- The molding must be installed securely so that it is in position and leaves no gap.
- Inform the customer that the vehicle should remain stationary until the urethane adhesive has completely cured (preferably 24 hours). Curing time varies with temperature and humidity.

WARNING:

- Keep heat and open flames away as primers and adhesive are flammable.
- The materials contained in the kit are harmful if swallowed, and may irritate skin and eyes. Avoid contact with the skin and eyes.
- Use in an open, well ventilated location. Avoid breathing the vapors. They can be harmful if inhaled. If affected by vapor inhalation, immediately move to an area with fresh air.
- Driving the vehicle before the urethane adhesive has completely cured may affect the performance of the windshield in case of an accident.

CAUTION:

- Do not use an adhesive which is past its usable term. Shelf life of this product is limited to six months after the date of manufacture. Carefully adhere to the expiration or manufacture date printed on the box.
- Keep primers and adhesive in a cool, dry place. Ideally, they should be stored in a refrigerator.



TROUBLE DIAGNOSIS — INDEX

Alphabetical & P No. Index for DTC (Cont'd)

DTC*1	Items (CONSULT-II screen terms)	Reference page
P0745	L/PRESS SOL/CIRC	AT-168
P0750	SFT SOL A/CIRC*3	AT-174
P0755	SFT SOL B/CIRC*3	AT-179
P1126	THERMOSTAT FNCTN	EC-481
P1130	SWIRL CONT SOL/V	EC-483
P1148	CLOSED LOOP-B1	EC-507
P1165	SWL CON VC SW/CIRC	EC-509
P1168	CLOSED LOOP-B2	EC-507
P1211*2	TCS C/U FUNCTN	EC-515
P1212*2	TCS CIRC	EC-517
P1217*2	ENG OVER TEMP	EC-520
P1220	FPCM/CIRCUIT	EC-537
P1320	IGN SIGNAL-PRIMARY	EC-544
P1335	CPS/CIRCUIT (REF)	EC-555
P1336	CPS/CIRC (POS) COG	EC-561
P1401	EGR TEMP SEN/CIRC	EC-569
P1402	EGR SYSTEM	EC-577
P1440	EVAP SMALL LEAK	EC-586
P1444	PURG VOLUME CONT/V	EC-588
P1446	VENT CONTROL VALVE	EC-600
P1447	EVAP PURG FLOW/MON	EC-608
P1448	VENT CONTROL VALVE	EC-620
P1464	FUEL LEVEL SEN/CIRC	EC-629
P1490	VC/V BYPASS/V	EC-632
P1491	VC CUT/V BYPASS/V	EC-638
P1605	A/T DIAG COMM LINE	EC-650
P1610 - P1615*2	NATS MALFUNCTION	EL-404
P1705	TP SEN/CIRC A/T*3	AT-184
P1706	P-N POS SW/CIRCUIT	EC-653
P1760	O/R CLTCH SOL/CIRC	AT-193

*1: 1st trip DTC No. is the same as DTC No.

*2: This DTC is displayed with CONSULT-II only.

*3: When the fail-safe operation occurs, the MIL illuminates.

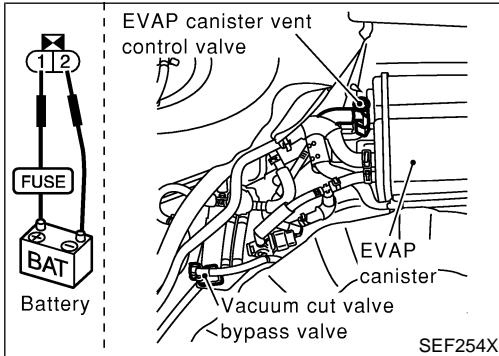
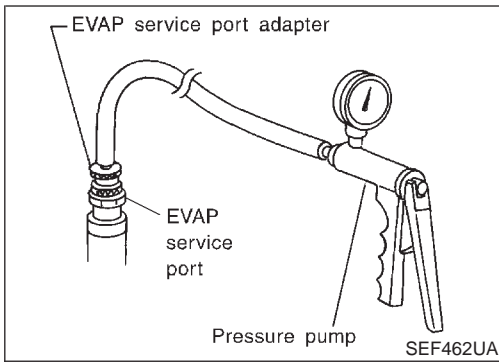
*4: The MIL illuminates when both the "Revolution sensor signal" and the "Vehicle speed sensor signal" meet the fail-safe condition at the same time.

NOTE:

Regarding A33 models, "-B1" and "BK1" indicate right bank and "-B2" and "BK2" indicate left bank.

ENGINE AND EMISSION BASIC CONTROL SYSTEM DESCRIPTION

Evaporative Emission System (Cont'd)



⊗ Without CONSULT-II

NHEC0019S0802

- 1) Attach the EVAP service port adapter securely to the EVAP service port.
- 2) Also attach the pressure pump with pressure gauge to the EVAP service port adapter.
- 3) Apply battery voltage to between the terminals of both EVAP canister vent control valve and vacuum cut valve bypass valve to make a closed EVAP system.
- 4) To locate the leak, deliver positive pressure to the EVAP system until pressure gauge points reach 1.38 to 2.76 kPa (0.014 to 0.028 kg/cm², 0.2 to 0.4 psi).
- 5) Remove EVAP service port adapter and hose with pressure pump.
- 6) Locate the leak using a leak detector. Refer to "EVAPORATIVE EMISSION LINE DRAWING", EC-37.

BASIC SERVICE PROCEDURE

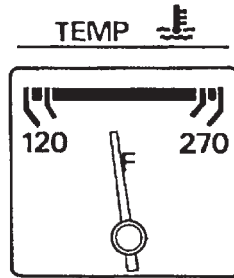
Idle Speed/Ignition Timing/Idle Mixture Ratio Adjustment (Cont'd)

INSPECTION PROCEDURE

=NHEC0028S02

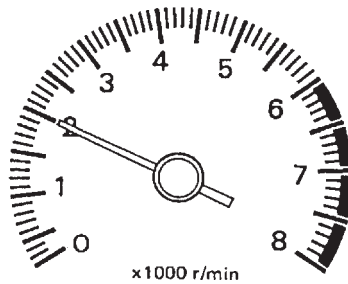
1 INSPECTION START

1. Visually check the following:
 - Air cleaner clogging
 - Hoses and ducts for leaks
 - EGR valve operation
 - Electrical connectors
 - Gasket
 - Throttle valve and throttle position sensor operation
2. Start engine and warm it up until engine coolant temperature indicator points to the middle of gauge. Ensure engine stays below 1,000 rpm.



SEF976U

3. Open engine hood and run engine at about 2,000 rpm for about 2 minutes under no-load.



SEF977U

4. Make sure that no DTC is displayed with CONSULT-II or GST.

OK or NG

OK	▶	GO TO 3.
NG	▶	GO TO 2.

2 REPAIR OR REPLACE

Repair or replace components as necessary according to corresponding "Diagnostic Procedure".

▶	GO TO 3.
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ON BOARD DIAGNOSTIC SYSTEM DESCRIPTION



Emission-related Diagnostic Information (Cont'd)

Items (CONSULT-II screen terms)	DTC*1	SRT code	Test value/ Test limit (GST only)	1st trip DTC*1	Reference page
FRONT O2 SENSOR-B2	P0150	X	X	X*2	EC-206
FRONT O2 SENSOR-B2	P0151	X	X	X*2	EC-216
FRONT O2 SENSOR-B2	P0152	X	X	X*2	EC-224
FRONT O2 SENSOR-B2	P0153	X	X	X*2	EC-232
FRONT O2 SENSOR-B2	P0154	X	X	X*2	EC-245
FR O2 SE HEATER-B2	P0155	X	X	X*2	EC-253
REAR O2 SENSOR-B2	P0157	X	X	X*2	EC-260
REAR O2 SENSOR-B2	P0158	X	X	X*2	EC-270
REAR O2 SENSOR-B2	P0159	X	X	X*2	EC-280
REAR O2 SENSOR-B2	P0160	X	X	X*2	EC-290
RR O2 SE HEATER-B2	P0161	X	X	X*2	EC-298
FUEL SYS-LEAN/BK1	P0171	—	—	X	EC-305
FUEL SYS-RICH/BK1	P0172	—	—	X	EC-313
FUEL SYS-LEAN/BK2	P0174	—	—	X	EC-305
FUEL SYS-RICH/BK2	P0175	—	—	X	EC-313
FUEL TEMP SEN/CIRC	P0180	—	—	X	EC-320
ENG OVER TEMP	P0217	—	—	X	EC-325
MULTI CYL MISFIRE	P0300	—	—	X	EC-343
CYL 1 MISFIRE	P0301	—	—	X	EC-343
CYL 2 MISFIRE	P0302	—	—	X	EC-343
CYL 3 MISFIRE	P0303	—	—	X	EC-343
CYL 4 MISFIRE	P0304	—	—	X	EC-343
CYL 5 MISFIRE	P0305	—	—	X	EC-343
CYL 6 MISFIRE	P0306	—	—	X	EC-343
KNOCK SEN/CIRC-B1	P0325	—	—	—	EC-351
CPS/CIRCUIT (POS)	P0335	—	—	X	EC-356
CAM PS/CIRC (PHS)	P0340	—	—	X	EC-364
EGR SYSTEM	P0400	X	X	X*2	EC-370
EGR VOL CONT/V CIR	P0403	—	—	X	EC-379
TW CATALYST SYS-B1	P0420	X	X	X*2	EC-386
TW CATALYST SYS-B2	P0430	X	X	X*2	EC-386
EVAP SMALL LEAK	P0440	X	X	X*2	EC-391
PURG VOLUME CONT/V	P0443	—	—	X	EC-406
VENT CONTROL VALVE	P0446	—	—	X	EC-412
EVAPO SYS PRES SEN	P0450	—	—	X	EC-419
EVAP GROSS LEAK	P0455	X	X	X*2	EC-431
FUEL LV SE (SLOSH)	P0460	—	—	X	EC-444

ON BOARD DIAGNOSTIC SYSTEM DESCRIPTION

CONSULT-II (Cont'd)

TEST ITEM	CONDITION	JUDGEMENT	CHECK ITEM (REMEDY)
FPCM	<ul style="list-style-type: none"> Ignition switch: ON Select "LOW" and "HI" with CONSULT-II and check that "FPCM D/R VOLT" of CONSULT-II changes. 	"FPCM D/R VOLT" of CONSULT-II changes as follows; LOW ... Approx. 2.4V HI ... Approx. 0.4V	<ul style="list-style-type: none"> Harness and connector FPCM
IDLE AIR VOL LEARN	<ul style="list-style-type: none"> In this test, the idle air volume that keeps the engine within the specified range is memorized in ECM. 		

DTC & SRT CONFIRMATION MODE

NHEC0034S08

SRT STATUS Mode

NHEC0034S0801

For details, refer to "SYSTEM READINESS TEST (SRT) CODE", EC-71.

SRT Work Support Mode

NHEC0034S0803

This mode enables a technician to drive a vehicle to set the SRT while monitoring the SRT status.

DTC Work Support Mode

NHEC0034S0802

Test mode	Test item	Condition	Reference page
EVAPORATIVE SYSTEM	EVAP SML LEAK P0440	Refer to corresponding trouble diagnosis for DTC.	EC-391
	EVAP SML LEAK P1440		EC-586
	PURG VOL CN/V P1444		EC-588
	PURGE FLOW P1447		EC-608
	VC CUT/V BP/V P1491		EC-638
FR O2 SENSOR	FR O2 SEN-B1 P0130		EC-206
	FR O2 SEN-B1 P0131		EC-216
	FR O2 SEN-B1 P0132		EC-224
	FR O2 SEN-B1 P0133		EC-232
	FR O2 SEN-B2 P0150		EC-206
	FR O2 SEN-B2 P0151		EC-216
	FR O2 SEN-B2 P0152		EC-224
RR O2 SENSOR	RR O2 SEN-B1 P0137		EC-260
	RR O2 SEN-B1 P0138		EC-270
	RR O2 SEN-B1 P0139		EC-280
	RR O2 SEN-B2 P0157	EC-260	
	RR O2 SEN-B2 P0158	EC-270	
	RR O2 SEN-B2 P0159	EC-280	
EGR SYSTEM	EGR SYSTEM P0400	EC-370	
	EGR SYSTEM P1402	EC-577	

TROUBLE DIAGNOSIS — BASIC INSPECTION

Basic Inspection (Cont'd)

26	CHECK IGNITION TIMING AGAIN	
Check ignition timing again. Refer to Test No. 24.		
OK or NG		
OK (With CONSULT-II)	▶	GO TO 32.
OK (Without CONSULT-II)	▶	GO TO 35.
NG	▶	GO TO 27.


27	CHECK FOR INTAKE AIR LEAK	
1. Start engine and let it idle. 2. Listen for an air leak from PCV hose and after IACV-AAC valve.		
OK or NG		
OK	▶	GO TO 29.
NG	▶	GO TO 28.

28	REPAIR MALFUNCTION	
1. Stop engine. 2. Repair or replace malfunctioning part.		
	▶	GO TO 25.

29	DETECT MALFUNCTIONING PART	
Check the IACV-AAC valve circuit and function. Refer to EC-458.		
OK or NG		
OK	▶	GO TO 31.
NG	▶	GO TO 30.

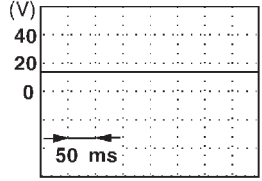
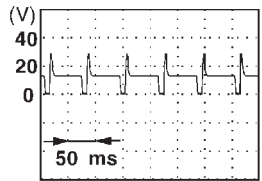
30	REPAIR MALFUNCTION	
Repair or replace malfunction part following the "Diagnostic Procedure" corresponding the detected malfunction.		
	▶	GO TO 25.

31	CHECK ECM FUNCTION	
1. Substitute another known-good ECM to check ECM function. (ECM may be the cause of a problem, but this is rarely the case.) 2. Perform initialization of IVIS (NATS) system and registration of IVIS (NATS) ignition key IDs. Refer to "IVIS (INFINITI VEHICLE IMMOBILIZER SYSTEM — NATS)", EC-84.		
	▶	GO TO 25.

32	CHECK TARGET IDLE SPEED	
 With CONSULT-II 1. Start engine and warm it up to normal operating temperature. 2. Select "CKPS-RPM (POS)" in "DATA MONITOR" mode. 3. Check idle speed. 700±50 rpm (in "P" or "N" position)		
OK or NG		
OK	▶	GO TO 38.
NG	▶	GO TO 33.

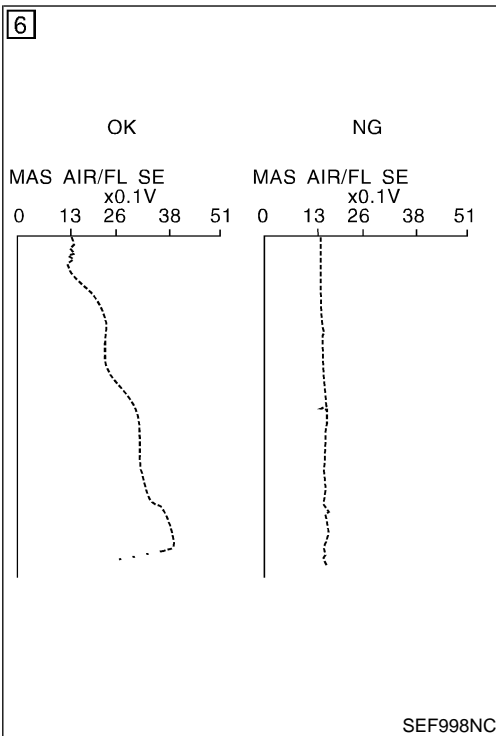
TROUBLE DIAGNOSIS — GENERAL DESCRIPTION

ECM Terminals and Reference Value (Cont'd)

TERMI- NAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
1	PU/R	EVAP canister purge volume control solenoid valve	<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Idle speed 	<p>BATTERY VOLTAGE (11 - 14V)</p>  <p style="text-align: right;">SEF994U</p>
			<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is about 2,000 rpm (More than 100 seconds after starting engine). 	<p>BATTERY VOLTAGE (11 - 14V)</p>  <p style="text-align: right;">SEF995U</p>
2	R/L	Front heated oxygen sensor LH heater	<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is below 3,600 rpm. 	0 - 1.0V
			<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is above 3,600 rpm. 	BATTERY VOLTAGE (11 - 14V)
3	OR/L	Front heated oxygen sensor RH heater	<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is below 3,600 rpm. 	0 - 1.0V
			<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is above 3,600 rpm. 	BATTERY VOLTAGE (11 - 14V)
4	R/L	Rear heated oxygen sensor LH heater	<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is below 3,600 rpm. ● After driving for 2 minutes at a speed of 70 km/h (43 MPH) or more. 	0 - 1.0V
			<p>[Ignition switch "ON"]</p> <ul style="list-style-type: none"> ● Engine stopped <p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is above 3,600 rpm. 	BATTERY VOLTAGE (11 - 14V)
5	P/B	Rear heated oxygen sensor RH heater	<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is below 3,600 rpm. ● After driving for 2 minutes at a speed of 70 km/h (43 MPH) or more. 	0 - 1.0V
			<p>[Ignition switch "ON"]</p> <ul style="list-style-type: none"> ● Engine stopped <p>[Engine is running]</p> <ul style="list-style-type: none"> ● Engine speed is above 3,600 rpm. 	BATTERY VOLTAGE (11 - 14V)
6 7 8 17	W/PU Y/B Y GY/L	IACV-AAC valve	<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Idle speed 	0.1 - 14V
9 10 18 19	G L/B BR P	EGR volume control valve	<p>[Engine is running]</p> <ul style="list-style-type: none"> ● Idle speed 	0.1 - 14V

DTC P0100 MASS AIR FLOW SENSOR (MAFS)

DTC Confirmation Procedure (Cont'd)



PROCEDURE FOR MALFUNCTION D

NHEC0054S04

CAUTION:

Always drive vehicle at a safe speed.

With CONSULT-II

NHEC0054S0402

- 1) Turn ignition switch "ON".
- 2) Start engine and warm it up to normal operating temperature. **If engine cannot be started, go to "Diagnostic Procedure", EC-170.**
- 3) Select "DATA MONITOR" mode with CONSULT-II.
- 4) Check the voltage of MAS AIR/FL SE with "DATA MONITOR".
- 5) Increases engine speed to about 4,000 rpm.
- 6) Monitor the linear voltage rise in response to engine speed increases.
If NG, go to "Diagnostic Procedure", EC-170.
If OK, go to following step.
- 7) Maintain the following conditions for at least 10 consecutive seconds.

CKPS-RPM (POS)	More than 2,000 rpm
THRTL POS SEN	More than 3V
Selector lever	Suitable position
Driving location	Driving vehicle uphill (Increased engine load) will help maintain the driving conditions required for this test.

- 8) If 1st trip DTC is detected, go to "Diagnostic Procedure", EC-170.

7

DATA MONITOR	
MONITORING	NO FAIL
CMPS~RPM(REF)	XXX rpm
VHCL SPEED SE	XXX km/h
THRTL POS SEN	XXX V

PEF362V

CALC LOAD	20%
COOLANT TEMP	95°C
SHORT FT #1	2%
LONG FT #1	0%
SHORT FT #2	4%
LONG FT #2	0%
ENGINE SPD	2637RPM
VEHICLE SPD	0MPH
IGN ADVANCE	41.0°
INTAKE AIR	41°C
MAF	14.1gm/sec
THROTTLE POS	3%

SEF534P

Overall Function Check

NHEC0055

PROCEDURE FOR MALFUNCTION D

NHEC0055S01

Use this procedure to check the overall function of the mass air flow sensor circuit. During this check, a 1st trip DTC might not be confirmed.

With GST

NHEC0055S0101

- 1) Start engine and warm it up to normal operating temperature.
- 2) Select "MODE 1" with GST.
- 3) Check the mass air flow sensor signal with "MODE 1".
- 4) Check for linear mass air flow sensor signal value rise in response to increases to about 4,000 rpm in engine speed.
- 5) If NG, go to "Diagnostic Procedure", EC-170.

On Board Diagnosis Logic

NHEC0077

Malfunction is detected when
(Malfunction A) an excessively low or high voltage from the sensor is sent to ECM,
(Malfunction B) a high voltage from the sensor is sent to ECM under light load driving conditions,
(Malfunction C) a low voltage from the sensor is sent to ECM under heavy load driving conditions.

FAIL-SAFE MODE

NHEC0077S02

When the malfunction A is detected, the ECM enters fail-safe mode and the MIL lights up.

Detected items	Engine operating condition in fail-safe mode	
Throttle position sensor circuit	Throttle position will be determined based on the injected fuel amount and the engine speed. Therefore, acceleration will be poor.	
	Condition	Driving condition
	When engine is idling	Normal
	When accelerating	Poor acceleration

Possible Cause

NHEC0430

MALFUNCTION A

NHEC0430S01

- Harness or connectors
(The throttle position sensor circuit is open or shorted.)
- Throttle position sensor

MALFUNCTION B

NHEC0430S02

- Harness or connectors
(The throttle position sensor circuit is open or shorted.)
- Throttle position sensor
- Fuel injector
- Crankshaft position sensor (REF)
- Crankshaft position sensor (POS)
- Mass air flow sensor

MALFUNCTION C

NHEC0430S03

- Harness or connectors
(The throttle position sensor circuit is open or shorted.)
- Intake air leaks
- Throttle position sensor

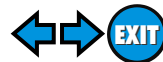
DTC Confirmation Procedure

NHEC0078

NOTE:

- Perform “PROCEDURE FOR MALFUNCTION A” first. If the 1st trip DTC cannot be confirmed, perform “PROCEDURE FOR MALFUNCTION B”.
- If there is no problem on “PROCEDURE FOR MALFUNCTION B”, perform “PROCEDURE FOR MALFUNCTION C”.
- If “DTC Confirmation Procedure” has been previously conducted, always turn ignition switch “OFF” and wait at least 10 seconds before conducting the next test.

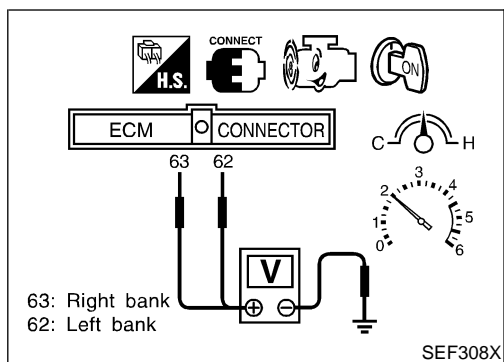
DTC P0130 (RIGHT, -B1), P0150 (LEFT, -B2) FRONT HO2S (CIRCUIT)



Diagnostic Procedure (Cont'd)

2	CHECK FRONT HO2S INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT															
<p>1. Disconnect ECM harness connector.</p> <p>2. Check harness continuity between ECM terminal and front HO2S terminal as follows. Refer to Wiring Diagram.</p>																
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">DTC</th> <th colspan="2">Terminals</th> <th rowspan="2">Bank</th> </tr> <tr> <th>ECM</th> <th>Sensor</th> </tr> </thead> <tbody> <tr> <td>P0130</td> <td style="text-align: center;">63</td> <td style="text-align: center;">1</td> <td style="text-align: center;">Right</td> </tr> <tr> <td>P0150</td> <td style="text-align: center;">62</td> <td style="text-align: center;">1</td> <td style="text-align: center;">Left</td> </tr> </tbody> </table>			DTC	Terminals		Bank	ECM	Sensor	P0130	63	1	Right	P0150	62	1	Left
DTC	Terminals			Bank												
	ECM	Sensor														
P0130	63	1	Right													
P0150	62	1	Left													
MTBL0332																
<p>Continuity should exist.</p> <p>3. Check harness continuity between ECM terminal or front HO2S terminal and ground as follows. Refer to Wiring Diagram.</p>																
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">DTC</th> <th colspan="2">Terminals</th> <th rowspan="2">Bank</th> </tr> <tr> <th>ECM or Sensor</th> <th>Ground</th> </tr> </thead> <tbody> <tr> <td>P0130</td> <td style="text-align: center;">63 or 1</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">Right</td> </tr> <tr> <td>P0150</td> <td style="text-align: center;">62 or 1</td> <td style="text-align: center;">Ground</td> <td style="text-align: center;">Left</td> </tr> </tbody> </table>			DTC	Terminals		Bank	ECM or Sensor	Ground	P0130	63 or 1	Ground	Right	P0150	62 or 1	Ground	Left
DTC	Terminals			Bank												
	ECM or Sensor	Ground														
P0130	63 or 1	Ground	Right													
P0150	62 or 1	Ground	Left													
MTBL0333																
<p>Continuity should not exist.</p> <p>4. Also check harness for short to power.</p>																
OK or NG																
OK (With CONSULT-II)	▶	GO TO 3.														
OK (Without CONSULT-II)	▶	GO TO 4.														
NG	▶	Repair open circuit or short to ground or short to power in harness or connectors.														

Overall Function Check



Overall Function Check

NHEC0113

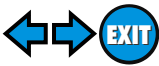
Use this procedure to check the overall function of the front heated oxygen sensor circuit. During this check, a 1st trip DTC might not be confirmed.

WITH GST

NHEC0113S01

- 1) Start engine and warm it up to normal operating temperature.
- 2) Set voltmeter probes between ECM terminal 63 (Right bank front HO2S signal) or 62 (Left bank front HO2S signal) and engine ground.
- 3) Check the following with engine speed held at 2,000 rpm constant under no load.
 - The voltage fluctuates between 0 to 0.3V and 0.6 to 1.0V more than 5 times within 10 seconds.
 - 1 time: 0 - 0.3V → 0.6 - 1.0V → 0 - 0.3V
 - 2 times: 0 - 0.3V → 0.6 - 1.0V → 0 - 0.3V → 0.6 - 1.0V → 0 - 0.3V
- 4) If NG, go to “Diagnostic Procedure”, EC-237.

DTC P0135 (RIGHT, -B1), P0155 (LEFT, -B2) FRONT HO2S HEATER



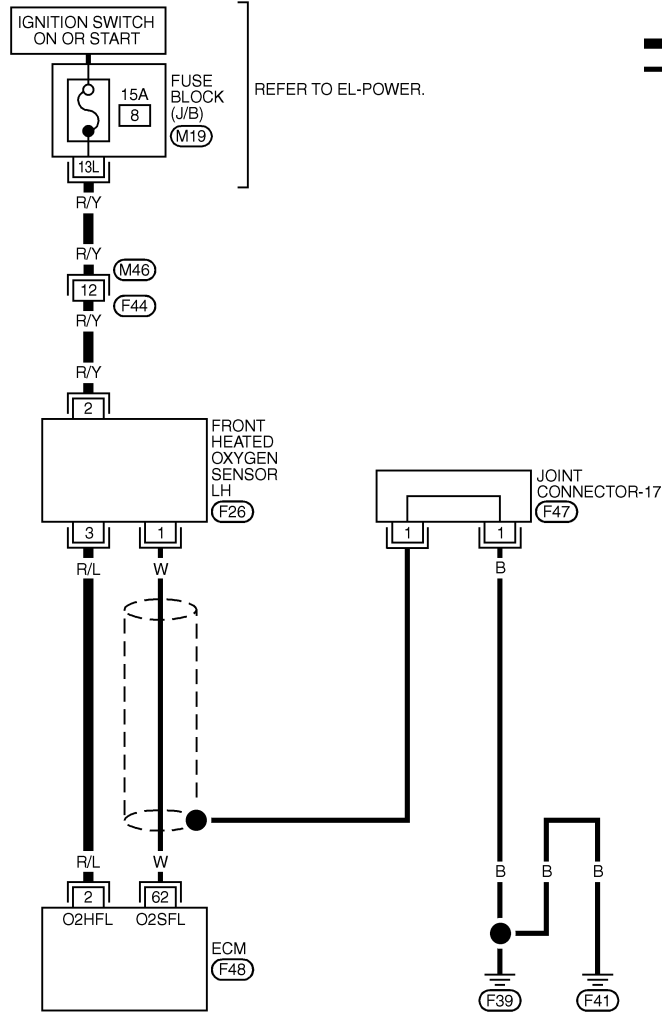
Wiring Diagram (Cont'd)

NHEC0128S02

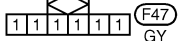
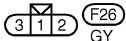
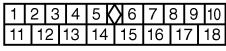
LEFT BANK

EC-FO2H-L-01

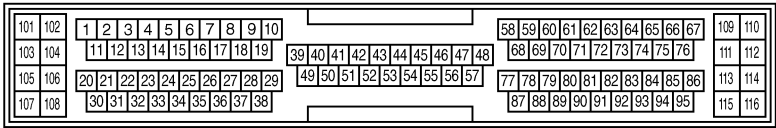
— : DETECTABLE LINE FOR DTC
 — : NON-DETECTABLE LINE FOR DTC



REFER TO EL-POWER.



REFER TO THE FOLLOWING.
 (M19) - FUSE BLOCK-JUNCTION BOX (J/B)



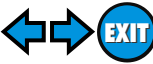
MEC806C

ECM TERMINALS AND REFERENCE VALUE MEASURED BETWEEN EACH TERMINAL AND 48.

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
2	R/L	FRONT HEATED OXYGEN SENSOR LH HEATER	ENGINE RUNNING BELOW 3,600 RPM	0 - 1.0V
			ENGINE RUNNING ABOVE 3,600 RPM	BATTERY VOLTAGE

SEF656X

DTC P0138 (RIGHT, -B1), P0158 (LEFT, -B2) REAR HO2S (MAX. VOLTAGE MONITORING)



Diagnostic Procedure (Cont'd)

6	CHECK REAR HEATED OXYGEN SENSOR-I
<p>⊗ Without CONSULT</p> <ol style="list-style-type: none"> Start engine and drive vehicle at a speed of more than 70 km/h (43 MPH) for 2 consecutive minutes. Stop vehicle with engine running. Set voltmeter probes between ECM terminal 72 (Right bank rear HO2S signal) or 71 (Left bank rear HO2S signal) and engine ground. Check the voltage when revving up to 4,000 rpm under no load at least 10 times. (Depress and release accelerator pedal as soon as possible.) 	
SEF313X	
OK or NG	
OK	▶ GO TO 9.
NG	▶ GO TO 7.

7	CHECK REAR HEATED OXYGEN SENSOR-II
<p>Idle vehicle for 10 minutes, then check voltage between the same terminals as in Test No. 6; or check voltage when coasting from 80 km/h (50 MPH) in "D" position with "OD" OFF.</p> <p>The voltage should go below 0.54V at least once during this procedure.</p> <p>CAUTION: Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.</p>	
OK or NG	
OK	▶ GO TO 9.
NG	▶ GO TO 8.

8	REPLACE REAR HEATED OXYGEN SENSOR
<ol style="list-style-type: none"> Stop vehicle and turn ignition switch "OFF". Check rear heated oxygen sensor harness protector color. 	
<p>P0138 (-B1) Right bank: White P0158 (-B2) Left bank: Red</p>	
SEF194WI	
<p>CAUTION: Before installing new oxygen sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner tool J-43897-18 or J-43897-12 and approved anti-seize lubricant.</p>	
▶	Replace malfunctioning rear heated oxygen sensor.

DTC P0141 (RIGHT, -B1), P0161 (LEFT, -B2) REAR HO2S HEATER

Wiring Diagram

Wiring Diagram

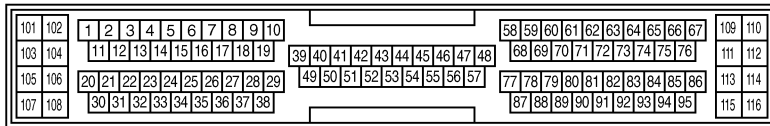
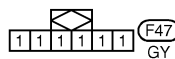
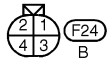
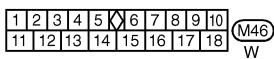
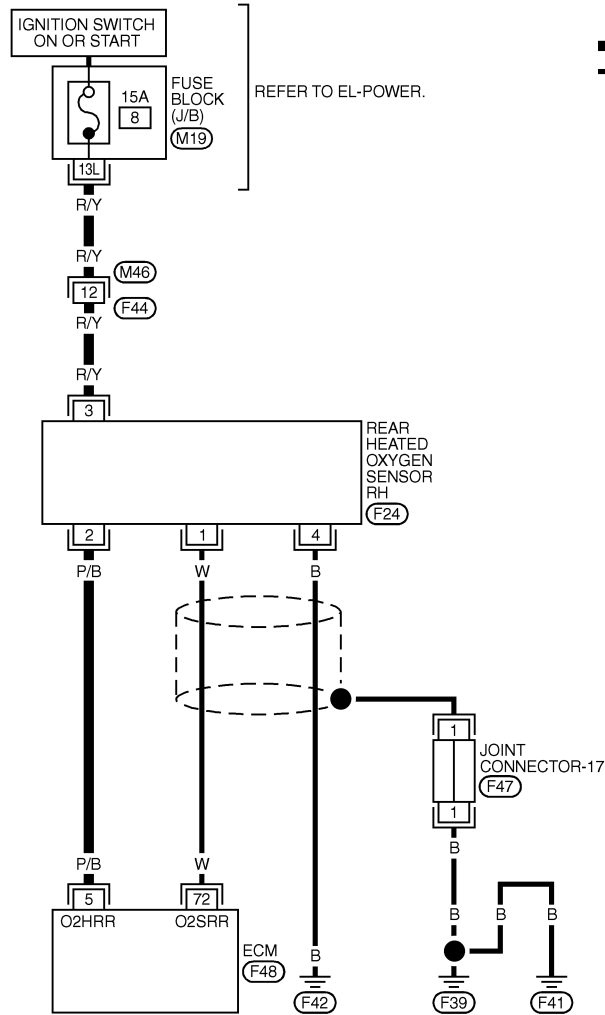
RIGHT BANK

NHEC0167

NHEC0167S01

EC-RO2H-R-01

— : DETECTABLE LINE FOR DTC
 - - - : NON-DETECTABLE LINE FOR DTC



REFER TO THE FOLLOWING.

(M19) - FUSE BLOCK- JUNCTION BOX (J/B)

MEC731C

ECM TERMINALS AND REFERENCE VALUE MEASURED BETWEEN EACH TERMINAL AND 48.

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
5	P/B	REAR HEATED OXYGEN SENSOR RH HEATER	IGN ON	BATTERY VOLTAGE
			ENGINE RUNNING ABOVE 3,600 RPM	
			ENGINE RUNNING BELOW 3,600 RPM AFTER DRIVING FOR 2 MINUTES AT A SPEED OF 70 KM/H (43 MPH) OR MORE	

SEF659X

DTC Confirmation Procedure

4	DATA MONITOR	
	MONITORING	NO FAIL
	CMPS~RPM (REF)	XXX rpm
	COOLAN TEMP/S	XXX °C
	VHCL SPEED SE	XXX km/h
	THRTL POS SEN	XXX V
CLSD THL/P SW	OFF	
P/N POSI SW	OFF	
PEF869U		

DTC Confirmation Procedure

NHEC0183

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

If "DTC Confirmation Procedure" has been previously conducted, always turn ignition switch "OFF" and wait at least 10 seconds before conducting the next test.

WITH CONSULT-II

NHEC0183S01

- 1) Turn ignition switch "ON", and select "DATA MONITOR" mode with CONSULT-II.
- 2) Start engine and warm it up to normal operating temperature.
- 3) Turn ignition switch "OFF" and wait at least 10 seconds.
- 4) Start engine again and drive at 1,500 to 3,000 rpm for at least 3 minutes.

Hold the accelerator pedal as steady as possible.

NOTE:

Refer to the freeze frame data for the test driving conditions.

- 5) If 1st trip DTC is detected, go to "Diagnostic Procedure", EC-344.

WITH GST

NHEC0183S02

Follow the procedure "With CONSULT-II" above.

Diagnostic Procedure

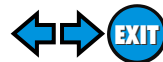
NHEC0184

1	CHECK FOR INTAKE AIR LEAK	
1. Start engine and run it at idle speed. 2. Listen for the sound of the intake air leak.		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Discover air leak location and repair.

2	CHECK FOR EXHAUST SYSTEM CLOGGING	
1. Stop engine and visually check exhaust tube, three way catalyst and muffler for dents.		
OK or NG		
OK	▶	GO TO 3.
NG	▶	Repair or replace it.

3	CHECK EGR FUNCTION	
Perform "DTC Confirmation Procedure" of "DTC P1402 EGR FUNCTION (OPEN)". Refer to EC-579.		
OK or NG		
OK	▶	GO TO 4.
NG	▶	Repair EGR system.

DTC P0420 (RIGHT BANK, -B1), P0430 (LEFT BANK, -B2) THREE WAY CATALYST FUNCTION



Overall Function Check (Cont'd)

A: Rear heated oxygen sensor voltage switching frequency

B: Front heated oxygen sensor voltage switching frequency

This ratio should be less than 0.75.

If the ratio is greater than above, it means warm-up three way catalyst does not operate properly. Go to "Diagnostic Procedure", EC-388.

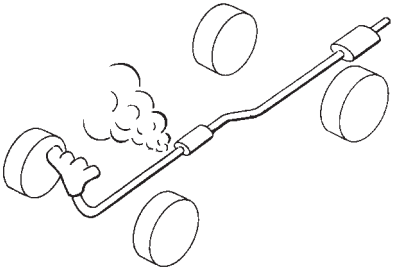
NOTE:

If the voltage at terminal 62 or 63 does not switch periodically more than 5 times within 10 seconds at step 5, perform trouble diagnosis for "DTC P0133, P0153" first. (See EC-232.)

Diagnostic Procedure

NHEC0217

1	CHECK EXHAUST SYSTEM	
Visually check exhaust tubes and muffler for dent.		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair or replace.

2	CHECK EXHAUST AIR LEAK	
<ol style="list-style-type: none"> 1. Start engine and run it at idle. 2. Listen for an exhaust air leak before the warm-up three way catalyst. 		
		
OK or NG		
OK	▶	GO TO 3.
NG	▶	Repair or replace.

SEF099P

3	CHECK INTAKE AIR LEAK	
Listen for an intake air leak after the mass air flow sensor.		
OK or NG		
OK	▶	GO TO 4.
NG	▶	Repair or replace.

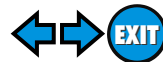
DTC P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE (CIRCUIT)

Diagnostic Procedure (Cont'd)

3	CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT	
<p>1. Turn ignition switch "OFF".</p> <p>2. Disconnect ECM harness connector.</p> <p>3. Check harness continuity between ECM terminal 1 and EVAP canister purge volume control solenoid valve terminal 1. Refer to Wiring Diagram. Continuity should exist.</p> <p>4. Also check harness for short to ground and short to power.</p> <p style="text-align: center;">OK or NG</p>		
OK (With CONSULT-II)	▶	GO TO 4.
OK (Without CONSULT-II)	▶	GO TO 5.
NG	▶	Repair open circuit or short to ground and short to power in harness or connectors.

4	CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION																					
<p> With CONSULT-II</p> <p>1. Start engine.</p> <p>2. Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT-II. Check that engine speed varies according to the valve opening.</p>																						
<table border="1" style="margin: auto; border-collapse: collapse;"> <tr><th colspan="2">ACTIVE TEST</th></tr> <tr><td>PURG VOL CONT/V</td><td style="text-align: center;">0.0%</td></tr> <tr><th colspan="2">MONITOR</th></tr> <tr><td>CMPS~RPM(REF)</td><td style="text-align: center;">XXX rpm</td></tr> <tr><td>FR O2 MNTR-B2</td><td style="text-align: center;">RICH</td></tr> <tr><td>FR O2 MNTR-B1</td><td style="text-align: center;">RICH</td></tr> <tr><td>A/F ALPHA-B2</td><td style="text-align: center;">XXX %</td></tr> <tr><td>A/F ALPHA-B1</td><td style="text-align: center;">XXX %</td></tr> <tr><td>THRTL POS SEN</td><td style="text-align: center;">XXX V</td></tr> <tr><td> </td><td> </td></tr> </table>			ACTIVE TEST		PURG VOL CONT/V	0.0%	MONITOR		CMPS~RPM(REF)	XXX rpm	FR O2 MNTR-B2	RICH	FR O2 MNTR-B1	RICH	A/F ALPHA-B2	XXX %	A/F ALPHA-B1	XXX %	THRTL POS SEN	XXX V		
ACTIVE TEST																						
PURG VOL CONT/V	0.0%																					
MONITOR																						
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FR O2 MNTR-B2	RICH																					
FR O2 MNTR-B1	RICH																					
A/F ALPHA-B2	XXX %																					
A/F ALPHA-B1	XXX %																					
THRTL POS SEN	XXX V																					
PEF882U																						
OK or NG																						
OK	▶	GO TO 6.																				
NG	▶	GO TO 5.																				

DTC P0455 EVAP CONTROL SYSTEM (GROSS LEAK)



Possible Cause (Cont'd)

- EVAP control system pressure sensor
- Refueling control valve
- ORVR system leaks

6

EVAP SML LEAK P0440/P1440

1)FOR BEST RSLT,PERFORM AT FOLLOWING CONDITIONS.
-FUEL LEVEL: 1/4-3/4
-AMBIENT TEMP: 0-30 C(32-86F)
-OPEN ENGINE HOOD.
2)START ENG WITH VHCL STOPPED. IF ENG IS ON,STOP FOR 5 SEC. THEN RESTART.
3)TOUCH START.

SEF565X

6

EVAP SML LEAK P0440/P1440

WAIT
2 TO 10 MINUTES.
KEEP ENGINE RUNNING AT IDLE SPEED.

SEF566X

6

EVAP SML LEAK P0440/P1440

MAINTAIN
1600 - 2100 RPM UNTIL FINAL RESULT APPEARS.
(APPROX. 3 MINUTES)

SEF874X

6

EVAP SML LEAK P0440/P1440

OK

SELF-DIAG RESULTS

NO DTC DETECTED.
FURTHER TESTING
MAY BE REQUIRED.

SEF567X

DTC Confirmation Procedure

NHEC0646

CAUTION:

Never remove fuel filler cap during the DTC Confirmation Procedure.

NOTE:

- If DTC P0455 is displayed with P1448, perform trouble diagnosis for DTC P1448 first. (See EC-620.)
- Make sure that EVAP hoses are connected to EVAP canister purge volume control solenoid valve properly.
- If “DTC Confirmation Procedure” has been previously conducted, always turn ignition switch “OFF” and wait at least 10 seconds before conducting the next test.

TESTING CONDITION:

- Perform “DTC WORK SUPPORT” when the fuel level is between 1/4 to 3/4 full and vehicle is placed on flat level surface.
- Open engine hood before conducting the following procedures.

WITH CONSULT-II

NHEC0646S01

- 1) Tighten fuel filler cap securely until ratcheting sound is heard.
- 2) Turn ignition switch “ON”.
- 3) Turn ignition switch “OFF” and wait at least 10 seconds.
- 4) Turn ignition switch “ON” and select “DATA MONITOR” mode with CONSULT-II.
- 5) Make sure that the following conditions are met.
COOLANT TEMP/S: 0 - 70°C (32 - 158°F)
INT/A TEMP SE: 0 - 60°C (32 - 140°F)
- 6) Select “EVAP SML LEAK P0440/P1440” of “EVAPORATIVE SYSTEM” in “DTC WORK SUPPORT” mode with CONSULT-II.
Follow the instruction displayed.

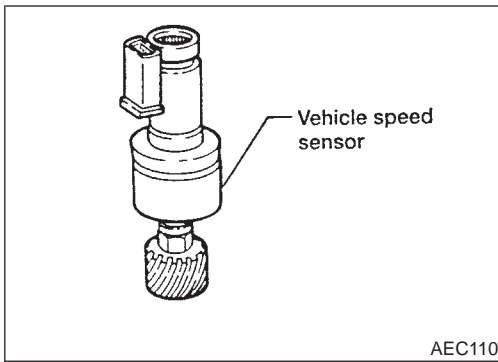
NOTE:

If the engine speed cannot be maintained within the range displayed on the CONSULT-II screen, go to “Basic Inspection”, EC-111.

- 7) Make sure that “OK” is displayed.
If “NG” is displayed, select “SELF-DIAG RESULTS” mode and make sure that “EVAP GROSS LEAK [P0455]” is displayed. If it is displayed, refer to “Diagnostic Procedure”, EC-433.
If P0440 is displayed, perform “Diagnostic Procedure” for DTC P0440.

DTC P0500 VEHICLE SPEED SENSOR (VSS)

Component Description



Component Description

The vehicle speed sensor is installed in the transaxle. It contains a pulse generator which provides a vehicle speed signal to the speedometer. The speedometer then sends a signal to the ECM. =NHEC0242

On Board Diagnosis Logic

Malfunction is detected when the almost 0 km/h (0 MPH) signal from vehicle speed sensor is sent to ECM even when vehicle is being driven. NHEC0244

Possible Cause

- Harness or connector (The vehicle speed sensor circuit is open or shorted.) NHEC0514
- Vehicle speed sensor

DTC Confirmation Procedure

CAUTION:

Always drive vehicle at a safe speed. NHEC0245

NOTE:

If "DTC Confirmation Procedure" has been previously conducted, always turn ignition switch "OFF" and wait at least 10 seconds before conducting the next test.

TESTING CONDITION:

Steps 1 and 2 may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

WITH CONSULT-II

- 1) Start engine (TCS switch "OFF"). NHEC0245S01
- 2) Read "VHCL SPEED SE" in "DATA MONITOR" mode with CONSULT-II. The vehicle speed on CONSULT-II should exceed 10 km/h (6 MPH) when rotating wheels with suitable gear position.
If NG, go to "Diagnostic Procedure", EC-457.
If OK, go to following step.
- 3) Select "DATA MONITOR" mode with CONSULT-II.
- 4) Warm engine up to normal operating temperature.

5	DATA MONITOR	
	MONITORING	NO FAIL
	CMPS-RPM(REF)	XXX rpm
	COOLAN TEMP/S	XXX °C
	B/FUEL SCHDL	XXX msec
	PW/ST SIGNAL	OFF
	VHCL SPEED SE	XXX km/h

PEF199V

System Description

NHEC0264

This circuit line (LAN) is used to control the smooth shifting up and down of A/T during the hard acceleration/ deceleration.

Pulse signals are exchanged between ECM and TCM (Transmission Control Module).

Be sure to erase the malfunction information such as DTC not only in TCM but also ECM after the A/T related repair.

On Board Diagnosis Logic

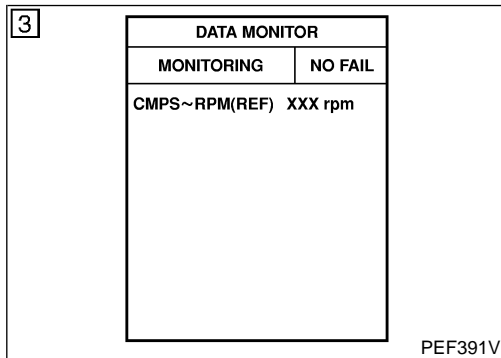
NHEC0266

Malfunction is detected when ECM receives incorrect voltage from TCM (Transmission Control Module) continuously.

Possible Cause

NHEC0517

- Harness or connectors
[The communication line circuit between ECM and TCM (Transmission Control Module) is open or shorted.]
- TCM
- Dead (Weak) battery



DTC Confirmation Procedure

NHEC0267

NOTE:

If "DTC Confirmation Procedure" has been previously conducted, always turn ignition switch "OFF" and wait at least 10 seconds before conducting the next test.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5V at idle.

Ⓜ WITH CONSULT-II

NHEC0267S01

- 1) Turn ignition switch "ON".
- 2) Select "DATA MONITOR" mode with CONSULT-II.
- 3) Start engine and let it idle for at least 2 seconds.
- 4) If DTC is detected, go to "Diagnostic Procedure", EC-478.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

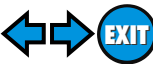
- Thank you very much for reading the preview of the manual.
- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

DTC P1130 SWIRL CONTROL VALVE CONTROL SOLENOID VALVE



Diagnostic Procedure (Cont'd)

12	CHECK THROTTLE POSITION SENSOR								
<p>⊗ Without CONSULT-II</p> <ol style="list-style-type: none"> 1. Start engine and warm it up to normal operating temperature. 2. Stop engine (ignition switch OFF). 3. Remove the vacuum hose connected to the throttle opener. 4. Connect suitable vacuum hose to the vacuum pump and the opener. 5. Apply vacuum [more than -40.0 kPa (-300 mmHg, -11.81 inHg)] until the throttle drum becomes free from the rod of the throttle opener. 									
SEF793W									
<ol style="list-style-type: none"> 6. Turn ignition switch ON. 7. Check voltage between ECM terminal 91 (Throttle position sensor signal) and ground. Voltage measurement must be made with throttle position sensor installed in vehicle. 									
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Throttle valve conditions</th> <th style="padding: 5px;">Voltage</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Completely closed (a)</td> <td style="padding: 5px;">0.15 - 0.85V</td> </tr> <tr> <td style="padding: 5px;">Partially open</td> <td style="padding: 5px;">Between (a) and (b)</td> </tr> <tr> <td style="padding: 5px;">Completely open (b)</td> <td style="padding: 5px;">3.5 - 4.7V</td> </tr> </tbody> </table>		Throttle valve conditions	Voltage	Completely closed (a)	0.15 - 0.85V	Partially open	Between (a) and (b)	Completely open (b)	3.5 - 4.7V
Throttle valve conditions	Voltage								
Completely closed (a)	0.15 - 0.85V								
Partially open	Between (a) and (b)								
Completely open (b)	3.5 - 4.7V								
MTBL0231									
OK or NG									
OK	▶ GO TO 14.								
NG	▶ GO TO 13.								

13	ADJUST CLOSED THROTTLE POSITION SWITCH								
Adjust closed throttle position switch. Refer to "Basic Inspection", EC-111.									
<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Items</th> <th style="padding: 5px;">Specifications</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Ignition timing</td> <td style="padding: 5px;">$15^\circ \pm 2^\circ$ BTDC</td> </tr> <tr> <td style="padding: 5px;">Closed throttle position switch idle position adjustment</td> <td style="padding: 5px;">Feeler gauge thickness and switch condition 0.05 mm (0.0020 in): ON 0.15 mm (0.0059 in): OFF</td> </tr> <tr> <td style="padding: 5px;">Target idle speed</td> <td style="padding: 5px;">700 ± 50 rpm (in "P" or "N" position)</td> </tr> </tbody> </table>		Items	Specifications	Ignition timing	$15^\circ \pm 2^\circ$ BTDC	Closed throttle position switch idle position adjustment	Feeler gauge thickness and switch condition 0.05 mm (0.0020 in): ON 0.15 mm (0.0059 in): OFF	Target idle speed	700 ± 50 rpm (in "P" or "N" position)
Items	Specifications								
Ignition timing	$15^\circ \pm 2^\circ$ BTDC								
Closed throttle position switch idle position adjustment	Feeler gauge thickness and switch condition 0.05 mm (0.0020 in): ON 0.15 mm (0.0059 in): OFF								
Target idle speed	700 ± 50 rpm (in "P" or "N" position)								
MTBL0382									
OK or NG									
OK	▶ GO TO 14.								
NG	▶ Replace throttle position sensor. To adjust it, perform "Basic Inspection", EC-111.								

DTC P1217 ENGINE OVER TEMPERATURE (OVERHEAT)

System Description

System Description

NHEC0554

COOLING FAN CONTROL

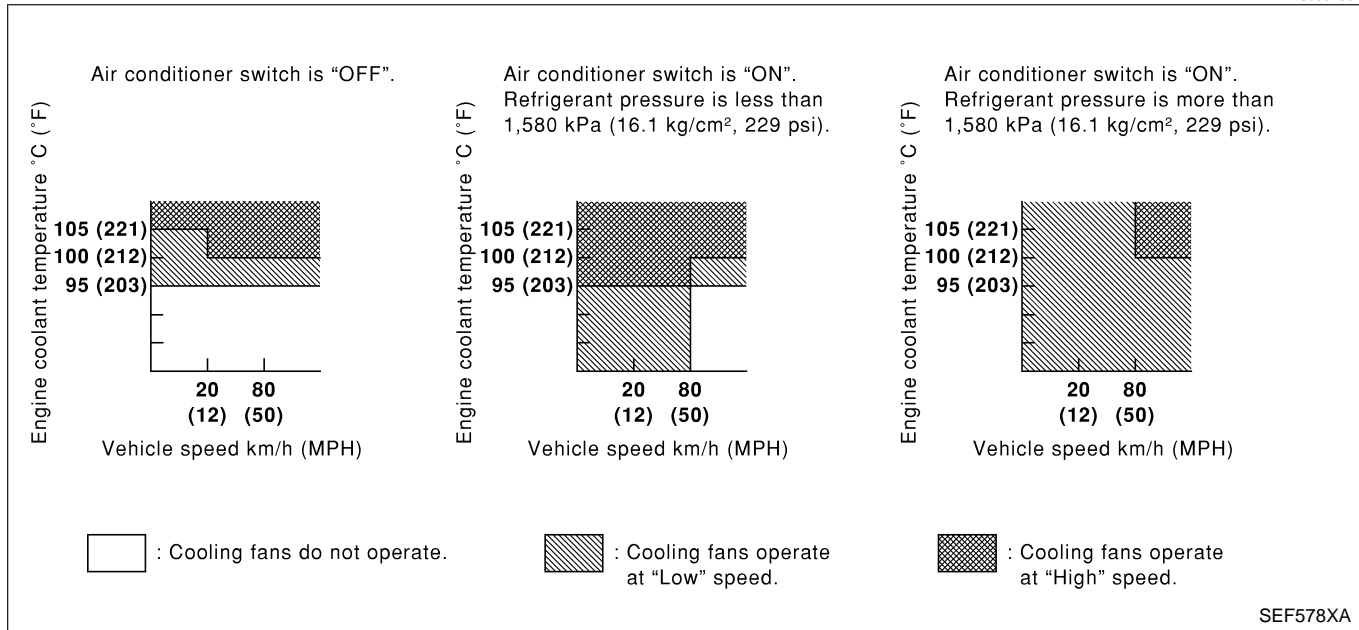
NHEC0554S01

Sensor	Input Signal to ECM	ECM function	Actuator
Vehicle speed sensor	Vehicle speed	Cooling fan control	Cooling fan relay(s)
Engine coolant temperature sensor	Engine coolant temperature		
Air conditioner switch	Air conditioner "ON" signal		
Ignition switch	Start signal		

The ECM controls the cooling fan corresponding to the vehicle speed, engine coolant temperature, refrigerant pressure and air conditioner ON signal. The control system has 3-step control [HIGH/LOW/OFF].

OPERATION

NHEC0554S02



SEF578XA

CONSULT-II Reference Value in Data Monitor Mode

NHEC0555

Specification data are reference values.

MONITOR ITEM	CONDITION	SPECIFICATION
AIR COND SIG	● Engine: After warming up, idle the engine	Air conditioner switch: OFF OFF
		Air conditioner switch: ON (Compressor operates) ON
COOLING FAN	● After warming up engine, idle the engine. ● Air conditioner switch: OFF	Engine coolant temperature is 94°C (201°F) or less OFF
		Engine coolant temperature is between 95°C (203°F) and 104°C (219°F) LOW
		Engine coolant temperature is 105°C (221°F) or more HIGH

DTC P1220 FUEL PUMP CONTROL MODULE (FPCM)

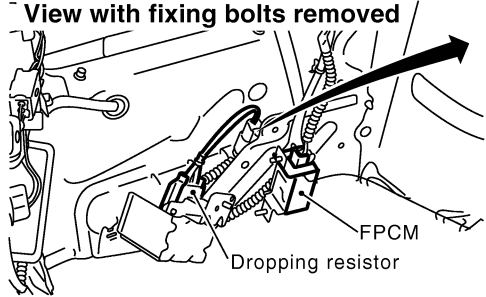
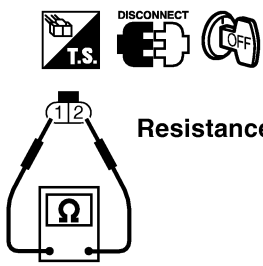
Diagnostic Procedure (Cont'd)

5	CHECK FPCM OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT	
1. Disconnect ECM harness connector. 2. Check harness continuity between ECM terminal 33 and FPCM terminal 3. Refer to Wiring Diagram. Continuity should exist. 3. Also check harness for short to ground and short to power.		
OK or NG		
OK	▶	GO TO 7.
NG	▶	GO TO 6.

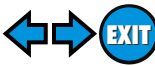
6	DETECT MALFUNCTIONING PART	
Check the following. <ul style="list-style-type: none"> ● Harness connectors B3, M6 ● Harness connectors M46, F44 ● Harness for open between ECM and FPCM 		
▶ Repair open circuit or short to ground or short to power in harness or connectors.		

7	CHECK FPCM INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT	
1. Check harness continuity between ECM terminal 94 and FPCM terminal 2 or fuel pump terminal 3. Refer to Wiring Diagram. Continuity should exist. 2. Check harness continuity between ECM terminal 94 and engine ground. Refer to Wiring Diagram. Continuity should not exist. 3. Also check harness for short to power.		
OK or NG		
OK	▶	GO TO 9.
NG	▶	GO TO 8.

8	DETECT MALFUNCTIONING PART	
Check the following. <ul style="list-style-type: none"> ● Harness connectors B2, M2 ● Harness connectors M46, F44 ● Harness for open or short between ECM and FPCM or fuel pump 		
▶ Repair open circuit or short to ground or short to power in harness or connectors.		

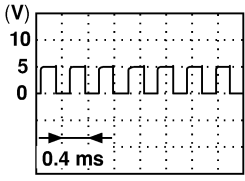
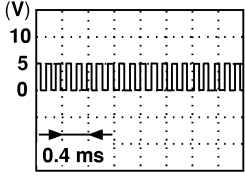
9	CHECK DROPPING RESISTOR	
Check resistance between dropping resistor terminals 1 and 2.		
<div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <p>- Inside trunk room View with fixing bolts removed</p>  <p style="text-align: right;">FPCM Dropping resistor</p> </div> <div style="flex: 1; margin-left: 20px;">  <p style="text-align: center;">Resistance: Approximately 0.8Ω at 25°C (77°F)</p> </div> </div>		
SEF595X		
OK or NG		
OK	▶	GO TO 10.
NG	▶	Replace dropping resistor.

DTC P1336 CRANKSHAFT POSITION SENSOR (CKPS) (POS) (COG)



Wiring Diagram (Cont'd)

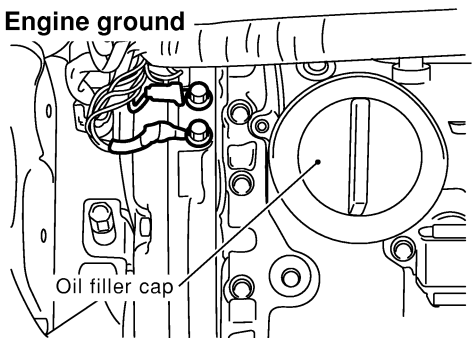
ECM TERMINALS AND REFERENCE VALUE MEASURED BETWEEN EACH TERMINAL AND 48.

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
85	W	CRANKSHAFT POSITION SENSOR (POS)	ENGINE RUNNING AT IDLE SPEED UNDER WARM-UP CONDITION	APPROX. 2.4V 
			ENGINE RUNNING AT 2,000 RPM	APPROX. 2.3V 

SEF664X

Diagnostic Procedure

NHEC0297

1	RETIGHTEN GROUND SCERWS
<p>1. Turn ignition switch "OFF". 2. Loosen and retighten engine ground screws.</p> <div style="text-align: center;">  <p>Engine ground</p> <p>Oil filler cap</p> </div>	
▶	GO TO 2.

SEF255X

On Board Diagnosis Logic

NHEC0316

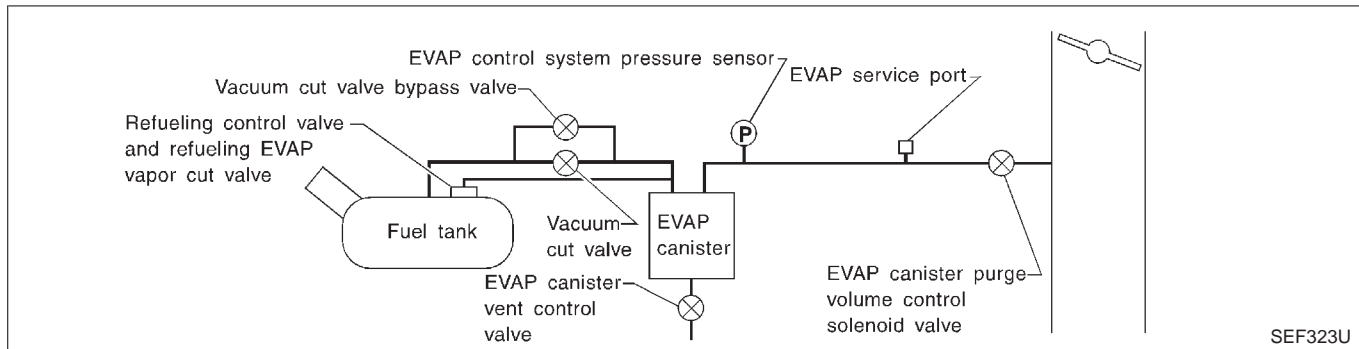
NOTE:

If DTC P1440 is displayed with P1448, perform trouble diagnosis for DTC P1448 first. (See EC-620.)

This diagnosis detects leaks in the EVAP purge line using of vapor pressure in the fuel tank.

The EVAP canister vent control valve is closed to shut the EVAP purge line. The vacuum cut valve bypass valve will then be opened to clear the line between the fuel tank and the EVAP canister purge volume control solenoid valve. The EVAP control system pressure sensor can now monitor the pressure inside the fuel tank.

If pressure increases, the ECM will check for leaks in the line between the vacuum cut valve and EVAP canister purge volume control solenoid valve.



SEF323U

Malfunction is detected when EVAP control system has a leak, EVAP control system does not operate properly.

CAUTION:

- Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may come on.
- If the fuel filler cap is not tightened properly, the MIL may come on.
- Use only a genuine NISSAN rubber tube as a replacement.

Possible Cause

NHEC0587

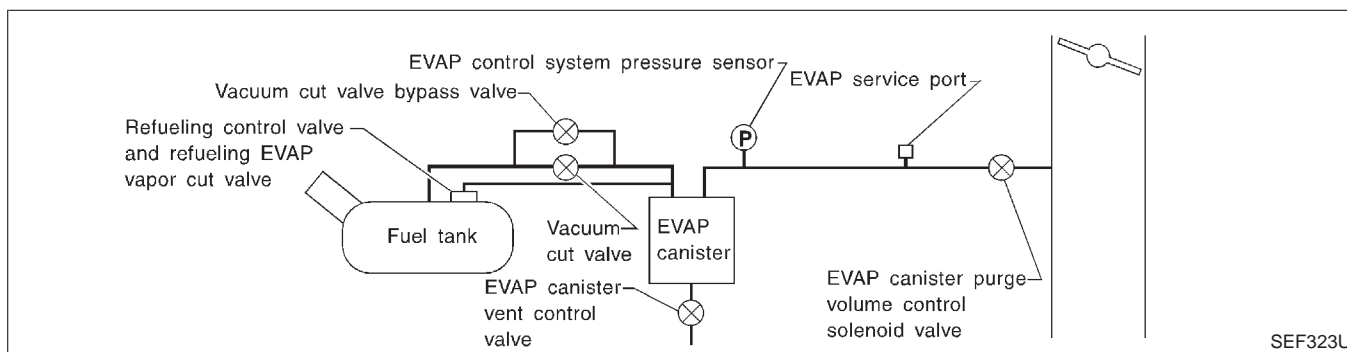
- Incorrect fuel tank vacuum relief valve
- Incorrect fuel filler cap used
- Fuel filler cap remains open or fails to close.
- Foreign matter caught in fuel filler cap.
- Leak is in line between intake manifold and EVAP canister purge volume control solenoid valve.
- Foreign matter caught in EVAP canister vent control valve.
- EVAP canister or fuel tank leaks
- EVAP purge line (pipe and rubber tube) leaks

System Description

NHEC0333

NOTE:

If DTC P1447 is displayed with P0510, perform trouble diagnosis for DTC P0510 first. (See EC-467.)



In this evaporative emission (EVAP) control system, purge flow occurs during non-closed throttle conditions. Purge volume is related to air intake volume. Under normal purge conditions (non-closed throttle), the EVAP canister purge volume control solenoid valve is open to admit purge flow. Purge flow exposes the EVAP control system pressure sensor to intake manifold vacuum.

On Board Diagnosis Logic

NHEC0334

Under normal conditions (non-closed throttle), sensor output voltage indicates if pressure drop and purge flow are adequate. If not, a fault is determined.

Malfunction is detected when EVAP control system does not operate properly, EVAP control system has a leak between intake manifold and EVAP control system pressure sensor.

Possible Cause

NHEC0590

- EVAP canister purge volume control solenoid valve stuck closed
- EVAP control system pressure sensor and the circuit
- Loose, disconnected or improper connection of rubber tube
- Blocked rubber tube
- Cracked EVAP canister
- EVAP canister purge volume control solenoid valve circuit
- Closed throttle position switch
- Blocked purge port
- EVAP canister vent control valve

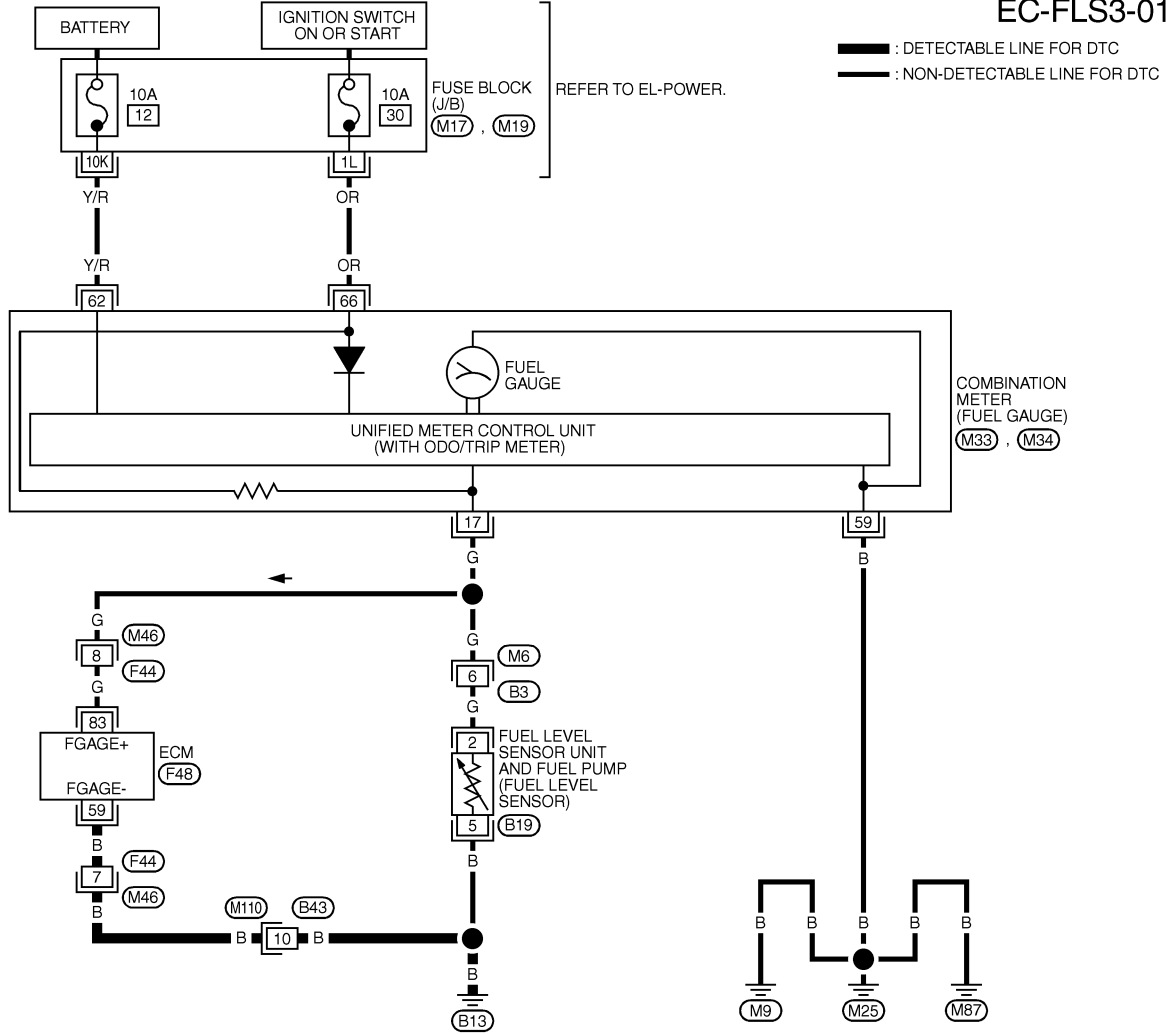
DTC P1464 FUEL LEVEL SENSOR CIRCUIT (GROUND SIGNAL)

Wiring Diagram

Wiring Diagram

NHEC0640

EC-FLS3-01



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18		

(M6) W, (M46) W

1	2	3	4	5	6	7
8	9	10	11	12	13	14

(M110) W

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22

(M33) W

45	46	47	48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63	64	65	66

(M34) BR

5	4	3	2	1
---	---	---	---	---

(B19) GY

101	102	1	2	3	4	5	6	7	8	9	10	58	59	60	61	62	63	64	65	66	67	109	110	
103	104	11	12	13	14	15	16	17	18	19	39	40	41	42	43	44	45	46	47	48	68	69	70	
105	106	20	21	22	23	24	25	26	27	28	29	49	50	51	52	53	54	55	56	57	77	78	79	
107	108	30	31	32	33	34	35	36	37	38	77	78	79	80	81	82	83	84	85	86	87	88	89	

(F48) GY, H.S.

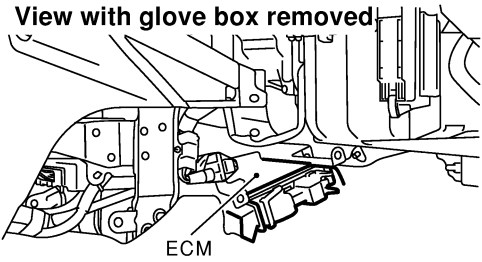
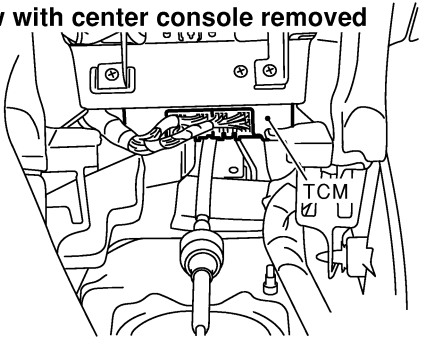
REFER TO THE FOLLOWING.

- (M17) - FUSE BLOCK - JUNCTION BOX (J/B)
- (M19) - FUSE BLOCK - JUNCTION BOX (J/B)

MEC878C

Diagnostic Procedure

NHEC0366

1	CHECK A/T DIAGNOSIS COMMUNICATION LINE INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT	
<p>1. Turn ignition switch "OFF". 2. Disconnect ECM harness connector and TCM (Transmission Control Module) harness connector.</p>		
<p>View with glove box removed</p>  <p style="text-align: center;">ECM</p>		
SEF270X		
<p>View with center console removed</p>  <p style="text-align: center;">TCM</p>		
SEF271X		
<p>3. Check harness continuity between ECM terminal 60 and TCM terminal 15. Refer to Wiring Diagram. Continuity should exist.</p> <p>4. Also check harness for short to ground and short to power.</p>		
OK or NG		
OK	▶	GO TO 2.
NG	▶	Repair open circuit or short to ground or short to power in harness or connectors.

2	CHECK INTERMITTENT INCIDENT	
Refer to "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT", EC-157.		
▶		INSPECTION END

FUEL PUMP

System Description

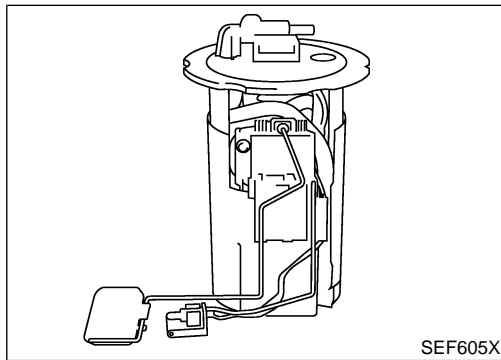
System Description

NHEC0392

Sensor	Input Signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed (POS signal)	Fuel pump control	Fuel pump relay
Crankshaft position sensor (REF)	Engine speed (REF signal)		
Ignition switch	Start signal		

The ECM activates the fuel pump for several seconds after the ignition switch is turned on to improve engine startability. If the ECM receives a 120° signal from the crankshaft position sensor (REF), it knows that the engine is rotating, and causes the pump to operate. If the 120° signal is not received when the ignition switch is on, the engine stalls. The ECM stops pump operation and prevents battery discharging, thereby improving safety. The ECM does not directly drive the fuel pump. It controls the ON/OFF fuel pump relay, which in turn controls the fuel pump.

Condition	Fuel pump operation
Ignition switch is turned to ON.	Operates for 1 second.
Engine running and cranking	Operates.
When engine is stopped	Stops in 1.5 seconds.
Except as shown above	Stops.



Component Description

NHEC0393

The fuel pump with a fuel damper is an in-tank type (the pump and damper are located in the fuel tank).

CONSULT-II Reference Value in Data Monitor Mode

NHEC0394

Specification data are reference values.

MONITOR ITEM	CONDITION	SPECIFICATION
FUEL PUMP RLY	<ul style="list-style-type: none"> Ignition switch is turned to ON. (Operates for 1 second.) Engine running and cranking 	ON
	Except as shown above	OFF

ELECTRICAL LOAD SIGNAL

Diagnostic Procedure (Cont'd)

4	CHECK REAR WINDOW DEFOGGER INPUT SIGNAL CIRCUIT FOR OPEN OR SHORT							
<ol style="list-style-type: none"> 1. Stop engine. 2. Disconnect ECM harness connector. 3. Disconnect rear window defogger relay. 4. Check harness continuity between ECM terminal 52 and rear window defogger relay terminals 5 and 7. 								
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>CONDITION 1</p> </div> <div style="text-align: center;"> <p>CONDITION 2</p> </div> </div>								
		<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">CONDITION</th> <th>CONTINUITY</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Should exist.</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Should not exist.</td> </tr> </tbody> </table>	CONDITION	CONTINUITY	1	Should exist.	2	Should not exist.
CONDITION	CONTINUITY							
1	Should exist.							
2	Should not exist.							
<p>5. Also check harness for short to ground and short to power.</p> <p style="text-align: center;">OK or NG</p>								
OK	▶	GO TO 6.						
NG	▶	GO TO 5.						

SEF612X

5	DETECT MALFUNCTIONING PART	
<p>Check the following.</p> <ul style="list-style-type: none"> ● Harness connectors B1, M5 ● Harness connectors M46, F44 ● Diode M35 ● Harness for open and short between ECM and rear window defogger relay 		
		▶ Repair open circuit or short to ground or short to power in harness or connectors.

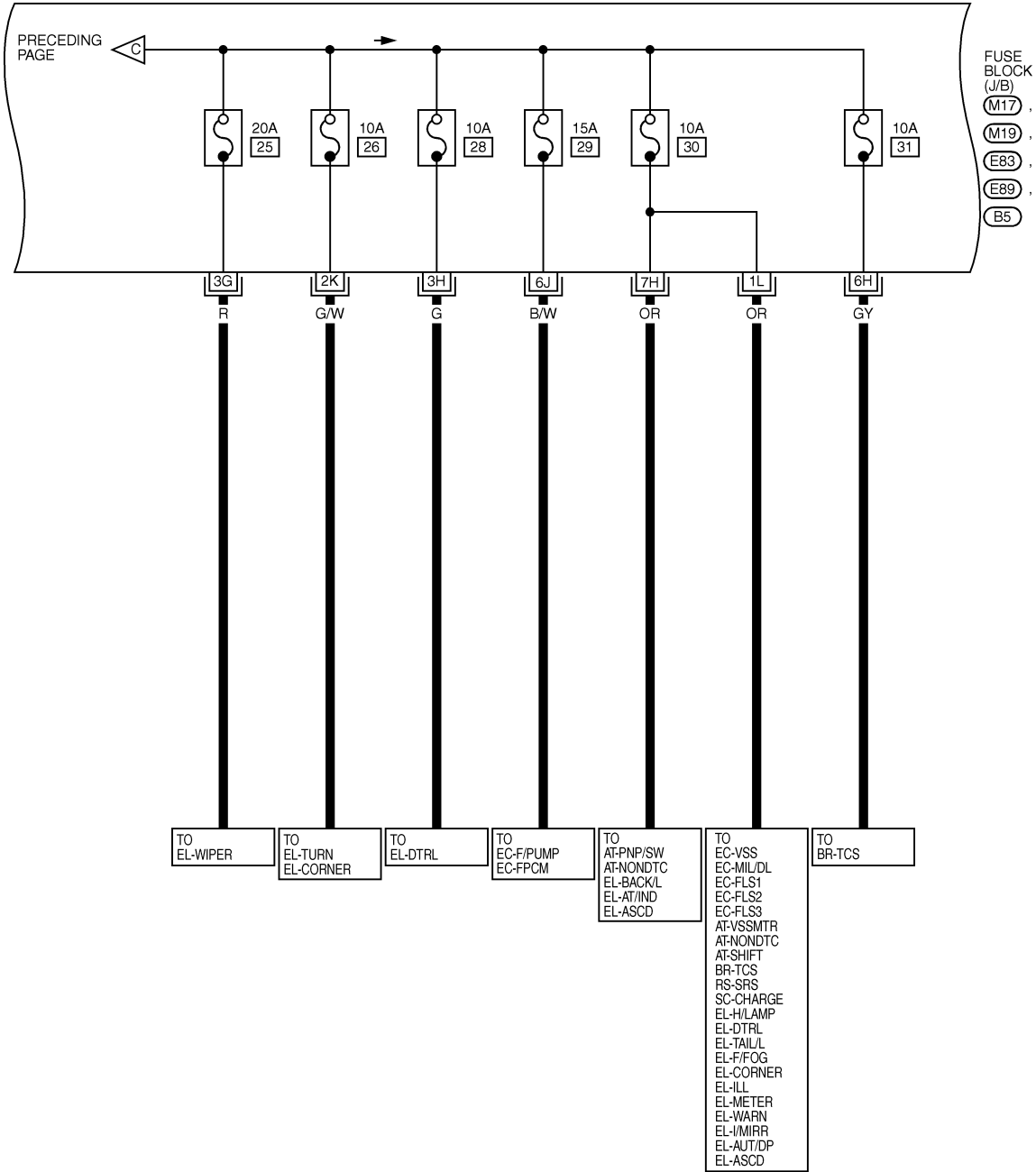
6	CHECK INTERMITTENT INCIDENT	
Perform "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT", EC-157.		
		▶ INSPECTION END

7	CHECK HEADLAMP FUNCTION	
<ol style="list-style-type: none"> 1. Start engine. 2. Turn the lighting switch "ON" at 1st position with high beam. 3. Check that headlamps are illuminated. 		
OK or NG		
OK	▶	GO TO 8.
NG	▶	Refer to EL-34, "HEADLAMP (FOR USA)" or "EL-65, "HEADLAMP (FOR CANADA) — DAYTIME LIGHT SYSTEM".

POWER SUPPLY ROUTING

Wiring Diagram — POWER — (Cont'd)

EL-POWER-06



REFER TO THE FOLLOWING.

(M17) , (M19) , (E83) , (E89) ,

(B5) -FUSE BLOCK-

JUNCTION BOX (J/B)

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16			17	18	19	20
21	22	23	24	25	26	27	28	29	30	31



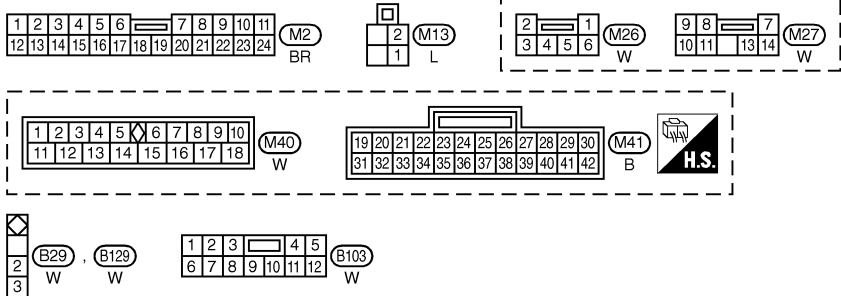
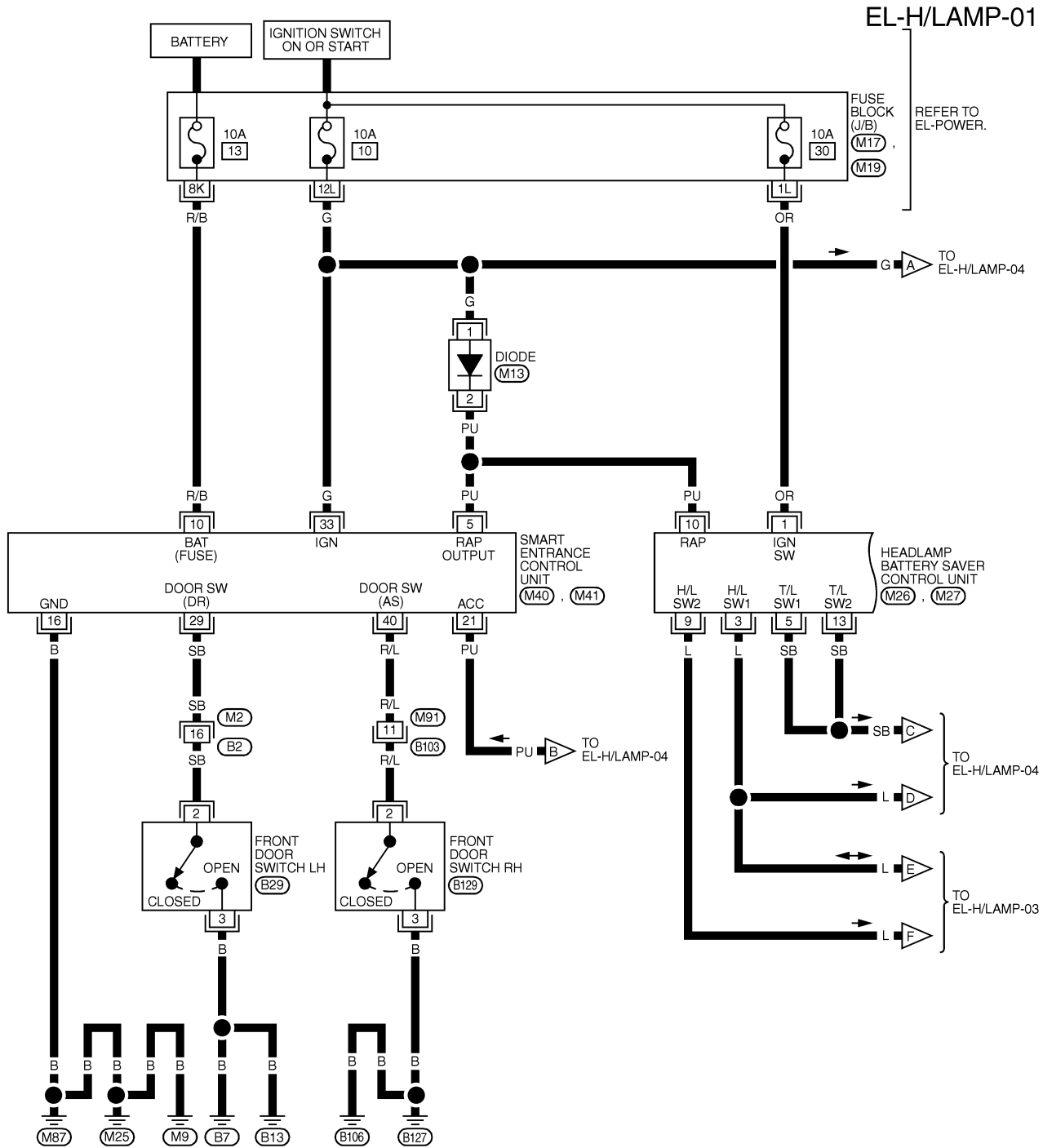
MEL157M

HEADLAMP (FOR USA) — CONVENTIONAL TYPE —

Wiring Diagram — H/LAMP —

Wiring Diagram — H/LAMP —

NHEL0013



REFER TO THE FOLLOWING.
(M17) , **(M19)** -FUSE BLOCK-
 JUNCTION BOX (J/B)

MEL158M

HEADLAMP (FOR USA) — XENON TYPE —

Trouble Diagnoses (Cont'd)

Symptom	Possible cause	Repair order
Battery saver control does not operate properly.	<ol style="list-style-type: none"> 1. RAP signal circuit 2. Door switch LH or RH circuit 3. Lighting switch circuit 4. Headlamp battery saver control unit 5. Smart entrance control unit 	<ol style="list-style-type: none"> 1. Check RAP signal. <ol style="list-style-type: none"> a. (With CONSULT-II) Check RAP signal with CONSULT-II. Use "ACTIVE TEST" mode, "RETAINED PWR" in "SMART ENTRANCE". (Refer to EL-57.) If NG, go to the step b. below. b. Verify 12 positive voltage from smart entrance control unit is present at terminal 10 of battery saver control unit: <ul style="list-style-type: none"> ● Within 45 seconds after ignition switch turns off. ● When front door LH and RH is closed. 2. Check harness between smart entrance control unit and LH or RH door switch for open or short circuit. Check LH or RH door switch ground circuit. Check LH or RH door switch. 3. Check harness between headlamp battery saver control unit terminals 5 or 13 and lighting switch terminal 11 for open or short circuit. Check harness between lighting switch terminal 5 and ground. Check lighting switch. 4. Check headlamp battery saver control unit. 5. Check smart entrance control unit. (EL-396)

BATTERY SAVER CONTROL UNIT INSPECTION TABLE

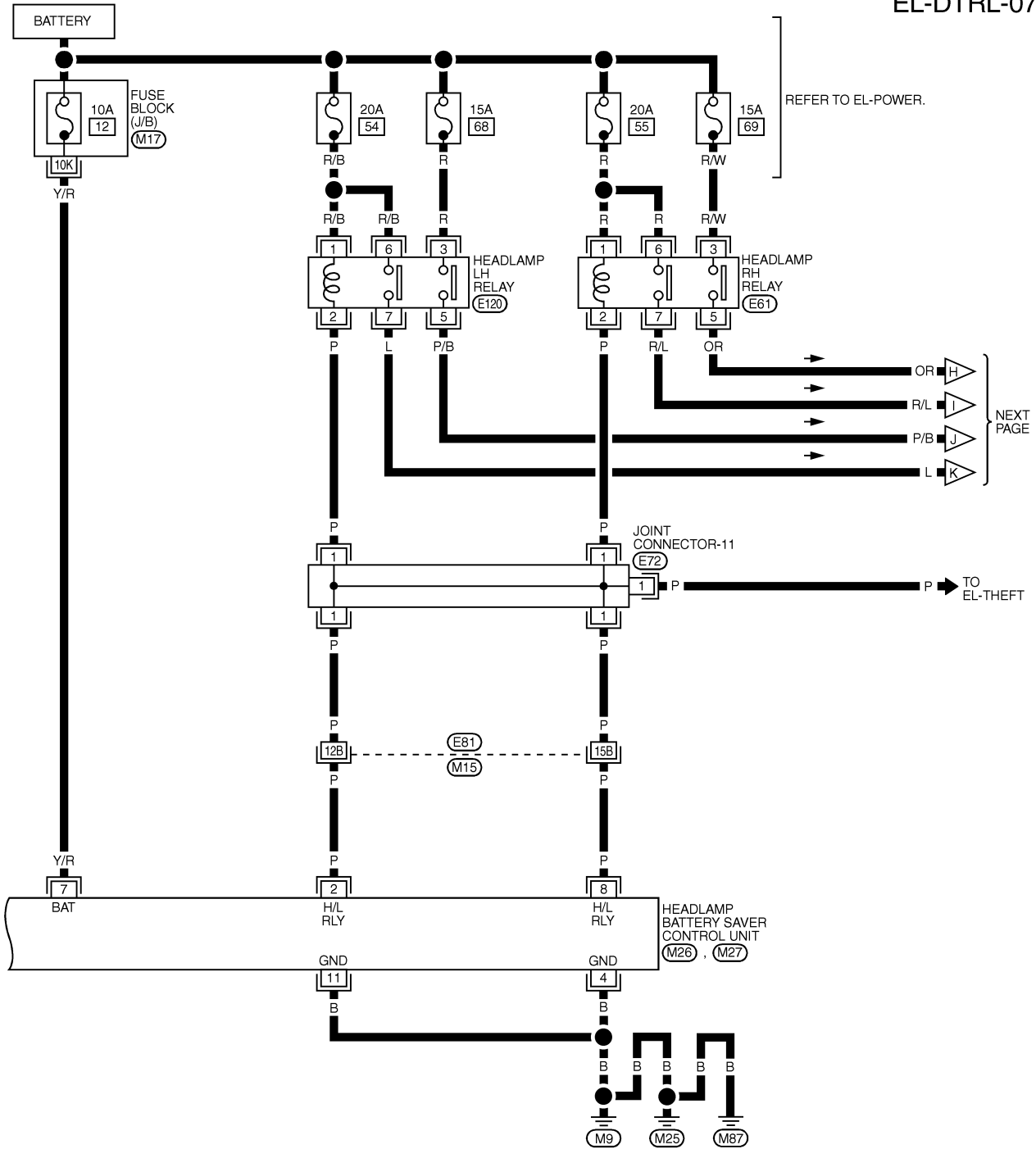
NHLE0258S01

Terminal No.	Wire color	Item	Condition	Voltage (Approximate value)		
1	OR	Ignition ON power supply	Ignition switch	OFF or ACC	Less than 1V	
				ON or START	Battery voltage	
2	P	Headlamp LH relay	Ignition switch (with lighting switch except OFF or 1ST)	OFF or ACC	More than 45 seconds after ignition switch is turned OFF or ACC	Battery voltage
					Within 45 seconds after ignition switch is turned OFF or ACC	Less than 1V
					ON or START	Less than 1V
			Headlamps illuminate by auto light control.			
3	L	Headlamp switch	Lighting switch	Except PASS or 2ND	Battery voltage	
				PASS or 2ND	Less than 1V	
			Headlamps illuminate by auto light control.			
4	B	Ground	—	—		
5	SB	Tail lamp switch	Lighting switch	OFF	Battery voltage	
				1ST or 2ND	Less than 1V	

HEADLAMP (FOR CANADA) — XENON TYPE —

Wiring Diagram — DTRL — (Cont'd)

EL-DTRL-07

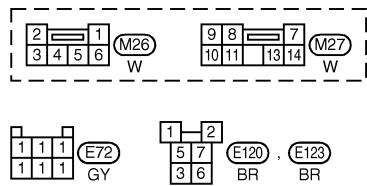


REFER TO EL-POWER.

NEXT PAGE

REFER TO THE FOLLOWING.

- (M15) -SUPER
- MULTIPLE JUNCTION (SMJ)
- (M17) -FUSE BLOCK-JUNCTION BOX (J/B)



MEL174M

System Description (Cont'd)

- through body grounds M9, M25 and M87
- to vanity mirror illuminations (LH and RH) terminals 2.

And power is supplied:

- to vanity mirror illuminations (LH and RH) terminals 1
- from smart entrance control unit terminal 17.

When rear door switch LH and/or RH is ON (door is opened), ground is supplied:

- through case ground of the rear door switch
- from the rear door switch terminal 1
- to front step lamp LH and RH terminals 1.

And power is supplied:

- to front step lamp LH and RH terminals 2
- from smart entrance control unit terminal 17.

When front door switch LH and/or RH is ON (door is opened), ground is supplied:

- through body grounds B7 and B13, and/or B106 and B127
- to the front door switch terminal 3
- from the front door switch terminal 2
- to smart entrance control unit terminal 29 and/or 40
- from smart entrance control unit terminal 28
- to front step lamp LH and RH terminals 1.

And power is supplied:

- to front step lamp LH and RH terminals 2
- from smart entrance control unit terminal 17.

When trunk room lamp switch is ON (trunk lid is opened), ground is supplied:

- through body grounds T6 and T8
- to trunk room lamp switch terminal 2
- from trunk room lamp switch terminal 1
- to trunk room lamp terminal 1

And power is supplied:

- to trunk room lamp terminal 2
- from smart entrance control unit terminal 17.

With power and ground supplied, interior lamps turn ON.

INTERIOR LAMP TIMER OPERATION

When interior lamp switch is in the "DOOR" position, the smart entrance control unit keeps the interior lamp illuminated for about 30 seconds when:

- unlock signal is supplied from driver's door unlock sensor while all doors are closed and key is out of ignition key cylinder
- unlock signal is supplied from multi-remote controller while driver's door is locked all doors are closed
- key is removed from ignition key cylinder while all doors are closed
- driver's door is opened and then closed while key is out of the ignition key cylinder. (However, if the driver's door is closed with the key inserted in the ignition key cylinder after the driver's door is opened with the key removed, the timer is operated.)

The timer is canceled when:

- driver's door is locked,
- driver's door is opened, or
- ignition switch is turned ON.

When driver's door is locked, interior room lamp timer is canceled as described before.

However, ignition key hole illumination remains on for about 30 seconds after driver's door has been locked.

ON-OFF CONTROL

When the driver side door, front passenger door, rear LH or RH door is opened, the interior room lamp turns on while the interior room lamp switch is in the "DOOR" position.

When any door is opened, step lamps turn ON.

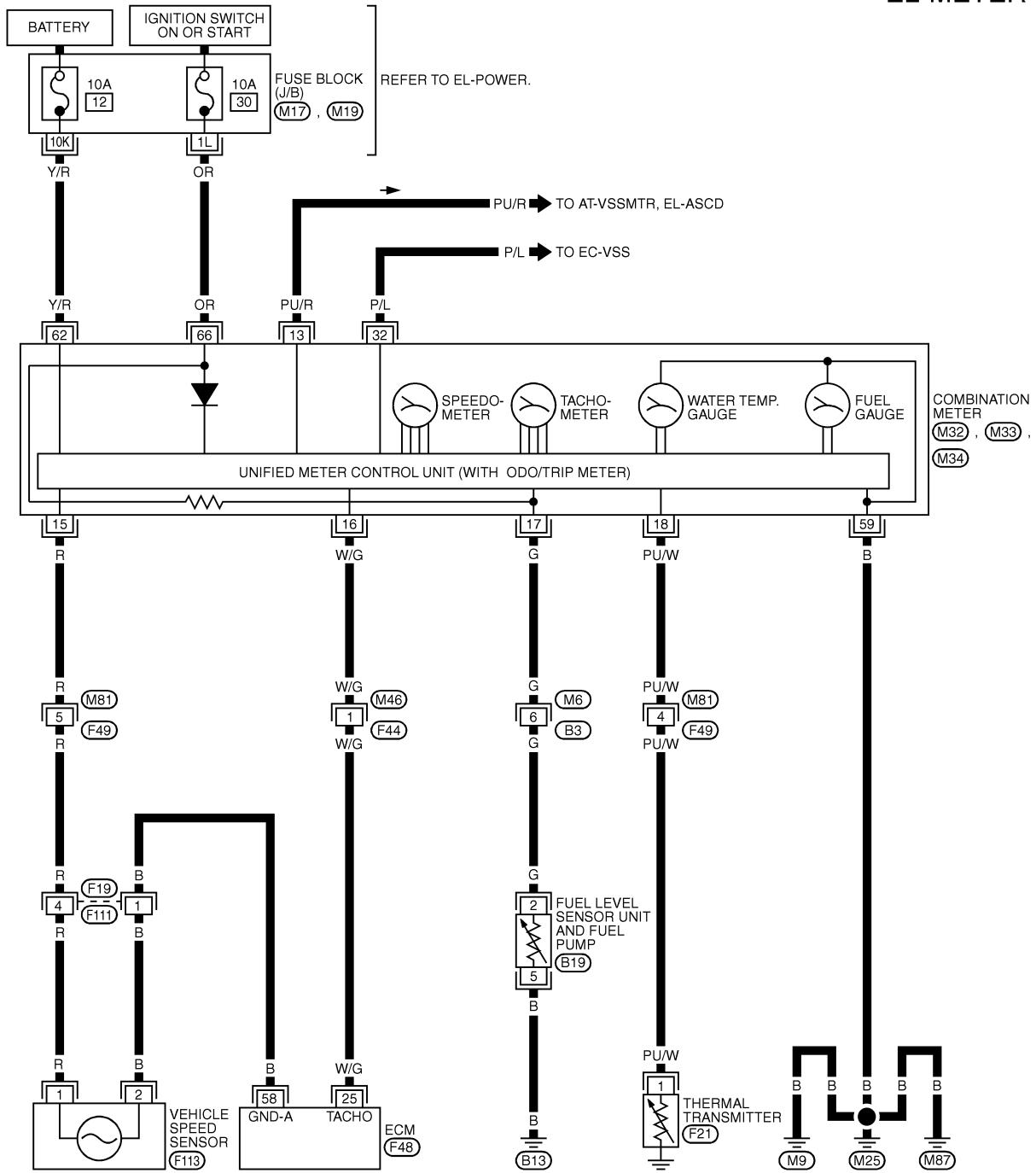
METERS AND GAUGES

Wiring Diagram — METER —

Wiring Diagram — METER —

NHEL0045

EL-METER-01



1	2	3	4	5	6	7	8	9	10	(M6)	(M46)
11	12	13	14	15	16	17	18	W	W		

25	26	27	28	29	30	31	32	33	(M32)	1	2	3	4	5	6	7	8	9	10	11	(M33)	45	46	47	48	49	50	51	52	53	54	55	(M34)				
34	35	36	37	38	39	40	41	42																										43	44	12	13

1	2	3	4	5	6	7	8	9	(M81)	1	2	3	4	5	6	(F19)	1	2	(F113)	5	4	3	2	1	(B19)
10	11	12	13	14	15	16	17	18																	

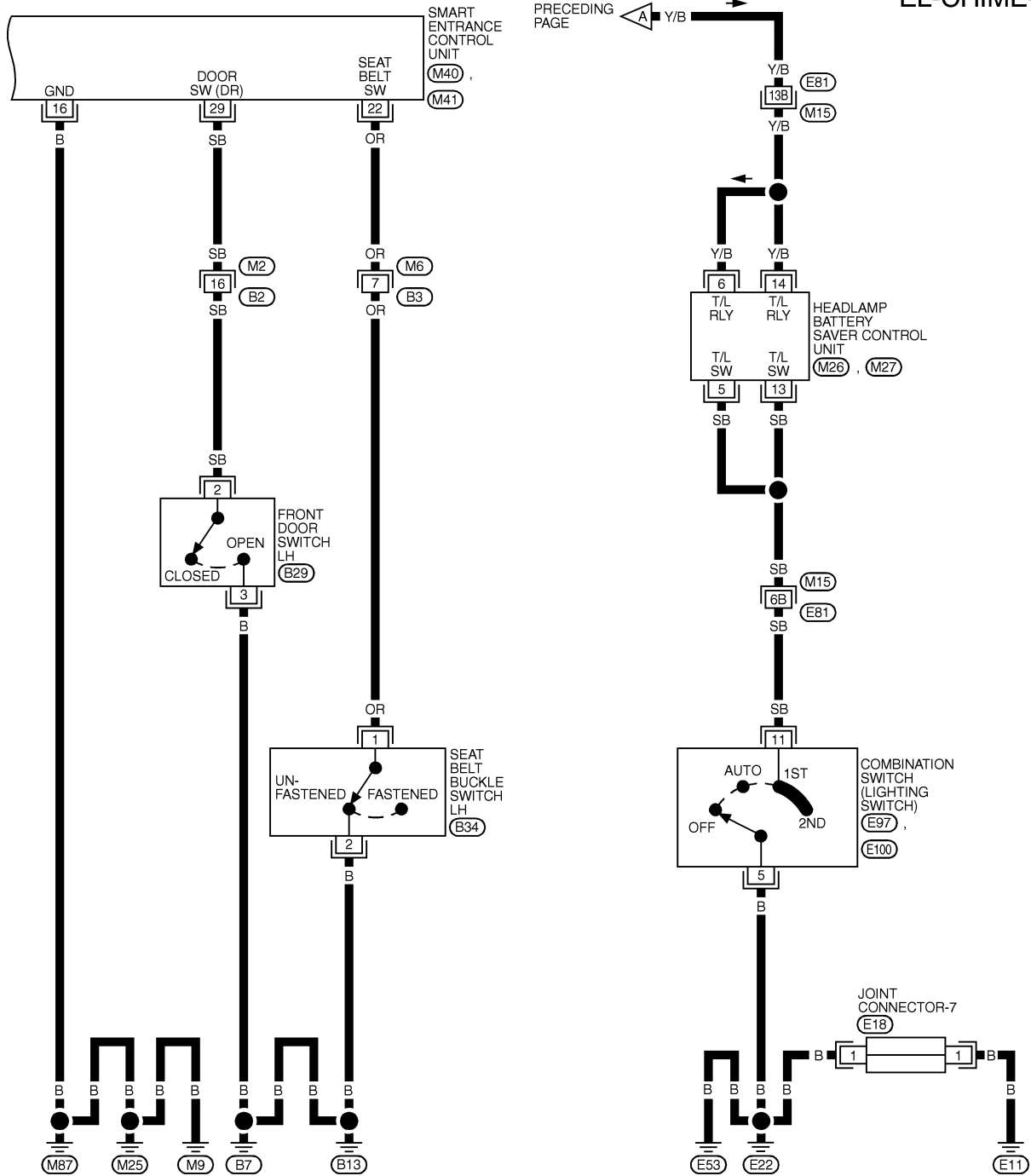
- REFER TO FOLLOWING.
- (M17) - FUSE BLOCK-JUNCTION BOX (J/B)
 - (M19) - FUSE BLOCK-JUNCTION BOX (J/B)
 - (F48) - ELECTRICAL UNITS-BR

MEL455K

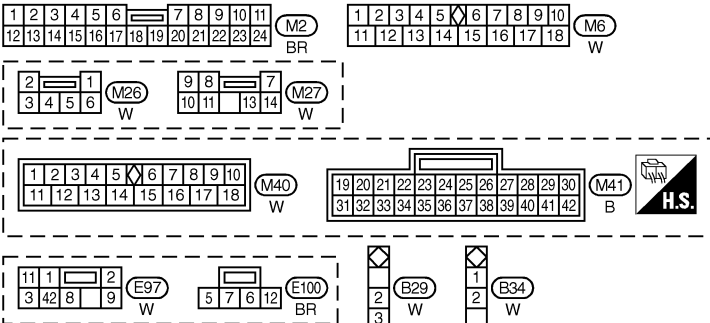
WARNING CHIME

Wiring Diagram — CHIME — (Cont'd)

EL-CHIME-02



PRECEDING PAGE Y/B



REFER TO THE FOLLOWING.
 (M15), (E81) -SUPER
 MULTIPLE JUNCTION (SMJ)

MEL463K

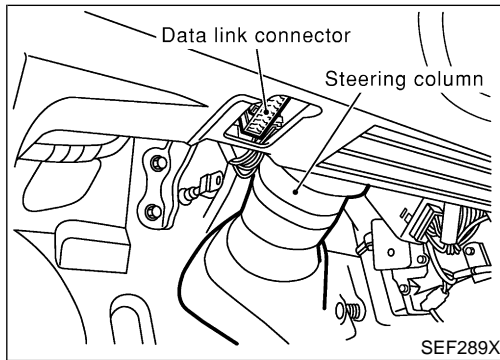
REAR WINDOW DEFOGGER

Wiring Diagram — DEF — (Cont'd)

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
2	G/R	REAR WINDOW DEFOGGER RELAY	OFF → ON (IGNITION KEY IS IN "ON" POSITION)	0V → 12V
10	R/B	POWER SOURCE (FUSE)	-	12V
16	B	GROUND	-	-
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
39	G/W	REAR WINDOW DEFOGGER SWITCH	OFF → ON	5V → 0V

SEL372WC

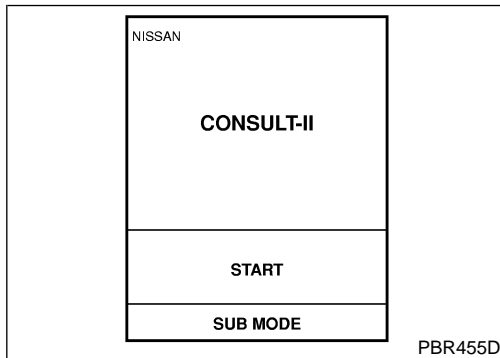


CONSULT-II Inspection Procedure "REAR DEFOGGER"

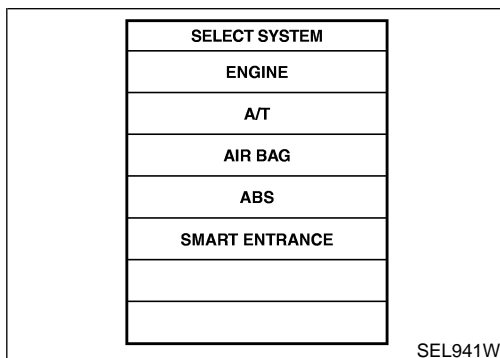
NHEL0218

NHEL0218S01

1. Turn ignition switch "OFF".
2. Connect CONSULT-II to the data link connector.



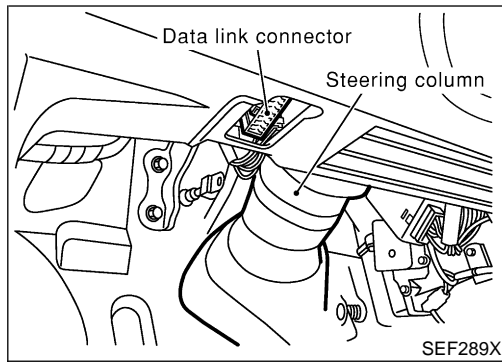
3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "SMART ENTRANCE".

POWER SUNROOF

CONSULT-II Inspection Procedure

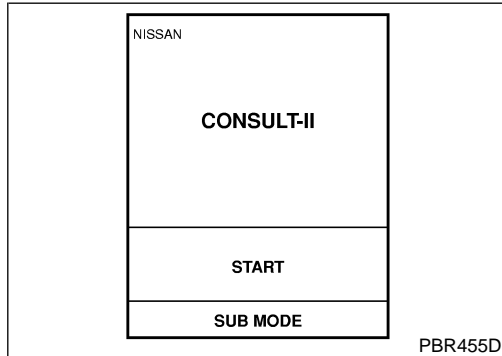


CONSULT-II Inspection Procedure “RETAINED PWR”

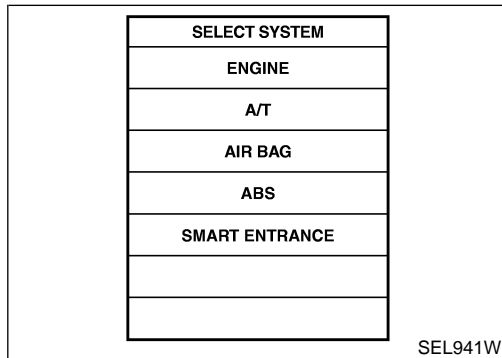
=NHLE0223

NHLE0223S01

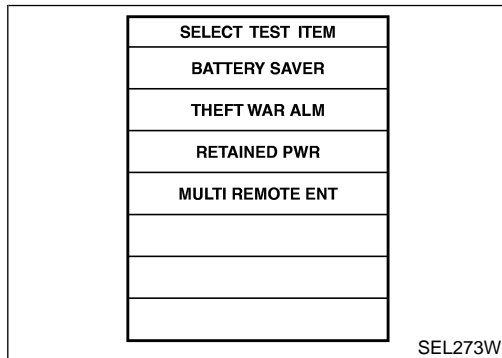
1. Turn ignition switch “OFF”.
2. Connect CONSULT-II to the data link connector.



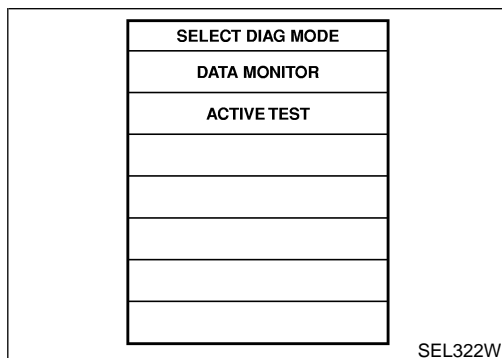
3. Turn ignition switch “ON”.
4. Touch “START”.



5. Touch “SMART ENTRANCE”.



6. Touch “RETAINED PWR”.



7. Select diagnosis mode.
“DATA MONITOR” and “ACTIVE TEST” are available.

AUTOMATIC DRIVE POSITIONER

Trouble Diagnoses (Cont'd)

SYMPTOM CHART

=NHLE0277S03

PROCEDURE		Diagnostic procedure							
REFERENCE PAGE (EL-)		238	239	241	243	245	247	248	
SYMPTOM		DIAGNOSTIC PROCEDURE 1 (Power supply and ground circuit for Driver's seat control unit)	DIAGNOSTIC PROCEDURE 2 (Sliding encoder check)	DIAGNOSTIC PROCEDURE 3 (Reclining encoder check)	DIAGNOSTIC PROCEDURE 4 [Lifting encoder (front) check]	DIAGNOSTIC PROCEDURE 5 [Lifting encoder (rear) check]	DIAGNOSTIC PROCEDURE 6 (Sliding motor check)	DIAGNOSTIC PROCEDURE 7 (Reclining motor check)	
1	No seat system functions operate.	X							
2	Some of the seat system functions do not operate during automatic/manual operation.	Sliding					X		
		Reclining						X	
		Lifting (Front)							
		Lifting (Rear)							
3	No functions operate during automatic operation, and some/all functions do not during manual operation.								
4	Some of the seat system functions do not operate during automatic operation.	Sliding	X						
		Reclining		X					
		Lifting (Front)				X			
		Lifting (Rear)					X		
5	No automatic operation functions operate.								
6	Drive position cannot be retained in the memory.								
7	Does not operate during manual operation. (Operates during automatic operation.)	Sliding							
		Reclining							
		Lifting (Front)							
		Lifting (Rear)							
8	Automatic operation cannot be canceled.								
9	Memory indicator does not light up.								

X : Applicable

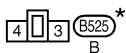
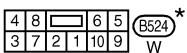
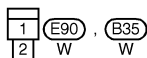
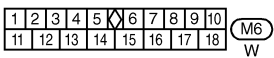
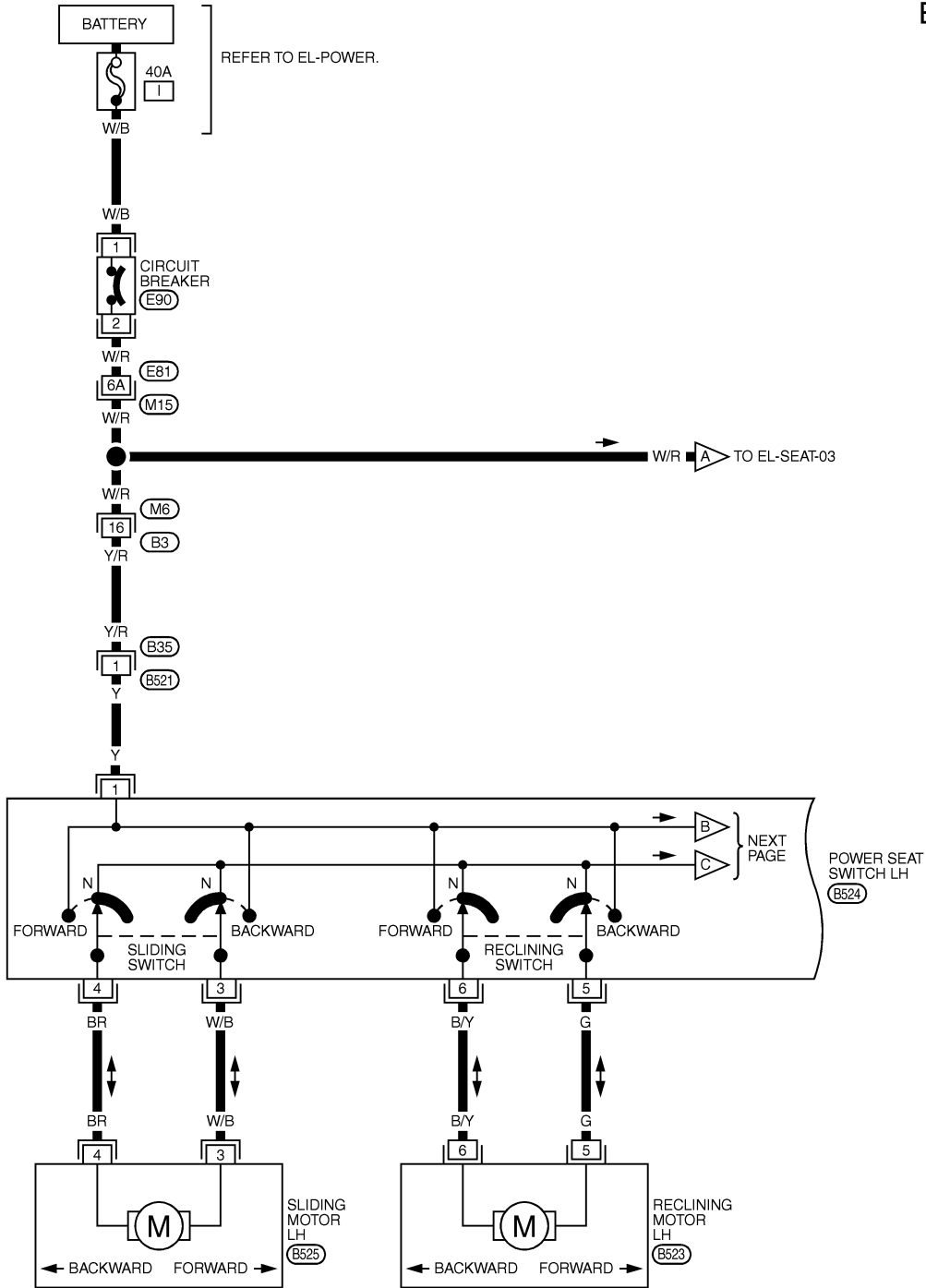
POWER SEAT

Wiring Diagram — SEAT —

Wiring Diagram — SEAT —

NHEL0092

EL-SEAT-01



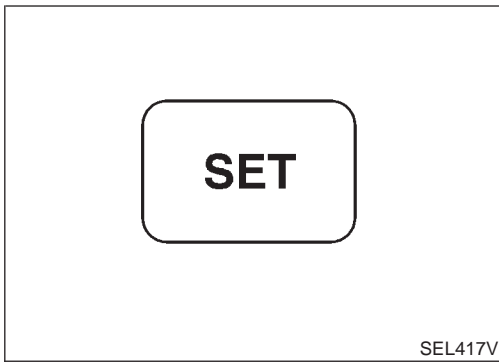
REFER TO THE FOLLOWING.
(M15) , (E81)
MULTIPLE JUNCTION (SMJ)

* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", EL SECTION.

MEL487K

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

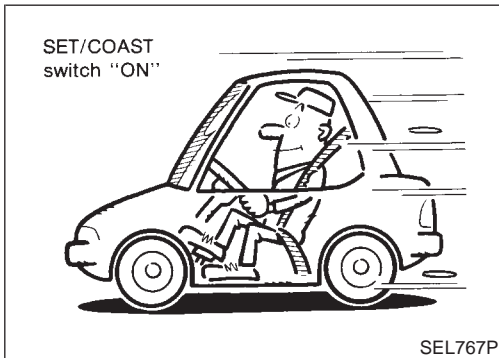
Trouble Diagnoses (Cont'd)



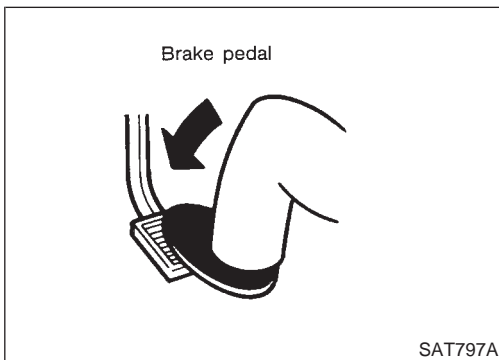
FAIL-SAFE SYSTEM CHECK

=NHLE0232S02

1. Turn ignition switch to ON position.
2. Turn ASCD main switch to ON and check if the "set indicator" blinks.
If the indicator lamp blinks, check the following.
 - ASCD steering switch. Refer to EL-284.



3. Drive the vehicle at more than 40 km/h (25 MPH) and push SET/COAST switch.
If the indicator lamp blinks, check the following.
 - Vehicle speed sensor. Refer to EL-286.
 - ASCD pump circuit. Refer to EL-287.
 - Replace control unit.



4. Depress brake pedal slowly (brake pedal should be depressed more than 5 seconds).
If the indicator lamp blinks, check the following.
 - ASCD brake/stop lamp switch. Refer to EL-282.

5. END. (System is OK.)

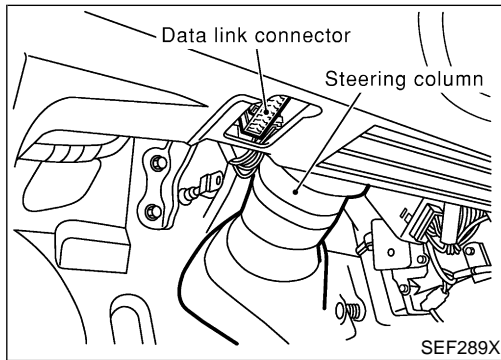
POWER WINDOW

Wiring Diagram — WINDOW — (Cont'd)

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
5	PU	HEADLAMP BATTERY SAVER CONTROL UNIT	WHEN HEADLAMP BATTERY SAVER TIMER IS OPERATED	12V
10	R/B	POWER SOURCE (FUSE)	-	12V
11	W/R	POWER SOURCE (C/B)	-	12V
16	B	GROUND	-	-
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED) → ON (OPEN)	5V → 0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED) → ON (OPEN)	5V → 0V

SEL369WC

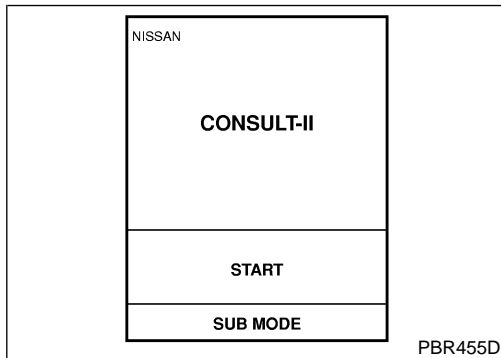


CONSULT-II Inspection Procedure "RETAINED PWR"

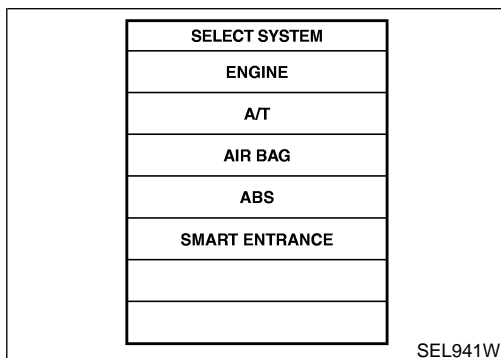
NHEL0235

NHEL0235S01

1. Turn ignition switch "OFF".
2. Connect CONSULT-II to the data link connector.



3. Turn ignition switch "ON".
4. Touch "START".



5. Touch "SMART ENTRANCE".

POWER DOOR LOCK

Trouble Diagnoses (Cont'd)

DOOR LOCK ACTUATOR CHECK

=NH0193S08

1 CHECK DOOR LOCK ACTUATOR OPERATION

 **With CONSULT-II**

1. Select "ACTIVE TEST" in "DOOR LOCK" with CONSULT-II.
2. Select "ALL D/LK MTR" and touch "ON".
3. Then, select "DR D/UN MTR" and touch "ON".
4. Select "NON DR D/UN" and touch "ON".

ACTIVE TEST	
ALL D/LK MTR	OFF
or	
(DR D/UN MTR	OFF)
(NON DR D/UN	OFF)
ON	

Door lock motor should operate.

SEL343W

NOTE:

If CONSULT-II is not available, skip this procedure and go to the next step.

OK or NG

OK  Door lock actuator is OK.

NG  GO TO 2.

MULTI-REMOTE CONTROL SYSTEM

Trouble Diagnoses (Cont'd)

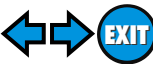
HAZARD REMINDER CHECK

=NHLE0195S08

1	CHECK HAZARD INDICATOR
Check if hazard indicator flashes with hazard switch.	
Does hazard indicator operate?	
Yes	▶ GO TO 2.
No	▶ Check "hazard indicator" circuit.

2	CHECK HAZARD REMINDER OPERATION WITH CONSULT-II
<p> With CONSULT-II</p> <ol style="list-style-type: none"> Select "ACTIVE TEST" in "MULTI REMOTE ENT" with CONSULT-II. Select "HAZARD" and touch "ON". 	
Hazard indicator should illuminate.	
SEL347W	
NOTE: If CONSULT-II is not available, skip this procedure and go to the next step.	
OK or NG	
OK	▶ Hazard reminder operation is OK.
NG	▶ GO TO 4.

3	CHECK HAZARD REMINDER OPERATION WITHOUT CONSULT-II
<p> Without CONSULT-II</p> <ol style="list-style-type: none"> Disconnect smart entrance control unit harness connector. Apply ground to smart entrance control unit harness connector terminal 7. 	
Hazard indicator should illuminate.	
SEL225W	
Refer to wiring diagram in EL-332.	
OK or NG	
OK	▶ Replace smart entrance control unit.
NG	▶ GO TO 4.



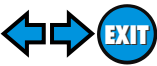
THEFT WARNING SYSTEM

Wiring Diagram — THEFT — (Cont'd)

SMART ENTRANCE CONTROL UNIT TERMINALS AND REFERENCE VALUE BETWEEN EACH TERMINAL AND GROUND

TERMINAL	WIRE COLOR	ITEM	CONDITION	DATA (DC)
4	BR/W	THEFT WARNING HORN RELAY-2	WHEN PANIC ALARM IS OPERATED USING REMORT CONTROLLER	12V → 0V
10	R/B	POWER SOURCE (FUSE)	—	12V
16	B	GROUND	—	—
21	PU	IGNITION SWITCH (ACC)	"ACC" POSITION	12V
23	GY	DOOR LOCK & UNLOCK SWITCHES	NEUTRAL → LOCKS	5V → 0V
27	Y/B	HOOD OPEN SIGNAL	ON (OPEN) → OFF (CLOSED)	0V → 5V
28	R/W	REAR DOOR SWITCHES	OFF (CLOSED) → ON (OPEN)	5V → 0V
29	SB	DRIVER DOOR SWITCH	OFF (CLOSED) → ON (OPEN)	5V → 0V
30	OR/L	DOOR KEY CYLINDER UNLOCK SWITCH	OFF (NEUTRAL) → ON (UNLOCKED)	5V → 0V
31	G/OR	THEFT WARNING INDICATOR	GOES OFF → ILLUMINATES	12V → 0V
33	G	IGN ON	IGNITION KEY IS IN "ON" POSITION	12V
35	BR/Y	DOOR LOCK & UNLOCK SWITCHES	NEUTRAL → UNLOCKS	5V → 0V
36	LG/R	DRIVER DOOR UNLOCK SENSOR	DRIVER DOOR: LOCKED → UNLOCKED	5V → 0V
37	PU	PASSENGER DOOR UNLOCK SENSOR	PASSENGER DOOR: LOCKED → UNLOCKED	5V → 0V
38	PU/Y	TRUNK ROOM LAMP SWITCH	ON (OPEN) → OFF (CLOSED)	0V → 12V
40	R/L	PASSENGER DOOR SWITCH	OFF (CLOSED) → ON (OPEN)	5V → 0V
41	OR/B	DOOR KEY CYLINDER LOCK SWITCH	OFF (NEUTRAL) → ON (LOCKED)	5V → 0V
42	G/B	TRUNK LID KEY CYLINDER SWITCH	OFF (NEUTRAL) → ON (UNLOCK)	5V → 0V

SEL375WE



SMART ENTRANCE CONTROL UNIT

Description (Cont'd)

System	Input	Output
Warning chime	Key switch (Insert) Ignition switch (ON) Lighting switch (1st) Seat belt switch Front door switch LH	Warning chime (located in smart entrance control unit)
Rear window defogger and door mirror defogger	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Theft warning	Ignition switch (ACC, ON) Door switches Hood switch Door lock/unlock switches Door key cylinder switches (lock/unlock) Trunk lid key cylinder switch (unlock) Door unlock sensors	Theft warning horn relay Security indicator
Interior lamp	Door switches Front door unlock sensor LH Ignition switch (ON) Key switch (Insert)	Interior lamp Key hole illumination
Battery saver control for headlamps/parking lamps/licence lamps/tail lamps/fog lamps/illumination lamps	Ignition switch (ON) Front door switches	Headlamp battery saver control unit
Battery saver control for interior lamp/trunk room lamp/spot lamp/vanity mirror illumination	Ignition switch (ON) Front door switches Lamp switches	Interior lamp Trunk room lamp Spot lamp Vanity mirror illumination
Battery saver control for rear window defogger and door mirror defogger	Ignition switch (ON) Rear window defogger switch	Rear window defogger relay
Retained power control for electric sunroof	Ignition switch (ON) Front door switches	Sunroof motor
Retained power control for power window	Ignition switch (ON) Front door switches	Power window relay

IVIS (INFINITI VEHICLE IMMOBILIZER SYSTEM — NATS)

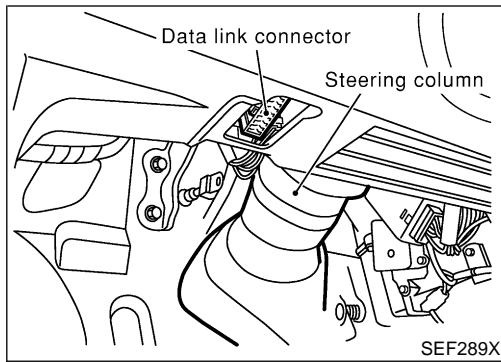
Trouble Diagnoses (Cont'd)

5	CHECK COMMUNICATION LINE OPEN CIRCUIT	
<ol style="list-style-type: none"> 1. Disconnect ECM connector. 2. Check harness continuity between ECM terminal 116 and IMMU terminal 1. 		
SEL305W		
OK or NG		
OK	▶	GO TO 6.
NG	▶	Repair harness or connector. Ref. part No. C4

6	CHECK COMMUNICATION LINE BATTERY SHORT CIRCUIT	
<ol style="list-style-type: none"> 1. Turn ignition ON. 2. Check voltage between ECM terminal 116 or IMMU terminal 1 and ground. 		
SEL306W		
OK or NG		
OK	▶	GO TO 7.
NG	▶	Communication line is short-circuited with battery voltage line or ignition switch ON line. Repair harness or connectors. Ref. part No. C4

INFINITI COMMUNICATOR (IVCS)

CONSULT-II



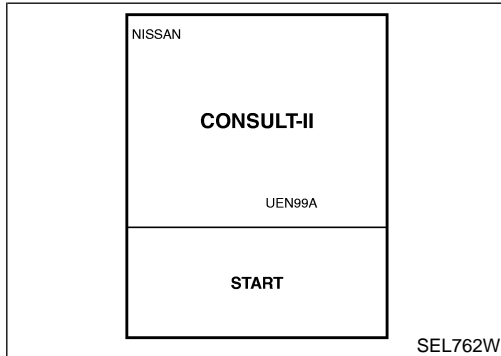
CONSULT-II

CONSULT-II INSPECTION PROCEDURE

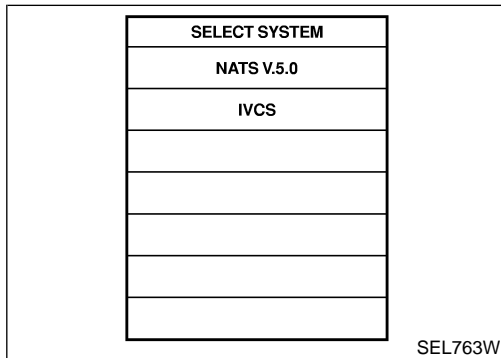
NHEL0288

NHEL0288S01

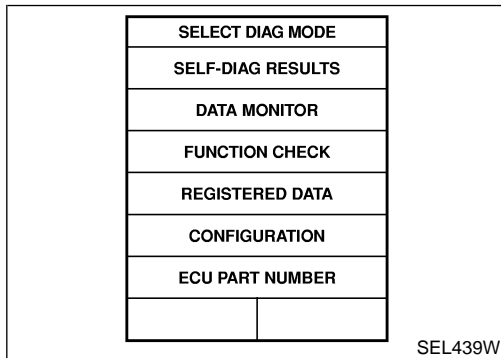
1. Turn ignition switch "OFF".
2. Connect CONSULT-II to the data link connector.



3. Insert UEN99A program card into CONSULT-II.
4. Turn ignition switch "ON".
5. Touch "START".



6. Touch "IVCS".



7. Perform each diagnostic item according to the item application chart as follows:

8. When CONSULT-II inspection is terminated, follow the procedure shown below.
 - a. Touch "BACK" key of CONSULT-II until "SELECT SYSTEM" appears, then turn off CONSULT-II.
 - b. Turn ignition switch to OFF position.
 - c. Disconnect CONSULT-II DDL connector.

NOTE:

If the DDL connector is disconnected before turning ignition switch to "OFF" position, INFINITI communicator may not operate properly.

INFINITI COMMUNICATOR (IVCS)

System Setting (When IVCS Unit is Replaced) (Cont'd)

NOTE:

If an unavailable number is input as “SYS ID”, “GR ID” or “OVERLOAD CLASS”, CONSULT-II may be locked. In such cases, disconnect the vehicle battery cable once and then setup the system again.

5. Touch “ENTER”.

PHONE SETUP	
SYS.ID:	
11111	
GR.ID:	
11	
OVERLOAD CLASS:	
11	
THE ABOVE DATA WILL BE PROGRAMMED. OK?	
CANCEL	OK
Scroll Down	

SEL465W

6. Touch “OK”.

7. Carry out the next system setting or contact Communicator Response Center and inform them that data has been updated or IVCS unit has been replaced. For details, refer to EL-453.

NOTE:

Whenever the phone number is updated or the IVCS unit is replaced, the INFINITI Communicator system automatically contacts the Communicator Response Center the first time the vehicle is started.

SELECT ITEM
PHONE SETUP
PHONE NUMBER
VEHICLE TRACKING
ALARM NOTIFICATION
DEMO MODE

SEL466W

STOLEN VEHICLE TRACKING/ALARM NOTIFICATION SETTING CHECK

NHEL0292S05

1. Touch “CONFIGURATION”.

2. Touch “VEHICLE TRACKING” or “ALARM NOTIFICATION”.

ALARM NOTIFICATION	
CURRENT SETTING IS	
ON	
ALARM NOTIFICATION FUNCTION IS ACTIVE.	
OFF	PRINT

SEL467W

3. This function should always be “ON” (function activate).

NOTE:

- If either setting is “OFF”, contact the Communicator Response Center at 1-888-427-4812 to verify the system setting.

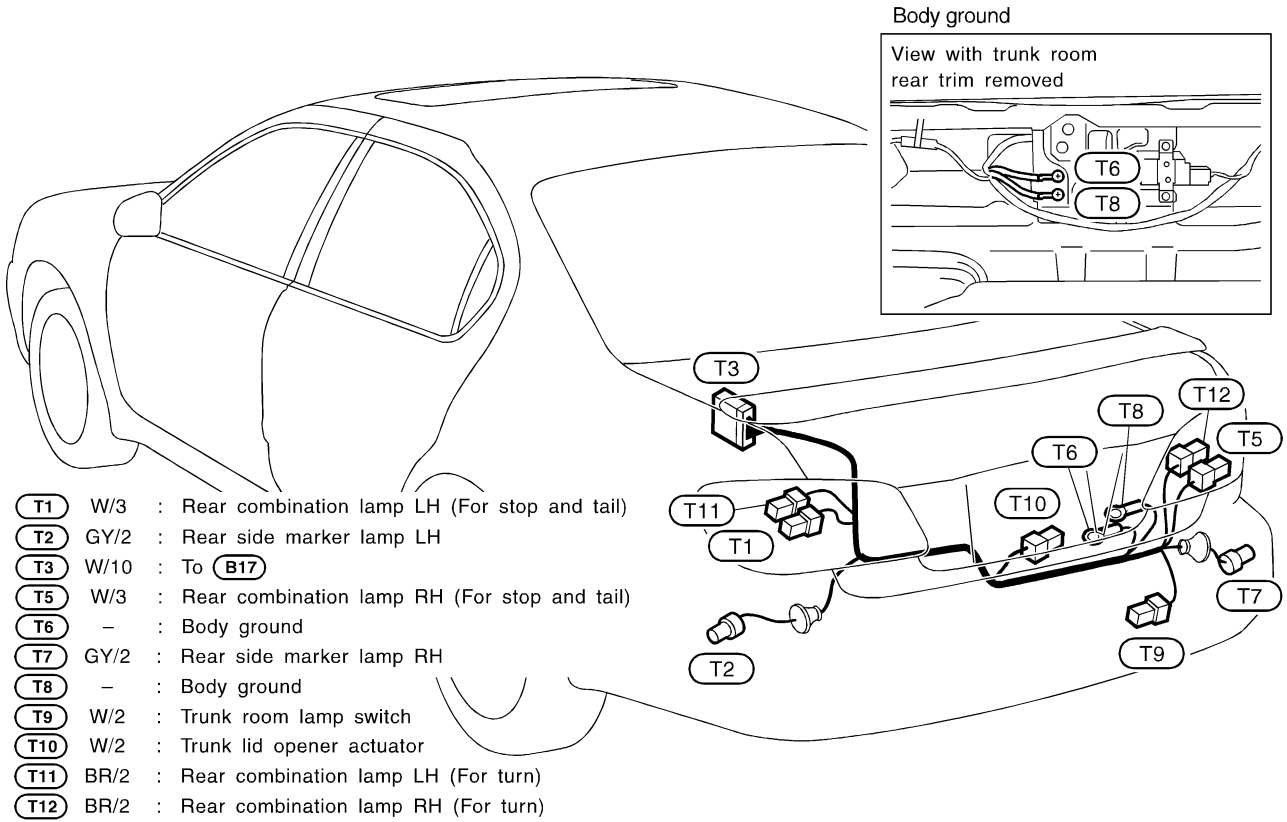
- Whenever dialing the above number, information about the vehicle is required by the operator. For details, refer to EL-421.

HARNESS LAYOUT

Tail Harness

Tail Harness

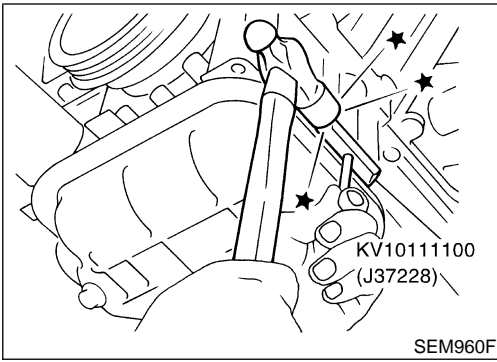
NHEL0138



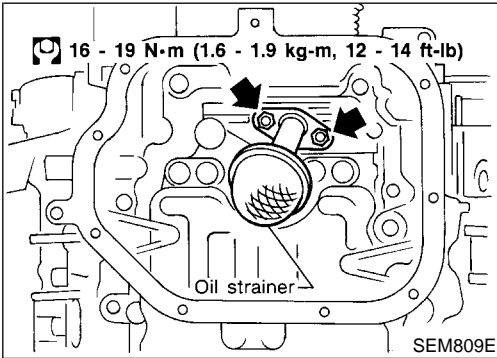
MEL638K

OIL PAN

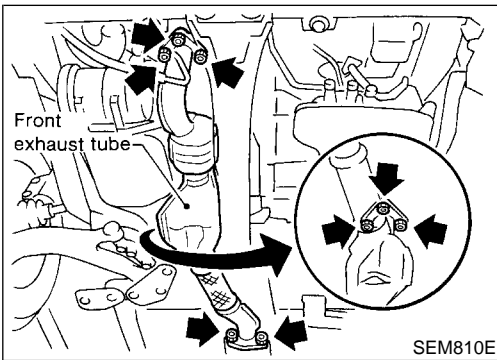
Removal (Cont'd)



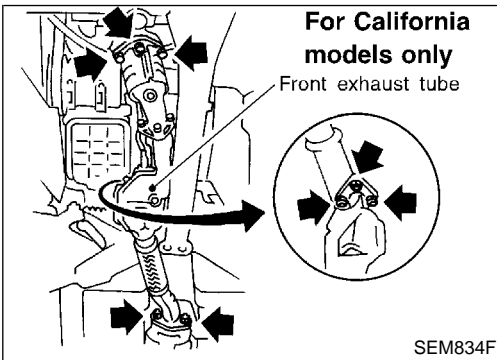
- b. Slide Tool by tapping on the side of the Tool with a hammer.
- c. Remove steel oil pan.



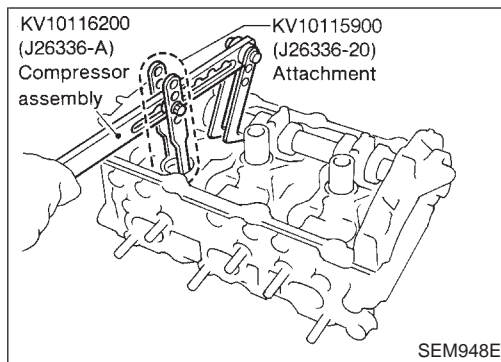
5. Remove oil strainer.



6. Remove front exhaust tube and its support. Refer to FE-11, "Removal and Installation".



Replacement



Replacement

NHEM0015

CAUTION:

When removing the oil pans, oil pump assembly and timing chain from engine, first remove the camshaft position sensor (PHASE) and the crankshaft position sensors (REF)/(POS) from the assembly.

Be careful not to damage sensor edges.

VALVE OIL SEAL

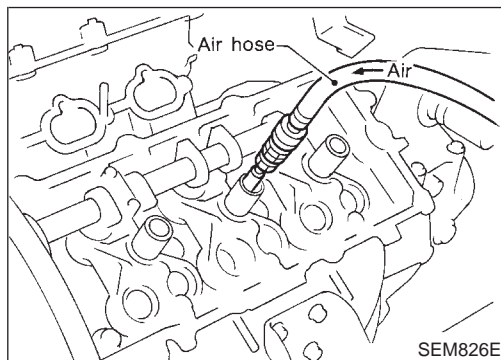
NHEM0015S01

1. Remove LH ornament cover.
2. Remove RH and LH ignition coils.
3. Remove EGR guide tube.
4. Remove intake manifold collector supports and intake manifold collector (RH cylinder head only).
5. Remove RH and LH rocker covers from cylinder head.
6. Remove camshaft position sensor (PHASE) and crankshaft position sensors (REF)/(POS).
7. Remove oil pan. Refer to "Removal", EM-13.
8. Remove timing chain. Refer to "Removal, EM-23.
9. Remove camshaft brackets and camshaft. Refer to "Disassembly", EM-40.
10. Remove valve lifters and shims.
11. Remove valve spring with Tool.
12. Reinstall any parts removed in reverse order of removal.

Before removing valve spring, fix valve as follows.

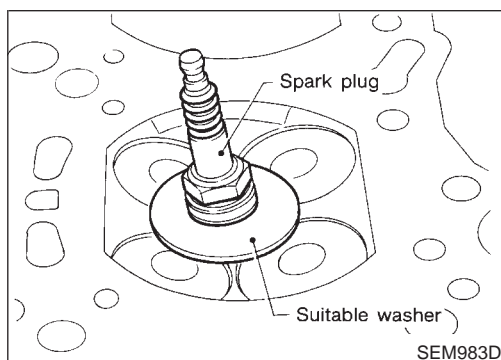
Method A:

Piston concerned should be set at TDC to prevent valve from falling.



Method B:

Remove spark plug, then install air hose adapter into spark plug hole and apply air pressure to hold valves in place. Apply a pressure of 490 kPa (5 kg/cm², 71 psi).



Method C:

Install spark plug with suitable washer into spark plug hole from combustion chamber side.

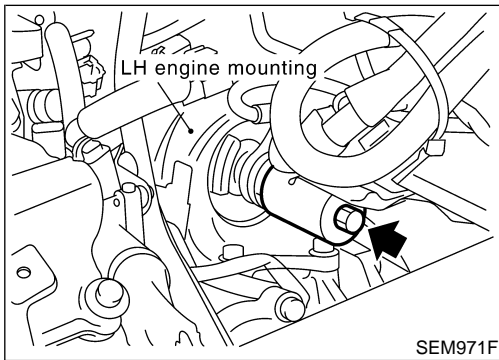
ENGINE ASSEMBLY

Removal and Installation (Cont'd)

- Before disconnecting fuel hose, release fuel pressure from fuel line.
Refer to EC-51, "Fuel Pressure Release".
- Before removing front axle from transaxle, place safety stands under designated front supporting points. Refer to GI-47, "Garage Jack and Safety Stand".
- Be sure to hoist engine and transaxle in a safe manner.
- For engines not equipped with engine slingers, attach proper slingers and bolts described in PARTS CATALOG.

CAUTION:

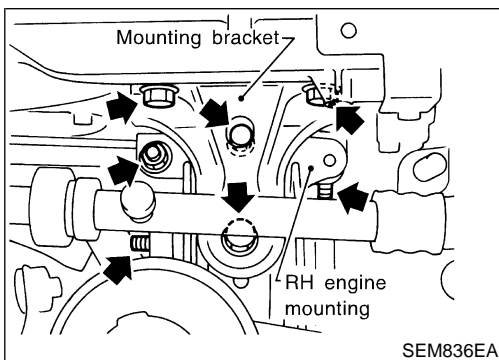
- When lifting engine, be careful not to strike adjacent parts, especially the following: Accelerator wire casing, brake lines, and brake master cylinder.
- In hoisting the engine, always use engine slingers in a safe manner.
- In removing drive shaft, be careful not to damage grease seal of transaxle.
- Before separating engine and transaxle, remove the crankshaft position sensor (POS) from the assembly.
- Always pay extra attention not to damage edge of crankshaft position sensor (POS) or ring gear teeth.



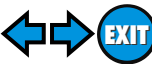
REMOVAL

NHEM0023S01

1. Remove engine undercover and hood.
2. Drain coolant from both cylinder block and radiator. Refer to MA-14, "Changing Engine Coolant".
3. Remove vacuum hoses, fuel hoses, wires, harnesses, connectors and so on.
4. Remove front exhaust tubes, ball joints and drive shafts.
5. Remove radiator and fans.
6. Remove drive belts.
7. Remove alternator, compressor and power steering oil pump from engine.
8. Set a suitable transmission jack under transaxle. Hoist engine with engine slinger.
9. Remove LH engine mounting.
10. Disconnect control cable from transaxle.



11. Remove RH engine mounting.



SERVICE DATA AND SPECIFICATIONS (SDS)

Piston, Piston Ring and Piston Pin (Cont'd)

PISTON RING

^{NHEM0036S02}
Unit: mm (in)

		Standard	Limit
Side clearance	Top	0.040 - 0.080 (0.0016 - 0.0031)	0.11 (0.0043)
	2nd	0.030 - 0.070 (0.0012 - 0.0028)	0.1 (0.004)
	Oil ring	0.015 - 0.185 (0.0006 - 0.0073)	—
End gap	Top	0.22 - 0.32 (0.0087 - 0.0126)	0.55 (0.0217)
	2nd	0.32 - 0.47 (0.0126 - 0.0185)	0.85 (0.0335)
	Oil (rail ring)	0.20 - 0.60 (0.0079 - 0.0236)	0.95 (0.0374)

PISTON PIN

^{NHEM0036S03}
Unit: mm (in)

Piston pin outer diameter	Grade No. 0	21.989 - 21.995 (0.8657 - 0.8659)
	Grade No. 1	21.995 - 22.001 (0.8659 - 0.8662)
Interference fit of piston pin to piston		0.002 - 0.006 (0.0001 - 0.0002)
Piston pin to connecting rod bushing clearance	Standard	0.005 - 0.017 (0.0002 - 0.0007)
	Limit	0.030 (0.0012)

*: Values measured at ambient temperature of 20°C (68°F)

Connecting Rod

^{NHEM0037}
Unit: mm (in)

Center distance		147.60 - 147.70 (5.8110 - 5.8149)
Bend [per 100 (3.94)]	Limit	0.15 (0.0059)
Torsion [per 100 (3.94)]	Limit	0.30 (0.0118)
Connecting rod small end inner diameter		23.980 - 24.000 (0.9441 - 0.9449)
Piston pin bushing inner diameter*	Grade No. 0	22.000 - 22.006 (0.8661 - 0.8664)
	Grade No. 1	22.006 - 22.012 (0.8664 - 0.8666)
Connecting rod big end inner diameter		48.000 - 48.013 (1.8898 - 1.8903)
Side clearance	Standard	0.20 - 0.35 (0.0079 - 0.0138)
	Limit	0.40 (0.0157)

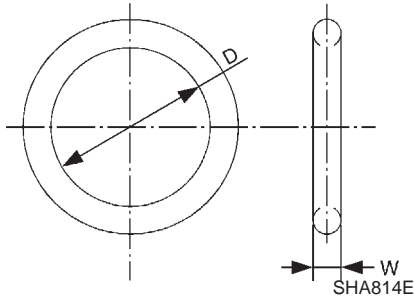
*: After installing in connecting rod

PRECAUTIONS

Precautions for Refrigerant Connection (Cont'd)

O-Ring Part Numbers and Specifications

NHHA0156S0201



Connection type	O-ring size	Part number	D mm (in)	W mm (in)
New	8	92471 N8210	6.8 (0.268)	1.85 (0.0728)
Former		92470 N8200	6.07 (0.2390)	1.78 (0.0701)
New	12	92472 N8210	10.9 (0.429)	2.43 (0.0957)
Former		92475 71L00	11.0 (0.433)	2.4 (0.094)
New	16	92473 N8210	13.6 (0.535)	2.43 (0.0957)
Former		92475 72L00	14.3 (0.563)	2.3 (0.0906)
New	19	92474 N8210	16.5 (0.650)	2.43 (0.0957)
Former		92477 N8200	17.12 (0.6740)	1.78 (0.0701)

WARNING:

Make sure all refrigerant is discharged into the recycling equipment and the pressure in the system is less than atmospheric pressure. Then gradually loosen the discharge side hose fitting and remove it.

CAUTION:

When replacing or cleaning refrigerant cycle components, observe the following.

- When the compressor is removed, store it in the same position as it is when mounted on the car. Failure to do so will cause lubricant to enter the low pressure chamber.
- When connecting tubes, always use a torque wrench and a back-up wrench.
- After disconnecting tubes, immediately plug all openings to prevent entry of dirt and moisture.
- When installing an air conditioner in the vehicle, connect the pipes as the final stage of the operation. Do not remove the seal caps of pipes and other components until just before required for connection.
- Allow components stored in cool areas to warm to working area temperature before removing seal caps. This prevents condensation from forming inside A/C components.
- Thoroughly remove moisture from the refrigeration system before charging the refrigerant.
- Always replace used O-rings.
- When connecting tube, apply lubricant to circle of the O-rings shown in illustration. Be careful not to apply lubricant to threaded portion.
Lubricant name: Nissan A/C System Oil Type S
Part number: KLH00-PAGS0
- O-ring must be closely attached to dented portion of tube.
- When replacing the O-ring, be careful not to damage O-ring and tube.
- Connect tube until you hear it click, then tighten the nut or bolt by hand until snug. Make sure that the O-ring is installed to tube correctly.
- After connecting line, conduct leak test and make sure that there is no leakage from connections. When the gas leaking point is found, disconnect that line and replace the O-ring. Then tighten connections of seal seat to the specified torque.

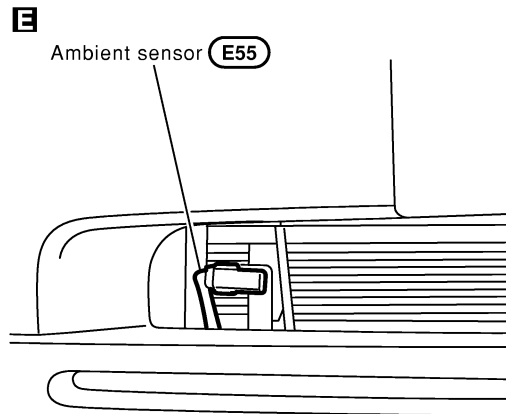
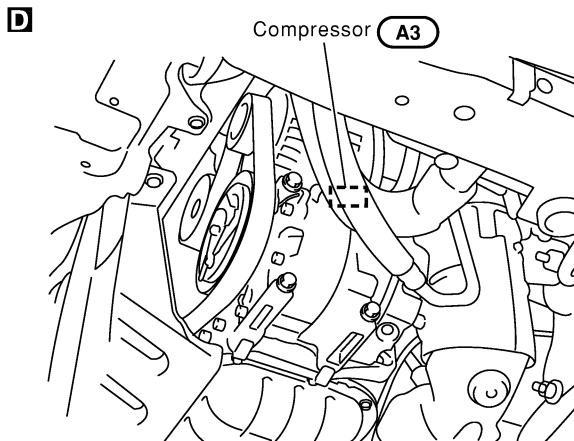
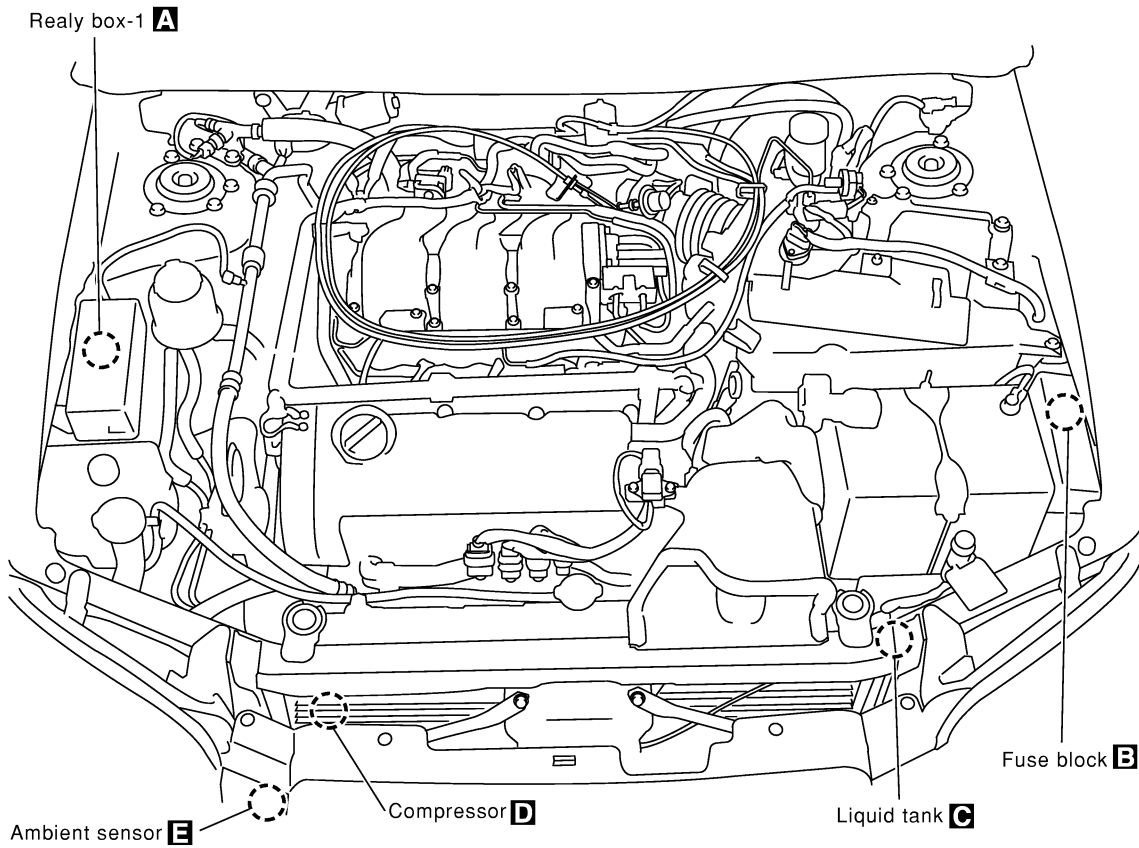
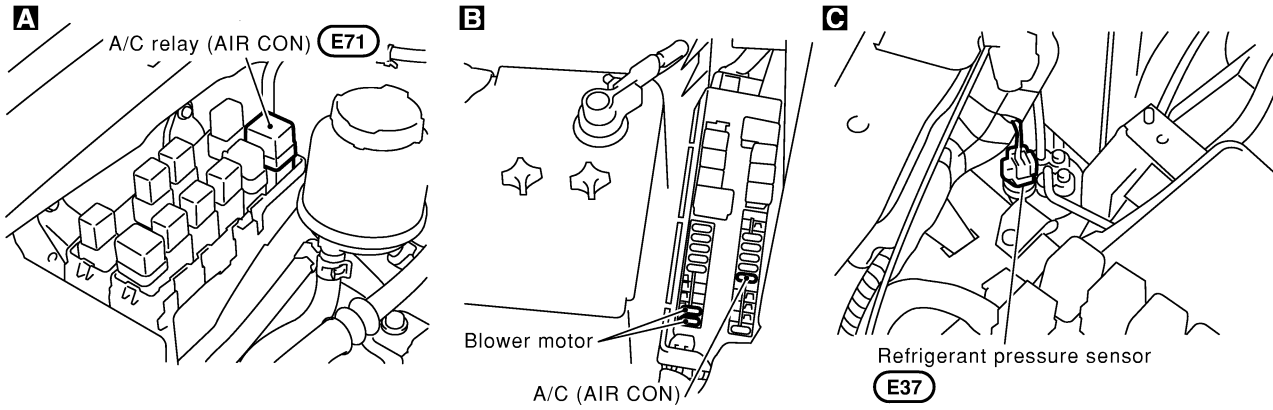
TROUBLE DIAGNOSES

Component Location

Component Location ENGINE COMPARTMENT

NHHA0172

NHHA0172S01



RHA453H

TROUBLE DIAGNOSES

A/C System

A/C System

TRouble Diagnosis Procedure for A/C System

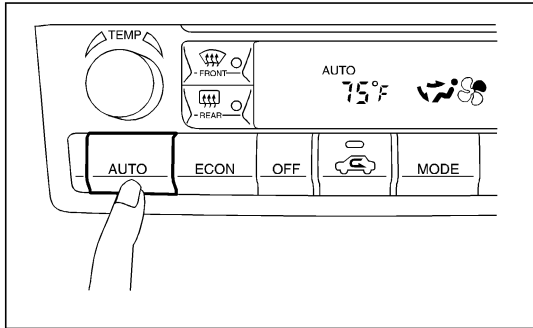
=NHHA0179

SYMPTOM:

- A/C system does not come on.

INSPECTION FLOW

1. Confirm symptom by performing the following operational check.



OPERATIONAL CHECK – AUTO mode

- Press AUTO switch.
- Display should indicate AUTO (not ECON). Confirm that the compressor clutch engages (audio or visual inspection). (Discharge air and blower speed will depend on ambient, in-vehicle, and temperatures switch.)

If OK (symptom cannot be duplicated), perform complete operational check (*2).
If NG (symptom is confirmed), continue with STEP-2 following.

2. Check for any service bulletins.

3. Check Main Power Supply and Ground Circuit. (*1)

OK

Go to A/C System Circuit. (*3)

OK

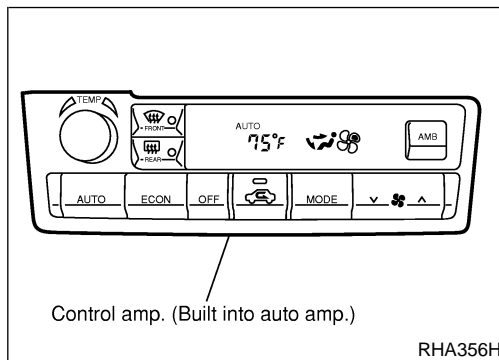
4. Replace auto amp.

RHA367H

*1: HA-51

*2: HA-47

*3: HA-51



COMPONENT DESCRIPTION

Automatic Amplifier (Auto Amp.)

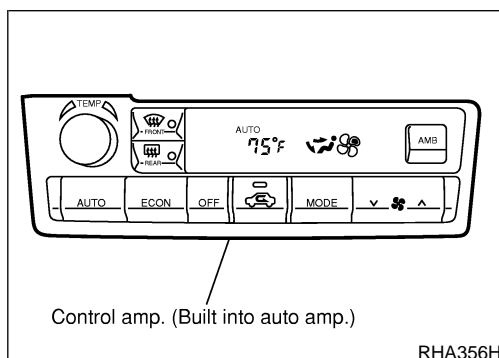
NHHA0247

NHHA0247S01

The auto amplifier has a built-in microcomputer which processes information sent from various sensors needed for air conditioner operation. The air mix door motor, mode door motor, intake door motor, blower motor and compressor are then controlled.

The auto amplifier is unitized with control mechanisms. Signals from various switches and Potentio Temperature Control (PTC) are directly entered into auto amplifier.

Self-diagnostic functions are also built into auto amplifier to provide quick check of malfunctions in the auto air conditioner system.



Potentio Temperature Control (PTC)

NHHA0247S02

The PTC is built into the A/C auto amp. It can be set at an interval of 0.5°C (1.0°F) in the 18°C (65°F) to 32°C (85°F) temperature range by pushing the temperature button. The set temperature is digitally displayed.

TROUBLE DIAGNOSES

Blower Motor (Cont'd)

7	CHECK POWER SUPPLY FOR AUTO AMP.	
<p>Do approx. 12 volts exist between auto amp. harness terminal No. 34 and body ground?</p> <div style="text-align: center;"> </div> <p style="text-align: right;">SHA370F</p> <p style="text-align: center;">Yes or No</p>		
Yes	▶	<ol style="list-style-type: none"> 1. Replace auto amp. 2. Go to "FUNCTION CONFIRMATION PROCEDURE", "Self-diagnosis", HA-37 and perform self-diagnosis STEP-4. Confirm that blower motor operation is normal.
No	▶	GO TO 10.

8	CHECK POWER SUPPLY FOR BLOWER MOTOR	
<p>Disconnect blower motor harness connector.</p> <p>Do approx. 12 volts exist between blower motor harness terminal No. 1 and body ground?</p> <div style="text-align: center;"> </div> <p style="text-align: right;">RHA091GE</p> <p style="text-align: center;">Yes or No</p>		
Yes	▶	GO TO 9.
No	▶	<p>Check power supply circuit and 15A fuses (No. 51 and 52, located in the fuse block).</p> <ul style="list-style-type: none"> ● Check blower motor relay. ● If OK, check for open circuit in wiring harness. Repair or replace as necessary. ● If NG, replace fuse and check wiring harness for short circuit. Repair or replace as necessary.

TROUBLE DIAGNOSES

Ambient Sensor Circuit (Cont'd)

AMBIENT TEMPERATURE INPUT PROCESS

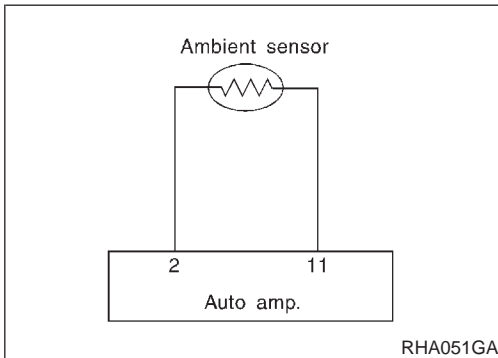
NHHA0215

The automatic amplifier includes a "processing circuit" for the ambient sensor input. However, when the temperature detected by the ambient sensor increases quickly, the processing circuit retards the auto amp. function. It only allows the auto amp. to recognize an ambient temperature increase of 0.33°C (0.6°F) per 100 seconds. As an example, consider stopping for a cup of coffee after high speed driving. Although the actual ambient temperature has not changed, the temperature detected by the ambient sensor will increase. This is because the heat from the engine compartment can radiate to the front grille area, location of the ambient sensor.

DIAGNOSTIC PROCEDURE

NHHA0216

SYMPTOM: Ambient sensor circuit is open or shorted. ($\overline{2}$! or $\overline{2}$! is indicated on the display as a result of conducting Self-diagnosis STEP 2.)



RHA051GA

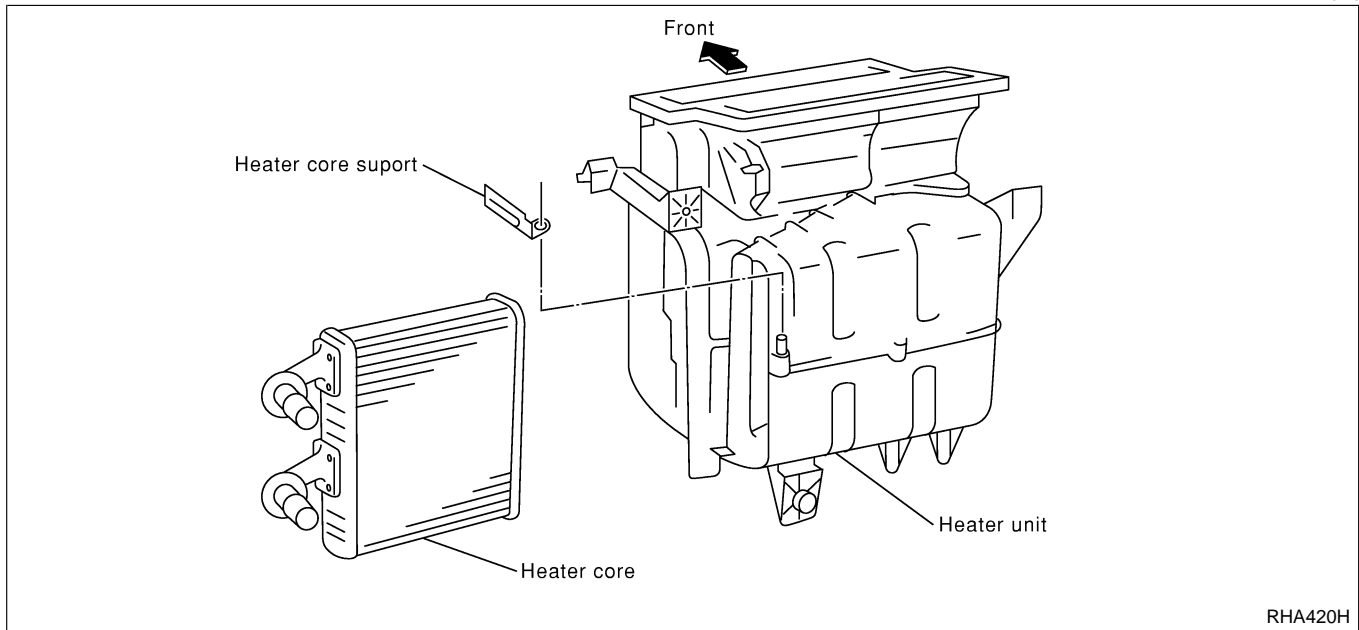
1	CHECK VOLTAGE BETWEEN AMBIENT SENSOR HARNESS CONNECTOR AND BODY GROUND	
<p>Disconnect ambient sensor harness connector. Do approx. 5 volts exist between ambient sensor harness terminal No. 1 and body ground?</p>		
RHA052GE		
Yes or No		
Yes	▶	GO TO 2.
No	▶	GO TO 4.

SERVICE PROCEDURE

Heater Unit (Heater Core)

Heater Unit (Heater Core) REMOVAL

NHHA0249



RHA420H

1. Drain the cooling system. Refer to MA-14, "Changing Engine Coolant".
2. Disconnect the two heater hoses from inside the engine compartment.
3. Remove the Blower and cooling unit. Refer to HA-117.
4. Remove the steering member assembly. Refer to BT-28, "Instrument Panel Assembly".
5. Remove the heater unit.
6. Remove the heater core.

INSTALLATION

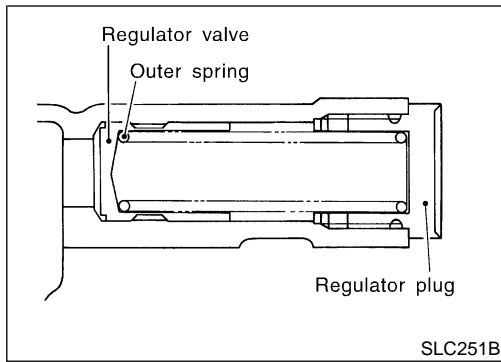
NHHA0250

Installation is basically the reverse order of removal.

When filling radiator with coolant, refer to MA-14, "Changing Engine Coolant".

ENGINE LUBRICATION SYSTEM

Oil Pump (Cont'd)

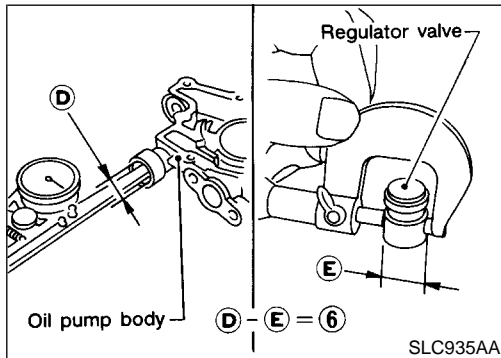


REGULATOR VALVE INSPECTION

NHLC0008

1. Visually inspect components for wear and damage.
2. Check oil pressure regulator valve sliding surface and valve spring.
3. Coat regulator valve with engine oil. Check that it falls smoothly into the valve hole by its own weight.

If damaged, replace regulator valve set or oil pump body.

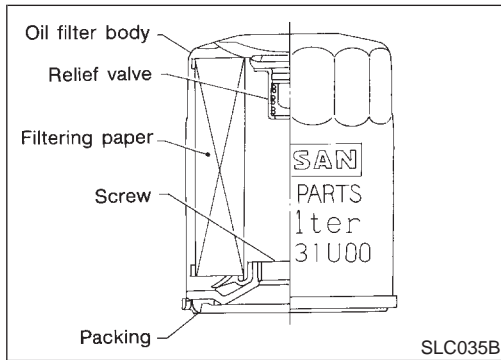


4. Check regulator valve to oil pump body clearance.

Clearance:

6 : 0.040 - 0.097 mm (0.0016 - 0.0038 in)

If it exceeds the limit, replace oil pump body.



OIL FILTER

NHLC0009

The oil filter is a small, full-flow cartridge type and is provided with a relief valve.

- Use Tool specified in MA-18 for changing oil filter.

Service Data and Specifications (SDS)

OIL PRESSURE

NHLC0010

Engine speed rpm	Approximate discharge pressure kPa (kg/cm ² , psi)
Idle speed 2,000	More than 98 (1.0, 14) 390 (3.98, 56.6)

REGULATOR VALVE

NHLC0011

Unit: mm (in)

Regulator valve to oil pump cover clearance	0.040 - 0.097 (0.0016 - 0.0038)
---	---------------------------------

OIL PUMP

NHLC0012

Unit: mm (in)

Body to outer rotor radial clearance	0.114 - 0.200 (0.0045 - 0.0079)
Inner rotor to outer rotor tip clearance	Below 0.18 (0.0071)
Body to inner rotor axial clearance	0.030 - 0.070 (0.0012 - 0.0028)
Body to outer rotor axial clearance	0.050 - 0.110 (0.0020 - 0.0043)
Inner rotor to brazed portion of housing clearance	0.045 - 0.091 (0.0018 - 0.0036)

PERIODIC MAINTENANCE

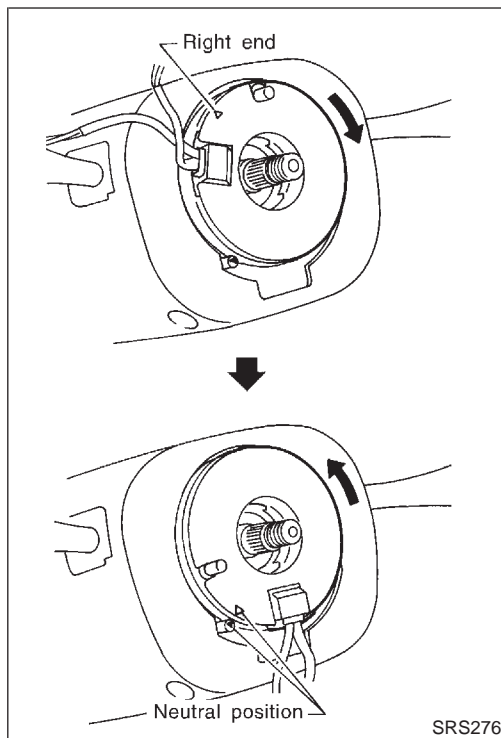
Two different maintenance schedules are provided, and should be used, depending upon the conditions in which the vehicle is mainly operated. **After 60,000 miles (96,000 km) or 48 months, continue the periodic maintenance at the same mileage/time intervals.**

Schedule 1	<p>Follow Periodic Maintenance Schedule 1 if the driving habits frequently include one or more of the following driving conditions:</p> <ul style="list-style-type: none"> ● Repeated short trips of less than 5 miles (8 km). ● Repeated short trips of less than 10 miles (16 km) with outside temperatures remaining below freezing. ● Operating in hot weather in stop-and-go “rush hour” traffic. ● Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use. ● Driving in dusty conditions. ● Driving on rough, muddy, or salt spread roads. ● Towing a trailer, using a camper or a car-top carrier. 	Emission Control System Maintenance	MA-7
		Chassis and Body Maintenance	MA-8
Schedule 2	<p>Follow Periodic Maintenance Schedule 2 if none of driving conditions shown in Schedule 1 apply to the driving habits.</p>	Emission Control System Maintenance	MA-9
		Chassis and Body Maintenance	MA-10

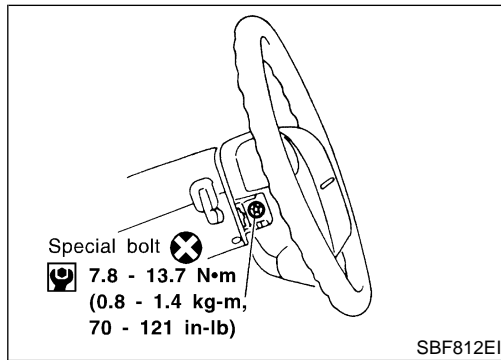
NOTES

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

Driver Air Bag Module and Spiral Cable (Cont'd)



SRS276



SBF812EI

INSTALLATION

NHRS0017

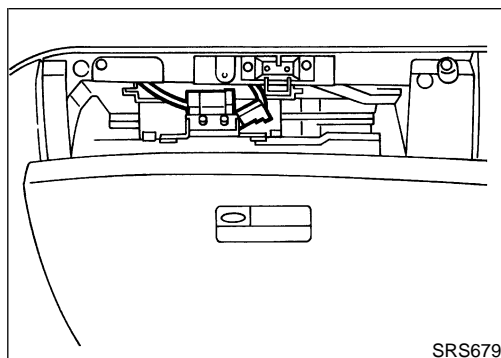
1. Set the front wheels in the straight-ahead position.
2. Make sure that the spiral cable is in the neutral position. The neutral position is detected by turning left about 2.5 revolutions from the right end position. Align the two marks (X).

CAUTION:

- The spiral cable may snap due to steering operation if the cable is installed in an improper position.
- Also, with the steering linkage disconnected, the cable may snap by turning the steering wheel beyond the limited number of turns. The spiral cable can be turned to the left about 2.5 turns from the right end position.

3. Connect spiral cable connector and tighten with screws. Install steering column cover.
4. Install steering wheel, aligning with spiral cable pin guides, and pull spiral cable through.
5. Connect horn connector and engage spiral cable with pawls in steering wheel. Move air bag module connector away from steering wheel lower lid opening.
6. Tighten nut.
 - ⚙️ : 29.4 - 39.2 N·m (3.0 - 4.0 kg·m, 22 - 28 ft·lb)
7. Install dynamic damper.

8. Position air bag module and tighten with new special bolts.
9. Connect air bag module connector.
10. Install steering switches and lids.
11. Conduct self-diagnosis to ensure entire SRS operates properly. (Use CONSULT-II or warning lamp check.) Before performing self-diagnosis, connect both battery cables.
12. Turn steering wheel to the left end and then to the right end fully to make sure that spiral cable is set in the neutral position. If air bag warning lamp blinks or stays ON (at the user mode), it shows the spiral cable may be snapped due to its improper position. Perform self-diagnosis again (use CONSULT-II or warning lamp). If a malfunction is detected, replace the spiral cable with a new one.
13. Perform self-diagnosis again to check that no malfunction is detected.



SRS679

Front Passenger Air Bag Module

REMOVAL

NHRS0018

CAUTION:

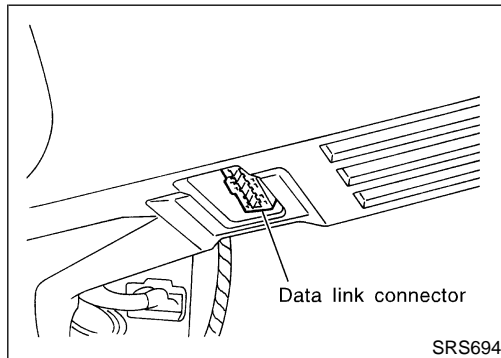
- Before servicing SRS, turn the ignition switch off, disconnect both battery cables and wait for at least 3 minutes.
 - Always work from the side of or under air bag module.
1. Open the glove box lid.
 2. Open the connector cover.
 3. Disconnect front passenger air bag module connector from air bag harness connector.

SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

SRS Operation Check (Cont'd)

"SEAT BELT" warning lamp operation	SRS condition	Reference item
	Meter fuse, diagnosis sensor unit or "SEAT BELT" warning lamp circuit is shorted or open and needs to be repaired.	Go to DIAGNOSTIC PROCEDURE 13 (RS-66).

* Follow the procedures in numerical order when repairing malfunctioning parts. Confirm whether malfunction is eliminated using the seat belt warning lamp each time repair is finished. If malfunction is still observed, proceed to the next step. When malfunction is eliminated, further repair work is not required.



Ⓜ Trouble Diagnoses with CONSULT-II

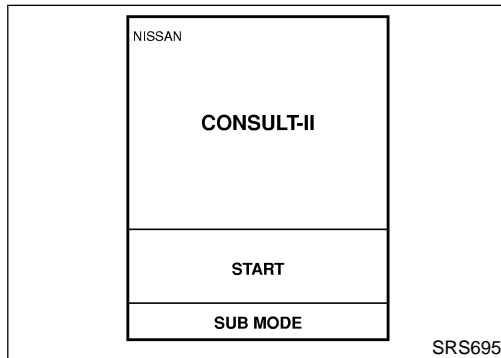
NHRS0028

DIAGNOSTIC PROCEDURE 2

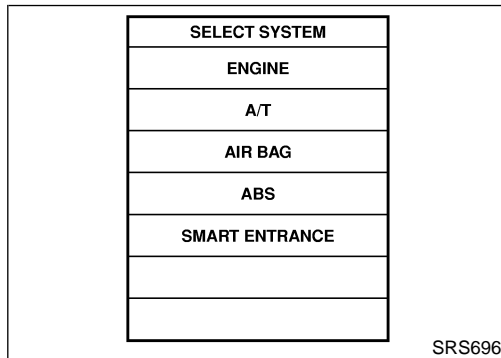
NHRS0028S01

Inspecting SRS malfunctioning parts by using CONSULT-II — Diagnosis mode

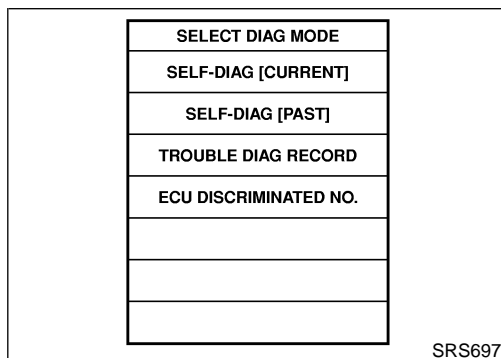
1. Turn ignition switch "OFF".
2. Connect CONSULT-II to data link connector.
3. Turn ignition switch "ON".
4. Touch "START".



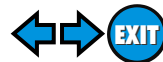
5. Touch "AIR BAG".



6. Touch "SELF-DIAG [CURRENT]".



SUPPLEMENTAL RESTRAINT SYSTEM (SRS)





Trouble Diagnoses: "SEAT BELT" Warning Lamp Does Not Turn On

Trouble Diagnoses: "SEAT BELT" Warning Lamp Does Not Turn On

=NHRS0038

NHRS0038S01

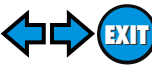
DIAGNOSTIC PROCEDURE 13

1	CHECK WARNING LAMP FUSE																																		
Is meter fuse OK?																																			
 UP SIDE		<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																																	
SRS774																																			
OK or NG																																			
OK	▶	GO TO 3.																																	
NG	▶	GO TO 2.																																	

2	CHECK WARNING LAMP FUSE AGAIN	
Replace meter fuse and turn ignition switch ON. Is meter fuse blown again?		
Yes or No		
Yes	▶	Repair main harness.
No	▶	INSPECTION END

3	CHECK WARNING LAMP BULB	
Is warning lamp bulb OK?		
OK or NG		
OK	▶	GO TO 4.
NG	▶	Replace warning lamp bulb.

4	REPLACE DIAGNOSIS SENSOR UNIT	
1. Visually check the wiring harness connections. 2. Replace the diagnosis unit. 3. Fasten the seat belt. 4. Turn ignition switch to ON position. Does the "SEAT BELT" warning lamp illuminate for about 7 seconds and then turn off?		
Yes or No		
Yes	▶	INSPECTION END
No	▶	GO TO 5.



PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

NHST0001

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER" used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The SRS system composition which is available to INFINITI I30 is as follows:

- For a frontal collision
The Supplemental Restraint System consists of driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), seat belt pre-tensioners, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.
- For a side collision
The Supplemental Restraint System consists of front side air bag module (located in the outer side of front seat), satellite sensor, diagnosis sensor unit (one of components of air bags for a frontal collision), wiring harness, warning lamp (one of components of air bags for a frontal collision).

Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance should be performed by an authorized INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by intentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the RS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. Spiral cable and wiring harnesses covered with yellow insulation tape either just before the harness connectors or for the complete harness are related to the SRS.**

Precautions for Steering System

NHST0003

- Before disassembly, thoroughly clean the outside of the unit.
- Disassembly should be done in a clean work area. It is important to prevent the internal parts from becoming contaminated by dirt or other foreign matter.
- Place disassembled parts in order, on a parts rack, for easier and proper assembly.
- Use nylon cloths or paper towels to clean the parts; common shop rags can leave lint that might interfere with their operation.
- Before inspection or reassembly, carefully clean all parts with a general purpose, non-flammable solvent.
- Before assembly, apply a coat of recommended power steering fluid* to hydraulic parts. Vaseline may be applied to O-rings and seals. Do not use any grease.
- Replace all gaskets, seals and O-rings. Avoid damaging O-rings, seals and gaskets during installation. Perform functional tests whenever designated.

*: Genuine Nissan PSF II or equivalent. Refer to MA-11, "Fluids and Lubricants".

POWER STEERING GEAR AND LINKAGE

Adjustment (Cont'd)

Average rack sliding force:

216 - 284 N (22 - 29 kg, 49 - 64 lb)

Maximum force deviation:

98 N (10 kg, 22 lb)

- g. Check sliding force outside above range at rack speed of 40 mm (1.57 in)/s.

Maximum rack sliding force:

294 N (30 kg, 66 lb)

Maximum force deviation:

147 N (15 kg, 33 lb)

- If rack sliding force is not within specification, readjust by repeating adjustment procedure from the beginning.
- If rack sliding force is still out of specification after readjustment, gear assembly needs to be replaced.

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