

## PRECAUTIONS

PPF:00001

### Description

AAS0005J

Observe the following precautions to ensure safe and proper servicing. These precautions are not described in each individual section.

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

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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.

### Precautions for NVIS/IVIS (NISSAN/INFINITI VEHICLE IMMOBILIZER SYSTEM - NATS) (If Equipped)

AAS0005L

NVIS/IVIS (NATS) will immobilize the engine if someone tries to start it without the registered key of NVIS/IVIS (NATS).

Both of the originally supplied ignition key IDs have been NVIS/IVIS (NATS) registered.

The security indicator is located on the instrument panel. The indicator blinks when the immobilizer system is functioning.

Therefore, NVIS/IVIS (NATS) warns outsiders that the vehicle is equipped with the anti-theft system.

- When NVIS/IVIS (NATS) detects trouble, the security indicator lamp lights up while ignition switch is in "ON" position.  
This lighting up indicates that the anti-theft is not functioning, so prompt service is required.
- When servicing NVIS/IVIS (NATS) (trouble diagnoses, system initialization and additional registration of other NVIS/IVIS (NATS) ignition key IDs), CONSULT-II hardware and CONSULT-II NVIS/IVIS (NATS) software is necessary.  
Regarding the procedures of NVIS/IVIS (NATS) initialization and NVIS/IVIS (NATS) ignition key ID registration, refer to CONSULT-II operation manual, NVIS/IVIS (NATS).

**Therefore, CONSULT-II NVIS/IVIS (NATS) software (program card and operation manual) must be kept strictly confidential to maintain the integrity of the anti-theft function.**

- When servicing NVIS/IVIS (NATS) (trouble diagnoses, system initialization and additional registration of other NVIS/IVIS (NATS) ignition key IDs), it may be necessary to re-register original key identification. Therefore, be sure to receive all keys from vehicle owner. A maximum of four or five key IDs can be registered into NVIS/IVIS (NATS).
- When failing to start the engine first time using the key of NVIS/IVIS (NATS), start as follows.
  1. Leave the ignition key in "ON" position for approximately 5 seconds.
  2. Turn ignition key to "OFF" or "LOCK" position and wait approximately 5 seconds.
  3. Repeat step 1 and 2 again.
  4. Restart the engine while keeping the key separate from any others on key-chain.

# HOW TO USE THIS MANUAL

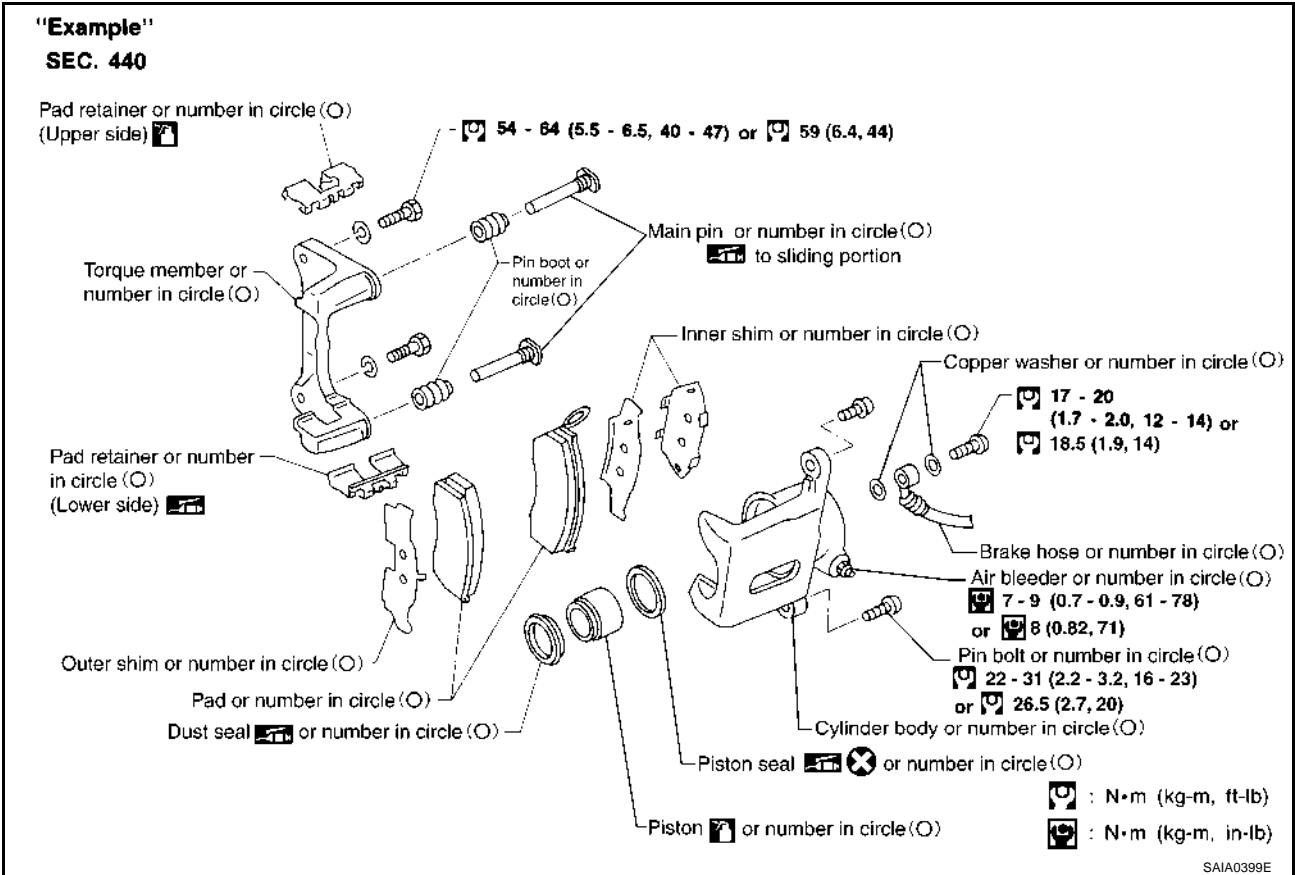
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## Components

- **THE LARGE ILLUSTRATIONS** are exploded views (See the following) and contain tightening torques, lubrication points, section number of the **PARTS CATALOG** (e.g. SEC. 440) and other information necessary to perform repairs.

The illustrations should be used in reference to service matters only. When ordering parts, refer to the appropriate **PARTS CATALOG**.

Components shown in an illustration may be identified by a circled number. When this style of illustration is used, the text description of the components will follow the illustration.



## SYMBOLS

SYMBOL	DESCRIPTION
	Tightening torque
	The tightening torque specifications of bolts and nuts may be presented as either a range or a standard tightening torque.
	Should be lubricated with grease. Unless otherwise indicated, use recommended multi-purpose grease.
	Should be lubricated with oil.
	Sealing point
	Checking point
	Always replace after every disassembly.
	Apply petroleum jelly.
P	
	Apply ATF.
★	Select with proper thickness.
☆	Adjustment is required.

# DTC P0133, P0153 HO2S1

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)
115	L	Heated oxygen sensor 1 (bank 2)	<p>[Engine is running]</p> <ul style="list-style-type: none"> <li>● Warm-up condition</li> <li>● Engine speed is 2,000 rpm.</li> </ul>	0 - Approximately 1.0V (Periodically change)

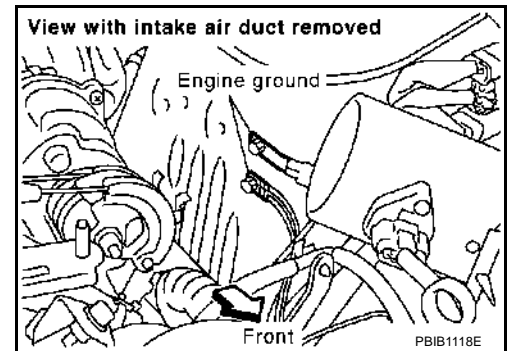
## Diagnostic Procedure

ABS002H0

### 1. RETIGHTEN GROUND SCREWS

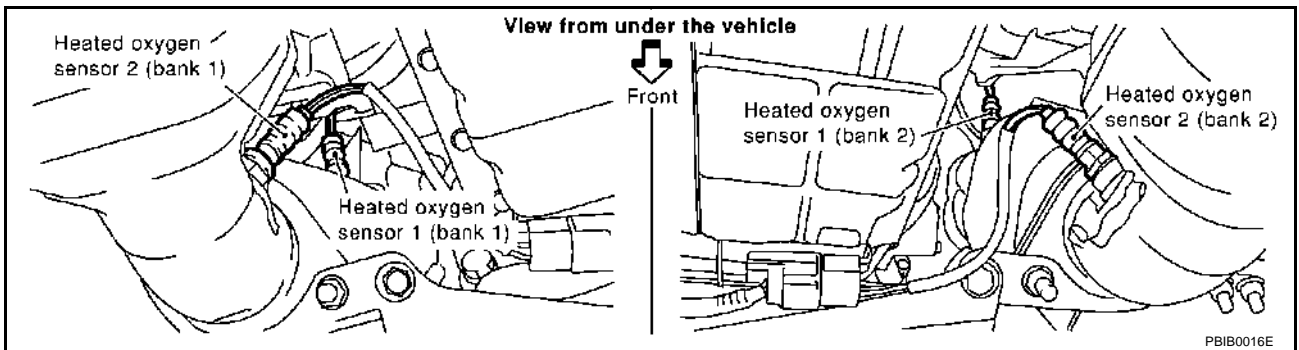
1. Turn ignition switch "OFF".
2. Loosen and retighten engine ground screws.

>> GO TO 2.



### 2. RETIGHTEN HEATED OXYGEN SENSOR 1

Loosen and retighten heated oxygen sensor 1.



**Tightening torque: 40 - 50 N·m (4.1 - 5.1 kg·m, 30 - 37 ft·lb)**

>> GO TO 3.

## 8. CHECK MASS AIR FLOW SENSOR

Refer to [EC-178, "Component Inspection"](#) .

OK or NG

- OK >> GO TO 9.
- NG >> Replace mass air flow sensor.

## 9. CHECK PCV VALVE

Refer to [EC-697, "Component Inspection"](#) .

OK or NG

- OK >> GO TO 10.
- NG >> Replace PCV valve.

## 10. CHECK HEATED OXYGEN SENSOR 1

Refer to [EC-231, "Component Inspection"](#) .

OK or NG

- OK >> GO TO 11.
- NG >> Replace malfunctioning heated oxygen sensor 1.

## 11. CHECK INTERMITTENT INCIDENT

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

>> INSPECTION END

### Component Inspection HEATED OXYGEN SENSOR 1

ABS002H1

#### With CONSULT-II

1. Start engine and warm it up to normal operating temperature.
2. Select "MANU TRIG" and adjust "TRIGGER POINT" to 100% in "DATA MONITOR" mode with CONSULT-II.
3. Select "HO2S1 (B1)/(B2)" and "HO2S1 MNTR (B1)/(B2)".
4. Hold engine speed at 2,000 rpm under no load during the following steps.
5. Touch "RECORD" on CONSULT-II screen.

DATA MONITOR	
MONITOR	NO DTC
ENG SPEED	XXX rpm
MAS A/F SE-B1	XXX V
COOLAN TEMP/S	XXX °C
HO2S1 (B1)	XXX V
HO2S1 (B2)	XXX V
HO2S1 MNTR (B1)	LEAN
HO2S1 MNTR (B2)	RICH

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6. Check the following.
  - "HO2S1 MNTR (B1)/(B2)" in "DATA MONITOR" mode changes from "RICH" to "LEAN" to "RICH" more than 5 times in 10 seconds.  
5 times (cycles) are counted as shown at right.
  - "HO2S1 (B1)/(B2)" voltage goes above 0.6V at least once.
  - "HO2S1 (B1)/(B2)" voltage goes below 0.3V at least once.
  - "HO2S1 (B1)/(B2)" voltage never exceeds 1.0V.

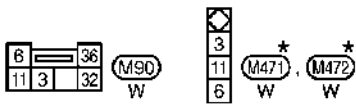
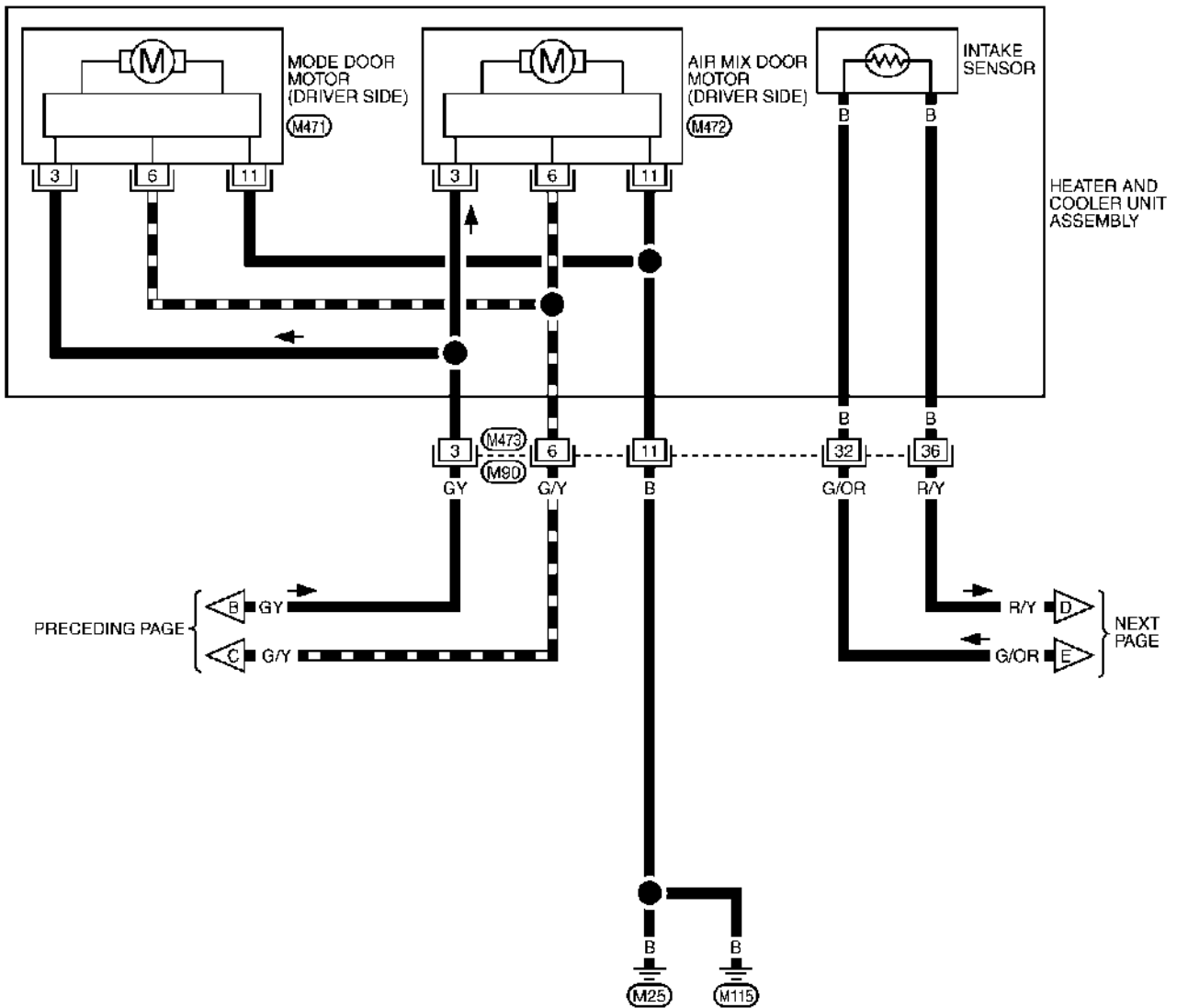
Bank 1	cycle	1   2   3   4   5
	HO2S1 MNTR (B1)	R-L-R-L-R-L-R-L-R-L-R
Bank 2	cycle	1   2   3   4   5
	HO2S1 MNTR (B2)	R-L-R-L-R-L-R-L-R-L-R
R means HO2S1 MNTR (B1)/(B2) indicates RICH		
L means HO2S1 MNTR (B1)/(B2) indicates LEAN		

SEF647Y

# TROUBLE DIAGNOSIS

ATC-A/C-05

▬ : DATA LINE



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

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# COMBINATION METERS

AKS002HY

## Power Supply and Ground Circuit Inspection

### 1. CHECK FUSES

Check that any of the fuses in combination meter is blown.

Unit	Power source	Fuse No.
Combination meter	Battery	6
	Ignition switch ON or START	9
	Ignition switch ACC or ON	21

OK or NG

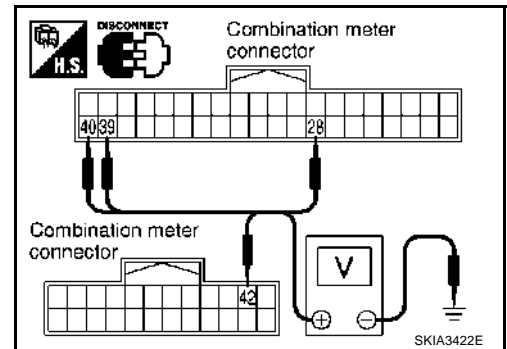
OK >> GO TO 2.

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

### 2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect the combination meter connector.
2. Check voltage between combination meter and ground.

Terminals		Ignition switch position			
(+)		(-)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M41	28 (L/OR)	Ground	0V	Battery voltage	Battery voltage
	39 (Y/G)		Battery voltage	Battery voltage	Battery voltage
	40 (G)		0V	0V	Battery voltage
M42	42 (G)				Battery voltage



OK or NG

OK >> GO TO 3.

NG >> Check harness for open or short between combination meter and fuse.

### 3. CHECK GROUND CIRCUIT

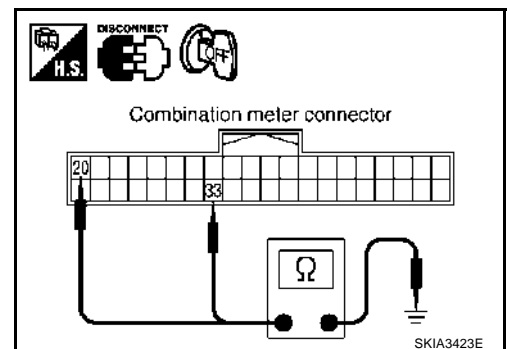
1. Turn ignition switch OFF.
2. Check continuity between combination meter harness connector M41 terminals 20 (B), 33 (B) and ground.

**Continuity should exist.**

OK or NG

OK >> Inspection end.

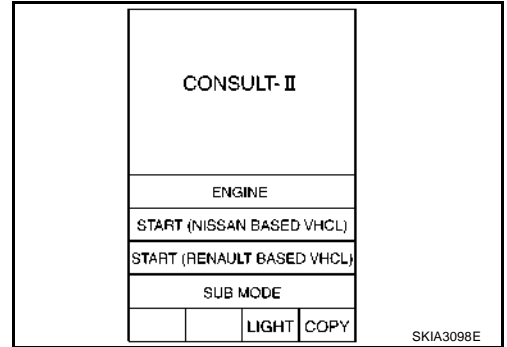
NG >> Check ground harness.



# LASER BEAM AIMING ADJUSTMENT

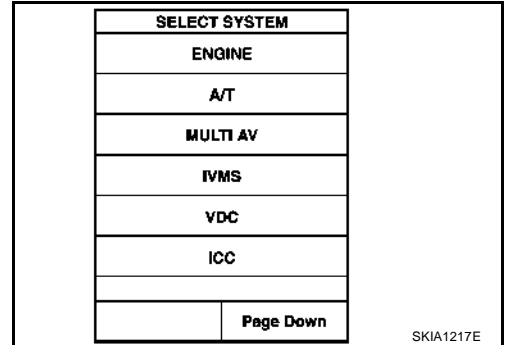
[ICC]

- Start the engine, wait for at least 10 sec., and touch "START (NISSAN BASED VHCL)"



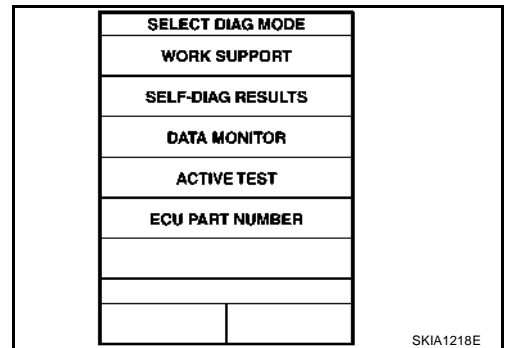
A  
B  
C  
D

- Touch "ICC".  
If "ICC" is not indicated, go to [GI-38. "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



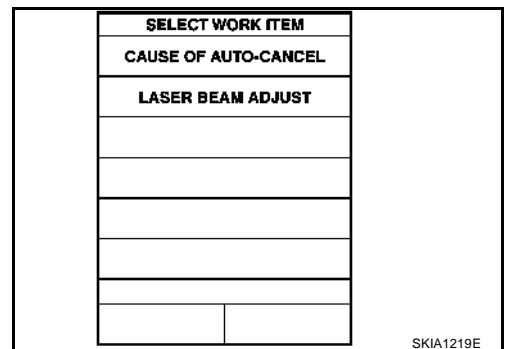
E  
F  
G

- Touch "WORK SUPPORT".



H  
I  
J

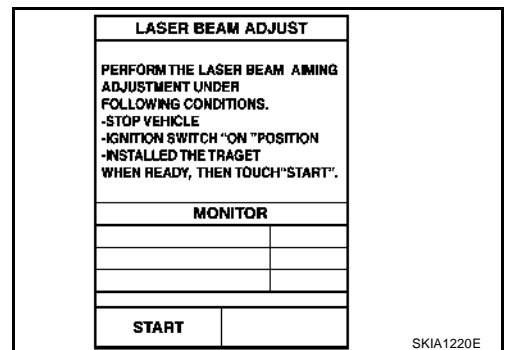
- Touch "LASER BEAM ADJUST".



ACS  
L  
M

- Touch "START".  
**CAUTION:**  
If the adjustment screen does not appear on CONSULT-II 10 sec. After touching "LASER BEAM ADJUST" screen, the following causes may be considered:

- Target is not set accurately.
- There is not enough space beside the target.
- Deformation of vehicle or the surrounding equipment unit, bracket, or the surrounding equipment is causing inappropriate installation of sensor and aiming may be set out of the adjustable range.



## 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:**

Before performing the following procedure, confirm that battery voltage is more than 11V at idle.

**WITH CONSULT-II**

1. Start engine and warm it up to normal operating temperature.
2. Select "HO2S1 (B1) P0134" or "HO2S1 (B2) P0154" of "HO2S1" in "DTC WORK SUPPORT" mode with CONSULT-II.
3. Touch "START".
4. Let it idle for at least 3 minutes.

**NOTE:**

Never raise engine speed above 3,600 rpm after this step. If the engine speed limit is exceeded, return to step 4.

HO2S1 (B1) P0134	
OUT OF CONDITION	
MONITOR	
ENG SPEED	XXX rpm
B/FUEL SCHDL	XXX msec
COOLAN TEMP/S	XXX °C
VHCL SPEED SEN	XXX km/h

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5. 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 approximately 10 to 60 seconds.)

ENG SPEED	1,100 - 3,600 rpm
Vehicle speed	More than 64 km/h (40 MPH)
B/FUEL SCHDL	1.6 - 12.0 msec
Selector lever	Suitable position

If "TESTING" is not displayed after 5 minutes, retry from step 2.

6. Make sure that "OK" is displayed after touching "SELF-DIAG RESULTS". If "NG" is displayed, refer to [EC-239, "Diagnostic Procedure"](#).

HO2S1 (B1) P0134	
TESTING	
MONITOR	
ENG SPEED	XXX rpm
B/FUEL SCHDL	XXX msec
COOLAN TEMP/S	XXX °C
VHCL SPEED SEN	XXX km/h

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HO2S1 (B1) P0134	
COMPLETED	

SEC750C



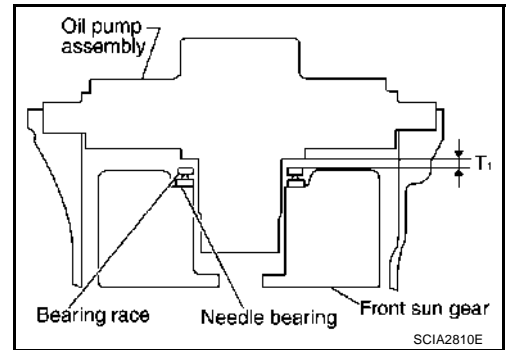
# ASSEMBLY

ACS004HJ

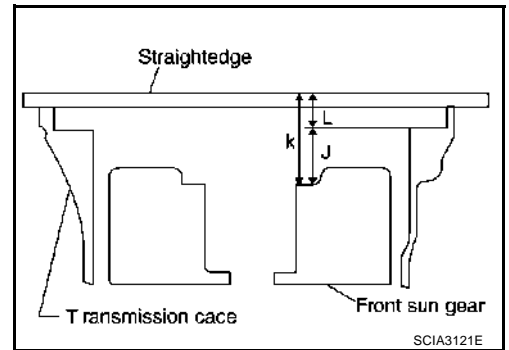
## Adjustment

### TOTAL END PLAY

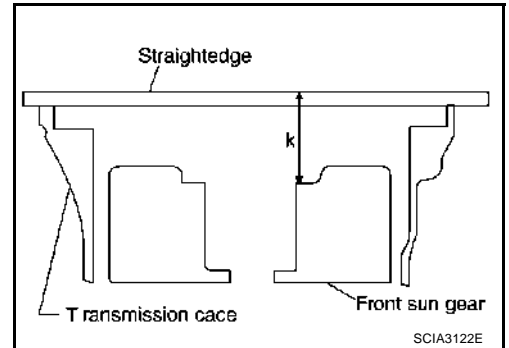
- Measure clearance between front sun gear and needle bearing for oil pump cover.
- Select proper thickness of bearing race so that end play is within specifications.



1. Measure dimensions "K" and "L" and then calculate dimension "J".



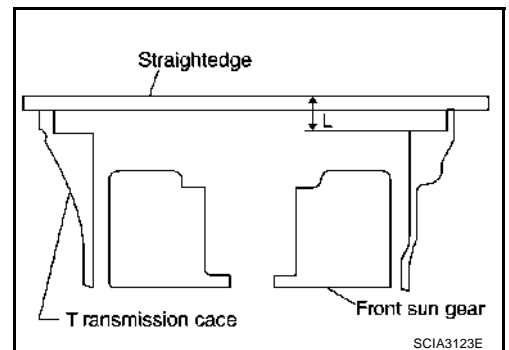
- a. Measure dimension "K".



- b. Measure dimension "L".
- c. Calculate dimension "J".

**"J": Distance between oil pump fitting surface of transmission case and needle bearing mating surface of front sun gear.**

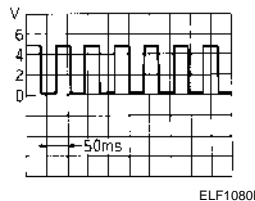
$$J = K - L$$



# AUTOMATIC DRIVE POSITIONER

## Terminals and Reference Values for BCM

AIS001JP

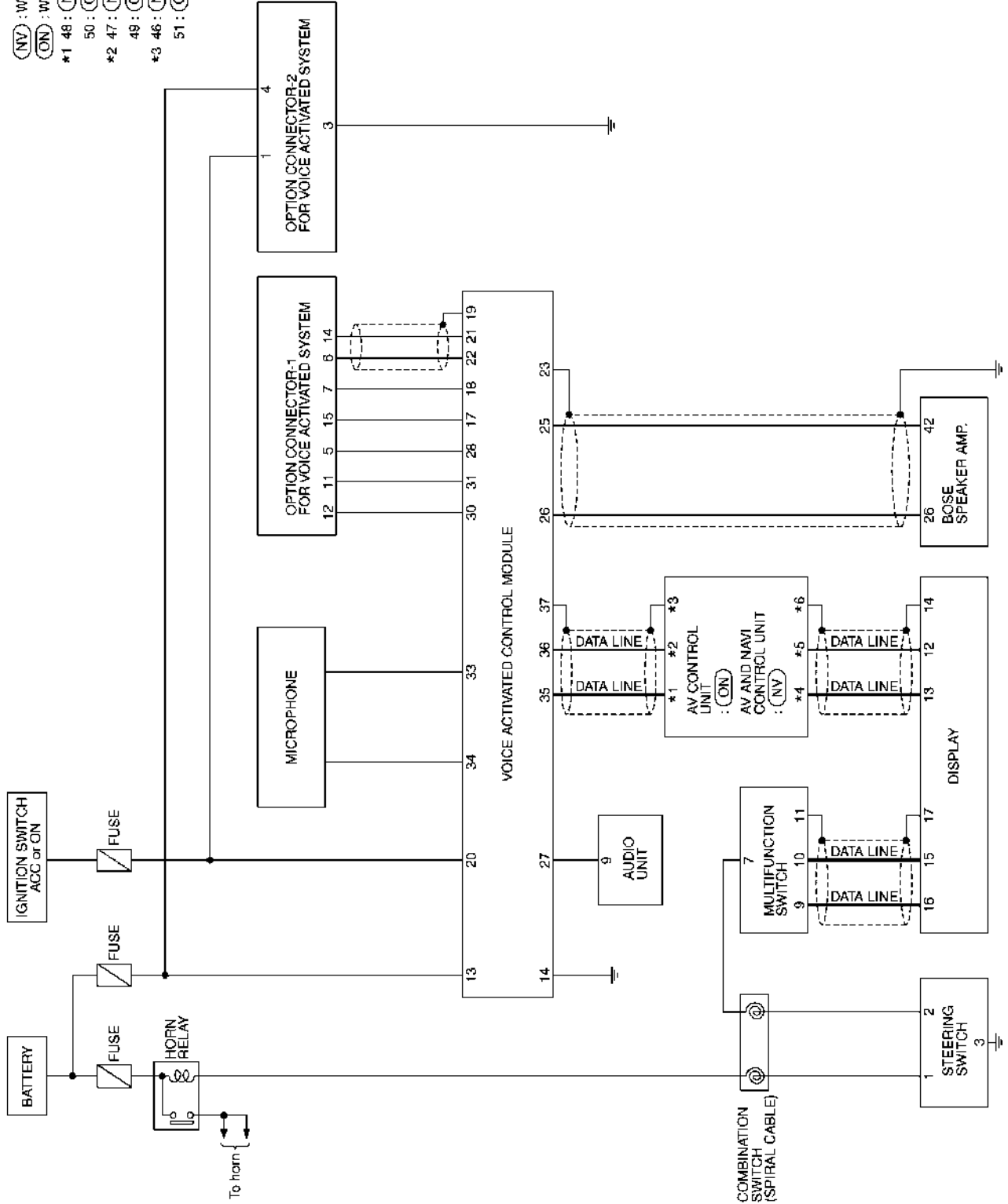
Terminal	WIRE COLOR	ITEM	CONDITION		VOLTAGE (V) (Approx)
8	G/OR	Detente switch signal.	Selector lever in P-position.		0
			Selector lever in other than P-position. With ignition key in ignition key cylinder		Battery voltage
17	BR/Y	Data link (RX line)	—		—
18	P	Data link (TX line)	—		—
22	R/B	Telescopic switch FR signal	Telescoping switch	Forward operation (Motor operated)	0
				OFF	5
23	PU/R	Tilt switch DOWN signal	Tilt switch	DOWN operation (Motor operated)	0
				OFF	5
26	G/B	Telescopic switch RR signal	Telescoping switch	Backward operation (Motor operated)	0
				OFF	5
30	PU	Monitor line (TX)	—		—
31	LG	Monitor line (RX)	—		—
36	P/L	Tilt switch UP signal	Tilt switch	UP operation (Motor operated)	0
				OFF	5
39	G	Memory switch 1 signal	Memory switch 1	ON	0
				OFF	5
43	OR/L	Memory switch 2 signal	Memory switch 2	ON	0
				OFF	5
46	LG/R	Tilt sensor input/output	Tilt position, top		2
			Tilt position, bottom		4
49	PU/W	Vehicle speed signal (2-pulse)	When vehicle speed is approx. 40 km/h (25 MPH).		
50	P/L	Seat memory setting switch signal	Setting switch	ON	0
				OFF	5
53	L/B	Tilt and telescopic sensor ground	Ignition switch ON		0
54	R	Tilt and telescopic sensor power supply	Ignition switch OFF		5
55	B/W	IGN START power supply	Ignition switch START		Battery voltage
56	B	ground	Ignition switch ON		0
60	L/OR	ACC power supply	Ignition switch ACC		Battery voltage
61	R/B	Data link A-2	—		—
62	P/B	Telescopic sensor input/output	Telescoping position, top		2
			Telescoping position, bottom		4

# VOICE ACTIVATED CONTROL SYSTEM

## Schematic

AKS004E9

- (NV) : With NAVI  
 (ON) : Without NAVI
- \*1 (NV) 48 : (NV) 44 : (NV) 44
  - \*2 (ON) 47 : (ON) 47 : (ON) 47
  - \*3 (NV) 49 : (NV) 45 : (NV) 45
  - \*4 (ON) 48 : (ON) 48 : (ON) 48
  - \*5 (NV) 46 : (NV) 43 : (NV) 43
  - \*6 (ON) 51 : (ON) 46 : (ON) 46



TKWA0620E

# ON BOARD DIAGNOSTIC (OBD) SYSTEM

- The time required for each diagnosis varies with road surface conditions, weather, altitude, individual driving habits, etc.  
Zone A refers to the range where the time, required for the diagnosis under normal conditions\*, is the shortest.  
Zone B refers to the range where the diagnosis can still be performed if the diagnosis is not completed within zone A.

\*: Normal conditions refer to the following:

- Sea level
- Flat road
- Ambient air temperature: 20 - 30°C (68 - 86°F)
- Diagnosis is performed as quickly as possible under normal conditions.  
Under different conditions [For example: ambient air temperature other than 20 - 30°C (68 - 86°F)], diagnosis may also be performed.

Pattern 1:

- **The engine is started at the engine coolant temperature of -10 to 35°C (14 to 95°F) (where the voltage between the ECM terminal 121 and ground is 3.0 - 4.3V).**
- **The engine must be operated at idle speed until the engine coolant temperature is greater than 70°C (158°F) (where the voltage between the ECM terminal 121 and ground is lower than 1.4V).**
- **The engine is started at the fuel tank temperature of warmer than 0°C (32°F) (where the voltage between the ECM terminal 92 and ground is less than 4.1V).**

Pattern 2:

- When steady-state driving is performed again even after it is interrupted, each diagnosis can be conducted. In this case, the time required for diagnosis may be extended.

Pattern 3:

- The driving pattern outlined in \*2 must be repeated at least 3 times.

Pattern 4:

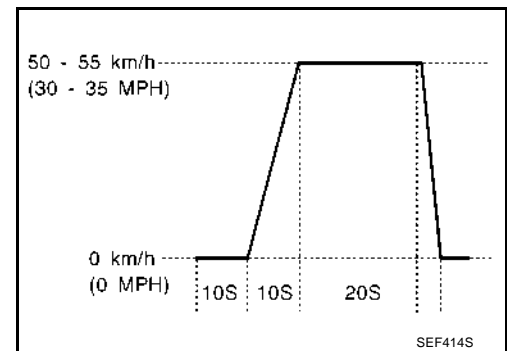
- Tests are performed after the engine has been operated for at least 17 minutes.
- The accelerator pedal must be held very steady during steady-state driving.
- If the accelerator pedal is moved, the test must be conducted all over again.

\*1: Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH), then release the accelerator pedal and keep it released for more than 10 seconds. Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH) again.

\*2: Operate the vehicle in the following driving pattern.

1. Decelerate vehicle to 0 km/h (0 MPH) and let engine idle.
2. Repeat driving pattern shown at right at least 10 times.  
- **During acceleration, hold the accelerator pedal as steady as possible.**

\*3: Checking the vehicle speed with GST is advised.



## Suggested Transmission Gear Position

Set the selector lever in the D position.

## TEST VALUE AND TEST LIMIT (GST ONLY — NOT APPLICABLE TO CONSULT-II)

The following is the information specified in Mode 6 of SAE J1979.

The test value is a parameter used to determine whether a system/circuit diagnostic test is OK or NG while being monitored by the ECM during self-diagnosis. The test limit is a reference value which is specified as the maximum or minimum value and is compared with the test value being monitored.

These data (test value and test limit) are specified by Test ID (TID) and Component ID (CID) and can be displayed on the GST screen.

# SHIFT CONTROL SYSTEM

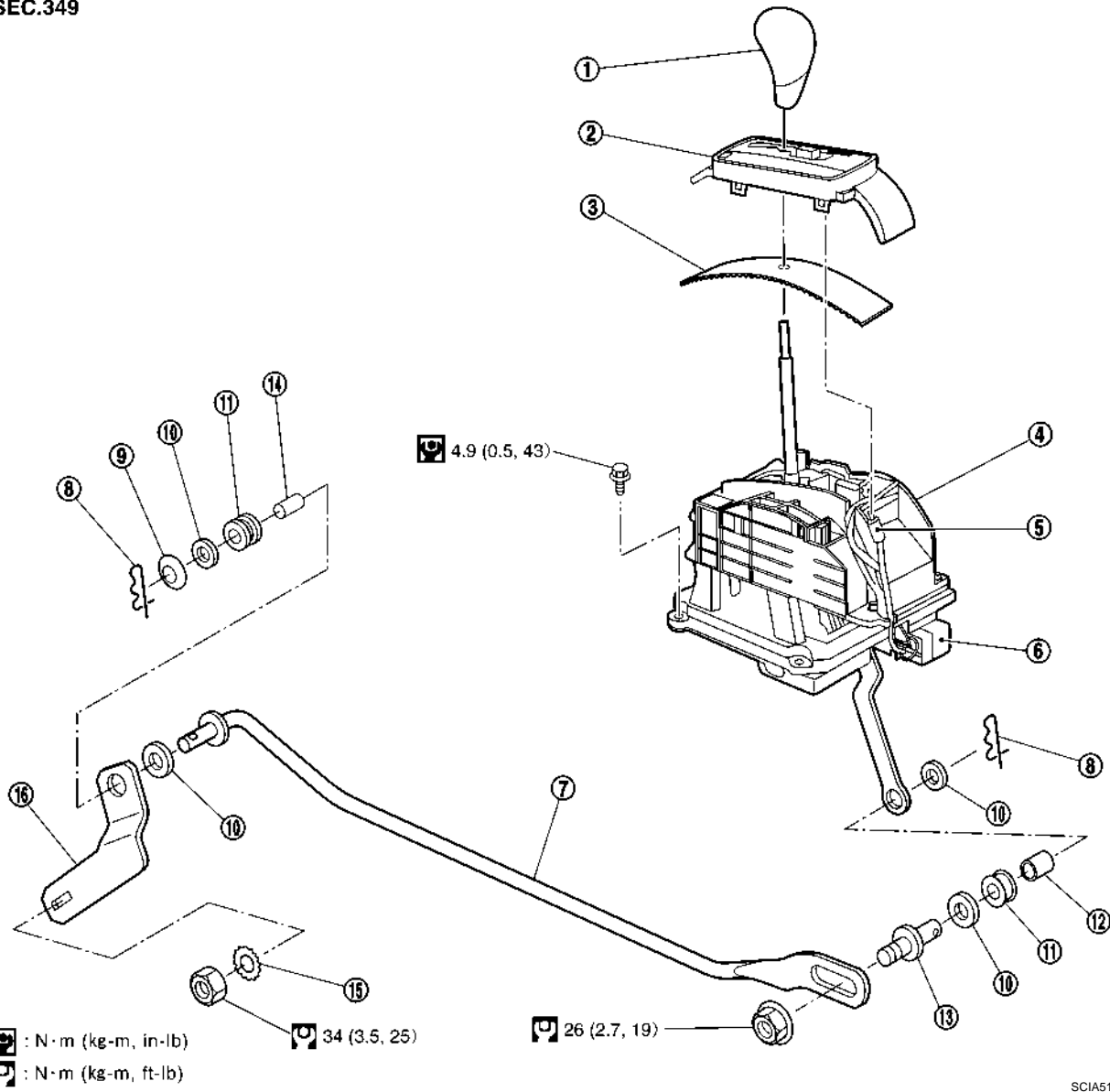
## SHIFT CONTROL SYSTEM

PFP:34901

### Control Device Removal and Installation

ACS001GB

SEC.349



SCIA5168E

- |                            |                             |                                 |
|----------------------------|-----------------------------|---------------------------------|
| 1. Select lever knob       | 2. Position indicator plate | 3. Slide plate                  |
| 4. Control device assembly | 5. Position lamp            | 6. A/T device harness connector |
| 7. Control rod             | 8. Snap pin                 | 9. Conical washer               |
| 10. Plain washer           | 11. Rod insulator           | 12. Cross tube                  |
| 13. Pivot pin              | 14. Collar                  | 15. Lock washer                 |
| 16. Manual lever           |                             |                                 |

# REVERSE INTERLOCK DOOR MIRROR SYSTEM

## Symptom Chart

AIS001XM

Symptom	Diagnoses / Service procedure	Refer to page
Reverse interlock door mirror system does not operate at all.	1. Door mirror remote control switch (changeover switch) circuit inspection.	<a href="#">GW-107</a>
	2. Back-up input signal circuit inspection in R position.	<a href="#">GW-109</a>
	3. Replace BCM.	—
<ul style="list-style-type: none"> <li>During the reverse interlock door mirror system operation, either LH or RH door mirror face does not reproduce the stored angle.</li> <li>After the reverse interlock door mirror system operation, the door mirror face returns to wrong position (not to the original position).</li> </ul>	1. Mirror sensors circuit inspection .	<a href="#">GW-113</a>
	2. Carry out the communication inspection again.	—
The mirror face position with the reverse gear engaged cannot be memorized.	1. Seat memory switch circuit inspection.	<a href="#">SE-76</a>
	2. Door mirror remote control switch (changeover switch) system inspection.	<a href="#">GW-107</a>
	3. Door mirror remote control switch (mirror switch) system inspection.	<a href="#">GW-110</a>
	4. Back-up input signal control inspection R position inspection.	<a href="#">GW-109</a>
	5. Mirror motors circuit inspection.	<a href="#">GW-111</a>
	6. Mirror sensors circuit inspection.	<a href="#">GW-113</a>
	7. Replace BCM.	—

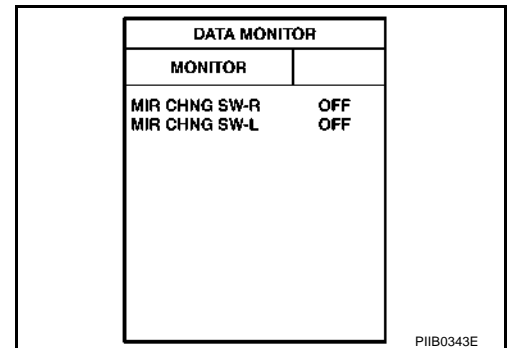
## Door Mirror Remote Control Switch (Changeover Switch) Circuit Inspection

AIS001XM

### 1. FUNCTION INSPECTION

#### With CONSULT-II

Check the operation on "MIR CHNG SW-R" or "MIR CHNG SW-L" in the DATA MONITOR. Refer to [GW-97, "DATA MONITOR"](#) .



#### Without CONSULT-II

Carry out the switch monitor in the self-diagnostic function. Refer to [GW-104, "SWITCH MONITOR"](#) .

OK or NG?

- OK >> Door mirror remote control switch (changeover switch) circuit is OK.
- NG >> GO TO 2.

# WARNING CHIME

AKS0040C

## Warning Chime Circuit Inspection

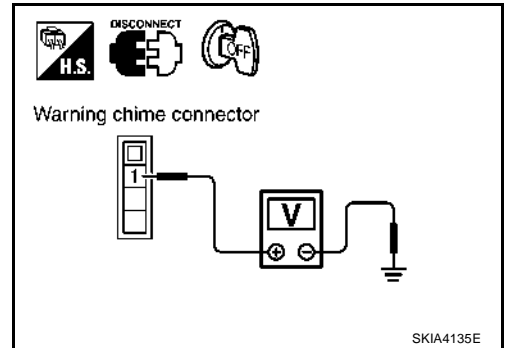
### 1. CHECK POWER SUPPLY CIRCUIT

1. Disconnect warning chime connector.
2. Check voltage between warning chime harness connector M74 terminal 1 (Y/G) and ground.

**Battery voltage should exist.**

OK or NG

- OK >> GO TO 2.  
NG >> Check harness for open or short between fuse and warning chime.



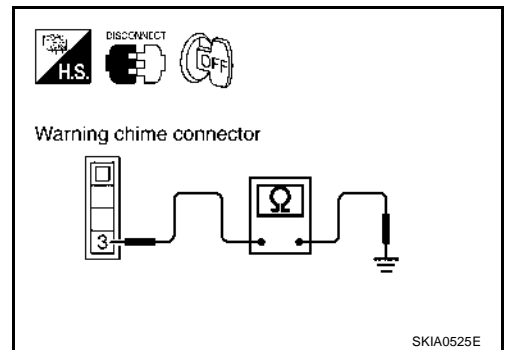
### 2. CHECK WARNING CHIME SHORT CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between warning chime harness connector M74 terminal 3 (BR) and ground.

**Continuity should not exist.**

OK or NG

- OK >> GO TO 3.  
NO >> Repair harness or connector.



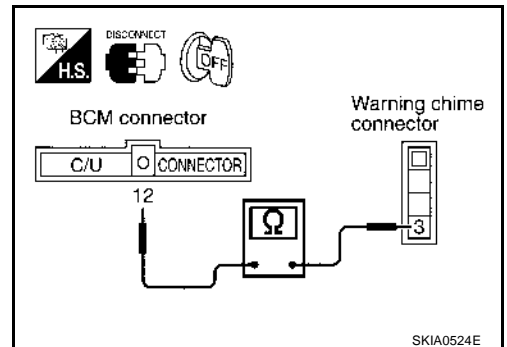
### 3. CHECK WARNING CHIME OPEN CIRCUIT

Check continuity between warning chime harness connector M74 terminal 3 (BR) and BCM harness connector M4 terminal 12 (BR).

**Continuity should exist.**

OK or NG

- OK >> GO TO 4.  
NG >> Repair harness or connector.



### 4. CHECK WARNING CHIME OPERATION

1. Connect warning chime connector.
2. Ground warning chime harness connector M74 terminal 3 (BR).

**Warning chime should operate.**

OK or NG

- OK >> Replace BCM.  
NG >> Replace warning chime.

