LCD (LIQUID CRYSTAL DISPLAY)

PFP:28090

System Description

EKS009BT

MULTIFUNCTION SWITCH SYSTEM

Refer to Owner′s Manual for multifunction switch operating instructions.
Using the multifunction switch at the center of the instrument panel, the controls of the following systems are centralized:

- Auto A/C system
- Vehicle information system
- Audio system

PRECAUTION OF LCD MONITOR

- When passenger compartment temperature is low, the LCD monitor sometimes dims because of the brightness of the back light (small fluorescent light) integrated into the LCD monitor decrease. In this case, the refreshing rate of the picture also becomes low because of the low response of the LCD monitor. When passenger compartment becomes warm, however, the LCD recovers the normal display.
- Sometimes, black or bright dots peculiar to LCD monitor can be seen on the display.
- Back light sometimes flickers or darkens according to the total consumption hours and the number of ON and OFF switching. In this case, the back light should be replaced (display unit assembly).

POWER SUPPLY AND GROUND

Power is Supplied at All Times

- through 15A fuse (No. 33, located in fuse and fusible link box)
- to display unit terminals 2 and 4
- to audio unit terminals 3 and 4.

When Ignition Switch is in ACC or ON Position, Power is Supplied

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to display unit terminal 6,
- to multifunction switch terminal 6 and
- to audio unit terminal 2.

When Ignition Switch is in ON or START Position, Power is Supplied

- through 10A fuse [No. 10, located in fuse block (J/B)]
- to display unit terminal 5.

Ground is Supplied

- to multifunction switch terminal 1 and
- to display unit terminals 1 and 3
- through body grounds M16, M50, M70 and F115 (Gasoline engine models) or
- through body grounds M16, M50 and M70 (Diesel engine models).

AV COMMUNICATION LINE

Display unit is controlled by the following unit with AV communication line.

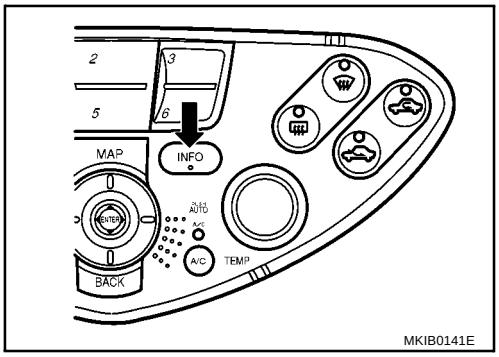
- Multifunction switch
- Audio unit

VEHICLE INFORMATION SYSTEM

Refer to Owner′s Manual for vehicle information system operating instructions.
Vehicle information system is monitoring to drive information, fuel economy information and maintenance information.

LCD (LIQUID CRYSTAL DISPLAY)

1. Press “INFO” switch to display vehicle information display.
2. Select “Drive”, “Fuel Economy” or “Maintenance”.



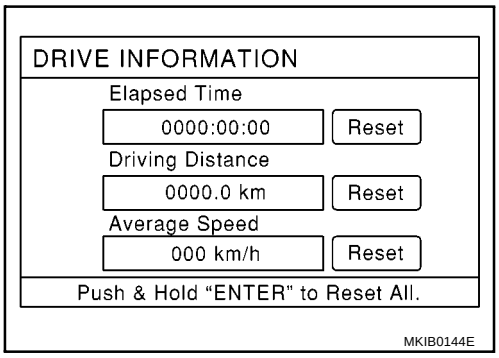
MKIB0141E

Display items		Display/Setting contents
Drive	Elapsed Time	Displays driving time with a range of 0000:00:00 to 9999:59:59.
	Driving Distance (km)	Displays driving distance with a range of 00000.0 to 99999.9.
	Average speed (km/h)	Displays average speed with a range of 000.0 to 999.9.
Fuel Economy	Average Fuel Economy (l/100km)	Displays fuel economy with ignition switch ON, average fuel economy each 30 minutes.
	Distance to Empty (km)	Displays possible driving distance with remaining fuel.
	Fuel Economy (l/100km)	Displays fuel economy each approx. 100 ms.
	Fuel Economy Record (l/100 km)	Displays Average Fuel Consumption History.
Maintenance (with Maintenance information*)	Engine oil	Maintenance intervals of engine oil and setting of oil change cycle
	Oil Filter	Maintenance intervals of oil filter and setting of filter replacement cycle
	Custom 1	Determines when maintenance intervals are needed.
	Custom 2	Determines when maintenance intervals are needed.

*: Maintenance information displays the change cycle of engine oil, oil filter, custom 1 and custom 2 on LCD monitor depending on the driving distance specified by a driver or a technician.

Drive Information

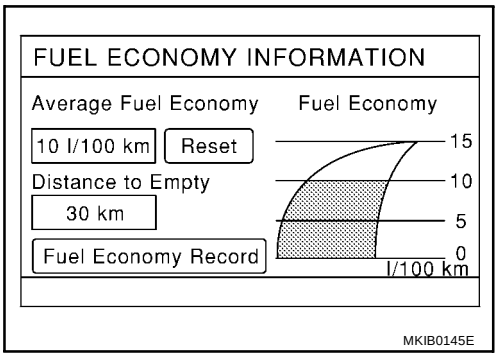
1. Select “Drive”.
2. Elapsed time, driving distance and average speed are displayed as drive information. When pushing “ENTER”, elapsed time, driving distance and average speed are all reset.



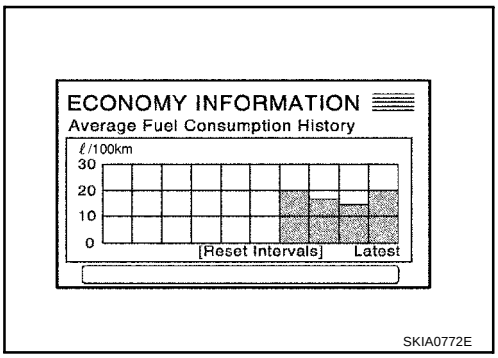
MKIB0144E

Fuel Economy Information

1. Select “Fuel Economy”.
2. Average Fuel Economy, Distance to Empty, Fuel Economy are displayed as Fuel Economy information.

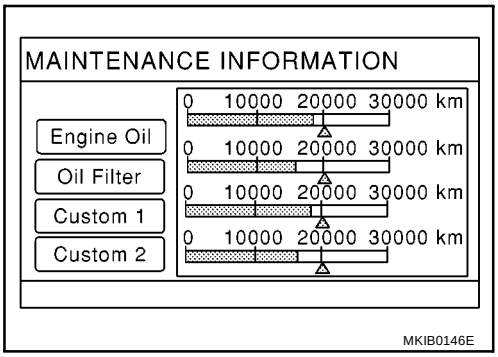


3. Select “Fuel Economy Record”. The average fuel consumption history will be displayed in graph along with the average for the previous Reset – to – Reset period.



Maintenance Information

1. Select “Maintenance”.
2. Engine Oil, Oil Filter, Custom 1 and Custom 2 are displayed as maintenance information.



WARNING INDICATIONS

When combination meter receives warning signal from some control units or sensors, then combination meter warning lamp is illuminated.
Then combination meter sends warning signal to display unit warning indications on the screen.

Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
ENGINE	ENGINE	Detection condition	Warning lamp ON signal is detected while engine is running.	ECM malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
ENGINE OIL PRESSURE	Engine oil pressure	Detection condition	Warning lamp ON signal is detected for at least approx. 5 seconds while engine is running.	Engine oil pressure decreases.
		Cancel condition	Warning lamp OFF signal is detected.	
AIR BAG	Air bag	Detection condition	Warning lamp ON signal is detected for at least approx. 10 seconds after ignition switch is turned ON.	SRS air bag system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
LOW BRAKE FLUID	Brake	Detection condition	Warning lamp ON signal (fluid level) is detected.	Low brake fluid level
		Cancel condition	Warning lamp OFF signal is detected.	
OVERHEATING	–	Detection condition	Engine coolant temperature as being approx. 119°C (246°F) min.	Engine cooling system malfunction
		Cancel condition	Engine coolant temperature as being approx. 105°C (221°F) max.	
CHARGE	Charge	Detection condition	Warning lamp ON signal is detected while engine is running. Charging system malfunction	Charging system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
LOW WASHER FLUID	–	Detection condition	Washer liquid level falls below approx. 0.8 ℓ (1-3/8 Imp pt)	Low washer liquid level
		Cancel condition	Except above condition.	
LOW FUEL	Fuel level	Detection condition	After warning lamp ON signal is detected, vehicle is driven for over specified distance. [Fuel level: Approx. 9.6 ℓ (8–1/2 Imp pt)]	Low fuel level
		Cancel condition	Warning lamp OFF signal is detected.	
PARKING BRAKE	Brake	Detection condition	Parking brake ON signal is detected while vehicle is running [approx. 5 km/h (3 MPH) or faster].	Parking brake remains engaged.
		Cancel condition	Vehicle is stopped, or parking brake OFF signal is detected.	
DOOR OPEN	Door	Detection condition	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.	Door is open
		Cancel condition	Vehicle is stopped and all the doors lock.	

Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
ABS	ABS	Detection condition	Warning lamp ON signal is detected when engine is running.	ABS control system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
ESP ELECTRONIC CONTROL SYSTEM	ESP	Detection condition	Warning lamp ON signal is detected when engine is running.	ESP system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
CVT ELECTRONIC CONTROL SYSTEM	CVT	Detection condition	Warning lamp ON signal is detected after ignition switch is turned ON.	TCM system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	
CRUISE CONTROL SYSTEM	CRUISE	Detection condition	Warning lamp ON signal is detected after ignition switch is turned ON.	ICC system malfunction
		Cancel condition	Warning lamp OFF signal is detected.	

Precautions for Display Unit Replacement

EKS009BU

- Record the following memorized contents before replacing the control unit.

<FM·AM>
- **Preset frequency**
- **Area for indicating station, selection of overlapped stations**

<CD>
- **Program status**

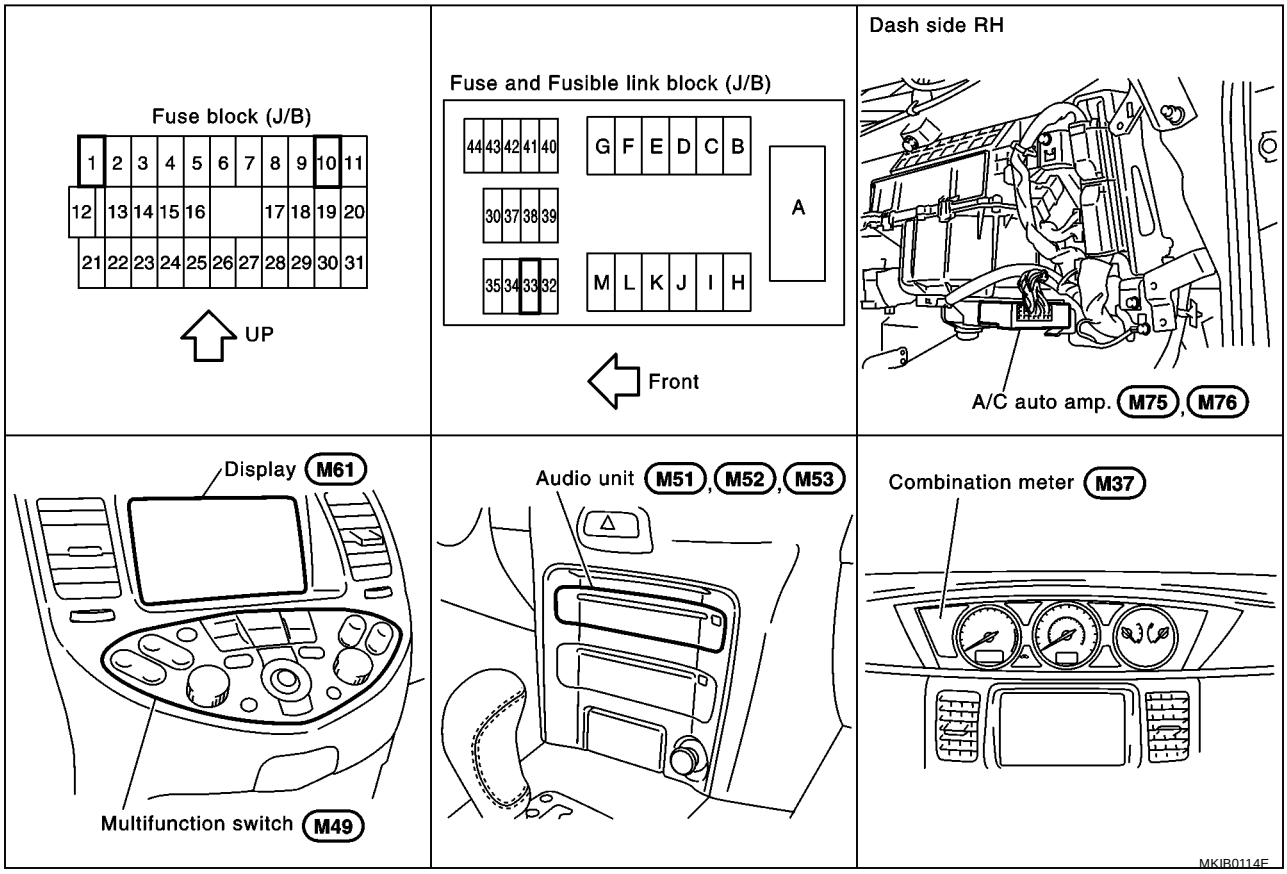
<Sound quality>
- **Volume balance memory set values**
- **Equalizer memory set values**

<Image quality>
- **Brightness of light when ON/OFF**
- **Dimming switching**
- **Display color switching**

- Replace the display unit after disconnecting both battery cables.

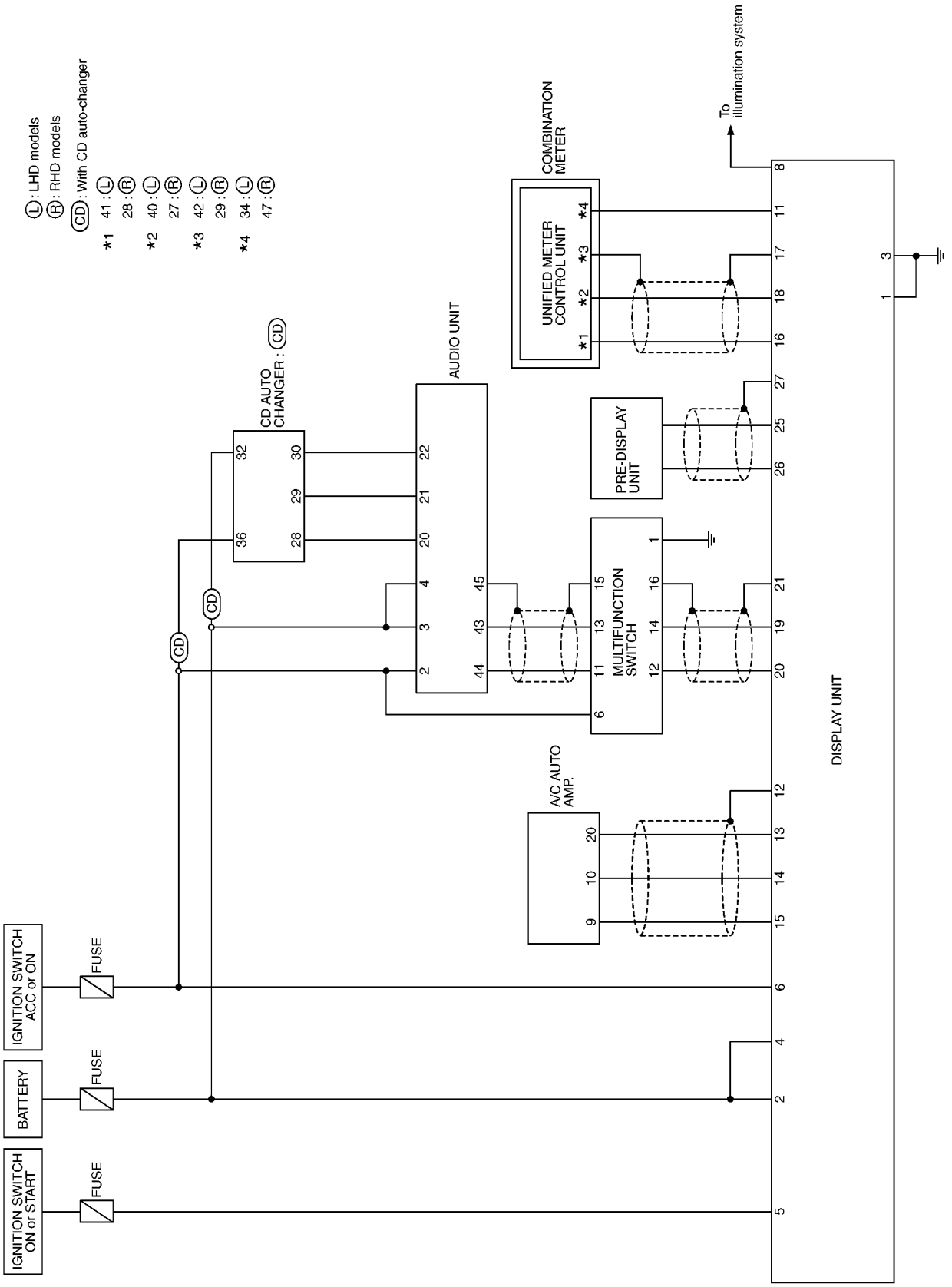
Component Parts and Harness Connector and Harness Connector Location

EKS009BV



Schematic

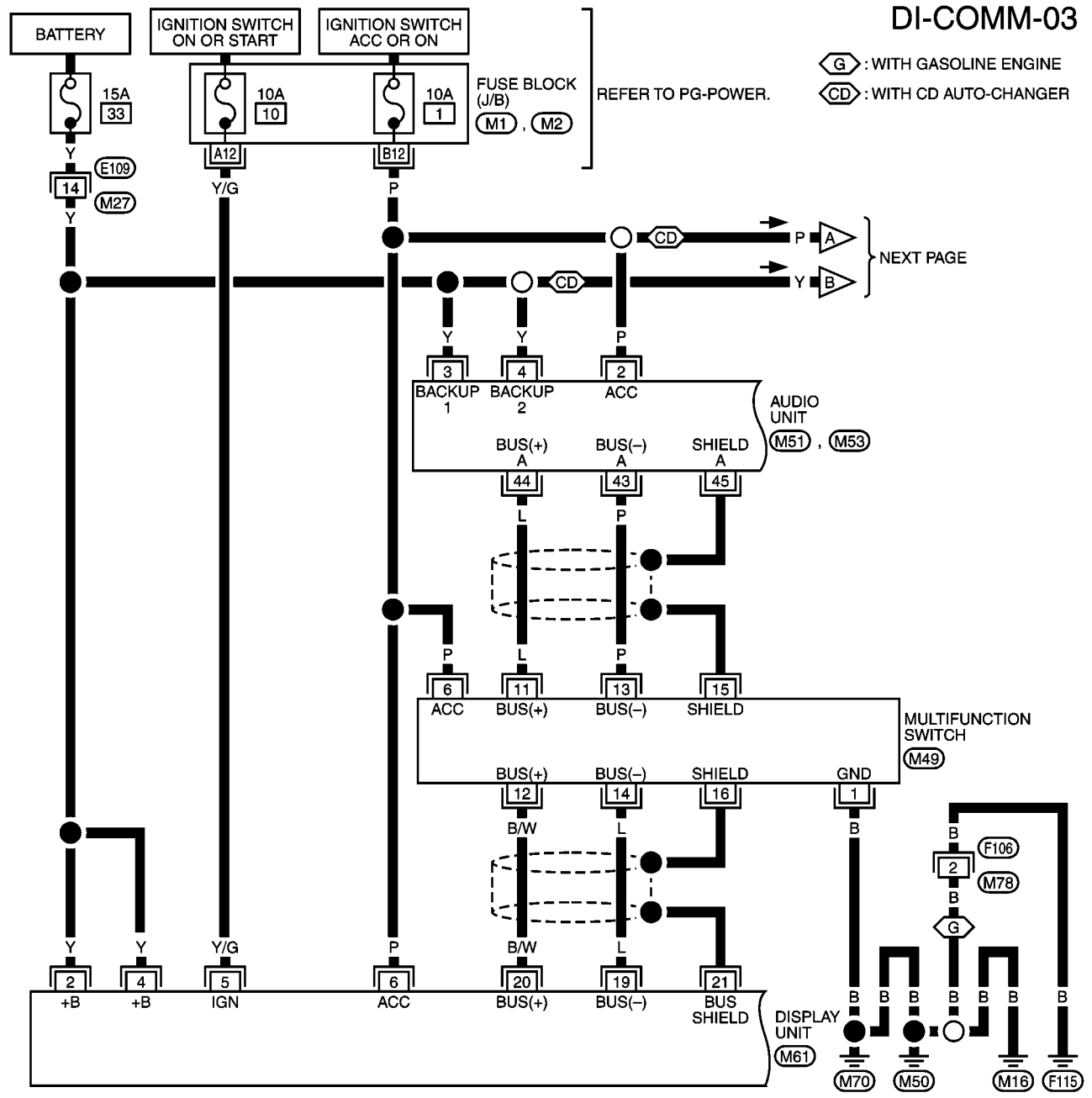
EKS009BW

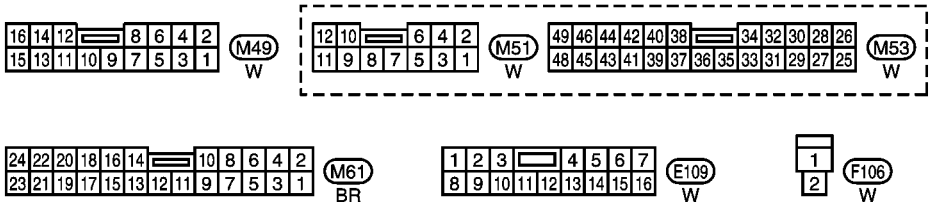


MKWA1021E

Wiring Diagram — COMM —

EKS009BX

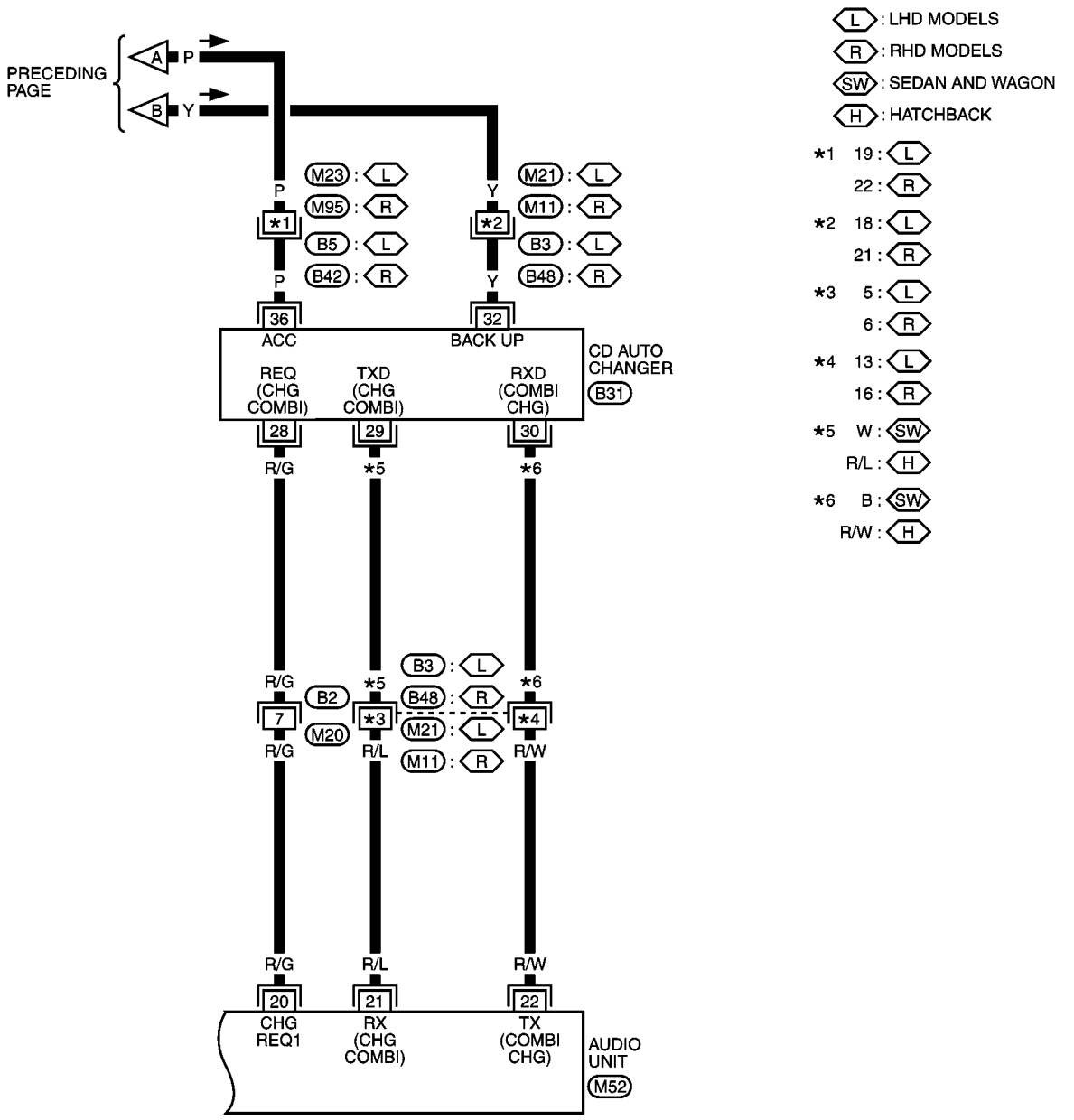


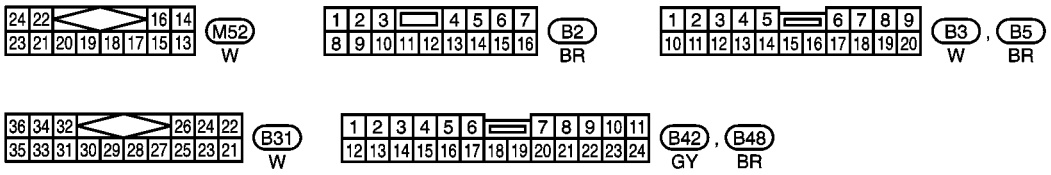


REFER TO THE FOLLOWING.
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA2481E

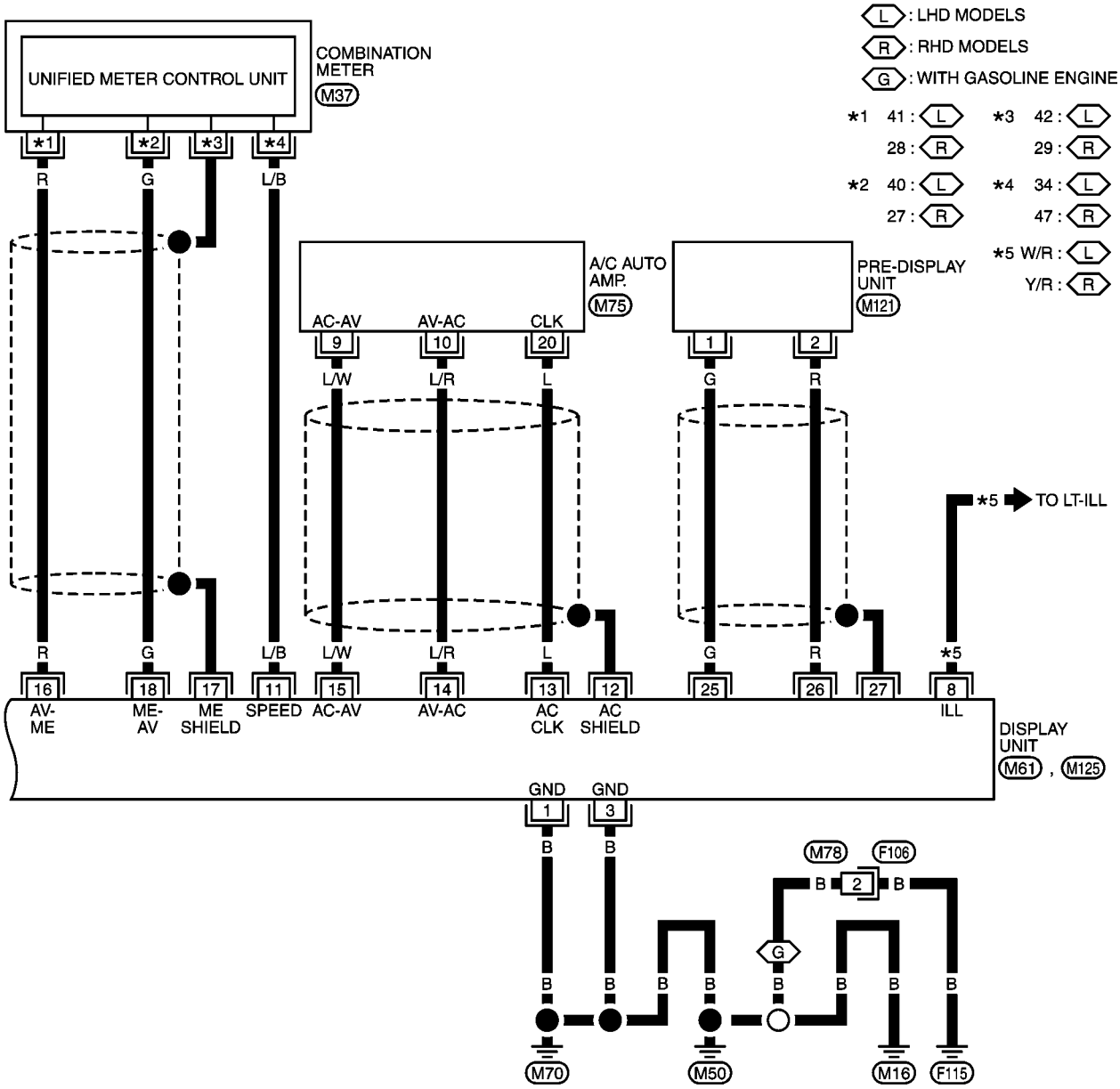
DI-COMM-04

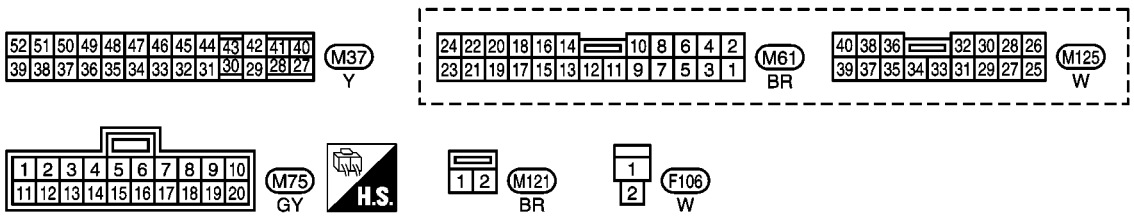




MKWA2482E

DI-COMM-05

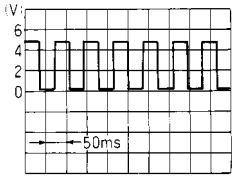
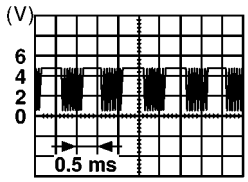
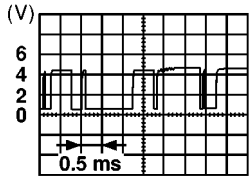
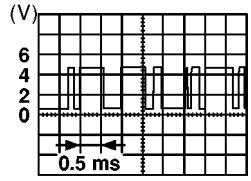


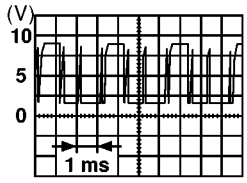
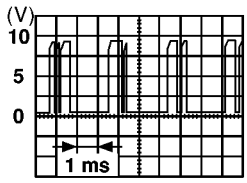
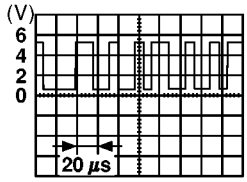
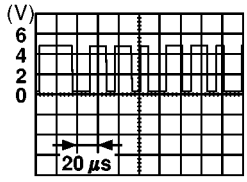


MKWA2483E

Terminals and Reference Value for Display Unit

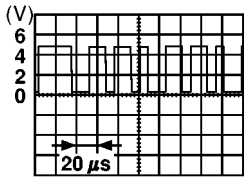
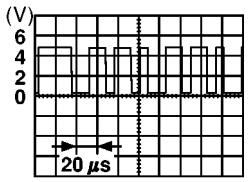
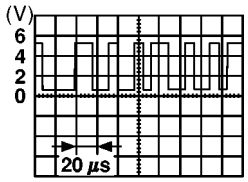
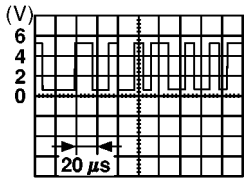
EKS009BY

TERMINALS (+) TER-MINAL	TERMINALS (+) WIRE COLOR	TERMINALS (–)	SIGNAL	CONDITION IGNI-TION SWITCH	CONDITION OPERATION		VOLTAGE
1	B	Ground	—	—	—		—
2	Y	Ground	Battery power	OFF	—		Battery voltage
3	B	Ground	—	—	—		—
4	Y	Ground	Battery power	OFF	—		Battery voltage
5	Y/G	Ground	Ignition signal	ON	—		Battery voltage
6	P	Ground	ACC signal	ACC	—		Battery voltage
8	LHD: W/R RHD: Y/R	Ground	Illumination control signal	ON	Lighting switch position	1st or 2nd	Battery voltage
						OFF	0V
11	L/B	Ground	Vehicle speed signal (2-pulse)	ON	When vehicle speed is approx. 20 km/h (12 MPH)		 ELF1080D
12	—	—	Shield ground	—	—		—
13	L	Ground	A/C clock signal	ON	—		 SKIA0174E
14	L/R	Ground	A/C communication signal (AV-AC)	ON	—		 SKIA0172E
15	L/W	Ground	A/C communication signal (AV-AC)	ON	—		 SKIA0173E

TERMINALS			SIGNAL	CONDITION		VOLTAGE
(+)		(–)		IGNITION SWITCH	OPERATION	
TERMINAL	WIRE COLOR					
16	R	Ground	Communication signal (AV-ME)	ON	Display the vehicle information screen.	 SKIA0169E
17	—	—	Shield ground	—	—	—
18	G	Ground	Communication signal (ME-AV)	ON	Perform various settings on the vehicle information screen.	 SKIA0170E
19	L	Ground	Communication signal (-)	ON	—	 SKIA0176E
20	B/W	Ground	Communication signal (+)	ON	—	 SKIA0175E
21	–	Ground	Shield ground	—	—	—

Terminals and Reference Value for Multifunction Switch

EKS009BZ

TERMINALS (+) TERMINAL	TERMINALS (+) WIRE COLOR	TERMINALS (–)	SIGNAL	CONDITION IGNITION SWITCH	CONDITION OPERATION	VOLTAGE
6	P	Ground	ACC	ACC	—	Battery voltage
1	B	Ground	Ground	ON	—	Approx. 0V
11	L	Ground	Communication signal (+)	ON	—	 SKIA0175E
12	B/W	Ground	Communication signal (+)	ON	—	 SKIA0175E
13	P	Ground	Communication signal (-)	ON	—	 SKIA0176E
14	L	Ground	Communication signal (-)	ON	—	 SKIA0176E
15	—	Ground	Shield ground	ON	—	—
16	—	Ground	Shield ground	ON	—	—

On Board Self-Diagnosis Function

EKS009C0

DESCRIPTION

- Diagnosis function consists of the self-diagnosis mode performed automatically and the CONFIRMATION/ ADJUSTMENT mode operated manually.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.
- CONFIRMATION/ADJUSTMENT mode is used to perform trouble diagnosis that require operation and judgment by an operator (trouble that cannot be automatically judged by the system), to check/change the set value.

DIAGNOSIS ITEM

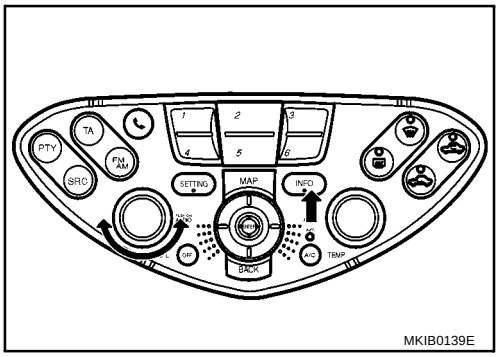
Mode			Description	Reference page
Self-diagnosis			● Center control unit (display unit) diagnosis. ● Analyzes connection between the display unit and each unit, and operation of each unit.	DI-124, "Self-Diagnosis Mode"
CONFIRMATION/ADJUSTMENT	Display Diagnosis	Display Color Spectrum Bar	Color of display can be checked in this mode.	DI-129, "DISPLAY DIAGNOSIS"
		Display Gradation Bar	Gray gradation of display can be checked in this mode.	
	Vehicle Signals	Vehicle Speed	Vehicle speed input signal to center control unit (display unit), can be monitored in this mode.	DI-129, "VEHICLE SIGNALS"
		Light	Light input signal to center control unit (display unit), can be monitored in this mode.	
		IGN	Ignition input signal to center control unit (display unit), can be monitored in this mode.	
	Auto Climate Control		Trouble diagnosis for auto climate control unit (A/C auto amp), can be checked in this mode.	ATC-55, "FUNCTION CONFIRMATION PROCEDURE"
	Service		Service schedule can be changed in this mode	DI-130, "SERVICE"

Self-Diagnosis Mode

EKS009C1

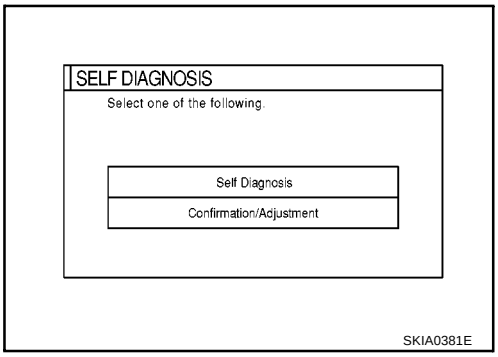
OPERATION PROCEDURES

1. Start the engine.
2. Turn the audio system off.
3. While pressing the “INFO” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “PREV” switch.

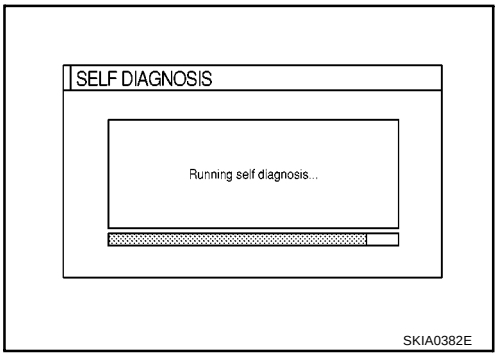


MKIB0139E

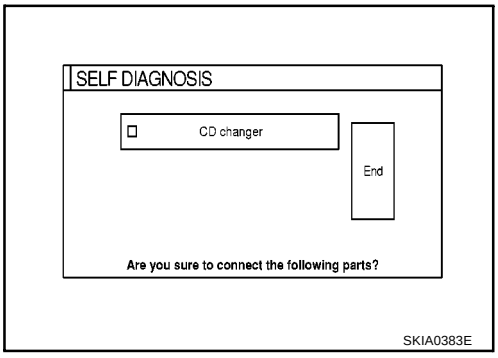
4. The initial trouble diagnosis screen will be shown, and items “SELF-DIAGNOSIS” and “CONFIRMATION/ADJUSTMENT” will become selective.



5. Perform self-diagnosis by selecting the “SELF-DIAGNOSIS”.
   - Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
   - A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.



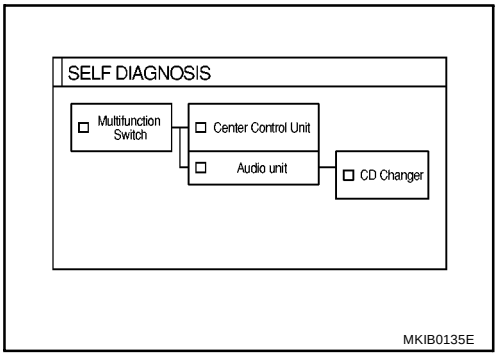
6. When the self-diagnosis completes, optional part confirmation screen will be shown.
   - When connection of an optional part is judged malfunction, a screen to check if the optional part is fitted on the vehicle or not will be shown. When fitted, select the switch of the part on the screen and press “END”. Then the “Self-diagnosis” screen will be shown.
   - When the optional part is connected normally, the switch for the part will not appear on the screen.



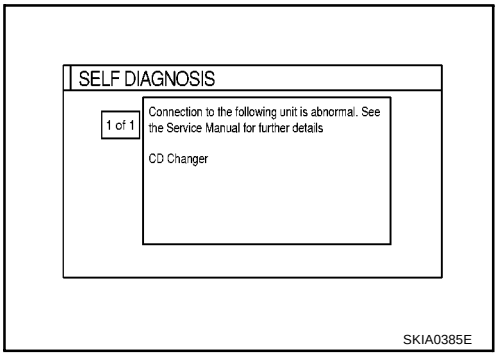
7. On the “Self-diagnosis” screen, each unit name will be colored according to the diagnosis result, as follows.

   Green : No malfunctioning.
   Yellow : Cannot be judged by self-diagnosis results.
   Red : Unit is malfunctioning.

   - If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.



8. Select a switch on the “Self-diagnosis” screen and comments for the diagnosis results will be shown.
   - When the switch is green, the following comment will be shown. “Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the “confirmation and adjustments” menu or refer to the service manual”.
   - When the switch is yellow, the following comment will be shown. “Connection to the following unit is abnormal. See the service manual for further details”.
   - When the switch is red, the following comment will be shown. “Center Control Unit is abnormal”.



CAUTION:
If self-diagnosis cannot activated, refer to DI-138, "Self-Diagnosis Does Not Perform" .

SELF-DIAGNOSIS RESULT

Quick Reference Table

1. Select an applicable diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to the AV communication line circuit diagram.
3. Turn the ignition switch to OFF and perform self-diagnosis again.

Screen switch					Diagnosis No.
Switch color	Center control unit *	Multifunction switch	Audio unit	CD auto changer	
Red	×				1
Yellow	×	×			2
	×		×	×	3
	×			×	4
	×	×	×	×	5

*: Center control unit = Display unit

CAUTION:

When an error is in the AV communication line, it cannot be detected on the screen because self-diagnosis is inoperative.

Self-Diagnosis Codes

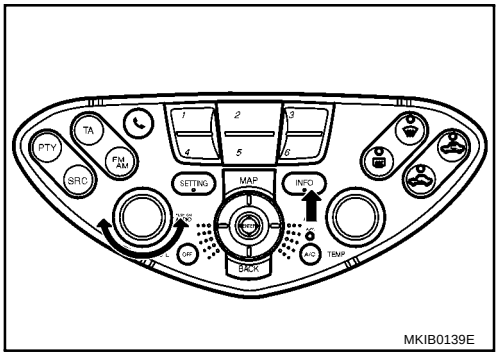
Diagnosis No.	Possible cause	Reference page
1	Display unit malfunction.	–
2	Multifunction switch power supply and ground circuit.	DI-132, "Power Supply and Ground Circuit Check for Multifunction Switch"
3	Audio unit power supply and ground circuit. AV communication line between multifunction switch and the display unit. Audio unit internal communication circuit.	●AV-48, "Power Supply Circuit Inspection" ●DI-136, "Audio Circuit Check"
4	CD auto changer power supply and ground circuit. AV communication line between CD auto changer and audio unit.	●AV-48, "Power Supply Circuit Inspection" ●DI-136, "CD Auto Changer Circuit Check"
5	AV communication line circuit malfunction.	DI-137, "AV Communication Line Check"

CONFIRMATION/ADJUSTMENT Mode

EKS009C2

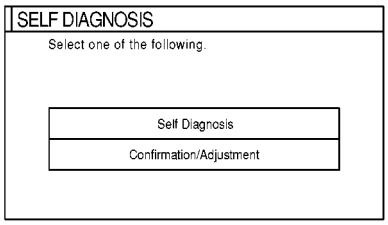
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system off.
3. While pressing the “INFO” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “PREV” switch.



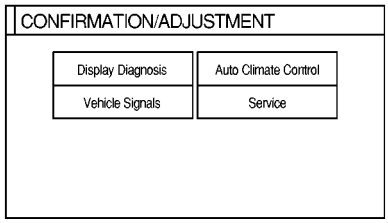
MKIB0139E

4. The initial trouble diagnosis screen will be shown, and items “SELF-DIAGNOSIS” and “CONFIRMATION/ADJUSTMENT” will become selective.



SKIA0381E

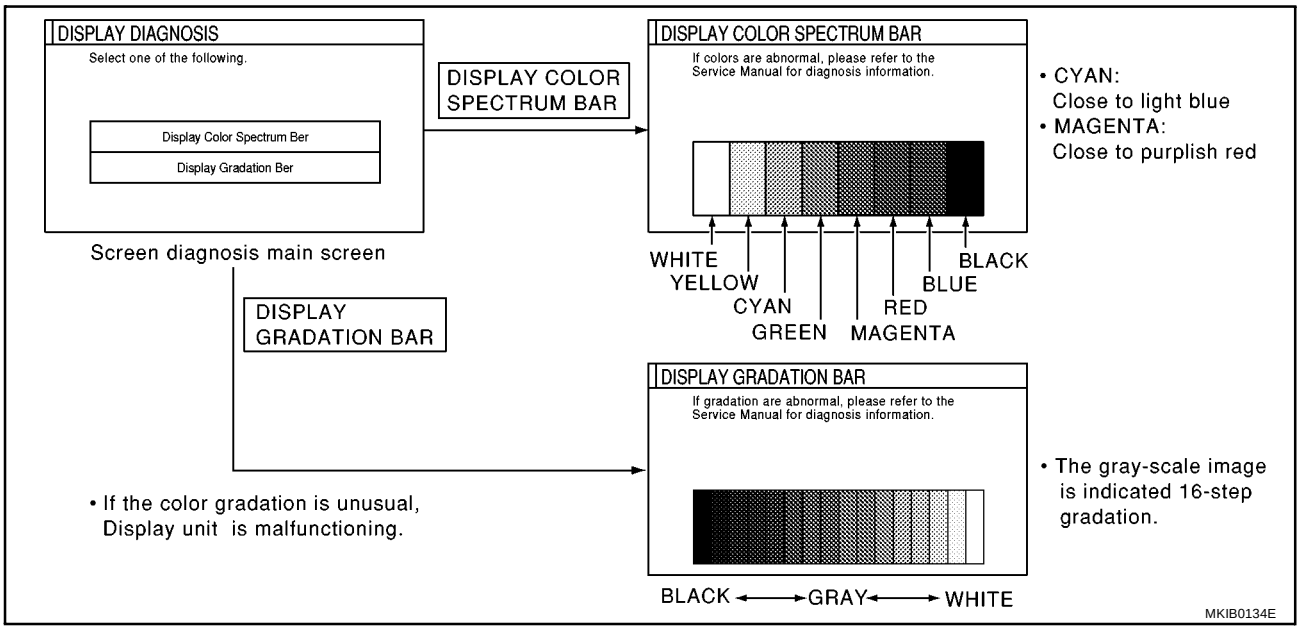
5. When “CONFIRMATION/ADJUSTMENT” is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
6. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.



MKIB0137E

DISPLAY DIAGNOSIS

Use this mode to check the display color brightness and setting. The display unit must be replaced if the color brightness and shading are unusual.

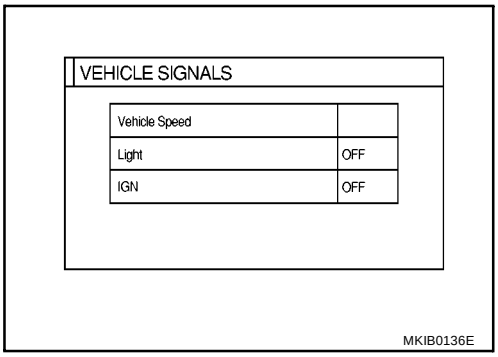


CAUTION:

When Display Color Spectrum Bar screen is completed after “BACK” switch is pressed, the screen color changes once. This is normal.

VEHICLE SIGNALS

- In this mode, following input signals to the display unit can be checked on the display.



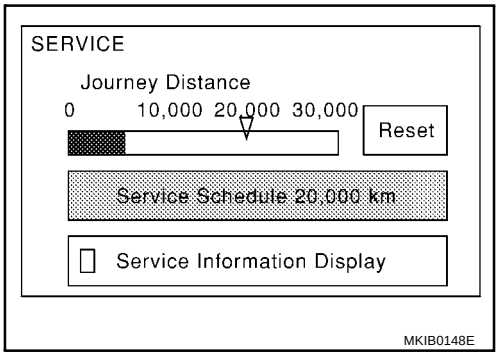
Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	Vehicle speed is greater than 0 km/h (0 MPH).	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Vehicle speed is 0 km /h (0 MPH).	
	–	Ignition switch is in “ACC” position.	
Light	ON	Lighting switch is 1st or 2nd position.	-
	OFF	Lighting switch is “OFF” position.	
IGN	ON	Ignition switch is in “ON” position.	-
	OFF	Ignition switch is in “ACC” or “OFF” position.	

- If vehicle speed is NG, refer to DI-133, "Vehicle Speed Signal Check/LHD Models" or DI-134, "Vehicle Speed Signal Check/RHD Models" .
- If light is NG, refer to DI-135, "Illumination Control Signal Check" .
- If IGN is NG, refer toDI-135, "Ignition Signal Check" .

SERVICE

- In this mode, service schedule can be set on this display.

  NOTE:
  - To set service schedule, change journey distance.
  - When the indicator of “Service Information Display” is set green, the color of the journey distance marker will be red. And automatically service information screen will be displayed when journey distance is reached on service schedule.



Power Supply and Ground Circuit Check for Display Unit

EKS009C3

1. CHECK FUSE

Check that the following fuses in display are blown.

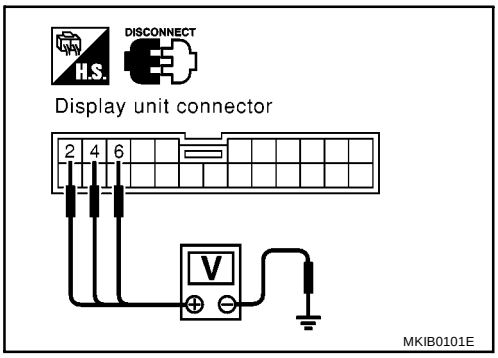
Unit	Power souse	Fuse No.
Display	Battery power	33
	Ignition switch ACC or ON	1

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-3, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect display connector.
2. Check voltage between display unit harness connector and ground.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M61	2 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	4 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	6 (P)	Ground	0V	Battery voltage	Battery voltage

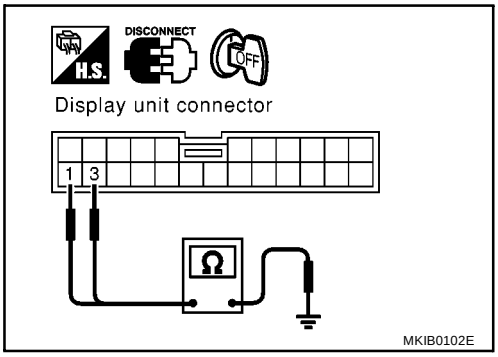
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between display and fuse.

3. GROUND CIRCUIT CHECK

Check continuity between display unit and ground.

Terminals			Continuity
(+)		(–)	
Connector	Terminal (wire color)		
M61	1 (B)	Ground	Yes
	3 (B)	Ground	Yes



OK or NG

OK >> Inspection end.
NG >> Check ground harness.

Power Supply and Ground Circuit Check for Multifunction Switch

EKS009C4

1. CHECK FUSES

Check the fuse below.

Unit	Power source	Fuse No.
Multifunction switch	Ignition switch ACC or ON	1

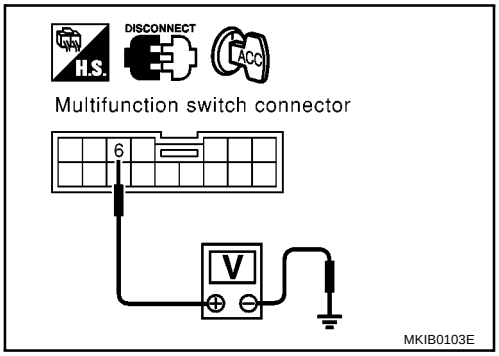
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING" .

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect multifunction switch connector.
2. Check voltage between multifunction switch and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M49	6 (P)	Ground	0V	Battery voltage	Battery voltage



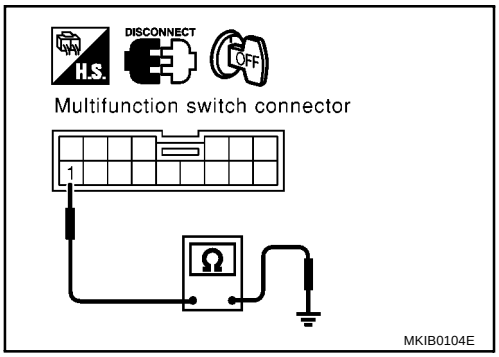
OK or NG

OK >> GO TO 3.
NG >> Check harness for open or short between multifunction switch and fuse.

3. GROUND CIRCUIT CHECK

1. Check continuity between multifunction switch harness connector M49 terminal 1 (B) and ground.

Continuity should exist.



OK or NG

OK >> Inspection end.
NG >> Check ground harness.

Vehicle Speed Signal Check/LHD Models

EKS009C5

1. HARNESS CHECK

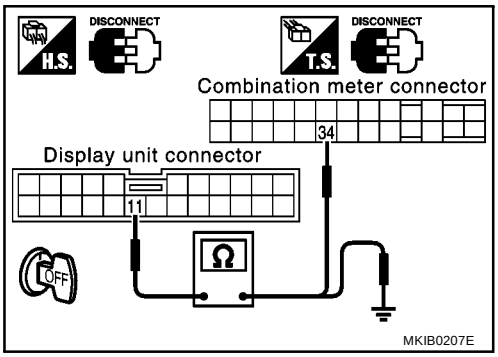
1. Disconnect display unit connector and combination meter connector.
2. Check the following.

– Continuity between display unit harness connector M61 terminal 11 (L/B) and combination meter harness connector M37 terminal 34 (L/B).

Continuity should exist.

– Continuity between display unit harness connector M61 terminal 11 (L/B) and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

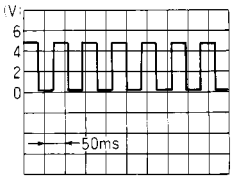
2. VEHICLE SPEED SIGNAL CHECK

Connect combination meter connector and display unit connector.

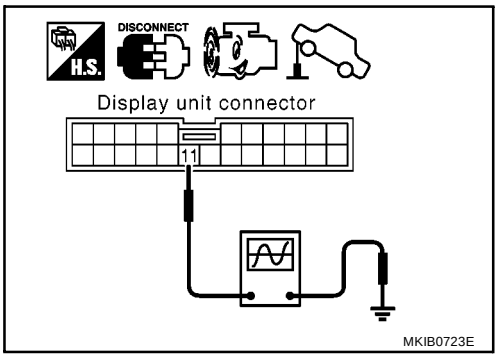
With CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12MPH).
3. Check signal between display unit harness connector M61 terminal 11(L/B) and ground when rotating wheels with engine at idle. (Use “SIMPLE OSCILLOSCOPE” in “SUB MODE” with CONSULT-II.)

11– Ground:



ELF1080D



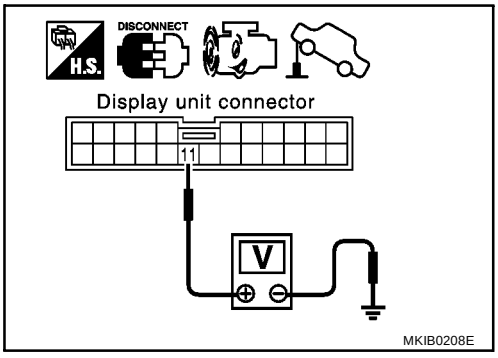
Without CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12MPH).
3. Check voltage between display unit harness connector M61 terminal 11(L/B) and ground when rotating wheels with engine at idle.

Voltage: Approximately 0 – 5V

OK or NG

OK >> Replace display unit.
NG >> Check combination meter system. Refer to DI-36, "Combination Meter Self-Diagnosis" .



Vehicle Speed Signal Check/RHD Models

EKS009C6

1. HARNESS CHECK

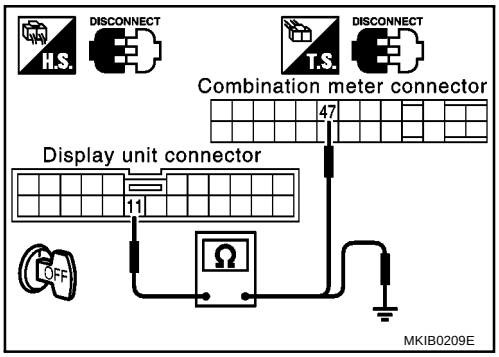
1. Disconnect display unit connector and combination meter connector.
2. Check the following.

– Continuity between display unit harness connector M61 terminal 11 (L/B) and combination meter harness connector M37 terminal 47 (L/B)

Continuity should exist.

– Continuity between display unit harness connector M61 terminal 11 (L/B) and ground.

Continuity should not exist.



OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

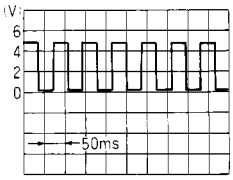
2. VEHICLE SPEED SIGNAL CHECK

Connect combination meter connector and display unit connector.

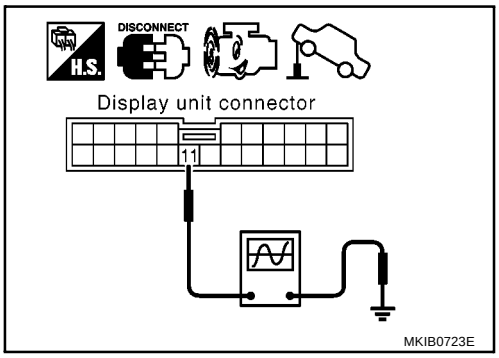
With CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12MPH).
3. Check signal between display unit harness connector M61 terminal 11(L/B) and ground when rotating wheels with engine at idle. (Use “SIMPLE OSCILLOSCOPE” in “SUB MODE” with CONSULT-II.)

11– Ground:



ELF1080D



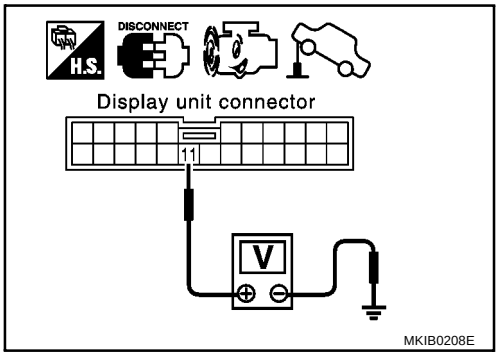
Without CONSULT-II

1. Lift up drive wheels.
2. Start engine and drive vehicle at more than 20 km/h (12MPH).
3. Check voltage between display unit harness connector M61 terminal 11(L/B) and ground when rotating wheels with engine at idle.

Voltage: Approximately 0 – 5V

OK or NG

OK >> Replace display unit.
NG >> Check combination meter system. Refer to DI-77, "Combination Meter Self-Diagnosis" .



Illumination Control Signal Check

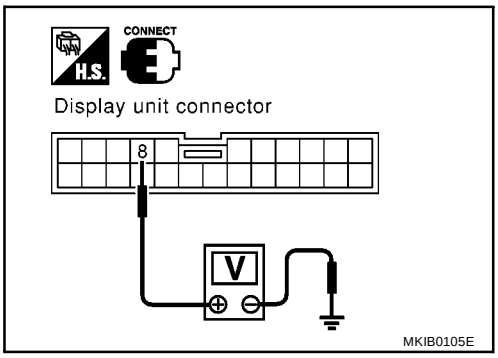
EKS009C7

1. ILLUMINATION CONTROL SIGNAL CHECK

1. Check voltage between display unit and ground.

Terminals			Condition	Voltage [V]
(+)		(-)		
Connector	Terminal (wire color)			
M61	8*	Ground	Lighting switch 1st or 2nd position	Battery voltage
			OFF	Approx.0

*: LHD: (W/R), RHD: (Y/R)



OK or NG

OK >> Replace display unit.
NG >> Check harness for open or short between display unit and lighting switch.

Ignition Signal Check

EKS009C8

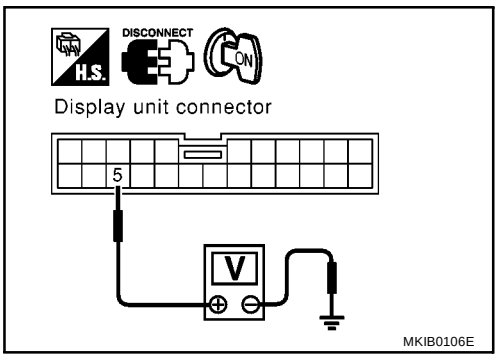
1. IGNITION SIGNAL CHECK

1. Turn ignition switch ON.
2. Disconnect the display unit connector.
3. Check voltage between display unit harness connector M61 terminal 5 (Y/G) and ground.

Battery voltage should exist.

OK or NG

OK >> Replace display unit.
NG >> Check harness for open or short between display unit and fuse.

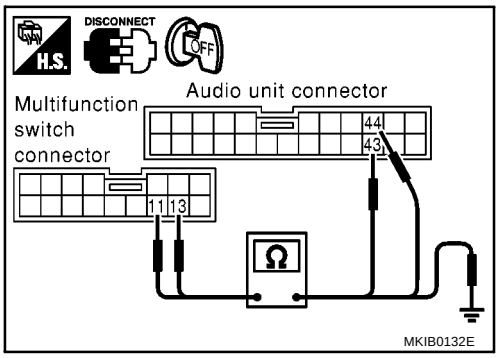


Audio Circuit Check

EKS009C9

1. AUDIO UNIT CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect audio unit connector.
3. Check continuity between multifunction switch and audio unit.



Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M49	11 (L)	M53	44 (L)	Yes
	13 (P)		43 (P)	

4. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	11 (L)	Ground	No
	13 (P)		

OK or NG

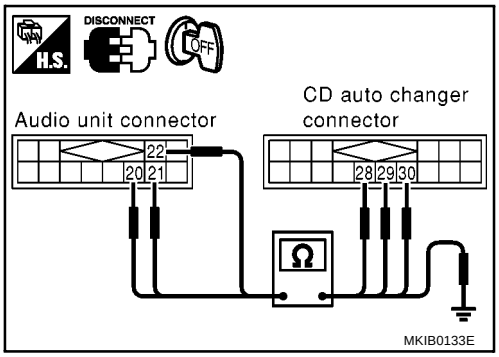
OK >> Replace audio unit.
NG >> Replace harness or connector.

CD Auto Changer Circuit Check

EKS009CA

1. CD AUTO CHANGER CIRCUIT CHECK

1. Disconnect CD auto changer connector.
2. Check continuity between audio unit and CD auto changer.



Terminals				Continuity
Audio unit		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M52	20 (R/G)	B31	28 (R/G)	Yes
	21 (R/L)		29 (*1)	
	22 (R/W)		30 (*2)	

*1: Sedan and wagon models (W)
Hatchback models (R/L)
*2: Sedan and wagon models (B)
Hatchback models (R/W)

3. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	20 (R/G)	Ground	No
	21 (R/L)		
	22 (R/W)		

OK or NG

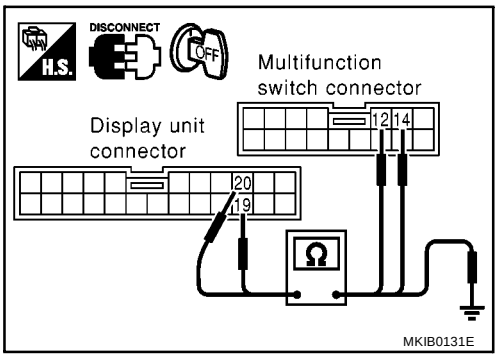
OK >> Replace CD auto changer.
NG >> Replace harness or connector.

AV Communication Line Check

EKS009CB

1. MULTIFUNCTION SWITCH CIRCUIT CHECK

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



Terminals				Continuity
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M61	19 (L)	M49	14 (L)	Yes
	20 (B/W)		12 (B/W)	

4. Check continuity between display unit and ground.

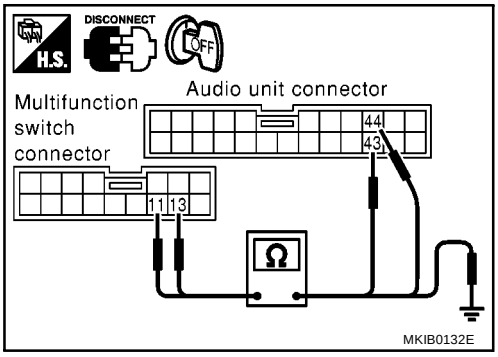
Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M61	19 (L)	Ground	No
	20 (B/W)		

OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector

2. AUDIO UNIT CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect audio unit connector.
3. Check continuity between multifunction switch and audio unit.



Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M49	11 (L)	M53	44 (L)	Yes
	13 (P)		43 (P)	

4. Check continuity between multifunction switch and ground.

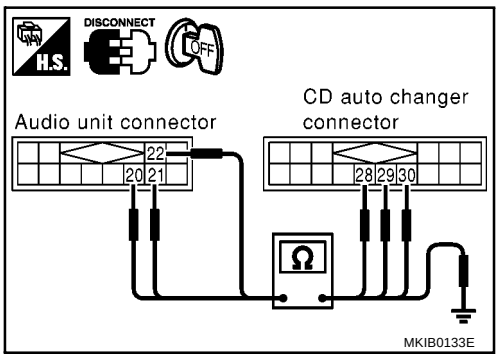
Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	11 (L)	Ground	No
	13 (P)		

OK or NG

OK >> GO TO 3.
NG >> Replace harness or connector.

3. CD CHANGER CIRCUIT CHECK

1. Disconnect CD auto changer connector.
2. Check continuity between audio unit and CD auto changer.



Terminals				Continuity
Audio unit		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M52	20 (R/G)	B31	28 (R/G)	Yes
	21 (R/L)		29 (*1)	
	22 (R/W)		30 (*2)	

*1: Sedan and wagon models (W)
Hatchback models (R/L)
*2: Sedan and wagon models (B)
Hatchback models (R/W)

3. Check continuity between multifunction switch and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	20 (R/G)	Ground	No
	21 (R/L)		
	22 (R/W)		

OK or NG

OK >> Replace display unit.
NG >> Replace harness or connector.

Self-Diagnosis Does Not Perform

EKS009CC

1. MULTIFUNCTION SWITCH CHECK

Check multifunction switch power and ground circuit.Refer to DI-132, "Power Supply and Ground Circuit Check for Multifunction Switch" .

>> GO TO 2.

2. DISPLAY UNIT CHECK

Check display unit power and ground circuit. Refer to DI-131, "Power Supply and Ground Circuit Check for Display Unit" .

>> GO TO 3.

3. SELF-DIAGNOSIS CHECK

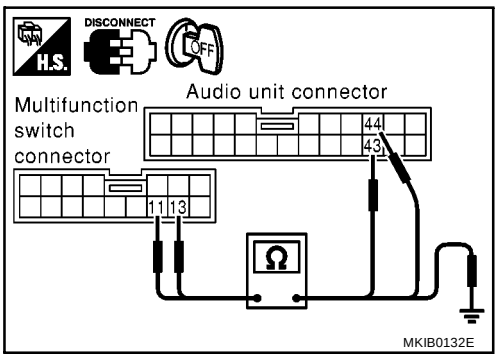
1. Disconnect audio unit connector M53.
2. Perform self-diagnosis mode.

Can self-diagnosis mode be activated?

Yes >> GO TO 4.
No >> AV communication line check. Refer to DI-137, "AV Communication Line Check" .

4. MULTIFUNCTION SWITCH CIRCUIT CHECK

1. Disconnect multifunction switch connector.
2. Check continuity between multifunction switch and audio unit.



Terminals				Continuity
Multifunction switch		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M49	11 (L)	M53	44 (L)	Yes
	13 (P)		43 (P)	

3. Check continuity between multifunction switch and ground.

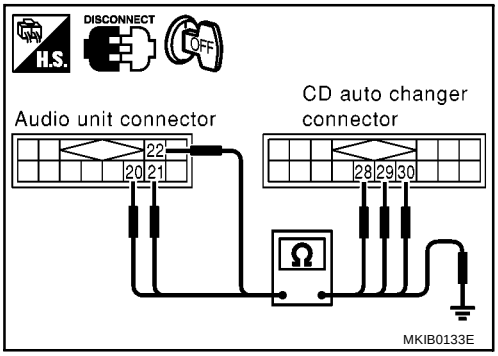
Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M49	11 (L)	Ground	No
	13 (P)		

OK or NG

OK >> GO TO 5.
NG >> Replace harness or connector.

5. AUDIO UNIT CIRCUIT CHECK

1. Disconnect CD auto changer connector.
2. Check continuity between audio unit and CD auto changer.



Terminals				Continuity
Audio unit		CD auto changer		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M52	20 (R/G)	B31	28 (R/G)	Yes
	21 (R/L)		29 (*1)	
	22 (R/W)		30 (*2)	

*1: Sedan and wagon models (W)
Hatchback models (R/L)
*2: Sedan and wagon models (B)
Hatchback models (R/W)

3. Check continuity between audio unit and ground.

Terminals			Continuity
Connector	Terminal (Wire color)	Terminal	
M52	20 (R/G)	Ground	No
	21 (R/L)		
	22 (R/W)		

OK or NG

OK >> Inspection end.
NG >> Replace harness or connector.

RGB Screen Is Not Shown

EKS009CD

Replace display unit.

Color of RGB Image Is Not Proper

EKS009CE

Replace display unit.

RGB Screen Is Rolling

EKS009CF

Replace display unit.

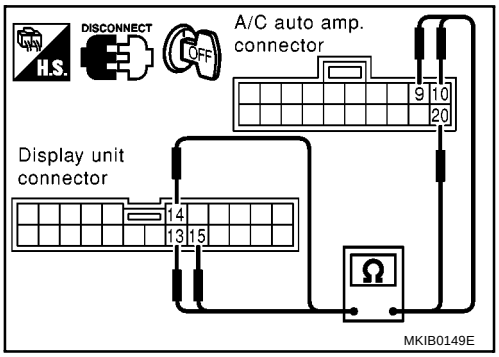
Air Conditioning Controls (Only) Are Ineffective (Rear Defogger Control Excluded)

EKS009CG

1. A/C AUTO AMP. AND DISPLAY UNIT CIRCUIT CHECK

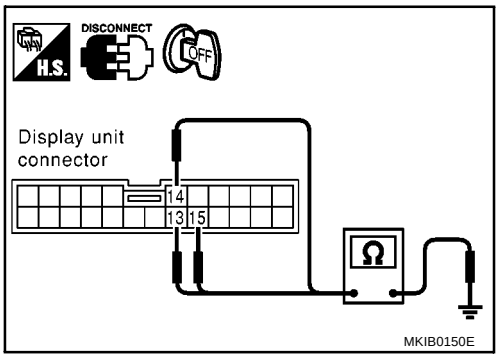
1. Turn the ignition switch OFF.
2. Disconnect A/C auto amp. connector and display unit connector.
3. Check continuity between display unit and A/C auto amp.

Terminals				Continuity
Display unit (+)		A/C auto amp. (-)		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M61	13 (L)	M75	20 (L)	YES
	14 (L/R)		10 (L/R)	
	15 (L/W)		9 (L/W)	



4. Check continuity between display unit and ground.

Terminals			Continuity
Connector	Terminal (wire color)	(-)	
M61	13 (L)	Ground	NO
	14 (L/R)		
	15 (L/W)		



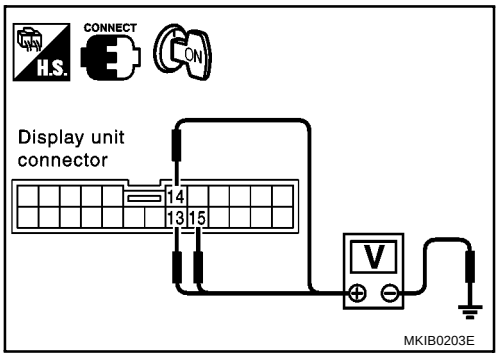
OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

2. A/C–AV, AV–AC, AC–CLK COMMUNICATION SIGNAL CHECK

1. Connect A/C auto amp. connector.
2. Turn the ignition switch ON.
3. Check voltage between display unit and ground.

Terminals			Voltage [V]
(+)		(-)	
Connector	Terminal (wire color)		
M61	13 (L)	Ground	Approx. 3.5 or more
	14 (L/R)		
	15 (L/W)		



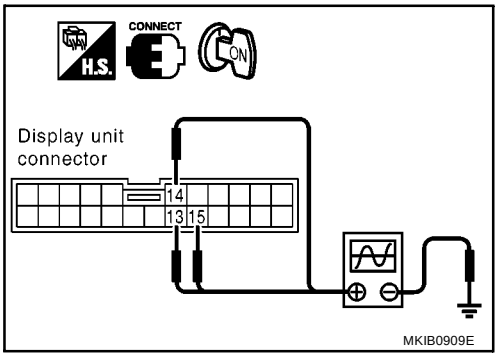
OK or NG

OK >> GO TO 3.
NG >> Replace A/C auto amp.

3. A/C– AV, AV– AC, AC– CLK COMMUNICATION SIGNAL CHECK

1. Connect display unit harness connector.
2. Turn the ignition switch ON.
3. Check voltage signal between display unit and ground with oscilloscope or CONSULT-II.

Terminals			Reference signal
(+)		(-)	
Connector	Terminal (wire color)		
M61	13 (L)	Ground	DI-121, "Terminals and Reference Value for Display Unit"
	14 (L/R)		
	15 (L/W)		



OK or NG

OK >> Replace A/C auto amp.
NG >> Replace display unit.

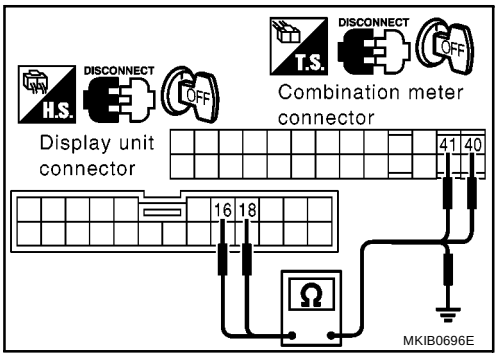
Fuel Information Is Not Displayed/Warning Message Is Not Displayed/LHD Models

EKS009CH

1. COMMUNICATION LINE (MA-AV, AV-ME) CIRCUIT CHECK

1. Disconnect the display unit connector and combination meter connector.
2. Check continuity between display unit and ground.

Terminals			Continuity
Connector	Terminal (wire color)	Terminal	
M61	16 (R)	Ground	No
	18 (G)		



3. Check continuity between display unit and combination meter.

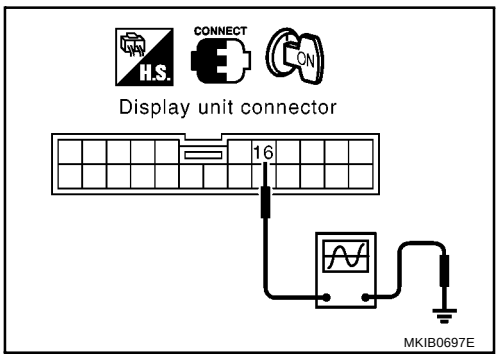
Terminals				Continuity
Display unit		Combination meter		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M61	16 (R)	M37	41 (R)	Yes
	18 (G)		40 (G)	

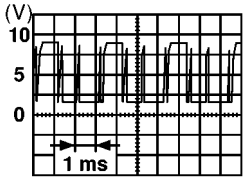
OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

2. COMMUNICATION SIGNAL (AV–ME) CHECK

1. Connect display unit connector and combination meter connector.
2. Turn ignition switch ON.
3. Check voltage signal between display unit harness connector M61 terminal 16 (R) and ground with oscilloscope or CONSULT-II.





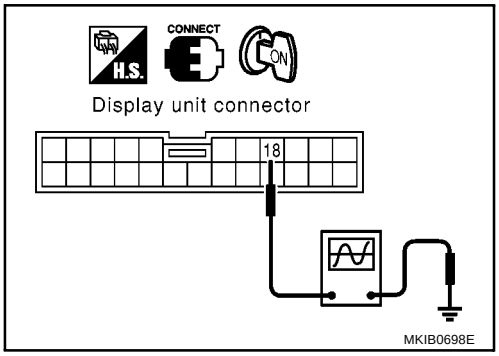
SKIA0169E

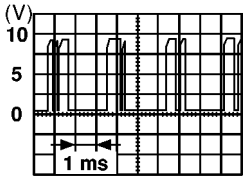
OK or NG

OK >> GO TO 3.
NG >> Replace display unit.

3. COMMUNICATION SIGNAL (ME–AV) CHECK

1. Turn ignition switch to ON and display.
2. Check voltage signal between display unit harness connector M61 terminal 18 (G) and ground with oscilloscope or CONSULT-II.





SKIA0170E

OK or NG

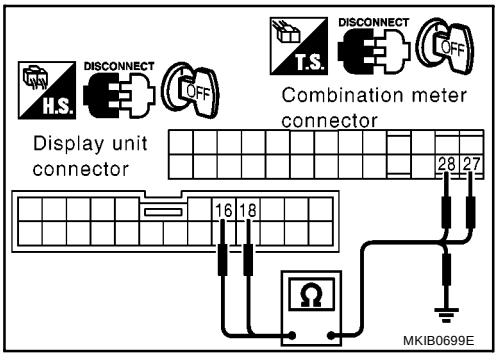
OK >> Replace display unit.
NG >> Replace combination meter.

Fuel Information Is Not Displayed/Warning Message Is Not Displayed/RHD Models

EKS009CI

1. COMMUNICATION LINE (MA-AV, AV-ME) CIRCUIT CHECK

1. Disconnect the display unit connector and combination meter connector.
2. Check continuity between display unit and combination meter.



Terminals				Continuity
Display unit		Combination meter		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
M61	16 (R)	M37	28 (R)	Yes
	18 (G)		27 (G)	

3. Check continuity between display unit and ground.

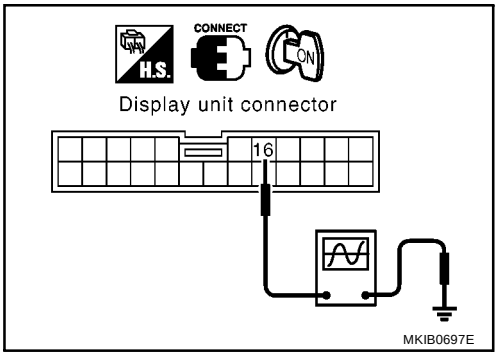
Terminals			Continuity
Connector	Terminal (wire color)	Terminal	
M61	16 (R)	Ground	No
	18 (G)		

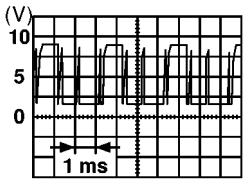
OK or NG

OK >> GO TO 2.
NG >> Replace harness or connector.

2. COMMUNICATION SIGNAL (AV–ME) CHECK

1. Connect display unit connector and combination meter connector.
2. Turn ignition switch ON.
3. Check voltage signal between display unit harness connector M61 terminal 16 (R) and ground with oscilloscope or CONSULT-II.





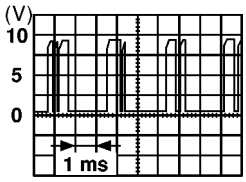
SKIA0169E

OK or NG

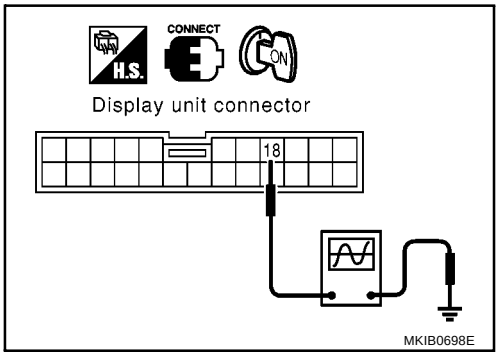
OK >> GO TO 3.
NG >> Replace display unit.

3. COMMUNICATION SIGNAL (ME–AV) CHECK

1. Turn ignition switch to ON and display.
2. Check voltage signal between display unit harness connector M61 terminal 18 (L) and ground with oscilloscope or CONSULT-II.



SKIA0170E



MKIB0698E

OK or NG

OK >> Replace display unit.
NG >> Replace combination meter.

Multifunction Switch Does Not Operate

EKS009CJ

1. POWER AND GROUND CIRCUIT CHECK

- Check power and ground circuit. Refer to DI-123, "Terminals and Reference Value for Multifunction Switch" .

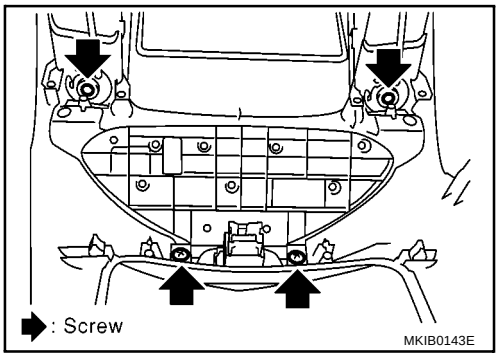
OK or NG

OK >> Replace multifunction switch.
NG >> Repair or replace harness.

Removal and Installation of Multifunction switch

EKS009CK

1. Remove the cluster lid C. Refer to IP section in P12 ESM (SM2E00-1P12E0E).
2. Remove the screw (4), and remove the multifunction switch.

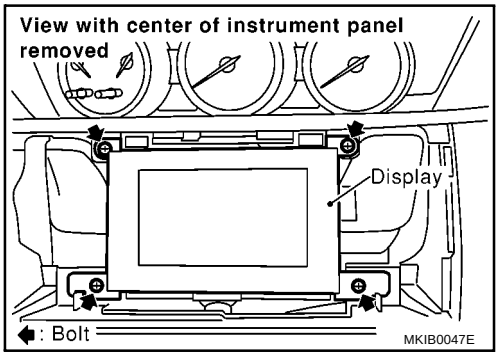


MKIB0143E

Removal and Installation of Display Unit

EKS009CL

1. Remove the cluster lid C. Refer to IP section in P12 ESM (SM2E00-1P12E0E).
2. Remove the screws (2), and remove the display unit.



MKIB0047E