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.

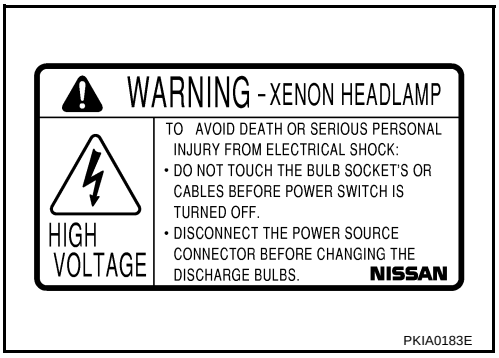
WARNING:

- **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.**

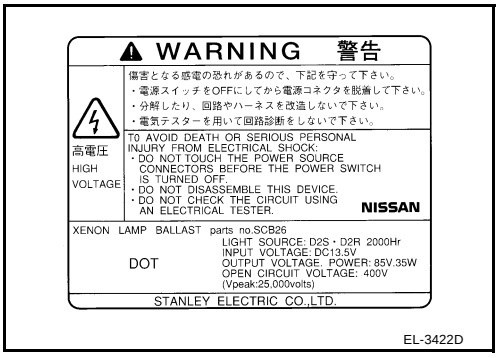
General Precautions for Service Operations

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.



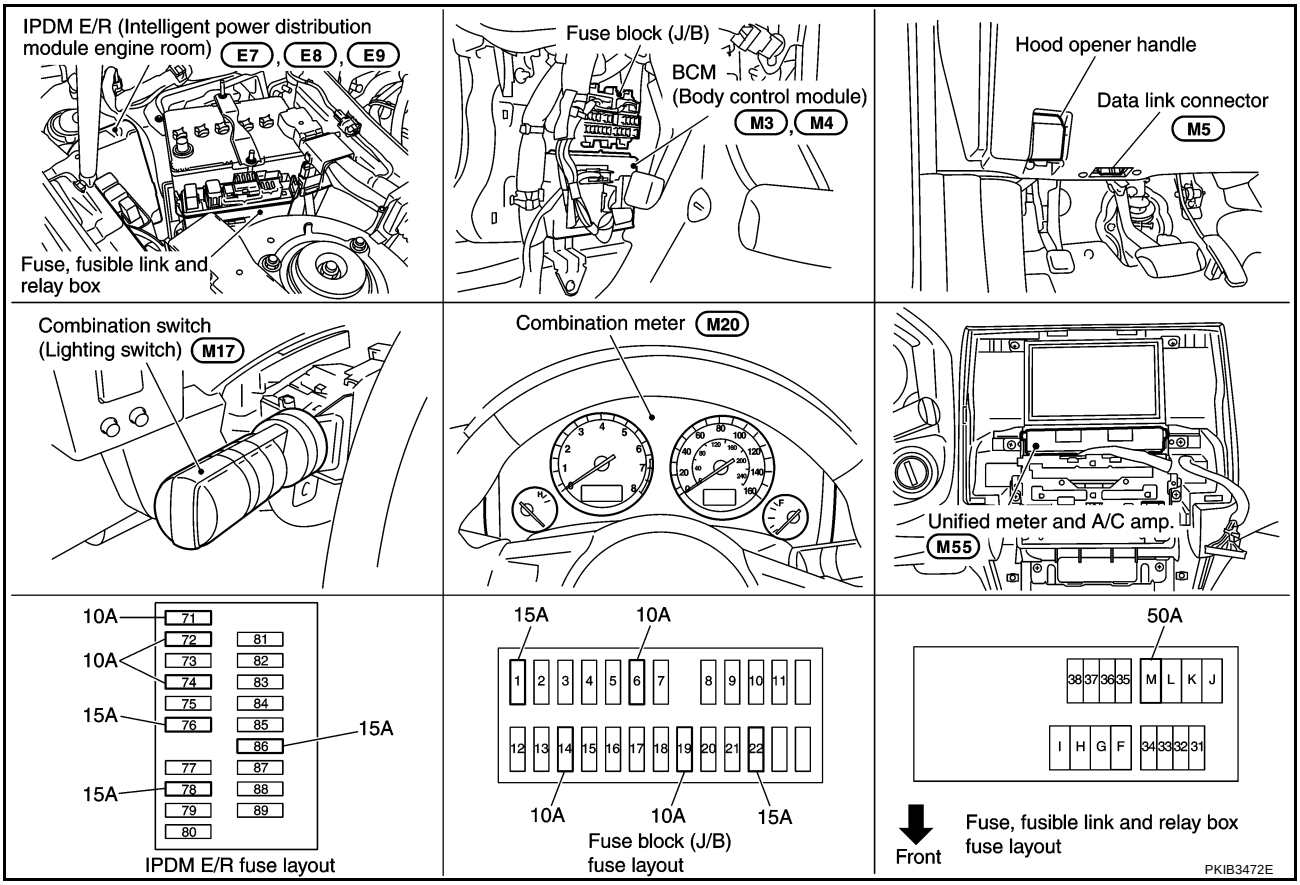
- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

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 CPU (central processing unit) located in 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,
- to headlamp low relay, located in IPDM E/R, and
- to ignition relay, located in IPDM E/R, from battery direct,
- through 10A fuse (No. 71, located in IPDM E/R)
- to CPU located in IPDM E/R,
- through 15A fuse (No. 78, located in IPDM E/R)
- to CPU located in IPDM E/R,
- through 50A fusible link (letter M, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM terminal 42,
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8.

With ignition switch in ON or START position, power is supplied
- to ignition relay, located in IPDM E/R, from battery direct
- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 38,
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 7.

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

Ground is supplied
- to BCM terminals 49 and 52
- through grounds M35, M45 and M85,
- to IPDM E/R terminals 38 and 60
- through grounds E21, E50 and E51,
- to combination meter terminals 5, 6 and 15
- through grounds M35, M45 and M85.

HEADLAMP OPERATION

Low Beam Operation

With the lighting switch in the 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 located in the IPDM E/R controls the headlamp low relay coil, which when energized, directs power
- through 15A fuse (No. 76, located in IPDM E/R)
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 6,
- through 15A fuse (No. 86, located in IPDM E/R)
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 6.

Ground is supplied
- to front combination lamp RH terminal 7
- through grounds E21, E50 and E51,
- to front combination lamp 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 the 2ND position and placed in the 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 located in the IPDM E/R controls the headlamp high relay coil and low relay coil, which when energized, directs power
- through 15A fuse (No. 76, located in IPDM E/R)
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 6,
- through 15A fuse (No. 86, located in IPDM E/R)
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 6,
- through 10A fuse (No. 72, located in IPDM E/R)
- through IPDM E/R terminal 27
- to front combination lamp RH terminal 5,
- through 10A fuse (No. 74, located in IPDM E/R)
- through IPDM E/R terminal 28

- to front combination lamp LH terminal 5.

Ground is supplied

- to front combination lamp RH terminal 7
- through grounds E21, E50 and E51,
- to front combination lamp 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-55, "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-186, "VEHICLE SECURITY (THEFT WARNING) SYSTEM" .

XENON HEADLAMP

Xenon type lamps are used for to the low 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 strong lighting power, electronic control of the power supply gives the headlamps stable quality and tone color.
Followings are some advantages of the xenon type headlamp.

- The light produced by the headlamps is white color similar to sunlight that is easy to the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- Retroreflected luminance increases and the contrast enhances on the wet road in the rain. That makes visibility go up more than the increase of the light volume.
- 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.

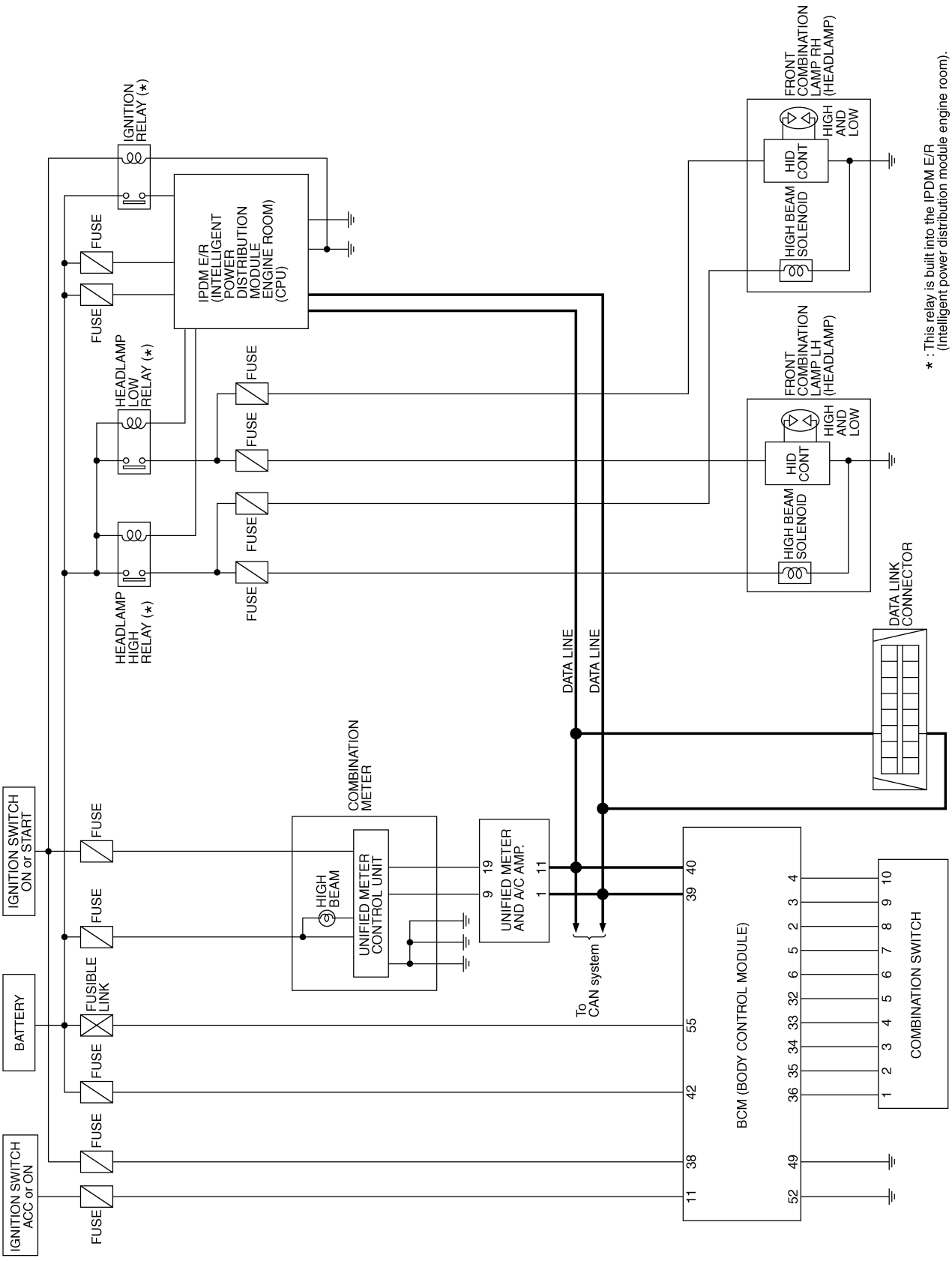
CAN Communication Unit

AKS0080S

Refer to LAN-30, "CAN Communication Unit" .

Schematic

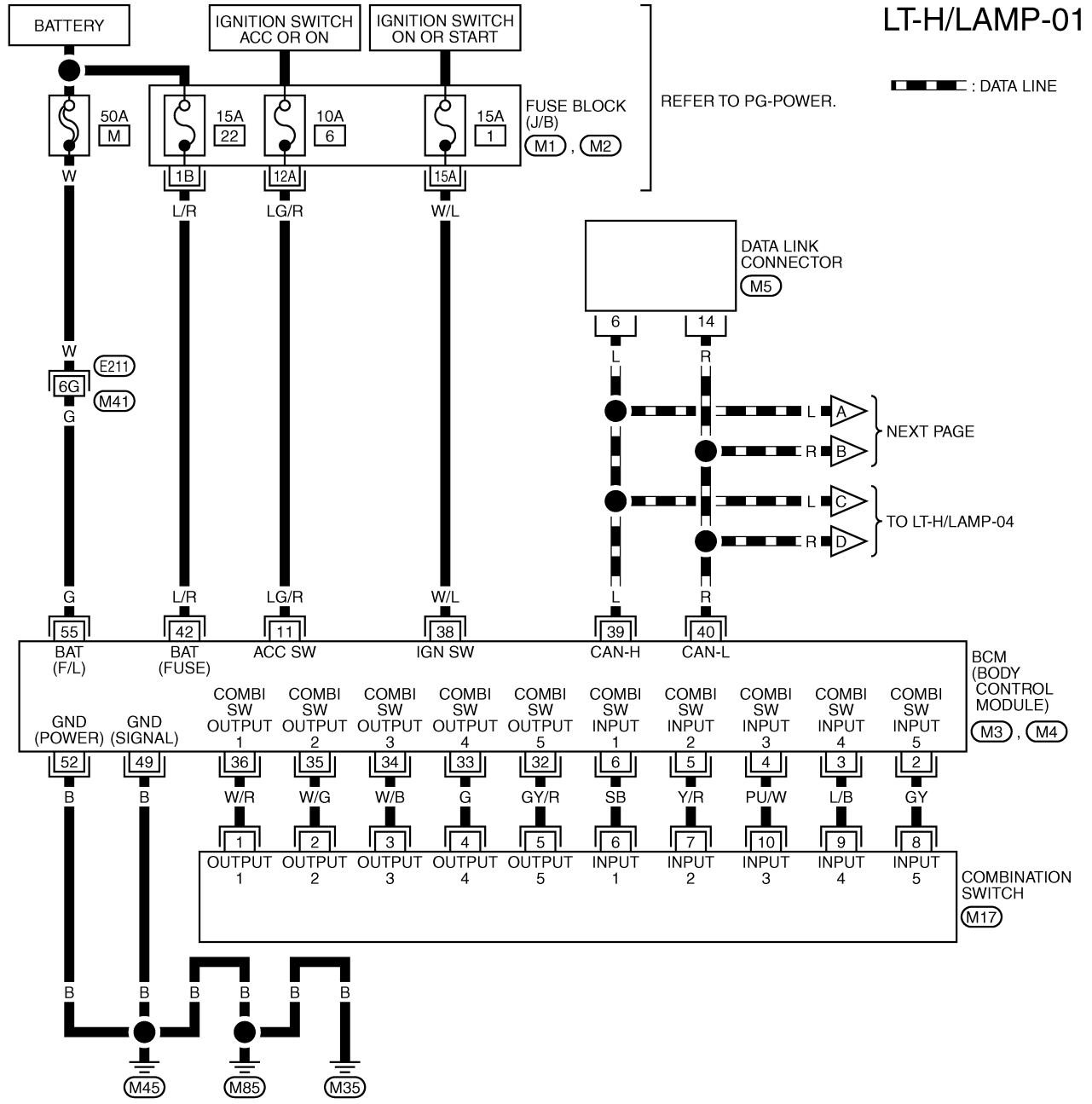
AKS007MD



TKWM0601E

Wiring Diagram — H/LAMP —

AKS007ME



REFER TO THE FOLLOWING.

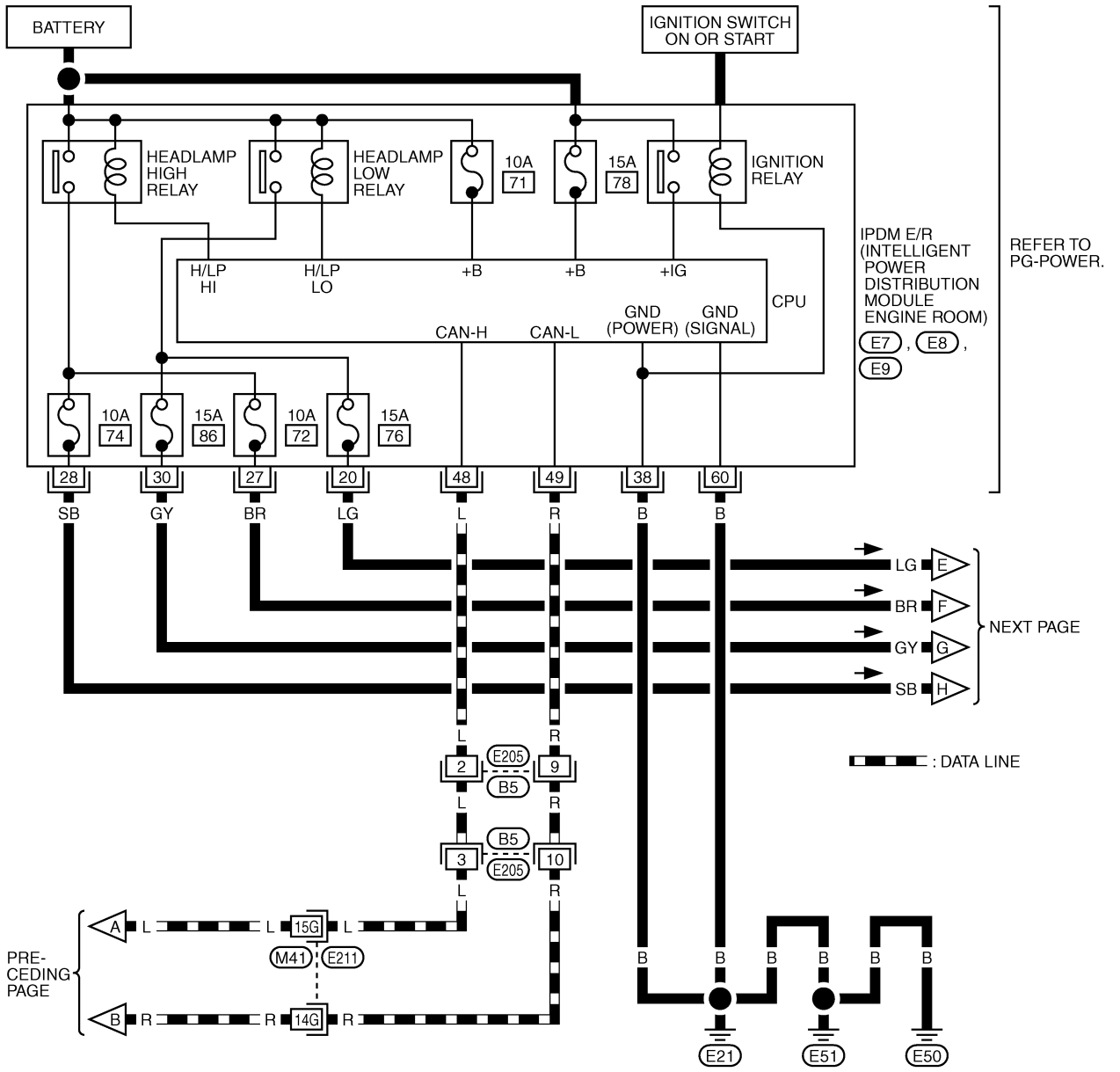
E211 -SUPER MULTIPLE JUNCTION (SMJ)

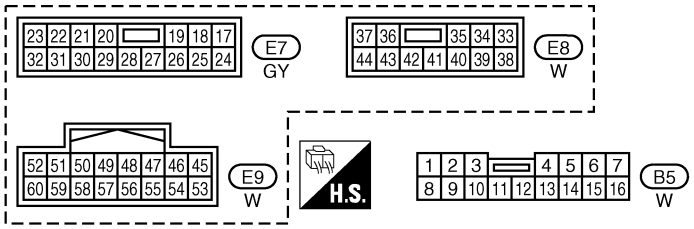
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM0815E

LT-H/LAMP-02



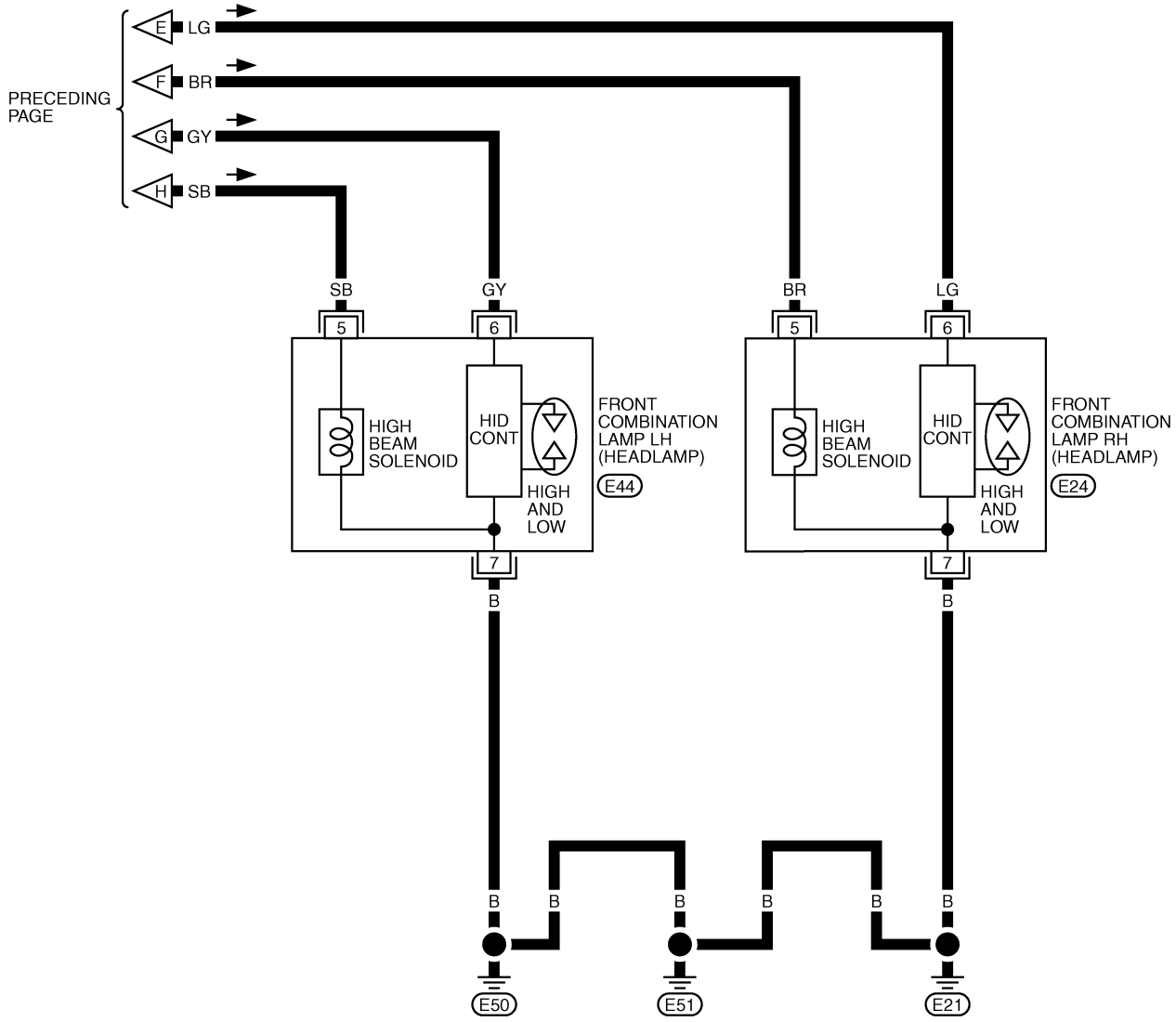


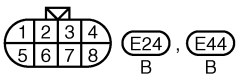
REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0603E

LT-H/LAMP-03





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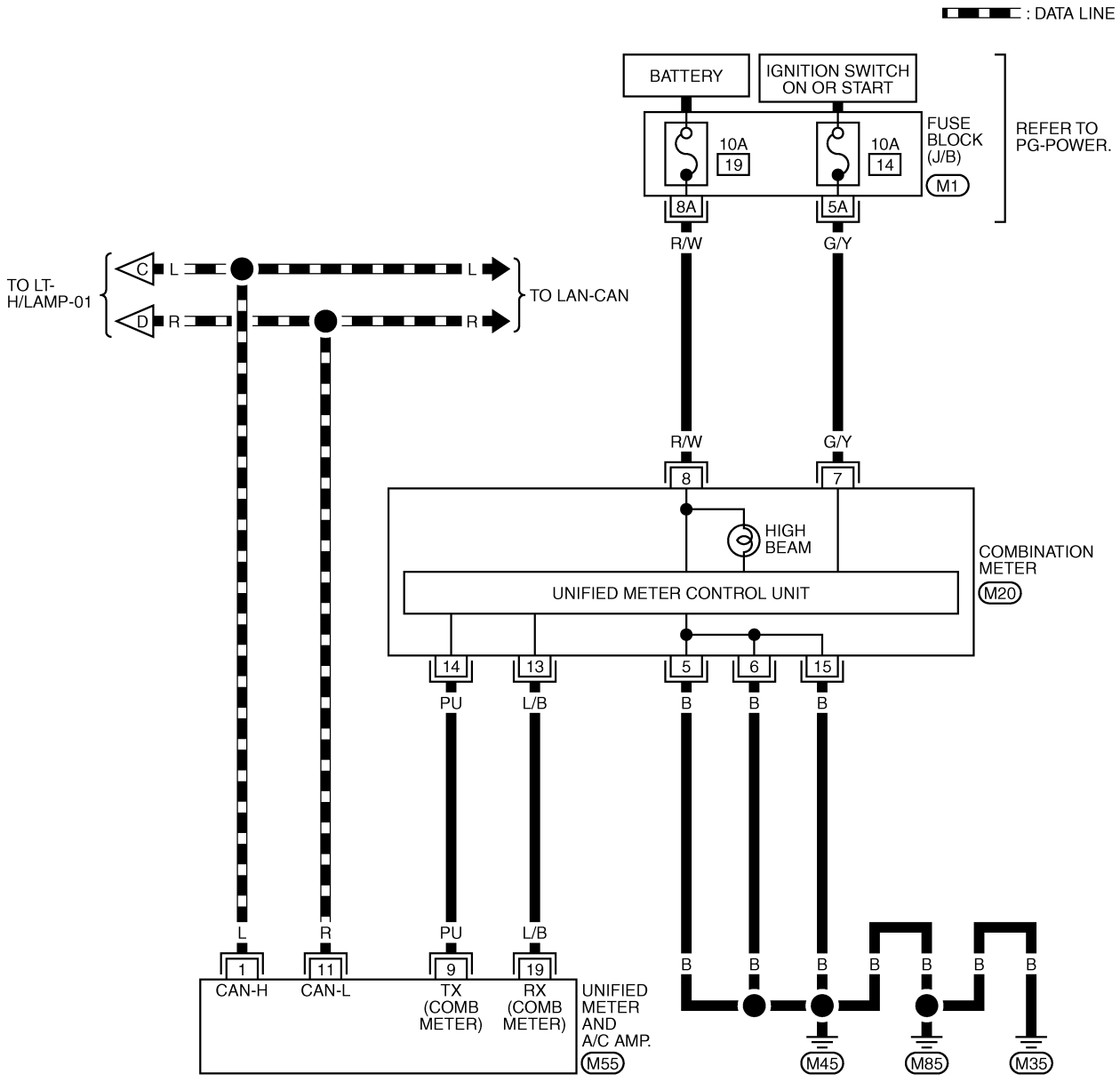
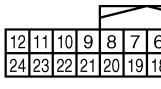
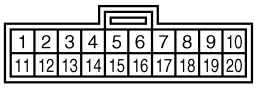
LT-H/LAMP-04





M20
W



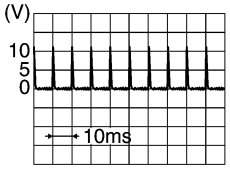
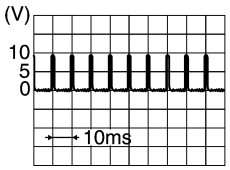
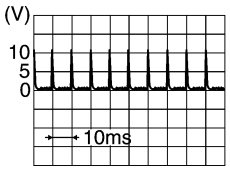
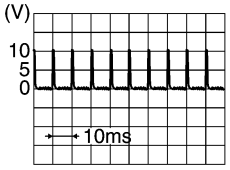
M55
GY

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	 PKIB3468E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3469E
4	PU/W	Combination switch input 3			
5	Y/R	Combination switch input 2			
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	 PKIB3470E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3471E
34	W/B	Combination switch output 3			
35	W/G	Combination switch output 2			
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

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
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 Preliminary Check. Refer to LT-16, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does 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 for blown fuses.

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

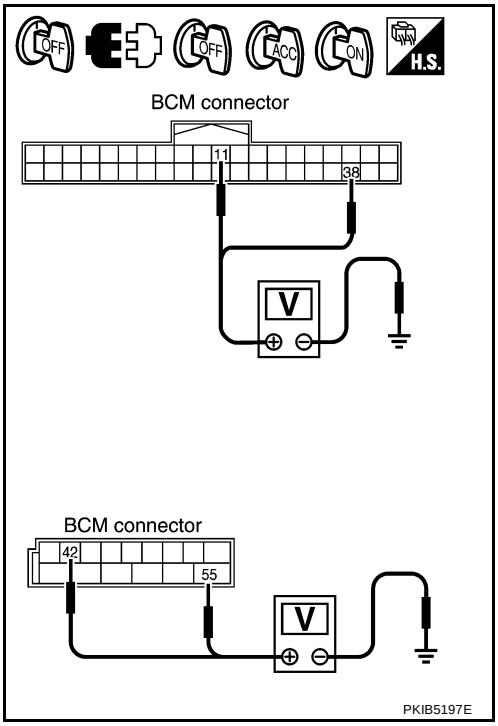
OK >> GO TO 2.

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 igintion switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

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



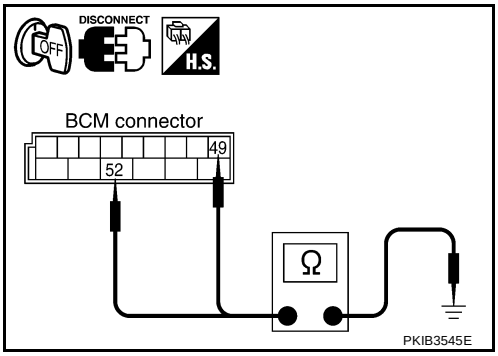
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-II Functions (BCM)

AKS007MJ

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

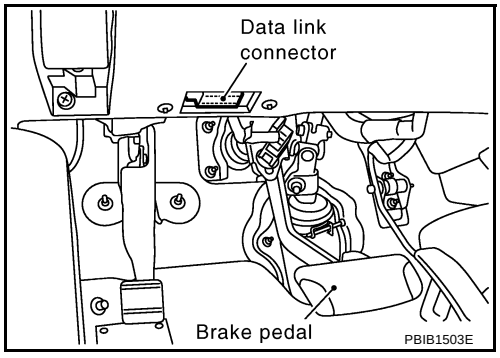
BCM diagnosis part	Diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	SELF-DIAG RESULTS	BCM performs self-diagnosis of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

CONSULT-II BASIC OPERATION

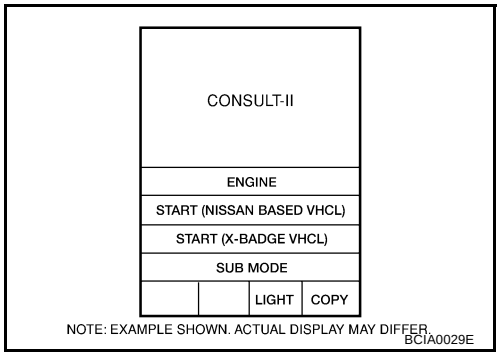
CAUTION:

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.

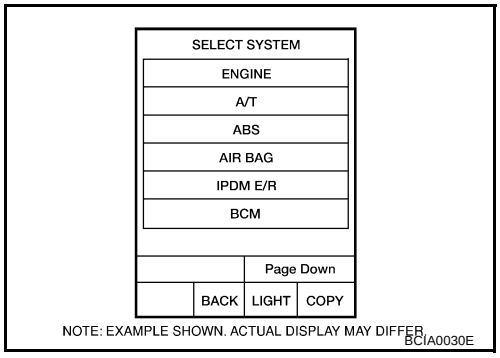
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



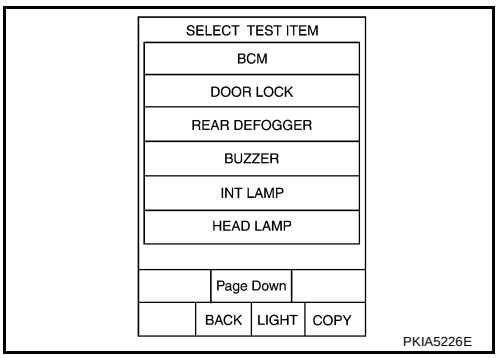
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
   If “BCM” is not indicated, refer to GI-39, "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 “SELECT MONITOR ITEM” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

4. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
5. Touch “START”.
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 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 1 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 or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.

Monitor item		Contents
AUTO LIGHT SW NOTE 1	“ON/OFF”	Displays status of lighting switch as judged from 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 driver door as judged from driver door switch signal. (Door is open: ON/ Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	“ON/OFF”	Displays status of rear door as judged from rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL	“ON/OFF”	Displays status of rear door as judged from rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	“ON/OFF”	Displays status of back door as judged from 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.
CARGO LAMP SW NOTE 3	“OFF”	—
OPTICAL SENSOR NOTE 1	“0 - 5V”	Displays “outside brightness (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 be monitored.
2. Vehicles without daytime light system display this item, but cannot be monitored.
3. This item is displayed, but cannot be monitored.

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 front fog lamp relay to operate by switching ON–OFF.
DTRL NOTE 1	Allows daytime light lamp operate by switching ON–OFF.
CORNERING LAMP NOTE 2	—
CARGO LAMP NOTE 2	—

NOTE:

1. Vehicles without daytime light lamp system display this item, but cannotbe tested.
2. This item is displayed, but cannot be tested.

CONSULT-II Functions (IPDM E/R)

AKS007MK

CONSULT-II can display each diagnostic item using the diagnostic test modes shown following.

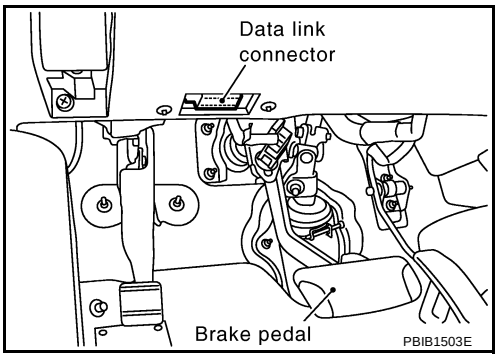
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-21, "SELF-DIAG RESULTS" .
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

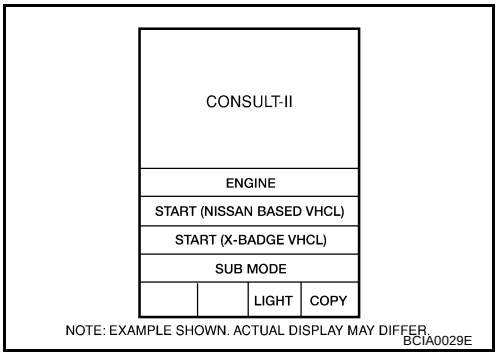
CAUTION:

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.

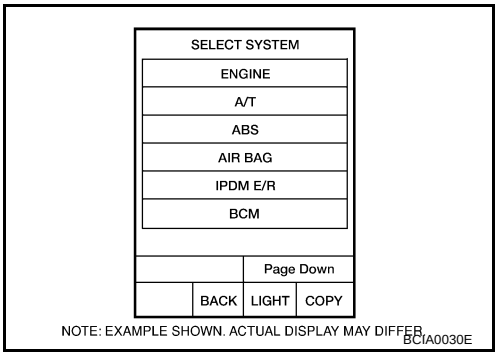
1. With ignition switch OFF, connect CONSULT-II and CON-SULT-II CONVERTER to data link connector, then turn ignition switch ON.



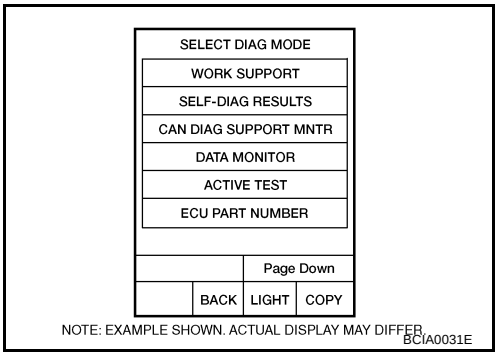
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IPDM E/R” on “SELECT SYSTEM” screen.
If “IPDM E/R” is not indicated, refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit" .



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



DATA MONITOR

Operation Procedure

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

ALL SIGNALS	Monitors all items.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Selects items and monitors them.

3. Touch the required monitoring item on “SELECTION FROM MENU”. In “ALL SIGNALS”, all items are monitored. In “MAIN SIGNALS”, predetermined items are monitored.
4. Touch “START”.
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
Front fog lights request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with ignition switch ON. When ignition switch is at ACC, 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 (Headlamp high beam repeats ON-OFF every 1 second).
Front fog lamp relay output		Allows front 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)

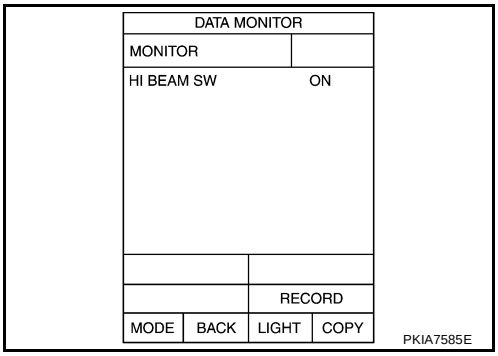
AKS007ML

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-115, "Combination Switch Inspection" .

OK or NG

OK >> GO TO 2.

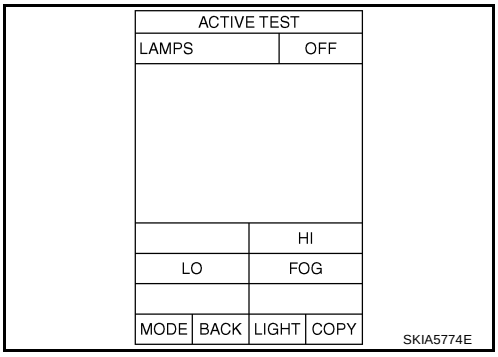
NG >> Check combination switch (lighting switch). Refer to LT-115, "Combination Switch Inspection" .

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 operation.

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 operation.

Headlamp high beam should operate.

OK or NG

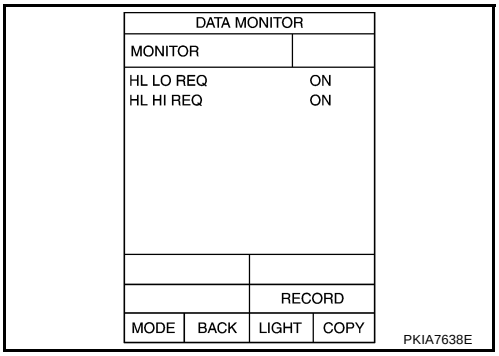
OK >> GO TO 3.

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



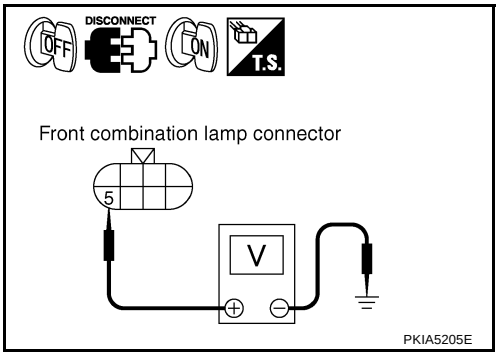
OK or NG

OK >> Replace IPDM E/R.
NG >> Replace BCM. Refer to BCS-16, "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).



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

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.

Terminal				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.

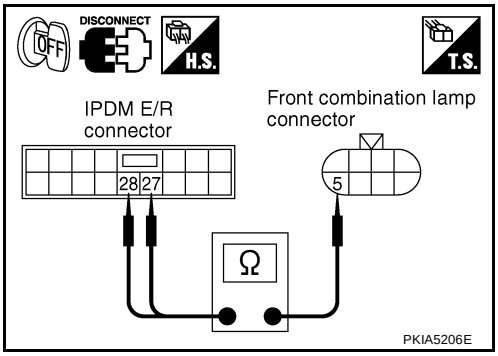
5. CHECK HEADLAMP CIRCUIT

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.

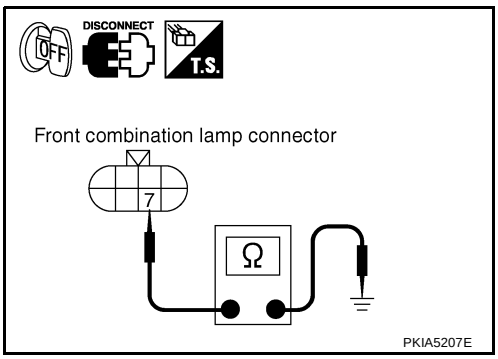
6. CHECK HEADLAMP GROUND

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 front combination lamp.
NG >> Repair harness or connector.

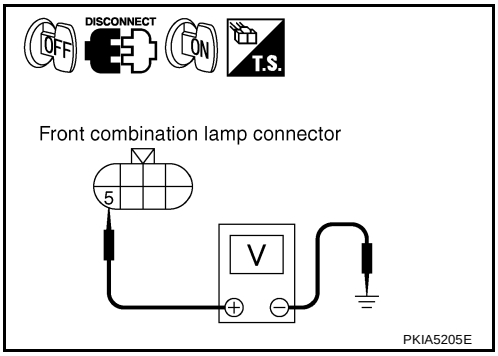
Headlamp Does Not Change To High Beam (One Side)

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.

Terminal				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.

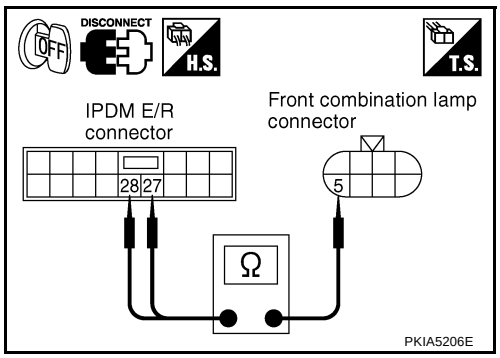
2. CHECK HEADLAMP CIRCUIT

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.

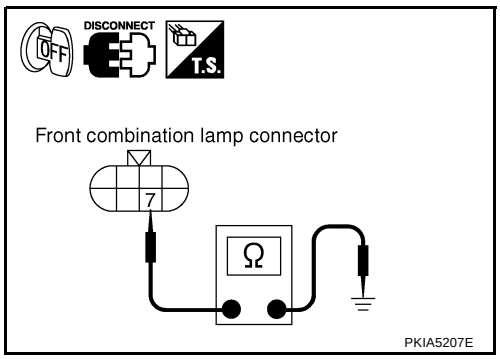
3. CHECK HEADLAMP GROUND

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 front combination lamp.
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)

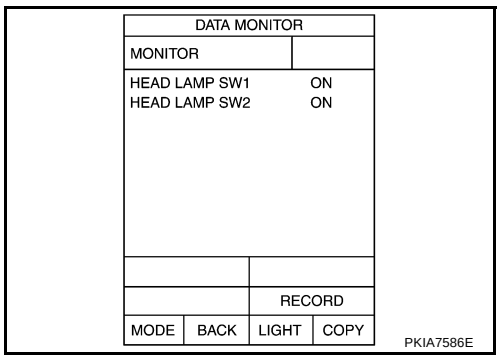
AKS007MO

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-115, "Combination Switch Inspection" .

OK or NG

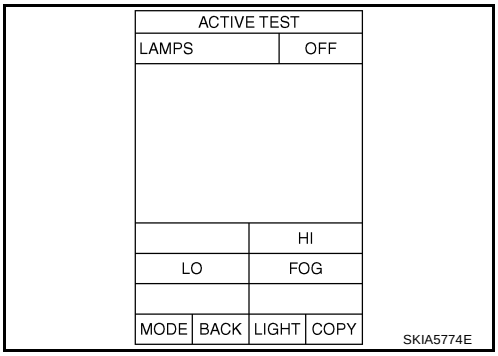
OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-115, "Combination Switch Inspection" .

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 operation.

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 operation.

Headlamp low beam should operate.

OK or NG

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

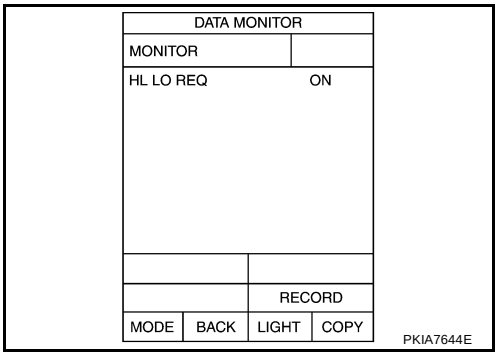
3. CHECK IPDM E/R

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

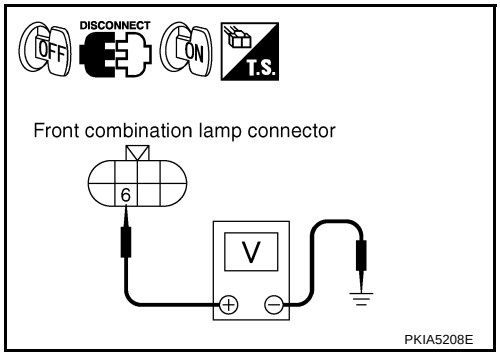
OK >> Replace IPDM E/R.
NG >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .



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.



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

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.

Terminal				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.

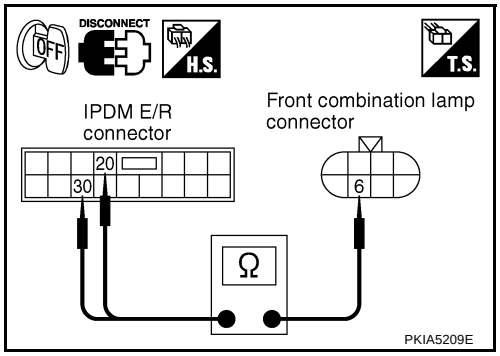
5. CHECK HEADLAMP CIRCUIT

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.

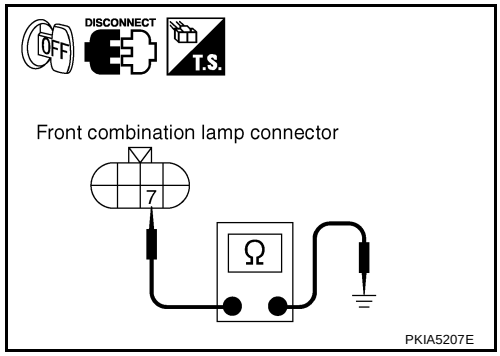
6. CHECK HEADLAMP GROUND

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-34, "Xenon Headlamp Trouble Diagnosis" .

NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

AKS007MP

1. CHECK BULB

Check ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-34, "Xenon Headlamp Trouble Diagnosis" .

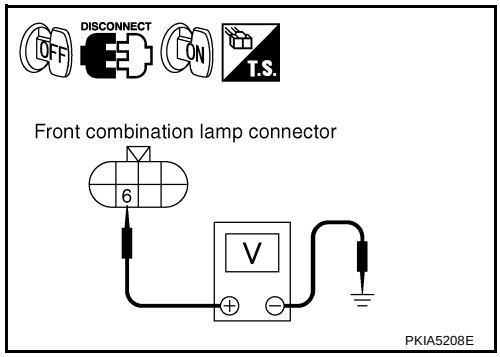
OK or NG

OK >> GO TO 2.

NG >> Replace malfunctioning part.

2. 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 2ND position.
5. Check voltage between front combination lamp RH or LH harness connector and ground.



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

OK or NG

OK >> GO TO 4.

NG >> GO TO 3.

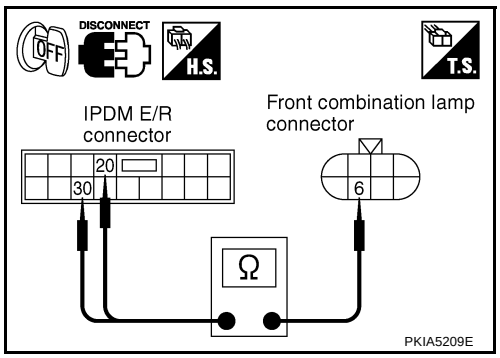
3. CHECK HEADLAMP CIRCUIT

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.

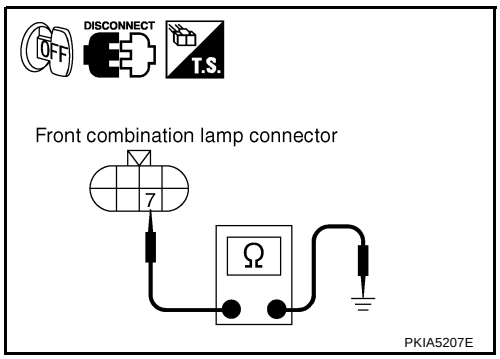
4. CHECK HEADLAMP GROUND

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 >> Check headlamp harness and connector.
NG >> Repair harness or connector.

Headlamp RH Low Beam and High Beam Does Not Illuminate

AKS007MQ

1. CHECK BULB

Inspect ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-34, "Xenon Headlamp Trouble Diagnosis" .

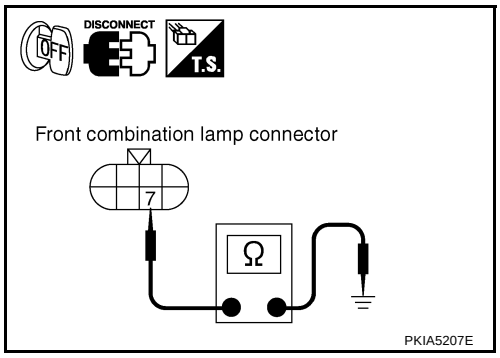
OK or NG

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

2. CHECK HEADLAMP GROUND

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

7 (B) – Ground : Continuity should exist.



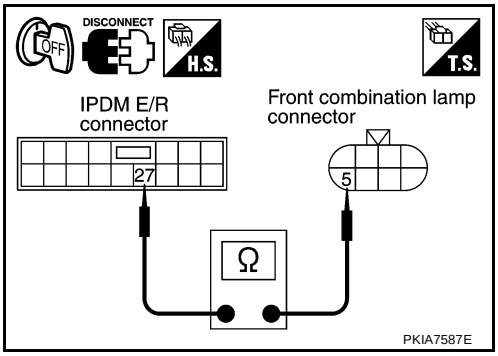
OK or NG

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

3. CHECK HEADLAMP CIRCUIT

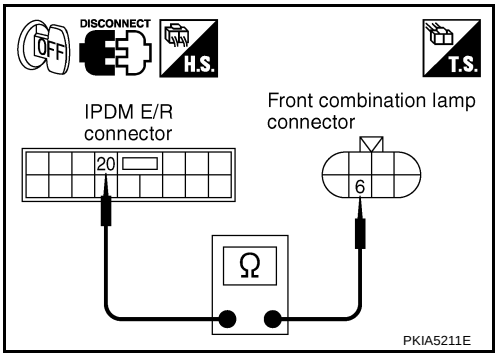
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 27 (BR) and front combination lamp RH harness connector E24 terminal 5 (BR).

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 Does Not Illuminate

AKS007MR

1. CHECK BULB

Inspect ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-34, "Xenon Headlamp Trouble Diagnosis" .

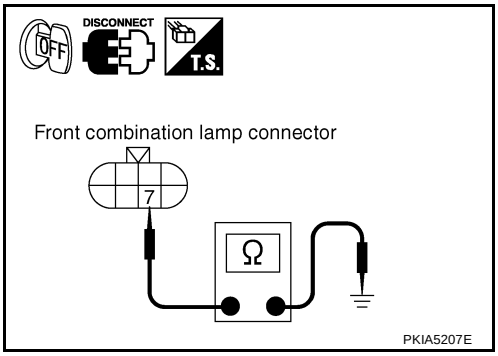
OK or NG

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

2. CHECK HEADLAMP GROUND

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

7 (B) – Ground **: Continuity should exist.**



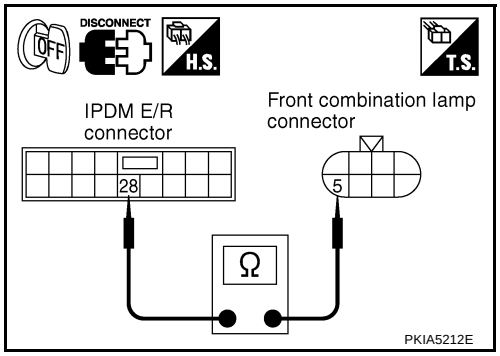
OK or NG

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

3. CHECK HEADLAMP CIRCUIT

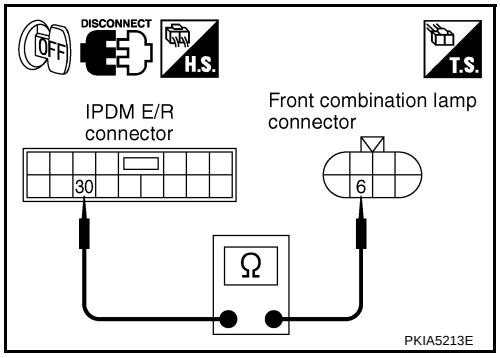
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 28 (SB) and front combination lamp LH harness connector E44 terminal 5 (SB).

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 is headlamp turns off when ignition switch is turned OFF.

OK or NG

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

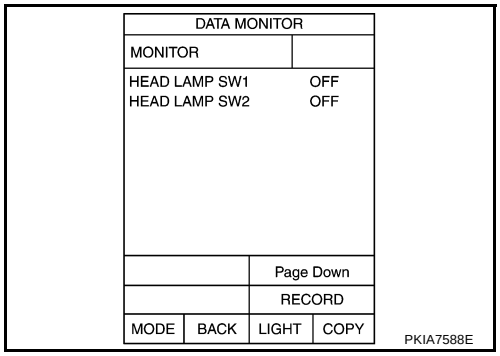
2. CHECK COMBINATION SWITCH INPUT SIGNAL

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 combination switch (lighting switch). Refer to LT-115, "Combination Switch Inspection" .



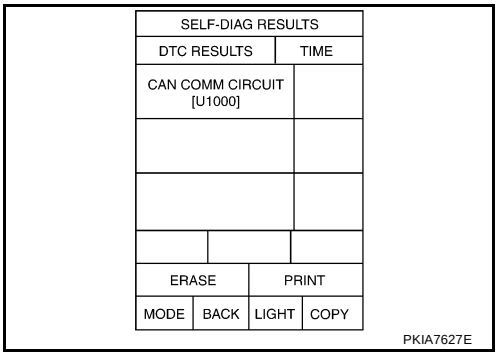
3. CHECKING CAN COMMUNICATIONS BETWEEN BCM AND IPDM E/R

Select “BCM” by 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-15, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



General Information for Xenon Headlamp Trouble Diagnosis

AKS00CHH

In most cases, malfunction of xenon headlamp - “does not illuminate”, “flickers” or “dark” - is caused by a malfunctioning xenon bulb. A malfunctioning HID control unit or lamp housing, however, may be a cause. Be sure to perform trouble diagnosis following the steps described below.

Caution:

AKS00CHI

- Installation or removal of connector must be done with lighting switch OFF.
- Disconnect the battery cable from the negative terminal or remove power fuse.
- When the lamp is illuminated (when lighting switch is ON), never touch harness, HID control unit, inside of lamp, or lamp metal parts.
- To check illumination, temporarily install lamp in vehicle. Be sure to connect power at vehicle side connector.
- If error can be traced directly to electrical system, first check for items such as blown fuses and fusible links, broken wires or loose connectors, dislocated terminals, and improper connections.
- Never work with wet hands.
- Using a tester for HID control unit circuit trouble diagnosis is prohibited.
- Disassembling HID control unit or harnesses (bulb socket harness, ECM harness) is prohibited.
- Immediately after illumination, light intensity and color will fluctuate, but there is nothing wrong.
- When bulb has come to end of its life, brightness will drop significantly, it will flash repeatedly, or light color will turn reddish.

Xenon Headlamp Trouble Diagnosis

AKS00CHJ

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

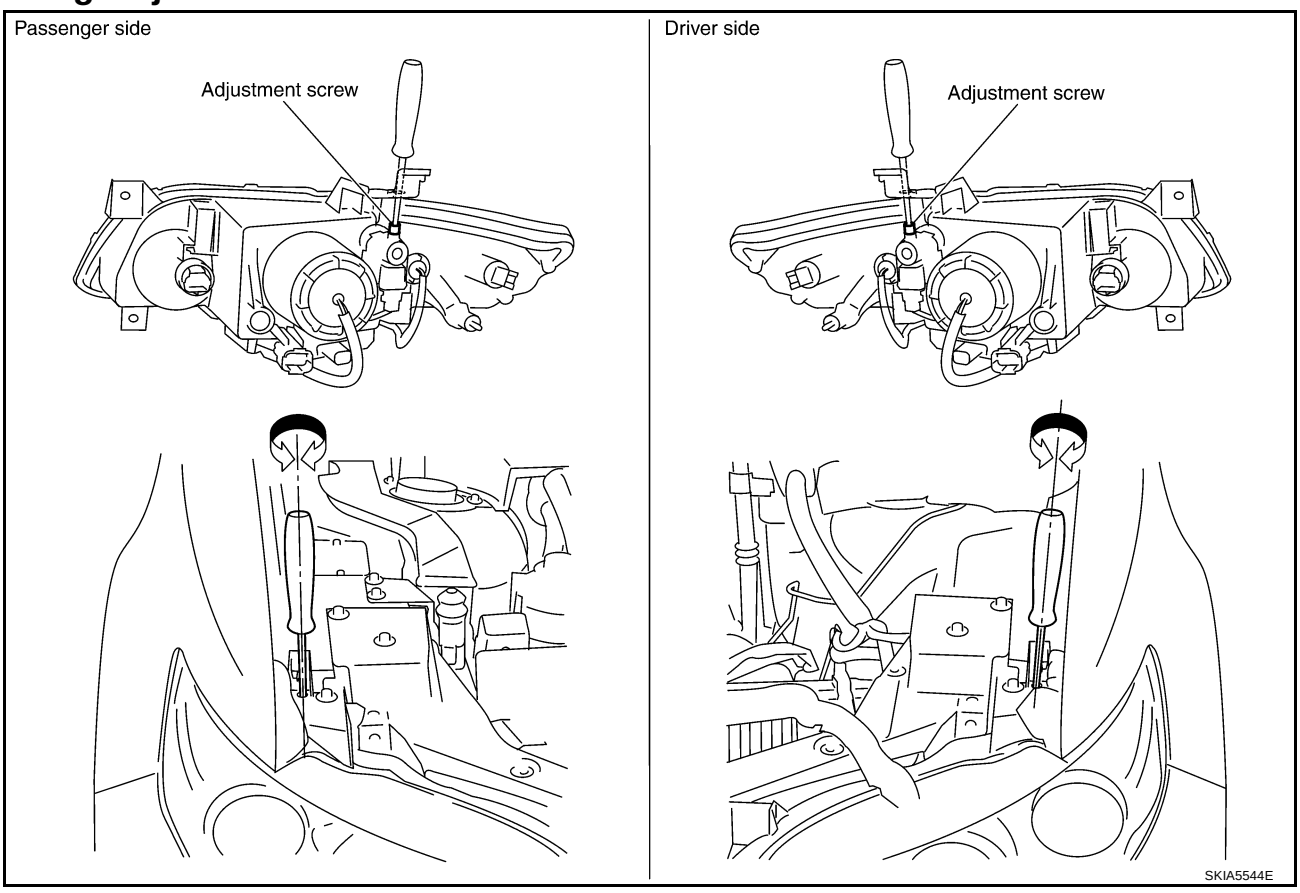
Install normal xenon lamp housing assembly to corresponding xenon headlamp, and check if lamp lights up.

OK or NG

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

Aiming Adjustment

AKS00CHK



PREPARATION BEFORE ADJUSTING

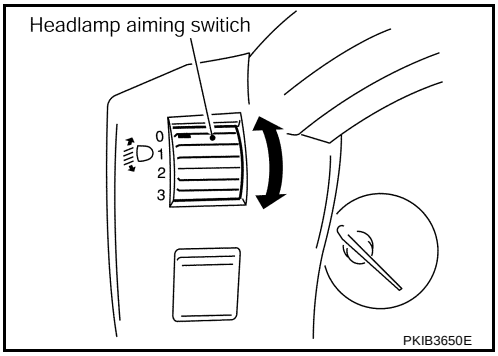
For details, refer to the regulations in your own country.
Before performing aiming adjustment, check the following.

1. Keep all tires inflated to correct pressures.
2. Place vehicle on level ground.
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.

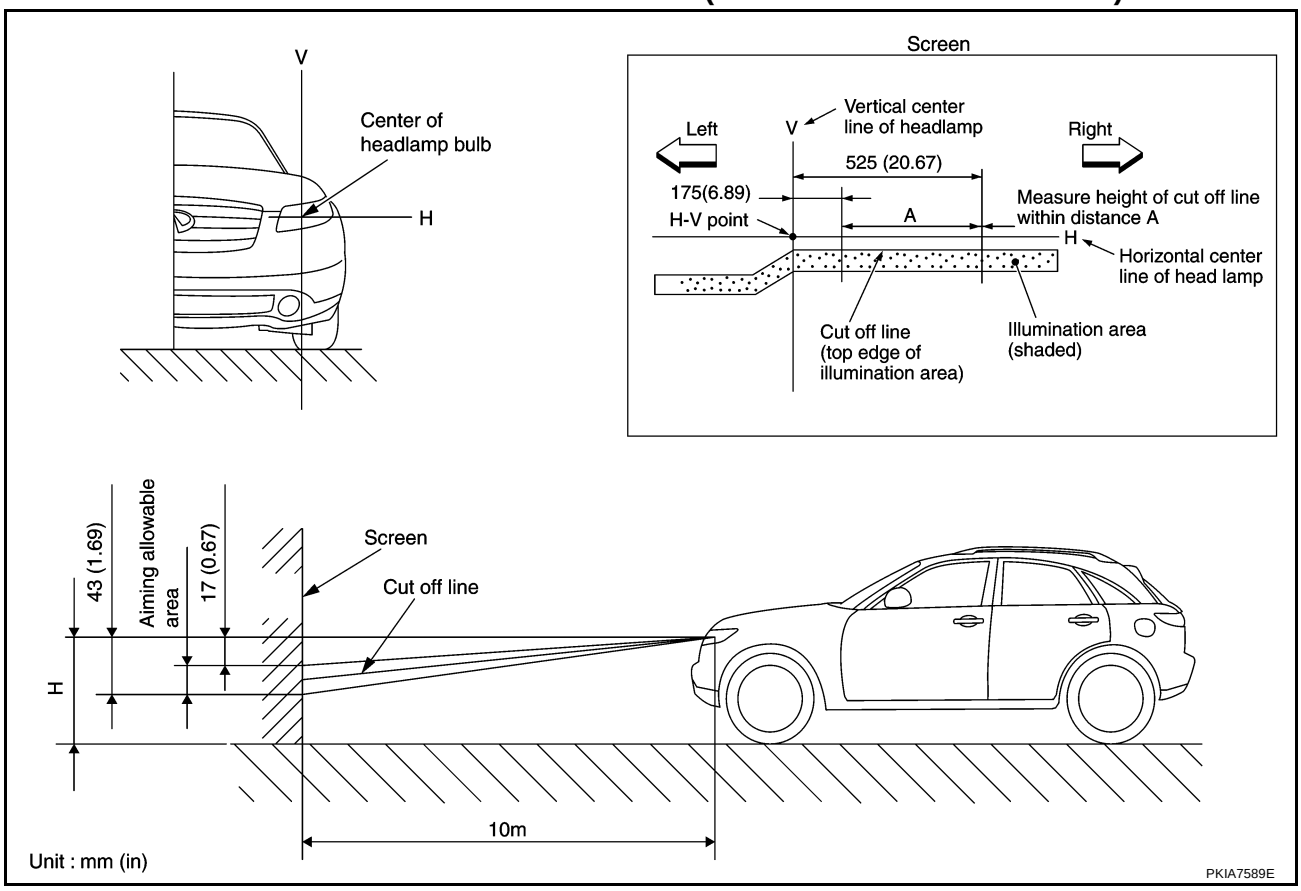
LOW BEAM AND HIGH BEAM

1. Turn headlamp low beam ON.

   CAUTION:
   Be sure aiming switch is set to “0” when performing aiming adjustment.
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 headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

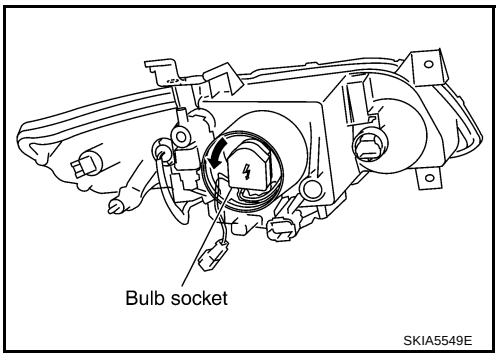
- Basic illumination area for adjustment should be within the range shown on the aiming chart. Adjust headlamp accordingly.

Bulb Replacement

AKS00CHL

HEADLAMP HIGH/LOW BEAM

1. Turn lighting switch OFF.
2. Disconnect the battery cable from the negative terminal or remove power fuse.
3. Remove air cleaner case (LH) or radiator reservoir tank (RH). Refer to EM-17, "Removal and Installation" , EM-176, "Removal and Installation" , CO-14, "Removal and Installation" , CO-41, "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. Installation is the reverse order of removal.



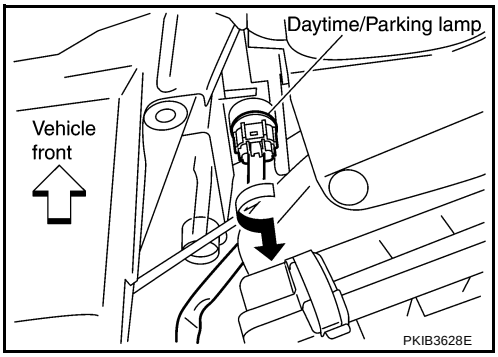
NOTE:
After installation, perform aiming adjustment. Refer to LT-35, "Aiming Adjustment" .

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

DAYTIME/PARKING LAMP

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

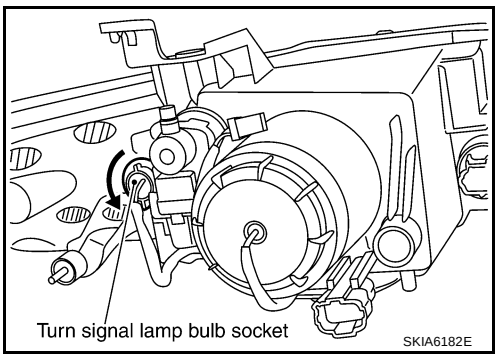
Daytime/Parking lamp (Clearance lamp) : 12V - 21/5W



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. Installation is the reverse order of removal.

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

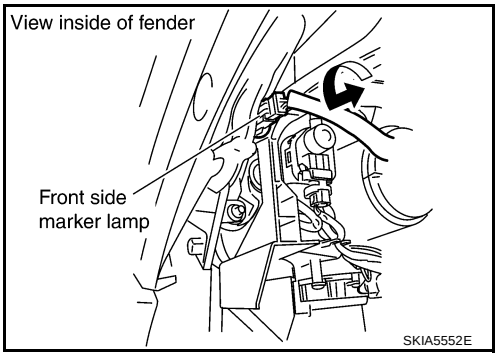


FRONT SIDE MARKER LAMP

1. Turn lighting switch OFF.
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb from its socket.
4. Installation is 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.

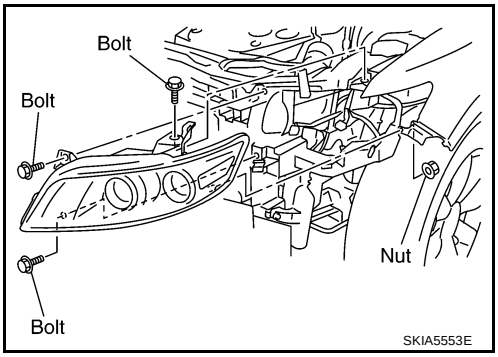


Removal and Installation

AKS00CHM

REMOVAL

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



INSTALLATION

Installation is the reverse order of removal.

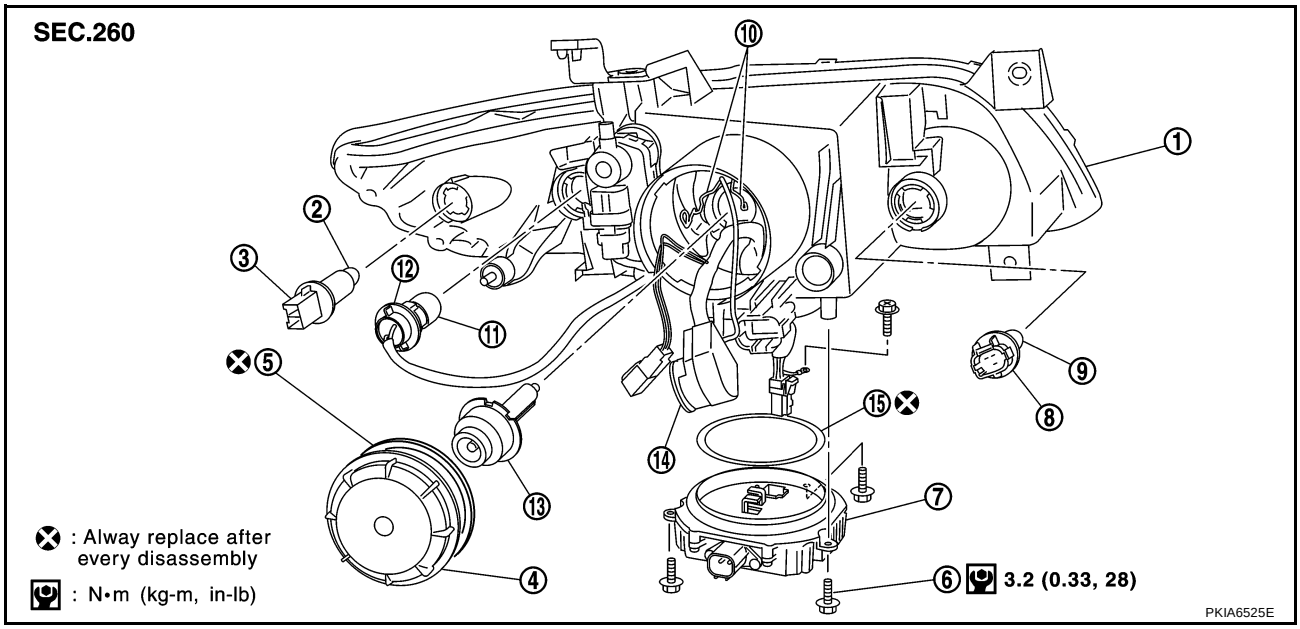
Headlamp mounting bolt : 6.1 N·m (0.62 kg-m, 54 in-lb)

NOTE:

After installation, perform aiming adjustment. Refer to LT-35, "Aiming Adjustment" .

Disassembly and Assembly

AKS00CHN



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 control unit	8. Daytime/Parking lamp bulb socket	9. Daytime/Parking 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 daytime/parking lamp bulb socket counterclockwise and unlock it.
6. Remove daytime/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

Assembly is the reverse order of disassembly.

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

CAUTION:

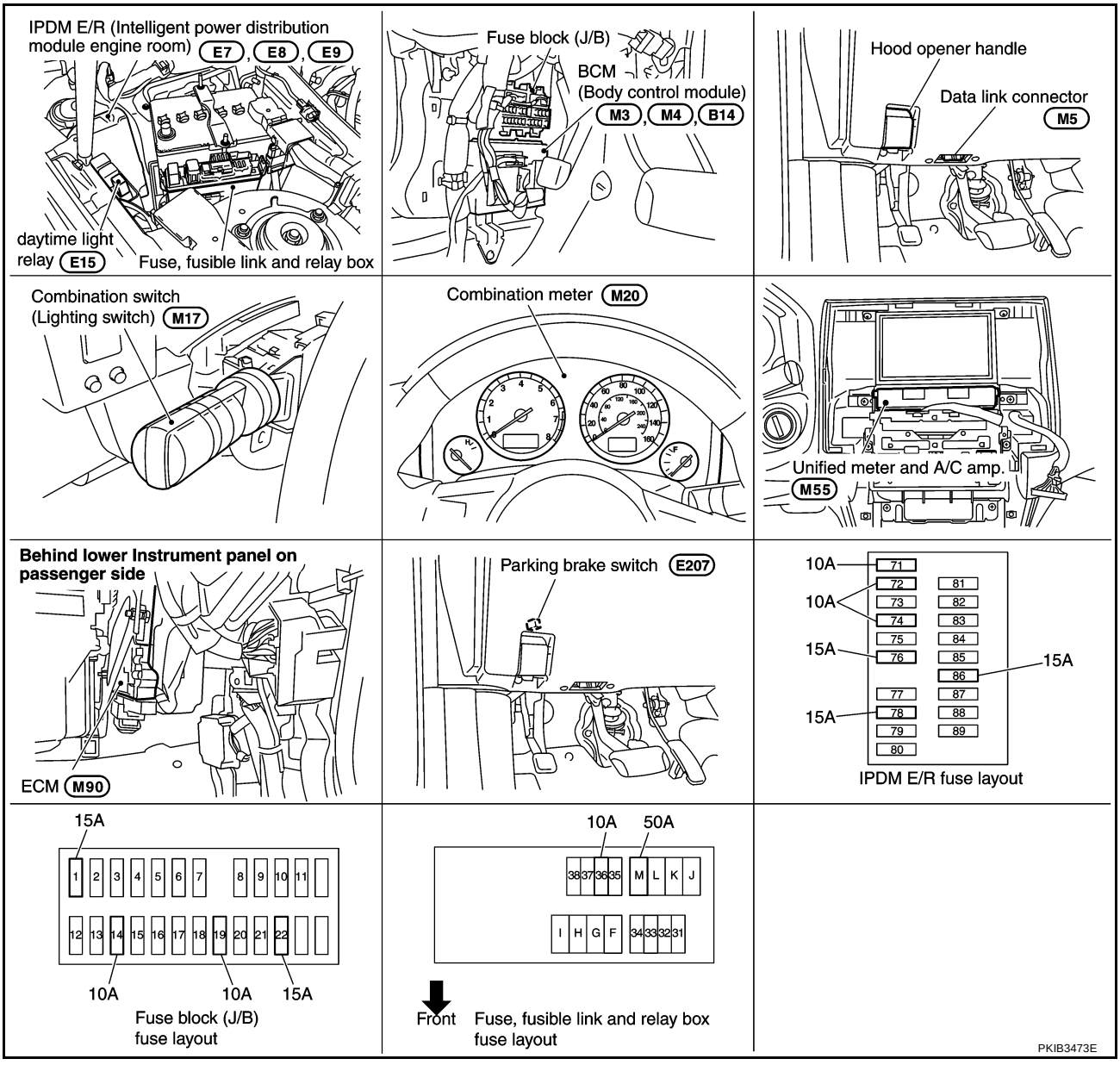
- **When HID control unit is removed, reinstall it securely and avoid any looseness.**
- **After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.**

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. Daytime 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 the lighting switch is in the 2ND position or AUTO position (headlamp is ON) and when the lighting switch is in the PASSING position (daytime light lamps are not turned OFF only by parking brake itself).

The parking brake signal and engine run/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 terminal 42,
- through 50A fusible link (letter M, located in fuse, fusible link and relay box)

- to BCM terminal 55,
- through 10A fuse (No. 36, located in fuse, fusible link and relay box)
- to daytime light relay terminals 2 and 5.

When 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 terminal 38.

Ground is supplied

- to combination meter terminals 5, 6 and 15
- through grounds M35, M45 and M85,
- to BCM 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 daytime light lamps illuminate.

COMBINATION SWITCH READING FUNCTION

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

AUTO LIGHT OPERATION

Refer to LT-55, "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.

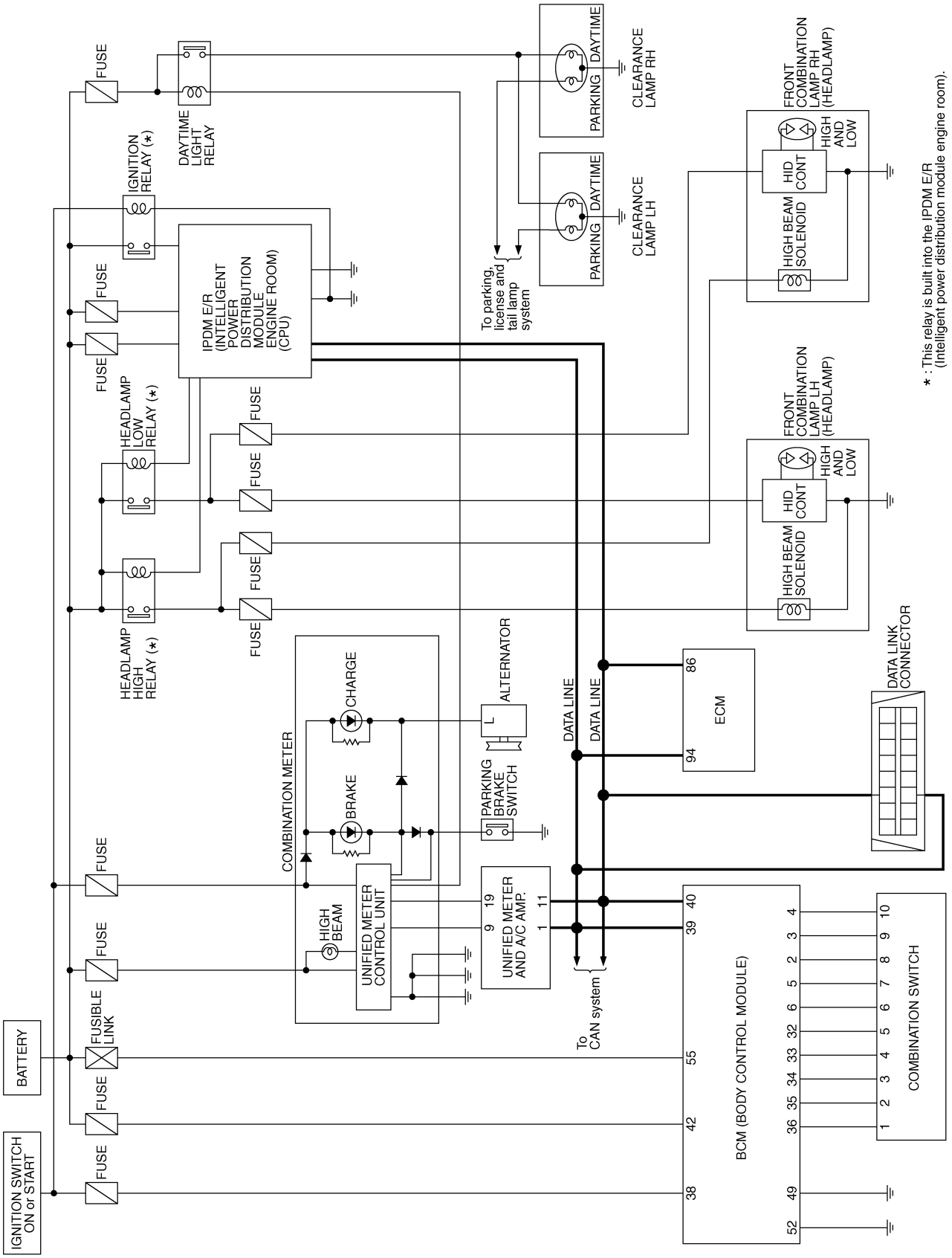
CAN Communication Unit

AKS0080T

Refer to LAN-30, "CAN Communication Unit" .

Schematic

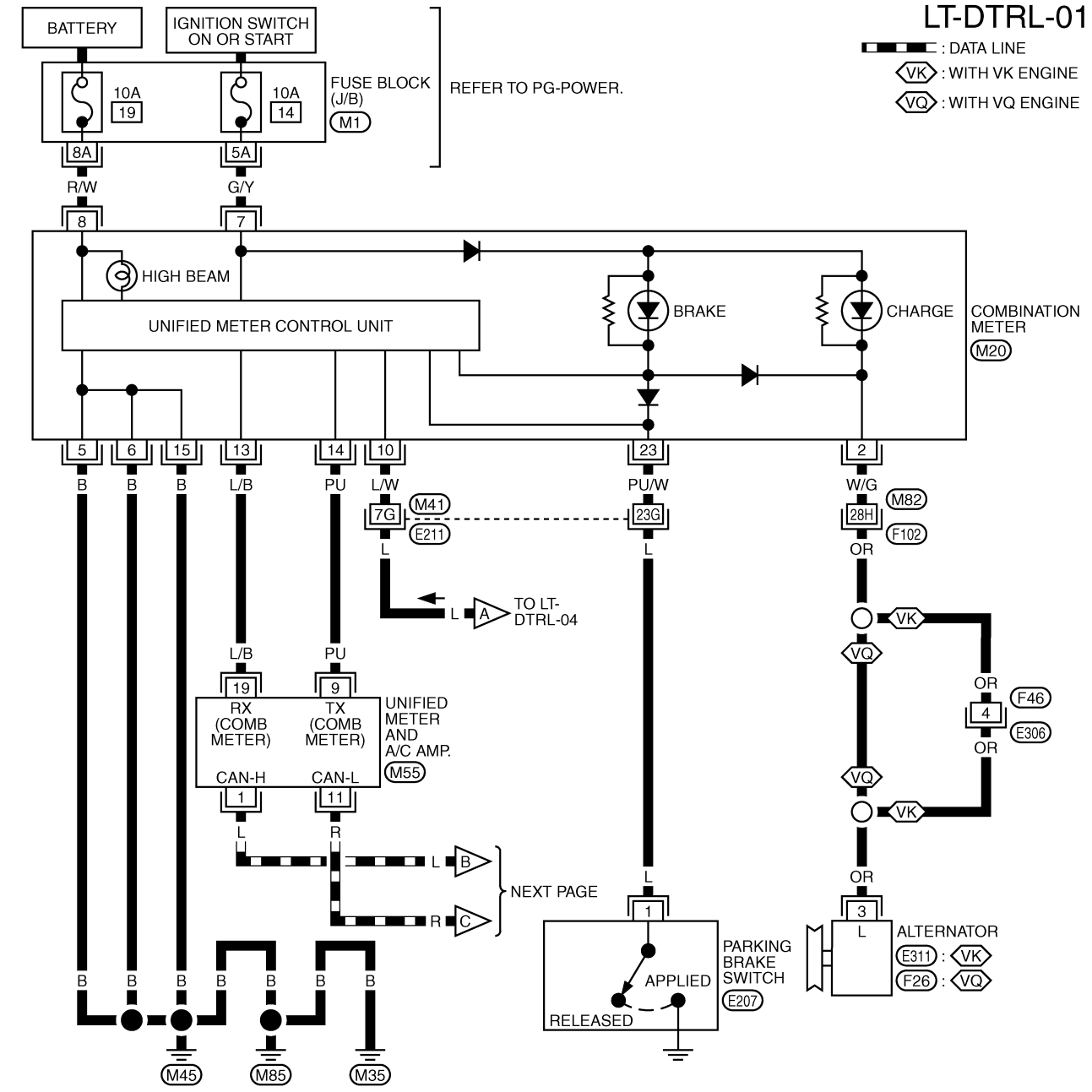
AKS007N3

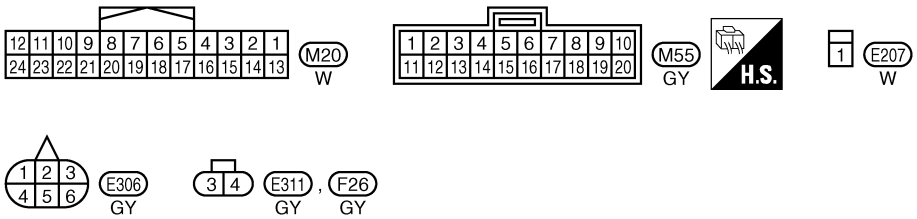


TKWM2045E

Wiring Diagram — DTRL —

AKS007N4



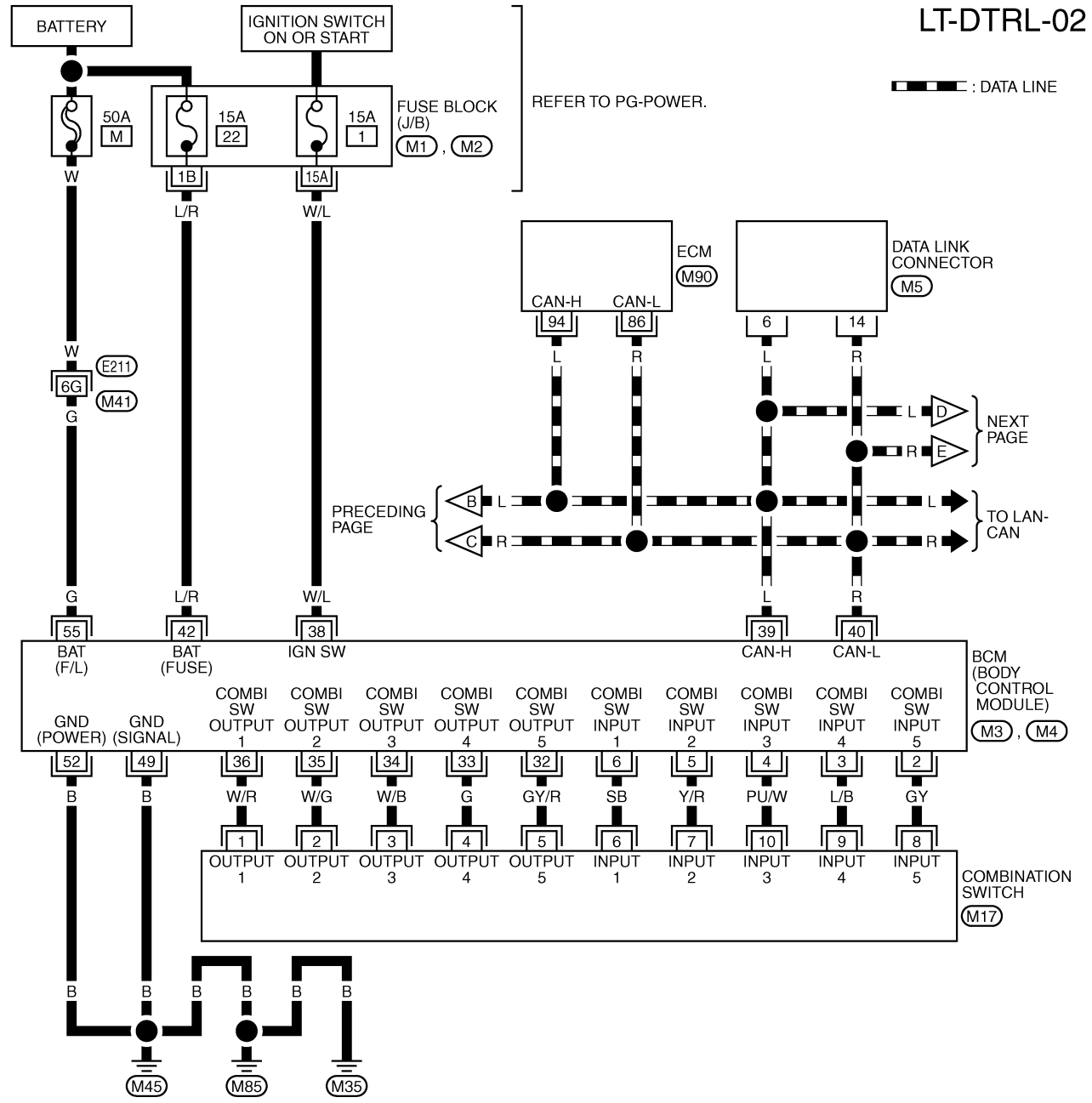


REFER TO THE FOLLOWING.

E211 , F102 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWM2046E



REFER TO THE FOLLOWING.

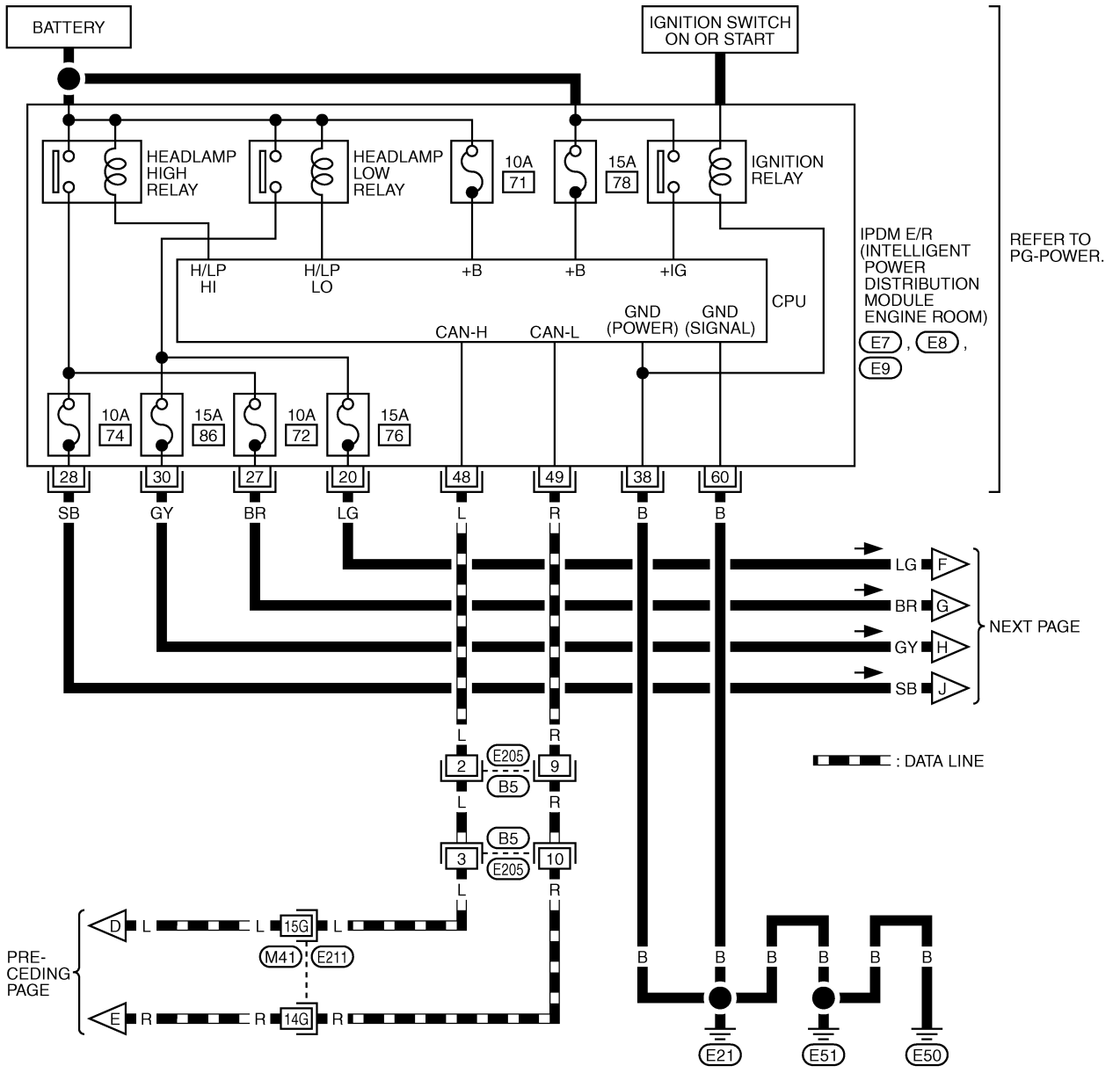
E211 -SUPER MULTIPLE JUNCTION (SMJ)

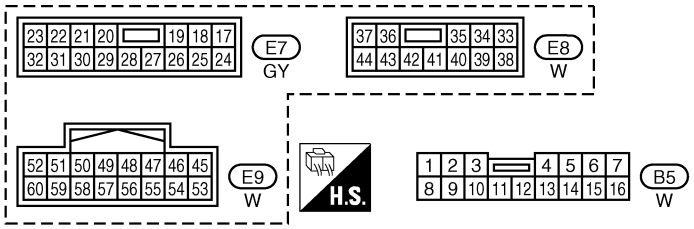
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4, M90 -ELECTRICAL UNITS

TKWM0816E

LT-DTRL-03

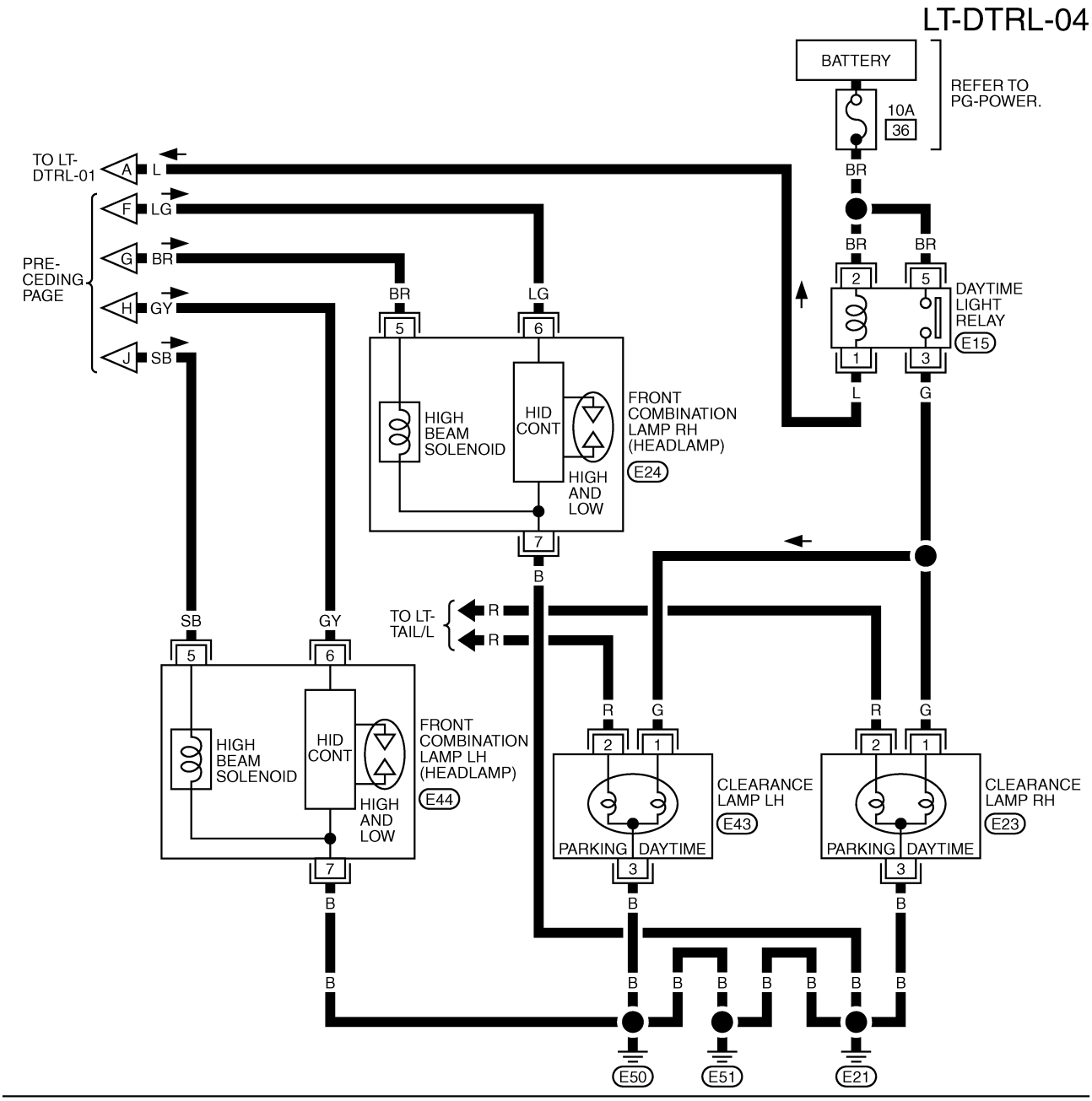


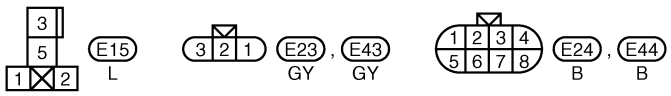


REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0609E

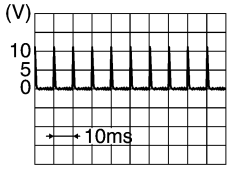
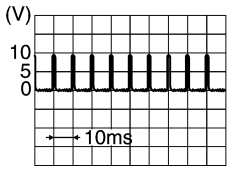
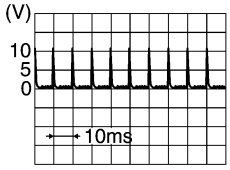
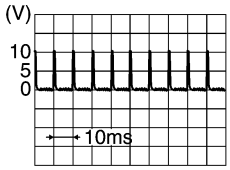

LT-DTRL-04
BATTERY
10A
36
REFER TO
PG-POWER.
TO LT-
DTRL-01
A
L
F
LG
G
BR
H
GY
J
SB
PRE-
CEDING
PAGE
BR
LG
5
6
HIGH
BEAM
SOLENOID
HID
CONT
HIGH
AND
LOW
FRONT
COMBINATION
LAMP RH
(HEADLAMP)
E24
7
B
BR
BR
2
5
DAYTIME
LIGHT
RELAY
E15
1
3
L
G
TO LT-
TAIL/L
R
R
SB
GY
5
6
HIGH
BEAM
SOLENOID
HID
CONT
HIGH
AND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


3
5
1
2
E15
L
3
2
1
E23
GY
E43
GY
1
2
3
4
5
6
7
8
E24
B
E44
B

TKWM0610E

Terminals and Reference Values for BCM

AKS00CHO

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	 PKIB3468E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3469E
4	PU/W	Combination switch input 3			
5	Y/R	Combination switch input 2			
6	SB	Combination switch input 1			
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3470E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3471E
34	W/B	Combination switch output 3			
35	W/G	Combination switch output 2			
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-39, "System Description" .
3. Perform Preliminary Check. Refer to LT-47, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does daytime light lamp 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 for blown fuses.

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-42, "Wiring Diagram — DTRL —" .

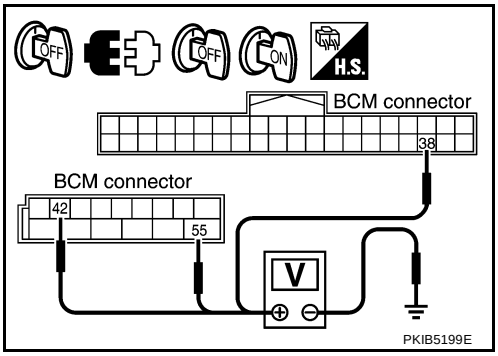
OK or NG

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.

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



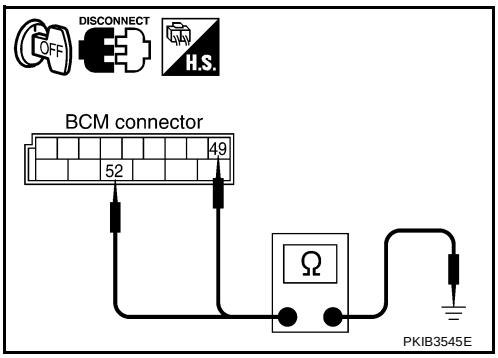
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

INSPECTION PARKING BRAKE SWITCH CIRCUIT

1. CHECK BRAKE INDICATOR

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

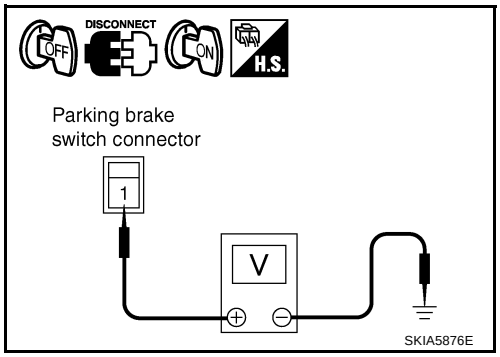
OK or NG

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.



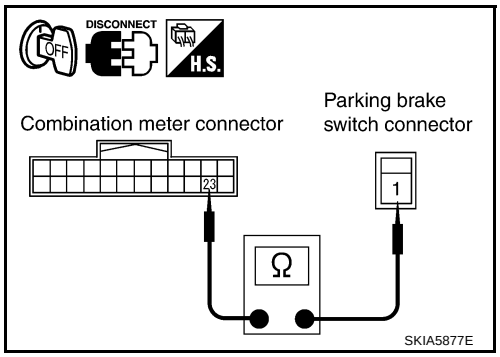
OK or NG

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 (BCM)

AKS007N8

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

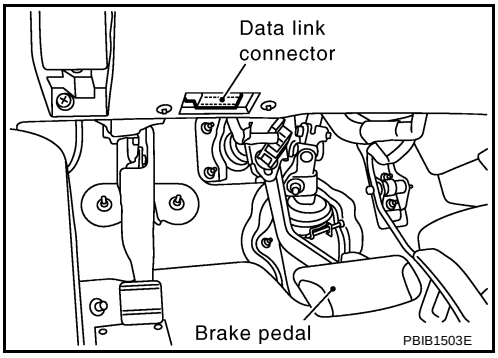
BCM diagnosis part	Diagnosis mode	Description
HEADLAMP	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	SELF-DIAG RESULTS	BCM performs self-diagnosis of CAN communication.
	CAN DIAG SUPPORT MNTR	The result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

CONSULT-II BASIC OPERATION

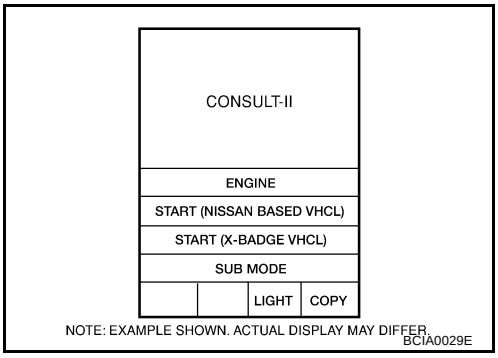
CAUTION:

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.

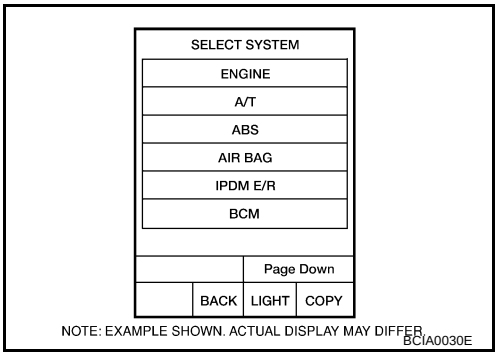
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



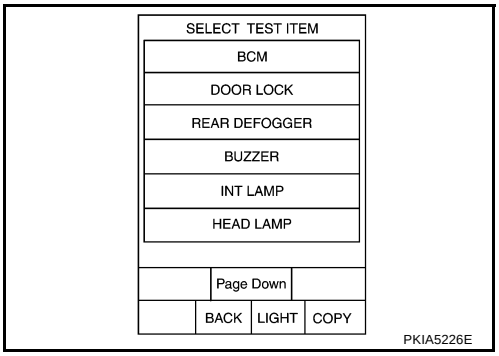
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-39, "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 “SELECT MONITOR ITEM” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

4. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
5. Touch “START”.
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 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 1 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 or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW NOTE 1	“ON/OFF”	Displays status of lighting switch as judged from 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 driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	“ON/OFF”	Displays status of rear door as judged from rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL	“ON/OFF”	Displays status of rear door as judged from rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)

Monitor item		Contents
BACK DOOR SW	“ON/OFF”	Displays status of back door as judged from 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.
CARGO LAMP SW NOTE 3	“OFF”	—
OPTICAL SENSOR NOTE 1	“0 - 5V”	Displays “outside brightness (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 be monitored.
2. Vehicles without daytime light system display this item, but cannot be monitored.
3. This item is displayed, but cannot be monitored.

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 front fog lamp relay to operate by switching ON–OFF
DTRL NOTE 1	Allows daytime light lamp operate by switching ON–OFF
CORNERING LAMP NOTE 2	—
CARGO LAMP NOTE 2	—

NOTE:

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

Daytime Light Control Does Not Operate Properly

AKS007N9

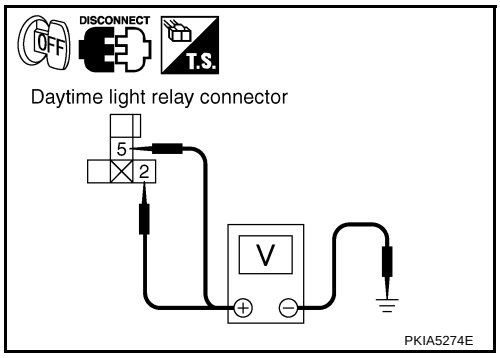
1. CHECK DAYTIME LIGHT RELAY POWER SUPPLY CIRCUIT

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.

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

5 (BR) – Ground : Battery voltage.



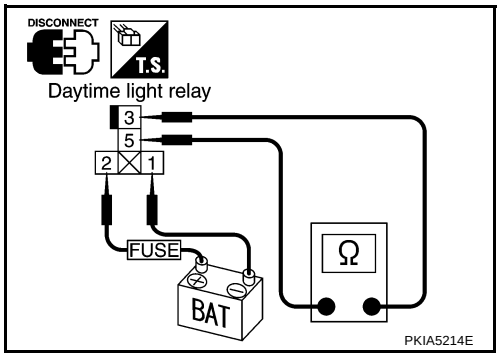
OK or NG

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

2. CHECK DAYTIME LIGHT RELAY

Apply battery voltage to between daytime light relay terminal 1, 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.

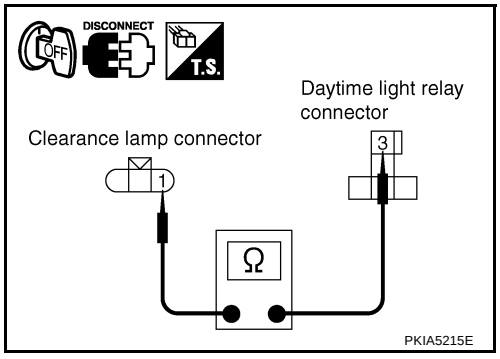
3. CHECK DAYTIME LIGHT RELAY CIRCUIT

1. Disconnect clearance lamp RH and LH connector.
2. 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.

3. 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.

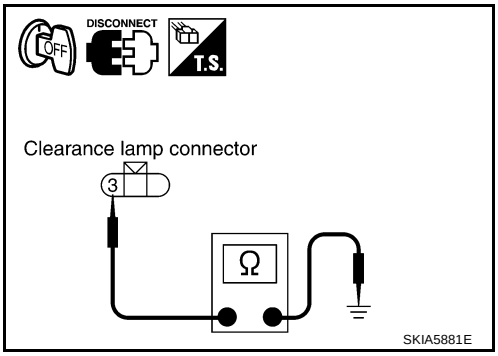
4. CHECK GROUND

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

Inspect bulbs of lamp which do not illuminate.

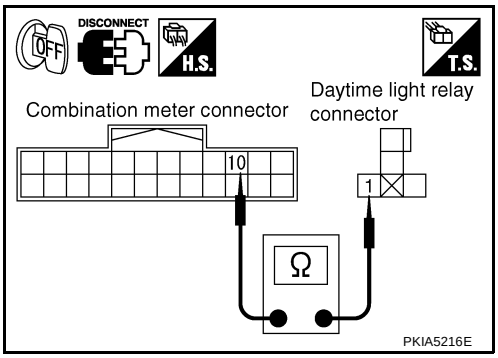
OK or NG

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.

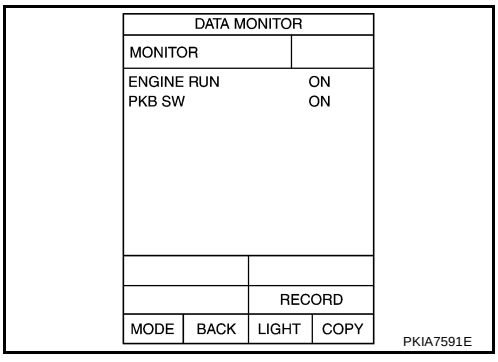
7. CHECK INPUT SIGNAL

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-16, "Removal and Installation of BCM" .
NG >> GO TO 8.

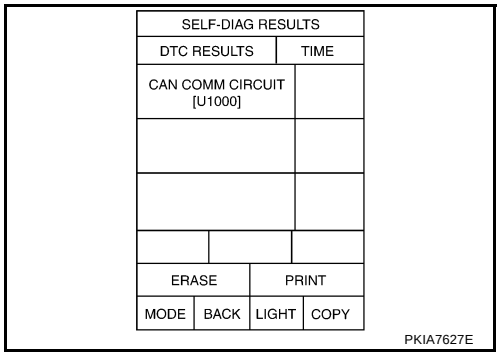
8. CHECKING CAN COMMUNICATIONS

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

Displayed self-diagnosis results

NO DTC>> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .

CAN COMM CIRCUIT>> Check BCM CAN communication system. Refer to BCS-15, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .



Aiming Adjustment

AKS007NA

Refer to LT-35, "Aiming Adjustment" in “HEADLAMP -XENON TYPE-”.

Bulb Replacement

AKS007NB

Refer to LT-36, "Bulb Replacement" in “HEADLAMP -XENON TYPE-”.

Removal and Installation

AKS007NC

Refer to LT-37, "Removal and Installation" in “HEADLAMP -XENON TYPE-”.

Disassembly and Assembly

AKS007ND

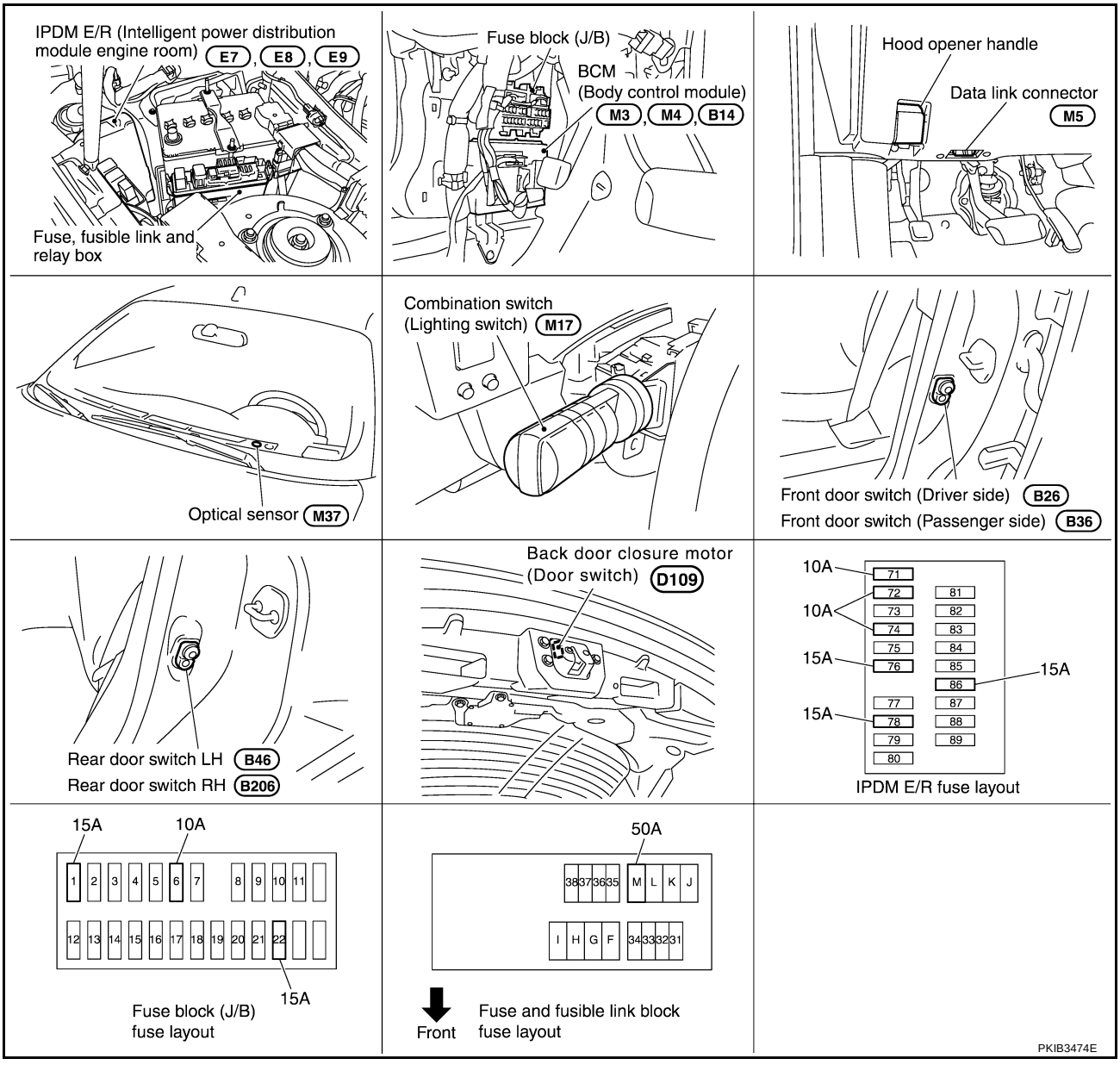
Refer to LT-38, "Disassembly and Assembly" in “HEADLAMP -XENON TYPE-”.

AUTO LIGHT SYSTEM

PFP:28491

Component Parts and Harness Connector Location

AKS007ER



System Description

AKS007ES

Automatically turns ON/OFF 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-63, "SETTING CHANGE FUNCTIONS" .
Optical sensor control mode can be changed by the function setting of CONSULT-II or display.
Optical sensor, power is supplied

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

Optical sensor, ground is supplied

- to optical sensor terminal 3
- through BCM terminal 18.

When ignition switch is turn to ON position, and
When outside brightness is darker than prescribed level, input is supplied

- from BCM terminal 14
- to optical sensor terminal 2

The headlamps will then illuminate. For a description of headlamp operation, Refer to LT-55, "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 5 mimutes, 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

Delay timer function carries out a function that BCM activates the timer and controls lights out of headlamps by door switch signal and lightning switch signal when turning the Ignition switch OFF while it is ON and headlamps are ON by the auto light function.
Timer types are a 5-minute timer and a 45-second timer

- When opening any door (door switch is ON), the 5-minute timer starts and then headlamps go out five minutes later
- When all the doors are closed (from door switch ON to OFF), the 45-second timer starts and then headlamps go out forty-five seconds later. If any door is opened (door switch ON) while the 45-second timer is in operation, the 5-minute timer starts again
- The timer stops when turning on the ignition switch or turning off the auto light switch under the above conditions.

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

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-30, "CAN Communication Unit" .

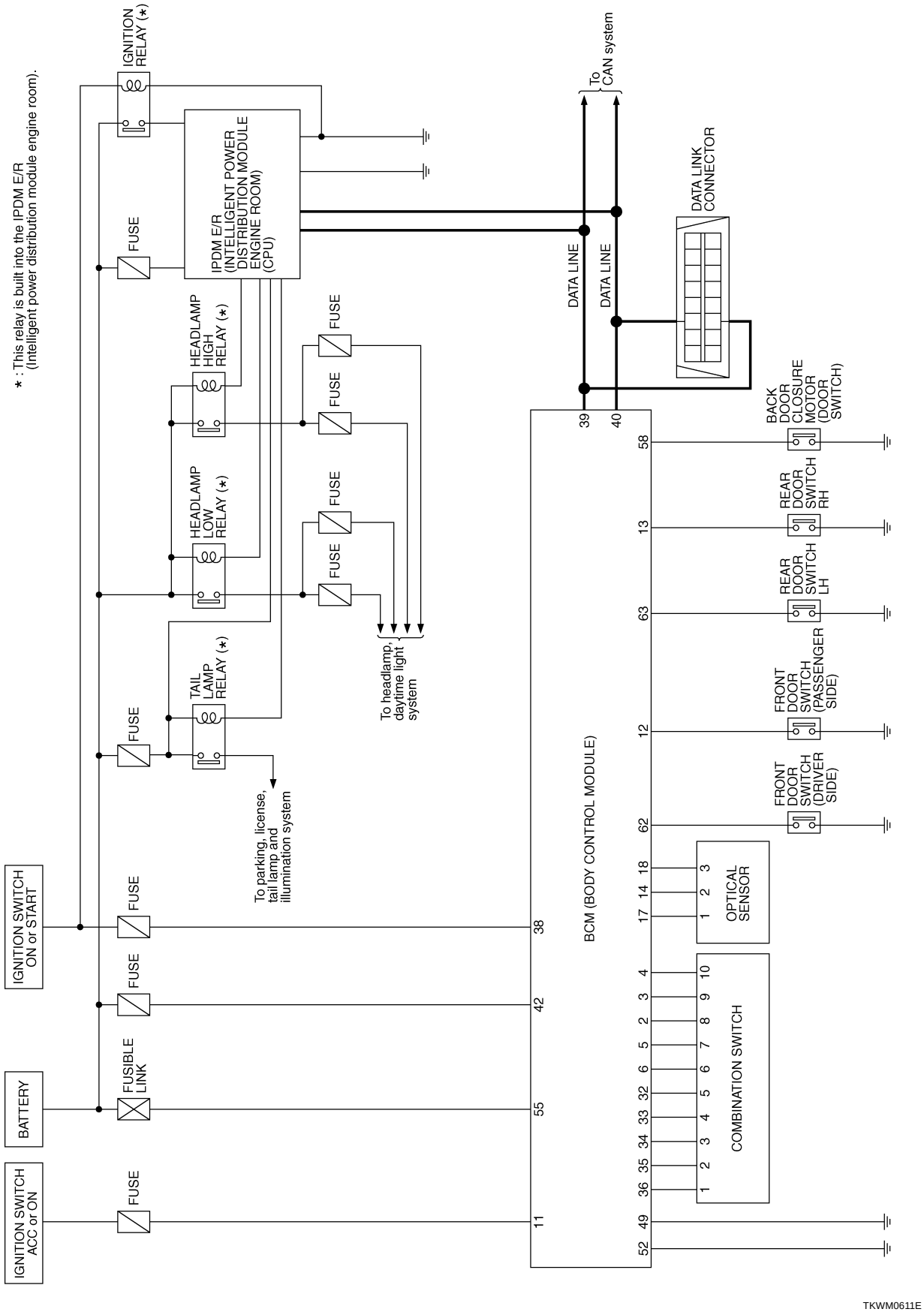
Major Components and Functions

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 outside brightness (lux) to voltage, and sends it to BCM. (Detects brightness of 50 to 1,300 lux)

Schematic

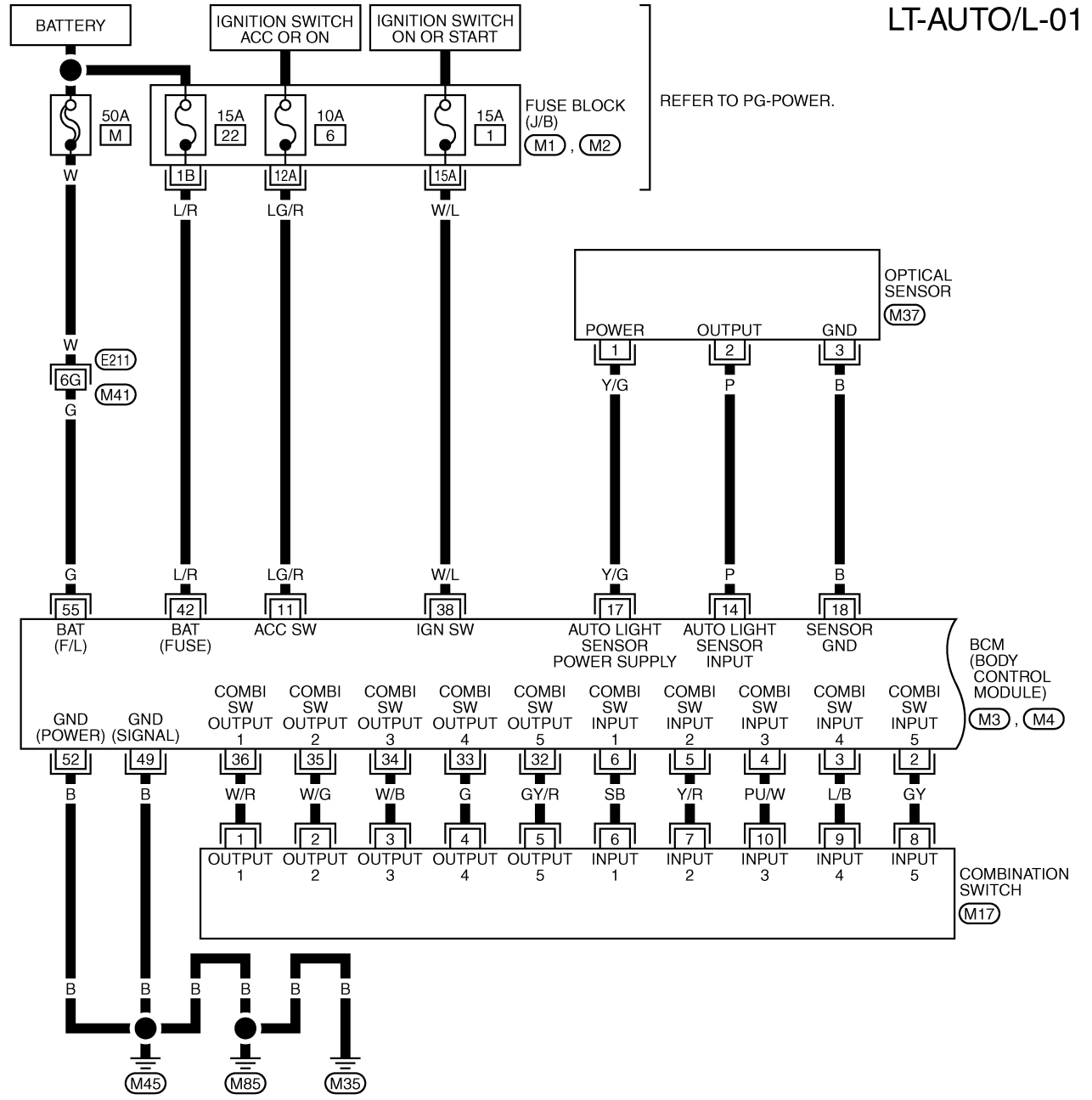
AKS007EW

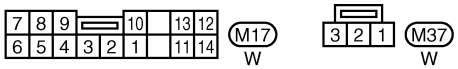


TKWM0611E

Wiring Diagram — AUTO/L —

AKS007EX





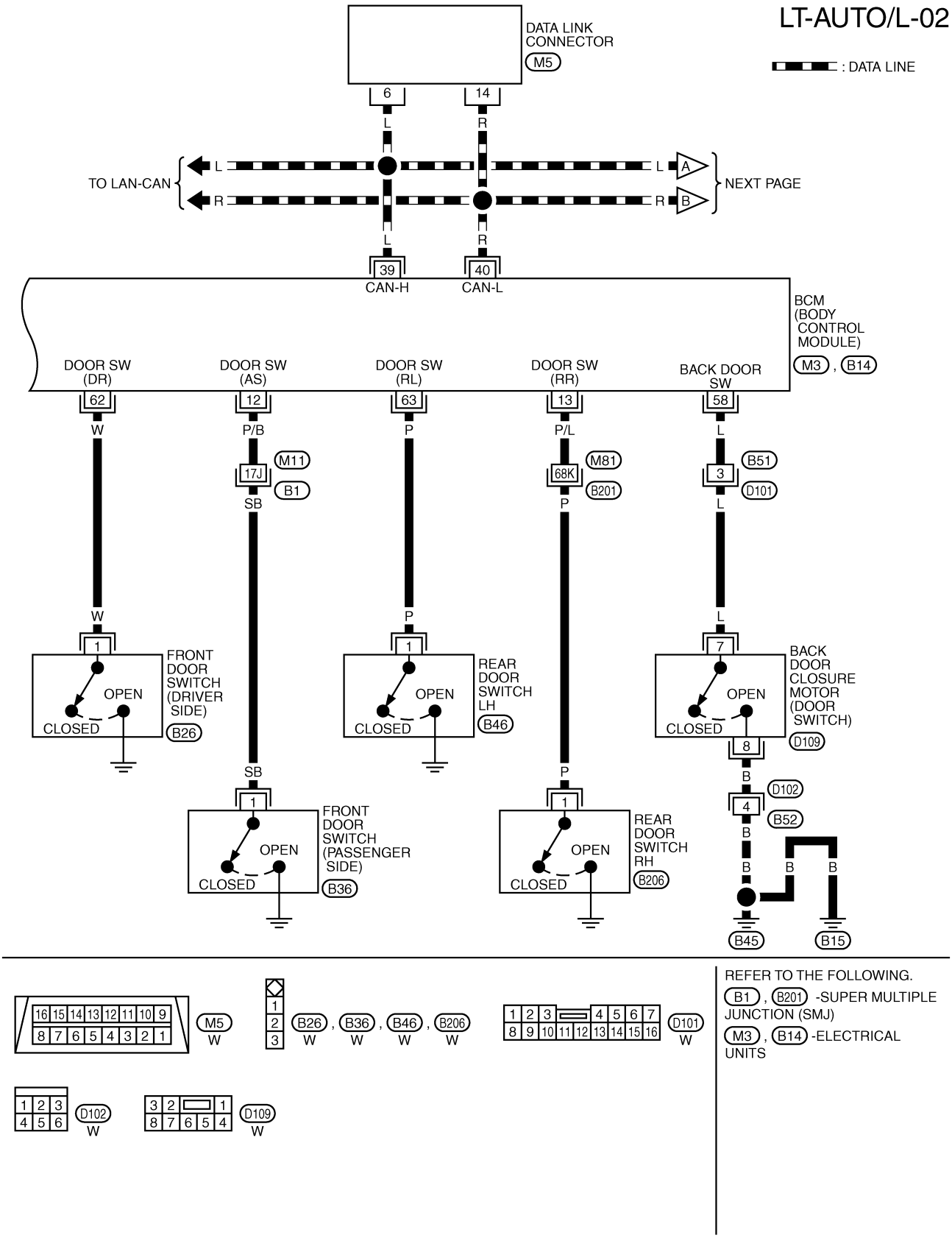
REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

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

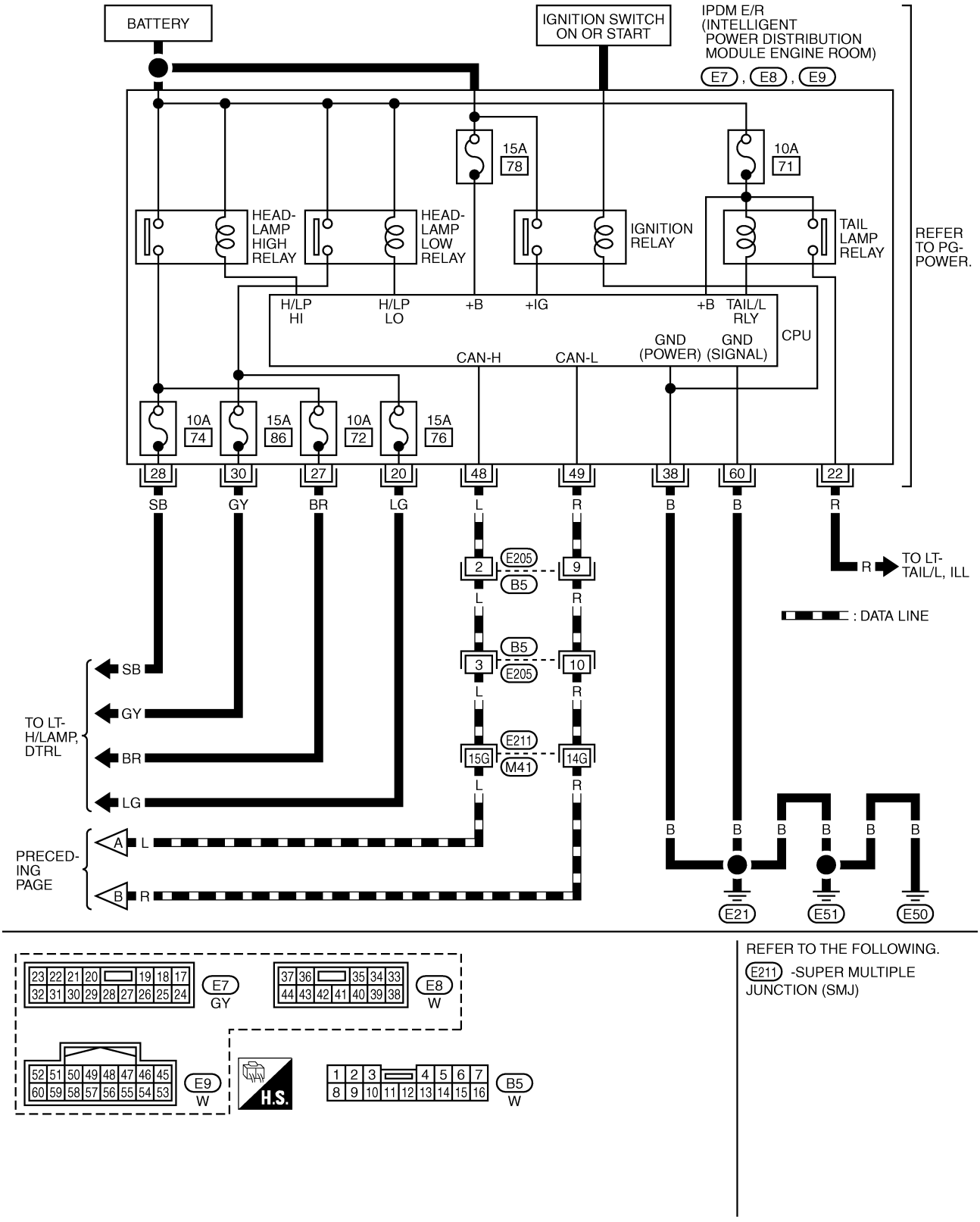
M3, M4 -ELECTRICAL UNITS

TKWM0817E


LT-AUTO/L-02
: DATA LINE
DATA LINK CONNECTOR
M5
6
14
L
R
TO LAN-CAN
NEXT PAGE
A
B
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M3 , B14
DOOR SW (DR)
DOOR SW (AS)
DOOR SW (RL)
DOOR SW (RR)
BACK DOOR SW
62
12
63
13
58
W
P/B
P
P/L
L
M11
17J
B1
M81
68K
B201
B51
3
D101
SB
FRONT DOOR SWITCH (DRIVER SIDE)
B26
REAR DOOR SWITCH LH
B46
BACK DOOR CLOSURE MOTOR (DOOR SWITCH)
D109
FRONT DOOR SWITCH (PASSENGER SIDE)
B36
REAR DOOR SWITCH RH
B206
OPEN
CLOSED
7
8
B
D102
4
B52
B45
B15
M5
W
B26 , B36 , B46 , B206
W
D101
W
D102
W
D109
W
REFER TO THE FOLLOWING.
B1 , B201 -SUPER MULTIPLE JUNCTION (SMJ)
M3 , B14 -ELECTRICAL UNITS

TKWM1073E

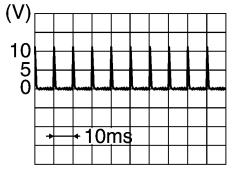
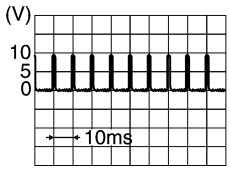
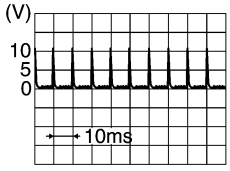
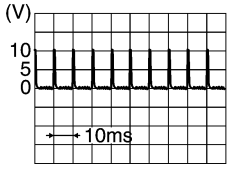
LT-AUTO/L-03



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		 PKIB3468E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 PKIB3469E
4	PU/W	Combination switch input 3				
5	Y/R	Combination switch input 2				
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		 PKIB3470E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 PKIB3471E
34	W/B	Combination switch output 3				
35	W/G	Combination switch output 2				
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

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
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 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
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-55, "System Description" .
3. Perform Preliminary Check. Refer to LT-63, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction. Refer to LT-70, "Symptom Chart" .
5. Does 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-66, "WORK SUPPORT" .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

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
		86

Refer to LT-58, "Wiring Diagram — AUTO/L —" .

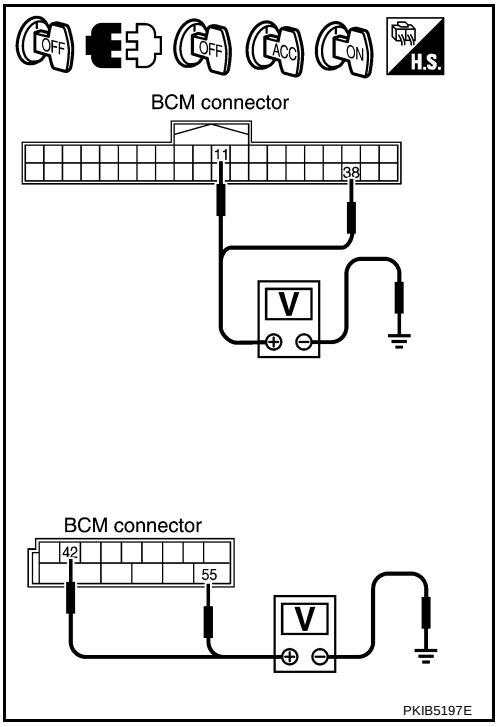
OK or NG

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.

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



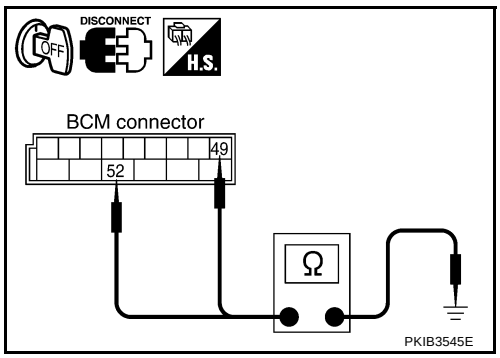
OK or NG

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.

Terminal			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 can display each diagnostic item using the diagnostic test modes shown following.

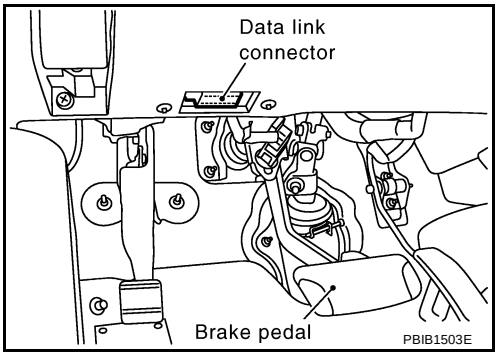
BCM diagnosis part	Diagnosis mode	Description
HEADLAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM	SELF-DIAG RESULTS	BCM performs self-diagnosis of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

CONSULT-II BASIC OPERATION

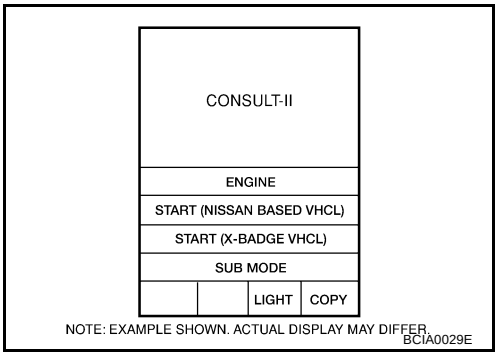
CAUTION:

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.

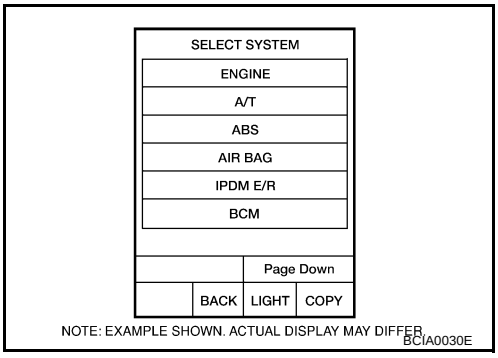
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



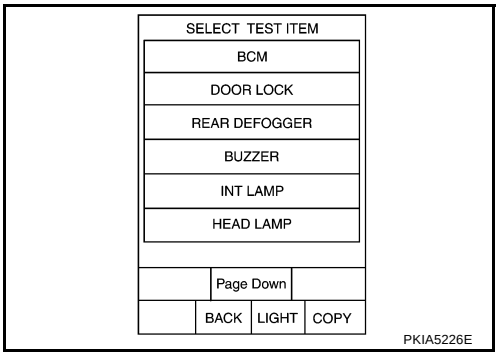
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-39, "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 “SELECT MONITOR ITEM” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

4. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
5. Touch “START”.
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 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 1 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 or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW NOTE 1	“ON/OFF”	Displays status of lighting switch as judged from 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 driver door as judged from driver door switch signal. (Door is open: ON/ Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	“ON/OFF”	Displays status of rear door as judged from rear door switch (RH) signal. (Door is open: ON/ Door is closed: OFF)
DOOR SW - RL	“ON/OFF”	Displays status of rear door as judged from rear door switch (LH) signal. (Door is open: ON/ Door is closed: OFF)
BACK DOOR SW	“ON/OFF”	Displays status of back door as judged from 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.
CARGO LAMP SW NOTE 3	“OFF”	—
OPTICAL SENSOR NOTE 1	“0 - 5V”	Displays “outside brightness (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 be monitored.
2. Vehicles without daytime light system display this item, but cannot be monitored.
3. This item is displayed, but cannot be monitored.

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	Allows day time light lamp operate by switching ON–OFF.
CORNERING LAMP NOTE 2	—
CARGO LAMP NOTE 2	—

NOTE:

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

CONSULT-II Functions (IPDM E/R)

AKS007I6

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

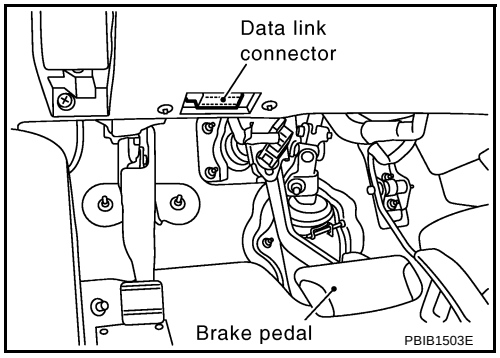
Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-21, "SELF-DIAG RESULTS" .
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

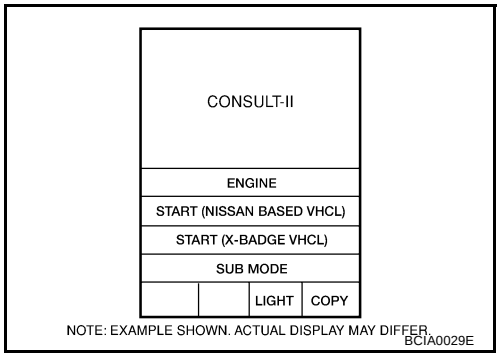
CAUTION:

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.

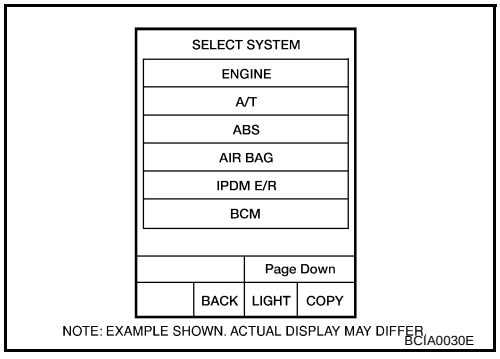
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



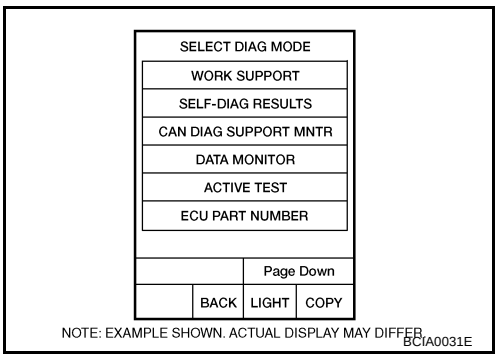
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “IPDM E/R” on “SELECT SYSTEM” screen.
   If “IPDM E/R” is not displayed, refer to GI-39, "CONSULT-II Data Link Connector (DLC) Circuit" .



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



DATA MONITOR

Operation Procedure

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

ALL SIGNALS	Monitors all items.
MAIN SIGNALS	Monitor the predetermined item.
SELECTION FROM MENU	Selects items and monitors them.

3. Touch the required monitoring item on “SELECTION FROM MENU”. In “ALL SIGNALS”, all items are monitored. In “MAIN SIGNALS”, predetermined items are monitored.
4. Touch “START”.
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
Front fog lights request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:
Perform monitoring of IPDM E/R data with ignition switch ON. When 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.

Symptom Chart

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-66, "WORK SUPPORT" . ● Refer to LT-70, "Lighting Switch Inspection" . ● Refer to LT-71, "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-66, "WORK SUPPORT" . ● Refer to LT-71, "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-71, "Optical sensor System Inspection" . If above system is normal, replace BCM.
Auto light adjustment system of combination meter will not operate.	● CAN communication line inspection between BCM and combination meter. Refer to BCS-15, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
Shut off delay feature will not operate.	● CAN communication line inspection between BCM and combination meter. Refer to BCS-15, "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

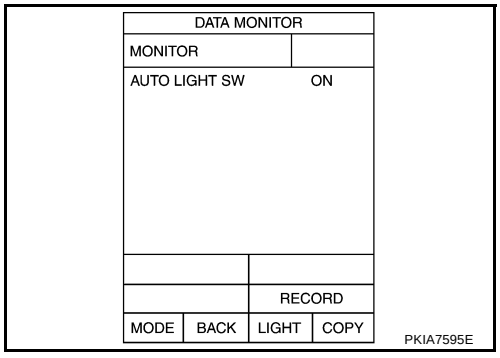
AKS007F4

1. CHECK LIGHTING SWITCH INPUT SIGNAL

With CONSULT-II

Select “BCM” on CONSULT-II. With “HEAD LAMP” data monitor, make sure “AUTO 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-115, "Combination Switch Inspection" .

OK or NG

OK >> INSPECTION END

NG >> Check combination switch (lighting switch). Refer to LT-115, "Combination Switch Inspection" .

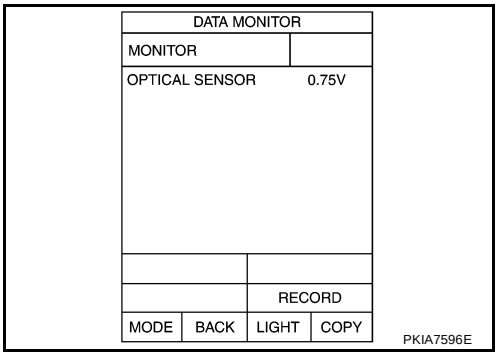
Optical sensor System Inspection

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 auto light sensor is illuminated and not illuminated.



Illuminated

OPTICAL SENSOR : 3.1V or more

Not illuminated

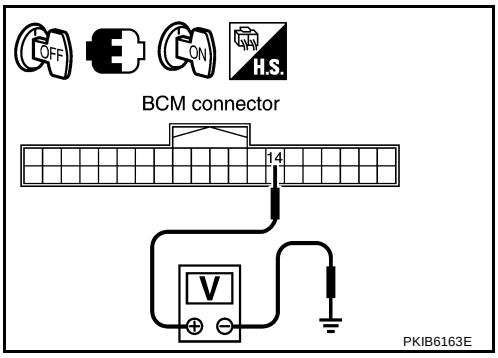
OPTICAL SENSOR : 0.6V or less

CAUTION:

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

Without CONSULT-II

1. Turn ignition switch ON.
2. Check voltage between BCM harness connector M3 terminal 14 (P) and ground.



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 optical sensor is insufficiently illuminated, the measured value may not satisfy the standard.

OK or NG

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

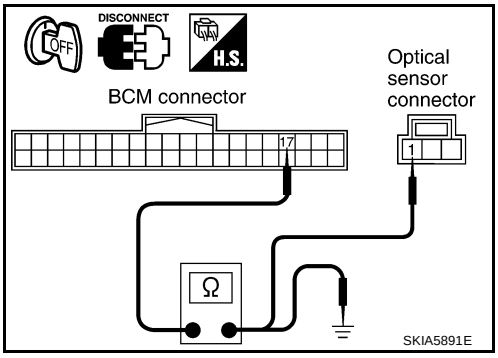
2. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

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.

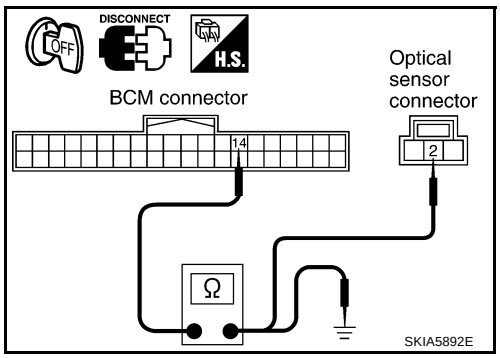
3. CHECK OPTICAL SENSOR SIGNAL CIRCUIT

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 M3 terminal 14 (P) and ground.

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



OK or NG

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

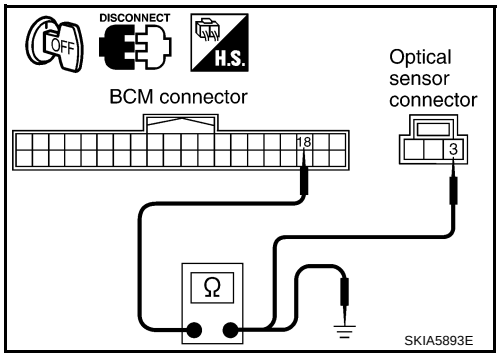
4. CHECK OPTICAL SENSOR GROUND CIRCUIT

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 M3 terminal 18 (B) and ground.

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



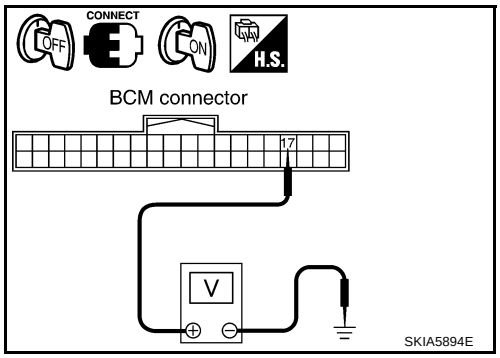
OK or NG

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



OK or NG

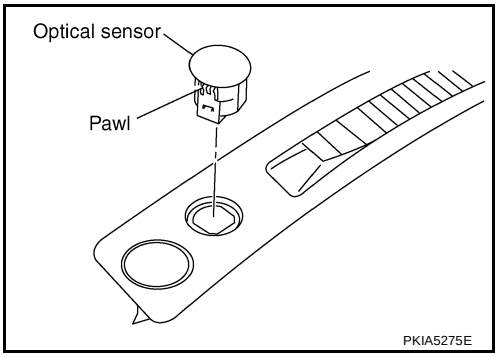
OK >> Replace optical sensor.
NG >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .

Removal and Installation of 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 (RH/LH)" in “IP” section.
2. Disconnect optical sensor connector.
3. Remove optical sensor.



INSTALLATION

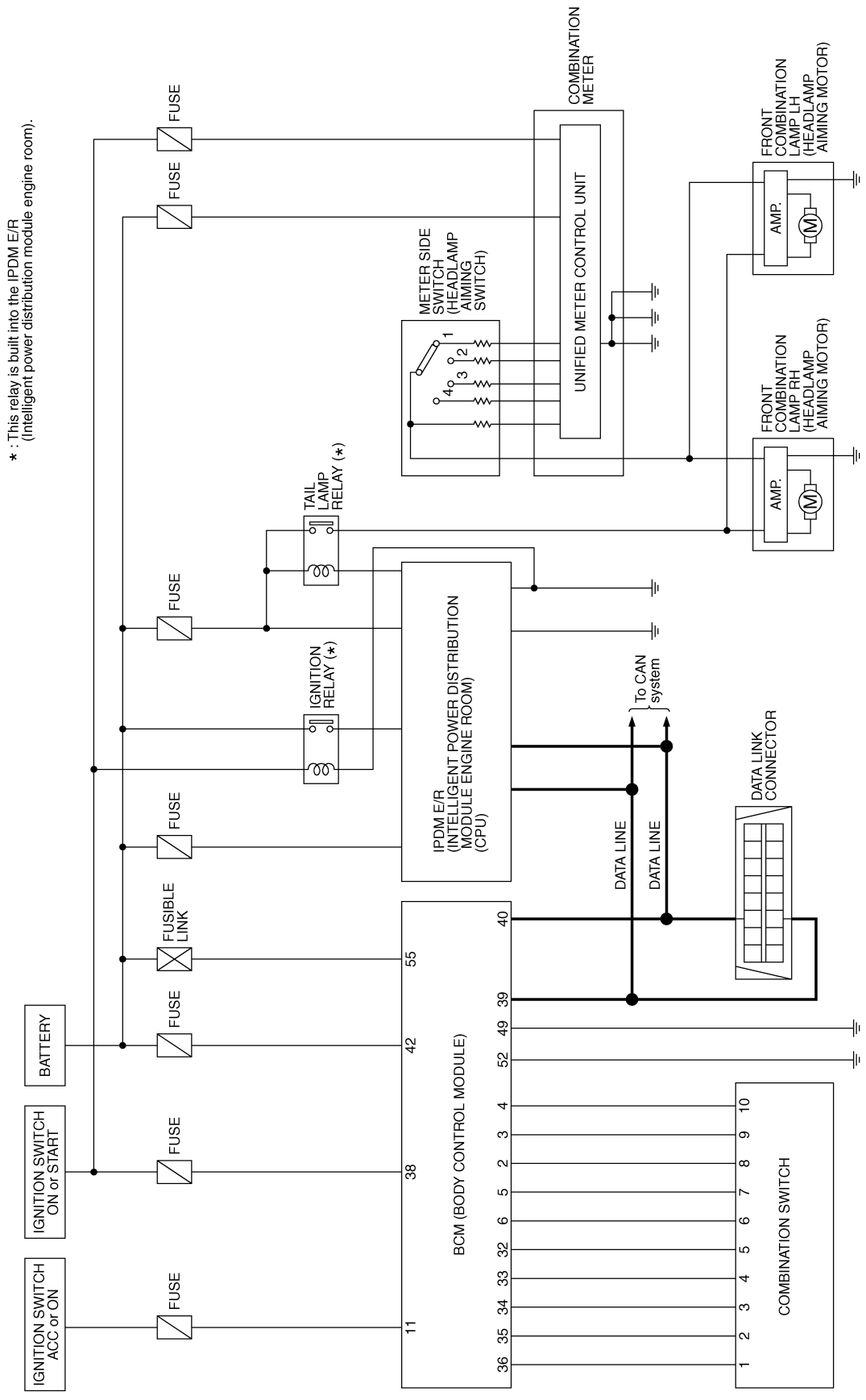
Installation is the reverse order of removal.

HEADLAMP AIMING CONTROL

PFP:26010

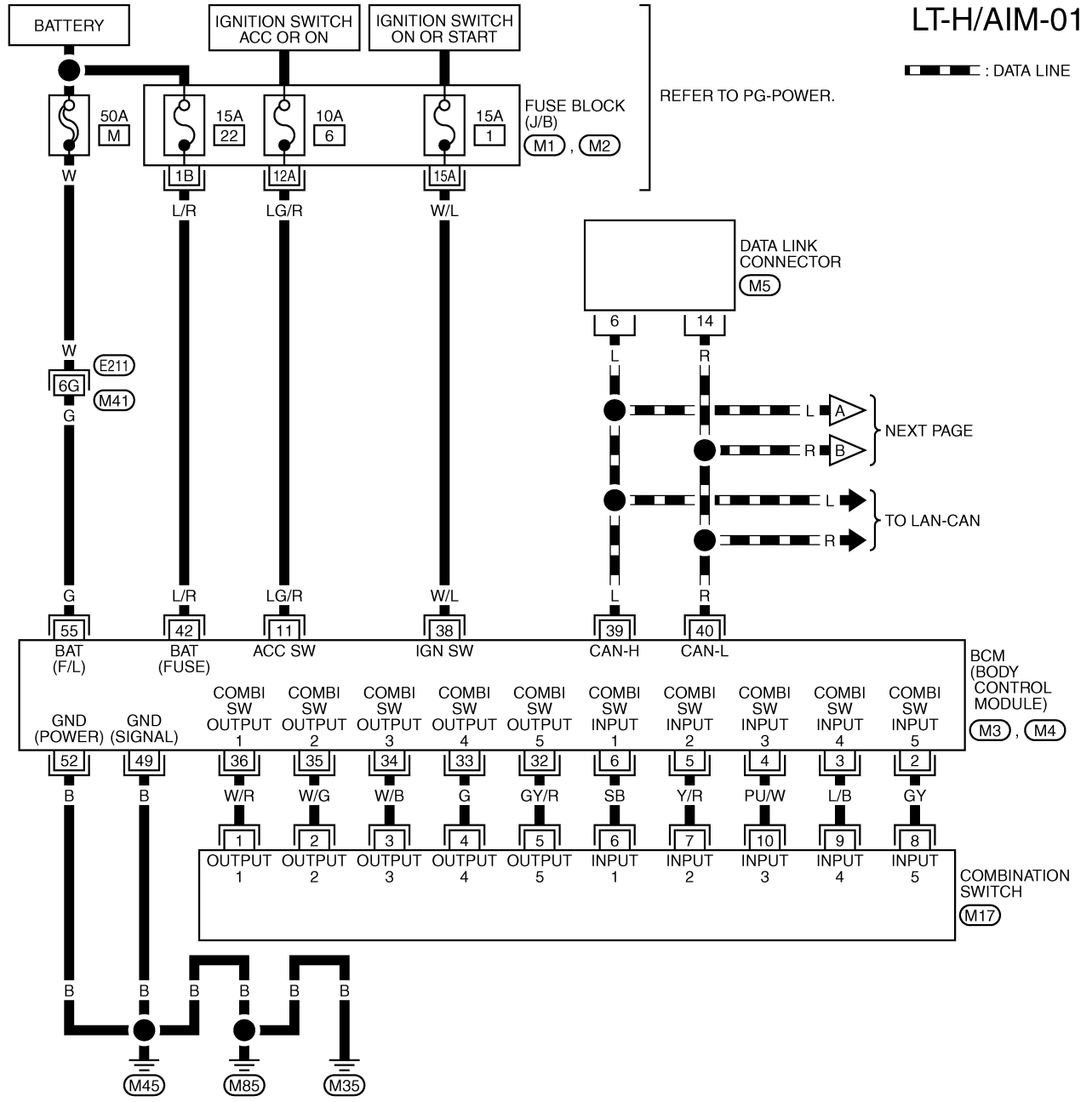
Schematic

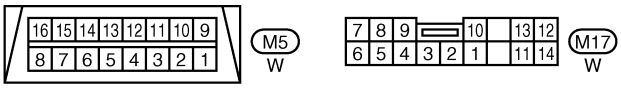
AKS007I7



Wiring Diagram — H/AIM —

AKS007CF





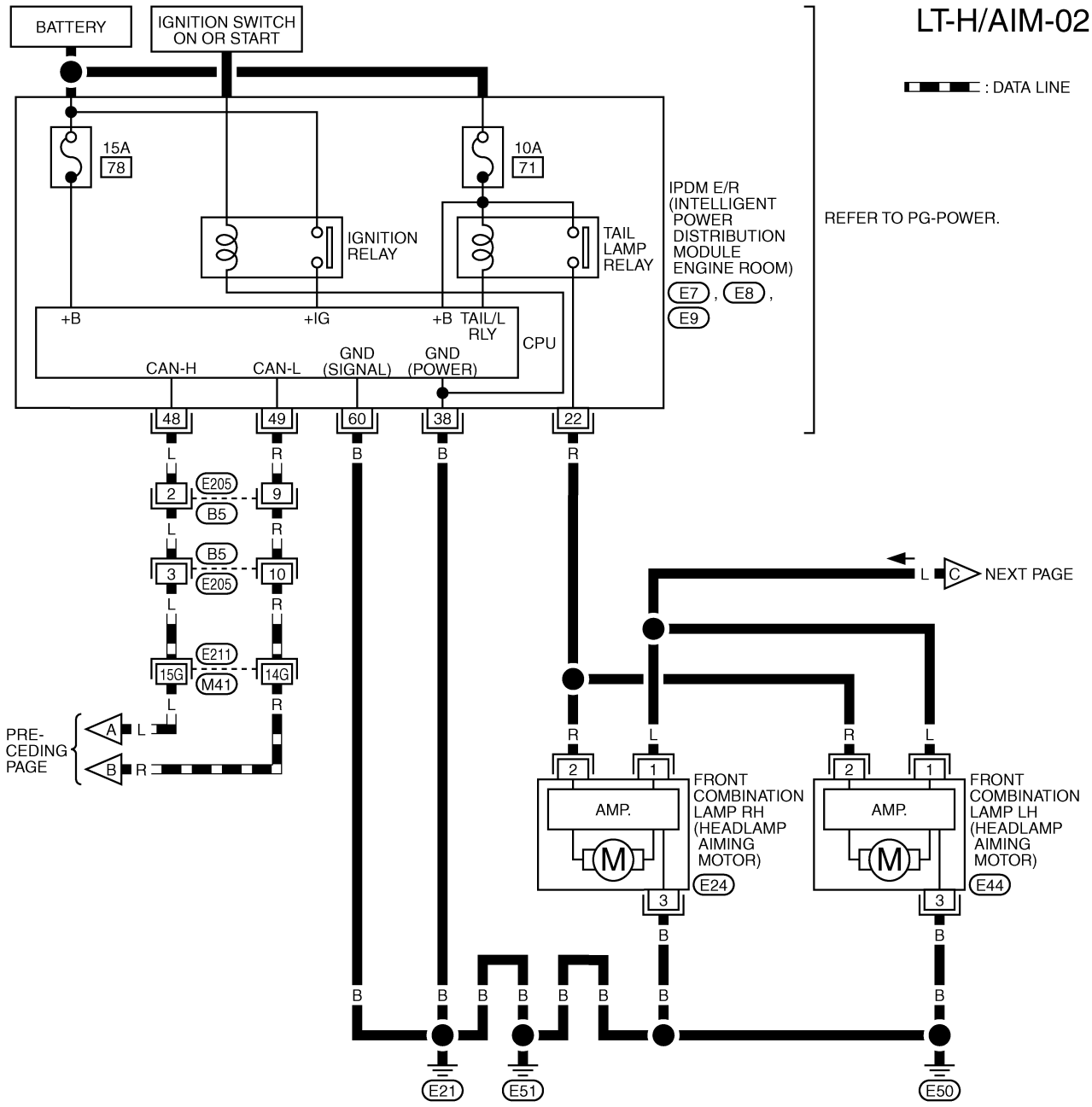
REFER TO THE FOLLOWING.

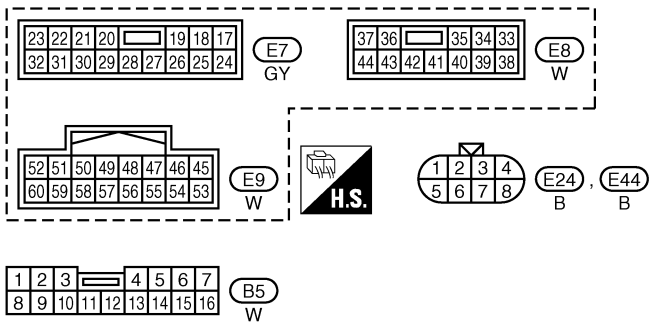
E211 -SUPER MULTIPLE JUNCTION (SMJ)

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

M3, M4 -ELECTRICAL UNITS

TKWM0818E



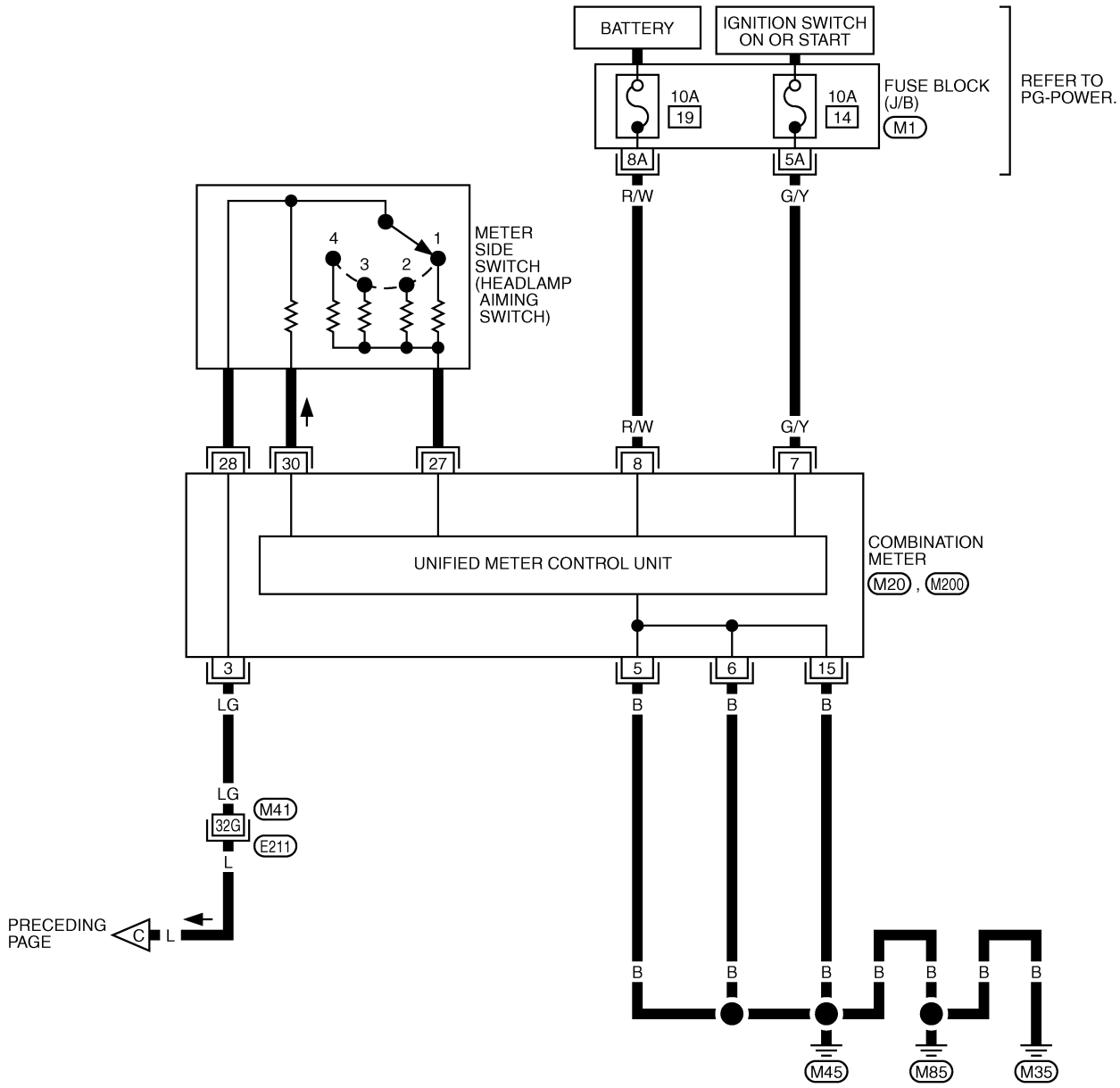


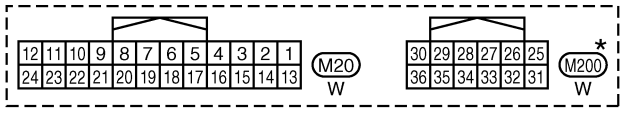
REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1074E

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)

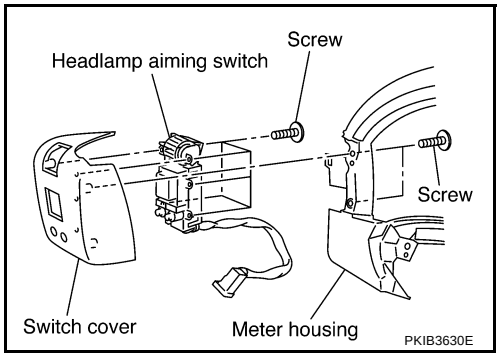
TKWM0618E

Removal and Installation

AKS007CG

REMOVAL

1. Remove combination meter. Refer to DI-25, "Removal and Installation of Combination Meter" in “DI” section.
2. Remove screws for removing headlamp aiming switch from meter housing.
3. Remove screws and then remove headlamp aiming switch.



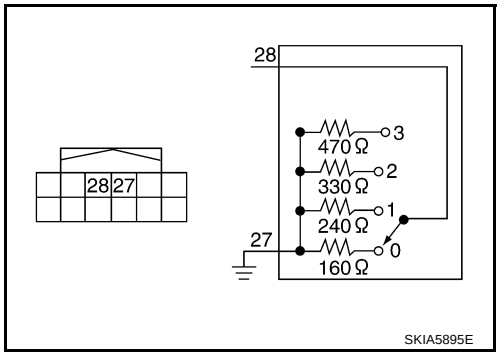
INSTALLATION

Installation is the reverse order of removal.

Switch Circuit Inspection

AKS007CH

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

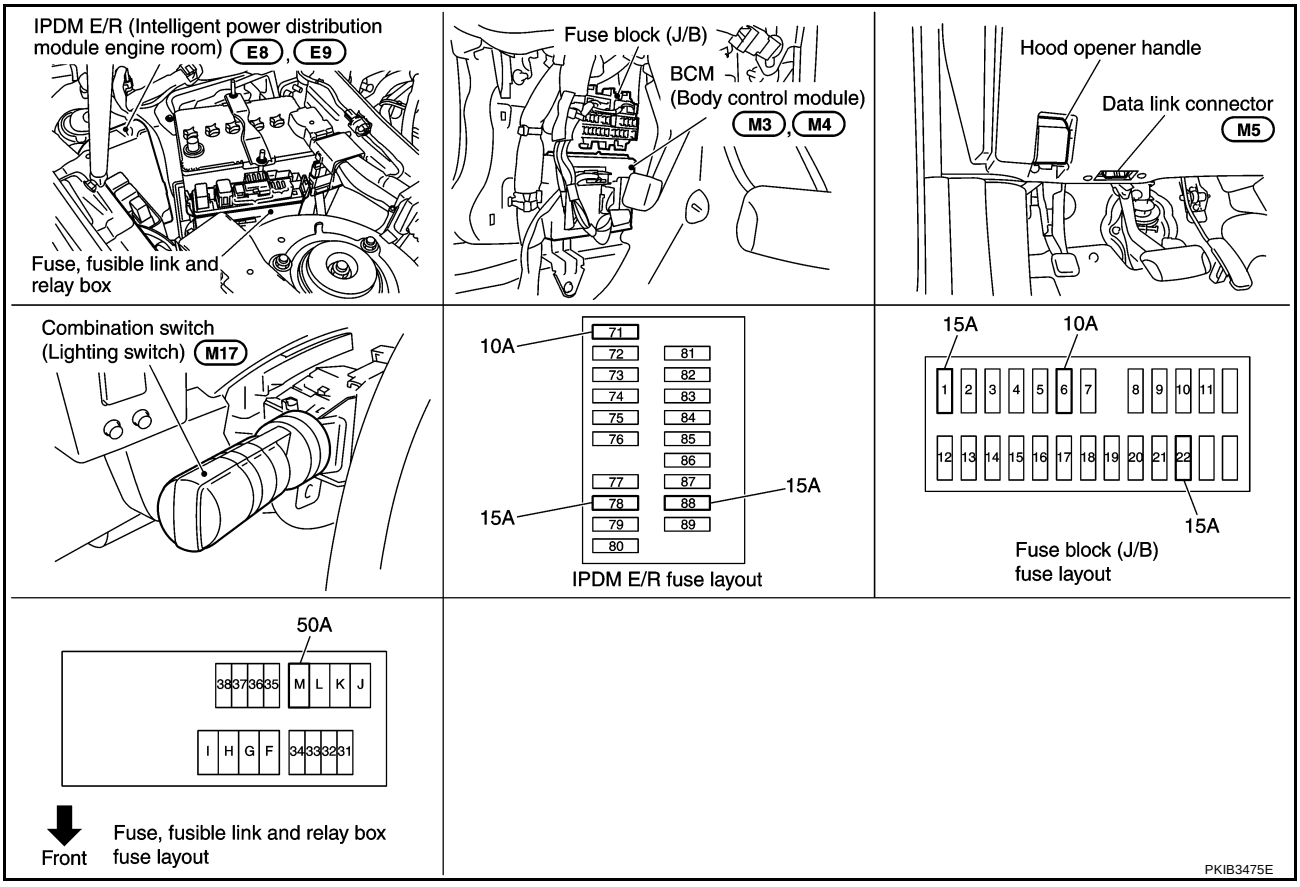


FRONT FOG LAMP

PFP:26150

Component Parts and Harness Connector Location

AKS007O5



System Description

AKS007CI

Control of the front 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 (headlamp 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 front 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 CPU (central processing unit) located in 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

- through 15A fuse (No. 88, located in IPDM E/R)
- to front fog lamp relay, located in IPDM E/R,
- through 15A fuse (No. 78, located in IPDM E/R)
- to CPU located in IPDM E/R, and
- to ignition relay, located in IPDM E/R, from battery direct,
- through 10A fuse (No. 71, located in IPDM E/R)
- to CPU located in IPDM E/R.

Power is also supplied at all times

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

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

- through 15A fuse [No. 1, located in fuse block (J/B)]

- to BCM terminal 38.

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

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

Ground is supplied

- to BCM terminals 49 and 52
- through grounds M35, M45 and M85,
- to IPDM E/R terminals 38 and 60
- through grounds E21, E50 and E51.

FRONT FOG LAMP OPERATION

The front fog lamp switch is built into combination switch. The lighting switch must be in the 2ND position or AUTO position (headlamp is ON) and the front fog lamp switch must be ON for front fog lamp operation.
With the front fog lamp switch in the ON position, the CPU located in the IPDM E/R grounds the coil side of the front fog lamp relay. The front 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,
- to front fog lamp RH terminal 2
- through grounds E21, E50 and E51.

With power and grounds supplied, 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 front 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 front fog lamps (and headlamps) remain illuminated for 5 minutes, then the front 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.

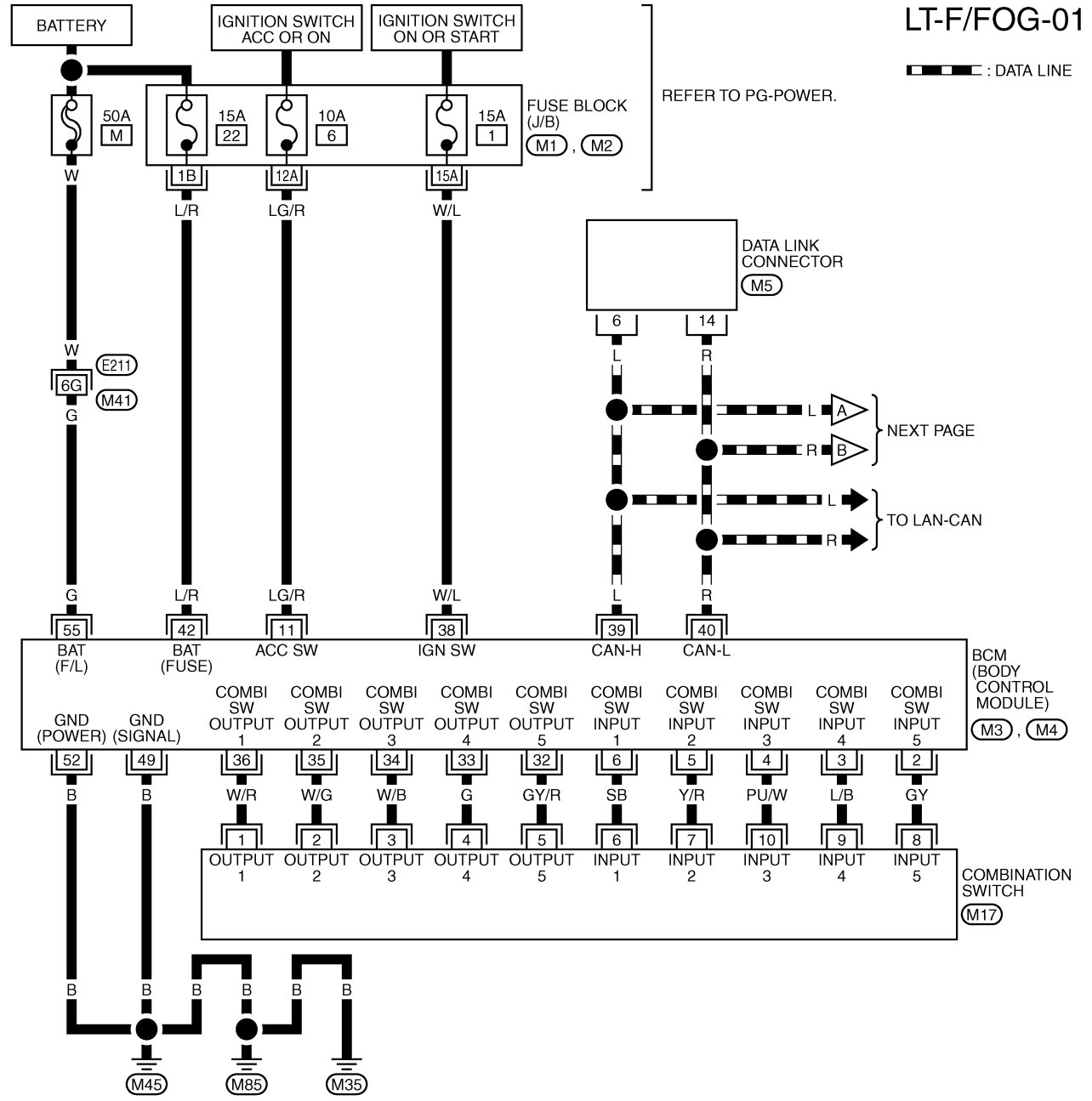
CAN Communication Unit

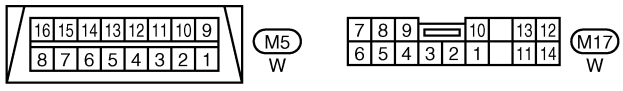
AKS0080V

Refer to LAN-30, "CAN Communication Unit" .

Wiring Diagram — F/FOG —

AKS007CL





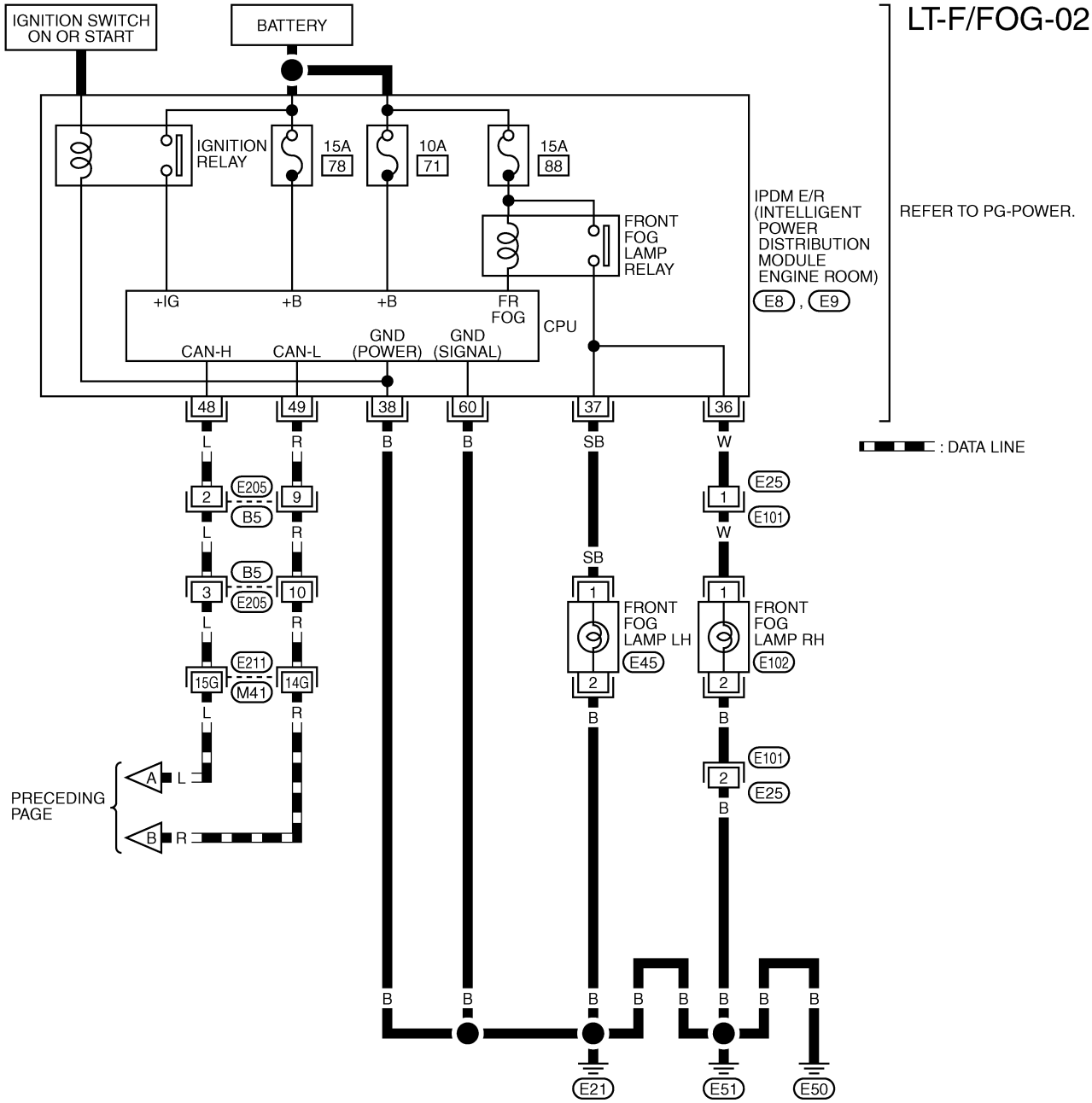
REFER TO THE FOLLOWING.

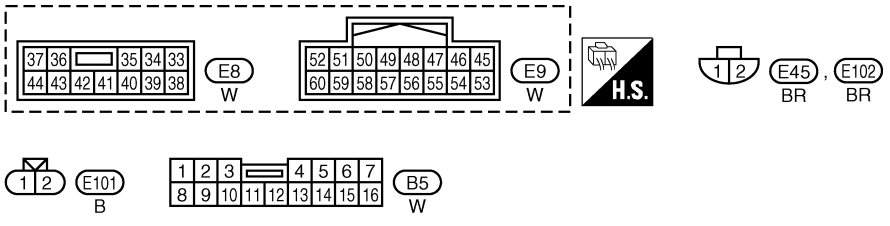
E211 -SUPER MULTIPLE JUNCTION (SMJ)

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

M3, M4 -ELECTRICAL UNITS

TKWM0819E



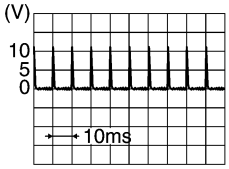
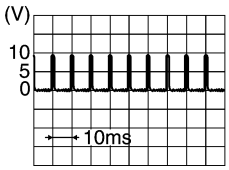
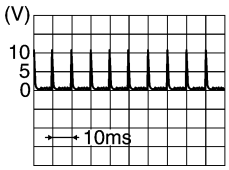
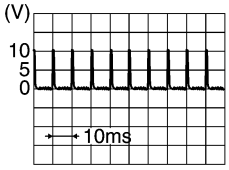


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

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	 PKIB3468E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3469E
4	PU/W	Combination switch input 3			
5	Y/R	Combination switch input 2			
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	 PKIB3470E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3471E
34	W/B	Combination switch output 3			
35	W/G	Combination switch output 2			
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 (headlamp is ON) and 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 (headlamp is ON) and front fog lamp switch must be ON.	OFF	Approx. 0V
					ON	Battery voltage
38	B	Ground	ON	—		Approx. 0V
48	L	CAN – H	—	—		—

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
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-79, "System Description" .
3. Perform Preliminary Check. Refer to LT-84, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does 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 for blown fuses.

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	88

Refer to LT-81, "Wiring Diagram — F/FOG —" .

OK or NG

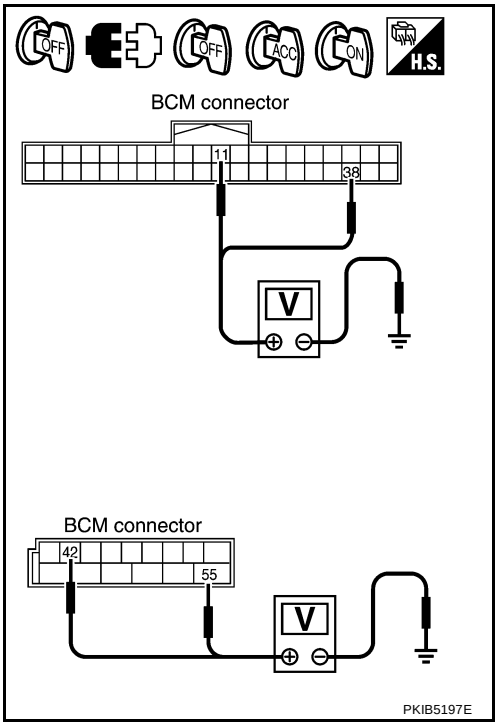
OK >> GO TO 2.

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.

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



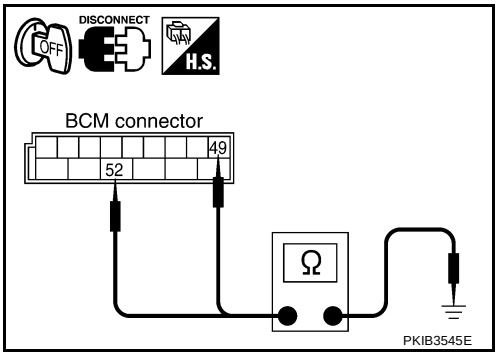
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Repair harness or conector.

CONSULT-II Functions (BCM)

AKS007CQ

Refer to LT-18, "CONSULT-II Functions (BCM)" in HEADLAMP.

CONSULT-II Functions (IPDM E/R)

AKS00CM5

Refer to LT-20, "CONSULT-II Functions (IPDM E/R)" in HEADLAMP.

Front Fog Lamp Does Not Illuminate (Both Sides)

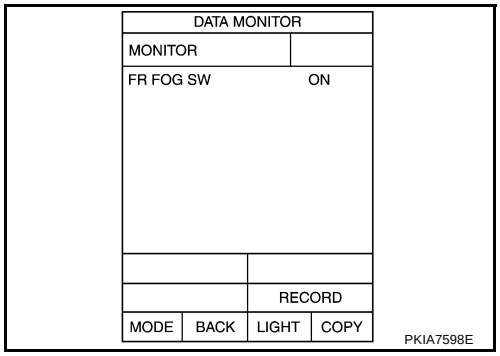
AKS007I9

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-115, "Combination Switch Inspection" .

OK or NG

OK >> GO TO 2.

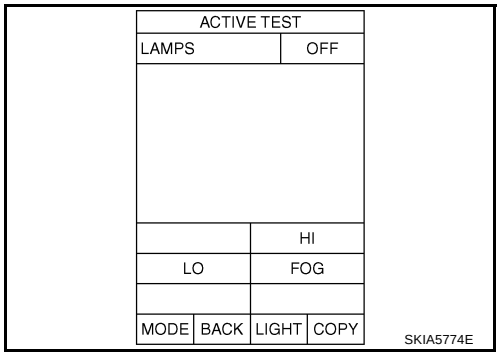
NG >> Check combination switch (lighting switch). Refer to LT-115, "Combination Switch Inspection" .

2. FRONT 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 front fog lamp operation.

Front fog lamp should operate.



Without CONSULT-II

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

Front fog lamp should operate.

OK or NG

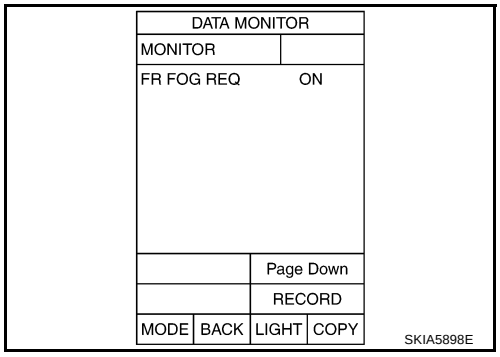
OK >> GO TO 3.

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

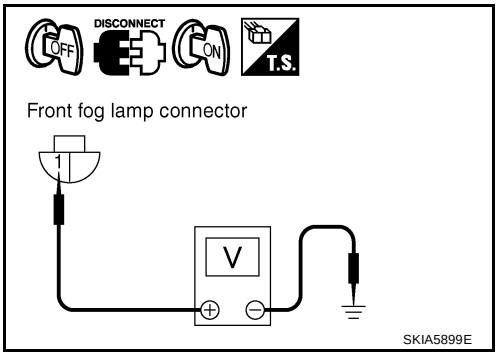
OK >> Replace IPDM E/R.

NG >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .

4. CHECK FRONT 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 “LAMPS” on “SELECT TEST ITEM” screen.
5. Touch “FOG” screen.
6. When front fog lamp is operating, check voltage between front fog lamp RH and LH harness connector and ground.



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

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 front fog lamp is operating, check voltage between front fog lamp RH and LH harness connector and ground.

Terminal				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.

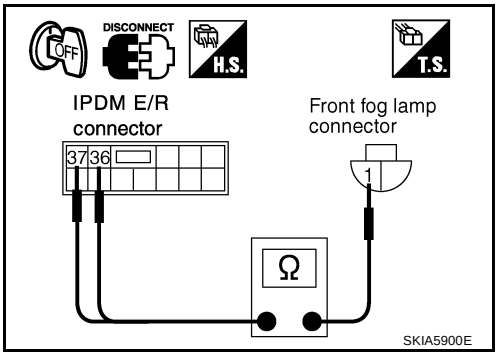
5. CHECK FRONT FOG LAMP CIRCUIT

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.

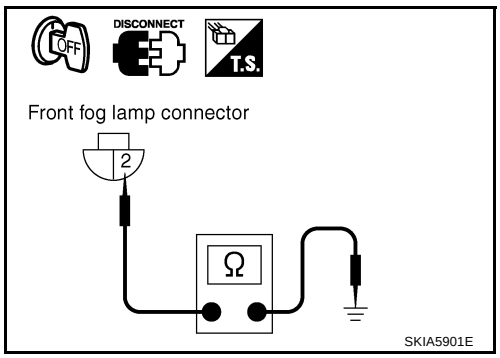
6. CHECK FRONT FOG LAMP GROUND

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.

Front Fog Lamp Does Not Illuminate (One Side)

AKS007IA

1. CHECK BULB

Check bulb of lamp which does not illuminate.

OK or NG

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

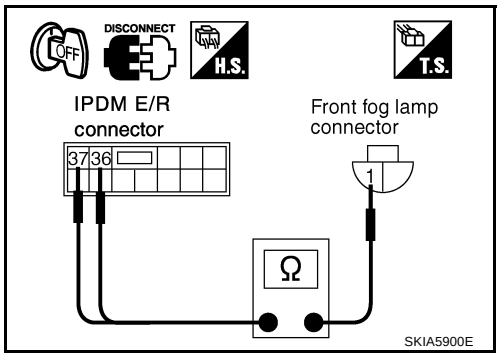
2. CHECK FRONT FOG LAMP CIRCUIT

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

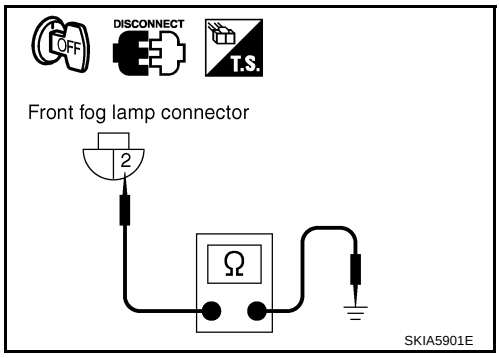
3. CHECK FRONT FOG LAMP GROUND

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.

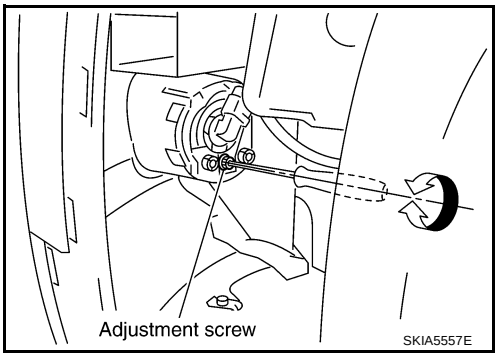
Aiming Adjustment

AKS007CT

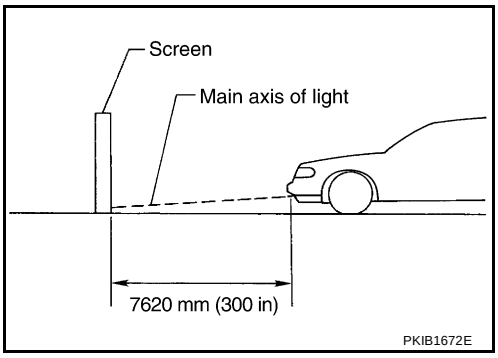
Front fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

- 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.

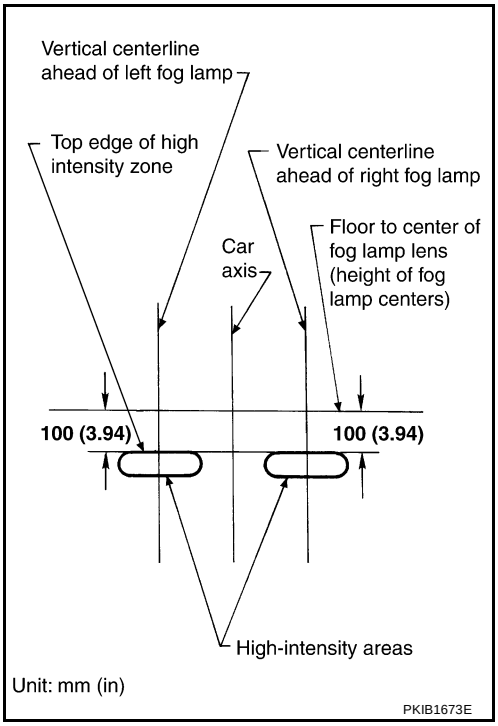
Adjust aiming in the vertical direction by turning adjusting screw.



1. Set the distance between the screen and the center of front 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 (3.94 in) below the height of front fog lamp centers as shown at left.
   - When performing adjustment, if necessary, cover headlamps and opposite front fog lamp.

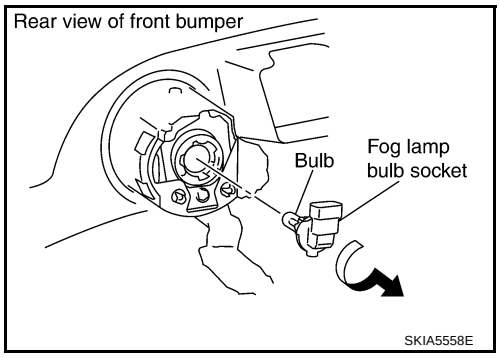


Bulb Replacement

AKS007CU

1. Remove left side fender protector (front). Refer to EI-24, "Removal and Installation" ,EI-14, "Removal and Installation" in “EI” section.
2. Disconnect fog lamp connector.
3. Turn bulb socket counterclockwise and unlock it.

Front fog lamp : 12 V - 51 W (HB4 halogen)



CAUTION:

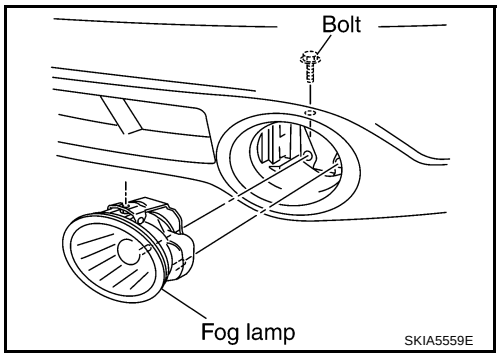
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off. Burning may result.**
- **Never leave bulb out of front fog lamp reflector for a long time because dust, moisture smoke, etc. May affect the performance of front 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 front fog lamp mounting bolt.
3. Pull out front fog lamp from vehicle and disconnect fog lamp connector.



INSTALLATION

Installation is the reverse order of removal.

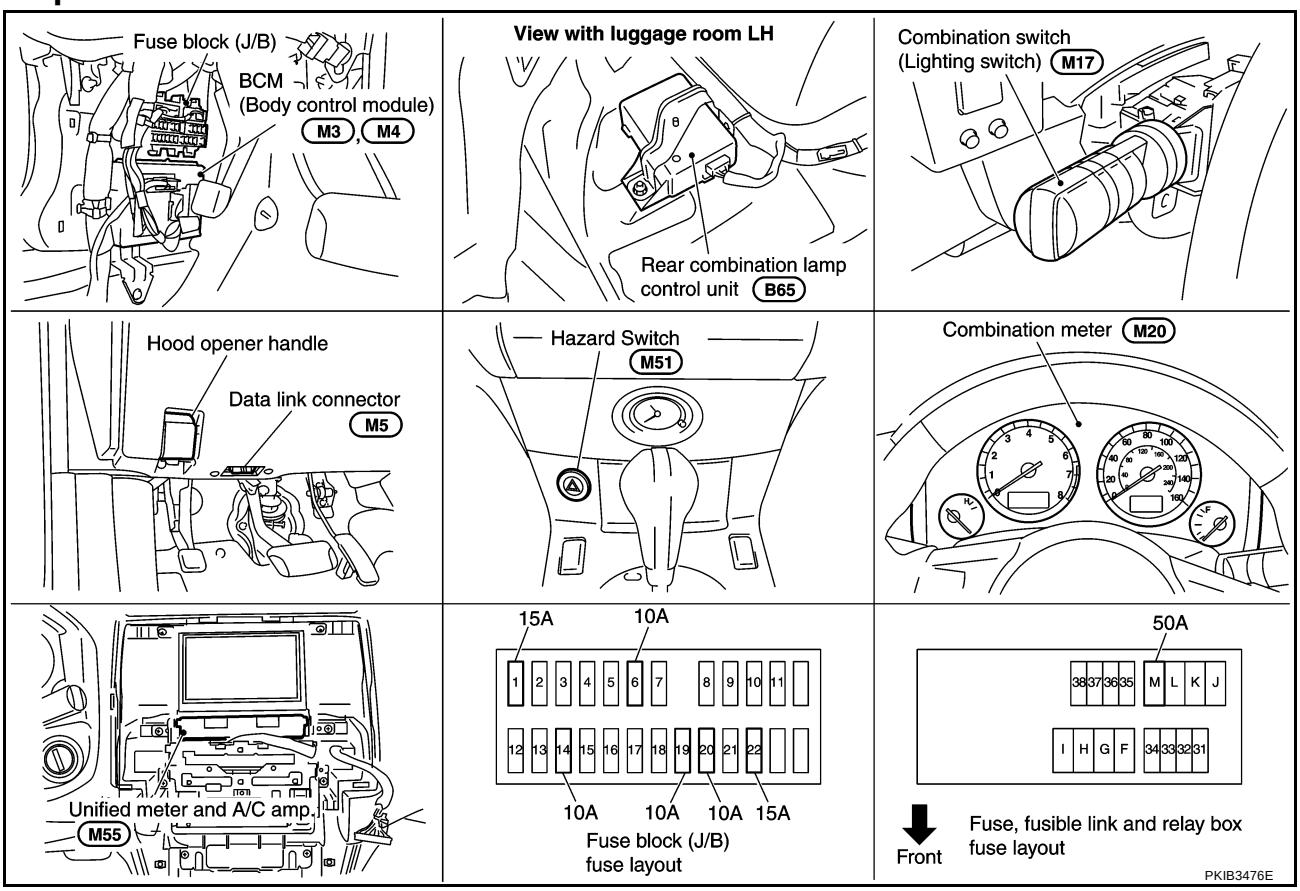
Front fog lamp mounting bolt : 5.5 N·m (0.55 kg-m, 48 in-lb)

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

Component Parts and Harness Connector Location

AKS007O6



System Description

AKS007CW

TURN SIGNAL OPERATION

Power is supplied at all times

- through 10A fuse [No. 20, located in fuse block (J/B)]
- to rear combination lamp control unit terminal 1.

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

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

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.

LH Turn Signal Lamp

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 from 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 the 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 combination meter. And then unified meter and A/C amp. ends turn LED burnout status signal to BCM through CAN communication lines for speeding up turn signal blinking.

RH Turn Signal Lamp

When the turn signal switch is moved to 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 the 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 combination meter. And then unified meter and A/C amp. ends 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, fusible link and relay box)
- 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 hazard switch is depressed, ground is supplied

- to hazard switch terminal 2
- through BCM terminal 29,

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

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 the 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 combination meter. And then unified meter and A/C amp. ends 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, fusible link and relay box)
- 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 key fob, 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 the unified meter and A/C amp. through the CAN communication lines, and turns ON turn signal indicator lamp with combination meter.
With power and input supplied, BCM controls the flashing of hazard warning lamps when key fob is used to activate 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.

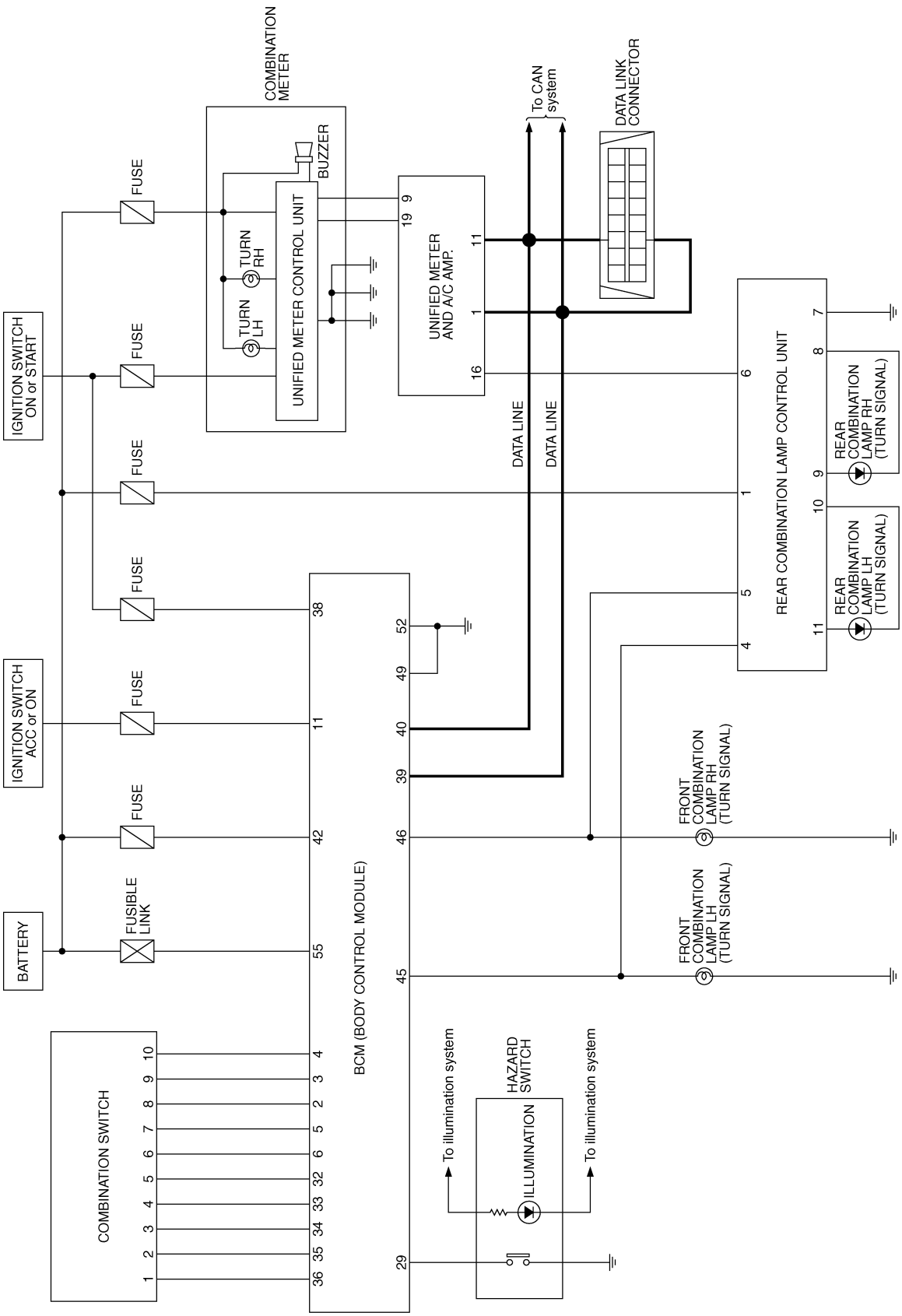
CAN Communication Unit

AKS0080W

Refer to LAN-30, "CAN Communication Unit" .

Schematic

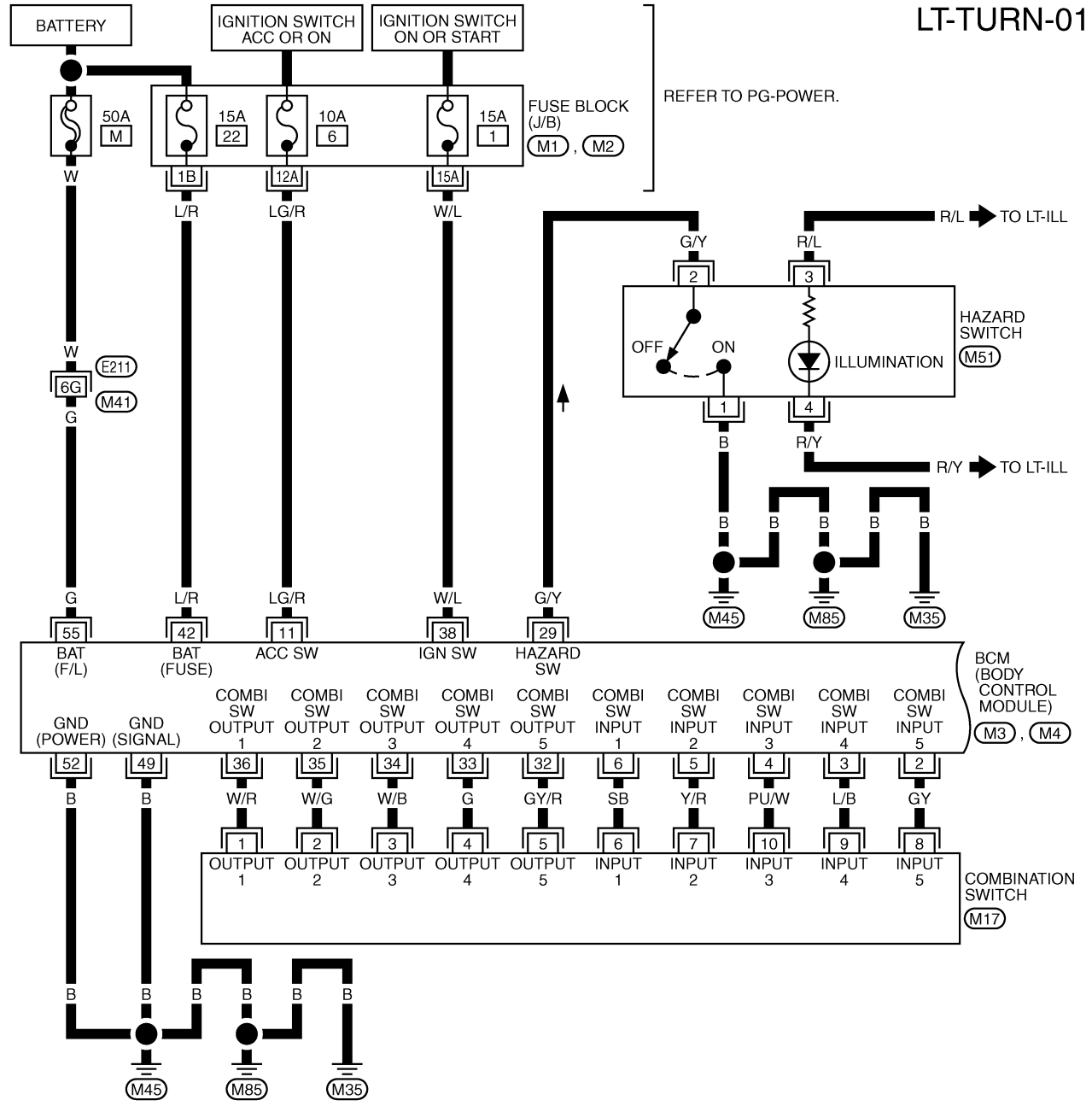
AKS007CZ



TKWM0621E

Wiring Diagram — TURN —

AKS007D0



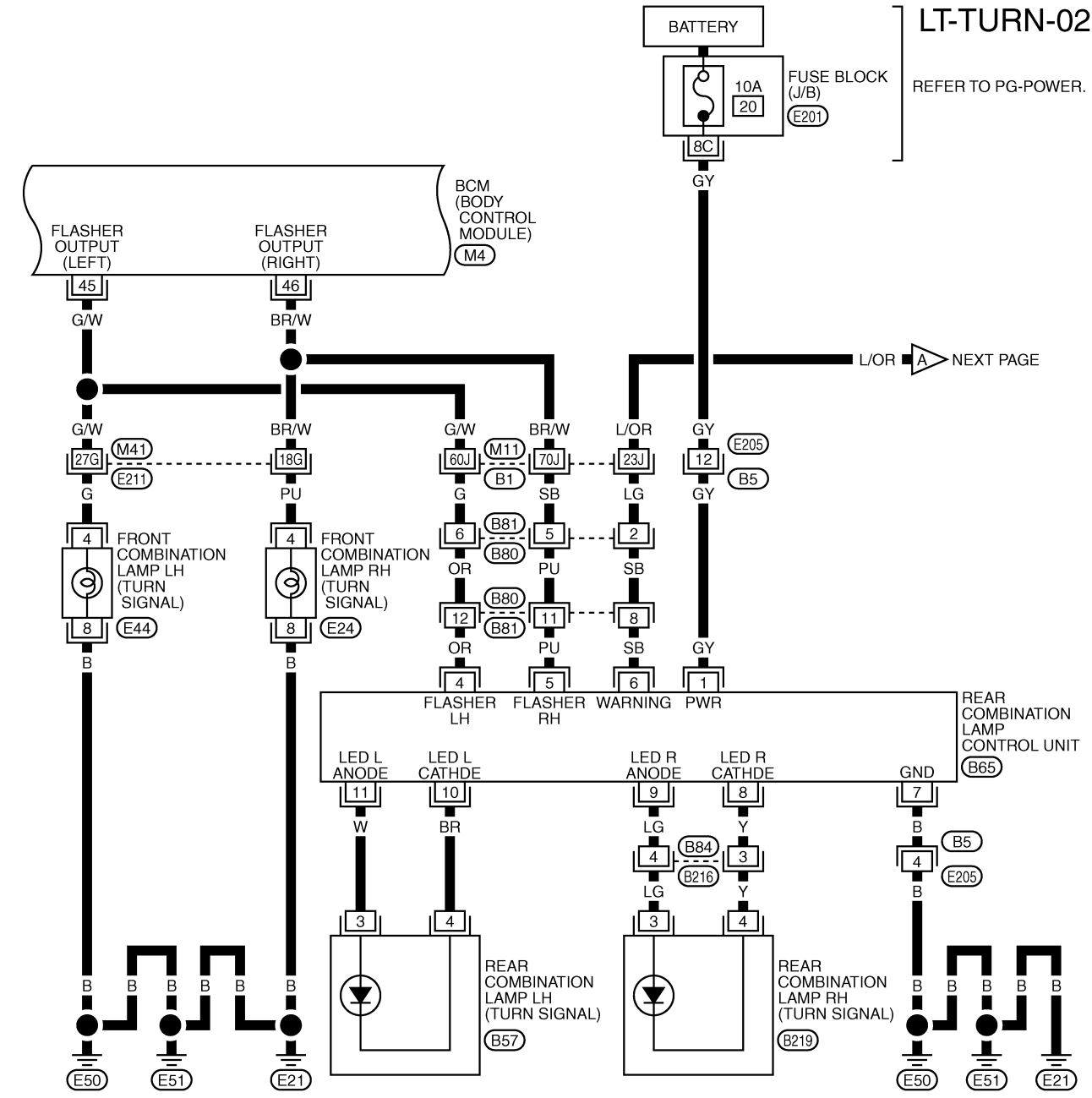
REFER TO THE FOLLOWING.

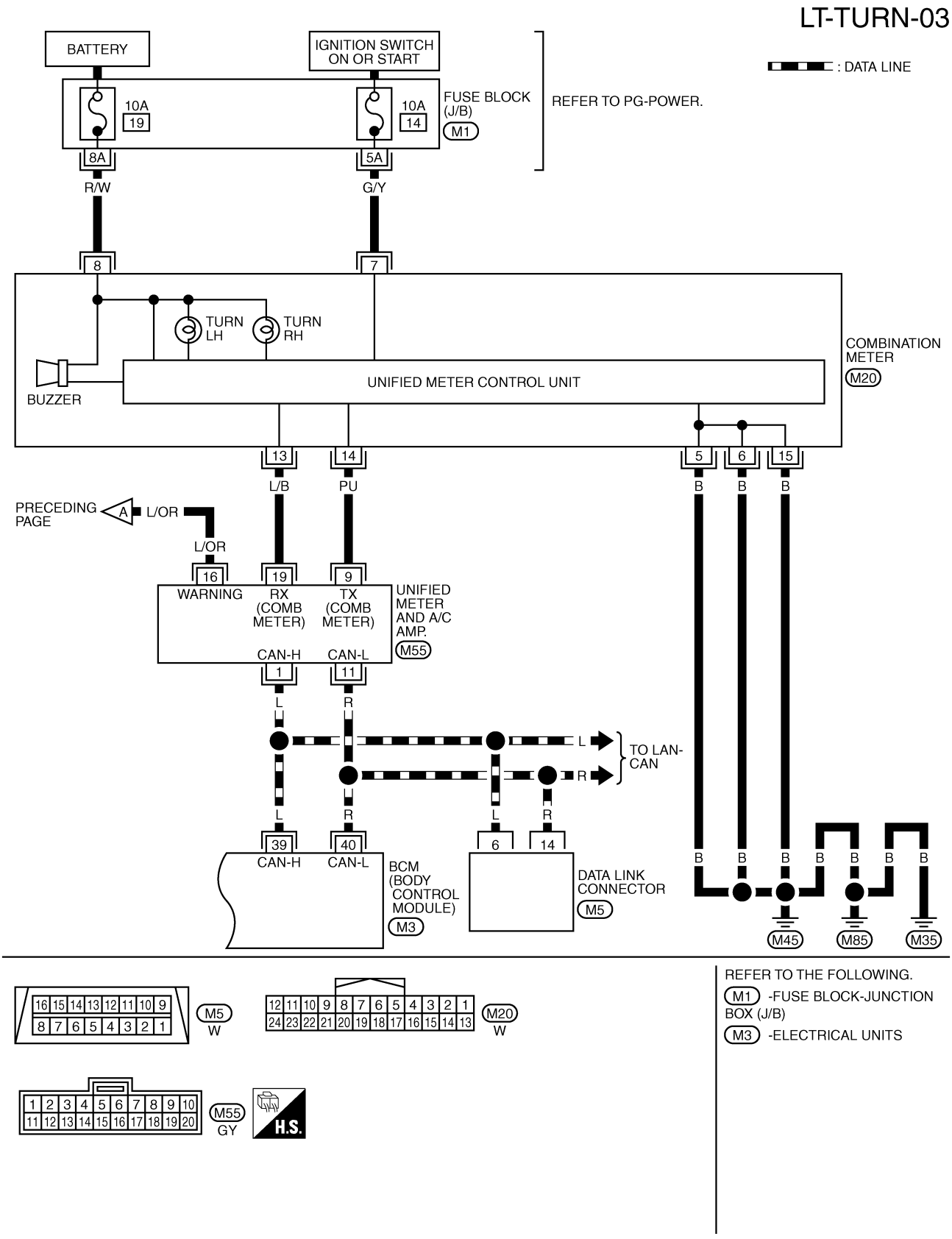
E211 -SUPER MULTIPLE JUNCTION (SMJ)

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

M3, M4 -ELECTRICAL UNITS

TKWM0820E

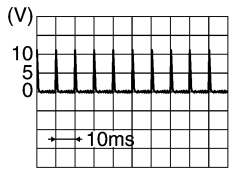
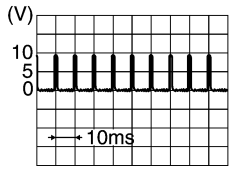
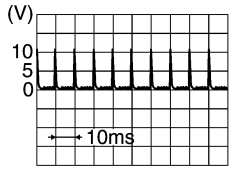
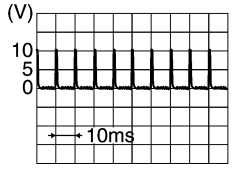
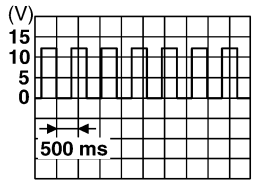
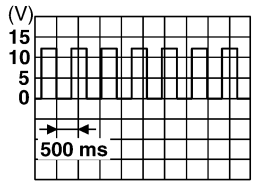

LT-TURN-02
BATTERY
10A
20
FUSE BLOCK (J/B)
E201
8C
REFER TO PG-POWER.
GY
BCM (BODY CONTROL MODULE)
M4
FLASHER OUTPUT (LEFT)
FLASHER OUTPUT (RIGHT)
45
46
G/W
BR/W
L/OR
A
NEXT PAGE
27G
M41
E211
18G
60J
M11
B1
70J
23J
12
E205
B5
G
PU
SB
LG
GY
4
FRONT COMBINATION LAMP LH (TURN SIGNAL)
8
E44
FRONT COMBINATION LAMP RH (TURN SIGNAL)
E24
6
B81
B80
5
2
OR
12
11
FLASHER LH
FLASHER RH
WARNING
PWR
REAR COMBINATION LAMP CONTROL UNIT
B65
LED L ANODE
LED L CATHDE
LED R ANODE
LED R CATHDE
GND
11
10
9
7
W
BR
LG
Y
B84
B216
3
REAR COMBINATION LAMP LH (TURN SIGNAL)
B57
REAR COMBINATION LAMP RH (TURN SIGNAL)
B219
E50
E51
E21
E24 , E44
B5
B57 , B219
B65
B80
B216
REFER TO THE FOLLOWING.
E211 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
E201 -FUSE BLOCK-JUNCTION BOX (J/B)
M4 -ELECTRICAL UNITS
TKWM1075E


LT-TURN-03
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
10A 19
10A 14
FUSE BLOCK (J/B) M1
REFER TO PG-POWER.
8A
5A
R/W
G/Y
8
7
TURN LH
TURN RH
BUZZER
UNIFIED METER CONTROL UNIT
COMBINATION METER M20
13
14
5
6
15
L/B
PU
B
PRECEDING PAGE
A
L/OR
16
19
9
WARNING
RX (COMB METER)
TX (COMB METER)
UNIFIED METER AND A/C AMP. M55
CAN-H
CAN-L
1
11
L
R
TO LAN-CAN
39
40
6
14
BCM (BODY CONTROL MODULE) M3
DATA LINK CONNECTOR M5
M45
M85
M35
M5 W
M20 W
M55 GY
H.S.
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		 PKIB3468E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 PKIB3469E
4	PU/W	Combination switch input 3				
5	Y/R	Combination switch input 2				
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		 PKIB3470E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4		 PKIB3471E
34	W/B	Combination switch output 3				
35	W/G	Combination switch output 2				
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	Flasher output (left)	ON	Combination switch	Turn left ON	 SKIA3009J
46	BR/W	Flasher output (right)	ON	Combination switch	Turn right ON	 SKIA3009J

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
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-91, "System Description" .
3. Perform preliminary check. Refer to LT-100, "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 for blown fuses.

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-96, "Wiring Diagram — TURN —" .

OK or NG

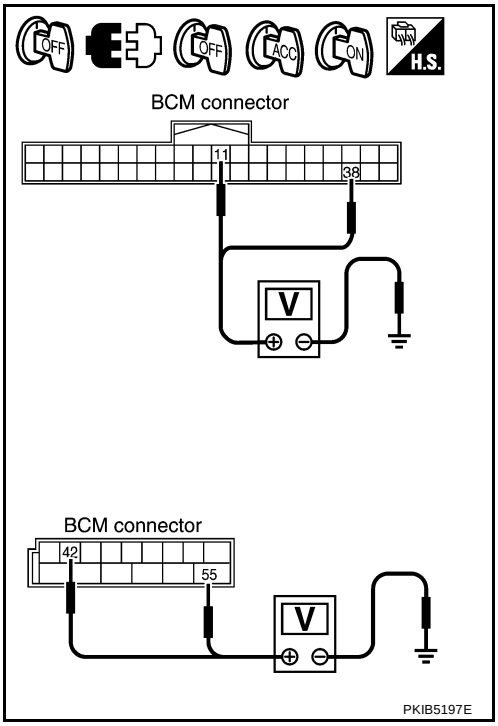
OK >> GO TO 2.

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.

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



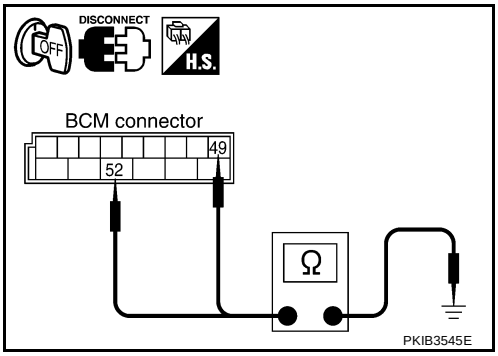
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-II Functions (BCM)

AKS007D4

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

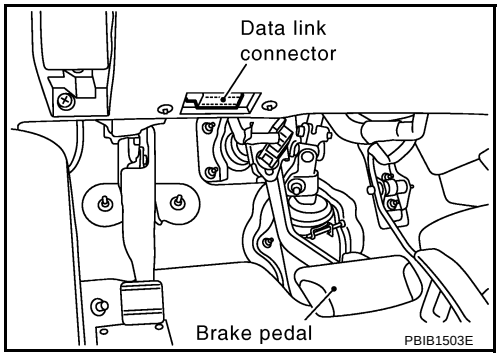
BCM diagnosis part	Diagnosis mode	Description
FLASHER	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

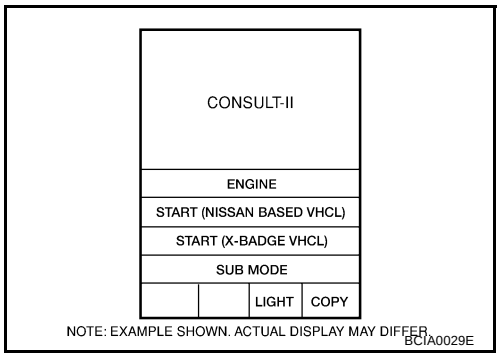
CAUTION:

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.

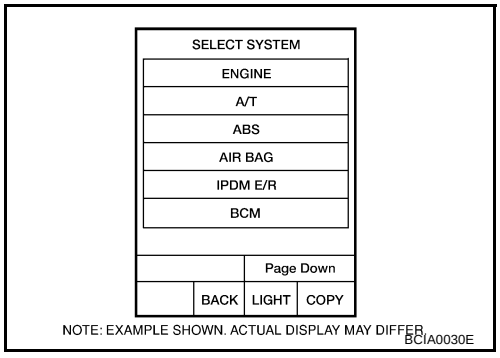
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



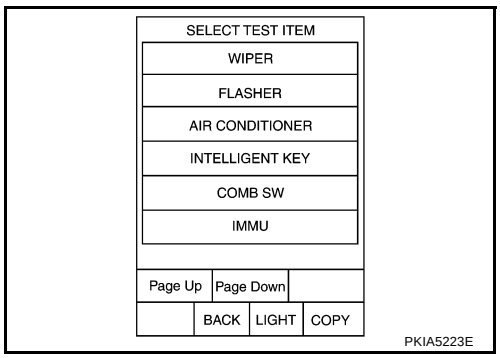
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-39, "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 “SELET MONITOR ITEM” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

4. When “SELECTION FROM MENU” is selected, touch items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
5. Touch “START”.
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 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	“ON/OFF”	Displays “Stop lamp switch ON (ON)/Stop lamp switch OFF (OFF)” status, determined from stop lamp switch signal.

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	Turn signal lamp (right or left) can be operated by any ON-OFF operations.

Turn Signal Lamp Does Not Operate

AKS007D5

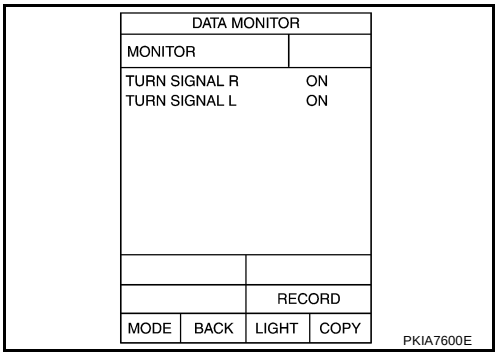
1. CHECK COMBINATION SWITCH INPUT SIGNAL

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-115, "Combination Switch Inspection" .

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (lighting switch). Refer to LT-115, "Combination Switch Inspection" .

2. ACTIVE TEST

With CONSULT-II

1. Select “FLASHER” during active test. Refer to LT-103, "ACTIVE TEST" .
2. Make sure “FLASHER RIGHT” and “FLASHER LEFT” operate.

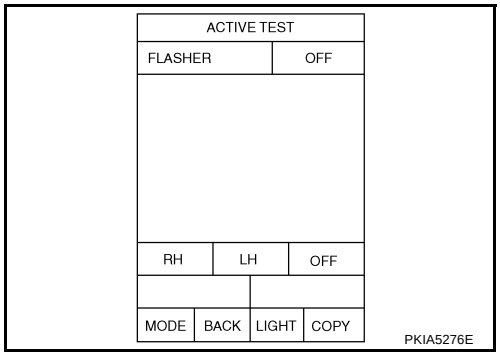
Without CONSULT-II

GO TO 3.

OK or NG

OK >> Replace BCM. Refer to BCS-16, "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.

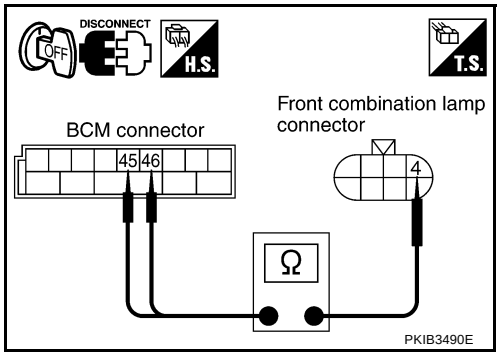
4. Check continuity between BCM harness connector M4 terminal 46 (BR/W) and front combination lamp RH harness connector E24 terminal 4 (PU).

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.

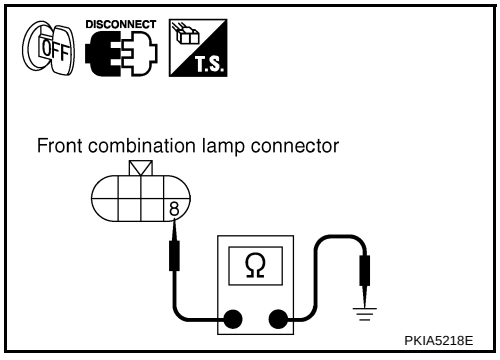
2. Check continuity between front combination lamp RH harness connector E24 terminal 8 (B) and ground.

8 (B) – Ground : Continuity should exist.

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



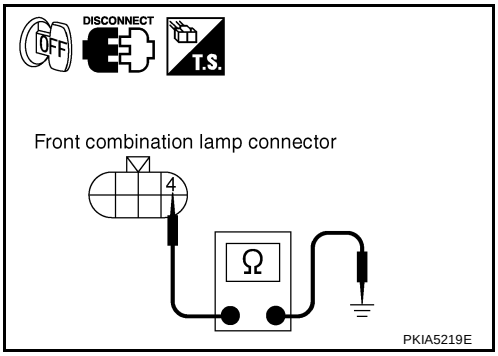
5. CHECK TURN SIGNAL LAMPS SHORT CIRCUIT

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 standard of each turn signal lamp is correct.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-16, "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 is illuminated.

OK or NG

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

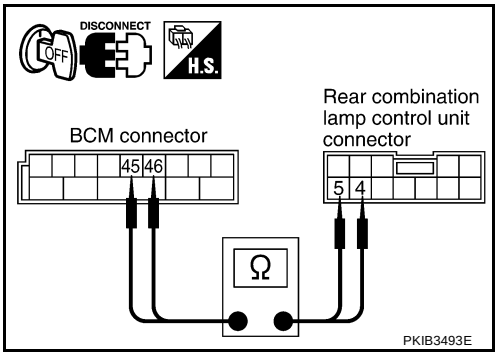
2. CHECK TURN SIGNAL LAMPS CIRCUIT

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.



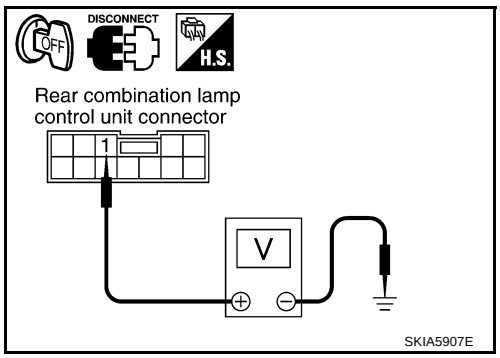
OK or NG

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.



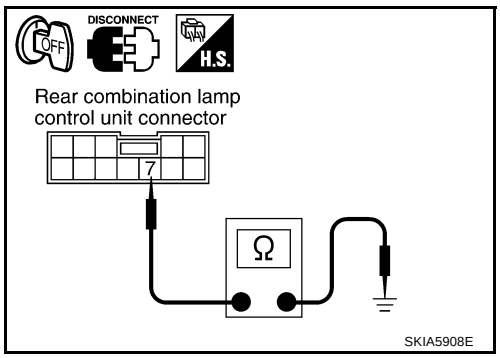
OK or NG

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.

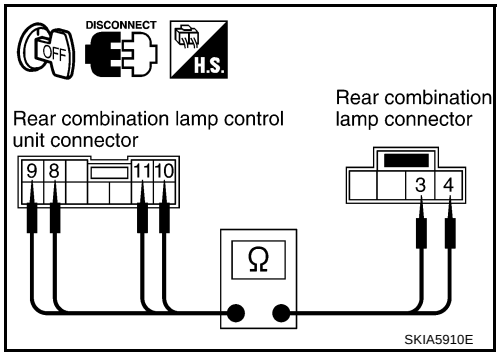
5. CHECK TURN SIGNAL LAMPS CIRCUIT

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.

Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate

AKS007D6

1. CHECK BULB

Make sure bulb standard of each turn signal lamp is correct.

OK or NG

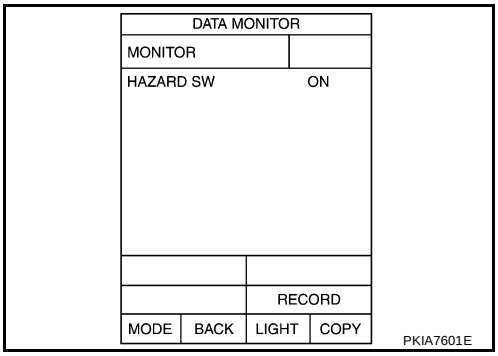
OK >> GO TO 2.
NG >> Replace bulb.

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.

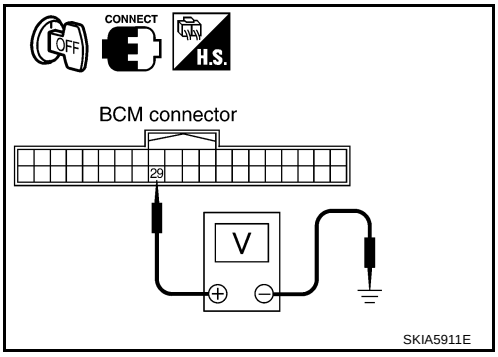
When hazard switch is ON position : HAZARD SW ON



Without CONSULT-II

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

Terminal			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-16, "Removal and Installation of BCM" .
NG >> GO TO 3.

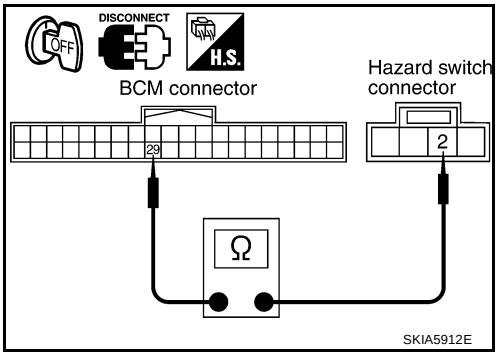
3. CHECK HAZARD SWITCH CIRCUIT

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

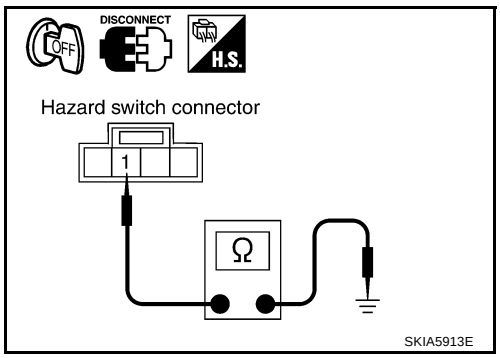
OK >> GO TO 4.
NG >> Repair harness or connector.



4. CHECK GROUND

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

1 (B) – Ground : Continuity should exist.



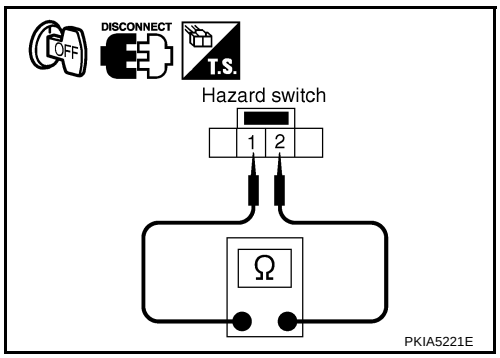
OK or NG

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

5. CHECK HAZARD SWITCH

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-16, "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-36, "Bulb Replacement" in "HEADLAMP -XENON TYPE-".

Bulb Replacement (Rear Turn Signal Lamp)

AKS007D9

Refer to LT-149, "Bulb Replacement" in "REAR COMBINATION LAMP".

Removal and Installation of Front Turn Signal Lamp

AKS007DA

Refer to LT-37, "Removal and Installation" in "HEADLAMP -XENON TYPE-".

Removal and Installation of Rear Turn Signal Lamp

AKS007DB

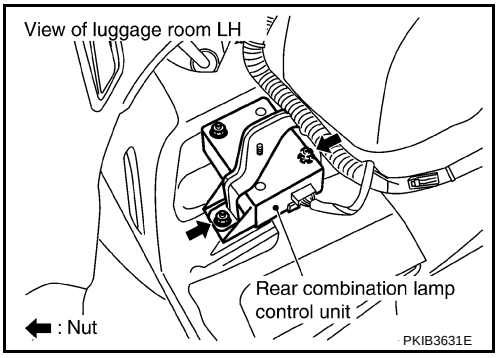
Refer to LT-149, "Removal and Installation" in "REAR COMBINATION LAMP".

Removal and Installation of Rear Combination Lamp Control Unit

AKS007NX

REMOVAL

1. Remove luggage side finisher assembly (left). Refer to EI-43, "Removal and Installation" in “EI” section.
2. Remove nuts (2), and remove rear combination lamp control unit.



INSTALLATION

Installation is the reverse order of removal.

LIGHTING AND TURN SIGNAL SWITCH

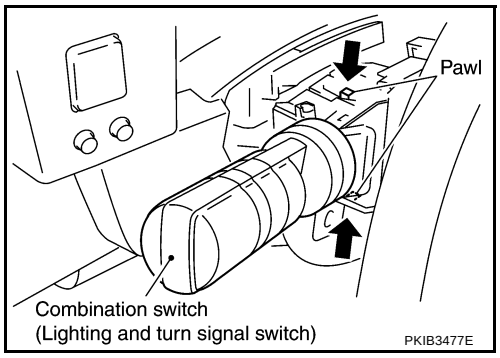
PFP:25540

Removal and Installation

AKS007DC

REMOVAL

1. Remove steering column cover. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" 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

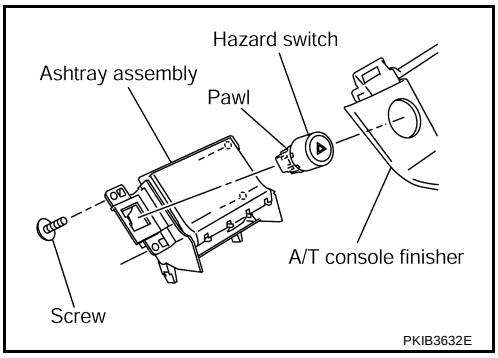
PFP:25290

Removal and Installation

AKS007DD

REMOVAL

1. Remove A/T console finisher. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" 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 hazard switch.



INSTALLATION

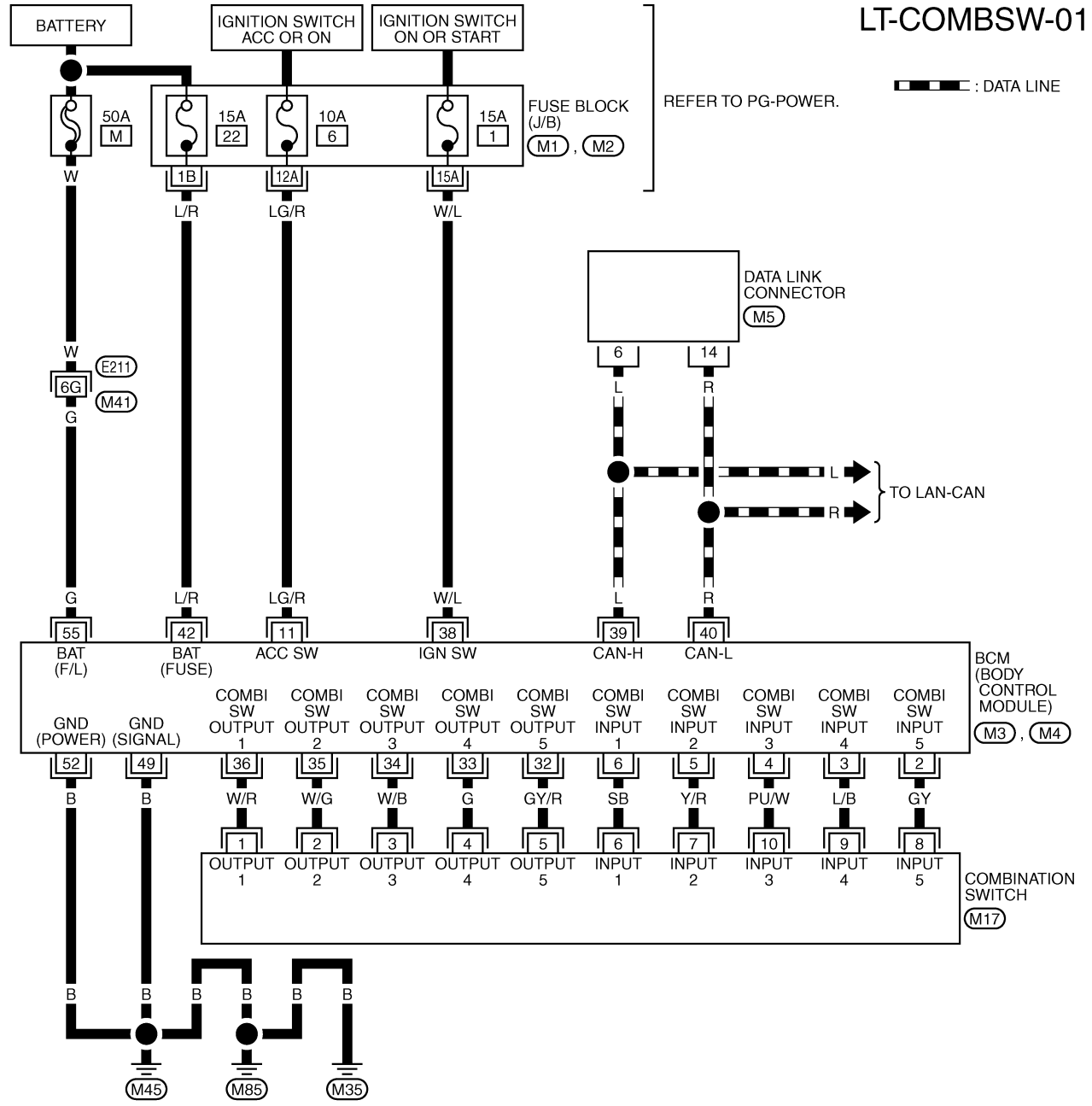
Installation is the reverse order of removal.

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 Functions (BCM)

AKS007G6

- CONSULT-II can display each diagnostic item using the diagnostic test modes shown following.

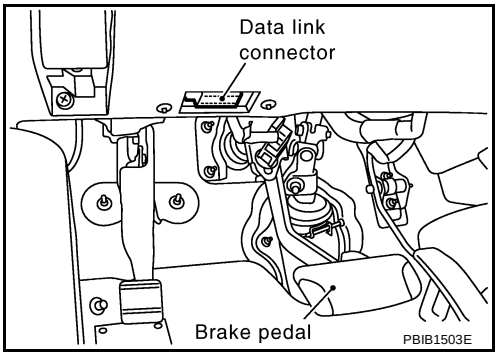
BCM diagnosis part	Diagnosis mode	Description
COMB SW	DATA MONITOR	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

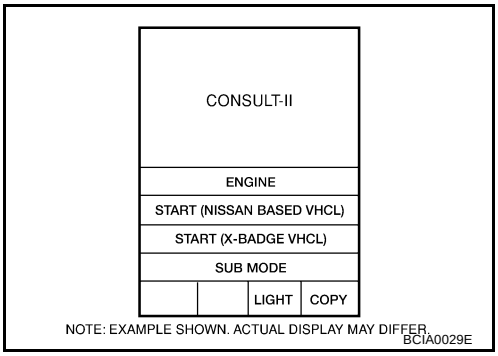
CAUTION:

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.

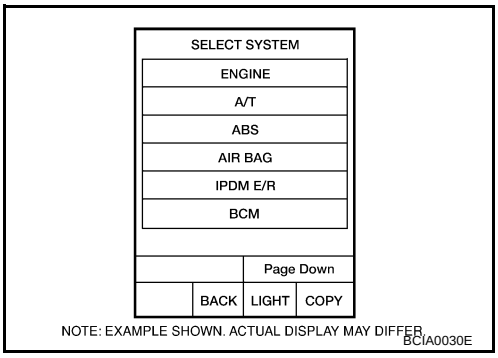
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



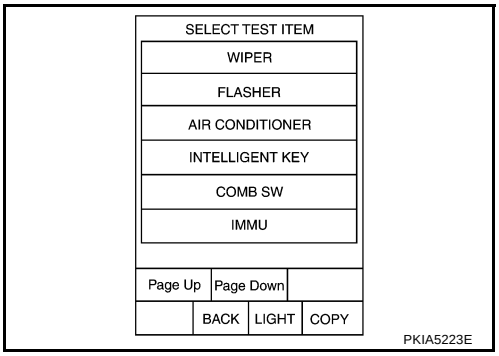
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-39, "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 “SELECT MONITOR ITEM” screen.

ALL SIGNALS	Monitors all the signals.
SELECTION FROM MENU	Selects items and monitors them.

4. When “SELECTION FROM MENU” is selected, touch items to be monitored. When “ALL SIGNALS” is selected, all the signals will be monitored.
5. Touch “START”.
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
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 status (headlamp switch 2: ON/Others: OFF) of headlamp switch 1 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 1ST	“ON/OFF”	Displays status (lighting switch 1ST or 2ND 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.

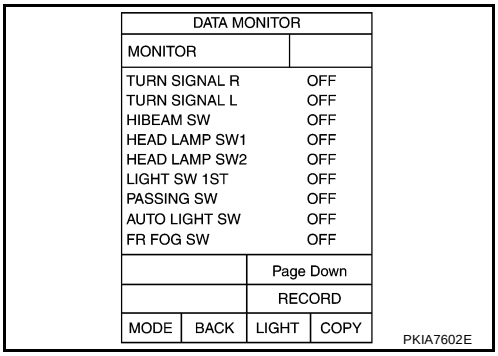
2. SYSTEM CHECK

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 the 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, and confirm that other switches in malfunctioning system operate normally.
Example: When the 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.

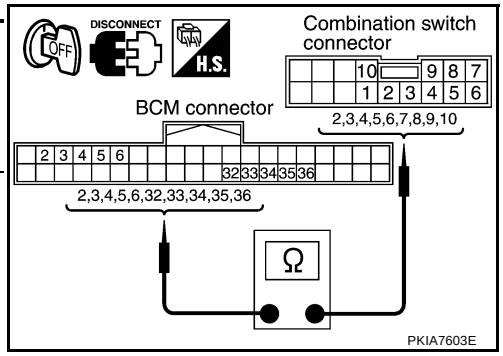
Check results

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

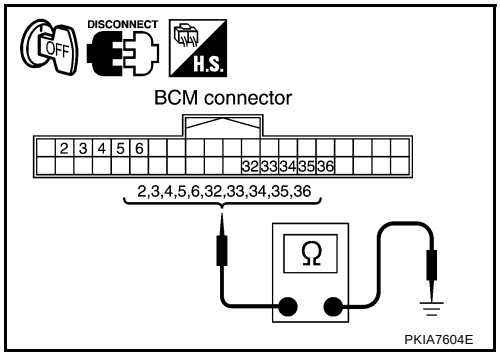
1. Turn ignition switch OFF.
2. Disconnect BCM and combination switch connectors.
3. Check continuity between BCM harness connector of the suspect system and the corresponding combination switch connector terminals.

Suspect system	Terminal					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	Terminal				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)		



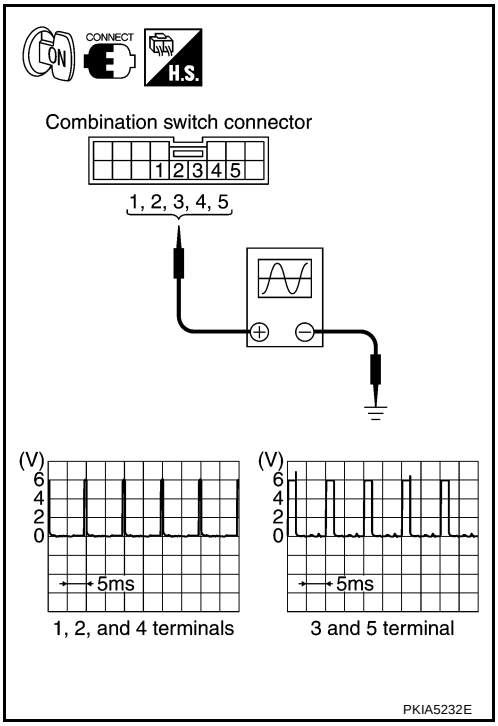
OK or NG

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 ON.
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	Terminal		
	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. Refer to BCS-16, "Removal and Installation of 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

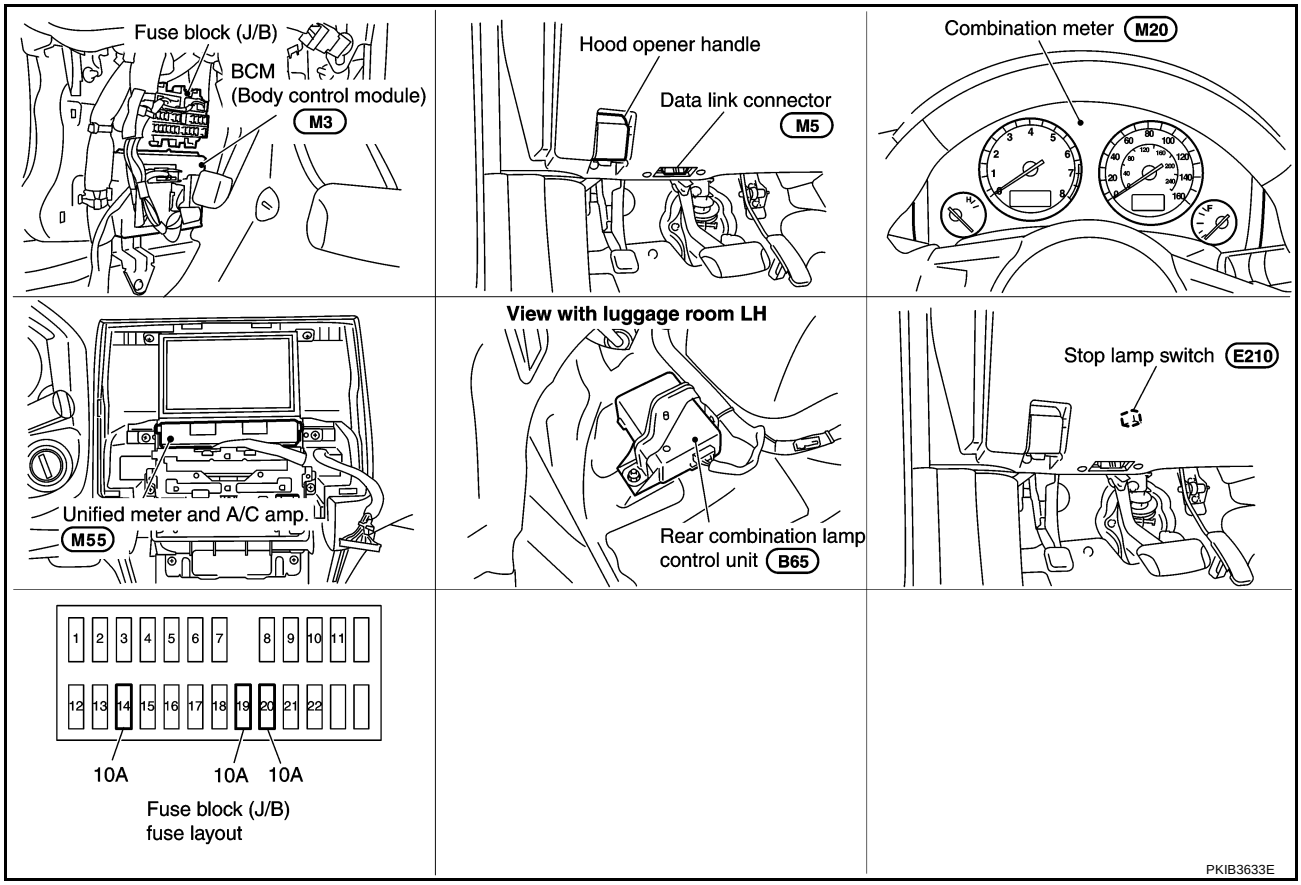
For details, refer to LT-110, "LIGHTING AND TURN SIGNAL SWITCH" .

STOP LAMP

PFP:26550

Component Parts and Harness Connector Location

AKS007IG



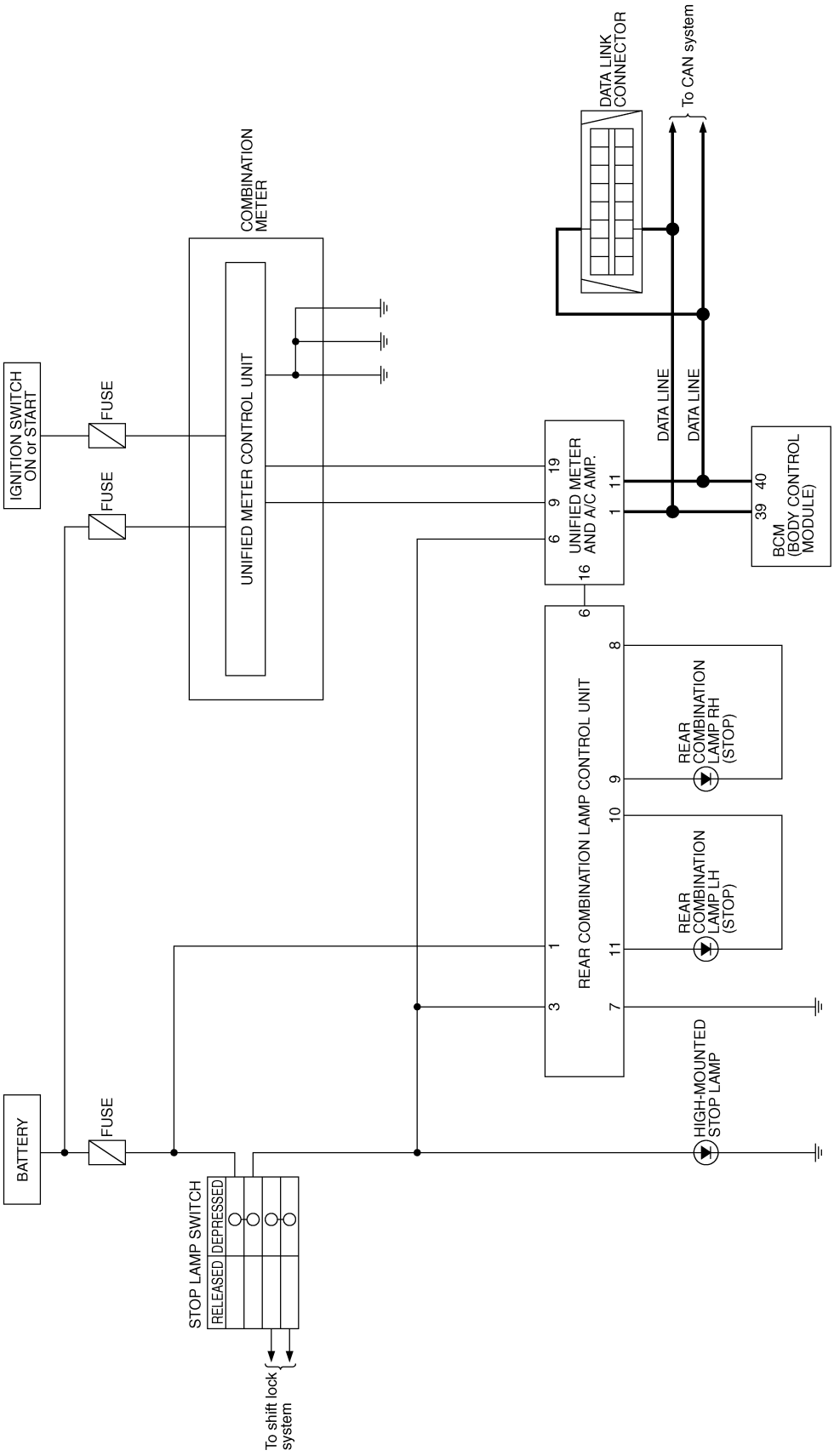
System Description

AKS007IH

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

Schematic

AKS007II

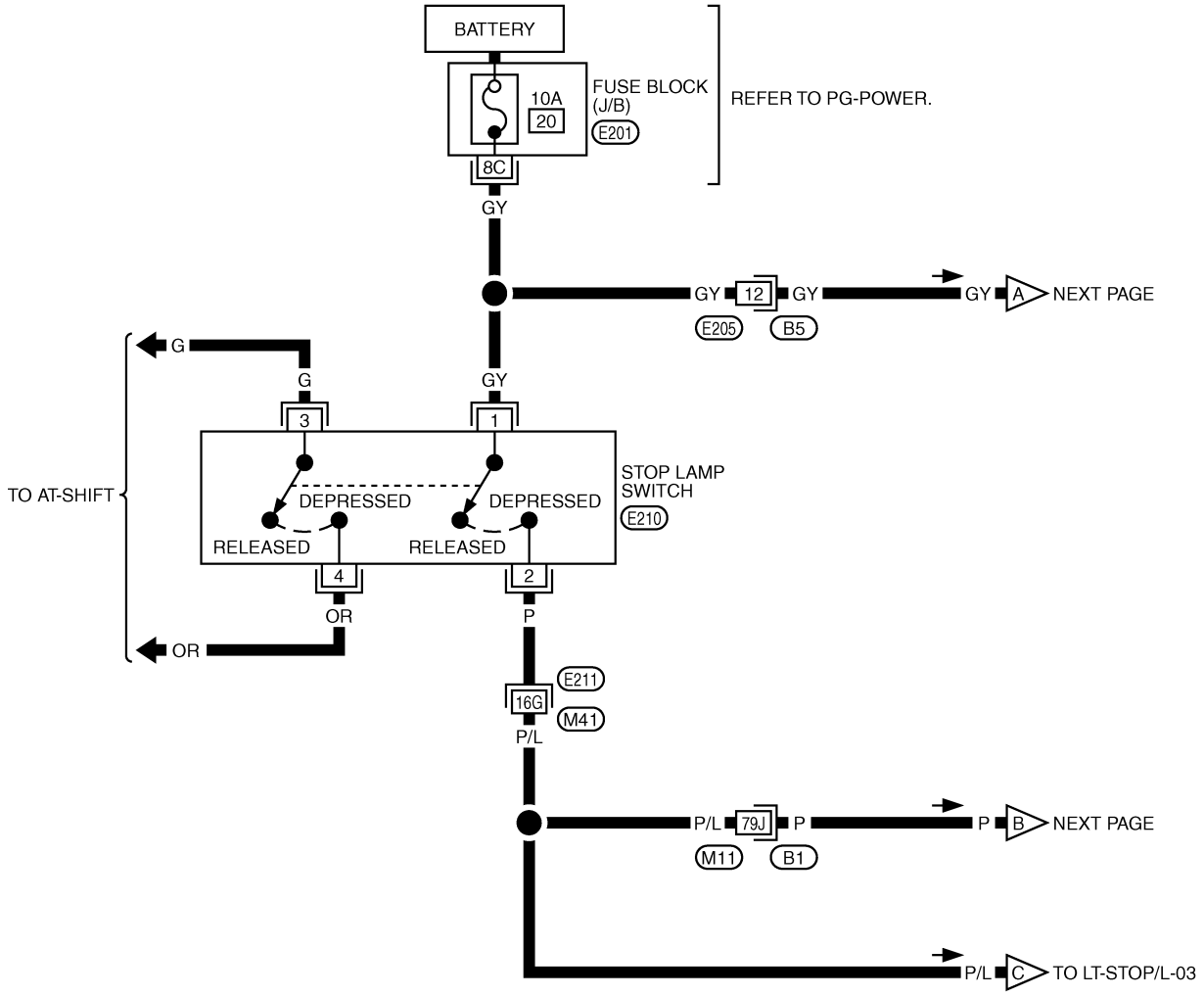


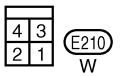
TKWM0625E

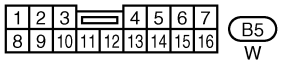
Wiring Diagram — STOP/L —

AKS007DL

LT-STOP/L-01







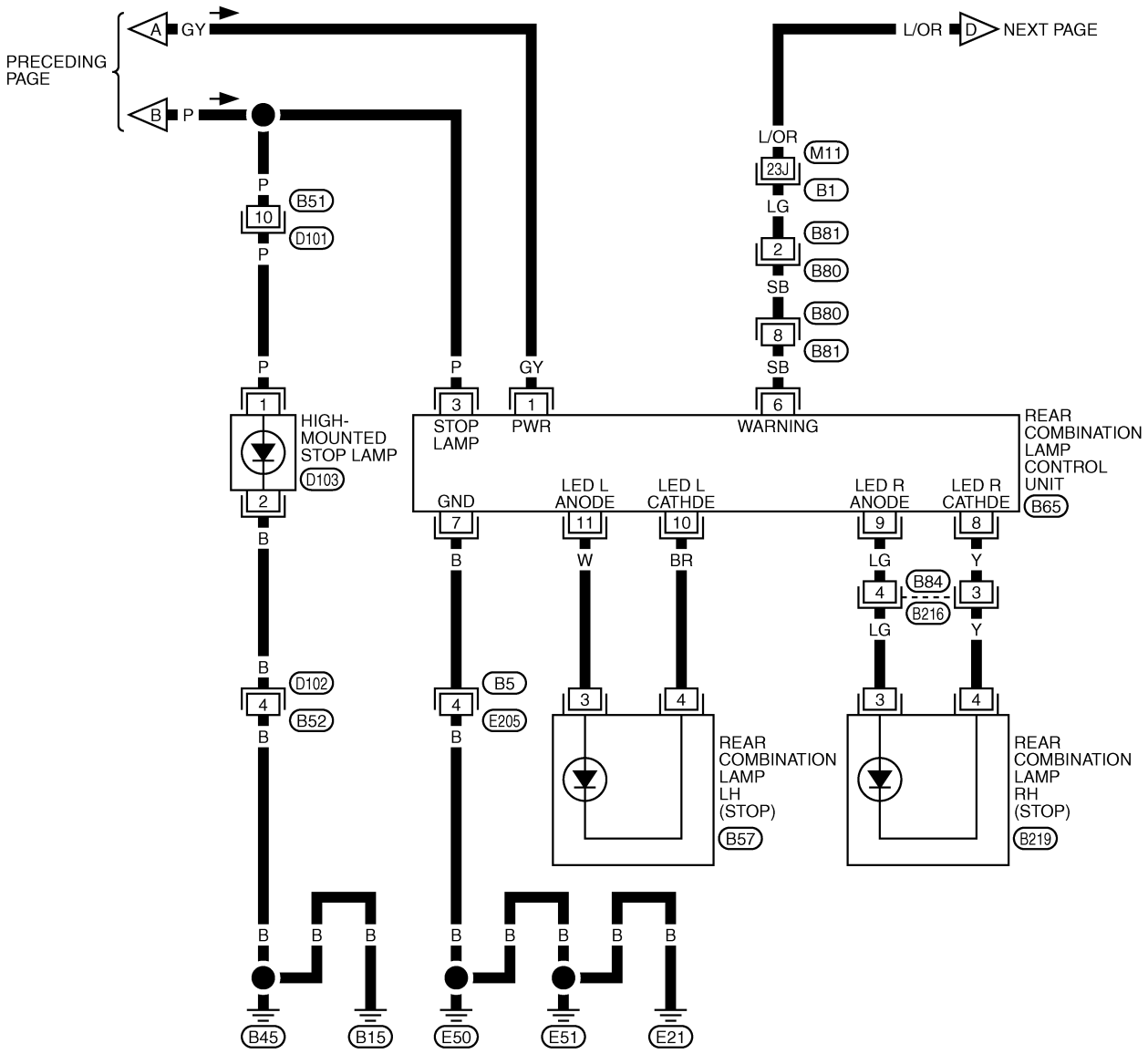
REFER TO THE FOLLOWING.

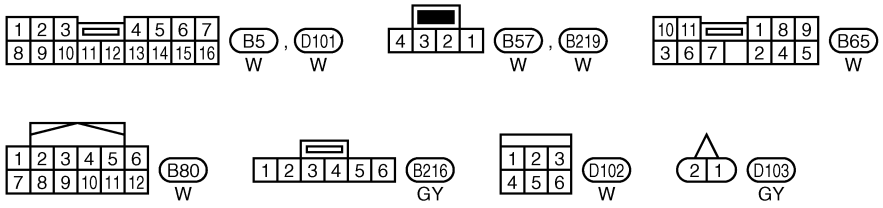
E211 , B1 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWM1076E

LT-STOP/L-02



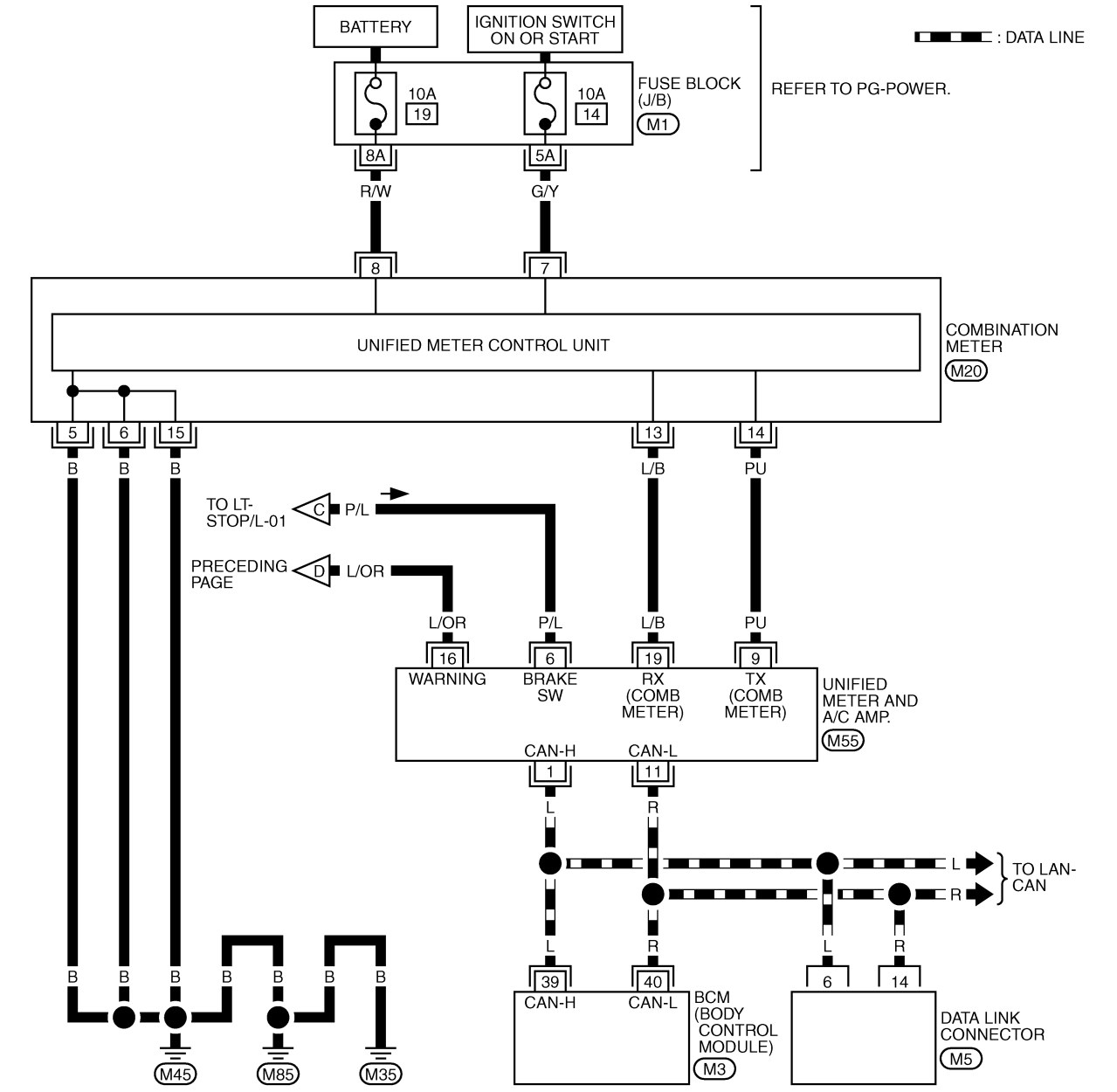


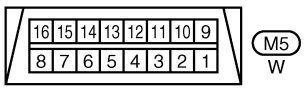
REFER TO THE FOLLOWING.

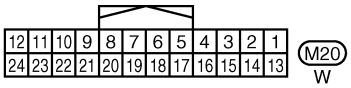
B1 -SUPER MULTIPLE JUNCTION (SMJ)

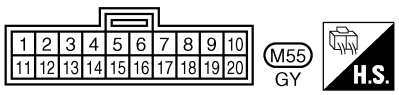
TKWH0227E

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 LAMP AND TURN SIGNAL LAMP

Make sure tail lamps and turn signal lamps is illuminated.

OK or NG

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

2. CHECK FUSE

Check fuse No.20 is blow out.

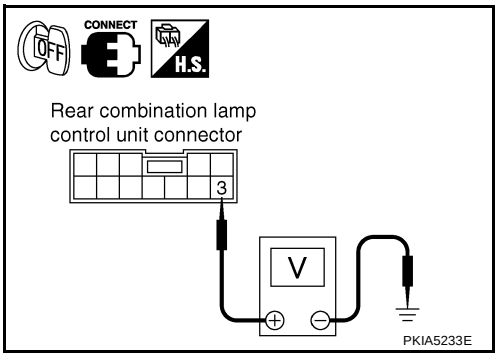
OK or NG

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

3. CHECK INPUT SIGNAL

1. Turn ignition switch OFF.
2. Check voltage between rear combination lamp control unit harness connector and ground.

Terminal (+)		(-)	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.

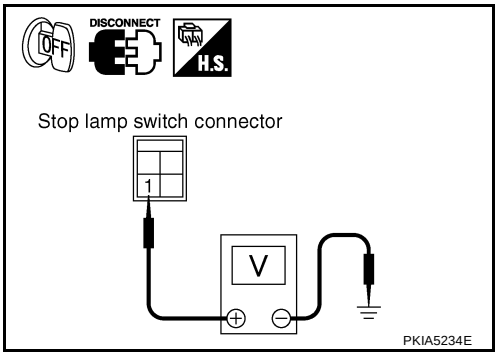
4. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

1 (GY) – Ground : Battery voltage.

OK or NG

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



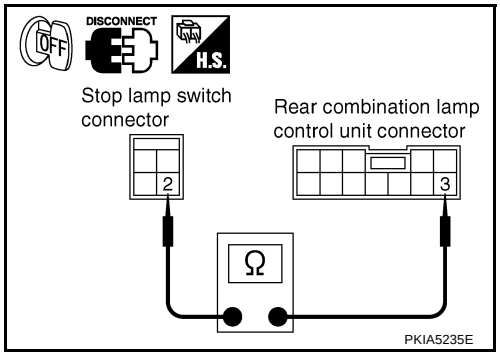
5. CHECK STOP LAMP SWITCH CIRCUIT

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.



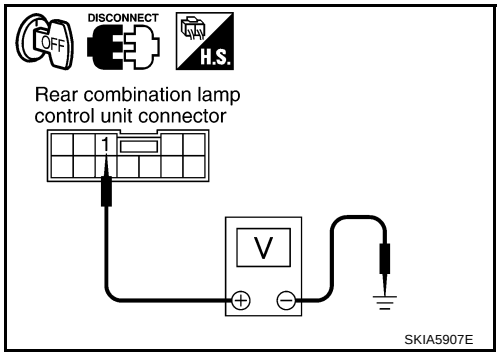
6. CHECK POWER SUPPLY CIRCUIT

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.

OK or NG

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



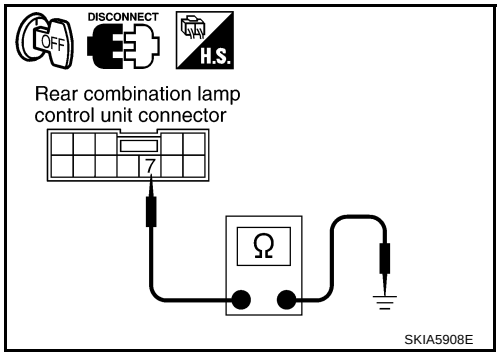
7. CHECK GROUND CIRCUIT

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.



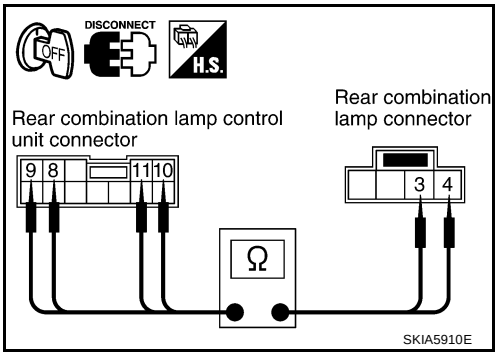
8. CHECK STOP LAMPS CIRCUIT

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 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.

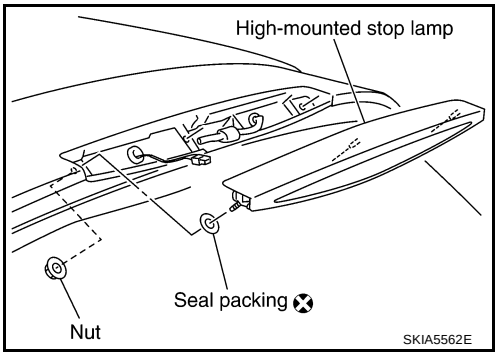
High-Mounted Stop Lamp

AKS007DM

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove cap from back door finisher and remove nuts. Refer to EI-45, "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. Installation is the reverse order of removal.

High-mounted stop lamp : LED



CAUTION:
Seal packing cannot be reused.

Stop Lamp

AKS007DN

BULB REPLACEMENT

Refer to LT-149, "Bulb Replacement" in “REAR COMBINATION LAMP”.

REMOVAL AND INSTALLATION

Refer to LT-149, "Removal and Installation" in “REAR COMBINATION LAMP”.

Rear Combination Lamp Control Unit

AKS007NY

REMOVAL AND INSTALLATION

Refer to LT-109, "Removal and Installation of Rear Combination Lamp Control Unit" in “TURN SIGNAL AND HAZARD WARNING LAMPS”.

STEP LAMP

PFP:26420

Front Door Step Lamp

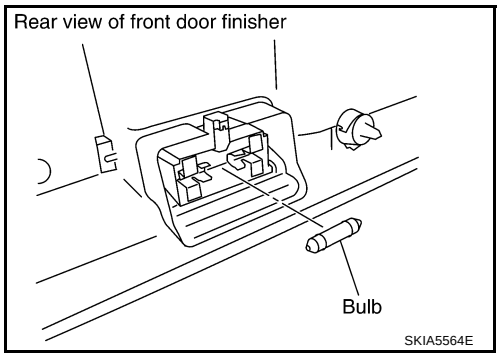
AKS007DO

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove door finisher. Refer to EI-34, "Removal and Installation" in “EI” section.
2. Insert a screwdriver in lens and remove lens.
3. Remove bulb.

Step lamp : 12V - 5W

4. Installation is the reverse order of removal.



Rear Door Step Lamp

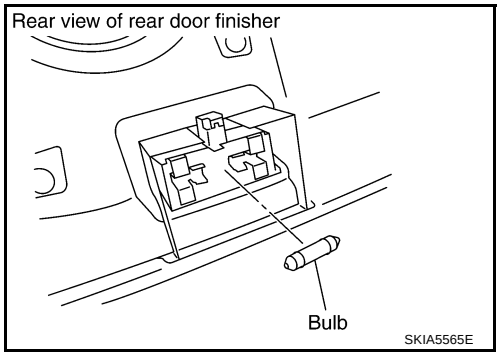
AKS007DP

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove door finisher. Refer to EI-34, "Removal and Installation" in “EI” section.
2. Insert a screwdriver in lens and remove lens.
3. Remove bulb.

Step lamp : 12V - 5W

4. Installation is the reverse order of removal.

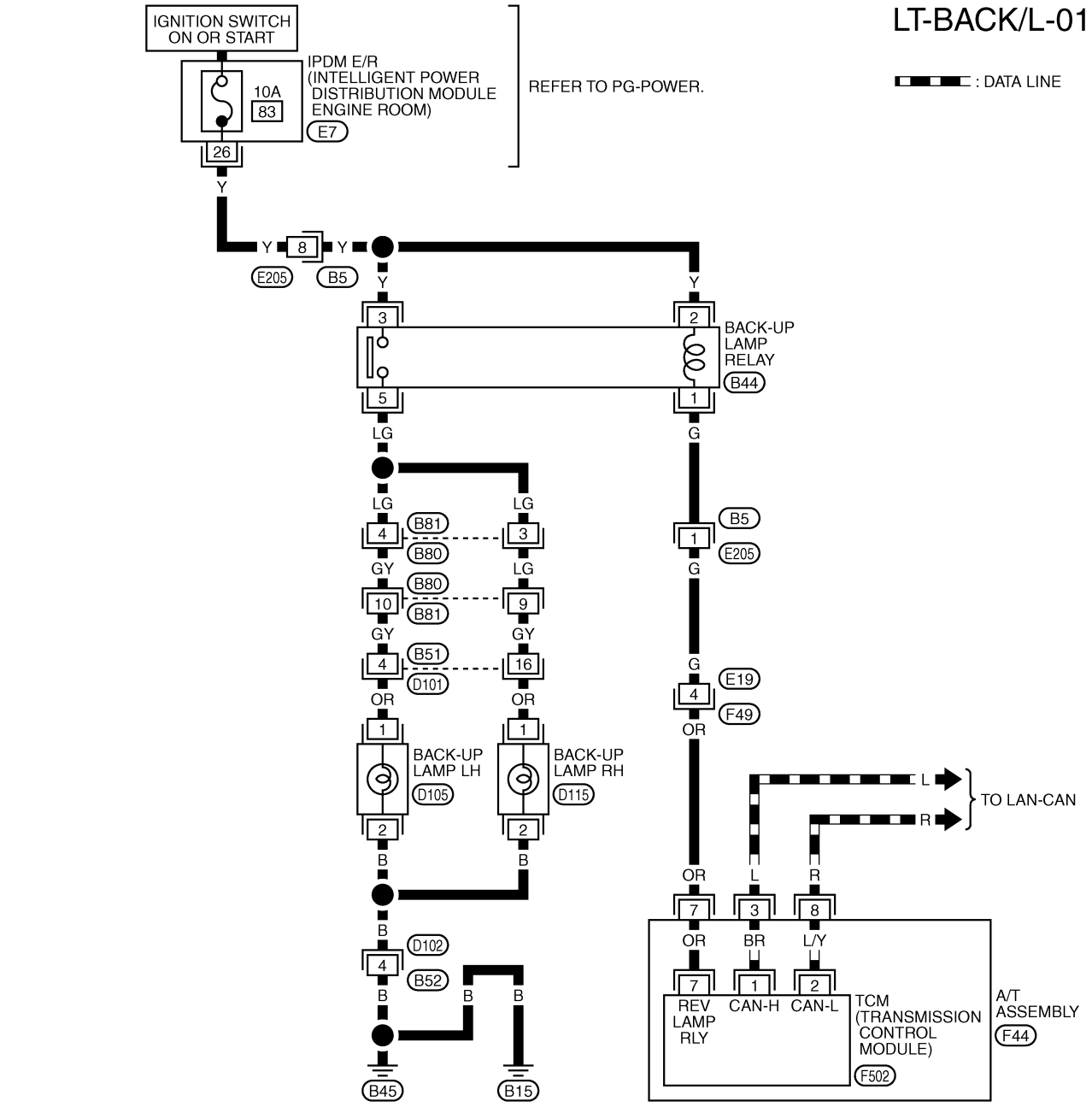


BACK-UP LAMP

PFP:26550

Wiring Diagram — BACK/L —

AKS007DQ



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

TKWM1370E

Bulb Replacement

AKS007DR

Refer to LT-149, "Bulb Replacement" in “REAR COMBINATION LAMP”.

Removal and Installation

AKS007DS

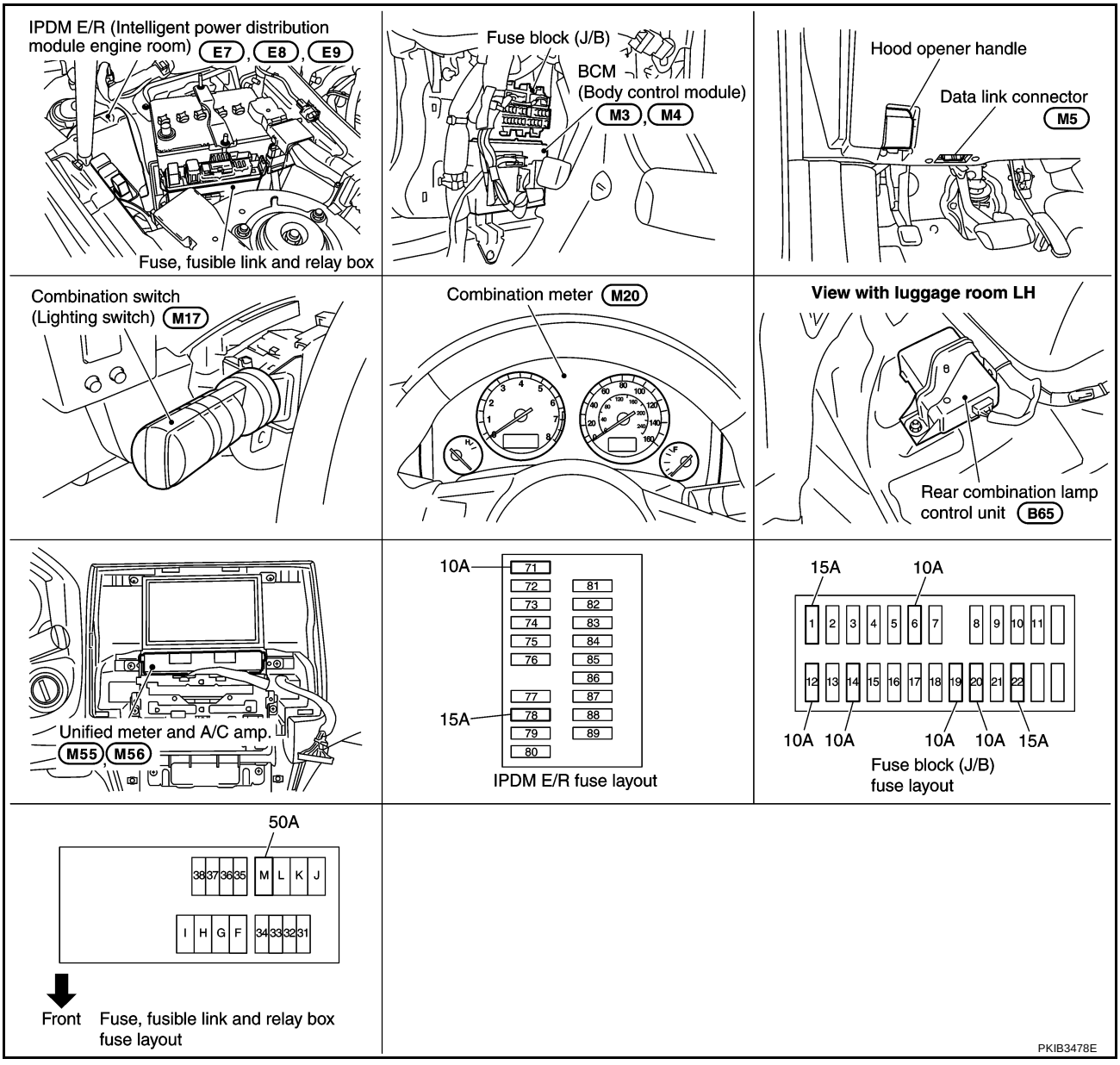
Refer to LT-149, "Removal and Installation" in “REAR COMBINATION LAMP”.

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

Component Parts and Harness Connector Location

AKS007O7



System Description

AKS007DT

Control of the parking, license plate, side marker 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. CPU (central processing unit) located in the IPDM E/R 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 control unit is controlled, and a tail lamp (LED) is made to turn ON.

OUT LINE

Power is supplied at all times

- through 10A fuse (No. 71, located in IPDM E/R)
- to tail lamp relay, located in IPDM E/R, and
- to CPU located in IPDM E/R,

- through 15A fuse (No. 78, located in IPDM E/R)
- to CPU located in IPDM E/R.

Power is also supplied at all times

- through 50A fusible link (letter M, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM 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, and
- to unified meter and A/C amp. terminal 21.

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

- through ignition relay, located in IPDM E/R, from battery direct,
- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 38,
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 7,
- through 10A fuse [No. 12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22.

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

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

Ground is supplied

- to BCM terminals 49 and 52
- through grounds M35, M45 and M85,
- to IPDM E/R terminals 38 and 60
- through grounds E21, E50 and E51,
- 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,
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M35, M45 and M85.

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 located 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, and
- 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.

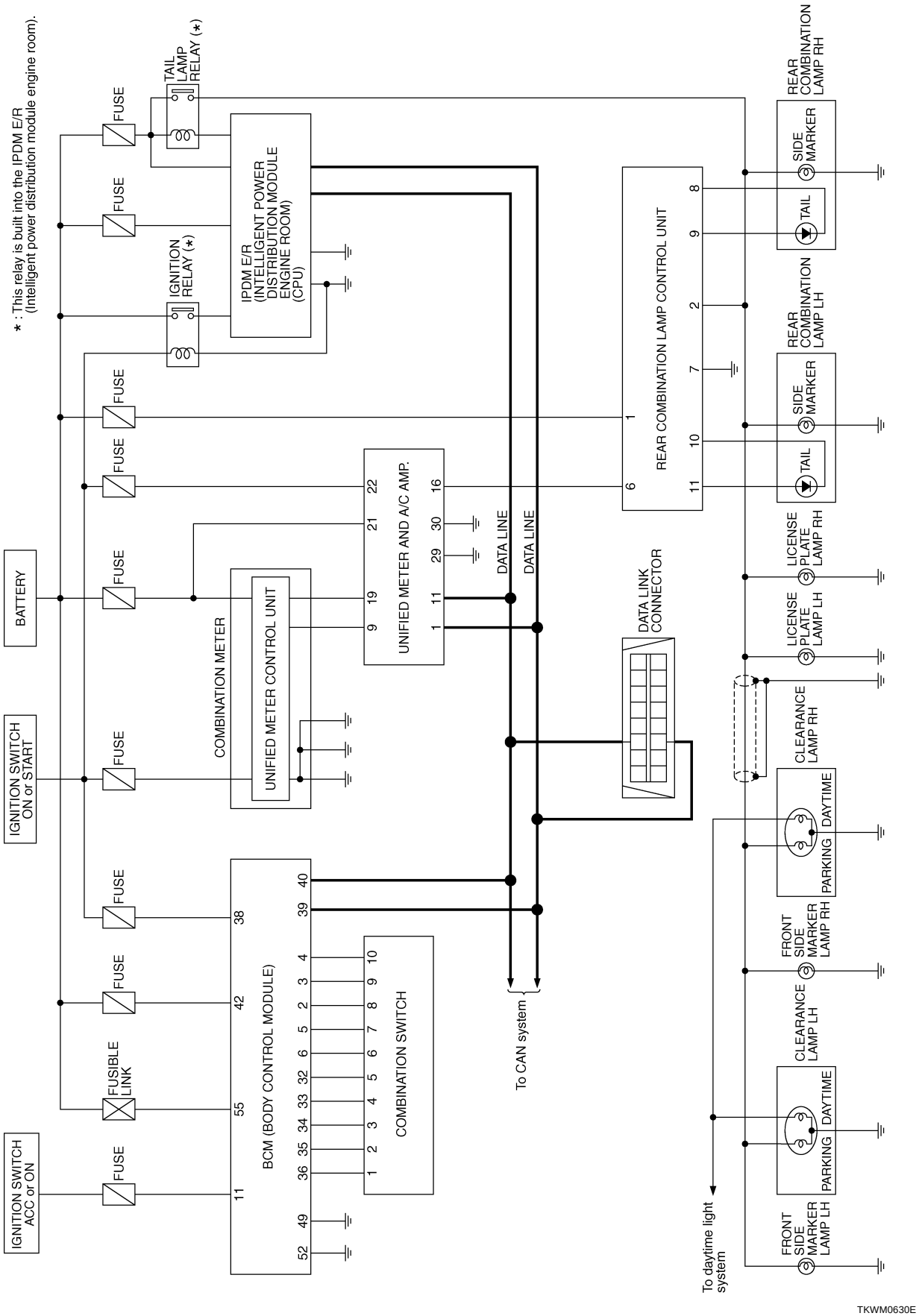
CAN Communication Unit

AKS0080X

Refer to LAN-30, "CAN Communication Unit" .

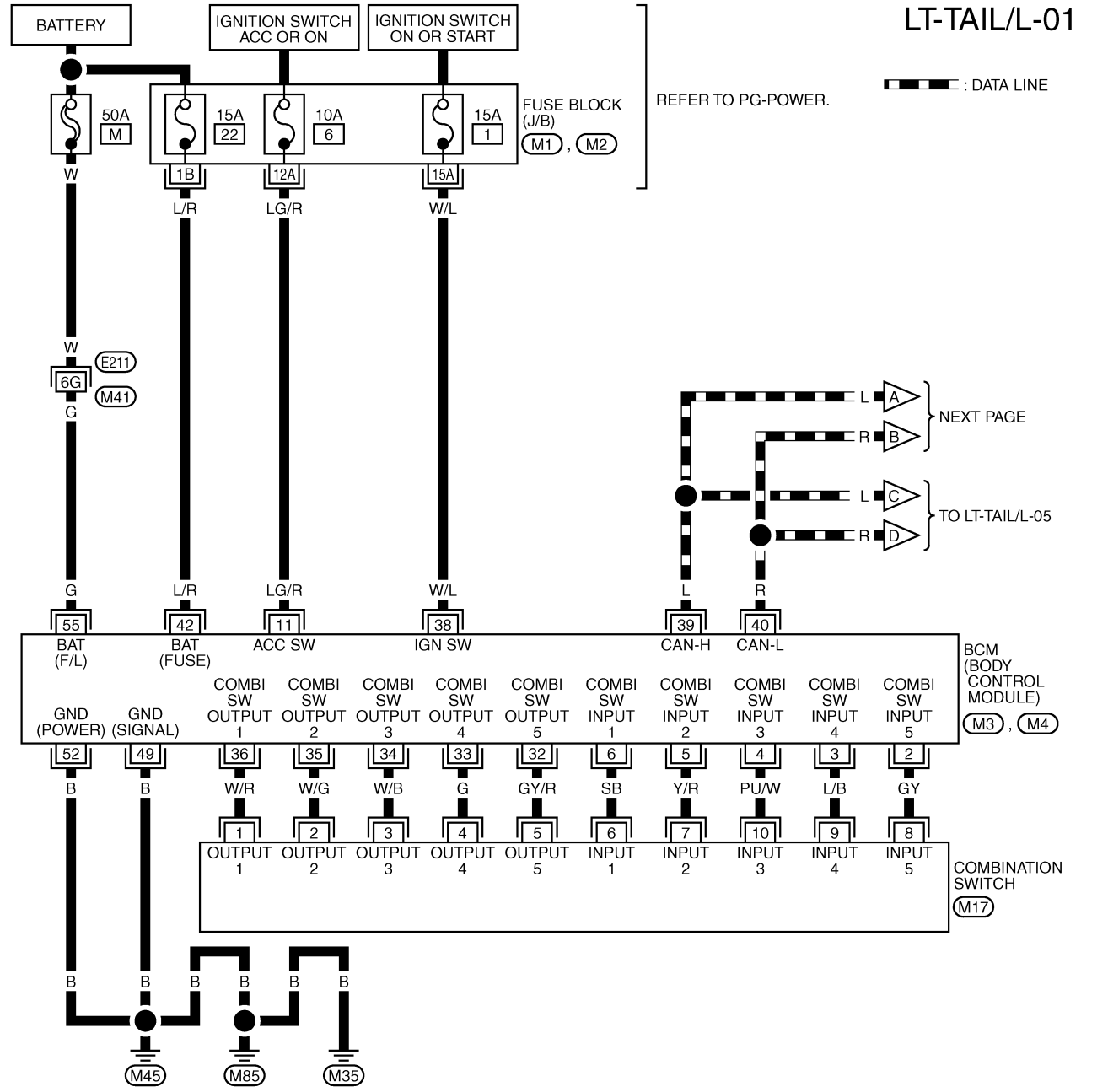
Schematic

AKS007DW



Wiring Diagram — TAIL/L —

AKS007DX



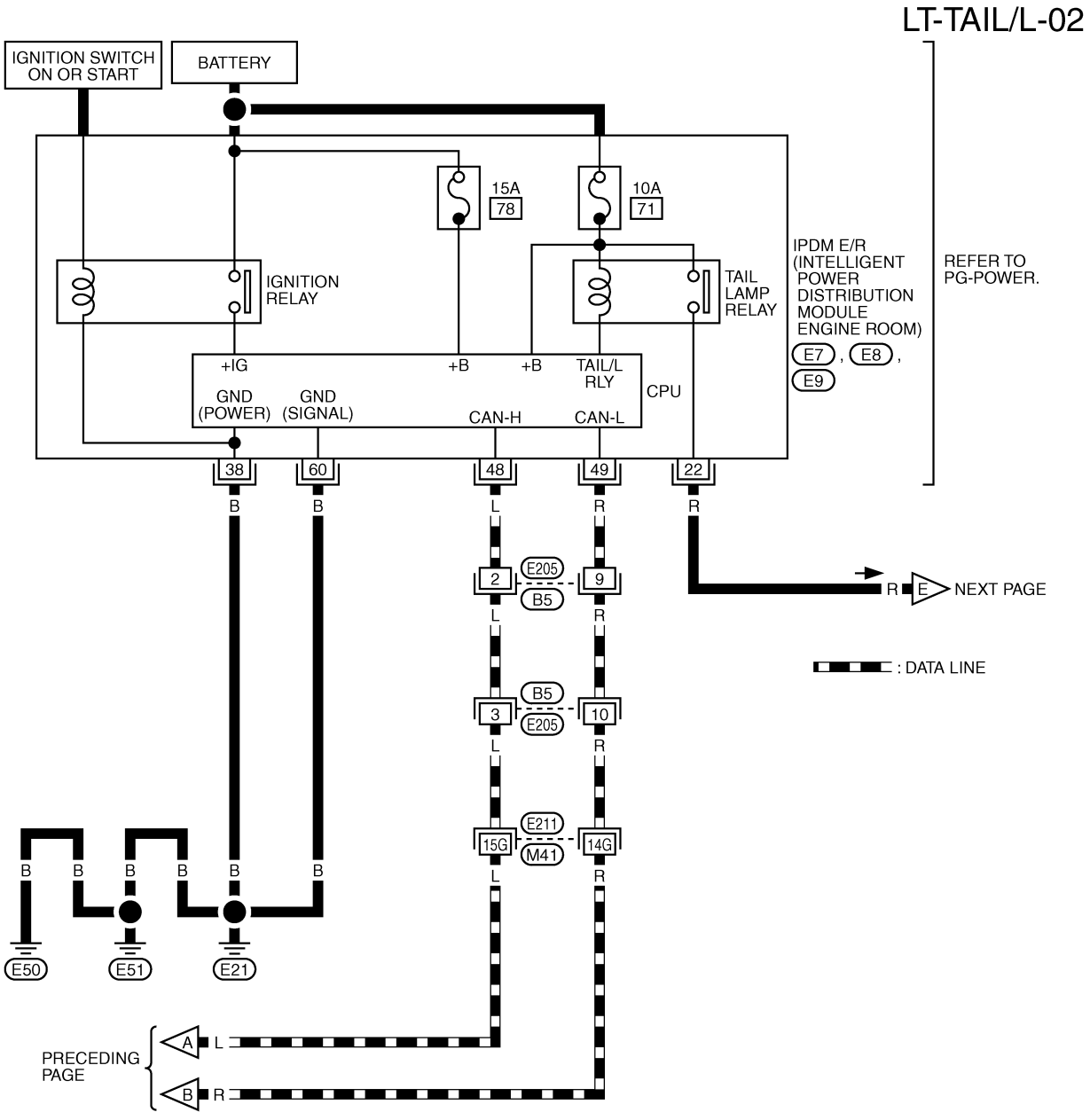
REFER TO THE FOLLOWING.

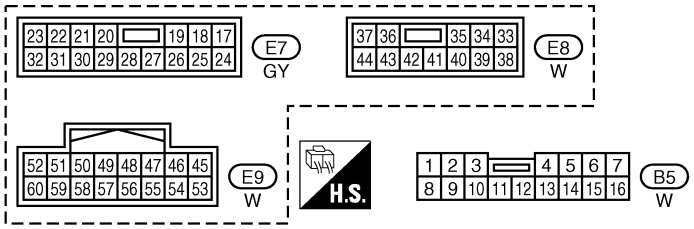
E211 -SUPER MULTIPLE JUNCTION (SMJ)

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

M3, M4 -ELECTRICAL UNITS

TKWM0821E



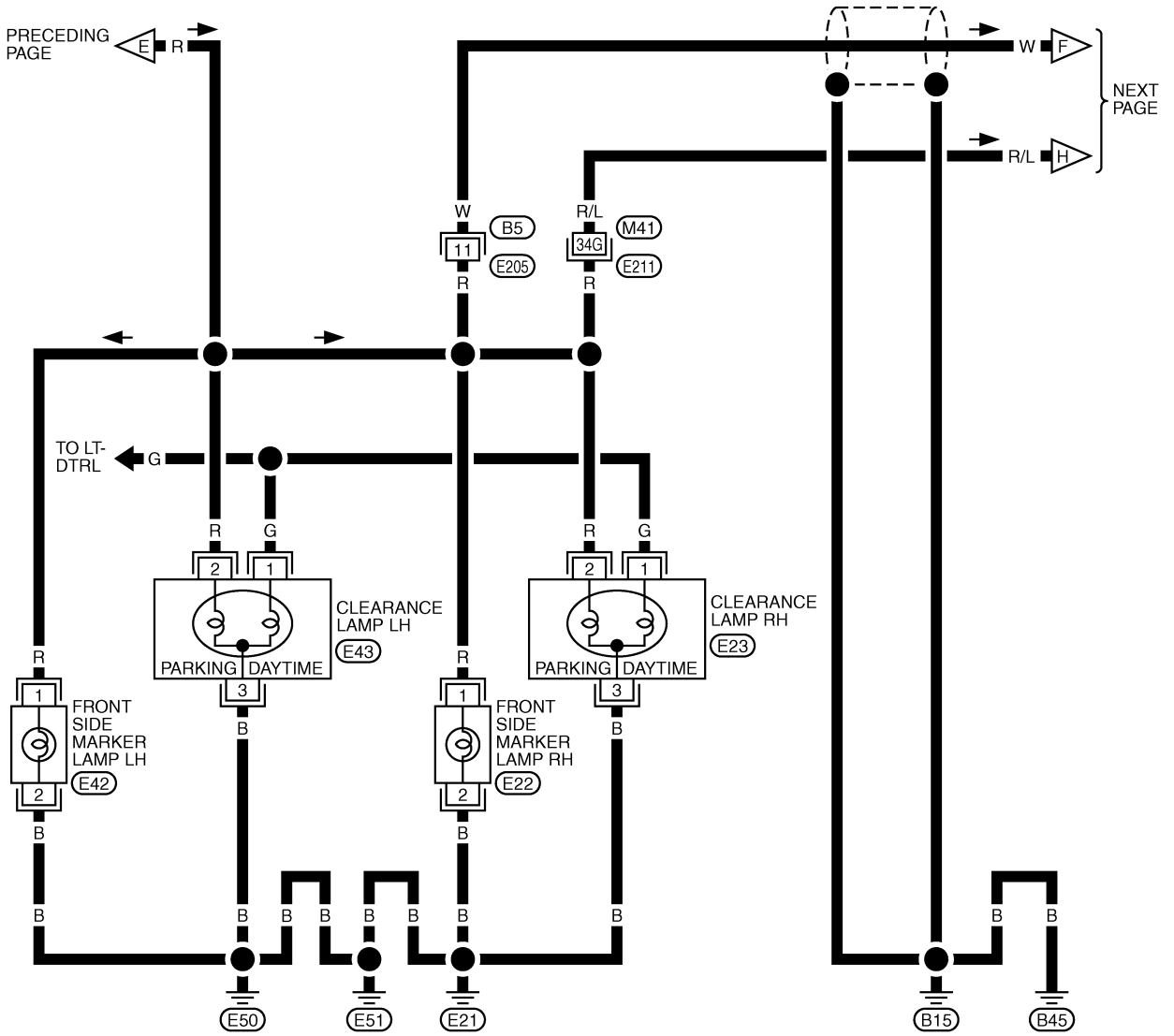


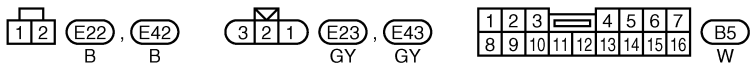
REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0632E

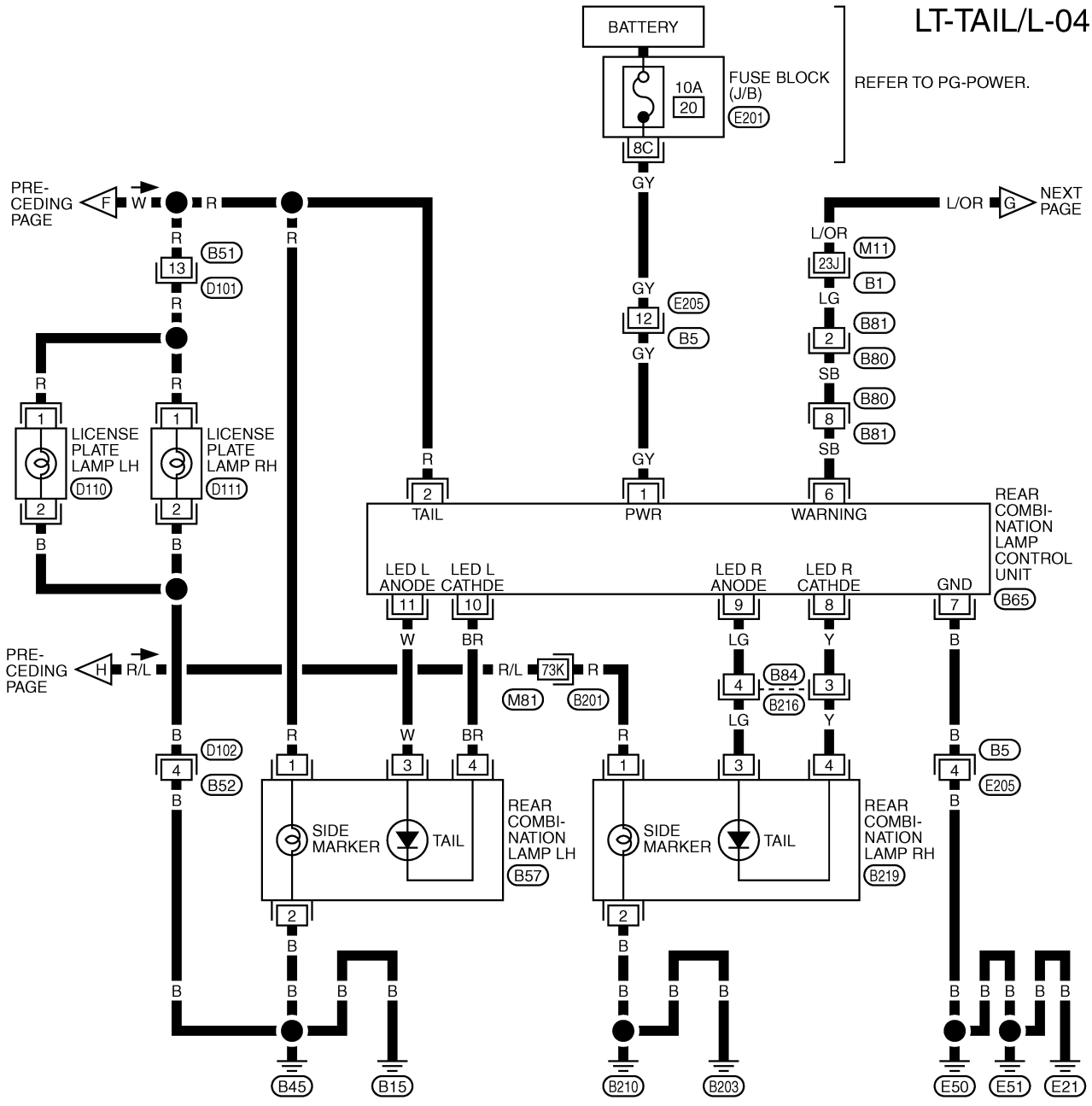
LT-TAIL/L-03

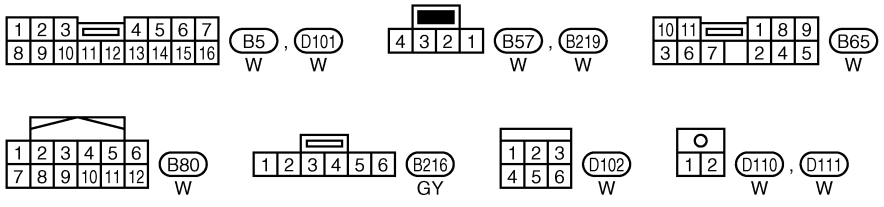




REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1080E



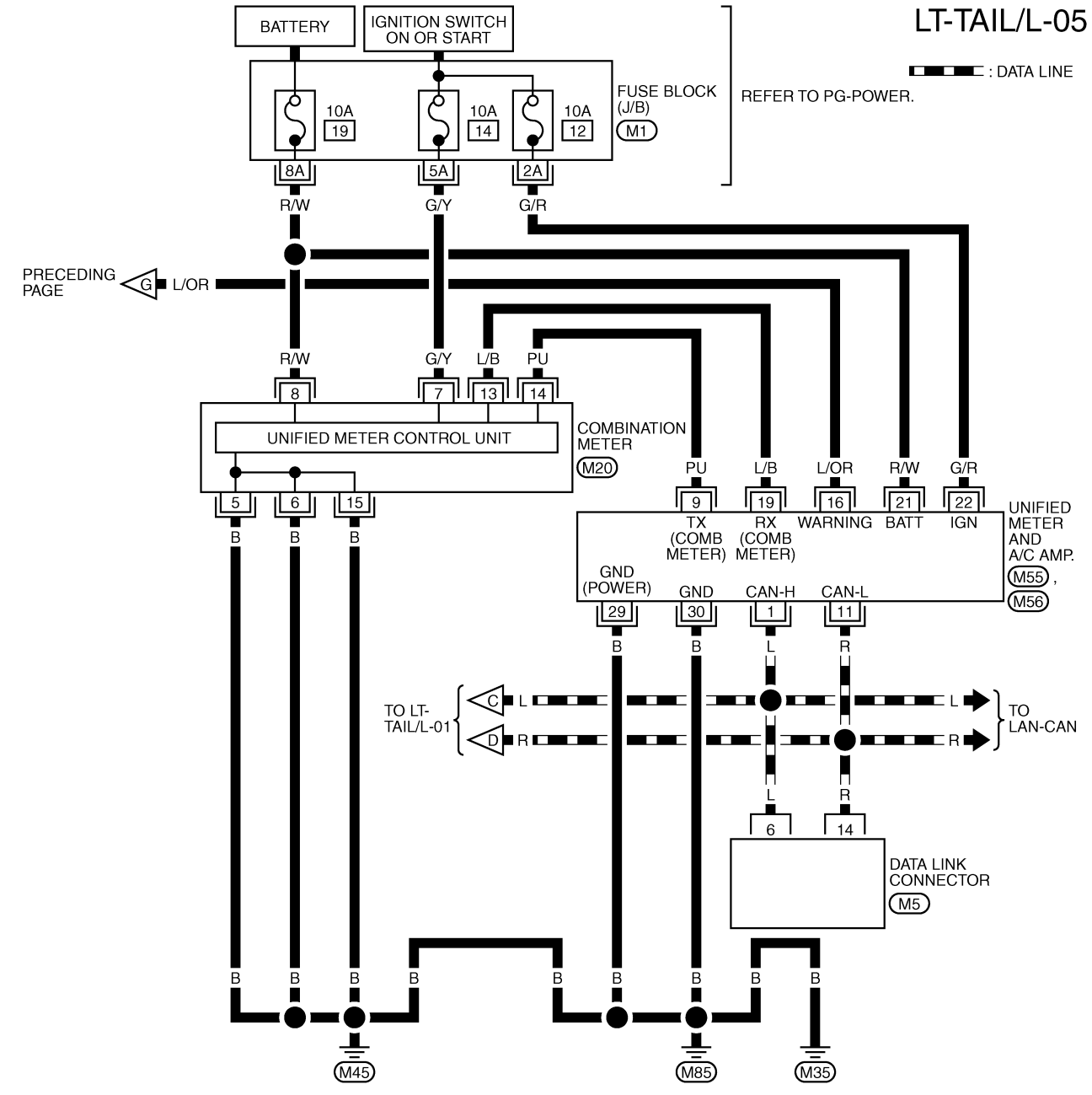


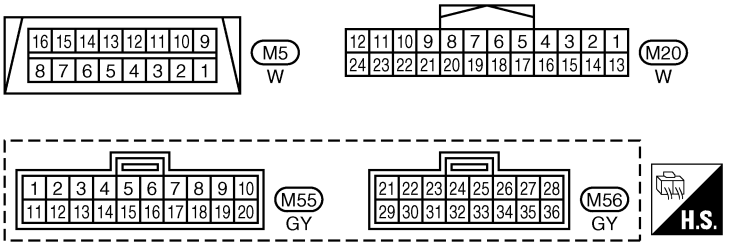
REFER TO THE FOLLOWING.

B1 , B201 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWM1081E



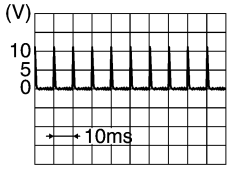
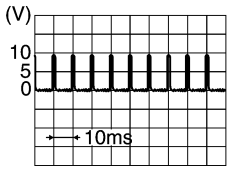
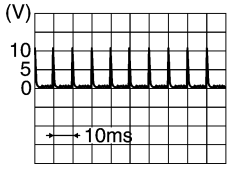
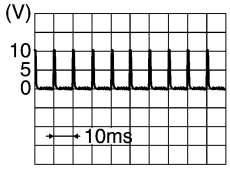


REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM2431E

Terminals and Reference Values for BCM

AKS00CJ0

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	 PKIB3468E
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3469E
4	PU/W	Combination switch input 3			
5	Y/R	Combination switch input 2			
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	 PKIB3470E
33	G	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 PKIB3471E
34	W/B	Combination switch output 3			
35	W/G	Combination switch output 2			
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-129, "System Description" .
3. Perform Preliminary Check. Refer to LT-139, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Do parking, license plate, side marker 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 for blown fuses.

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
Rear combination lamp control unit	Battery	20

Refer to LT-133, "Wiring Diagram — TAIL/L —" .

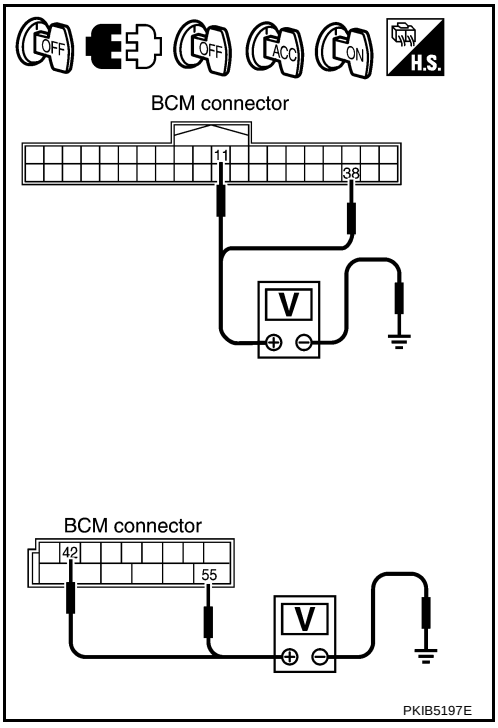
OK or NG

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	Approx. 0V	Battery voltage	Battery voltage
	38 (W/L)		Approx. 0V	Approx. 0V	Battery voltage
M4	42 (L/R)		Battery voltage	Battery voltage	Battery voltage
	55 (G)		Battery voltage	Battery voltage	Battery voltage



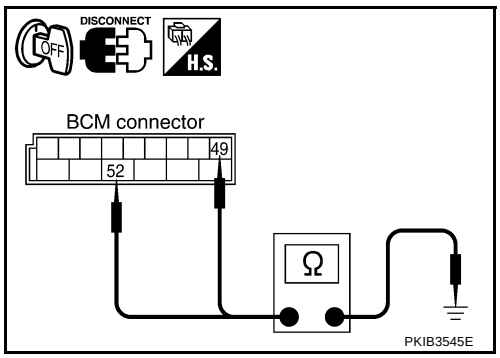
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-II Functions (BCM)

AKS007E2

Refer to LT-18, "CONSULT-II Functions (BCM)" in HEADLAMP.

CONSULT-II Functions (IPDM E/R)

AKS00CM4

Refer to LT-20, "CONSULT-II Functions (IPDM E/R)" in HEADLAMP.

Parking, License Plate and Side Marker Lamps Do Not Illuminate

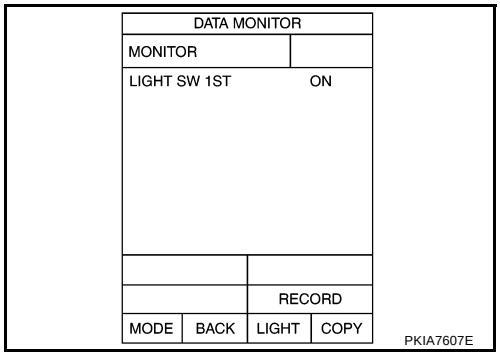
AKS007IO

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 1 ST ON position



Without CONSULT-II

Refer to LT-115, "Combination Switch Inspection" .

OK or NG

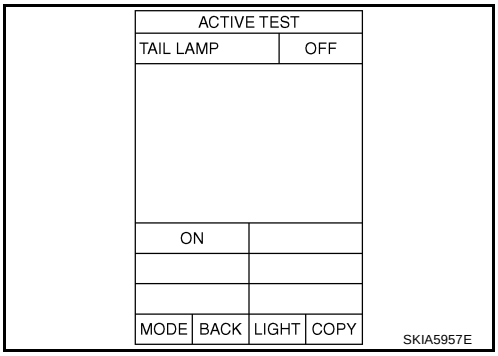
OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-115, "Combination Switch Inspection" .

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 and side marker lamp operation.

Parking, license plate and side marker lamp should operate.



Without CONSULT-II

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

Parking, license plate and side marker lamp should operate.

OK or NG

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

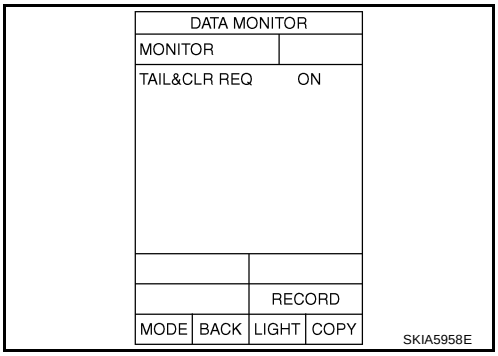
3. CHECK IPDM E/R

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

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

OK or NG

OK >> Replace IPDM E/R.
NG >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .



4. CHECK INPUT SIGNAL

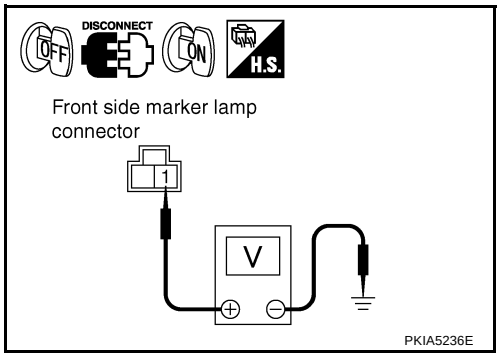
With CONSULT-II

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 parking, license plate and side marker is operating, check voltage between front side marker lamp, clearance lamp, license plate lamp, rear combination lamp harness connector and ground.

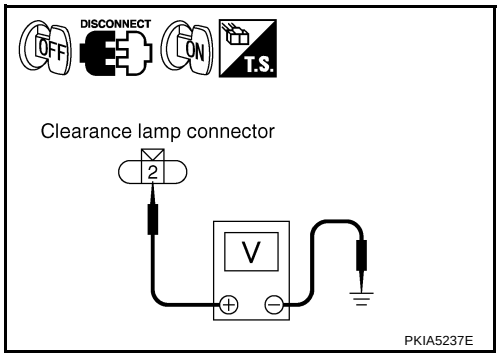
Without CONSULT-II

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

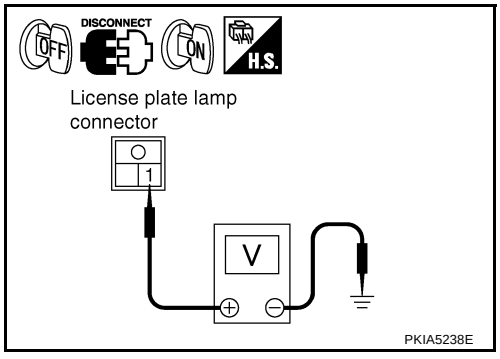
Terminal				Voltage
Front side marker lamp (+)			(-)	
Connector		Terminal (Wire color)		
RH	E22	1 (R)	Ground	Battery voltage
LH	E42			



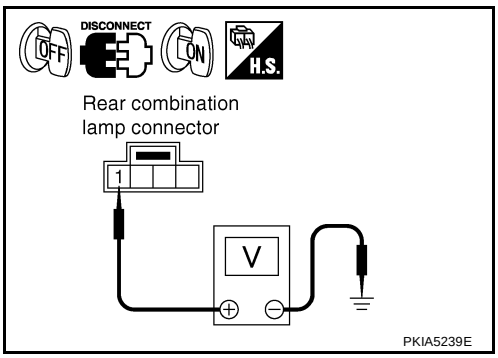
Terminal				Voltage
Clearance lamp (+) (Parking)			(-)	
Connector		Terminal (Wire color)		
RH	E23	2 (R)	Ground	Battery voltage
LH	E43			



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



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



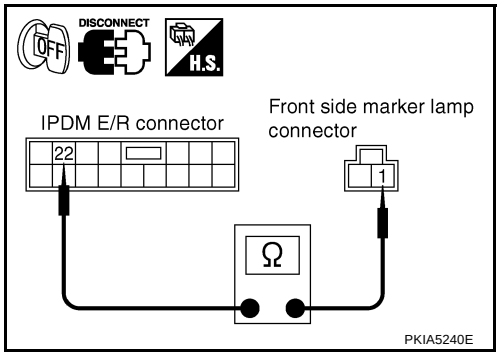
OK or NG

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

5. CHECK PARKING, LICENSE PLATE AND SIDE MARKER LAMPS CIRCUIT

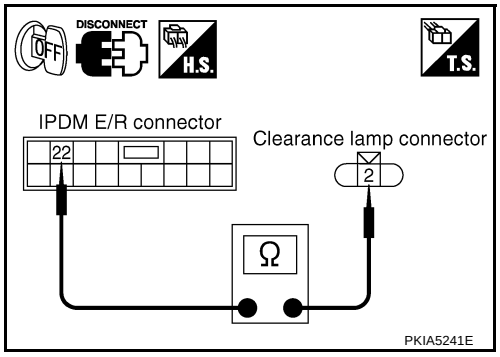
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front side marker lamp harness connector.

Terminal					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		



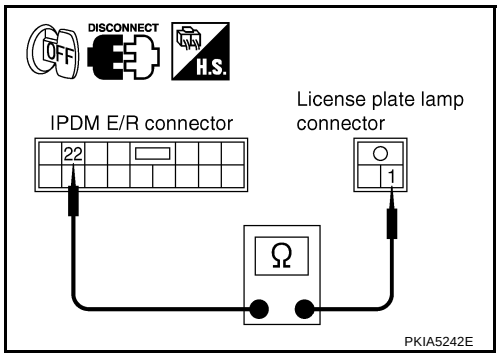
4. Check continuity between IPDM E/R harness connector and clearance lamp harness connector.

Terminal					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		



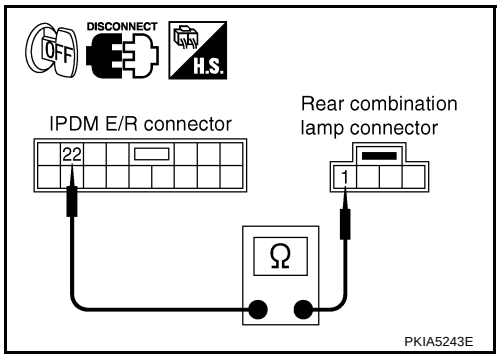
5. Check continuity between IPDM E/R harness connector and license plate lamp harness connector.

Terminal					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.

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



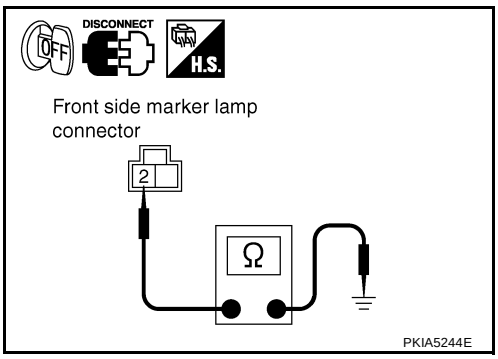
OK or NG

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

6. CHECK GROUND

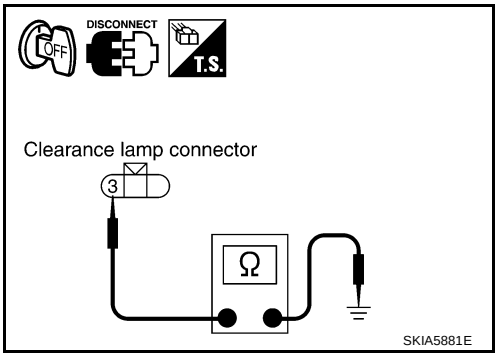
1. Turn ignition switch OFF.
2. Check continuity between front side maker lamp harness connector and ground.

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



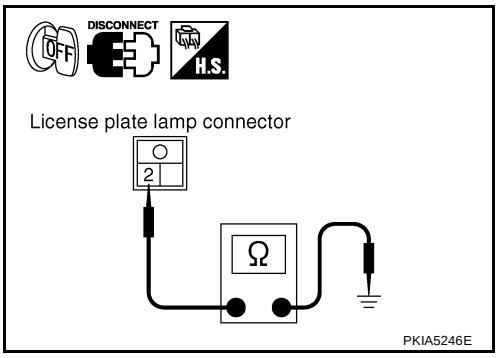
3. Check continuity between clearance lamp harness connector and ground.

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



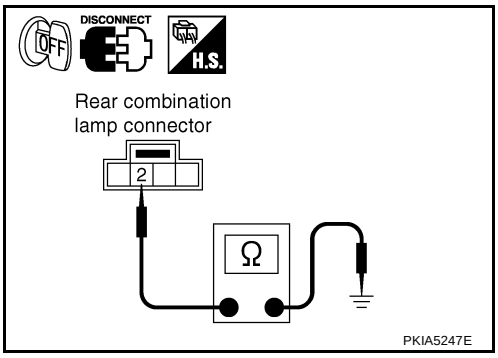
4. Check continuity between license plate lamp harness connector and ground.

Terminal				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.

Terminal				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 is illuminated.

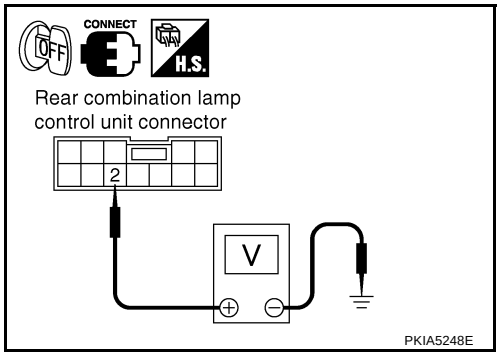
OK or NG

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. 0V



OK or NG

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

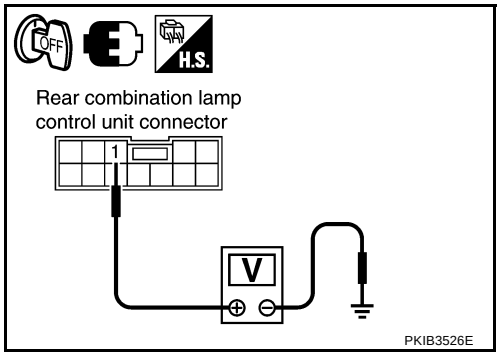
3. CHECK POWER SUPPLY CIRCUIT

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

1 (GY) – Ground : Battery voltage.

OK or NG

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



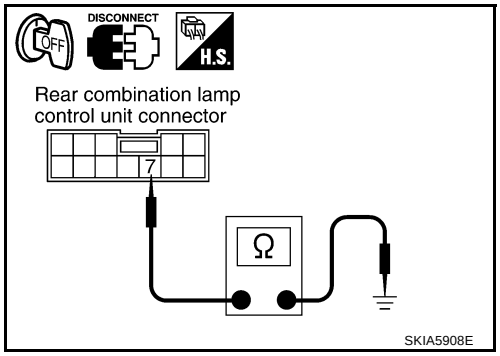
4. CHECK GROUND CIRCUIT

1. Disconnect rear combination lamp control unit connector.
2. 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.



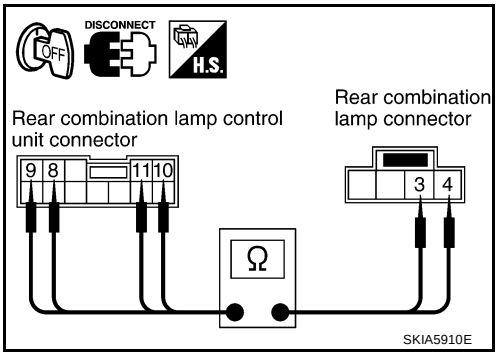
5. CHECK TURN SIGNAL LAMPS CIRCUIT

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, Side Maker and Tail Lamps Do Not Turn OFF (After Approx. 10 Minutes)

AKS007E4

1. CHECK IPDM E/R

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

OK or NG

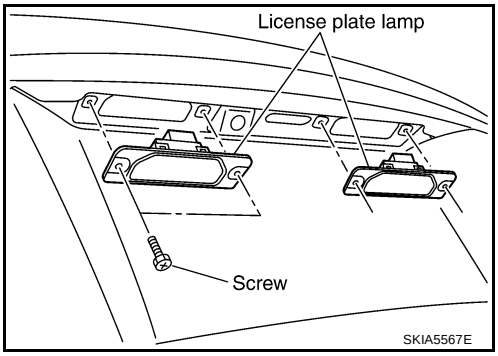
OK >> Ignition relay malfunction. Refer to PG-19, "Function of Detecting Ignition Relay Malfunction" .
NG >> INSPECTION END

License Plate Lamp

AKS007E5

BULB REPLACEMENT, REMOVAL AND INSTALLATION

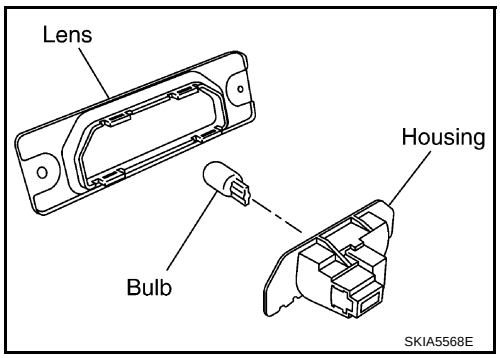
1. Remove screws and remove license plate lamp from back door.
2. Disconnect license plate lamp connector.



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

License plate lamp : 12V - 5W

5. Installation is the reverse order of removal.



Front Parking Lamp

AKS007E6

BULB REPLACEMENT

For bulb replacement, refer to LT-36, "Bulb Replacement" in “HEADLAMP-XENON TYPE-”.

REMOVAL AND INSTALLATION

For front parking lamp removal and installation procedures, refer to LT-37, "Removal and Installation" in “HEAD LAMP -XENON TYPE-”.

Tail Lamp

AKS007E7

BULB REPLACEMENT

For bulb replacement, refer to LT-149, "Bulb Replacement" in “REAR COMBINATION LAMP”.

REMOVAL AND INSTALLATION

For tail lamp removal and installation procedures, refer to LT-149, "Removal and Installation" in “REAR COMBINATION LAMP”.

Front Side Marker Lamp

AKS007E8

BULB REPLACEMENT

For bulb replacement, refer to LT-36, "Bulb Replacement" in “HEADLAMP-XENON TYPE-”.

REMOVAL AND INSTALLATION

For head lamp removal and installation procedures, refer to LT-37, "Removal and Installation" in “HEAD LAMP-XENON TYPE-”.

Rear Side Marker Lamp

AKS007E9

BULB REPLACEMENT

For bulb replacement, refer to LT-149, "Bulb Replacement" in “REAR COMBINATION LAMP”.

REMOVAL AND INSTALLATION

For rear side marker lamp removal and installation procedures, refer to LT-149, "Removal and Installation" in “REAR COMBINATION LAMP”.

Rear Combination Lamp Control Unit

AKS007O3

REMOVAL AND INSTALLATION

Refer to LT-109, "Removal and Installation of Rear Combination Lamp Control Unit" in “TURN SIGNAL AND HAZARD WARNING LAMPS”.

REAR COMBINATION LAMP

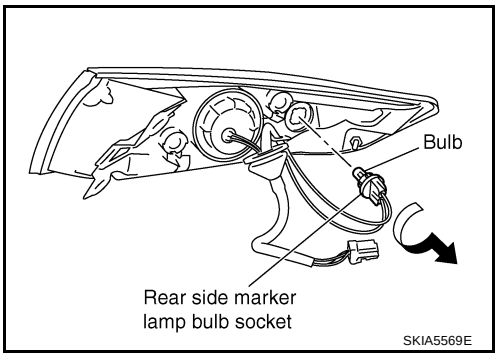
PFP:26554

Bulb Replacement

AKS007FP

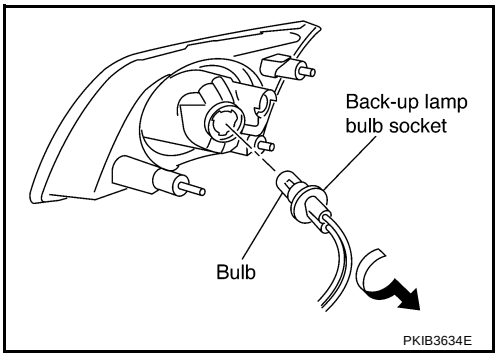
REAR FENDER SIDE (REAR SIDE MARKER LAMP BULB)

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 and rear turn signal 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**

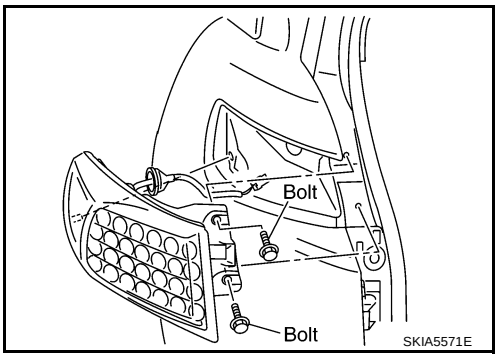
Removal and Installation

AKS007FQ

REMOVAL

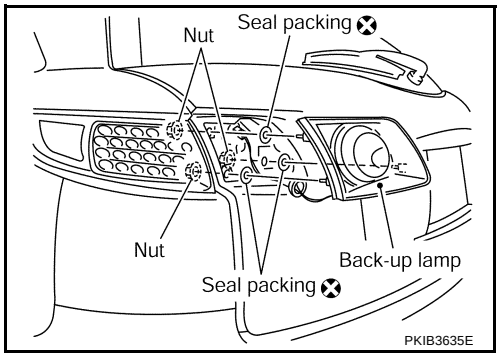
Rear Fender Side

1. Remove bumper side cover A. Refer to EI-17, "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-45, "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

Installation is the reverse order of removal.

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

CAUTION:
Seal packing cannot be reused.

Rear combination lamp (trunk lid side) mounting nut		**: 5.5 N·m (0.56 kg-m, 49 in-lb)**
Rear combination lamp (rear fender side) mounting nut		**: 3.2 N·m (0.33 kg-m, 28 in-lb)**

VANITY MIRROR LAMP

PFP:96400

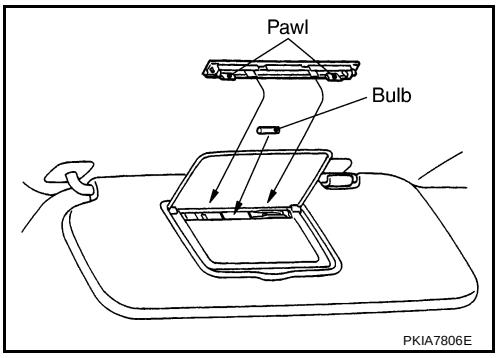
Bulb Replacement

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. Installation is the reverse order of removal.



MAP LAMP

PFP:26430

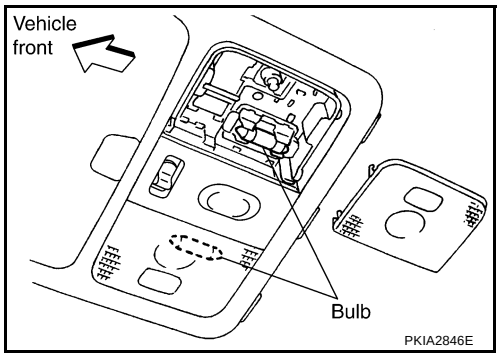
Bulb Replacement

AKS007ED

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

Map lamp : 12V - 8 W

3. Installation is the reverse order of removal.

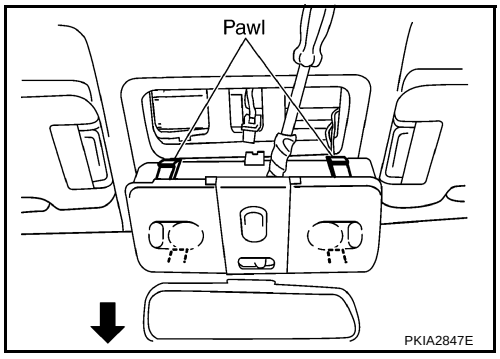


Removal and Installation

AKS007EE

REMOVAL

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



INSTALLATION

Installation is the reverse order of removal.

PERSONAL LAMP

PFP:26415

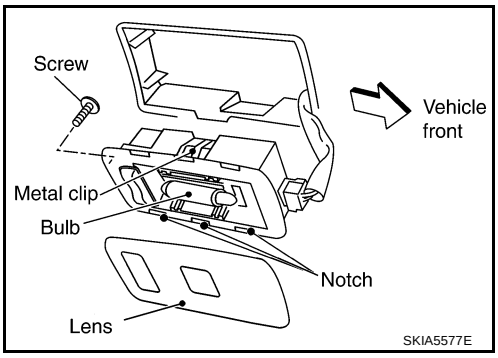
Bulb Replacement

AKS007FT

1. Remove personal lamp. Refer to LT-153, "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. Installation is the reverse order of removal.

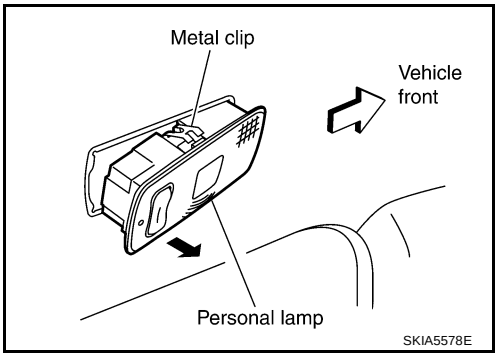


Removal and Installation

AKS007FU

REMOVAL

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



INSTALLATION

Installation is the reverse order of removal.

LUGGAGE ROOM LAMP

PFP:26410

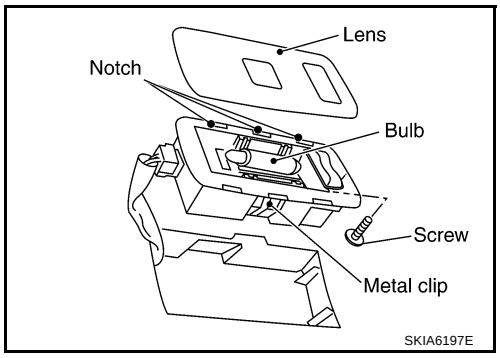
Bulb Replacement

AKS007FV

1. Remove luggage room lamp. Refer to LT-154, "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. Installation is the reverse order of removal.

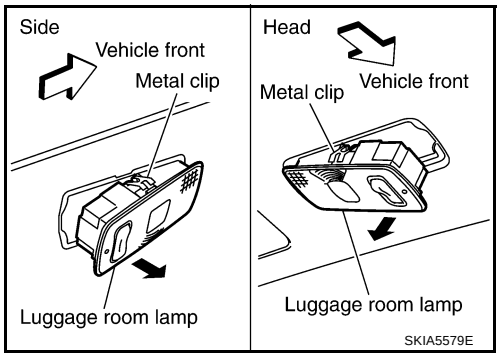


Removal and Installation

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

Installation is the reverse order of removal.

IGNITION KEY HOLE ILLUMINATION

PFP:48476

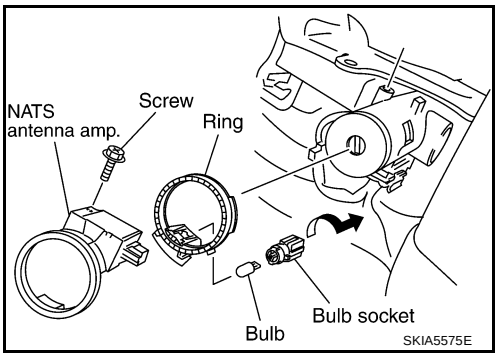
Bulb Replacement, Removal and Installation

AKS007FR

1. Remove combination meter. Refer to DI-25, "Removal and Installation of Combination Meter" in “DI” section.
2. Remove screw and remove NATS antenna amp.
3. Pull out ring and turn bulb socket to left to release lock.

Ignition key hole illumination : 12V - 0.8W

4. Installation is the reverse order of removal.



GLOVE BOX LAMP

PFP:68520

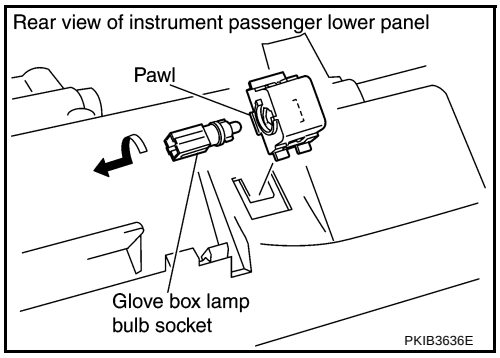
Bulb Replacement, Removal and Installation

AKS007FS

1. Remove instrument passenger lower panel. Refer to IP-18, "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. Installation is the reverse order of removal.



ASHTRAY ILLUMINATION

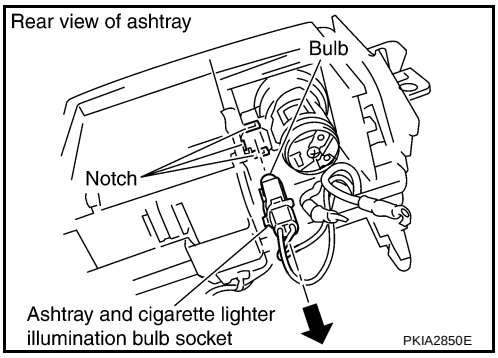
PFP:25860

Bulb Replacement and Removal and Installation

AKS007NZ

1. Remove A/T console finisher. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" in “IP” section.
2. Remove instrument ashtray and hazard switch. Refer to IP-16, "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. Installation is 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

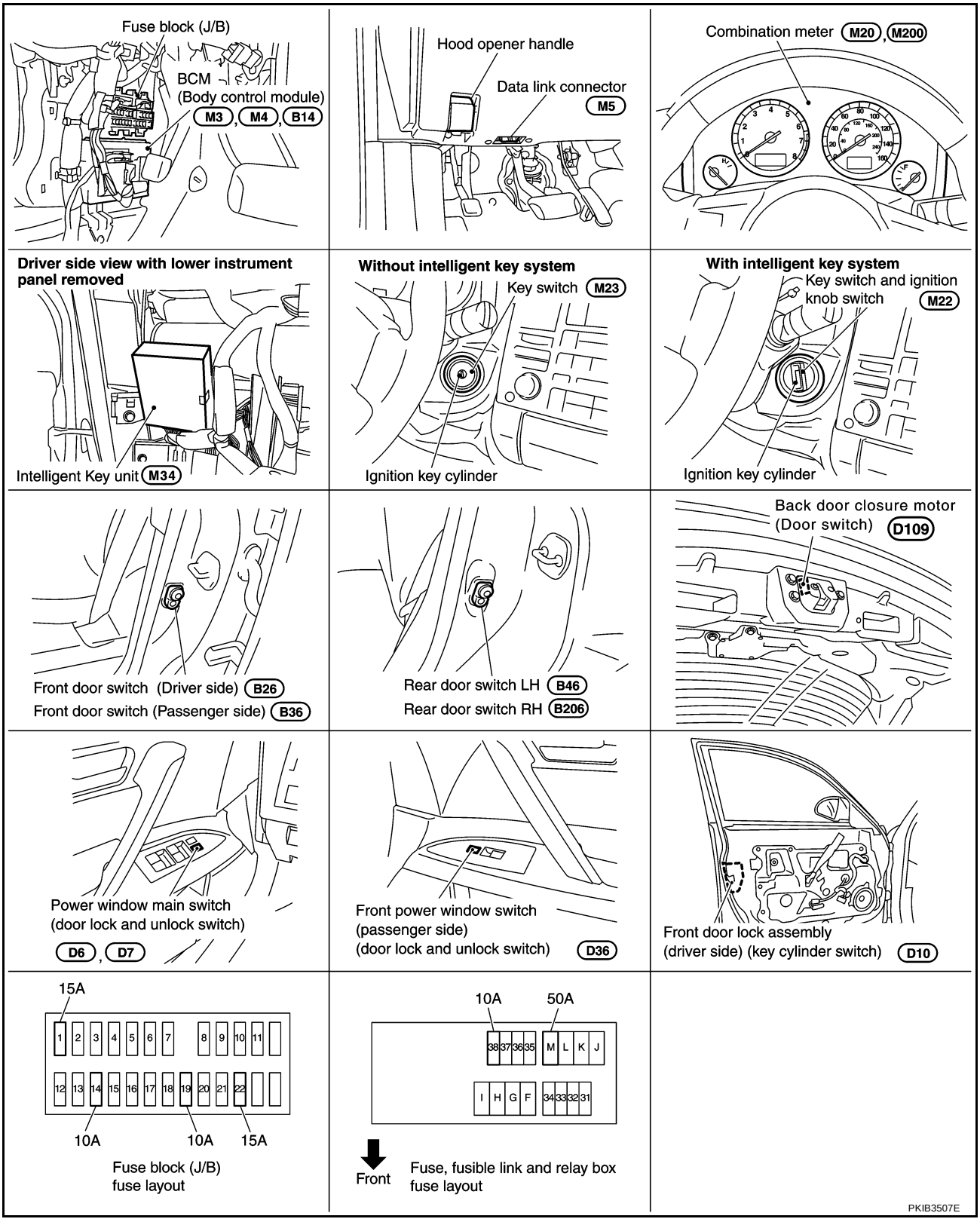
Refer to LT-157, "Bulb Replacement and Removal and Installation" in “ASHTRAY ILLUMINATION”.

INTERIOR ROOM LAMP

PFP:26410

Component Parts and Harness Connector Location

AKS007O8



System Description

AKS007F7

When the 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 the 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 the 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 terminal 42,
- through 50A fusible link (letter M, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8.

Power is supplied at all times (with Intelligent Key system)

- through 10A fuse (No.38, located in fuse, fusible link and relay box)
- to key switch and ignition knob switch terminal 1,
- through 15A fuse [No.22, located in fuse block (J/B)]
- to BCM terminal 42,
- to key switch and ignition knob switch terminal 3,
- through 50A fusible link (letter M, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8.

When key plate inserted to key switch, power is supplied (without Intelligent Key system)

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

When inserted key plate to key switch, power is supplied (with Intelligent Key system)

- through key switch and ignition knob switch terminal 4
- to BCM terminal 37.

When moved ignition knob switch, power is supplied (with Intelligent Key system)

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

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

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

Ground is supplied

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

When driver side door is opened, ground is supplied

- through case ground of front door switch (driver side)
- through front door switch (driver side) terminal 1
- to BCM terminal 62.

When passenger side door is opened, ground is supplied

- through case ground of front door switch (passenger side)
- through front door switch (passenger side) terminal 1
- to BCM terminal 12.

When rear door LH is opened, ground is supplied
- through case ground of rear door switch LH
- through rear door switch LH terminal 1
- to BCM terminal 63, and
- to personal lamp LH terminal 1.

When rear door RH is opened, ground is supplied
- through case ground of rear door switch RH
- through rear door switch RH terminal 1
- to BCM terminal 13, and
- to personal lamp RH terminal 1.

When driver side door is unlocked by door lock and unlock switch, BCM receives a ground signal
- through grounds terminals M35, M45 and M85
- to power window main switch (door lock and unlock switch) terminal 17 or front power window switch (passenger side) (door lock and unlock switch) terminal 11
- from power window main switch (door lock and unlock switch) terminal 14 or front power window switch (passenger side) (door lock and unlock switch) terminal 16
- to BCM terminal 22.

When front driver side door is unlocked by driver side door lock assembly (key cylinder switch), BCM receives a ground signal
- through grounds M35, M45 and M85
- to front door lock assembly (driver side) (key cylinder switch) terminal 5
- from front door lock assembly (driver side) (key cylinder switch) terminal 6
- to power window main switch (door lock and unlock switch) terminal 6
- from power window main switch (door lock and unlock switch) terminal 14
- to BCM terminal 22.

When a signal, or combination of signals is received by BCM, ground is supplied
- to interior room lamp terminal 1 (without DVD player),
- to map lamp terminal 2,
- to front door inside handle illumination terminal 2, and
- to rear door inside handle illumination terminal 2
- through BCM terminal 48.

With power and supplied, 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) and rear step lamp (LH and RH) terminals 2
- through rear door switch (LH or RH) terminal 1
- to personal lamp (LH or RH) terminals 1.

And power is supplied
- from BCM terminal 41
- to front step lamp (driver side and passenger side) and rear step lamp (LH and RH) terminals 1, and
- to personal lamp (LH and RH) terminals 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 interior room lamp switch is ON, ground supplied (without DVD player)

- through grouunds M35, M45 and M85
- to interior room lamp terminal 3.

And power is supplied (without DVD player)

- from BCM terminal 41
- to interior room lamp terminal 2.

When personal lamp LH or RH switch is ON, ground supplied

- through grounds M35, M45 and M85
- to personal lamp LH or RH terminal 3.

And power is supplied

- from BCM terminal 41
- to personal lamp LH or RH terminal 2.

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

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

And power is supplied

- from BCM terminal 41
- to vanity mirror lamp (driver side or 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 (back door side) terminals 2.

ROOM LAMP TIMER OPERATION

Without Intelligent Key System

When the 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 infuse 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 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 the 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 interior room lamp and map lamp ON for 30 seconds.
When driver door opens → closes, and key is not inserted in key switch (key switch OFF), BCM terminal 62 changes between 0V (door open) → 12V (door closed). BCM determines that conditions for interior room lamp and map lamp operation are met and turns 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 the 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 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 the 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 interior room lamp and map lamp ON for 30 seconds.
When driver door opens → closes, and key is not inserted in key switch (or not turned ignition knob switch), BCM terminal 62 changes between 0V (door open) → 12V (door closed). BCM determines that conditions for interior room lamp and map lamp operation are met and turns interior room lamp ON for 30 seconds.
Timer control is canceled under the following conditions.

- Driver door is locked [when locked keyfob, power window main switch (door lock and unlock switch) or 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

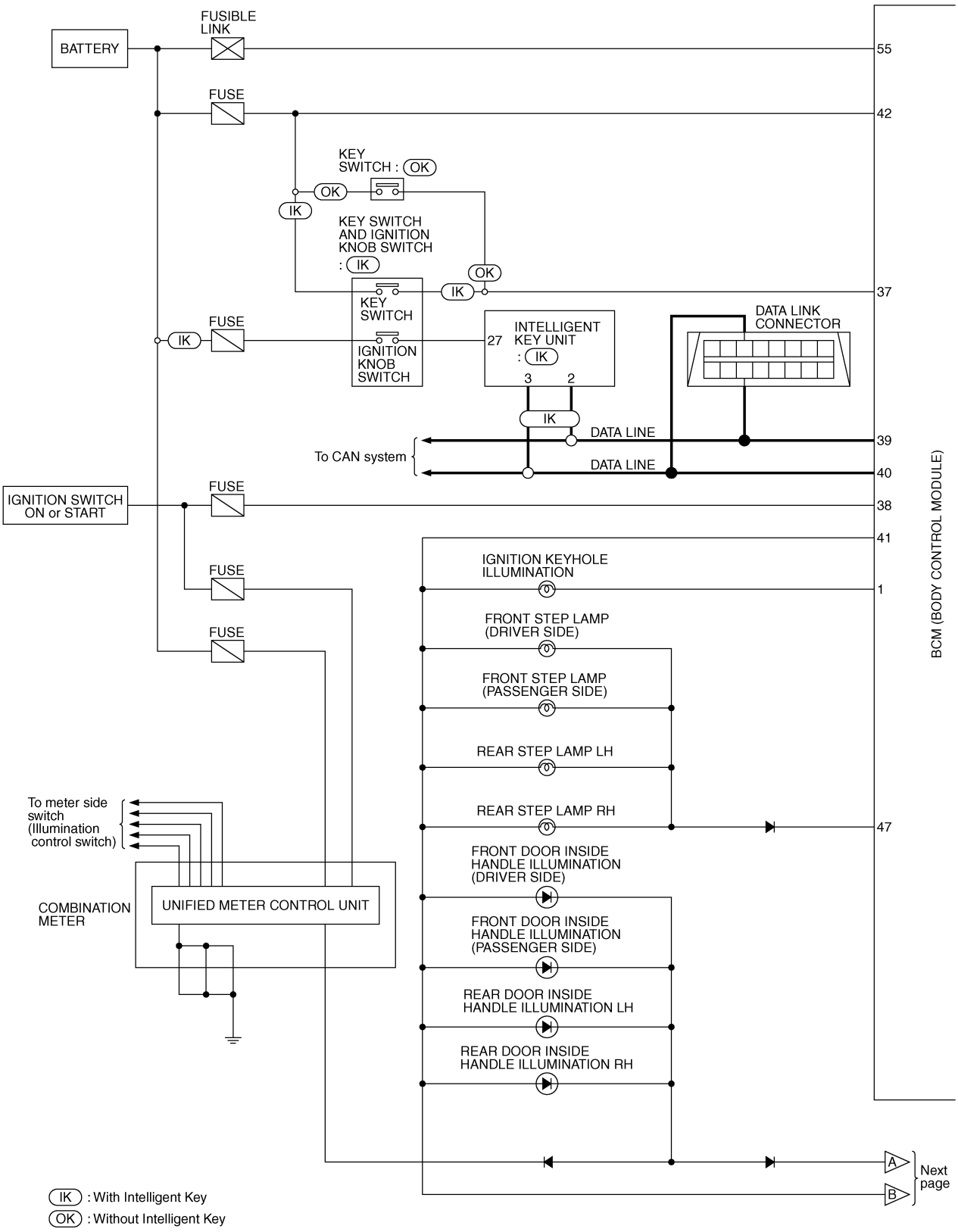
After lamps turn OFF by battery saver system, lamps illuminate again when

- 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.

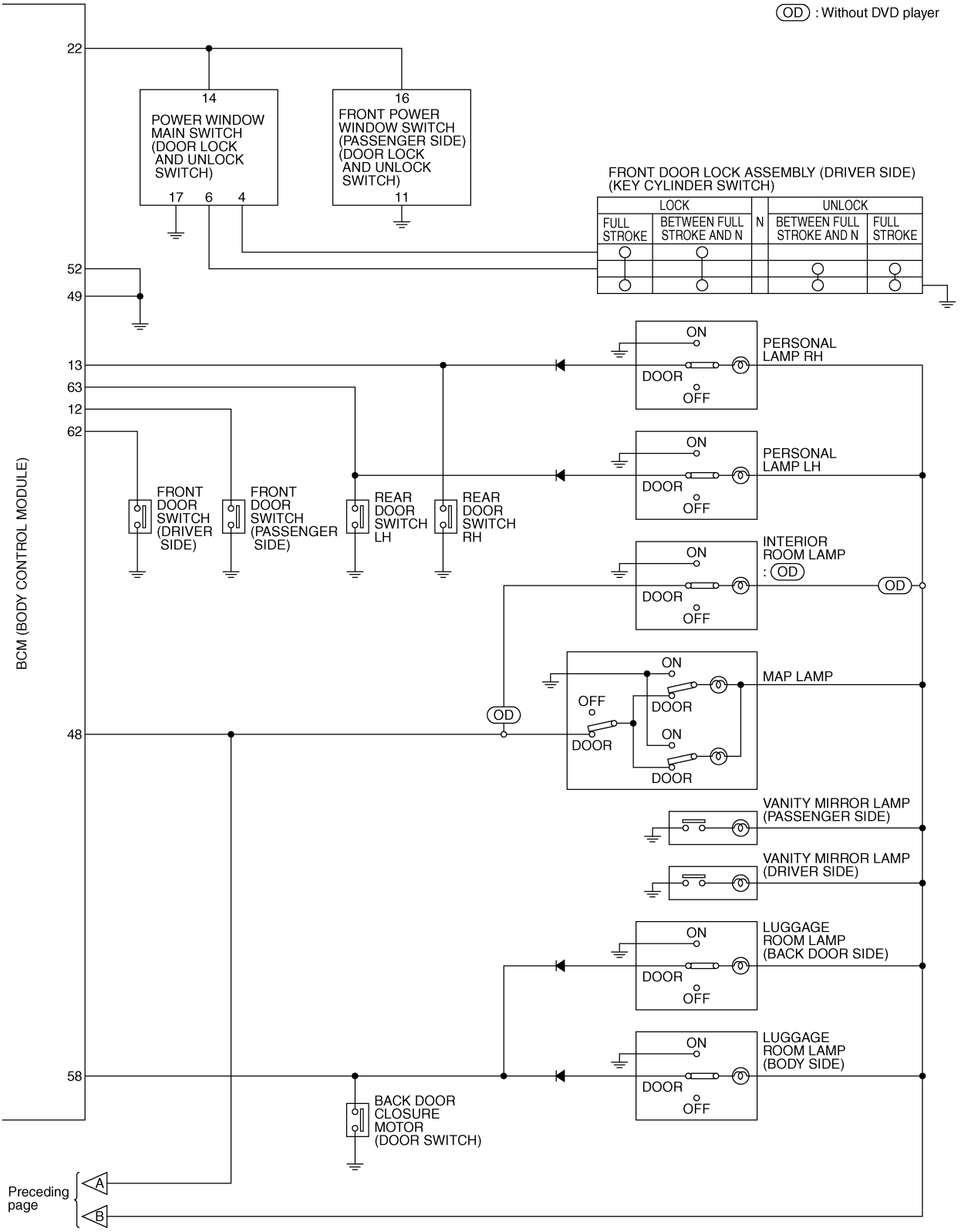
Interior lamp battery saver control period can be changed by the function setting of CONSULT-II.

Schematic

AKS007F9



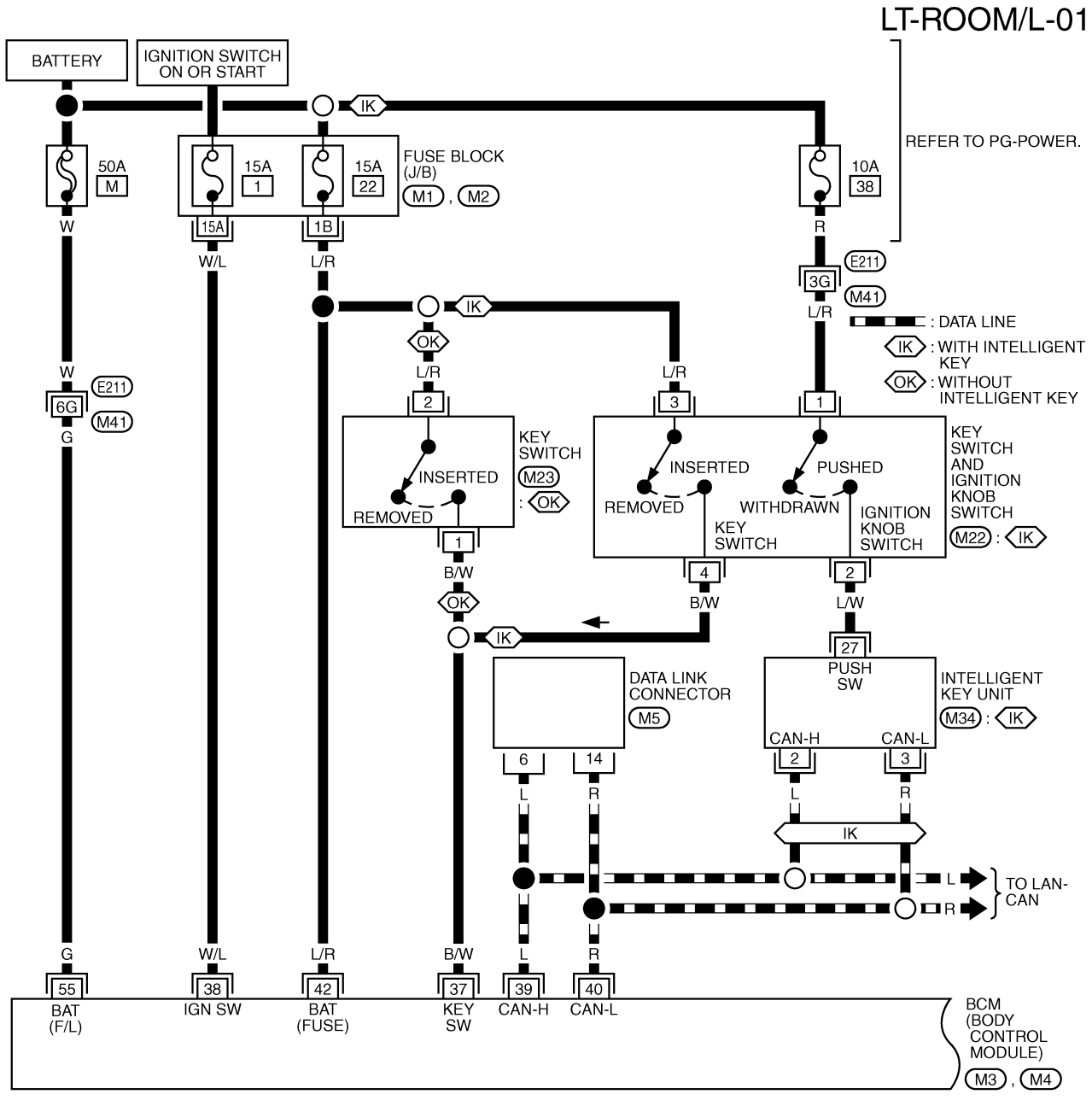
TKWH0228E

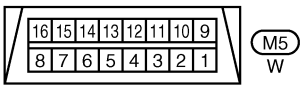

OD : Without DVD player
22
14
POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH)
17 6 4
16
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (DOOR LOCK AND UNLOCK SWITCH)
11
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) (KEY CYLINDER SWITCH)
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE 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

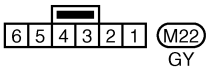
TKWM0823E

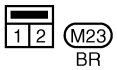
Wiring Diagram — ROOM/L —

AKS007FA



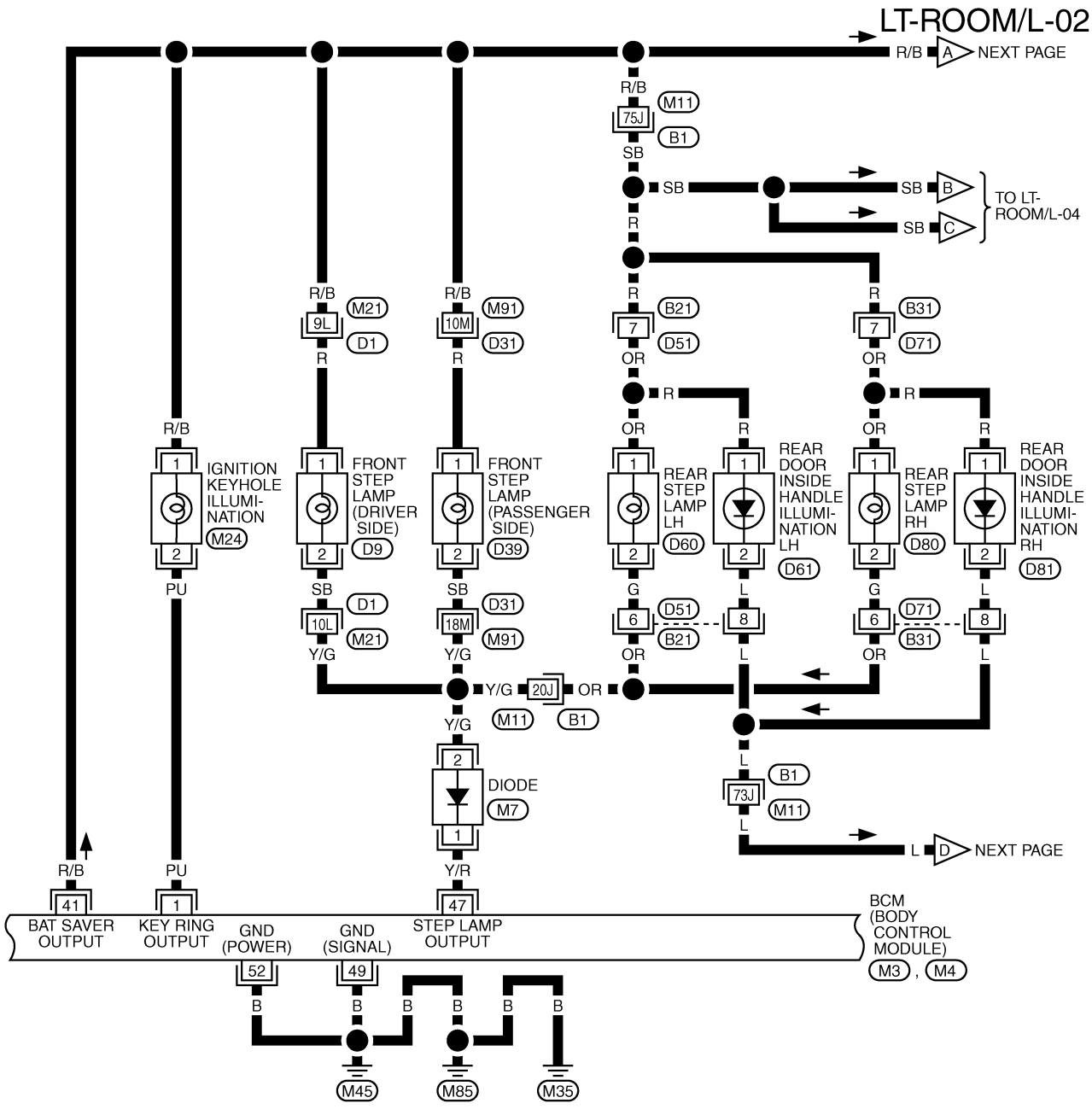




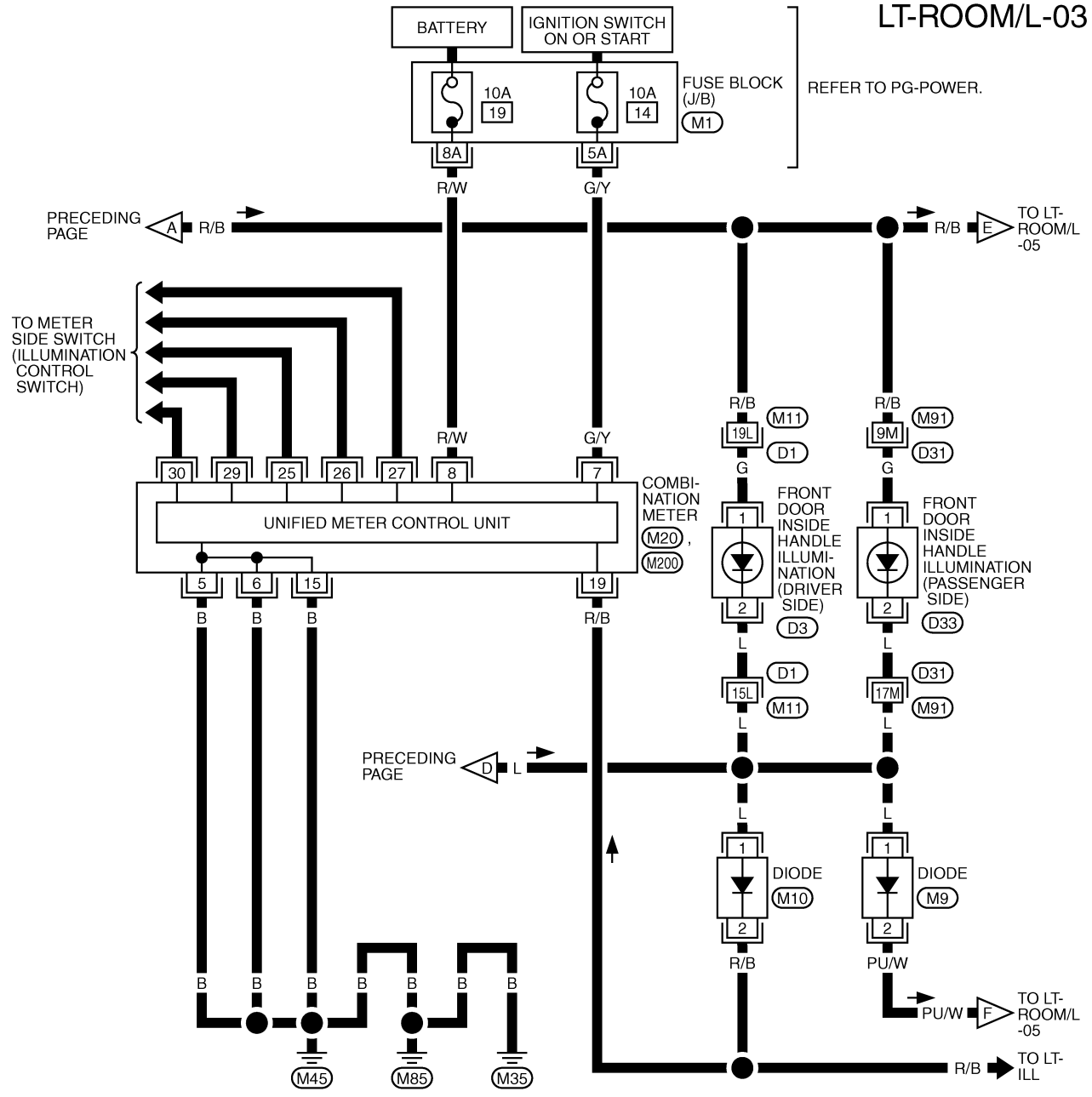


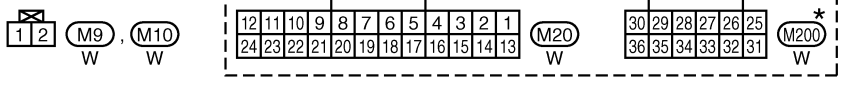
REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)
M3 , M4 , M34 -ELECTRICAL UNITS

TKWM2047E


LT-ROOM/L-02
R/B
A
NEXT PAGE
R/B
M11
75J
B1
SB
SB
SB
B
SB
C
TO LT-ROOM/L-04
R
R/B
M21
9L
D1
R/B
M91
10M
D31
R
B21
7
D51
R
B31
7
D71
OR
R
OR
R
R/B
IGNITION KEYHOLE ILLUMI-NATION
M24
PU
FRONT STEP LAMP (DRIVER SIDE)
D9
SB
D1
10L
M21
Y/G
FRONT STEP LAMP (PASSENGER SIDE)
D39
SB
D31
18M
M91
Y/G
REAR STEP LAMP LH
D60
G
D51
6
B21
OR
REAR DOOR INSIDE HANDLE ILLUMI-NATION LH
D61
L
8
L
REAR STEP LAMP RH
D80
G
D71
6
B31
OR
REAR DOOR INSIDE HANDLE ILLUMI-NATION RH
D81
L
8
L
Y/G
20J
OR
M11
B1
Y/G
DIODE
M7
Y/R
L
B1
73J
M11
L
L
D
NEXT PAGE
R/B
41
BAT SAVER OUTPUT
PU
1
KEY RING OUTPUT
47
STEP LAMP OUTPUT
GND (POWER)
52
GND (SIGNAL)
49
BCM (BODY CONTROL MODULE)
M3
M4
B
M45
M85
M35
M7
W
M24
W
B21
W
B31
W
D9
W
D39
W
D60
W
D61
GY
D80
W
D81
GY
REFER TO THE FOLLOWING.
B1
D1
D31
-SUPER MULTIPLE JUNCTION (SMJ)
M3
M4
-ELECTRICAL UNITS

TKWM1078E



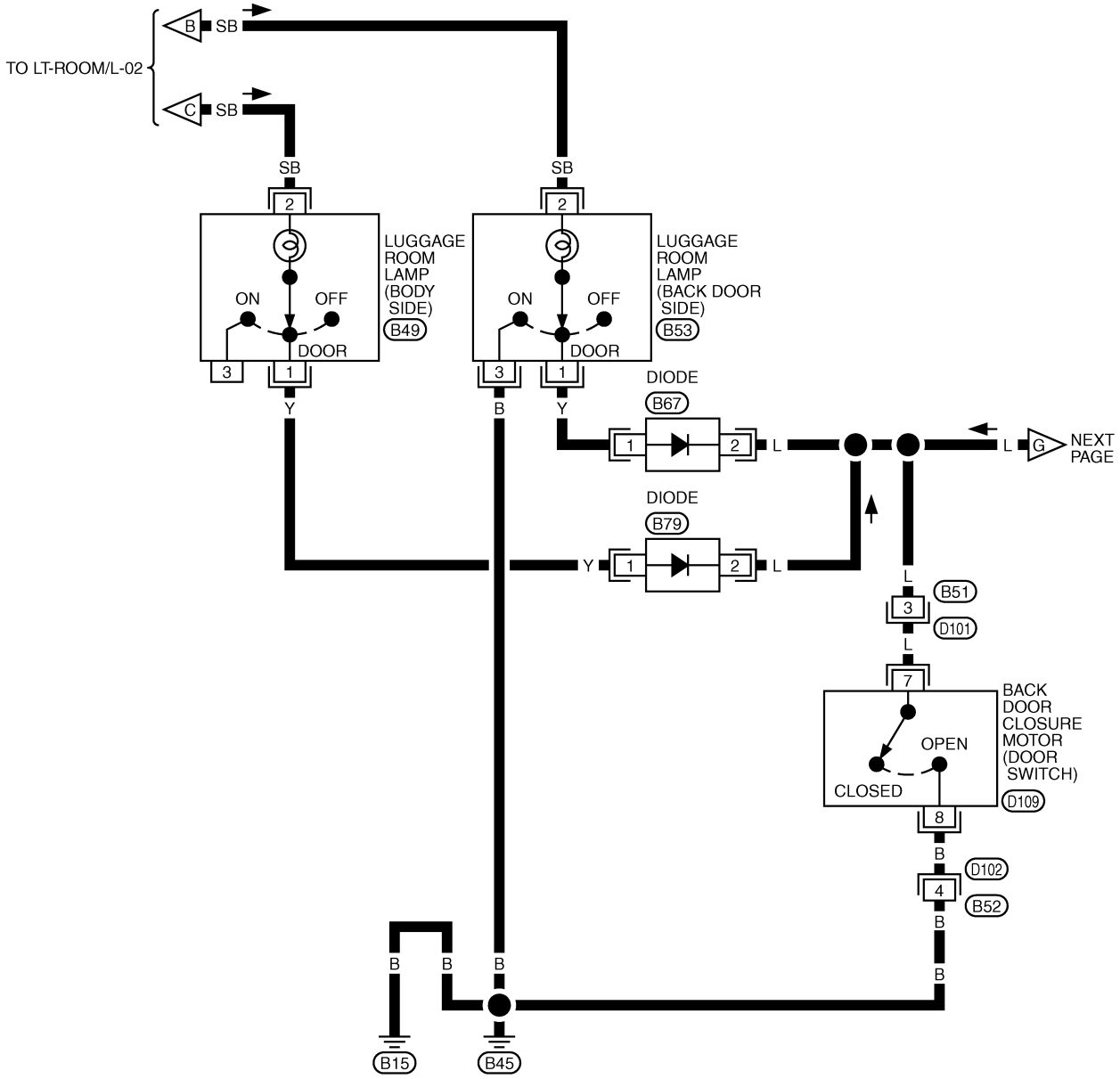


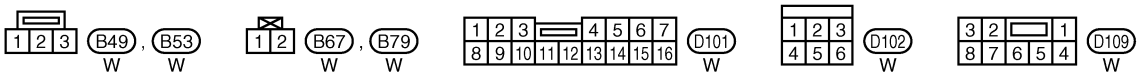
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
D1, D31 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

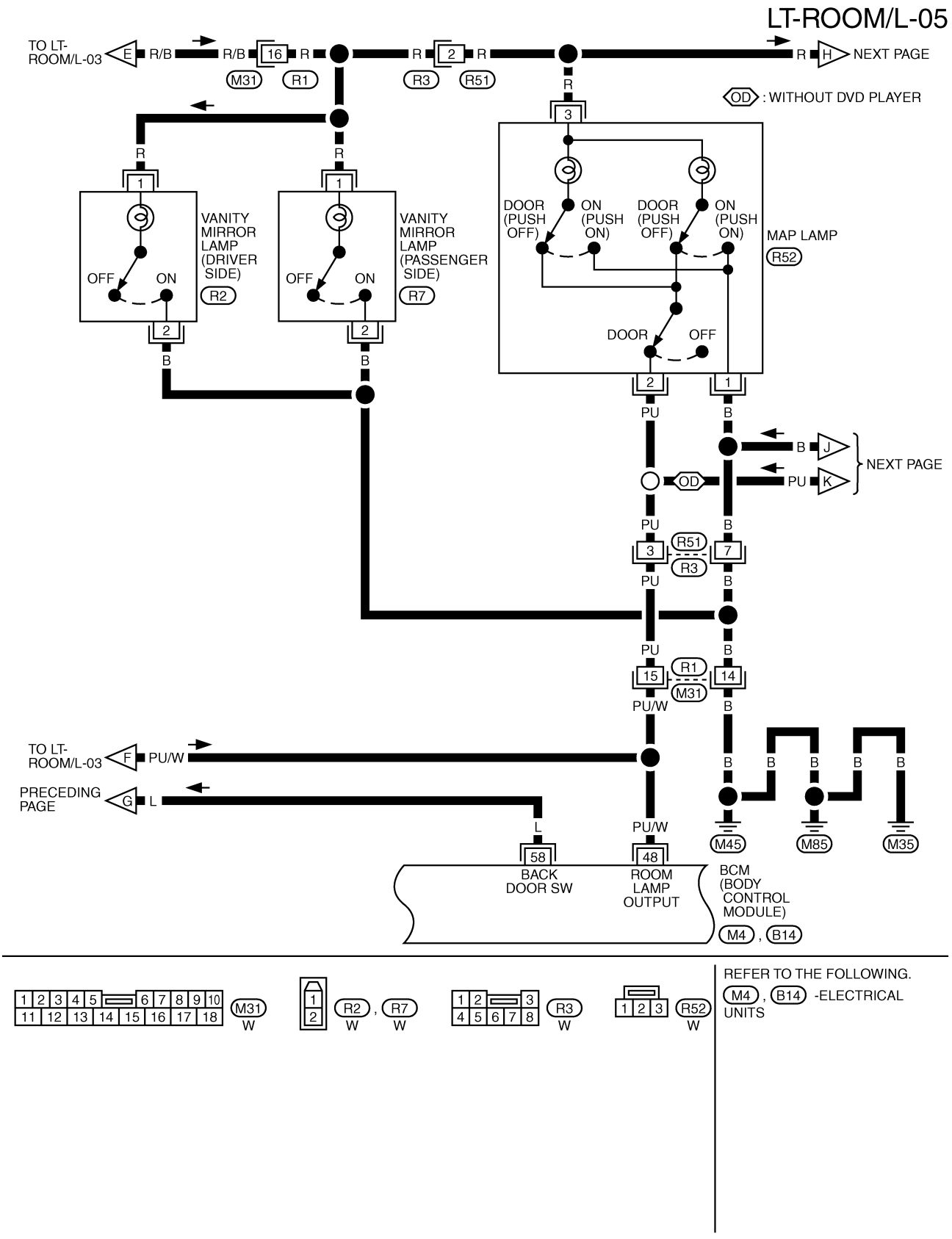
TKWH0230E

LT-ROOM/L-04



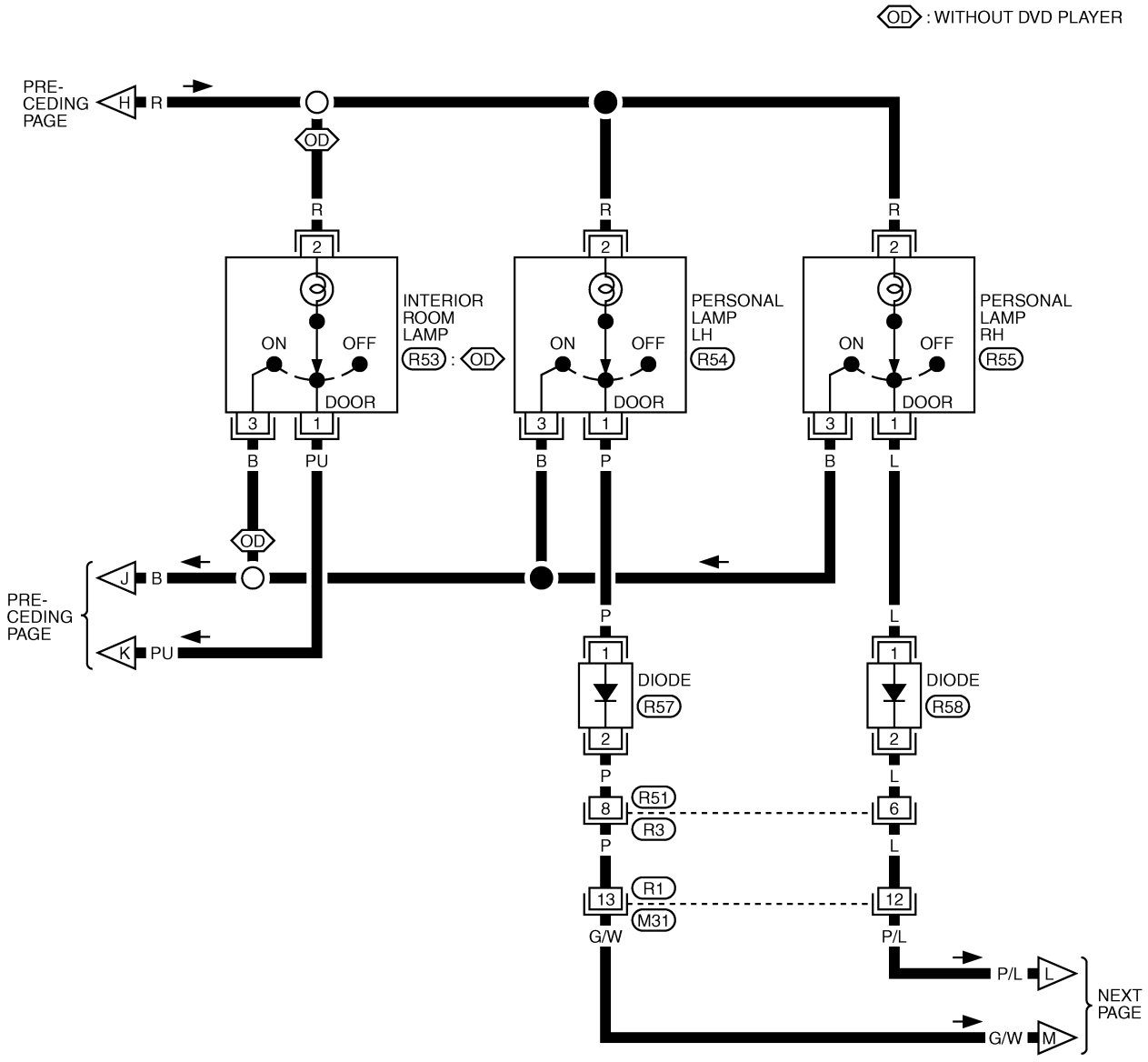


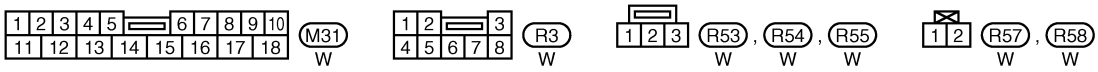
TKWH0231E


LT-ROOM/L-05
TO LT-ROOM/L-03
E
R/B
16
M31
R1
R
2
R3
R51
H
NEXT PAGE
OD : WITHOUT DVD PLAYER
3
DOOR (PUSH OFF)
ON (PUSH ON)
MAP LAMP
R52
DOOR
OFF
1
VANITY MIRROR LAMP (DRIVER SIDE)
OFF
ON
R2
VANITY MIRROR LAMP (PASSENGER SIDE)
R7
B
PU
J
K
NEXT PAGE
OD
R51
R3
7
R1
M31
14
15
PU/W
TO LT-ROOM/L-03
F
PRECEDING PAGE
G
L
58
BACK DOOR SW
48
ROOM LAMP OUTPUT
BCM (BODY CONTROL MODULE)
M4 , B14
M45
M85
M35
M31
W
R2 , R7
R3
R52
REFER TO THE FOLLOWING.
M4 , B14 -ELECTRICAL UNITS

TKWM2048E

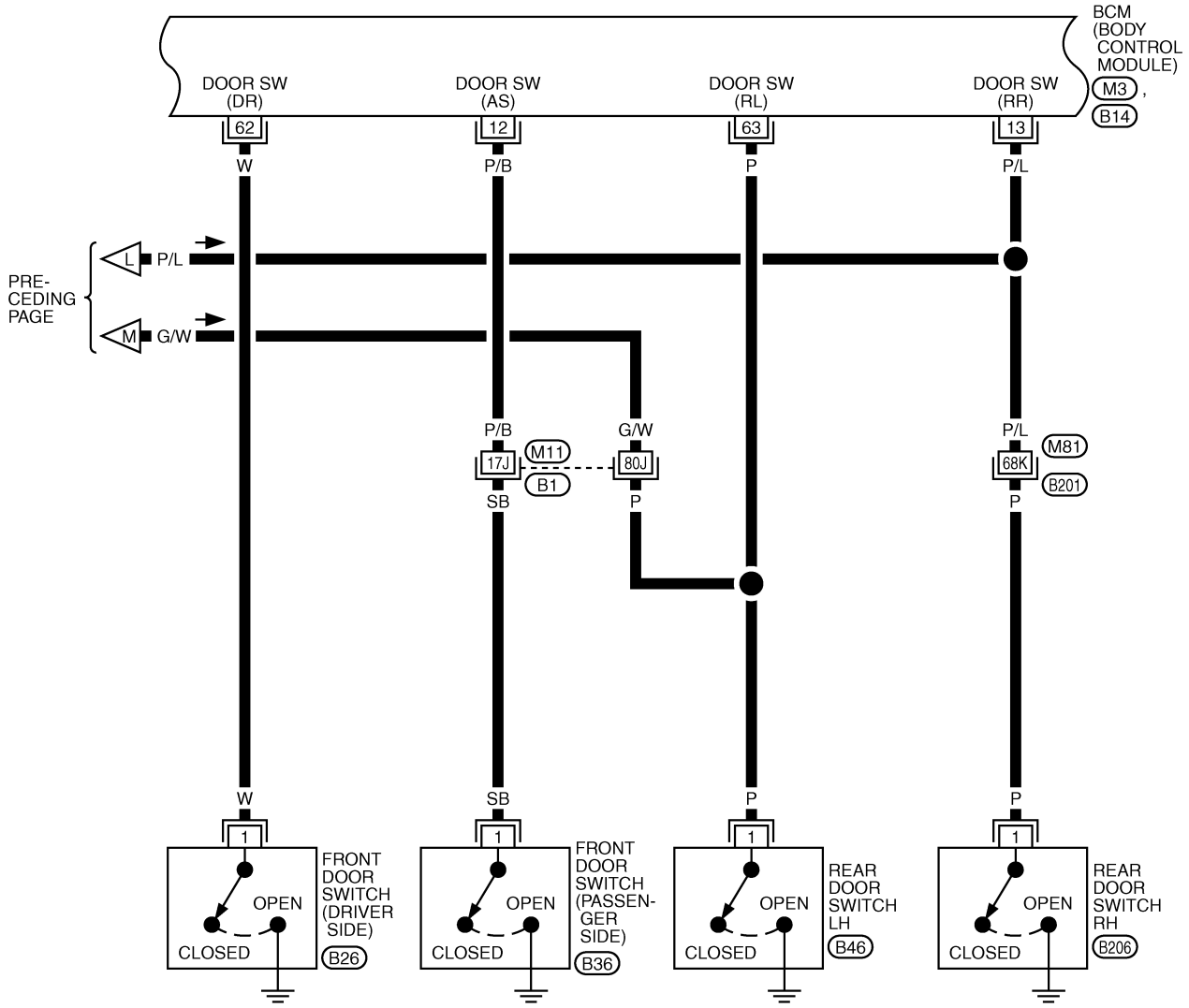
LT-ROOM/L-06





TKWM2049E

LT-ROOM/L-07

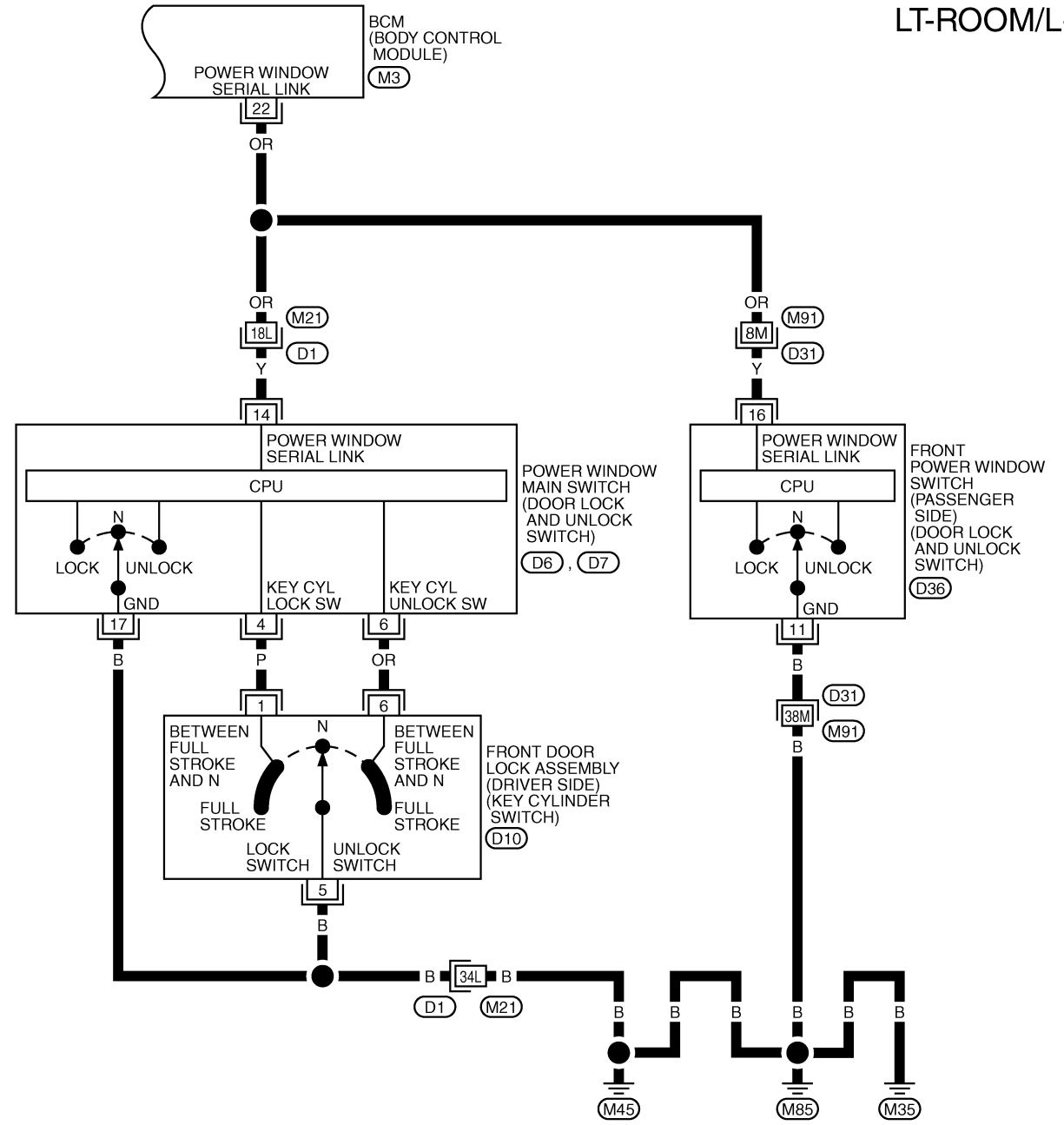


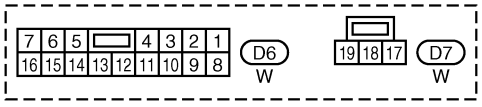
1
2
3
B26, B36, B46, B206
W W W W

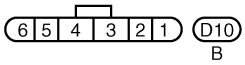
REFER TO THE FOLLOWING.
B1, B201 -SUPER MULTIPLE JUNCTION (SMJ)
M3, B14 -ELECTRICAL UNITS

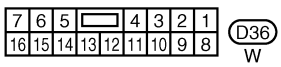
TKWM1079E

LT-ROOM/L-08









REFER TO THE FOLLOWING.

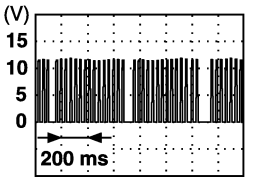
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

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	OR	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, front door inside handle and rear door inside handle illumination output signal	OFF	Interior door switch: DOOR position	Any door switch	ON (open)	Approx. 0V
						OFF (closed)	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 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-159, "System Description" .
3. Perform Preliminary Check. Refer to LT-176, "Preliminary Check" .
4. Check symptom and repair or replace the cause of malfunction.
5. Does 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 fuses.

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

Refer to LT-167, "Wiring Diagram — ROOM/L —" .

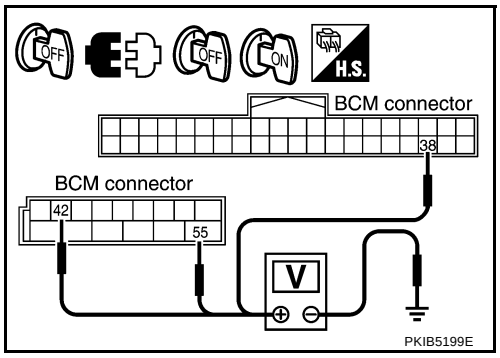
OK or NG

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.

Terminal			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)		Approx. 0V	Battery voltage



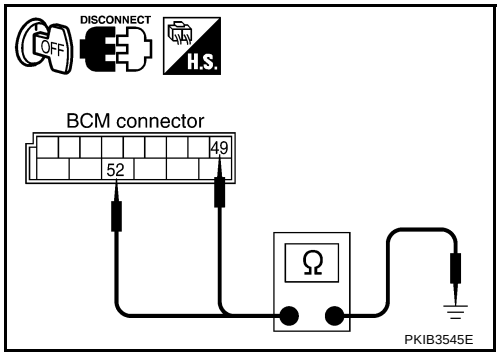
OK or NG

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

3. CHECK GROUND CIRCUIT

Check continuity between BCM and ground.

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



OK or NG

OK >> INSPECTION END
NG >> Repair harness or connector.

CONSULT-II Functions (BCM)

AKS007FE

CONSULT-II can display each diagnostic item using the diagnostic test mode shown following.

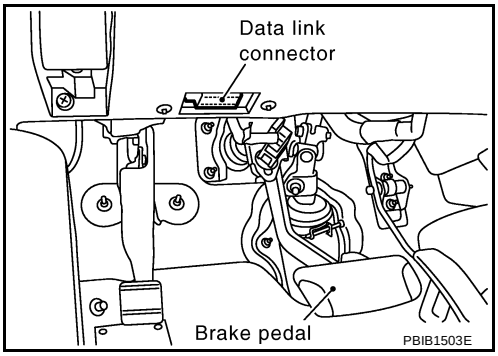
BCM diagnosis part	Diagnosis mode	Description
INT LAMP	WORK SUPPORT	Changes setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

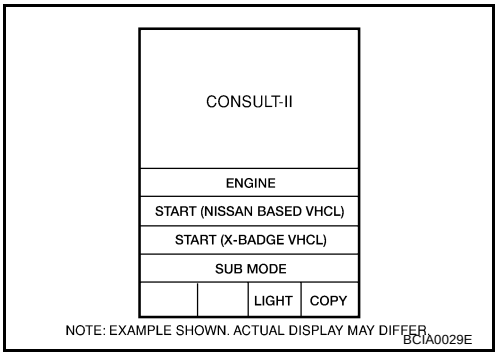
CAUTION:

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.

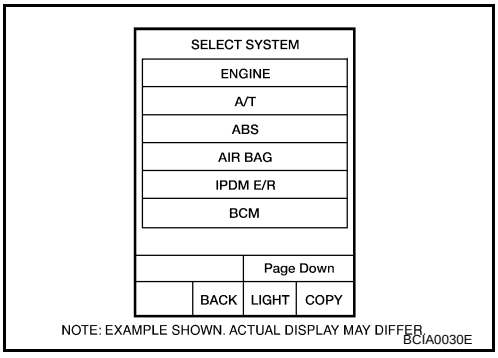
1. With ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to data link connector, then turn ignition switch ON.



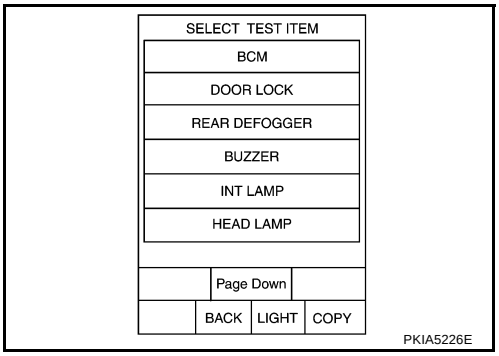
2. Touch “START (NISSAN BASED VHCL)”.



3. Touch “BCM” on “SELECT SYSTEM” screen.
If “BCM” is not indicated, refer to GI-39, "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 interior room lamps and ignition keyhole illumination can be selected when driver door is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be adjusted when interior room lamps and ignition keyhole illumination is turned on.	MODE 1 – 7
ROOM LAMP OFF TIME SET	The time in order to diminish illumination can be adjusted when interior room lamps and 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 “SELECT MONITOR ITEM” screen.

All signals	Monitors all the signals.
Selection from menu	Selects items and monitors them.

4. When “SELECTION FROM MENU” is selected, touch items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
5. Touch “START”.
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 ignition switch signal.
KEY ON SW	“ON/OFF”	Displays “Key inserted (ON)/key removed (OFF)” status judged from key switch signal.

Monitor item		Contents
DOOR SW - DR	“ON/OFF”	Displays status of driver door as judged from 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.

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.
STEP LAMP TEST	All step lamp can be operated by ON–OFF operation.
LUGGAGE LAMP TEST NOTE	—

NOTE:
This item is displayed, but cannot be tested.

Interior Room Lamp Control Does Not Operate

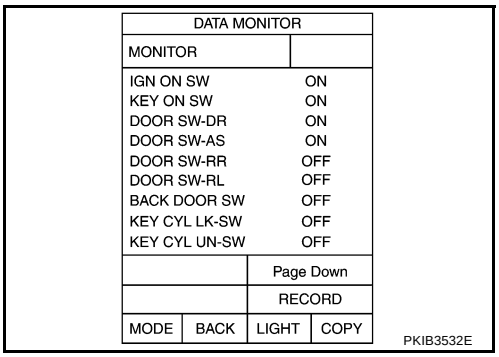
AKS007FF

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-178, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.
NG >> Inspect malfunctioning switch system.

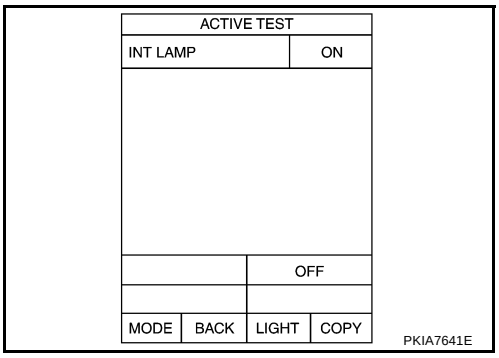


2. ACTIVE TEST

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-16, "Removal and Installation of BCM" .
NG >> GO TO 3.



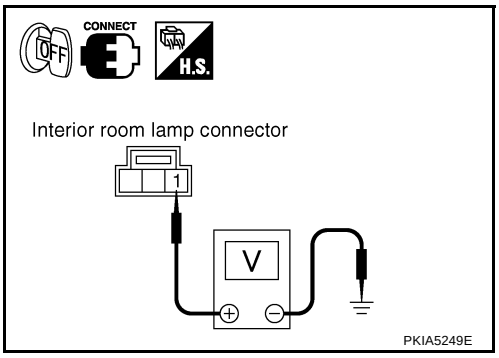
3. CHECK INTERIOR ROOM LAMP INPUT

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.

OK or NG

OK >> GO TO 6.
NG >> GO TO 4.



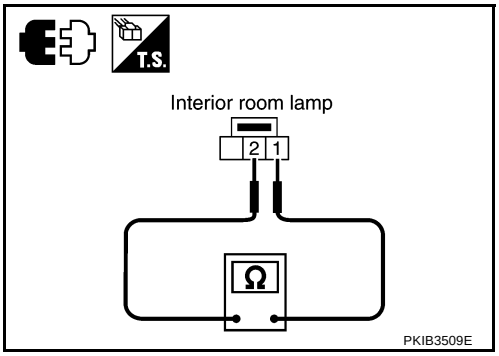
4. CHECK INTERIOR ROOM LAMP

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 or ON.	No

OK or NG

OK >> GO TO 5.
NG >> Replace Interior room lamp.



5. CHECK INTERIOR ROOM LAMP CIRCUIT

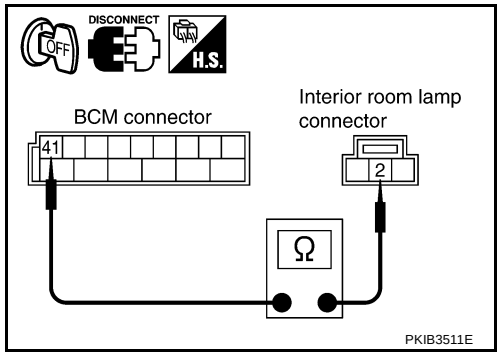
1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 41 (R/B) and interior room lamp harness connector R53 terminal 2 (R).

41 (R/B) – 2 (R) : Continuity should exist.

OK or NG

OK >> Replace BCM if interior room lamp does not work after setting the connector again. Refer to BCS-16, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



6. CHECK INTERIOR ROOM LAMP CIRCUIT

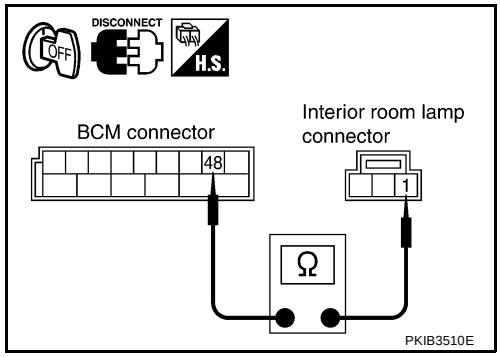
1. Disconnect BCM connector and interior room lamp connector.
2. Check continuity between BCM harness connector M4 terminal 48 (PU/W) and interior room lamp harness connector R53 terminal 1 (PU).

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

OK or NG

OK >> Replace BCM if interior room lamp does not work after setting the connector again. Refer to BCS-16, "Removal and Installation of BCM" .

NG >> Repair harness or connector.



Map Lamp Control Does Not Operate

AKS007IK

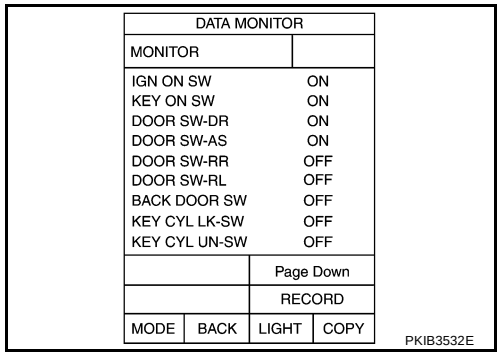
1. CHECK EACH SWITCH

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-178, "Display Item List" for switches and their functions.

OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.



2. ACTIVE TEST

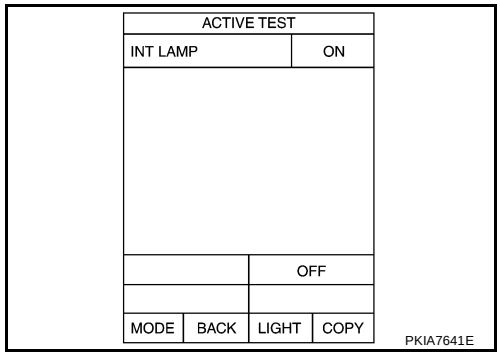
1. Select “BCM” on CONSULT-II. Select “INT LAMP” active test.
2. When map lamp switch is in DOOR position, use active test to make sure map lamp operates.

Map lamp should operate.

OK or NG

OK >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .

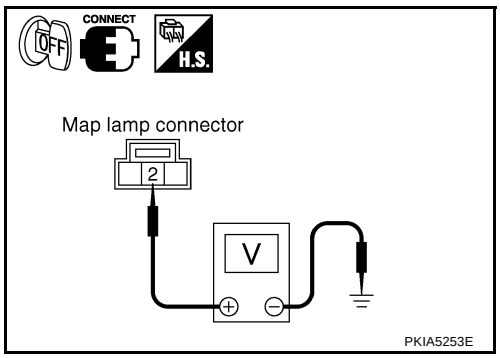
NG >> GO TO 3.



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.



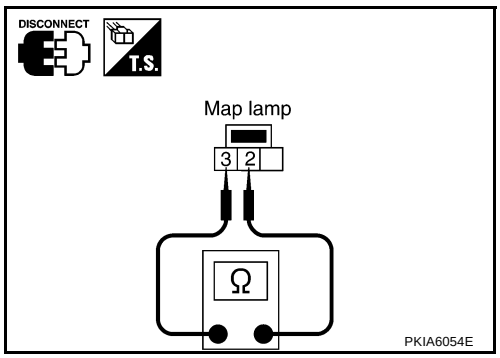
OK or NG

OK >> GO TO 6.
NG >> GO TO 4.

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 OFF.	No



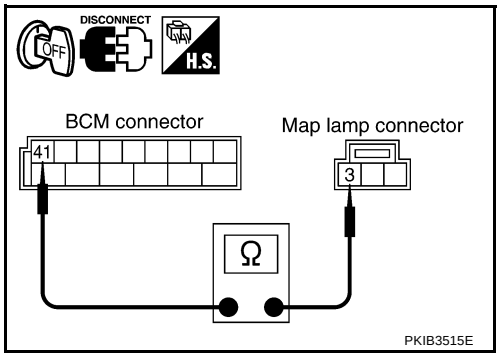
OK or NG

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 41 (R/B) and map lamp harness connector R52 terminal 3 (R).

41 (R/B) – 3 (R) : Continuity should exist.



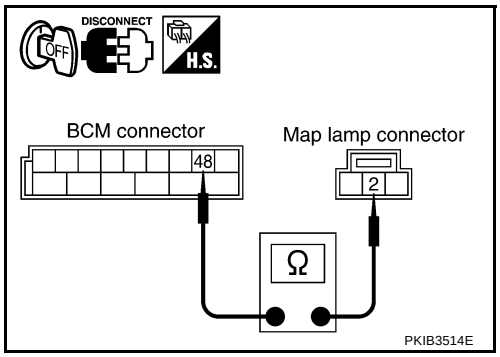
OK or NG

OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-16, "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 48 (PU/W) and map lamp harness connector R52 terminal 2 (PU).

48 (PU/W) – 2 (PU) : Continuity should exist.



OK or NG

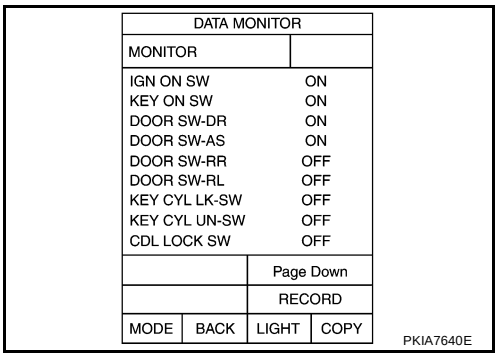
OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-16, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

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.

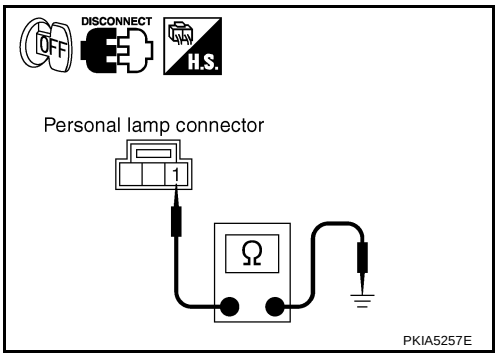


OK or NG

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 rear door.
4. Check continuity between personal lamp harness connector and ground.



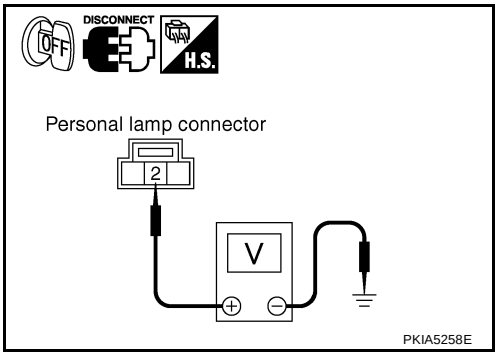
Terminal			Continuity
Personal lamp		Ground	
Connector		Terminal (Wire color)	
RH	R55	1 (L)	Yes
LH	R54	1 (P)	

OK or NG

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

3. CHECK PERSONAL LAMP INPUT

Check voltage between personal lamp harness connector and ground.



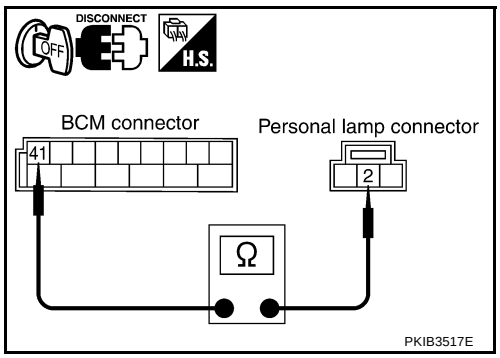
Terminal			Voltage
Personal lamp (+)		(-)	
Connector		Terminal (Wire color)	Ground
RH	R55	2 (R)	Battery voltage
LH	R54		

OK or NG

OK >> Replace personal lamp. Refer to LT-153, "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.



Terminal					Continuity
BCM		Personal lamp			
Connector	Terminal (Wire color)	Connector		Terminal (Wire color)	
M4	41 (R/B)	RH	R55	2 (R)	Yes
		LH	R54		

OK or NG

OK >> Replace BCM if personal lamp does not work after setting the connector again. Refer to BCS-16, "Removal and Installation of BCM" .

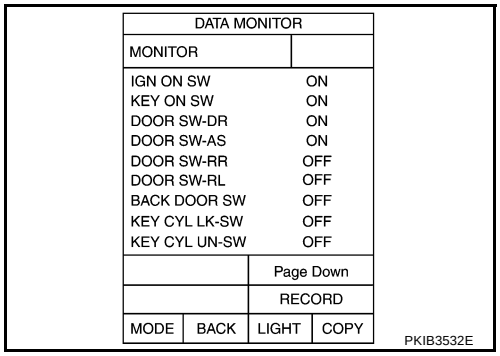
NG >> Repair harness or connector.

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-178, "Display Item List" for switches and their functions.



OK or NG

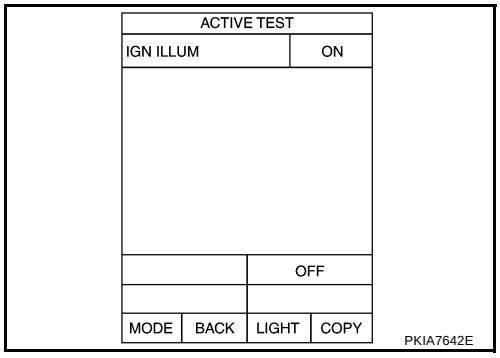
OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.

2. ACTIVE TEST

1. Select “BCM” on CONSULT-II. Select “INT LAMP”.
2. Select “IGN ILLUM” active test to make sure lamp operates.

Ignition key hole illumination should operate.



OK or NG

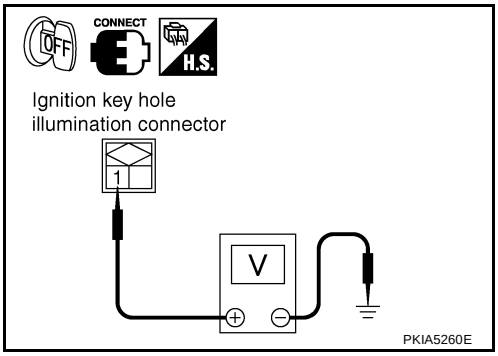
OK >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .

NG >> GO TO 3.

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.



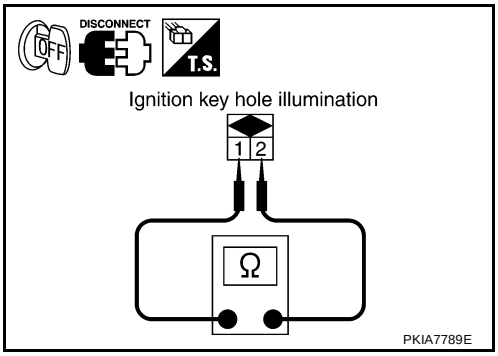
OK or NG

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 terminals 1 and 2.

1 – 2 : Continuity should exist.



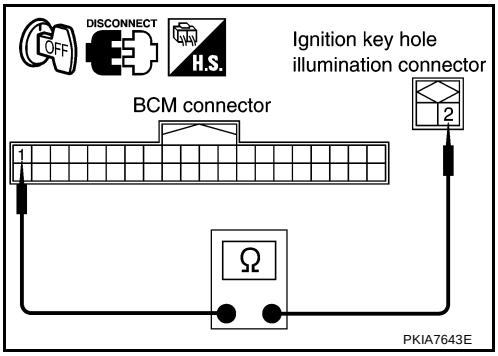
OK or NG

OK >> GO TO 5.
NG >> Replace ignition key hole illumination. Refer to LT-155, "Bulb Replacement, Removal and Installation" .

5. CHECK IGNITION KEY HOLE ILLUMINATION CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M3 terminal 1 (PU) and ignition key hole illumination harness connector M24 terminal 2 (PU).

1 (PU) – 2 (PU) : Continuity should exist.



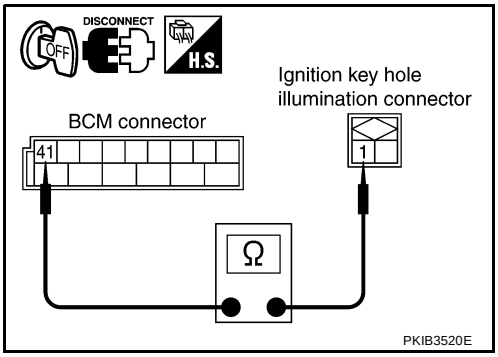
OK or NG

OK >> Replace BCM if ignition key hole illumination does not work after setting the connector again. Refer to BCS-16, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

6. CHECK IGNITION KEY HOLE ILLUMINATION CIRCUIT

1. Disconnect BCM connector and ignition key hole illumination connector.
2. Check continuity between BCM harness connector M4 terminal 41 (R/B) and ignition 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 ignition key hole illumination does not work after setting the connector again. Refer to BCS-16, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

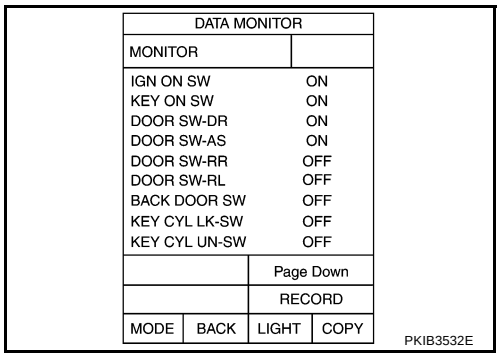
All Step Lamps Do Not Operate

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



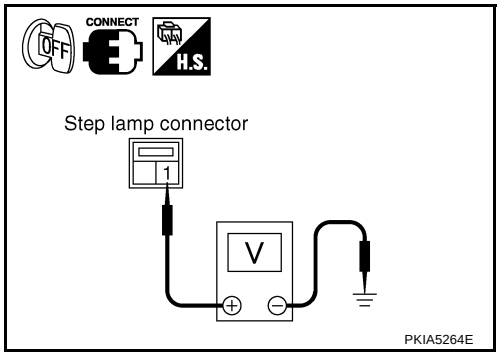
OK or NG

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.



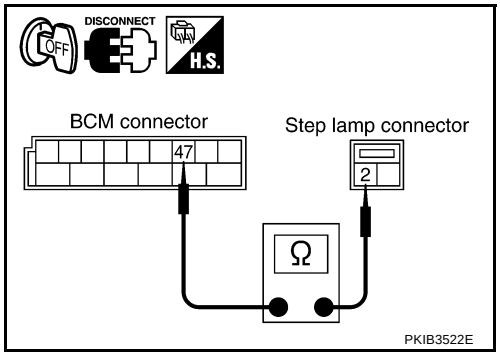
OK or NG

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.



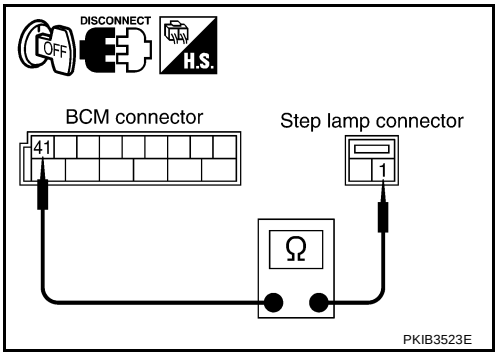
OK or NG

OK >> Replace BCM if step lamp does not work after setting the connector again. Refer to BCS-16, "Removal and Installation of BCM" .
NG >> Repair harness or connector.

4. 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 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 step lamp does not work after setting the connector again. Refer to BCS-16, "Removal and Installation of BCM" .

NG >> Repair harness or connector.

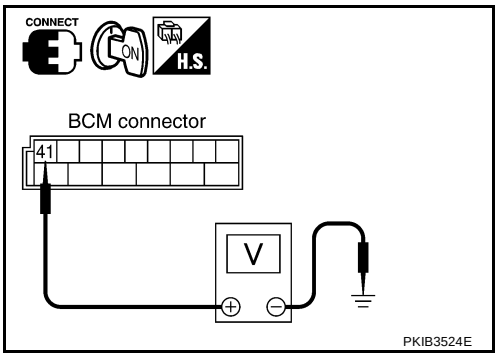
All Interior Room Lamps Do Not Operate

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.



OK or NG

OK >> Repair harness or connector. In a case of making a short circuit, be sure to disconnect cable from the negative terminal repairing harness, and then reconnect.

NG >> Replace BCM. Refer to BCS-16, "Removal and Installation of BCM" .

Bulb Replacement

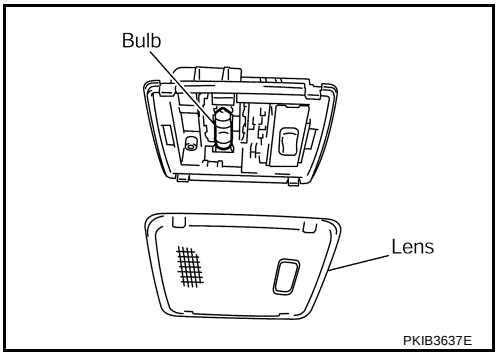
AKS007FK

INTERIOR ROOM LAMP

1. Remove interior room lamp. Refer to LT-188, "Removal and Installation" .
2. Insert a suitable tool and remove lens.
3. Remove bulb.

Interior room lamp :12V - 10W

4. Installation is the reverse order of removal.



MAP LAMP

Refer to LT-152, "Bulb Replacement" in “MAPLAMP”.

PERSONAL LAMP

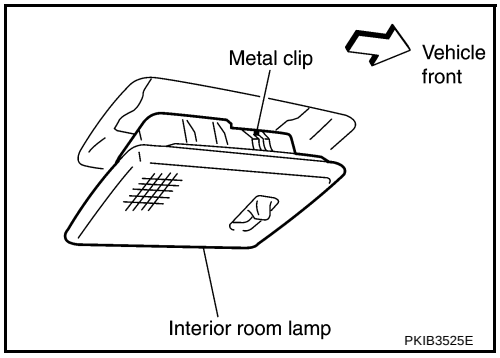
Refer to LT-153, "Bulb Replacement" in “PERSONAL LAMP”.

Removal and Installation

AKS007FL

INTERIOR ROOM LAMP

1. Use a suitable tool to press metal clip and remove room lamp.
2. Disconnect interior room lamp connector.



MAP LAMP

Refer to LT-152, "Removal and Installation" in “MAP LAMP”.

PERSONAL LAMP

Refer to LT-153, "Removal and Installation" in “PERSONAL LAMP”.

ILLUMINATION

PFP:27545

System Description

AKS007EI

Control of illumination lamps operation is dependent upon position of lighting switch (combination switch). When lighting switch is placed in the 1ST or 2ND position (or if auto light system is activated), BCM (body control module) receives input signal requesting illumination lamps to illuminate. This input signal is communicated to IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) located in the IPDM E/R controls tail lamp relay coil. This relay, when energized, directs power to illumination lamps, which then illuminate.

Power is supplied at all times

- through 10A fuse (No. 71, located in IPDM E/R)
- to tail lamp relay, located in IPDM E/R, and
- to CPU located in IPDM E/R.

Power is also supplied at all times

- through 50A fusible link (letter M, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 15A fuse [No. 22 located in fuse block (J/B)]
- to BCM terminal 42,
- through 15A fuse (No. 78, located in IPDM E/R)
- to CPU located in IPDM E/R,
- through 10A fuse [No. 19 located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 21, and
- to combination meter terminal 8.

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

- to ignition relay, located in IPDM E/R, from battery direct,
- through 15A fuse [No. 1 located in fuse block (J/B)]
- to BCM terminal 38,
- through 10A fuse [No. 12, located in fuse block (J/B)]
- to unified meter and A/C amp. terminal 22,
- through 10A fuse [No. 14 located in fuse block (J/B)]
- to combination meter terminal 7.

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

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

Ground is supplied

- to BCM 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 terminals 38 and 60
- through grounds E21, E50, and E51.

ILLUMINATION OPERATION BY LIGHTING SWITCH

With lighting switch in the 1ST or 2ND position (or if auto light system is activated), BCM receives input signal requesting illumination lamps to illuminate. This input signal is communicated to IPDM E/R across the CAN communication lines. The CPU located in the IPDM E/R controls 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 5
- 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 LDW switch (illumination) terminal 5
- to door mirror remote control switch (illumination) terminal 16
- 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 (without interruption detection function for rear door window), and
- to rear power window switch RH (illumination) terminal 6 (without interruption detection function for rear door window).

Illumination control

- through combination meter terminal 19
- to A/T device (illumination) terminal 12
- to snow mode switch (illumination) terminal 6
- 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 door mirror remote control switch terminal 15
- to LDW switch (illumination) terminal 4,
- to A/C and AV switch (illumination) terminal 4
- to NAVI control unit (illumination) terminal 30, and
- 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 (without interruption detection function for rear door window), and
- to rear power window switch RH (illumination) terminal 7 (without interruption detection function for rear door window)
- through grounds B15 and B45.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

When the lighting switch is in the 1ST or 2ND position (or if auto light system is activated), and ignition switch is turned from ON or ACC to OFF, battery saver control function is activated.
Under this condition, illumination lamps remain illuminated for 5 minutes, then 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 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.

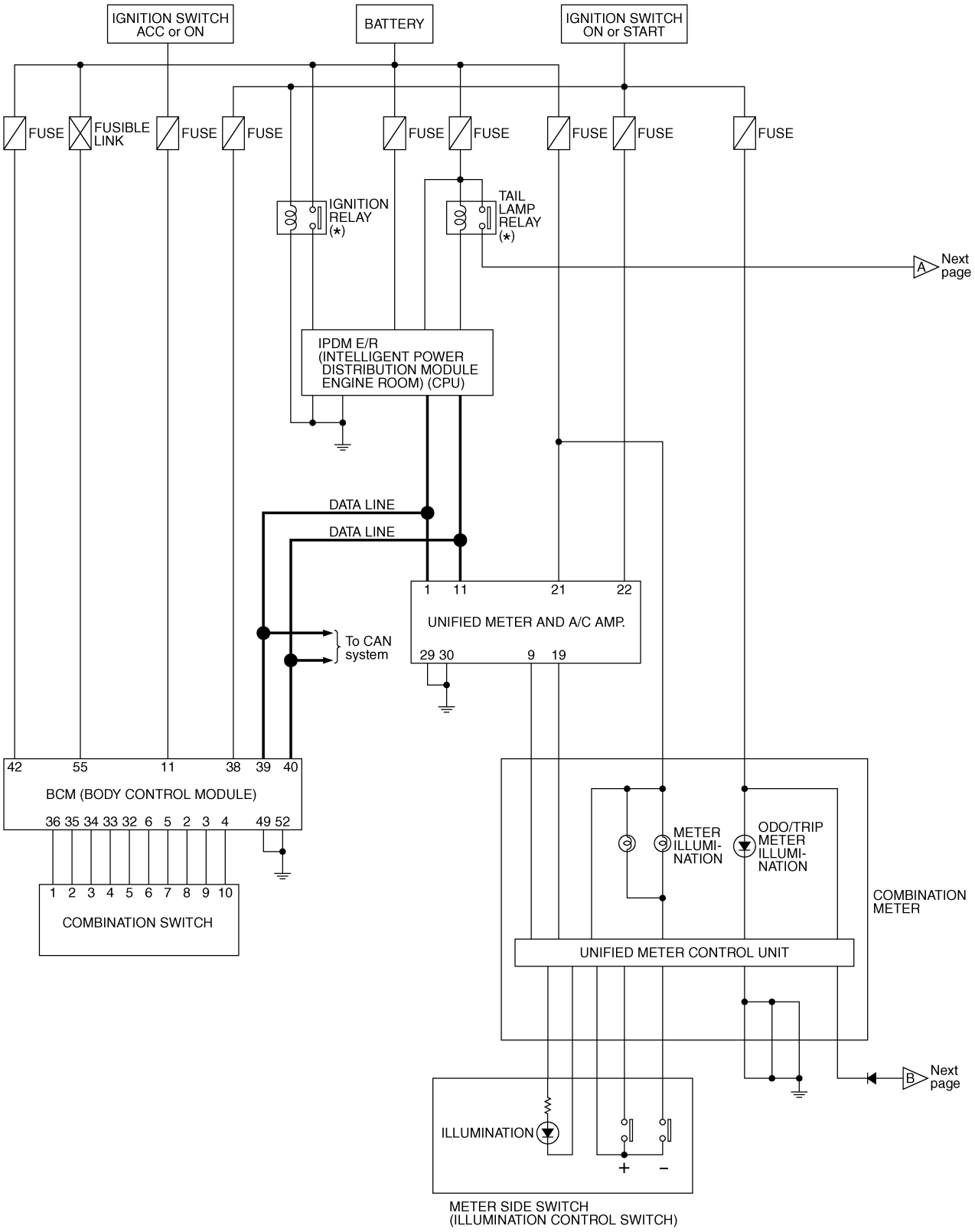
CAN Communication Unit

AKS0080Y

Refer to LAN-30, "CAN Communication Unit" .

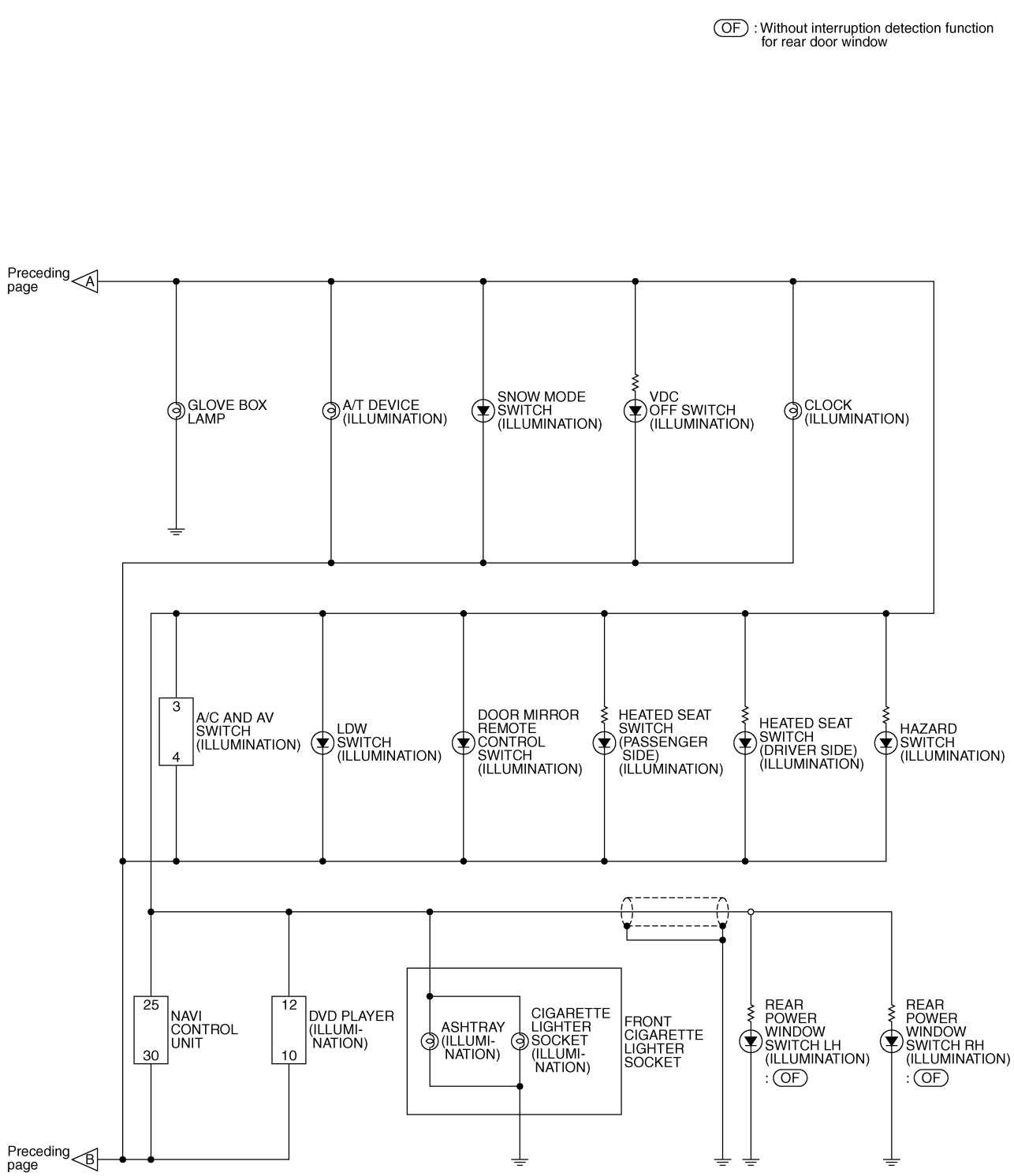
Schematic

AKS007EL



* : This relay is built into the IPDM E/R (Intelligent power distribution module engine room).

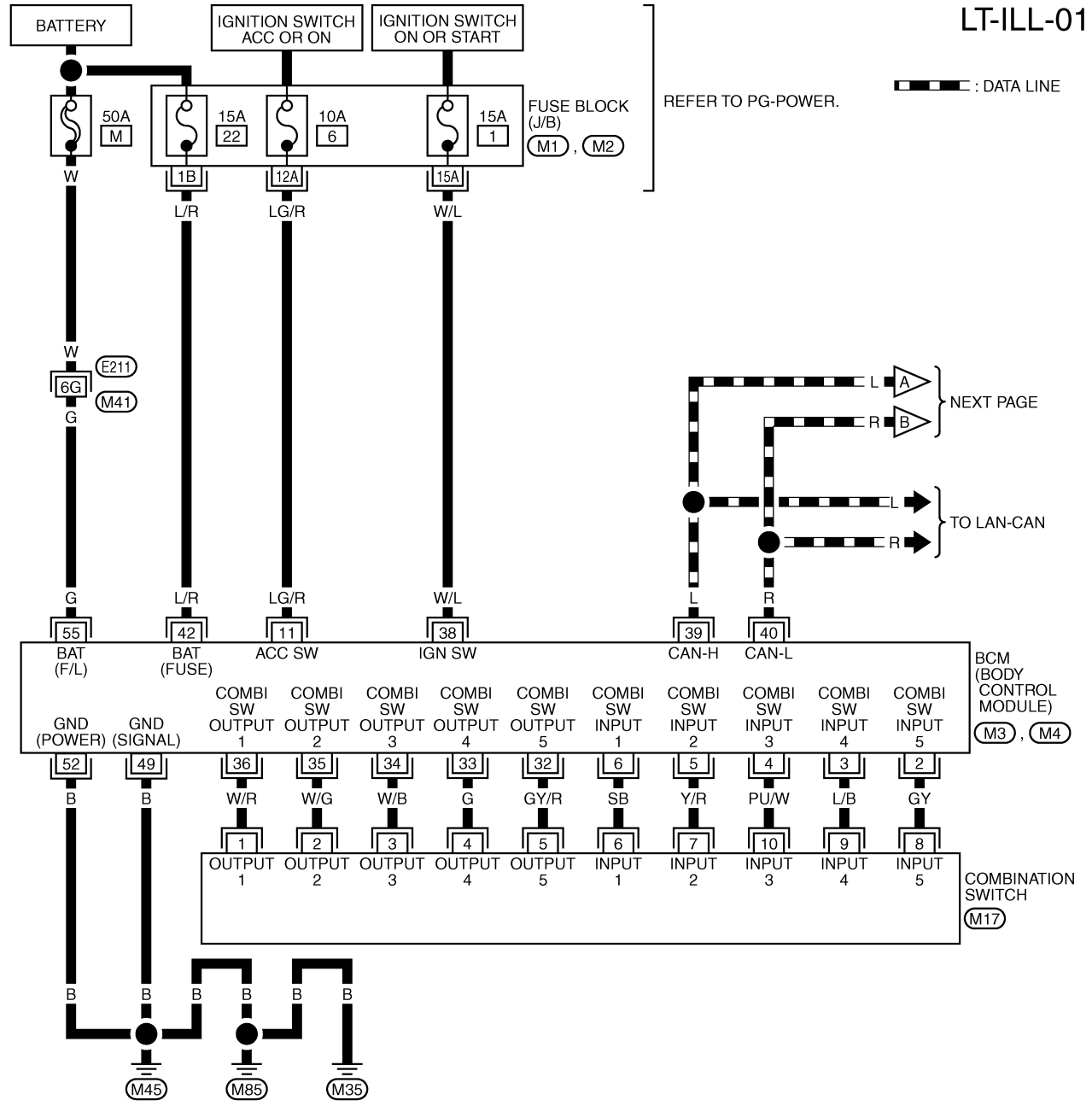
TKWM0670E


OF : Without interruption detection function for rear door window
Preceding page A
GLOVE BOX LAMP
A/T DEVICE (ILLUMINATION)
SNOW MODE SWITCH (ILLUMINATION)
VDC OFF SWITCH (ILLUMINATION)
CLOCK (ILLUMINATION)
3
4
A/C AND AV SWITCH (ILLUMINATION)
LDW SWITCH (ILLUMINATION)
DOOR MIRROR REMOTE CONTROL SWITCH (ILLUMINATION)
HEATED SEAT SWITCH (PASSENGER SIDE) (ILLUMINATION)
HEATED SEAT SWITCH (DRIVER SIDE) (ILLUMINATION)
HAZARD SWITCH (ILLUMINATION)
25
30
NAVI CONTROL UNIT
12
10
DVD PLAYER (ILLUMI-NATION)
ASHTRAY (ILLUMI-NATION)
CIGARETTE LIGHTER SOCKET (ILLUMI-NATION)
FRONT CIGARETTE LIGHTER SOCKET
REAR POWER WINDOW SWITCH LH (ILLUMINATION) : OF
REAR POWER WINDOW SWITCH RH (ILLUMINATION) : OF
Preceding page B

TKWM2050E

Wiring Diagram — ILL —

AKS007EM



REFER TO THE FOLLOWING.

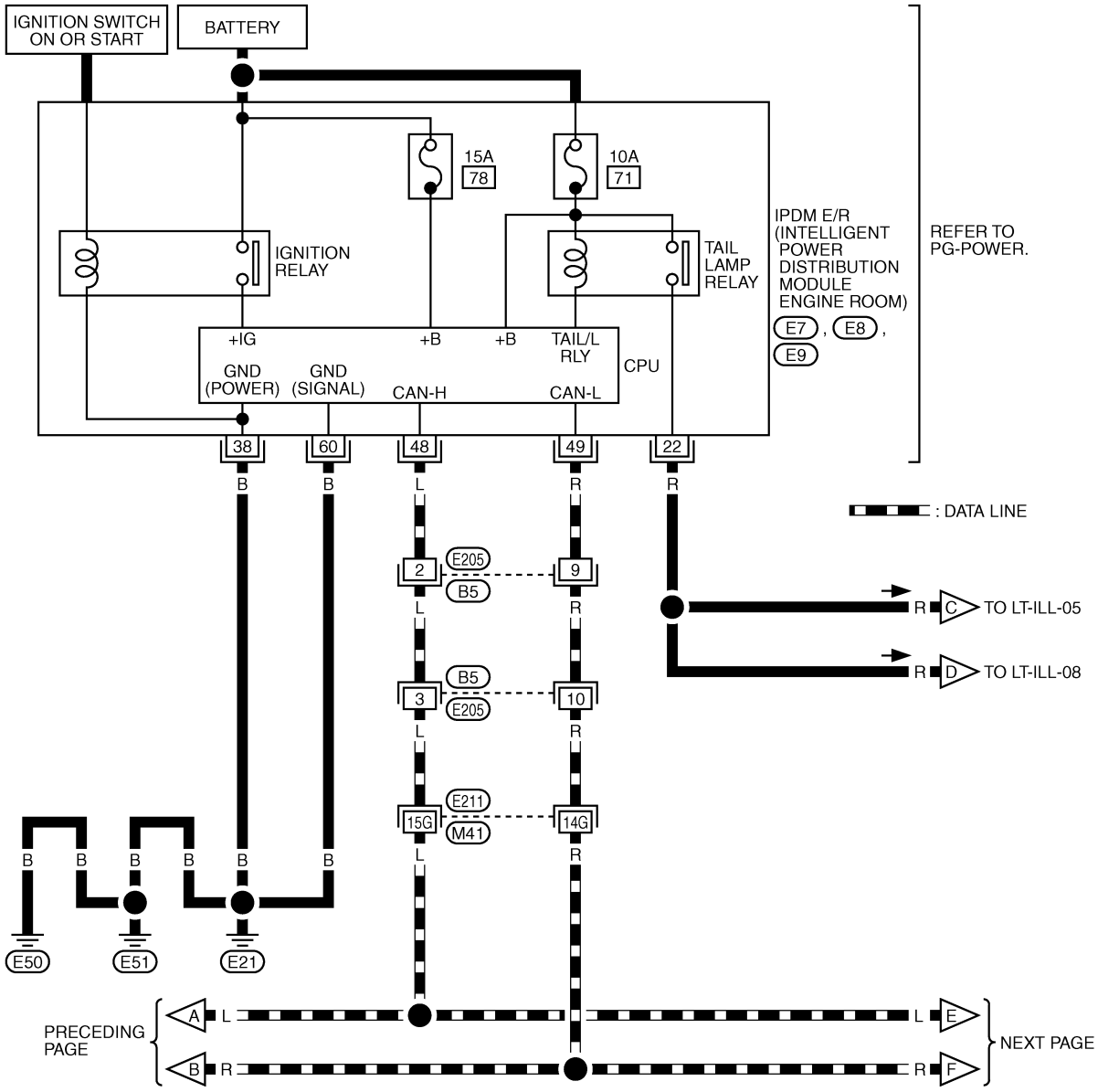
E211 -SUPER MULTIPLE JUNCTION (SMJ)

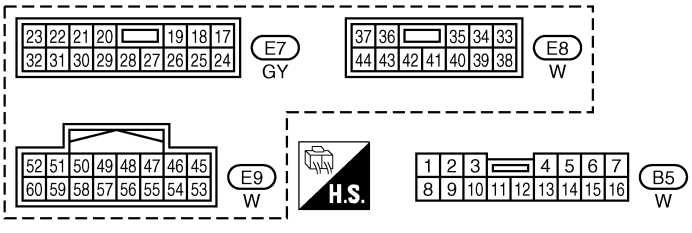
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM0826E

LT-ILL-02

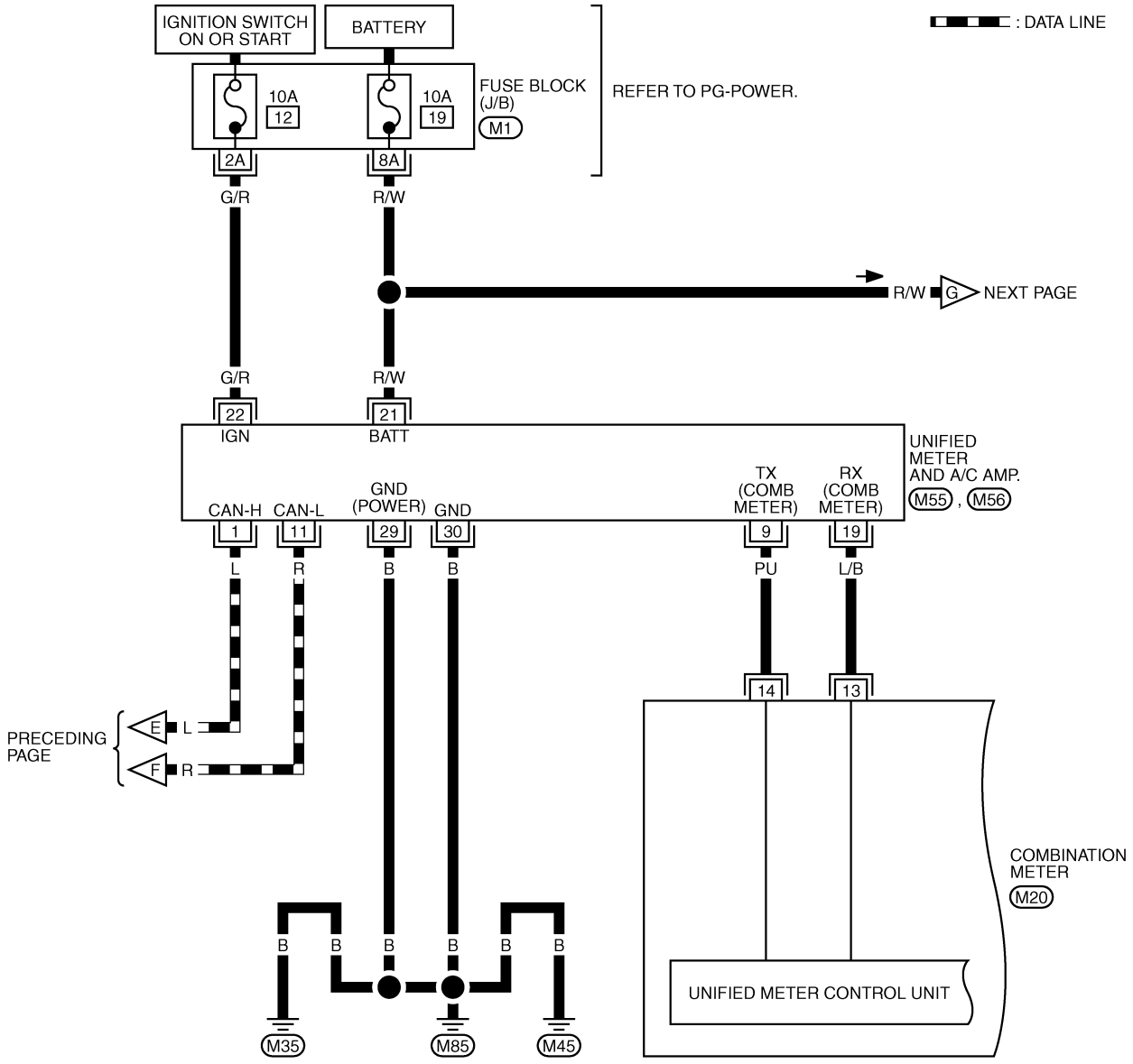


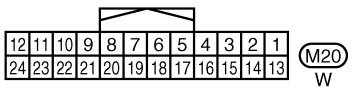


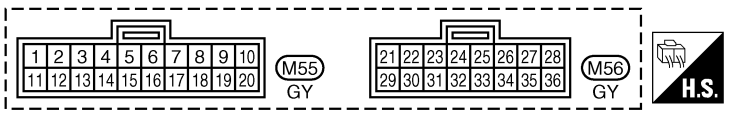
REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1082E

LT-ILL-03



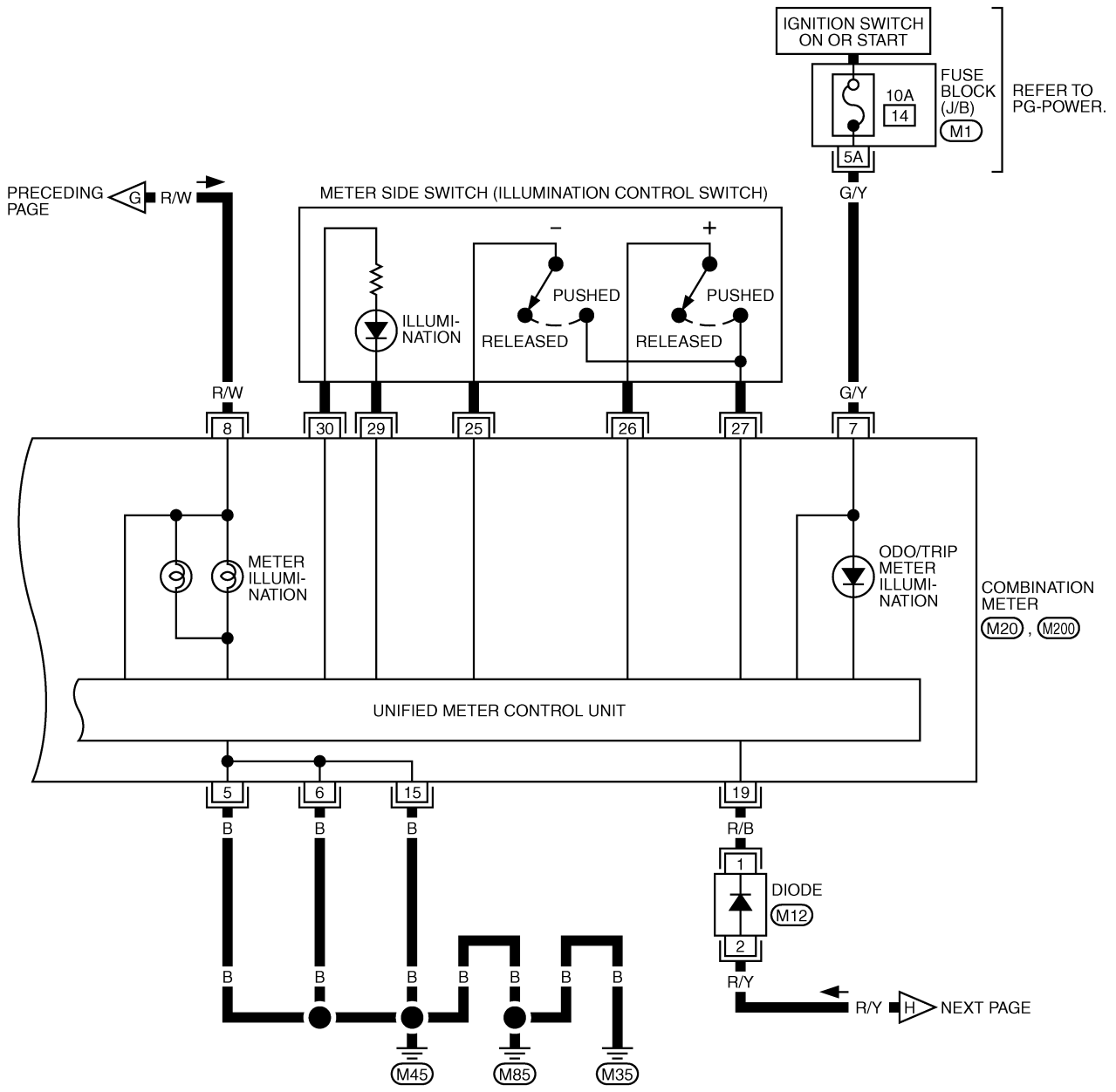


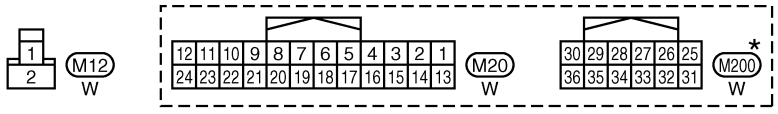


REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM2432E

LT-ILL-04



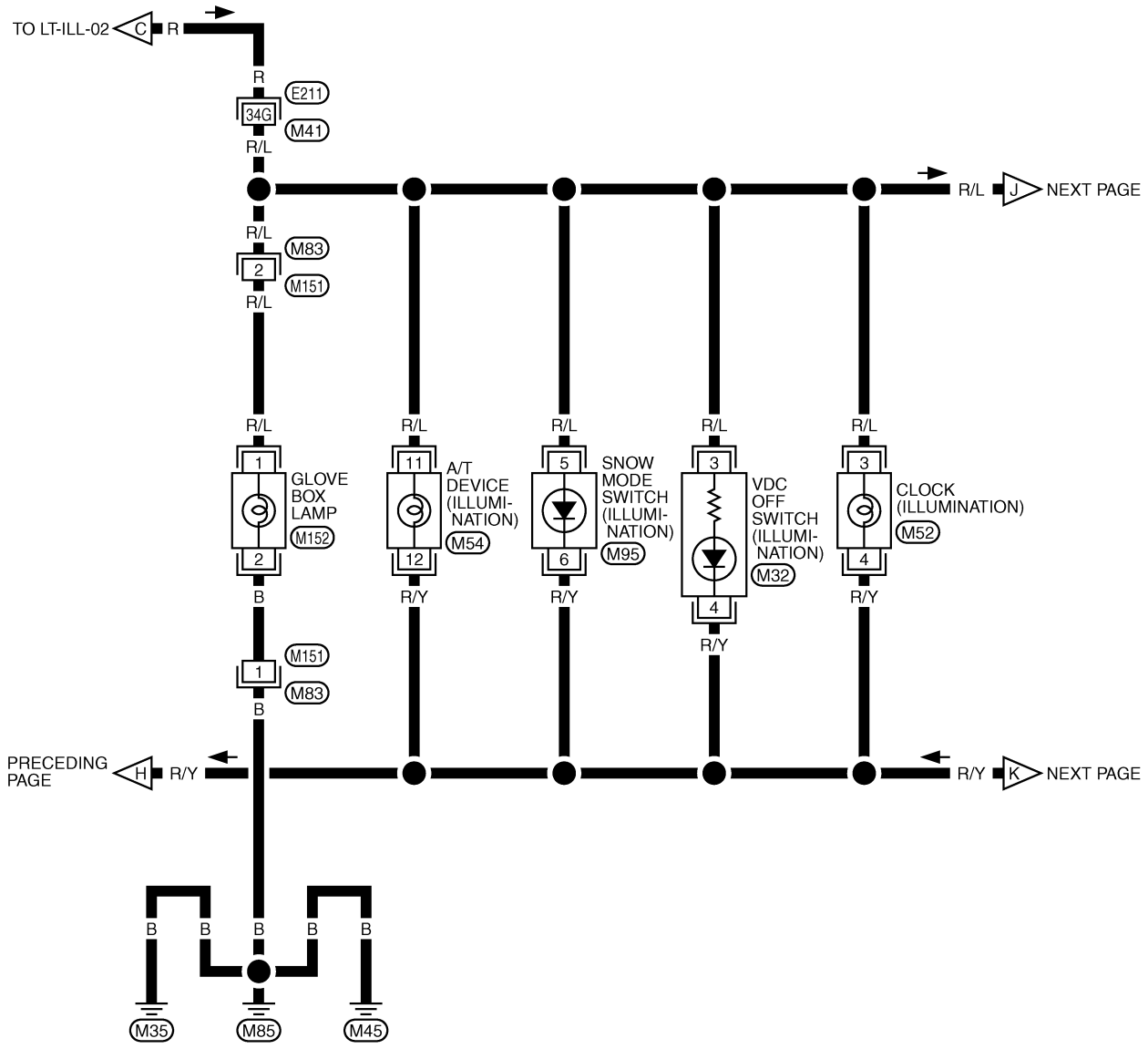


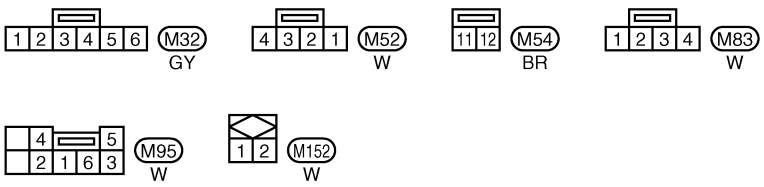
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWM0675E

LT-ILL-05

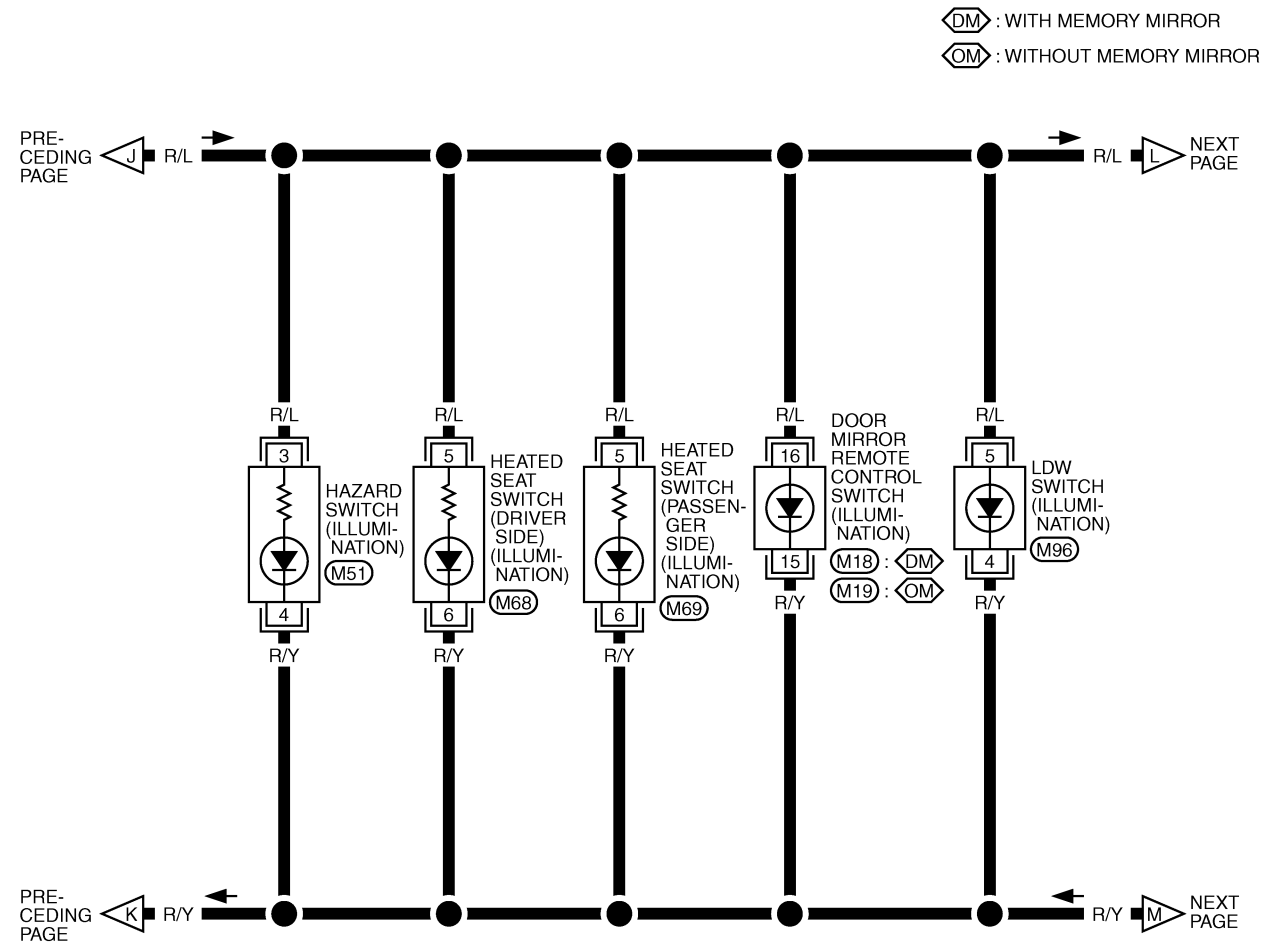


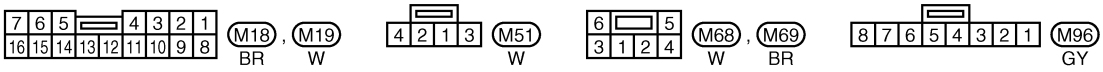


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM2051E

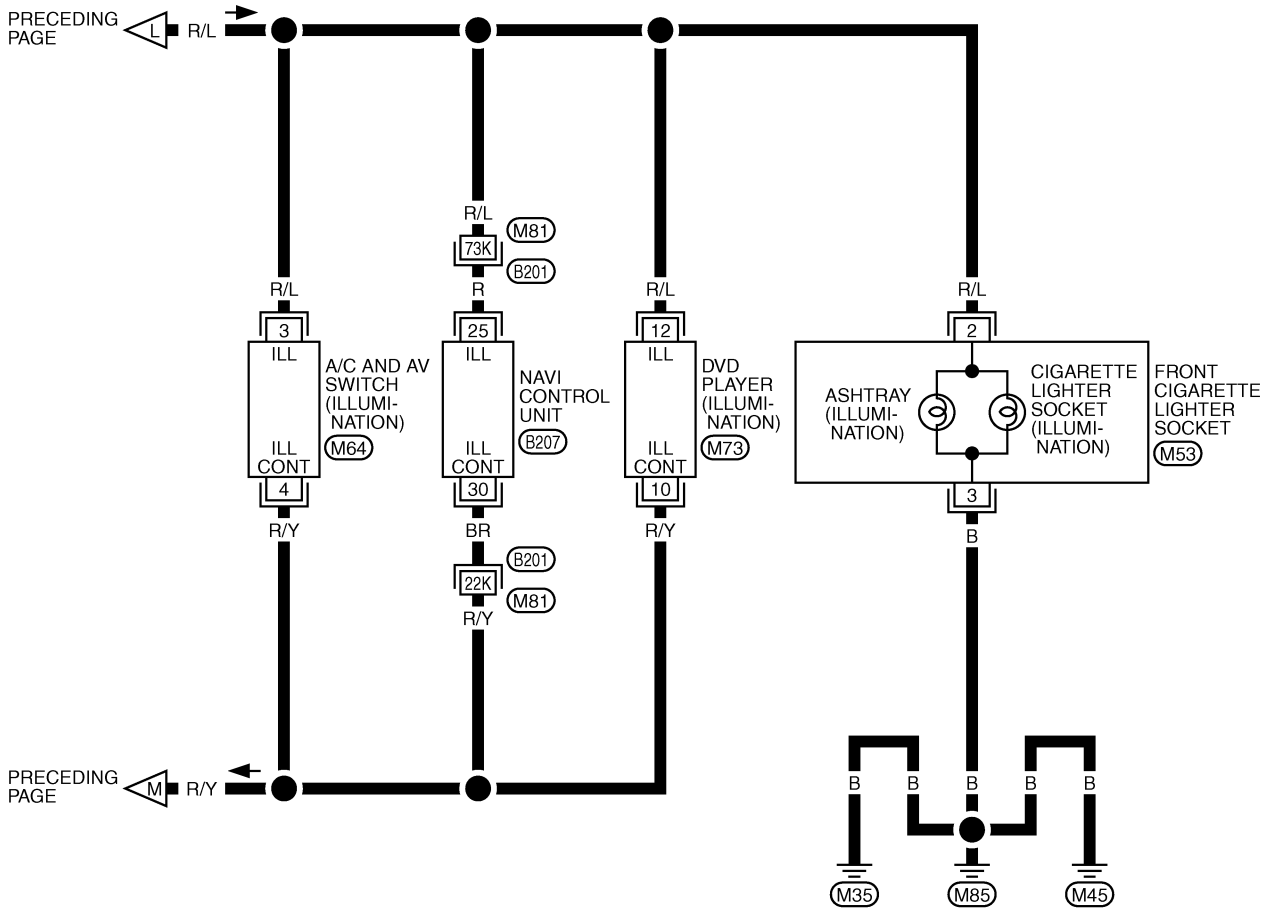
LT-ILL-06

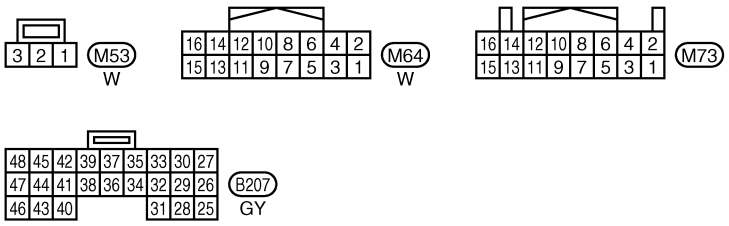




TKWM2052E

LT-ILL-07



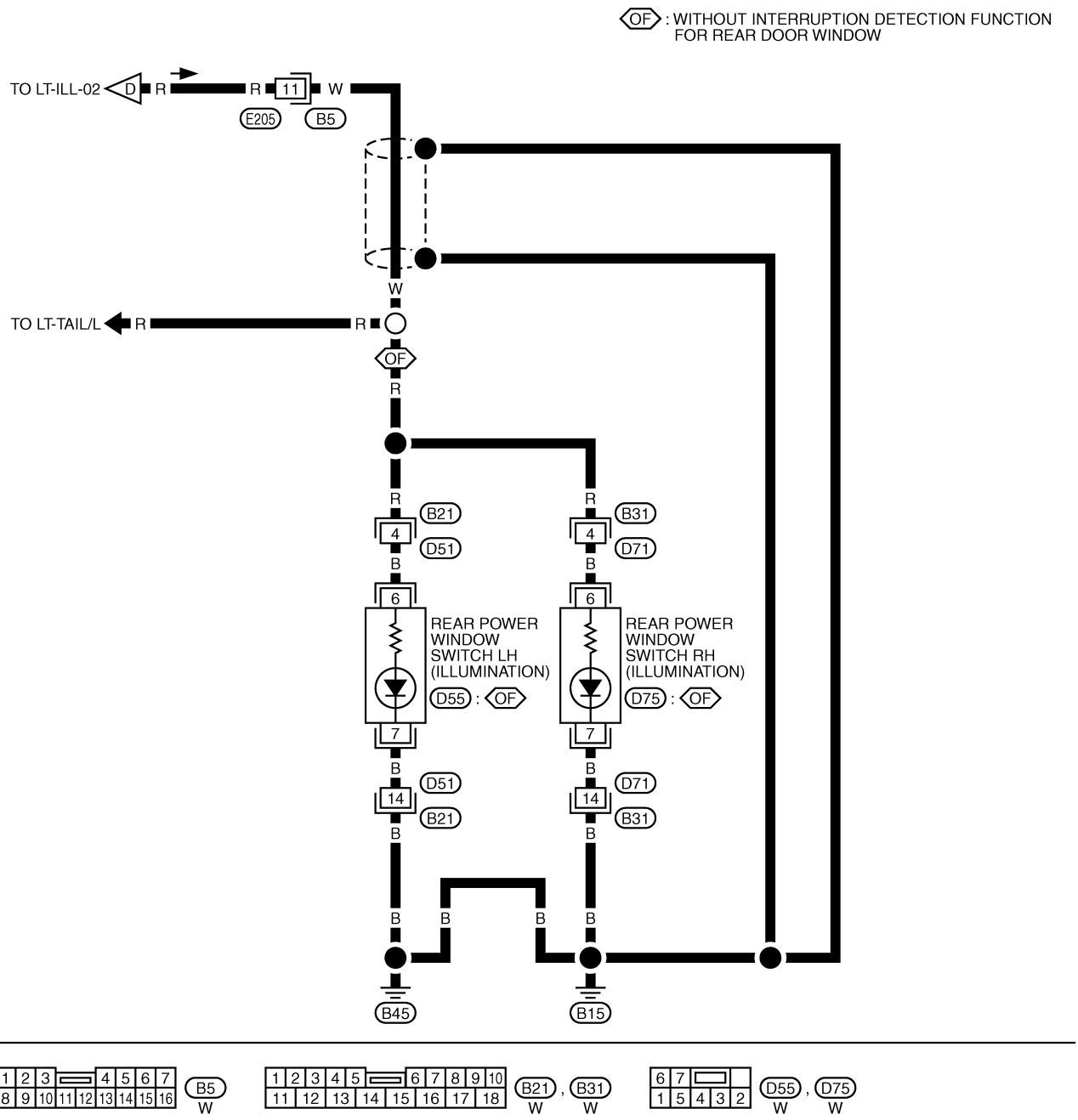


REFER TO THE FOLLOWING.

B201 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM2053E

LT-ILL-08



TKWM1083E

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-156, "Bulb Replacement, Removal and Installation" .

FRONT DOOR INSIDE ILLUMINATION

Refer to EI-34, "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)
	Daytime/Parking lamp	21/5
	Front side marker lamp	3.8
Rear combination lamp	Stop/Tail lamp and 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
Interior room lamp	10
Personal lamp	8
Luggage room lamp	8
Step lamp	5
Glove box lamp	1.4
Vanity mirror lamp	1.32
Ignition key hole illumination	0.8
Front door inside handle illumination	LED
Rear door inside handle illumination	LED
Console illumination lamp	1.4