SECTION LT
LIGHTING SYSTEM

CONTENTS

PRECAUTIONS

PFP:00011

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

AKS007KP

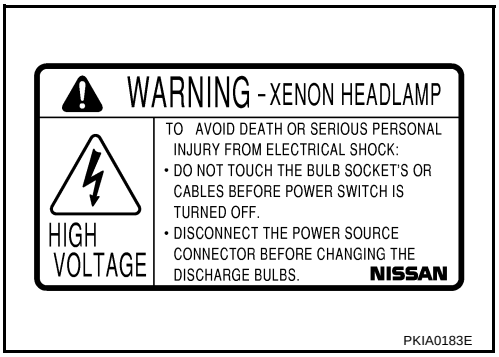
The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air 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:

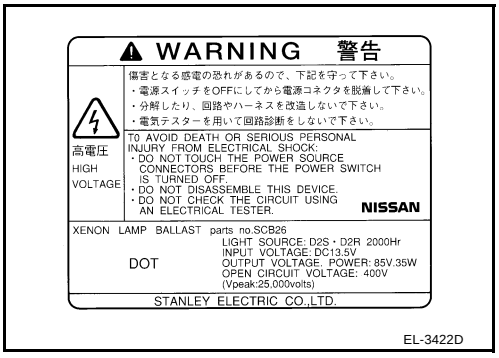
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal 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.**

General precautions for service operations

AKS004ZU



- Never work with wet hands.
- Xenon headlamp includes high voltage generating part. Be sure to disconnect battery negative cable (negative terminal) or power fuse before removing, installing, or touching the xenon headlamp (including lamp bulb).
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When turning the xenon headlamp on and while it is illuminated, never touch the harness, bulb, and socket of the headlamp.
- When checking the headlamp on/off operation, check it on vehicle and with the power connected to the vehicle-side connector.
- Do not touch the headlamp bulb glass surface with bare hands or allow oil or grease to get on it. Do not touch the headlamp bulb just after the headlamp is turned off, because it is very hot.



- Install the xenon headlamp bulb socket correctly. If it is installed improperly, high-voltage leak or corona discharge may occur that can melt the bulb, connector, and housing. Do not illuminate the xenon headlamp bulb out of the headlamp housing. Doing so can cause fire and harm your eyes.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.
- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

Wiring Diagrams and Trouble Diagnosis

AKS004ZV

When you read wiring diagrams, refer to the following:

- Refer to GI-15, "How to Read Wiring Diagrams" in GI section.
- Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" for power distribution in PG section.

When you perform trouble diagnosis, refer to the following:

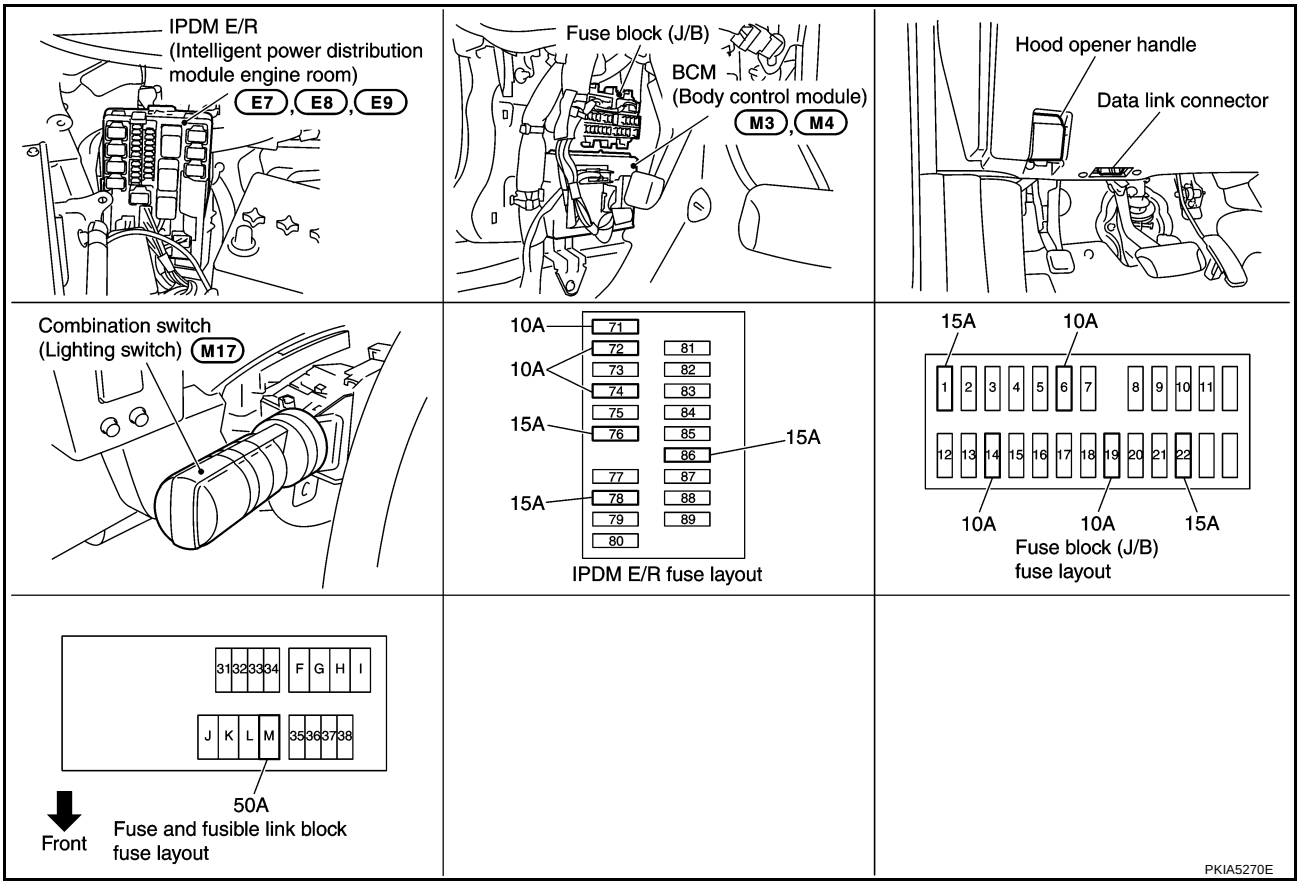
- Refer to GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES" in GI section.
- Refer to GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident" in GI section.

HEADLAMP - XENON TYPE -

PFP:26010

Component Parts and Harness Connector Location

AKS007M9



System Description

AKS007MA

Control of the headlamp system operation is dependent upon the position of the combination switch (lighting switch). When the lighting switch is placed in the 2ND position, the BCM (body control module) receives input signal requesting the headlamps (and tail lamps) illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The central processing unit of the IPDM E/R controls the headlamp high and headlamp low relay coils. These relays, when energized, direct power to the respective headlamps, which then illuminate.
If voltage is applied to a high beam solenoid, the bulb shade will move, even a xenon head lamp bulb comes out, and a high beam and a low beam are changed.

OUTLINE

Power is supplied at all times

- to headlamp high relay [located in IPDM E/R (intelligent power distribution module engine room)]
- to headlamp low relay [located in IPDM E/R (intelligent power distribution module engine room)]
- to ignition relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 71, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 50A fusible link (letter M, located in fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8.

With the ignition switch in the ON or START position, power is supplied
- to ignition relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 7.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 11.

Ground is supplied
- to BCM (body control module) terminals 49 and 52
- through grounds M35, M45 and M85
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E21, E50 and E51
- to combination meter terminals 5, 6 and 15
- through grounds M35, M45 and M85.

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input signal requesting the headlamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the headlamp low relay coil, which when energized, directs power
- to 15A fuse [No. 76, located in IPDM E/R]
- through IPDM E/R terminal 20
- to headlamp RH terminal 6
- to 15A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 30
- to headlamp LH terminal 6.

Ground is supplied
- to headlamp RH terminal 7
- through grounds E21, E50 and E51
- to headlamp LH terminal 7
- through grounds E21, E50 and E51.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the headlamp high relay coil and low relay coil, which when energized, directs power
- to 15A fuse [No. 76, located in IPDM E/R]
- through IPDM E/R terminal 20
- to headlamp RH terminal 6, and
- to 15A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 30
- to headlamp LH terminal 6
- to 10A fuse [No. 72, located in IPDM E/R]
- through IPDM E/R terminal 27
- to headlamp RH terminal 5, and
- to 10A fuse [No. 74, located in IPDM E/R]
- through IPDM E/R terminal 28
- to headlamp LH terminal 5.

Ground is supplied

- to headlamp RH terminal 7
- through grounds E21, E50 and E51
- to headlamp LH terminal 7
- through grounds E21, E50 and E51.

With power and ground supplied, the high beam headlamps illuminate.
If voltage is applied to a high beam solenoid, the bulb shade will move, even a xenon head lamp bulb comes out, and a high beam and a low beam are changed.
The unified meter and A/C amp that received the high beam request signal by BCM across the CAN communication makes a high beam indicator lamp turn on in combination meter.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated.
Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamps are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

AUTO LIGHT OPERATION (IF EQUIPPED)

Refer to LT-54, "System Description" in “AUTO LIGHT SYSTEM”.

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to BL-181, "VEHICLE SECURITY (THEFT WARNING) SYSTEM" .

XENON HEADLAMP

Xenon type headlamp is adopted to the low and high beam headlamps. Xenon bulbs do not use a filament. Instead, they produce light when a high voltage current is passed between two tungsten electrodes through a mixture of xenon (an inert gas) and certain other metal halides. In addition to added lighting power, electronic control of the power supply gives the headlamps stable quality and tone color.
Following are some of the many advantages of the xenon type headlamp.

- The light produced by the headlamps is a white color comparable to sunlight that is easy on the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- The light features a high relative spectral distribution at wavelengths to which the human eye is most sensitive. This means that even in the rain, more light is reflected back from the road surface toward the vehicle, for added visibility.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

CAN Communication System Description

AKS007MB

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

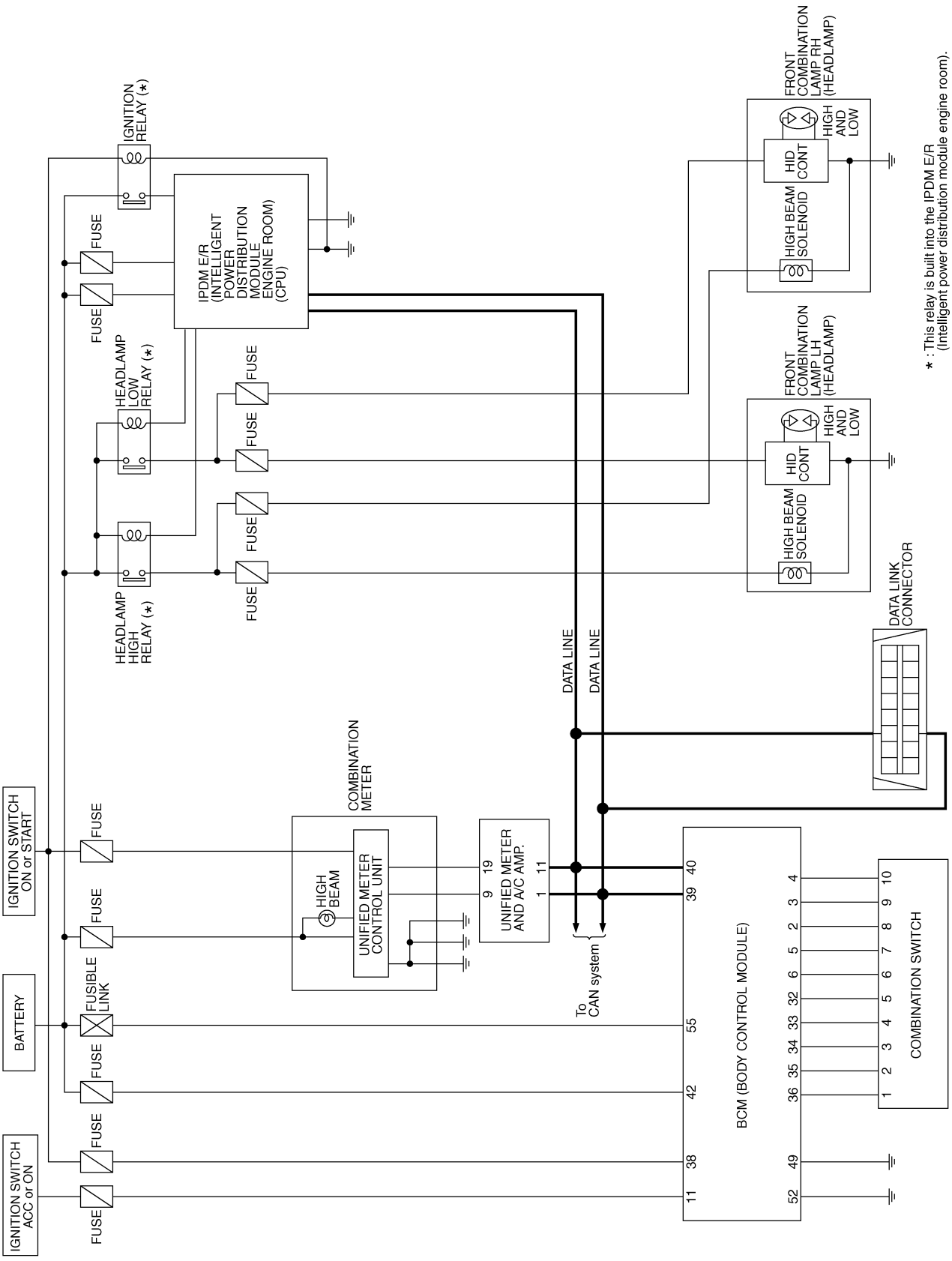
CAN Communication Unit

AKS0080S

Refer to LAN-6, "CAN Communication Unit" .

Schematic

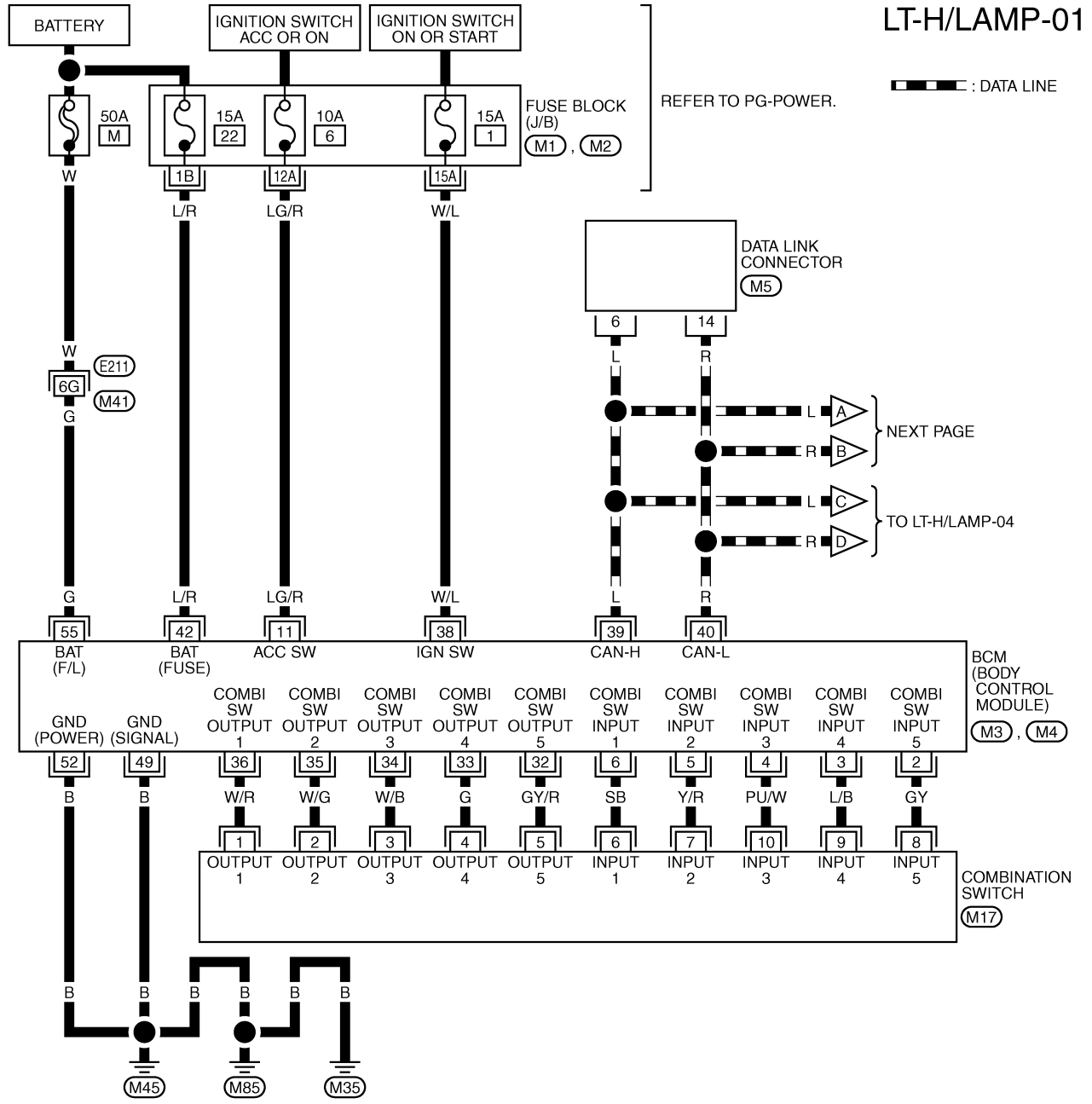
AKS007MD



TKWM0601E

Wiring Diagram — H/LAMP —

AKS007ME



REFER TO THE FOLLOWING.

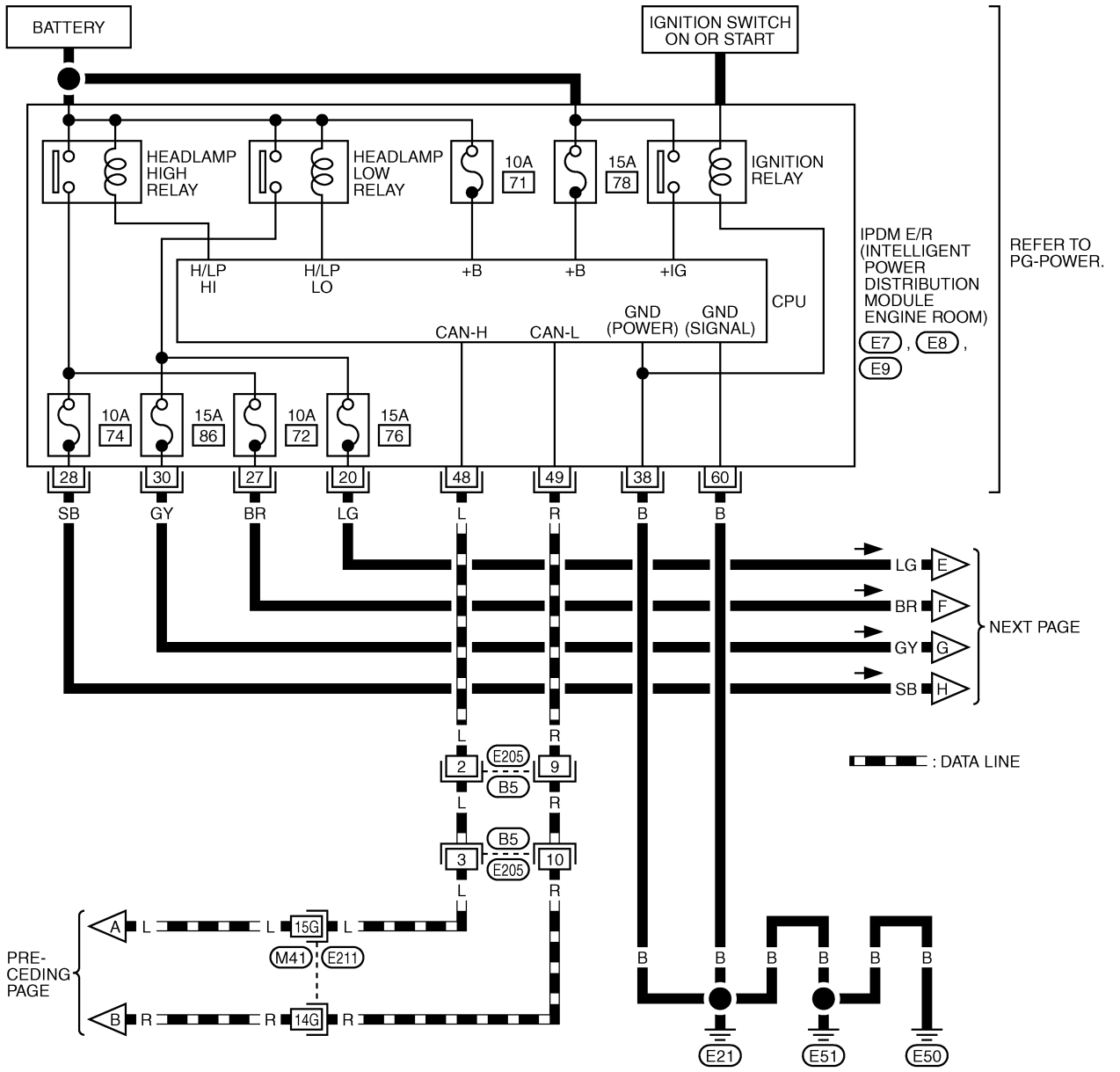
E211 -SUPER MULTIPLE JUNCTION (SMJ)

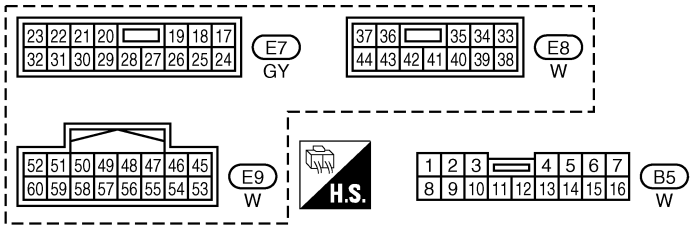
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM0815E

LT-H/LAMP-02



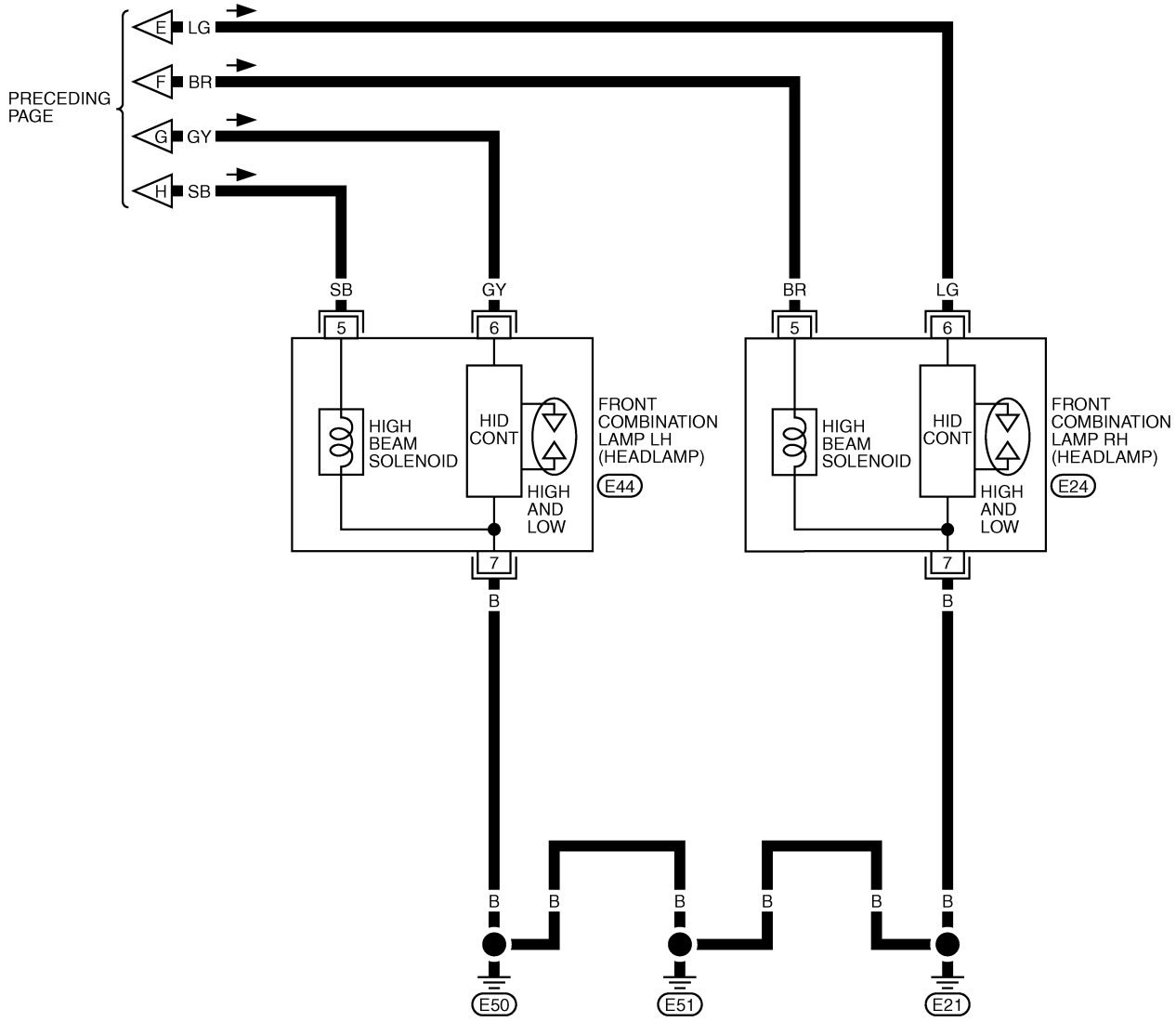


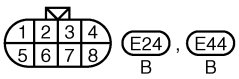
REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0603E

LT-H/LAMP-03

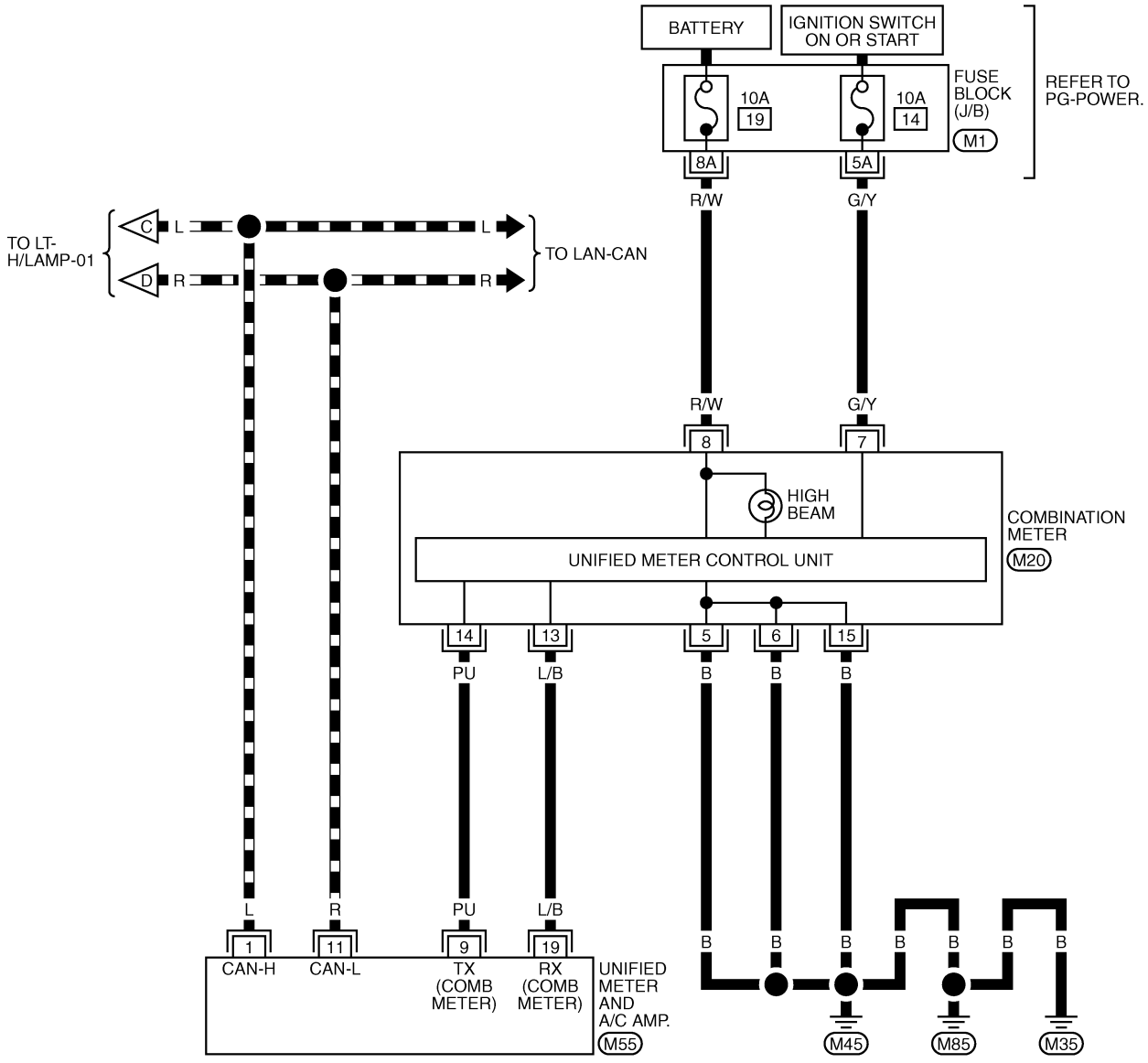


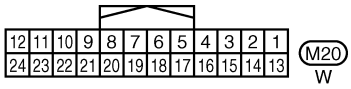


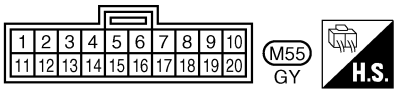
TKWM0604E

LT-H/LAMP-04

: DATA LINE







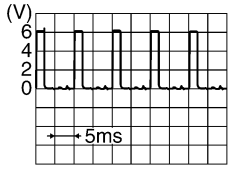
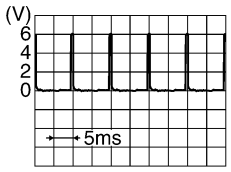
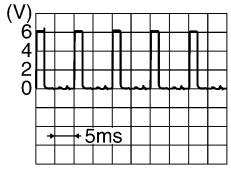
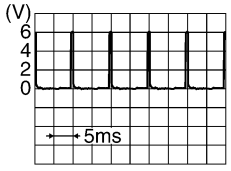
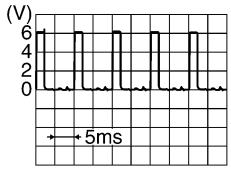
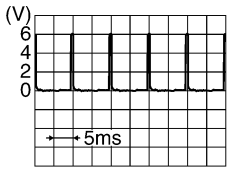
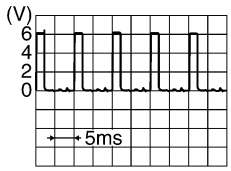
REFER TO THE FOLLOWING.

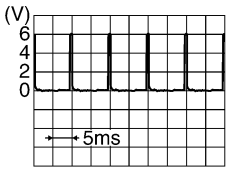
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0605E

Terminals and Reference Values for BCM

AKS007MF

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	SB	Combination switch input 1			
11	LG/R	Ignition switch (ACC)	ACC	—	Battery voltage
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	W/R	Combination switch output 1			
38	W/L	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN– H	—	—	—
40	R	CAN– L	—	—	—
42	L/R	Battery power supply	OFF	—	Battery voltage
49	B	Ground	ON	—	Approx. 0V
52	B	Ground	ON	—	Approx. 0V
55	G	Battery power supply	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

AKS007MG

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
20	LG	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
27	BR	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
28	SB	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
30	GY	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
38	B	Ground	ON	—		Approx. 0V
48	L	CAN– H	—	—		—
49	R	CAN– L	—	—		—
60	B	Ground	ON	—		Approx. 0V

How to Proceed With Trouble Diagnosis

AKS007MH

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-7, "System Description" .
3. Perform the Preliminary Check. Refer to LT-17, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007MI

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
		22
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	72
		74
		76
		86

Refer to LT-11, "Wiring Diagram — H/LAMP —" .

OK or NG

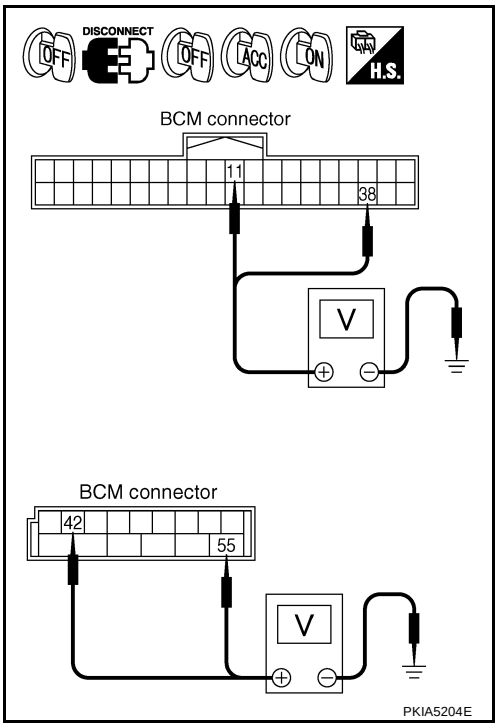
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(-)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M3	11 (LG/R)	Ground	0V	Battery voltage	Battery voltage
	38 (W/L)		0V	0V	Battery voltage
M4	42 (L/R)		Battery voltage	Battery voltage	Battery voltage
	55 (G)		Battery voltage	Battery voltage	Battery voltage



OK or NG

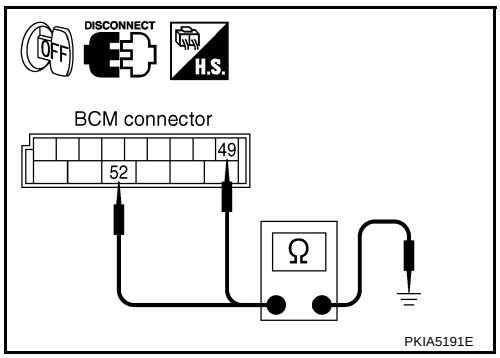
OK >> GO TO 3.

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M4	49 (B)	Ground	Yes
	52 (B)		



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions (BCM)

AKS007MJ

- CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. Work support, self-diagnosis, data monitor, and active test display.

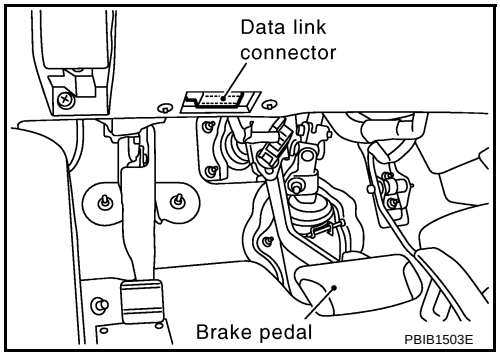
BCM diagnosis part	Check item, diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

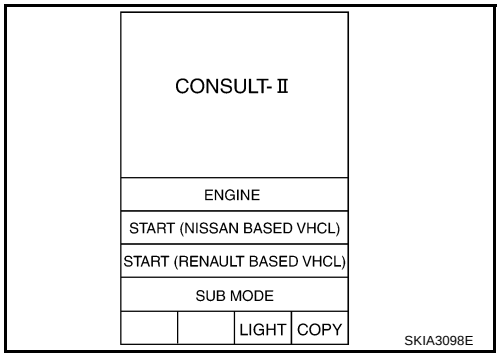
CAUTION:

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.

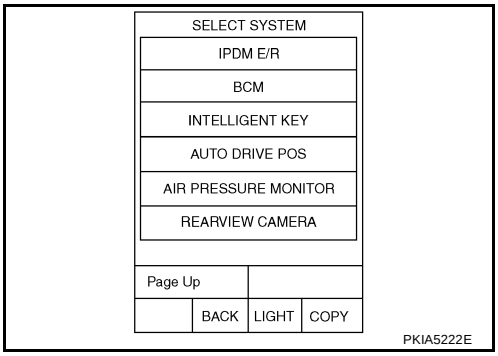
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



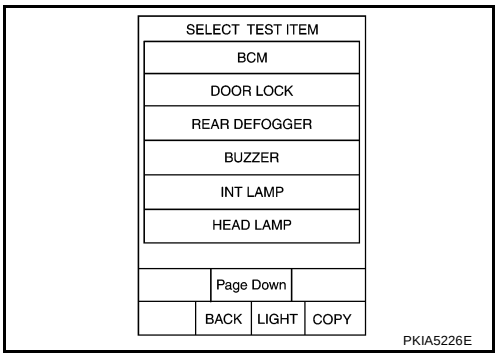
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.



WORK SUPPORT

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
3. Touch item on “SELECT WORK ITEM” screen.
4. Touch “START”.
5. Touch “CHANGE SET”.
6. The setting will be changed and “CUSTOMIZING COMPLETED” will be displayed.
7. Touch “END”.

Display Item List

Item	Description	CONSULT-II	Factory setting
BATTERY SAVER SET	Exterior lamp battery saver control mode can be changed in this mode. Selects exterior lamp battery saver control mode between two ON/OFF.	ON	×
		OFF	—

DATA MONITOR

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch “START”.
5. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
6. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
ACC ON SW	“ON/OFF”	Displays “ACC (ON)/OFF, Ignition OFF (OFF)” status judged from ignition switch signal.
HI BEAM SW	“ON/OFF”	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW[NOTE 1]	“ON/OFF”	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	“ON/OFF”	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	“ON/OFF”	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL	“ON/OFF”	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	“ON/OFF”	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	“ON/OFF”	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN[NOTE 2]	“ON/OFF”	Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW[NOTE 2]	“ON/OFF”	Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
OPTICAL SENSOR[NOTE 1]	[0 - 5V]	Displays “ambient light (close to 5V when light/close to 0V when dark)” judged from optical sensor signal.

NOTE:

1. Vehicles without auto light system display this item, but cannot monitor it.
2. Vehicles without daytime light system display this item, but cannot monitor it.

ACTIVE TEST

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching “BACK” deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON–OFF.

Test item	Description
DTRL[NOTE 1]	Allow day time light lamp operate by switching ON–OFF.
CORNERING LAMP[NOTE 2]	—

NOTE:

1. Vehicles without daytime light lamp system display this item, but cannot monitor it.
2. This item is displayed, but cannot monitor it.

CONSULT-II Functions (IPDM E/R)

AKS007MK

CONSULT-II can display each diagnostic item using the following diagnostic test modes: work support, self-diagnostic results, data monitor and active test through data reception and command transmission via the IPDM E/R CAN communication line.

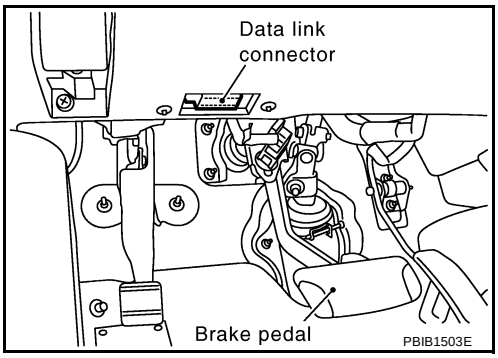
Inspection Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	The IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of the IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	The IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II OPERATION

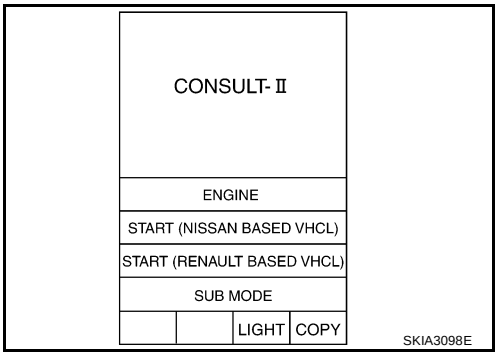
CAUTION:

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.

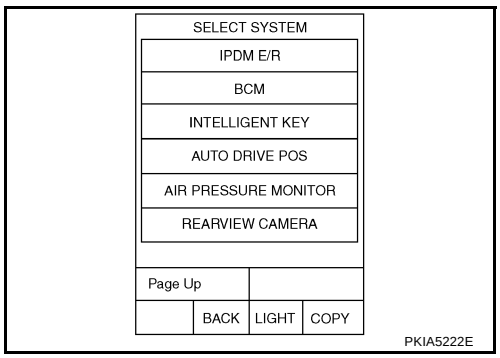
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



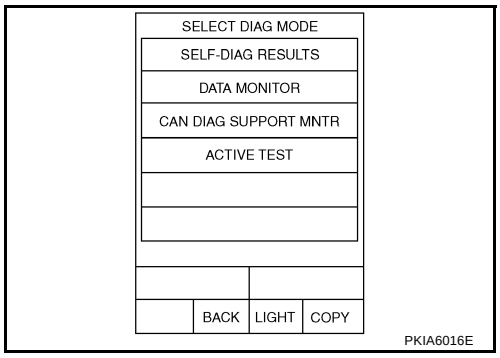
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IPDM E/R” on “SELECT SYSTEM” screen.
If “IPDM E/R” is not displayed, print “SELECT SYSTEM” screen, then refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Select the desired part to be diagnosed on the “SELECT SYSTEM” screen.



SELF-DIAGNOSTIC RESULTS

Refer to PG-21, "SELF-DIAG RESULTS" .

DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE ” screen.
2. Touch “ALL SIGNALS”, “MAIN SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	All items will be monitored.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Select any item for monitoring.

3. Touch “START”.
4. Touch the required monitoring item on “SELECTION FROM MENU”. In “ALL SIGNALS”, all items are monitored. In “MAIN SIGNALS”, predetermined items are monitored.
5. Touch “RECORD” while monitoring to record the status of the item being monitored. To stop recording, touch “STOP”.

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Position lights request	TAIL & CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Font fog lights request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

1. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Touch item to be tested, and check operation.
3. Touch “START”.
4. Touch “STOP” while testing to stop the operation.

Test item	CONSULT-II screen display	Description
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI ON, LO ON) at your option (Head lamp high beam repeats ON–OFF every 1 second).
Front fog lamp relay output		Allows fog lamp relay to operate by switching operation ON-OFF at your option.
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.

Headlamp Does Not Change To High Beam (Both Sides)

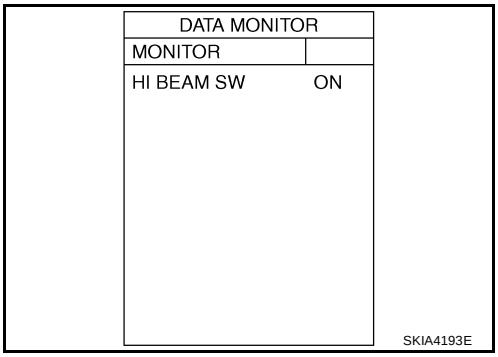
AKS007ML

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “HI BEAM SW” turns ON-OFF linked with operation of lighting switch.

When lighting switch is HIGH BEAM position : HI BEAM SW ON



Without CONSULT-II

Refer to LT-113, "Combination Switch Inspection" .

OK or NG

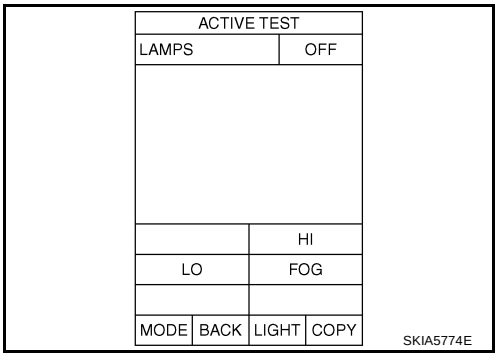
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-113, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

With CONSULT-II

1. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “LAMPS” on “SELECT TEST ITEM” screen.
3. Touch “HI” screen.
4. Make sure headlamp high beam operates.

Headlamp high beam should operate (Headlamp high beam repeats ON–OFF every 1 second).



Without CONSULT-II

1. Start auto active test. Refer to PG-24, "Auto Active Test" .
2. Make sure headlamp high beam operates.

Headlamp high beam should operate.

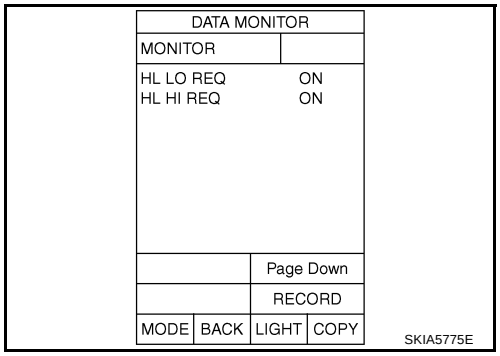
OK or NG

OK >> GO TO 3.
NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select “IPDM E/R” on CONSULT-II. and select “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Make sure “HL LO REQ” and “HL HI REQ” turns ON when lighting switch is in HIGH BEAM position.

When lighting switch is HIGH BEAM position : HL LO REQ ON
: HL HI REQ ON



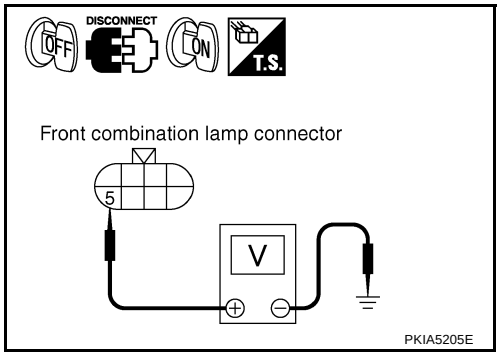
OK or NG

OK >> Replace IPDM E/R.
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

4. CHECK HEADLAMP INPUT SIGNAL

With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
4. Select “LAMPS” on “SELECT TEST ITEM” screen.
5. Touch “HI” screen.
6. When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground (Headlamp high beam repeats ON–OFF every 1 second).



Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Start auto active test. Refer to PG-24, "Auto Active Test" .
4. When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

Terminals				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E24	5 (BR)	Ground	Battery voltage
LH	E44	5 (SB)		

OK or NG

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

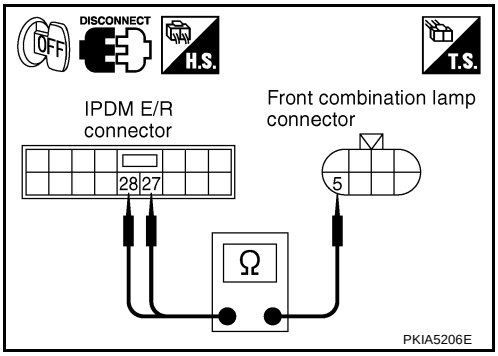
5. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 27 (BR) and front combination lamp RH harness connector E24 terminal 5 (BR).

27 (BR) – 5 (BR) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 28 (SB) and front combination lamp LH harness connector E44 terminal 5 (SB).

28 (SB) – 5 (SB) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

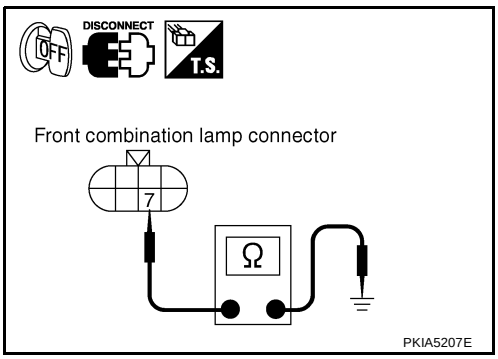
6. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E24 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E44 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



OK or NG

OK >> Replace headlamp assembly.
NG >> Repair harness or connector.

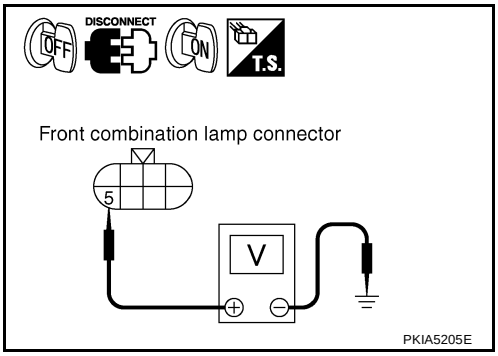
Headlamp Does Not Change To High Beam (One Side)

AKS007MM

1. CHECK HEADLAMP INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH or LH connector.
3. Turn ignition switch ON.
4. Lighting switch is turned HIGH BEAM position.
5. Check voltage between front combination lamp RH or LH harness connector and ground.

Terminals				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E24	5 (BR)	Ground	Battery voltage
LH	E44	5 (SB)		



OK or NG

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

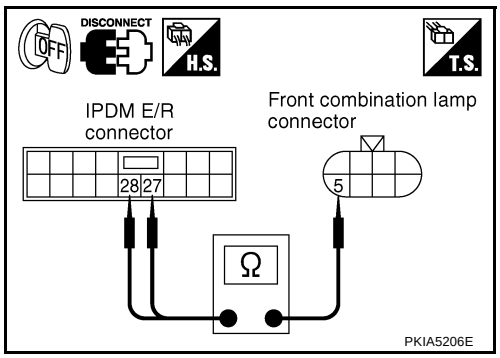
2. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 27 (BR) and front combination lamp RH harness connector E24 terminal 5 (BR).

27 (BR) – 5 (BR) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 28 (SB) and front combination lamp LH harness connector E44 terminal 5 (SB).

28 (SB) – 5 (SB) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

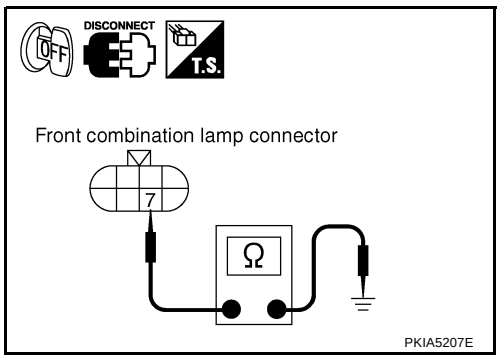
3. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E24 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E44 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



OK or NG

OK >> Replace headlamp assembly.
NG >> Repair harness or connector.

High Beam Indicator Lamp Does Not Illuminate

AKS007MN

1. CHECK BULB

Check bulb of high beam indicator lamp.

OK or NG

OK >> Replace combination meter.
NG >> Replace indicator bulb.

Headlamp Low Beam Does Not Illuminate (Both Sides)

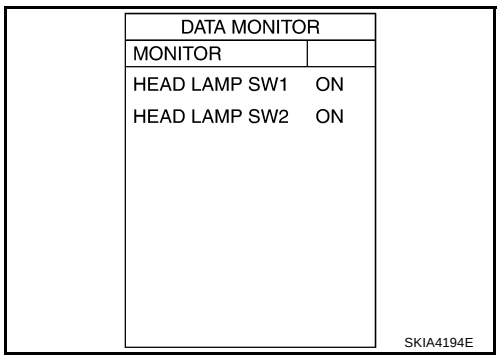
AKS007MO

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “HEAD LAMP SW 1” and “HEAD LAMP SW 2” turns ON-OFF linked with operation of lighting switch.

When lighting switch is 2ND position : HEAD LAMP SW 1 ON
: HEAD LAMP SW 2 ON



Without CONSULT-II

Refer to LT-113, "Combination Switch Inspection" .

OK or NG

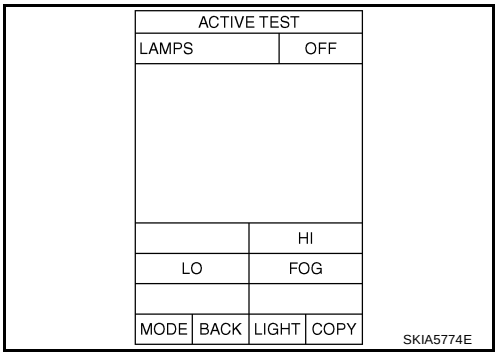
OK >> GO TO 2.
NG >> Check lighting switch. Refer to LT-113, "Combination Switch Inspection" .

2. HEADLAMP ACTIVE TEST

With CONSULT-II

1. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “LAMPS” on “SELECT TEST” ITEM screen.
3. Touch “LO” screen.
4. Make sure headlamp low beam operates.

Headlamp low beam should operate.



Without CONSULT-II

1. Start auto active test. Refer to PG-24, "Auto Active Test" .
2. Make sure headlamp low beam operates.

Headlamp low beam should operate.

OK or NG

OK >> GO TO 3.
NG >> GO TO 4.

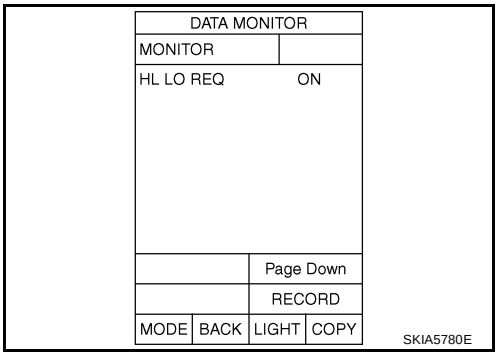
3. CHECK IPDM E/R

1. Select “IPDM E/R” on CONSULT-II. and select “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Make sure “HL LO REQ” turns ON when lighting switch is in 2ND position.

When lighting switch is 2ND position : HL LO REQ ON

OK or NG

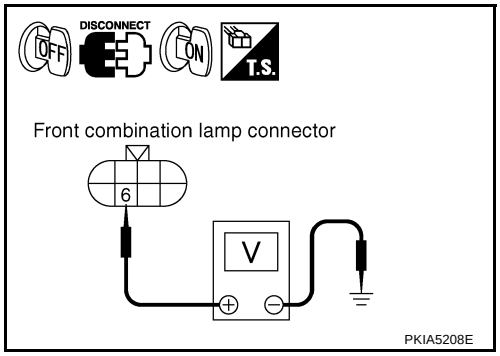
OK >> Replace IPDM E/R.
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .



4. CHECK HEADLAMP INPUT SIGNAL

With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
4. Select “LAMPS” on “SELECT TEST ITEM” screen.
5. Touch “LO” screen.
6. When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.



Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Start auto active test. Refer to PG-24, "Auto Active Test" .
4. When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connector and ground.

Terminals				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E24	6 (LG)	Ground	Battery voltage
LH	E44	6 (GY)		

OK or NG

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

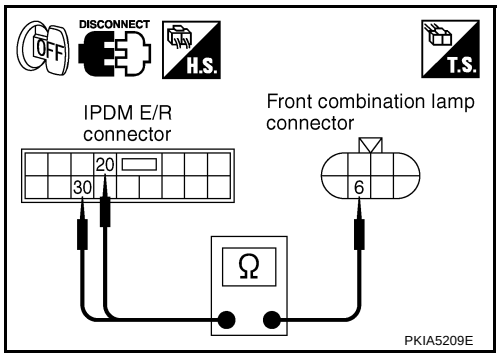
5. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 20 (LG) and front combination lamp RH harness connector E24 terminal 6 (LG).

20 (LG) – 6 (LG) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E7 terminal 30 (GY) and front combination lamp LH harness connector E44 terminal 6 (GY).

30 (GY) – 6 (GY) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

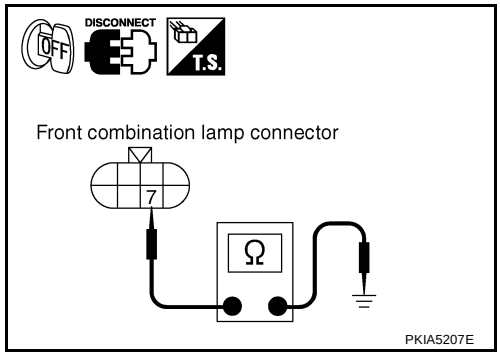
6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp RH harness connector E24 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.

3. Check continuity between front combination lamp LH harness connector E44 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



OK or NG

OK >> Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to LT-33, "Xenon Headlamp Trouble Diagnosis" .

NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

AKS007MP

1. CHECK BULB

Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-33, "Xenon Headlamp Trouble Diagnosis" .

OK or NG

OK >> GO TO 2.

NG >> Repair malfunctioning part.

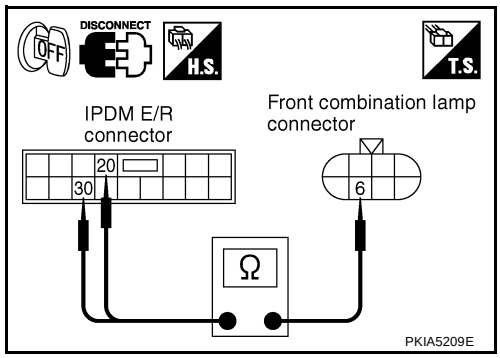
2. CHECK HEADLAMP CIRCUIT

1. Disconnect IPDM E/R connector and front combination lamp RH or LH connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 20 (LG) and front combination lamp RH harness connector E24 terminal 6 (LG).

20 (LG) – 6 (LG) : Continuity should exist.

3. Check continuity between IPDM E/R harness connector E7 terminal 30 (GY) and front combination lamp LH harness connector E44 terminal 6 (GY).

30 (GY) – 6 (GY) : Continuity should exist.



OK or NG

OK >> GOTO 3.

NG >> Repair harness or connector.

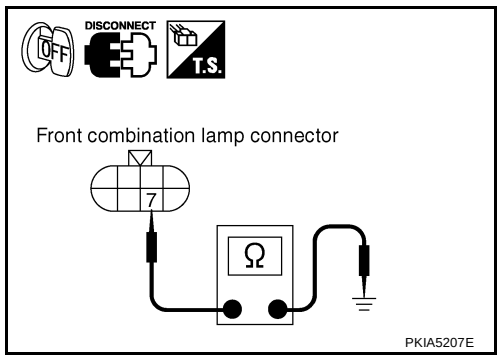
3. CHECK HEADLAMP GROUND

1. Check continuity between front combination lamp RH harness connector E24 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.

2. Check continuity between front combination lamp LH harness connector E44 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

Headlamp RH Low Beam and High Beam Do Not Illuminate

AKS007MQ

1. CHECK BULB

Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-33, "Xenon Headlamp Trouble Diagnosis" .

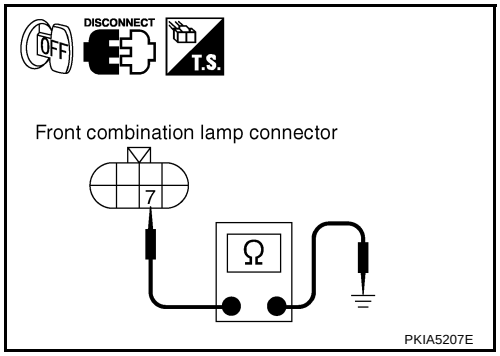
OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning part.

2. CHECK HEADLAMP GROUND

1. Disconnect front combination lamp RH connector.
2. Check continuity between front combination lamp RH harness connector E24 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



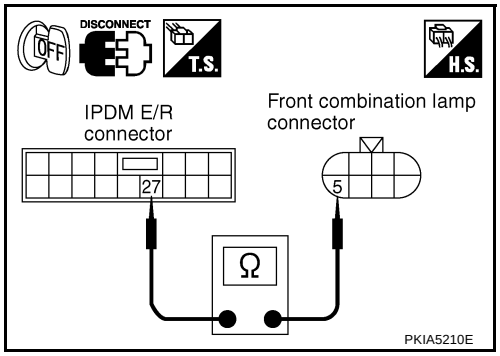
OK or NG

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

3. CHECK HEADLAMP CIRCUIT

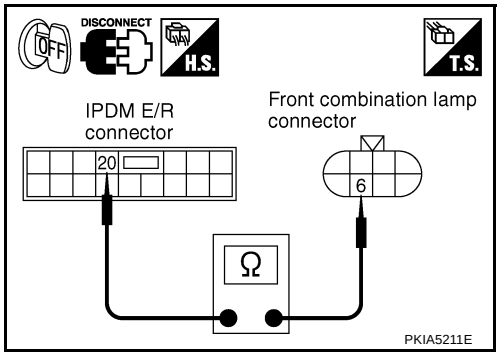
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 27 (BR) and front combination lamp RH harness connector E24 terminal 5 (BR).

27 (BR) – 5 (BR) : Continuity should exist.



3. Check continuity between IPDM E/R harness connector E7 terminal 20 (LG) and front combination lamp RH harness connector E24 terminal 6 (LG).

20 (LG) – 6 (LG) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

Headlamp LH Low Beam and High Beam Do Not Illuminate

AKS007MR

1. CHECK BULB

Check ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-33, "Xenon Headlamp Trouble Diagnosis" .

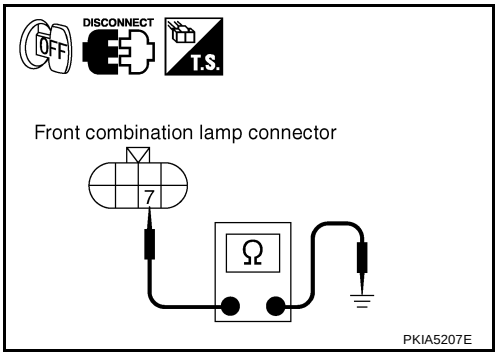
OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning part.

2. CHECK HEADLAMP GROUND

1. Disconnect front combination lamp LH connector.
2. Check continuity between front combination lamp LH harness connector E44 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



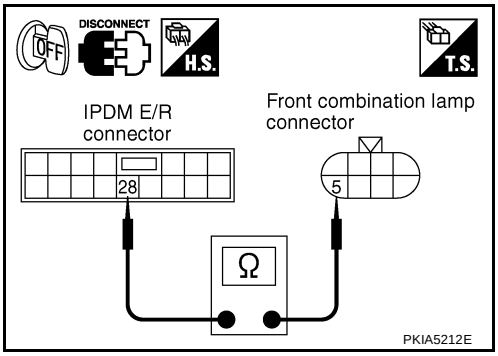
OK or NG

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

3. CHECK HEADLAMP CIRCUIT

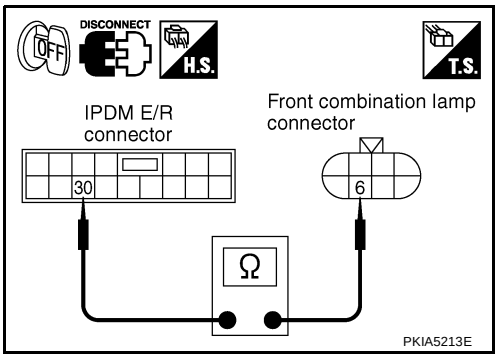
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 28 (SB) and front combination lamp LH harness connector E44 terminal 5 (SB).

28 (SB) – 5 (SB) : Continuity should exist.



3. Check continuity between IPDM E/R harness connector E7 terminal 30 (GY) and front combination lamp LH harness connector E44 terminal 6 (GY).

30 (GY) – 6 (GY) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

Headlamps Do Not Turn OFF

AKS007MS

1. CHECK HEADLAMP TURN OFF

Make sure that lighting switch is OFF. And make sure headlamp turns off when ignition switch is turned OFF.

OK or NG

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

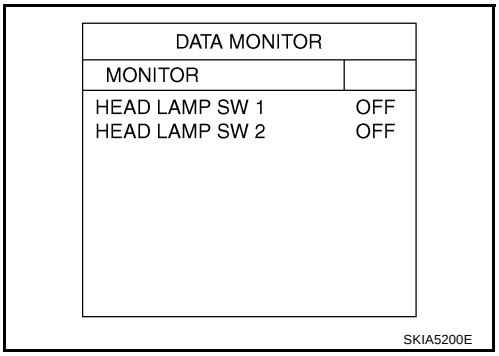
2. CHECK COMBINATION SWITCH INPUT SIGNAL

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “HEAD LAMP SW 1” and “HEAD LAMP SW 2” turns ON-OFF linked with operation of lighting switch.

When lighting switch is OFF position : HEAD LAMP SW 1 OFF
: HEAD LAMP SW 2 OFF

OK or NG

OK >> Replace IPDM E/R.
NG >> Check lighting switch. Refer to LT-113, "Combination Switch Inspection" .

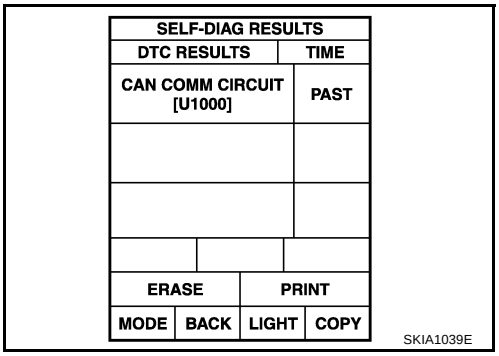


3. CHECKING CAN COMMUNICATIONS BETWEEN BCM AND IPDM E/R

Select “BCM” on CONSULT-II, and perform self-diagnosis for “BCM”.

Display of self-diagnosis results

NO DTC>> Replace IPDM E/R.
CAN COMM CIRCUIT>> Refer to BCS-14, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



CAUTION:

AKS007MT

- Installation or removal of the connector must be done with the lighting switch OFF.
- When the lamp is illuminated (when the lighting switch is ON), do not touch the harness, HID control unit, inside of the lamp, or the lamp metal parts.
- To check illumination, temporarily install lamp in the vehicle. Be sure to connect power at the vehicle-side connector.
- If the error can be traced directly to the electrical system, first check for items such as burned-out fuses and fusible links, broken wires or loose connectors, pulled-out terminals, and improper connections.
- Do not work with wet hands.
- Using a tester for HID control unit circuit trouble diagnosis is prohibited.
- Disassembling the HID control unit or harnesses (bulb socket harness, ECM harness) is prohibited.
- Immediately after illumination, the light intensity and color will fluctuate, but there is nothing wrong.
- When the bulb has reached the end of its lifetime, the brightness may drop significantly, it may flash repeatedly, or the light may turn a reddish color.

Xenon Headlamp Trouble Diagnosis

AKS007MU

1. CHECK 1: XENON HEADLAMP LIGHTING

Install normal xenon bulb to corresponding xenon bulb headlamp, and check if lamp lights up.

OK or NG

OK >> Replace xenon bulb.
NG >> GO TO 2.

2. CHECK 2: XENON HEADLAMP LIGHTING

Install normal HID control unit to corresponding xenon headlamp, and check if lamp lights up.

OK or NG

OK >> Replace HID control unit.
NG >> GO TO 3.

3. CHECK 3: XENON HEADLAMP LIGHTING

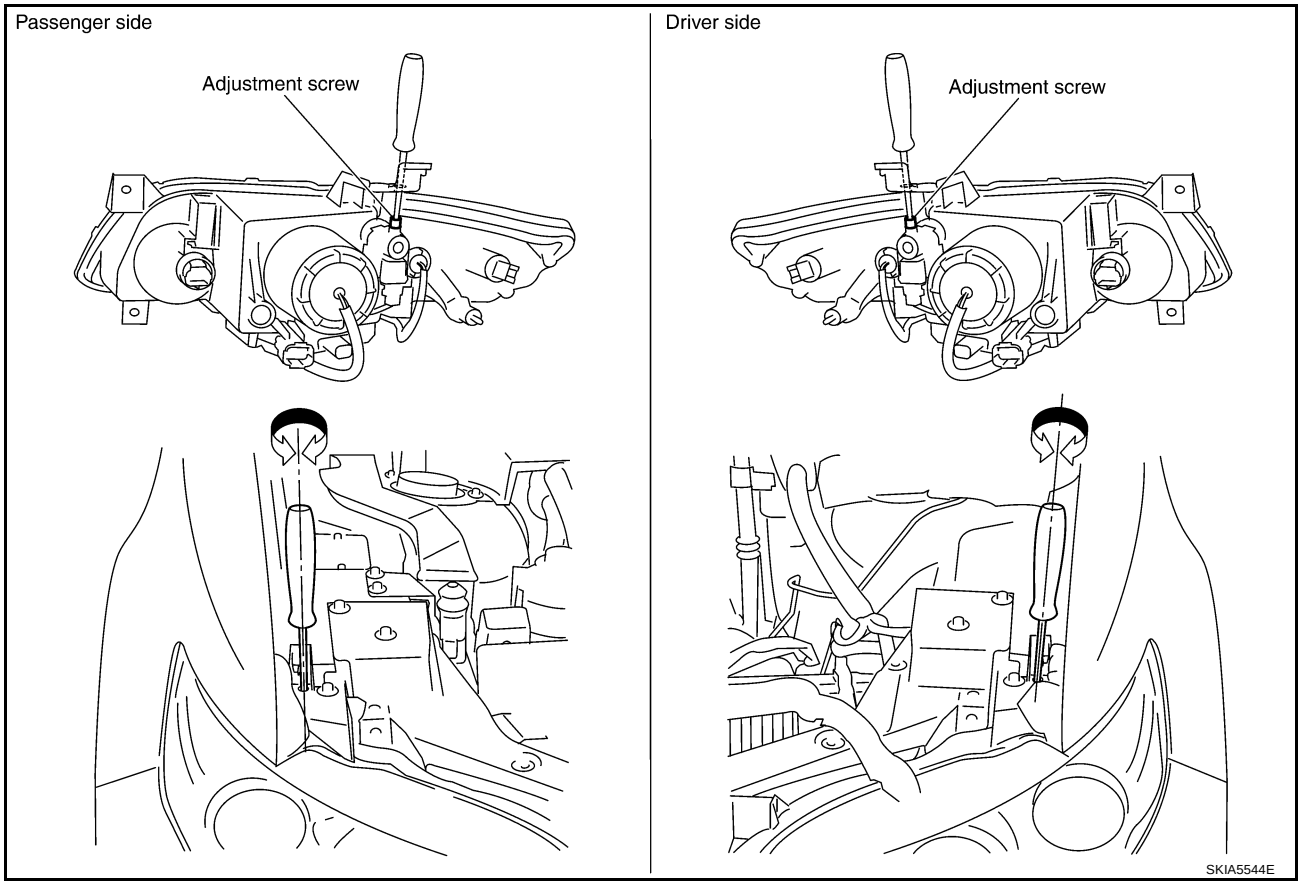
Install normal xenon lamp housing assembly to corresponding xenon headlamp, and check if lamp lights up.

OK or NG

OK >> Malfunction in starter (boosting circuit) in xenon headlamp housing. (Replace xenon headlamp housing assembly.)
NG >> INSPECTION END

Aiming Adjustment

AKS007MV



PREPARATION BEFORE ADJUSTING

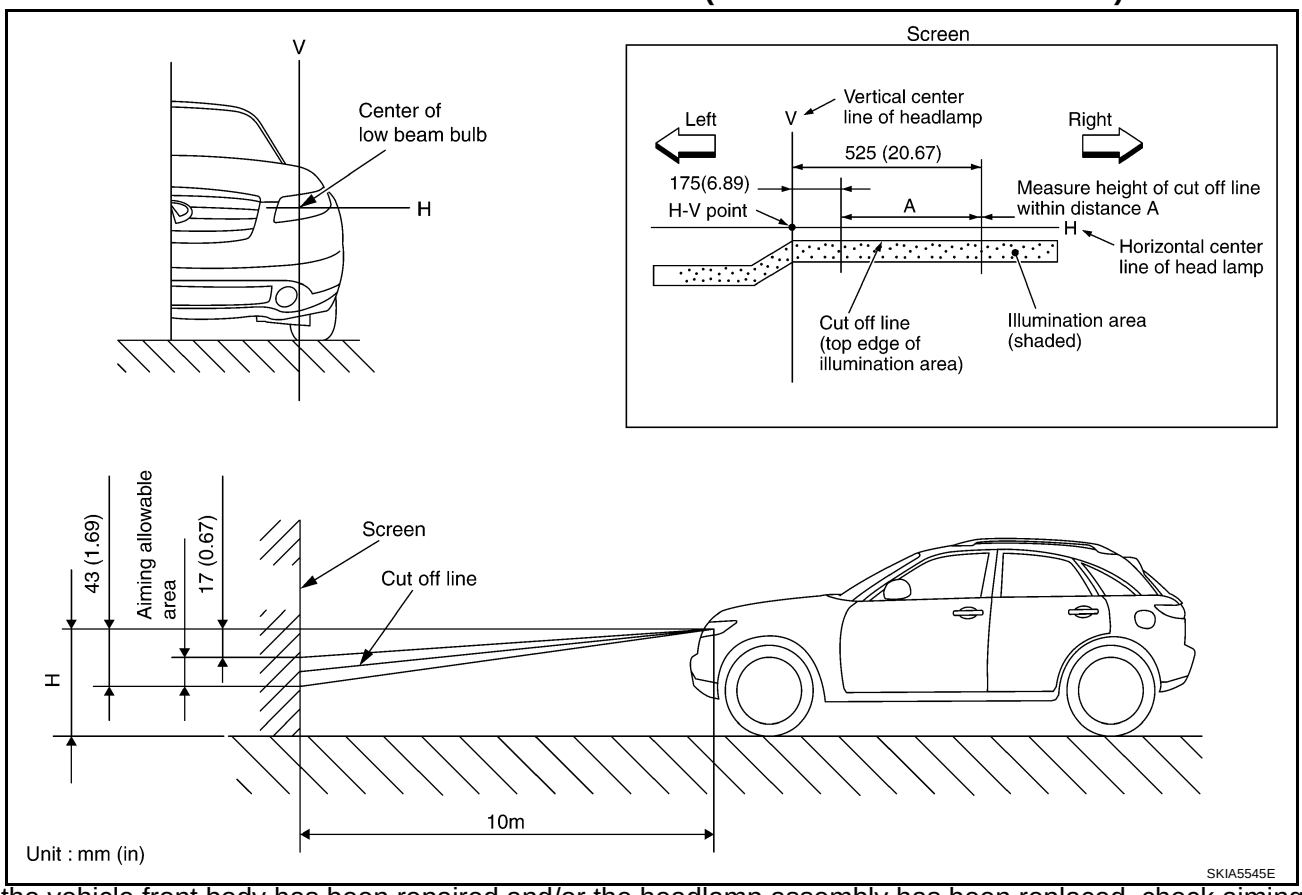
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

1. Keep all tires inflated to correct pressures.
2. Place vehicle on flat surface.
3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

LOW BEAM AND HIGH BEAM

1. Turn headlamp low beam on.
2. Use adjusting screws to perform aiming adjustment.

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)

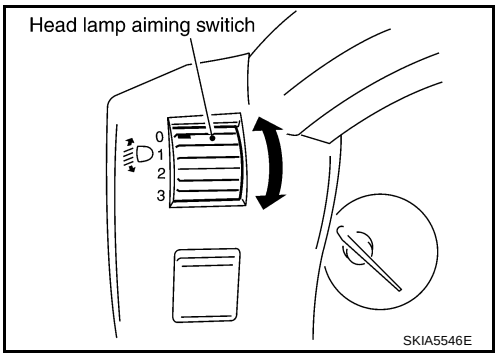


If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

- Basic illumination area for adjustment should be within the range shown on the aiming chart. Adjust headlamp accordingly.

CAUTION:

Be sure aiming switch is set to “0” when performing aiming adjustment.

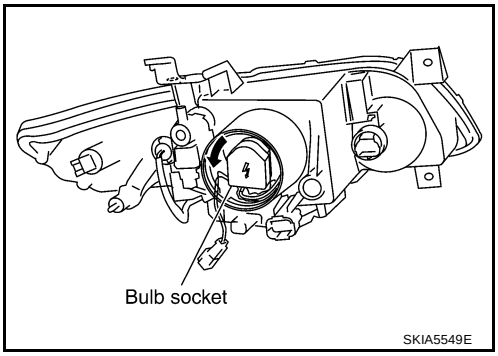


Bulb Replacement

AKS007MW

HEADLAMP HIGH/LOW BEAM

1. Turn lighting switch OFF.
2. Disconnect negative battery cable or remove power fuse.
3. Remove air cleaner case (LH) or radiator reservoir tank (RH). Refer to EM-17, "Removal and Installation" , EM-172, "Removal and Installation" , CO-14, "Removal and Installation" , CO-39, "Removal and Installation" .
4. Turn plastic cap counterclockwise and unlock it.
5. Turn bulb socket counterclockwise and unlock it.
6. Unlock retaining spring and remove bulb from headlamp.
7. Install in the reverse order of removal.



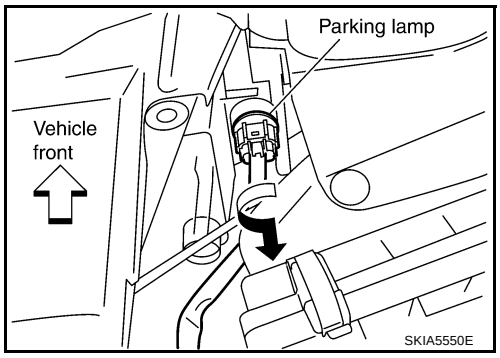
NOTE:
After installation, perform aiming adjustment. Refer to LT-34, "Aiming Adjustment" .

Headlamp high/low beam (Xenon) : 12V - 35W (D2S)

PARKING LAMP (CLEARANCE LAMP)

1. Turn lighting switch OFF.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from its socket.
4. Install in the reverse order of removal.

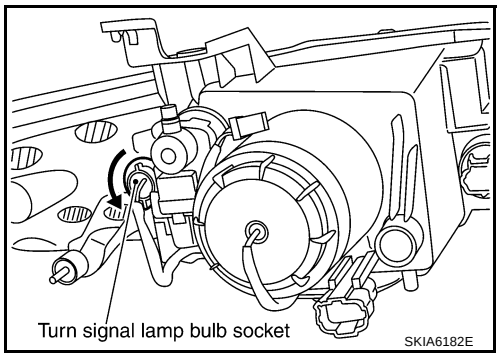
Parking lamp (Clearance lamp) : 12V - 5W



FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF.
2. Turn bulb socket counterclockwise with suitable tool and unlock it.
3. Remove bulb from its socket.
4. Install in the reverse order of removal.

Front turn signal lamp : 12V - 21W (amber)

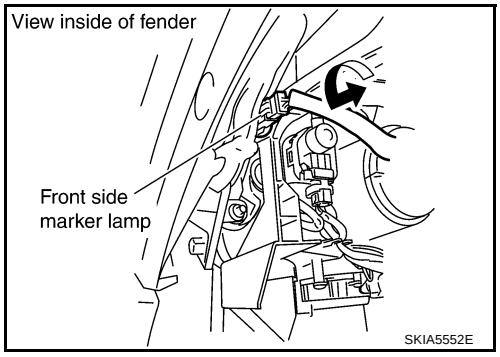


FRONT SIDE MARKER LAMP

1. Turn lighting switch OFF.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from its socket.
4. Install in the reverse order of removal.

Front side marker lamp : 12V - 3.8W

CAUTION:
After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

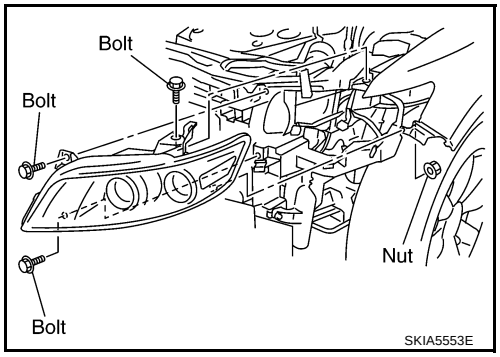


Removal and Installation

AKS007MX

REMOVAL

1. Disconnect the battery negative cable.
2. Remove front bumper. Refer to EI-14, "Removal and Installation" in “EI” section.
3. Remove headlamp mounting bolts.
4. Remove plastics bumper bracket, then pull headlamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

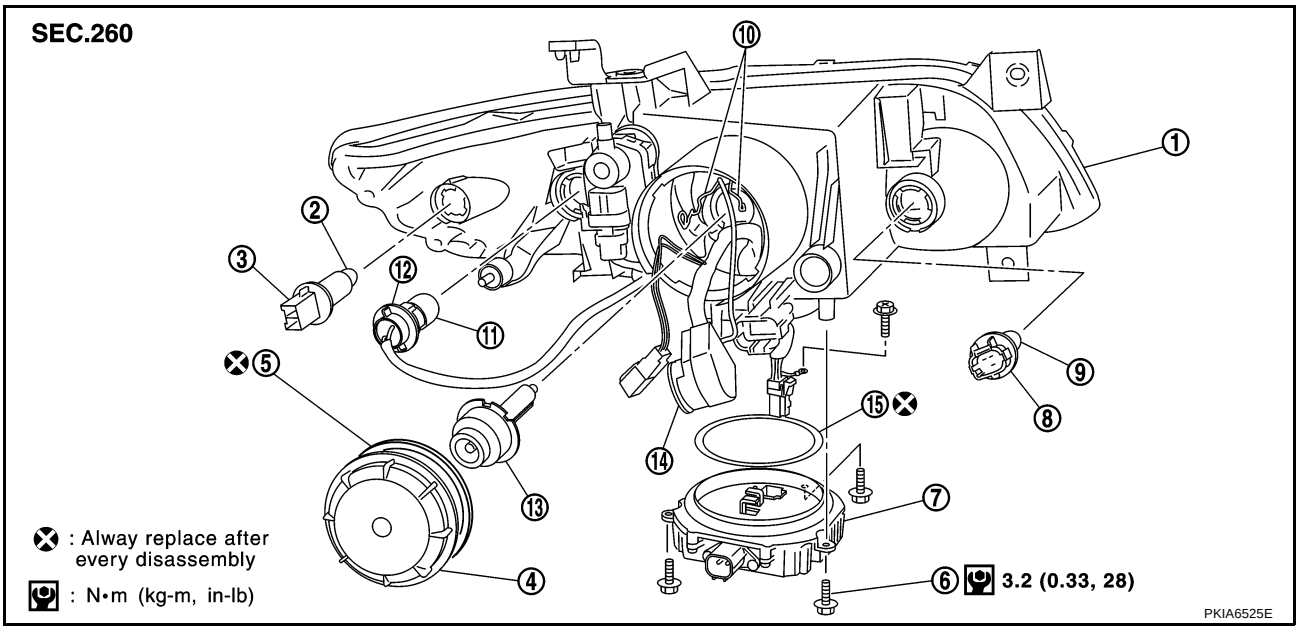
Note the following, and install in the reverse order of removal.

Headlamp mounting bolt : **6.1 N·m (0.62 kg-m, 54 in-lb)**

NOTE:
After installation, perform aiming adjustment. Refer to LT-34, "Aiming Adjustment" .

Disassembly and Assembly

AKS007MY



1.	Headlamp housing assembly	2.	Side marker lamp bulb	3.	Side marker lamp bulb socket
4.	Plastic cap	5.	Seal packing	6.	Screw
7.	HID C/U	8.	Parking lamp (Clearance lamp) bulb socket	9.	Parking lamp (Clearance lamp) bulb
10.	Retaining spring	11.	Front turn signal lamp bulb	12.	Front turn signal lamp bulb socket
13.	Xenon bulb	14.	Xenon bulb socket	15.	Seal packing

DISASSEMBLY

1. Turn plastic cap counterclockwise and unlock it.
2. Turn xenon bulb socket counterclockwise, and unlock it.
3. Unlock retaining spring, and remove xenon bulb.
4. Disconnect HID control unit connector, and remove HID control unit screws.
5. Turn parking lamp bulb socket counterclockwise and unlock it.
6. Remove parking lamp bulb from its socket.
7. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
8. Remove front turn signal lamp bulb from its socket.
9. Turn front side marker lamp bulb socket counterclockwise and unlock it.
10. Remove front side marker lamp bulb from its socket.

ASSEMBLY

Note the following, and assemble in the reverse order of disassembly.

HID control unit mounting screw : **3.2 N·m (0.33 kg-m, 28 in-lb)**

CAUTION:

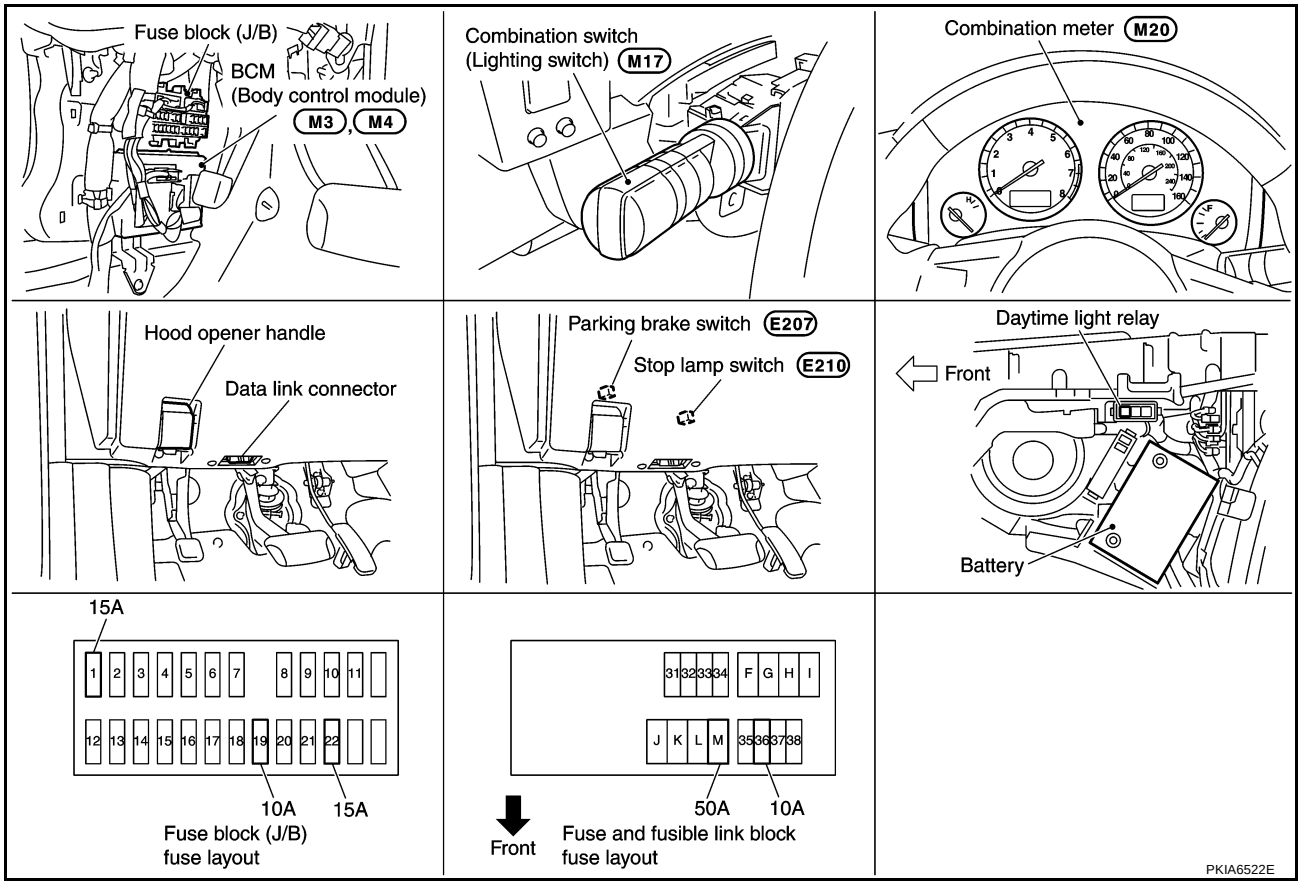
- **When HID control unit is removed, reinstall it securely and avoid any looseness.**
- **After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.**

DAYTIME LIGHT SYSTEM

PFP:284B2

Component Parts and Harness Connector Location

AKS007MZ



System Description

AKS007N0

DAYTIME LIGHT SYSTEM turns on Daytime Light Lamps while driving. Day Light Lamps are not turned on if engine is activated with Parking Brake on. Take off Parking Brake to turn on Daytime Light Lamps. The lamps turn off when Lighting Switch is in the 2ND position or AUTO position (Head Lamp is “ON”) and when Lighting Switch is in the PASSING position. (Daytime Light Lamps are not turned off only by Parking Brake itself.)
An parking brake signal and engine run or stop signal are sent to BCM (body control module) by CAN communication line, and control daytime light system.

OUTLINE

Power is supplied at all times

- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 50A fusible link (letter M, located in fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 10A fuse [No. 36, located in fuse and fusible link block]
- to daytime light relay terminals 2 and 5.

When the ignition switch is in ON or START position, power is supplied

- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 7
- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38.

Ground is supplied

- to combination meter terminals 5, 6 and 15

- through grounds M35, M45 and M85
- to BCM (body control module) terminals 49 and 52
- through grounds M35, M45 and M85.

DAYTIME LIGHT OPERATION

With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, power is supplied

- through daytime light relay terminal 1
- to combination meter terminal 10
- through daytime light relay terminal 3
- to clearance lamp RH and LH terminal 1.

Ground is supplied

- to combination meter terminals 5, 6 and 15
- through grounds M35, M45 and M85
- to clearance lamp RH and LH terminal 3
- through grounds E21, E50 and E51.

With power and grounds supplied, the front fog lamps illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

AUTO LIGHT OPERATION

For auto light operation, refer to LT-54, "System Description" in “AUTO LIGHT SYSTEM”.

CAN Communication System Description

AKS007N1

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

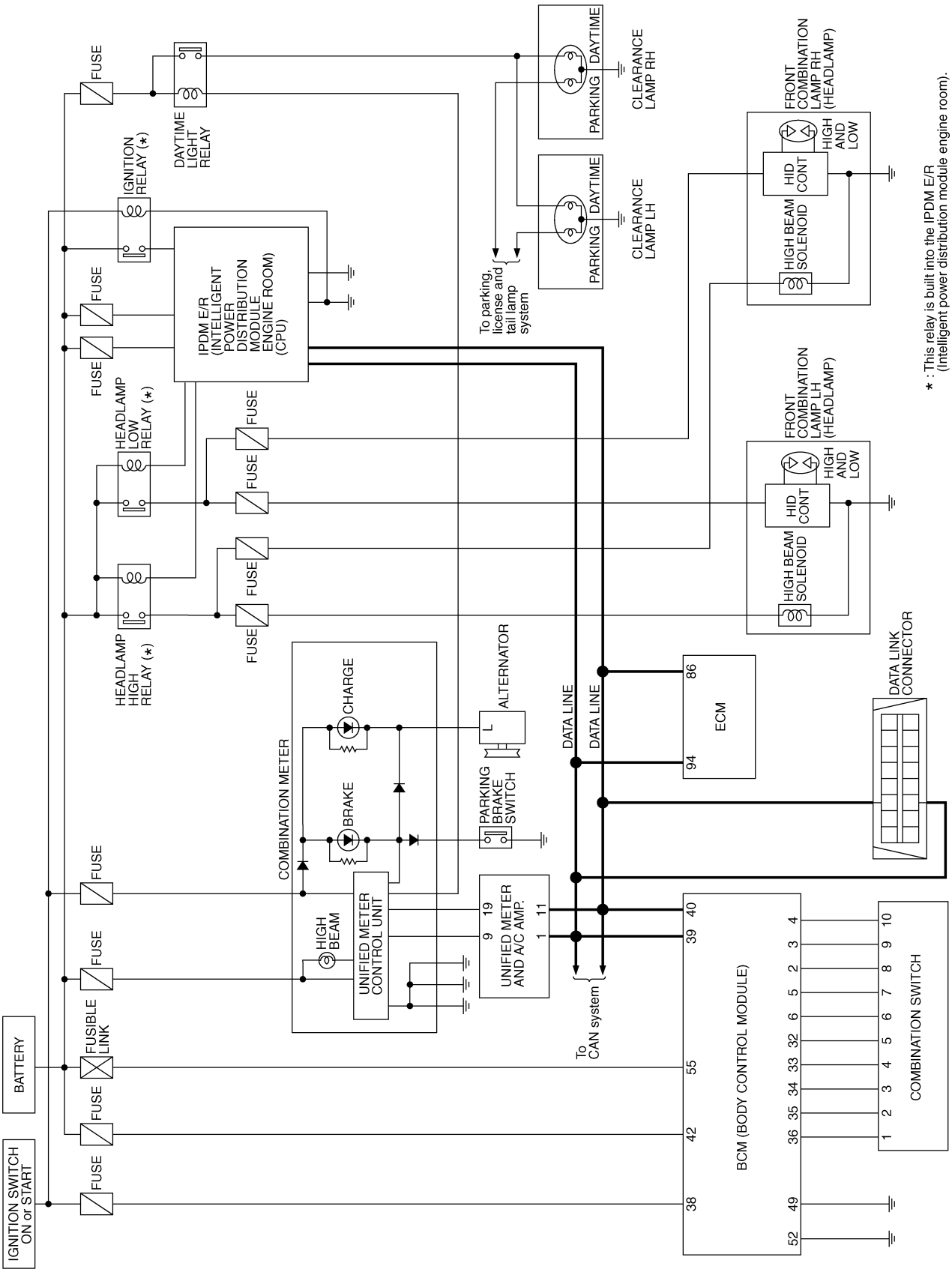
CAN Communication Unit

AKS0080T

Refer to LAN-6, "CAN Communication Unit" .

Schematic

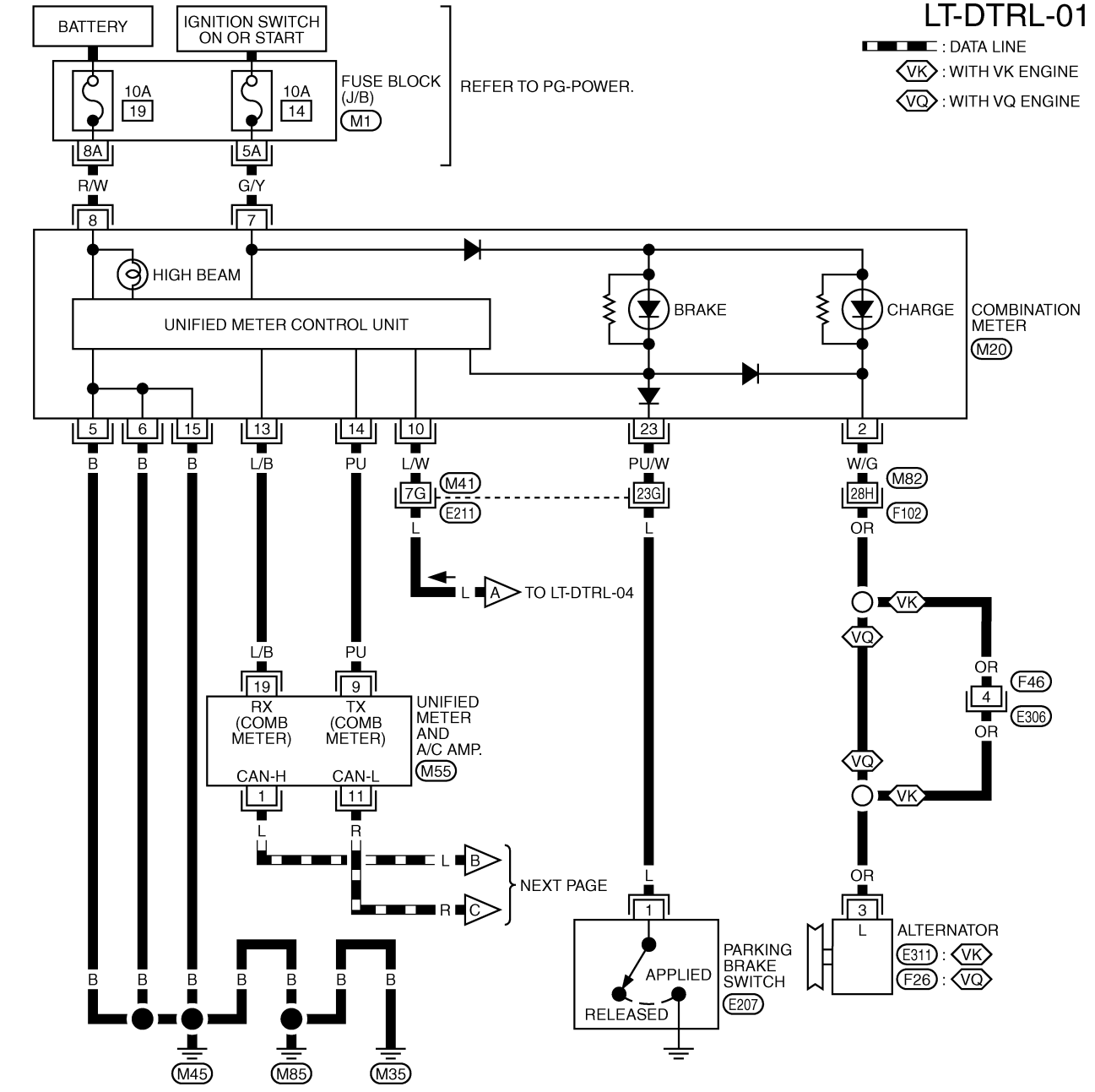
AKS007N3

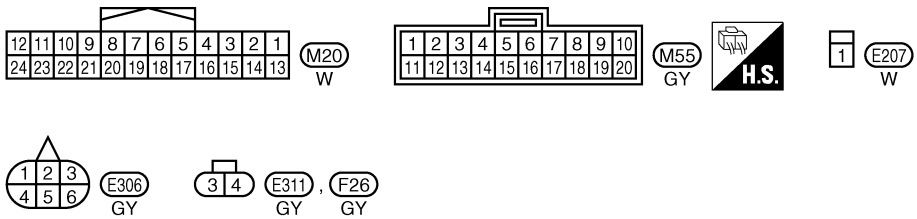


TKWM0606E

Wiring Diagram — DTRL —

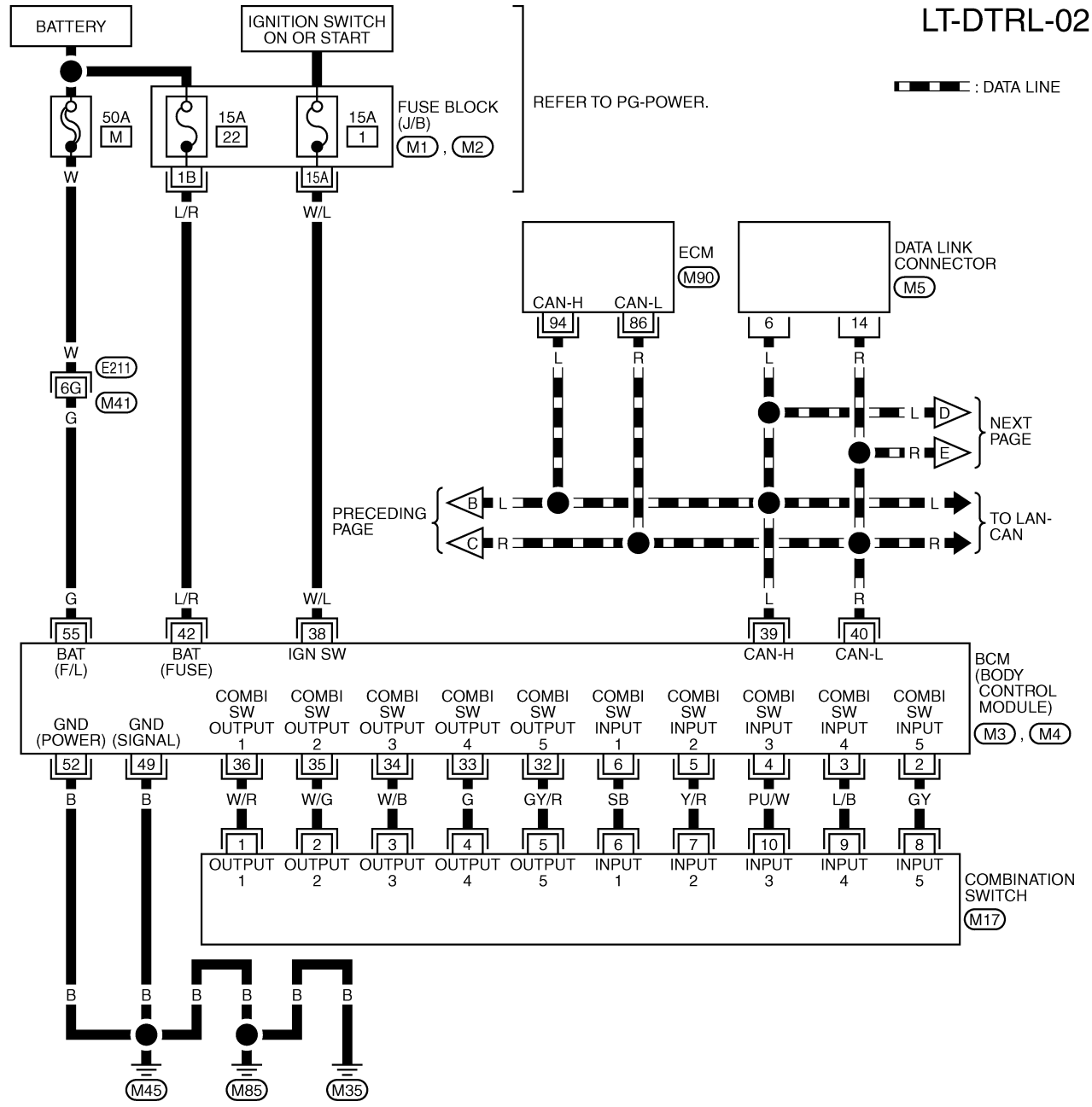
AKS007N4





REFER TO THE FOLLOWING.
E211 , F102 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

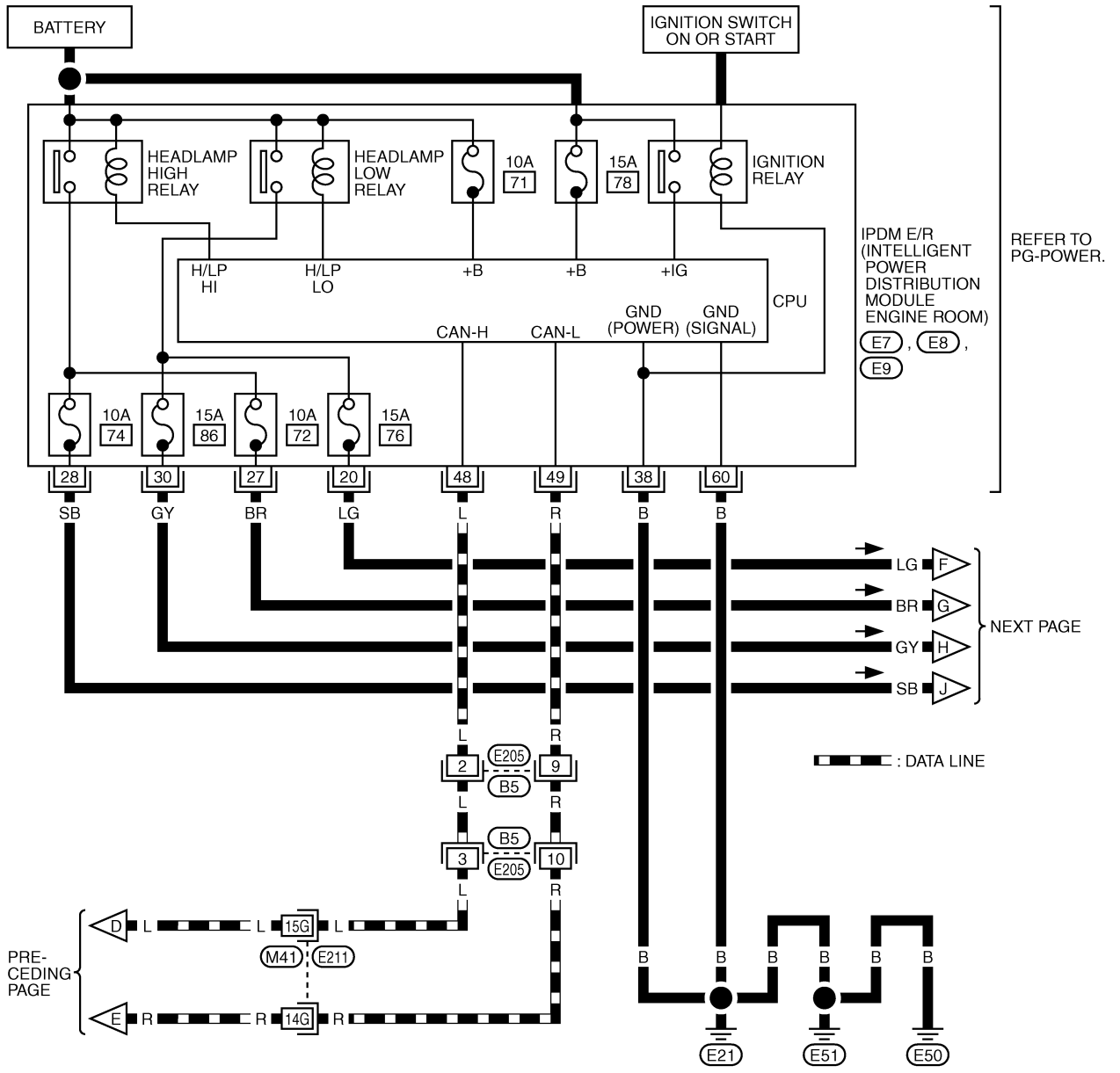
TKWM0607E

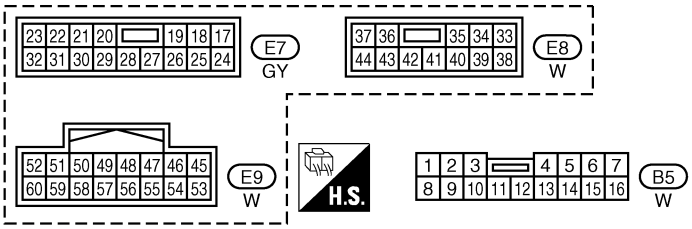


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)
M3, M4, M90 -ELECTRICAL UNITS

TKWM0816E

LT-DTRL-03

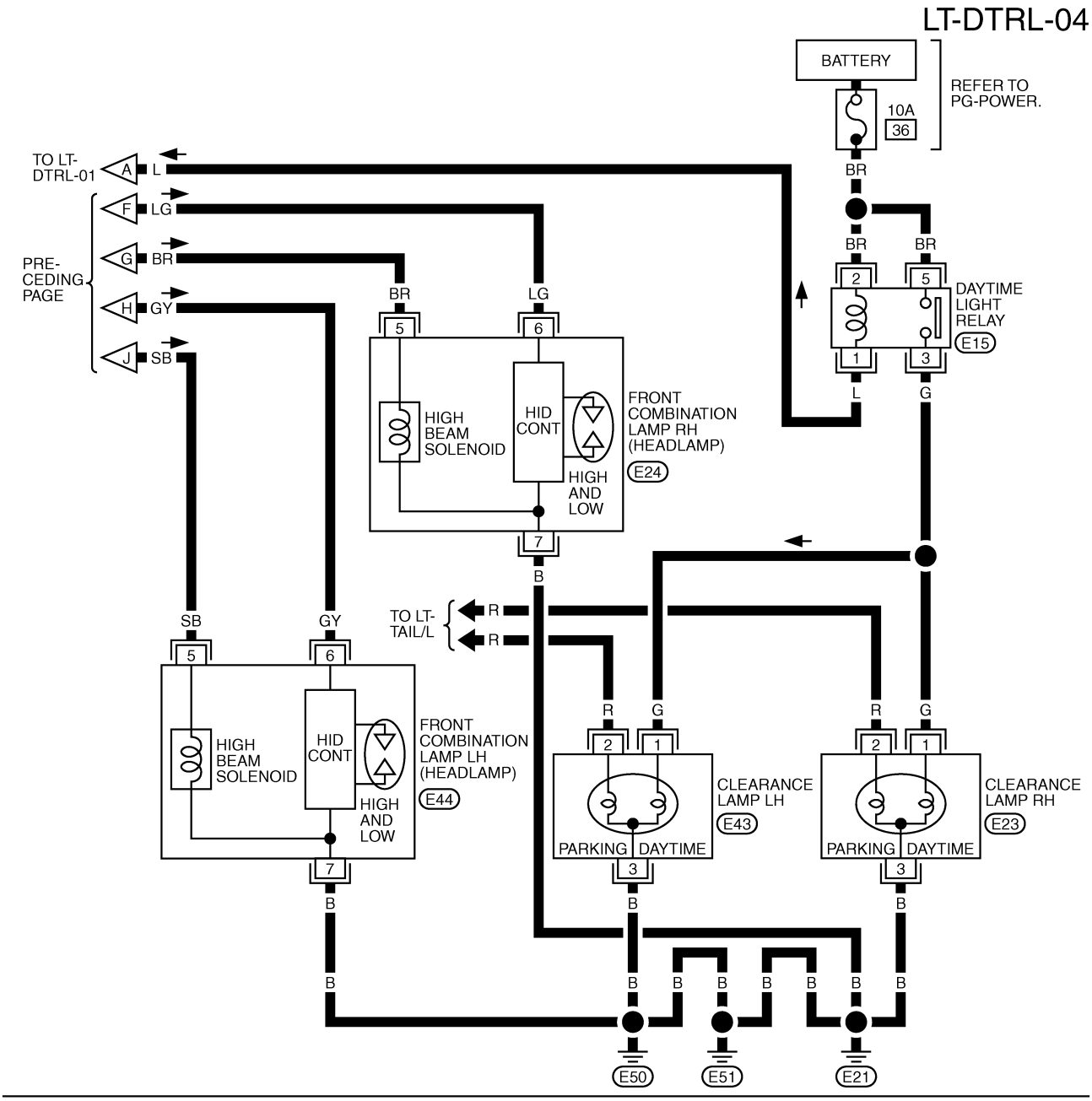




REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

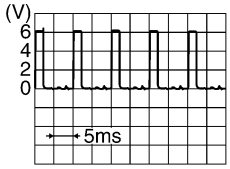
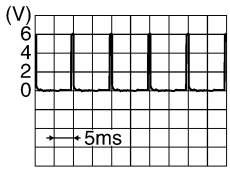
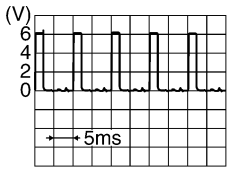
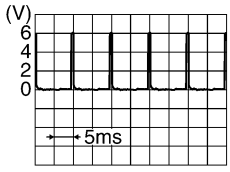
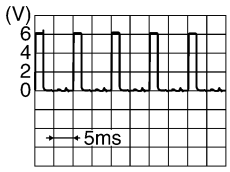
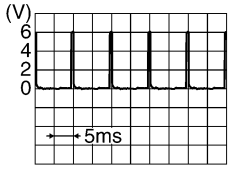
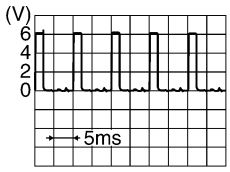
TKWM0609E

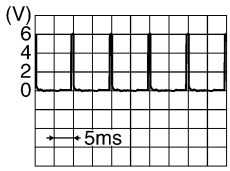

LT-DTRL-04
BATTERY
REFER TO PG-POWER.
10A
36
TO LT-DTRL-01
A L
F LG
G BR
H GY
J SB
PRE-CEDING PAGE
BR
LG
5
6
HIGH BEAM SOLENOID
HID CONT
HIGH AND LOW
FRONT COMBINATION LAMP RH (HEADLAMP)
E24
7
B
BR BR
2 5
1 3
DAYTIME LIGHT RELAY
E15
L G
SB GY
TO LT-TAIL/L
R
R
HIGH BEAM SOLENOID
HID CONT
HIGH AND LOW
FRONT COMBINATION LAMP LH (HEADLAMP)
E44
R G
2 1
PARKING DAYTIME
3
CLEARANCE LAMP LH
E43
CLEARANCE LAMP RH
E23
E50
E51
E21
E15
L
E23 , E43
GY GY
E24 , E44
B B

TKWM0610E

Terminals and Reference Values for BCM

AKS007XM

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	SB	Combination switch input 1			
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	W/R	Combination switch output 1			
38	W/L	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN– H	—	—	—
40	R	CAN– L	—	—	—
42	L/R	Battery power supply	OFF	—	Battery voltage
49	B	Ground	ON	—	Approx. 0V
52	B	Ground	ON	—	Approx. 0V
55	G	Battery power supply	OFF	—	Battery voltage

How to Proceed With Trouble Diagnosis

AKS007N6

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-38, "System Description" .
3. Perform the Preliminary Check. Refer to LT-46, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007N7

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
		22
	Ignition switch ON or START position	1
Daytime light relay	Battery	36

Refer to LT-41, "Wiring Diagram — DTRL —" .

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-3, "POWER SUPPLY ROUTING CIRCUIT" .

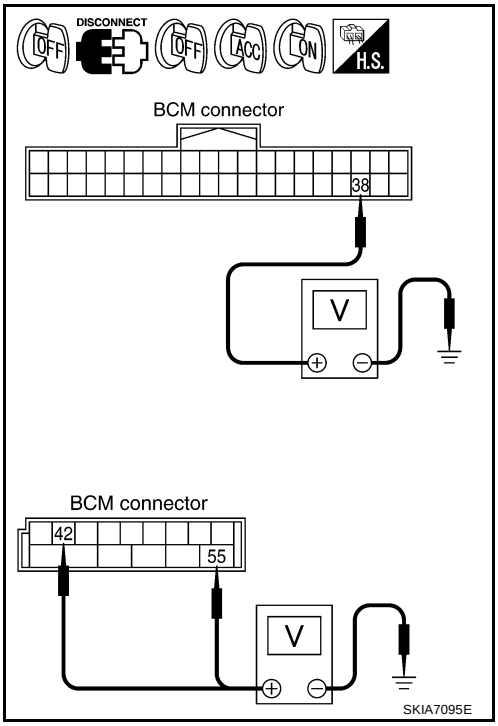
2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position	
(+)		(-)	OFF	ON
Connector	Terminal (Wire color)			
M3	38 (W/L)	Ground	0V	Battery voltage
M4	42 (L/R)		Battery voltage	Battery voltage
	55 (G)		Battery voltage	Battery voltage

OK or NG

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



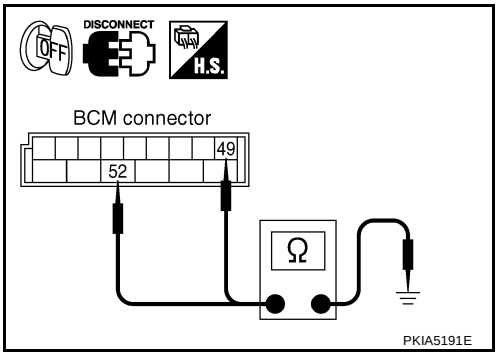
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M4	49 (B)	Ground	Yes
	52 (B)		

OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.



INSPECTION PARKING BRAKE SWITCH CIRCUIT

1. CHECK BRAKE INDICATOR

1. Turn ignition switch ON
2. When parking brake is made ON/OFF, it checks whether the brake indicator lamp of combination meter lights up/puts out the light.

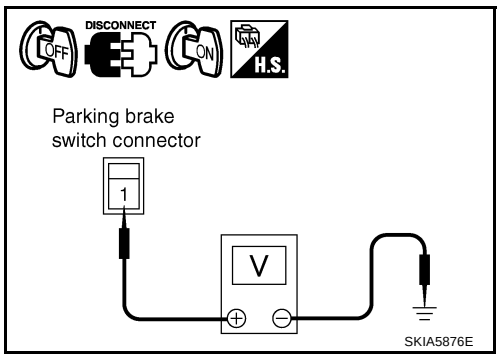
OK or NG

OK >> INSPECTION END
NG >> GO TO 2.

2. CHECK PARKING BRAKE SWITCH SIGNAL

1. Turn ignition switch OFF.
2. Disconnect parking brake switch connector.
3. Turn ignition switch ON.
4. Check voltage between parking brake switch harness connector E207 terminal 1 (L) and ground.

1 (L) – Ground : Battery voltage should exist.



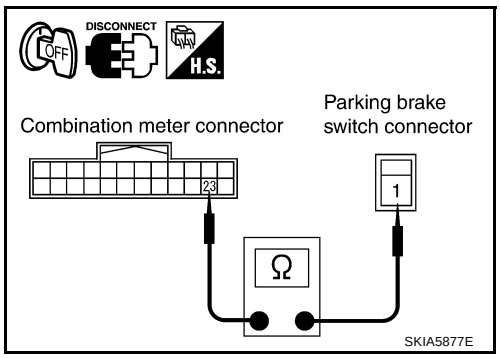
OK or NG

OK >> Replace parking brake switch.
NG >> GO TO 3.

3. CHECK PARKING BRAKE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M20 terminal 23 (PU/W) and parking brake switch harness connector E207 terminal 1 (L).

1 (L) – 23 (PU/W) : Continuity should exist.



OK or NG

OK >> Replace combination meter.
NG >> Repair harness or connector.

CONSULT-II Functions

AKS007N8

- CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. Work support, self-diagnosis, data monitor, and active test display.

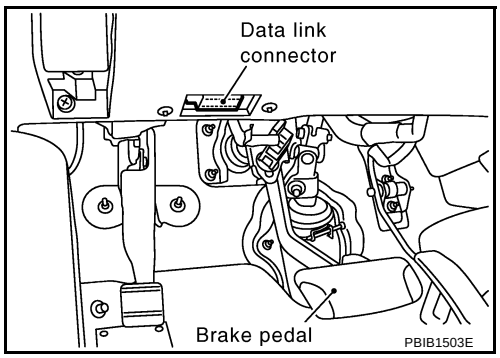
BCM diagnosis part	Check item, diagnosis mode	Description
HEADLAMP	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

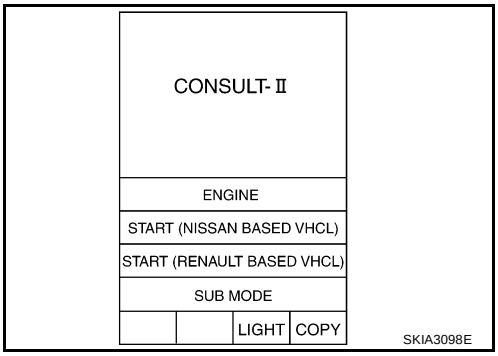
CAUTION:

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.

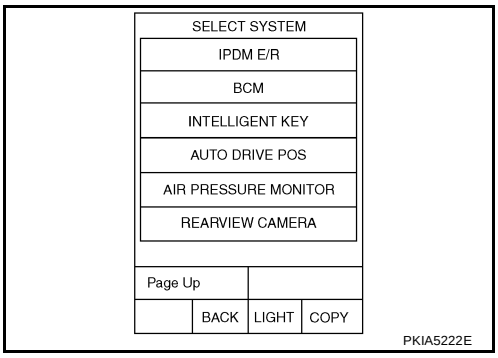
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



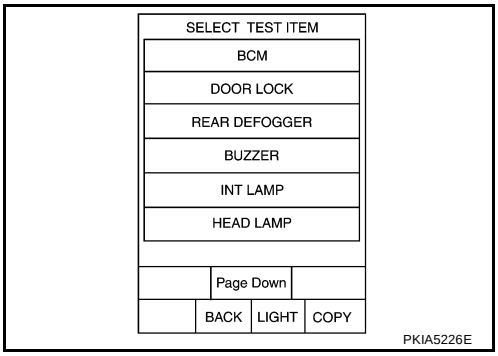
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.



DATA MONITOR

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch “START”.
5. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
6. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
ACC ON SW	“ON/OFF”	Displays “ACC (ON)/OFF, Ignition OFF (OFF)” status judged from ignition switch signal.
HI BEAM SW	“ON/OFF”	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.

Monitor item		Contents
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW[NOTE 1]	“ON/OFF”	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	“ON/OFF”	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	“ON/OFF”	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL	“ON/OFF”	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	“ON/OFF”	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	“ON/OFF”	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN[NOTE 2]	“ON/OFF”	Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW[NOTE 2]	“ON/OFF”	Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
OPTICAL SENSOR[NOTE 1]	[0 - 5V]	Displays “ambient light (close to 5V when light/close to 0V when dark)” judged from optical sensor signal.

NOTE:

1. Vehicles without auto light system display this item, but cannot monitor it.
2. Vehicles without daytime light system display this item, but cannot monitor it.

ACTIVE TEST

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching “BACK” deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON–OFF.
DTRL[NOTE 1]	Allow day time light lamp operate by switching ON–OFF.
CORNERING LAMP[NOTE 2]	—

NOTE:

1. Vehicles without daytime light lamp system display this item, but cannot monitor it.
2. This item is displayed, but cannot monitor it.

Daytime Light Control Does Not Operate Properly

AKS007N9

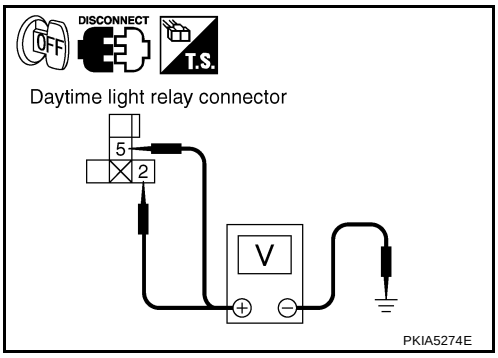
1. CHECK DAYTIME LIGHT RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Remove daytime light relay.
3. Check voltage between daytime light relay harness connector E15 terminal 2 (BR) and ground.

   2 (BR) – Ground : Battery voltage should exist.

4. Check voltage between daytime light relay harness connector E15 terminal 5 (BR) and ground.

   5 (BR) – Ground : Battery voltage should exist.



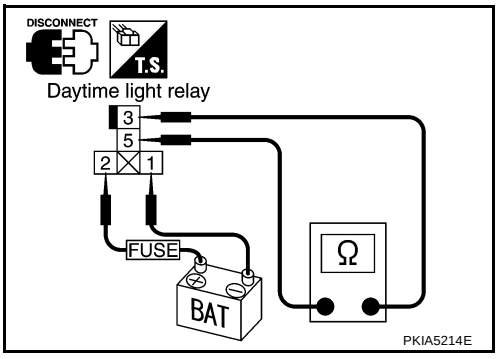
OK or NG

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

2. CHECK DAYTIME LIGHT RELAY

Apply battery voltage to between daytime light relay terminal 1 and 2, and check continuity between terminal 3 and 5.

3 – 5 : Continuity should exist.



OK or NG

OK >> GO TO 3.
NG >> Replace daytime light relay.

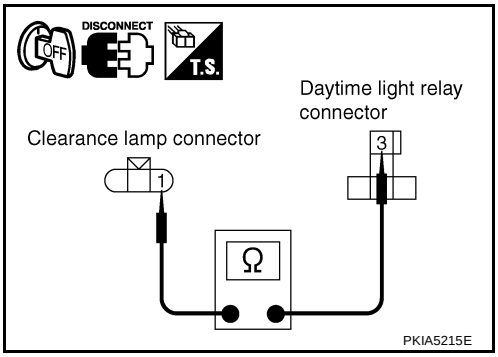
3. CHECK DAYTIME LIGHT RELAY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect clearance lamp RH and LH connector.
3. Check continuity between daytime light relay connector E15 terminal 3 (G) and clearance lamp RH harness connector E23 terminal 1 (G).

   3 (G) – 1 (G) : Continuity should exist.

4. Check continuity between daytime light relay connector E15 terminal 3 (G) and clearance lamp LH harness connector E43 terminal 1 (G).

   3 (G) – 1 (G) : Continuity should exist.



OK or NG

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

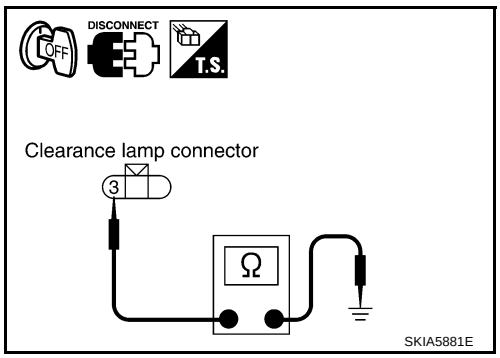
4. CHECK GROUND

1. Check continuity between clearance lamp RH harness connector E23 terminal 3 (B) and ground.

   3 (B) – Ground : Continuity should exist.

2. Check continuity between clearance lamp LH harness connector E43 terminal 3 (B) and ground.

   3 (B) – Ground : Continuity should exist.



OK or NG

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

5. CHECK BULB

Check bulbs of lamp which does not illuminate.

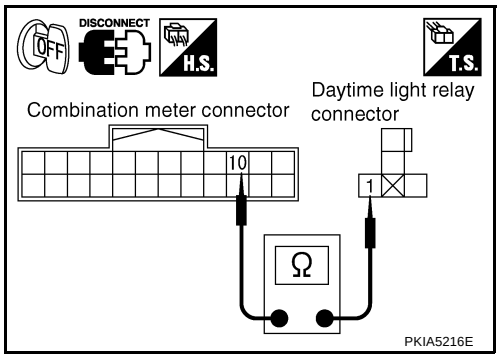
OK or NG

OK >> GO TO 6.
NG >> Replace bulb.

6. CHECK DAYTIME RELAY CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between daytime lamp relay harness connector E15 terminal 1 (L) and combination meter harness connector M20 terminal 10 (L/W).

   1 (L) – 10 (L/W) : Continuity should exist.



OK or NG

OK >> GO TO 7.
NG >> Repair harness or connector.

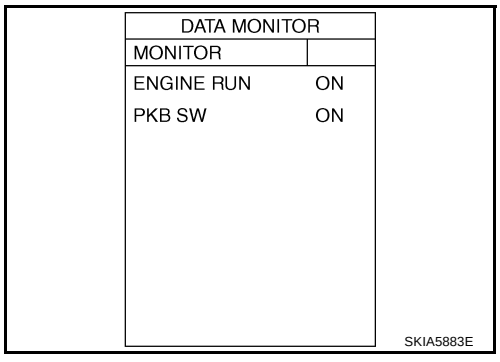
7. CHECK INPUT SIGNAL

1. Connect combination meter connector.
2. Start engine running.
3. Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “ENGINE RUN” turns ON-OFF linked with operation of engine running or stop.

   Engine running : ENGINE RUN ON
   Engine stop : ENGINE RUN OFF

4. Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “PKB SW” turns ON-OFF linked with operation of parking brake switch.

   Parking brake ON : PKR SW ON
   Parking brake OFF : PKR SW OFF



OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> GO TO 8.

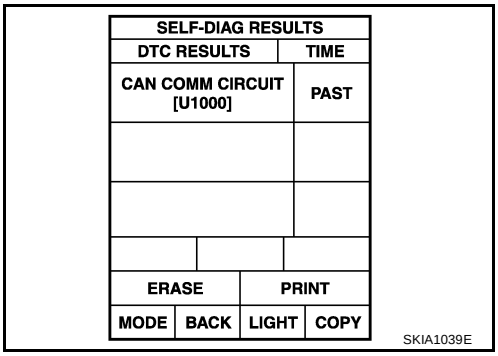
8. CHECKING CAN COMMUNICATIONS

Select “BCM” by CONSULT-II, and perform self-diagnosis for “BCM”.

Displayed self-diagnosis results

NO DTC>> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

CAN COMM CIRCUIT>> Check BCM CAN communication system. Refer to BCS-14, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



Aiming Adjustment

AKS007NA

Refer to LT-34, "Aiming Adjustment" in “HEAD LAMP -XENON TYPE-”.

Bulb Replacement

AKS007NB

Refer to LT-35, "Bulb Replacement" in “HEAD LAMP -XENON TYPE-”.

Removal and Installation

AKS007NC

Refer to LT-36, "Removal and Installation" in “HEAD LAMP -XENON TYPE-”.

Disassembly and Assembly

AKS007ND

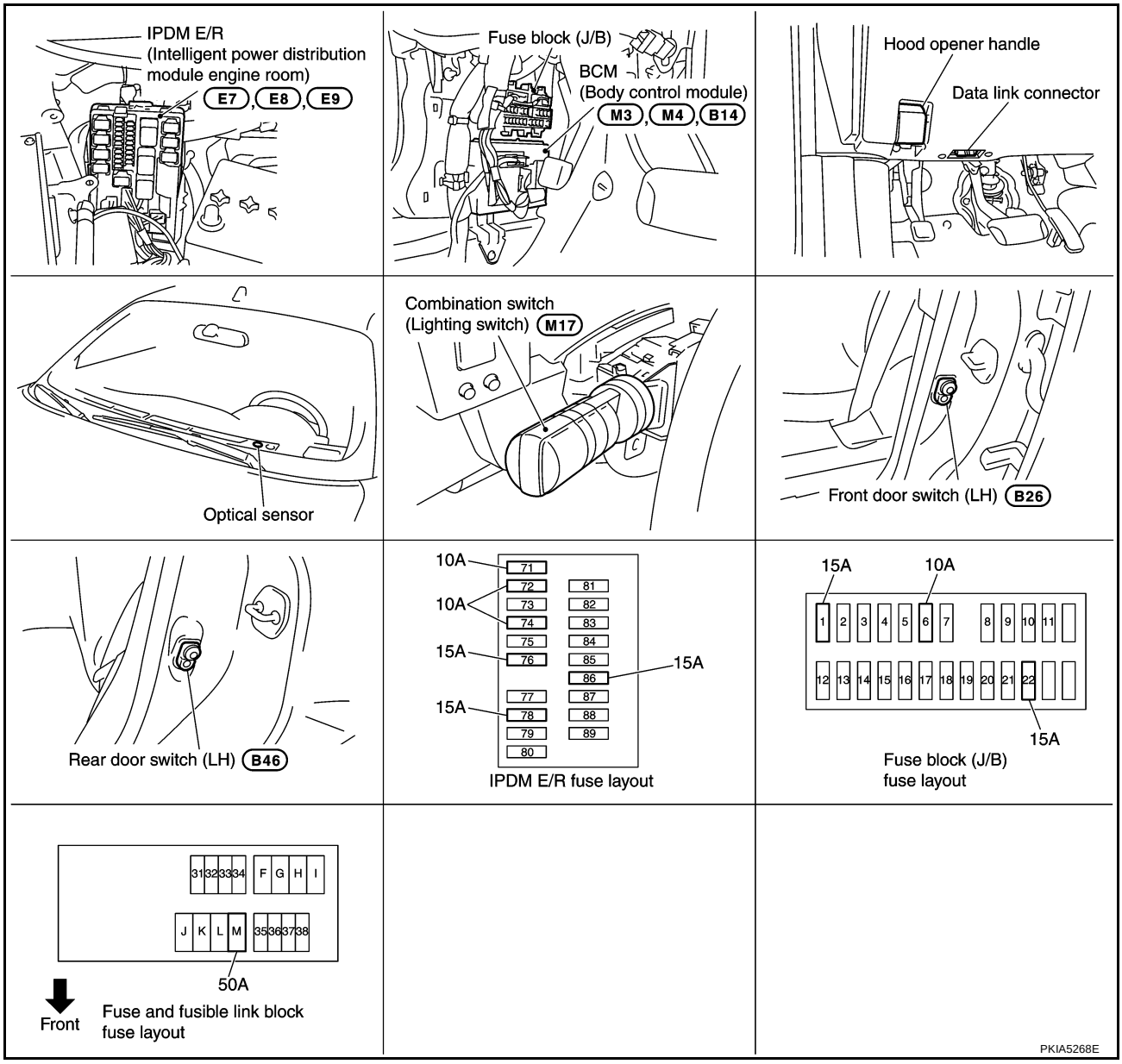
Refer to LT-37, "Disassembly and Assembly" in “HEAD LAMP -XENON TYPE-”.

AUTO LIGHT SYSTEM

PFP:28491

Component Parts and Harness Connector Location

AKS007ER



System Description

AKS007ES

Automatically turns on/off the parking lamps and the headlamps in accordance with ambient light.
Timing for when the lamps turn on/off can be selected using four modes.

OUTLINE

The auto light control system has an optical sensor inside it that detects outside brightness.
When the lighting switch is in “AUTO” position, it automatically turns on/off the parking lamps and the headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, refer to LT-62, "SETTING CHANGE FUNCTIONS" .
Optical sensor, power is supplied

- from BCM (body control module) terminal 17
- to optical sensor terminal 1.

Optical sensor, ground is supplied

- from BCM (body control module) terminal 18
- to optical sensor terminal 3.

When ignition switch is turn to “ON” position, and

When outside brightness is darker than prescribed level, input is supplied

- to BCM (body control module) terminal 14
- from optical sensor terminal 2.

The headlamps will then illuminate. For a description of headlamp operation, refer to LT-54, "System Description" .

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the AUTO position, and the ignition switch is turned from ON or ACC to OFF, and one of the front door is opened, the battery saver control feature is activated.
Under this condition, the headlamp remain illuminated for 5mimutes, then the headlamp are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

DELAY TIMER FUNCTION

When ignition switch ON and ACC are OFF while auto light switch is ON, BCM turn on/off headlamp. In delay timer function, auto timer sensor power source is OFF and BCM is not turned on/off by auto sensor signal.

- When the states ignition switch ON or ACC is ON and output judgment by auto light function is headlamp ON turn to ignition switch ON or ACC are OFF and front door switch (driver side), front door switch (passenger side) is ON, output judgment by auto light function should be headlamp ON for 5 minutes by tamer. After time out, output judgment by auto light function should be headlamp OFF.
- When the state is front door switch (driver side), front door switch (passenger side), rear door switch LH, rear door switch RH or back door switch is turner to ON from OFF 45 seconds or 5 minutes while timer is counting, timer stops, and re–start counting for 5 minutes, then auto light function judges output as headlamp ON. After time out, auto light function judges output as headlamp OFF.
- When the states front door witch (driver side), front door switch (passenger side), rear door switch LH, rear door switch RH or back door switch is ON turns to front door witch (driver side), front door switch (passenger side), rear door switch LH, rear door switch RH or back door switch are OFF 45seconds or 5minute while is counting, Timer stops, and re–start counting for 45 seconds, then auto light function judges output as head lamp ON. After timer out, auto light function judges output as head lamp OFF.
- When the state is ignition switch ON or ACC is ON or auto light switch OFF while timer is counting, timer stops counting and BCM turns on/off lamps according to headlamp function, front fog lamp function, auto light function and headlamp battery save function.

Delay timer control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

AKS007ET

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

AKS0080U

Refer to LAN-6, "CAN Communication Unit" .

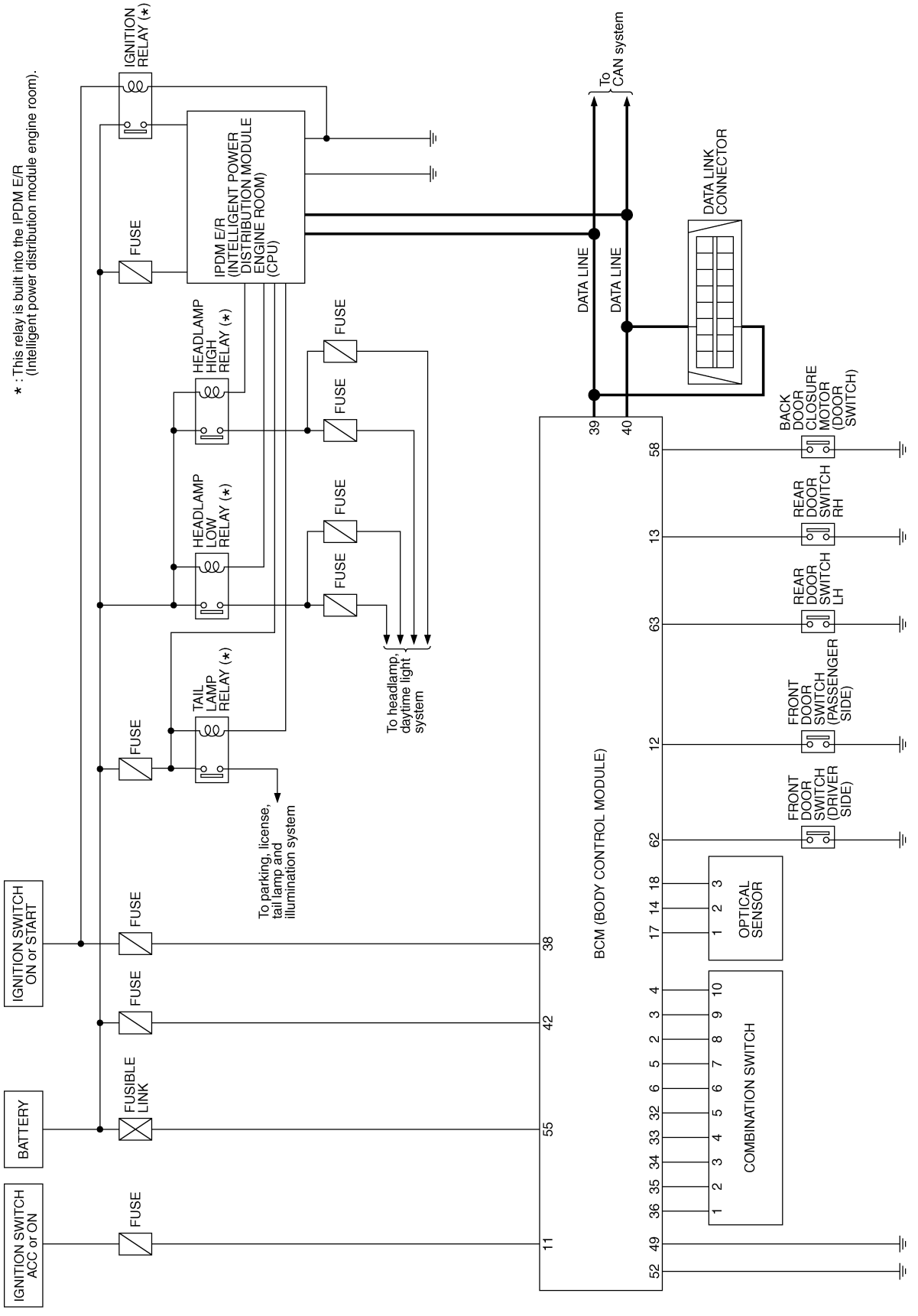
Major Components and Functions

AKS007EV

Components	Functions
BCM	● Turns on/off circuits of tail light and headlamp according to signals from light sensor, lighting switch (AUTO), driver door switch, passenger door switch, rear door switch, and ignition switch (ON, OFF).
Optical sensor	● Converts ambient light (lux) to voltage, and sends it to BCM. (Detects lightness of 50 to 1,300 lux)

Schematic

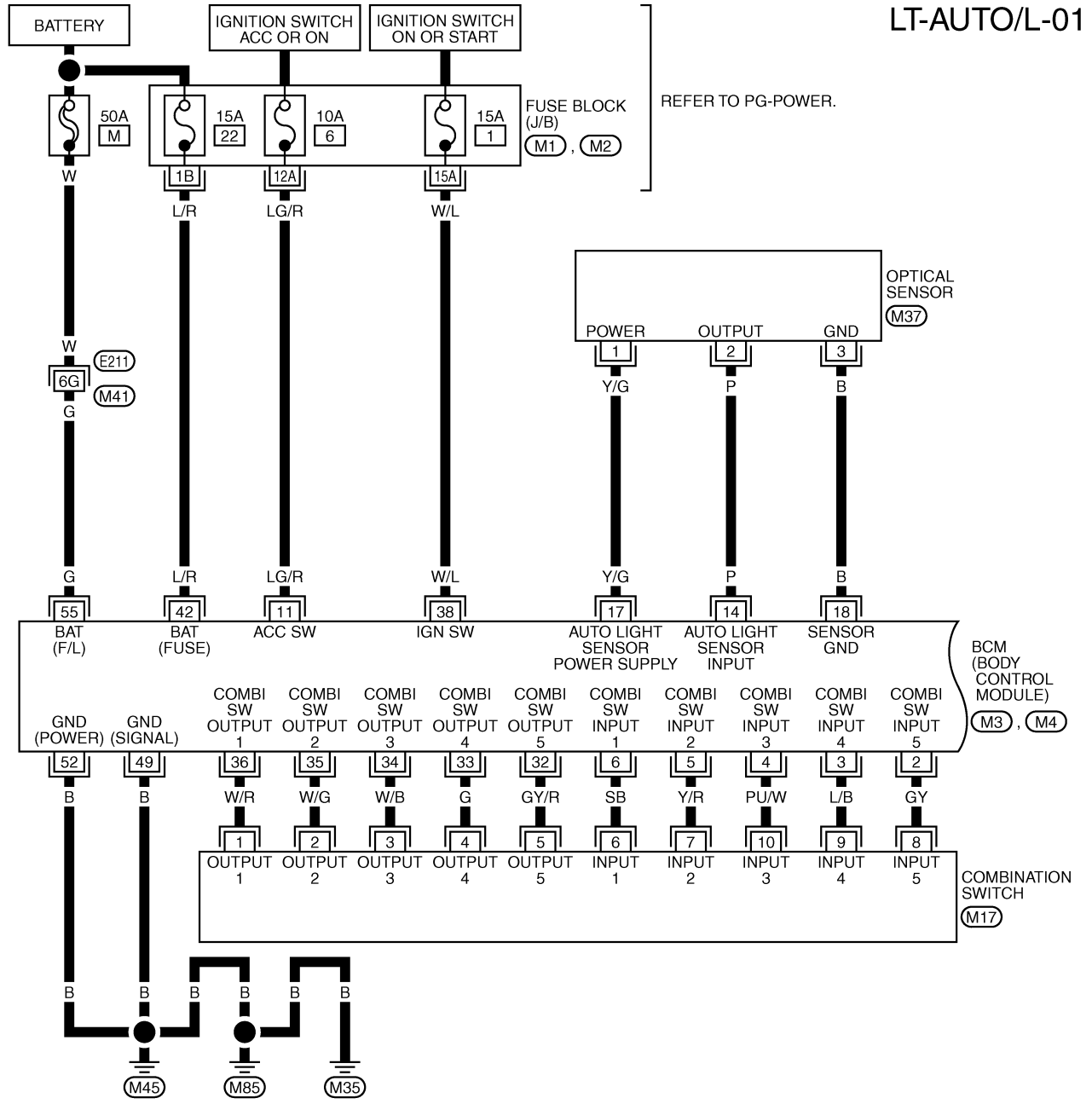
AKS007EW

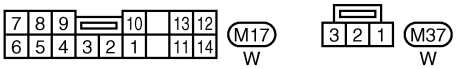


TKWM0611E

Wiring Diagram — AUTO/L —

AKS007EX





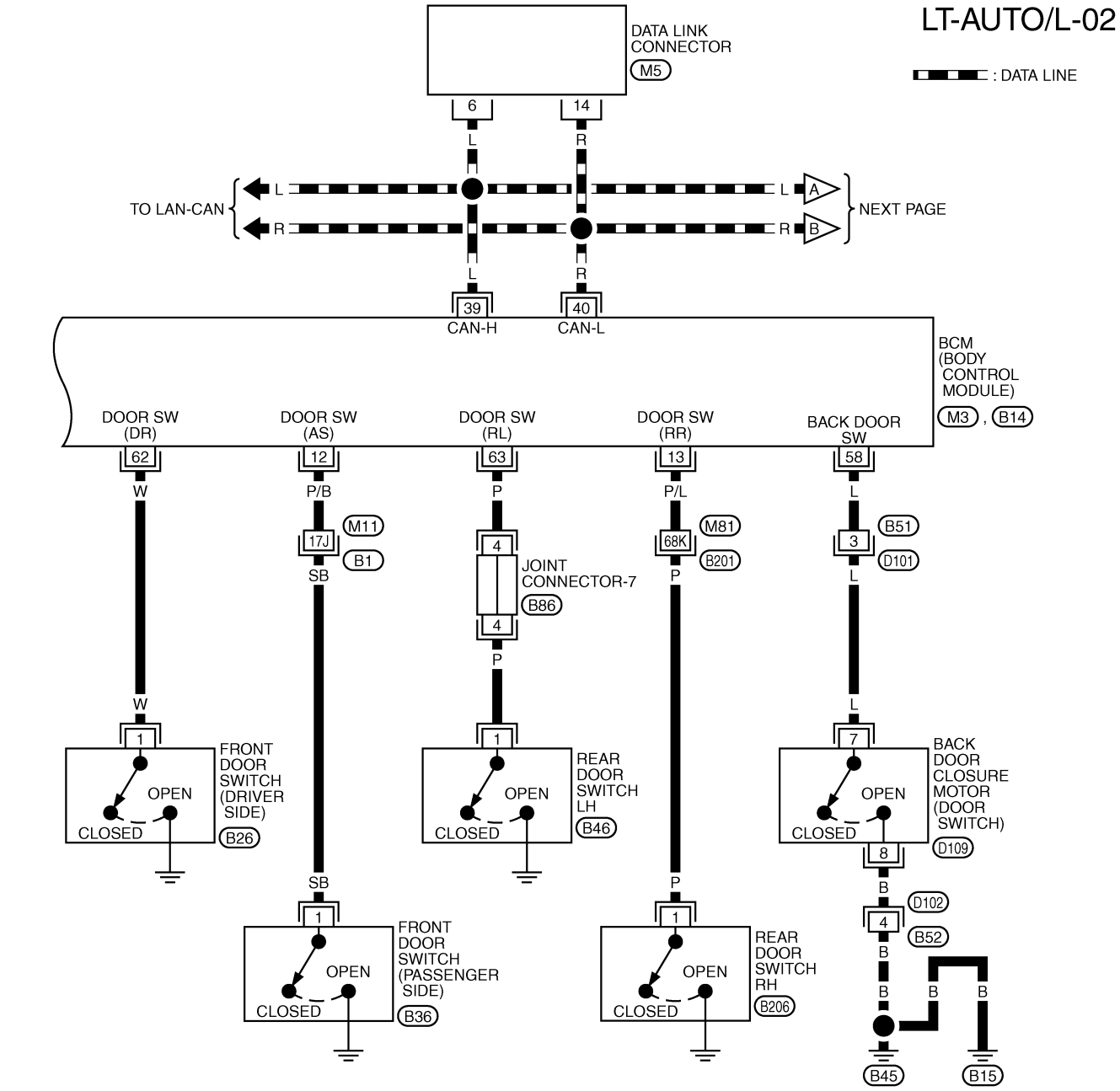
REFER TO THE FOLLOWING.

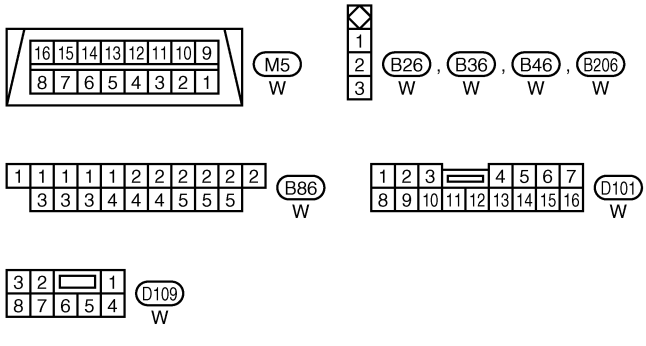
E211 -SUPER MULTIPLE JUNCTION (SMJ)

M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM0817E





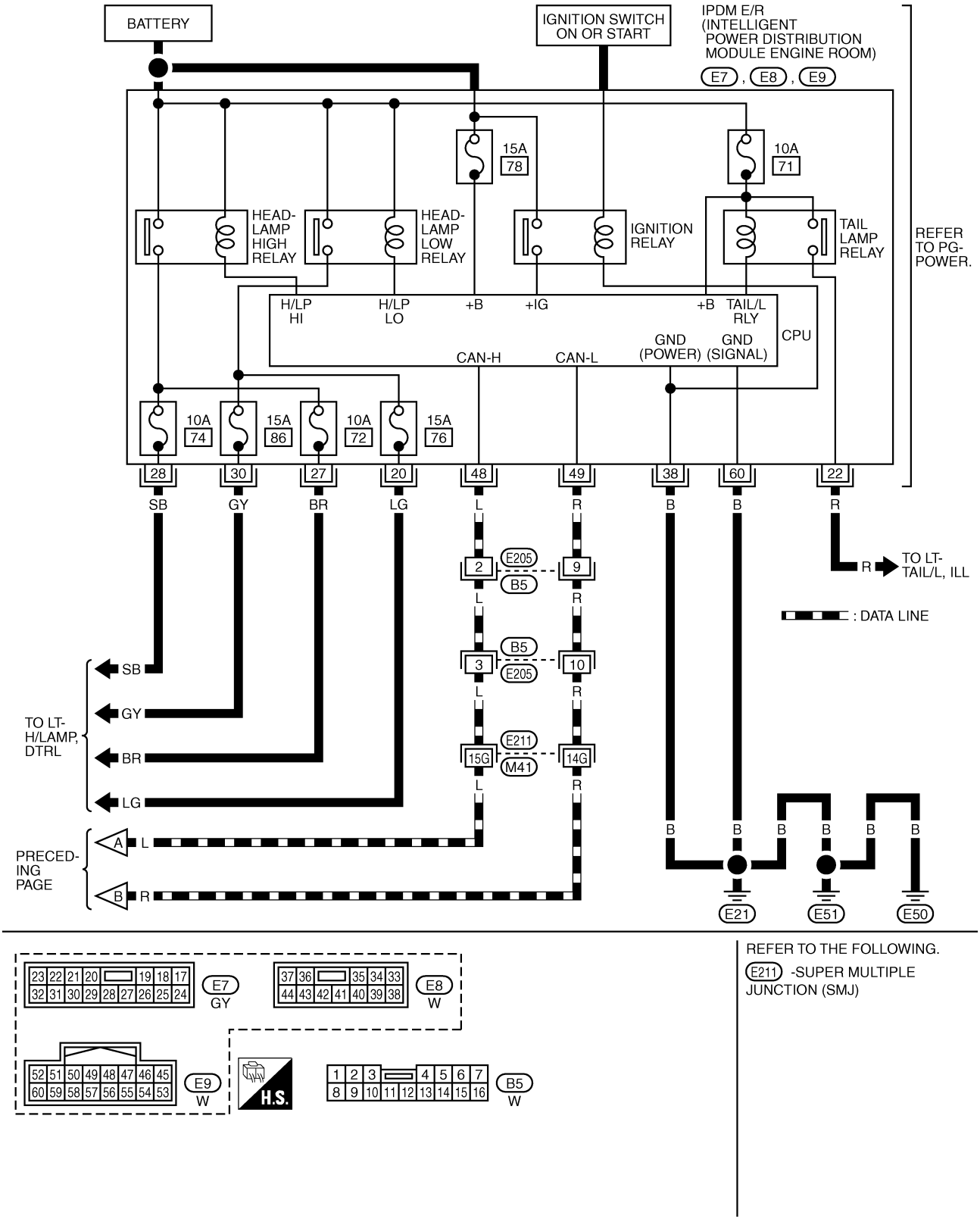
REFER TO THE FOLLOWING.

B1 , B201 -SUPER MULTIPLE JUNCTION (SMJ)

M3 , B14 -ELECTRICAL UNITS

TKWH0224E

LT-AUTO/L-03



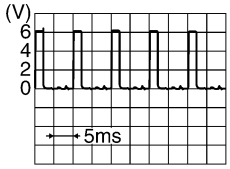
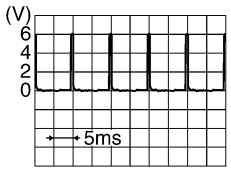
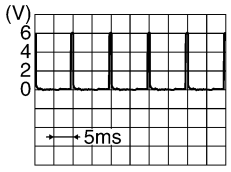
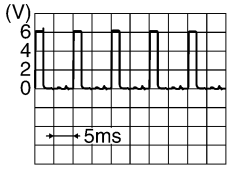
REFER TO THE FOLLOWING.

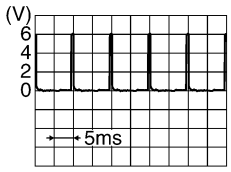
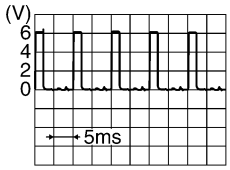
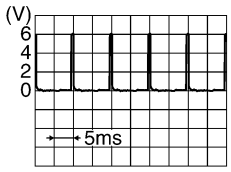
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0614E

Terminals and Reference Values for BCM

AKS007XO

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
6	SB	Combination switch input 1				
11	LG/R	Ignition switch (ACC)	ACC	—		Battery voltage
12	P/B	Front door switch (Passenger side) signal	OFF	Front door switch (Passenger side)	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
13	P/L	Rear door switch RH signal	OFF	Rear door switch RH	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
14	P	Optical sensor signal	ON	When optical sensor is illuminated		3.1 V or more[Note]
				When optical sensor is not illuminated		0.6 V or less
17	Y/G	Optical sensor power supply	ON	—		Approx. 5V
18	B	Sensor ground	ON	—		Approx. 0V
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
36	W/R	Combination switch output 1				
38	W/L	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN– H	—	—		—
40	R	CAN– L	—	—		—
42	L/R	Battery power supply	OFF	—		Battery voltage
49	B	Ground	ON	—		Approx. 0V
52	B	Ground	ON	—		Approx. 0V
55	G	Battery power supply	OFF	—		Battery voltage
58	L	Back door closure motor (Door switch)	OFF	Back door switch	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
62	W	Front door switch (Driver side) signal	OFF	Front door switch (Driver side)	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage
63	P	Rear door switch LH signal	OFF	Rear door switch LH	ON (open)	Approx. 0V
					OFF (closed)	Battery voltage

NOTE:
Optical sensor must be securely subjected to work lamp light. If the optical sensor is insufficiently illuminated, the measured value may not satisfy standard.

Terminals and Reference Values for IPDM E/R

AKS007I4

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
20	LG	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
22	R	Parking, license, and tail lamp	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
27	BR	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
28	SB	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0V
					ON	Battery voltage
30	GY	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0V
					ON	Battery voltage
38	B	Ground	ON	—		Approx. 0V
48	L	CAN– H	—	—		—
49	R	CAN– L	—	—		—
60	B	Ground	ON	—		Approx. 0V

How to Proceed With Trouble Diagnosis

AKS007F0

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-54, "System Description" .
3. Perform the Preliminary Check. Refer to LT-62, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction. Refer to LT-68, "Trouble Diagnosis Chart by Symptom" .
5. Does the auto light system operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007F1

SETTING CHANGE FUNCTIONS

- Sensitivity of auto light system can be adjusted using CONSULT-II. Refer to LT-64, "WORK SUPPORT" .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
		22
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	71
		72
		74
		76
		78
		86

Refer to LT-57, "Wiring Diagram — AUTO/L —" .

OK or NG

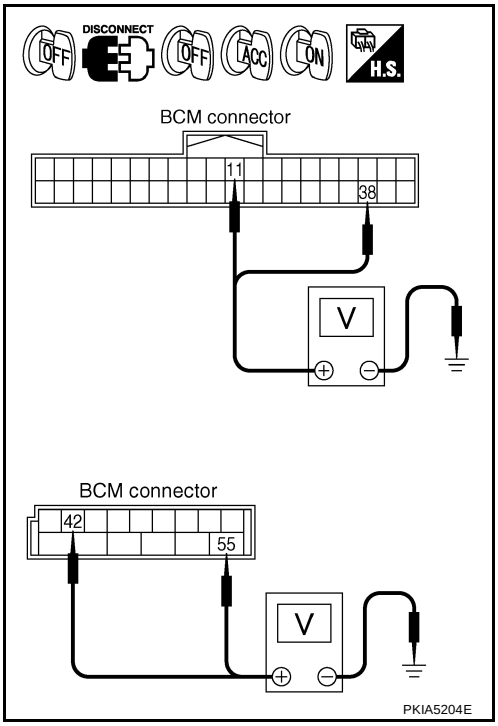
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(-)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M3	11 (LG/R)	Ground	0V	Battery voltage	Battery voltage
	38 (W/L)		0V	0V	Battery voltage
M4	42 (L/R)		Battery voltage	Battery voltage	Battery voltage
	55 (G)		Battery voltage	Battery voltage	Battery voltage



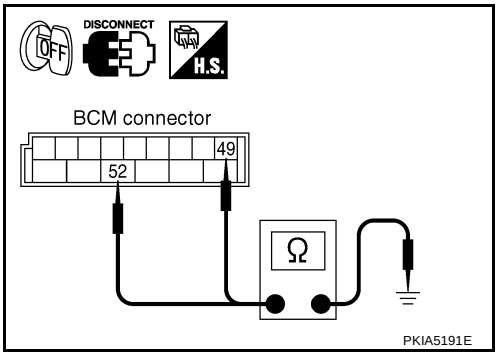
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M4	49 (B)	Ground	Yes
	52 (B)		



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions (BCM)

AKS007I5

- CONSULT-II executes the following functions by combining data reception and command transmission via the communication line from BCM. Work support, self-diagnosis, data monitor, and active test display.

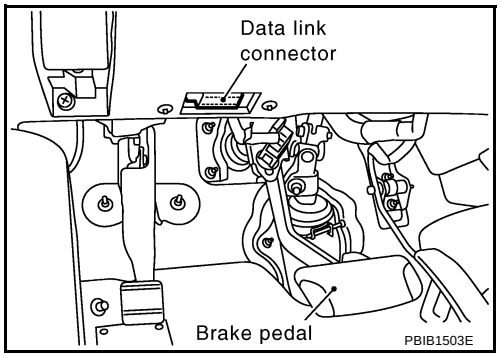
BCM diagnosis part	Check item, diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.

CONSULT-II BASIC OPERATION

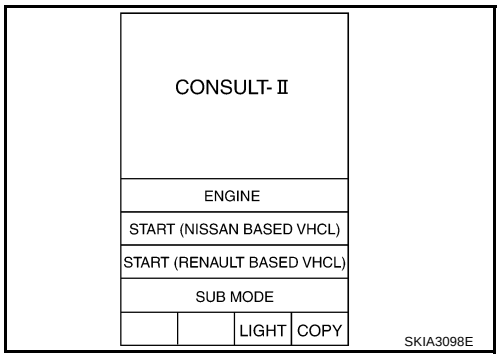
CAUTION:

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.

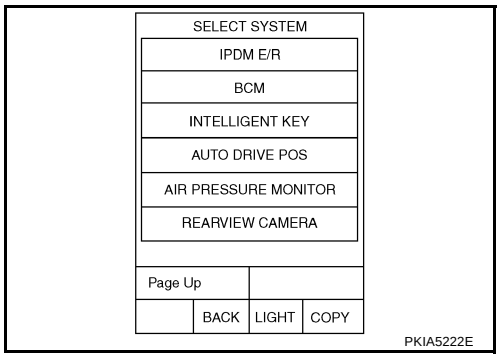
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



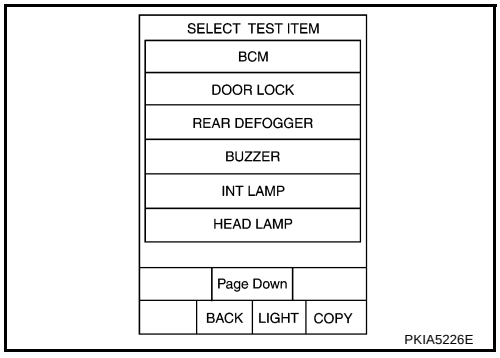
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.



WORK SUPPORT

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
3. Touch “CUSTOM A/LIGHT SETTING” or “ILL DELAY SET” on “SELECT WORK ITEM” screen.
4. Touch “START”.

5. Touch “NORMAL” or “MODE 2 - 4” of setting to be changed (CUSTOM A/LIGHT SETTING), Touch “MODE1–8” of setting to be changed (ILL DELAY SET).
6. Touch “SETTING CHANGE”.
7. The setting will be changed and “CUSTOMIZING COMPLETED” will be displayed.
8. Touch “END”.

Work Support Setting Item

- Sensitivity of auto light can be selected and set from four modes.

Work item	Description
CUSTOM A/LIGHT SETTING	Auto light sensitivity can be changed in this mode. Sensitivity can be adjusted in four modes. ● MODE 1 (Normal)/ MODE 2 (sensitive)/MODE 3 (Desensitized)/MODE4 (Insensitive)
ILL DELAY SET	Auto light delay off timer period can be changed in this mode. Selects auto light delay off timer period among eight modes. ● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (30 sec.)/MODE 4 (60 sec.)/MODE 5 (90 sec.)/MODE 6 (120 sec.)/MODE 7 (150 sec.)/MODE 8 (180 sec.)

DATA MONITOR

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch “START”.
5. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
6. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
ACC ON SW	“ON/OFF”	Displays “ACC (ON)/OFF, Ignition OFF (OFF)” status judged from ignition switch signal.
HI BEAM SW	“ON/OFF”	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
TAIL LAMP SW	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW[NOTE 1]	“ON/OFF”	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	“ON/OFF”	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)

Monitor item		Contents
DOOR SW - RR	“ON/OFF”	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL	“ON/OFF”	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	“ON/OFF”	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	“ON/OFF”	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN[NOTE 2]	“ON/OFF”	Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW[NOTE 2]	“ON/OFF”	Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
OPTICAL SENSOR[NOTE 1]	[0 - 5V]	Displays “ambient light (close to 5V when light/close to 0V when dark)” judged from optical sensor signal.

NOTE:

1. Vehicles without auto light system display this item, but cannot monitor it.
2. Vehicles without daytime light system display this item, but cannot monitor it.

ACTIVE TEST

Operation Procedure

1. Touch “HEAD LAMP” on “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching “BACK” deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON–OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON–OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON–OFF.
DTRL[NOTE 1]	Allow day time light lamp operate by switching ON–OFF.
CORNERING LAMP[NOTE 2]	—

NOTE:

1. Vehicles without daytime light lamp system display this item, but cannot monitor it.
2. This item is displayed, but cannot monitor it.

CONSULT-II Functions (IPDM E/R)

AKS007I6

CONSULT-II can display each diagnostic item using the following diagnostic test modes: work support, self-diagnostic results, data monitor and active test through data reception and command transmission via the IPDM E/R CAN communication line.

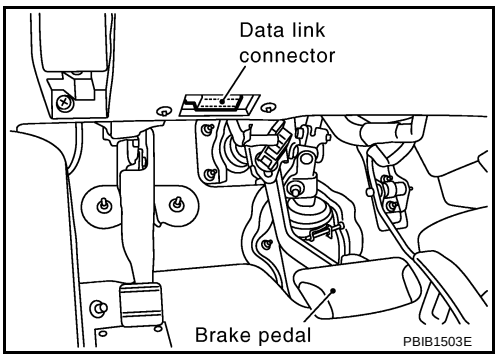
Inspection Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	The IPDM E/R performs self-diagnosis of CAN communication.
DATA MONITOR	The input/output data of the IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	The IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II OPERATION

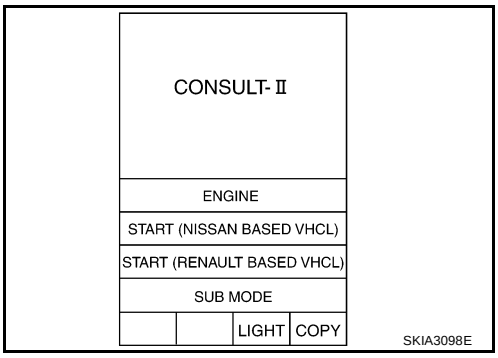
CAUTION:

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.

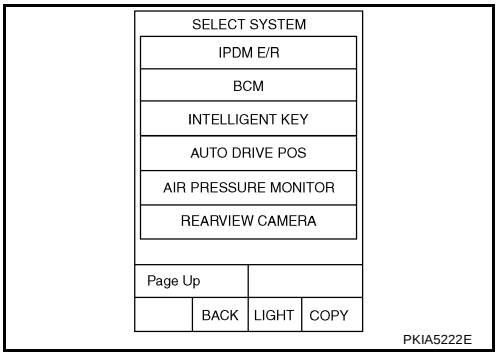
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



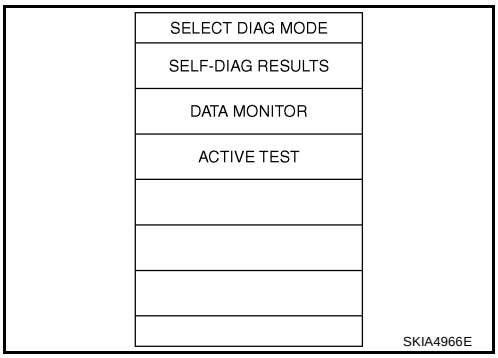
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IPDM E/R” on “SELECT SYSTEM” screen.
If “IPDM E/R” is not displayed, print “SELECT SYSTEM” screen, then refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Select the desired part to be diagnosed on the “SELECT SYSTEM” screen.



SELF-DIAGNOSTIC RESULTS

Refer to PG-21, "SELF-DIAG RESULTS" .

DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE ” screen.
2. Touch “ALL SIGNALS”, “MAIN SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

ALL SIGNALS	All items will be monitored.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Select any item for monitoring.

3. Touch “START”.
4. Touch the required monitoring item on “SELECTION FROM MENU”. In “ALL SIGNALS”, all items are monitored. In “MAIN SIGNALS”, predetermined items are monitored.
5. Touch “RECORD” while monitoring to record the status of the item being monitored. To stop recording, touch “STOP”.

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Position lights request	TAIL & CLR REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp low beam request	HL LO REQ	ON/OFF	×	×	×	Signal status input from BCM
Headlamp high beam request	HL HI REQ	ON/OFF	×	×	×	Signal status input from BCM
Font fog lights request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with the ignition switch ON. When the ignition switch is at ACC, the display may not be correct.

ACTIVE TEST

Operation Procedure

1. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Touch item to be tested, and check operation.
3. Touch “START”.
4. Touch “STOP” while testing to stop the operation.

Test item	CONSULT-II screen display	Description
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI ON, LO ON) at your option (Head lamp high beam repeats ON–OFF every 1 second).
Front fog lamp relay output		Allows fog lamp relay to operate by switching operation ON-OFF at your option
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option

Trouble Diagnosis Chart by Symptom

AKS007F3

Trouble phenomenon	Malfunction system and reference
● Parking lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1st position and 2nd position operate normally.) ● Parking lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1st position and 2nd position operate normally.) ● Headlamps go out when outside of the vehicle becomes light, but parking lamps stay on.	● Refer to LT-64, "WORK SUPPORT" . ● Refer to LT-69, "Lighting Switch Inspection" . ● Refer to LT-69, "Optical Sensor System Inspection" . If above systems are normal, replace BCM.
Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1st position and 2nd position operate normally.)	● Refer to LT-64, "WORK SUPPORT" . ● Refer to LT-69, "Optical Sensor System Inspection" . If above systems are normal, replace BCM.
Auto light adjustment system will not operate. (Lighting switch AUTO, 1st position and 2nd position operate normally.)	● Refer to LT-69, "Optical Sensor System Inspection" . If above system is normal, replace BCM.

Trouble phenomenon	Malfunction system and reference
Auto light adjustment system of combination meter will not operate.	● CAN communication line inspection between BCM and combination meter. Refer to BCS-14, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
Shut off delay feature will not operte.	● CAN communication line inspection between BCM and combination meter. Refer to BCS-14, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" . ● Refer to BL-42, "Check Door Switch" . If above system is normal, replace BCM.

Lighting Switch Inspection

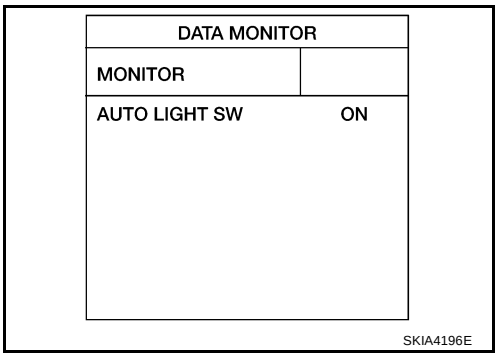
AKS007F4

1. CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure“AUTU LIGHT SW” turns ON–OFF linked with operation of lighting switch.

When lighting switch is AUTO position : AUTO LIGHT SW ON



Without CONSULT-II

Refer to LT-113, "Combination Switch Inspection" .

OK or NG

OK >> INSPECTION END

NG >> Check lighting switch. Refer to LT-113, "Combination Switch Inspection" .

Optical Sensor System Inspection

AKS007F5

1. CHECK OPTICAL SENSOR INPUT SIGNAL

With CONSULT-II

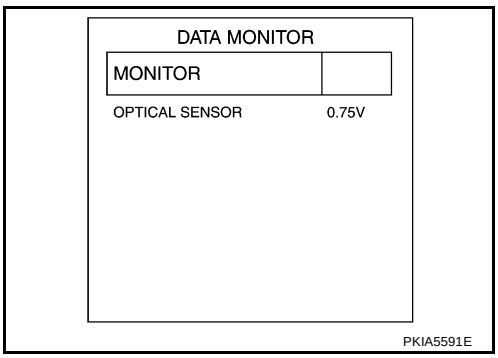
Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “OPTICAL SENSOR”, check difference in the voltage when the auto light sensor is illuminated and not illuminated.

Illuminated

OPTICAL SENSOR : 3.1V or more

Not illuminated

OPTICAL SENSOR : 0.6V or less



CAUTION:

Optical sensor must be securely subjected to work lamp light. If the optical sensor is insufficiently illuminated, the measured value may not satisfy the standard.

Without CONSULT-II

GO TO 2.

OK or NG

OK >> INSPECTION END

NG >> GO TO 2.

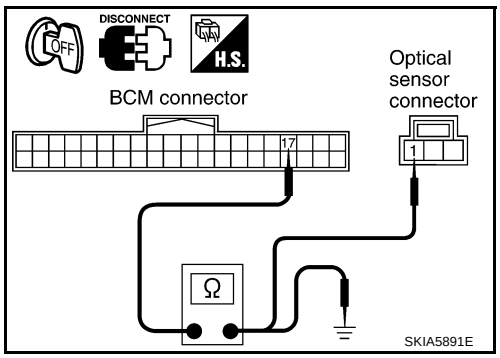
2. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and optical sensor connector.
3. Check continuity (open circuit) between BCM harness connector M3 terminal 17 (Y/G) and optical sensor harness connector M37 terminal 1 (Y/G).

17 (Y/G) – 1 (Y/G) : Continuity should exist.

4. Check continuity (short circuit) between BCM harness connector M3 terminal 17 (Y/G) and ground.

17 (Y/G) – Ground : Continuity should not exist.



OK or NG

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

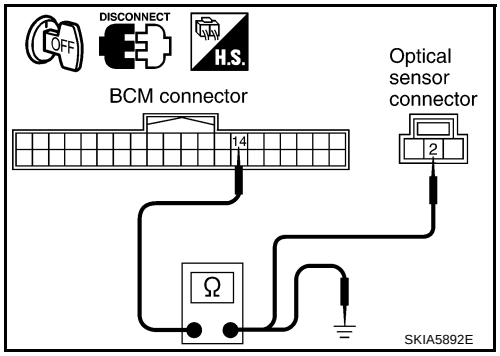
3. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Check continuity (open circuit) between BCM harness connector M3 terminal 14 (P) and optical sensor harness connector M37 terminal 2 (P).

14 (P) – 2 (P) : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M36 terminal 14 (P) and ground.

14 (P) – Ground : Continuity should not exist.



OK or NG

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

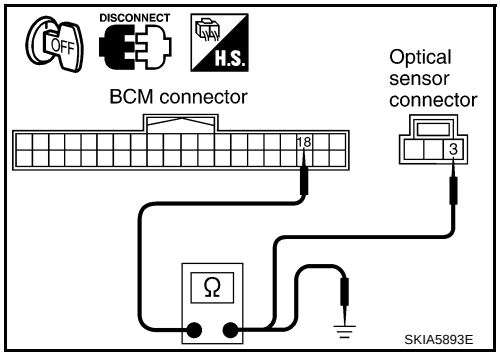
4. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

1. Check continuity (open circuit) between BCM harness connector M3 terminal 18 (B) and optical sensor harness connector M37 terminal 3 (B).

18 (B) – 3 (B) : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M37 terminal 18 (B) and ground.

18 (B) – Ground : Continuity should not exist.



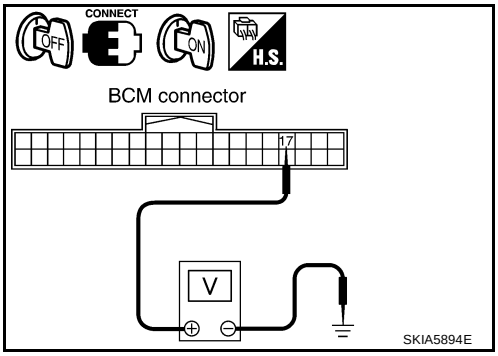
OK or NG

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

5. CHECK OPTICAL SENSOR VOLTAGE

1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M3 terminal 17 (Y/G) and ground.

17 (Y/G) – Ground : Approx. 5V should exist.



OK or NG

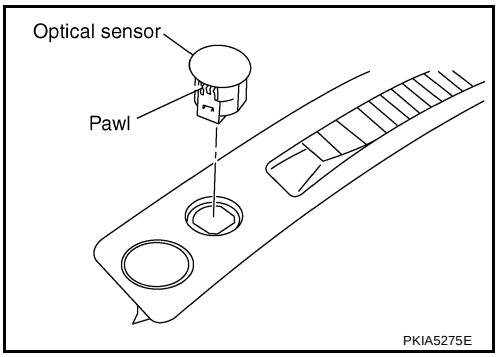
OK >> Replace the optical sensor.
NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

Removal and Installation for Optical Sensor

AKS007F6

REMOVAL

1. Insert a screwdriver or similar tool and remove front defroster grill (LH). Refer to IP-15, "(V) Front Defroster Grille (LH/RH)" in "IP" section.
2. Disconnect optical sensor connector.
3. Remove optical sensor.



INSTALLATION

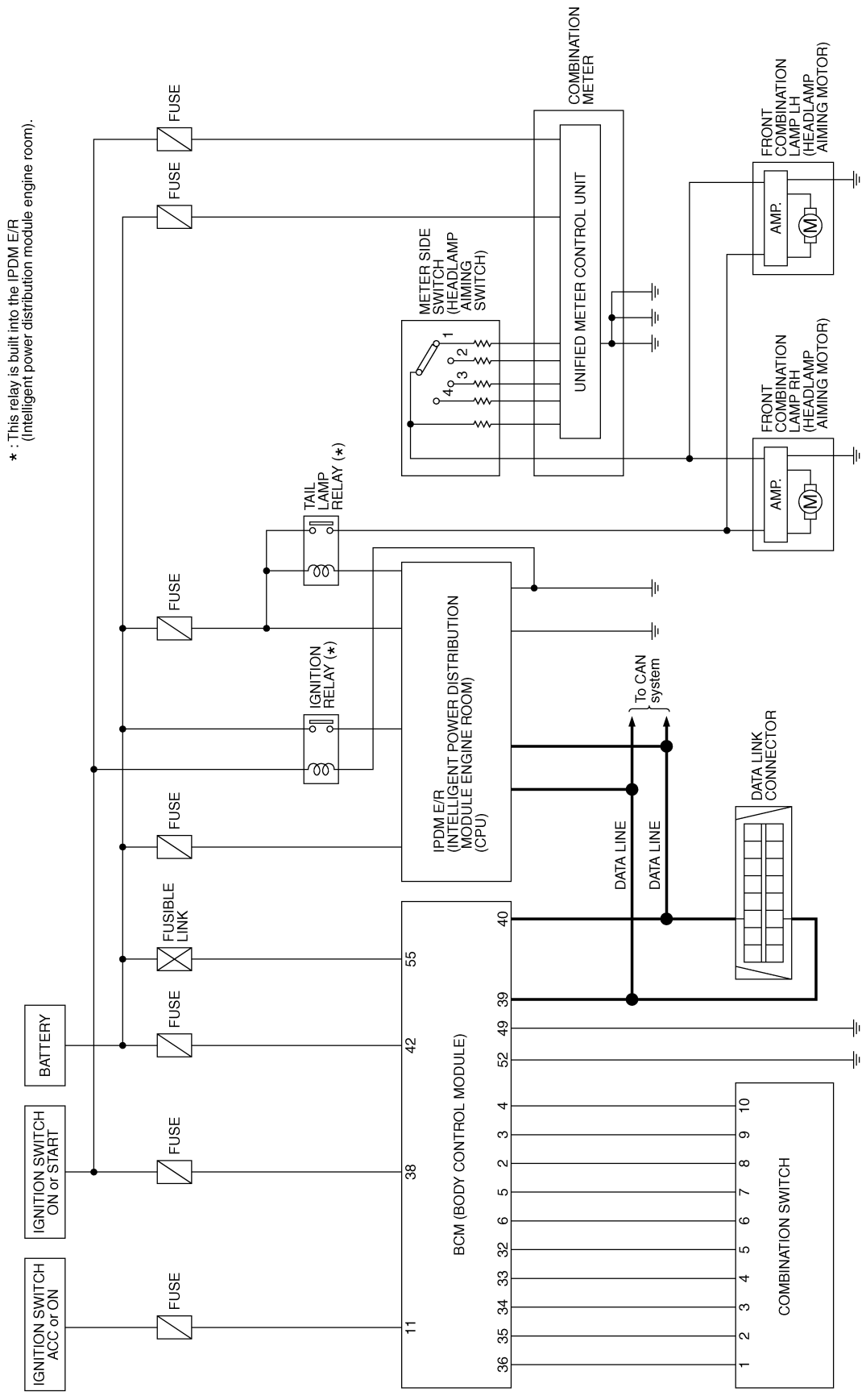
Install in the reverse order of removal.

HEADLAMP AIMING CONTROL

PFP:26010

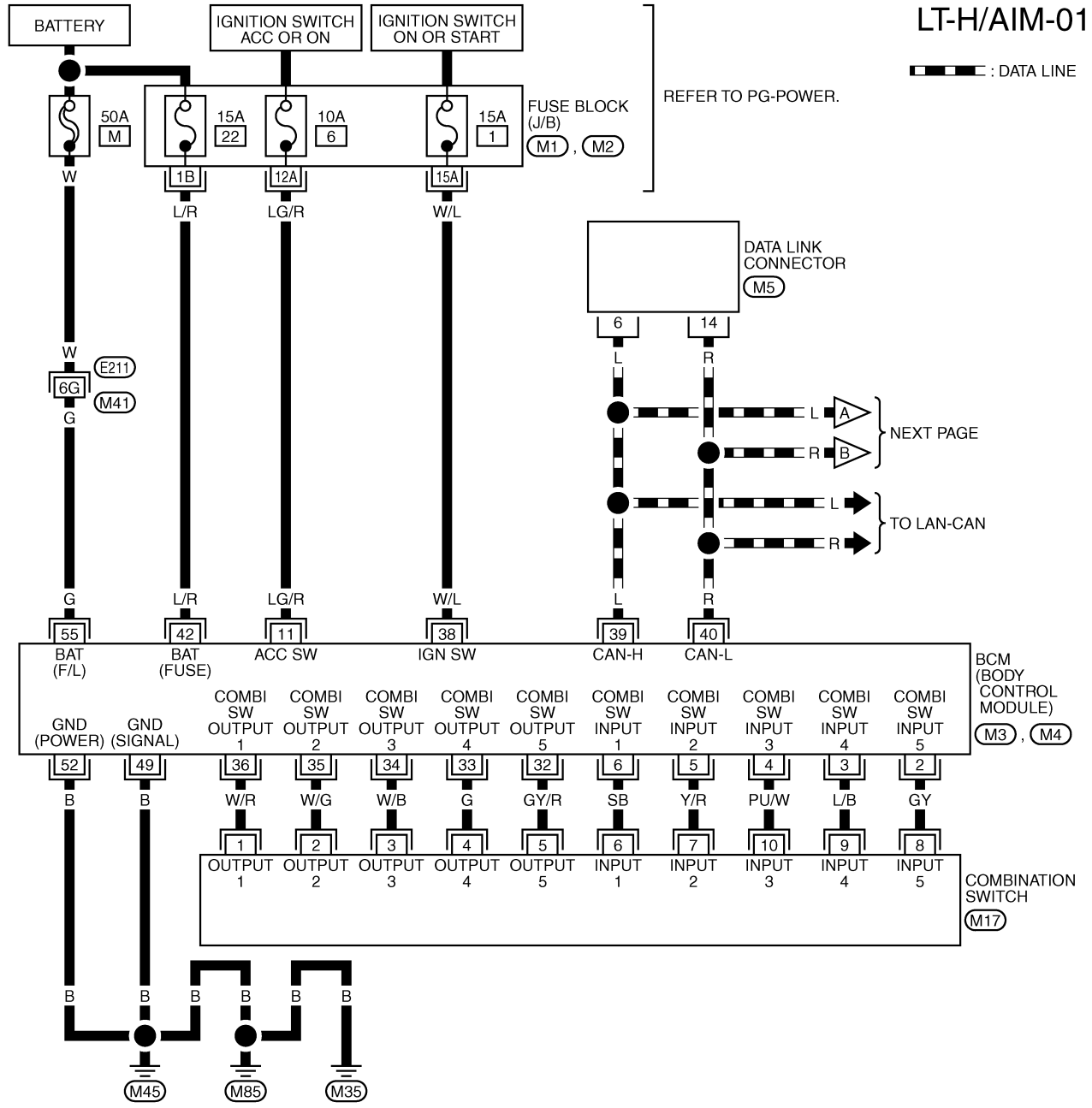
Schematic

AKS007I7



Wiring Diagram — H/AIM —

AKS007CF



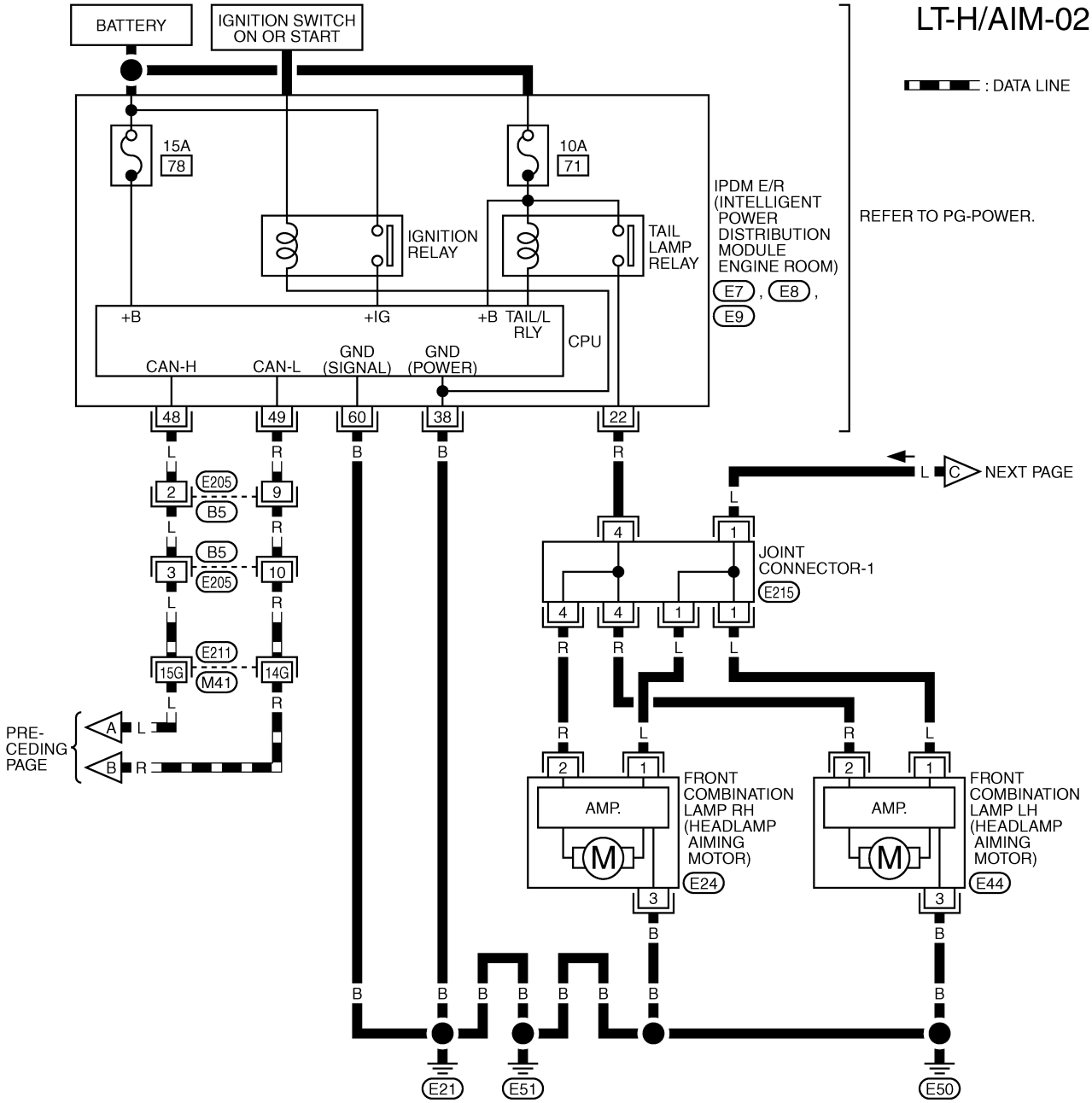
REFER TO THE FOLLOWING.

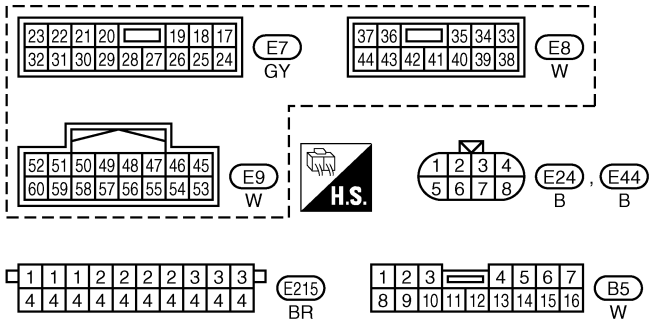
E211 -SUPER MULTIPLE JUNCTION (SMJ)

M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM0818E



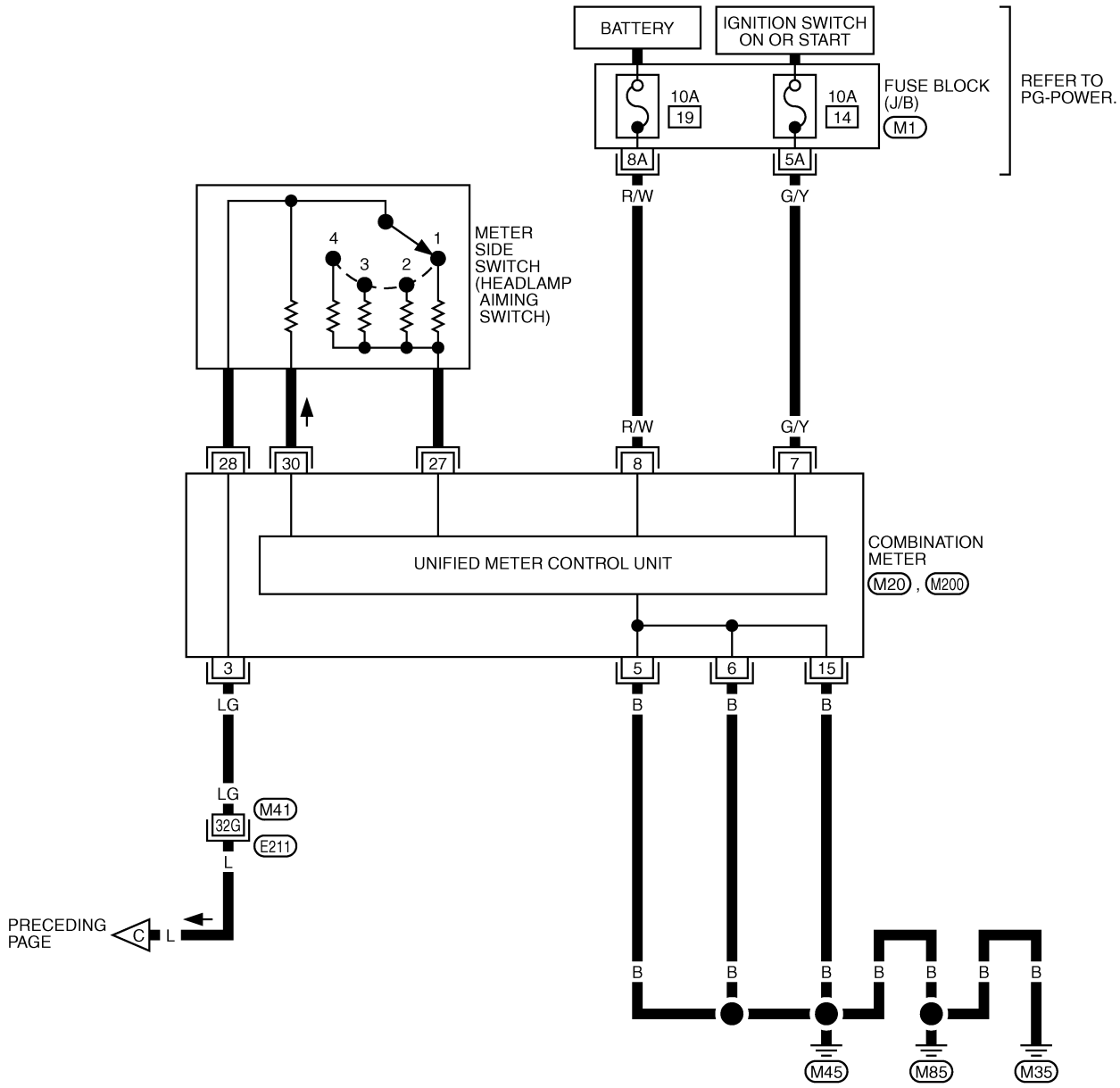


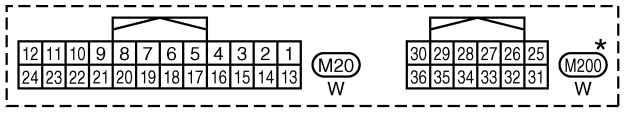
REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0617E

LT-H/AIM-03





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

REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

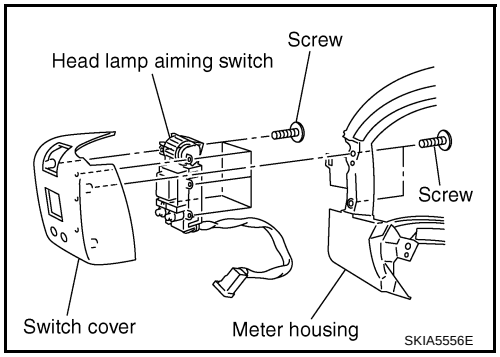
TKWM0618E

Removal and Installation

AKS007CG

REMOVAL

1. Remove combination meter. Refer to DI-26, "Removal and Installation" in “DI” section.
2. Remove screws for removing headlamp aiming switch from meter housing.
3. Remove screws and then remove headlamp aiming switch.



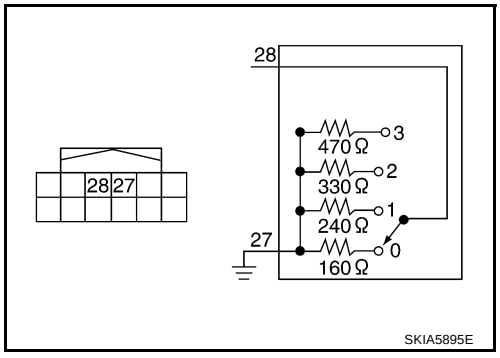
INSTALLATION

Install in the reverse order of removal.

Switch Circuit Inspection

AKS007CH

Using a circuit tester, check continuity between the headlamp aiming switch connector terminals in each operation status of the aiming switch.

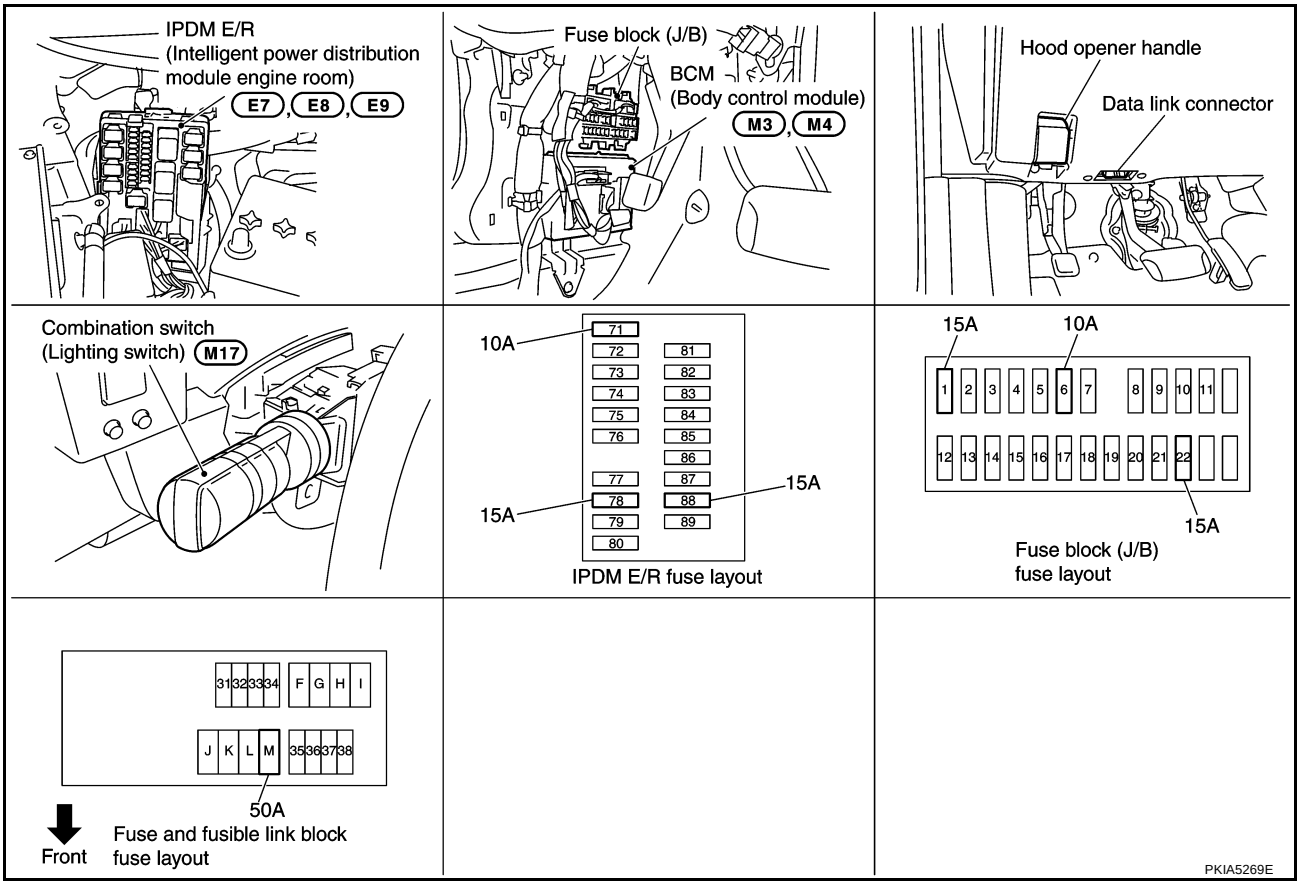


FRONT FOG LAMP

PFP:26150

Component Parts and Harness Connector Location

AKS007O5



System Description

AKS007CI

Control of the fog lamps is dependent upon the position of the combination switch (lighting switch). The lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) for front fog lamp operation. When the lighting switch is placed in the fog lamp position the BCM (body control module) receives input signal requesting the fog lamps to illuminate. When the headlamps are illuminated, this input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The central processing unit of the IPDM E/R controls the front fog lamp relay coil. When activated, this relay directs power to the front fog lamps.

OUTLINE

Power is supplied at all times

- to ignition relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 88, located in IPDM E/R (intelligent power distribution module engine room)]
- to front fog lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 71, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 50A fusible link (letter M, located in the fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM (body control module) terminal 42.

When the ignition switch is in ON or START position, power is supplied

- to ignition relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38.

When the ignition switch is in ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 11.

Ground is supplied

- to BCM (body control module) terminals 49 and 52
- through grounds M35, M45 and M85
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E21, E50 and E51.

Fog Lamp Operation

The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the fog lamp switch must be ON for fog lamp operation.
With the fog lamp switch in the ON position, the CPU of the IPDM E/R grounds the coil side of the fog lamp relay. The fog lamp relay then directs power

- through IPDM E/R terminal 37
- to front fog lamp LH terminal 1
- through IPDM E/R terminal 36
- to front fog lamp RH terminal 1.

Ground is supplied

- to front fog lamp LH terminal 2
- through grounds E21, E50 and E51, and
- to front fog lamp RH terminal 2
- through grounds E21, E50 and E51.

With power and grounds supplied, the front fog lamps illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), the fog lamp switch is ON, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the fog lamps (and headlamps) remain illuminated for 5 minutes, then the fog lamps (and headlamps) are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

AKS007CJ

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

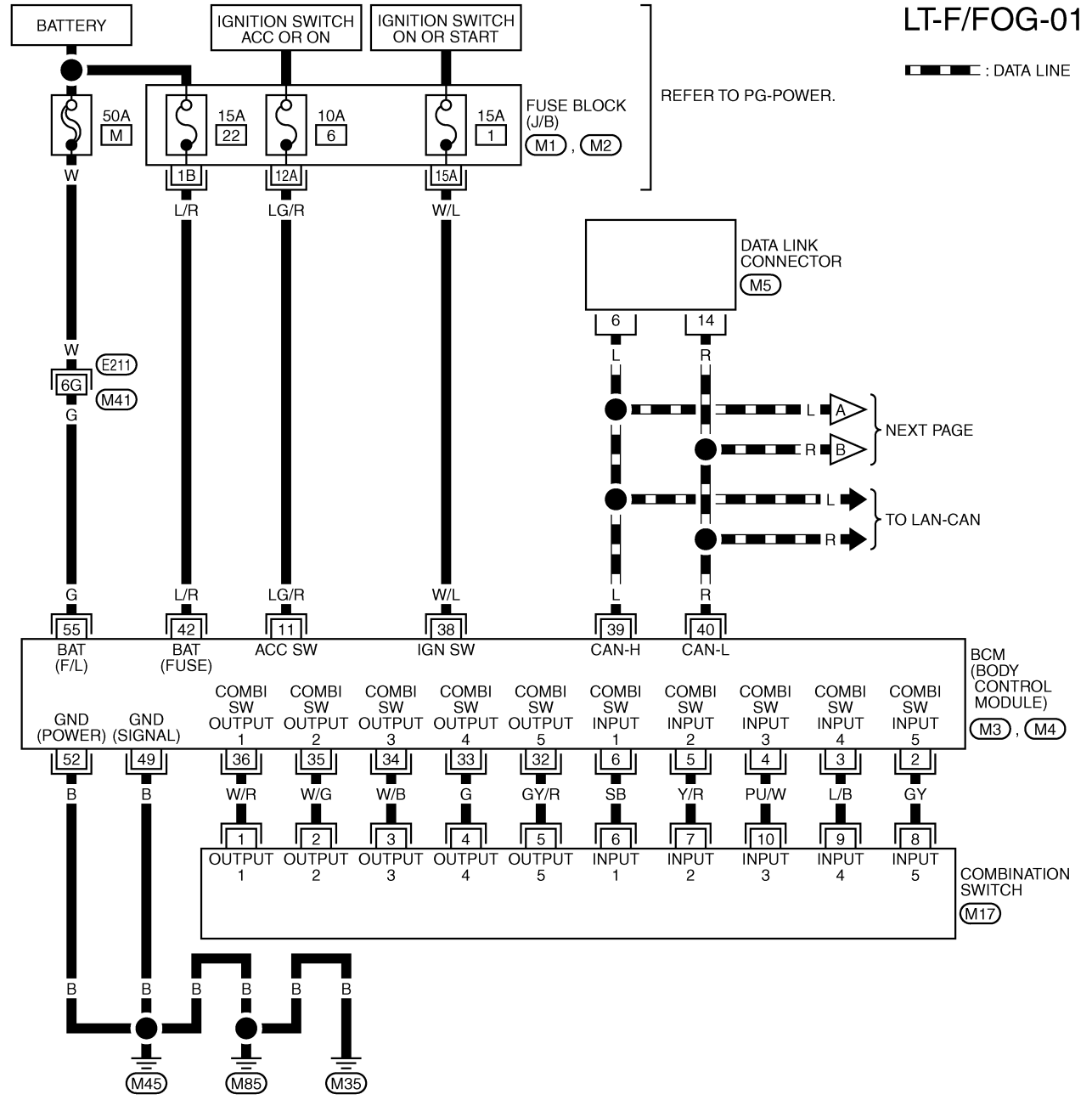
CAN Communication Unit

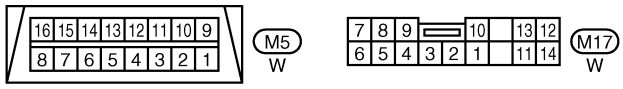
AKS0080V

Refer to LAN-6, "CAN Communication Unit" .

Wiring Diagram — F/FOG —

AKS007CL





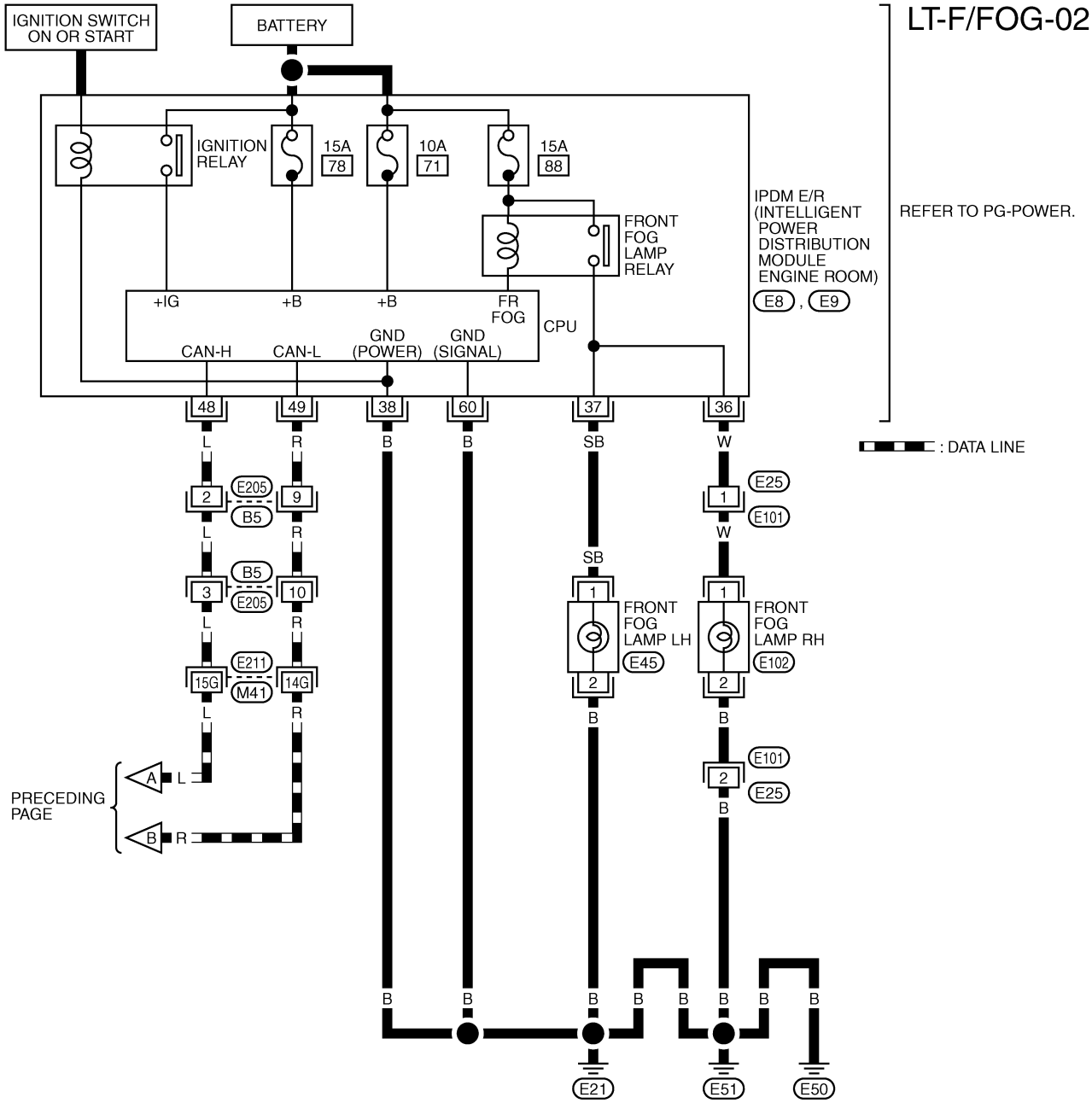
REFER TO THE FOLLOWING.

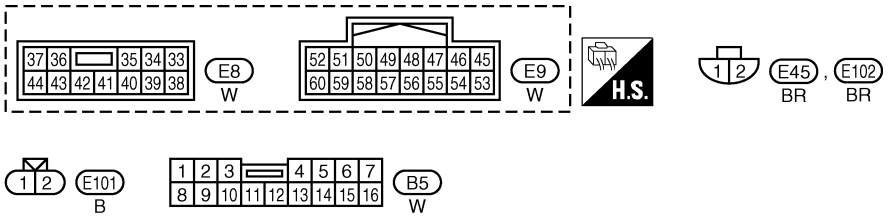
E211 -SUPER MULTIPLE JUNCTION (SMJ)

M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM0819E



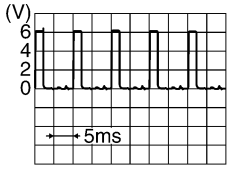
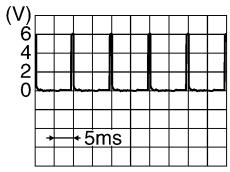
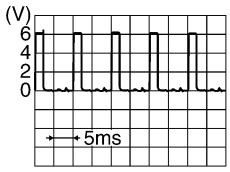
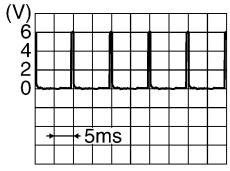
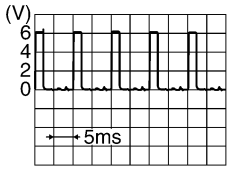
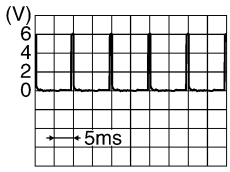
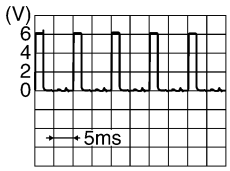


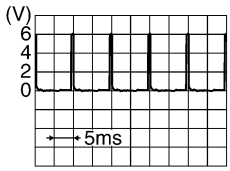
REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0620E

Terminals and Reference Values for BCM

AKS007XP

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	SB	Combination switch input 1			
11	LG/R	Ignition switch (ACC)	ACC	—	Battery voltage
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	W/R	Combination switch output 1			
38	W/L	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN– H	—	—	—
40	R	CAN– L	—	—	—
42	L/R	Battery power supply	OFF	—	Battery voltage
49	B	Ground	ON	—	Approx. 0V
52	B	Ground	ON	—	Approx. 0V
55	G	Battery power supply	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

AKS007CN

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
36	W	Front fog lamp (RH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON.	OFF	Approx. 0V
					ON	Battery voltage
37	SB	Front fog lamp (LH)	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON.	OFF	Approx. 0V
					ON	Battery voltage
38	B	Ground	ON	—		Approx. 0V
48	L	CAN– H	—	—		—
49	R	CAN– L	—	—		—
60	B	Ground	ON	—		Approx. 0V

How to Proceed With Trouble Diagnosis

AKS007CO

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-77, "System Description" .
3. Perform the Preliminary Check. Refer to LT-82, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front fog lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007CP

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
		22
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6

Unit	Power source	Fuse and fusible link No.
IPDM E/R	Battery	71
		78
		88

Refer to LT-79, "Wiring Diagram — F/FOG —" .

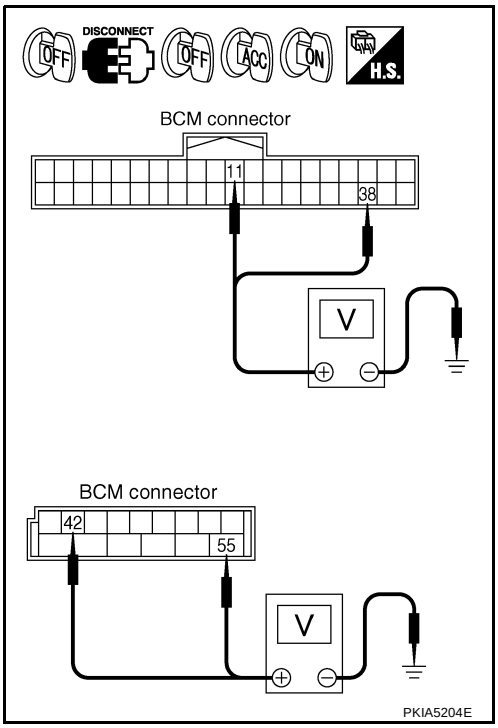
OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(-)			
Connector	Terminal (Wire color)		OFF	ACC	ON
M3	11 (LG/R)	Ground	0V	Battery voltage	Battery voltage
	38 (W/L)		0V	0V	Battery voltage
M4	42 (L/R)		Battery voltage	Battery voltage	Battery voltage
	55 (G)		Battery voltage	Battery voltage	Battery voltage



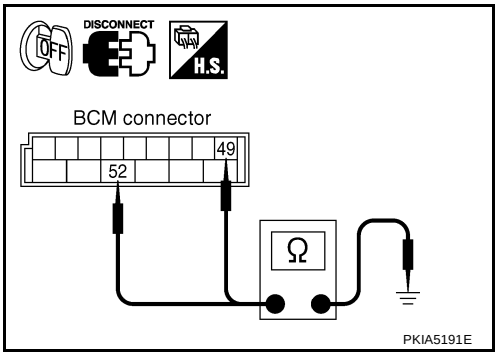
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M4	49 (B)	Ground	Yes
	52 (B)		



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions

AKS007CQ

Refer to LT-18, "CONSULT-II Functions (BCM)" in HEAD LAMP.
Refer to LT-21, "CONSULT-II Functions (IPDM E/R)" in HEAD LAMP.

Front Fog Lamps Do Not Illuminate (Both Sides)

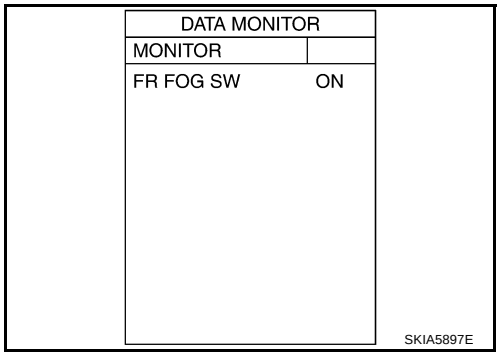
AKS007I9

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “FR FOG SW” turns ON-OFF linked with operation of lighting switch.

When lighting switch is FOG position : FR FOG SW ON



Without CONSULT-II

Refer to LT-113, "Combination Switch Inspection" .

OK or NG

OK >> GO TO 2.

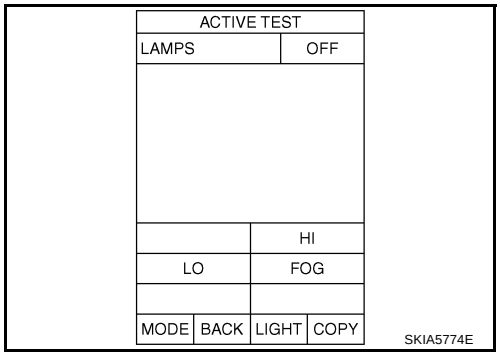
NG >> Check lighting switch. Refer to LT-113, "Combination Switch Inspection" .

2. FOG LAMP ACTIVE TEST

With CONSULT-II

1. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “LAMPS” on “SELECT TEST ITEM” screen.
3. Touch “FOG” screen.
4. Make sure fog lamp operates.

Fog lamp should operate.



Without CONSULT-II

1. Start auto active test. Refer to PG-24, "Auto Active Test" .
2. Make sure fog lamp operates.

Fog lamp should operate.

OK or NG

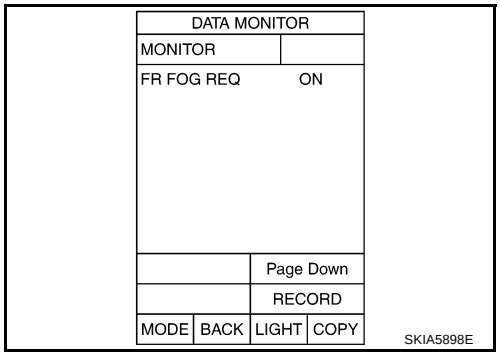
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select “IPDM E/R” on CONSULT-II. and select “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Make sure “FR FOG REQ” turns ON when lighting switch is in FOG position.

When lighting switch is FOG position : FR FOG REQ ON



OK or NG

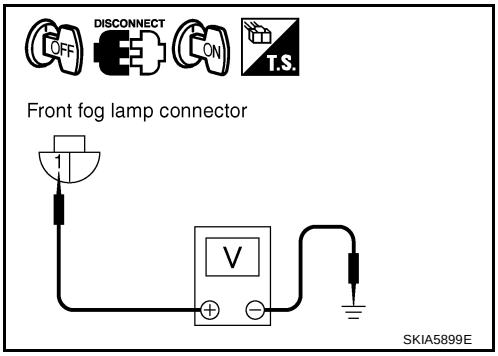
OK >> Replace IPDM E/R.

NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

4. CHECK FOG LAMP INPUT SIGNAL

With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connector.
3. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
4. Select “TAIL LAMP” on “SELECT TEST ITEM” screen.
5. Touch “FOG” screen.
6. When fog lamp is operating, check voltage between front fog lamp RH and LH harness connector and ground.



Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connector.
3. Start auto active test. Refer to PG-24, "Auto Active Test" .
4. When fog lamp is operating, check voltage between front fog lamp RH and LH harness connector and ground.

Terminals				Voltage
(+)			(-)	
Connector		Terminal (Wire color)		
RH	E102	1 (W)	Ground	Battery voltage
LH	E45	1 (SB)		

OK or NG

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

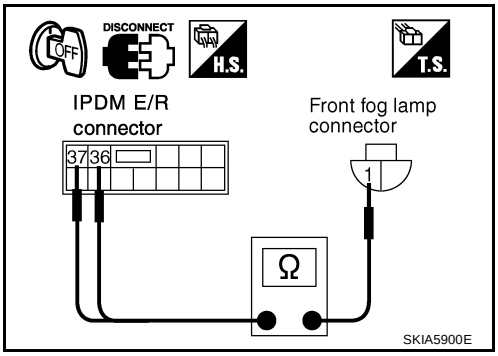
5. CHECK FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E8 terminal 36 (W) and front fog lamp RH harness connector E102 terminal 1 (W).

36 (W) – 1 (W) : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E8 terminal 37 (SB) and front fog lamp LH harness connector E45 terminal 1 (SB).

37 (SB) – 1(SB) : Continuity should exist.



OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

6. CHECK FOG LAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front fog lamp RH harness connector E102 terminal 2 (B) and ground.

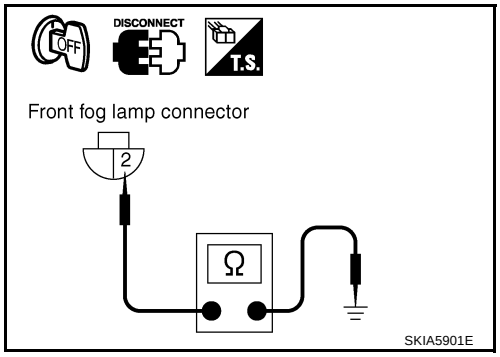
2 (B) – Ground : Continuity should exist.

3. Check continuity between front fog lamp LH harness connector E45 terminal 2 (B) and ground.

2 (B) – Ground : Continuity should exist.

OK or NG

OK >> Check front fog lamp bulbs.
NG >> Repair harness or connector.



AKS007IA

Front Fog Lamp Does Not Illuminate (One Side)

1. CHECK BULB

Check bulb of lamp which does not illuminate.

OK or NG

OK >> GO TO 2.
NG >> Replace front fog lamp bulb.

2. CHECK FOG LAMP CIRCUIT

1. Disconnect IPDM E/R connector and front fog lamp RH or LH connector.
2. Check continuity between IPDM E/R harness connector E8 terminal 36 (W) and front fog lamp RH harness connector E102 terminal 1 (W).

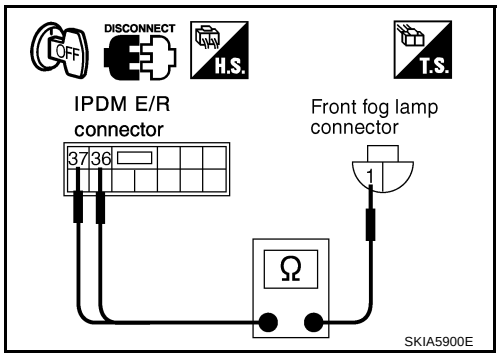
36 (W) – 1 (W) : Continuity should exist.

3. Check continuity between IPDM E/R harness connector E8 terminal 37 (SB) and front fog lamp LH harness connector E45 terminal 1 (SB).

37 (SB) – 1 (SB) : Continuity should exist.

OK or NG

OK >> GOTO 3.
NG >> Repair harness or connector.



3. CHECK FOG LAMP GROUND

1. Check continuity between front fog lamp RH harness connector E102 terminal 2 (B) and ground.

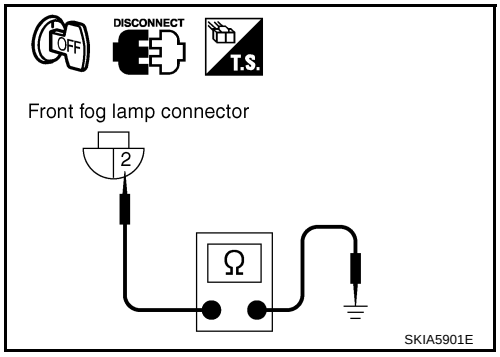
2 (B) – Ground : Continuity should exist.

2. Check continuity between front fog lamp LH harness connector E45 terminal 2 (B) and ground.

2 (B) – Ground : Continuity should exist.

OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.



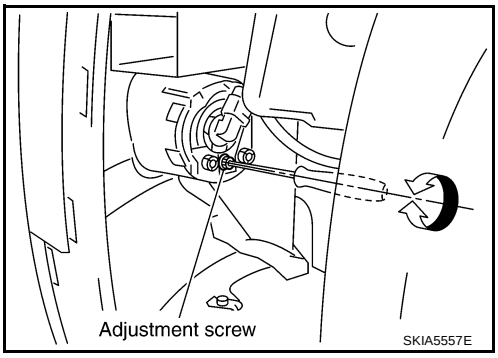
Aiming Adjustment

AKS007CT

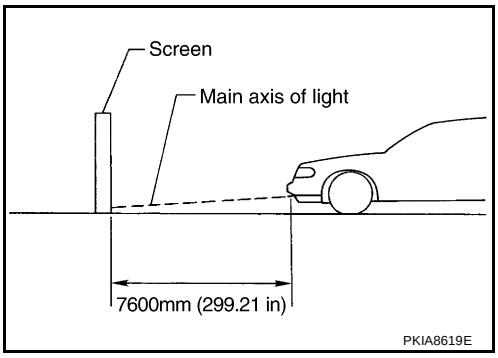
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

- Keep all tires inflated to correct pressure.
- Place vehicle on level ground.
- See that vehicle is unloaded (except for full levels of coolant, engine oil and fuel, and spare tire, jack, and tools). Have the driver or equivalent weight placed in driver seat.

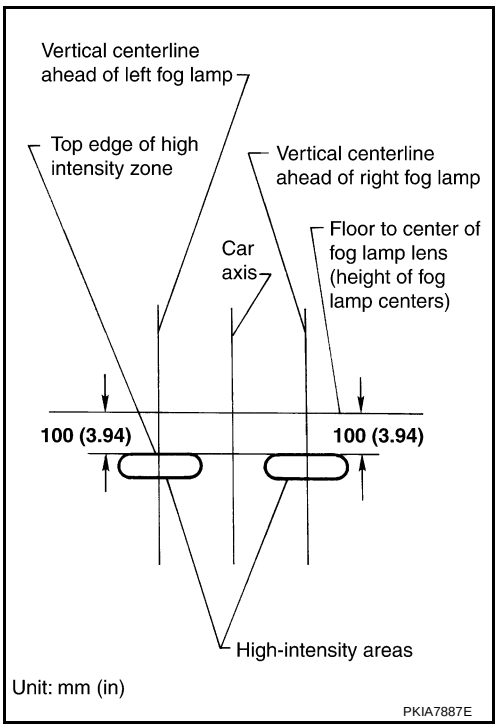
Adjust aiming in the vertical direction by turning the adjusting screw.



1. Set the distance between the screen and the center of the fog lamp lens as shown at left.
2. Turn front fog lamps ON.



3. Adjust front fog lamps using adjusting screw so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown at left.
   - When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.

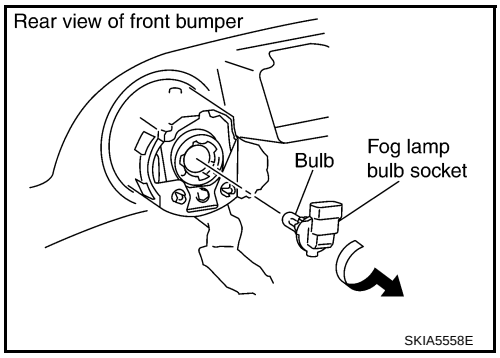


Bulb Replacement

AKS007CU

1. Remove left side fender protector (front). Refer to EI-25, "Removal and Installation" , EI-14, "Removal and Installation" in “EI” section.
2. Disconnect fog lamp connector.
3. Turn bulb socket counterclockwise and unlock it.

Fog lamp : 12 V - 51 W (HB4 halogen)



CAUTION:

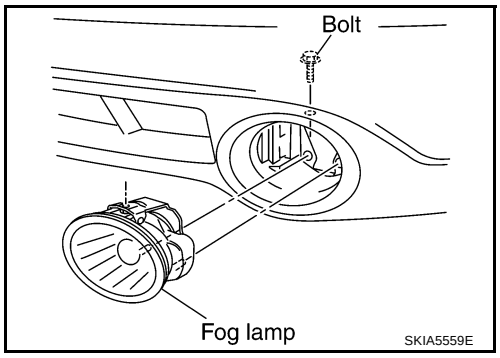
- **Do not touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Do not touch bulb by hand while it is lit or right after being turned off. Burning may result.**
- **Do not leave bulb out of fog lamp reflector for a long time because dust, moisture smoke, etc. May affect the performance of fog lamp. When replacing bulb, be sure to replace it with new one.**

Removal and Installation

AKS007CV

REMOVAL

1. Remove front bumper fascia. Refer to EI-14, "Removal and Installation" in “EI” section.
2. Remove fog lamp mounting bolt.
3. Pull out fog lamp from vehicle and disconnect fog lamp connector.



INSTALLATION

- Install fog lamp in the reverse order of removal, observing the tightening torque shown below.

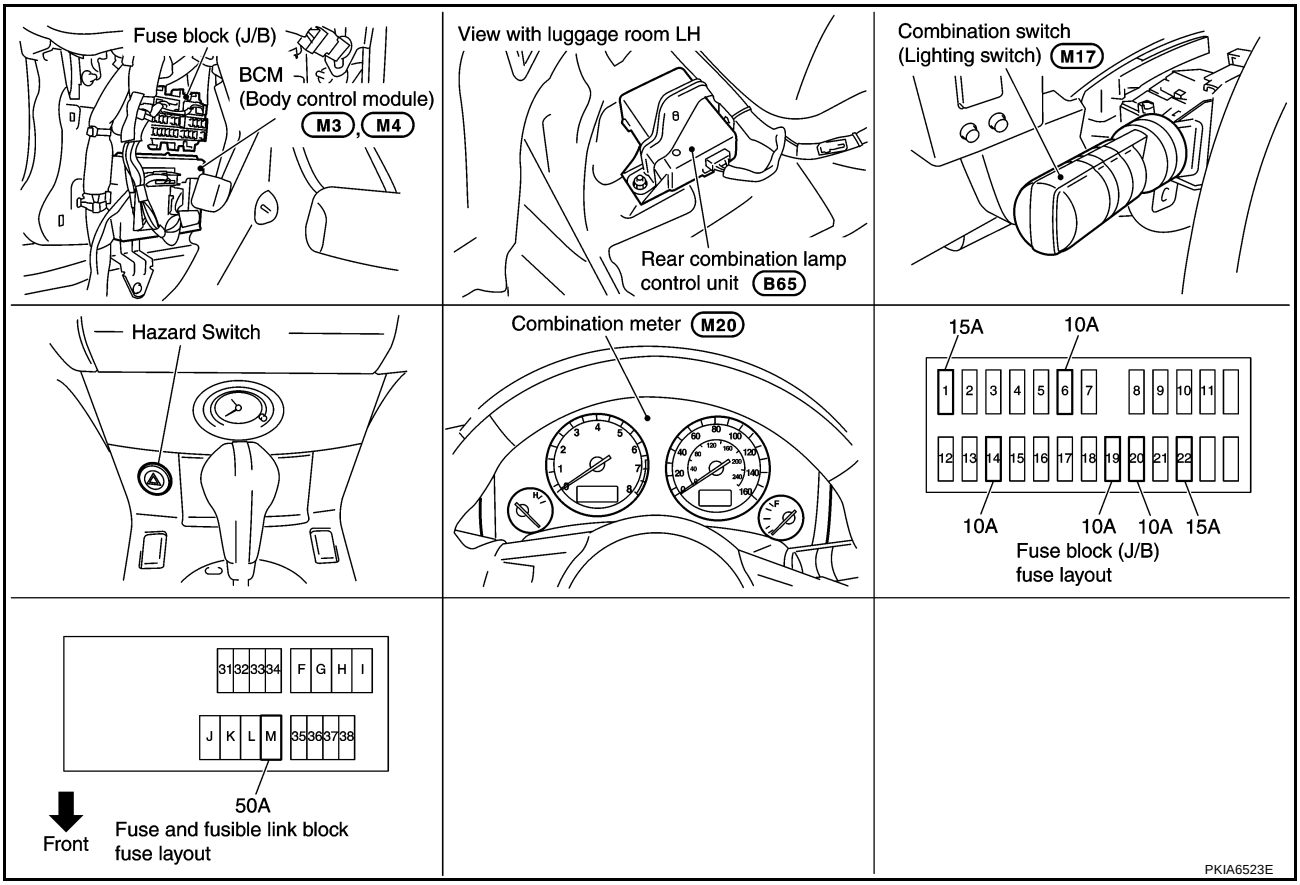
Fog lamp mounting bolt : 5.5 N·m (0.56 kg-m, 49 in-lb)

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

Component Parts and Harness Connector Location

AKS007O6



System Description

AKS007CW

OUTLINE

Power is supplied at all times

- through 50A fusible link (letter M, located in fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 10A fuse [No. 20, located in fuse block (J/B)]
- to rear combination lamp control unit terminal 1
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8.

TURN SIGNAL OPERATION

When the ignition switch is in the ON or START position, power is supplied

- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 7.

When the ignition switch is in the ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 11.

Ground is supplied

- to BCM (body control module) terminals 49 and 52
- through grounds M35, M45 and M85

- to rear combination lamp control unit terminal 7
- through grounds E21, E50 and E51
- to combination meter terminals 5, 6 and 15
- through grounds M35, M45 and M85.

LH Turn

When the turn signal switch is moved to the left position, BCM output turn signal from BCM terminal 45, interpreting it as turn signal is ON.
Connected from BCM terminal 45 to front combination lamp LH terminal 4.
Turn signal lamp turns on

- through front combination lamp LH terminal 8
- to grounds E21, E50 and E51.

Connected form BCM terminal 45 to rear combination lamp control unit terminal 4.
Rear turn signal (LED) turns on

- through rear combination lamp control unit terminal 11
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 4
- to rear combination lamp control unit terminal 10.

BCM sends signal to unified meter and A/C amp. through CAN communication lines, and turns on turn signal indicator lamp with combination meter.
When rear turn signal lamp (LED) does not turn on, Rear combination lamp control unit sends signal to unified meter and A/C amp. Unified meter and A/C amp. turn LED burnout status signal to BCM through CAN communication lines for speeding up turn signal blinking.

RH Turn

When the turn signal switch is moved to the right position, BCM output turn signal from BCM terminal 46, interpreting it as turn signal is ON.
Connected from BCM terminal 46 to front combination lamp RH terminal 4.
Turn signal lamp turns on

- through front combination lamp RH terminal 8
- to grounds E21, E50 and E51.

Connected form BCM terminal 46 to rear combination lamp control unit terminal 5.
Rear turn signal (LED) turns on

- through rear combination lamp control unit terminal 9
- to rear combination lamp RH terminal 3
- through rear combination lamp RH terminal 4
- to rear combination lamp control unit terminal 8.

BCM sends signal to unified meter and A/C amp. through CAN communication lines, and turns on turn signal indicator lamp with combination meter.
When rear turn signal lamp (LED) does not turn on, Rear combination lamp control unit sends signal to unified meter and A/C amp. Unified meter and A/C amp. turn LED burnout status signal to BCM through CAN communication lines for speeding up turn signal blinking.

HAZARD LAMP OPERATION

Power is supplied at all times

- through 50A fusible link [letter M, located in fuse and fusible link block]
- to BCM terminal 55
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8
- through 10A fuse [No. 20, located in fuse block (J/B)]
- to rear combination lamp control unit terminal 1.

Ground is supplied

- through BCM terminals 49 and 52
- to grounds M35, M45 and M85

- through rear combination lamp control unit terminal 7
- to grounds E21, E50 and E51
- through combination meter terminals 5, 6 and 15
- to grounds M35, M45 and M85.

When the hazard switch is depressed, ground is supplied

- through BCM terminal 29
- to hazard switch terminal 2
- through hazard switch terminal 1
- to grounds M35, M45 and M85.

When the hazard switch is depressed, BCM output turn signal from BCM terminals 45 and 46, interpreting it as turn signal is ON.
Connected from BCM terminal 45 and 46 to front combination lamp terminal 4.
Turn signal lamp turns on

- through front combination lamp terminal 8
- to grounds E21, E50 and E51.

Connected form BCM terminals 45 and 46 to rear combination lamp control unit terminals 4 and 5.
Rear turn signal (LED) turns on

- through rear combination lamp control unit terminal 11
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 4
- to rear combination lamp control unit terminal 10
- through rear combination lamp control unit terminal 9
- to rear combination lamp RH terminal 3
- through rear combination lamp RH terminal 4
- to rear combination lamp control unit terminal 8.

BCM sends signal to unified meter and A/C amp. through CAN communication lines, and turns on turn signal indicator lamp with combination meter.
When rear turn signal lamp (LED) does not turn on, rear combination lamp control unit sends signal to unified meter and A/C amp. Unified meter and A/C amp. turn LED burnout status signal to BCM through CAN communication lines for speeding up turn signal blinking.

REMOTE CONTROL ENTRY SYSTEM OPERATION

Power is supplied at all times

- through 50A fusible link [letter M, located in fuse and fusible link block]
- to BCM terminal 55
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8
- through 10A fuse [No. 20, located in fuse block (J/B)]
- to rear combination lamp control unit terminal 1.

Ground is supplied

- to BCM terminals 49 and 52
- through grounds M35, M45 and M85
- to rear combination lamp control unit terminal 7
- through grounds E21, E50 and E51
- to combination meter terminals 5, 6 and 15
- through grounds M35, M45 and M85.

When the remote control entry system is triggered by input from the keyfob, BCM output turn signal from BCM terminals 45 and 46, interpreting it as turn signal is ON.
Connected from BCM terminals 45 and 46 to front combination lamp terminal 4,
turn signal lamp turns on

- through front combination lamp terminal 8
- to grounds E21, E50 and E51.

Connected form BCM terminals 45 and 46 to rear combination lamp control unit terminals 4 and 5, rear turn signal (LED) turns on

- through rear combination lamp control unit terminal 11
- to rear combination lamp LH terminal 3
- through rear combination lamp LH terminal 4
- to rear combination lamp control unit terminal 10
- through rear combination lamp control unit terminal 9
- to rear combination lamp RH terminal 3
- through rear combination lamp RH terminal 4
- to rear combination lamp control unit terminal 8.

BCM sends signal to unified meter and A/C amp. through CAN communication lines, and turns on turn signal indicator lamp with combination meter.
With power and input supplied, the BCM controls the flashing of the hazard warning lamps when keyfob is used to activate the remote control entry system.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

CAN Communication System Description

AKS007CX

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

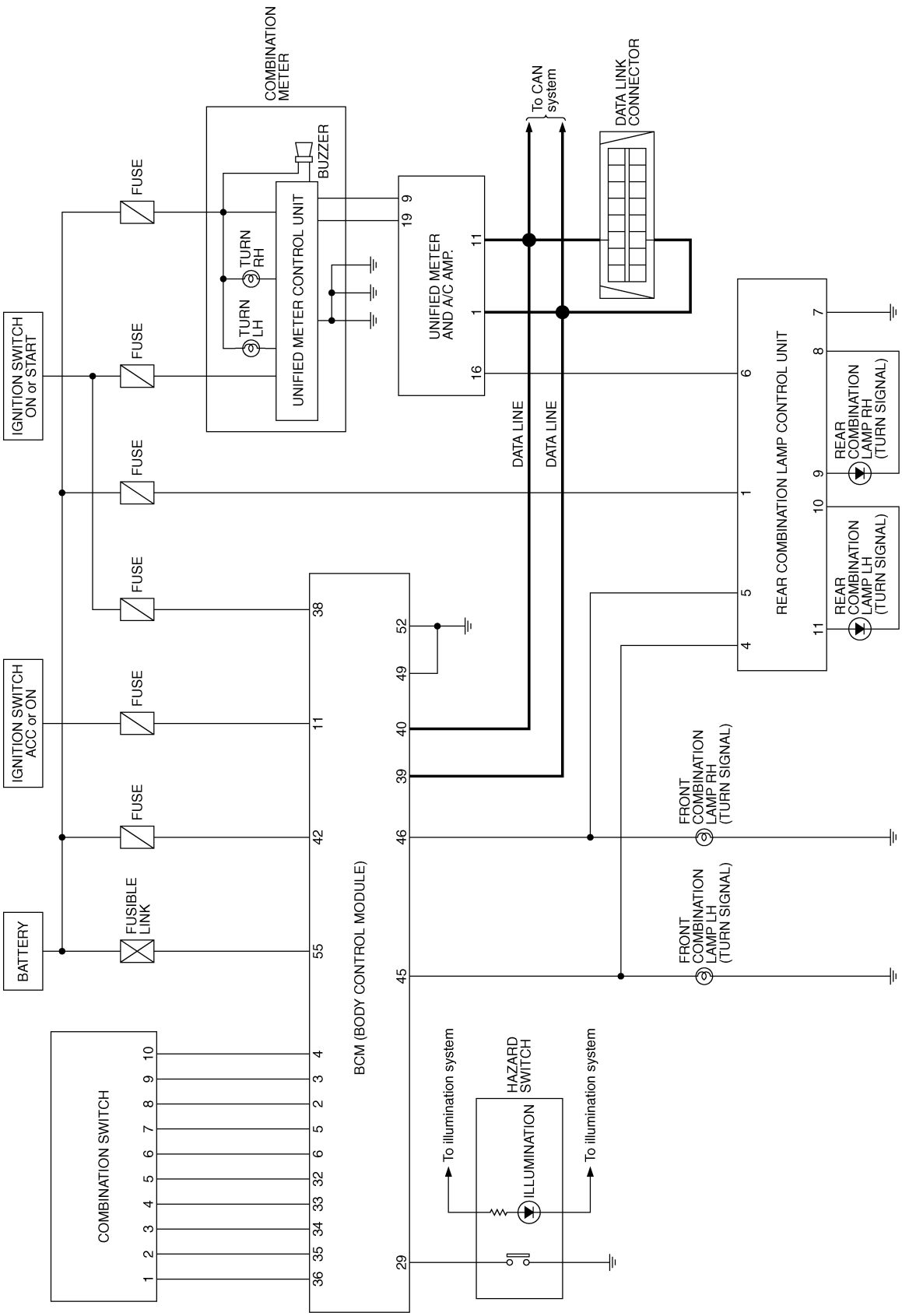
CAN Communication Unit

AKS0080W

Refer to LAN-6, "CAN Communication Unit" .

Schematic

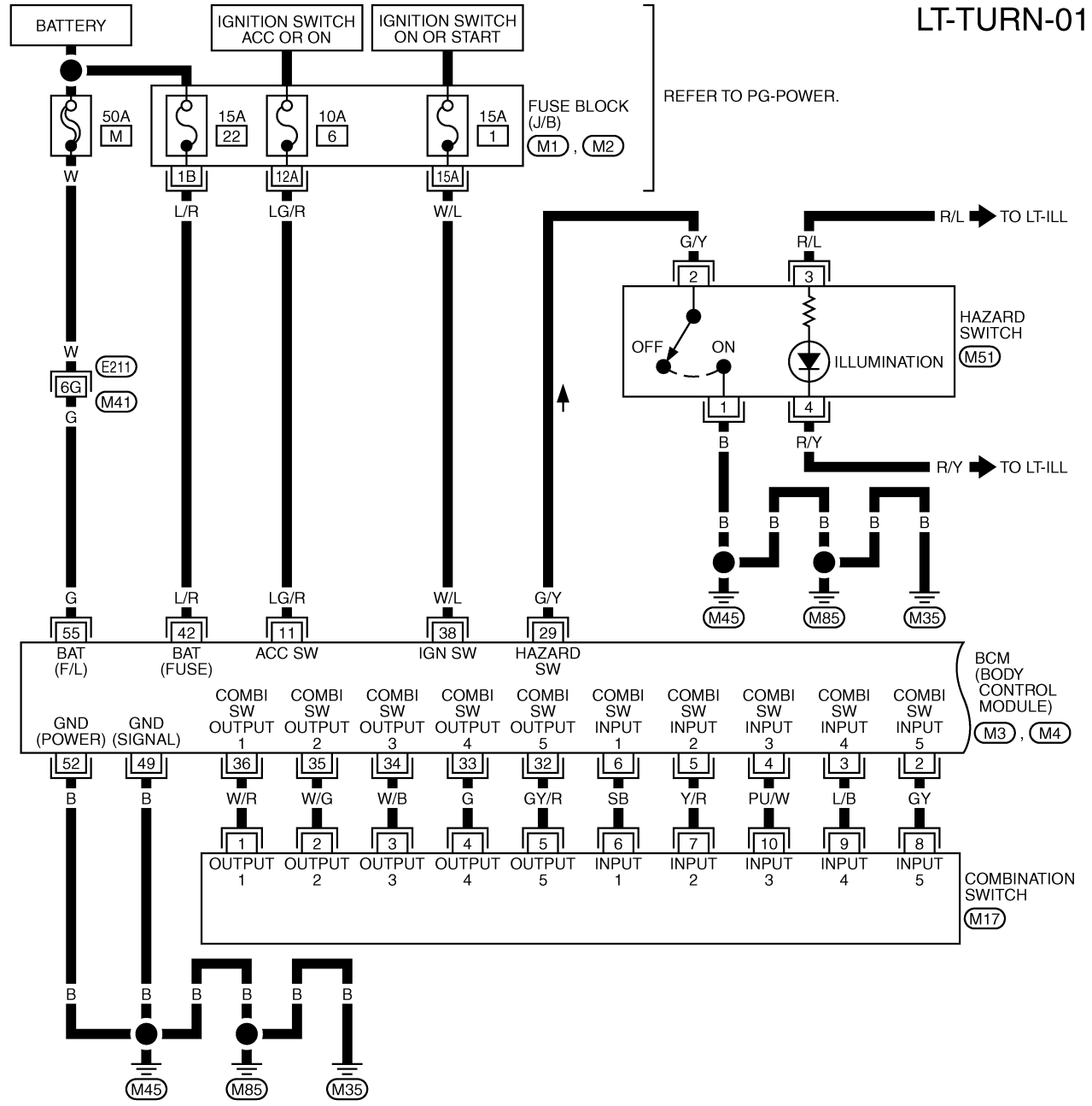
AKS007CZ



TKWM0621E

Wiring Diagram — TURN —

AKS007D0



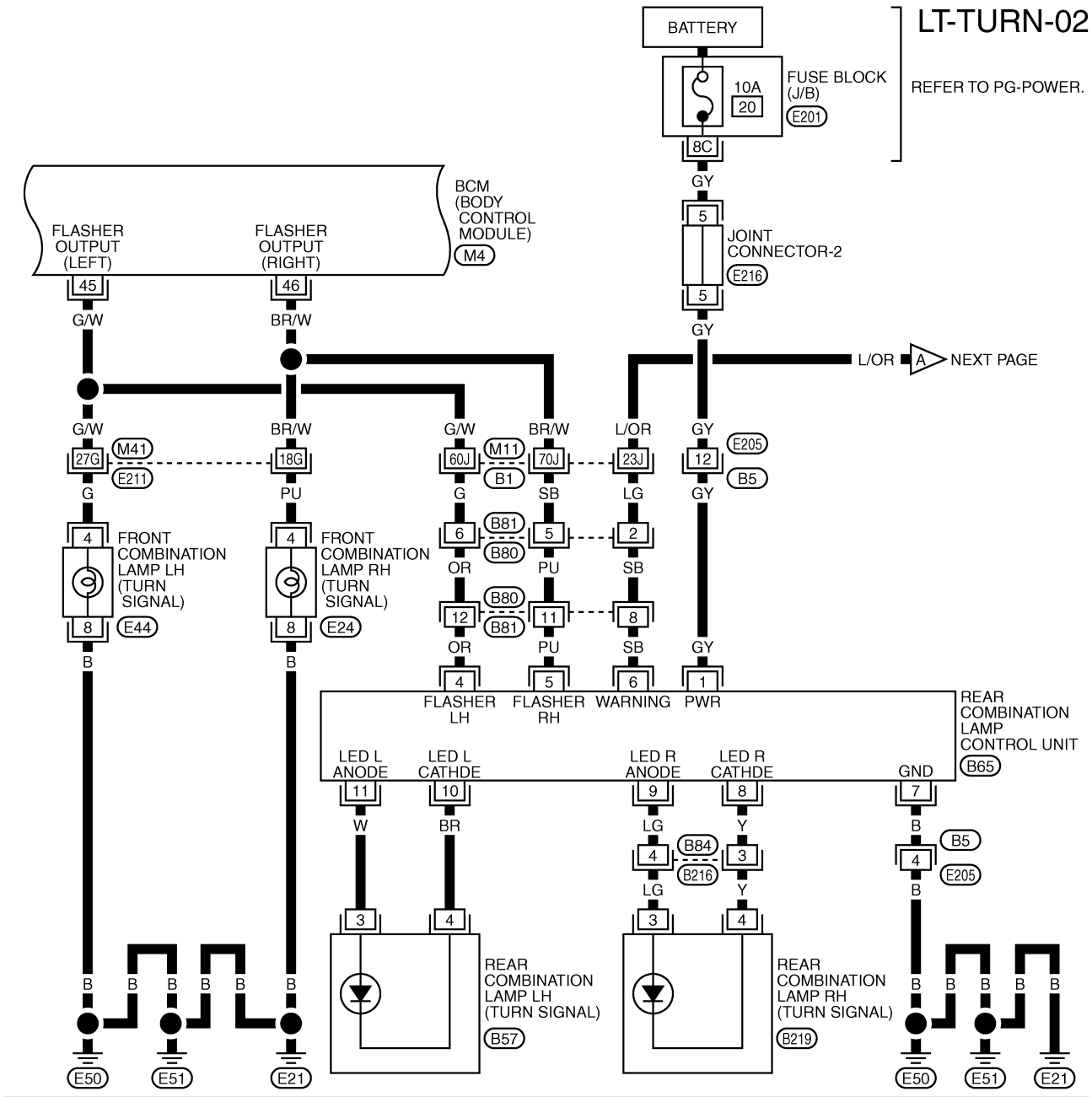
REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

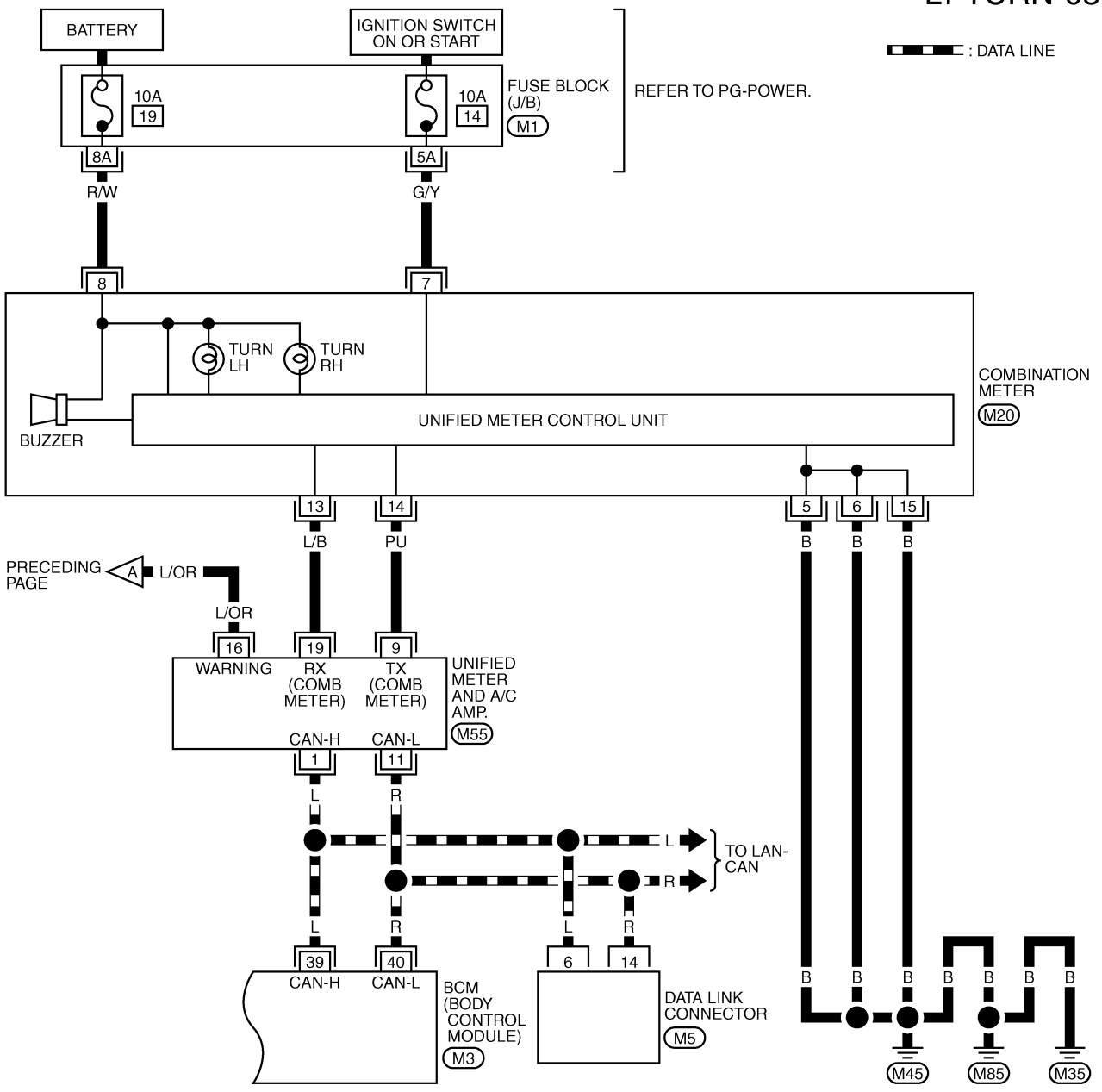
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

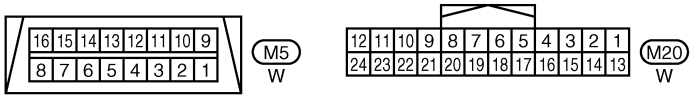
M3, M4 -ELECTRICAL UNITS

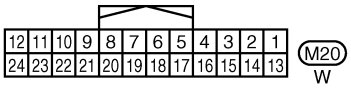
TKWM0820E

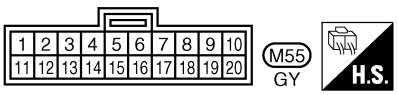

LT-TURN-02
REFER TO PG-POWER.
BATTERY
FUSE BLOCK (J/B) E201
10A 20
8C
GY
JOINT CONNECTOR-2 E216
L/OR A NEXT PAGE
BCM (BODY CONTROL MODULE) M4
FLASHER OUTPUT (LEFT) 45
FLASHER OUTPUT (RIGHT) 46
G/W
BR/W
27G M41 E211
18G
60J M11 B1
70J
23J
12 E205 B5
FRONT COMBINATION LAMP LH (TURN SIGNAL) E44
FRONT COMBINATION LAMP RH (TURN SIGNAL) E24
B81 B80
REAR COMBINATION LAMP CONTROL UNIT B65
FLASHER LH
FLASHER RH
WARNING
PWR
LED L ANODE
LED L CATHDE
LED R ANODE
LED R CATHDE
GND
B84 B216
B5 E205
REAR COMBINATION LAMP LH (TURN SIGNAL) B57
REAR COMBINATION LAMP RH (TURN SIGNAL) B219
E50
E51
E21
REFER TO THE FOLLOWING.
E211 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
E201 -FUSE BLOCK-JUNCTION BOX (J/B)
M4 -ELECTRICAL UNITS
B216 GY
TKWH0225E

LT-TURN-03







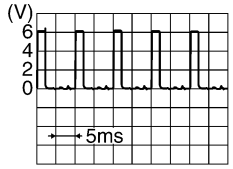
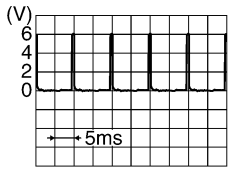
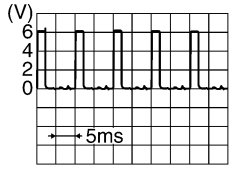
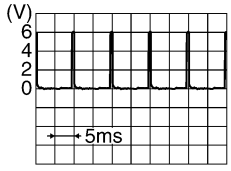
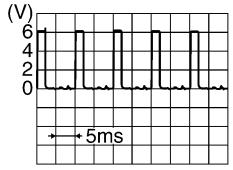
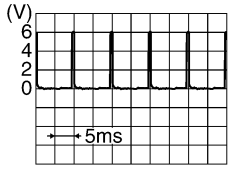


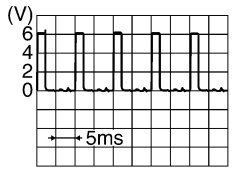
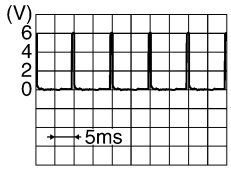
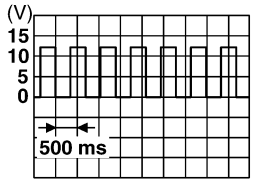
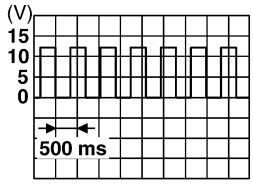
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)
M3 -ELECTRICAL UNITS

TKWM0624E

Terminals and Reference Values for BCM

AKS007IB

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
6	SB	Combination switch input 1				
11	LG/R	Ignition switch (ACC)	ACC	—		Battery voltage
29	G/Y	Hazard switch signal	OFF	Hazard switch	ON	Approx. 0V
					OFF	Battery voltage
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5291E
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4		 SKIA5292E
36	W/R	Combination switch output 1				
38	W/L	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN–H	—	—		—
40	R	CAN–L	—	—		—
42	L/R	Battery power supply	OFF	—		Battery voltage
45	G/W	Turn signal (left)	ON	Combination switch	Turn left ON	 SKIA3009J
46	BR/W	Turn signal (right)	ON	Combination switch	Turn right ON	 SKIA3009J
49	B	Ground	ON	—		Approx. 0V
52	B	Ground	ON	—		Approx. 0V
55	G	Battery power supply	OFF	—		Battery voltage

How to Proceed With Trouble Diagnosis

AKS007D2

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-89, "System Description" .
3. Perform.preliminary check. Refer to LT-99, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007D3

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
		22
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
Rear combination lamp control unit	Battery	20

Refer to LT-94, "Wiring Diagram — TURN —" .

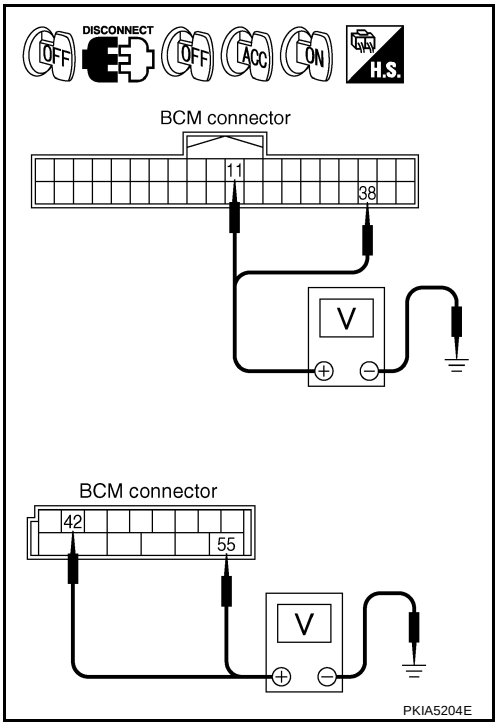
OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(-)			
Connector	Terminal (Wire color)		OFF	ACC	ON
M3	11 (LG/R)	Ground	0V	Battery voltage	Battery voltage
	38 (W/L)		0V	0V	Battery voltage
M4	42 (L/R)		Battery voltage	Battery voltage	Battery voltage
	55 (G)		Battery voltage	Battery voltage	Battery voltage



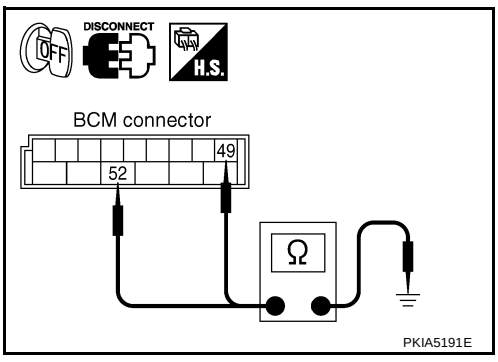
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M4	49 (B)	Ground	Yes
	52 (B)		



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions

AKS007D4

CONSULT-II has a display function for work support, self-diagnosis, data monitor, and active test for each part by combining data receiving and sending via the communication line from BCM.

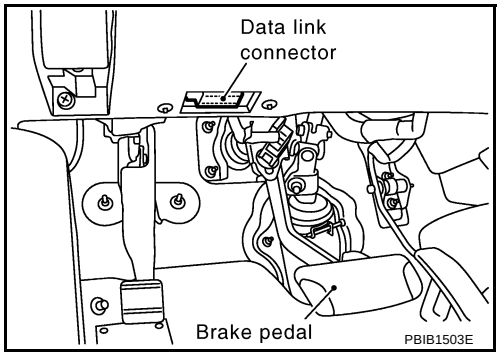
BCM diagnosis part	Check item, diagnosis mode	Description
FLASHER	Data monitor	Displays BCM input data in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

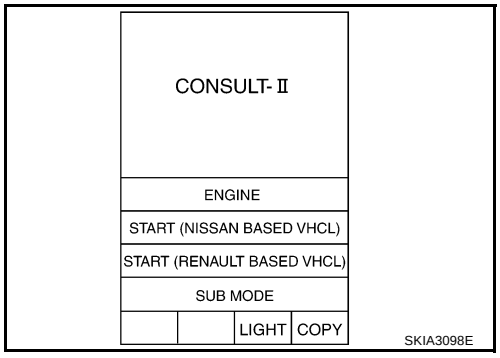
CAUTION:

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.

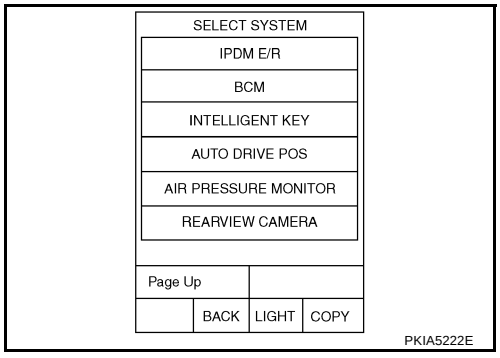
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



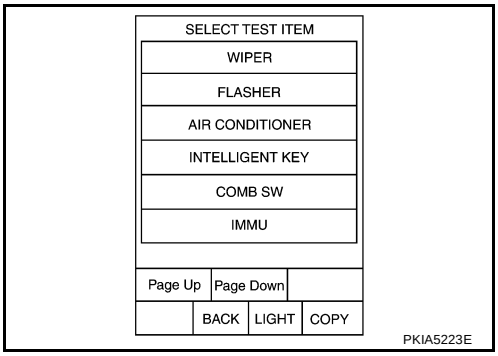
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “FLASHER” on “SELECT TEST ITEM” screen.



DATA MONITOR

Operation Procedure

1. Touch “FLASHER” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on the “DATA MONITOR” screen.

All signals	Monitors all the signals.
Selection from menu	Selects and monitors the individual signal.

4. Touch “START”.
5. When “SELECTION FROM MENU” is selected, touch items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
6. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
HAZARD SW	“ON/OFF”	Displays “Hazard ON (ON)/Hazard OFF (OFF)” status, determined from hazard switch signal.
TURN SIGNAL R	“ON/OFF”	Displays “Turn right (ON)/Other (OFF)” status, determined from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays “Turn left (ON)/Other (OFF)” status, determined from lighting switch signal.
BRAKE SW[NOTE]	“OFF”	—

NOTE:
This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

1. Touch “FLASHER” on “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching “BACK” deactivates the operation.

Display Item List

Test item	Description
FLASHER (RIGHT)	Turn signal lamp (right) can be operated by any ON-OFF operations.
FLASHER (LEFT)	Turn signal lamp (left) can be operated by any ON-OFF operations.

Turn Signal Lamp Does Not Operate

AKS007D5

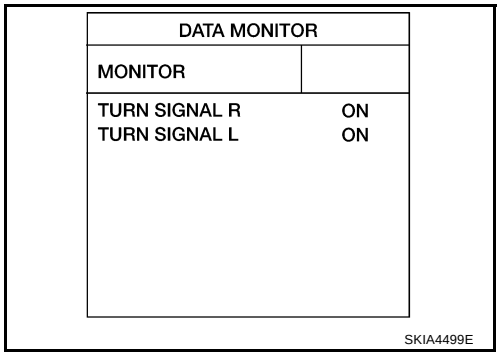
1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “FLASHER” data monitor, make sure “TURN SIGNAL R” and “TURN SIGNAL L” turns ON-OFF linked with operation of lighting switch.

When lighting switch is TURN RH position : TURN SIGNAL R ON

When lighting switch is TURN LH position : TURN SIGNAL L ON



Without CONSULT-II

Refer to LT-113, "Combination Switch Inspection" .

OK or NG

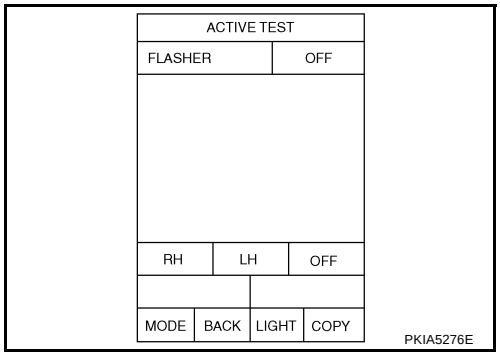
OK >> GO TO 2.

NG >> Check lighting switch. Refer to LT-113, "Combination Switch Inspection" .

2. ACTIVE TEST

With CONSULT-II

1. Select “FLASHER” during active test. Refer to LT-101, "ACTIVE TEST" .
2. Make sure “FLASHER RIGHT” and “FLASHER LEFT” operates.



Without CONSULT-II

GO TO 3.

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> GO TO 3.

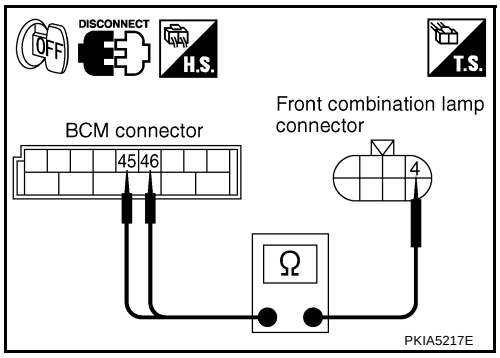
3. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and front combination lamp LH and RH connectors.
3. Check continuity between BCM harness connector M4 terminal 45 (G/W) and front combination lamp LH harness connector E44 terminal 4 (G).

45 (G/W) – 4 (G) : Continuity should exist.

4. Check continuity between BCM harness connector M4 terminal 46 (BR/W) and front combination lamp RH harness connector E24 terminal 4 (PU).

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



OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

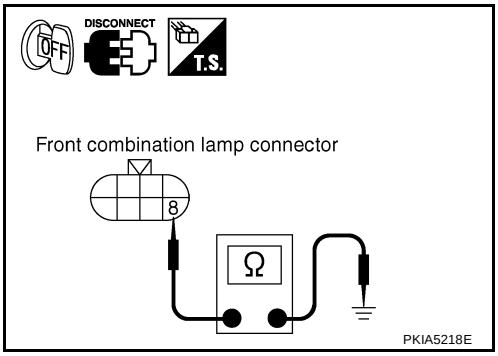
4. CHECK GROUND

1. Check continuity between front combination lamp LH harness connector E44 terminal 8 (B) and ground.

8 (B) – Ground : Continuity should exist.

2. Check continuity between front combination lamp RH harness connector E24 terminal 8 (B) and ground.

8 (B) – Ground : Continuity should exist.



OK or NG

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

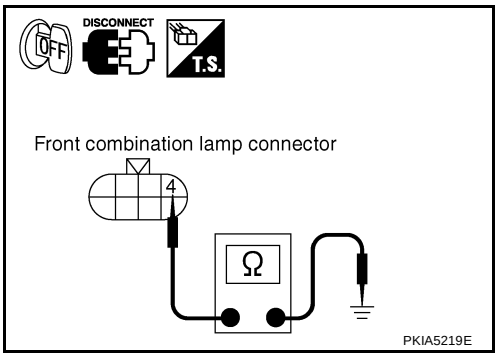
5. CHECK TURN SIGNAL LAMPS SHORT CIRCUIT

1. Disconnect rear combination lamp unit connector.
2. Check continuity (short circuit) between front combination lamp LH harness connector E44 terminal 4 (G) and ground.

4 (G) – Ground : Continuity should not exist.

3. Check continuity (short circuit) between front combination lamp RH harness connector E24 terminal 4 (PU) and ground.

4 (PU) – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 6.
NG >> Repair harness or connector.

6. CHECK BULB

Check bulb of each turn signal lamp.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> Replace turn signal lamp bulb.

Rear Turn Signal Lamp Does Not Operate

AKS007IF

1. CHECK TAIL LAMPS AND STOP LAMPS

Make sure tail lamps and stop lamps are illuminated.

OK or NG

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

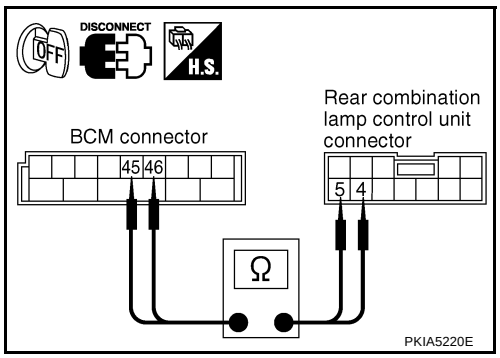
2. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 45 (G/W) and rear combination lamp control unit harness connector B65 terminal 4 (OR).

45 (G/W) – 4 (OR) : Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 46 (BR/W) and rear combination lamp control unit harness connector B65 terminal 5 (PU).

46 (BR/W) – 5 (PU) : Continuity should exist.



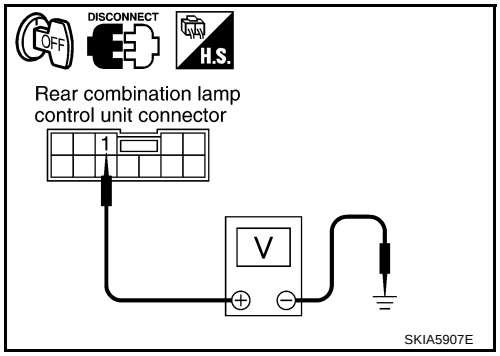
OK or NG

OK >> Replace rear combination lamp control unit.
NG >> Repair harness or connector.

3. CHECK POWER SUPPLY CIRCUIT

1. Disconnect rear combination lamp control unit connector.
2. Check voltage between rear combination lamp control unit harness connector B65 terminal 1 (GY) and ground.

1 (GY) – Ground : Battery voltage should exist.



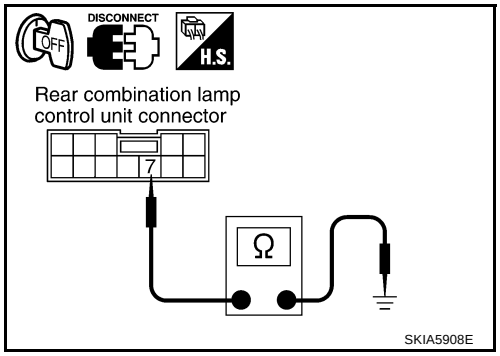
OK or NG

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

4. CHECK GROUND CIRCUIT

Check continuity between rear combination lamp control unit harness connector B65 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



OK or NG

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

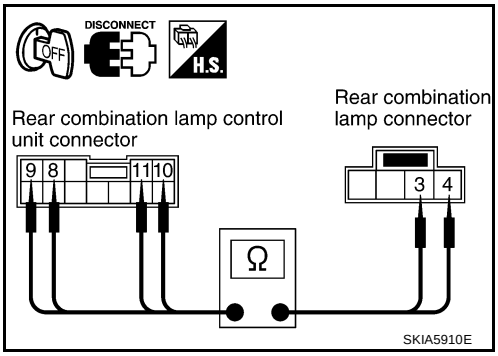
5. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Disconnect rear combination lamp RH and LH connector.
2. Check continuity between rear combination lamp control unit harness connector B65 terminal 11 (W) and rear combination lamp LH harness connector B57 terminal 3 (W).

11 (W) – 3 (W) : Continuity should exist.

3. Check continuity between rear combination lamp control unit harness connector B65 terminal 10 (BR) and rear combination lamp LH harness connector B57 terminal 4 (BR).

10 (BR) – 4 (BR) : Continuity should exist.



4. Check continuity between rear combination lamp control unit harness connector B65 terminal 9 (LG) and rear combination lamp RH harness connector B77 terminal 3 (LG).

9 (LG) – 3 (LG) : Continuity should exist.

5. Check continuity between rear combination lamp control unit harness connector B65 terminal 8 (Y) and rear combination lamp RH harness connector B77 terminal 4 (Y).

8 (Y) – 4 (Y) : Continuity should exist.

OK or NG

OK >> Replace rear combination lamp control unit or rear combination lamp, and then check if turn signal lamps is illuminated.
NG >> Repair harness or connector.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate

AKS007D6

1. CHECK BULB

Check bulb of each turn signal lamp.

OK or NG

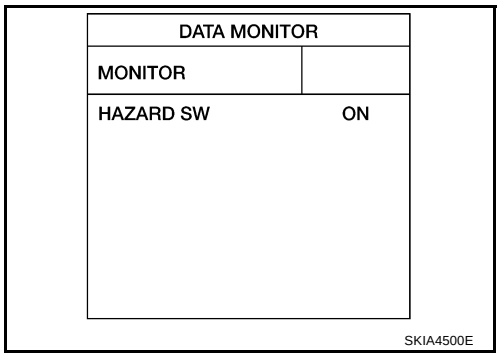
OK >> GO TO 2.
NG >> Replace bulb.

2. CHECK HAZARD SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “FLASHER” data monitor to make sure “HAZARD SW” turns ON-OFF linked with operation of hazard switch.

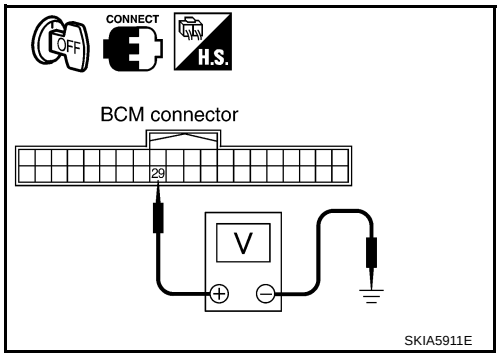
When hazard switch is ON position : HAZARD SW ON



Without CONSULT-II

Check voltage between BCM harness connector M3 terminal 29 (G/Y) and ground.

Terminals			Condition	Voltage
(+)		(-)		
Connector	Terminal (Wire color)			
M3	29 (G/Y)	Ground	Hazard switch is ON.	Approx. 0V
			Hazard switch is OFF.	Battery voltage



OK or NG

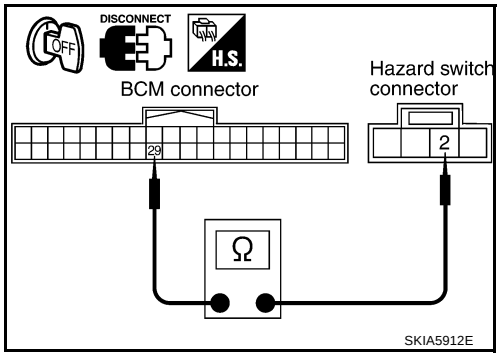
OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> GO TO 3.

3. CHECK HAZARD SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and hazard switch connector.
3. Check continuity BCM harness connector M3 terminal 29 (G/Y) and hazard switch harness connector M51 terminal 2 (G/Y).

29 (G/Y) – 2 (G/Y) : Continuity should exist.



OK or NG

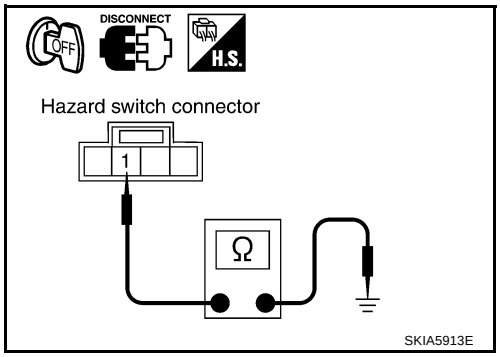
OK >> GO TO 4.

NG >> Repair harness or connector.

4. CHECK GROUND

Check continuity hazard switch harness connector M51 terminal 1 (B) and ground.

1 (B) – Ground : Continuity should exist.



OK or NG

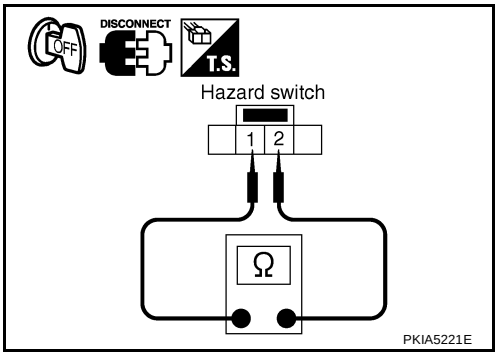
OK >> GO TO 5.

NG >> Repair harness or connector.

5. CHECK HAZARD SWITCH

1. Disconnect hazard switch connector.
2. Check continuity hazard switch.

Terminal		Condition	Continuity
Hazard switch			
1	2	Hazard switch is ON.	Yes
		Hazard switch is OFF.	No



OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> Replace hazard switch.

Turn Signal Indicator Lamp Does Not Operate

AKS007D7

1. CHECK BULB

Check bulb of turn signal indicator lamp in combination meter.

OK or NG

OK >> Replace combination meter.

NG >> Replace indicator bulb.

Bulb Replacement (Front Turn Signal Lamp)

AKS007D8

Refer to LT-35, "Bulb Replacement" in “HEADLAMP -XENON TYPE-”.

Bulb Replacement (Rear Turn Signal Lamp)

AKS007D9

Refer to LT-147, "Bulb Replacement" in “REAR COMBINATION LAMP”.

Removal and Installation of Front Turn Signal Lamp

AKS007DA

Refer to LT-36, "Removal and Installation" in “HEADLAMP -XENON TYPE-”.

Removal and Installation of Rear Turn Signal Lamp

AKS007DB

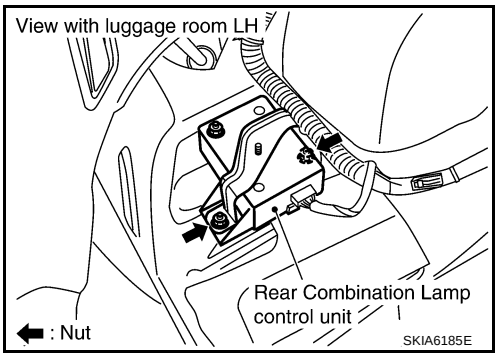
Refer to LT-147, "Removal and Installation" in “REAR COMBINATION LAMP”.

Removal and Installation of Rear Combination Lamp Control Unit

AKS007NX

REMOVAL

1. Remove luggage side finisher assembly (left). Refer to EI-44, "Removal and Installation" in “EI” section.
2. Remove nuts (2), and remove rear combination lamp control unit.



INSTALLATION

Install in the reverse order of removal.

LIGHTING AND TURN SIGNAL SWITCH

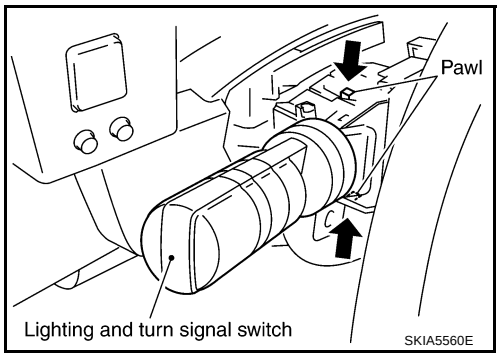
PFP:25540

Removal and Installation

AKS007DC

REMOVAL

1. Remove steering column cover. Refer to IP-13, "(L) Steering Column Front Lower Cover" , IP-13, "(M) Steering Column Lower Cover" in “IP” section.
2. While pressing pawls in direction as shown in the figure, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Installation is the reverse order of removal.

HAZARD SWITCH

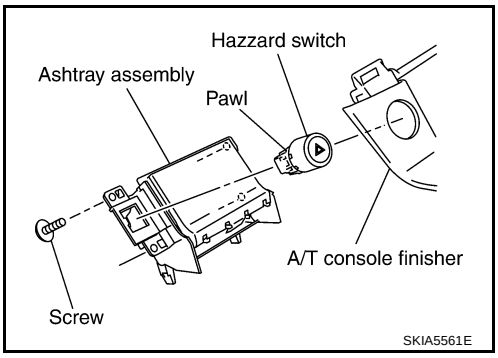
PFP:25290

Removal and Installation

AKS007DD

REMOVAL

1. Remove A/T console finisher. Refer to IP-12, "(F) A/T Console Finisher" in “IP” section.
2. Disconnect hazard switch connector.
3. Remove screws and remove ashtray assembly from A/T console finisher.
4. Press pawl on reverse side and remove the hazard switch.



INSTALLATION

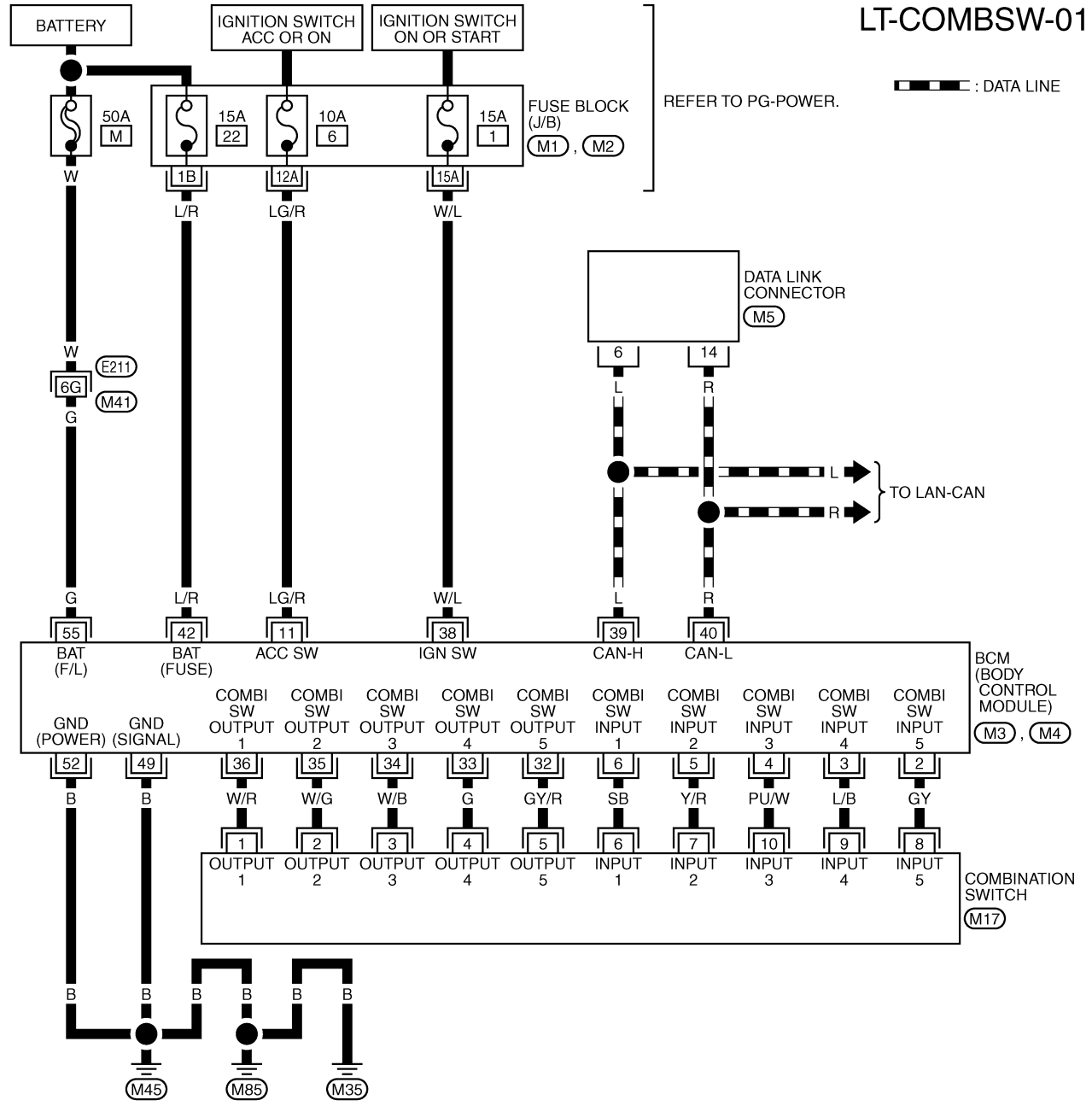
Install in the reverse order of removal.

COMBINATION SWITCH

PFP:25567

Wiring Diagram — COMBSW —

AKS007G4



REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM0814E

Combination Switch Reading Function

AKS007G5

For details, refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" in “BCS” section.

CONSULT-II Function

AKS007G6

CONSULT-II has a display function for work support, self-diagnosis, data monitor, and active test for each part by combining data receiving and sending via the communication line from BCM.

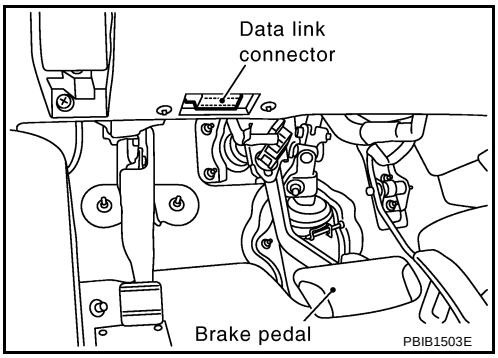
BCM diagnosis part	Check item, diagnosis mode	Description
Combination switch	Data monitor	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

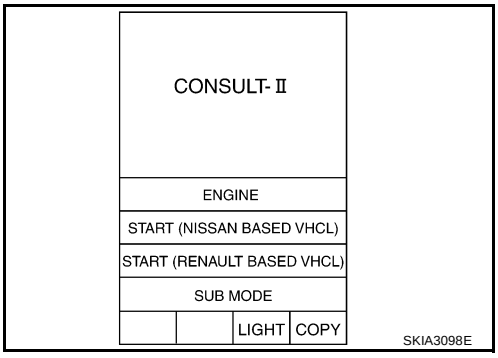
CAUTION:

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.

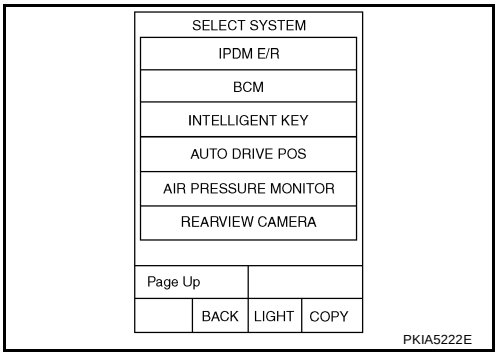
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



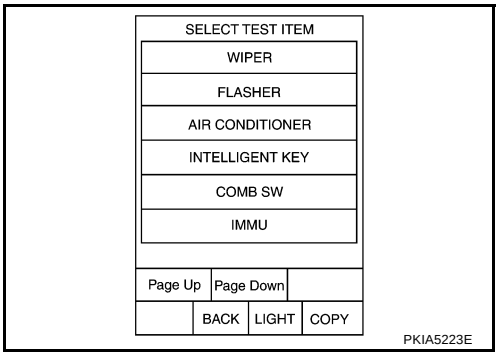
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “COMB SW”.



DATA MONITOR

Operation Procedure

1. Touch “COMB SW” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on “DATA MONITOR” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects and monitors individual signal.

4. Touch “START”.
5. When “SELECTION FROM MENU” is selected, touch items to be monitored. When “ALL SIGNALS” is selected, all the signals will be monitored.
6. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Monitor item name “OPERATION OR UNIT”		Contents
TURN SIGNAL R	“ON/OFF”	Displays “Turn Right (ON)/Other (OFF)” status, determined from lighting switch signal.
TURN SIGNAL L	“ON/OFF”	Displays “Turn Left (ON)/Other (OFF)” status, determined from lighting switch signal.
HI BEAM SW	“ON/OFF”	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	“ON/OFF”	Displays “Headlamp switch 1 (ON)/Other (OFF)” status, determined from lighting switch signal.
HEAD LAMP SW 2	“ON/OFF”	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
TAIL LAMP SW	“ON/OFF”	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
PASSING SW	“ON/OFF”	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
AUTO LIGHT SW	“ON/OFF”	Displays “Auto light switch (ON)/Other (OFF)” status, determined from lighting switch signal.
FR FOG SW	“ON/OFF”	Displays “Front fog lamp switch (ON)/Other (OFF)” status, determined from lighting switch signal.
FR WIPER HI	“ON/OFF”	Displays “Front Wiper HI (ON)/Other (OFF)” status, determined from wiper switch signal.
FR WIPER LOW	“ON/OFF”	Displays “Front Wiper LOW (ON)/Other (OFF)” status, determined from wiper switch signal.
FR WIPER INT	“ON/OFF”	Displays “Front Wiper INT (ON)/Other (OFF)” status, determined from wiper switch signal.
FR WASHER SW	“ON/OFF”	Displays “Front Washer Switch (ON)/Other (OFF)” status, determined from wiper switch signal.
INT VOLUME	[1 - 7]	Displays intermittent operation knob setting (1 - 7), determined from wiper switch signal.
RR WIPER ON	“ON/OFF”	Displays “rear Wiper (ON)/Other (OFF)” status as judged from wiper switch signal.
RR WIPER INT	“ON/OFF”	Displays “rear Wiper INT (ON)/Other (OFF)” status as judged from wiper switch signal.
RR WASHER SW	“ON/OFF”	Displays “rear Washer Switch (ON)/Other (OFF)” status as judged from wiper switch signal.

Combination Switch Inspection

AKS007G7

1. SYSTEM CHECK

1. Referring to table below, check which system malfunctioning switch belongs to.

System 1	System 2	System 3	System 4	System 5
—	FR WASHER	FR WIPER LO	TURN LH	TURN RH
FR WIPER HI	—	FR WIPER INT	PASSING	HEAD LAMP1
INT VOLUME 1	RR WASHER	—	HEAD LAMP2	HI BEAM
RR WIPER INT	INT VOLUME 3	AUTO LIGHT	—	LIGHT SW 1ST
INT VOLUME 2	RR WIPER ON	—	FR FOG	—

>> Check the system to which malfunctioning switch belongs, and GO TO 2.

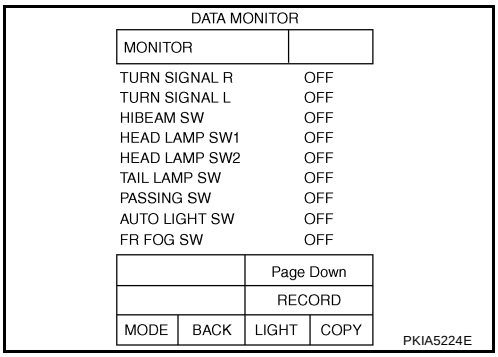
2. SYSTEM CHECK

With CONSULT-II

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.

1. Connect CONSULT-II, and select “COMB SW” on “SELECT TEST ITEM” screen.
2. Select “DATA MONITOR”.
3. Select “START”, and confirm that other switches in malfunctioning system operate normally.
   Example: When auto light switch is malfunctioning, confirm that “FRONT WIPER LOW” and “FRONT WIPER INT” in System 3, to which the auto light switch belongs, turn ON-OFF normally.



Without CONSULT-II

Operating combination switch, confirm that other switches in malfunctioning system operate normally.
Example: When auto light switch is malfunctioning, confirm that FRONT WIPER LOW and FRONT WIPER INT in System 3, to which the auto light switch belongs, operate normally.

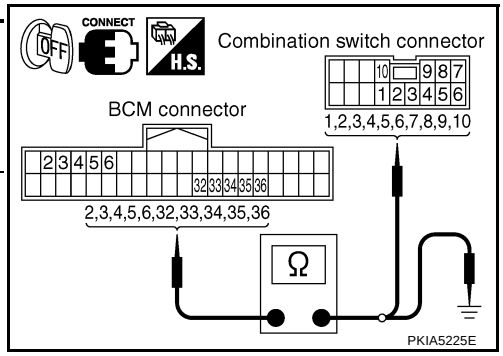
Check results

Other switches in malfunctioning system operate normally.>>Replace lighting switch or wiper switch.
Other switches in malfunctioning system do not operate normally.>>GO TO 3.

3. HARNESS INSPECTION

1. Turn ignition switch OFF.
2. Disconnect BCM and combination switch connectors.
3. Check for continuity between BCM harness connector of the suspect system and the corresponding combination switch connector terminals.

Suspect system	Terminals					Continuity
	BCM			Combination switch		
	Connector	Terminal (Wire color)		Connector	Terminal (Wire color)	
1	M3	Input 1	6 (SB)	M17	6 (SB)	Yes
		Output 1	36 (W/R)		1 (W/R)	
2		Input 2	5 (Y/R)		7 (Y/R)	
		Output 2	35 (W/G)		2 (W/G)	
3		Input 3	4 (PU/W)		10 (PU/W)	
		Output 3	34 (W/B)		3 (W/B)	
4		Input 4	3 (L/B)		9 (L/B)	
		Output 4	33 (G)		4 (G)	
5		Input 5	2 (GY)		8 (GY)	
		Output 5	32 (GY/R)		5 (GY/R)	



4. Check for continuity between each terminal of BCM harness connector in suspect malfunctioning system and ground.

Suspect system	Terminals				Continuity
	BCM (+)			(-)	
	Connector	Terminal (Wire color)			
1	M3	Input 1	6 (SB)	Ground	No
		Output 1	36 (W/R)		
2		Input 2	5 (Y/R)		
		Output 2	35 (W/G)		
3		Input 3	4 (PU/W)		
		Output 3	34 (W/B)		
4		Input 4	3 (L/B)		
		Output 4	33 (G)		
5		Input 5	2 (GY)		
		Output 5	32 (GY/R)		

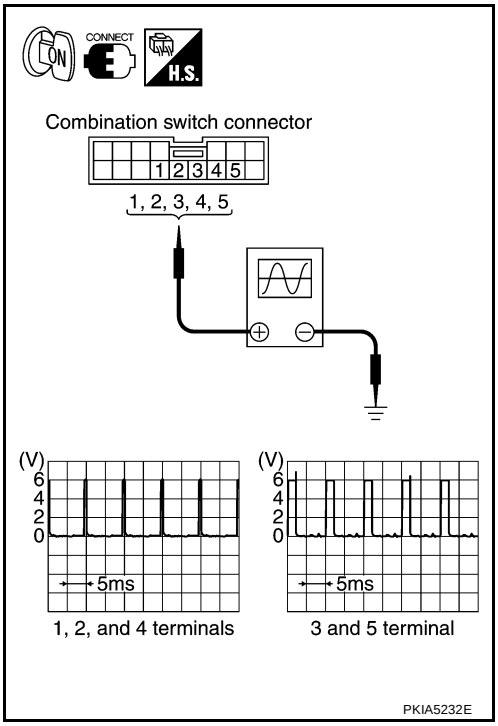
OK or NG

OK >> GO TO 4.
NG >> Check harness between BCM and combination switch for open or short circuit.

4. BCM OUTPUT TERMINAL INSPECTION

1. Turn lighting switch and wiper switch into OFF.
2. Set wiper dial position 4.
3. Connect BCM and combination switch connectors, and check BCM output terminal voltage waveform of suspect malfunctioning system.

Suspect system	Terminals		
	Combination switch (+)		(-)
	Connector	Terminal (Wire color)	
1	M17	1 (W/R)	Ground
2		2 (W/G)	
3		3 (W/B)	
4		4 (G)	
5		5 (GY/R)	



OK or NG

OK >> Open circuit in combination switch, GO TO 5.
NG >> Replace BCM.

5. COMBINATION SWITCH INSPECTION

Referring to table below, perform combination switch inspection.

Procedure													
1	2		3		4		5		6		7		
Replace lighting switch.	Confirm check results.	OK	INSPECTION END		Confirm check results.	OK	INSPECTION END		Confirm check results.	OK	INSPECTION END		
		NG	Replace wiper switch.			NG	Replace switch base.			NG	Confirm symptom again.		

>> INSPECTION END

Removal and Installation

AKS007G8

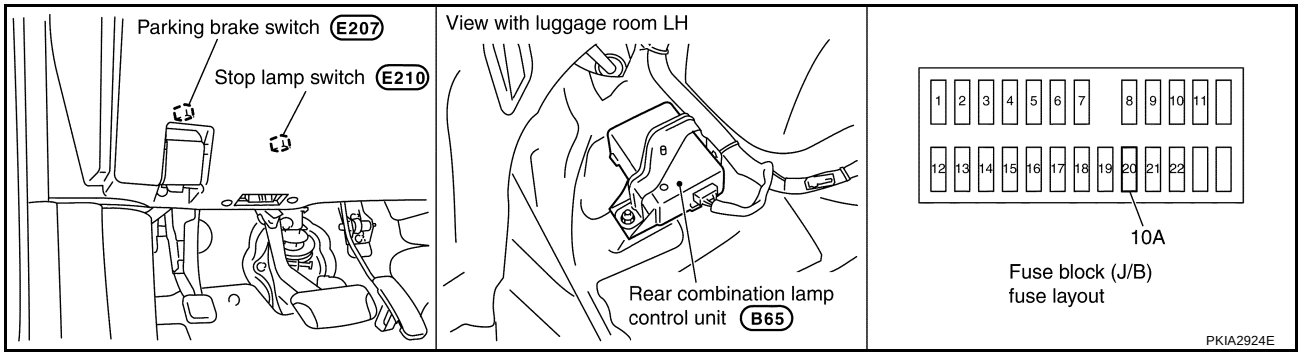
For details, refer to LT-108, "LIGHTING AND TURN SIGNAL SWITCH" .

STOP LAMP

PFP:26550

Component Parts and Harness Connector Location

AKS007IG



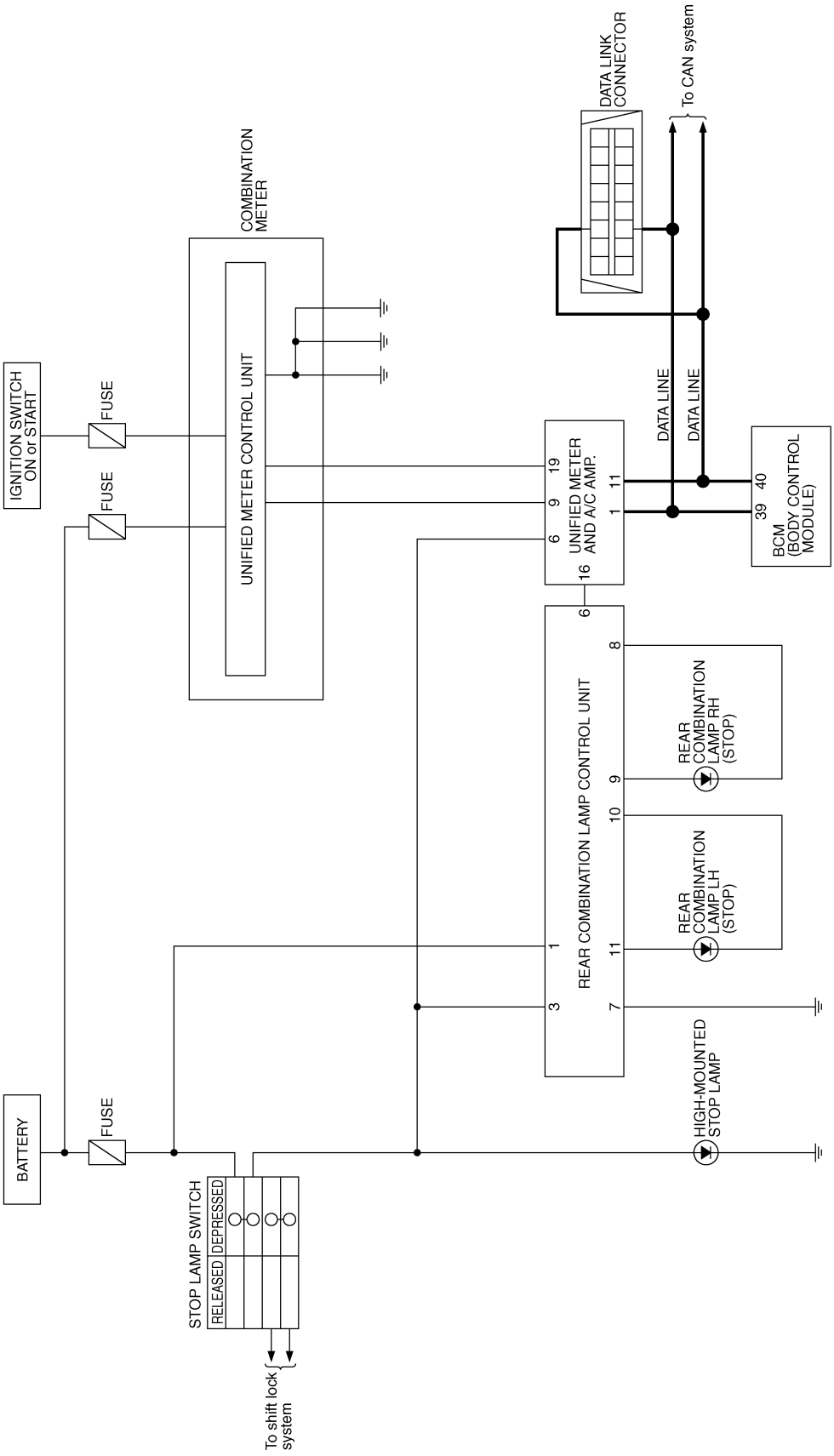
System Description

AKS007IH

The current that flows by Rear combination lamp unit is controlled, and a stop lamp (LED) is made to turn on.

Schematic

AKS007II

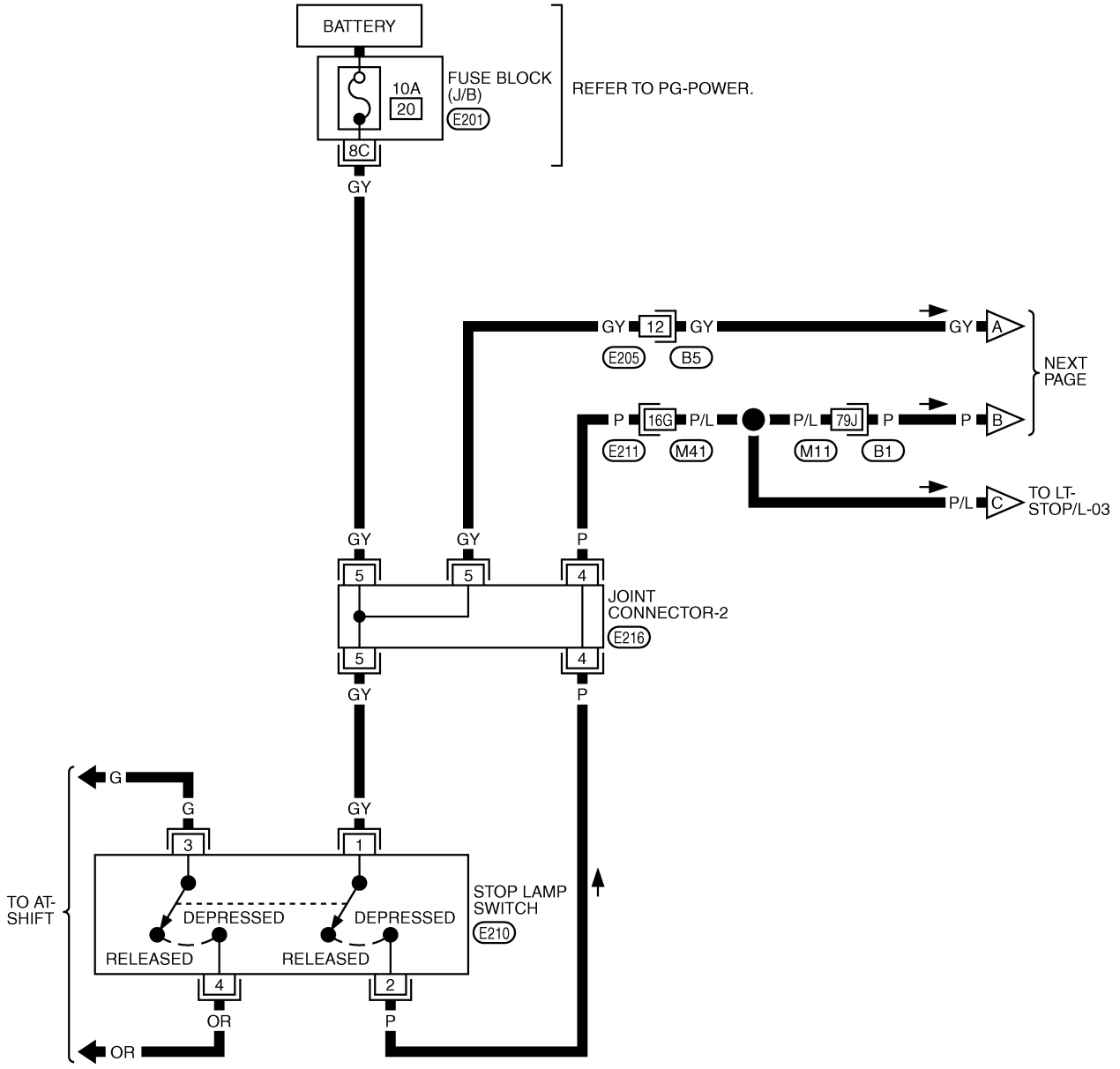


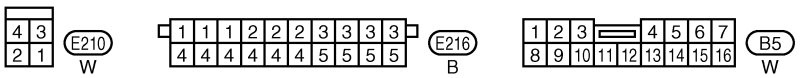
TKWM0625E

Wiring Diagram — STOP/L —

AKS007DL

LT-STOP/L-01





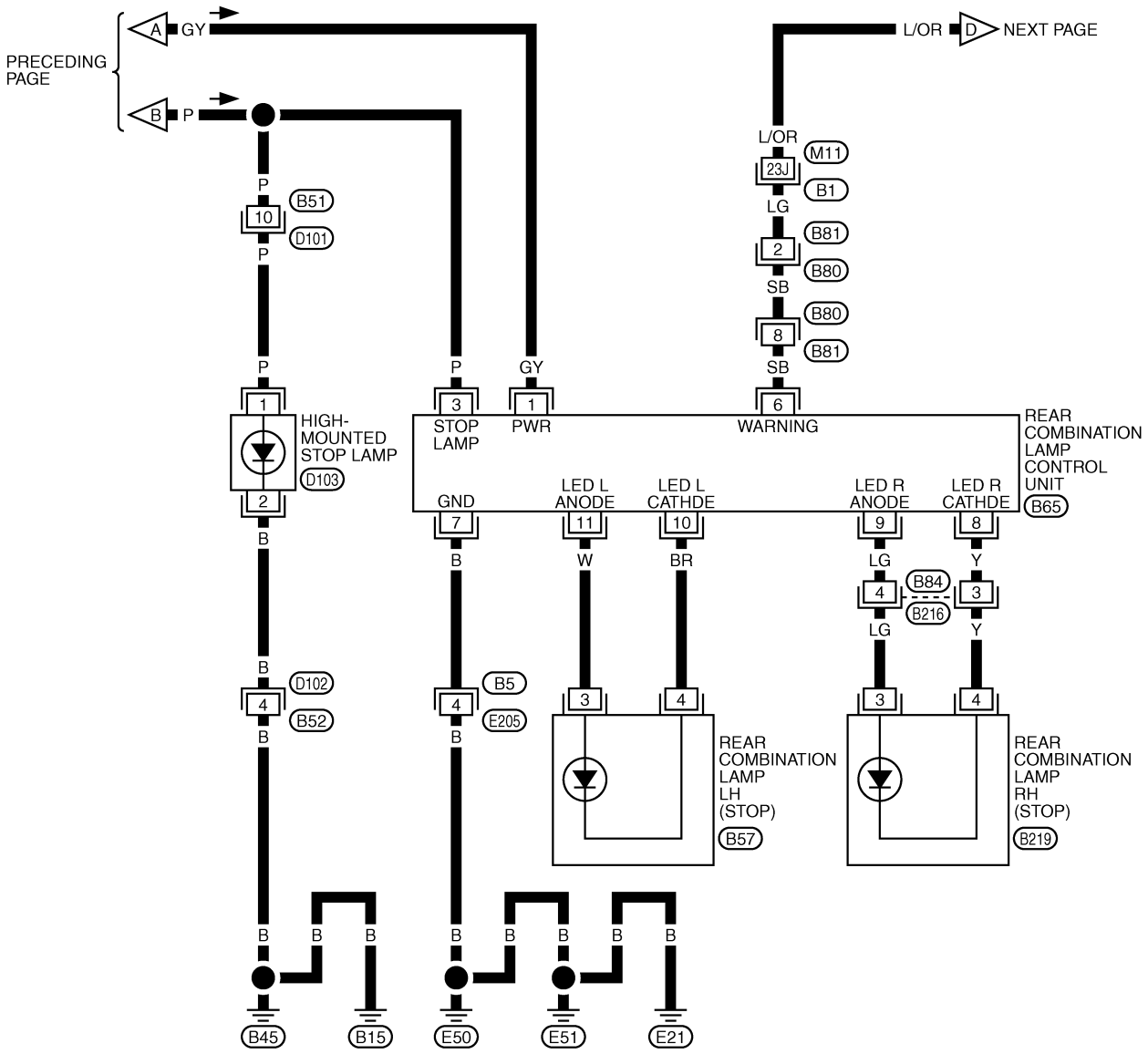
REFER TO THE FOLLOWING.

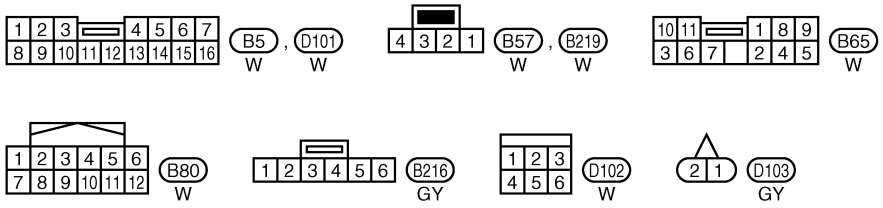
E211 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

E201 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWH0226E

LT-STOP/L-02



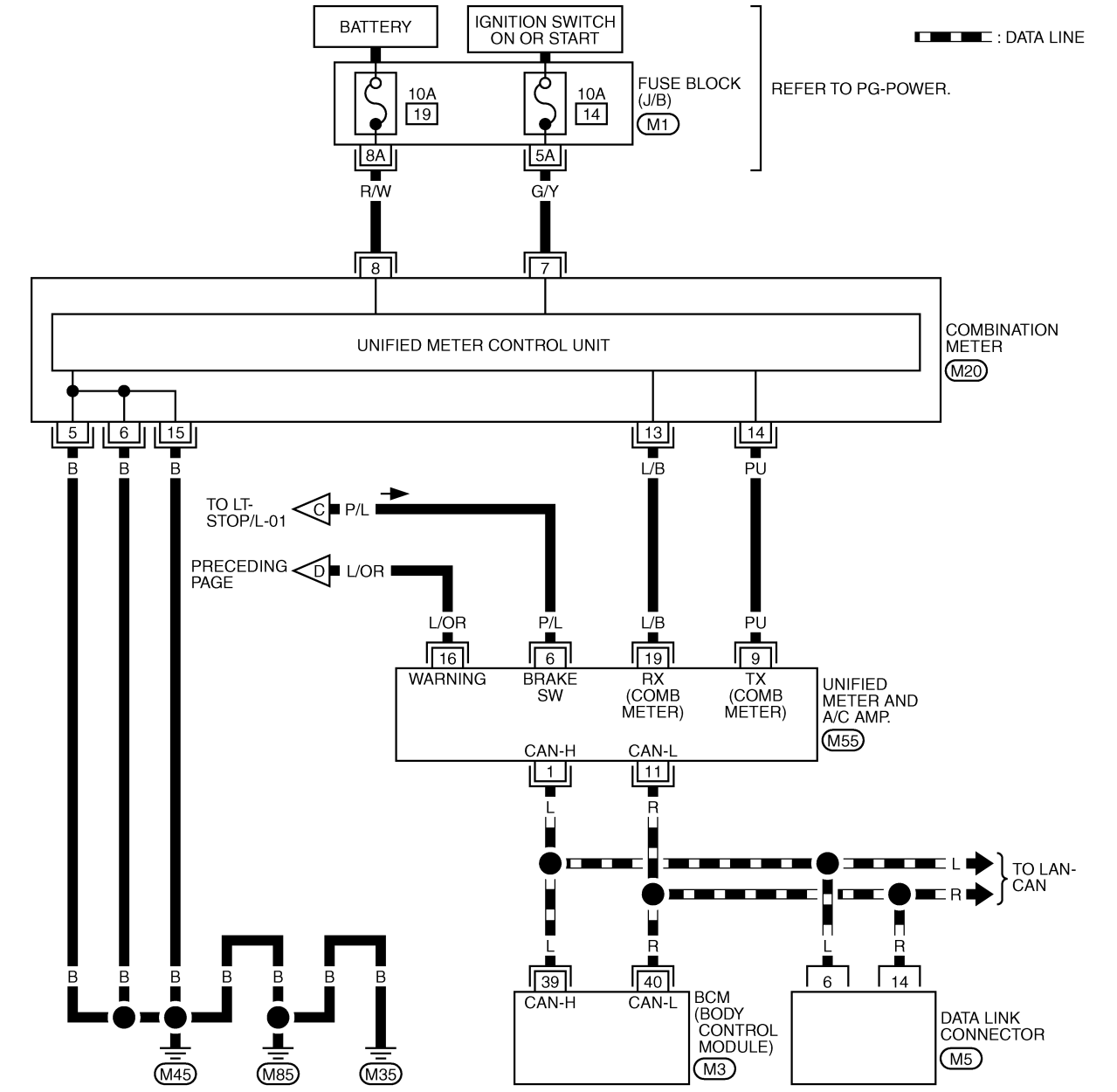


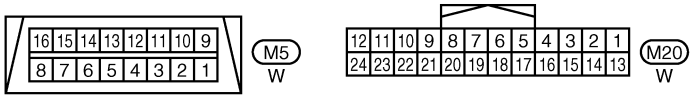
REFER TO THE FOLLOWING.

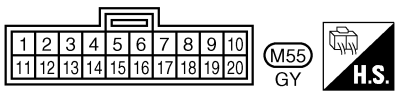
B1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWH0227E

LT-STOP/L-03







REFER TO THE FOLLOWING.

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

M3 -ELECTRICAL UNITS

TKWM0628E

Stop Lamp Does Not Operate

AKS007IJ

1. CHECK TAIL LANP AND TURN SIGNAL LAMP

Make sure tail lamps and turn signal lamps are illuminated.

OK or NG

OK >> GO TO 2.
NG >> GO TO 6.

2. CHECK FUSE

Check fuse No. 20 is blow out.

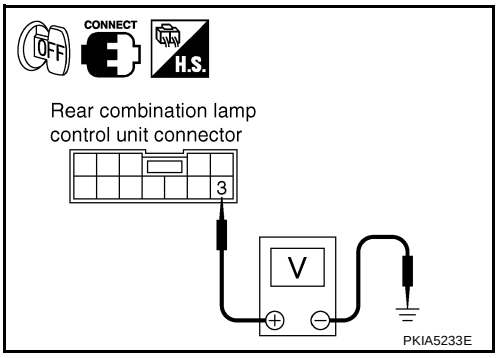
OK or NG

OK >> GO TO 3.
NG >> If fuse is blow out, be sure to eliminate cause of malfunction before installing new fuse.

3. CHECK INPUT SIGNAL

Check voltage between rear combination lamp control unit harness connector B65 terminal 3 (P) and ground.

Terminals		(-)	Condition	Voltage
Connector	Terminal (Wire color)			
B65	3 (P)	Ground	Stop lamp switch is ON. (Depressed)	Battery voltage
			Stop lamp switch is OFF. (Released)	Approx. 0



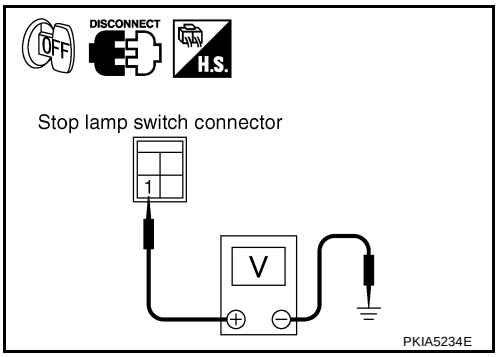
OK or NG

OK >> Replace rear combination lamp control unit.
NG >> GO TO 4.

4. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch connector.
3. Check voltage between stop lamp switch harness connector E210 terminal 1 (GY) and ground.

1 (GY) – Ground : Battery voltage should exist.



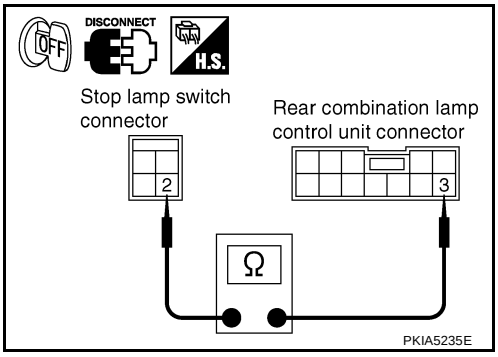
OK or NG

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

5. CHECK STOP LAMP SWITCH CIRCUIT

1. Disconnect rear combination lamp control unit connector.
2. Check continuity between stop lamp switch harness connector E210 terminal 2 (P) and rear combination lamp control unit harness connector B65 terminal 3 (P).

2 (P) – 3 (P) : Continuity should exist.



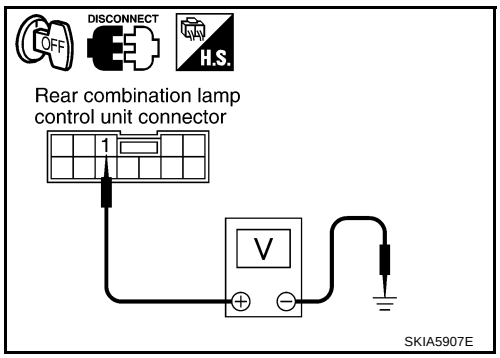
OK or NG

OK >> Replace stop lamp switch.
NG >> Repair harness or connector.

6. CHECK POWER SUPPLY CIRCUIT

1. Disconnect rear combination lamp control unit connector.
2. Check voltage between rear combination lamp control unit harness connector B65 terminal 1 (GY) and ground.

1 (GY) – Ground : Battery voltage should exist.



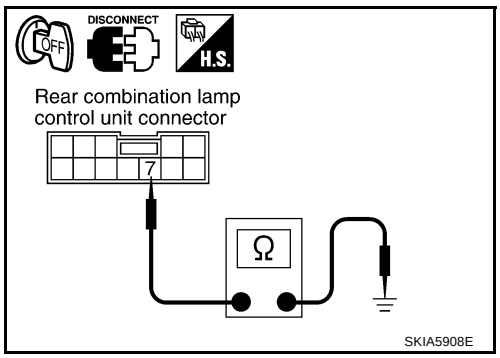
OK or NG

OK >> GO TO 7.
NG >> Repair harness or connector.

7. CHECK GROUND CIRCUIT

Check continuity between rear combination lamp control unit harness connector B65 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



OK or NG

OK >> GO TO 8.
NG >> Repair harness or connector.

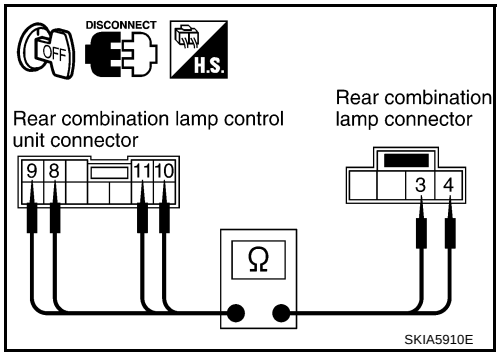
8. CHECK STOP LAMPS CIRCUIT

1. Disconnect rear combination lamp RH and LH connector.
2. Check continuity between rear combination lamp control unit harness connector B65 terminal 11 (W) and rear combination lamp LH harness connector B57 terminal 3 (W).

11 (W) – 3 (W) : Continuity should exist.

3. Check continuity between rear combination lamp control unit harness connector B65 terminal 10 (BR) and rear combination lamp LH harness connector B57 terminal 4 (BR).

10 (BR) – 4 (BR) : Continuity should exist.



4. Check continuity between rear combination lamp control unit harness connector B65 terminal 9 (LG) and rear combination lamp RH harness connector B77 terminal 3 (LG).

9 (LG) – 3 (LG) : Continuity should exist.

5. Check continuity between rear combination lamp control unit harness connector B65 terminal 8 (Y) and rear combination lamp RH harness connector B77 terminal 4 (Y).

8 (Y) – 4 (Y) : Continuity should exist.

OK or NG

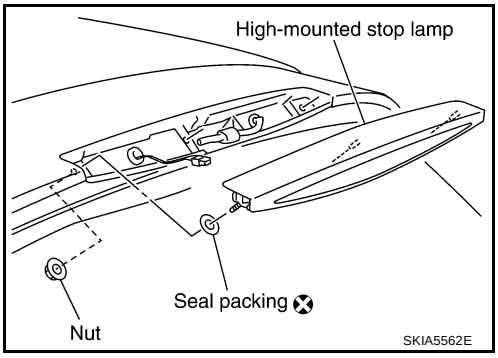
OK >> Replace rear combination lamp control unit or rear combination lamp, and then check if turn signal lamps is illuminated.
NG >> Repair harness or connector.

High-Mounted Stop Lamp

AKS007DM

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove cap from back door finisher and remove nuts. Refer to EI-46, "Removal and Installation" in “EI” section.
2. Disconnect high-mounted stop lamp connector.
3. Remove washer tube from high-mounted stop lamp, and remove high-mounted stop lamp from the rear air spoiler.
4. Remove seal packing from the rear air spoiler.
5. Install in the reverse order of removal.



High-mounted stop lamp : LED

CAUTION:
Seal packing cannot be reused.

Stop Lamp

AKS007DN

BULB REPLACEMENT

Refer to LT-147, "Bulb Replacement" in “REAR COMBINATION LAMP”.

REMOVAL AND INSTALLATION

Refer to LT-147, "Removal and Installation" in “REAR COMBINATION LAMP”.

Rear Combination Lamp Control Unit

AKS007NY

REMOVAL AND INSTALLATION

Refer to LT-107, "Removal and Installation of Rear Combination Lamp Control Unit" in “TURN SIGNAL AND HAZARD WARNING LAMPS”.

STEP LAMP

PFP:26420

Front Door Step Lamp

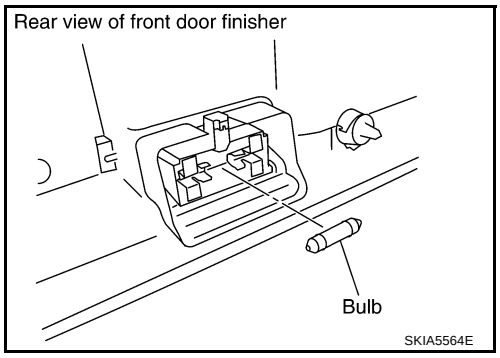
AKS007DO

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove door finisher. Refer to EI-35, "Removal and Installation" in “EI” section.
2. Insert a screwdriver in lens and remove lens.
3. Remove bulb.

Step lamp : 12V - 5W

4. Install in the reverse order of removal.



Rear Door Step Lamp

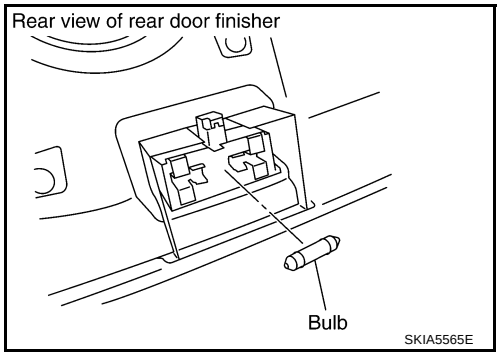
AKS007DP

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove door finisher. Refer to in “EI” section.
2. Insert a screwdriver in lens and remove lens.
3. Remove bulb.

Step lamp : 12V - 5W

4. Install in the reverse order of removal.

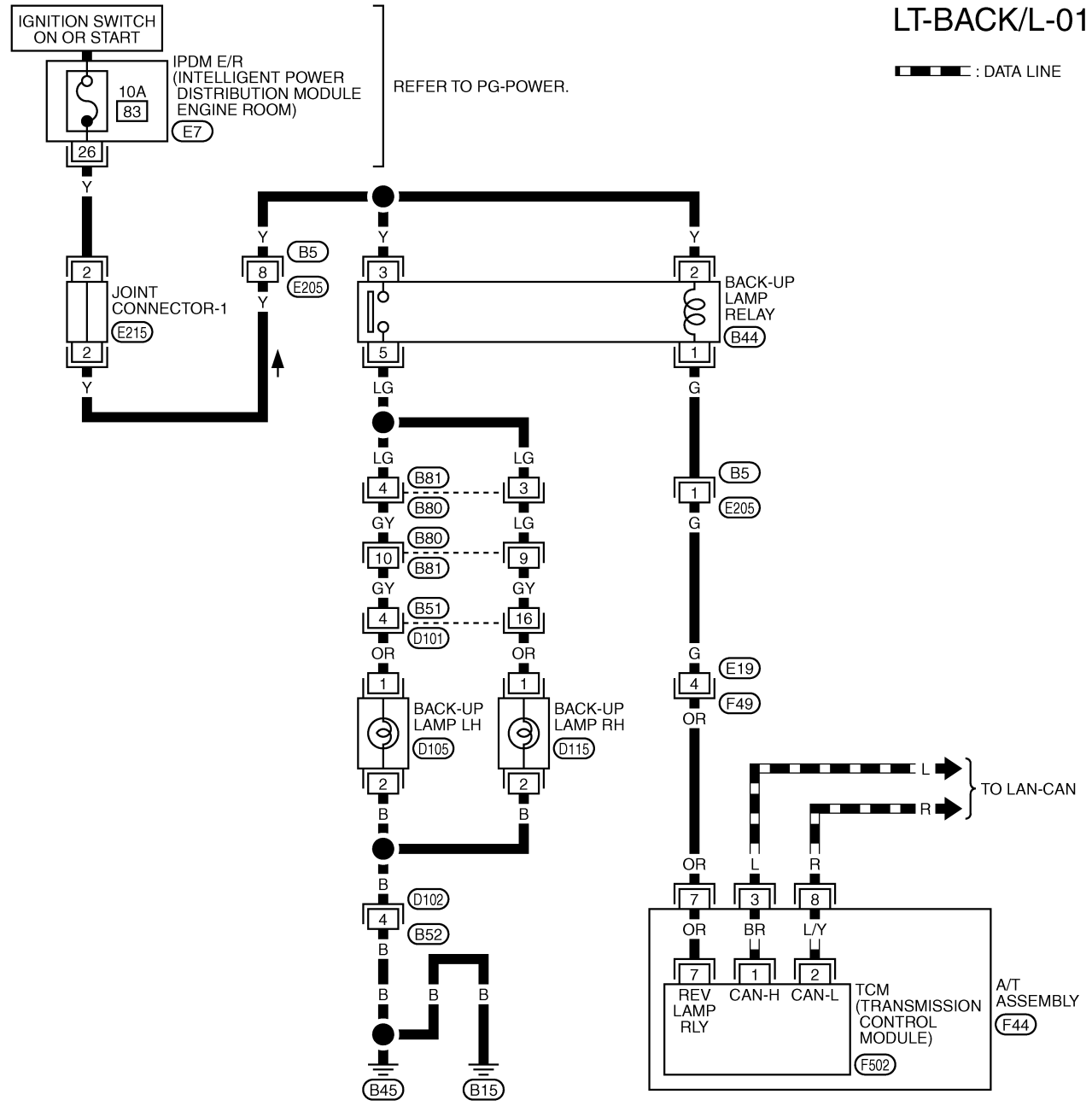


BACK-UP LAMP

PFP:26550

Wiring Diagram — BACK/L —

AKS007DQ



TKWM1277E

Bulb Replacement

AKS007DR

Refer to LT-147, "Bulb Replacement" in “REAR COMBINATION LAMP”.

Removal and Installation

AKS007DS

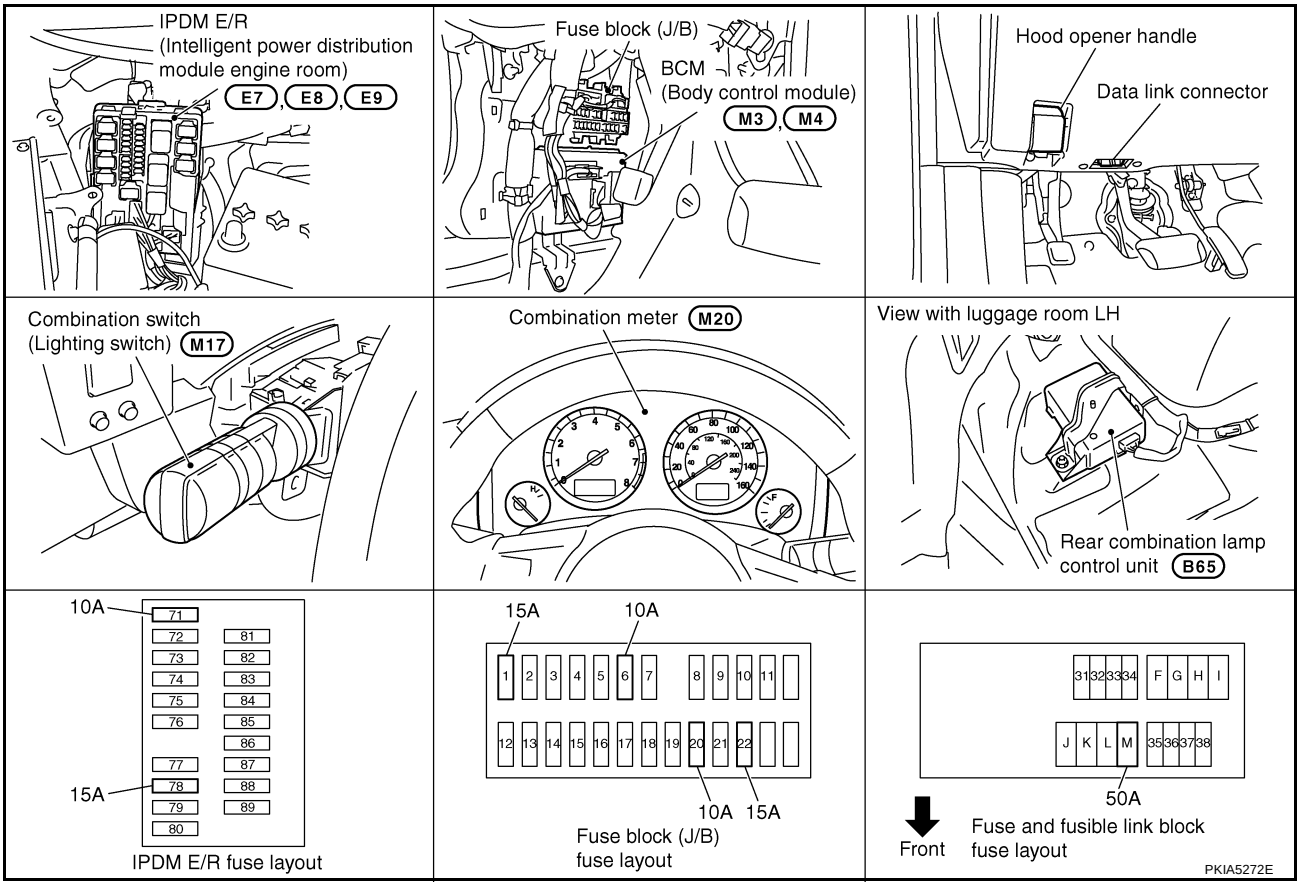
Refer to LT-147, "Removal and Installation" in “REAR COMBINATION LAMP”.

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

Component Parts and Harness Connector Location

AKS007O7



System Description

AKS007DT

Control of the parking, license plate, and tail lamp operation is dependent upon the position of the lighting switch (combination switch). When the lighting switch is placed in the 1ST position, the BCM (body control module) receives input signal requesting the parking, license plate, side marker and tail lamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R (intelligent power distribution module engine room) controls the tail lamp relay coil. This relay, when energized, directs power to the parking, license plate, side marker and tail lamps, which then illuminate.

The current that flows by Rear combination lamp unit is controlled, and a tail lamp (LED) is made to turn on.

Power is supplied at all times

- through 10A fuse [No. 71, located in IPDM E/R (intelligent power distribution module engine room)]
- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)] and
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].
- through 15A fuse [No. 78, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- through 50A fusible link (letter M, located in the fuse and fusible link block)
- to BCM (body control module) terminal 55
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- through 10A fuse [No. 20, located in fuse block (J/B)]
- to rear combination lamp control unit terminal 1.

With the ignition switch in the ON or START position, power is supplied

- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38
- through ignition relay [located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

With the ignition switch in the ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to BCM (body control module) terminal 11.

Ground is supplied

- to BCM (body control module) terminals 49 and 52
- through grounds M35, M45 and M85
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E21, E50 and E51
- to rear combination lamp control unit terminal 7
- through grounds E21, E50 and E51.

OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position (or if the auto light system is activated), the BCM receives input signal requesting the parking, license plate, side marker and tail lamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the tail lamp relay coil, which when energized, directs power

- through IPDM E/R terminal 22
- to front side marker lamp LH terminal 1
- to clearance lamp LH terminal 2
- to license plate lamp LH terminal 1
- to rear combination lamp LH terminal 1
- to rear combination lamp control unit terminal 2
- to front side marker lamp RH terminal 1
- to clearance lamp RH terminal 2
- to license plate lamp RH terminal 1
- to rear combination lamp RH terminal 1.

Ground is supplied at all times

- to front side marker lamp LH terminal 2
- through grounds E21, E50 and E51
- to clearance lamp LH terminal 3
- through grounds E21, E50 and E51
- to license plate lamp LH terminal 2
- through grounds B15 and B45
- to rear combination lamp LH terminal 2
- through grounds B15 and B45
- to front side marker lamp RH terminal 2
- through grounds E21, E50 and E51
- to clearance lamp RH terminal 3
- through grounds E21, E50 and E51
- to license plate lamp RH terminal 2
- through grounds B15 and B45
- to rear combination lamp RH terminal 2
- through grounds B203 and B210
- to rear combination lamp control unit terminal 7
- through grounds E21, E50 and E51.

With power and ground supplied, the parking, license plate, side marker and tail lamps illuminate.

COMBINATION SWITCH READING FUNCTION

Refer to BCS-3, "COMBINATION SWITCH READING FUNCTION" .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST (or 2ND) position, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.
Under this condition, the parking, license, side marker and tail lamps remain illuminated for 5 minutes, then the parking, license plate, side marker and tail lamps are turned off.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

AKS007DU

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

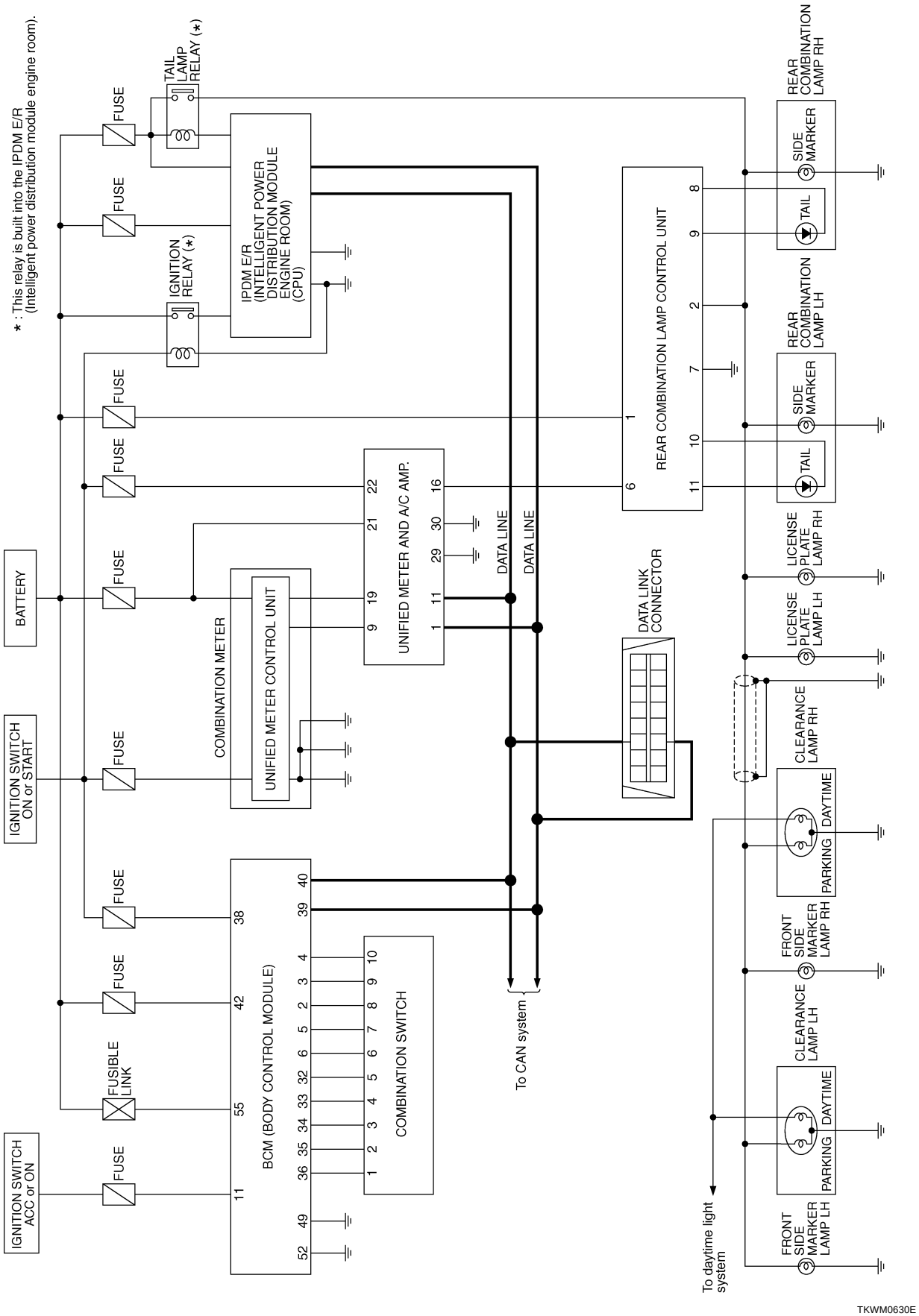
CAN Communication Unit

AKS0080X

Refer to LAN-6, "CAN Communication Unit" .

Schematic

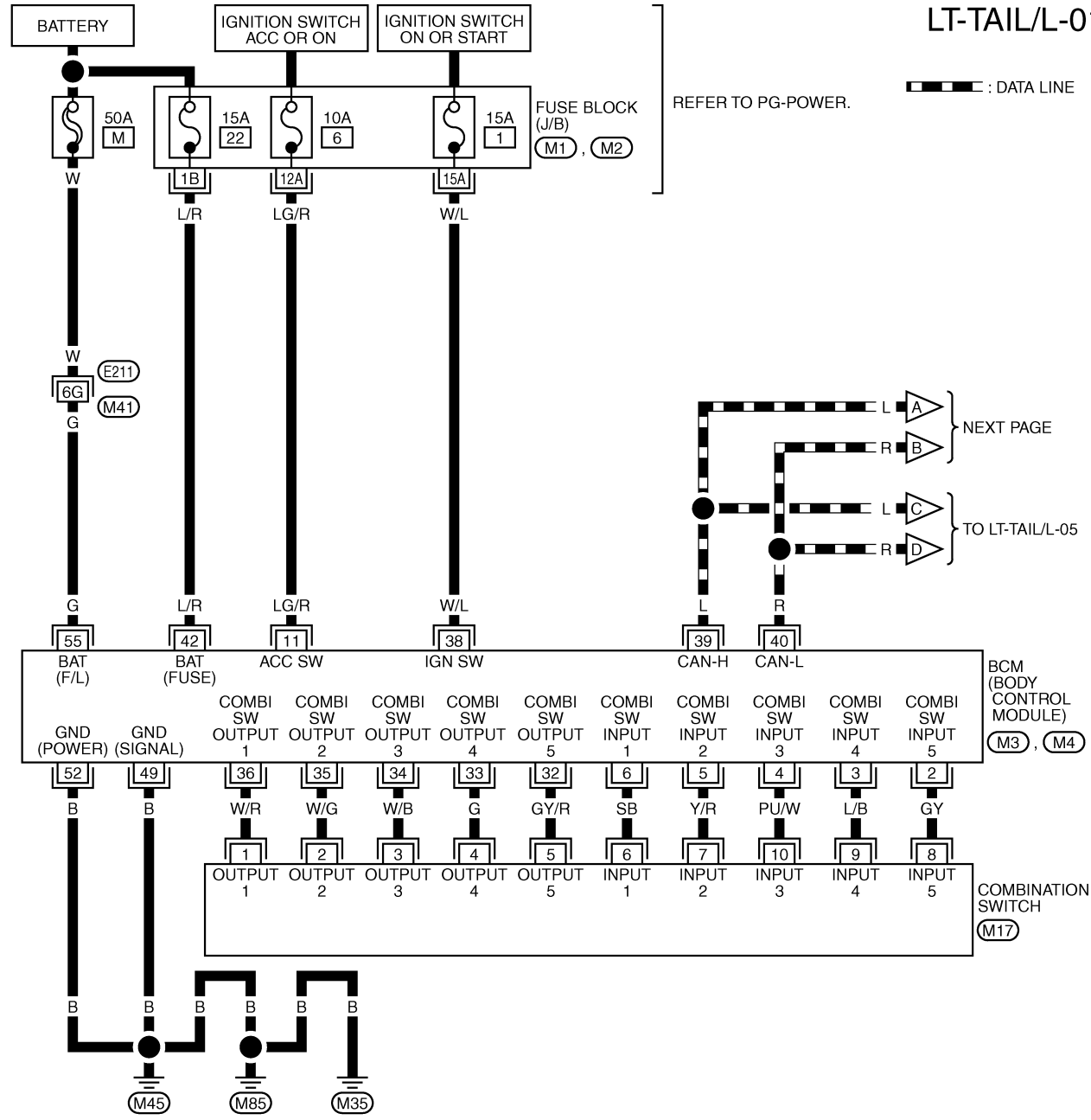
AKS007DW



TKWM0630E

Wiring Diagram — TAIL/L —

AKS007DX



REFER TO THE FOLLOWING.

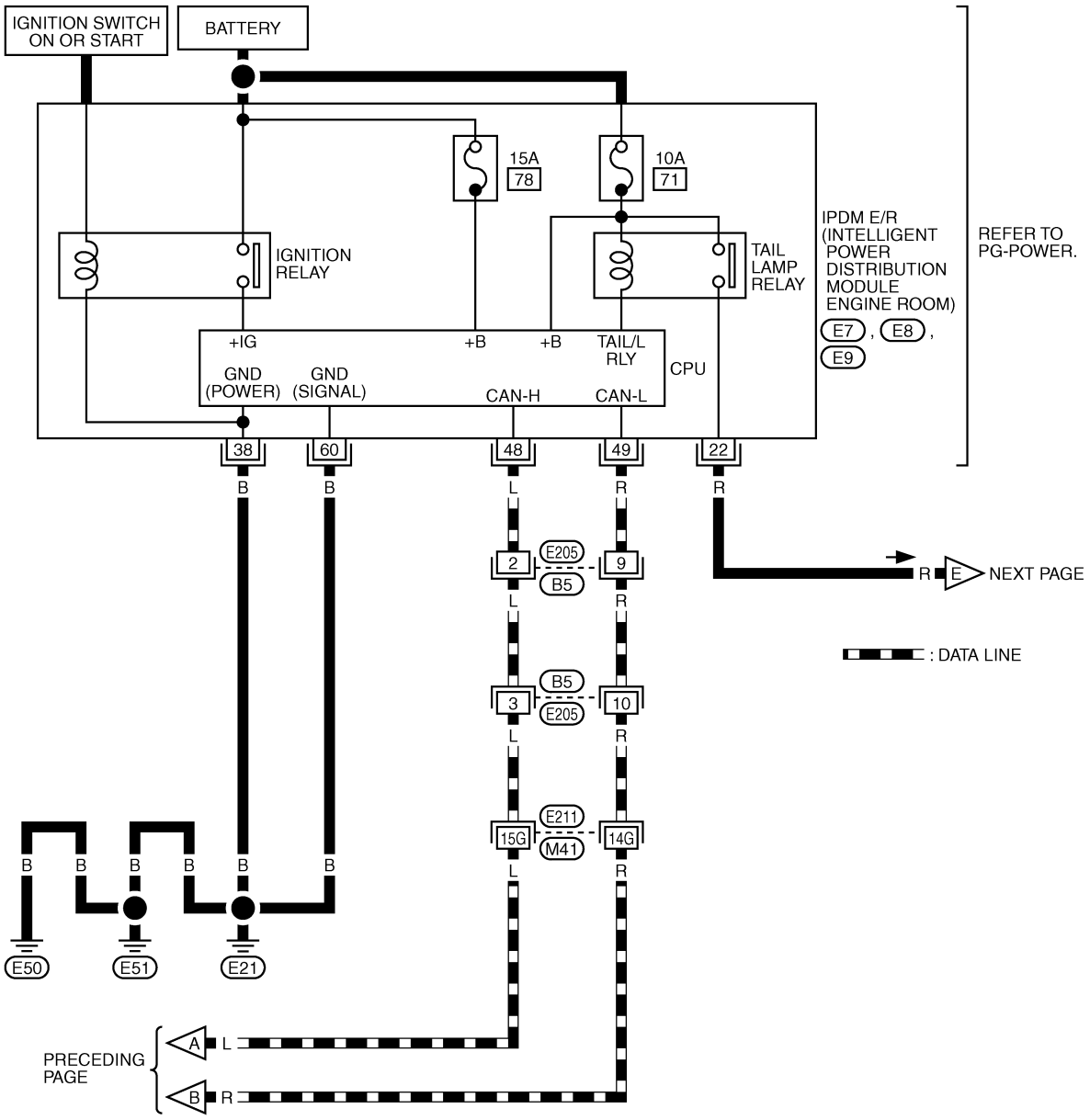
E211 -SUPER MULTIPLE JUNCTION (SMJ)

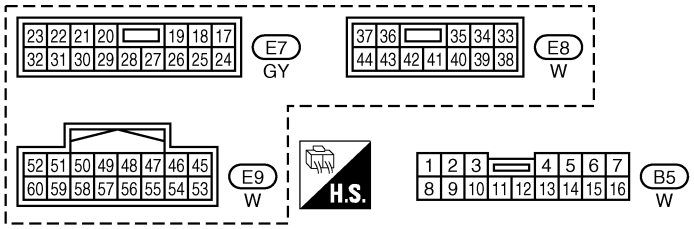
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM0821E

LT-TAIL/L-02



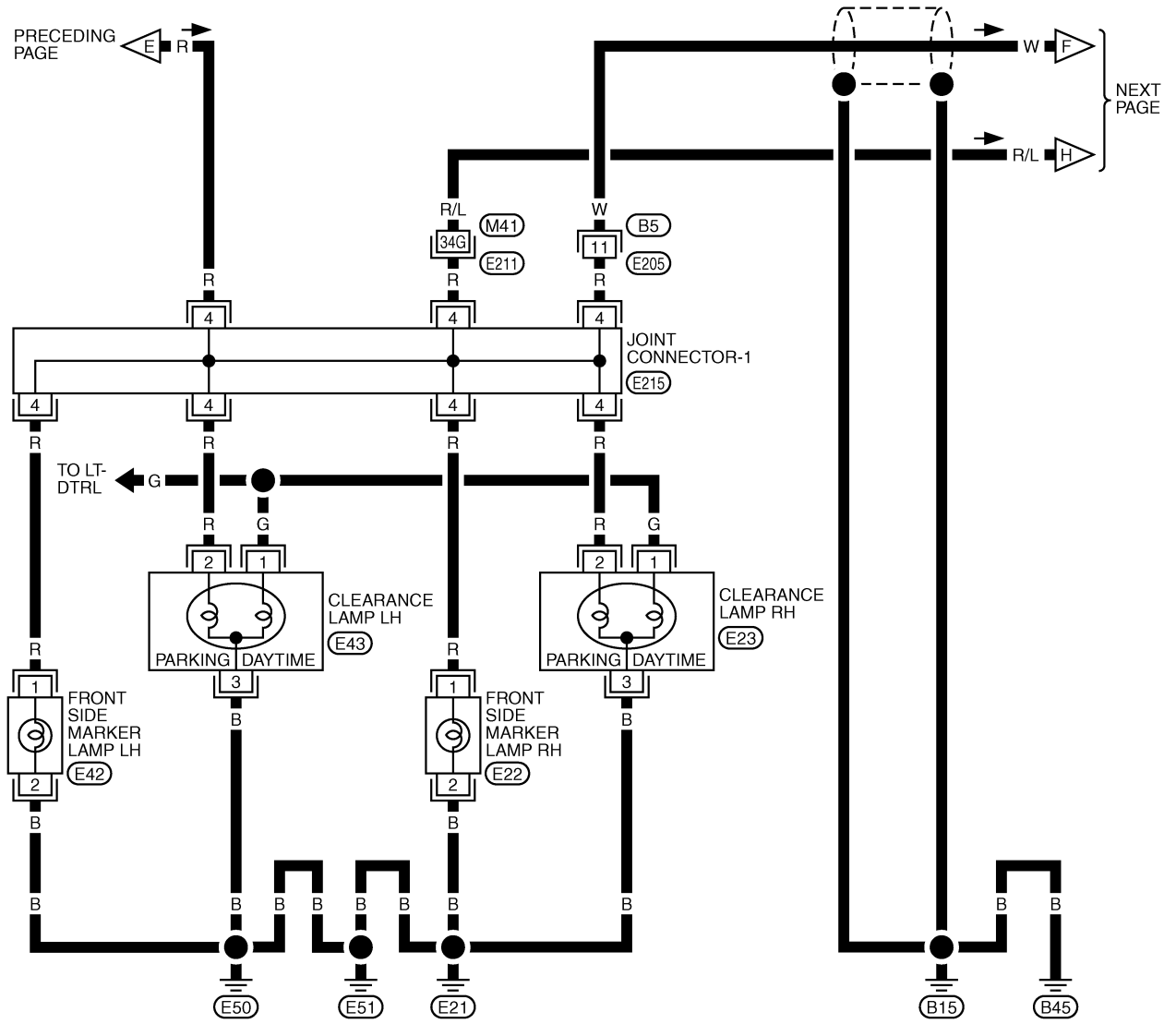


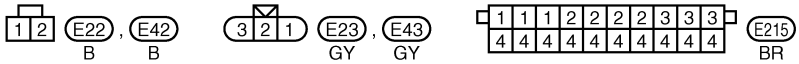
REFER TO THE FOLLOWING.

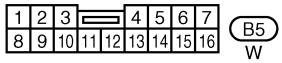
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0632E

LT-TAIL/L-03

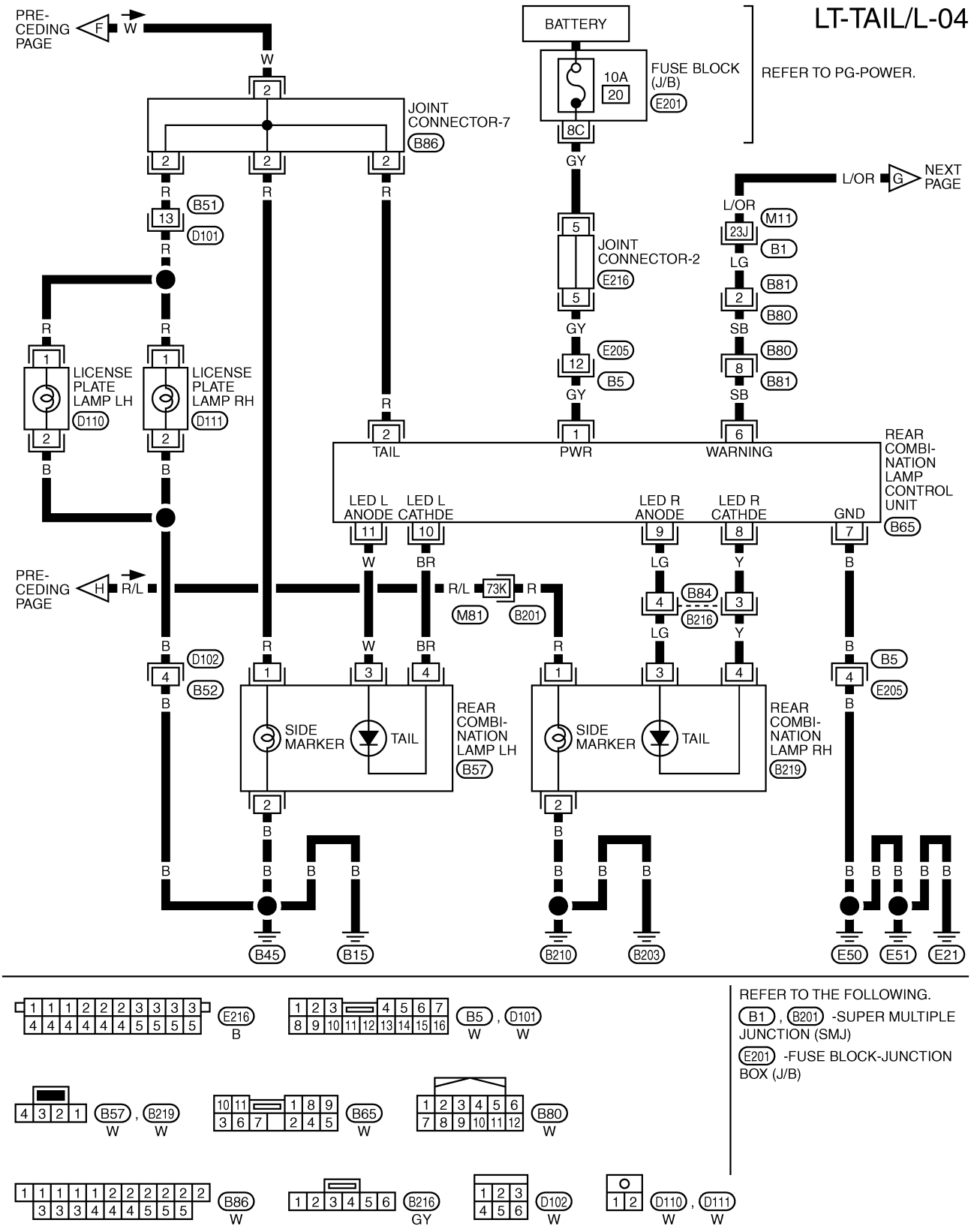




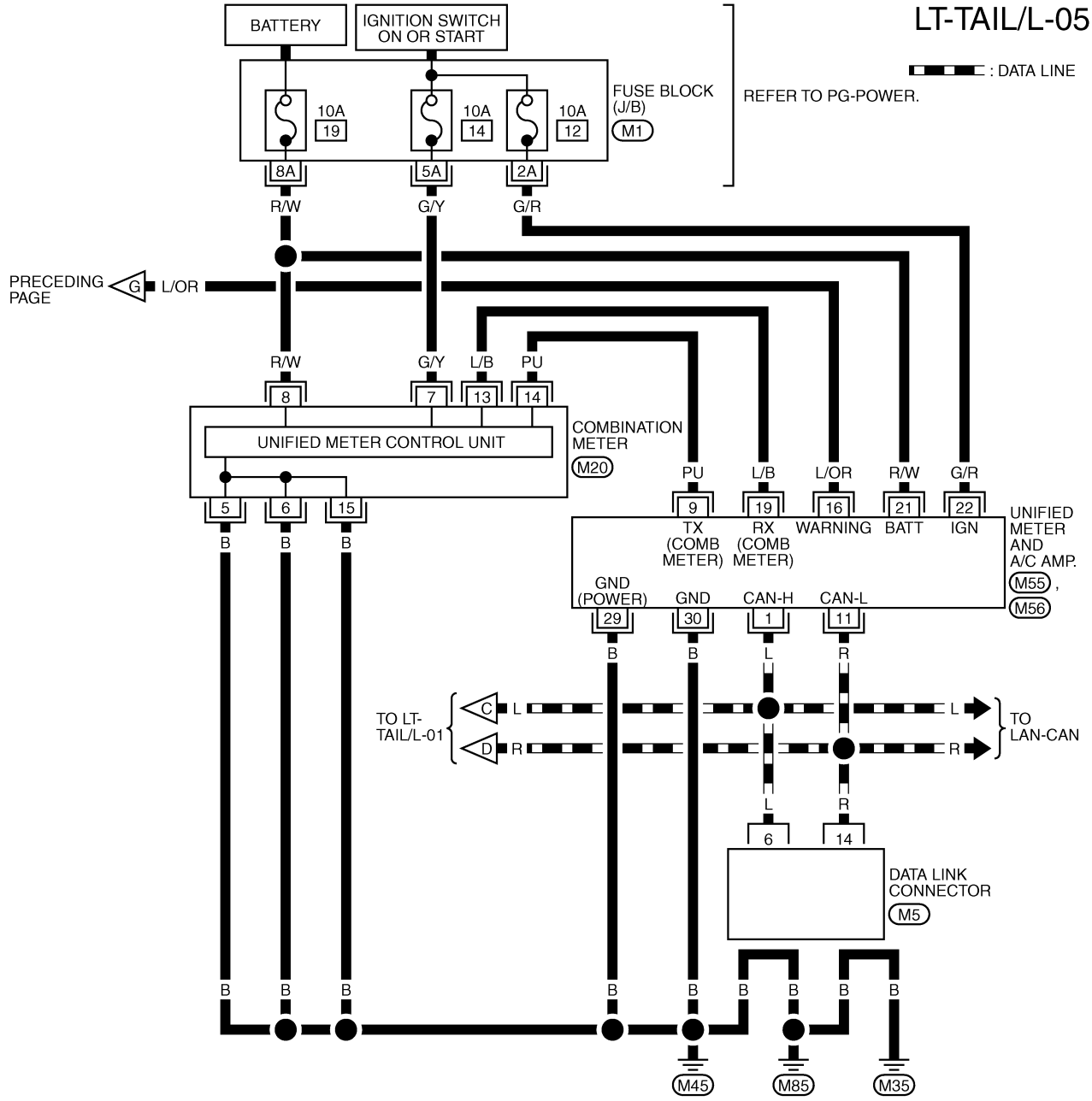


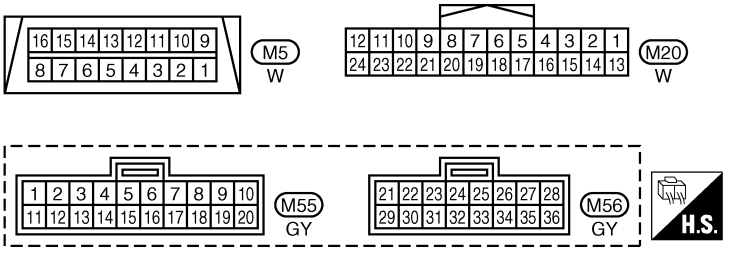
REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWH0236E


LT-TAIL/L-04
PRE-CEDING PAGE
F
W
BATTERY
10A
20
FUSE BLOCK (J/B)
E201
REFER TO PG-POWER.
JOINT CONNECTOR-7
B86
JOINT CONNECTOR-2
E216
L/OR
G
NEXT PAGE
M11
23J
B1
B81
B80
LICENSE PLATE LAMP LH
D110
LICENSE PLATE LAMP RH
D111
B51
D101
E205
B5
TAIL
PWR
WARNING
REAR COMBI-NATION LAMP CONTROL UNIT
B65
LED L ANODE
LED L CATHDE
LED R ANODE
LED R CATHDE
GND
PRE-CEDING PAGE
H
R/L
73K
M81
B201
B84
B216
D102
B52
SIDE MARKER
TAIL
REAR COMBI-NATION LAMP LH
B57
REAR COMBI-NATION LAMP RH
B219
B45
B15
B210
B203
E50
E51
E21
REFER TO THE FOLLOWING.
B1 , B201 -SUPER MULTIPLE JUNCTION (SMJ)
E201 -FUSE BLOCK-JUNCTION BOX (J/B)
E216
B
B5 , D101
W
B57 , B219
B65
B80
B86
B216
GY
D102
D110 , D111

TKWH0237E



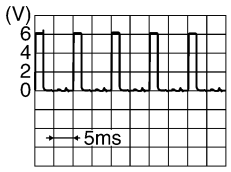
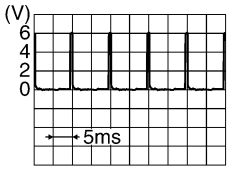
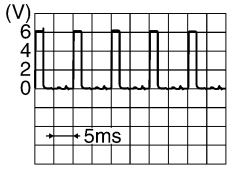
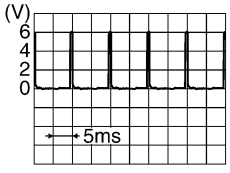
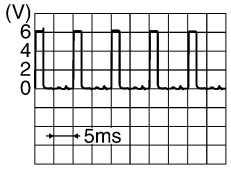
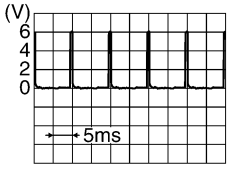


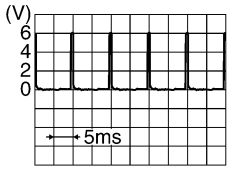
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0635E

Terminals and Reference Values for BCM

AKS007XQ

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
2	GY	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	SB	Combination switch input 1			
11	LG/R	Ignition switch (ACC)	ACC	—	Battery voltage
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
36	W/R	Combination switch output 1			
38	W/L	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN– H	—	—	—
40	R	CAN– L	—	—	—
42	L/R	Battery power supply	OFF	—	Battery voltage
49	B	Ground	ON	—	Approx. 0V
52	B	Ground	ON	—	Approx. 0V
55	G	Battery power supply	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

AKS007IM

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
22	R	Parking, license, and tail lamp	ON	Lighting switch 1ST position	OFF	Approx. 0V
					ON	Battery voltage
38	B	Ground	ON	—		Approx. 0V
48	L	CAN– H	—	—		—
49	R	CAN– L	—	—		—
60	B	Ground	ON	—		Approx. 0V

How to Proceed With Trouble Diagnosis

AKS007E0

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-127, "System Description" .
3. Perform the Preliminary Check. Refer to LT-137, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do the parking, license and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007E1

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check fuses for blown-out.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
		22
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	71
		78
Rear combination lamp control unit	Battery	20

Refer to LT-131, "Wiring Diagram — TAIL/L —" .

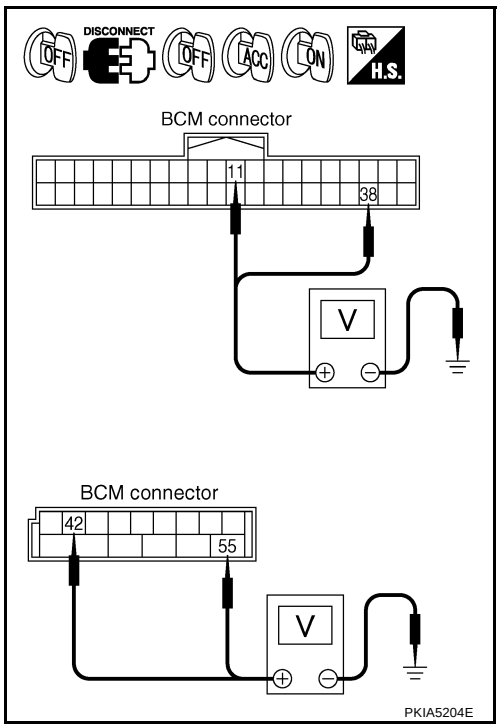
OK or NG

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

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

Terminals			Ignition switch position		
(+)		(-)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M3	11 (LG/R)	Ground	0V	Battery voltage	Battery voltage
	38 (W/L)		0V	0V	Battery voltage
M4	42 (L/R)		Battery voltage	Battery voltage	Battery voltage
	55 (G)		Battery voltage	Battery voltage	Battery voltage



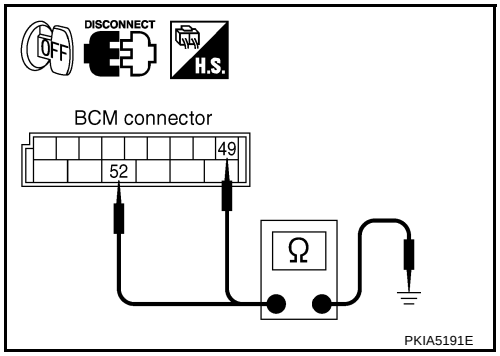
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M4	49 (B)	Ground	Yes
	52 (B)		



OK or NG

OK >> INSPECTION END
NG >> Check ground circuit harness.

CONSULT-II Functions

AKS007E2

Refer to LT-18, "CONSULT-II Functions (BCM)" in HEAD LAMP.
Refer to LT-21, "CONSULT-II Functions (IPDM E/R)" in HEAD LAMP.

Parking, License Plate and Tail Lamps Do Not Illuminate

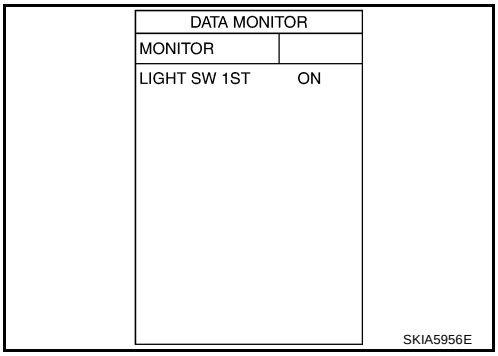
AKS007IO

1. CHECK COMBINATION SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “LIGHT SW 1 ST” turns ON-OFF linked with operation of lighting switch.

When lighting switch is 1ST : LIGHT SW 1ST ON position



Without CONSULT-II

Refer to LT-113, "Combination Switch Inspection" .

OK or NG

OK >> GO TO 2.

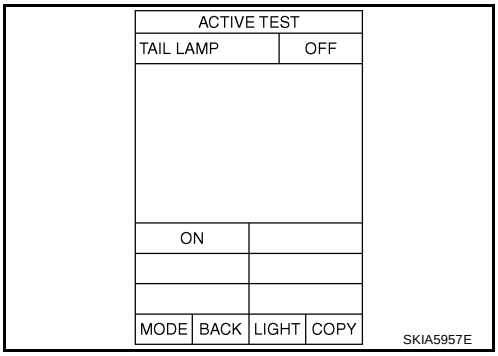
NG >> Check lighting switch. Refer to LT-113, "Combination Switch Inspection" .

2. ACTIVE TEST

With CONSULT-II

1. Select “IPDM E/R” on CONSULT-II and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
2. Select “TAIL LAMP” on “SELECT TEST ITEM” screen.
3. Touch “ON” screen.
4. Make sure parking, license plate, side marker and tail lamps operate.

Parking, license plate, side marker and tail lamps should operate.



Without CONSULT-II

1. Start auto active test. Refer to PG-24, "Auto Active Test" .
2. Make sure parking, license plate, side marker and tail lamps operate.

Parking, license plate, side marker and tail lamps should operate.

OK or NG

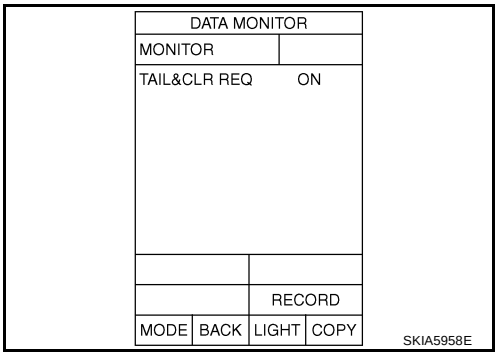
OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

1. Select “IPDM E/R” on CONSULT-II and select “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Make sure “TAIL & CLR REQ” turns ON when lighting switch is in 1ST position.

When lighting switch is 1ST : TAIL & CLR REQ ON position



OK or NG

OK >> Replace IPDM E/R.

NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

4. CHECK INPUT SIGNAL

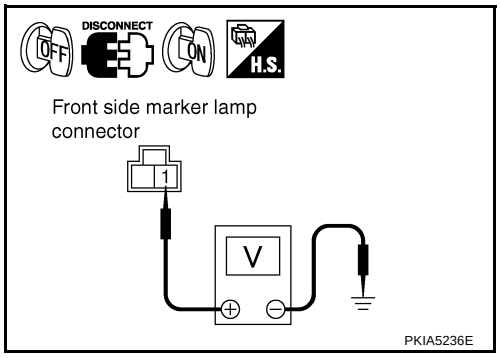
With CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front side marker, clearance lamp, license plate lamp and rear combination lamp connectors.
3. Select “IPDM E/R” on CONSULT-II. and select “ACTIVE TEST” on “SELECT DIAG MODE” screen.
4. Select “TAIL LAMP” on “SELECT TEST ITEM” screen.
5. Touch “ON” screen.
6. When tail lamp is operating, check voltage between front side marker lamp, clearance lamp, license plate lamp, rear combination lamp harness connector and ground.

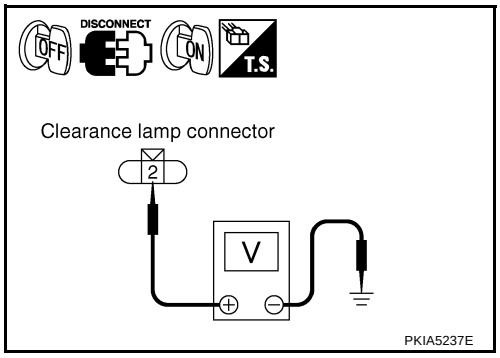
Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connector.
3. Start auto active test. Refer to PG-24, "Auto Active Test" .
4. When tail lamp is operating, check voltage between front side marker lamp, clearance lamp, license plate lamp, rear combination lamp harness connector and ground.

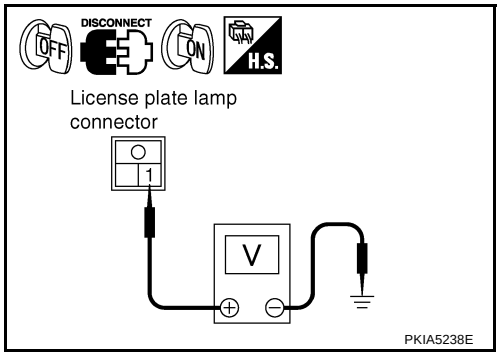
Terminals				Voltage
Front side marker lamp (+)			(-)	
Connector		Terminal (Wire color)		
RH	E22	1 (R)	Ground	Battery voltage
LH	E42			



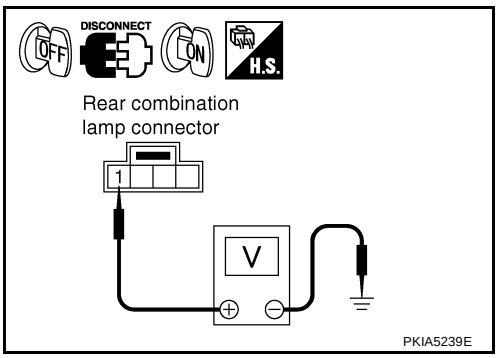
Terminals				Voltage
Clearance lamp (+)			(-)	
Connector		Terminal (Wire color)		
RH	E23	2 (R)	Ground	Battery voltage
LH	E43			



Terminals				Voltage
License plate lamp (+)			(-)	
Connector		Terminal (Wire color)		
RH	D111	1 (R)	Ground	Battery voltage
LH	D110			



Terminals				Voltage
Rear combination lamp (+) (Side marker)			(-)	
Connector		Terminal (Wire color)		
RH	B219	1 (R)	Ground	Battery voltage
LH	B57			



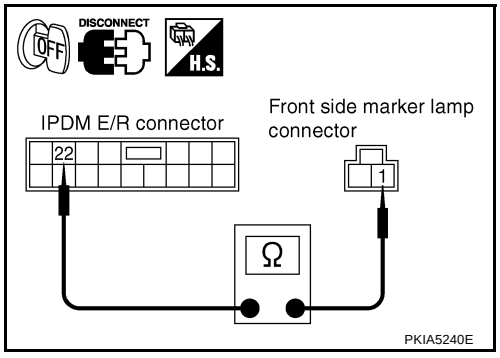
OK or NG

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

5. CHECK PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMP CIRCUIT

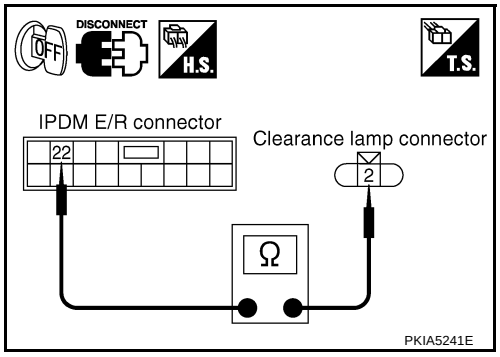
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front side marker lamp harness connector.

Terminals					Continuity
IPDM E/R		Front side marker lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	22 (R)	RH	E22	1 (R)	Yes
		LH	E42		



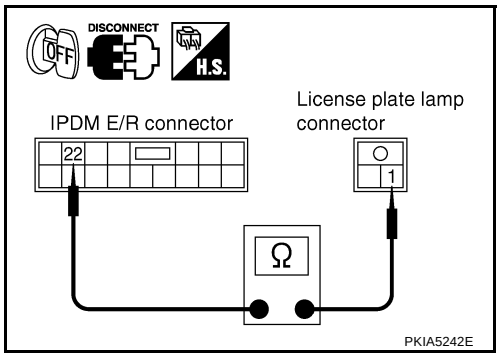
4. Check continuity between IPDM E/R harness connector and clearance lamp harness connector.

Terminals					Continuity
IPDM E/R		Clearance lamp (Parking)			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	22 (R)	RH	E23	2 (R)	Yes
		LH	E43		



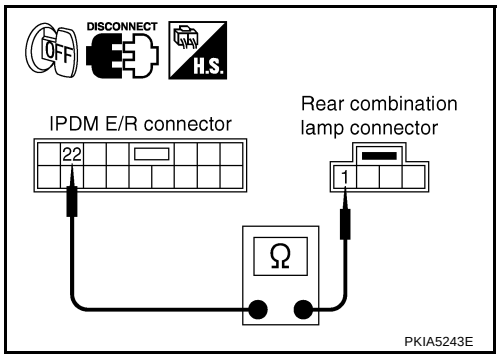
5. Check continuity between IPDM E/R harness connector and license plate lamp harness connector.

Terminals					Continuity
IPDM E/R		License plate lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	22 (R)	RH	D111	1 (R)	Yes
		LH	D110		



6. Check continuity between IPDM E/R harness connector and rear combination lamp harness connector.

Terminals					Continuity
IPDM E/R		Rear combination lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
E7	22 (R)	RH	B219	1 (R)	Yes
		LH	B57		



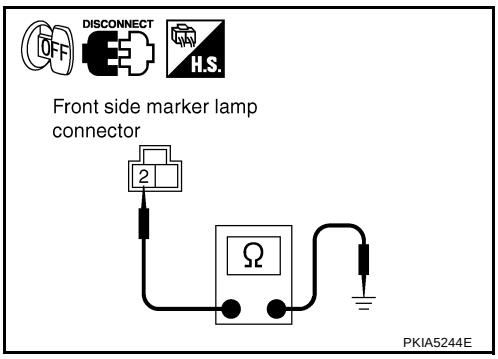
OK or NG

OK >> Replace IPDM E/R.
NG >> Repair harness or connector.

6. CHECK GROUND

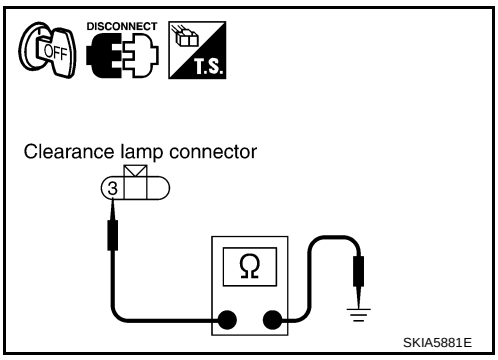
1. Turn ignition switch OFF.
2. Check continuity between front side maker lamp harness connector and ground.

Terminals			Continuity
Front side marker lamp		Ground	
Connector		Terminal (Wire color)	
RH	E22	2 (B)	Yes
LH	E42		



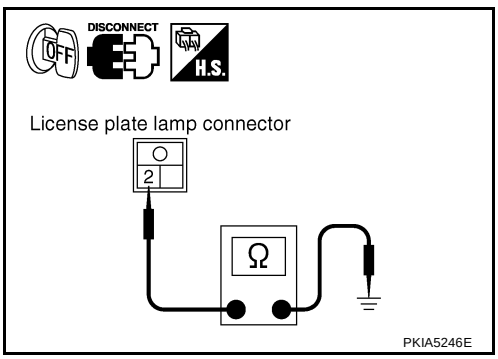
3. Check continuity between clearance lamp harness connector and ground.

Terminals			Continuity
Clearance lamp		Ground	
Connector		Terminal (Wire color)	
RH	E23	3 (B)	Yes
LH	E43		



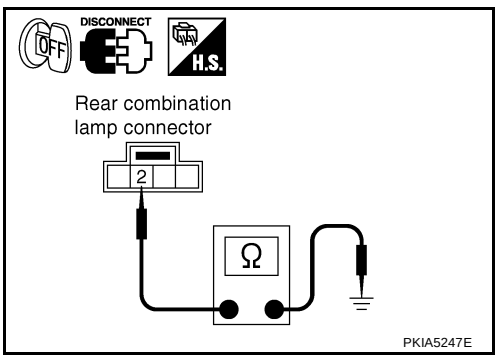
4. Check continuity between license plate lamp harness connector and ground.

Terminals			Continuity
License plate lamp		Ground	
Connector		Terminal (Wire color)	
RH	D111	2 (B)	Yes
LH	D110		



5. Check continuity between rear combination lamp harness connector and ground.

Terminals			Continuity
Rear combination lamp (Side marker)		Ground	
Connector		Terminal (Wire color)	
RH	B219	2 (B)	Yes
LH	B57		



OK or NG

OK >> Check bulb.
NG >> Repair harness or connector.

Tail Lamp Does Not Operate

AKS007IN

1. CHECK STOP LAMP AND TURN SIGNAL LAMP

Make sure stop lamps and turn signal lamps are illuminated.

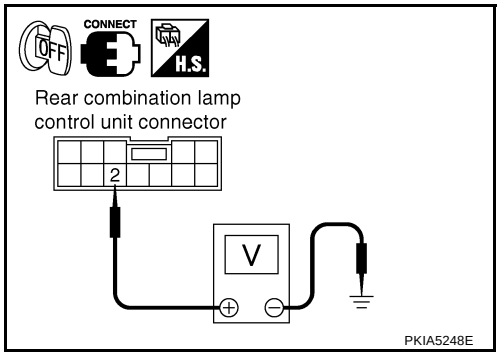
OK or NG

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

2. CHECK INPUT SIGNAL

Check voltage between rear combination lamp control unit harness connector B65 terminal 2 (R) and ground.

Terminal (+)		(-)	Condition	Voltage
Connector	Terminal (Wire color)			
B65	2 (R)	Ground	Lighting switch 1ST position is ON.	Battery voltage
			Lighting switch 1ST position is OFF.	Approx. 0



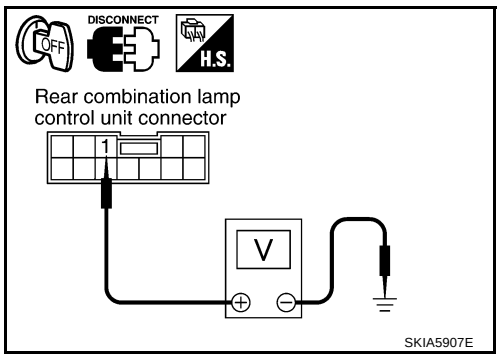
OK or NG

OK >> Replace rear combination lamp control unit.
NG >> Repair harness or connector.

3. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear combination lamp control unit connector.
3. Check voltage between rear combination lamp control unit harness connector B65 terminal 1 (GY) and ground.

1 (GY) – Ground : Battery voltage should exist.



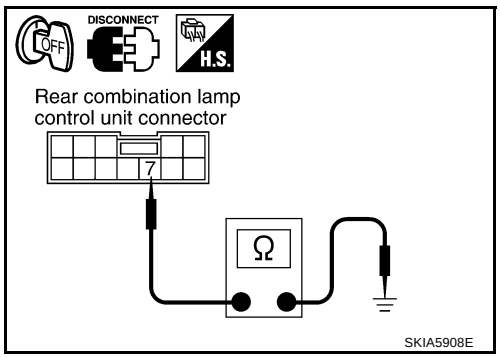
OK or NG

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

4. CHECK GROUND CIRCUIT

Check continuity between rear combination lamp control unit harness connector B65 terminal 7 (B) and ground.

7 (B) – Ground : Continuity should exist.



OK or NG

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

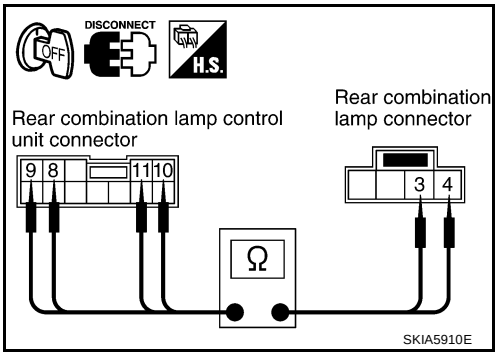
5. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Disconnect rear combination lamp RH and LH connector.
2. Check continuity between rear combination lamp control unit harness connector B65 terminal 11 (W) and rear combination lamp LH harness connector B57 terminal 3 (W).

11 (W) – 3 (W) : Continuity should exist.

3. Check continuity between rear combination lamp control unit harness connector B65 terminal 10 (BR) and rear combination lamp LH harness connector B57 terminal 4 (BR).

10 (BR) – 4 (BR) : Continuity should exist.



4. Check continuity between rear combination lamp control unit harness connector B65 terminal 9 (LG) and rear combination lamp RH harness connector B219 terminal 3 (LG).

9 (LG) – 3 (LG) : Continuity should exist.

5. Check continuity between rear combination lamp control unit harness connector B65 terminal 8 (Y) and rear combination lamp RH harness connector B219 terminal 4 (Y).

8 (Y) – 4 (Y) : Continuity should exist.

OK or NG

OK >> Replace rear combination lamp control unit or rear combination lamp, and then check if turn signal lamps is illuminated.
NG >> Repair harness or connector.

Parking, License Plate and Tail Lamps Do Not Turn OFF (After Approx. 10 Minutes)

AKS007E4

1. CHECK IPDM E/R

1. Turn ignition switch ON. Turn the combination switch (lighting switch) to the OFF position. Turn ignition switch OFF.
2. Verify that the parking, license plate, and tail lamps turn ON and OFF after approximately 10 minutes.

OK or NG

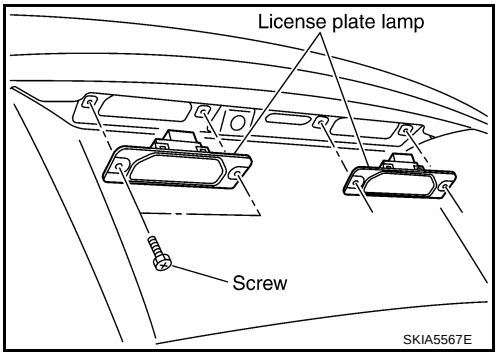
OK >> Ignition relay malfunction. Refer to PG-19, "Function of Detecting Ignition Relay Malfunction" .
NG >> INSPECTION END

License Plate Lamp

AKS007E5

BULB REPLACEMENT, REMOVAL AND INSTALLATION

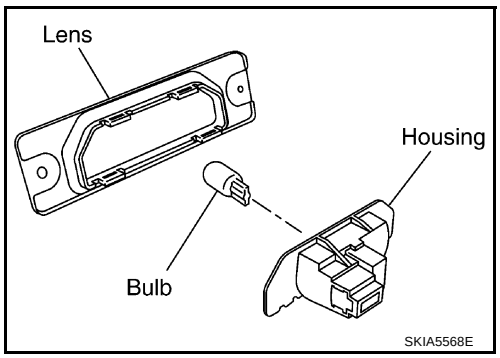
1. Remove screws and remove license plate lamp from back door.
2. Disconnect license plate lamp connector.



3. Insert a flat head or suitable tool and remove housing.
4. Remove bulb from it's socket.

License plate lamp : 12V - 5W

5. Install in the reverse order of removal.



Front Parking (Clearance) Lamp

AKS007E6

BULB REPLACEMENT

For bulb replacement, refer to LT-35, "Bulb Replacement" in “HEAD LAMP-XENON TYPE-”.

REMOVAL AND INSTALLATION

For front parking (clearance) lamp removal and installation procedures, refer to LT-36, "Removal and Installation" in “HEAD LAMP -XENON TYPE-”.

Tail Lamp

AKS007E7

BULB REPLACEMENT

For bulb replacement, refer to LT-147, "Bulb Replacement" in “REAR COMBINATION LAMP”.

REMOVAL AND INSTALLATION

For tail lamp removal and installation procedures, refer to LT-147, "Removal and Installation" in “REAR COMBINATION LAMP”.

Front Side Marker Lamp

AKS007E8

BULB REPLACEMENT

For bulb replacement, refer to LT-35, "Bulb Replacement" in “HEAD LAMP-XENON TYPE-”.

REMOVAL AND INSTALLATION

For head lamp removal and installation procedures, refer to LT-36, "Removal and Installation" in “HEAD LAMP-XENON TYPE-”.

Rear Side Marker Lamp

AKS007E9

BULB REPLACEMENT

For bulb replacement, refer to LT-147, "Bulb Replacement" in “REAR COMBINATION LAMP”.

REMOVAL AND INSTALLATION

For rear side marker lamp removal and installation procedures, refer to LT-147, "Removal and Installation" in “REAR COMBINATION LAMP”.

Rear Combination Lamp Control Unit

AKS007O3

REMOVAL AND INSTALLATION

Refer to LT-107, "Removal and Installation of Rear Combination Lamp Control Unit" in “TURN SIGNAL AND HAZARD WARNING LAMPS”.

REAR COMBINATION LAMP

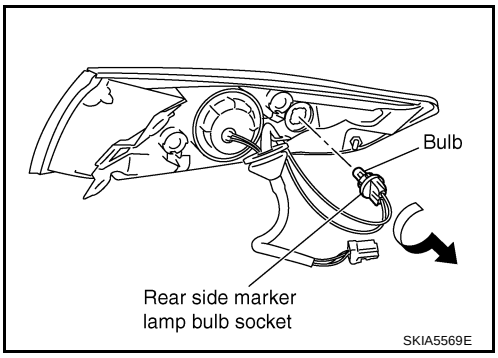
PFP:26554

Bulb Replacement

AKS007FP

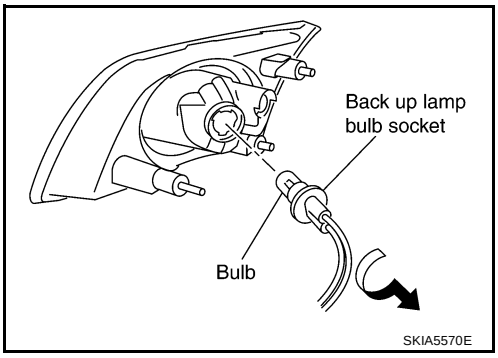
REAR FENDER SIDE (REAR SIDE MARKER LAMP BULB)

1. Remove rear combination lamp.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.



BACK DOOR SIDE (BACK-UP LAMP)

1. Remove rear combination lamp.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.



Stop/tail lamp (rear fender side)	**: LED (Replace together with rear combination lamp assembly.)**
Rear side marker lamp (rear fender side)	**: 12V - 3.8W**
Back-up lamp (back door side)	**: 12V - 18W**
Rear turn signal lamp (rear fender side)	**: LED (Replace together with rear combination lamp assembly.)**

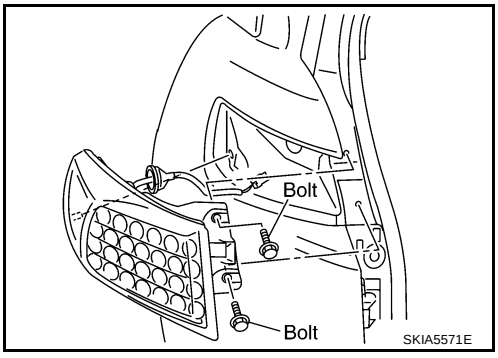
Removal and Installation

AKS007FQ

REMOVAL

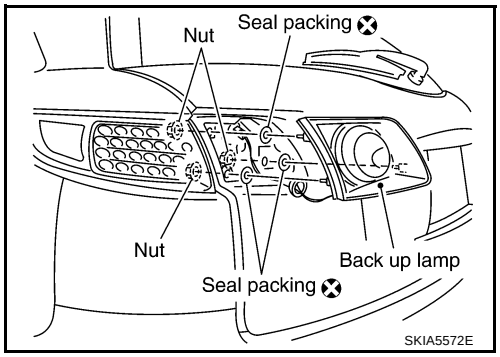
Rear Fender Side

1. Remove bumper side cover A. Refer to EI-18, "Removal and Installation" in “EI” section.
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting bolts.
4. Pull rear combination lamp toward side of the vehicle and remove from the vehicle.



Trunk Lid Side

1. Remove back door finisher. Refer to EI-46, "Removal and Installation" in “EI” section.
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting nuts.
4. Remove rear combination lamp from back door.
5. Remove seal packing from back door.



INSTALLATION

Note the following, and install in the reverse order of removal.

- Install a new seal packing to the rear combination lamp.

  CAUTION:
  Seal packing cannot be reused.

Rear combination lamp mounting nut : 3.2 N·m (0.33 kg-m, 28 in-lb)

VANITY MIRROR LAMP

PFP:96400

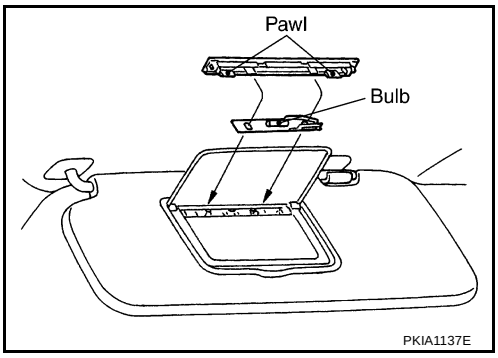
Bulb Replacement

AKS007EC

1. Insert a thin screwdriver in the lens end and remove lens.
2. Remove bulb together with substrate.

Vanity mirror lamp : 12V - 1.32W

3. Install in the reverse order of removal.



MAP LAMP

PFP:26430

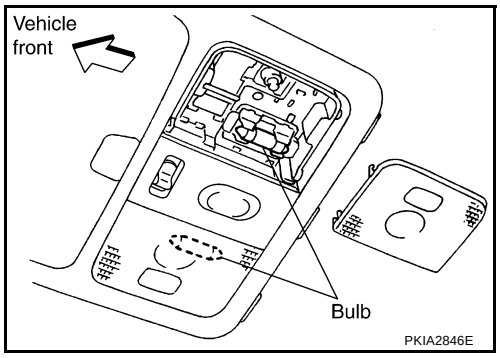
Bulb Replacement

AKS007ED

1. Remove lens using clip driver or suitable tool.
2. Remove bulb.

Map lamp : 12V - 8 W

3. Install in the reverse order of removal.

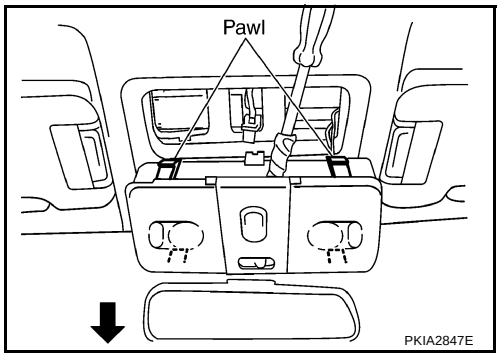


Removal and Installation

AKS007EE

REMOVAL

1. Insert a clip driver or suitable tool back of map lamp and pull down it to disengage metal clip.
2. Pull down map lamp in direction shown by the arrow in the figure.
3. Disconnect map lamp connector and remove map lamp.



INSTALLATION

Install in the reverse order of removal.

PERSONAL LAMP

PFP:26415

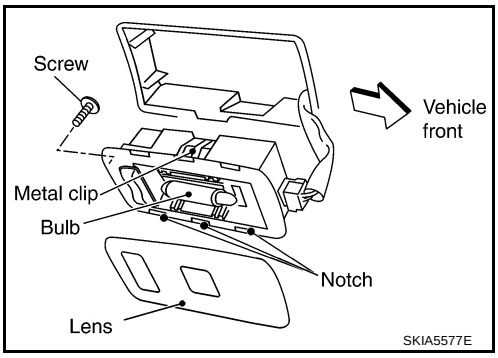
Bulb Replacement

AKS007FT

1. Remove personal lamp. Refer to LT-151, "Removal and Installation" .
2. Remove screw from personal lamp.
3. Insert a screwdriver or similar tool and remove lens.
4. Remove bulb.

Personal lamp : 12V - 8W

5. Install in the reverse order of removal.

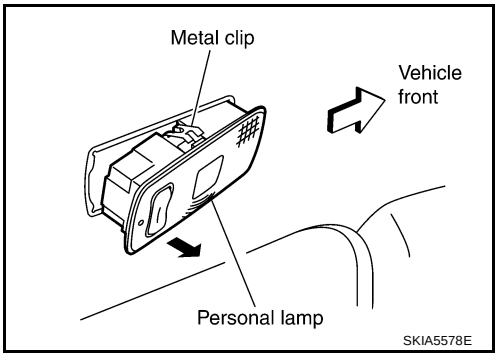


Removal and Installation

AKS007FU

REMOVAL

1. Use a clip driver or similar tool to press metal clip, and remove personal lamp.
2. Disconnect personal lamp connector.



INSTALLATION

Install in the reverse order of removal.

LUGGAGE ROOM LAMP

PFP:26410

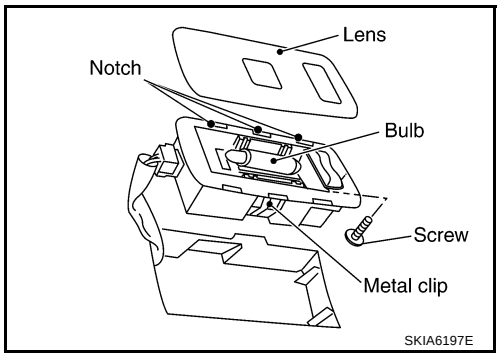
Bulb Replacement

AKS007FV

1. Remove luggage room lamp. Refer to LT-152, "Removal and Installation" .
2. Remove screw from luggage room lamp.
3. Insert a suitable tool and remove lens.
4. Remove bulb.

Luggage room lamp : 12V - 8W

5. Install in the reverse order of removal.

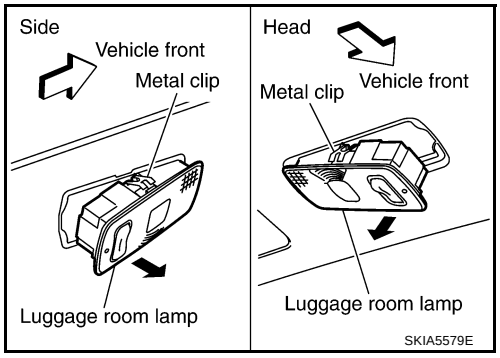


Removal and Installation

AKS007FW

REMOVAL

1. Use a clip driver or similar tool to press metal clip, and remove luggage room lamp.
2. Disconnect luggage room lamp connector.



INSTALLATION

Install in the reverse order of removal.

IGNITION KEY HOLE ILLUMINATION

PFP:48476

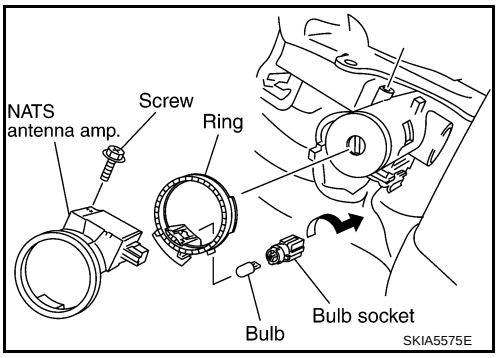
Bulb Replacement, Removal and Installation

AKS007FR

1. Remove combination meter. Refer to DI-26, "Removal and Installation" in “DI” section.
2. Remove screw and remove NATS antenna amp.
3. Pull out ring and turn bulb socket to left to release lock.

Key cylinder illumination : 12V - 1.4W

4. Install in the reverse order of removal.



GLOVE BOX LAMP

PFP:68520

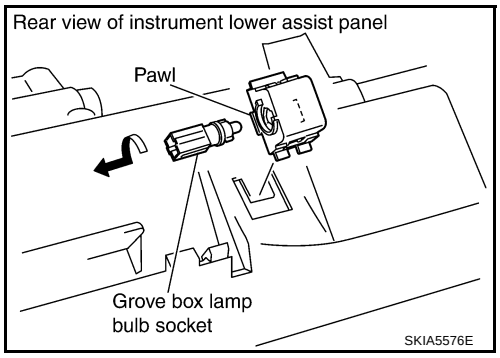
Bulb Replacement, Removal and Installation

AKS007FS

1. Remove instrument passenger lower panel. Refer to IP-13, "(J) Instrument Passenger Lower Panel" in “IP” section.
2. Turn bulb socket left to release lock and remove it.

Glove box lamp : 12V - 1.4W

3. Install in the reverse order of removal.



ASHTRAY ILLUMINATION

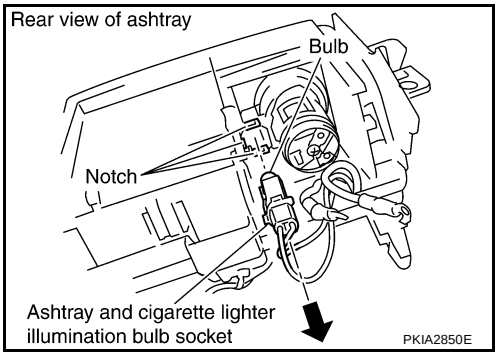
PFP:25860

Bulb Replacement and Removal and Installation

AKS007NZ

1. Remove A/T console finisher. Refer to IP-12, "(F) A/T Console Finisher" in “IP” section.
2. Remove instrument ashtray and hazard switch. Refer to IP-17, "A/T CONSOLE FINISHER" in “IP” section.
3. Use a screwdriver to undo ashtray finisher hooks.
4. Turn bulb socket on circuit board to left to undo lock. Remove bulb socket.
5. Install in the reverse order of removal.

Ashtray and cigarette lighter illumination : 12V - 1.4W



CIGARETTE LIGHTER ILLUMINATION

PFP:25331

Bulb Replacement and Removal and Installation

AKS007O0

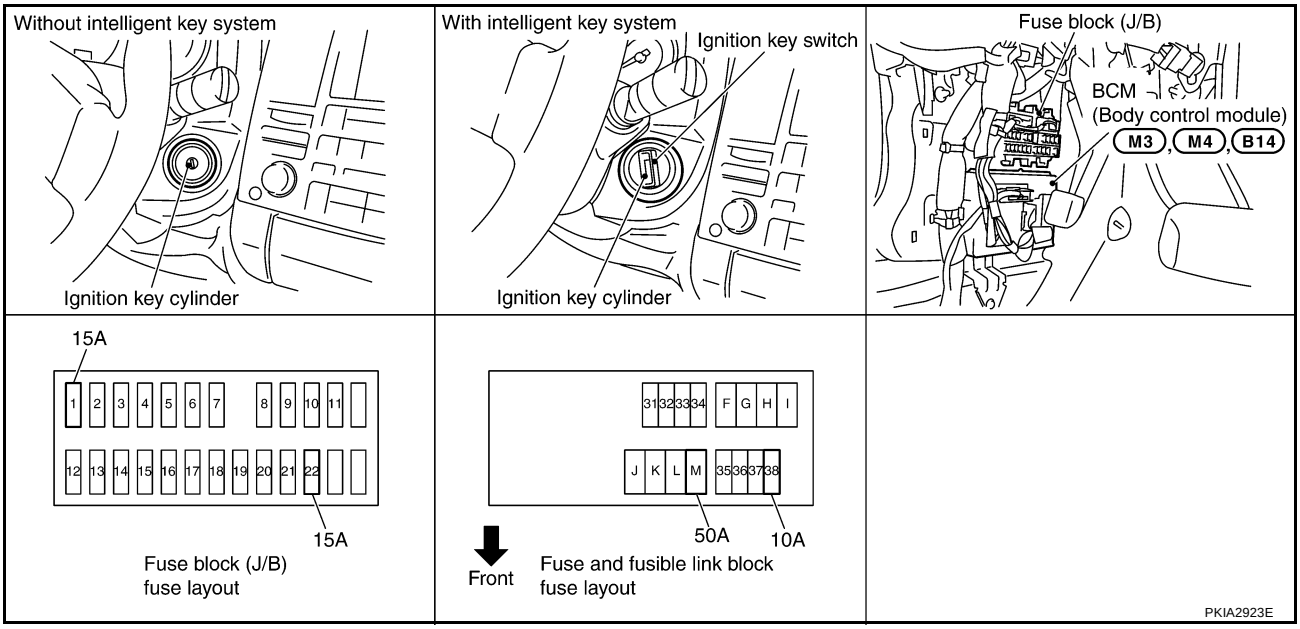
Refer to LT-155, "Bulb Replacement and Removal and Installation" in “ASHTRAY ILLUMINATION”.

INTERIOR ROOM LAMP

PFP:26410

Component Parts and Harness Connector Location

AKS007O8



System Description

AKS007F7

When room lamp and personal lamp switch is in DOOR position, room lamp and personal lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch driver side, unlock signal from keyfob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.
When room lamp and personal lamp turns ON, there is a gradual brightening over 1 second. When room lamp and personal lamp turns OFF, there is a gradual dimming over 1 second.
The room lamp and personal lamp timer is controlled by the BCM (body control module).
Room lamp and personal lamp timer control settings can be changed with CONSULT-II.
Ignition keyhole illumination turns ON at time when driver door is opened (door switch ON) or removed keyfob from key cylinder. Illumination turns OFF when driver door is closed (door switch OFF).
Step lamp turns ON at time when driver door or passenger door is opened (door switch ON). Lamp turns OFF when driver, passenger doors are closed (all door switches OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times (without intelligent key system)

- through 15A fuse [No. 22, located in fuse block (J/B)]
- to key switch terminal 2 and
- to BCM (body control module) terminal 42
- through 50A fusible link [letter M, located in fuse and fusible link block]
- to BCM (body control module) terminal 55.

Power is supplied at all times (with intelligent key system)

- through 10A fuse [No.38, located in fuse and fusible link block]
- to key switch and ignition knob switch terminals 1
- through 15A fuse [No.22, located in fuse block (J/B)]
- to BCM (body control module) terminal 42
- to key switch and ignition knob switch terminal 3, and
- to key switch terminal 2
- through 50A fusible link [letter M, located in fuse and fusible link block]
- to BCM (body control module) terminal 55.

When the key plate inserted to key switch, power is supplied (without intelligent key system)

- through the key switch terminal 1
- to BCM (body control module) terminal 37.

When inserted the key plate to key switch, power is supplied (with intelligent key system)

- through the key switch and ignition knob switch terminal 4
- to BCM (body control module) terminal 37.

When moved the ignition knob switch, power is supplied (with intelligent key system)

- through the ignition knob switch terminal 2
- to intelligent key unit terminal 27.

With the ignition switch in the ON or START position, power is supplied

- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 38.

Ground is supplied

- to BCM (body control module) terminals 49 and 52
- through grounds terminals M35, M45 and M85.

When the driver side door is opened, ground is supplied

- through case ground of door switch driver side
- to BCM (body control module) terminal 62.

When the passenger side door is opened, ground is supplied

- through case ground of door switch passenger side
- to BCM (body control module) terminal 12.

When the rear door LH is opened, ground is supplied

- through case ground of door switch rear door LH
- to BCM (body control module) terminal 63, and
- to personal lamp LH terminal 1.

When the rear door RH is opened, ground is supplied

- through case ground of door switch rear door RH
- to BCM (body control module) terminal 13, and
- to personal lamp RH terminal 1.

When the driver side door is unlocked by the door lock and unlock switch, BCM (body control module) receives a ground signal

- through grounds terminals M35, M45 and M85
- to power window main switch terminal 17 (door lock and unlock switch) or front power window (passenger side) terminal 11 (door lock and unlock switch)
- from power window main switch terminal 14 (door lock and unlock switch) or front power window (passenger side) terminal 16 (door lock and unlock switch)
- to BCM (body control module) terminal 22.

When the front driver side door is unlocked by the driver side door lock assembly (door key cylinder switch), BCM (body control module) receives a ground signal

- through grounds M35, M45 and M85
- to front door lock assembly (driver side) (door key cylinder switch) terminal 5
- from front door lock assembly (driver side) (door key cylinder switch) terminal 6
- to power window main switch terminal 6 (door lock and unlock switch)
- from power window main switch terminal 14 (door lock and unlock switch)
- to BCM (body control module) terminal 22.

When a signal, or combination of signals is received by BCM (body control module), ground is supplied

- through BCM (body control module) terminal 48
- to interior room lamp terminal 1(without DVD player),
- to map lamp terminal 2 and
- to front door inside handle illumination (driver side and passenger side) terminal 2

With power and supplied, the interior lamp illuminates.

SWITCH OPERATION

When driver door switch is ON (door is opened), ground is supplied

- through BCM terminal 1
- to ignition keyhole illumination terminal 2.

And power is supplied

- from BCM terminal 41
- to ignition keyhole illumination terminal 1.

When any door switch is ON (door is opened), ground is supplied

- through BCM terminal 47
- to front step lamp driver side and passenger side, rear step lamp (LH and RH)
- through rear door switch terminal 1
- to personal lamp (LH and RH) terminal 1.

And power is supplied

- from BCM terminal 41
- to every step lamp terminal 1, and personal lamp (LH and RH) terminal 2.

When map lamp switch is ON, ground is supplied

- through grounds M35, M45 and M85
- to map lamp terminal 1.

And power is supplied

- from BCM terminal 41
- to map lamp terminal 3.

When vanity mirror lamp (driver side and passenger side) is ON, ground is supplied

- through grounds M35, M45 and M85
- to vanity mirror lamp (driver side and passenger side) terminal 2.

And power is supplied

- from BCM terminal 41
- to vanity mirror lamp (driver side and passenger side) terminal 1.

When luggage room lamp (back door side) is ON, ground is supplied

- through grounds B15 and B45
- to luggage room lamp (back door side) terminal 3.

And power is supplied

- from BCM terminal 41
- to luggage room lamp (body side and back door side) terminal 2.

ROOM LAMP TIMER OPERATION

Without Intelligent Key System

When interior room lamp and map lamp switch is in DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 seconds) for interior room lamp and map lamp ON/OFF.
In addition, when spot turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied

- to 15A fuse [No. 22, located in fuse block (J/B)]
- through key switch terminal 2.

Key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.
Ground is supplied

- from BCM terminal 22
- to power window main switch (door lock and unlock switch) terminal 14.

At the time that driver door are opened, BCM detects that driver door is unlocked. It determines that interior room lamp and map lamp timer operation conditions are met, and turns the interior room lamp and map lamp ON for 30 seconds.
Key is in ignition key cylinder (key switch ON),
Power is supplied

- through key switch terminal 1
- to BCM terminal 37.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 37 is terminated. BCM detects that key has been removed, determines that interior room lamp and map lamp timer conditions are met, and turns the interior room lamp and map lamp ON for 30 seconds.
When driver door opens → closes, and the key is not inserted in the key switch (key switch OFF), BCM terminal 62 changes between 0V (door open) → 12V (door closed). The BCM determines that conditions for interior room lamp and map lamp operation are met and turns the interior room lamp ON for 30 seconds.
Timer control is canceled under the following conditions.

- Driver door is locked [when locked keyfob or power window main switch (door lock and unlock switch), door key cylinder switch].
- Driver door is opened (driver door switch turns ON).
- Ignition switch ON.

With Intelligent Key System

When interior room lamp and map lamp switch is in DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 second) for interior room lamp and map lamp ON/OFF.
In addition, when spot turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied

- to 15A fuse [No. 22, located in fuse and fuse block (J/B)]
- through key switch and ignition knob switch terminal 3.

Key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.
And not turned ignition knob switch, power will not be supplied to Intelligent Key unit.
Ground is supplied

- from BCM terminal 22
- to power window main switch (door lock and unlock switch) terminal 14.

At the time that driver door are opened, BCM detects that driver door is unlocked. It determines that interior room lamp and map lamp timer operation conditions are met, and turns the interior room lamp and map lamp ON for 30 seconds.
Key is in ignition key cylinder (key switch ON), or turned ignition knob switch,
Power is supplied

- through key switch and ignition knob switch terminal 4
- to BCM terminal 37
- through key switch and ignition knob switch terminal 2
- to Intelligent Key unit terminal 27.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 37 is terminated. And turned ignition knob switch, power supply to intelligent key unit is terminated. BCM detects that key has been removed, determines that interior room lamp and map lamp timer conditions are met, and turns the interior room lamp and map lamp ON for 30 seconds.
When driver door opens → closes, and the key is not inserted in the key switch (or not turned ignition knob switch), BCM terminal 62 changes between 0V (door open) → 12V (door closed). The determines that conditions for interior room lamp and map lamp operation are met and turns the interior room lamp ON for 30 seconds.
Timer control is canceled under the following conditions.

- Driver door is locked [when locked keyfob or power window main switch (door lock and unlock switch). door key cylinder switch].
- Driver door is opened (driver door switch terns ON).
- Ignition switch ON.

INTERIOR LAMP BATTERY SAVER CONTROL

If interior lamp is left “ON”, it will not be turned out even when door is closed.
BCM turns off interior lamp automatically to save battery 30 minutes after ignition switch is turned off.
BCM controls interior lamps listed below:

- Luggage room lamp
- Vanity mirror lamp
- Map lamp

- Interior room lamp
- Personal lamp

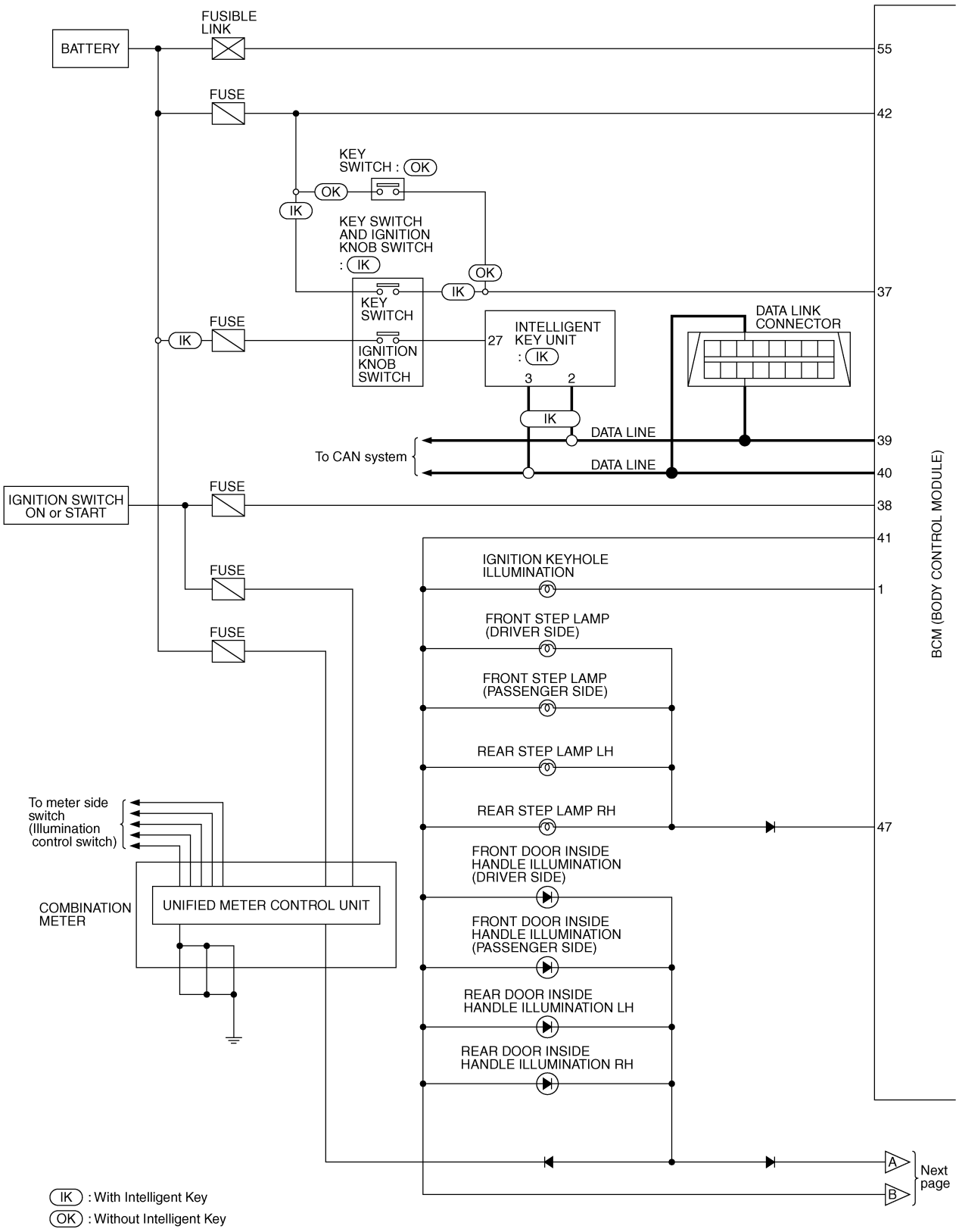
After lamps turn OFF by the battery saver system, the lamps illuminate again when

- signal from keyfob, or power window main switch (door lock and unlock switch) or key cylinder is locked or unlocked,
- door is opened or closed,
- key is removed from ignition key cylinder or inserted in ignition key cylinder, or turned ignition knob switch.

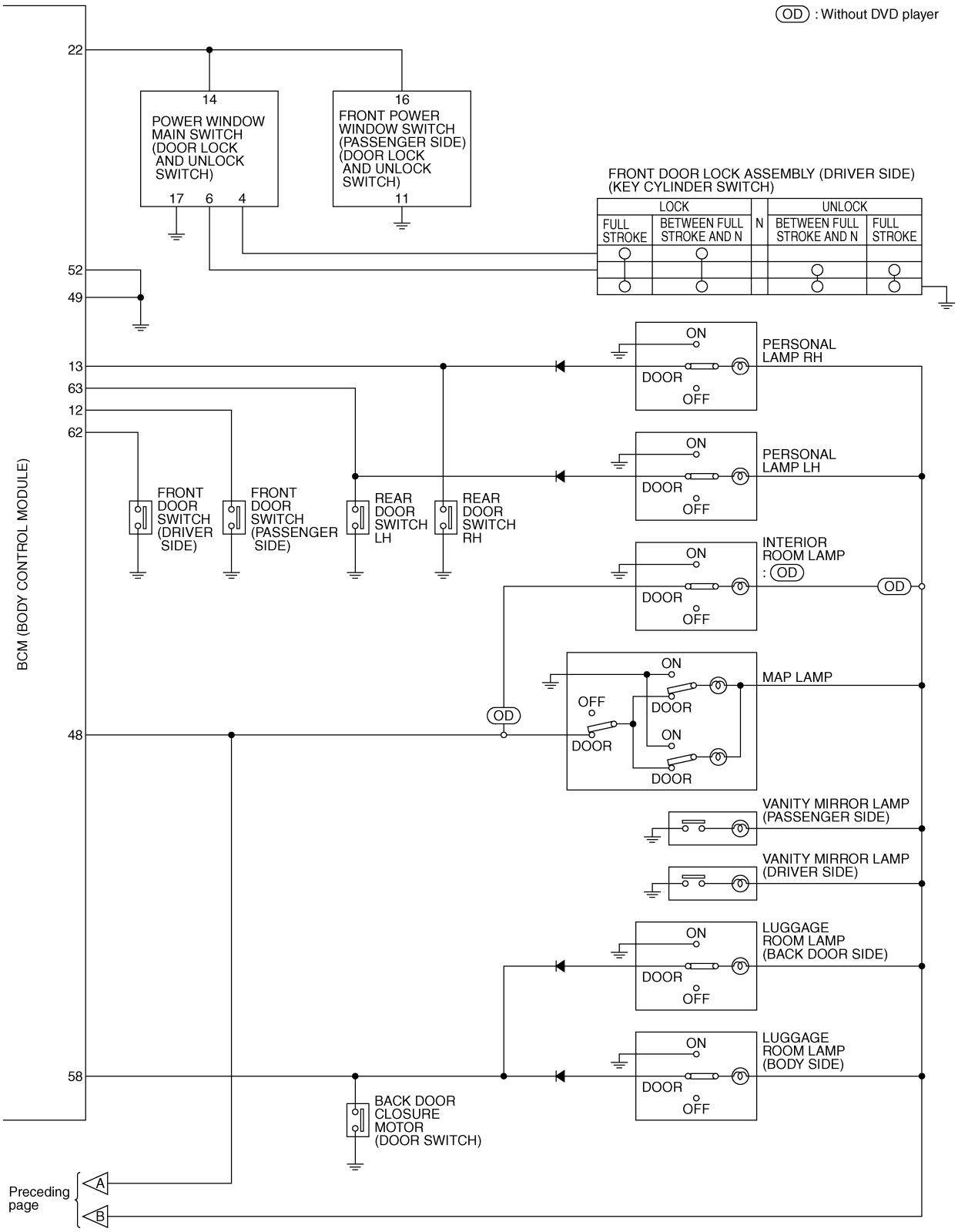
Interior lamp battery saver control period can be changed by the function setting of CONSULT-II.

Schematic

AKS007F9



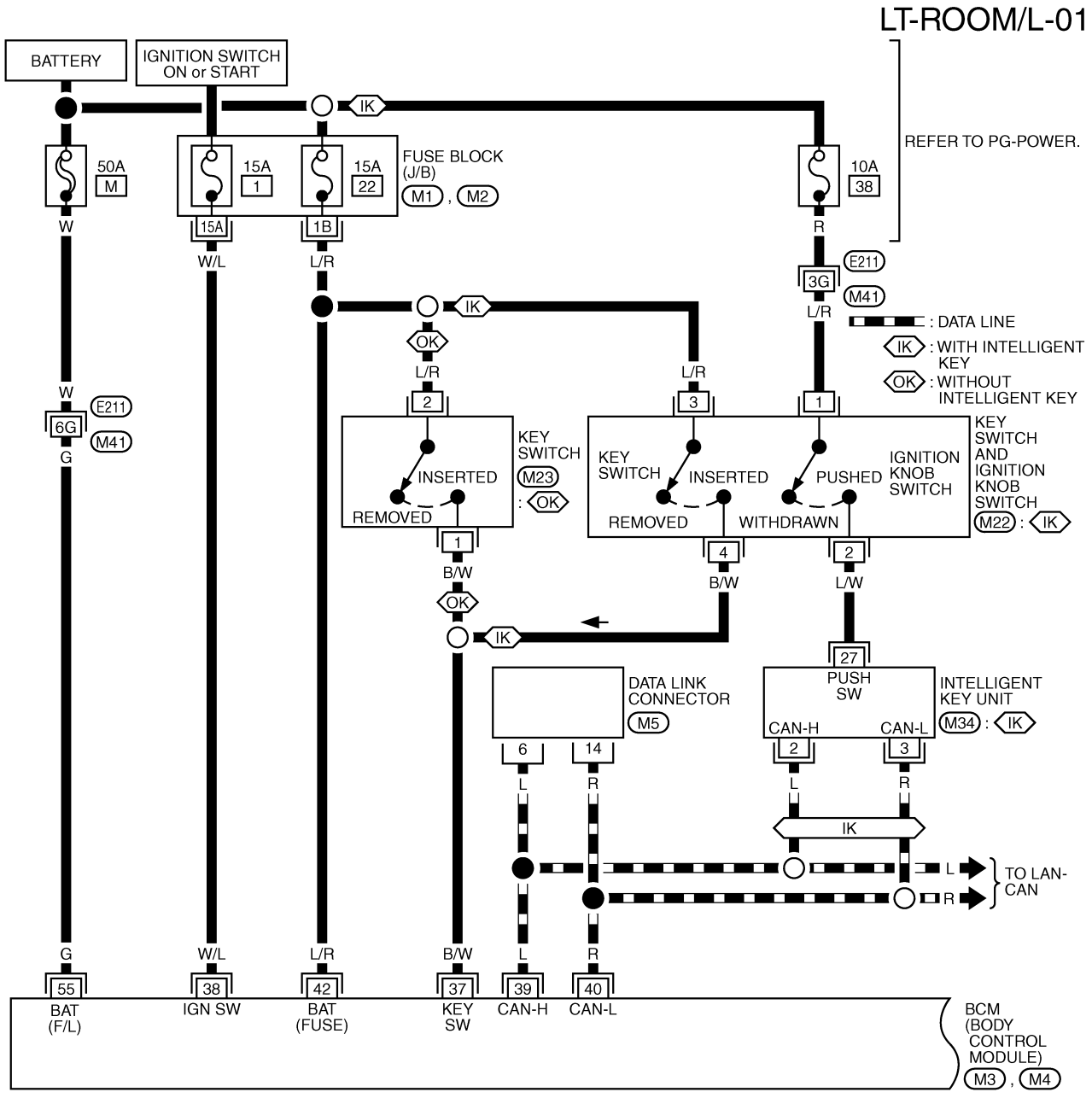
TKWH0228E

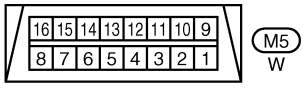

OD : Without DVD player
22
14
POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH)
17 6 4
16
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (DOOR LOCK AND UNLOCK SWITCH)
11
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE)
(KEY CYLINDER SWITCH)
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
52
49
13
63
12
62
BCM (BODY CONTROL MODULE)
FRONT DOOR SWITCH (DRIVER SIDE)
FRONT DOOR SWITCH (PASSENGER SIDE)
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
ON
DOOR
OFF
PERSONAL LAMP RH
PERSONAL LAMP LH
INTERIOR ROOM LAMP
: OD
OD
MAP LAMP
48
VANITY MIRROR LAMP (PASSENGER SIDE)
VANITY MIRROR LAMP (DRIVER SIDE)
LUGGAGE ROOM LAMP (BACK DOOR SIDE)
LUGGAGE ROOM LAMP (BODY SIDE)
58
BACK DOOR CLOSURE MOTOR (DOOR SWITCH)
Preceding page
A
B

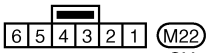
TKWM0823E

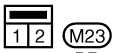
Wiring Diagram — ROOM/L —

AKS007FA









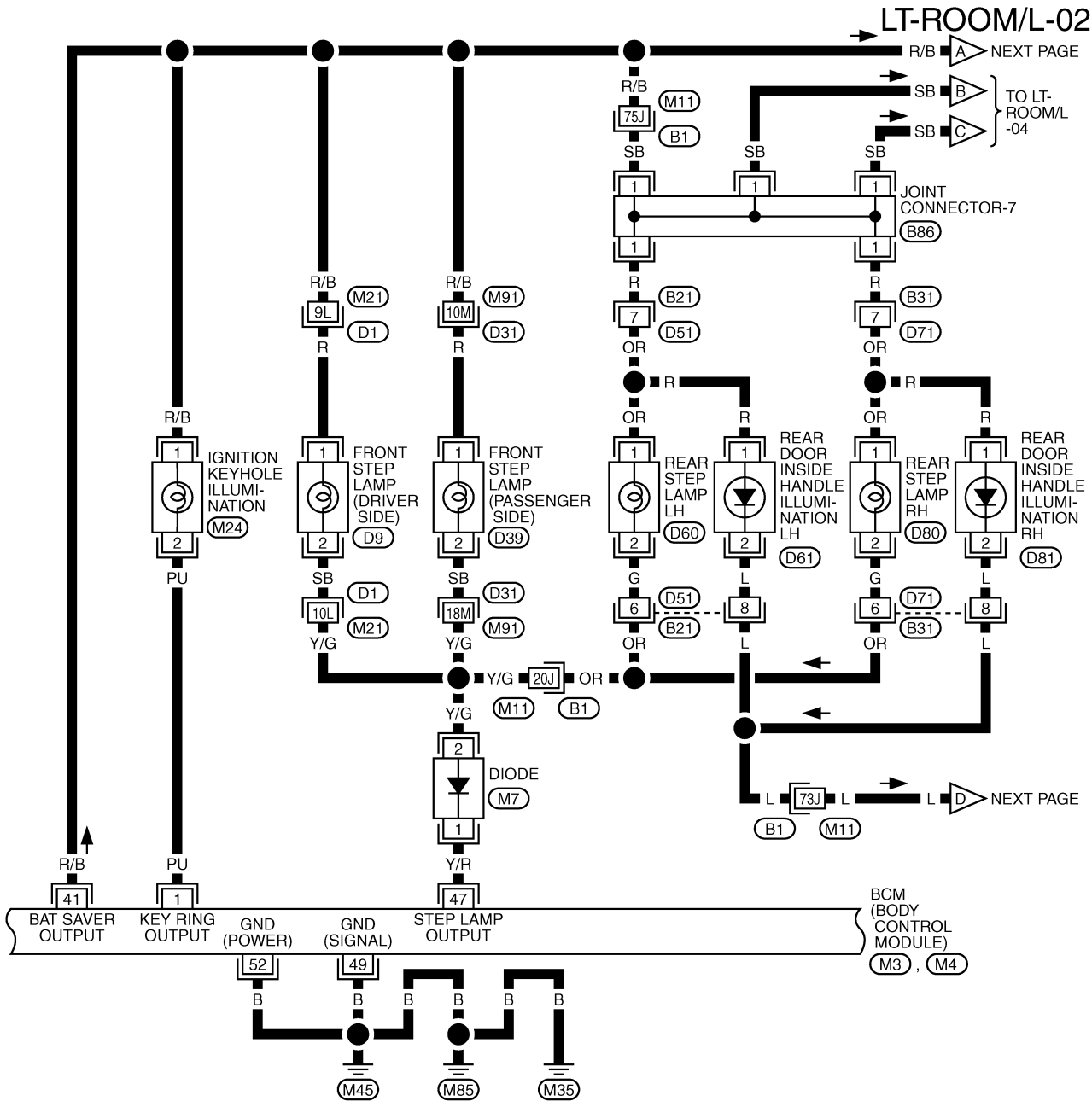
REFER TO THE FOLLOWING.

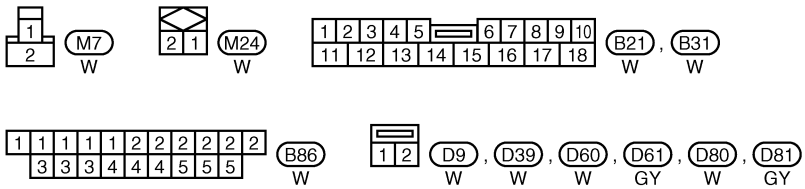
E211 -SUPER MULTIPLE JUNCTION (SMJ)

M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3 , M4 , M34 -ELECTRICAL UNITS

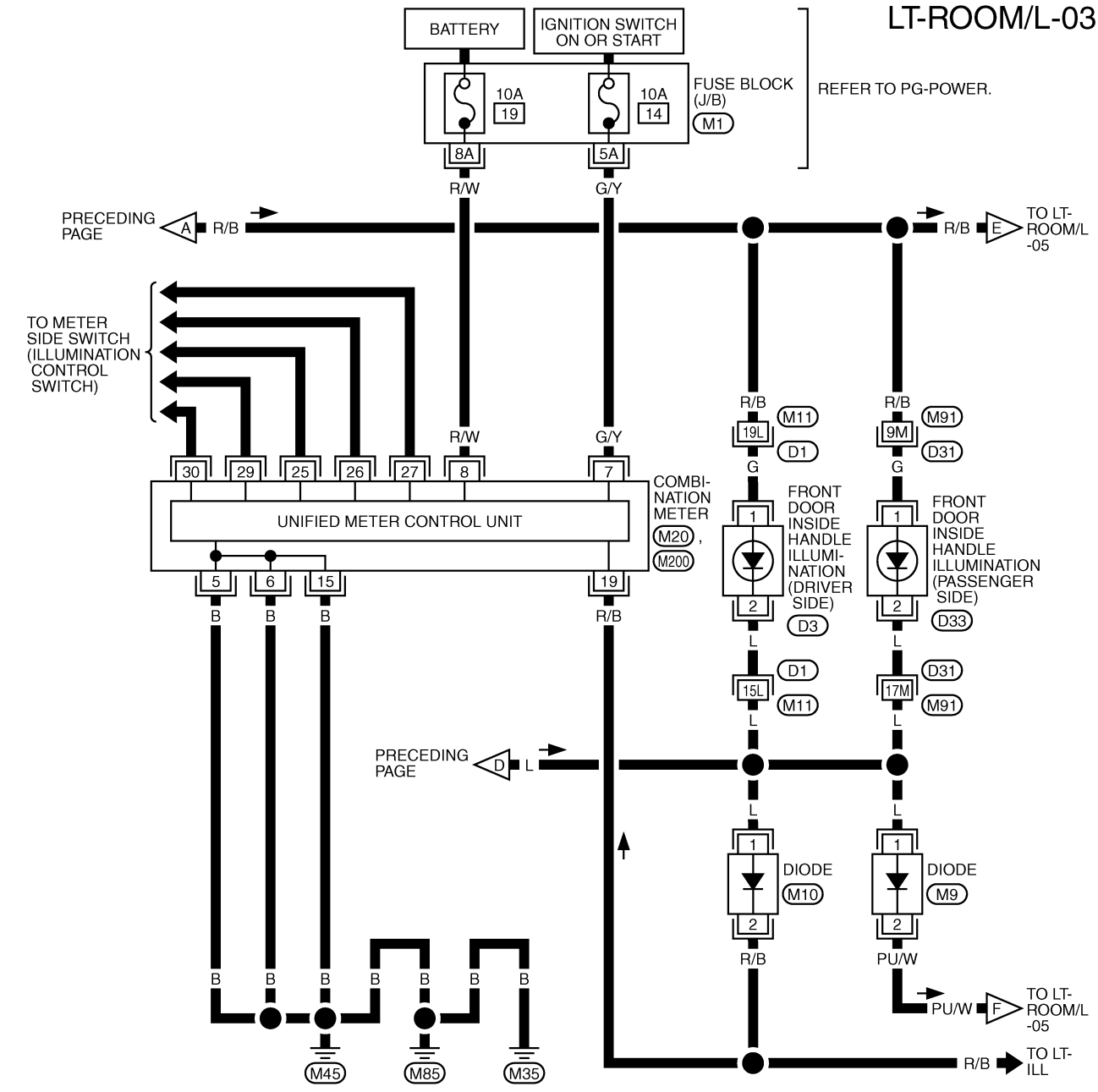
TKWM0824E

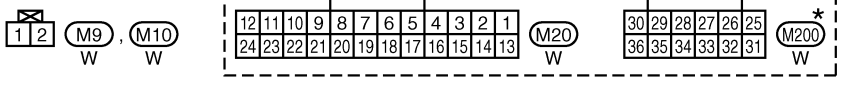




REFER TO THE FOLLOWING.
(B1) , (D1) , (D31) -SUPER MULTIPLE JUNCTION (SMJ)
(M3) , (M4) -ELECTRICAL UNITS

TKWH0229E





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

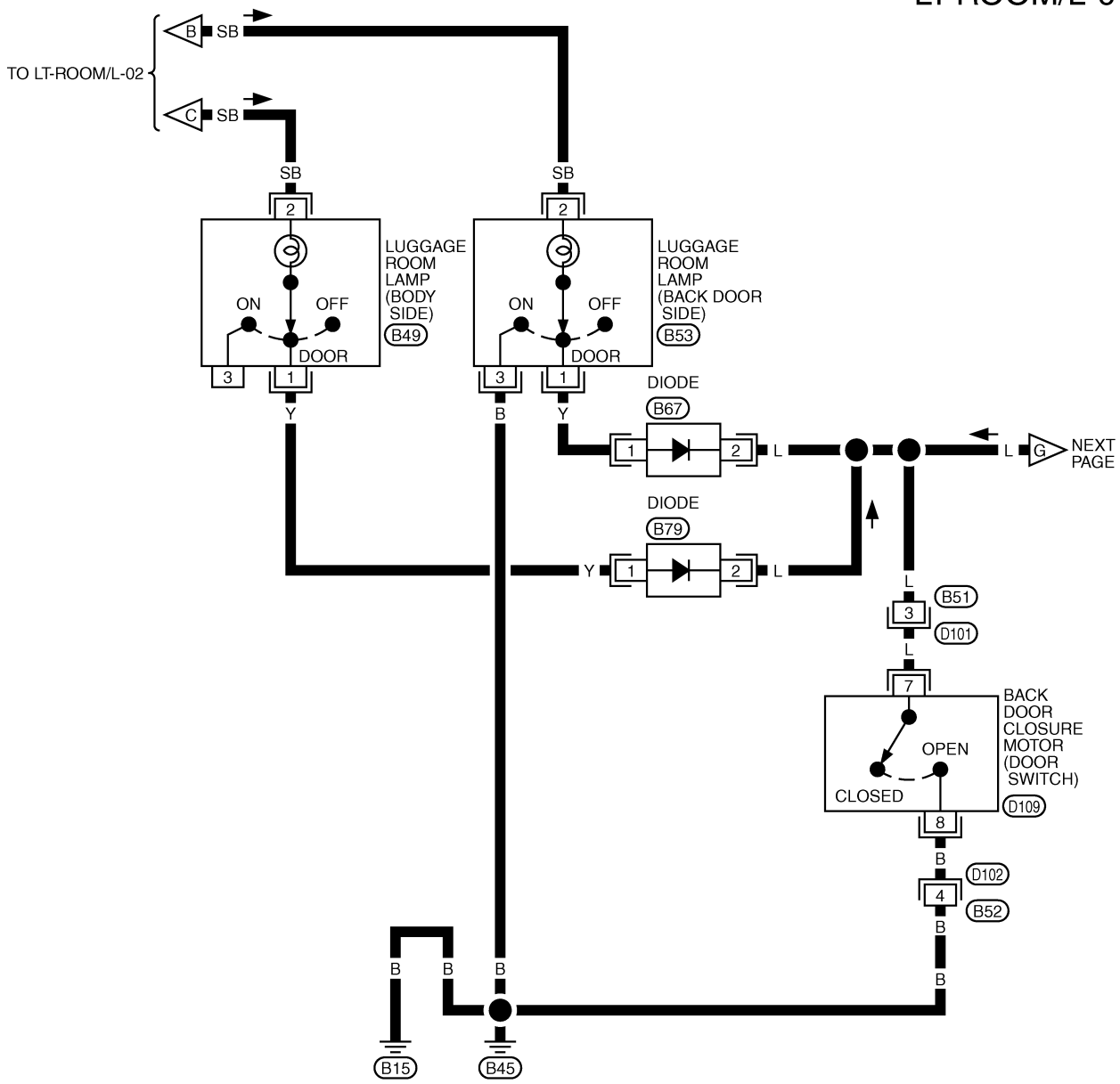
REFER TO THE FOLLOWING.

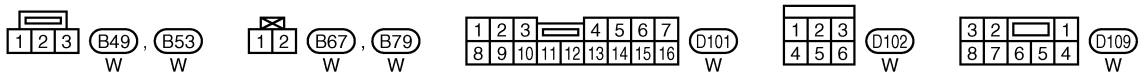
D1, D31 -SUPER MULTIPLE JUNCTION (SMJ)

M1 -FUSE BLOCK-JUNCTION BOX (J/B)

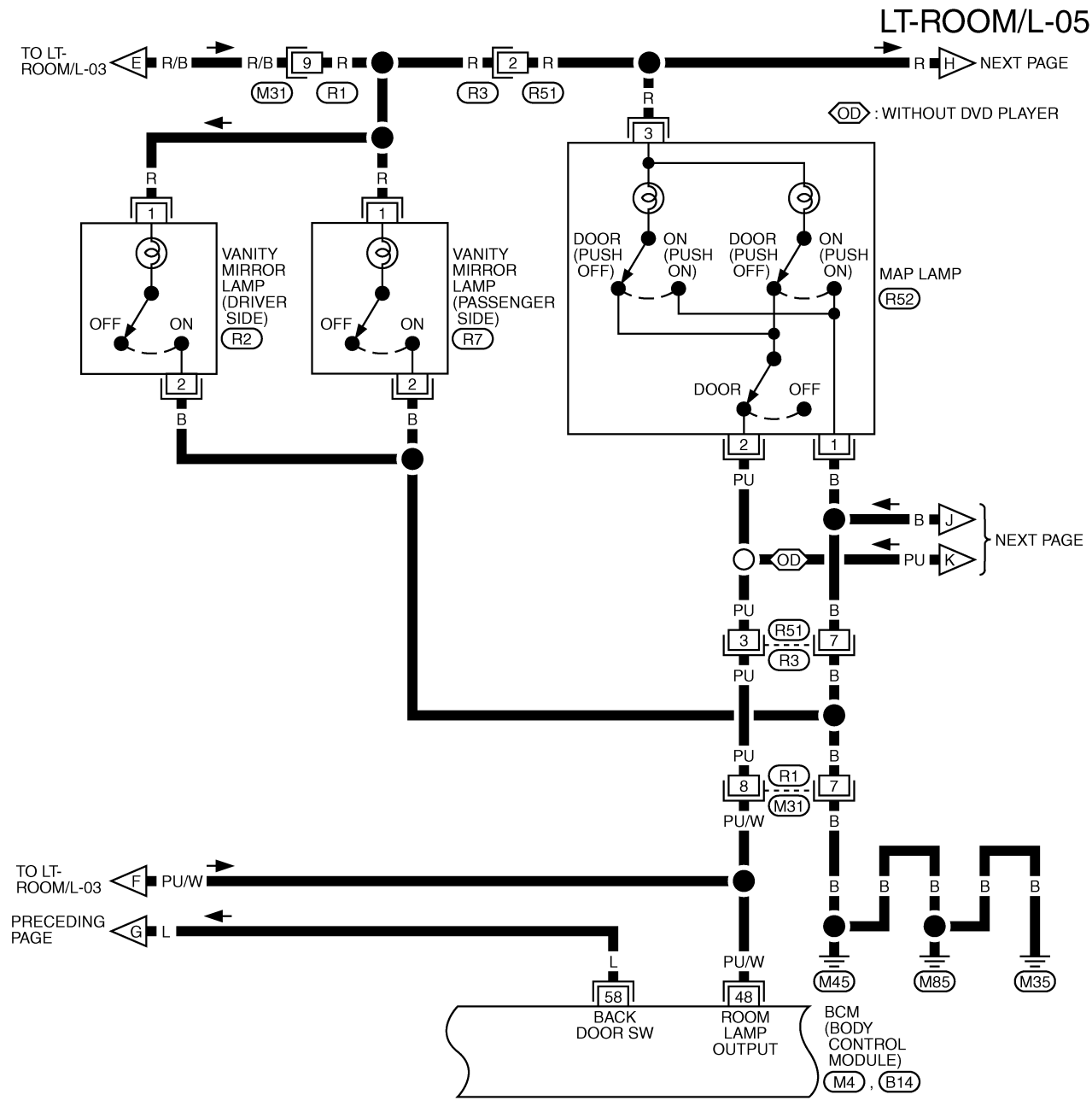
TKWH0230E

LT-ROOM/L-04

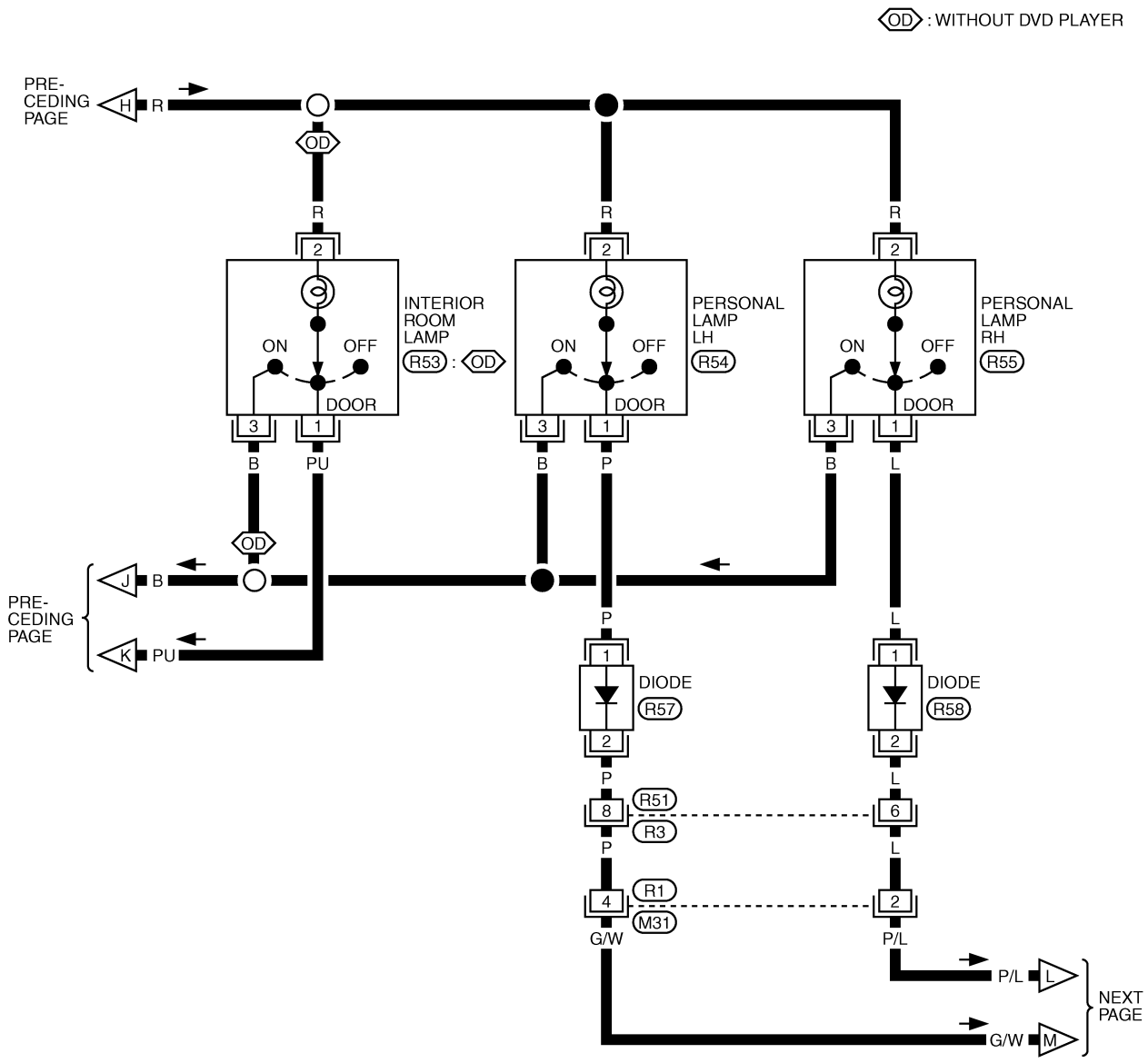


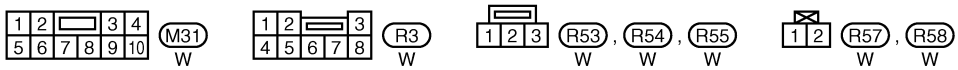


TKWH0231E


LT-ROOM/L-05
TO LT-ROOM/L-03
E
R/B
9
M31
R1
2
R3
R51
H
NEXT PAGE
OD : WITHOUT DVD PLAYER
3
VANITY MIRROR LAMP (DRIVER SIDE)
R2
VANITY MIRROR LAMP (PASSENGER SIDE)
R7
DOOR (PUSH OFF)
ON (PUSH ON)
MAP LAMP
R52
DOOR
OFF
PU
B
J
K
R51
R3
R1
M31
PU/W
F
G
L
58
48
BACK DOOR SW
ROOM LAMP OUTPUT
BCM (BODY CONTROL MODULE)
M4 , B14
M45
M85
M35
M31 W
R2 W , R7 W
R3 W
R52 W
REFER TO THE FOLLOWING.
M4 , B14 -ELECTRICAL UNITS
TKWH0232E

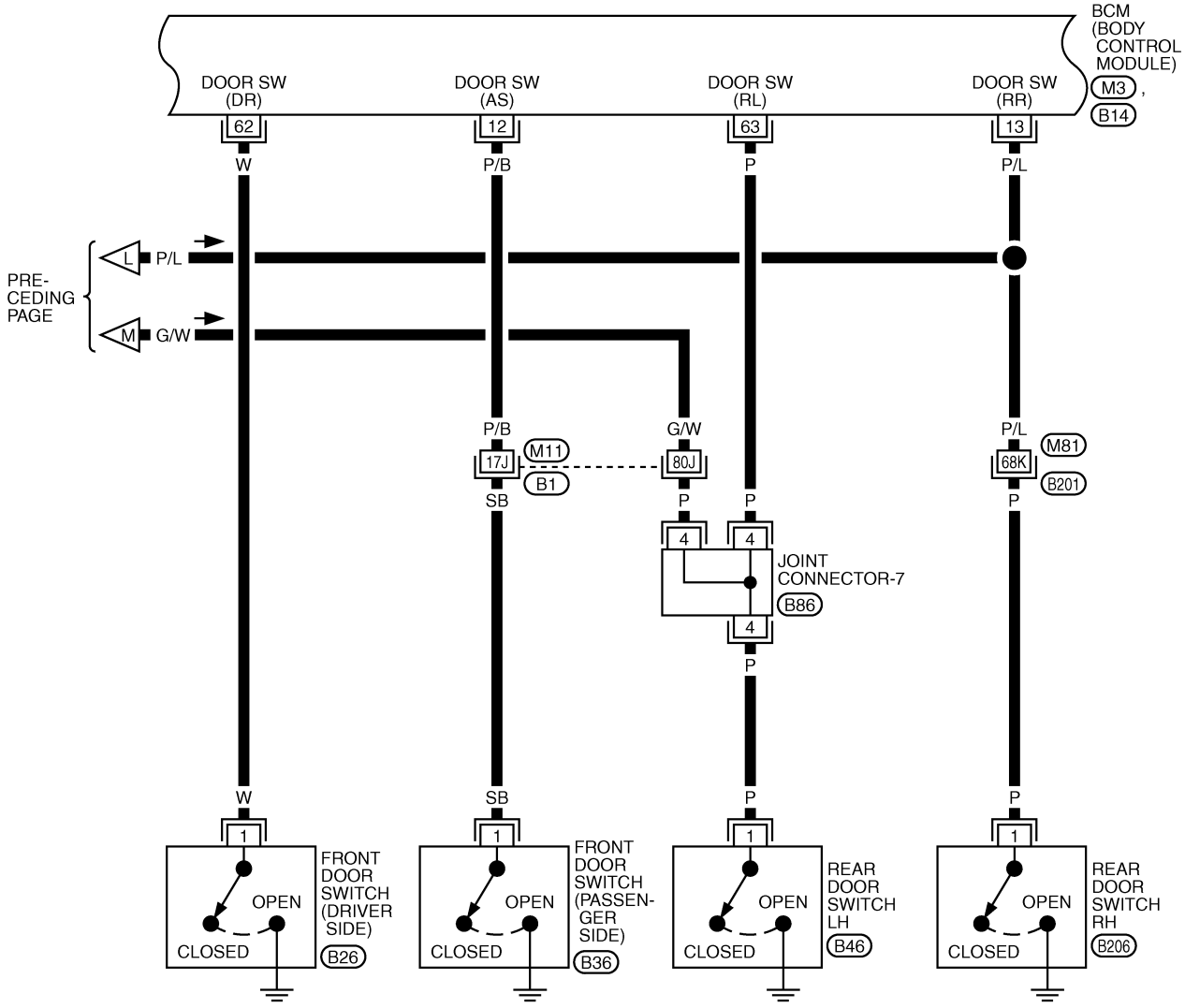
LT-ROOM/L-06

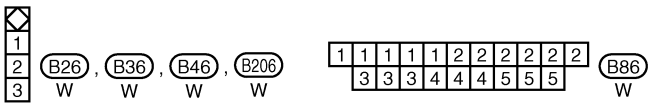




TKWH0233E

LT-ROOM/L-07

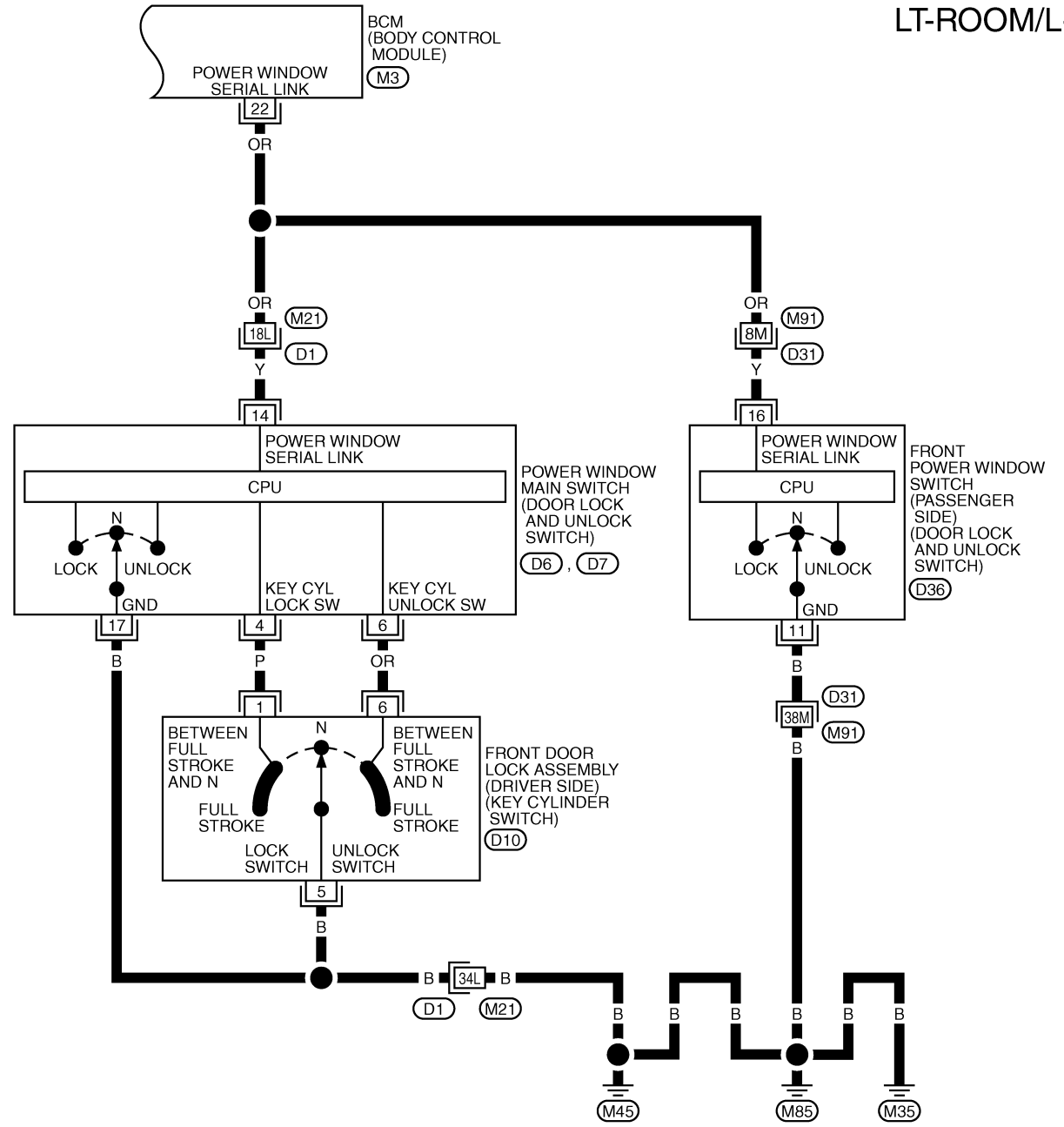


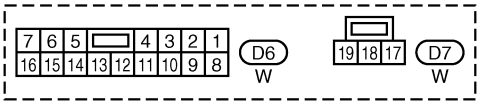


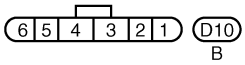
REFER TO THE FOLLOWING.
B1, B201 -SUPER MULTIPLE JUNCTION (SMJ)
M3, B14 -ELECTRICAL UNITS

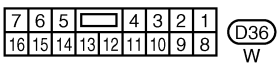
TKWH0234E

LT-ROOM/L-08









REFER TO THE FOLLOWING.

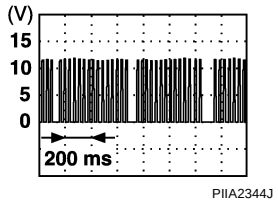
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

M3 -ELECTRICAL UNITS

TKWH0235E

Terminals and Reference Values for BCM

AKS007FB

Terminal No.	Wire color	Signal name	Measuring condition				Reference value
			Ignition switch	Operation or condition			
1	PU	Ignition keyhole illumination signal	OFF	Door is locked. (SW OFF)			Battery voltage
				Door is unlocked. (SW ON)			Approx. 0V
12	P/B	Front door switch AS signal	OFF	Front door switch AS	ON (open)		Approx. 0V
					OFF (closed)		Battery voltage
13	P/L	Rear door switch RH signal	OFF	Rear door switch RH	ON (open)		Approx. 0V
					OFF (closed)		Battery voltage
22	O/R	Power window switch serial link	—	—			 PIIA2344J
37	B/W	Key-in detection switch signal	OFF	Vehicle key is removed.			Approx. 0V
				Vehicle key is inserted.			Battery voltage
38	W/L	Ignition power supply	ON	—			Battery voltage
39	L	CAN–H	—	—			—
40	R	CAN–L	—	—			—
41	R/B	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF			Approx. 0V
			ON	—			Battery voltage
42	L/R	Battery power supply	OFF	—			Battery voltage
47	Y/R	Step lamp signal	OFF	Any door is open (ON)			Approx. 0V
				All doors are closed (OFF)			Battery voltage
48	PU/W	Interior room lamp, map lamp and front door inside handle illumination output signal	OFF	Interior door switch: DOOR position	Any door switch	ON (open)	Approx. 0V
						OFF (closed)	Battery voltage
49 52	B	Ground	ON	—			Approx. 0V
55	G	Battery power supply	OFF	—			Battery voltage
58	L	Back door switch signal (Auto close motor)	OFF	Back door switch	ON (open)		Approx. 0V
					OFF (closed)		Battery voltage
62	W	Front door switch DR signal	OFF	Front door switch DR	ON (open)		Approx. 0V
					OFF (closed)		Battery voltage
63	P	Rear door switch LH signal	OFF	Rear door switch LH	ON (open)		Approx. 0V
					OFF (closed)		Battery voltage

How to Proceed With Trouble Diagnosis

AKS007FC

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-157, "System Description" .
3. Perform the Preliminary Check. Refer to LT-173, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does the interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS007FD

CHECK FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
		22
	Ignition switch ON or START position	1

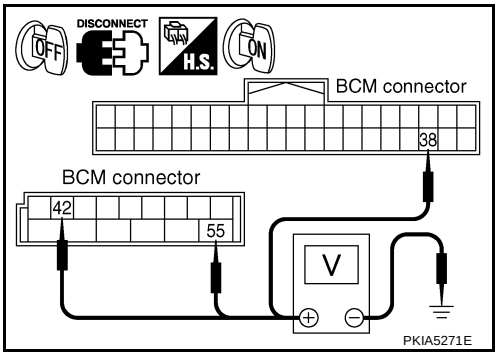
Refer to LT-164, "Wiring Diagram — ROOM/L —" .

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-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM connector and ground.



Terminals			Ignition switch position	
(+)		(-)	OFF	ON
Connector	Terminal (Wire color)			
M4	42 (L/R)	Ground	Battery voltage	Battery voltage
	55 (G)		Battery voltage	Battery voltage
M3	38 (W/L)		0V	Battery voltage

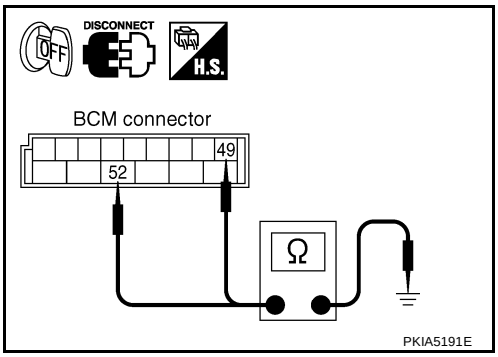
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

Terminals			Continuity
Connector	Terminal (Wire color)		
M4	49 (B)	Ground	Yes
	52 (B)		



OK or NG

OK >> INSPECTION END
NG >> Check harness ground circuit.

CONSULT-II Functions

AKS007FE

CONSULT-II has a display function for work support, self-diagnosis, data monitor, and active test for each part by combining data receiving and sending via the communication line from BCM.

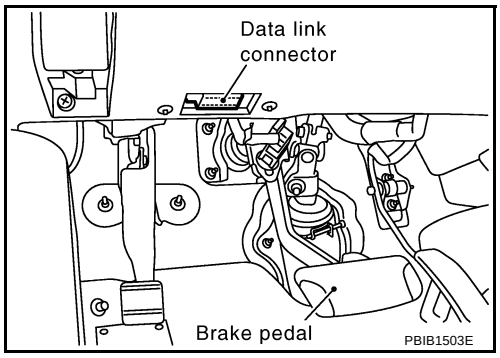
BCM diagnosis part	Check item, diagnosis mode	Description
INTERIOR LAMP	Work support	Changes the setting for each function.
	Data monitor	Displays BCM input data in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

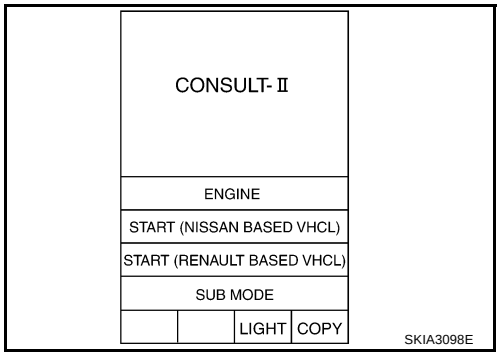
CAUTION:

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.

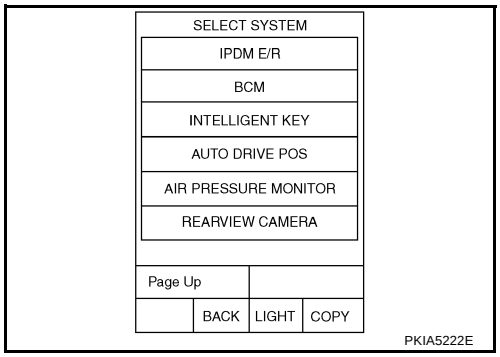
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



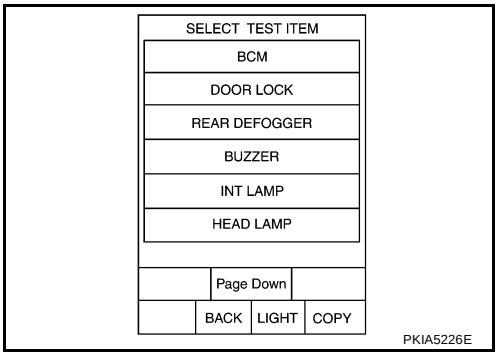
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-40, "CONSULT-II Data Link Connector (DLC) Circuit" .



4. Touch “INT LAMP” on “SELECT TEST ITEM” screen.



WORK SUPPORT

Operation Procedure

1. Touch “INT LAMP” on “SELECT TEST ITEM” screen.
2. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
3. Touch “SET I/L D– UNLCK INTCON” on “SELECT WORK ITEM” screen.
4. Touch “START”.
5. Touch “CHANGE SETT”.
6. The setting will be changed and “CUSTOMIZING COMPLETED ” will be displayed.
7. Touch “END”.

Display Item List

Item	Description	CONSULT-II
SET I/L D–UNLCK INTCON	The 30 seconds glowing function the interior room lamps and the ignition key-hole illumination can be selected when driver door is released (unlocked).	ON/OFF
TURN ON TIME	The time in order to escalate illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned on.	MODE 1 – 7
TURN OFF TIME	The time in order to diminish illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned off.	MODE 1 – 7

Reference between “MODE” and “TIME” for “TURN ON/OFF”

MODE	1	2	3	4	5	6	7
Time (sec.)	0.5	1	2	3	4	5	0

DATA MONITOR

Operation Procedure

1. Touch “INT LAMP” on “SELECT TEST ITEM” screen.
2. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
3. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on “DATA MONITOR” screen.

All signals	Monitors all the signals.
Selection from menu	Selects and monitors the individual signal.

4. Touch “START”.
5. When “SELECTION FROM MENU” is selected, touch items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
6. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
KEY ON SW	“ON/OFF”	Displays “Key inserted (ON)/key removed (OFF)” status judged from the key switch signal.

Monitor item		Contents
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/ Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays “Door open (ON)/Door closed (OFF)” status, determined from passenger door switch signal.
DOOR SW - RR	“ON/OFF”	Displays “Door open (ON)/Door closed (OFF)” status, determined from rear door switch RH signal.
DOOR SW - RL	“ON/OFF”	Displays “Door open (ON)/Door closed (OFF) ” status, determined from rear door switch LH signal.
BACK DOOR SW	“ON/OFF”	Displays “Door open (ON)/Door closed (OFF)” status, determined from back door switch signal.
KEY CYL LK - SW	“ON/OFF”	Displays “Door locked (ON) status, determined from key cylinder lock switch in driver door.
KEY CYL UN - SW	“ON/OFF”	Displays “Door unlocked (OFF) status, determined from key cylinder lock switch in driver door.
CDL LOCK SW	“ON/OFF”	Displays “Door locked (ON)/Door unlocked (OFF) status, determined from locking detection switch in driver door.
CDL UNLOCK SW	“ON/OFF”	Displays “Door unlocked (OFF)” status, determined from locking detection switch in passenger door.
I– KEY LOCK[NOTE]	“ON/OFF”	Displays “Locked (ON)/Other (OFF)” status, determined from lock signal.
I– KEY UNLOCK[NOTE]	“ON/OFF”	Displays “Unlocked (ON)/Other (OFF)” status, determined from unlock signal.
KEYLESS LOCK	“ON/OFF”	Displays “Locked (ON)/Other (OFF)” status, determined from lock signal.
KEYLESS UNLOCK	“ON/OFF”	Displays “Unlocked (ON)/Other (OFF)” status, determined from unlock signal.

NOTE:
Vehicle with intelligent key system display this item.

ACTIVE TEST

Operation Procedure

1. Touch “INT LAMP” on “SELECT TEST ITEM” screen.
2. Touch “ACTIVE TEST” on “SELECT DIAG MODE” screen.
3. Touch item to be tested and check operation of the selected item.
4. During the operation check, touching “BACK” deactivates the operation.

Display Item List

Test item	Description
INT LAMP	Interior room lamp can be operated by any ON-OFF operations.
IGN ILLUM	Ignition key hole illumination can be operated by ON– OFF operation.

Interior Room Lamp Control Does Not Operate

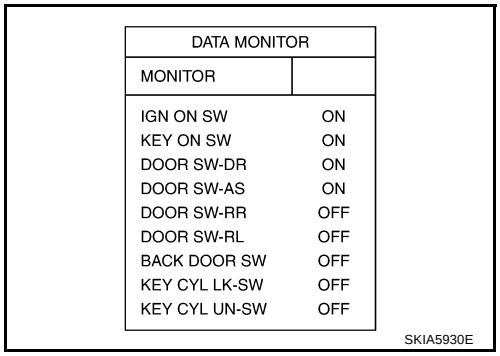
AKS007FF

1. CHECK EACH SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-175, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning switch system.

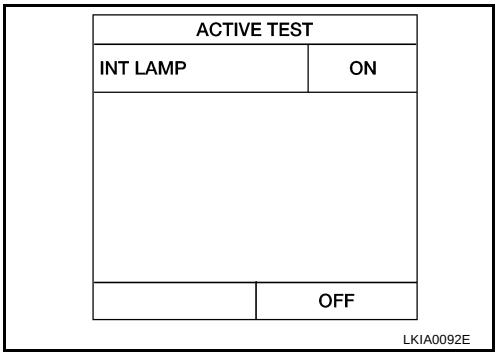


2. ACTIVE TEST

1. Select “BCM” on CONSULT-II. Select “INT LAMP” active test.
2. When interior room lamp switch is in “DOOR” position, use active test to make sure interior room lamp operates.

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> GO TO 3.



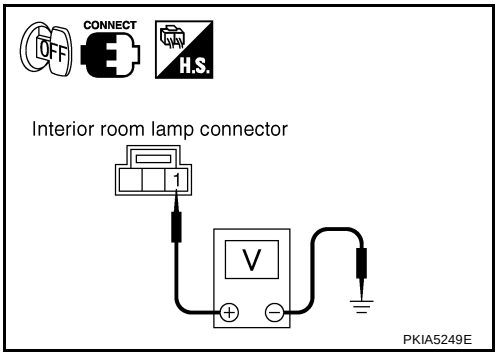
3. CHECK INTERIOR ROOM LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between interior room lamp harness connector R53 terminal 1 (PU) and ground.

1 (PU) – Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 4.
NG >> GO TO 6.



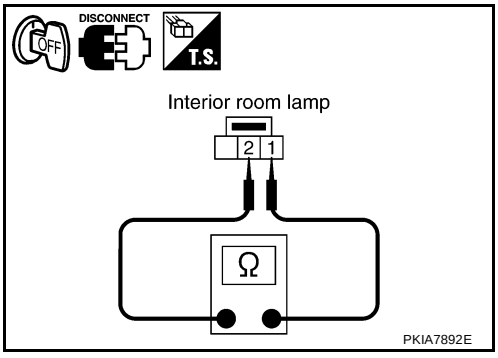
4. CHECK INTERIOR ROOM LAMP

1. Disconnect interior room lamp connector.
2. Check continuity between interior room lamp.

Terminal		Condition	Continuity
Interior room lamp			
1	2	Interior room lamp switch is DOOR.	Yes
		Interior room lamp switch is OFF.	No

OK or NG

OK >> GO TO 5.
NG >> Replace Interior room lamp.



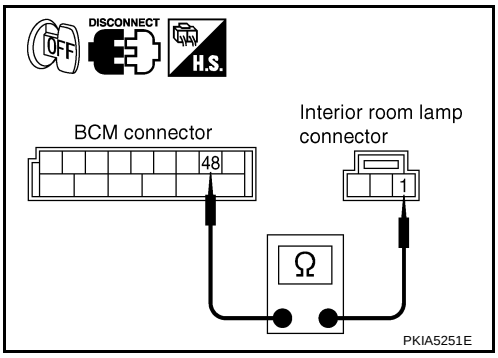
5. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 48 (PU/W) and interior room lamp harness connector R53 terminal 1 (PU).

48 (PU/W) – 1 (PU) : Continuity should exist.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> Repair harness or connector.



6. CHECK INTERIOR ROOM LAMP CIRCUIT

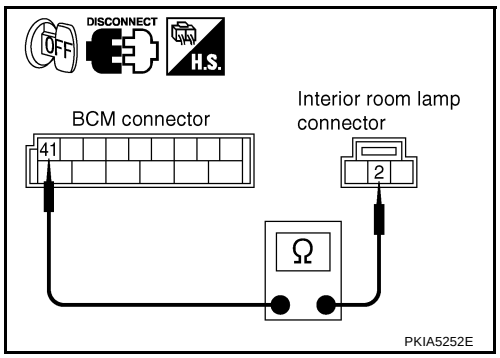
1. Disconnect BCM connector and interior room lamp connector.
2. Check continuity between BCM harness connector M4 terminal 41 (R/B) and interior room lamp harness connector R53 terminal 2 (R).

41 (R/B) – 2 (R) : Continuity should exist.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



Map Lamp Control Does Not Operate

AKS007IK

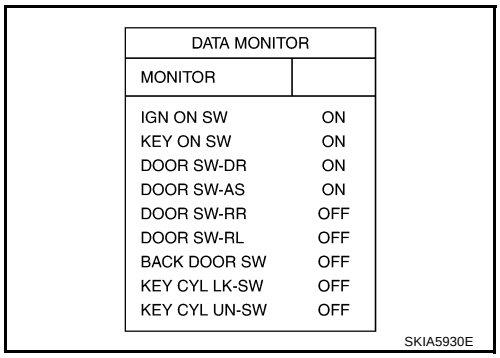
1. CHECK EACH SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-175, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.



2. ACTIVE TEST

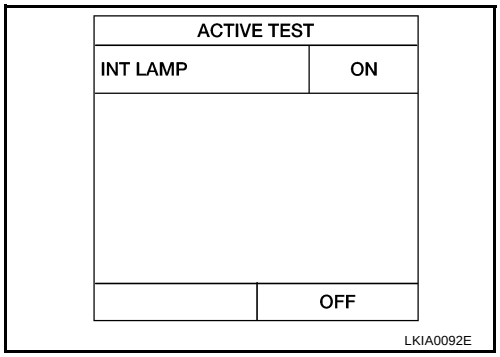
1. Select “BCM” on CONSULT-II. Select “INT LAMP” active test.
2. When map lamp switch is in “DOOR” position, use active test to make sure map lamp operates.

Map lamp should operate.

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> GO TO 3.



3. CHECK MAP LAMP INPUT

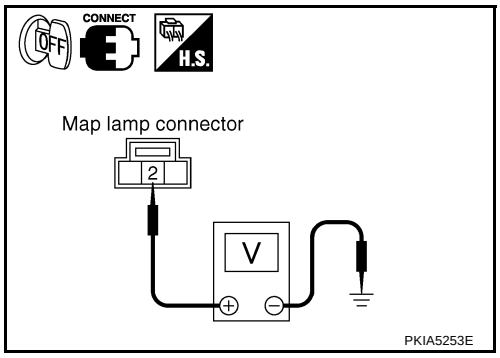
1. Turn ignition switch OFF.
2. Check voltage between map lamp harness connector R52 terminal 2 (PU) and ground.

2 (PU) – Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 4.

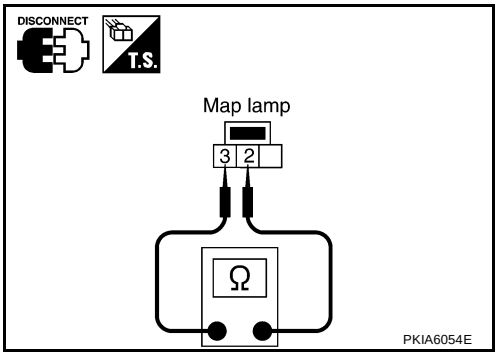
NG >> GO TO 6.



4. CHECK MAP LAMP

1. Disconnect map lamp connector.
2. Check continuity between map lamp.

Terminal		Condition	Continuity
Map lamp			
2	3	Map lamp switch is DOOR.	Yes
		Map lamp switch is ON.	No



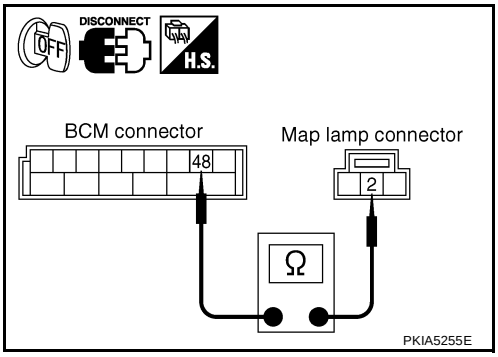
OK or NG

OK >> GO TO 5.
NG >> Replace Map lamp.

5. CHECK MAP LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 48 (PU/W) and map lamp harness connector R52 terminal 2 (PU).

48 (PU/W) – 2 (PU) : Continuity should exist.



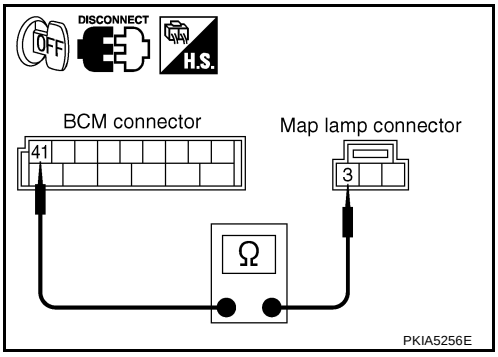
OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

6. CHECK MAP LAMP CIRCUIT

1. Disconnect BCM connector and map lamp connector.
2. Check continuity between BCM harness connector M4 terminal 41 (R/B) and map lamp harness connector R52 terminal 3 (R).

41 (R/B) – 3 (R) : Continuity should exist.



OK or NG

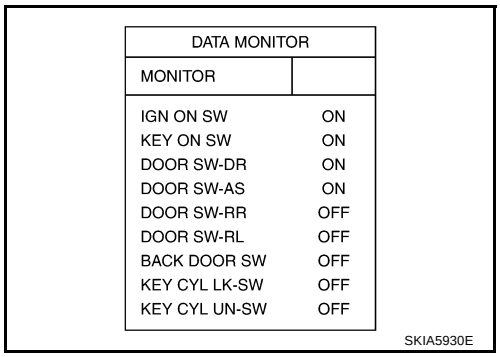
OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

Personal Lamp Control Does Not Operate

AKS007FG

1. CHECK REAR DOOR SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor to make sure switch “DOOR SW-RR” and “DOOR SW-RL” turn ON-OFF linked with rear door (RH and LH) operation.



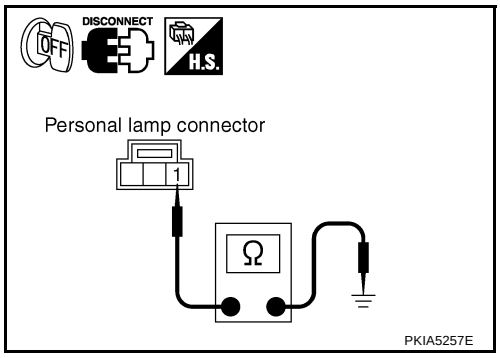
OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning rear door switch.

2. CHECK PERSONAL LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect personal lamp connector.
3. Open the rear door.
4. When personal lamp switch is in “DOOR” position, check continuity between personal lamp harness connector R54 terminal 1 (P), R55 terminal 1 (L) and ground.

1 (P), 1 (L) – Ground : Continuity should exist.



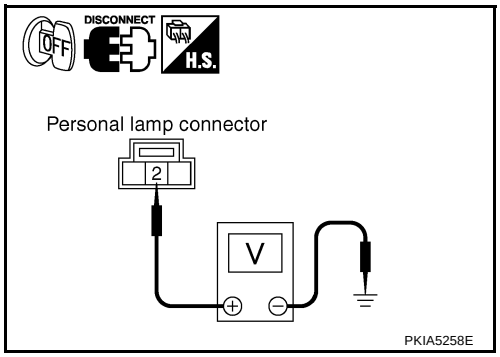
OK or NG

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

3. CHECK PERSONAL LAMP INPUT

Check voltage between personal lamp harness connector R54 and R55 terminal 2 (R) and ground.

2 (R) – Ground : Battery voltage should exist.



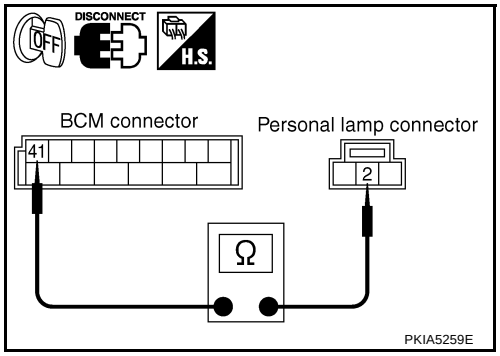
OK or NG

OK >> Replace personal lamp. Refer to LT-151, "Removal and Installation" .
NG >> GO TO 4.

4. CHECK PERSONAL LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 41 (R/B) and personal lamp harness connector R54 and R55 terminal 2 (R).

41 (R/B) – 2 (R) : Continuity should exist.



OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

Ignition key Hole illumination Control Does Not Operate

AKS007FH

1. CHECK EACH SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-175, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning switch system.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

SKIA5930E

2. ACTIVE TEST

1. Select “BCM” on CONSULT-II. Select “INT LAMP”.
2. Select “IGN ILLUM” active test to make sure lamp operates.

Ignition key hole illumination should operate.

OK or NG

OK >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .
NG >> GO TO 3.

ACTIVE TEST	
IGN ILLUM	ON
	OFF

SKIA3992E

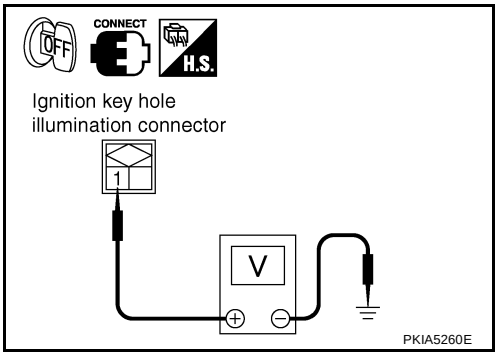
3. CHECK IGNITION KEY HOLE ILLUMINATION INPUT

1. Turn ignition switch OFF.
2. Check voltage between ignition key hole illumination harness connector M24 terminal 1 (R/B) and ground.

1 (R/B) – Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 4.
NG >> GO TO 6.



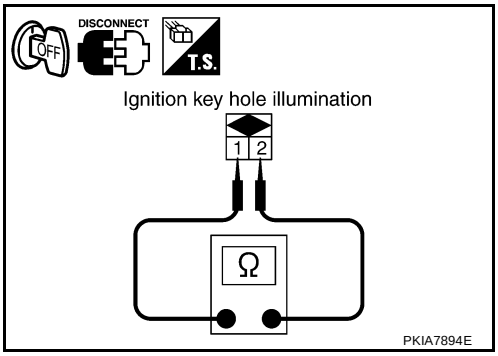
4. CHECK IGNITION KEY HOLE ILLUMINATION BULB

1. Disconnect ignition key hole illumination connector.
2. Check continuity between ignition key hole illumination terminal 1 and 2.

1 – 2 : Continuity should exist.

OK or NG

OK >> GO TO 5.
NG >> Replace ignition key hole illumination. Refer to LT-153, "Bulb Replacement, Removal and Installation" .



5. CHECK IGNITION KEY HOLE ILLUMINATION CIRCUIT

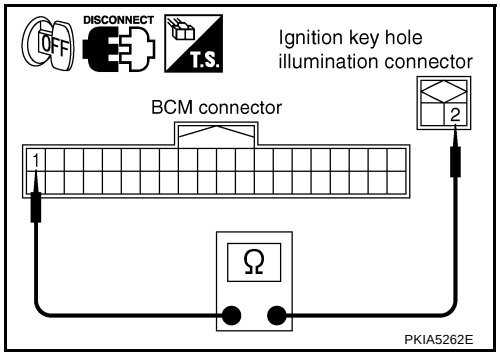
1. Disconnect BCM connector and key hole illumination connector.
2. Check continuity between BCM harness connector M3 terminal 1 (PU) and key hole illumination harness connector M24 terminal 2 (PU).

1 (PU) – 2 (PU) : Continuity should exist.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



6. CHECK IGNITION KEY HOLE ILLUMINATION CIRCUIT

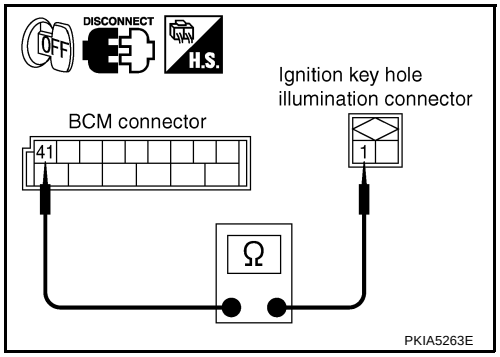
1. Disconnect BCM connector and key hole illumination connector.
2. Check continuity between BCM harness connector M4 terminal 41 (R/B) and key hole illumination harness connector M24 terminal 1 (R/B).

41 (R/B) – 1 (R/B) : Continuity should exist.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



All Step Lamps Do Not Operate

AKS007FI

1. CHECK EACH DOOR SWITCH

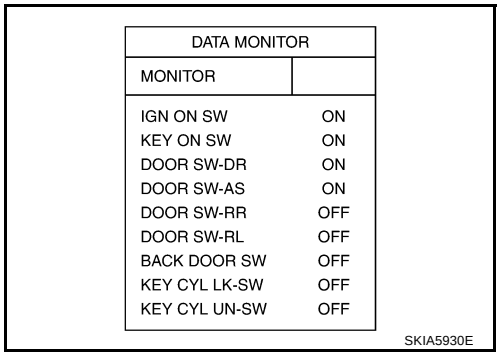
Select “BCM” on CONSULT-II. With “INT LAMP” data monitor to make sure switches listed below turn ON-OFF linked with switch operation.

Switch name	CONSULT screen
Driver side door switch	DOOR SW - DR
Passenger side door switch	DOOR SW - AS
Rear RH side door switch	DOOR SW - RR
Rear LH side door switch	DOOR SW - RL

OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.



2. CHECK STEP LAMP INPUT

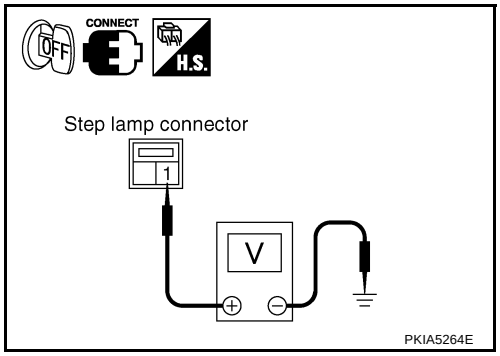
1. Turn ignition switch OFF.
2. Check voltage between front door driver side step lamp harness connector D9 terminal 1 (R) and ground.

1 (R) – Ground : Battery voltage should exist.

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.



3. CHECK STEP LAMP CIRCUIT

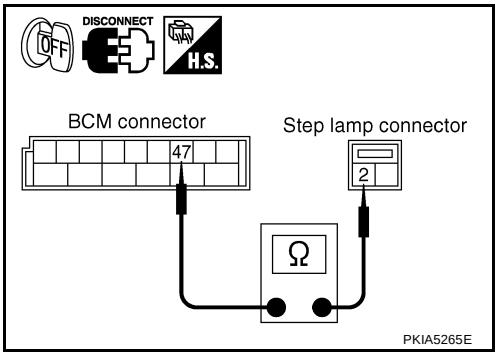
1. Disconnect BCM connector and front door driver side step lamp connector.
2. Check continuity between BCM harness connector M4 terminal 47 (Y/R) and front door driver side step lamp harness connector D9 terminal 2 (SB).

47 (Y/R) – 2 (SB) : Continuity should exist.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



4. CHECK STEP LAMP CIRCUIT

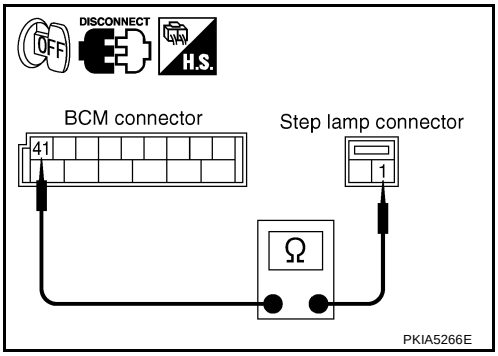
1. Disconnect BCM connector and step lamp connector.
2. Check continuity between BCM harness connector M4 terminal 41 (R/B) and front door driver side step lamp harness connector D9 terminal 1 (R).

41 (R/B) – 1 (R) : Continuity should exist.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-15, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



All Interior Room Lamps Do Not Operate

AKS007FJ

1. CHECK POWER SUPPLY CIRCUIT

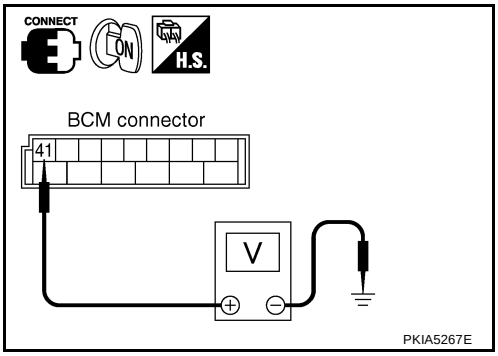
1. All interior room lamps switch are OFF.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M4 terminal 41 (R/B) and ground.

41 (R/B) – Ground : Battery voltage should exist.

OK or NG

OK >> Repair harness or connector. In a case of making a short circuit, be sure to disconnect battery negative cable after repairing harness, and then reconnect.

NG >> Replace BCM. Refer to BCS-15, "Removal and Installation of BCM" .



Bulb Replacement

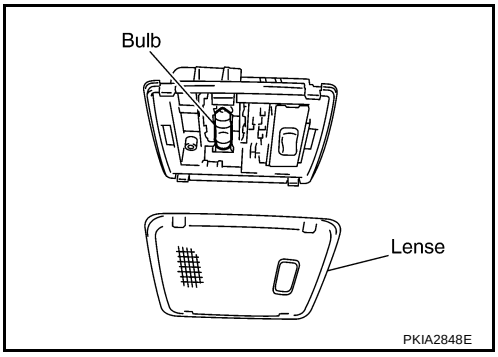
AKS007FK

ROOM LAMP

1. Remove room lamp. Refer to LT-184, "Removal and Installation" .
2. Insert a suitable tool and remove lens.
3. Remove the bulb.

Room lamp :12V - 8W

4. Install in the reverse order of removal.



MAP LAMP

Refer to LT-150, "Bulb Replacement" in “MAP LAMP”.

PERSONAL LAMP

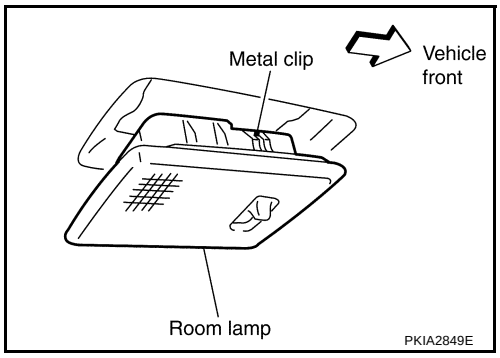
Refer to LT-151, "Bulb Replacement" in “PERSONAL LAMP”.

Removal and Installation

AKS007FL

ROOM LAMP

1. Use a suitable tool to press metal clip and remove room lamp.
2. Disconnect room lamp connector.



MAP LAMP

Refer to LT-150, "Removal and Installation" in “MAP LAMP”.

PERSONAL LAMP

Refer to LT-151, "Removal and Installation" in “PERSONAL LAMP”.

ILLUMINATION

PFP:27545

System Description

AKS007EI

Control of the illumination lamps operation is dependent upon the position of the lighting switch (combination switch). When the lighting switch is placed in the 1ST or 2ND position (or if the auto light system is activated) the BCM (body control module) receives input signal requesting the illumination lamps to illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of IPDM E/R (intelligent power distribution module engine room) controls the tail lamp relay coil. This relay, when energized, directs power to the illumination lamps, which then illuminate.

Power is supplied at all times

- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 71, located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- to BCM (body control module) terminal 55
- through 50A fusible link (letter M, located in fuse and fusible link block)
- to BCM (body control module) terminal 42
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 15A fuse [No. 78, located in IPDM E/R (intelligent power distribution module engine room)]
- to unified meter and A/C amp. terminal 21 and
- to combination meter terminal 8
- through 10A fuse [No. 19, located in fuse block (J/B)].

With the ignition switch in the ON or START position, power is supplied

- to BCM (body control module) terminal 38
- through 15A fuse [No. 1, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22
- through 10A fuse [No. 12, located in fuse block (J/B)]
- to ignition relay in the IPDM E/R (intelligent power distribution module engine room)
- from ignition switch
- to combination meter terminal 7
- through 10A fuse [No. 14, located in fuse block (J/B)].

With the ignition switch in the ACC or ON position, power is supplied

- to BCM (body control module) terminal 11
- through 10A fuse [No. 6, located in fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminals 49 and 52
- to unified meter and A/C amp. terminals 29 and 30, and
- to combination meter terminals 5, 6, and 15
- through grounds M35, M45, and M85
- to IPDM E/R (intelligent power distribution module engine room) terminals 38 and 60
- through grounds E21, E50, and E51.

ILLUMINATION OPERATION BY LIGHTING SWITCH

With the lighting switch in the 1ST or 2ND position (or if the auto light system is activated), the BCM receives input signal requesting the illumination lamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The central processing unit of the IPDM E/R controls the tail lamp relay coil, which, when energized, directs power

- through IPDM E/R terminal 22
- to glove box lamp terminal 1
- to A/T device (illumination) terminal 11
- to snow mode switch (illumination) terminal 4

- to VDC off switch (illumination) terminal 3
- to clock (illumination) terminal 3
- to hazard switch (illumination) terminal 3
- to heated seat switch (driver side) (illumination) terminal 5
- to heated seat switch (passenger side) (illumination) terminal 5
- to A/C and AV switch (illumination) terminal 3
- to NAVI control unit (illumination) terminal 25
- to DVD player (illumination) terminal 12
- to front cigarette lighter socket terminal 2
- to rear power window switch LH (illumination) terminal 6 and
- to rear power window switch RH (illumination) terminal 6.

Illumination control

- through combination meter terminal 19
- to A/T device (illumination) terminal 12
- to snow mode switch (illumination) terminal 2
- to VDC off switch (illumination) terminal 4
- to clock (illumination) terminal 4
- to hazard switch (illumination) terminal 4
- to heated seat switch (driver side) (illumination) terminal 6
- to heated seat switch (passenger side) (illumination) terminal 6
- to A/C and AV switch (illumination) terminal 4
- to NAVI control unit (illumination) terminal 30
- to DVD player (illumination) terminal 10.

Ground is supplied at all times

- to glove box lamp terminal 2 and
- to front cigarette lighter socket terminal 3
- through grounds M35, M45 and M85
- to rear power window switch LH (illumination) terminal 7 and
- to rear power window switch RH (illumination) terminal 7
- through grounds B15 and B45.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST or 2ND position (or if auto light system is activated), and the ignition switch is turned from ON or ACC to OFF, the battery saver control function is activated. Under this condition, the illumination lamps remain illuminated for 5 minutes, then the illumination lamps are turned off.
When the lighting switch is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps are turned off by the battery saver control, and illumination lamps illuminate again.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

AKS007EJ

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

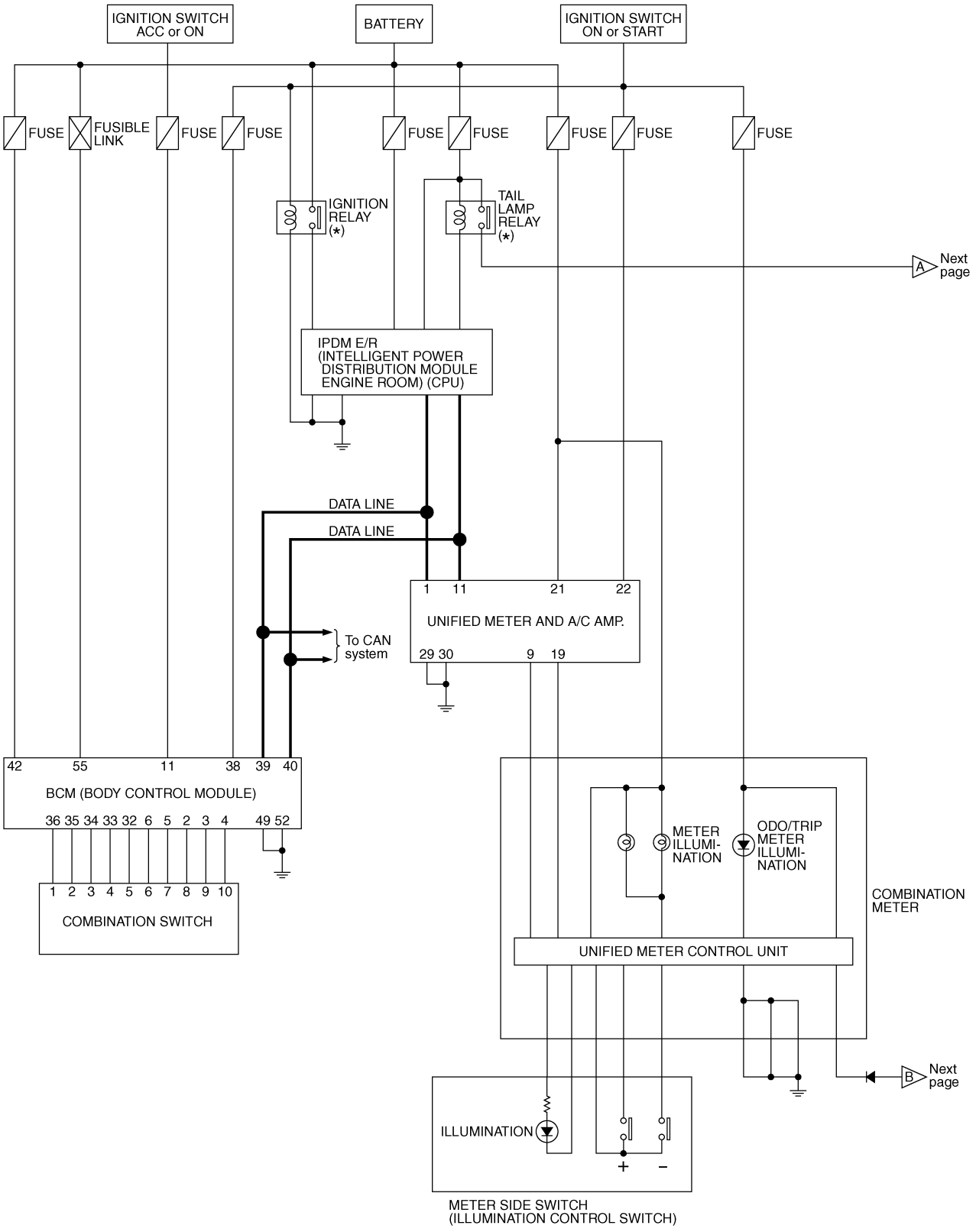
CAN Communication Unit

AKS0080Y

Refer to LAN-6, "CAN Communication Unit" .

Schematic

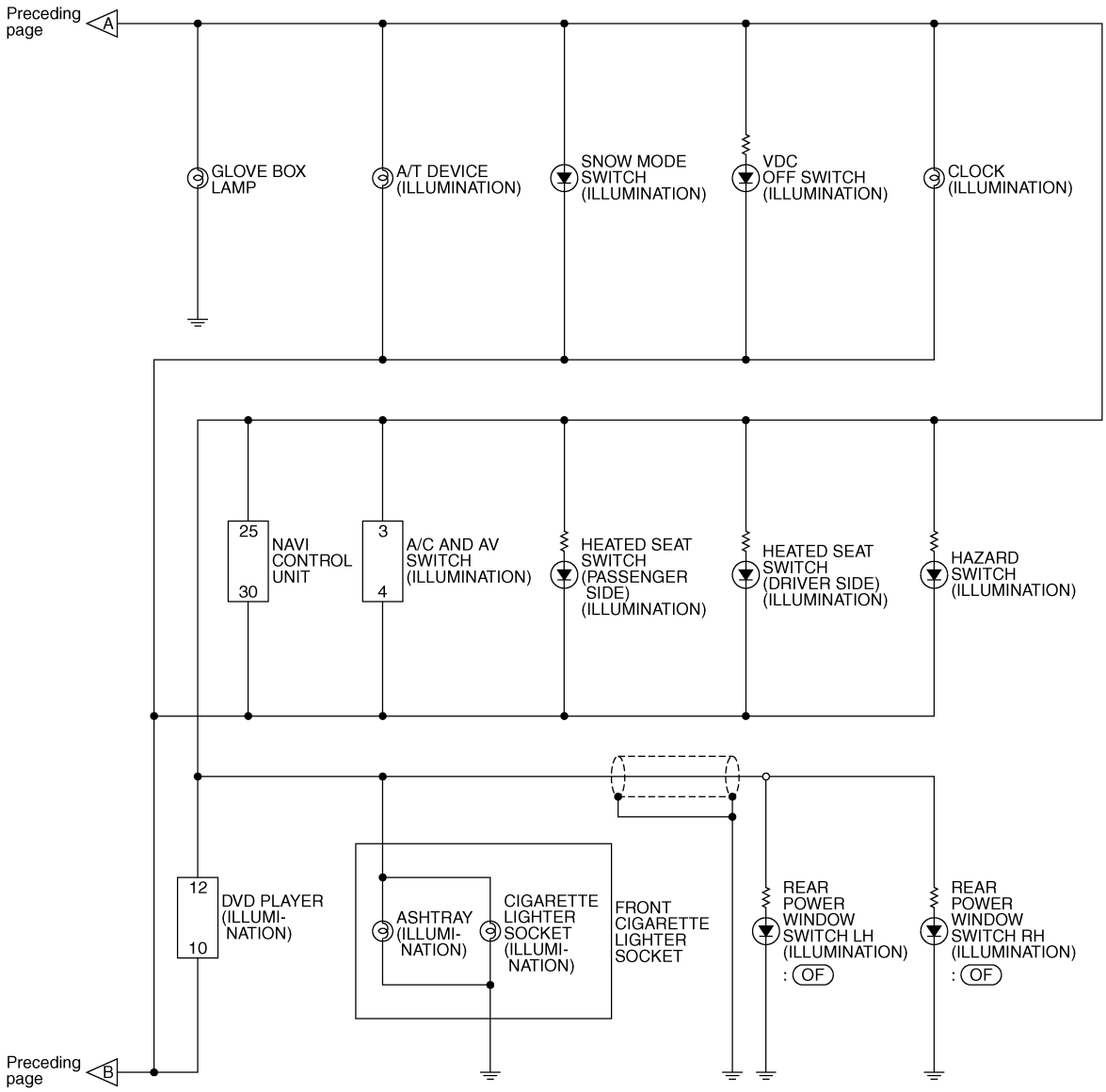
AKS007EL



* : This relay is built into the IPDM E/R (Intelligent power distribution module engine room).

TKWM0670E

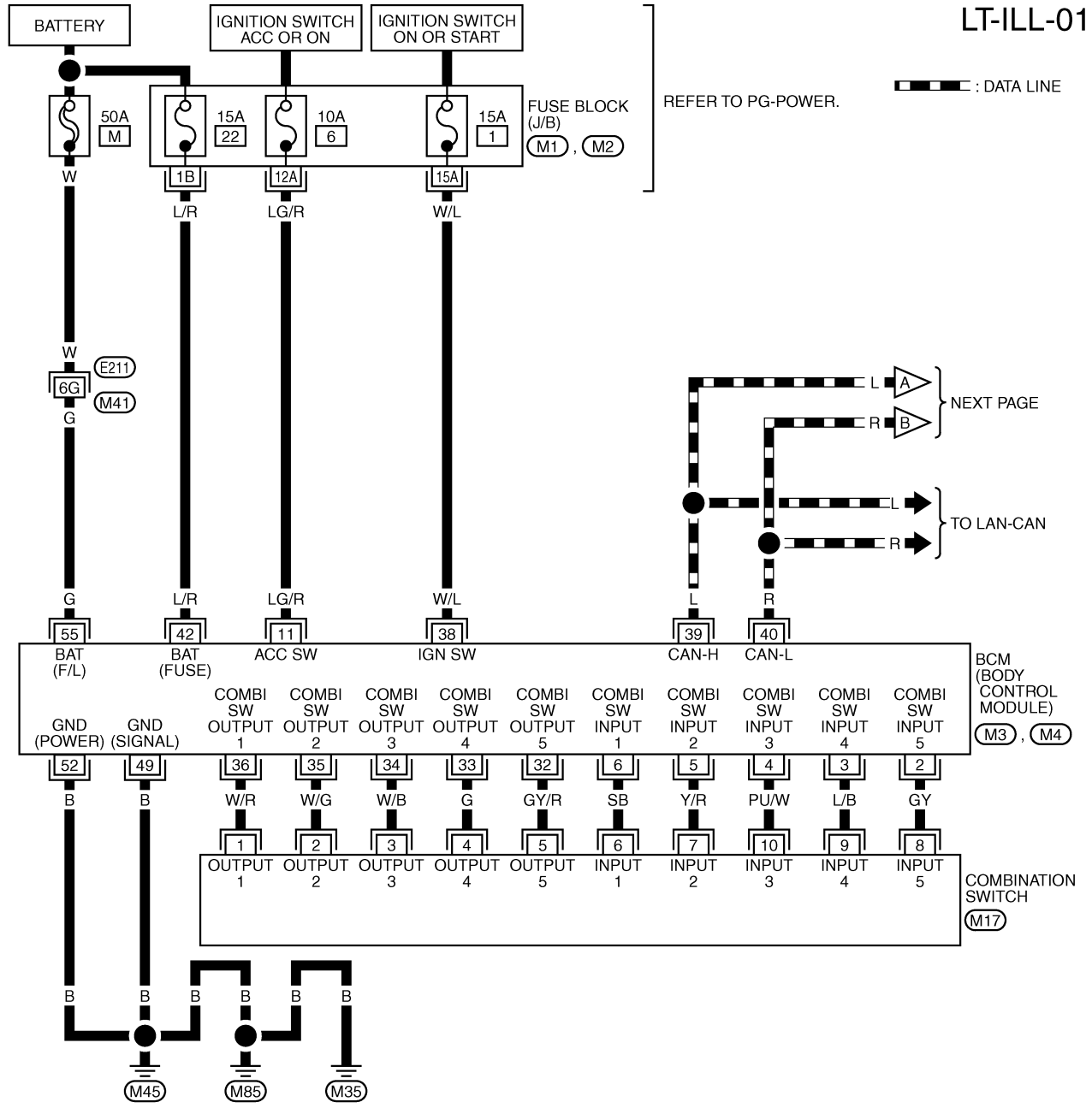
(OF) : Without interruption detection function for rear door window



TKWM1254E

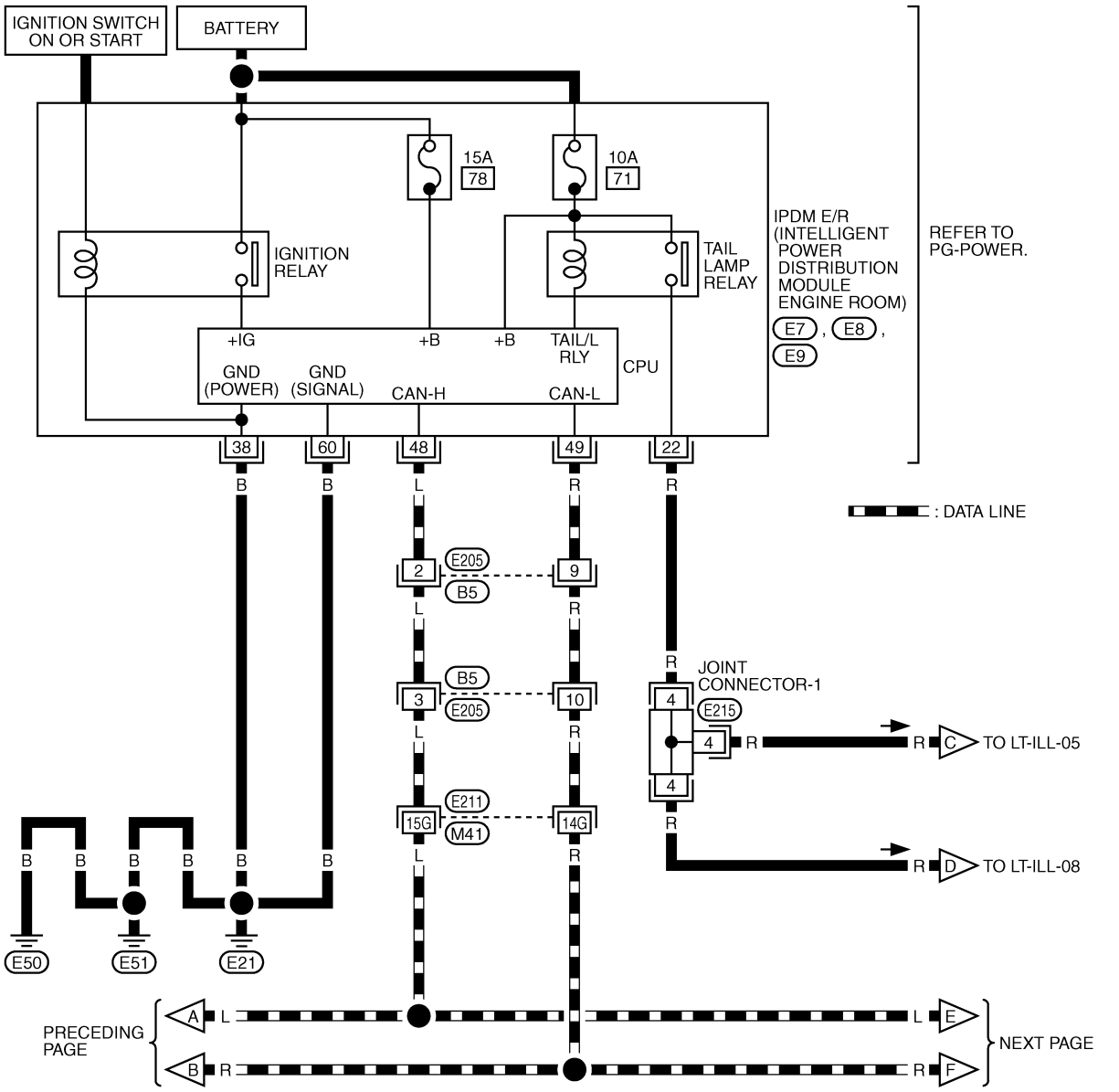
Wiring Diagram — ILL —

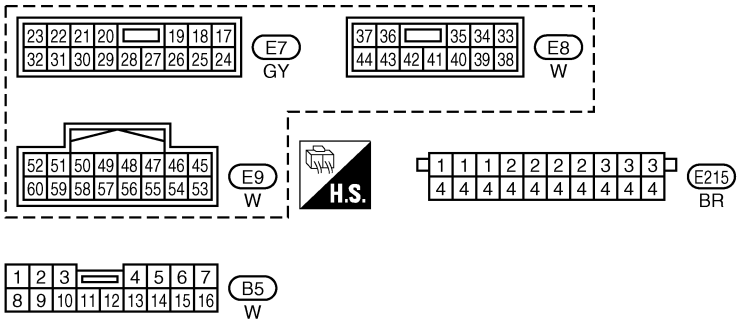
AKS007EM



TKWM0826E

LT-ILL-02



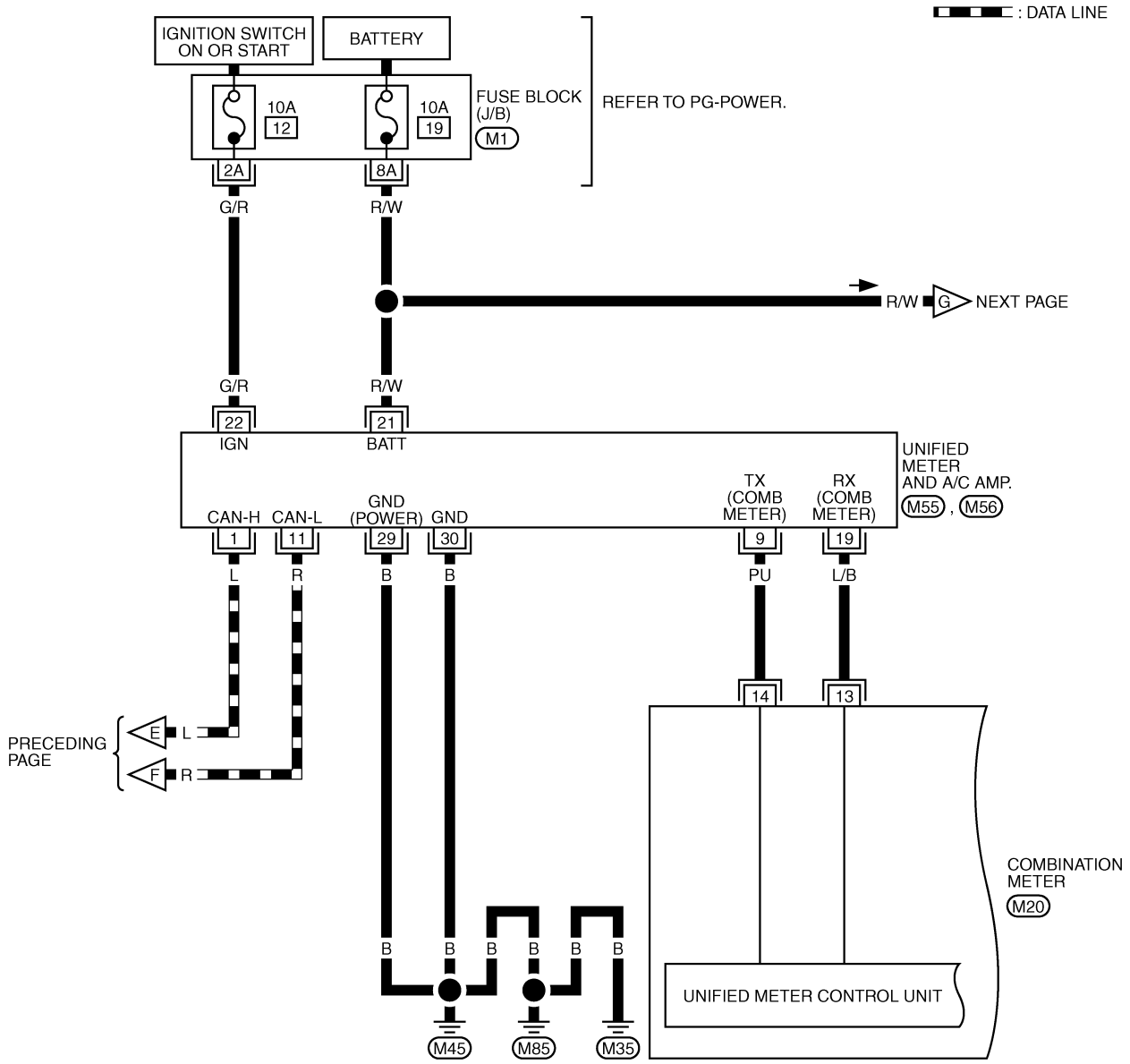


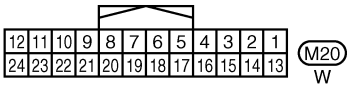
REFER TO THE FOLLOWING.

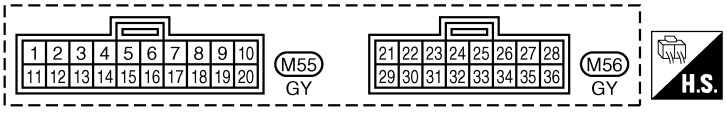
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0673E

LT-ILL-03

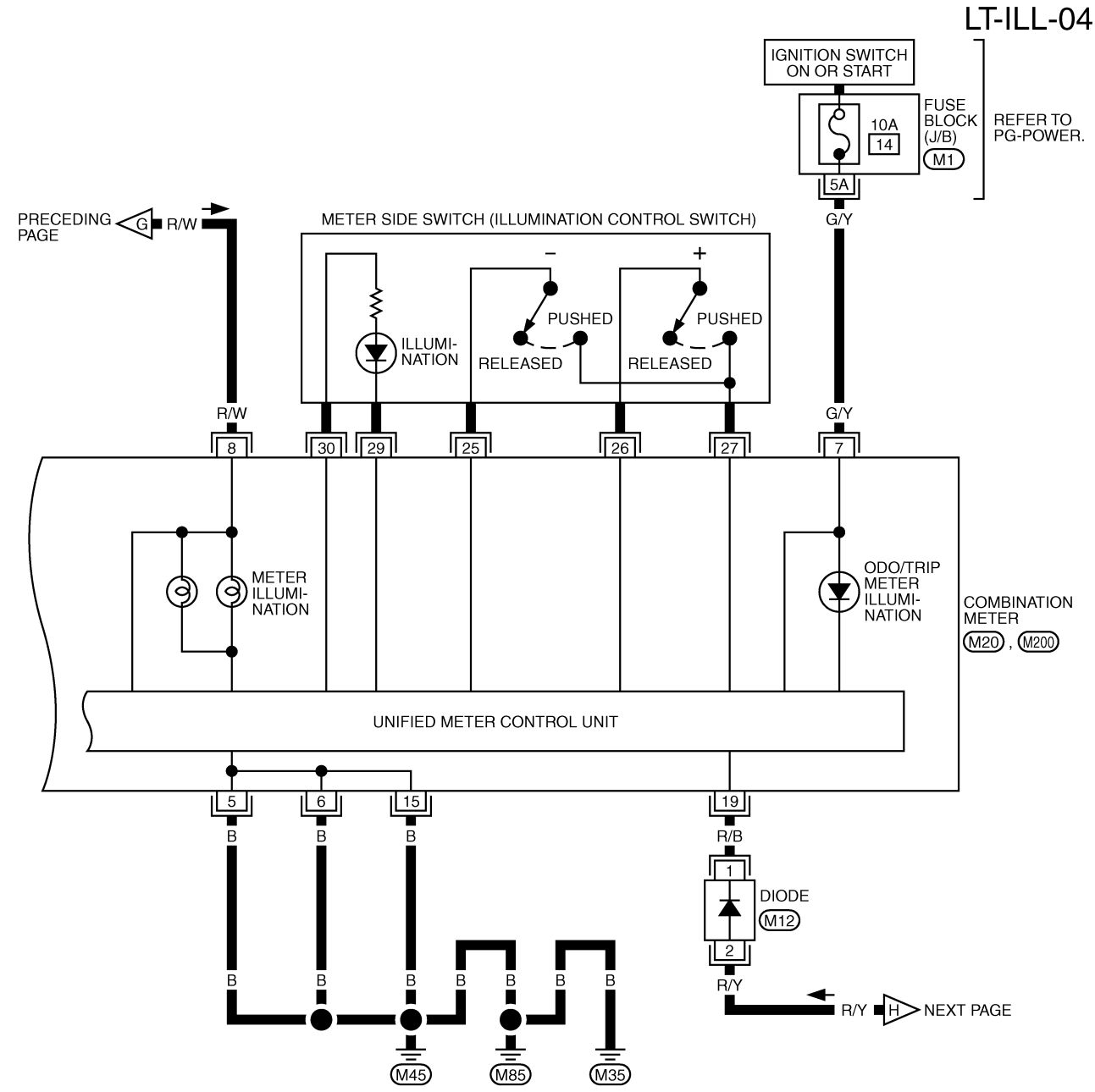


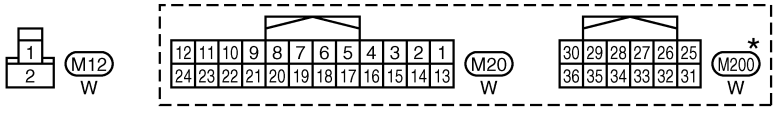




REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0674E



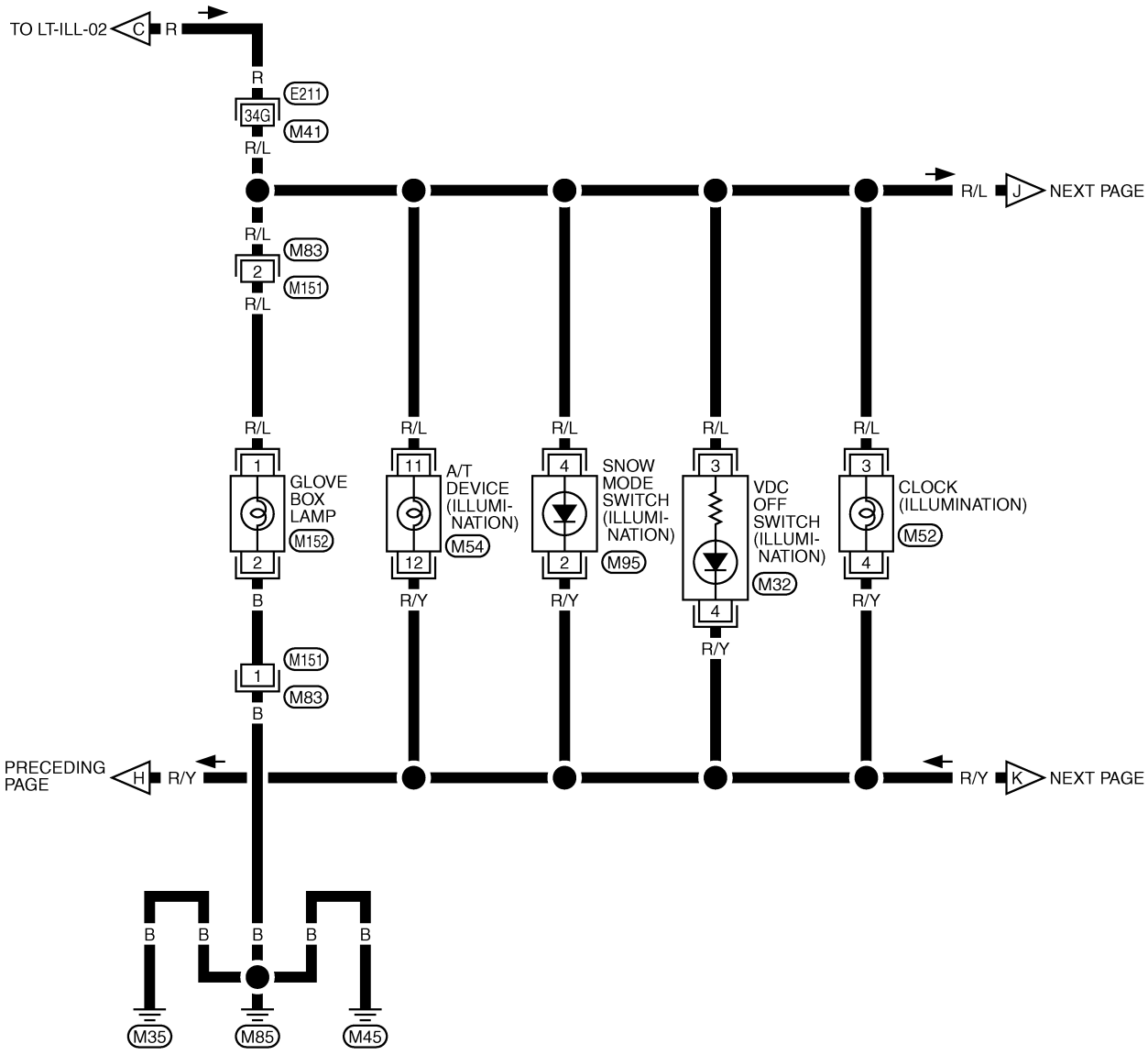


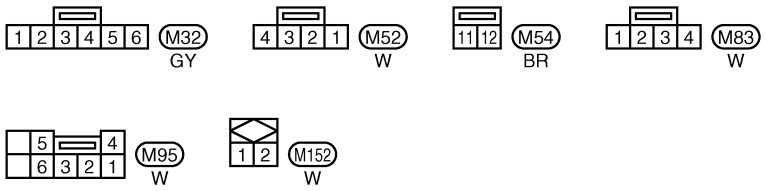
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWM0675E

LT-ILL-05

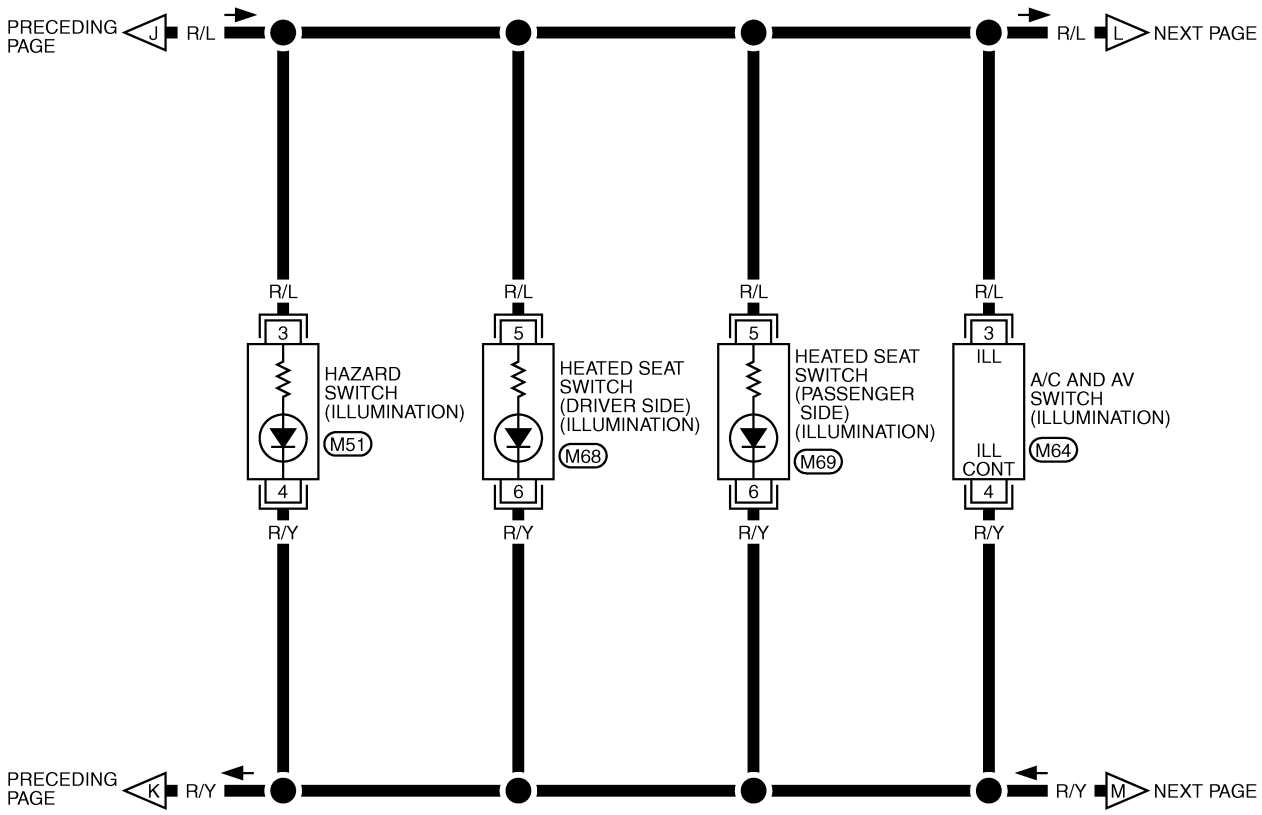


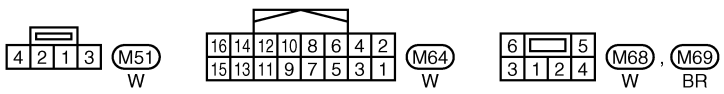


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1051E

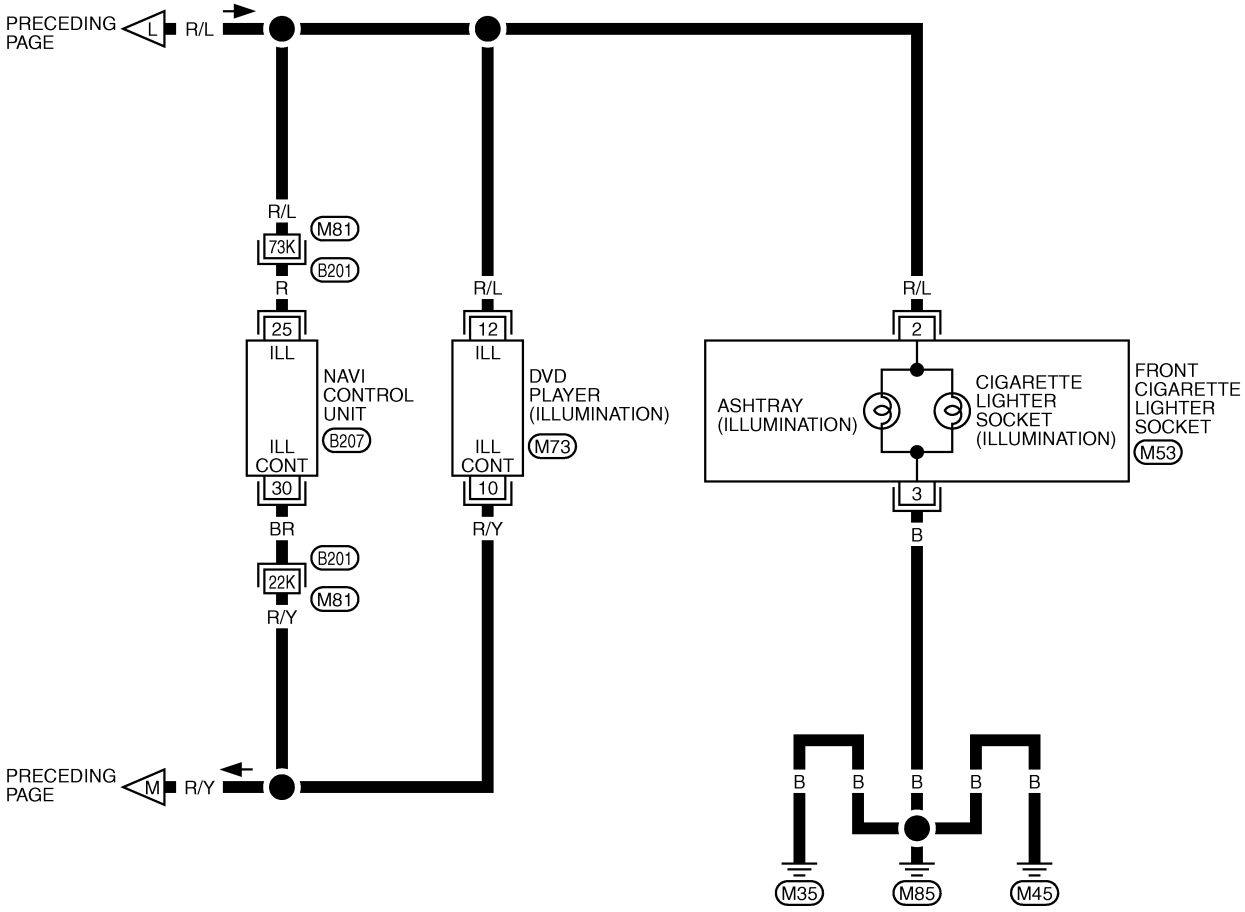
LT-ILL-06

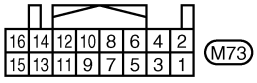


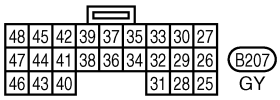


TKWM0677E

LT-ILL-07



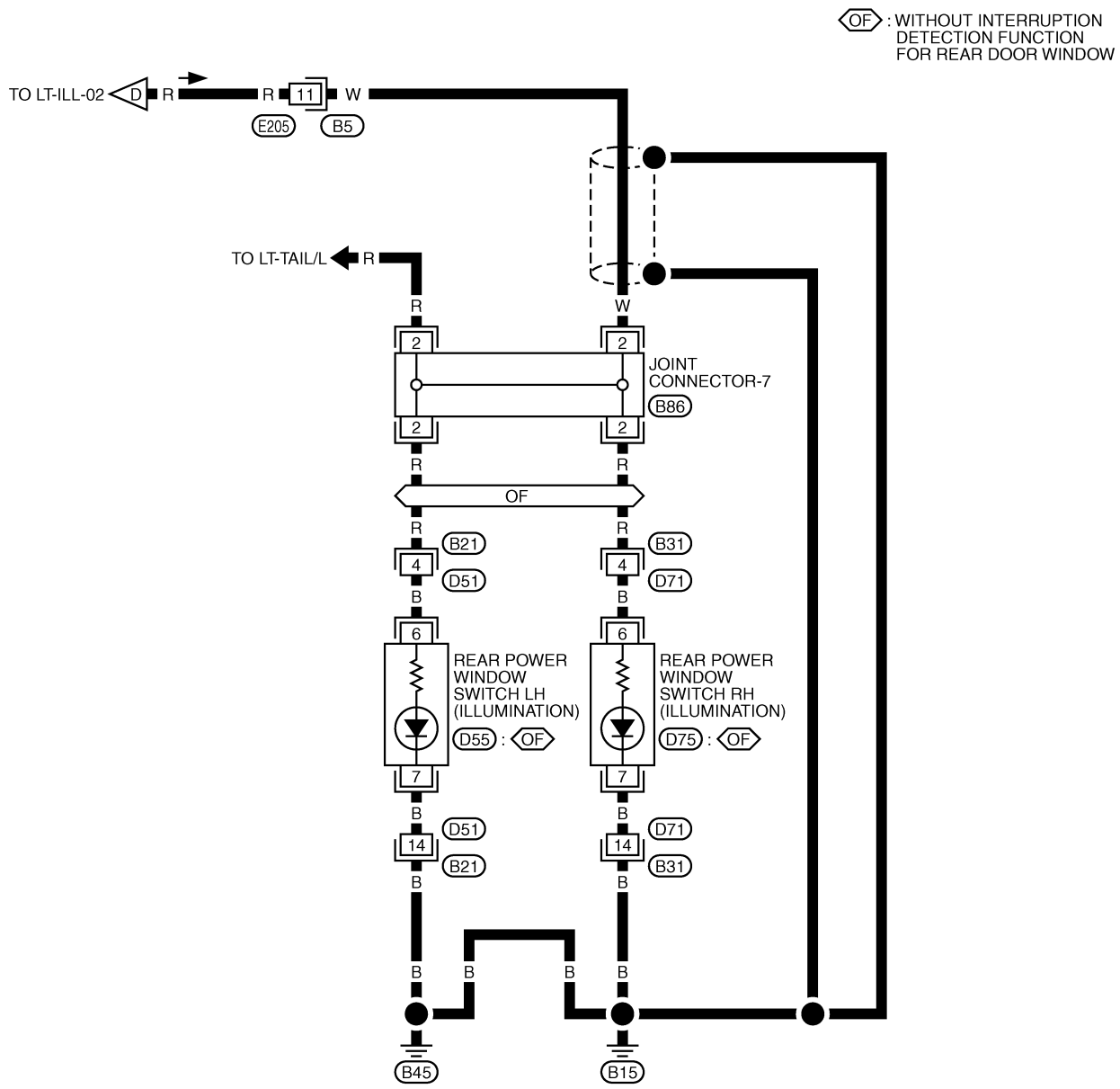


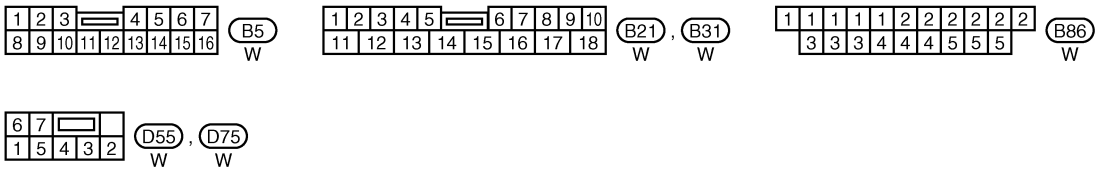


REFER TO THE FOLLOWING.
B201 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1255E

LT-ILL-08





TKWH0339E

Removal and Installation

AKS007EN

ILLUMINATION CONTROL SWITCH

Refer to DI-27, "Removal and Installation of Odo/Trip Meter and Illumination Control Switch" in “DI” section.

GLOVE BOX LAMP

Refer to LT-154, "Bulb Replacement, Removal and Installation" .

FRONT DOOR INSIDE ILLUMINATION

Refer to EI-35, "Removal and Installation" in “EI” section.

BULB SPECIFICATIONS

PFP:26297

Headlamp

AKS007EO

Item	Wattage (W)
High/Low (Xenon type)	35 (D2S)

Exterior Lamp

AKS007EP

Item		Wattage (W)
Front combination lamp	Front Turn signal lamp	21 (amber)
	Parking lamp	5
	Front side marker lamp	3.8
Rear combination lamp	Stop/Tail lamp	LED
	Rear Turn signal lamp	LED
	Rear side marker lamp	3.8
Front fog lamp		51 (HB4)
Back-up lamp		18
License plate lamp		5
High-mounted stop lamp (back door mount)		LED

Interior Lamp/Illumination

AKS007EQ

Item	Wattage (W)
Map lamp	8
Room lamp	8
Personal lamp	8
Luggage room lamp	8
Step lamp	5
Glove box lamp	1.4
Vanity mirror lamp	2
Ignition key hole illumination	2
Front door inside handle illumination	LED
Console illumination lamp	1.4