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QUICK REFERENCE INDEX



Q45
MODEL F50 SERIES



INFINITI®

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A GENERAL INFORMATION	GI General Information
B ENGINE	EM Engine Mechanical
	LU Engine Lubrication System
	CO Engine Cooling System
	EC Engine Control System
	FL Fuel System
	EX Exhaust System
	ACC Accelerator Control System
C TRANSMISSION/ TRANSAXLE	AT Automatic Transmission
D DRIVELINE/AXLE	PR Propeller Shaft
	RFD Rear Final Drive
	FAX Front Axle
	RAX Rear Axle
E SUSPENSION	FSU Front Suspension
	RSU Rear Suspension
	WT Road Wheels & Tires
	SCS Suspension Control System
F BRAKES	BR Brake System
	PB Parking Brake System
	BRC Brake Control System
G STEERING	PS Power Steering System
	STC Steering Control System
H RESTRAINTS	SB Seat Belts
	SRS Supplemental Restraint System (SRS)
I BODY	BL Body, Lock & Security System
	GW Glasses, Window System & Mirrors
	RF Roof
	EI Exterior & Interior
	IP Instrument Panel
	SE Seat
J AIR CONDITIONER	ATC Automatic Air Conditioner
K ELECTRICAL	SC Starting & Charging System
	LT Lighting System
	DI Driver Information System
	WW Wiper, Washer & Horn
	LAN LAN System
	AV Audio, Visual,Navigation & Telephone System
	ACS Auto Cruise Control System
	PG Power Supply, Ground & Circuit Elements
L MAINTENANCE	MA Maintenance
M INDEX	IDX Alphabetical Index

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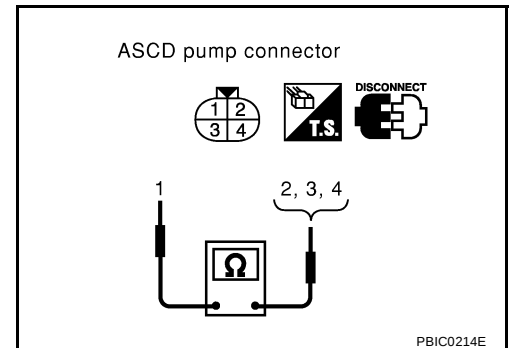
CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

ASCD PUMP CIRCUIT CHECK

1. CHECK ASCD PUMP

1. Disconnect ASCD pump connector.
2. Measure resistance between ASCD pump terminals 1 and 2, 3, 4.

Terminals		Resistance [Ω]
1	2	Approx. 65
	3	Approx. 65
	4	Approx. 3



Refer to wiring diagram in [ACS-11, "FIG. 4"](#) .

OK or NG

- OK >> GO TO 2.
 NG >> Replace ASCD pump.

2. CHECK ASCD PUMP CIRCUIT

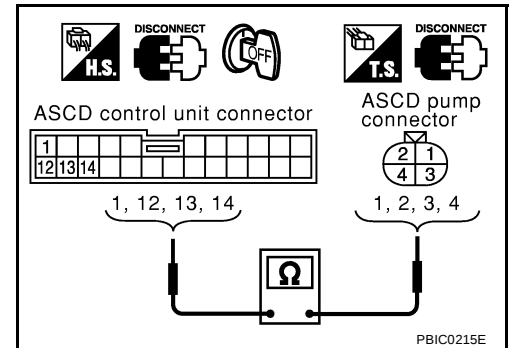
1. Disconnect ASCD control unit harness connector.
2. Check harness for open or short between ASCD control unit and ASCD pump.

Circuit	Terminal (Wire color)	
	ASCD control unit	ASCD pump
ASCD pump power supply	12 (R/L)	1 (R/L)
Air valve	13 (L/R)	2 (L/R)
Release valve	1 (L/Y)	3 (L/Y)
Vacuum motor	14 (W/R)	4 (W/R)

Continuity should exist.

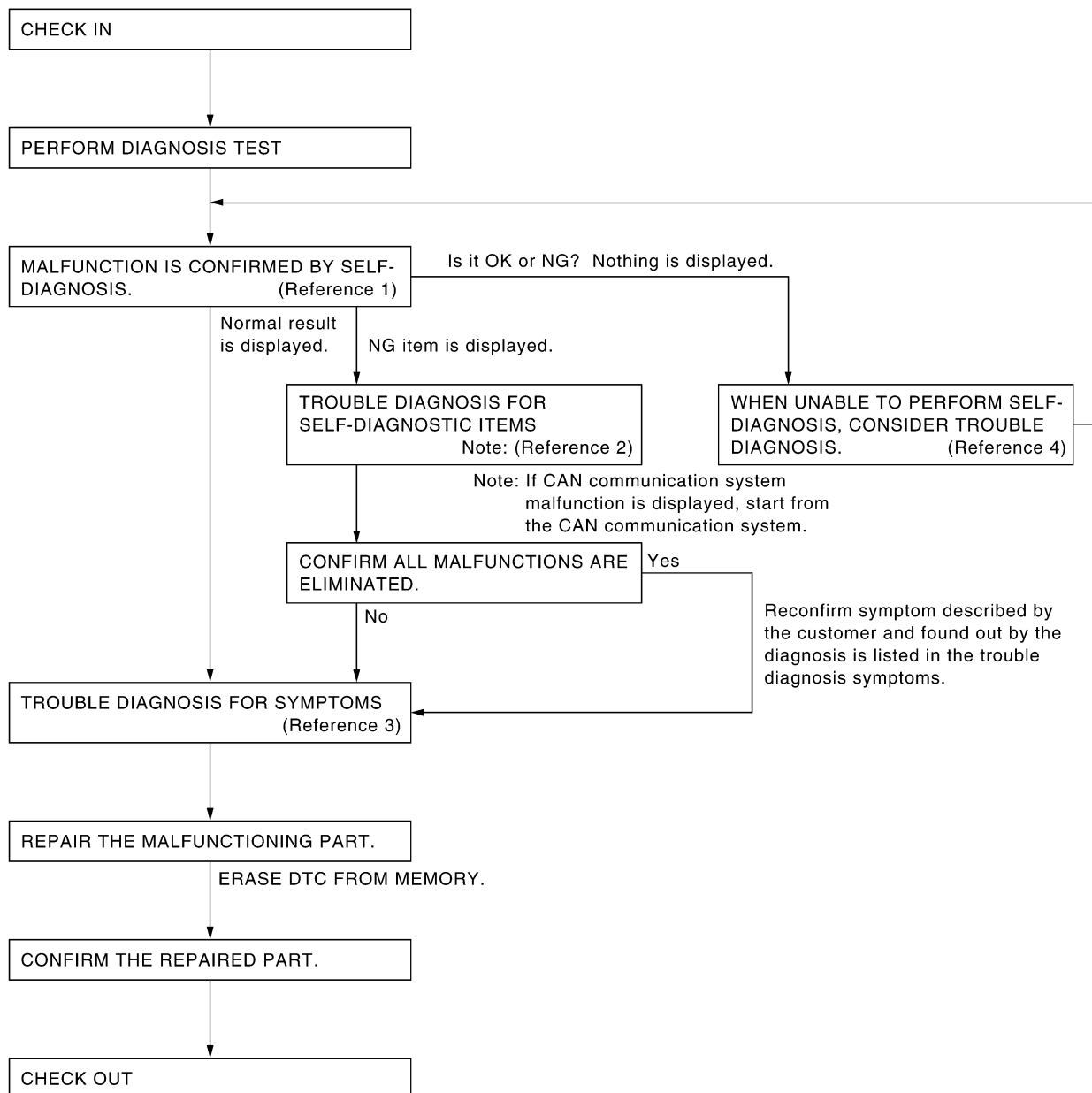
OK or NG

- OK >> GO TO 3.
 NG >> Repair harness or connector.



TROUBLE DIAGNOSIS — GENERAL DESCRIPTION

Work Flow



SKIA1227E

- Reference 1... Refer to [ACS-62, "Self-Diagnostic Function"](#) .
- Reference 2... Refer to [ACS-67, "Diagnostic Trouble Code \(DTC\) Chart"](#) .
- Reference 3... Refer to [ACS-91, "Symptom Chart"](#) .
- Reference 4...Refer to [ACS-64, "SELF-DIAGNOSIS BY CONSULT-II WILL NOT RUN"](#) / [ACS-65, "SELF-DIAGNOSIS BY ICC SYSTEM DISPLAY WILL NOT RUN."](#) .

DTC 109 LASER HIGH TEMP

EKS003PZ

1. CHECK SYMPTOM

- Is cooling system malfunctioning?

Yes or No

Yes >> ● Repair cooling system.

- After that, Erase DTC and perform ICC system running test. Then perform self-diagnosis of ICC system again.

No >> ● Replace ICC sensor, and adjust laser beam aiming.

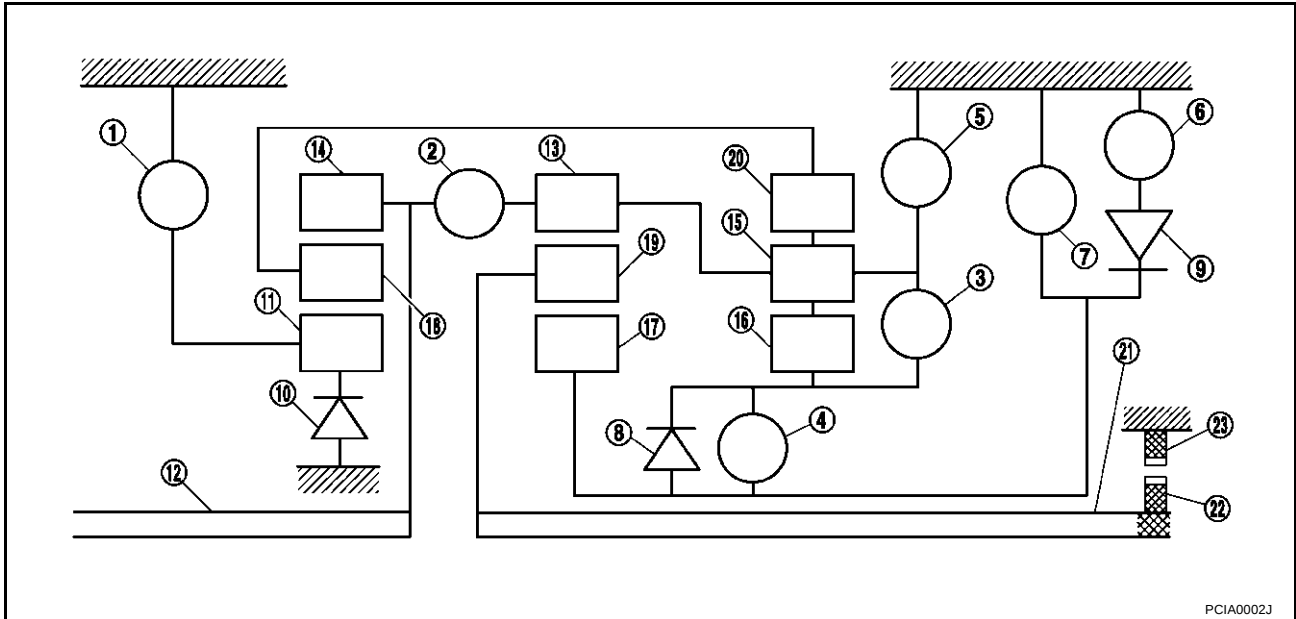
- After repair, Erase DTC. Then perform ICC system running test, and perform self-diagnosis of ICC unit.

Shift Mechanism

ECS0082P

The automatic transmission uses compact dual planetary gear systems to improve power-transmission efficiency, simplify construction and reduce weight. It also employs an optimum shift control and super wide gear ratios. They improve starting performance and acceleration during medium and high-speed operation.

CONSTRUCTION



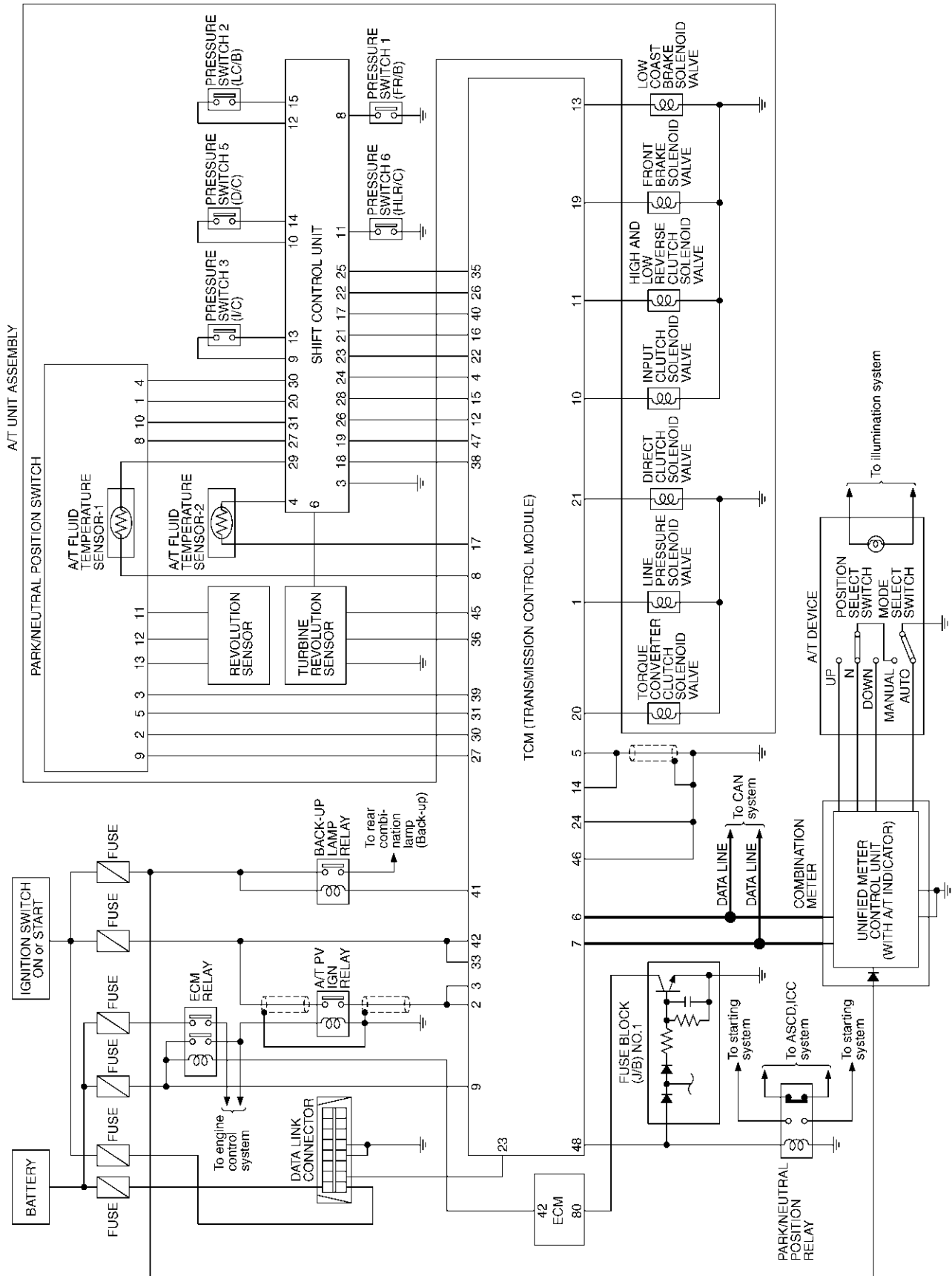
- | | | |
|--------------------------------|-------------------------|---------------------------|
| 1. Front brake | 2. Input clutch | 3. Direct clutch |
| 4. High and low reverse clutch | 5. Reverse brake | 6. Forward brake |
| 7. Low coast brake | 8. 1st one-way clutch | 9. Forward one-way clutch |
| 10. 3rd one-way clutch | 11. Front sun gear | 12. Input shaft |
| 13. Mid internal gear | 14. Front internal gear | 15. Rear carrier |
| 16. Rear sun gear | 17. Mid sun gear | 18. Front carrier |
| 19. Mid carrier | 20. Rear internal gear | 21. Output shaft |
| 22. Parking gear | 23. Parking pawl | |

FUNCTION OF CLUTCH AND BRAKE

Name of the Part	Abbreviation	Function
Front brake (1)	Fr/B	Fastens the front sun gear (11).
Input clutch (2)	I/C	Connects the input shaft (12), the front internal gear (14) and the mid internal gear (13).
Direct clutch (3)	D/C	Connects the rear carrier (15) and the rear sun gear (16).
High and low reverse clutch (4)	H&LR/C	Connects the mid sun gear (17) and the rear sun gear (16).
Reverse brake (5)	R/B	Fastens the rear carrier (15).
Forward brake (6)	F/B	Fastens the mid sun gear (17).
Low coast brake (7)	LC/B	Fastens the mid sun gear (17).
1st one-way clutch (8)	1st/O.C	Allows the rear sun gear (16) to turn freely forward relative to the mid sun gear (17) but fastens it for reverse rotation.
Forward one-way clutch (9)	F/O.C	Allows the mid sun gear (17) to turn freely in the forward direction but fastens it for reverse rotation.
3rd one-way clutch (10)	3rd/O.C	Allows the front sun gear (11) to turn freely in the forward direction but fastens it for reverse rotation.

Circuit Diagram

ECS00837



TCWM0051E

TROUBLE DIAGNOSIS

Symptom	Condition	Diagnostic Item	Reference page
Engine does not start in "N" or "P" position. Refer to AT-240 , "Engine Cannot Be Started In "P" or "N" Position" .	ON vehicle	1. Ignition switch and starter	PG-2, SC-22
		2. Control linkage adjustment	AT-283
		3. PNP switch	AT-106
Engine starts in positions other than "N" or "P".	ON vehicle	1. Ignition switch and starter	PG-2, SC-22
		2. Control linkage adjustment	AT-283
		3. PNP switch	AT-106
Engine stall.	ON vehicle	1. Fluid level and state	AT-51
		2. Engine speed signal	AT-116
		3. Turbine revolution sensor	AT-153
		4. Torque converter clutch solenoid valve	AT-118
		5. CAN communication line	AT-100
		6. Control valve assembly	AT-290
	OFF vehicle	7. Torque converter (ATF condition "NG" only. Refer to AT-51 , "Fluid Condition Check" .)	AT-308
Engine stalls when select lever shifted "N" → "D", "R".	ON vehicle	1. Fluid level and state	AT-51
		2. Engine speed signal	AT-116
		3. Turbine revolution sensor	AT-153
		4. Torque converter clutch solenoid valve	AT-118
		5. CAN communication line	AT-100
		6. Control valve assembly	AT-290
	OFF vehicle	7. Torque converter (ATF condition "NG" only. Refer to AT-51 , "Fluid Condition Check" .)	AT-308
Engine speed does not return to idle. Refer to AT-269 , "Engine Speed Does Not Return To Idle" .	ON vehicle	1. Fluid level and state	AT-51
		2. ATF pressure switch 5 and direct clutch solenoid valve	AT-228, AT-189
		3. ATF pressure switch 1 and front brake solenoid valve	AT-220, AT-180
		4. Accelerator pedal position sensor	AT-145
		5. Vehicle speed sensor A/T and vehicle speed sensor MTR	AT-111, AT-158
		6. CAN communication line	AT-100
		7. Control valve assembly	AT-290
	OFF vehicle	8. Front brake [brake band (ATF condition "NG" only. Refer to AT-51 , "Fluid Condition Check" .)]	AT-308
		9. Direct clutch (ATF condition "NG" only. Refer to AT-51 , "Fluid Condition Check" .)	AT-338

*: Parts behind Drum Support is impossible to perform inspection by disassembly.

DTC P0725 ENGINE SPEED SIGNAL

DTC P0725 ENGINE SPEED SIGNAL

PFP:24825

Description

ECS0084A

The engine speed signal is sent from the ECM to the TCM.

On Board Diagnosis Logic

ECS0084B

- This is not an OBD-II self-diagnostic item.
- Diagnostic trouble code "ENGINE SPEED SIG" with CONSULT-II or 16th judgement flicker without CONSULT-II is detected when TCM does not receive the ignition signal from ECM during engine cranking or running.

Possible Cause

ECS0084C

Harness or connectors
(The ECM to the TCM circuit is open or shorted.)

DTC Confirmation Procedure

ECS0084D

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.

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

④ WITH CONSULT-II

1. Turn ignition switch to "ON" position and select "DATA MONITOR" mode for "A/T" with CONSULT-II.
2. Start engine and maintain the following conditions for at least 10 consecutive seconds.
VHCL SPEED SE: 10 km/h (6 MPH) or more
ACCELE POSI: More than 1/8
Selector lever: "D" position
3. If DTC is detected, go to [AT-116, "Diagnostic Procedure"](#).

SELECT SYSTEM
A/T
ENGINE

SAT014K

Diagnostic Procedure

ECS0084E

1. CHECK DTC WITH ECM

④ With CONSULT-II

1. Turn ignition switch to "ON" position. (Do not start engine.)
2. Select "SELF-DIAG RESULTS" mode for "ENGINE" with CONSULT-II. Refer to [EC-108, "CONSULT-II Function"](#).

OK or NG

OK >> GO TO 2.

NG >> Check the DTC detected item, go to [EC-108, "CONSULT-II Function"](#).

- If CAN communication line is detected, go to [AT-100, "DTC U1000 CAN COMMUNICATION LINE"](#).

SELECT SYSTEM
A/T
ENGINE

SAT014K

DTC P1710 A/T FLUID TEMPERATURE SENSOR CIRCUIT

Diagnostic Procedure

ECS0085V

1. CHECK INPUT SIGNALS (WITH CONSULT-II)

With CONSULT-II

1. Start engine.
2. Select "ECU INPUT SIGNALS" in "DATA MONITOR" mode for "A/T" with CONSULT-II.
3. Read out the value of "ATF TEMP SE 1" or "ATF TEMP SE 2".

Item name	Condition °C (°F)	Display value (Approx.) V
Fluid temperature sensor 1	0 (32) - 20 (68) - 80 (176)	2.2 - 1.8 - 0.6
Fluid temperature sensor 2		2.2 - 1.7 - 0.45

DATA MONITOR	
MONITOR	NO DTC
OUTPUT REV	0 rpm
ATF TEMP SE 1	1.84 v
ATF TEMP SE 2	1.72 v
BATTERY BOLT	11.5 v
ATF PRES SW 1	OFF
Δ ▽	
RECORD	
MODE	BACK
LIGHT	COPY

PCIA0039E

OK or NG

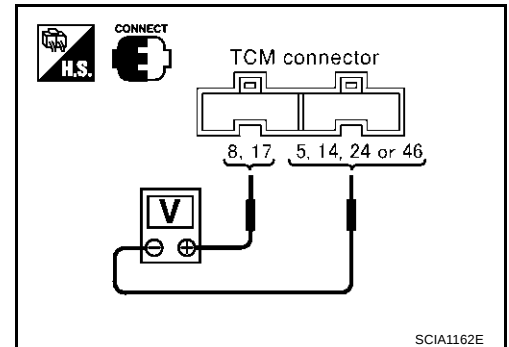
- OK >> GO TO 7.
NG >> GO TO 3.

2. CHECK INPUT SIGNALS (WITHOUT CONSULT-II)

Without CONSULT-II

1. Start engine.
2. Check voltage between TCM connector and ground while warming up A/T. Refer to [AT-148, "Wiring Diagram — AT — FTS"](#).

Name	Connector No.	Terminal No.	Temperature °C (°F)	Voltage (V) (Approx.)
Fluid temperature sensor 1	F103	8 (B/R) - 5 (B), 14 (B), 24 (B) or 46 (B) (ground)	0 (32)	2.2
			20 (68)	1.8
			80 (176)	0.6
Fluid temperature sensor 2		17 (Y/B) - 5 (B), 14 (B), 24 (B) or 46 (B) (ground)	0 (32)	2.2
			20 (68)	1.7
			80 (176)	0.45



3. Turn ignition switch to "OFF" position.
4. Disconnect the TCM connector.
5. Check if there is continuity between the connector terminal and ground.

OK or NG

- OK >> GO TO 7.
NG >> GO TO 3.

DTC P1757 FRONT BRAKE SOLENOID VALVE

EC500871

Diagnostic Procedure

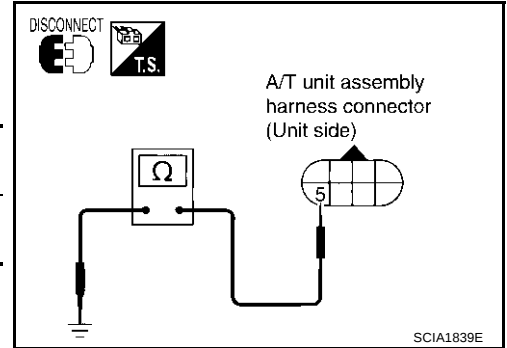
1. CHECK FRONT BRAKE SOLENOID VALVE CIRCUIT

1. Turn ignition switch to "OFF" position.
2. Disconnect A/T unit assembly harness connector at the transmission right side.
3. Check the resistance between terminal and ground.

Solenoid valve	Connector No.	Terminal No. (Wire color)	Resistance (Approx.)
Front brake solenoid valve	F27	5 (R) - Ground	3 - 9 Ω

OK or NG

- OK >> GO TO 4.
NG >> GO TO 2.



2. CHECK TERMINAL CORD ASSEMBLY

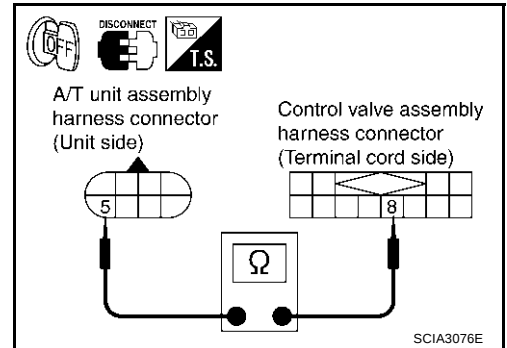
1. Remove oil pan. Refer to [AT-290, "Control Valve Assembly"](#).
2. Disconnect A/T unit assembly harness connector and control valve assembly harness connector.
3. Check continuity between A/T unit assembly harness connector and control valve assembly harness connector.

Item	Connector No.	Terminal No. (Wire color)	Continuity
A/T unit assembly harness connector	F27	5 (W/R)	Yes
Control valve assembly harness connector	F301	8 (W/R)	

4. If OK, check harness for short to ground and short to power.

OK or NG

- OK >> GO TO 3.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.



3. CHECK VALVE RESISTANCE

Check valve resistance

- Refer to [AT-184, "Component Inspection"](#).

OK or NG

- OK >> GO TO 4.
NG >> Replace the control valve assembly. Refer to [AT-290, "Control Valve Assembly"](#).

DTC P1774 LOW COAST BRAKE SOLENOID VALVE FUNCTION

3. CHECK TERMINAL CORD ASSEMBLY

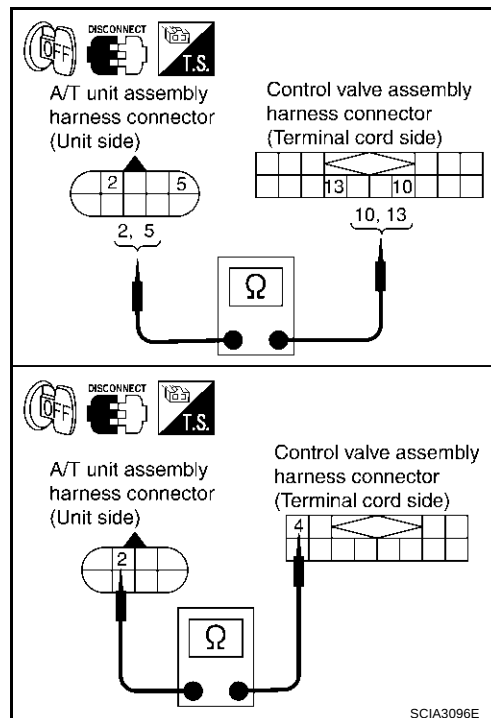
1. Remove oil pan. Refer to [AT-290, "Control Valve Assembly"](#) .
2. Disconnect A/T unit assembly harness connector and control valve assembly harness connector.
3. Check continuity between A/T unit assembly harness connector and control valve assembly harness connector.

Item	Connector No.	Terminal No. (Wire color)	Continuity
A/T unit assembly harness connector	F26	2 (R)	Yes
Control valve assembly harness connector	F302	10 (R)	
A/T unit assembly harness connector	F26	5 (L)	Yes
Control valve assembly harness connector	F302	13 (L)	
A/T unit assembly harness connector	F27	2 (B/R)	Yes
Control valve assembly harness connector	F301	4 (B/R)	

4. If OK, check harness for short to ground and short to power.
5. Reinstall any part removed.

OK or NG

- OK >> Replace the control valve assembly. Refer to [AT-290, "Control Valve Assembly"](#) .
- NG >> Repair open circuit or short to ground or short to power in harness or connectors.



4. CHECK DTC

Perform "DTC Confirmation Procedure". Refer to [AT-212, "DTC Confirmation Procedure"](#) .

OK or NG

- OK >> **INSPECTION END**
- NG >> GO TO 5.

5. PERFORM TCM INSPECTION

1. Perform TCM input/output signal inspection.
2. If NG, recheck TCM pin terminals for damage or loose connection with harness connector.

OK or NG

- OK >> **INSPECTION END**
- NG >> Repair or replace damaged parts.

TROUBLE DIAGNOSIS FOR SYMPTOMS

9. DETECT MALFUNCTIONING ITEM

- Check the malfunction items. If any items are damaged, repair or replace damaged parts. Refer to [AT-60, "Symptom Chart"](#).

OK or NG

OK >> GO TO 10.

NG >> Repair or replace damaged parts.

10. CHECK SYMPTOM

Check again.

OK or NG

OK >> **INSPECTION END**

NG >> GO TO 11.

11. PERFORM TCM INSPECTION

1. Perform TCM input/output signal inspection.
2. If NG, recheck TCM pin terminals for damage or loose connection with harness connector.

OK or NG

OK >> **INSPECTION END**

NG >> Repair or replace damaged parts.

12. DETECT MALFUNCTIONING ITEM

- Check the malfunction items. If any items are damaged, repair or replace damaged parts. Refer to [AT-60, "Symptom Chart"](#).

OK or NG

OK >> GO TO 10.

NG >> Repair or replace damaged parts.

Vehicle Does Not Creep Forward In "D" Position

SYMPTOM:

ECS0089D

Vehicle does not creep forward when selecting "D" position.

DIAGNOSTIC PROCEDURE

1. CHECK SELF-DIAGNOSTIC RESULTS

Execute self-diagnosis.

Do the self-diagnostic results indicate accelerator pedal position sensor, CAN communication line, PNP switch?

Yes >> Check the malfunctioning system. Refer to [AT-145, "DTC P1705 THROTTLE POSITION SENSOR"](#), [AT-100, "DTC U1000 CAN COMMUNICATION LINE"](#), [AT-106, "DTC P0705 PARK/NEUTRAL POSITION SWITCH"](#).

No >> GO TO 2.

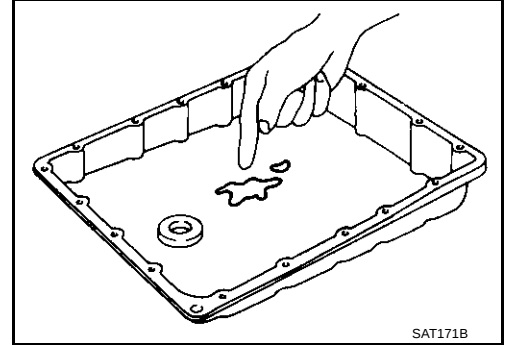
TROUBLE DIAGNOSIS FOR SYMPTOMS

5. CHECK A/T FLUID CONDITION

1. Remove oil pan. Refer to [AT-290, "Control Valve Assembly"](#) .
2. Check A/T fluid condition.

OK or NG

- OK >> GO TO 6.
NG >> GO TO 9.



6. DETECT MALFUNCTIONING ITEM

- Check the malfunction items. If any items are damaged, repair or replace damaged parts. Refer to [AT-60, "Symptom Chart"](#) .

OK or NG

- OK >> GO TO 7.
NG >> Repair or replace damaged parts.

7. CHECK SYMPTOM

Check again.

OK or NG

- OK >> **INSPECTION END**
NG >> GO TO 8.

8. PERFORM TCM INSPECTION

1. Perform TCM input/output signal inspection.
2. If NG, recheck TCM pin terminals for damage or loose connection with harness connector.

OK or NG

- OK >> **INSPECTION END**
NG >> Repair or replace damaged parts.

9. DETECT MALFUNCTIONING ITEM

- Check the malfunction items. If any items are damaged, repair or replace damaged parts. Refer to [AT-60, "Symptom Chart"](#) .

OK or NG

- OK >> GO TO 7.
NG >> Repair or replace damaged parts.

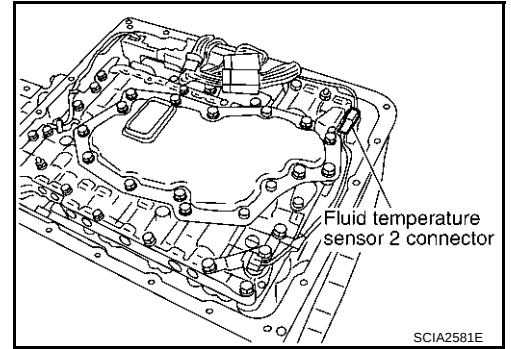
A
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DISASSEMBLY

27. Disconnect fluid temperature sensor 2 connector.

CAUTION:

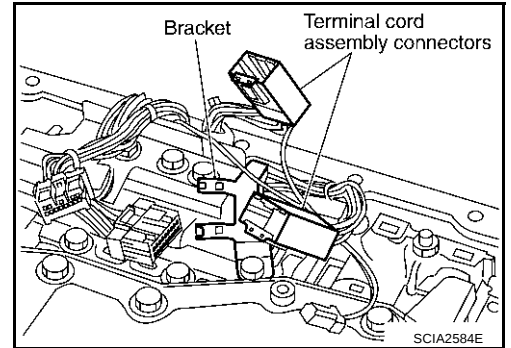
Be careful not to damage connector.



28. Remove terminal cord assembly connectors from bracket.

CAUTION:

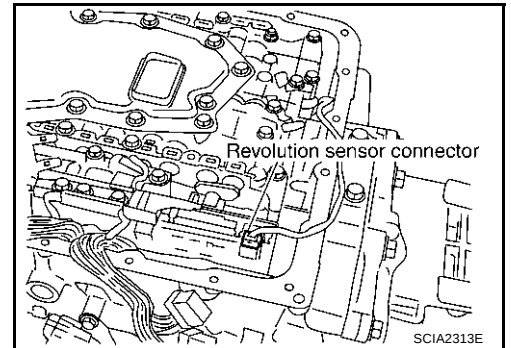
Be careful not to damage connector.



29. Disconnect revolution sensor connector.

CAUTION:

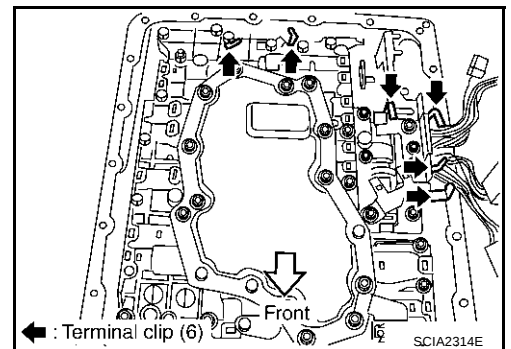
Be careful not to damage connector.



30. Straighten terminal clips to free terminal cord assembly and revolution sensor harness then remove terminal clips.

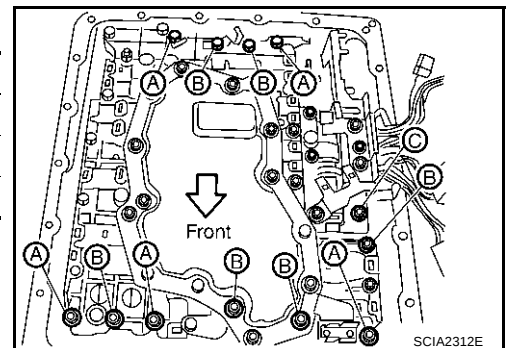
CAUTION:

Hang down terminal cord assembly and revolution sensor harness toward outside so as not to disturb removal of control valve assembly.



31. Remove bolts A, B and C from control valve assembly.

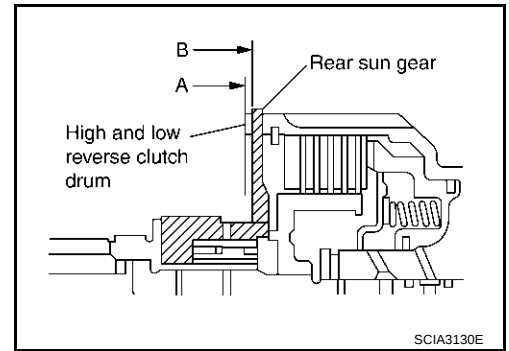
Bolt symbol	Length mm (in)	Number of bolts
A	42 (1.65)	5
B	55 (2.17)	6
C	40 (1.57)	1



ASSEMBLY

CAUTION:

Check that portion A of high and low reverse clutch drum protrudes approximately 2 mm (0.08 in) beyond portion B of rear sun gear.



35. Install needle bearing in rear carrier assembly.

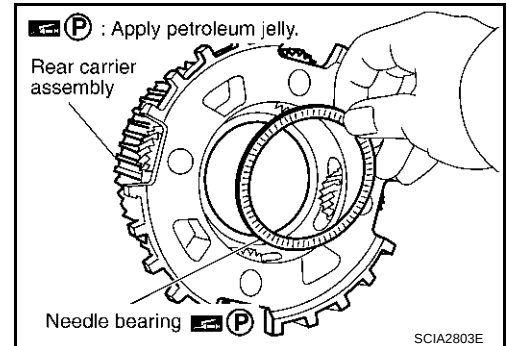
CAUTION:

Apply petroleum jelly to needle bearing.

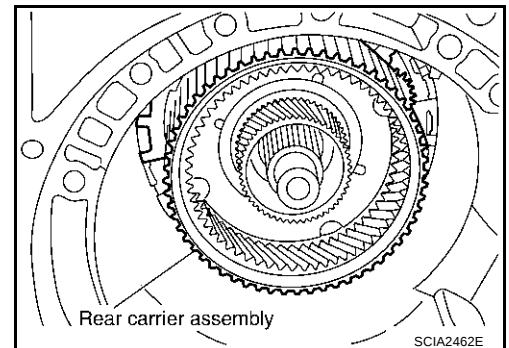
36. Install bearing race in rear carrier assembly.

CAUTION:

Apply petroleum jelly to bearing race.



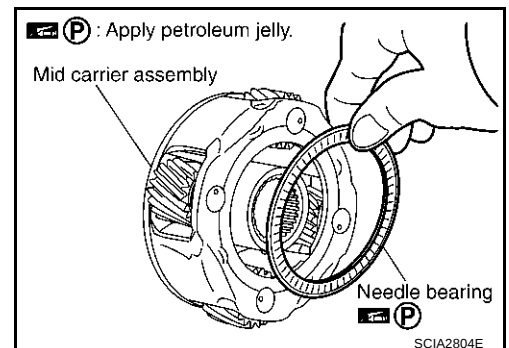
37. Install rear carrier assembly in transmission case.



38. Install needle bearing (rear side) in mid carrier assembly.

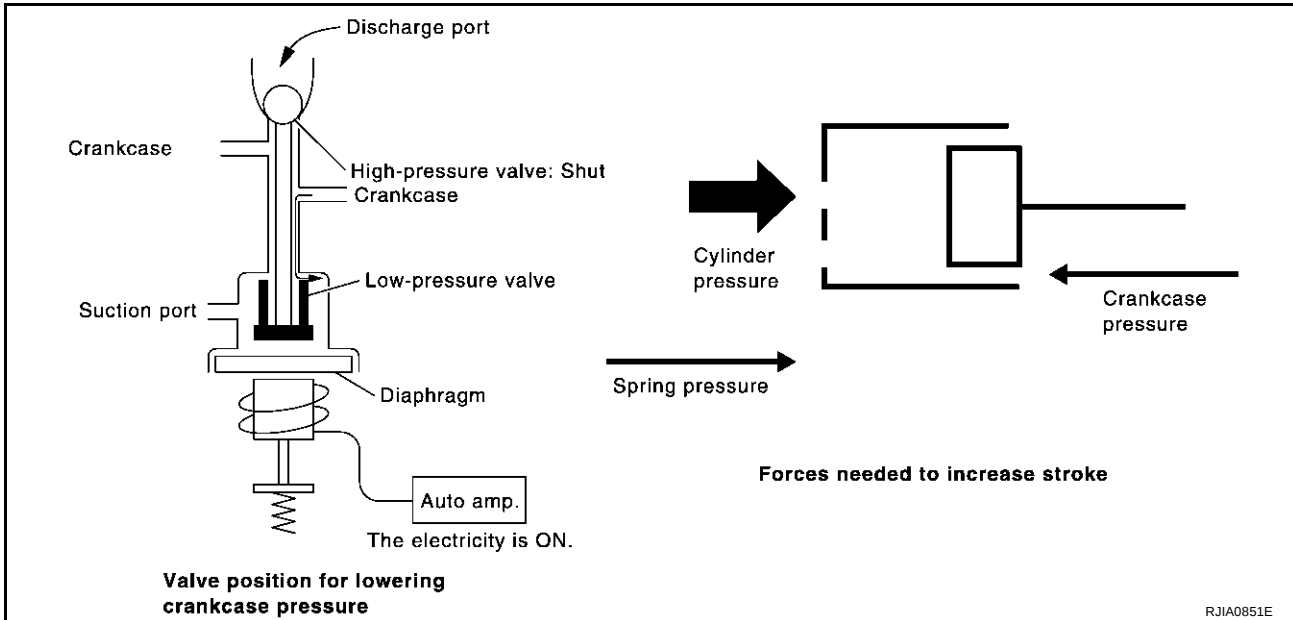
CAUTION:

Apply petroleum jelly to needle bearing.



REFRIGERATION SYSTEM

- Amount of high-pressure valve lift is determined by factors below.
 - Low pressure applied to diaphragm
 - Spring load of set spring
 - Balance of magnetic force generated in magnet coil
 - Electronic control valve (ECV) magnet coil receives electric signal (duty control) from auto amplifier. Then, magnetic force generated by electric current is changed to control high-pressure valve lift amount.
2. Maximum Cooling
- High-pressure valve is closed by magnetic force generated by electric signal sent from automatic amplifier. At this time, cylinder moves full stroke due to pressure balance between inside crankcase (P_c) and suction line (P_s).
- Under this condition, the wobble (swash) plate is set to the maximum stroke position.

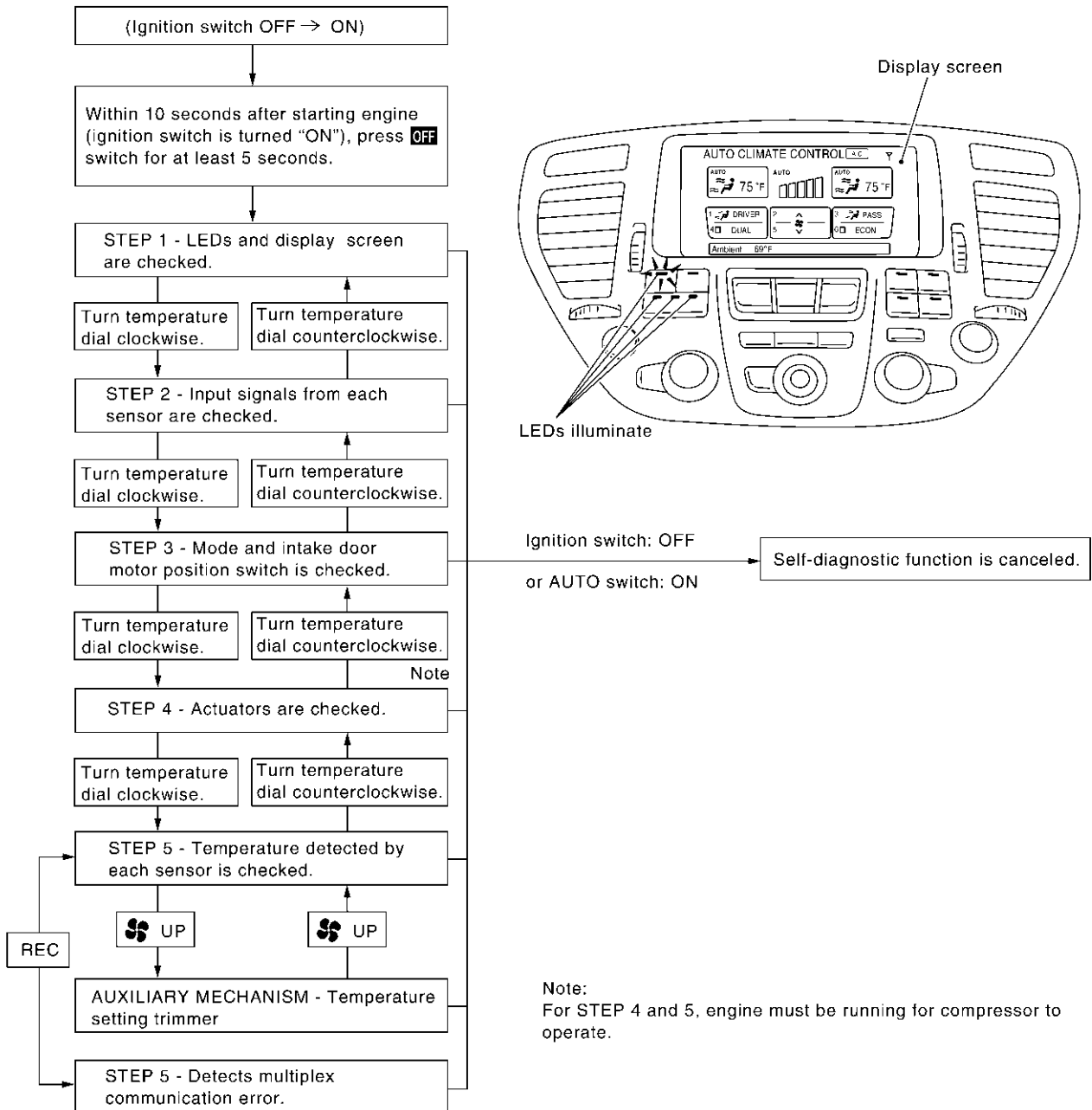


3. Capacity Control
- When no electric signal is sent from automatic amplifier (current: OFF), high-pressure valve is opened by spring force.
- Since suction pressure is low, it makes the suction port close and the discharge port open. Thus, crankcase pressure becomes high as high pressure enters the crankcase.
- The force acts around the journal pin near the wobble (swash) plate, and is generated by the pressure difference before and behind the piston.
- The drive lug and journal pin are located where the piston generates the highest pressure. Piston pressure is between suction pressure P_s and discharge pressure P_d , which is near suction pressure P_s . If crankcase pressure P_c rises due to capacity control, the force around the journal pin makes the wobble (swash) plate angle decrease and also the piston stroke decrease. In other words, crankcase pressure

Self-diagnosis Function

DESCRIPTION

The self-diagnostic system diagnoses sensors, door motors, blower motor, etc. by system line. Refer to applicable sections (items) for details. Shifting from normal control to the self-diagnostic system is accomplished by starting the engine (turning the ignition switch to ON) and pressing OFF switch for at least 5 seconds. The "OFF" switch must be pressed within 10 seconds after starting the engine (ignition switch is turned ON). This system will be canceled by either pressing AUTO switch or turning the ignition switch OFF. Shifting from one step to another is accomplished by means of turning temperature dial, as required. Additionally shifting from STEP-5 to AUXILIARY MECHANISM is accomplished by means of pushing  (fan) UP switch.



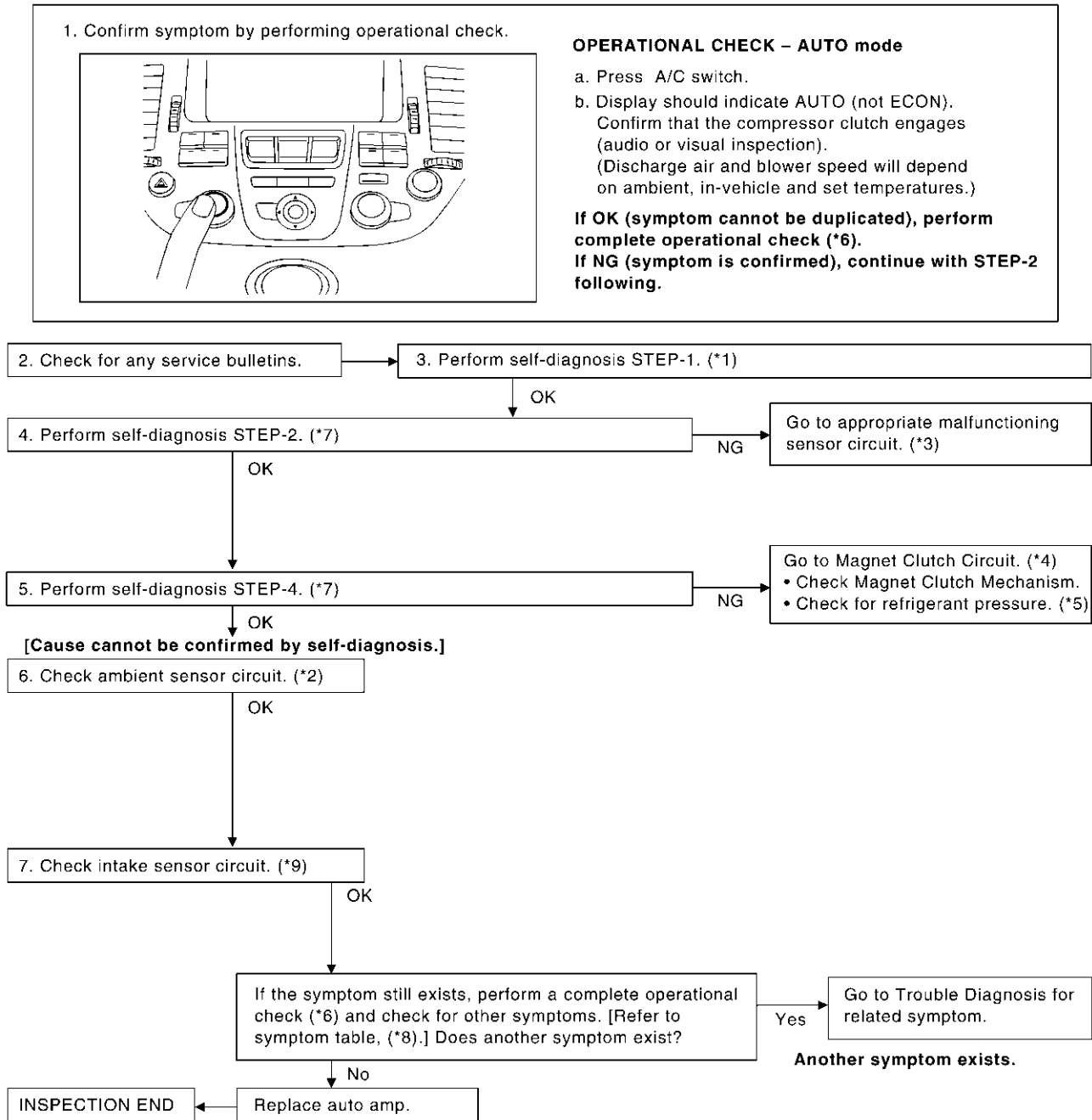
TROUBLE DIAGNOSIS

Magnet Clutch Circuit

EJS001YA

SYMPTOM: Magnet clutch does not engage.

INSPECTION FLOW



RJIA1571E

*1 [ATC-54, "FUNCTION CONFIRMATION PROCEDURE"](#), see No.1.

*2 [ATC-108, "Ambient Sensor Circuit"](#).

*3 [ATC-54, "FUNCTION CONFIRMATION PROCEDURE"](#), see No. 14.

*4 [ATC-86, "Magnet Clutch Circuit"](#).

*5 [ATC-96, "TROUBLE DIAGNOSES FOR UNUSUAL PRESSURE"](#).

*6 [ATC-62, "Operational Check"](#).

*7 [ATC-54, "FUNCTION CONFIRMATION PROCEDURE"](#), see No.5 to 7.

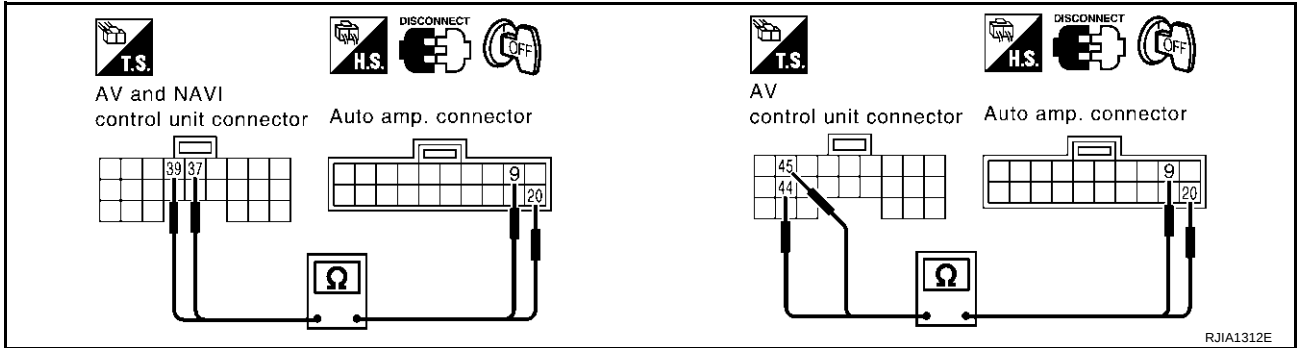
*8 [ATC-35, "SYMPTOM TABLE"](#).

*9 [ATC-116, "Intake Sensor Circuit"](#).

TROUBLE DIAGNOSIS

2. CHECK CIRCUIT CONTINUITY BETWEEN AV AND NAVI CONTROL UNIT (AV CONTROL UNIT) AND AUTO AMP.

1. Turn ignition switch OFF.
2. Disconnect AV and NAVI control unit (AV control unit) and auto amp. connector.
3. Check continuity between AV and NAVI control unit harness connector B29 terminals 37(W), 39(B) or AV control unit harness connector M77 terminals 44 (W), 45 (B) and auto amp. harness connector M119 terminals 9 (W), 20 (B).



	Terminals				Continuity
	AV control unit or AV and NAVI control unit connector	Terminal No. (Wire color)	Auto amp. connector	Terminal No. (Wire color)	
AV control unit	M77	44 (W)	M119	9 (W)	Yes
	M77	45 (B)	M119	20 (B)	
AV and NAVI control unit	B29	37 (W)	M119	9 (W)	
	B29	39 (B)	M119	20 (B)	

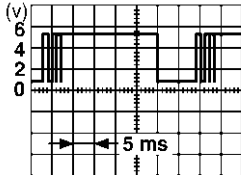
OK or NG

OK >> GO TO 3.

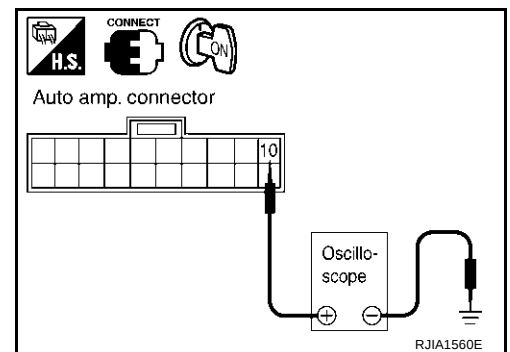
NG >> Repair harness or connector.

3. CHECK FOR AUTO AMP. INPUT

1. Reconnect AV and NAVI control unit (AV control unit) and auto amp. connector.
2. Turn ignition switch ON.
3. Confirm multiplex communication signal using an oscilloscope.

Terminals			Voltage
(+)		(-)	
Auto amp. connector	Terminal No. (wire color)		
M119	10 (R)	Ground	

RJIA0213E



OK or NG

OK >> INSPECTION END

NG >> GO TO 4.

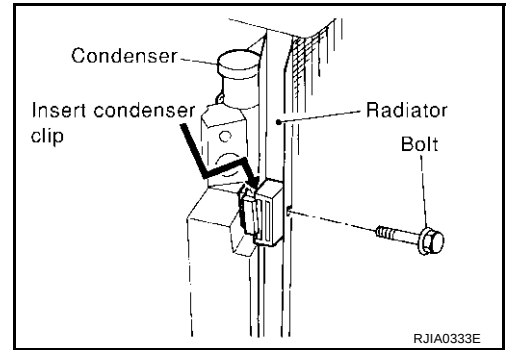
REFRIGERANT LINES

INSTALLATION

Installation is basically the reverse order of removal.

CAUTION:

- Replace high-pressure pipe and high-pressure flexible hose O-rings with new ones. Apply compressor oil prior to installation.
- When pouring refrigerant, check for leaks.



Bolts mounting the high-pressure flexible hose

Tightening torque : 7.8 - 19.6 N·m (0.8 - 1.9 kg·m, 69 - 173 in-lb)

Bolts mounting the high-pressure pipe

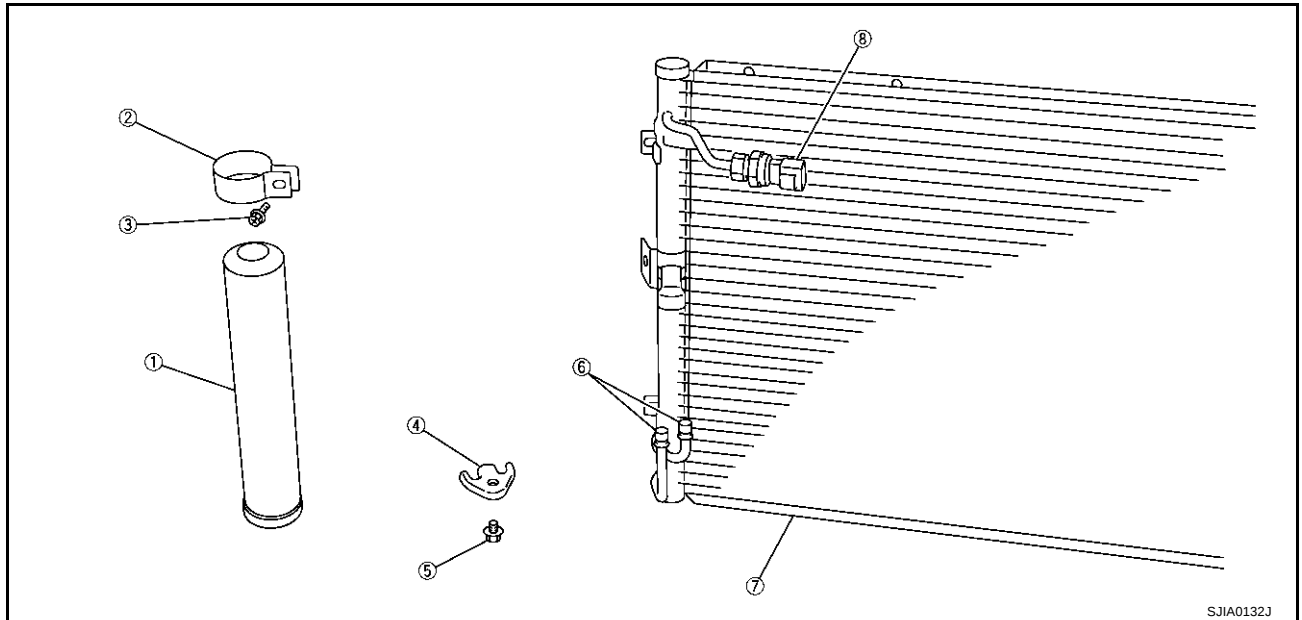
Tightening torque : 2.9 - 5.9 N·m (0.29 - 0.6 kg·m, 26 - 52 in-lb)

Bolts mounting the condenser

Tightening torque : 3.82 - 4.51 N·m (0.39 - 0.46 kg·m, 34 - 39 in-lb)

Liquid Tank

EJS001JS



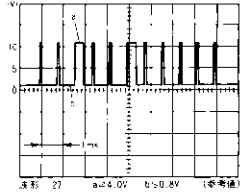
- | | | |
|----------------------------|--------------------------------|-----------|
| 1. Liquid tank | 2. Liquid tank securing bands | 3. Screw |
| 4. Securing bracket piping | 5. Screw | 6. O-ring |
| 7. Condenser | 8. Refrigerant pressure sensor | |

AUDIO

Terminal No.		Signal name	Signal input/output	Condition		Voltage	Example of symptom
+	-			Ignition switch	Operation		
14 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is ON (1st position)	Battery voltage	-
					Turn lighting switch OFF	Approx. 3.0V or less	-
15 (B)	Ground	Ground	-	ON	-	Approx. 0V	-
16 (L/OR)	Ground	ACC power	Input	ACC	-	Battery voltage	CD auto changer operation is not possible.

Terminals and Reference Value for Rear Control Switch

EKS00130

TERMINALS			ITEM	CONDITION		DATA (DC)
(+) (–)		Ignition switch		Operation		
TERMINAL	WIRE COLOR					
1	L/Y	Ground	ACC Power	ACC	Rear control cancel switch is ON (position ON)	Ground battery voltage
12	B	Ground	Ground	ON	—	Approx. 0V
10	Y	Ground	Rear control switch communication signal	ON	Operate the rear control switch.	

Terminals and Reference Value for Rear Control Cancel Switch

EKS006H5

Terminal No.		Signal name	Signal input/output	Condition		Voltage	Example of symptom
+	-			Ignition switch	Operation		
3 (G)	Ground	Acc power	Output	ACC	Rear control cancel switch is ON (position ON)	Battery voltage	-
					Rear control cancel switch is OFF (position CAN-CEL)	Approx. 0V	-
4 (P/B)	Ground	Acc power	Input	ACC	-	Battery voltage	Rear control switch operation does not work.

Self-Diagnosis Function DESCRIPTION

EKS006RK

- Diagnosis function consists of the self-diagnosis mode, and the “CONFIRMATION/ADJUSTMENT” mode.
- Self-diagnosis mode checks for connection among audio unit, and CD auto changer and analyzes each unit, then displays the results.
- “CONFIRMATION/ADJUSTMENT” function analyzes each speaker.(without navigation system)

NAVIGATION SYSTEM

DATA MONITOR (SIGNAL MONITOR)

- Displays status of the vehicle signal input to the AV and NAVI control unit. (Refer to [AV-83. "Confirmation/Adjustment Mode"](#) for operation conditions for the connections to be indicated.)

DATA MONITOR			
MONITOR		NO DTC	
VHCL SPD SIG		OFF	
FOOT BRAKE		ON	
PARKING BRAKE		OFF	
MTR ILL DIM		OFF	
IGN SW		ON	
PNP SW		ON	
		RECORD	
MODE	BACK	LIGHT	COPY

SKIA3674E

- For each signal, a comparison of actual operating status and the status recognized by the system can be checked.

DATA MONITOR item	Display	Condition	Remarks
VHCL SPD SIG	ON	Vehicle speed > km/h (0 MPH)	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Vehicle speed = km/h (0 MPH)	
	-	Ignition switch in ACC position	
FOOT BREAK	ON	-	This item cannot be monitored. (No change of display)
PARKING BRAKE	OFF	-	This item cannot be monitored. (No change of display)
MTR ILL DIM	ON	Lighting switch ON	-
	OFF	Lighting switch OFF	
IGN SW	ON	Ignition switch ON	-
	OFF	Ignition switch ACC or OFF	
PNP SW	ON	-	This item cannot be monitored. (No change of display)

A
B
C
D
E
F
G
H
I
J
L
M

AV

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POWER DOOR LOCK SYSTEM

(The display only shows the incident records, they are not malfunctions caused during the diagnosis. One possible cause is that an irreproducible incident symptom occurred.)

- Follow the steps below to erase the memory
Perform either disconnect BCM battery power supply or erase memory with CONSULT-II.
- With the battery connected, if the local control unit (LCU) connector is disconnected for approximately 1 minute, the BCM stores "NO RESPONSE" record.

SELF-DIAGNOSIS RESULTS

Operation Procedure

1. Touch "DOOR LOCK" on the "SELECT TEST ITEM" screen.
2. Touch "SELF-DIAG RESULTS" on the "SELECT DIAG MODE" screen.
3. Touch "START" on the "SELF DIAG RESULTS" screen.
4. Door lock actuator automatically locks/unlocks all the doors before the door lock actuator self-diagnosis start.
5. After the diagnosis is completed, the malfunctioning system name is displayed.
6. When the malfunctioning items are displayed, touch "PRINT" to keep the records.
7. Touch "ERASE".
8. Perform the self-diagnosis again to make sure that any malfunctioning item is displayed.
9. Perform out the inspection to the displayed items. If "No failure" is displayed, the malfunctioning item recorded at first shall be checked.

Self-Diagnostic Result List

Malfunctioning system.	Malfunction detecting condition
DOOR LOCK MOTOR-DR	The circuit for the driver side door lock actuator/unlock sensor is malfunctioning.
DOOR LOCK MOTOR-AS	The circuit for the passenger side door lock actuator/unlock sensor is malfunctioning.
DOOR LOCK MOTOR-RR/RH	The circuit for the rear RH side door lock actuator/unlock sensor is malfunctioning.
DOOR LOCK MOTOR-RR/LH	The circuit for the rear LH side door lock actuator/unlock sensor is malfunctioning.
NO DTC IS DETECTED/FURTHER TESTING MAY BE REQUIRED	No malfunction in the above items.

DATA MONITOR

Monitored item	Description
IGN ON SW	Indicates [ON/OFF] condition of ignition switch.
IGN KEY SW	Indicates [ON/OFF] condition of electronic key switch.
DOOR LK SW-LK	Indicates [ON/OFF] condition of lock signal from lock/unlock switch front LH.
DOOR LK SW-UN	Indicates [ON/OFF] condition of unlock signal from lock/unlock switch front LH.
LOCK SIG-DR	Indicates [ON/OFF] condition of driver door unlock signal from door unlock sensor.
LOCK SIG-AS	Indicates [ON/OFF] condition of passenger door unlock signal from door unlock sensor.
LOCK SIG-RR/RH	Indicates [ON/OFF] condition of rear RH door unlock signal from door unlock sensor.
LOCK SIG-RR/LH	Indicates [ON/OFF] condition of rear LH door unlock signal from door unlock sensor.
DOOR SW-DR	Indicates [ON/OFF] condition of front door switch LH.
DOOR SW-AS	Indicates [ON/OFF] condition of front door switch RH.
KEY CYL UN-DR	Indicates [ON/OFF] condition of unlock signal from driver door key cylinder.
KEY CYL LK-DR	Indicates [ON/OFF] condition of lock signal from driver door key cylinder.
MAIN/S LOCK AS	Indicates [ON/OFF] condition of lock signal from lock/unlock switch front RH
MAIN/S UNLK AS	Indicates [ON/OFF] condition of unlock signal from lock/unlock switch front RH

ACTIVE TEST

Test item.	Malfunction detecting condition
DR LOCK MTR-ALL	This test is able to check all door lock actuators lock operation. These actuators lock when "ON" on CONSULT-II screen is touched.

REMOTE KEYLESS ENTRY SYSTEM

EIS0028K

Preliminary Check POWER SUPPLY AND GROUND CIRCUIT INSPECTION

1. FUSE INSPECTION

Check if any of the following fuses are blown.

Unit	Power source	Fuse No.
BCM	Battery power supply	3 (10A)
	ACC power supply	21 (10A)

Refer to [BL-57, "Wiring Diagram – KEYLES –"](#) .

Unit	Power source	Fusible link location
Driver door control unit Passenger door control unit Rear LH door control unit Rear RH door control unit	Battery power supply	H (40A)

Refer to [BL-57, "Wiring Diagram – KEYLES –"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse, refer to [PG-2, "POWER SUPPLY ROUTING"](#) .

2. POWER SUPPLY CIRCUIT INSPECTION

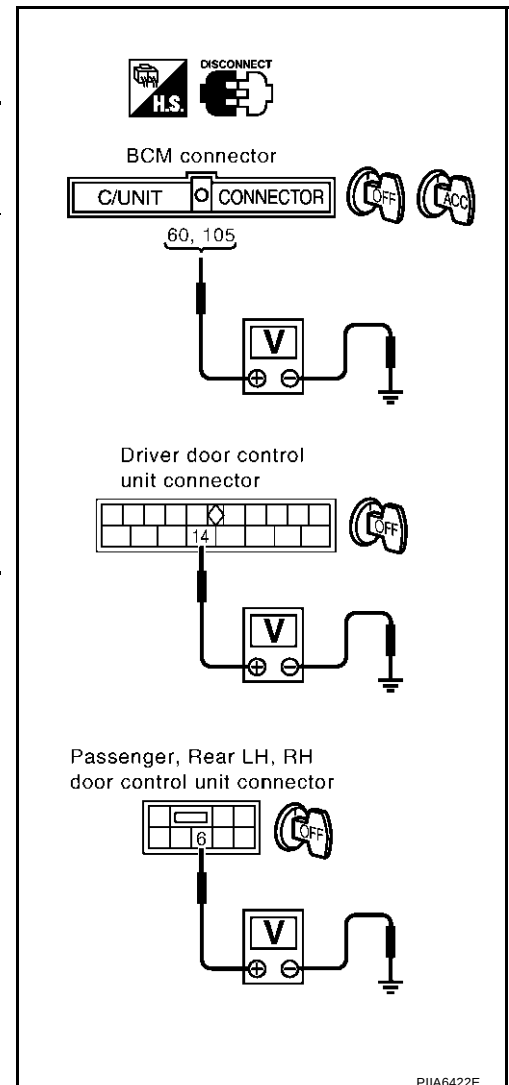
Remove the connectors for BCM and driver door LCU or passenger, rear LH, RH door control units, check the voltage between the following terminals of connectors and ground.

Unit	Terminals (wire color)		Ignition switch condition	Voltage (V) Approx.
Connector	(+)	(-)		
BCM (M4)	105 (Y/L)	Ground	OFF	Battery voltage
	60 (L/OR)		ACC or ON	
Driver door control unit (D8)	14 (Y/G)		OFF	
Passenger door control unit (D38)	6 (W/R)		OFF	
Rear LH door control unit (D58)	6 (Y/B)			
Rear RH door control unit (D78)	6 (Y/B)			

OK or NG

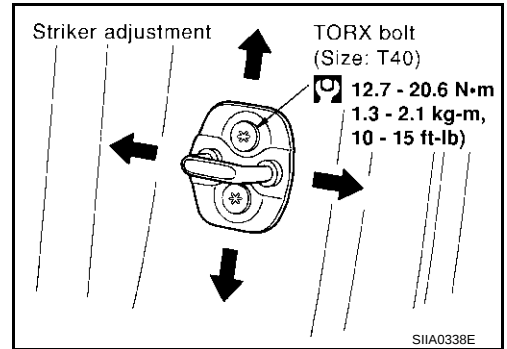
OK >> GO TO 3.

NG >> Check harness for open or short.



DOOR

2. Adjust the striker so that it becomes parallel with the lock insertion direction.



Removal and Installation of Front Door

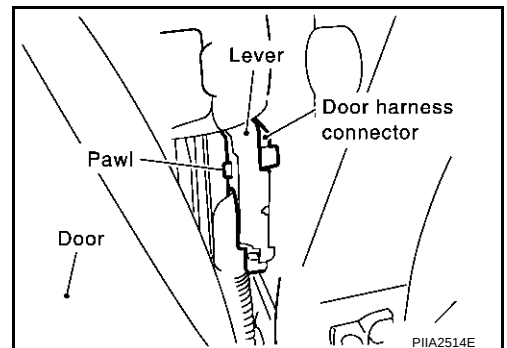
EIS009W0

CAUTION:

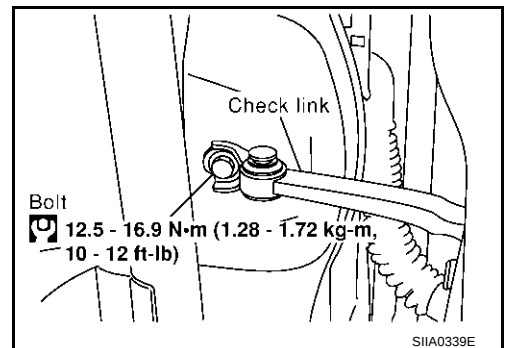
- When removing and installing the door assembly, support the door with a jack and cloth to protect the door and body.
- Operate with two workers, because of its heavy weight.
- When removing and installing front door assembly, be sure to perform the fitting adjustment Refer to [BL-102, "Fitting Adjustment"](#).
- Check the hinge rotating part for poor lubrication. If necessary, apply "body grease".
- After installing, apply touch-up paint (the body color) onto the head of the hinge mounting nuts.
- After installing, check operation.

REMOVAL

1. Pull the lever and remove the front door harness connector while removing tabs of door harness connector.

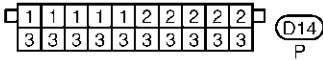
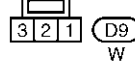
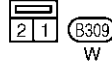
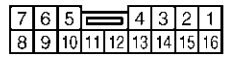
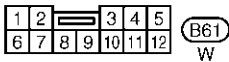
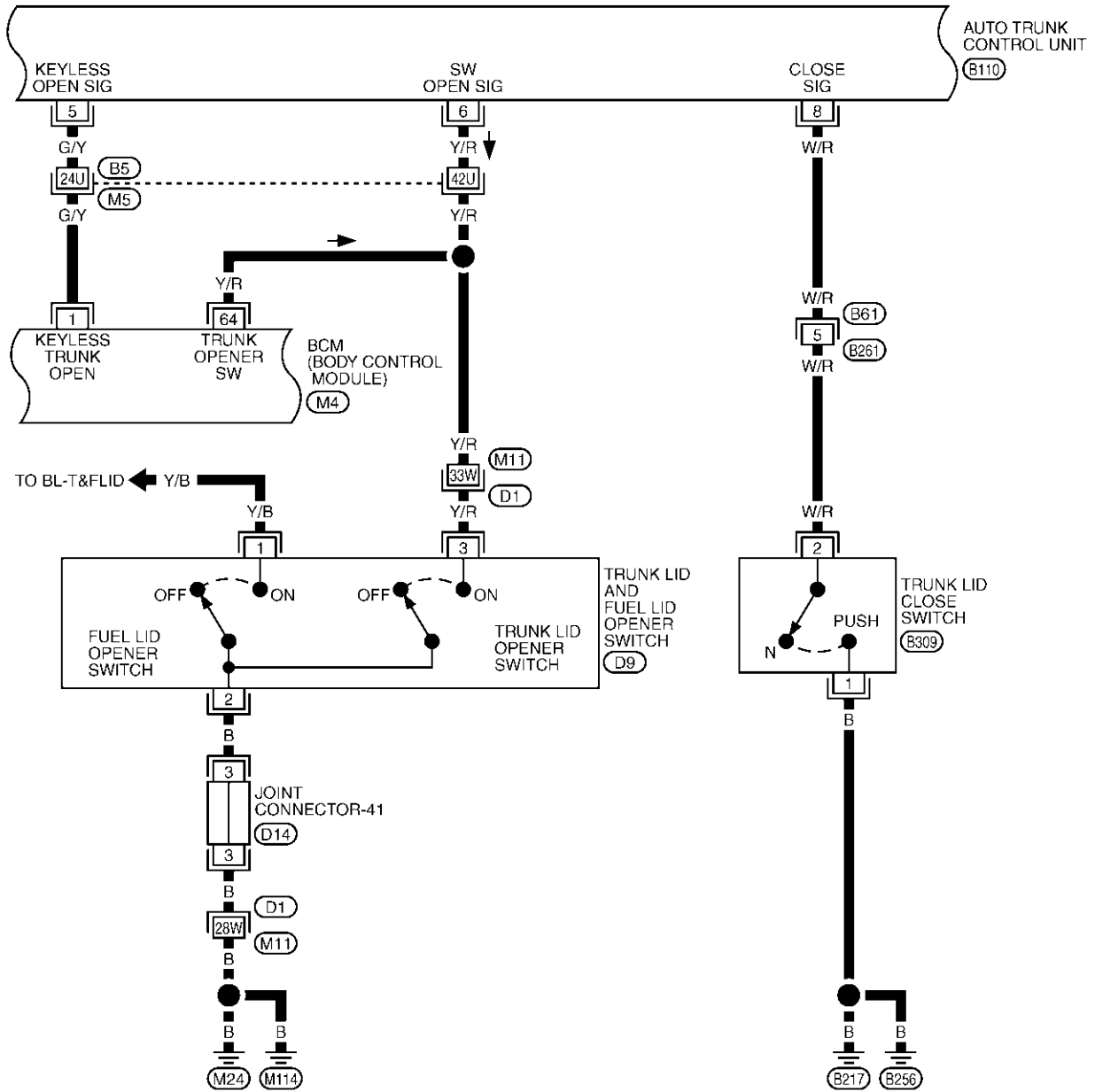


2. Remove the check link cover.
3. Remove the mounting bolts of the check link on the vehicle.



AUTO TRUNK SYSTEM

BL-A/TRNK-02



REFER TO THE FOLLOWING.

(M5), (D1) -SUPER
MULTIPLE JUNCTION (SMJ)
(M4) -ELECTRICAL UNITS

TIWM0408E

VEHICLE SECURITY (THEFT WARNING) SYSTEM

8. Touch "THEFT WARNING SYSTEM" on the "SELECT TEST ITEM" screen.

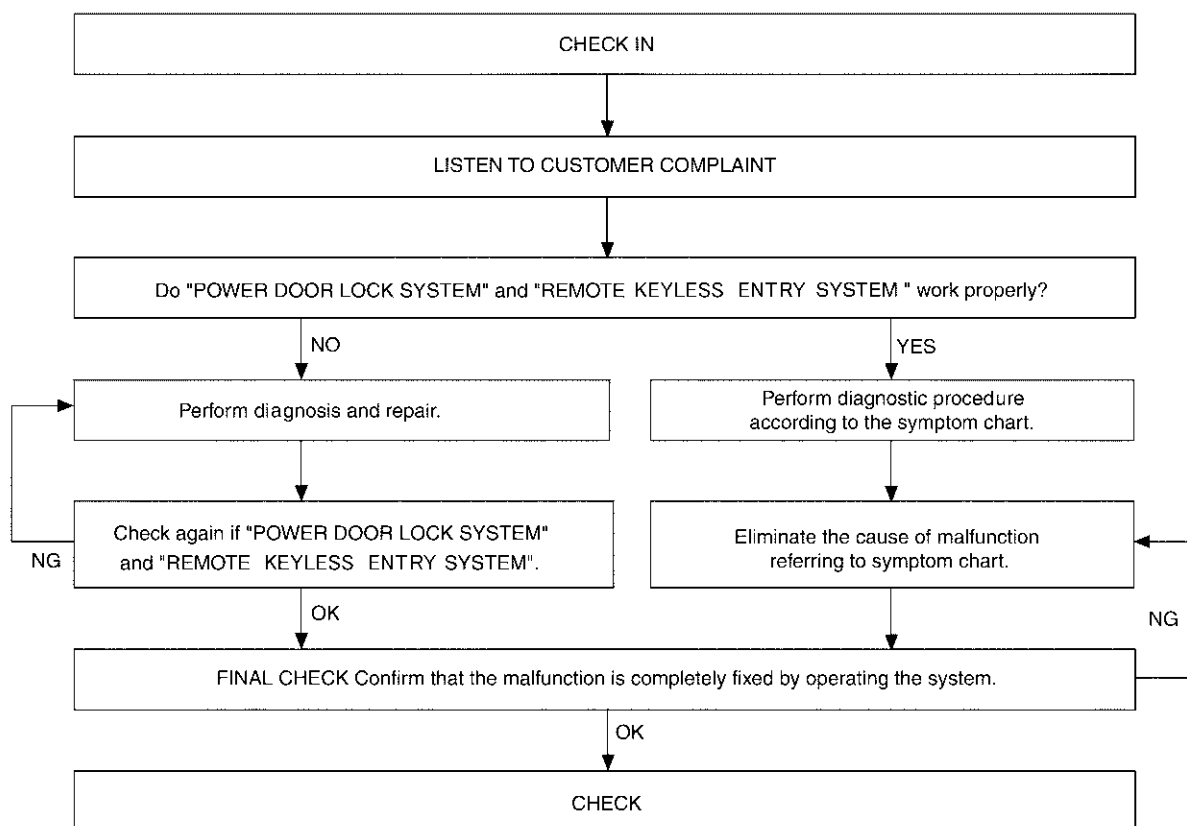
- WORK SUPPORT, DATA MONITOR and ACTIVE TEST are available for the vehicle security system.

SELECT TEST ITEM			
THEFT WARNING SYSTEM			
STEP LAMP			
MULTI-REMOTE CONT SYS			
AUTO LIGHT SYSTEM			
INTERIOR ILLUMINATION			
SUN ROOF RELAY			
Scroll up	Scroll down		
	BACK	LIGHT	COPY

PIIA2797E

Trouble Diagnoses WORK FLOW

EIS003Q8



LIIA0123E

- "POWER DOOR LOCK SYSTEM" Diagnosis refer to [BL-19, "POWER DOOR LOCK SYSTEM"](#) .
- "REMOTE KEYLESS ENTRY SYSTEM" Diagnosis refer to [BL-52, "REMOTE KEYLESS ENTRY SYSTEM"](#) .

IVIS (INFINITI VEHICLE IMMOBILIZER SYSTEM-NATS)

NOTE:

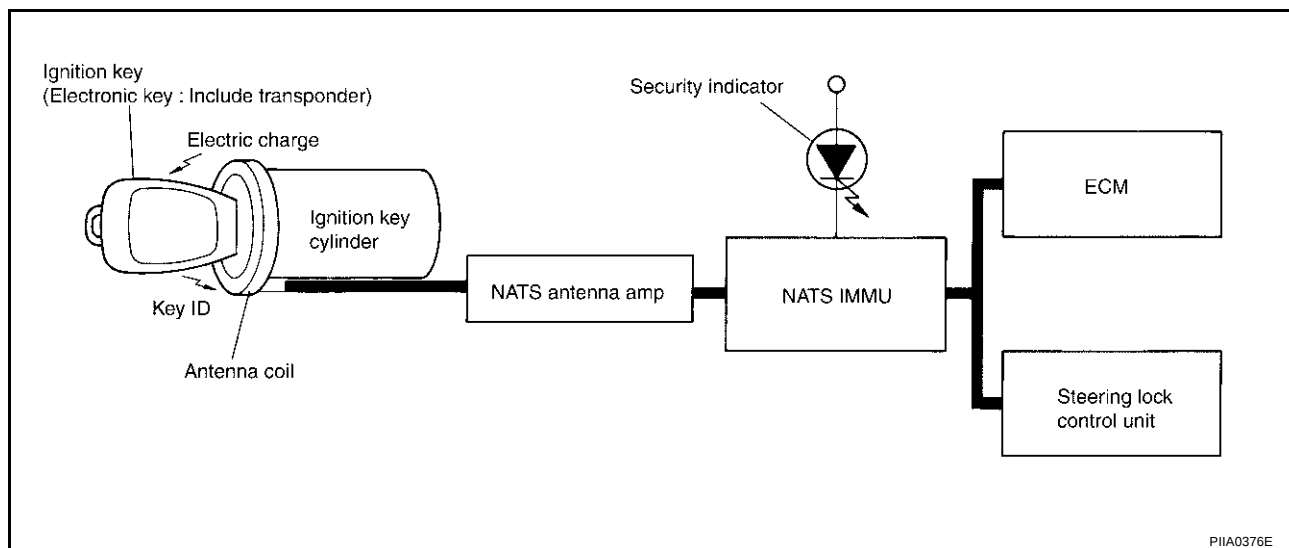
When servicing a malfunction of the IVIS (NATS) indicated by lighting up of Security Indicator Lamp or registering another IVIS (NATS) electronic key ID no., it is necessary to re-register original key identification. Therefore, be sure to receive ALL ELECTRONIC KEYS from vehicle owner.

System Composition

EIS0012A

The immobilizer function of the IVIS (NATS) consists of the following:

- IVIS (NATS) electronic key
- IVIS (NATS) antenna amp. Located in the ignition key cylinder
- Steering lock control unit.
- IVIS (NATS) immobilizer control unit (NATS IMMU)
- Engine control module (ECM)
- Security indicator



OUTLINE OF IVIS (NATS) FUNCTION

Operation 1 (Insert the Key into the Ignition Key Cylinder)

1. By inserting the ignition key (electronic key: built-in transponder) into the key cylinder, the key detection switch is turned to ON.
2. The power is supplied from the NATS IMMU → NATS antenna amp. → antenna coil.
3. The current through the antenna coil induces a magnetic field.
4. The coil in the transponder induces electromotive force by mutual induction, which is charged in the capacitor.
5. The transponder uses the charged energy to transmit the built-in key ID signal.
6. The sent key ID signal is received by the antenna coil and transmitted via the NATS antenna amp. to NATS IMMU.
7. NATS IMMU compares the stored key ID and received one, and only if the matching result is OK, it transmits the key rotation permission signal to the steering lock control unit (integrated in the key cylinder).
8. When the key rotation permission signal is input, the steering lock control unit activates the electronic key solenoid valve in the key cylinder to allow the electronic key to turn.
9. Turn ignition switch ON.
10. Only if the key ID matching result is OK, the ECM allows the engine to start.

Operation 2 (Withdraw the Key from the Ignition Key Cylinder)

1. Return the electronic key to the LOCK position of the steering system lock.
2. When the key is removed, the electronic key solenoid valve in the key cylinder returns to inhibit the key from turning. In this case, the steering lock control unit processes the key switch ON → OFF signal by itself to inhibit the electronic key from turning.

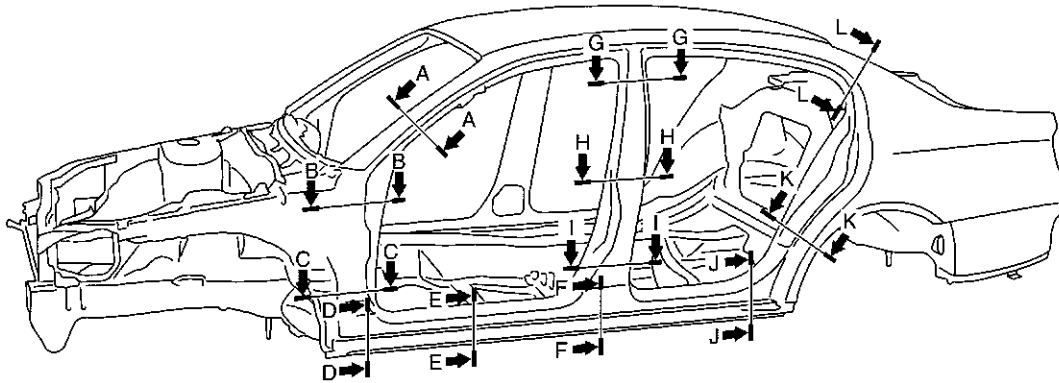
NOTE:

If the A/T selector lever is not in "P" position, the electronic key does not return to LOCK position.

BODY REPAIR

Body Construction BODY CONSTRUCTION

EIS000K6



Section A-A	Section B-B	Section C-C	Section D-D
Section E-E	Section F-F	Section G-G	Section H-H
Section I-I	Section J-J	Section K-K	Section L-L

A

B

C

D

E

F

G

H

BL

J

K

L

M

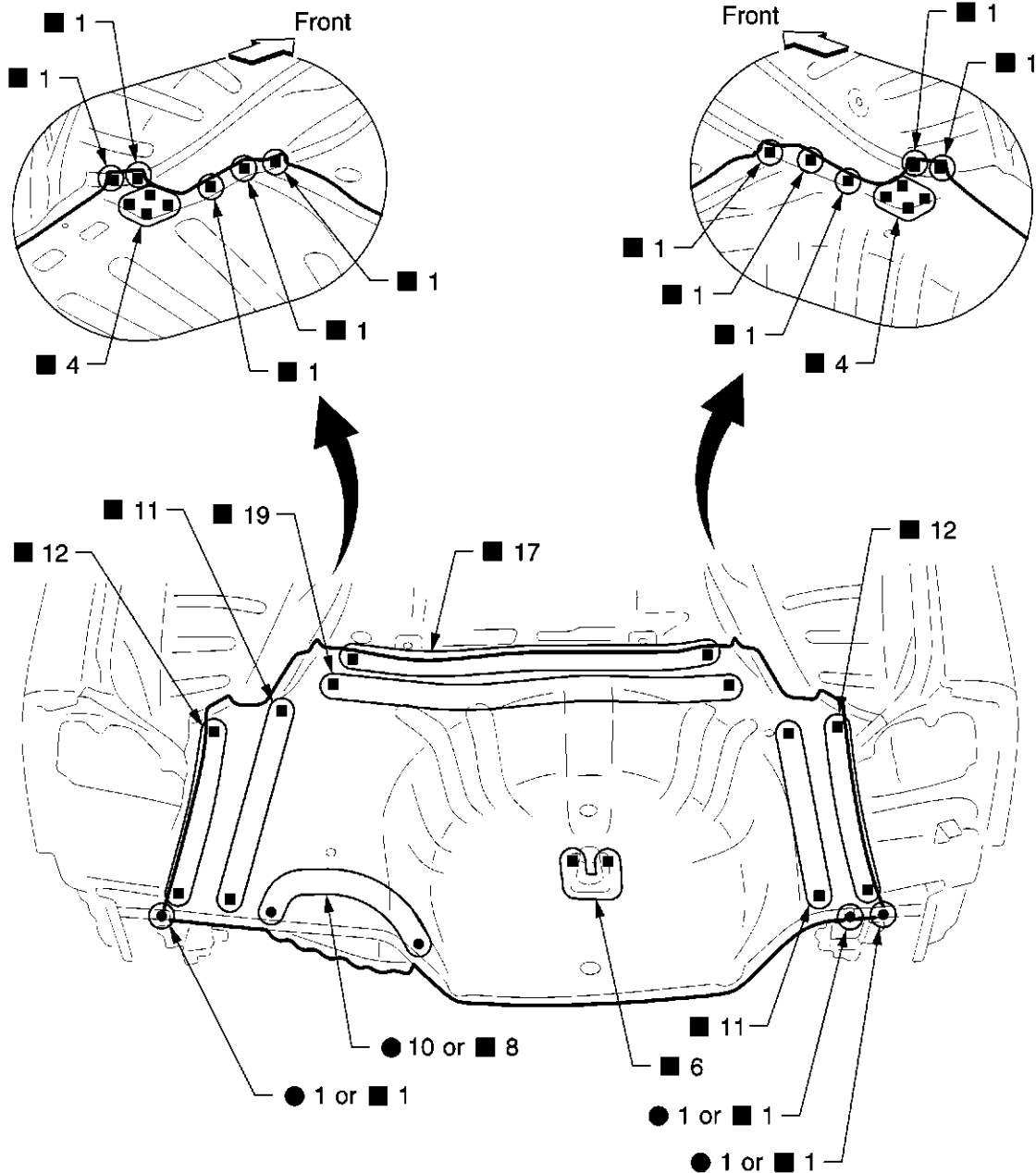
PIIA0101E

BODY REPAIR

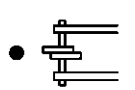
REAR FLOOR REAR

- Work after rear panel has been removed.

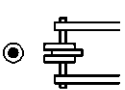
Service Joint



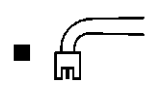
2-spot welds



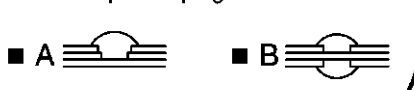
3-spot welds



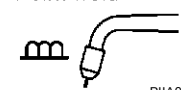
M I G plug weld



For 3 panels plug weld method



M I G seam weld/
Point weld



PIIA0088E

REAR DISC BRAKE

Inspection

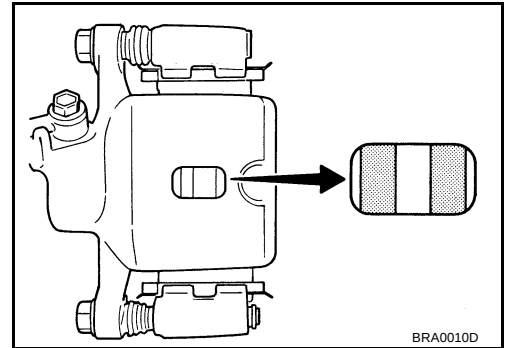
PAD THICKNESS

- Remove wheel with vehicle lifted to check pad thickness from check hole on cylinder body. If necessary, use a scale to check.

Rear brake pad

Standard thickness : 9.8 mm (0.386 in)

Repair limit thickness : 2.0 mm (0.079 in)



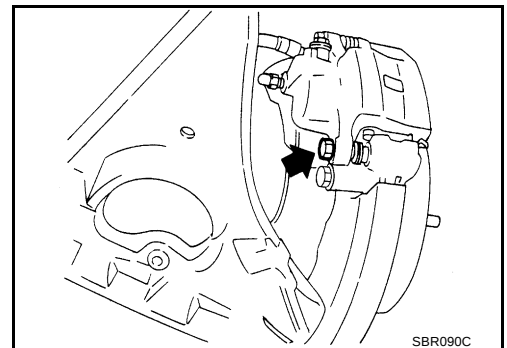
Pad Replacement REMOVAL

WARNING:

Clean brake pads with a vacuum dust collector to minimize the hazard of airborne particles or other materials.

CAUTION:

- While cylinder body is open, do not depress brake pedal, otherwise piston will pop out.
 - Be careful not to damage piston boot or get oil on rotor, Always replace shims when replacing pads.
 - If shims are rusted or show peeling of rubber coat, replace them with new shims.
 - It is not necessary to remove connecting bolt except for disassembly or replacement of caliper assembly. In this case, suspend cylinder body with wire so as not to stretch brake hose.
 - Carefully monitor brake fluid level because brake fluid will return to reservoir when pushing back piston.
 - Burnish brake contact surfaces after refinishing or replacing drums or rotor, after replacing pads or linings, or if a soft pedal occurs at very low mileage. Refer to [BR-29, "Brake Burnishing Procedure"](#).
- Remove master cylinder reservoir cap.
 - Remove lower sliding pin bolt.



TROUBLE DIAGNOSIS

Monitor item	Display content	Data monitor		Note: Error inspection checklist
		Condition	Reference value in normal operation	
ABS WARN LAMP	ABS warning lamp ON condition (Note 2)	ABS warning lamp ON	ON	ABS warning lamp harness
		ABS warning lamp OFF	OFF	
VDC OFF LAMP	VDC OFF indicator lamp status (Note 3)	When VDC OFF indicator lamp is ON	ON	VDC OFF indicator lamp circuit
		When VDC OFF indicator lamp is OFF	OFF	
EV SIGNAL AV SIGNAL	Solenoid valve operation	Actuator (solenoid) is active ("ACTIVE TEST" with CONSULT-II) or actuator relay is inactive (in fail-safe mode).	ON	Solenoid and circuit [Inspection 7] BRC-46
		When actuator (solenoid) is not active and actuator relay is active (ignition switch ON).	OFF	
USV SIGNAL MAV SIGNAL	VDC switch-over valve status	When actuator (switch-over valve) is active ("ACTIVE TEST" with CONSULT-II) or actuator relay is inactive (when in fail-safe mode).	ON	Switch-over valve and circuit [Inspection 7] BRC-46
		When actuator (switch-over valve) is not active and actuator relay is active (ignition switch ON).	OFF	
M/R OUTPUT	Actuator motor and motor relay status (ON/OFF)	When actuator motor and motor relay are active ("ACTIVE TEST" with CONSULT-II).	ON	Actuator motor, motor relay, and circuit [Inspection 8] BRC-48
		When actuator motor and motor relay are inactive.	OFF	

Note 1: Confirm tire pressure is normal.

Note 2: ON/OFF timing of ABS warning lamp

ON: For approximately 1 seconds after ignition switch is turned ON, or when a malfunction is detected.

OFF: Approximately 1 seconds after ignition switch is turned ON (when system is in normal operation).

Note 3: ON/OFF timing of VDC OFF indicator lamp

ON: For approximately 1 seconds after ignition switch is turned ON, or when a malfunction is detected and VDC OFF switch is ON.

OFF: Approximately 1 seconds after ignition switch is turned ON (when system is in normal operation.) And when VDC OFF switch is OFF.

CONSULT-II Functions

CONSULT-II MAIN FUNCTION

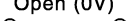
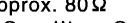
EFS001Z9

In a diagnosis function (main function), there are "WORK SUPPORT", "SELF-DIAGNOSTIC RESULTS", "DATA MONITOR", "CAN DIAG SUPPORT MNTR", "ACTIVE TEST", "FUNCTION TEST", "ECU PART NUMBER".

Diagnostic test mode	Function	Reference
WORK SUPPORT	This mode enables a technician to adjust some devices faster and more accurately by following the indications on CONSULT-II.	BRC-6, "Adjustment of Steering Angle Sensor Neutral Position"
SELF-DIAGNOSTIC RESULTS	Self-diagnostic results can be read and erased quickly.	BRC-27, "SELF-DIAGNOSIS"
DATA MONITOR	Input/Output data in the VDC/TCS/ABS control unit can be read.	BRC-30, "DATA MONITOR"

TROUBLE DIAGNOSIS

Continuity, Resistance

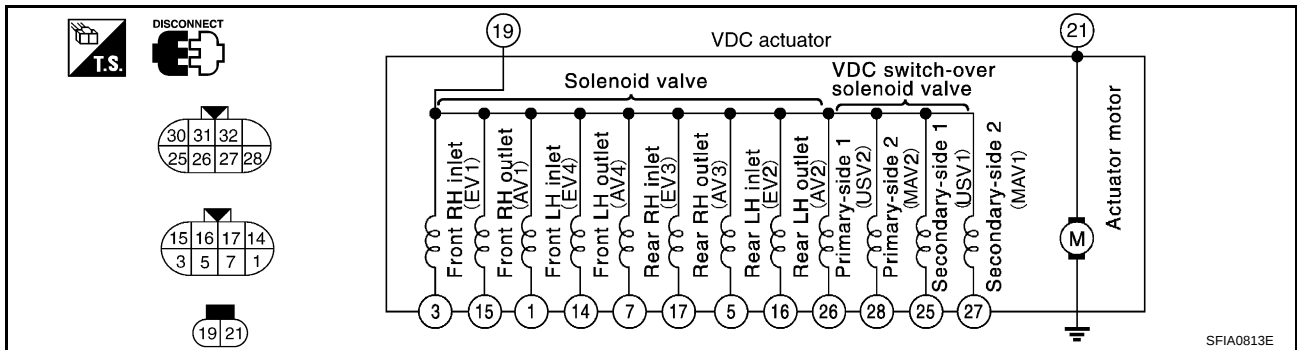
Item	VDC relay box											Condition
	16	2	4	1	9	4	15	10	5	7	8	
Solenoid valve relay									Open (0V) 			Between terminal No. 5 and No. 7 Open (0V)
									12V 			Between terminal No. 5 and No. 7 Add 12V
Motor relay												—
									Open (0V) 			Between terminal No. 5 and No. 8 Open (0V)
									12V 			Between terminal No. 5 and No. 8 Add 12V
Relay coil						Approx. 100 Ω  Approx. 80 Ω 						—

○ — ○ : Conductivity ○ — ○ : Open between terminals (0V) Approx. 100 Ω
 ○ — x — ○ : Not conductivity ○ — 12V — ○ : Add 12V between terminals ○ — w — ○ : Resistance between terminals is 100 Ω

SFIA0582E

VDC/TCS/ABS ACTUATOR

Disconnect actuator connectors. Check continuity and resistance value between any pair of terminals on the actuator.



SFIA0813E

CAUTION:
Make sure actuator motor is correctly grounded.

COOLING FAN

NOTE:

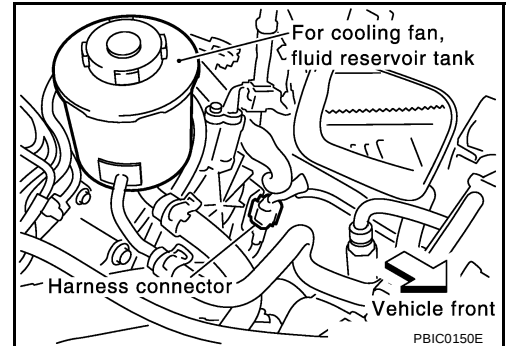
- With the engine operating, the reservoir tank cap can be removed to check the fluid level.
- Immediately after starting, certain noise will come from the fluid pump. This is caused by air taken in to the piping and will gradually disappear.

4. Continue with step 3 until the level of the fluid stops decreasing.
5. Stop the engine and disconnect the harness connector for the cooling fan speed control solenoid valve.

NOTE:

When the solenoid valve harness is disconnected, the fan will operate at full speed.

6. Start the engine. Repeat step 3 until the fluid level stops decreasing and air bubbles stop coming out.
7. Stop the engine. Connect the harness connector for the cooling fan speed control solenoid valve.



INSPECTION AFTER INSTALLATION

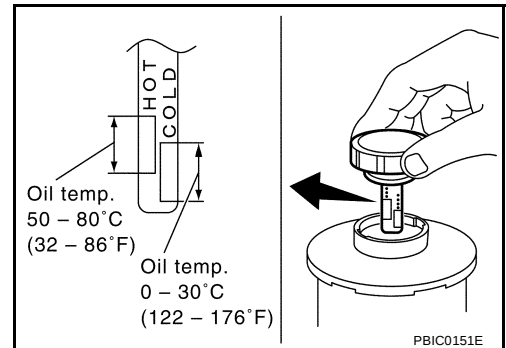
- Check that there is no fluid leakage from any hose connection or any other part.
- Check the fluid level with the level gauge on the reservoir tank cap. If there is too much or too little, adjust the amount of fluid.
- Check that under the fluid temperature conditions below, the fluid level is within the "COLD" or "HOT" range on the level gauge.

COLD : Fluid temperature 0 - 30 °C (32 - 86 °F)

HOT : Fluid temperature 50 - 80 °C (122 - 176 °F)

NOTE:

- There is no specified timing for replacing the fluid.
- Refer to [EC-571, "DTC P1480 COOLING FAN SPEED CONTROL SOLENOID VALVE"](#) for control of cooling fan.



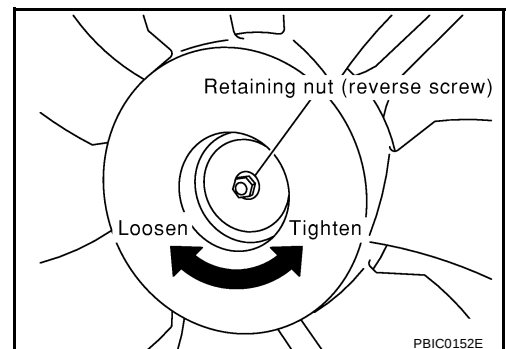
Disassembly and Assembly

DISASSEMBLY

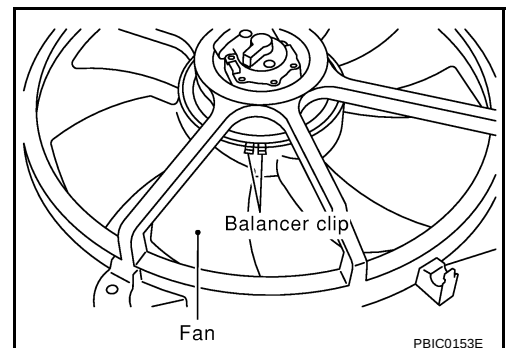
1. Remove fan.

CAUTION:

- Reverse screws are used for the fan attachment nuts. When removing or attaching, turn the nut the opposite way as for a normal screw.
- Do not remove the balancer clip from the fan.
- For the case if the balancer clip is removed, make an alignment mark for the installation position on the fan side.



2. Remove cooling fan motor from cooling fan shroud.



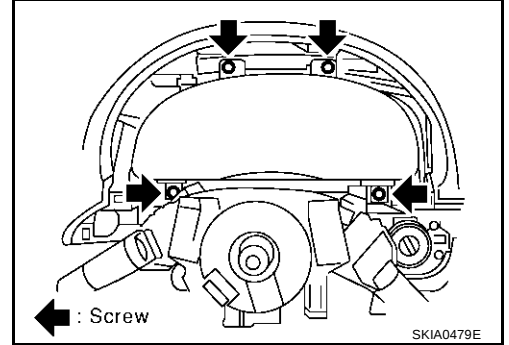
COMBINATION METERS

Removal and Installation for Combination Meter

EKS0010F

REMOVAL

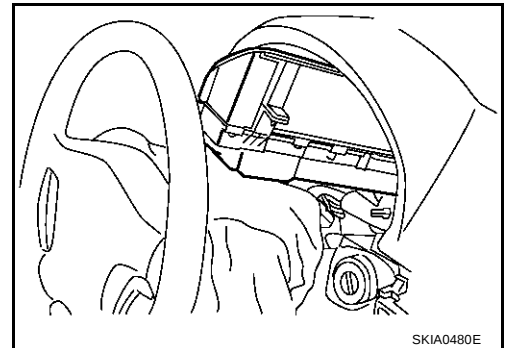
1. Remove the cluster lid A. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
2. Remove the screws (4) with power tool, and disconnect connectors.



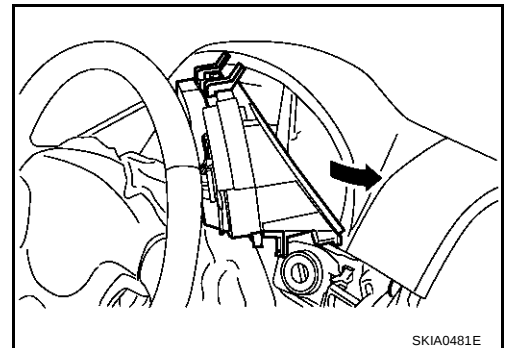
3. Rotating the combination meter so that the left-side is in front, turn it until the meter face comes to the top.

CAUTION:

To prevent it from being damaged by interference with the meter bracket, protect the meter with cloth.



4. While pulling combination meter forward, pull it out to the right (combination meter back-side shall be in front).



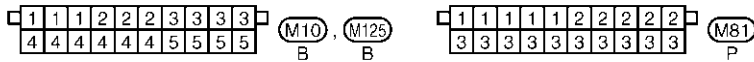
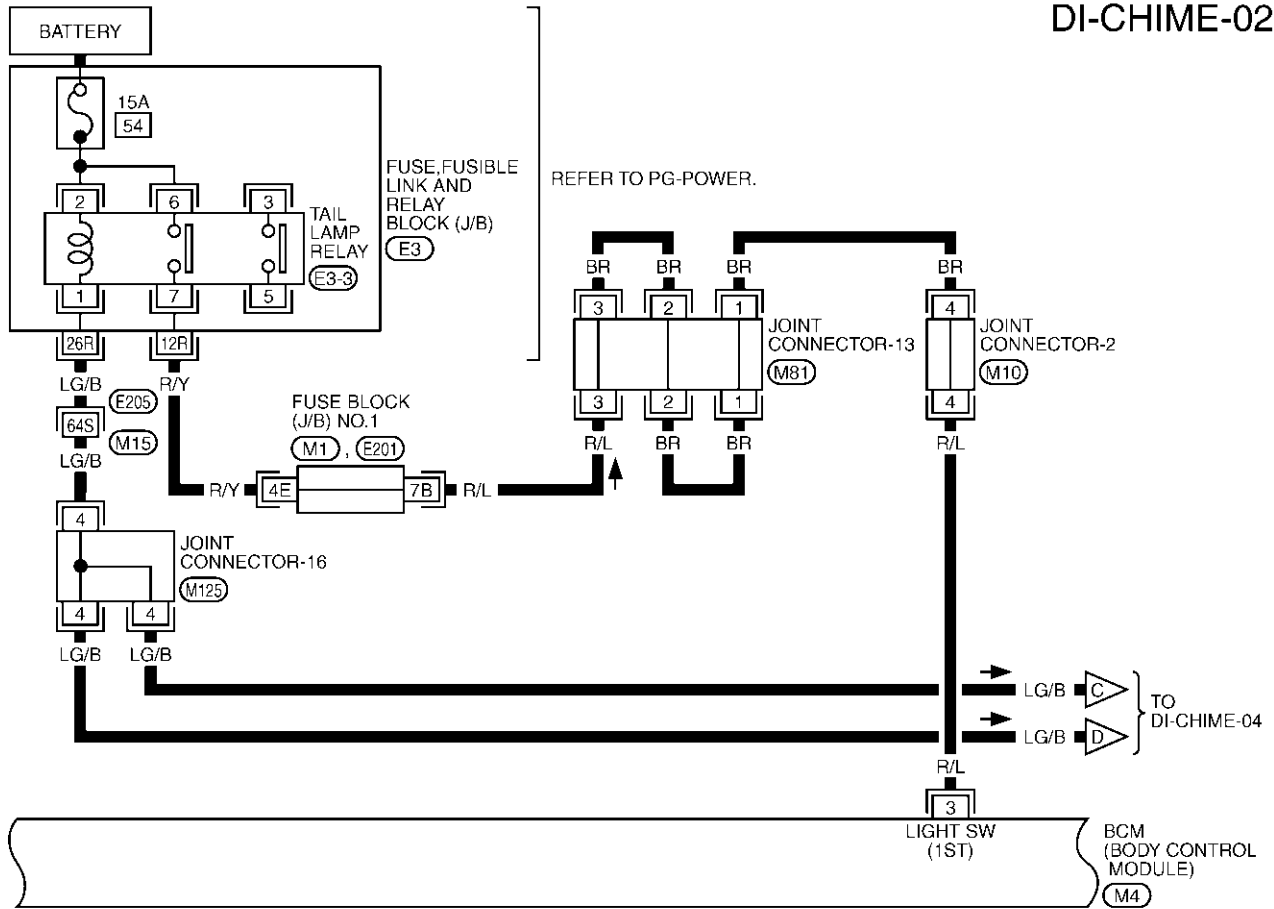
INSTALLATION

Install in the reverse order of removal.

A
B
C
D
E
F
G
H
I
J
DI
L
M

WARNING CHIME

DI-CHIME-02



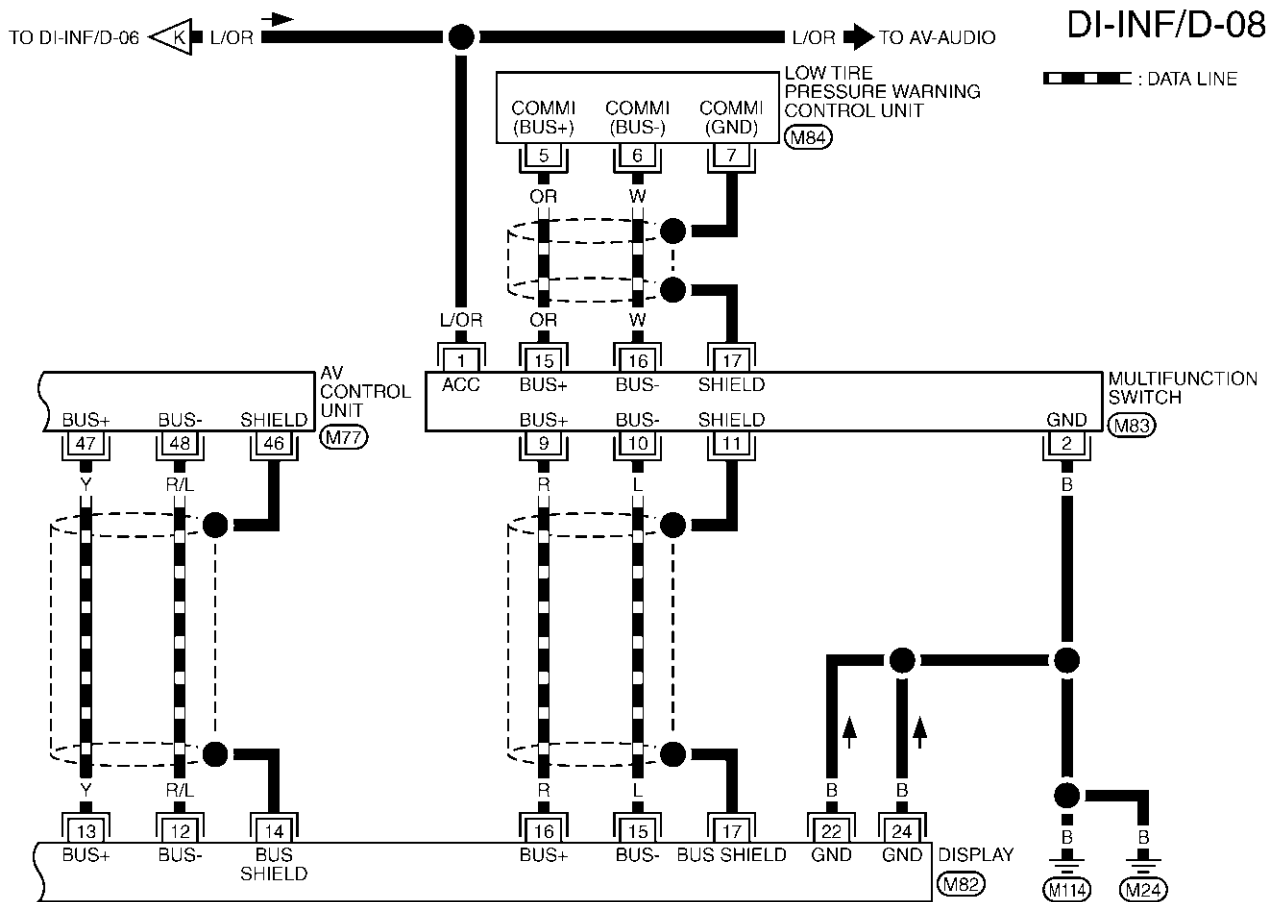
REFER TO THE FOLLOWING.

- (E205) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1, E201) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
- (E3) -FUSE,FUSIBLE LINK AND RELAY BLOCK (J/B)
- (M4) -ELECTRICAL UNITS

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

TKWM0534E

VEHICLE INFORMATION AND INTEGRATED SWITCH SYSTEM /WITHOUT NAVIGATION SYSTEM



48	45	42	39	37	35	33	30	27
47	44	41	38	36	34	32	29	26
46	43	40				31	28	25

(M77) GY

24	22	20	18	16	14			10	8	6	4	2
23	21	19	17	15	13	12	11	9	7	5	3	1

(M82)
GY

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

(M83)
W

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

M84

W

TKWM0728E

VEHICLE INFORMATION AND INTEGRATED SWITCH SYSTEM /WITHOUT NAVIGATION SYSTEM

3. CHECK RGB SIGNAL

1. Connect AV control unit and display connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check the following with CONSULT-II or oscilloscope.

● When the screen looks bluish

Voltage signal between AV control unit harness connector M78 terminal 18 (L) and 14.

18 (L) - 14 : Refer to [DI-101, "Terminals and Reference Value for AV Control Unit"](#) .

● When the screen looks reddish

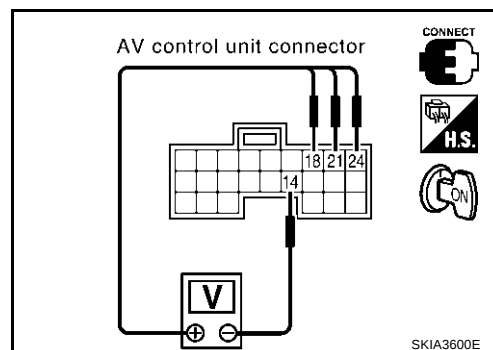
Voltage signal between AV control unit harness connector M78 terminal 21 (Y) and 14.

21 (Y) - 14 : Refer to [DI-101, "Terminals and Reference Value for AV Control Unit"](#) .

● When the screen looks yellowish

Voltage signal between AV control unit harness connector M78 terminal 24 (G) and 14.

24 (G) - 14 : Refer to [DI-101, "Terminals and Reference Value for AV Control Unit"](#) .



OK or NG

- OK >> Replace display.
- NG >> Replace AV control unit.

RGB Screen Is Rolling

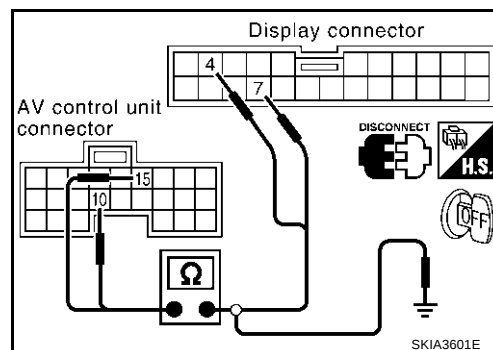
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect AV control unit and display connector.
3. Check continuity between AV control unit and ground.

Terminals			Continuity
(+)		(-)	
Connector	Terminal (Wire color)		
M78	15 (L/R)	Ground	No
	10		

4. Check continuity between AV control unit and display.

Terminals				Continuity
AV control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M78	15 (L/R)	M82	7 (L/R)	Yes
	10		4	



OK or NG

- OK >> GO TO 2.
- NG >> ● Check connector housings for disconnected or loose terminals.
- Repair harness or connector.

Vehicle Condition Setting Is Not Possible

1. CHECK HARNESS

1. Turn the ignition switch OFF.
2. Disconnect connectors of combination meter, BCM, and AV and NAVI control unit.
3. Check continuity AV and NAVI control unit and BCM.

Terminals				Continuity
AV and NAVI control unit (+)		BCM (-)		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B29	33 (LG)	M4	31 (LG)	YES
B29	32 (PU)	M4	30 (PU)	YES

4. Check continuity between AV and NAVI control unit and ground.

Terminals			Continuity
AV and NAVI control unit (+)		(-)	
Connector	Terminal (Wire color)		
B29	33 (LG)	Ground	NO
	32 (PU)		

OK or NG

- OK >> GO TO 2.
 NG >> Repair harness.

2. CHECK COMMUNICATION SIGNAL (AV-ME)

1. Connect connectors of combination meter, BCM, and AV and NAVI control unit.
2. Turn the ignition switch ON.
3. Check the signal between AV and NAVI control unit harness connector B29 terminal 33 (LG) and ground with CONSULT-II or oscilloscope.

33 (LG) – Ground : Refer to [AV-74, "Terminals and Reference Value for AV and NAVI Control unit"](#) .

OK or NG

- OK >> GO TO 3.
 NG >> Replace AV and NAVI control unit

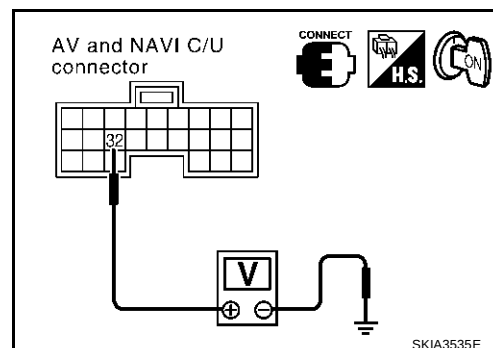
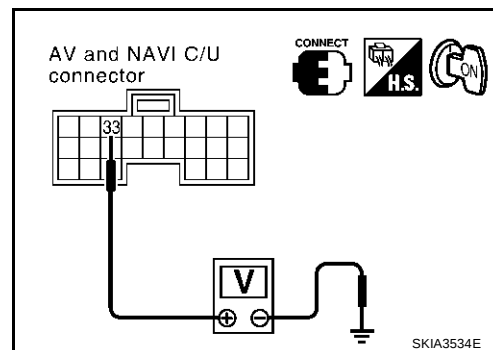
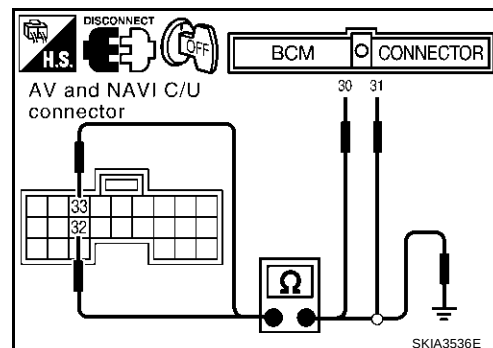
3. CHECK COMMUNICATION SIGNAL (ME-AV)

1. Turn ignition switch to ON and display "VEHICLE ELECTRONIC SYSTEMS" screen.
2. Check the signal between AV and NAVI control unit harness connector B29 terminal 32 (PU) and ground with CONSULT-II or oscilloscope.

32 (PU) – Ground : Refer to [AV-74, "Terminals and Reference Value for AV and NAVI Control unit"](#) .

OK or NG

- OK >> Replace AV and NAVI control unit.
 NG >> Replace BCM.



VOICE ACTIVATED CONTROL SYSTEM

Trouble Diagnoses

EKS0017G

THIS CONDITION IS NOT MALFUNCTION

Example of Basic Operational Errors

The system should respond correctly to all voice commands. Follow the solutions given in this guide for the appropriate error when any of the following symptom is encountered.

Where the solutions are listed by number, try each solution in turn, starting with number one, until the symptom is resolved.

Symptom	Remedy
Displays "COMMAND NOT RECOGNIZED" or the system does not interpret the command correctly.	1. Ensure that the command is valid, see Command list (Refer to Owner's Manual). 2. Ensure that the command is given after the tone while "LISTENING" is displayed. 3. Speak clearly without pausing between words and at a level appropriate to the ambient noise level. 4. Ensure that the ambient noise level is not excessive, for example, windows open or defrost on. NOTE: If it is too noisy to use the microphone, it is likely that voice commands will not be recognized. 5. If optional words of the command have been omitted, then the command should be tried with these in place. 6. If a number of commands have been given in rapid succession resulting in the message "COMMAND NOT RECOGNIZED" to be displayed, then allow the system to recover (approximately one minute) before trying the command again. 7. If the system consistently does not recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker.
Displays "NO SPEECH DETECTED".	1. Ensure that the command is given after the tone while "LISTENING" is displayed. 2. Ensure that the command is given within a maximum of five seconds from the end of the tone. NOTE: Be sure you know what to say before pressing the Voice button.
Displays "NAMETAG NOT UNIQUE".	1. This response will be received when storing a nametag if the nametag being given has already been stored. This can be confirmed by giving the Radio Directory command. 2. If this response is received and the nametag has not been used already, then it is too similar to an existing nametag or voice grammar and an alternative should be used.
The system consistently selects the wrong nametag.	1. Ensure that the nametag requested matches what was originally stored. This can be confirmed by giving the Radio Directory command. 2. Delete one of the nametags being confused and replace it with a different nametag.

Self-Diagnosis Function

EKS001AT

DESCRIPTION

- Diagnosis function consists of the self-diagnosis mode, and the "CONFIRMATION/ADJUSTMENT" mode.
- Self-diagnosis mode checks for connection between AV and NAVI control unit (with navigation system) or AV control unit (without navigation system) and voice activated control module and analyzes each unit, then displays the results.
- "CONFIRMATION/ADJUSTMENT" function analyzes each microphone.

DIAGNOSIS ITEM

Mode		Description
Self-diagnosis		● Checks for the connections between AV and NAVI control unit or AV control unit and voice activated control module. ● Performs the unit diagnosis of voice activated control module.
CONFIRMATION/ ADJUSTMENT	Voice Mic. Test	● Checks microphone.

Self-Diagnosis Mode

EKS001AU

OPERATION PROCEDURE

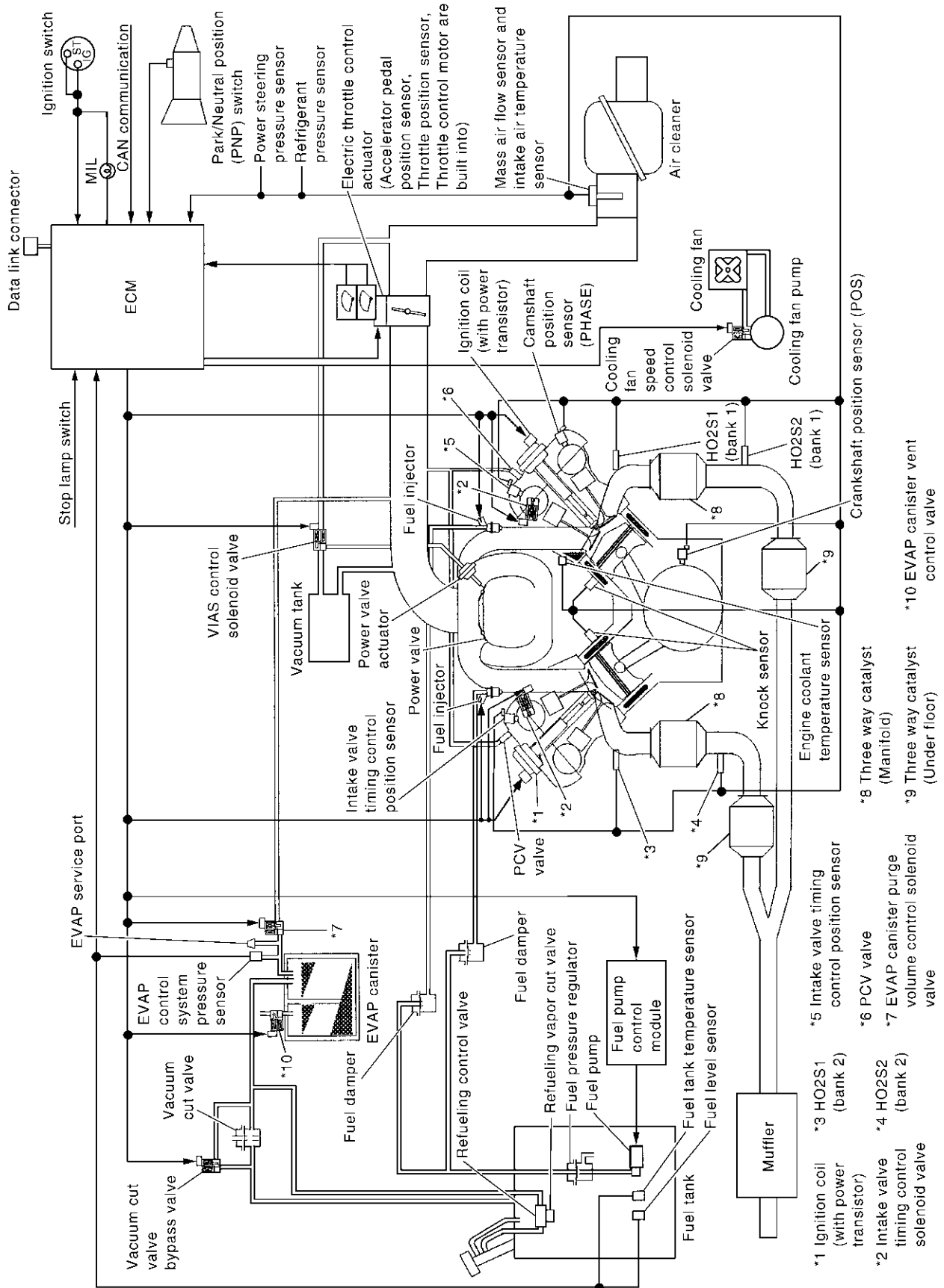
- To start the self-diagnosis mode and to check the diagnosis result, refer to [DI-109, "Self-Diagnosis Mode"](#) (with navigation system), or [DI-109, "Self-Diagnosis Mode"](#) (without navigation system).

ENGINE CONTROL SYSTEM

PFP:23710

System Diagram

EBS00LV9



PBIB1916E

ON BOARD DIAGNOSTIC (OBD) SYSTEM

trips, only the 1st trip DTC will continue to be stored. For malfunctions that blink or light up the MIL during the 1st trip, the DTC and 1st trip DTC are stored in the ECM memory.

Procedures for clearing the DTC and the 1st trip DTC from the ECM memory are described in [EC-63, "HOW TO ERASE EMISSION-RELATED DIAGNOSTIC INFORMATION"](#).

For malfunctions in which 1st trip DTCs are displayed, refer to [EC-52, "EMISSION-RELATED DIAGNOSTIC INFORMATION ITEMS"](#). These items are required by legal regulations to continuously monitor the system/component. In addition, the items monitored non-continuously are also displayed on CONSULT-II.

1st trip DTC is specified in Mode 7 of SAE J1979. 1st trip DTC detection occurs without lighting up the MIL and therefore does not warn the driver of a malfunction. However, 1st trip DTC detection will not prevent the vehicle from being tested, for example during Inspection/Maintenance (I/M) tests.

When a 1st trip DTC is detected, check, print out or write down and erase (1st trip) DTC and Freeze Frame data as specified in "Work Flow" procedure Step II, refer to [EC-75, "WORK FLOW"](#). Then perform "DTC Confirmation Procedure" or "Overall Function Check" to try to duplicate the malfunction. If the malfunction is duplicated, the item requires repair.

How to Read DTC and 1st Trip DTC

DTC and 1st trip DTC can be read by the following methods.

 **With CONSULT-II**

 **With GST**

CONSULT-II or GST (Generic Scan Tool) Examples: P0340, P1148, P1706, etc.

These DTCs are prescribed by SAE J2012.

(CONSULT-II also displays the malfunctioning component or system.)

 **No Tools**

The number of blinks of the MIL in the Diagnostic Test Mode II (Self-Diagnostic Results) indicates the DTC. Example: 0340, 1148, 1706, etc.

These DTCs are controlled by NISSAN.

- **1st trip DTC No. is the same as DTC No.**
- **Output of a DTC indicates a malfunction. However, GST or the Diagnostic Test Mode II do not indicate whether the malfunction is still occurring or has occurred in the past and has returned to normal. CONSULT-II can identify malfunction status as shown below. Therefore, using CONSULT-II (if available) is recommended.**

A sample of CONSULT-II display for DTC and 1st trip DTC is shown below. DTC or 1st trip DTC of a malfunction is displayed in SELF-DIAGNOSTIC RESULTS mode of CONSULT-II. Time data indicates how many times the vehicle was driven after the last detection of a DTC.

If the DTC is being detected currently, the time data will be "0".

If a 1st trip DTC is stored in the ECM, the time data will be "[1t]".

DTC display	SELF DIAG RESULTS	
	DTC RESULTS	TIME
	CKP SEN/CIRCUIT [P0335]	0

1st trip DTC display	SELF DIAG RESULTS	
	DTC RESULTS	TIME
	CKP SEN/CIRCUIT [P0335]	1t

PBIB0911E

FREEZE FRAME DATA AND 1ST TRIP FREEZE FRAME DATA

The ECM records the driving conditions such as fuel system status, calculated load value, engine coolant temperature, short term fuel trim, long term fuel trim, engine speed, vehicle speed, base fuel schedule and intake air temperature at the moment a malfunction is detected.

Data which are stored in the ECM memory, along with the 1st trip DTC, are called 1st trip freeze frame data. The data, stored together with the DTC data, are called freeze frame data and displayed on CONSULT-II or GST. The 1st trip freeze frame data can only be displayed on the CONSULT-II screen, not on the GST. For details, see [EC-56, "FREEZE FRAME DATA AND 1ST TRIP FREEZE FRAME DATA"](#).

Only one set of freeze frame data (either 1st trip freeze frame data or freeze frame data) can be stored in the ECM. 1st trip freeze frame data is stored in the ECM memory along with the 1st trip DTC. There is no priority for 1st trip freeze frame data and it is updated each time a different 1st trip DTC is detected. However, once freeze frame data (2nd trip detection/MIL on) is stored in the ECM memory, 1st trip freeze frame data is no

TROUBLE DIAGNOSIS

SYSTEM — ENGINE MECHANICAL & OTHER

		SYMPTOM													Reference page
		HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	
Warranty symptom code		AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	HA	
Fuel	Fuel tank	5	5												FL-9
	Fuel piping			5	5	5		5	5			5			FL-2, MA-16
	Vapor lock														—
	Valve deposit														—
	Poor fuel (Heavy weight gaso-line, Low octane)	5		5	5	5		5	5			5			—
Air	Air duct		5												EM-15
	Air cleaner													EM-15	
	Air leakage from air duct (Mass air flow sensor — electric throttle control actuator)			5		5		5	5			5			EM-15
	Electric throttle control actuator, Throttle wire	5			5		5			5					EM-17, ACC-2
	Air leakage from intake manifold/Collector/Gasket														EM-17
Cranking	Battery	1	1	1		1		1	1			1		1	SC-4
	Generator circuit														SC-9
	Starter circuit	3													SC-22
	Drive plate	6													EM-73
	PNP switch	4													AT-103
Engine	Cylinder head	5	5	5	5	5		5	5			5			EM-61
	Cylinder head gasket										4		3		
	Cylinder block														
	Piston												4		
	Piston ring														
	Connecting rod	6	6	6	6	6		6	6			6			EM-73
	Bearing														
	Crankshaft														

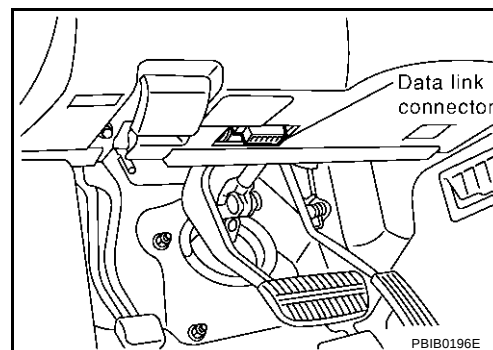
TROUBLE DIAGNOSIS

FUNCTION

Diagnostic test mode		Function
MODE 1	READINESS TESTS	This mode gains access to current emission-related data values, including analog inputs and outputs, digital inputs and outputs, and system status information.
MODE 2	(FREEZE DATA)	This mode gains access to emission-related data value which were stored by ECM during the freeze frame. For details, refer to EC-56, "FREEZE FRAME DATA AND 1ST TRIP FREEZE FRAME DATA" .
MODE 3	DTCs	This mode gains access to emission-related power train trouble codes which were stored by ECM.
MODE 4	CLEAR DIAG INFO	This mode can clear all emission-related diagnostic information. This includes: ● Clear number of diagnostic trouble codes (MODE 1) ● Clear diagnostic trouble codes (MODE 3) ● Clear trouble code for freeze frame data (MODE 1) ● Clear freeze frame data (MODE 2) ● Reset status of system monitoring test (MODE 1) ● Clear on board monitoring test results (MODE 6 and 7)
MODE 6	(ON BOARD TESTS)	This mode accesses the results of on board diagnostic monitoring tests of specific components/systems that are not continuously monitored.
MODE 7	(ON BOARD TESTS)	This mode enables the off board test drive to obtain test results for emission-related powertrain components/systems that are continuously monitored during normal driving conditions.
MODE 8	—	This mode can close EVAP system in ignition switch "ON" position (Engine stopped). When this mode is performed, the following parts can be opened or closed. ● EVAP canister vent control valve open ● Vacuum cut valve bypass valve closed In the following conditions, this mode cannot function. ● Low ambient temperature ● Low battery voltage ● Engine running ● Ignition switch "OFF" ● Low fuel temperature ● Too much pressure is applied to EVAP system
MODE 9	(CALIBRATION ID)	This mode enables the off-board test device to request specific vehicle information such as Vehicle Identification Number (VIN) and Calibration IDs.

GST INSPECTION PROCEDURE

1. Turn ignition switch OFF.
2. Connect "GST" to data link connector, which is located under LH dash panel near the fuse box cover.



DTC P0031, P0032, P0051, P0052 HO2S1 HEATER

DTC P0031, P0032, P0051, P0052 HO2S1 HEATER

PFP:22690

Description SYSTEM DESCRIPTION

EBS00LWW

Sensor	Input Signal to ECM	ECM function	Actuator
Camshaft position sensor (PHASE) Crankshaft position sensor (POS)	Engine speed	Heated oxygen sensor 1 heater control	Heated oxygen sensor 1 heater
Engine coolant temperature sensor	Engine coolant temperature		

The ECM performs ON/OFF control of the heated oxygen sensor 1 heater corresponding to the engine speed and engine coolant temperature. The duty percent varies with engine coolant temperature when engine is started.

OPERATION

Engine speed rpm	Heated oxygen sensor 1 heater
Above 3,600	OFF
Below 3,600 after warming up	ON

CONSULT-II Reference Value in Data Monitor Mode

EBS00LWX

Specification data are reference values.

MONITOR ITEM	CONDITION	SPECIFICATION
HO2S1 HTR (B1) HO2S1 HTR (B2)	● Engine: After warming up	ON
	● Engine speed: Below 3,600 rpm	
	● Engine speed: Above 3,600 rpm	OFF

On Board Diagnosis Logic

EBS00LWY

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0031 0031 (Bank 1) P0051 0051 (Bank 2)	Heated oxygen sensor 1 heater control circuit low	The current amperage in the heated oxygen sensor 1 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the heated oxygen sensor 1 heater.)	● Harness or connectors (The heated oxygen sensor 1 heater circuit is open or shorted.) ● Heater oxygen sensor 1 heater
P0032 0032 (Bank 1) P0052 0052 (Bank 2)			
P0032 0032 (Bank 1) P0052 0052 (Bank 2)	Heated oxygen sensor 1 heater control circuit high	The current amperage in the heated oxygen sensor 1 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the heated oxygen sensor 1 heater.)	● Harness or connectors (The heated oxygen sensor 1 heater circuit is shorted.) ● Heater oxygen sensor 1 heater

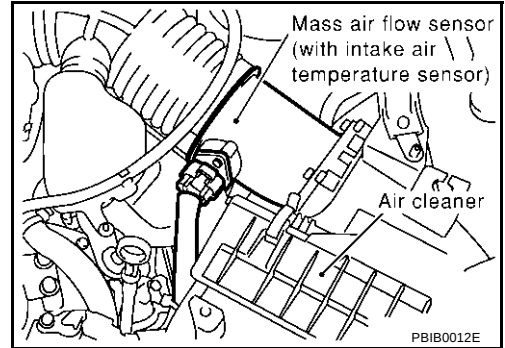
DTC P0112, P0113 IAT SENSOR

Diagnostic Procedure

EBS00LXX

1. CHECK INTAKE AIR TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch "OFF".
2. Disconnect mass air flow sensor (intake air temperature sensor is built-into) harness connector.
3. Turn ignition switch "ON".

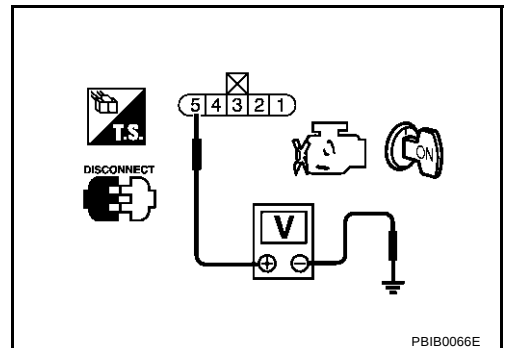


4. Check voltage between mass air flow sensor terminal 5 and ground.

Voltage: Approximately 5V

OK or NG

- OK >> GO TO 2.
NG >> Repair harness or connectors.



2. CHECK INTAKE AIR TEMPERATURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch "OFF".
2. Disconnect ECM.
3. Check harness continuity between mass air flow sensor terminal 3 and ECM terminal 109. Refer to Wiring Diagram.

Continuity should exist.

4. Also check harness for short to ground and short to power.

OK or NG

- OK >> GO TO 3.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

3. CHECK INTAKE AIR TEMPERATURE SENSOR

Refer to [EC-188, "Diagnostic Procedure"](#).

OK or NG

- OK >> GO TO 4.
NG >> Replace mass air flow sensor (with intake air temperature sensor).

4. CHECK INTERMITTENT INCIDENT

Refer to [EC-132, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT"](#).

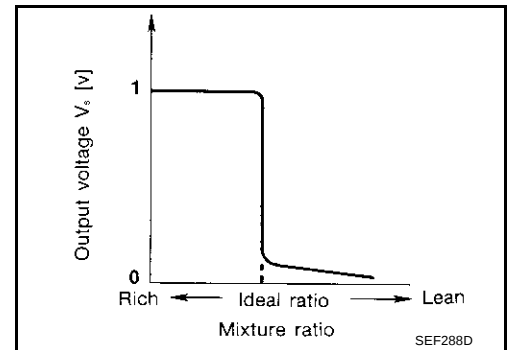
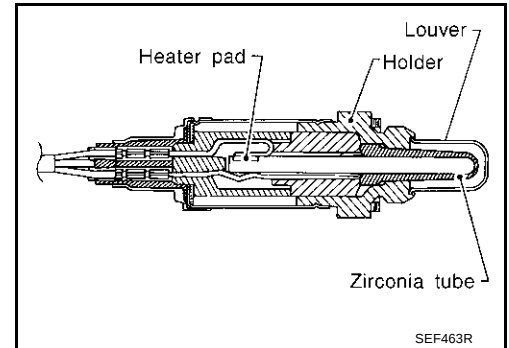
>> INSPECTION END

DTC P0133, P0153 HO2S1

PFP:22690

Component Description

The heated oxygen sensor 1 is placed into the exhaust manifold. It detects the amount of oxygen in the exhaust gas compared to the outside air. The heated oxygen sensor 1 has a closed-end tube made of ceramic zirconia. The zirconia generates voltage from approximately 1V in richer conditions to 0V in leaner conditions. The heated oxygen sensor 1 signal is sent to the ECM. The ECM adjusts the injection pulse duration to achieve the ideal air-fuel ratio. The ideal air-fuel ratio occurs near the radical change from 1 to 0V.



CONSULT-II Reference Value in Data Monitor Mode

ABS002GV

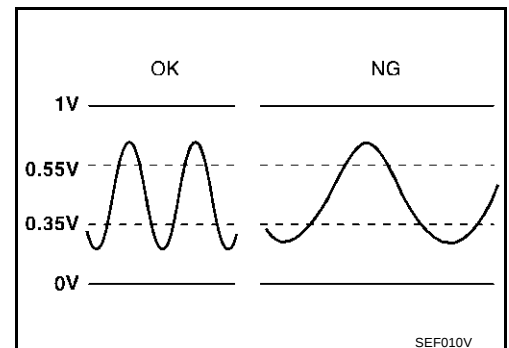
Specification data are reference values.

MONITOR ITEM	CONDITION		SPECIFICATION
HO2S1 (B1) HO2S1 (B2)	● Engine: After warming up	Maintaining engine speed at 2,000 rpm	0 - 0.3V ↔ Approx. 0.6 - 1.0V
HO2S1 MNTR (B1) HO2S1 MNTR (B2)	● Engine: After warming up	Maintaining engine speed at 2,000 rpm	LEAN ↔ RICH Changes more than 5 times during 10 seconds.

On Board Diagnosis Logic

ABS002GW

To judge the malfunction of heated oxygen sensor 1, this diagnosis measures response time of heated oxygen sensor 1 signal. The time is compensated by engine operating (speed and load), fuel feedback control constant, and heated oxygen sensor 1 temperature index. Judgment is based on whether the compensated time (heated oxygen sensor 1 cycling time index) is inordinately long or not.



DTC Confirmation Procedure

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

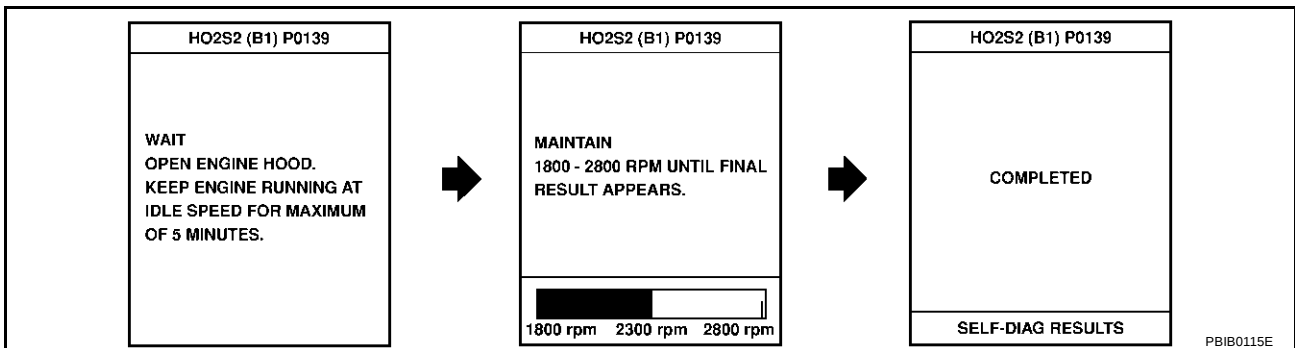
TESTING CONDITION:

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30 °C (32 to 86 °F).

1. Turn ignition switch "ON" and select "DATA MONITOR" mode with CONSULT-II.
2. Start engine and warm it up to the normal operating temperature.
3. Turn ignition switch "OFF" and wait at least 10 seconds.
4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
5. Let engine idle for 1 minute.
6. Make sure that "COOLAN TEMP/S" indicates more than 70°C (158°F).
If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches to 70°C (158°F).
7. Select "HO2S2 (B1) P0139" or "HO2S2 (B2) P0159" of "HO2S2" in "DTC WORK SUPPORT" mode with CONSULT-II.
8. Start engine and following the instruction of CONSULT-II.

DATA MONITOR	
MONITOR	NO DTC
ENG SPEED	XXX rpm
COOLAN TEMP/S	XXX °C

SEF174Y



9. Make sure that "OK" is displayed after touching "SELF-DIAG RESULTS".
If "NG" is displayed, refer to [EC-259. "Diagnostic Procedure"](#).
If "CAN NOT BE DIAGNOSED" is displayed, perform the following.
 - a. Turn ignition switch "OFF" and leave the vehicle in a cool place (soak the vehicle).
 - b. Return to step 1.

Overall Function Check

Use this procedure to check the overall function of the heated oxygen sensor 2 circuit. During this check, a DTC might not be confirmed.

WITH GST

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch "OFF" and wait at least 10 seconds.
3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
4. Let engine idle for 1 minute.
5. Set voltmeter probes between ECM terminal 123 [HO2S2 (B1) signal] or 124 [HO2S2 (B2) signal] and engine ground.

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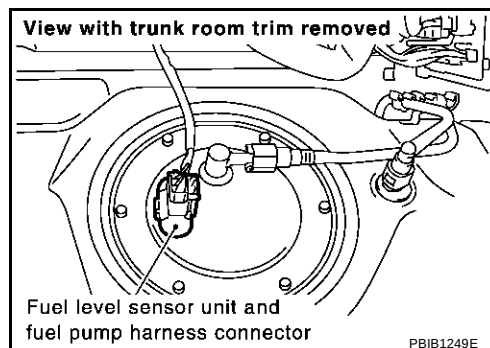
DTC P0182, P0183 FTT SENSOR

DTC P0182, P0183 FTT SENSOR

PDF:22630

Component Description

The fuel tank temperature sensor is used to detect the fuel temperature inside the fuel tank. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the fuel temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



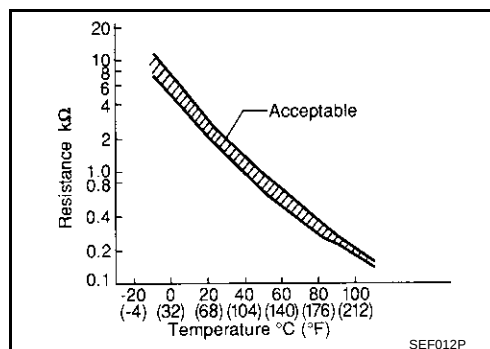
<Reference data>

Fluid temperature °C (°F)	Voltage* V	Resistance kΩ
20 (68)	3.5	2.3 - 2.7
50 (122)	2.2	0.79 - 0.90

*: These data are reference values and are measured between ECM terminal 92 (Fuel tank temperature sensor) and ground.

CAUTION:

Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than ECM terminals, such as the ground.



On Board Diagnosis Logic

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0182 0182	Fuel tank temperature sensor circuit low input	An excessively low voltage from the sensor is sent to ECM.	● Harness or connectors (The sensor circuit is open or shorted.) ● Fuel tank temperature sensor
P0183 0183	Fuel tank temperature sensor circuit high input	An excessively high voltage from the sensor is sent to ECM.	

DTC Confirmation Procedure

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

1. Turn ignition switch "ON".
2. Select "DATA MONITOR" mode with CONSULT-II.
3. Wait at least 5 seconds.
4. If 1st trip DTC is detected, go to [EC-289, "Diagnostic Procedure"](#).

DATA MONITOR	
MONITOR	NO DTC
ENG SPEED	XXX rpm
COOLAN TEMP/S	XXX °C

WITH GST

Follow the procedure "WITH CONSULT-II" above.

DTC P0420, P0430 THREE WAY CATALYST FUNCTION

DTC P0420, P0430 THREE WAY CATALYST FUNCTION

PFP:20905

On Board Diagnosis Logic

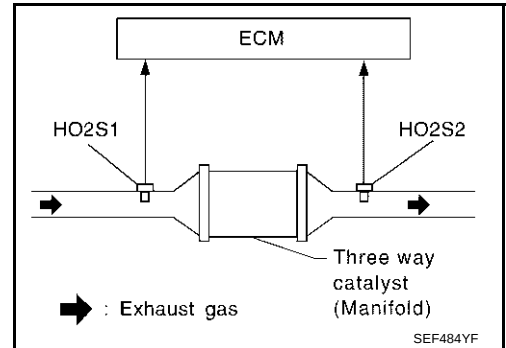
EBS00ME5

The ECM monitors the switching frequency ratio of heated oxygen sensors 1 and 2.

A three way catalyst (Manifold) with high oxygen storage capacity will indicate a low switching frequency of heated oxygen sensor 2. As oxygen storage capacity decreases, the heated oxygen sensor 2 switching frequency will increase.

When the frequency ratio of heated oxygen sensors 1 and 2 approaches a specified limit value, the three way catalyst (Manifold) malfunction is diagnosed.

Malfunction is detected when three way catalyst (Manifold) does not operate properly, three way catalyst (Manifold) does not have enough oxygen storage capacity.



DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0420 0420 (Bank 1)	Catalyst system efficiency below threshold	- Three way catalyst (Manifold) does not operate properly. - Three way catalyst (Manifold) does not have enough oxygen storage capacity.	- Three way catalyst (Manifold) - Exhaust tube - Intake air leaks - Fuel injectors - Fuel injector leaks - Spark plug - Improper ignition timing
P0430 0430 (Bank 2)			

DTC Confirmation Procedure

EBS00ME6

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

TESTING CONDITION:

Do not hold engine speed for more than the specified minutes below.

- Start engine and warm it up to the normal operating temperature.
- Turn ignition switch "OFF" and wait at least 10 seconds.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for one minute under no load.
- Let engine idle for one minute.
- Open engine hood.
- Select "DTC & SRT CONFIRMATION" then "SRT WORK SUPPORT" mode with CONSULT-II.
- Rev engine up to 2,000 to 3,000 rpm and hold it for 3 consecutive minutes then release the accelerator pedal completely.
If "INCMP" of "CATALYST" changed to "CMPLT", go to step 10.
- Wait 5 seconds at idle.

SRT WORK SUPPORT	
CATALYST	INCMP
EVAP SYSTEM	INCMP
HO2S HTR	CMPLT
HO2S	INCMP
MONITOR	
ENG SPEED	XXX rpm
MAS A/F SE-B1	XXX V
B/FUEL SCHDL	XXX msec
A/F ALPHA-B1	XXX V
COOLANT TEMP/S	XX °C
HO2S1 (B1)	XXX V

SEF940Z

DTC P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

EBS00MF0

DTC Confirmation Procedure

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:

Always perform test at a temperature of 5°C (41°F) or more.

① WITH CONSULT-II

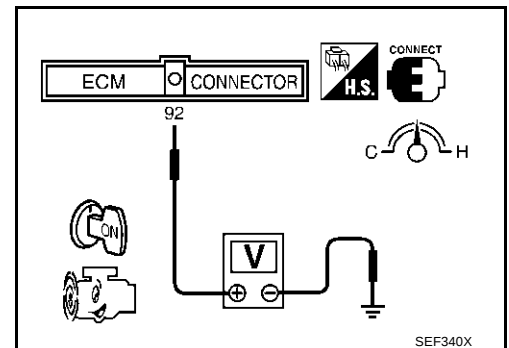
1. Start engine and warm it up to normal operating temperature.
2. Turn ignition switch "OFF" and wait at least 10 seconds.
3. Turn ignition switch "ON".
4. Select "DATA MONITOR" mode with CONSULT-II.
5. Make sure that "FUEL T/TEMP SE" is more than 0°C (32°F).
6. Start engine and wait at least 20 seconds.
If 1st trip DTC is detected, go to [EC-355, "Diagnostic Procedure"](#)

DATA MONITOR	
MONITOR	NO DTC
ENG SPEED	XXX rpm
COOLAN TEMP/S	XXX °C
FUEL T/TMP SE	XXX °C

SEF194Y

② WITH GST

1. Start engine and warm it up to normal operating temperature.
2. Check that voltage between ECM terminal 92 (Fuel tank temperature sensor signal) and ground is less than 4.2V.
3. Turn ignition switch "OFF" and wait at least 10 seconds.
4. Start engine and wait at least 20 seconds.
5. Select "MODE 7" with GST.
If 1st trip DTC is detected, go to [EC-355, "Diagnostic Procedure"](#)



DTC P0460 FUEL LEVEL SENSOR

Specification data are reference values and are measured between each terminal and ground.

CAUTION:

Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than ECM terminals, such as the ground.

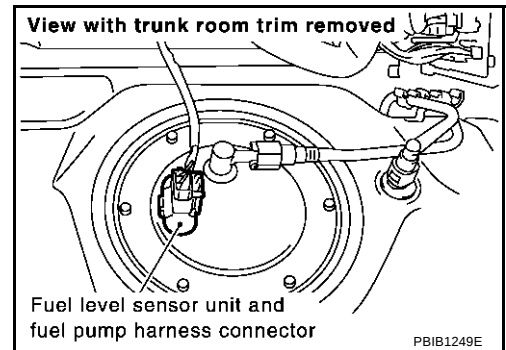
TER-MINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
107	B	Fuel level sensor ground	[Engine is running] ● Idle speed	Approximately 0V
119	R/L	Fuel level sensor	[Ignition switch "ON"]	Approximately 0 - 4.8V Output voltage varies with fuel level.

Diagnostic Procedure

EBS00MFN

1. CHECK FUEL LEVEL SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch "OFF".
2. Disconnect fuel level sensor unit and fuel pump harness connector.
3. Turn ignition switch "ON".

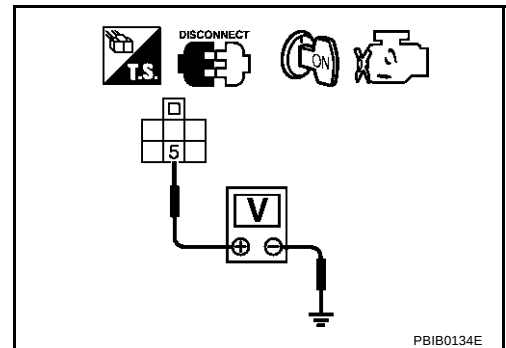


4. Check voltage between fuel level sensor unit and fuel pump terminal 5 and ground with CONSULT-II or a tester.

Voltage: Battery voltage

OK or NG

- OK >> GO TO 3.
NG >> GO TO 2.



2. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors M141, B211
- Harness connectors B61, B261
- Joint connector-15
- Harness for open or short between combination meter and fuel level sensor unit and fuel pump

>> Repair open circuit or short to ground or short to power in harness or connectors.

DTC P1102 MAF SENSOR

DTC Confirmation Procedure

EBS00MGZ

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

1. Turn ignition switch "ON".
2. Select "DATA MONITOR" mode with CONSULT-II.
3. Start engine and wait at least 5 seconds.
4. If DTC is detected, go to [EC-421, "Diagnostic Procedure"](#) .

DATA MONITOR	
MONITOR	NO DTC
ENG SPEED	XXX rpm

SEF058Y

WITH GST

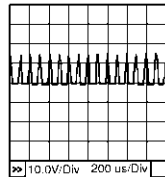
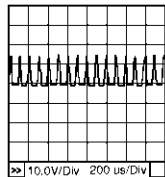
Follow the procedure "WITH CONSULT-II" above.

DTC P1128 THROTTLE CONTROL MOTOR

Specification data are reference values and are measured between each terminal and ground.
Pulse signal is measured by CONSULT-II.

CAUTION:

Do not use ECM ground terminals when measuring input/output voltage. Doing so may result in damage to the ECM's transistor. Use a ground other than ECM terminals, such as the ground.

TER-MINAL NO.	WIRE COLOR	ITEM	CONDITION	DATA (DC Voltage)
151	L/B	Throttle control motor (Open)	[Ignition switch "ON"] ● Engine stopped ● Selector lever: "D" ● Accelerator pedal is fully depressed	0 - 14V★  PBIB0058E
154	L/W	Throttle control motor (Close)	[Ignition switch "ON"] ● Engine stopped ● Selector lever: "D" ● Accelerator pedal is released	0 - 14V★  PBIB0061E

★: Average voltage for pulse signal (Actual pulse signal can be confirmed by oscilloscope.)

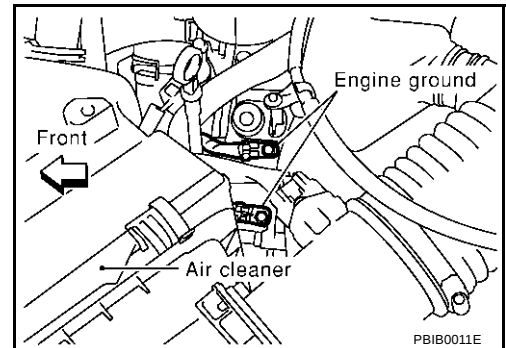
Diagnostic Procedure

EBS00M15

1. RETIGHTEN GROUND SCREWS

1. Turn ignition switch "OFF".
2. Loosen and retighten engine ground screws.

>> GO TO 2.



5. CHECK HO2S2 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check harness continuity between ECM terminal and HO2S2 terminal as follows.
Refer to Wiring Diagram.

DTC	Terminals		Bank
	ECM	Sensor	
P1146	123	1	1
P1166	124	1	2

Continuity should exist.

3. Check harness continuity between the following terminals and ground.
Refer to Wiring Diagram.

DTC	Terminals		Bank
	ECM	Sensor	
P1146	123	1	1
P1166	124	1	2

Continuity should not exist.

4. Also check harness for short to ground or short to short to power.

OK or NG

- OK >> GO TO 7.
NG >> GO TO 6.

6. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E315, F5
- Harness open or short between HO2S2 and ECM

>> Repair open circuit or short to ground or short to power in harness or connectors.

7. CHECK HEATED OXYGEN SENSOR 2

Refer to [EC-485, "Component Inspection"](#) .

OK or NG

- OK >> GO TO 8.
NG >> Replace malfunctioning heated oxygen sensor 2.

8. CHECK INTERMITTENT INCIDENT

Refer to [EC-132, "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT"](#) .

>> INSPECTION END

Component Inspection HEATED OXYGEN SENSOR 2

EBS00M33

With CONSULT-II

1. Start engine and warm it up to the normal operating temperature.
2. Turn ignition switch "OFF" and wait at least 10 seconds.
3. Start engine and keep engine speed between 3,500 and 4,000 rpm for one minute under no load.
4. Let engine idle for one minute.

DTC P1220 FUEL PUMP CONTROL MODULE (FPCM)

4. CHECK FPCM GROUND CIRCUIT-II FOR OPEN AND SHORT

1. Disconnect fuel level sensor unit and fuel pump harness connector.
2. Disconnect dropping resistor harness connector.
3. Check harness continuity between fuel level sensor unit and fuel pump terminal 1 and dropping resistor terminal 2, FPCM terminal 4 and dropping resistor terminal 2.
Refer to Wiring Diagram.

Continuity should exist.

4. Check harness continuity between FPCM terminal 4 and ground, fuel level sensor and fuel pump terminal 1 and ground.
Refer to Wiring Diagram.

Continuity should not exist.

5. Also check harness for short to power.

OK or NG

- OK >> GO TO 6.
NG >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors B63, B263
- Harness for open or short between fuel level sensor unit and fuel pump and dropping resistor
- Harness for open or short between FPCM and dropping resistor
- Harness for open or short between fuel level sensor unit and fuel pump and body ground
- Harness for open or short between FPCM and body ground

>> Repair open circuit or short to ground or short to power in harness or connectors.

6. CHECK FPCM INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check harness continuity between ECM terminal 116 and FPCM terminal 4.
Refer to Wiring Diagram.

Continuity should exist.

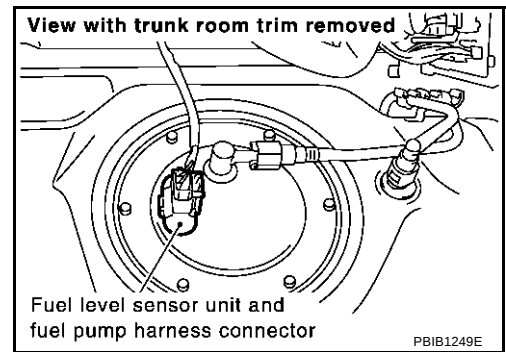
3. Check harness continuity between ECM terminal 116 and ground.
Refer to Wiring Diagram.

Continuity should not exist.

4. Also check harness for short to power.

OK or NG

- OK >> GO TO 8.
NG >> GO TO 7.



DTC P1446 EVAP CANISTER VENT CONTROL VALVE

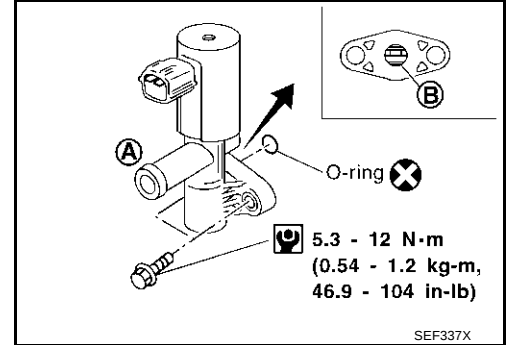
ABS002QR

Component Inspection

EVAP CANISTER VENT CONTROL VALVE

With CONSULT-II

1. Remove EVAP canister vent control valve from EVAP canister.
2. Check portion **B** of EVAP canister vent control valve for being rusted.
If NG, replace EVAP canister vent control valve.
If OK, go to next step.
3. Reconnect harness connectors disconnected.
4. Turn ignition switch "ON".



5. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
6. Check air passage continuity and operation delay time.
Make sure new O-ring is installed properly.

Condition VENT CONTROL/V	Air passage continuity between A and B
ON	No
OFF	Yes

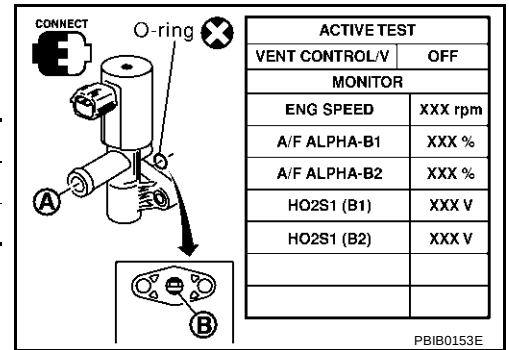
Operation takes less than 1 second.

If NG, replace EVAP canister vent control valve.
If OK, go to next step.

7. Clean the air passage (Portion **A** to **B**) of EVAP canister vent control valve using an air blower.
8. Perform step 5 again.

Without CONSULT-II

1. Remove EVAP canister vent control valve from EVAP canister.
2. Check portion **B** of EVAP canister vent control valve for being rusted.



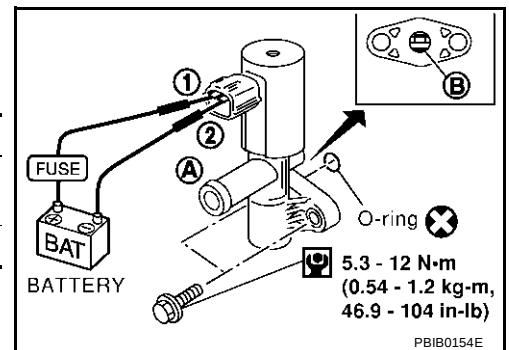
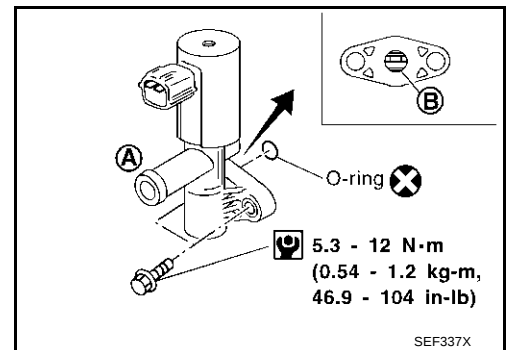
3. Check air passage continuity and operation delay time under the following conditions.
Make sure new O-ring is installed properly.

Condition	Air passage continuity between A and B
12V direct current supply between terminals 1 and 2	No
OFF	Yes

Operation takes less than 1 second.

If NG, replace EVAP canister vent control valve.
If OK, go to next step.

4. Clean the air passage (Portion **A** to **B**) of EVAP canister vent control valve using an air blower.
5. Perform step 3 again.



DTC P1491 VACUUM CUT VALVE BYPASS VALVE

EBS00MM2

DTC Confirmation Procedure

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.

TESTING CONDITION:

- Always perform test at a temperature of 5 to 30°C (41 to 86°F).
- Before performing the following procedure, confirm that battery voltage is more than 11V at idle.

Ⓐ WITH CONSULT-II

1. Turn ignition switch "ON".
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 and let it idle for at least 70 seconds.
5. Select "VC CUT/V BP/V P1491" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CONSULT-II.
6. Touch "START".

VC CUT/V BP/V P1491	
OUT OF CONDITION	
MONITOR	
ENG SPEED	XXX rpm
VHCL SPEED SE	XXX km/h
B/FUEL SCHDL	XXX msec

SEF210Y

7. When the following conditions are met, "TESTING" will be displayed on the CONSULT-II screen. Maintain the conditions continuously until "TESTING" changes to "COMPLETED". (It will take at least 30 seconds.)

ENG SPEED	More than 1,000 rpm
Selector lever	Suitable position
Vehicle speed	More than 37 km/h (23 MPH)
B/FUEL SCHDL	1.0 - 10.0 msec

If "TESTING" is not displayed after 5 minutes, retry from step 3.

8. Make sure that "OK" is displayed after touching "SELF-DIAG RESULTS". If "NG" is displayed, refer to [EC-587, "Diagnostic Procedure"](#).

VC CUT/V BP/V P1491	
TESTING	
MONITOR	
ENG SPEED	XXX rpm
VHCL SPEED SE	XXX km/h
B/FUEL SCHDL	XXX msec

SEF211Y

VC CUT/V BP/V P1491	
COMPLETED	

SEF239Y

Overall Function Check

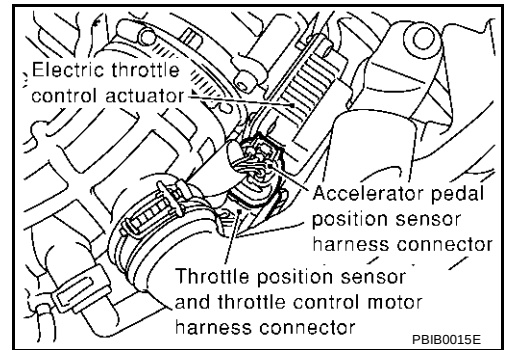
EBS00MM3

Use this procedure to check the overall function of vacuum cut valve bypass valve. During this check, the 1st trip DTC might not be confirmed.

DTC P2127, P2128 APP SENSOR

2. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT

1. Disconnect electric throttle control actuator harness connector.
2. Turn ignition switch "ON".

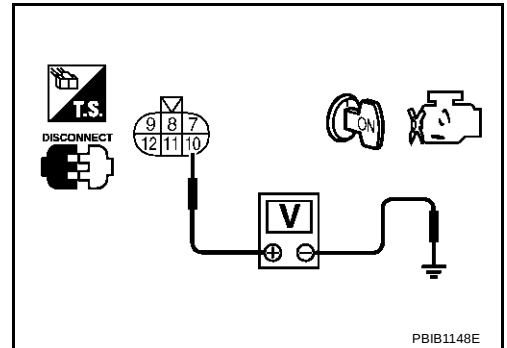


3. Check voltage between electric throttle control actuator terminal 10 and ground with CONSULT-II or tester.

Voltage: Approximately 2.5V

OK or NG

- OK >> GO TO 3.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.



3. CHECK APP SENSOR 2 GROUND CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch "OFF".
2. Check harness continuity between electric throttle control actuator terminal 12 and ECM terminal 100. 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 4.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

4. CHECK APP SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Disconnect ECM harness connector.
2. Check harness continuity between ECM terminal 117 and electric throttle control actuator terminal 11. 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 5.
NG >> Repair open circuit or short to ground or short to power in harness or connectors.

5. CHECK APP SENSOR

Refer to [EC-618, "Component Inspection"](#).

OK or NG

- OK >> GO TO 7.
NG >> GO TO 6.

IGNITION SIGNAL

11. CHECK CONDENSER CIRCUIT FOR OPEN AND SHORT

1. Turn ignition switch OFF.
2. Disconnect condenser harness connector.
3. Check harness continuity between ECM terminal 12 and condenser terminal 1, condenser terminal 2 and engine ground.
Refer to Wiring Diagram.

Continuity should exist.

4. Also check harness for short to ground and short to power.

OK or NG

OK >> GO TO 12.

NG >> Repair open circuit or short to ground or short to power in harness or connectors.

12. CHECK CONDENSER

Refer to [EC-651, "Component Inspection"](#)

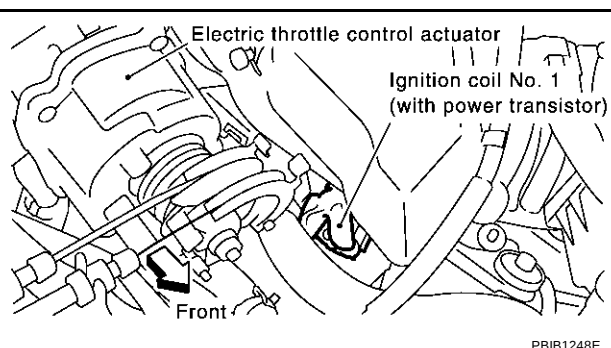
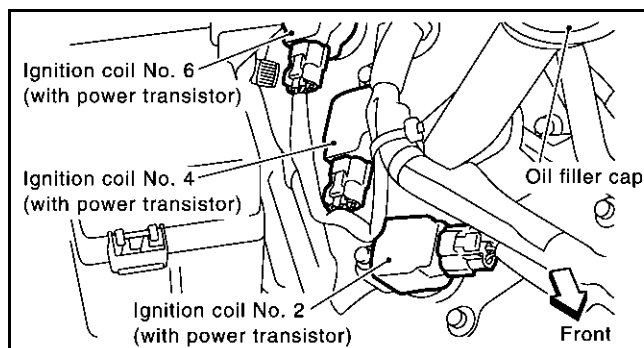
OK or NG

OK >> GO TO 13.

NG >> Replace condenser.

13. CHECK IGNITION COIL POWER SUPPLY CIRCUIT-V

1. Turn ignition switch OFF.
2. Reconnect all harness connectors disconnected.
3. Disconnect ignition coil harness connector.



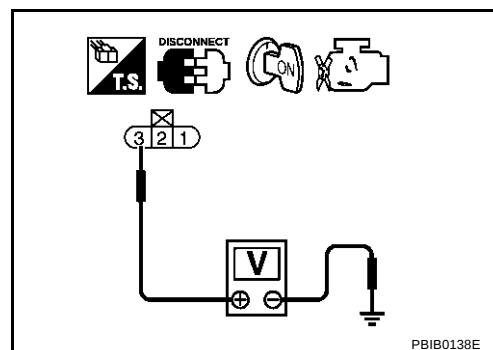
4. Turn ignition switch ON.
5. Check voltage between ignition coil terminal 3 and ground with CONSULT-II or tester.

Voltage: Battery voltage

OK or NG

OK >> GO TO 15.

NG >> GO TO 14.



14. DETECT MALFUNCTIONING PART

Check the harness for open or short between ignition coil and harness connector F105.

>> Repair or replace harness or connectors.

DATA LINK CONNECTOR

DATA LINK CONNECTOR

PFP:24814

Wiring Diagram

EBS00MOP

EC-DLC-01

EC

C

D

E

F

G

H

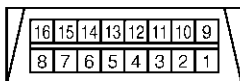
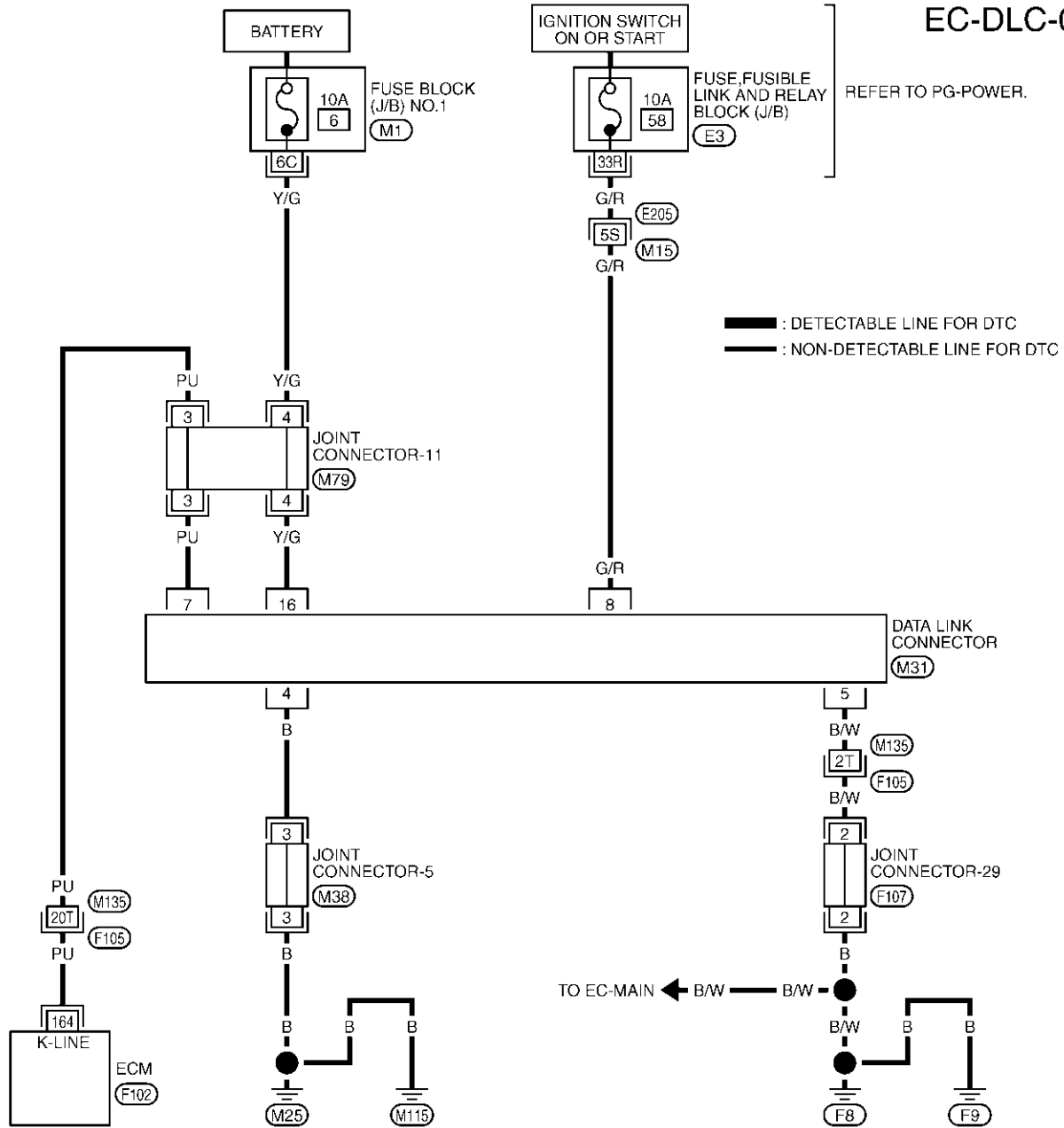
I

J

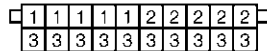
K

L

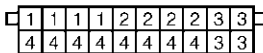
M



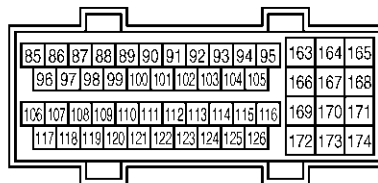
(M31)
W



(M38), (F107)
P P



(M79)
G



(F102)
W



REFER TO THE FOLLOWING.

(E205), (F105) -SUPER MULTIPLE JUNCTION (SMJ)

(M1) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

(E3) -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

TBWM0175E

FRONT BUMPER

2. Remove front grille. Refer to [EI-19, "FRONT GRILLE"](#) .
3. Remove bolts at the edge of engine undercover. (Refer to A shown in the figure)
4. Remove bolts and clips of both right/left front fender protectors (on front side). (Refer to B and C shown in the illustration)
5. Remove bumper fascia screws from both right/left front fenders. (Refer to D shown in the figure)
6. Remove bumper fascia clips from upper bracket assembly. (Refer to E shown in the figure)
7. Remove bumper fascia assembly.
8. Remove bumper reinforcement nuts. (Refer to G shown in the figure)
9. Remove bumper upper retainer bolts and nuts. (Refer to F shown in the figure)

INSTALLATION

Install in the reverse order of removal.

HEADLINING

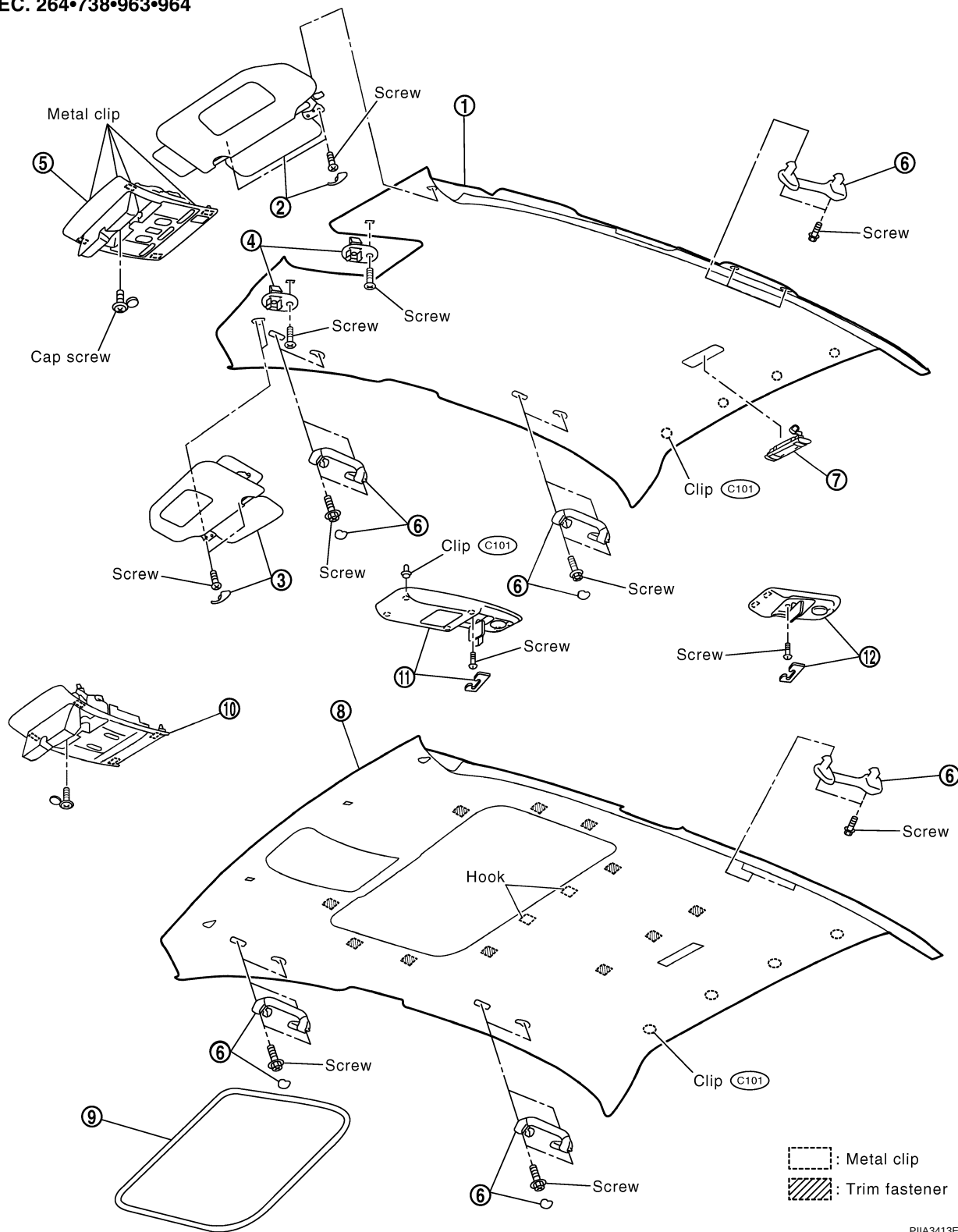
PFP:73910

Removal and Installation

EIS000DO

A
B
C
D
E
F
G
H
EI
J
K
L
M

SEC. 264•738•963•964



PIIA3413E

- | | | |
|--------------------------|-------------------------|---------------------|
| 1. Headlining (standard) | 2. Sunvisor (left) | 3. Sunvisor (right) |
| 4. Holder retainer | 5. Map lamp | 6. Assist grip |
| 7. Personal lamp | 8. Headlining (sunroof) | 9. Sunroof welt |

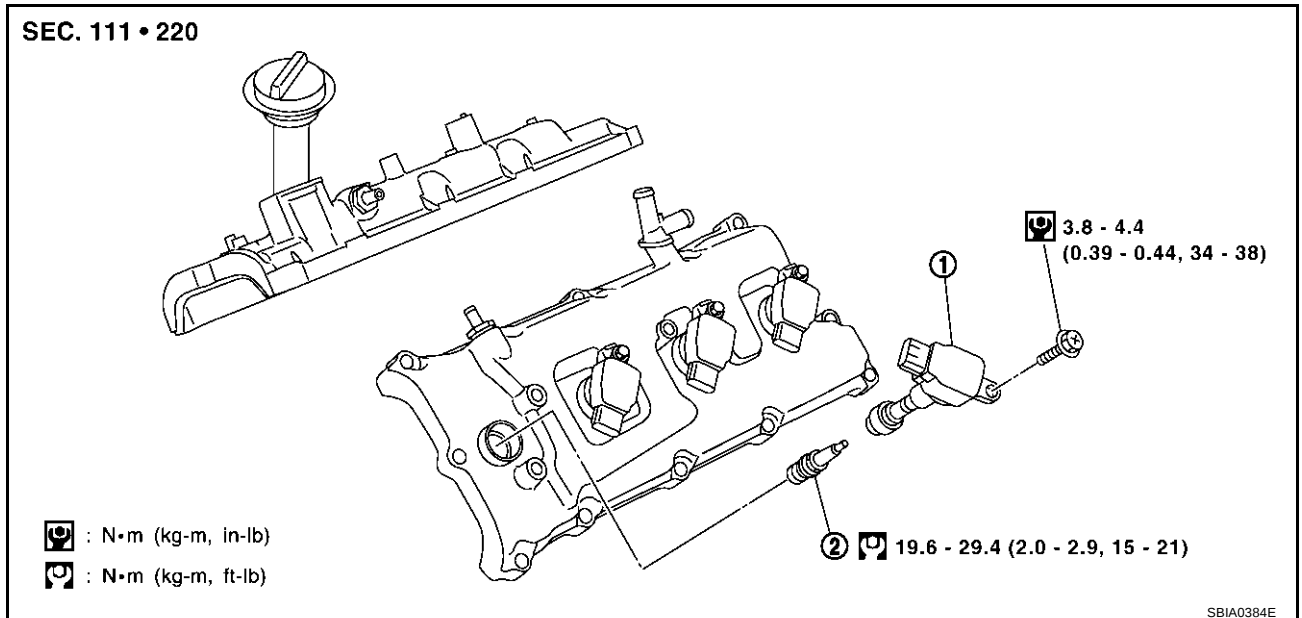
IGNITION COIL

IGNITION COIL

PFP:22448

Removal and Installation

EBS001LD



1. Ignition coil

2. Spark plug

REMOVAL

1. Remove engine cover (with power tool), air cleaner cover and battery cover. Refer to [EM-11, "Removal and Installation"](#).
2. Move heater hose and its peripheral parts aside. (No.7 cylinder)
3. Disconnect harness connector from ignition coil.
4. Remove ignition coil.

CAUTION:

Do not shock it.

INSTALLATION

Install in the reverse order of removal.

CYLINDER HEAD

CYLINDER HEAD

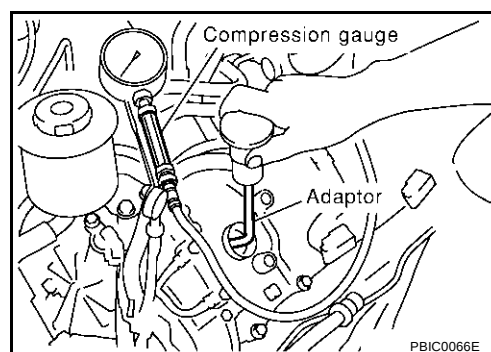
PFP:11041

On-Vehicle Service

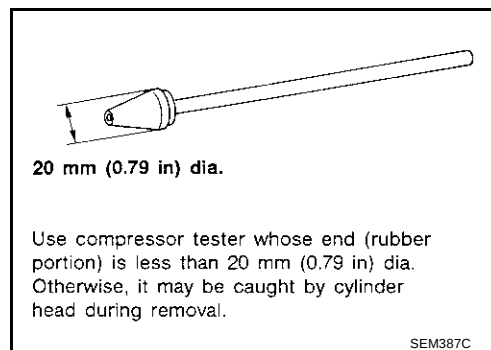
EBS001K1

CHECKING COMPRESSION PRESSURE

1. Remove engine cover with power tool, air cleaner cover and battery cover. Refer to [EM-11, "Removal and Installation"](#).
2. Warm up engine thoroughly. Then, stop it.
3. Release fuel pressure.
 - a. Remove fuel pump fuse, and start engine. Refer to [EC-48, "FUEL PRESSURE RELEASE"](#) for fuel pump fuse location.
 - b. After engine stalls, crank it two or three times to release all fuel pressure.
 - Let fuel pump fuse removed until the end of step 7.
4. Remove ignition coil and spark plug from each cylinder. Refer to [EM-28, "Removal and Installation"](#) and [EM-29, "Removal and Installation"](#).
5. Connect engine tachometer (not required in use of CONSULT-II).
6. Install compression gauge with adapter onto spark plug hole.
 - Use compression gauge adapter which is required on No.7 and No.8 cylinders.



- Use compression gauge whose picking up end inserted to spark plug hole is smaller than 20 mm (0.79 in) in diameter. Otherwise, it may be caught by cylinder head during removal.
7. With accelerator pedal fully depressed, turn ignition switch to "START" for cranking. When the gauge pointer stabilizes, read the compression pressure and engine rpm. Perform these steps to check each cylinder.



Compression pressure

Unit: kPa (kg/cm², psi) /rpm

Standard	Minimum	Deference limit between cylinders
1,320 (13.5, 191) / 300	1,130 (11.5, 164) / 300	98 (1.03, 14) / 300

CAUTION:

Always use a fully charged battery to obtain specified engine speed.

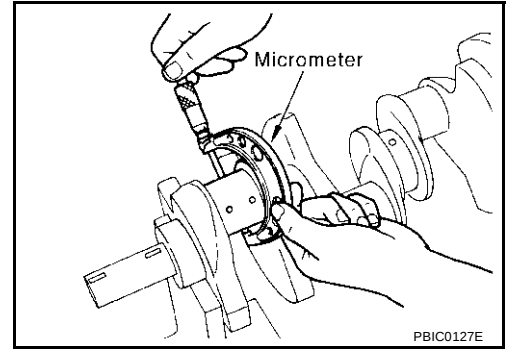
- If the engine speed is out of specified range, check battery liquid for proper gravity. Check engine speed again with normal battery gravity.
- If compression pressure is below minimum value, check valve clearances and parts associated with combustion chamber (Valve, valve seat, piston, piston ring, cylinder bore, cylinder head, cylinder head gasket). After the checking, measure compression pressure again.
- If some cylinders have low compression pressure, pour small amount of engine oil into the spark plug hole of the cylinder to re-check it for compression.
 - If the added engine oil improves the compression, the piston rings may be worn out or damaged. Check the piston rings and replace if necessary.
 - If the compression pressure remains at low level despite the addition of engine oil, the valves may be malfunctioning. Check the valves for damage. Replace the valve or valve seat accordingly.

CYLINDER BLOCK

OUTER DIAMETER OF CRANKSHAFT PIN

Measure outer diameter of crankshaft pin.

Standard : 51.956 - 51.974 mm (2.0455-2.0462 in)



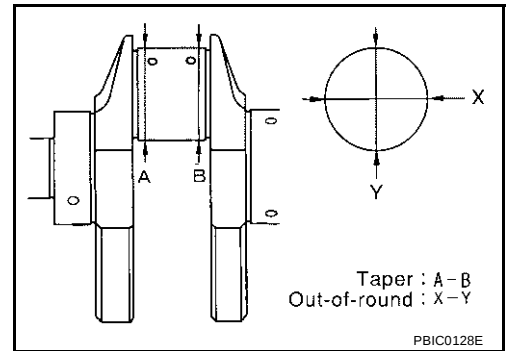
OUT-OF-ROUND AND TAPER OF CRANKSHAFT

- Using a micrometer, measure the dimensions at 4 different points shown in the figure on each journal and pin.
- Out-of-roundness is indicated by the difference in dimension between X and Y at A and B.
- Taper is indicated by the difference in dimension between A and B at X and Y.

Limit:

Out-of-round (X-Y) : 0.015 mm (0.0006 in)

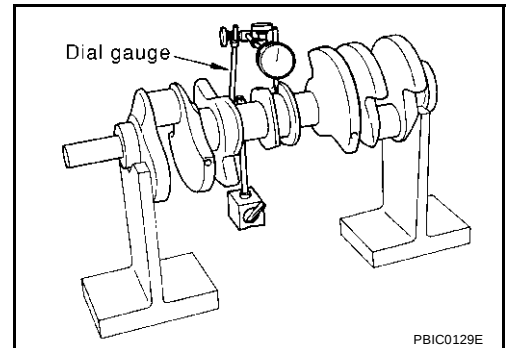
Taper (A-B) : 0.010 mm (0.0004 in)



CRANKSHAFT RUNOUT

- Place a V-block on a precise flat table to support the journals on the both end of the crankshaft.
- Place a dial gauge straight up on the No. 3 journal.
- While rotating the crankshaft, read the movement of the pointer on the dial gauge.
- Half of the movement shows the runout.

Limit: : 0.05 mm (0.002 in)



OIL CLEARANCE OF CONNECTING ROD BEARING

Method of Measurement

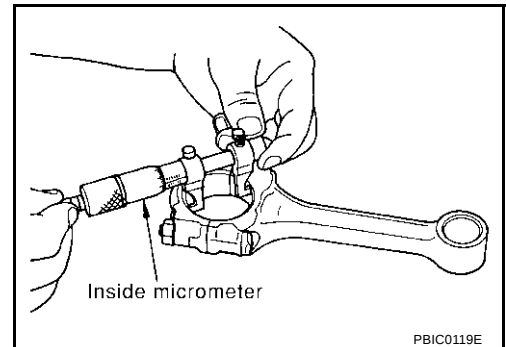
- Install the connecting rod bearings to the connecting rod and the cap, and tighten the connecting rod nut to the specified torque. Using an inside micrometer measure the inner diameter of connecting rod bearing.

(Oil clearance) = (Inner diameter of connecting rod bearing) – (Outer diameter of crankshaft pin)

Standard : 0.020 - 0.045 mm (0.0008 - 0.0018 in)

Limit : 0.055 mm (0.0022 in)

- If clearance cannot be adjusted within the standard, grind crankshaft pin and use undersized bearing. Refer to [EM-83, "HOW TO SELECT CONNECTING ROD BEARING"](#).



SERVICE DATA

SERVICE DATA

PFP:00030

Wheel Bearing

EDS000WI

Axial end play limit	0.05 mm (0.002 in) or less
Rotational torque	Less than 1.49 N·m (0.15 kg-m, 13 in-lb)
Measurement of spring scale (Spring scale hooking position: wheel hub bolt)	Less than 26.1 N (2.66 kg, 5.87 lb)

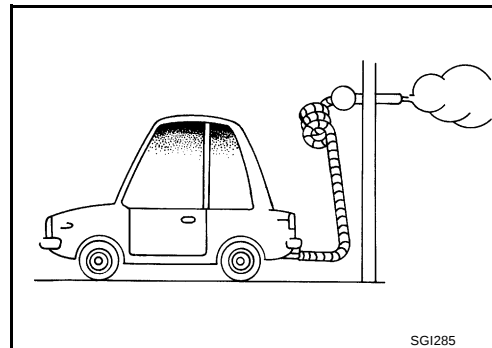
- A
- B
- C
- FAX
- E
- F
- G
- H
- I
- J
- K
- L
- M

PRECAUTIONS

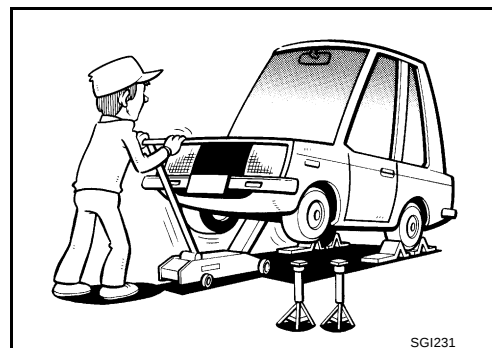
General Precautions

EAS000E0

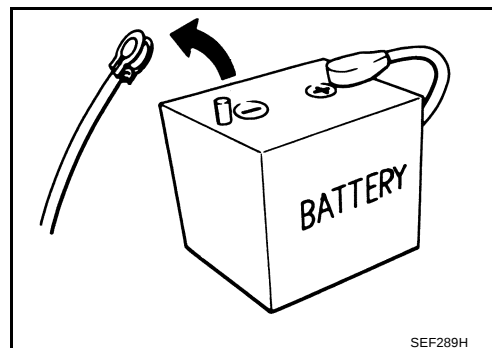
- Do not operate the engine for an extended period of time without proper exhaust ventilation.
Keep the work area well ventilated and free of any inflammable materials. Special care should be taken when handling any inflammable or poisonous materials, such as gasoline, refrigerant gas, etc. When working in a pit or other enclosed area, be sure to properly ventilate the area before working with hazardous materials.
Do not smoke while working on the vehicle.



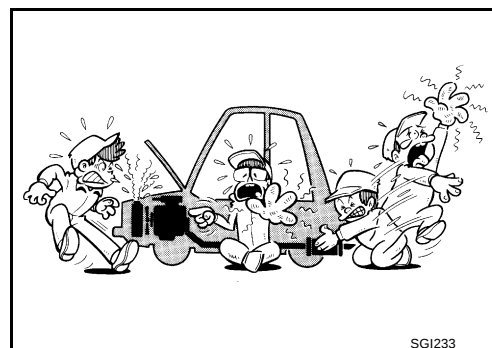
- Before jacking up the vehicle, apply wheel chocks or other tire blocks to the wheels to prevent the vehicle from moving. After jacking up the vehicle, support the vehicle weight with safety stands at the points designated for proper lifting before working on the vehicle.
These operations should be done on a level surface.
- When removing a heavy component such as the engine or transaxle/transmission, be careful not to lose your balance and drop them. Also, do not allow them to strike adjacent parts, especially the brake tubes and master cylinder.



- Before starting repairs which do not require battery power:
Turn off ignition switch.
Disconnect the negative battery terminal.
- If the battery terminals are disconnected, recorded memory of radio and each control unit is erased.



- To prevent serious burns:
Avoid contact with hot metal parts.
Do not remove the radiator cap when the engine is hot.
- Dispose of drained oil or the solvent used for cleaning parts in an appropriate manner.
- Do not attempt to top off the fuel tank after the fuel pump nozzle shuts off automatically.
Continued refueling may cause fuel overflow, resulting in fuel spray and possibly a fire.
- Clean all disassembled parts in the designated liquid or solvent prior to inspection or assembly.
- Replace oil seals, gaskets, packings, O-rings, locking washers, cotter pins, self-locking nuts, etc. with new ones.
- Replace inner and outer races of tapered roller bearings and needle bearings as a set.
- Arrange the disassembled parts in accordance with their assembled locations and sequence.
- Do not touch the terminals of electrical components which use microcomputers (such as ECM).
Static electricity may damage internal electronic components.
- After disconnecting vacuum or air hoses, attach a tag to indicate the proper connection.
- Use only the fluids and lubricants specified in this manual.



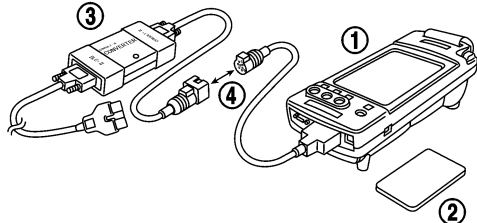
CONSULT-II CHECKING SYSTEM

Checking Equipment

EAS0008M

GI

When ordering the following equipment, contact your NISSAN/INFINITI distributor.

Tool name	Description
NISSAN CONSULT-II 1. CONSULT-II unit (Tester internal soft: Resident version 3.3.0) and accessories 2. Program card AED03E and AEN02C (For NATS) 3. CONSULT-II CONVERTER 4. "CONSULT-II Pigtail" Cable	 SAIA0363E

NOTE:

- The CONSULT-II must be used in conjunction with a program card. CONSULT-II does not require loading (Initialization) procedure.
- Be sure the CONSULT-II is turned off before installing or removing a program card.

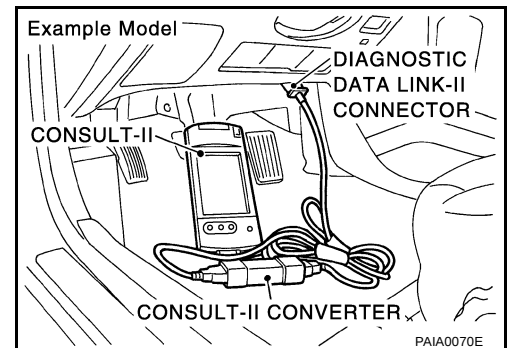
CAUTION:

- If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.
- If CONVERTER is not connected with CONSULT-II, vehicle occur the "FAIL SAFE MODE" which is "LIGHT UP the HEAD LIGHT" and/or "COOLING FAN ROTATING" when CONSULT-II is started.
- Previous CONSULT-II "I" and "Y" DLC-I and DLC-II cables should NOT be used anymore because their DDL connector pins can be damaged during cable swapping.

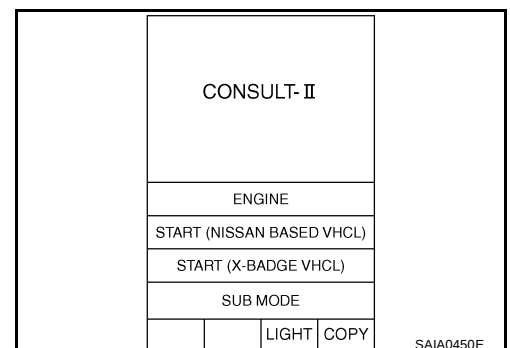
CONSULT-II Start Procedure

EAS0005F

1. Turn off the ignition switch.
2. Connect CONSULT-II and CONSULT-II CONVERTER to the data link connector.



3. Turn on the ignition switch.
4. Touch "START (NISSAN BASED VHCL)" or "System Shortcut" (eg: ENGINE) on the screen.



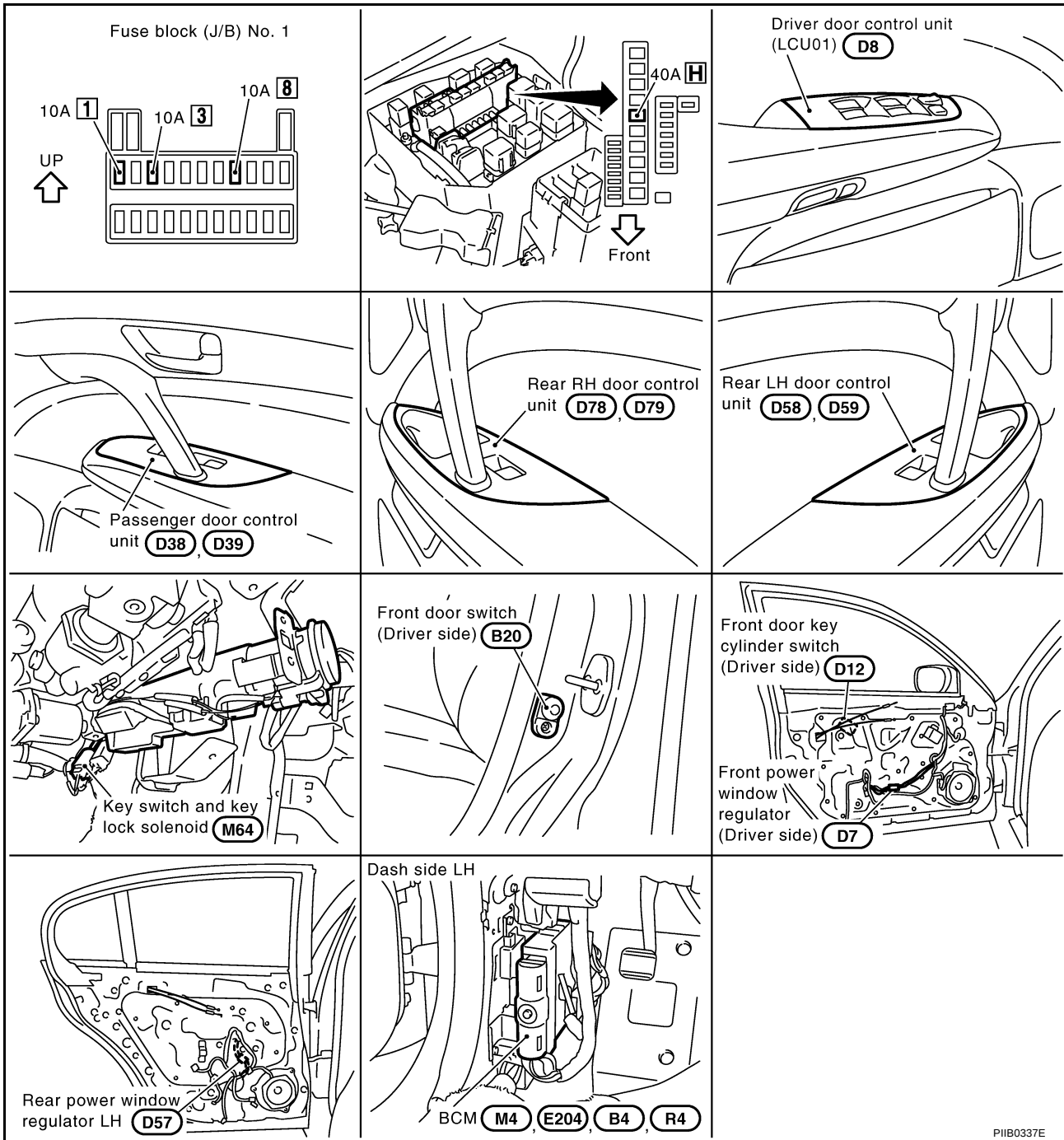
POWER WINDOW SYSTEM

POWER WINDOW SYSTEM

PFP:25401

Component Parts and Harness Connector Location

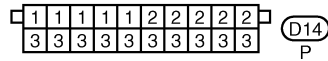
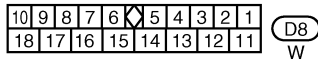
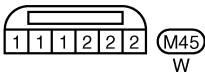
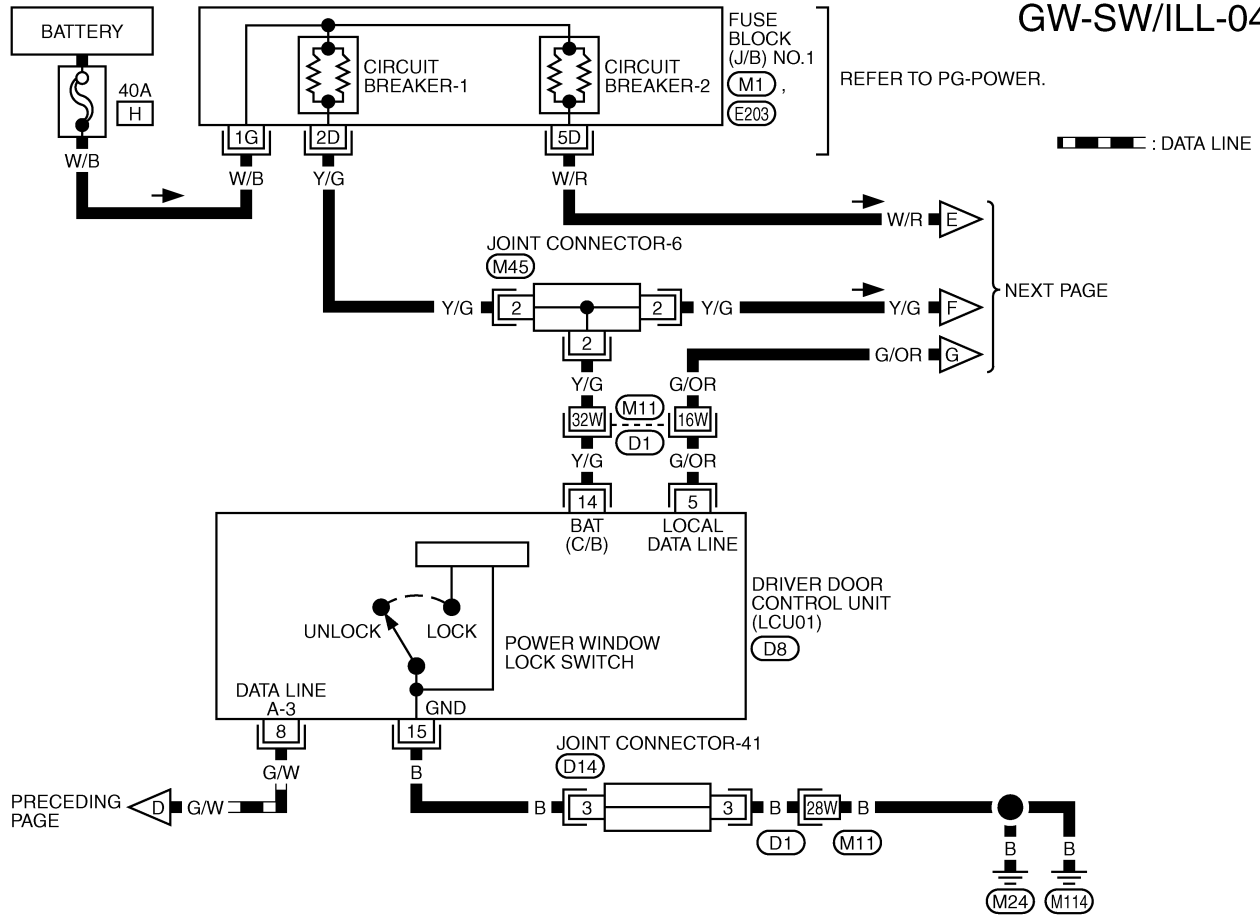
EIS000UT



PIIB0337E

POWER WINDOW SYSTEM

GW-SW/ILL-04



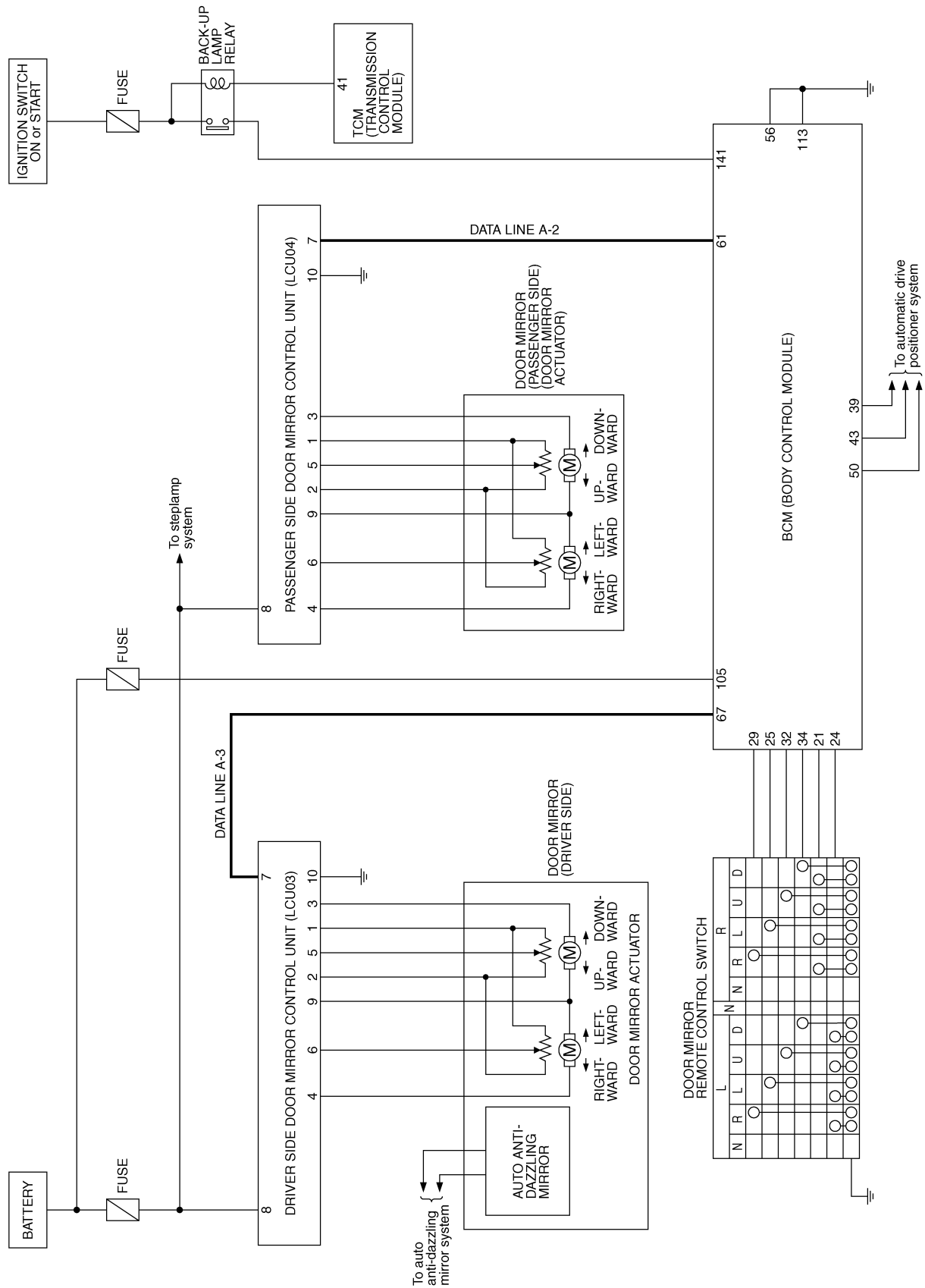
REFER TO THE FOLLOWING.

- (D1) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (E203) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TIWM0216E

Schematic

EIS0011B

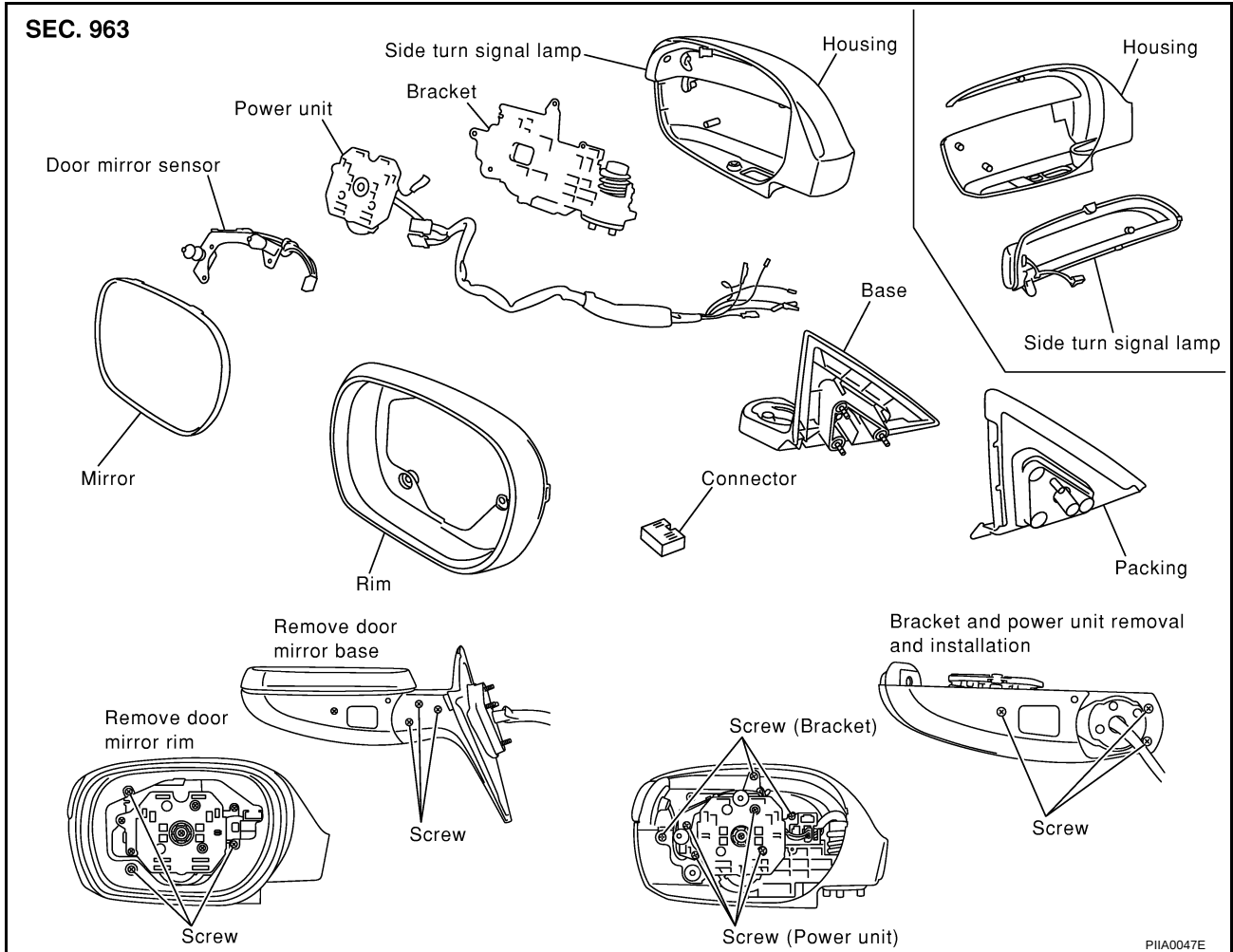


TIWM0053E

DOOR MIRROR

Disassembly and Assembly

EIS0000F



DISASSEMBLY

1. Place the mirror body with the mirror glass facing upward.
2. Put a strip of protective tape on the mirror body.
3. As shown in the figure, insert a small slotted screwdriver into the recess between the mirror face (mirror holder) and mirror holder bracket, and push up the pawls (2) to remove the mirror holder lower half.

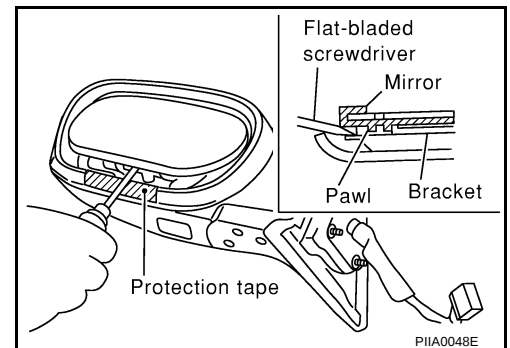
NOTE:

When pushing up the pawls, do not attempt to use 1 recess only, be sure to push up with both recesses. Insert screwdriver into recesses, and push up while rotating (twist) to make work easier.

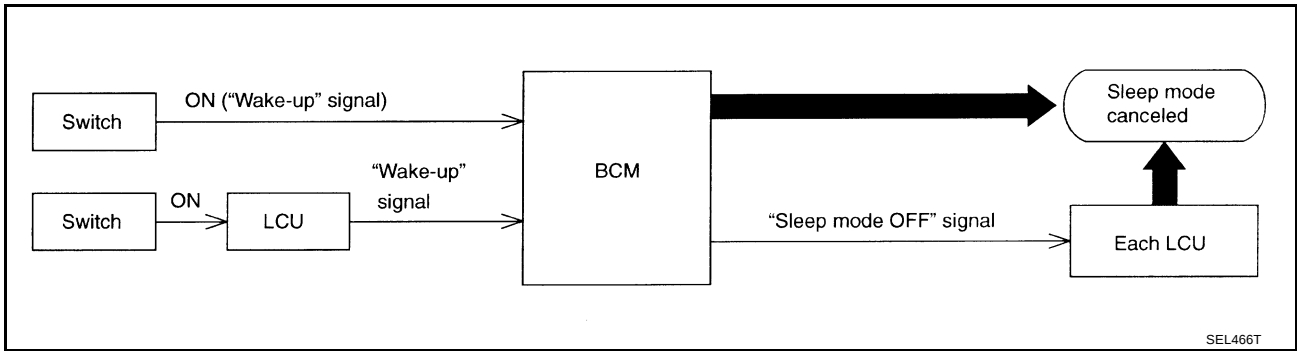
4. Lightly lift up lower side of mirror surface from mirror surface, and detach pawls (2) of upper side as if pulling it out. Remove mirror surface from mirror body.

NOTE:

Be certain not to allow grease on sealing agent in center of mirror body assembly (actuator) or back side of mirror surface (mirror holder).



WAKE-UP CONTROL



As shown above, when the BCM detects a "wake-up" signal, it wakes up the whole system and starts communicating again. The "sleep" mode of all LCUs is now canceled, and the BCM returns to the normal control mode. When any one of the following switches are turned ON, the "sleep" mode is canceled:

- All switches combined or connected with BCM
- All switches combined or connected with LCU

Fail-safe System

EKS001PG

Fail-safe system operates when the signal from LCU is judged to be malfunctioning by BCM. If LCU sends no signal or an irregular signal to BCM a certain number of times in succession, the IVMS is set in a fail-safe condition. In the fail-safe condition, the electrical loads controlled by the switch on the questionable LCU will be operated at fail-safe mode.

CONSULT-II Function

EKS001R9

CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. IVMS communication inspection, work support (only function setting of seats and steering wheel), self-diagnosis, data monitor, and active test display.

DIAGNOSTIC ITEMS DESCRIPTION

IVMS diagnosis position	Diagnosis mode	Description
IVMS– COMM CHECK	IVMS– COMM DIAGNOSIS	Diagnosis of continuity in the communication line(s), and of the function of the IVMS-communication interface between the body control module and the local control units, accomplished by transmitting a signal from the body control module to the local control units.
	WAKE–UP DIAGNOSIS	Diagnosis of the "wake-up" function of local control units by having a technician input the switch data into the local control unit that is in the temporary "sleep" condition.
Each system inspection	Work support	Changes the setting for each function.
	Self-diagnosis results	Carries out self-diagnosis.
	Data monitor	Displays data relative to the body control module (BCM) input signals and various control related data for each system.
	Active test	Turns on/off actuators, relay and according to the commands transmitted by the CONSULT-II unit.
BCM PART NUMBER		Displays BCM part No.

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B6 terminals 23(LG/B), 24(P/B) and ground.

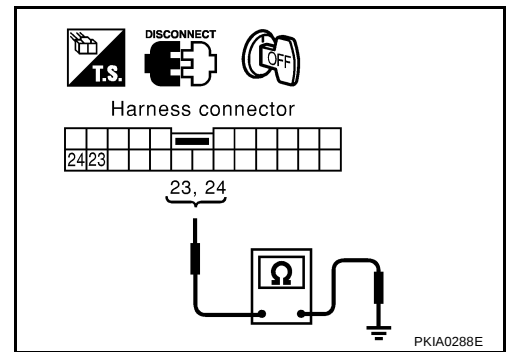
23(LG/B) – ground : Continuity should not exist.

24(P/B) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 8.

NG >> Repair harness between harness connector B6 and harness connector B63.



8. CHECK HARNESS FOR SHORT CIRCUIT

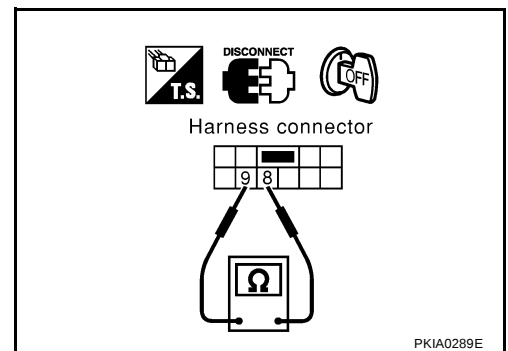
1. Disconnect harness connector B204.
2. Check continuity between harness connector B263 terminals 9(LG/B) and 8(P/B).

9(LG/B) – 8(P/B) : Continuity should not exist.

OK or NG

OK >> GO TO 9.

NG >> Repair harness between harness connector B263 and harness connector B204.



9. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B263 terminals 9(LG/B), 8(P/B) and ground.

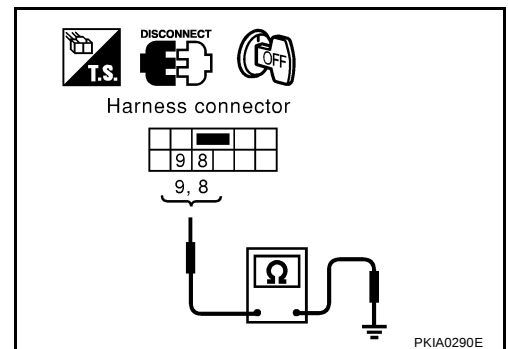
9(LG/B) – ground : Continuity should not exist.

8(P/B) – ground : Continuity should not exist.

OK or NG

OK >> GO TO 10.

NG >> Repair harness between harness connector B263 and harness connector B204.



10. CHECK HARNESS FOR SHORT CIRCUIT

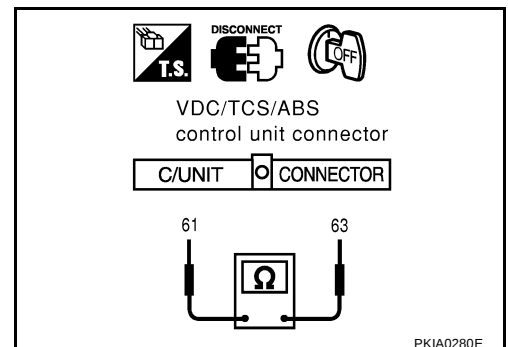
1. Disconnect VDC/TCS/ABS control unit connector and harness connector E34.
2. Check continuity between VDC/TCS/ABS control unit harness connector E218 terminals 61 (LG/B) and 63(P/B).

61(LG/B) – 63(P/B) : Continuity should not exist.

OK or NG

OK >> GO TO 11.

NG >> • Repair harness between harness connector E34 and harness connector E224.
• Repair harness between harness connector E34 and VDC/TCS/ABS control unit.

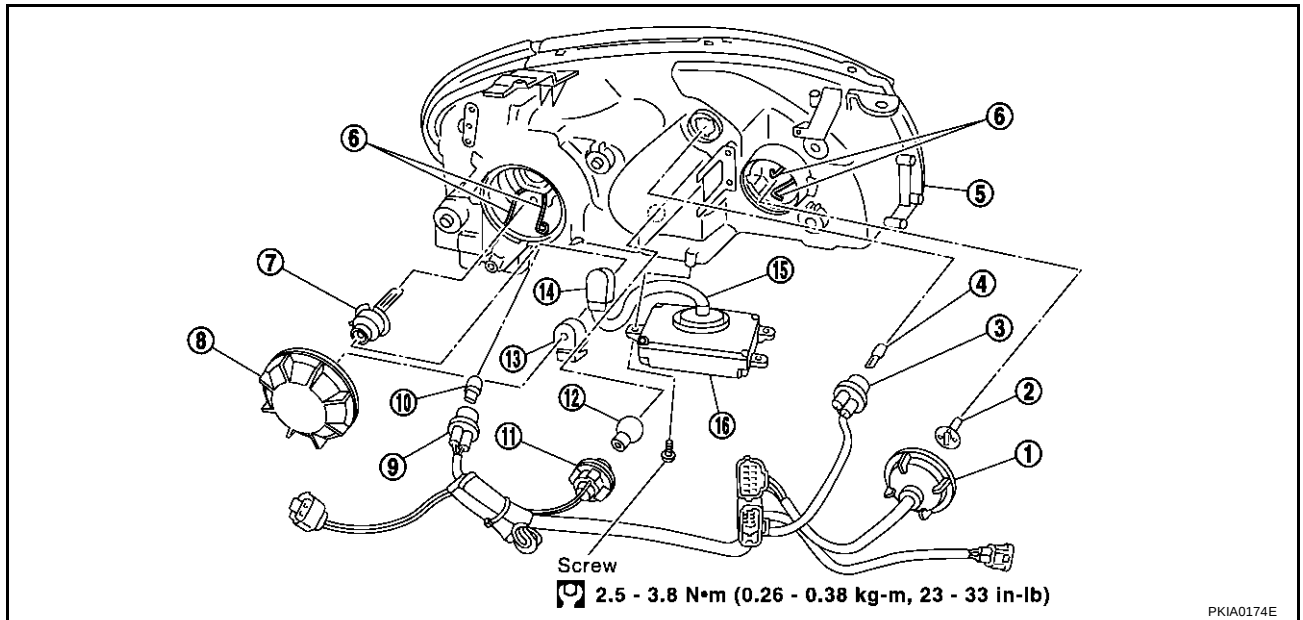


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HEADLAMP (FOR USA)

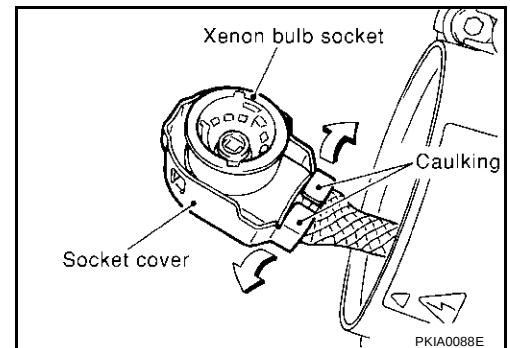
Disassembly and Assembly DISASSEMBLY

EKS001HL

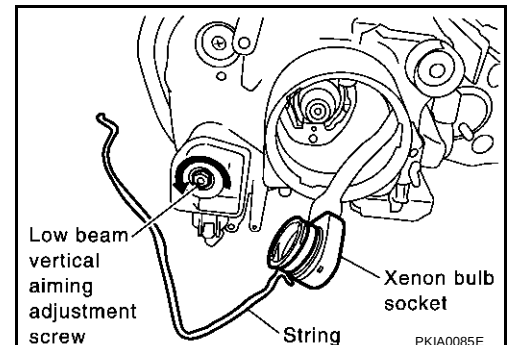


- | | | |
|---------------------------------------|--|--|
| 1. Plastic cap (high) | 2. Halogen bulb | 3. Parking lamp (Clearance lamp) bulb socket |
| 4. Parking lamp (Clearance lamp) bulb | 5. Xenon headlamp assembly | 6. Retaining springs |
| 7. Xenon bulb | 8. Plastic cap (low) | 9. Front side marker lamp bulb socket |
| 10. Front side marker lamp bulb | 11. Front turn signal lamp bulb socket | 12. Front turn signal lamp bulb |
| 13. Socket cover | 14. Xenon bulb socket | 15. Mesh cord |
| 16. H.I.D control unit | | |

1. Turn the plastic cap (low) counterclockwise and unlock it.
2. Turn the xenon bulb socket counterclockwise and unlock it.
3. Unlock the retaining spring and remove the xenon bulb (low).
4. Expand calking of socket cover, and then remove socket cover from the xenon valve socket.
5. Disconnect the H.I.D control unit connector and remove the H.I.D control unit mounting screws.



6. Turn the dipped beam vertical aiming adjustment screw counterclockwise to secure space in the headlamp for the xenon bulb socket to pass through. Tie a cord to the bulb socket to facilitate removal and insertion.



HAZARD SWITCH

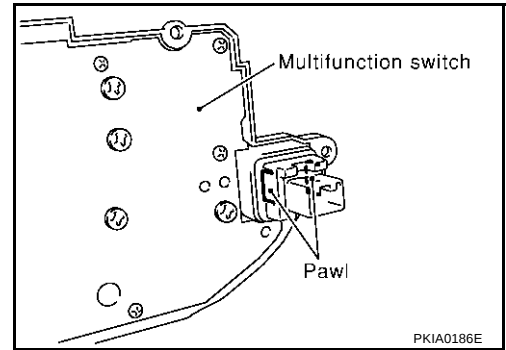
HAZARD SWITCH

PFP:25290

Removal and Installation

EKS0007I

Refer to [DI-131, "Disassembly and Assembly for Multifunction Switch"](#), [DI-161, "Disassembly and Assembly for Multifunction Switch"](#) in "DRIVER INFORMATION SYSTEM (DI)" section.



INTERIOR ROOM LAMP

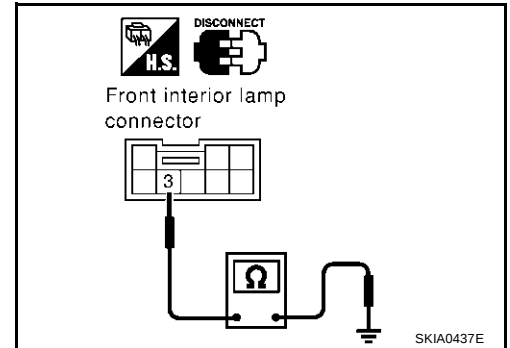
3. CHECK GROUND CIRCUIT

Check continuity between the front interior lamp harness connector R6 terminal 3(B) and body ground.

3(B) - Body ground : Continuity should exist.

OK or NG

- OK >> Check interior lamp ill switch.
- NG >> Repair or replace harness.



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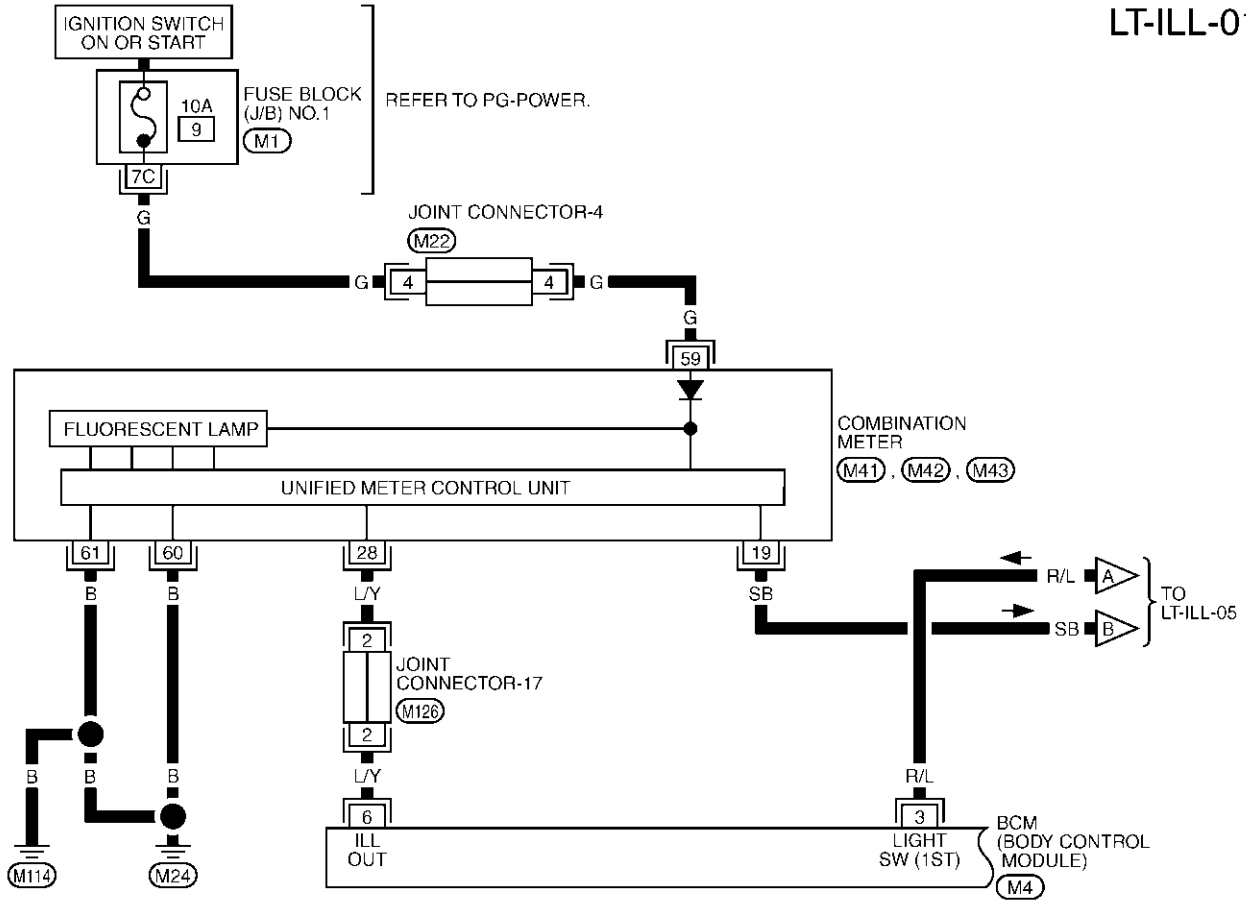
M

ILLUMINATION

Wiring Diagram — ILL —

EKS000U8

LT-ILL-01



1	1	1	1	1	1	2	2	2	2
3	3	3	3	3	3	4	4	4	4

(M22)
L

1	2	3	4	5			6	7	8	9											21	22	23	24	25	26			27	28	29	30	31				
10	11	12	13	14	15	16	17	18	19	20											32	33	34	35	36	37	38	39	40	41	42	43	44				

M41

BR

M42

BR

45	46	47	48	49	50			51	52	53	54	55						
56	57	58	59	60	61	62	63	64	65	66	67	68						

M43

W

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

(M126)
B

REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B) NO.1

(M4) - ELECTRICAL UNITS

TKWM0410E

GENERAL MAINTENANCE

GENERAL MAINTENANCE

PFP:00000

Explanation of General Maintenance

ELS000L3

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their INFINITI dealers do them.

OUTSIDE THE VEHICLE

The maintenance items listed here should be performed from time to time, unless otherwise specified.

Item		Reference page
Tires	Check the pressure with a gauge, including the spare, at least once a month and always prior to a long distance trips. Adjust to the specified pressure if necessary. Check carefully for damage, cuts or excessive wear.	—
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	—
Tire rotation	Tires should be rotated every 12,000 km (7,500 miles).	MA-24
Wheel alignment and balance	If the vehicle pulls to either side while driving on a straight and level road, or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed.	MA-23 , FSU-6
Windshield	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
Windshield wiper blades	Check for cracks or wear if they do not wipe properly.	—
Doors and engine hood	Check that all doors and the engine hood operate smoothly as well as the trunk lid and back hatch. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	MA-28
Lamps	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	—

INSIDE THE VEHICLE

The maintenance items listed here should be checked on a regular basis, such as when performing periodic maintenance, cleaning the vehicle, etc.

Item		Reference page
Warning lamps and chimes	Make sure that all warning lamps and chimes are operating properly.	—
Windshield wiper and washer	Check that the wipers and washer operate properly and that the wipers do not streak.	—
Windshield defroster	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner.	—
Steering wheel	Check that it has the specified play. Be sure to check for changes in the steering condition, such as excessive play, hard steering or strange noises. Free play: Less than 35 mm (1.38 in)	—
Seats	Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seatbacks.	—
Seat belts	Check that all parts of the seat belt system (e.g. buckles, anchors, adjusters and retractors) operate properly and smoothly, and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	MA-28
Accelerator pedal	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—

PARKING BRAKE SHOE

BREAKING IN DRUM AND LINING

CAUTION:

Do not carry out break-in procedure excessively, because it may cause the uneven wear or pre-mature wear of lining.

When a new rotor/parking brake shoe is installed, or when braking performance is poor, perform the following break-in procedure.

1. Drive the unloaded vehicle on a safe, level and dry road.
2. Depress parking brake pedal with a force of 147 N (15 kg, 33 lb).
3. While depressing pedal, continue to drive vehicle for-ward 100 m (328 ft) at approximately 35 km/h (22 MPH).
4. Cool down parking brake for approx. Five minutes.
5. After releasing pedal, drive vehicle under the normal conditions for two minutes to cool down parking drum brake.
6. Repeat steps 1 through 5 three times and then repeat only step 5 one more time.
7. After the break-in procedure, check pedal stroke of parking brake. If it is out of the specification, adjust again.

Inspection

- Visually check lining for malfunction wear, damage, and peeling.
- Using a scale, check thickness of lining.

Standard lining thickness : 3.2 mm (0.126 in)

Lining wear limit (A) : 1.5 mm (0.059 in)

CAUTION:

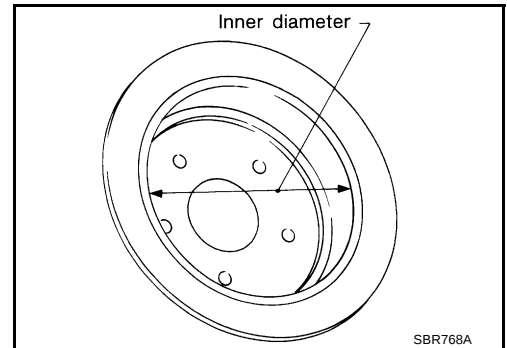
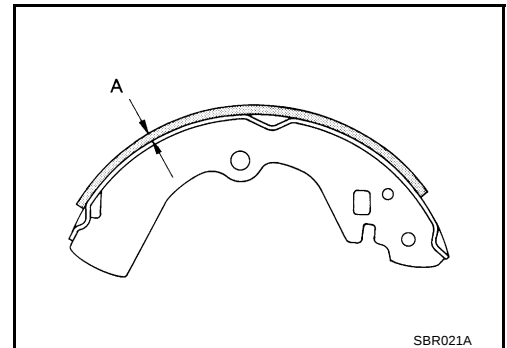
If necessary, remove brake shoe, and check as follows.

- Check shoe sliding surface for malfunction wear and damage.
- Check anchor pin for malfunction wear and corrosion.
- Check return spring for sagging.
- Check adjuster for rough operation.
- Visually check the inside of drum for malfunction wear, damage, and cracks. Using a pair of vernier calipers, check the inside of drum.

Standard inner diameter : 172.0 mm (6.77 in)

Maximum inner diameter : 173.0 mm (6.81 in)

EFS00007



E1	(M81)	P/20	: Joint connector-13
D1	(M82)	GY/24	: Display
E1	(M83)	W/20	: Multifunction switch
E2	(M84)	W/16	: Low tire pressure warning control unit
E2	(M86)	W/12	: Audio unit
E2	(M87)	W/16	: Audio unit
E3	(M88)	W/12	: Audio unit
G1	(M89)	BR/2	: Antenna amp. (Via sub-harness)
D3	(M90)	W/6	: Cooling unit assembly
E3	(M91)	W/8	: Combination flasher unit
E3	(M92)	W/3	: Front cigarette lighter socket
E3	(M93)	B/6	: Rear vent door motor
E3	(M94)	W/6	: Heated seat switch (Driver side)
F3	(M95)	BR/6	: Heated seat switch (Passenger side)
F3	(M96)	W/4	: Handset (Option)
E4	★(M97)	W/12	: A/T device
E4	(M99)	B/6	: Yaw rate/Side G sensor
G4	(M100)	B/2	: Front power socket
B5	(M101)	W/24	: To (B501)
F4	(M102)	W/2	: Console box lamp
F4	(M103)	Y/28	: Air bag diagnosis sensor unit
E2	(M106)	W/3	: Mode door motor (Passenger side)
E3	(M107)	W/3	: Air mix door motor (Passenger side)
F1	(M108)	W/8	: Power steering control unit
D3	(M109)	W/16	: CD auto changer
F1	(M110)	W/3	: Optical sensor
D1	(M111)	W/6	: To (M411)
E3	(M112)	W/6	: Blower motor
E1	(M114)	—	: Body ground
F1	(M115)	—	: Body ground
G1	(M116)	W/2	: Glove box lamp
G1	(M117)	W/2	: Trunk lid opener cancel switch
F1	(M118)	W/3	: Intake door motor
F2	(M119)	GY/20	: A/C auto amp.
F2	(M120)	GY/16	: A/C auto amp.
F2	(M121)	Y/4	: Front passenger air bag module
E1	(M123)	L/20	: Joint connector-14
G1	★(M124)	B/20	: Joint connector-15
F1	★(M125)	B/20	: Joint connector-16

G1	★(M126)	B/20	: Joint connector-17
G1	(M127)	OR/20	: Joint connector-18
G1	★(M128)	OR/20	: Joint connector-19
E1	(M129)	B/20	: Joint connector-20
G2	★(M130)	W/6	: Joint connector-21
F3	(M132)	W/24	: To (E222)
F3	★(M133)	W/12	: To (E223)
G2	★(M135)	SMJ	: To (F105)
G3	(M137)	W/3	: To (B207)
G3	(M138)	BR/24	: To (B208)
G3	(M139)	W/4	: To (B209)
G3	(M140)	GY/6	: To (B210)
G2	★(M141)	SMJ	: To (B211)
G2	(M142)	SMJ	: To (D31)
G2	★(M143)	W/10	: Fuse block (J/B) No. 2
F3	(M144)	W/8	: Fuse block (J/B) No. 2
F3	★(M145)	W/8	: Fuse block (J/B) No. 2

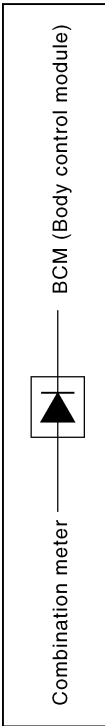
Main sub-harness-1

C1	★(M401)	W/4	: To (M61)
C1	★(M402)	B/2	: Stop lamp switch
C1	(M403)	BR/2	: ASCD brake switch (Without ICC)
C2	(M404)	BR/2	: ICC brake switch (With ICC)

Main sub-harness-2

D1	(M411)	W/6	: To (M11)
B1	(M412)	BR/2	: Instrument speaker LH
D1	(M413)	BR/2	: Instrument speaker CENTER
F1	(M414)	BR/2	: Instrument speaker RH

Diode (M36)



★ : Be sure to connect and lock the connectors securely after repair work.
Failure to do so may cause the ECM to have diagnostic trouble codes.
Do not disconnect these connectors except in the case of working according to WORK FLOW of TROUBLE DIAGNOSES in EC and AT sections.

STANDARDIZED RELAY

STANDARDIZED RELAY

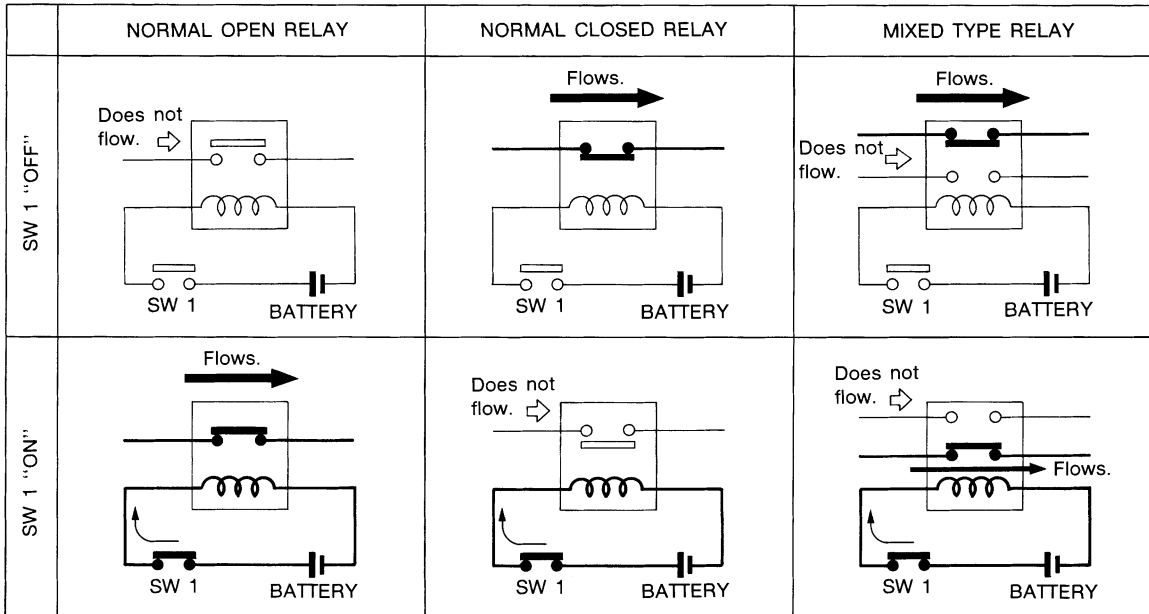
PFP:00011

Description

EKS000E4

NORMAL OPEN, NORMAL CLOSED AND MIXED TYPE RELAYS

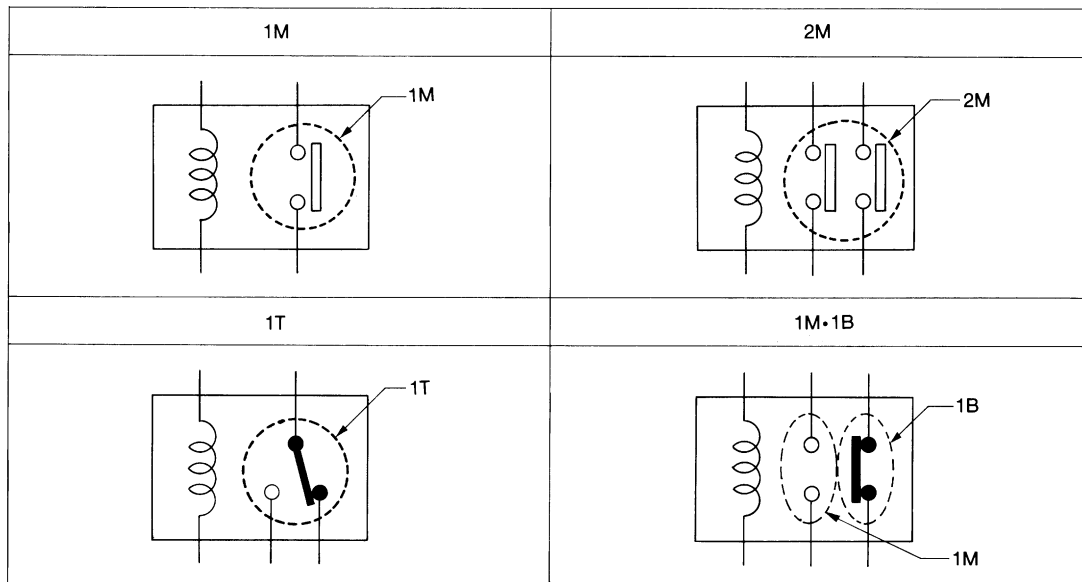
Relays can mainly be divided into three types: normal open, normal closed and mixed type relays.



SEL881H

TYPE OF STANDARDIZED RELAYS

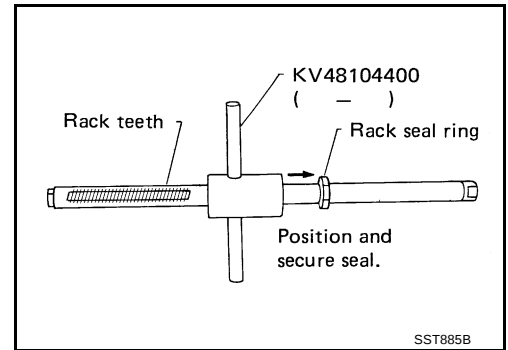
1M 1 Make 2M 2 Make
 1T 1 Transfer 1M·1B 1 Make 1 Break



SEL882H

POWER STEERING GEAR AND LINKAGE

3. Using tool, compress rack Teflon ring securely on rack.
Bold→Always insert tool from rack gear side.

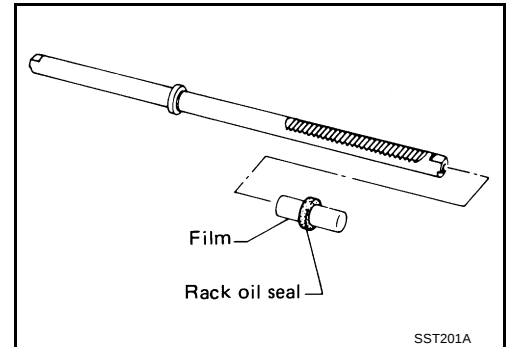


4. Remove rack oil seal.

CAUTION:

Do not use old rack oil seal is not reusable. Always use a new rack oil seal.

- a. To prevent inner rack oil seal from being damaged, wrap a place plastic film around the rack teeth surface and place the oil seal around sheet. Pull the sheet with oil seal around it until the seal passes the rack teeth surface.



- b. Install center bushing to rack. Be careful not to damage the inside of gear housing assembly with rack. If damaged, replace gear housing assembly. Otherwise, oil leaks may result.

CAUTION:

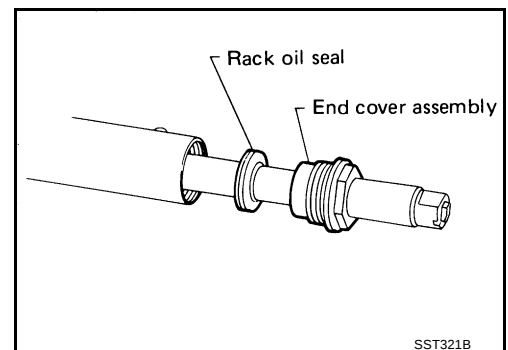
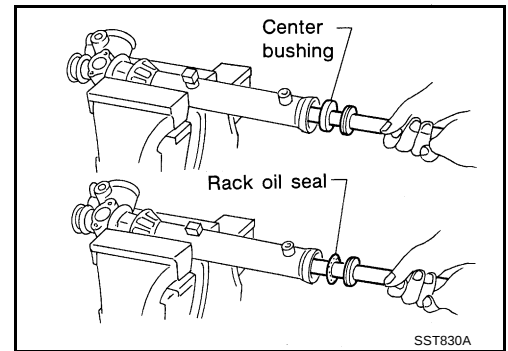
Be careful not to damage the inside of gear housing assembly with rack. If damaged, replace gear housing assembly. Otherwise, oil leaks may result.

- c. Insert rack oil seal (inner) into rack piston. Move rack in the gear housing assembly so that rack oil seal (inner) can be pressed against center bushing.

CAUTION:

Be careful not to damage the inside of gear housing assembly with rack. If damaged, replace gear housing assembly. Otherwise, oil leaks may result.

- d. To prevent the rack oil seal (outer) from being damaged, wrap a place plastic film around the end of rack and place the oil seal around the sheet. Pull the sheet with oil seal around it until the oil seal passes the end of rack. Then, install rack oil seal in place with end cover assembly.



A

B

C

D

E

F

PS

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I

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K

L

M

SQUEAK AND RATTLE TROUBLE DIAGNOSES

Diagnostic Worksheet

EIS000ZE



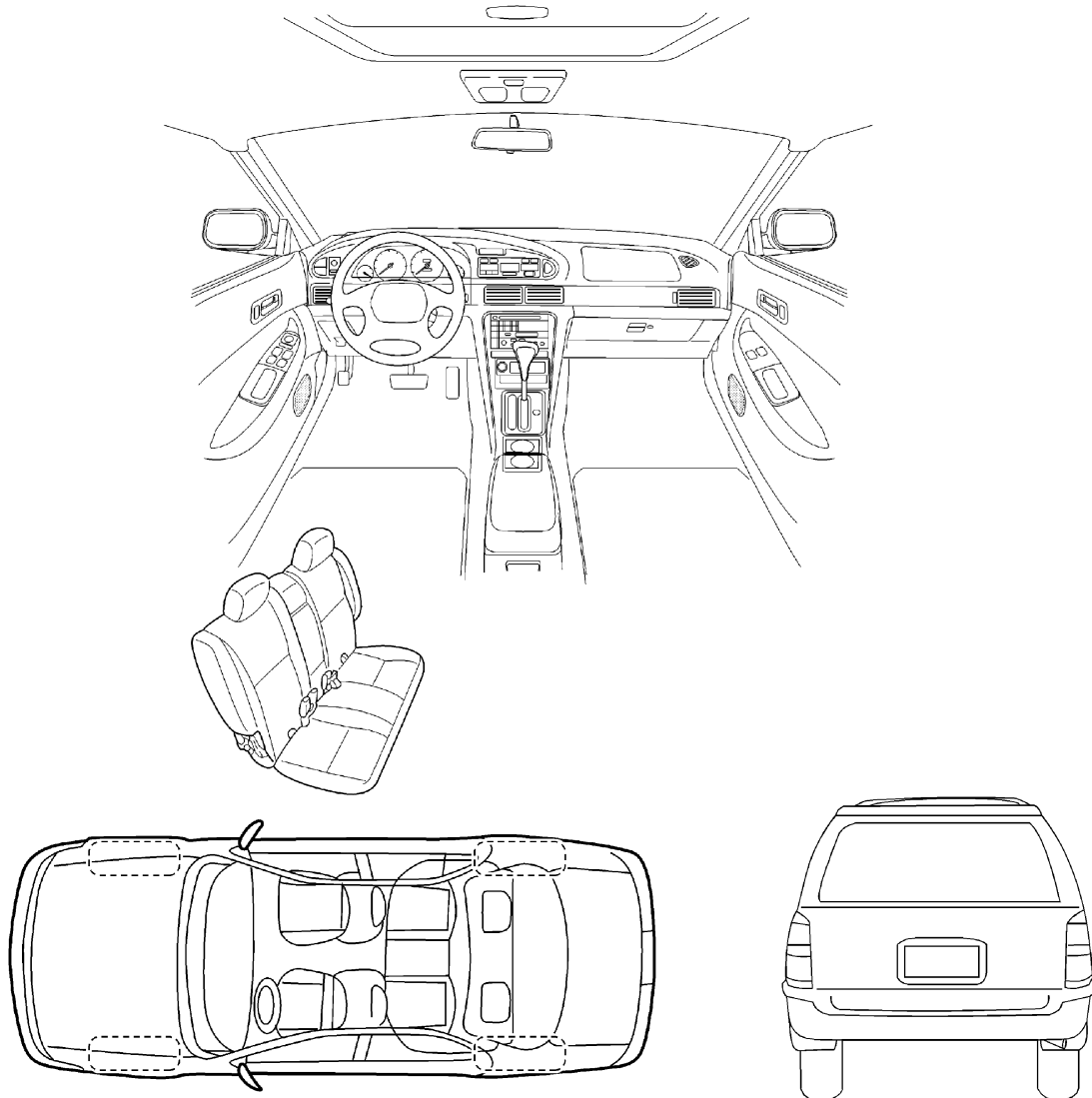
SQUEAK & RATTLE DIAGNOSTIC WORKSHEET

Dear Infiniti Customer:

We are concerned about your satisfaction with your Infiniti vehicle. Repairing a squeak or rattle sometimes can be very difficult. To help us fix your Infiniti right the first time, please take a moment to note the area of the vehicle where the squeak or rattle occurs and under what conditions. You may be asked to take a test drive with a service advisor or technician to ensure we confirm the noise you are hearing.

I. WHERE DOES THE NOISE COME FROM? (circle the area of the vehicle)

The illustrations are for reference only, and may not reflect the actual configuration of your vehicle.



Continue to the back of the worksheet and briefly describe the location of the noise or rattle.
In addition, please indicate the conditions which are present when the noise occurs.

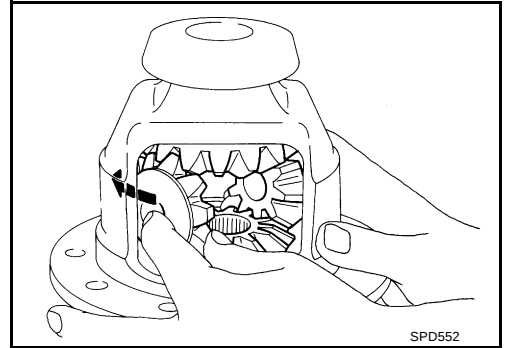
SBT860

REAR FINAL DRIVE ASSEMBLY

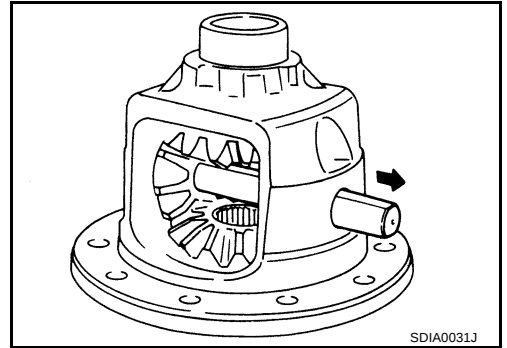
ADJUSTMENT OF DIFFERENTIAL CASE

Thrust Washer Selection

1. Install side gears, pinion mate gears, thrust washers into differential case.



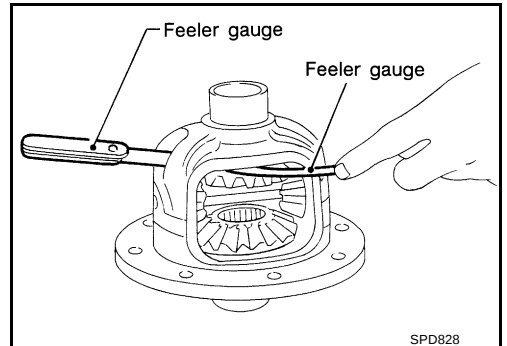
2. Fit pinion mate shaft to differential case so that it meets lock pin holes.



3. Adjust clearance between rear face of side gear and thrust washer by selecting side gear thrust washer. Refer to [RFD-28](#), "AVAILABLE SIDE GEAR THRUST WASHERS". Use two feeler gauges to prevent leaning of side gear as showing, figure.

Clearance between side gear thrust washer and differential case

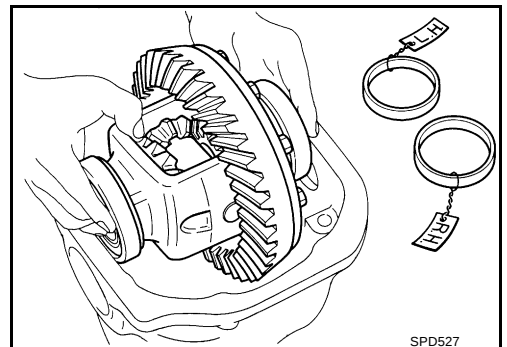
: 0.20mm (0.0079 in) less



SIDE BEARING PRELOAD

A selection of carrier side bearing adjusting washers is required for successful completion of this procedure.

1. Make sure all parts are clean. Also, make sure the bearings are well lubricated with light oil or DEXRON™ type automatic transmission fluid.
2. Place the differential carrier, with side bearings and bearing races installed, into the final drive housing.



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PRECAUTIONS

PRECAUTIONS

PFP:00001

Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

EHS000M7

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB 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 must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

Precaution for Seat Belt Service

EHS000B4

CAUTION:

- Before removing the seat belt pre-tensioner assembly, turn the ignition switch off, disconnect the both battery cables and wait at least 3 minutes.
- Do not use electrical test equipment for seat belt pre-tensioner connector.
- After replacing or reinstalling seat belt pre-tensioner assembly, or reconnecting seat belt pre-tensioner connector, check the system function. Refer to [SRS-20, "SRS Operation Check"](#) .
- Do not use disassemble buckle or seat belt assembly.
- Replace anchor bolts if they are deformed or worn out.
- Never oil tongue and buckle.
- If any component of seat belt assembly is questionable, do not repair. Replace the whole seat belt assembly.
- If webbing is cut, frayed, or damaged, replace seat belt assembly.
- When replacing seat belt assembly, use a genuine seat belt assembly.

AFTER A COLLISION

WARNING:

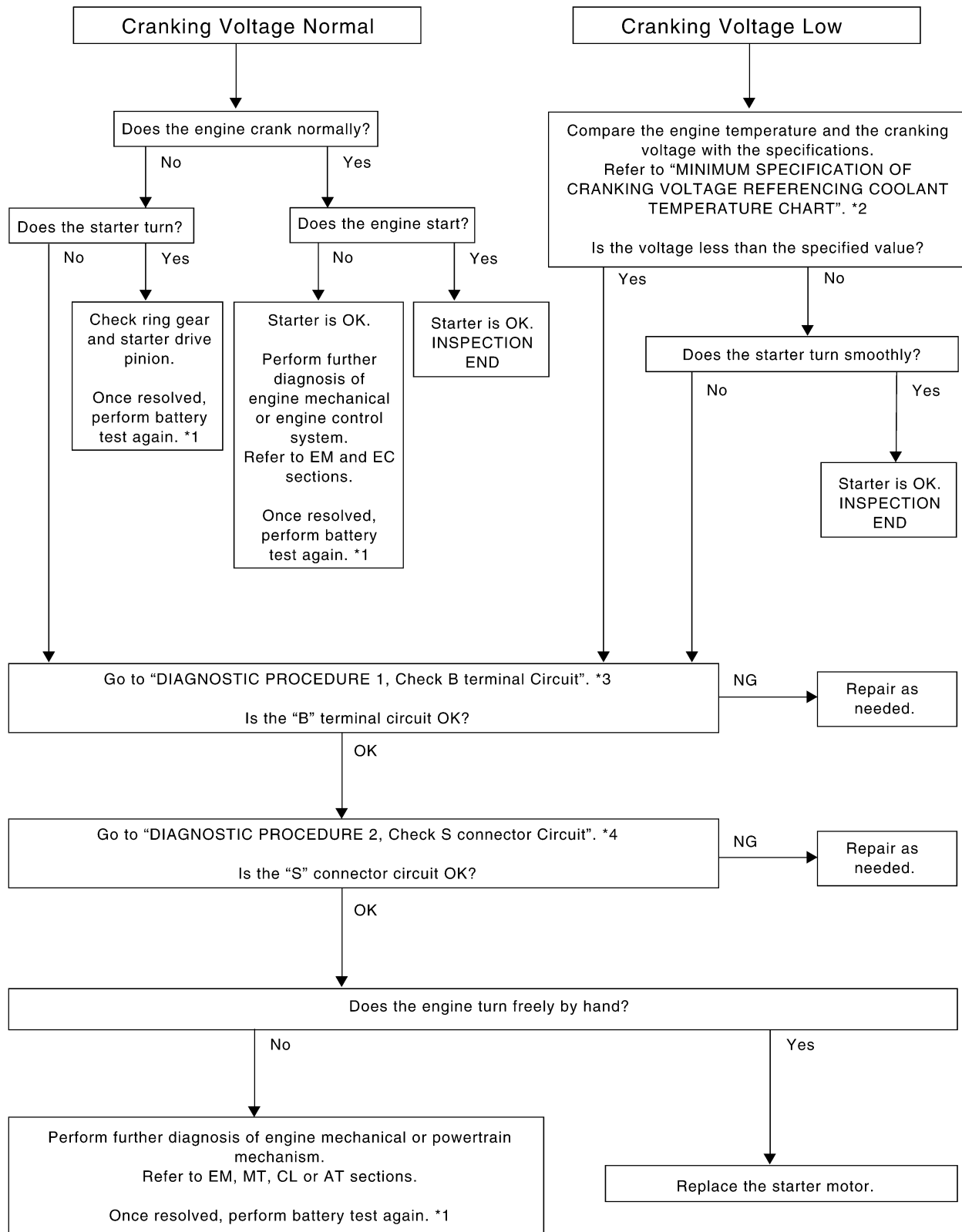
Inspect all seat belt assemblies including retractors and attaching hardware after any collision. NISSAN recommends that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show no damage and continue to operate properly. Failure to do so could result in serious personal injury in an accident. Seat belt assemblies not in use during a collision should also be replaced if either damage or improper operation is noted. Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision in which the air bags are deployed.

Replace any seat belt assembly (including anchor bolts) if:

- The seat belt was in use at the time of a collision (except for minor collisions and the belts, retractors and buckles show no damage and continue to operate properly).
- The seat belt was damaged in an accident. (i.e. torn webbing, bent retractor or guide, etc.)
- The seat belt attaching point was damaged in an accident. Inspect the seat belt attaching area for damage or distortion and repair as necessary before installing a new seat belt assembly.
- Anchor bolts are deformed or worn out.
- The seat belt pre-tensioner should be replaced even if the seat belts are not in use during the collision in which the air bags are deployed.

STARTING SYSTEM

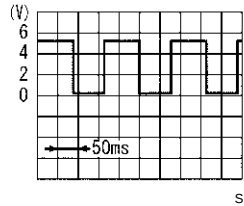
WORK FLOW



PKIA2371E

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AUTOMATIC DRIVE POSITIONER

TERMI- NAL	WIRE COLOR	ITEM	CONDITION	VOLTAGE (V) (Approx.)
31	W/R	Rear lifting sensor signal	Rear lifting motor operation	
			Other than above.	0
32	R/W	Ground (sensor)	Ignition switch ON	0

Work Flow

EIS0043G

1. Check the symptom and customer's requests.
2. Understand the system description. Refer to [SE-13, "System Description"](#).
3. Perform the preliminary check. Refer to [SE-36, "Preliminary Check"](#).
4. Perform the communication diagnosis.
 With CONSULT-II, Refer to [SE-40, "IVMS Communication Diagnosis"](#).
 Without CONSULT-II, refer to [SE-47, "COMMUNICATION DIAGNOSIS"](#).
 Is the communication diagnosis result OK?
 If OK, GO TO 7.
 If NG, GO TO 5.
5. Repair or replace depending on the diagnosis result.
6. Perform the communication diagnosis again.
 With CONSULT-II, refer to [SE-40, "IVMS Communication Diagnosis"](#).
 Without CONSULT-II, refer to [SE-47, "COMMUNICATION DIAGNOSIS"](#).
 Is the communication diagnosis result OK?
 If OK, GO TO 7.
 If NG, GO TO 5.
7. Perform the self-diagnosis.
 With CONSULT-II, refer to [SE-43, "SELF-DIAGNOSIS RESULTS"](#).
 Without CONSULT-II, refer to [SE-51, "ON BOARD DIAGNOSIS FOR AUTOMATIC DRIVE POSITIONER"](#).
 Is the self-diagnosis result OK?
 If OK, GO TO 11.
 If NG, GO TO 8.
8. Repair or replace depending on the self-diagnosis result.
9. Perform the self-diagnosis again.
 With CONSULT-II, refer to [SE-43, "SELF-DIAGNOSIS RESULTS"](#).
 Without CONSULT-II, refer to [SE-51, "ON BOARD DIAGNOSIS FOR AUTOMATIC DRIVE POSITIONER"](#).
 Is the self-diagnosis result OK?
 If OK, GO TO 11.
 If NG, GO TO 8.
10. Based on the trouble diagnosis chart, repair or replace the cause of the malfunction. Refer to [SE-53, "Symptom Chart"](#).
11. Does the automatic drive positioned system operate normally?
 If it is normal, GO TO 12.
 If it is not normal, GO TO 10.
12. Inspection end.

AUTOMATIC DRIVE POSITIONER

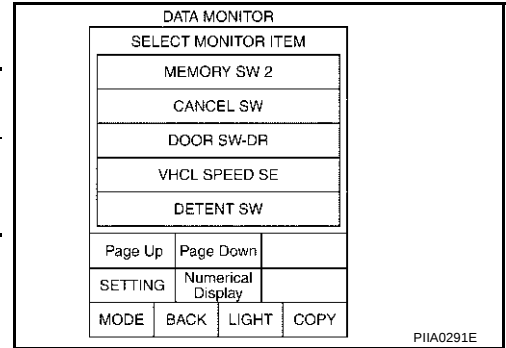
Detention Switch Circuit Inspection

EIS0041X

1. CHECK FUNCTION

With CONSULT-II

Check that when the A/T selector lever is in P-position, "DETENT SW" on the DATA MONITOR becomes ON.



Without CONSULT-II

Carry out "SWITCH MONITOR" in the self-diagnosis function, and operate the A/T selector lever to check. Refer to [SE-50](#).

OK or NG

- OK >> System is OK.
NG >> GO TO 2.

2. CHECK DETENTION SWITCH POWER SUPPLY CIRCUIT HARNESS

- Turn ignition switch OFF.
- Disconnect A/T device (detention switch) connector and "key switch and key lock solenoid" connector.
- Check continuity harness between A/T device (detention switch) connector M97 terminal 6 (PU/W) and key switch and key lock solenoid connector M64 terminal 4 (PU/W).

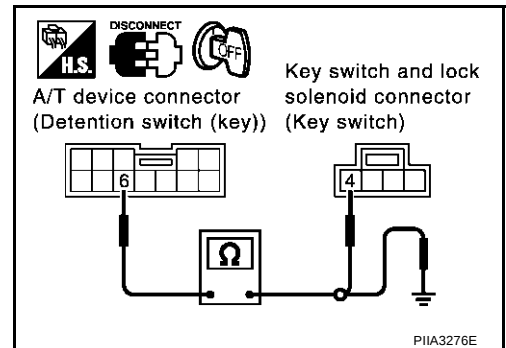
6 (PU/W) – 4 (PU/W) : Continuity should exist.

- Check continuity harness between A/T device (detention switch) connector M97 terminal 6 (PU/W) and ground.

6 (PU/W) – Ground :Continuity should not exist.

OK or NG

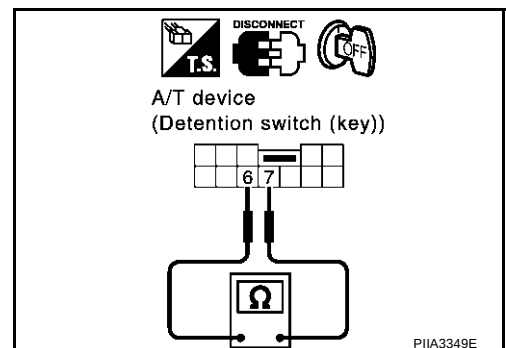
- OK >> GO TO 3.
NG >> Repair or replace harness between A/T device (detention switch) and key switch and key lock solenoid.



3. CHECK DETENTION SWITCH

Check continuity between A/T device (detention switch) connector.

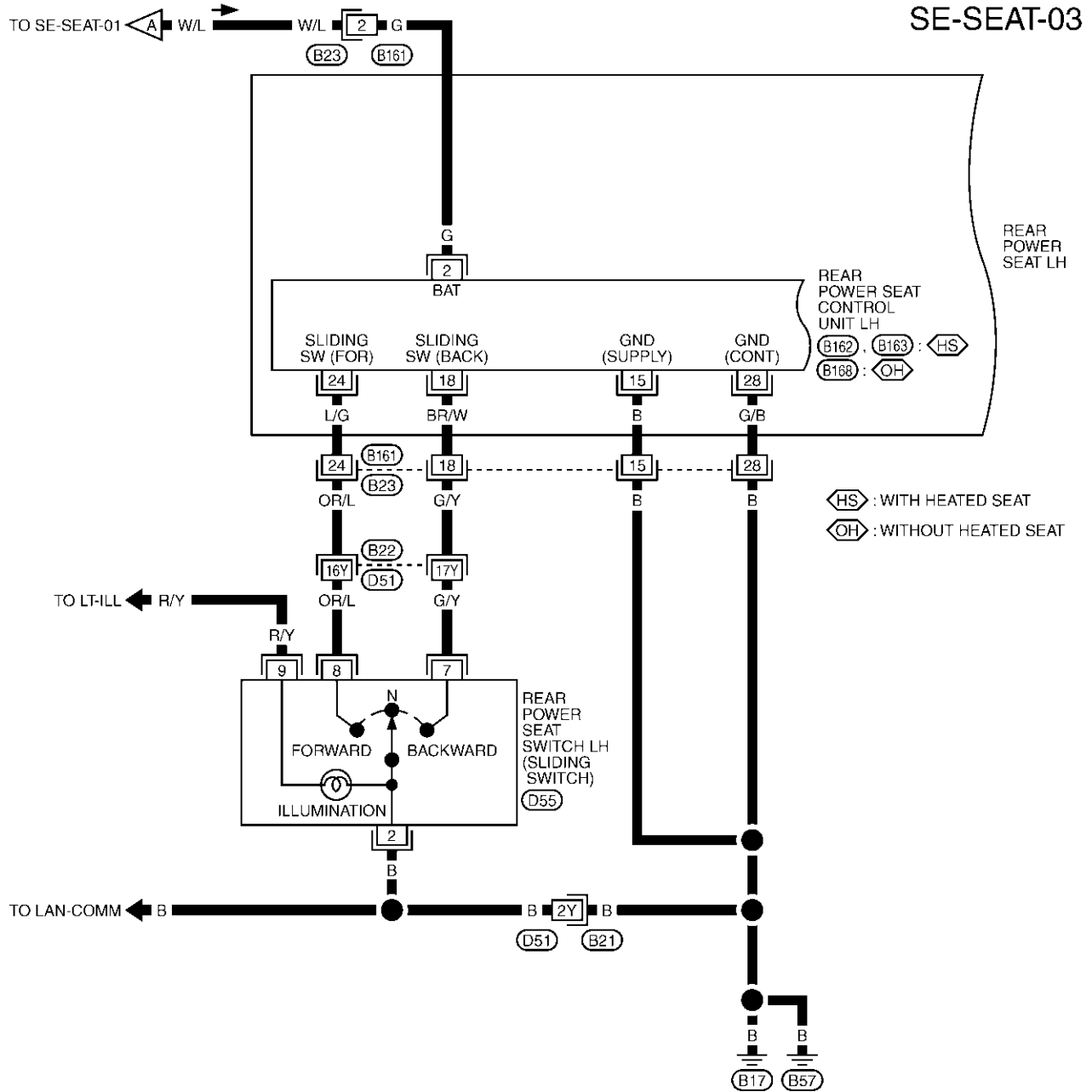
Connector	Terminals (Wire color)		Condition	Continuity
	(+)	(-)		
M97	6 (PU/W)	7 (G/OR)	P-position	Continuity should not exist
			Other than P-position	Continuity should exist



OK or NG

- OK >> GO TO 4.
NG >> Replace detention switch.

POWER SEAT



43	36	44	28	26	20	32	22
24	18		44B	15		2	

B23
W

4	2
15	11
8	5
44	

B162
W

28	21	36	24	20
74	32	22	43	18
26				

B163
W

28	21	36	24	2
15	74	43	11	4
18				

B168
W

5	3	6	4
9	7	2	8
1			

D55
W

REFER TO THE FOLLOWING.

B21, B22 -SUPER MULTIPLE JUNCTION (SMJ)

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

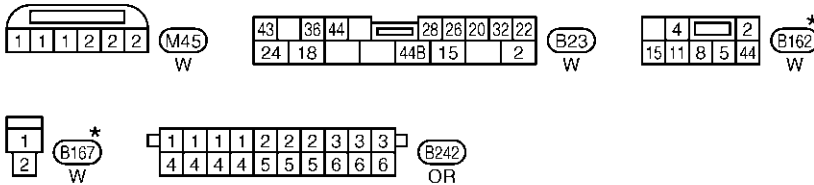
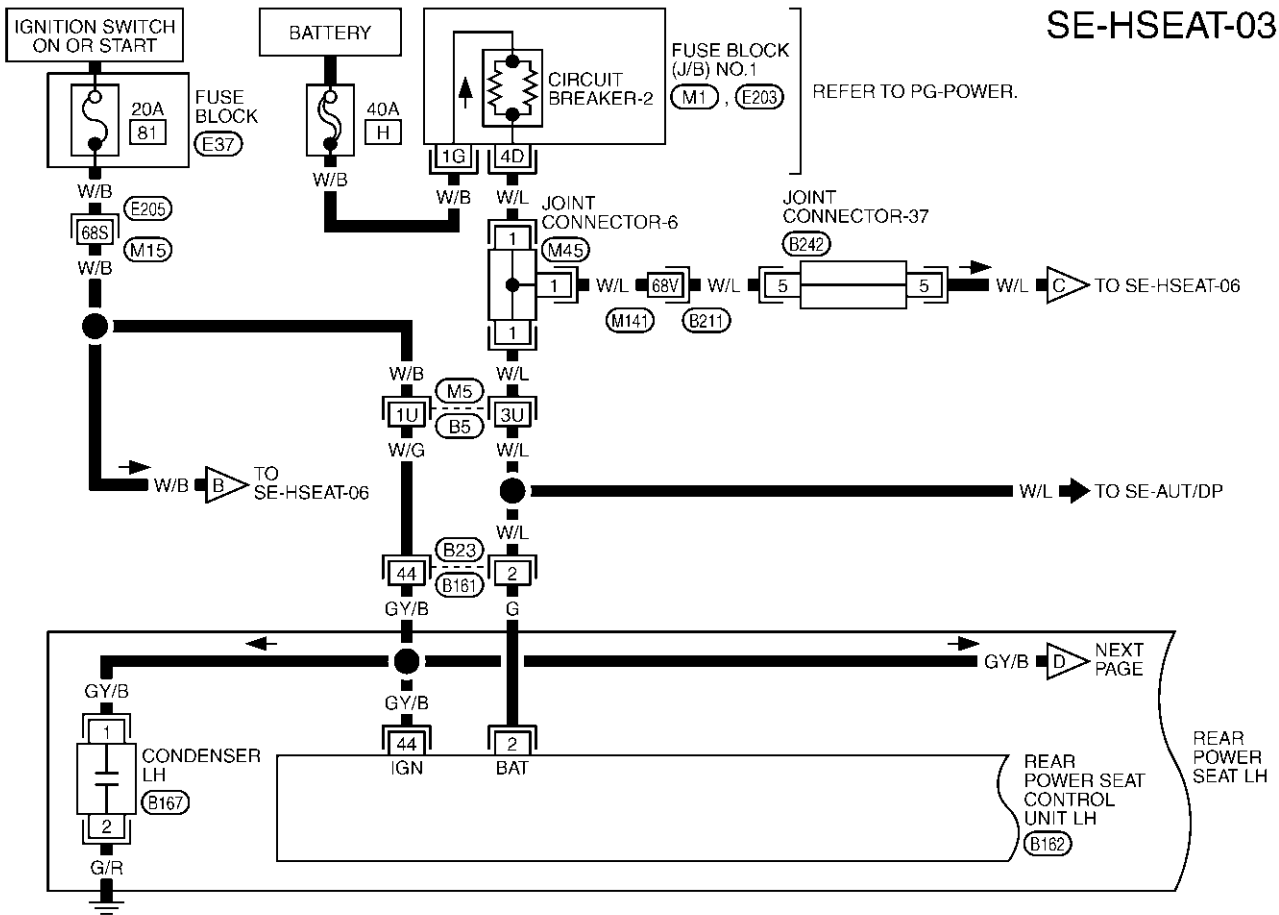
TIWM0228E

HEATED SEAT

Wiring Diagram – HSEAT – REAR HEATED SEAT

EIS0002P

SE-HSEAT-03

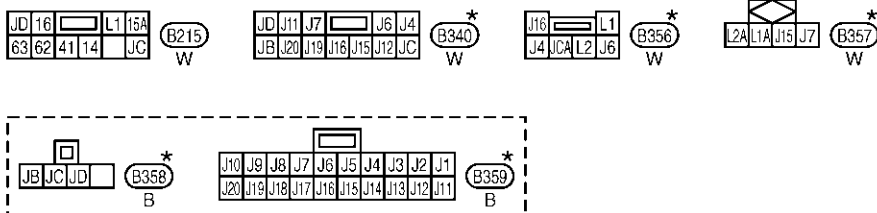
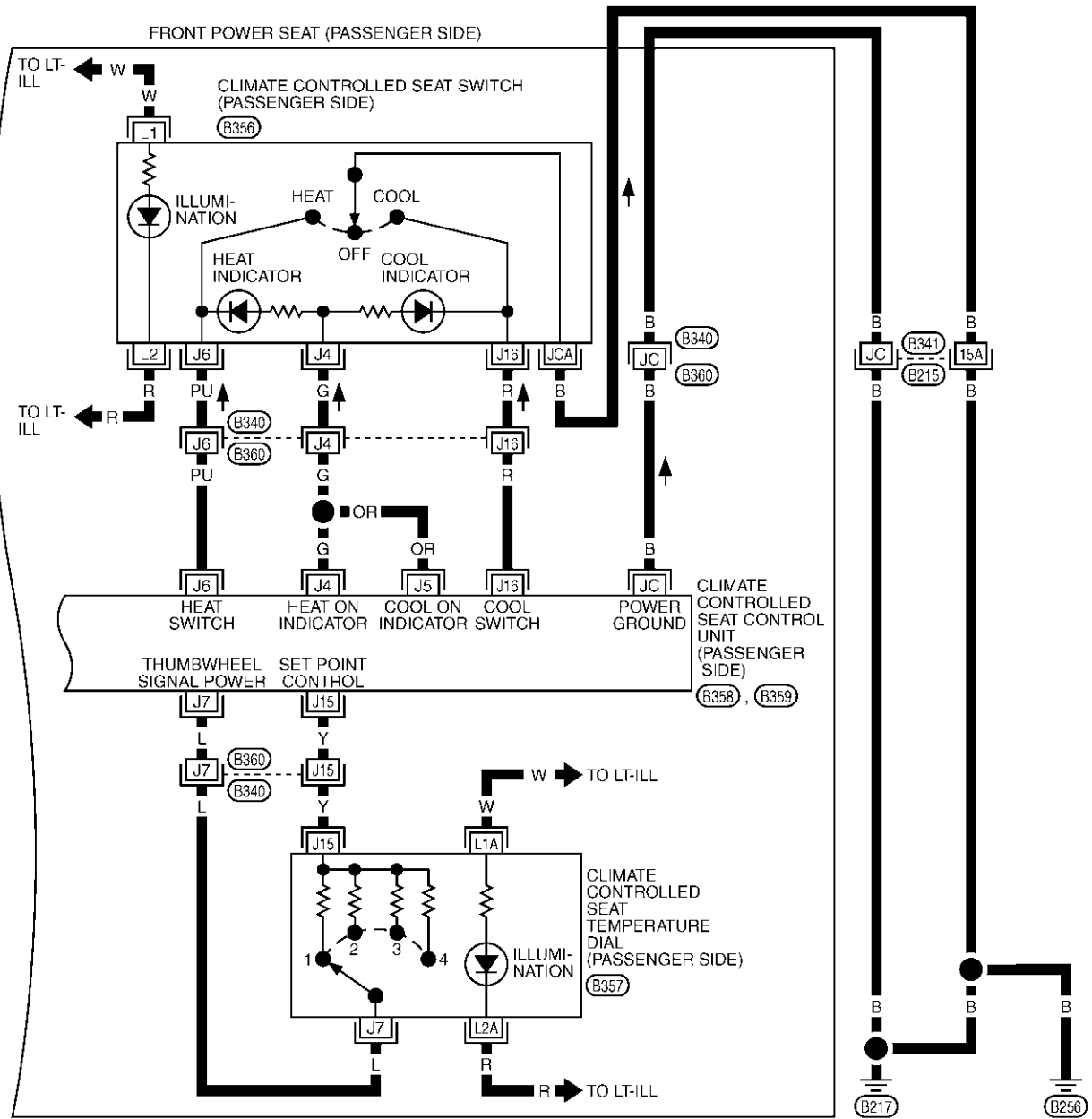


★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.

(M5), (E205), (B211) -SUPER
MULTIPLE JUNCTION (SMJ)
(M1), (E203) -FUSE BLOCK-
JUNCTION BOX (J/B) NO.1
(E37) -FUSE BLOCK

TIWM0132E

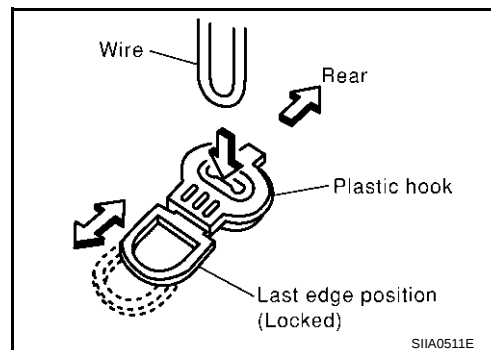


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REAR SEAT

REMOVAL OF MANUAL SEAT (BENCH SEAT)

1. Pull the lock at the front bottom of the seat cushion forward and pull the seat cushion upward to release the wire from the plastic hook, then pull the seat cushion forward to remove.



2. Partially remove the seatback board to disconnect the harness connector and remove the nuts on the sunshade switch.
3. Remove the RH and LH screws on the seatback.
4. Slide the seatback upward to pull off the wire from the vehicle-side hook, and remove the seatback.
5. After removing, remove the hog ring to separate the trim and pad.

INSTALLATION OF MANUAL SEAT (BENCH SEAT)

Install in the reverse order of removal.

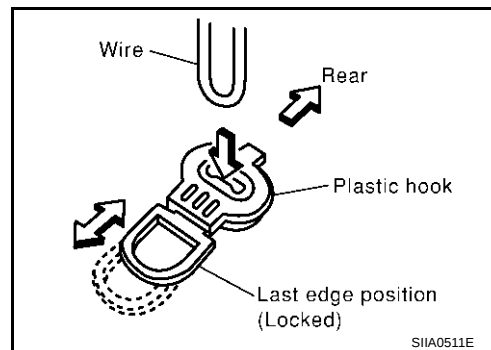
REMOVAL OF POWER SEAT (SPLIT SEAT)

NOTE:

Remove the LH and RH seat before removing the center seat.

Center Seat

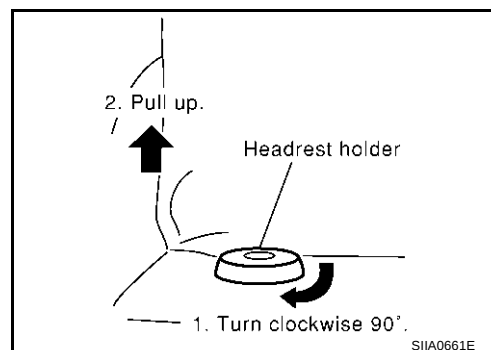
1. Pull the lock at the front bottom of the seat cushion forward, and pull the seat cushion upward to release the wire from the plastic hook.



2. Remove the Velcro fastener at the rear of the seat cushion trim, and pull the seat cushion trim forward to remove.
3. Partially remove the seatback board to disconnect the harness connectors for rear control switch and rear seat control unit.
4. Remove the nuts and slide the center seatback assembly upward to remove.
5. After removing, remove the hog ring to separate the trim and pad.

RH/LH Seat

1. Remove the headrest holders at the right and left.
 - For the RH seat, remove the headrest, and turn the headrest holder toward the front of the vehicle by 90° to remove.
 - For the LH seat, move the headrest to the lower limit to remove it. Then insert a slotted screwdriver into the hole on the headrest holder to pull up. Release the tab on the headrest holder to remove the headrest holder.



TROUBLE DIAGNOSIS

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

SELECT DIAG MODE
SELF-DIAG [CURRENT]
SELF-DIAG [PAST]
TROUBLE DIAG RECORD
ECU DISCRIMINATED NO.

SRS697

A
B
C
D
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F
G

7. If diagnostic codes are displayed on "SELF-DIAG [PAST]", go to step 10.

SELF-DIAG [PAST]
DTC RESULTS:
AIR BAG MODULE [OPEN]

SRS700

If no malfunction is detected on "SELF-DIAG [PAST]", touch "BACK" and go back to "SELECT DIAG MODE".

SELF-DIAG [PAST]
DTC RESULTS:
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.

SRS702

SRS

I
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K

8. Touch "TROUBLE DIAG RECORD".

NOTE:
With "TROUBLE DIAG RECORD", diagnosis results previously erased by a reset operation can be displayed.

SELECT DIAG MODE
SELF-DIAG [CURRENT]
SELF-DIAG [PAST]
TROUBLE DIAG RECORD
ECU DISCRIMINATED NO.

SRS697

L
M

9. Diagnostic code is displayed on "TROUBLE DIAG RECORD".
10. Touch "PRINT".
11. Compare diagnostic codes to [SRS-30. "CONSULT-II Diagnostic Code Chart \("SELF-DIAG \[PAST\]" or TROUBLE DIAG RECORD\)"](#).
12. Touch "BACK" key of CONSULT-II until "SELECT SYSTEM" appears.
13. Turn ignition switch OFF, then turn off and disconnect CONSULT-II, and both battery cables.

TROUBLE DIAG RECORD
DTC RESULTS:
DRIVER AIR BAG MODULE [OPEN]

SHIA0182E

COLLISION DIAGNOSIS

Part	Front side air bag and side curtain air bag is activated	Front side air bag and side curtain air bag is NOT activated
Seat belt pre-tensioner assembly	1. Check if the seat belt can be extended smoothly. If the seat belt cannot be extended smoothly, – Check for deformities of the center pillar inner. – If the center pillar inner has no damage, REPLACE the seat belt pre-tensioner assembly. 2. Remove the seat belt pre-tensioner assembly on the collision side. Check harness cover and connectors for damage, terminals for deformities, and harness for binding. 3. Check for visible signs of damage (dents, cracks, deformation) of the seat belt pre-tensioner assembly. 4. Check seat belt adjuster for damage. 5. If no damage is found, reinstall the seat belt pre-tensioner assembly. 6. If damaged—REPLACE the seat belt pre-tensioner assembly with new bolts. The seat belt pre-tensioner assembly must be deployed before disposal.	
Seat with front side air bag	REPLACE all parts of front seat back (including front seat back frame)	1. Visually check the seat on the collision side. 2. Remove the seat on the collision side and check the following for damage and deformities. – Harness, connectors and terminals – Frame and recliner (for front and rear seat), and also adjuster and slides (for front seat) 3. If no damage is found, reinstall the seat. 4. If damaged—REPLACE the damaged seat parts using new bolts.
Center inner pillar	1. Check the center inner pillar on the collision side for damage (dents, cracks, deformation). 2. If damaged—REPAIR the center inner pillar.	
Trim/headliner	1. Check for visible signs of damage (dents, cracks, deformation) of the interior trim on the collision side. 2. If damaged—REPLACE the damaged trim parts.	

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