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SECTION
LIGHTING SYSTEM

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PRECAUTIONS

PRECAUTIONS

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

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The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

General precautions for service operations

EKS009JB

- Never work with wet hands.
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- 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.
- 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.
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.

Wiring Diagrams and Trouble Diagnosis

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When you read wiring diagrams, refer to the following:

- Refer to [GI-15, "How to Read Wiring Diagrams"](#) in GI section.
- Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) for power distribution in PG section.

When you perform trouble diagnosis, refer to the following:

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

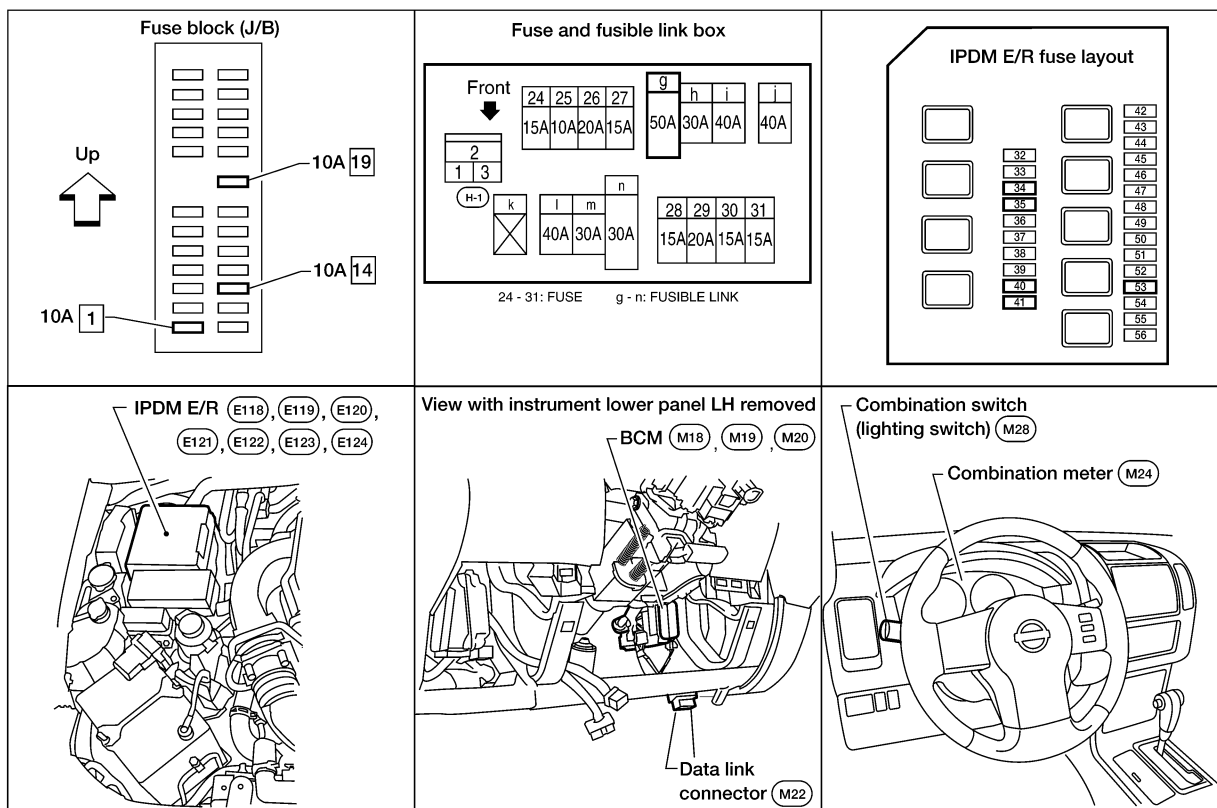
HEADLAMP (FOR USA)

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HEADLAMP (FOR USA)

Component Parts and Harness Connector Location

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System Description

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Control of the front 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 requesting the headlamps (and tail lamps) illuminate. This input is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R controls the front headlamp high and front headlamp low relay coils. When energized, these relays direct power to the respective headlamps, which then illuminate.

OUTLINE

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- to headlamp high relay, located in the IPDM E/R, and
- to headlamp low relay, located in the IPDM E/R, and
- through 20A fuse (No. 53, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM terminal 70.

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

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 59

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HEADLAMP (FOR USA)

- through grounds E9, E15 and E24.

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the headlamp low relay coil. When energized, this relay directs power

- through 15A fuse (No. 41, located in the IPDM E/R)
- through IPDM E/R terminal 54
- to front headlamp RH terminal 3, and
- through 15A fuse (No. 40, located in the IPDM E/R)
- through IPDM E/R terminal 52
- to front headlamp LH terminal 3.

Ground is supplied

- to front headlamp LH and RH terminal 2
- through grounds E9, E15 and E24.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input requesting the headlamp high beams to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the combination meter controls the ON/OFF status of the HIGH BEAM indicator. The CPU of the IPDM E/R controls the headlamp high relay coil. When energized, this relay directs power

- through 10A fuse (No. 34, located in the IPDM E/R)
- through IPDM E/R terminal 56
- to front headlamp RH terminal 1, and
- through 10A fuse (No. 35, located in the IPDM E/R)
- through IPDM E/R terminal 55
- to front headlamp LH terminal 1.

Ground is supplied

- to front headlamp LH and RH terminal 2
- through grounds E9, E15 and E24.

With power and ground supplied, the high beam headlamps illuminate.

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 feature is activated.

Under this condition, the headlamps remain illuminated for 5 minutes, unless the combination switch (lighting switch) position is changed. If the combination switch (lighting switch) position is changed, then the headlamps are turned off.

AUTO LIGHT OPERATION

Refer to [LT-46, "System Description"](#) for auto light operation.

VEHICLE SECURITY SYSTEM (PANIC ALARM)

The vehicle security system (panic alarm) will flash the high beams if the system is triggered. Refer to [BL-44, "Panic Alarm Operation"](#).

CAN Communication System Description

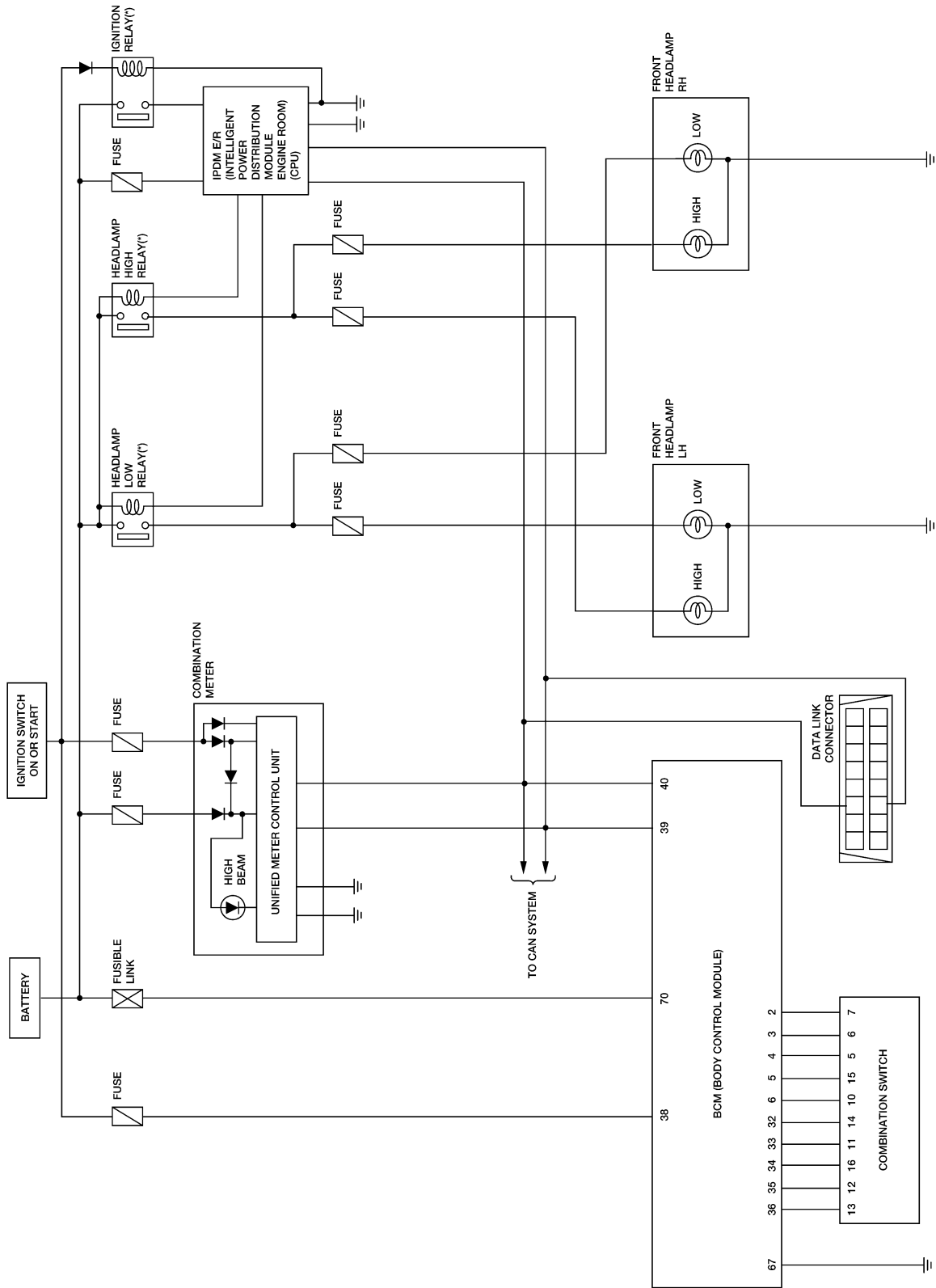
Refer to [LAN-24, "CAN COMMUNICATION"](#).

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Schematic

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*: THIS RELAY IS BUILT INTO THE IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

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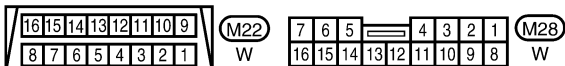
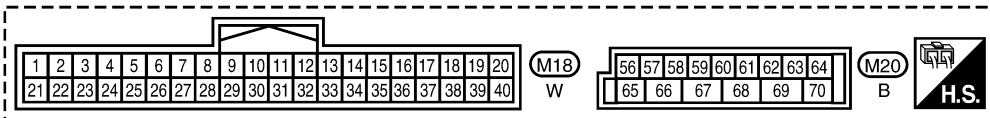
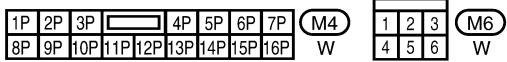
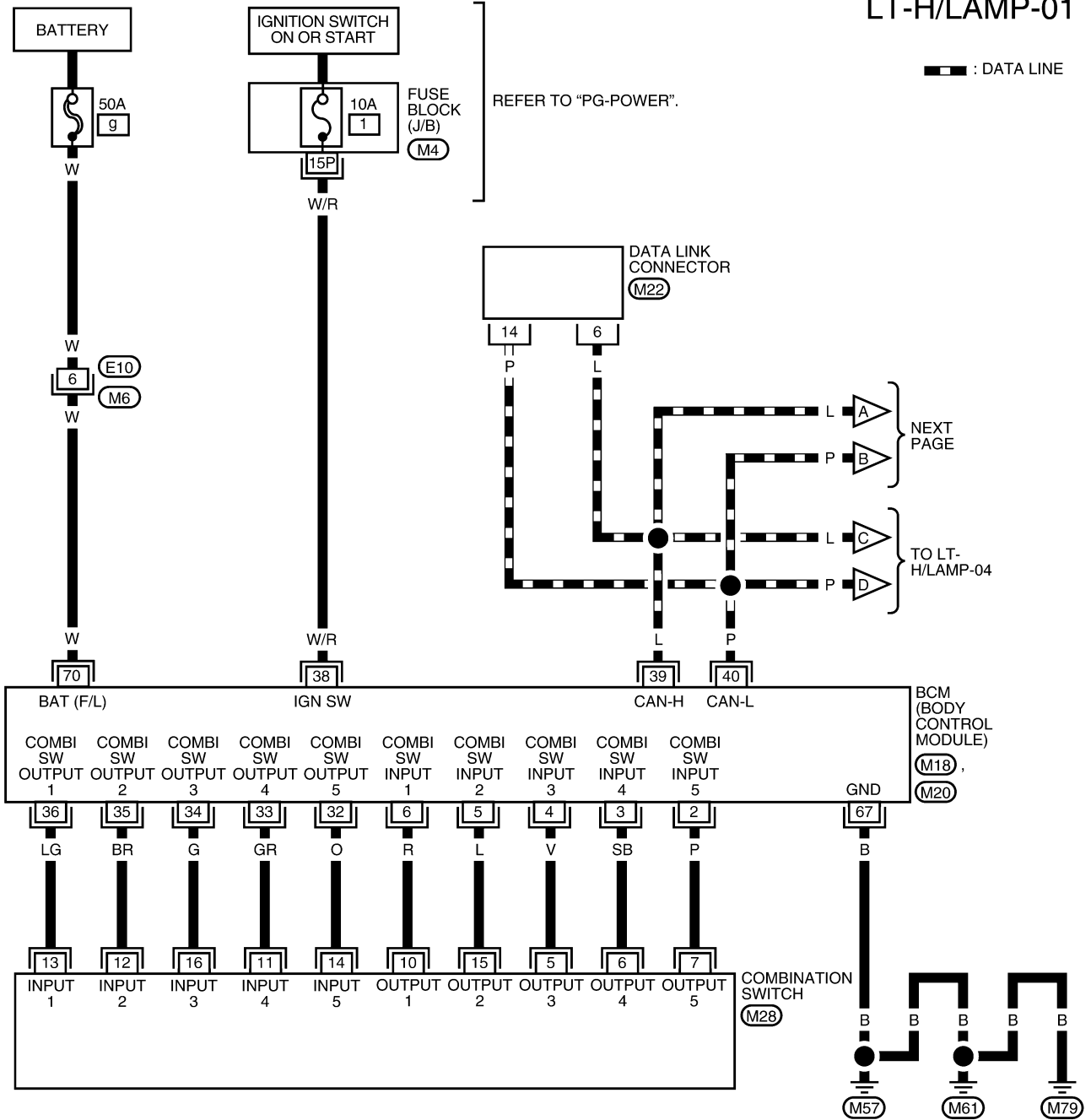
HEADLAMP (FOR USA)

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Wiring Diagram — H/LAMP —

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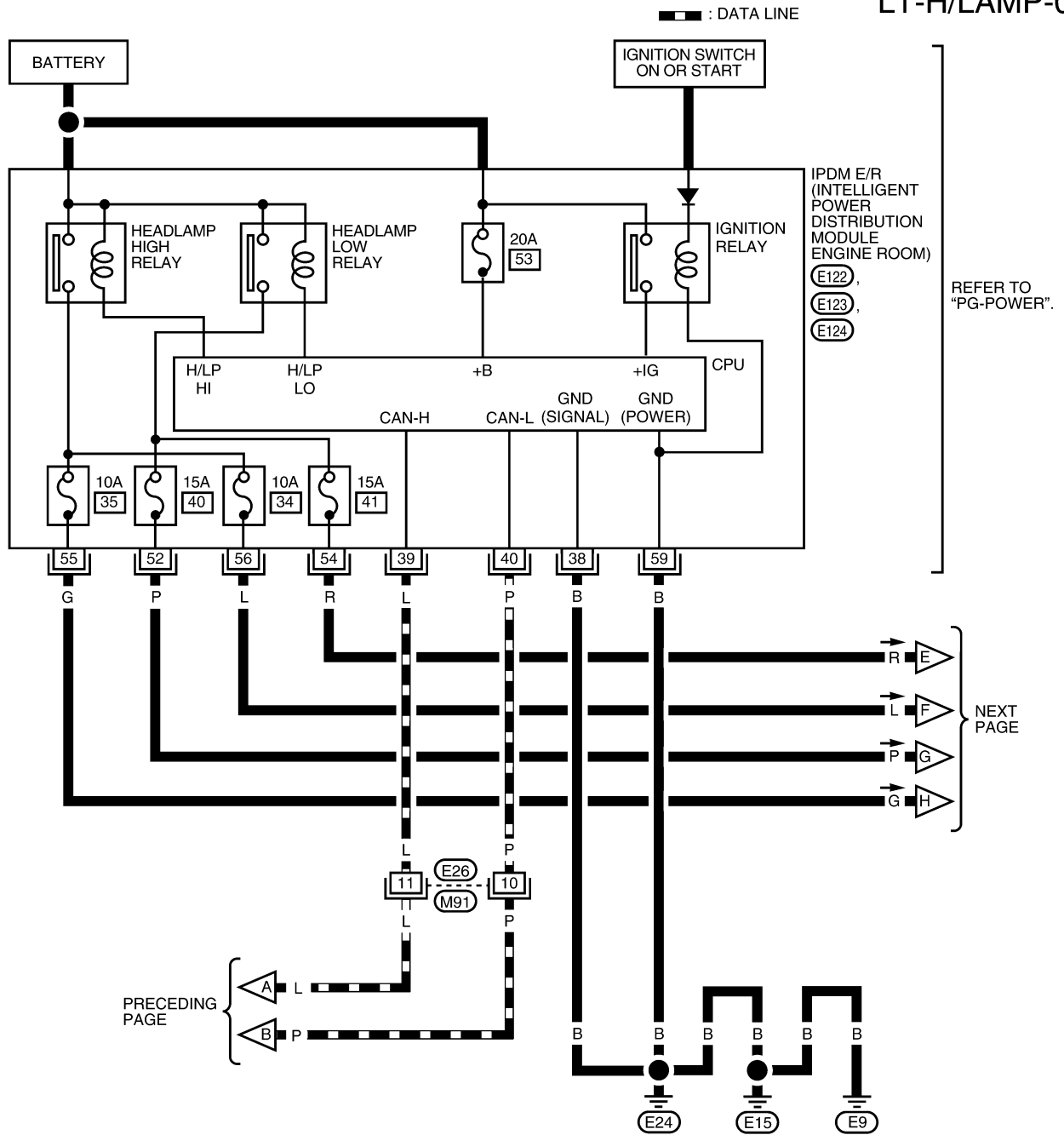
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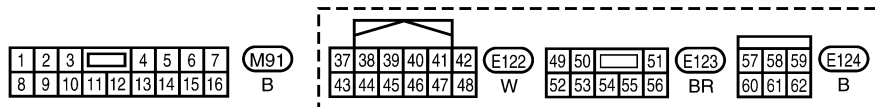
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HEADLAMP (FOR USA)

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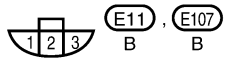
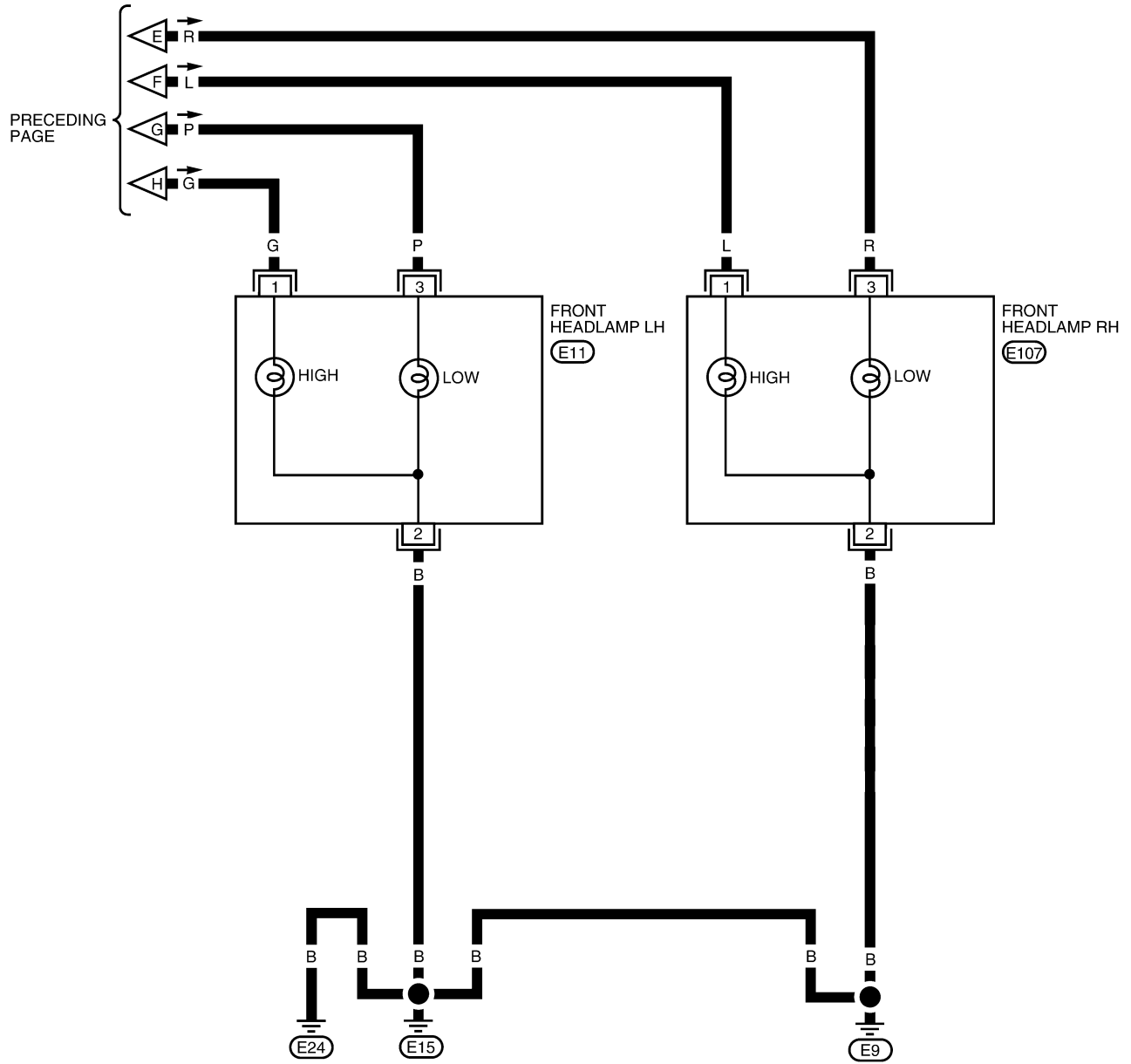
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HEADLAMP (FOR USA)

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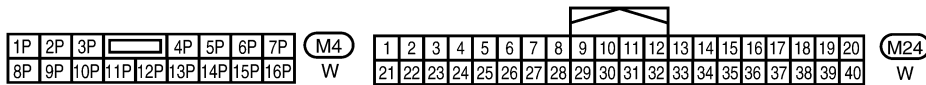
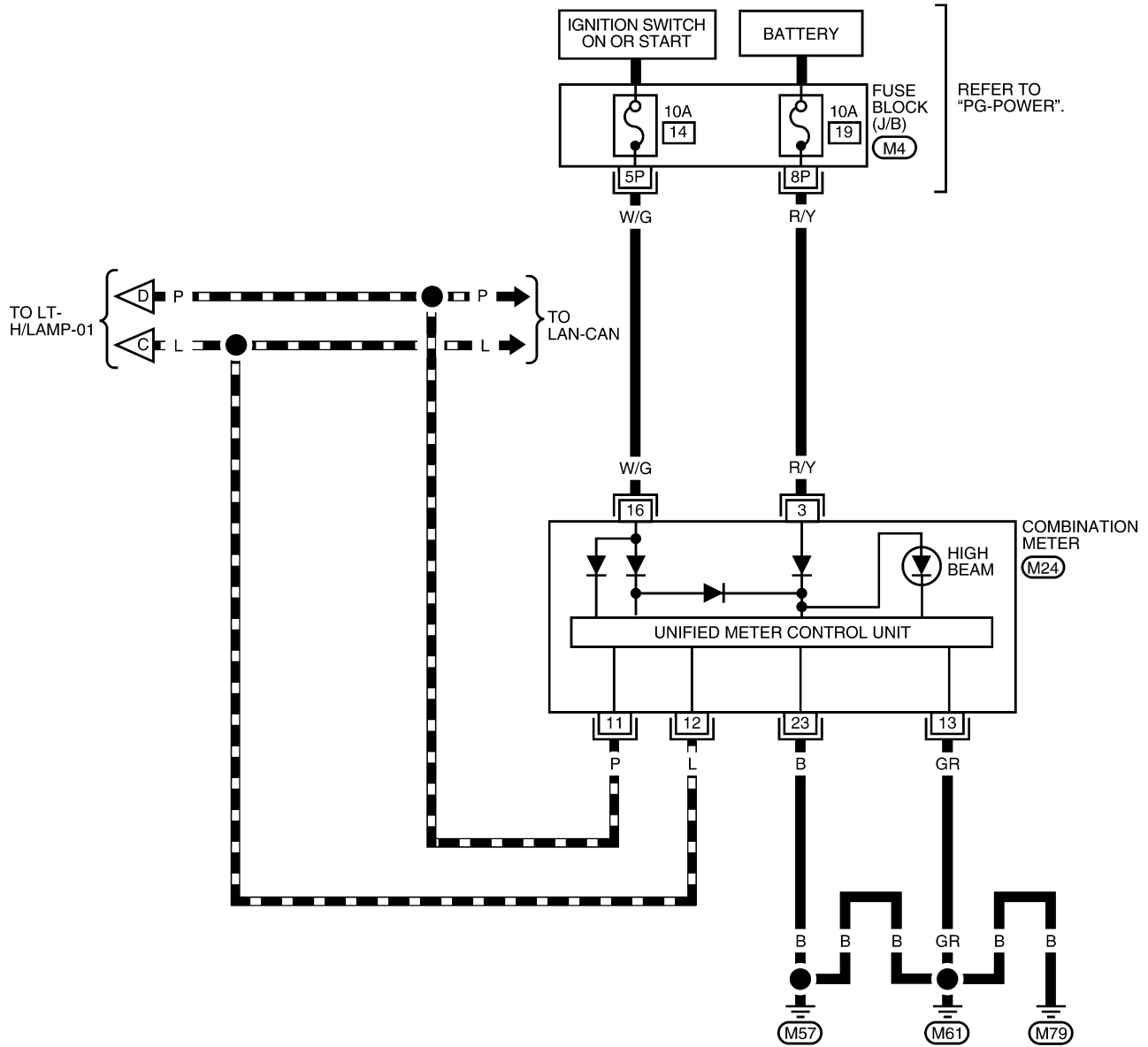


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HEADLAMP (FOR USA)

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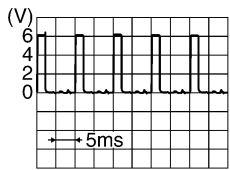
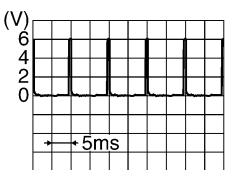

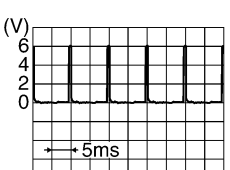

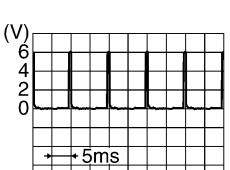
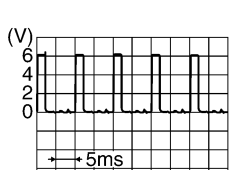


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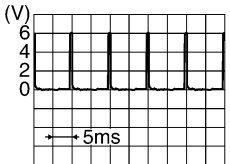
HEADLAMP (FOR USA)

Terminals and Reference Values for BCM

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Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5291E</p>
3	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5292E</p>
4	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5291E</p>
5	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5292E</p>
6	R	Combination switch input 1			
32	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5291E</p>
33	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5292E</p>
34	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5291E</p>

HEADLAMP (FOR USA)

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
35	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
36	LG	Combination switch output 1			
38	W/R	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	P	CAN-L	—	—	—
67	B	Ground	ON	—	0V
70	W	Battery power supply (fusible link)	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

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Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
38	B	Ground	ON	—	0V
39	L	CAN-H	—	—	—
40	P	CAN-L	—	—	—
52	P	Headlamp low (LH)	ON	Lighting switch 2ND position OFF	0V
				ON	Battery voltage
54	R	Headlamp low (RH)	ON	Lighting switch 2ND position OFF	0V
				ON	Battery voltage
55	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position OFF	0V
				ON	Battery voltage
56	L	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position OFF	0V
				ON	Battery voltage
59	B	Ground	ON	—	0V

How to Proceed With Trouble Diagnosis

EKS009JK

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-5, "System Description"](#).
3. Perform the Preliminary Check. Refer to [LT-13, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does the headlamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS009JL

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

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

HEADLAMP (FOR USA)

Unit	Power source	Fuse and fusible link No.
IPDM E/R	Battery	34
		35
		40
		41
		53

Refer to [LT-8, "Wiring Diagram — H/LAMP —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause before installing new fuse or fusible link.
Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

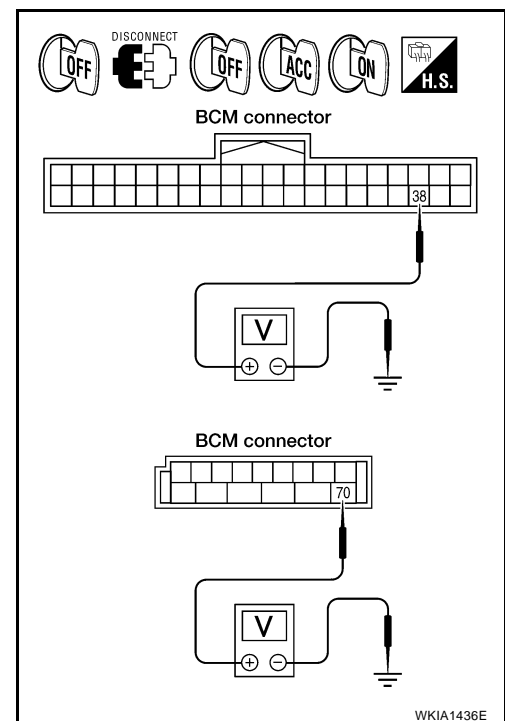
1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

BCM (+)		(-)	Ignition switch position		
Connector	Terminal		OFF	ACC	ON
M18	38	Ground	0V	0V	Battery voltage
M20	70		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

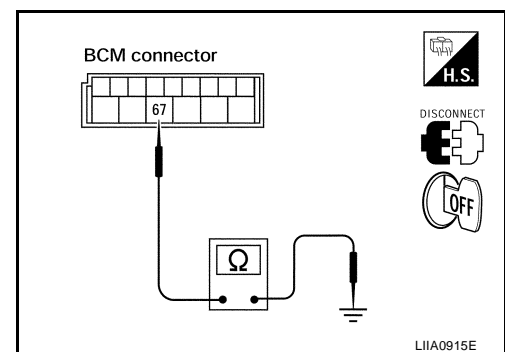
Check continuity between BCM harness connector and ground.

BCM		Continuity
Connector	Terminal	
M20	67	Ground Yes

OK or NG

OK >> Inspection End.

NG >> Check ground circuit harness.



HEADLAMP (FOR USA)

CONSULT-II Function (BCM)

EKS009JM

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

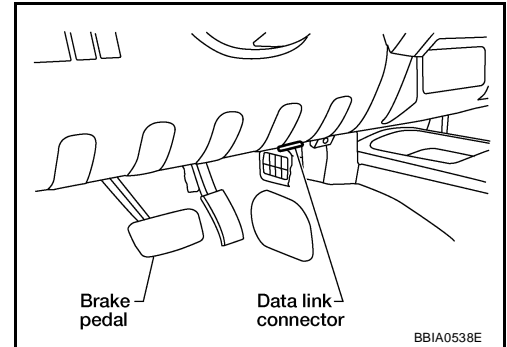
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II OPERATION

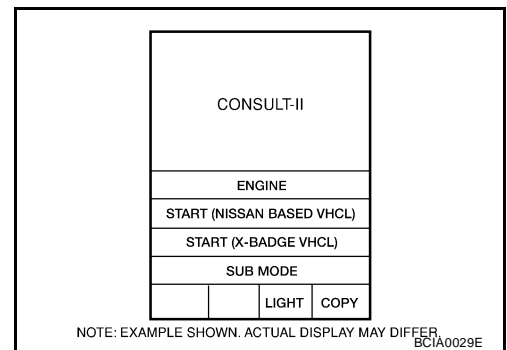
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

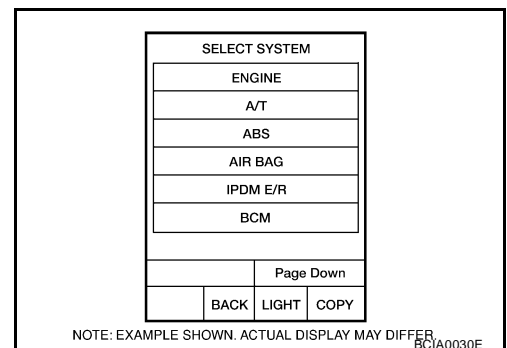
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, go to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



HEADLAMP (FOR USA)

4. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.

SELECT TEST ITEM			
HEAD LAMP			
WIPER			
FLASHER			
AIR CONDITIONER			
COMB SW			
BCM			
Scroll Up		Page Down	
	BACK	LIGHT	COPY

LKIA0183E

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 SETT".
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 ON/OFF.	ON	×
		OFF	—

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW "ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2 "ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.

HEADLAMP (FOR USA)

Monitor item	Contents
LIGHT SW 1ST "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW "ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW "ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW "ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW-DR "ON/OFF"	Displays status of the front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS "ON/OFF"	Displays status of the front door RH as judged from the front door switch RH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RR "ON/OFF"	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RL "ON/OFF"	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW "ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R "ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L "ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW "ON/OFF"	Displays status of cargo lamp switch.
OPTICAL SENSOR [0 - 5V]	Displays "ambient light (close to 5V when dark/close to 0V when light)" judged from optical sensor signal.

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 (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
CORNERING LAMP	Not used.
CARGO LAMP	Allows cargo lamp to operate by switching ON-OFF.

SELF-DIAGNOSTIC RESULTS

Operation Procedure

1. Touch "BCM" on "SELECT TEST ITEM" screen.
2. Touch "SELF-DIAG RESULTS" on "SELECT DIAG MODE" screen.
3. Self-diagnostic results are displayed.

Display Item List

Monitored item	CONSULT-II display	Description
CAN communication	CAN communication [U1000]	Malfunction is detected in CAN communication.
CAN communication system	CAN communication system 1 to 6 [U1000]	Malfunction is detected in CAN system.

HEADLAMP (FOR USA)

EKS009JN

CONSULT-II Function (IPDM E/R)

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

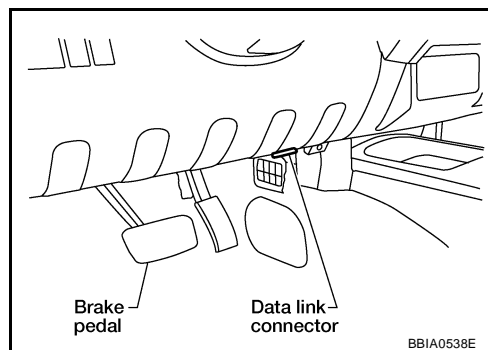
IPDM E/R diagnostic mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II OPERATION

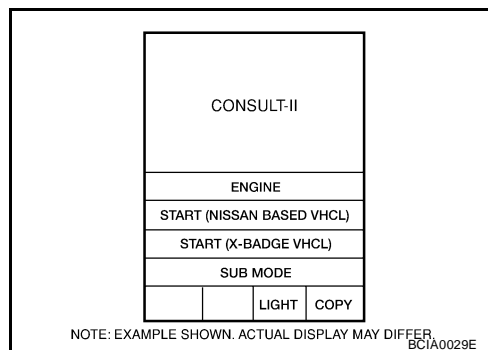
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

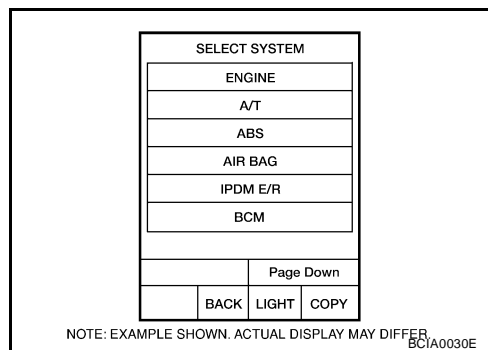
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

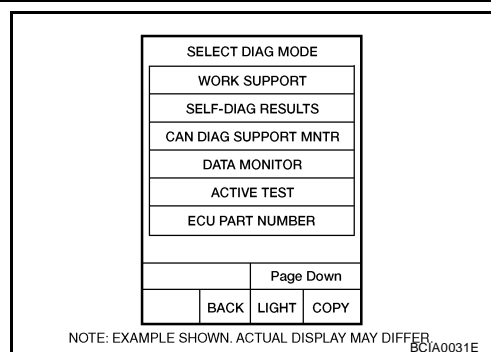


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen. If "IPDM E/R" is not displayed, refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



HEADLAMP (FOR USA)

- Select the desired part to be diagnosed on the "SELECT DIAG MODE" screen.



DATA MONITOR

Operation Procedure

- Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
- Touch "ALL SIGNALS", "MAIN SIGNALS" or "SELECTION FROM MENU" on the "SELECT MONITOR ITEM" screen.

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

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

All Items, Main Items, Select Item Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Parking, license plate and tail lamps 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
Daytime lights request	DTRL REQ	ON/OFF	×	–	×	Signal status input from BCM
Front fog lamps request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:

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

ACTIVE TEST

Operation Procedure

- Touch "ACTIVE TEST" on "SELECT DIAG MODE" screen.
- Touch "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
- Touch item to be tested, and check operation.
- Touch "START".
- Touch "STOP" while testing to stop the operation.

HEADLAMP (FOR USA)

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

Headlamp HI Does Not Illuminate (Both Sides)

EKS009JO

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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 in HIGH position : HI BEAM SW ON

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to [LT-94, "Combination Switch Inspection"](#).

DATA MONITOR	
MONITOR	
HI BEAM SW	ON

SKIA4193E

2. HEADLAMP ACTIVE TEST

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

Headlamp high beam should operate.

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

ACTIVE TEST	
EXTERNAL LAMPS	OFF
TAIL	
LO	HI
FOG	
MODE	BACK
LIGHT	COPY

WKIA1438E

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 position.

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

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).

NG >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).

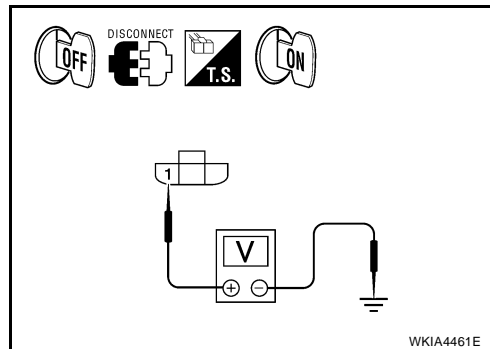
DATA MONITOR	
MONITOR	
HL LO REQ	ON
HL HI REQ	ON
Page Down	
RECORD	
MODE	BACK
LIGHT	COPY

SKIA5775E

HEADLAMP (FOR USA)

4. CHECK HEADLAMP INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect front headlamp RH and LH connectors.
3. Turn ignition switch ON.
4. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
5. Select "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
6. Touch "HI" on "ACTIVE TEST" screen.
7. When headlamp high beam is operating, check voltage between front headlamp RH and LH harness connector and ground.



Front headlamp		(-)	Voltage
(+)			
Connector	Terminal	Ground	Battery voltage
RH	E107		
LH	E11		

OK or NG

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

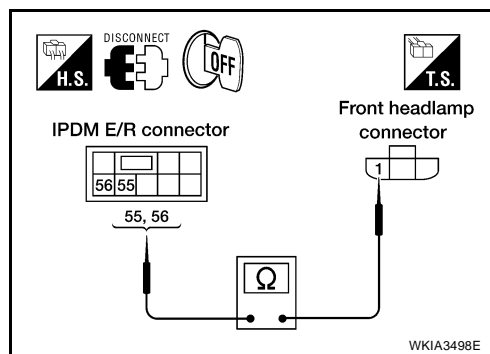
5. CHECK HEADLAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector E123 terminal 56 and front headlamp RH harness connector E107 terminal 1.

56 - 1 : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E123 terminal 55 and front headlamp LH harness connector E11 terminal 1.

55 - 1 : Continuity should exist.



OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#) .
 NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front headlamp RH harness connector E107 terminal 2 and ground.

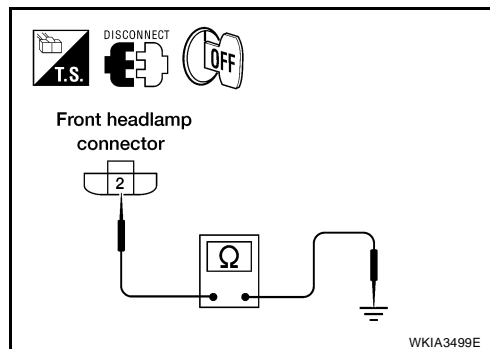
2 - Ground : Continuity should exist.

3. Check continuity between front headlamp LH harness connector E11 terminal 2 and ground.

2 - Ground : Continuity should exist.

OK or NG

- OK >> Check front headlamp connector for damage or poor connection. Repair as necessary.
 NG >> Repair harness or connector.



HEADLAMP (FOR USA)

EKS009JP

Headlamp HI Does Not Illuminate (One Side)

1. BULB INSPECTION

Inspect inoperative headlamp bulb.

OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb. Refer to [LT-29, "REMOVAL AND INSTALLATION OF HEADLAMP BULB"](#).

2. CHECK POWER TO HEADLAMP

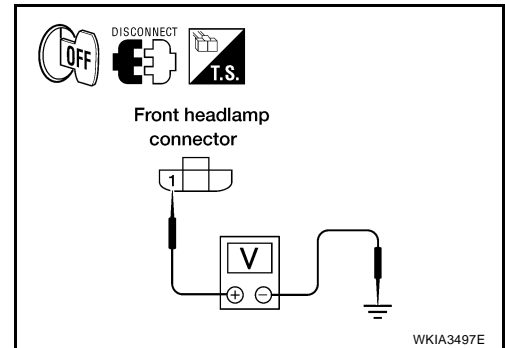
1. Disconnect inoperative headlamp connector.
2. Turn the high beam headlamps ON.
3. Check voltage between inoperative headlamp terminal and ground.

Front headlamp		Terminal	(-)	Voltage (Approx.)
(+)				
Connector				
RH	E107	1	Ground	Battery voltage
LH	E11			

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.



3. CHECK HEADLAMP GROUND

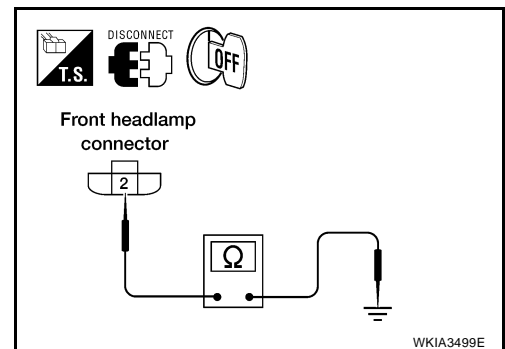
1. Turn the high beam headlamps OFF.
2. Check continuity between inoperative headlamp connector and ground.

Front headlamp		Terminal	Ground	Continuity
Connector				
RH	E107	2	Ground	Yes
LH	E11			

OK or NG

OK >> Check front headlamp connector for damage or poor connection. Repair as necessary.

NG >> Repair open circuit in harness between inoperative headlamp and ground.



HEADLAMP (FOR USA)

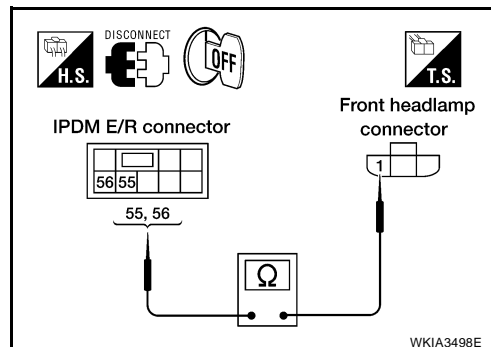
4. INSPECTION BETWEEN IPDM E/R AND HEADLAMPS

1. Disconnect IPDM E/R connector and inoperative headlamp connector.
2. Check continuity between harness connector terminals of IPDM E/R and harness connector terminals of inoperative headlamp.

IPDM E/R		Front headlamp		Continuity	
Connector	Terminal	Connector	Terminal		
E123	56	RH	E107	1	Yes
	55	LH	E11		

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).
- NG >> Check for short and open circuits in harness between IPDM E/R and front headlamps. Repair as necessary.



High Beam Indicator Lamp Does Not Illuminate

EKS009JQ

1. BULB INSPECTION

Inspect CAN communication system. Refer to [LAN-24, "CAN COMMUNICATION"](#).

OK or NG

- OK >> Replace combination meter. Refer to [IP-13, "COMBINATION METER"](#).
- NG >> Repair as necessary.

Headlamp LO Does Not Illuminate (Both Sides)

EKS009JR

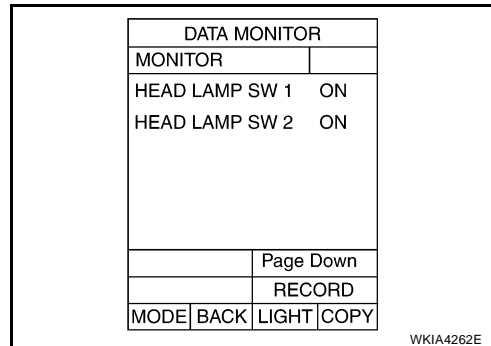
1. CHECK COMBINATION SWITCH INPUT SIGNAL

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 in 2ND position :
HEAD LAMP SW 1 ON
HEAD LAMP SW 2 ON

OK or NG

- OK >> GO TO 2.
- NG >> Check lighting switch. Refer to [LT-94, "Combination Switch Inspection"](#).



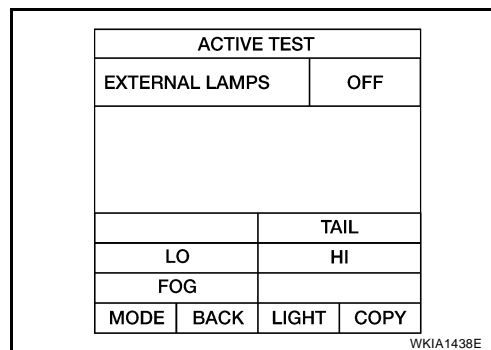
2. HEADLAMP ACTIVE TEST

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

Headlamp low beam should operate.

OK or NG

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



HEADLAMP (FOR USA)

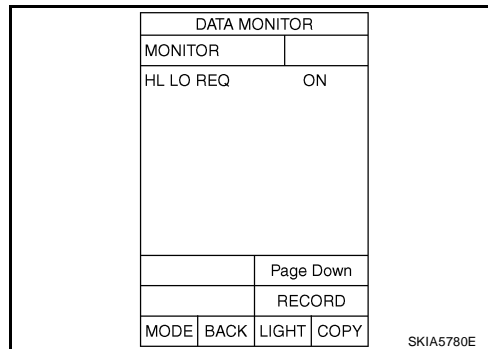
3. CHECK IPDM E/R

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 in 2ND position : HL LO REQ ON

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).
- NG >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).



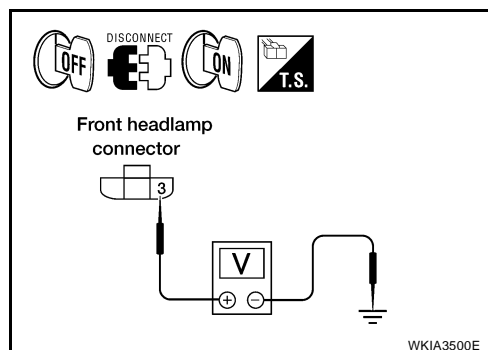
4. CHECK HEADLAMP INPUT SIGNAL

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

Front headlamp		Terminal	(-)	Voltage
(+) Connector				
RH	E107	3	Ground	Battery voltage
LH	E11			

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 E123 terminal 54 and front headlamp RH harness connector E107 terminal 3.

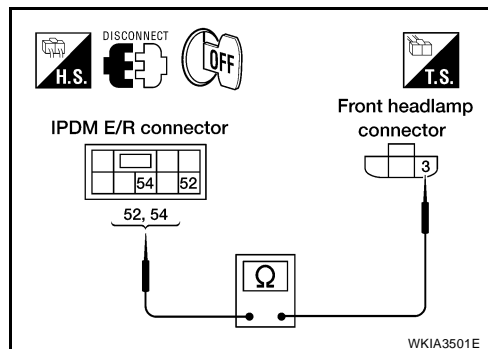
54 - 3 : Continuity should exist.

4. Check continuity between IPDM E/R harness connector E123 terminal 52 and front headlamp LH harness connector E11 terminal 3.

52 - 3 : Continuity should exist.

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).
- NG >> Repair harness or connector.



HEADLAMP (FOR USA)

6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front headlamp RH harness connector E107 terminal 2 and ground.

2 - Ground : Continuity should exist.

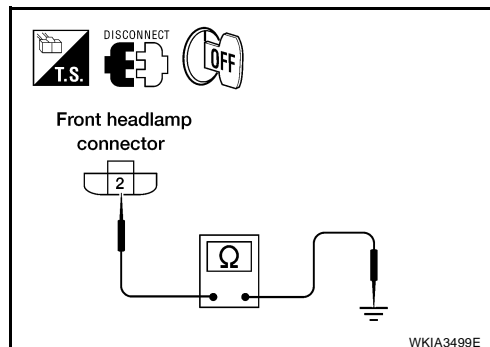
3. Check continuity between front headlamp LH harness connector E11 terminal 2 and ground.

2 - Ground : Continuity should exist.

OK or NG

OK >> Check front headlamp connector for damage or poor connection. Repair as necessary.

NG >> Repair harness or connector.



Headlamp LO Does Not Illuminate (One Side)

EKS009JS

1. BULB INSPECTION

Inspect inoperative headlamp bulb.

OK or NG

OK >> GO TO 2.

NG >> Replace headlamp bulb. Refer to [LT-29, "REMOVAL AND INSTALLATION OF HEADLAMP BULB"](#).

2. CHECK POWER TO HEADLAMP

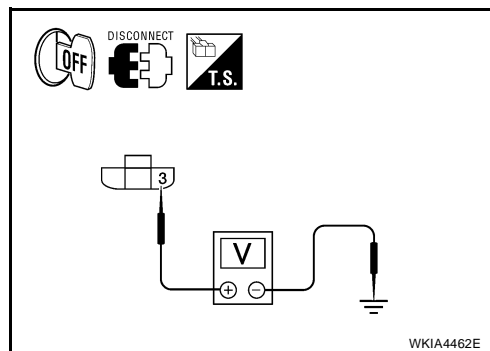
1. Disconnect inoperative headlamp connector.
2. Turn the low beam headlamps ON.
3. Check voltage between inoperative headlamp connector terminal and ground.

Front headlamp		Terminal	(-)	Voltage (Approx.)
(+)				
Connector				
RH	E107	3	Ground	Battery voltage
LH	E11			

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.



3. CHECK HEADLAMP GROUND

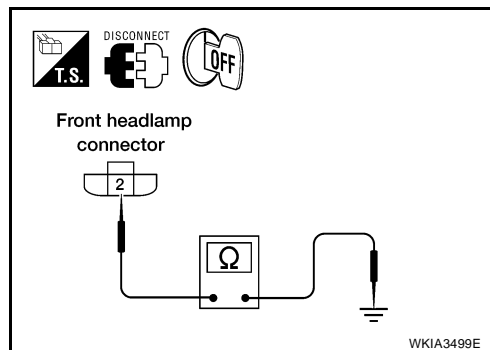
1. Turn the low beam headlamps OFF.
2. Check continuity between inoperative headlamp connector terminal and ground.

Front headlamp		Terminal	Ground	Continuity
Connector				
RH	E107	2	Ground	Yes
LH	E11			

OK or NG

OK >> Check front headlamp and IPDM E/R connector. Repair as necessary.

NG >> Repair open circuit in harness between inoperative headlamp and ground.



HEADLAMP (FOR USA)

4. INSPECTION BETWEEN IPDM E/R AND HEADLAMPS

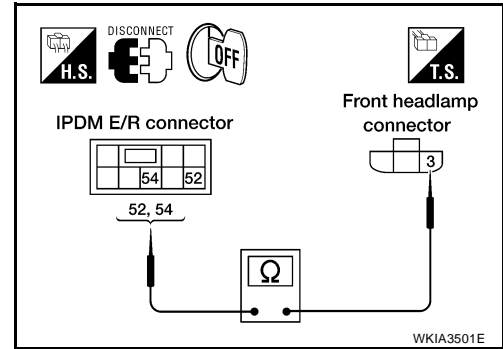
1. Disconnect IPDM E/R connector.
2. Check continuity between harness connector terminals of IPDM E/R harness connector terminals of inoperative headlamp.

IPDM E/R		Front headlamp		Continuity
Connector	Terminal	Connector	Terminal	
E123	54	RH	E107	Yes
	52	LH	E11	

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).

NG >> Check for short and open circuits in harness between IPDM E/R and headlamps. Repair as necessary.



Headlamps Do Not Turn OFF

EKS009JT

1. 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 in OFF position : HEAD LAMP SW 1 OFF
: HEAD LAMP SW 2 OFF**

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).

NG >> GO TO 2.

DATA MONITOR	
MONITOR	
HEAD LAMP SW 1	OFF
HEAD LAMP SW 2	OFF

2. CHECK LIGHTING SWITCH

Check lighting switch. Refer to [LT-94, "Combination Switch Inspection"](#).

OK or NG

OK >> GO TO 3.

NG >> Replace lighting switch. Refer to [LT-96, "Removal and Installation"](#).

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

Select "BCM" on CONSULT-II and perform self-diagnosis for BCM.

Display of self-diagnosis results

NO DTC>> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).

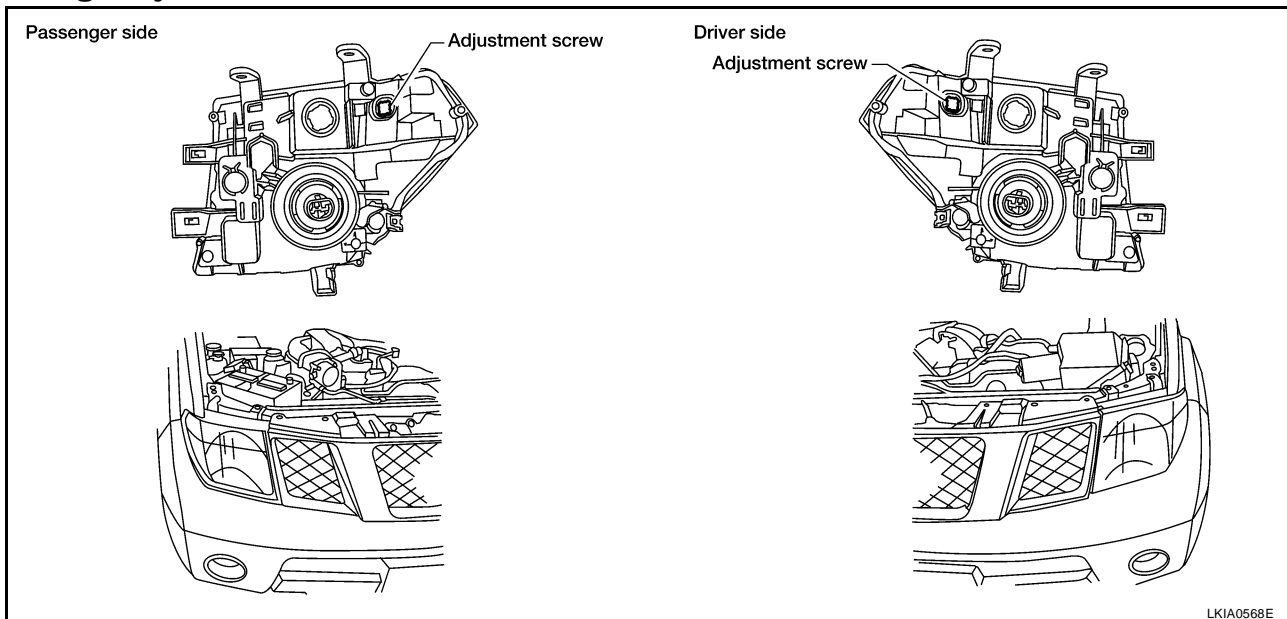
CAN COMM CIRCUIT>> Refer to [BCS-13, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		PAST	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

HEADLAMP (FOR USA)

Aiming Adjustment

EKS009JU



For details, refer to the regulations in your state.

When performing front headlamp aiming adjustment, use an aiming wall screen.

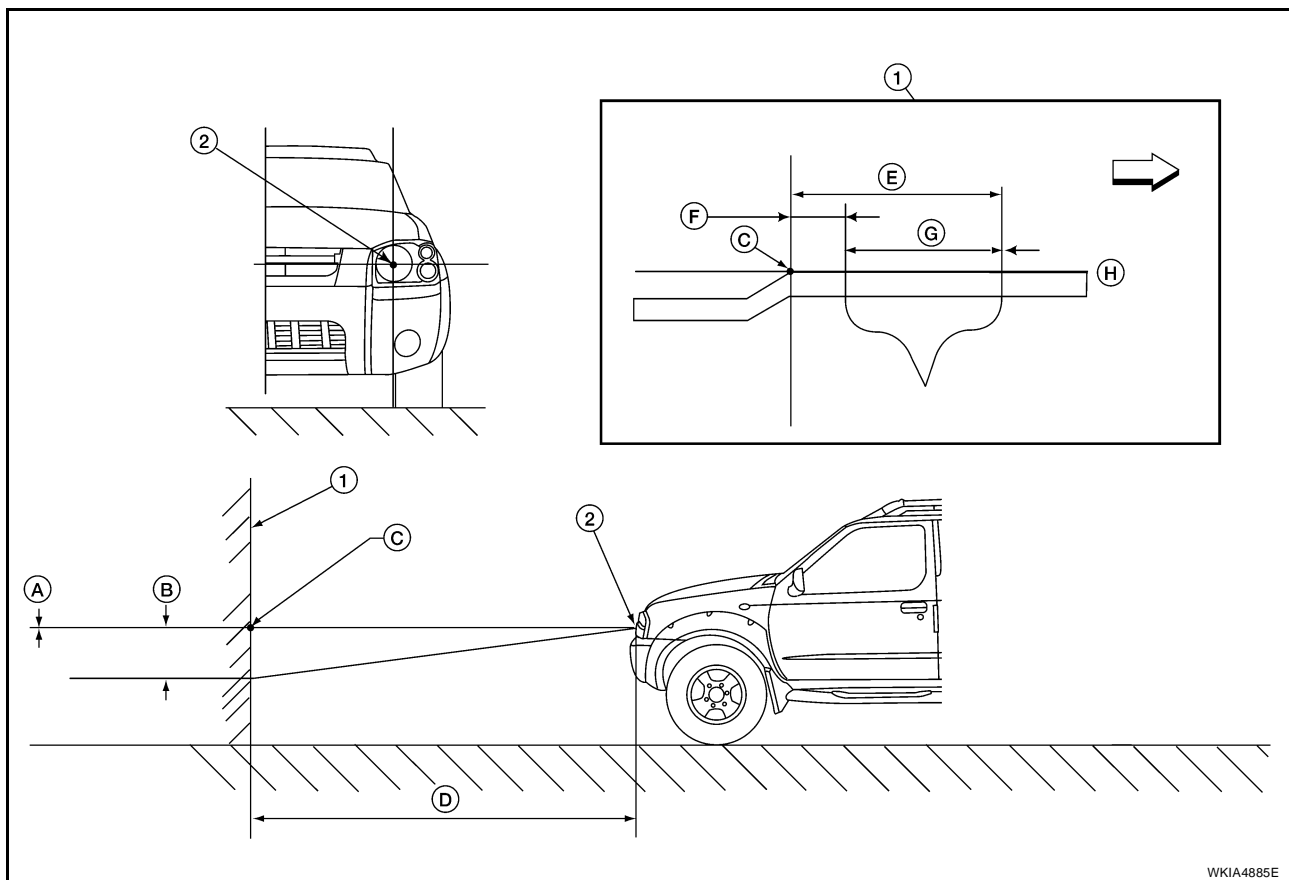
Before performing aiming adjustment, check the following.

1. Check all tires and adjust to correct pressure.
2. Place vehicle and screen on a level surface.
3. Be sure there is no additional load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant and engine oil filled to correct level, and fuel tank full.
4. Confirm spare tire, jack and tools are properly stowed.

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HEADLAMP (FOR USA)

LOW BEAM AND HIGH BEAM



WKIA4885E

- | | | | | | |
|---|---|---|--|---|---|
| 1 | Adjustment screen | 2 | Headlamp bulb center (HV point) | A | Minimum acceptable vertical aim dimension (see aiming chart) |
| B | Maximum acceptable vertical aim dimension (see aiming chart) | C | H-V point | D | Distance of headlamp aiming screen from vehicle 7.62 m (25 ft.) |
| E | Maximum aim evaluation distance from vertical center on aiming screen 399mm (3° R). | F | Minimum aim evaluation distance from vertical center on aiming screen 133 mm (1°R) | G | Aim evaluation area |
| H | Horizontal aiming evaluation line. | ⇒ | Right | | |

Aiming Chart

- | | | |
|--|--------------------------|--------------------|
| A (Minimum acceptable vertical aim dimension) | -3.3 mm (0.13 in) | 0.025° up |
| B (Maximum acceptable vertical aim dimension) | 36.6 mm (1.44 in) | 0.275° down |

NOTE:

- By regulation, no means for horizontal aim adjustment is provided from the factory; only vertical aim is adjustable.
 - If the vehicle front body has been repaired and/or the headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.
 - Basic illuminating area for evaluation and/or adjustment should be within range shown on the aiming screen.
1. Use adjustment screw to perform aiming adjustment.

- **Cover the opposite lamp and ensure fog lamps, if equipped, are turned off.**

CAUTION:

Do not tighten adjustment screw beyond specified torque or damage may occur.

Adjustment torque **1.67 N.m (17 kg-cm, 14.8 in-lb)**

2. Adjust beam pattern until cut-off line (top edge of illumination area) is positioned at the specified height off ground. Measure cut-off line within distance J on H-line. See aiming chart.

HEADLAMP (FOR USA)

EKS009JV

Bulb Replacement REMOVAL AND INSTALLATION OF HEADLAMP BULB

Removal

NOTE:

Reach through engine room for bulb replacement access.

CAUTION:

Grasp only the plastic base when handling the bulb. Never touch the glass envelope.

1. Turn front headlamp switch OFF.
2. Disconnect the electrical connector.
3. Rotate the headlamp bulb retaining ring counterclockwise and remove.
4. Pull the headlamp bulb straight out from the headlamp assembly.

NOTE:

Remove the headlamp bulb from the headlamp assembly just before a replacement bulb is installed. Dust, moisture, foreign materials, etc. entering headlamp body may affect performance.

Installation

Installation is in the reverse order of removal.

REMOVAL AND INSTALLATION OF FRONT TURN SIGNAL/PARKING LAMP

Removal

NOTE:

Reach through engine room for bulb replacement access.

1. Turn the bulb socket counterclockwise to unlock it.
2. Pull the bulb to remove it from the socket.

Installation

Installation is in the reverse order of removal.

CAUTION:

After installing the bulb, be sure to install the bulb socket securely for watertightness.

REMOVAL AND INSTALLATION OF FRONT SIDE MARKER LAMP

Removal

NOTE:

Reach through engine room for bulb replacement access.

1. Turn the bulb socket counterclockwise to unlock it.
2. Pull the bulb to remove it from the socket.

Installation

Installation is in the reverse order of removal.

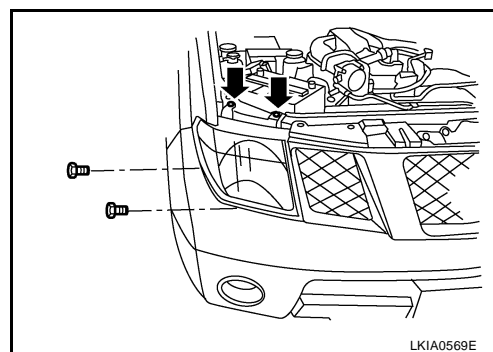
CAUTION:

After installing the bulb, be sure to install the bulb socket securely for watertightness.

Removal and Installation

REMOVAL

1. Remove the front bumper. Refer to [EI-14, "Removal and Installation"](#).
2. Remove the headlamp bolts.
3. Disconnect the headlamp connector.



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HEADLAMP (FOR USA)

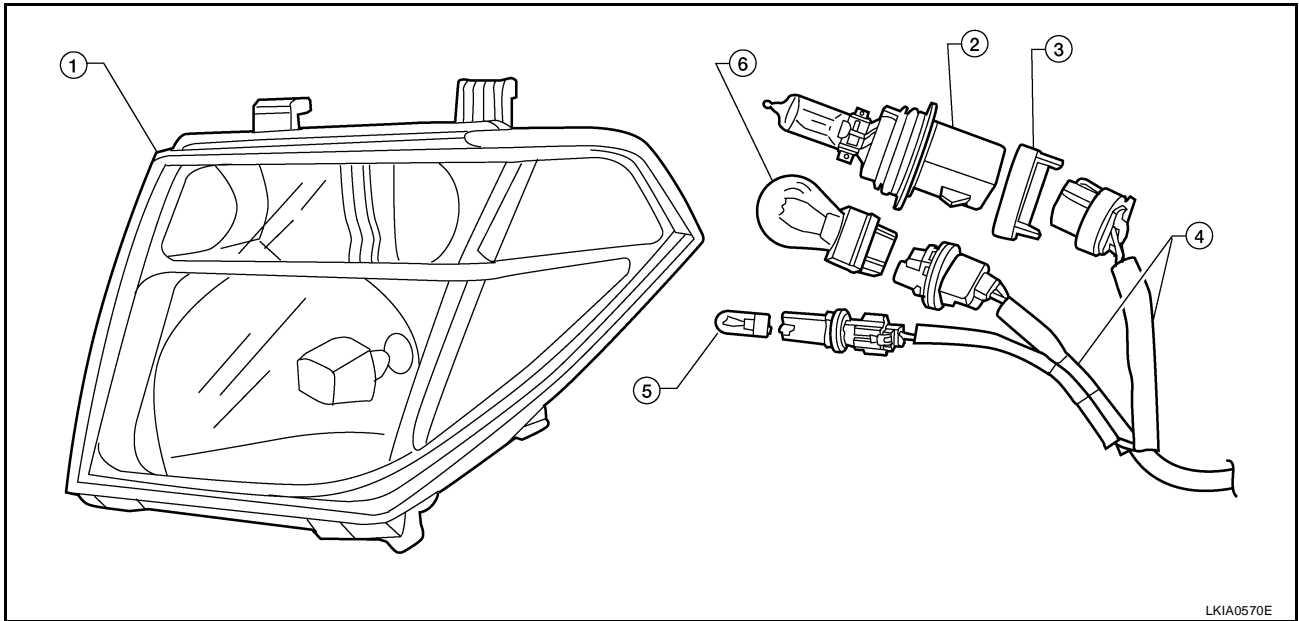
INSTALLATION

Installation is in the reverse order of removal.

: **6.0 N·m (0.61 kg-m, 53 in-lb)**

Disassembly and Assembly

EKS009JX



LKIA0570E

1. Headlamp assembly

2. Headlamp bulb

3. Headlamp bulb retaining ring

4. Wiring harness assembly

5. Front side marker lamp bulb

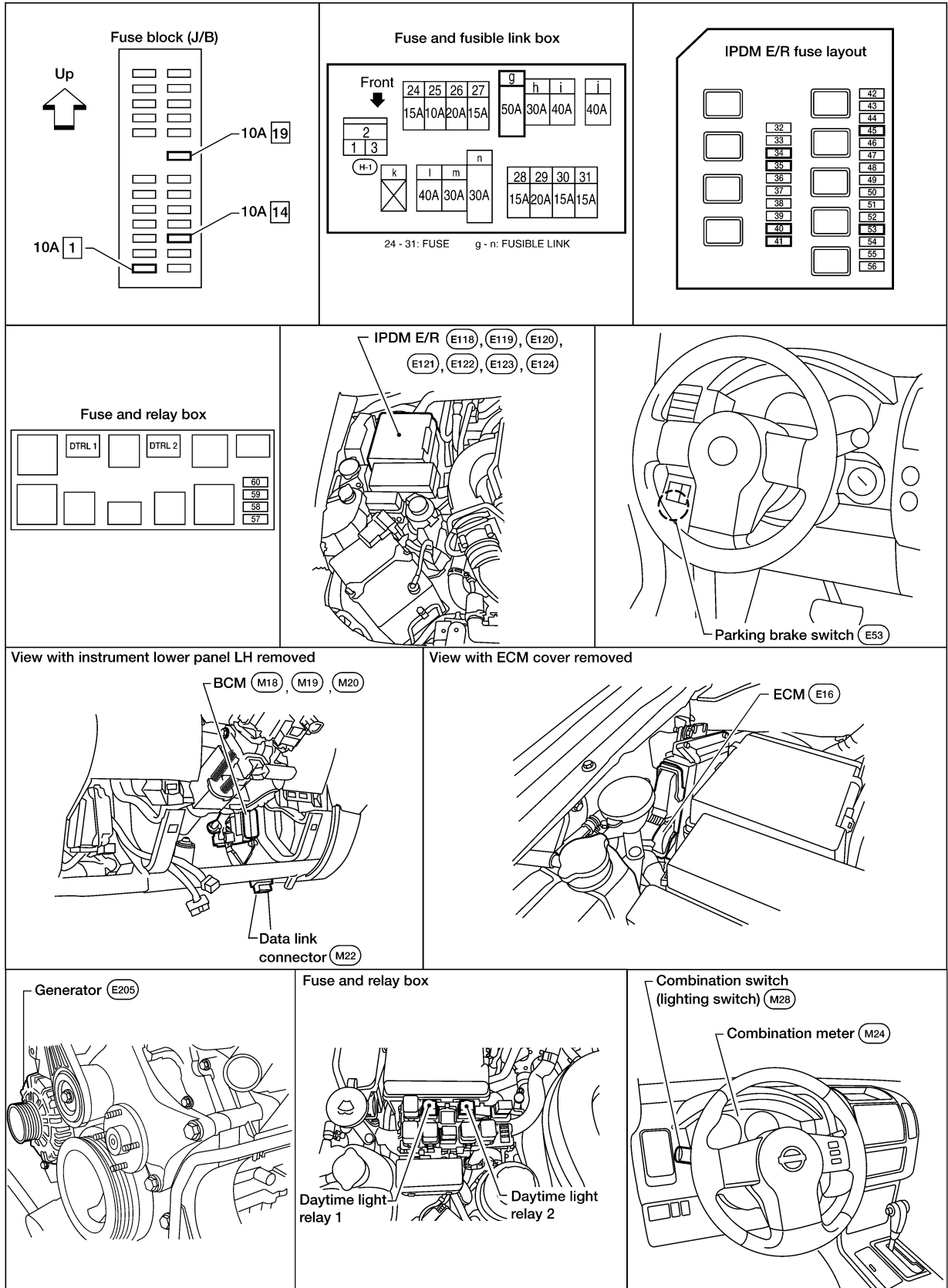
6. Front turn signal/parking lamp bulb

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM - Component Parts and Harness Connector Location

PFP:26010

EKS009JY



WKIA4149E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

EKS009JZ

System Description

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

A parking brake signal and engine run or stop signal are sent to BCM (body control module) by CAN communication line.

OUTLINE

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 3, and
- through 20A fuse (No. 53, located in the IPDM E/R)
- to CPU (central processing unit) of IPDM E/R (intelligent power distribution module engine room), and
- to headlamp high relay, located in the IPDM E/R, and
- to headlamp low relay, located in the IPDM E/R, and
- through 50A fusible link (letter **g** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse (No. 45, located in the IPDM E/R)
- to daytime light relay 1 terminals 2 and 5.

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

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 16, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67 and
- to combination meter terminals 13 and 23
- through grounds M57, M61 and M79.

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input requesting the headlamps to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the IPDM E/R controls the headlamp low relay coil. When energized, this relay directs power

- through 15A fuse (No. 41, located in the IPDM E/R)
- through IPDM E/R terminal 54
- to front headlamp RH terminal 3, and
- through 15A fuse (No. 40, located in the IPDM E/R)
- through IPDM E/R terminal 52
- to daytime light relay 2 terminals 2 and 5, and
- through daytime light relay 2 terminal 3
- to front headlamp LH terminal 3.

Ground is supplied

- to front headlamp RH terminal 2
- to daytime light relay 1 terminal 4
- to daytime light relay 2 terminal 1
- through grounds E9, E15 and E24.

When the CPU of the IPDM E/R energizes the headlamp low relay, it de-energizes daytime relay 1. When de-energized, this relay supplies ground

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

- to front headlamp LH terminal 2
- through daytime light relay 1 terminal 3.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input requesting the headlamp high beams to illuminate. This input is communicated to the IPDM E/R across the CAN communication lines. The CPU of the combination meter controls the ON/OFF status of the HIGH BEAM indicator. The CPU of the IPDM E/R controls the headlamp high relay coil. When energized, this relay directs power

- through 10A fuse (No. 34, located in the IPDM E/R)
- through IPDM E/R terminal 56
- to front headlamp RH terminal 1, and
- through 10A fuse (No. 35, located in the IPDM E/R)
- through IPDM E/R terminal 55
- to front headlamp LH terminal 1.

Ground is supplied

- to front headlamp RH terminal 2, and
- to daytime light relay 1 terminal 4, and
- to daytime light relay 2 terminal 1
- through grounds E9, E15 and E24.

When the CPU of the IPDM E/R energizes the headlamp high relay, it de-energizes daytime relay 1. When de-energized, this relay supplies ground

- to front headlamp LH terminal 2
- through daytime light relay 1 terminal 3.

With power and ground supplied, the high beam headlamps illuminate.

DAYTIME LIGHT OPERATION

With the engine running, the lighting switch in the OFF or 1ST position and parking brake released, the IPDM E/R receives input requesting the daytime lights illuminate. This input is communicated across the CAN communication lines. The CPU of the IPDM E/R controls daytime light relay 1 coil. When energized, this relay directs power

- through daytime light relay 1 terminal 3
- through front headlamp LH terminal 2
- through front headlamp LH terminal 1
- through IPDM E/R terminal 55
- through 10A fuse (No. 35, located in the IPDM E/R)
- through 10A fuse (No. 34, located in the IPDM E/R)
- through IPDM E/R terminal 56
- to front headlamp RH terminal 1.

Ground is supplied

- to combination lamp RH terminal 2
- through grounds E9, E15 and E24.

With power and ground supplied, the daytime lights illuminate. The high beam headlamps are now wired in series and illuminate at a reduced intensity.

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

AUTO LIGHT OPERATION

For auto light operation, refer to [LT-46, "System Description"](#) in AUTO LIGHT SYSTEM.

CAN Communication System Description

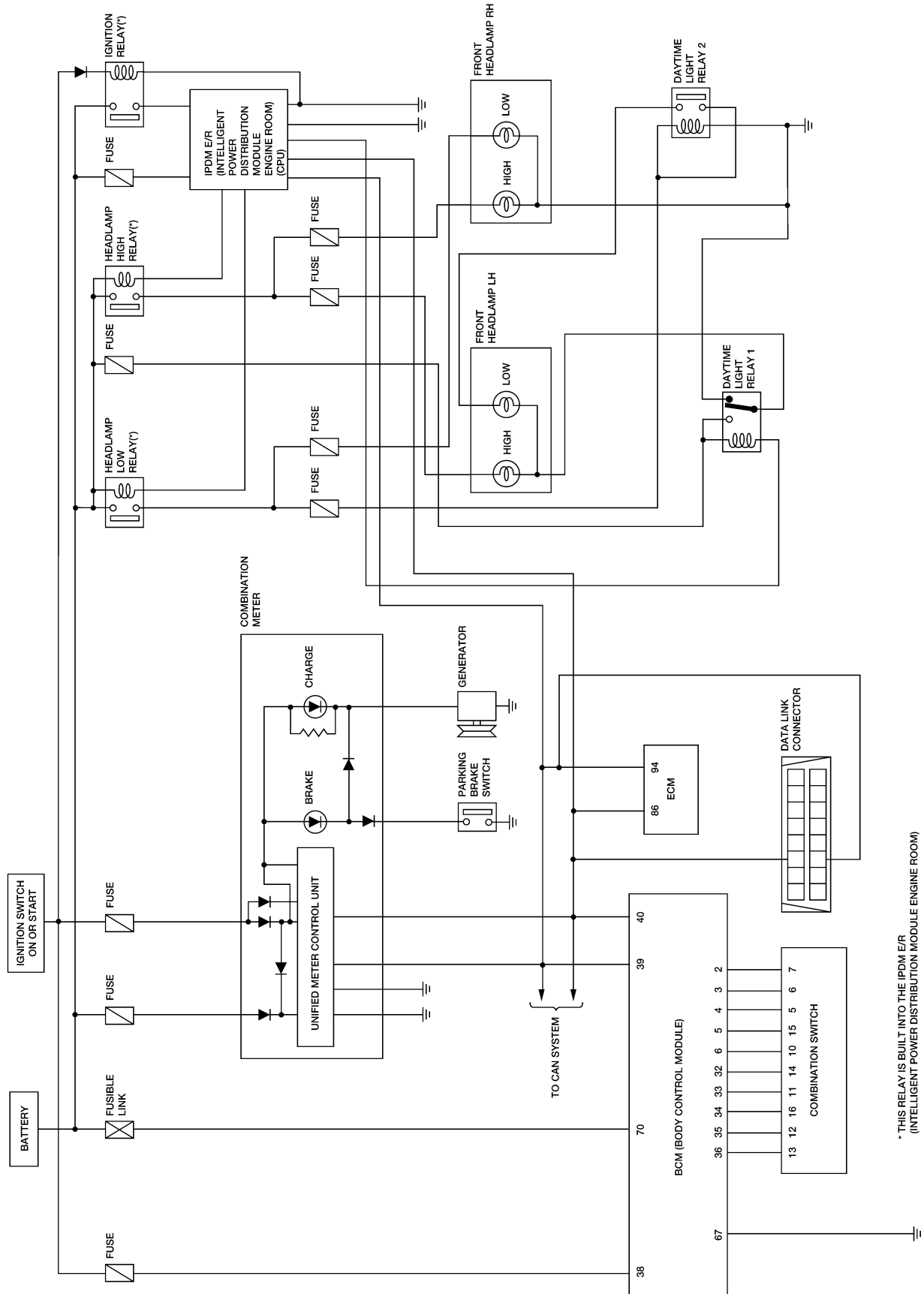
Refer to [LAN-24, "CAN COMMUNICATION"](#) .

EKS009K0

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Schematic

EKS009K1



WKWA3077E

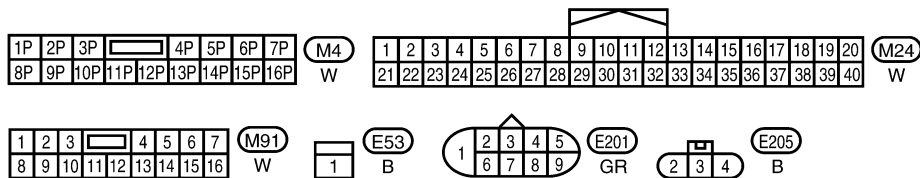
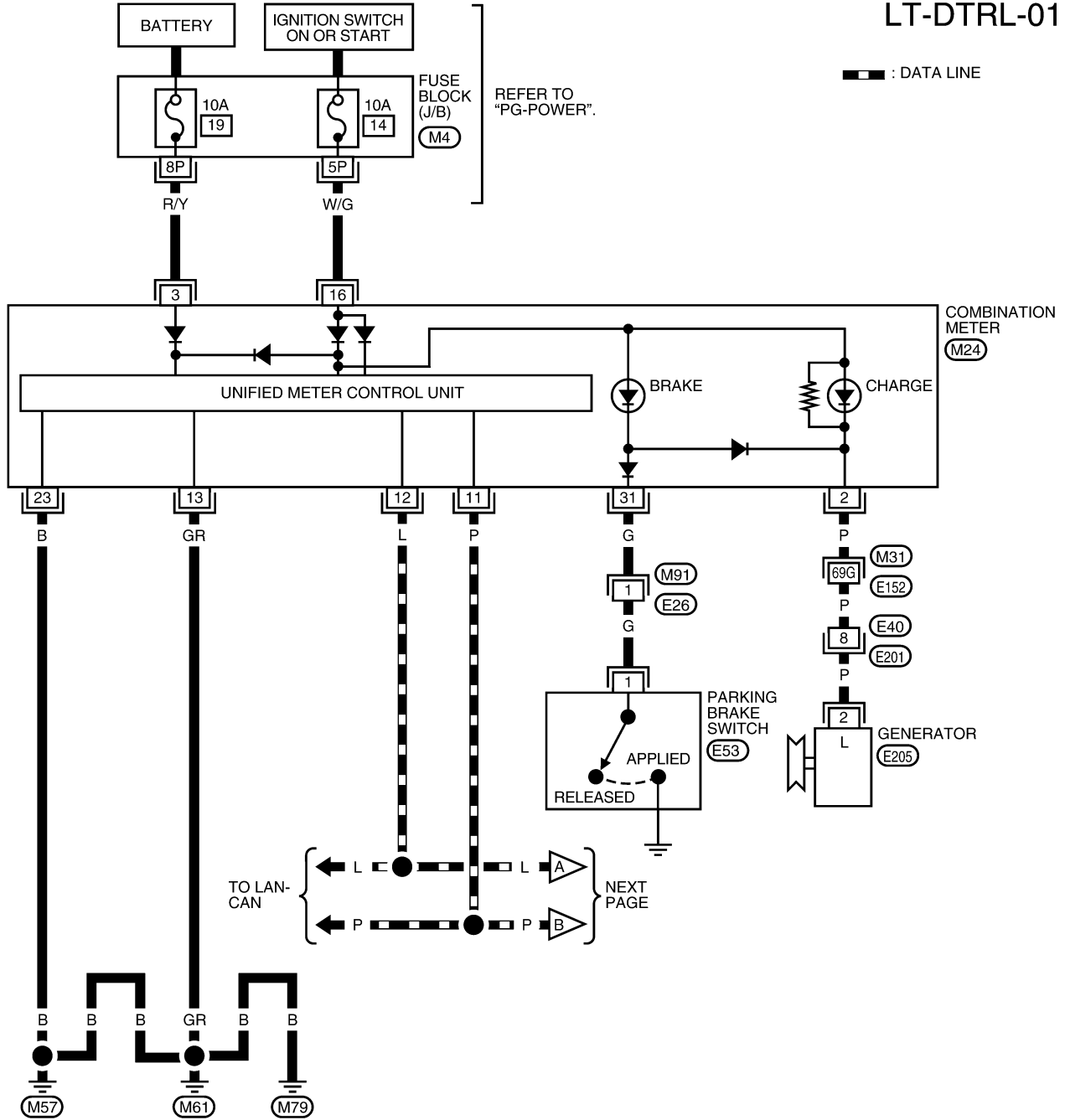
HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Wiring Diagram — DTRL —

EKS009K2

LT-DTRL-01

▬ : DATA LINE

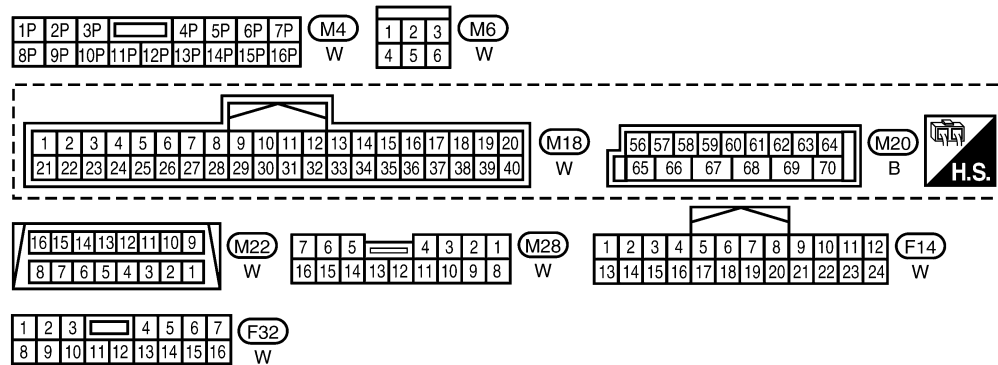
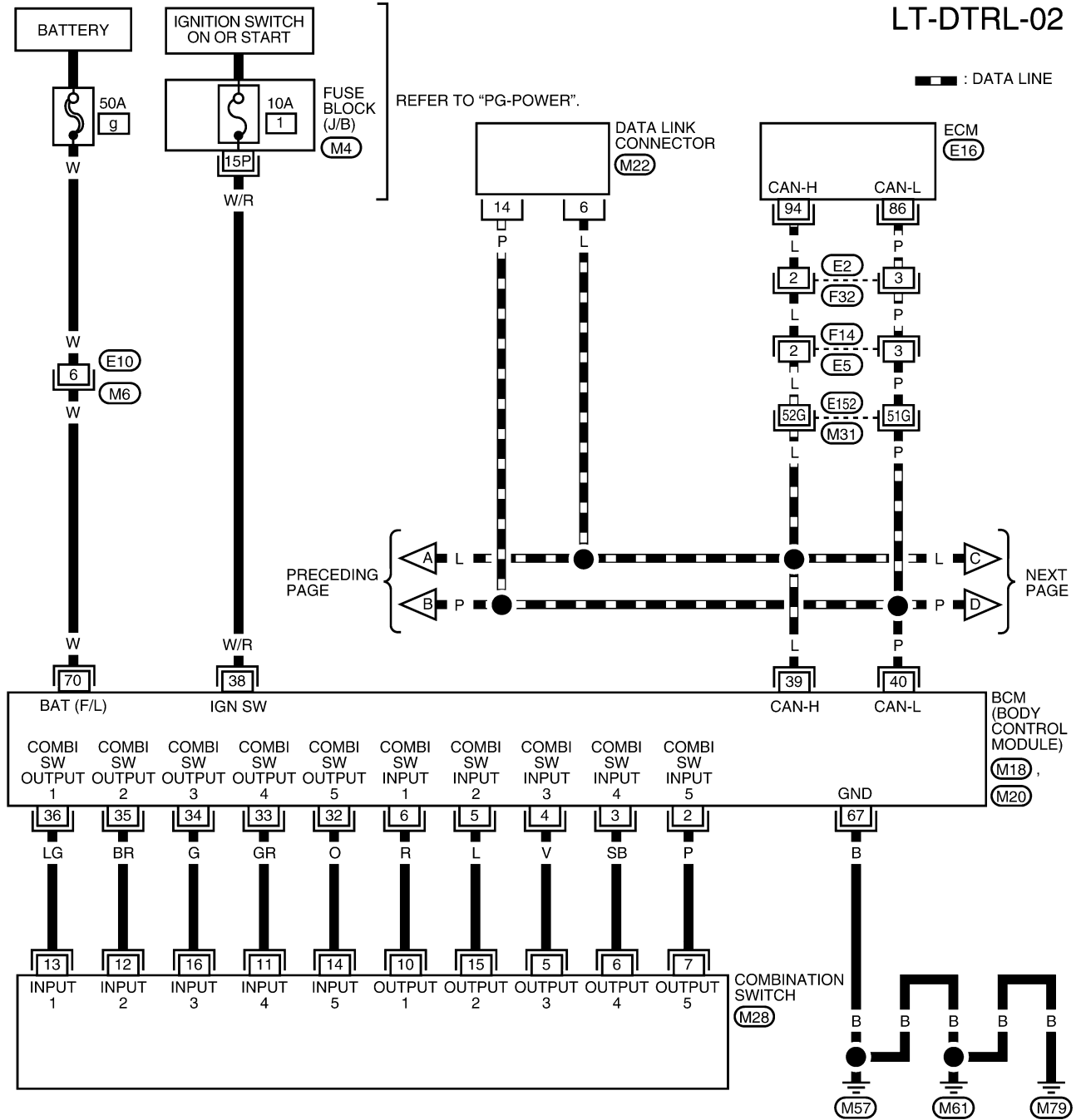


REFER TO THE FOLLOWING.
(M31) - SUPER MULTIPLE JUNCTION (SMJ)

WKWA3078E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-02



REFER TO THE FOLLOWING.

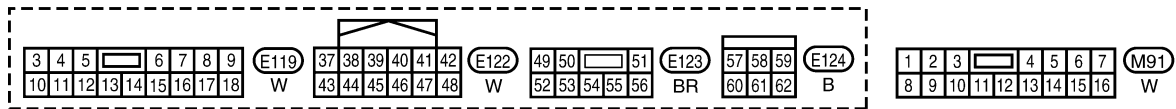
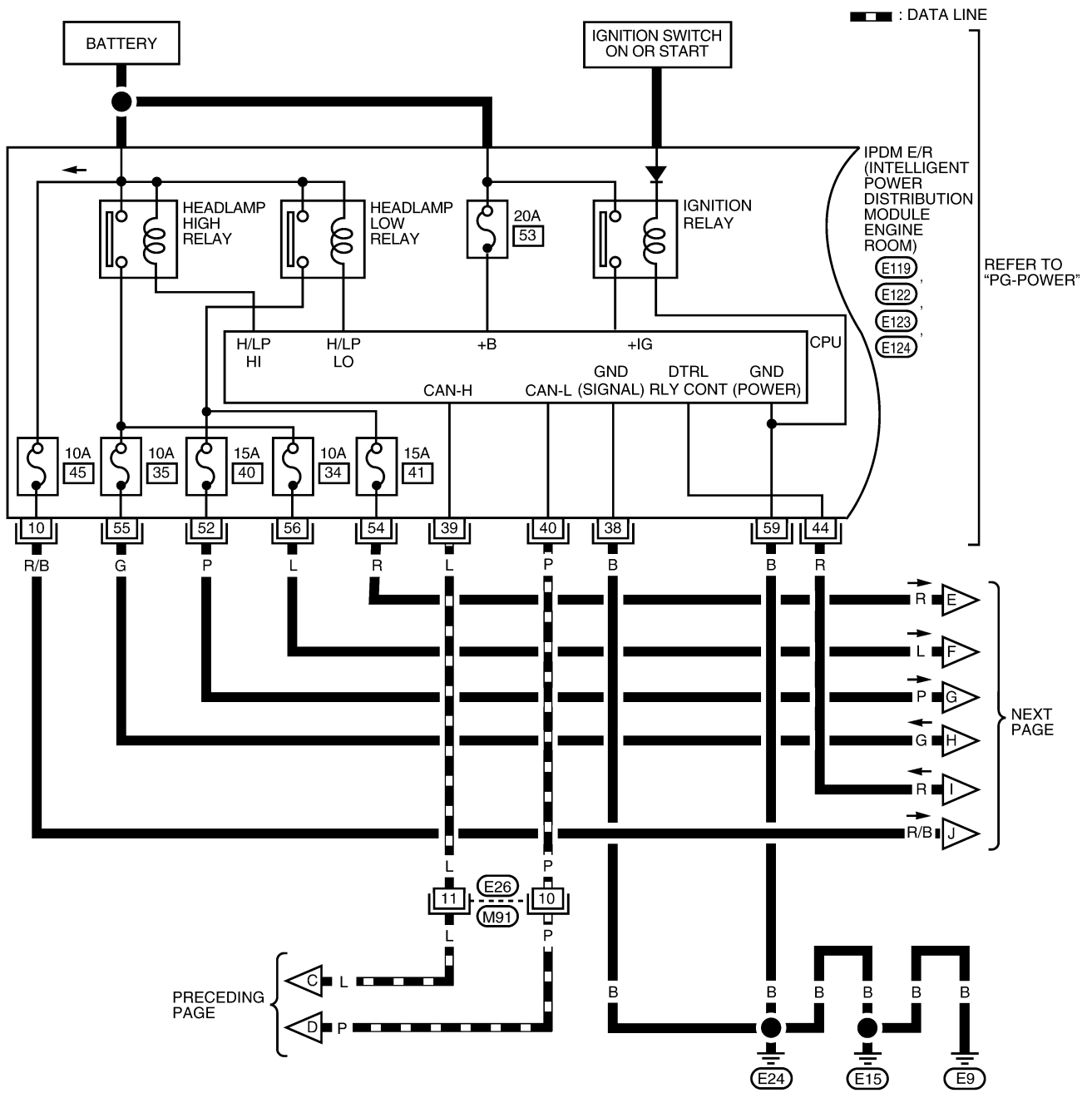
(E16) - ELECTRICAL UNITS

(M31) - SUPER MULTIPLE JUNCTION (SMJ)

WKWA3079E

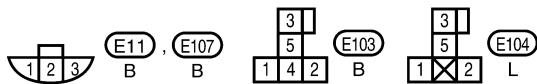
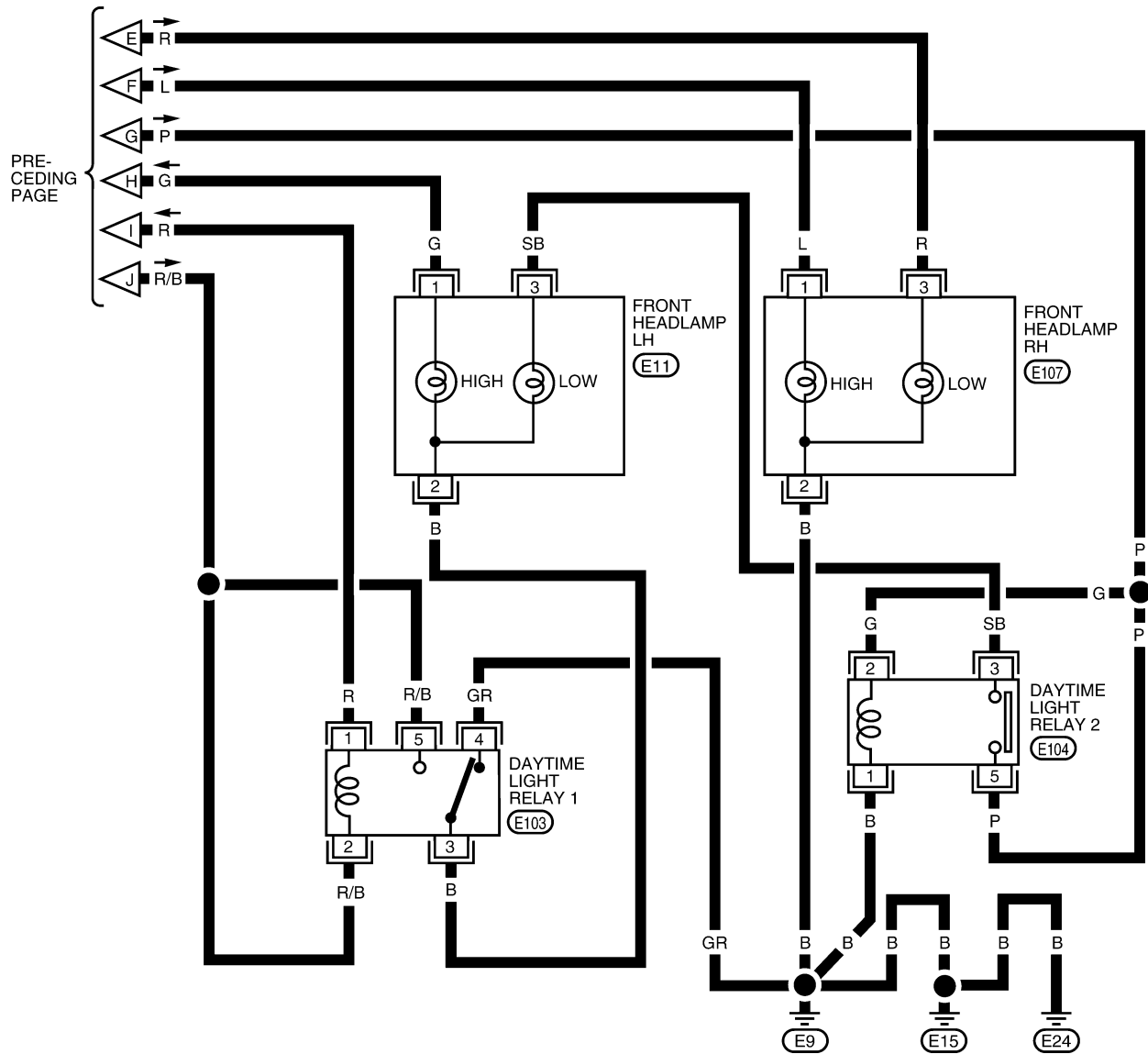
HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-03



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-04



WKWA3081E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Terminals and Reference Values for BCM

EKS009K3

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>
3	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>
4	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>
5	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>
6	R	Combination switch input 1			
32	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>
33	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>
34	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>

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HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
35	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
36	LG	Combination switch output 1			
38	W/R	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	P	CAN-L	—	—	—
67	B	Ground	ON	—	0V
70	W	Battery power supply (fusible link)	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

EKS00D8C

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)	
			Ignition switch	Operation or condition		
10	R/B ¹ O ²	Battery power supply	OFF	—	Battery voltage	
38	B	Ground	ON	—	0V	
39	L	CAN-H	—	—	—	
40	P	CAN-L	—	—	—	
44	R	Daytime light relay 1 signal	ON	Park brake switch position	OFF	0V
					ON	Battery voltage
52	P	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
54	R	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
55	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage
56	L	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage
59	B	Ground	ON	—	0V	

1 With auto light system

2 Without auto light system

How to Proceed With Trouble Diagnosis

EKS009K4

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-32, "System Description"](#).
3. Perform the Preliminary Check. Refer to [LT-41, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does the daytime light system operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

EKS009K5

Preliminary Check CHECK BCM CONFIGURATION

1. CHECK BCM CONFIGURATION

Confirm BCM configuration for "DTRL" is set to "WITH". Refer to [BCS-14, "READ CONFIGURATION PROCEDURE"](#).

OK or NG

- OK >> Continue preliminary check. Refer to [LT-41, "INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT"](#).
- NG >> Change BCM configuration for "DTRL" to "WITH". Refer to [BCS-16, "WRITE CONFIGURATION PROCEDURE"](#).

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	g
	Ignition switch ON or START position	1
Daytime light relay 1	Battery	45

Refer to [LT-35, "Wiring Diagram — DTRL —"](#).

OK or NG

- OK >> GO TO 2.
- NG >> If fuse or fusible link is blown, be sure to eliminate cause before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#).

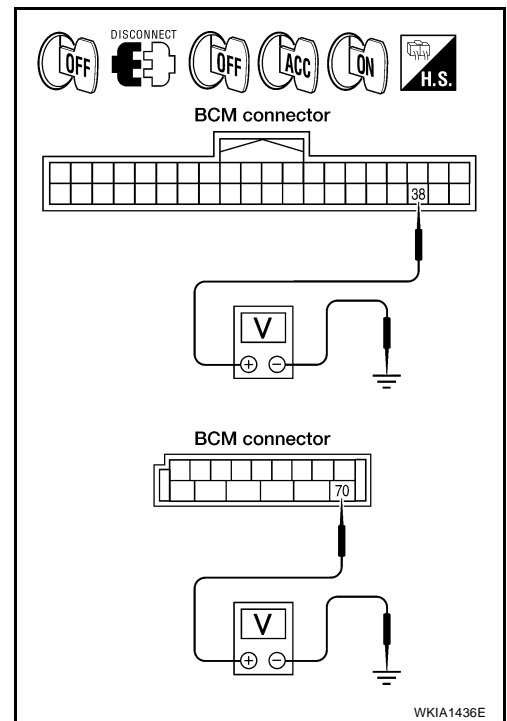
2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

BCM		(-)	Ignition switch position		
(+)	Terminal		OFF	ACC	ON
M18	38	Ground	0V	0V	Battery voltage
M20	70		Battery voltage	Battery voltage	Battery voltage

OK or NG

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



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

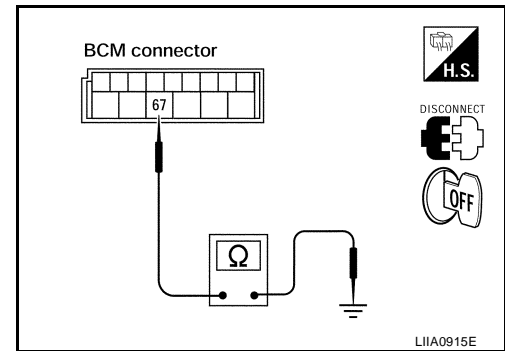
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM			Continuity
Connector	Terminal		
M20	67	Ground	Yes

OK or NG

- OK >> Inspection End.
- NG >> Check ground circuit harness.



INSPECTION PARKING BRAKE SWITCH CIRCUIT

1. CHECK BRAKE INDICATOR

1. Turn ignition switch ON.
2. Apply parking brake.
3. Release parking brake.

Brake indicator in combination meter should illuminate when parking brake is applied and turn OFF when released.

OK or NG

- OK >> Inspection End.
- NG >> GO TO 2.

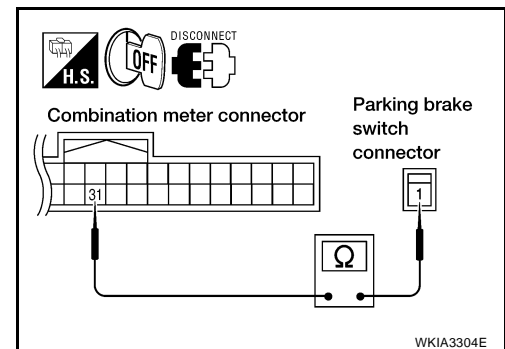
2. CHECK PARKING BRAKE SWITCH SIGNAL

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 E53 terminal 1 and ground.

1 - Ground : Battery voltage should exist.

OK or NG

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



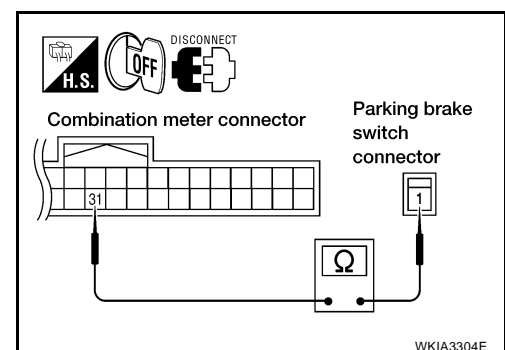
3. CHECK PARKING BRAKE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M24 terminal 31 and parking brake switch harness connector E53 terminal 1.

1 - 31 : Continuity should exist.

OK or NG

- OK >> Replace combination meter. Refer to [IP-13, "COMBINATION METER"](#).
- NG >> Repair harness or connector.



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

EKS009K6

CONSULT-II Functions

Refer to [LT-15, "CONSULT-II Function \(BCM\)"](#) in HEADLAMP (FOR USA).
 Refer to [LT-18, "CONSULT-II Function \(IPDM E/R\)"](#) in HEADLAMP (FOR USA).

Daytime Light Control Does Not Operate Properly (Normal Headlamps Operate Properly)

EKS009K7

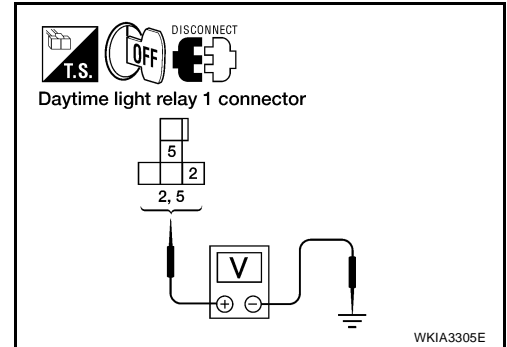
1. CHECK DAYTIME LIGHT RELAY 1 POWER SUPPLY CIRCUIT

1. Remove daytime light relay 1.
2. Check voltage between daytime light relay 1 harness connector E103 terminals 2, 5 and ground.

2, 5 - Ground : Battery voltage should exist.

OK or NG

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



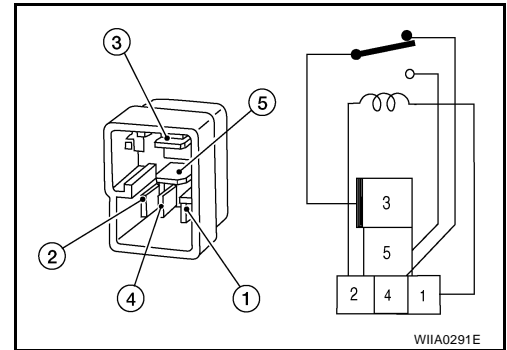
2. CHECK DAYTIME LIGHT RELAY 1

1. Apply battery voltage to daytime light relay 1 terminal 2 and ground terminal 1.
2. Check continuity between terminals 3 and 5.

3 - 5 : Continuity should exist.

OK or NG

- OK >> GO TO 3.
 NG >> Replace daytime light relay 1.



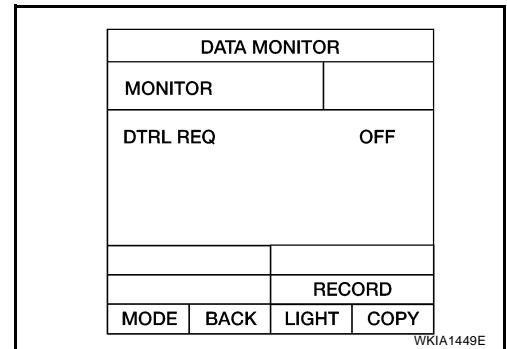
3. CHECK INPUT SIGNAL

1. Connect daytime light relay 1.
2. Start engine and release parking brake. Headlamp switch OFF.
3. Select "IPDM E/R" on CONSULT-II. With data monitor, make sure "DTRL REQ" turns ON-OFF linked with operation of parking brake switch.

Parking brake ON : DTRL REQ ON
Parking brake OFF : DTRL REQ OFF

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).
 NG >> GO TO 4.



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

4. CHECKING CAN COMMUNICATIONS

Select "BCM" on CONSULT-II and perform self-diagnosis for BCM.

Displayed self-diagnosis results

NO DTC>>Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#) .

CAN COMM CIRCUIT>> Check BCM CAN communication system.
Refer to [BCS-13, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .

SELF-DIAG RESULTS			
DTC RESULTS		TIME	
CAN COMM CIRCUIT [U1000]		PAST	
ERASE		PRINT	
MODE	BACK	LIGHT	COPY

SKIA1039E

Aiming Adjustment

Refer to [LT-27, "Aiming Adjustment"](#) .

Bulb Replacement

Refer to [LT-30, "Disassembly and Assembly"](#) .

Removal and Installation

Refer to [LT-29, "Removal and Installation"](#) .

Disassembly and Assembly

Refer to [LT-30, "Disassembly and Assembly"](#) .

EKS009K8

EKS009K9

EKS009KA

EKS009KB

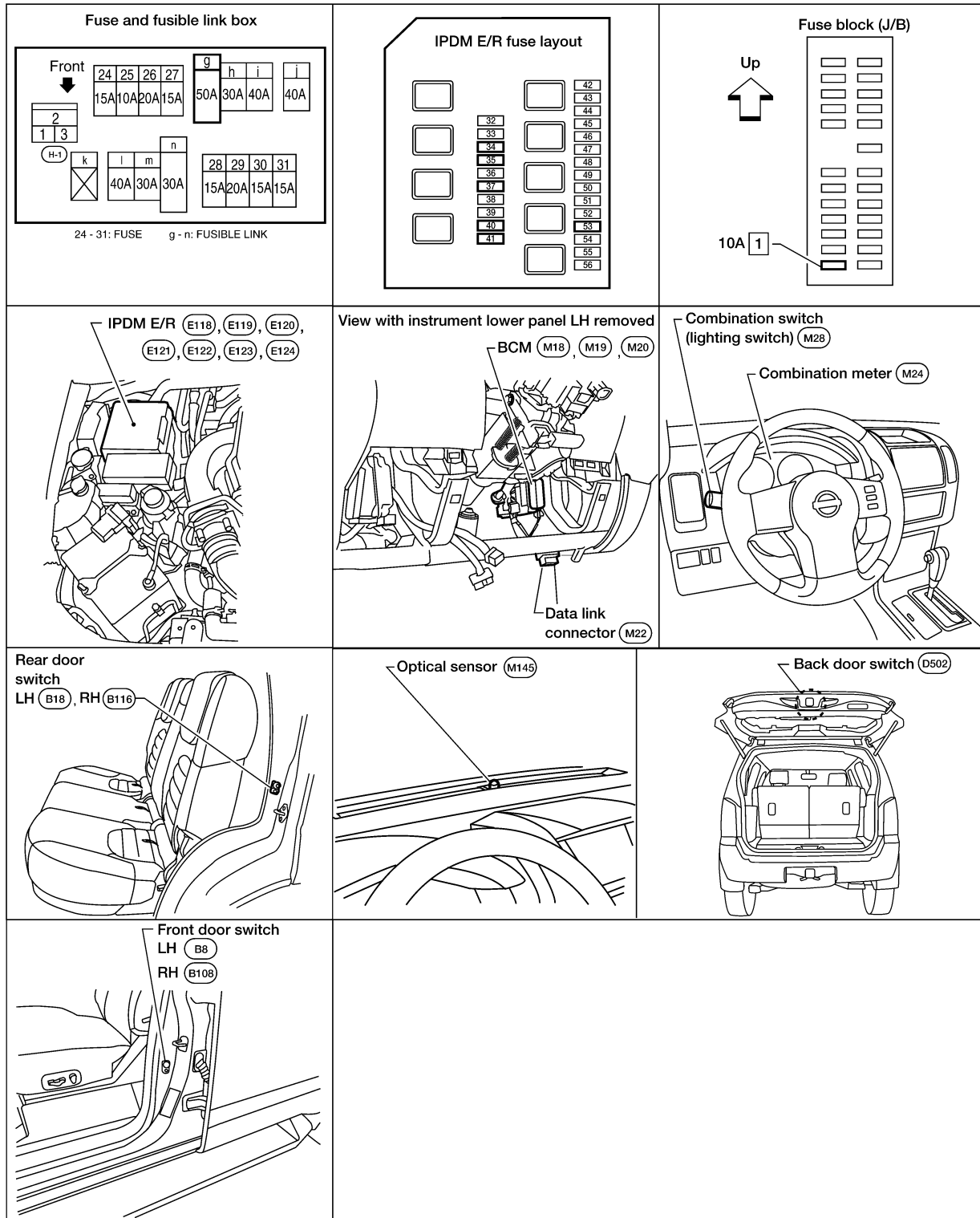
AUTO LIGHT SYSTEM

AUTO LIGHT SYSTEM

Component Parts and Harness Connector Location

PFP:28491

EKS009KC



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WKIA4150E

AUTO LIGHT SYSTEM

EKS009KD

System Description

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

OUTLINE

The auto light control system uses an optical sensor 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-53, "SETTING CHANGE FUNCTIONS"](#).

Optical sensor ground is supplied

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

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

- to BCM terminal 58
- from optical sensor terminal 4.

The headlamps will then illuminate. For a description of headlamp operation, refer to [LT-5, "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 doors is opened, the battery saver control feature 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.

DELAY TIMER FUNCTION

When the ignition switch is ON and auto light switch is ON, the BCM turns on/off the headlamps. In delay timer function, ignition is OFF, auto light sensor power source is OFF and the headlamps are not turned on/off by the BCM. On condition that:

- when the state of ignition switch ON or ACC is ON and output judgment by auto light function is headlamp ON changes to ignition switch and ACC are OFF and any door switch is ON, output judgment by BCM should be headlamp ON for 5 minutes by timer. After time out, output judgment by BCM should be headlamp OFF.
- when the state of any door switch is turned to ON from OFF while 45 second or 5 minute timer is counting, timer stops, and restarts counting for 5 minutes, then BCM judges output as headlamp ON. After time out, BCM judges output as headlamp OFF.
- when the state of front door switch LH, front door switch RH, rear door switch LH, rear door switch RH or back door latch (door ajar switch) is ON turns to all door switches are OFF while 45 second or 5 minute timer is counting, timer stops, and restarts counting for 45 seconds, then BCM judges output as headlamp ON. After timer out, BCM judges output as headlamp OFF.
- when the state is ignition switch ON or ACC is ON or auto light switch OFF while timer is counting, timer stops counting and BCM turns on/off lamps according to headlamp function, front fog lamp function, auto light function and headlamp battery save function.

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

CAN Communication System Description

EKS009KE

Refer to [LAN-24, "CAN COMMUNICATION"](#).

Major Components and Functions

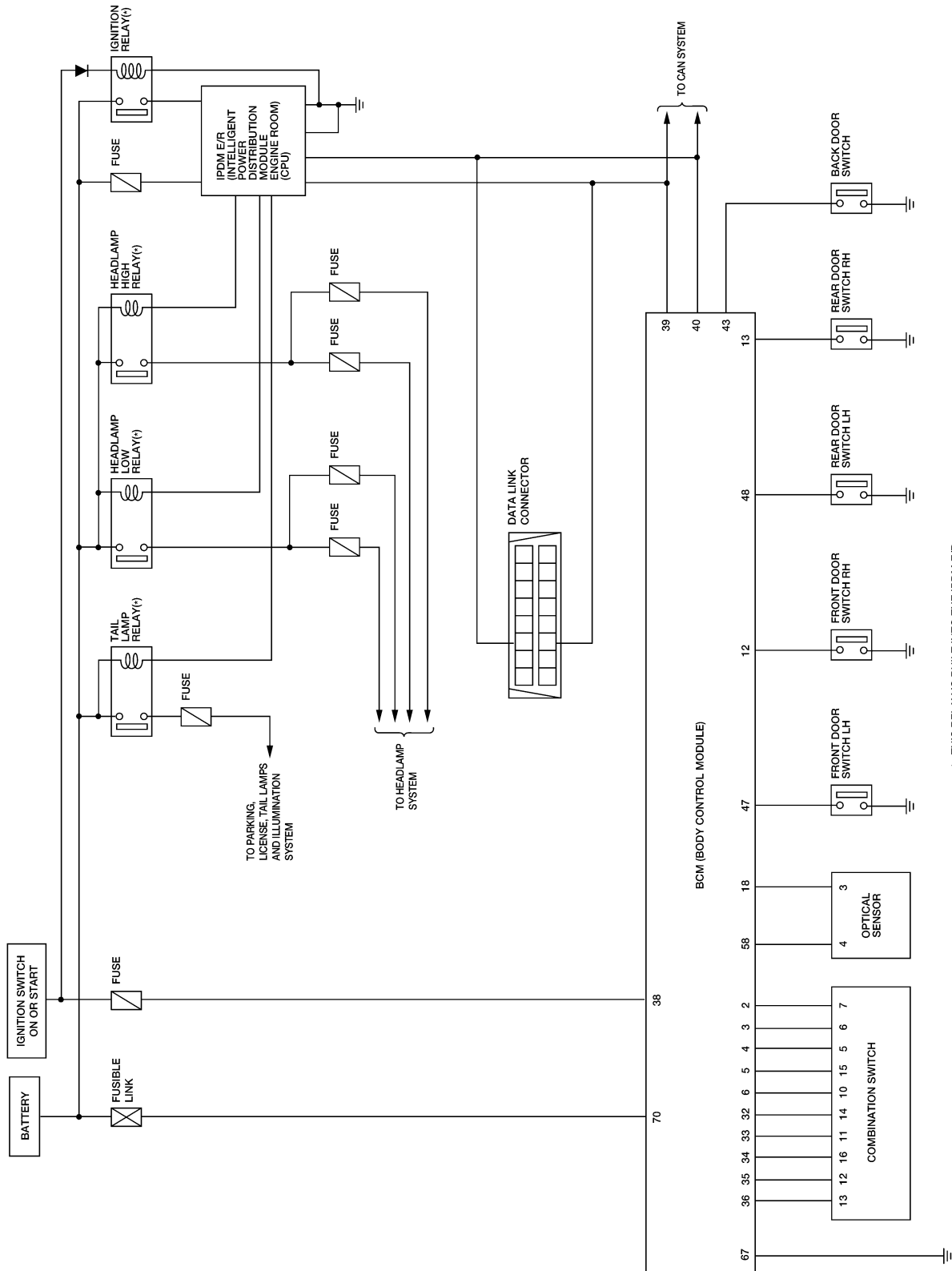
EKS009KF

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

AUTO LIGHT SYSTEM

Schematic

EKS009KG



*: THIS RELAY IS BUILT INTO THE IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM).

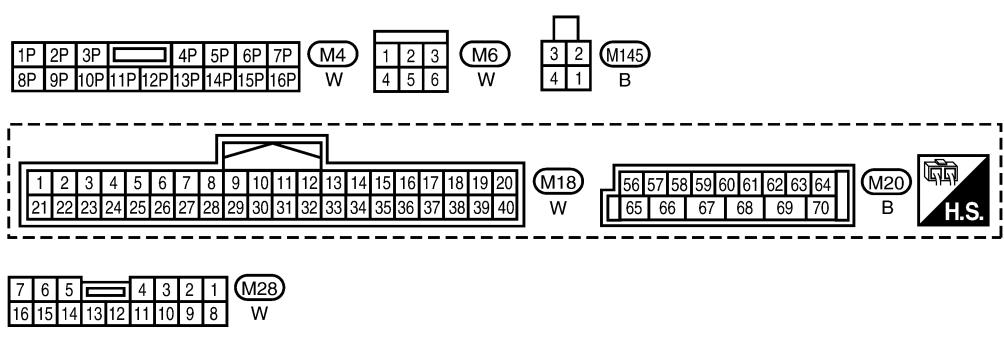
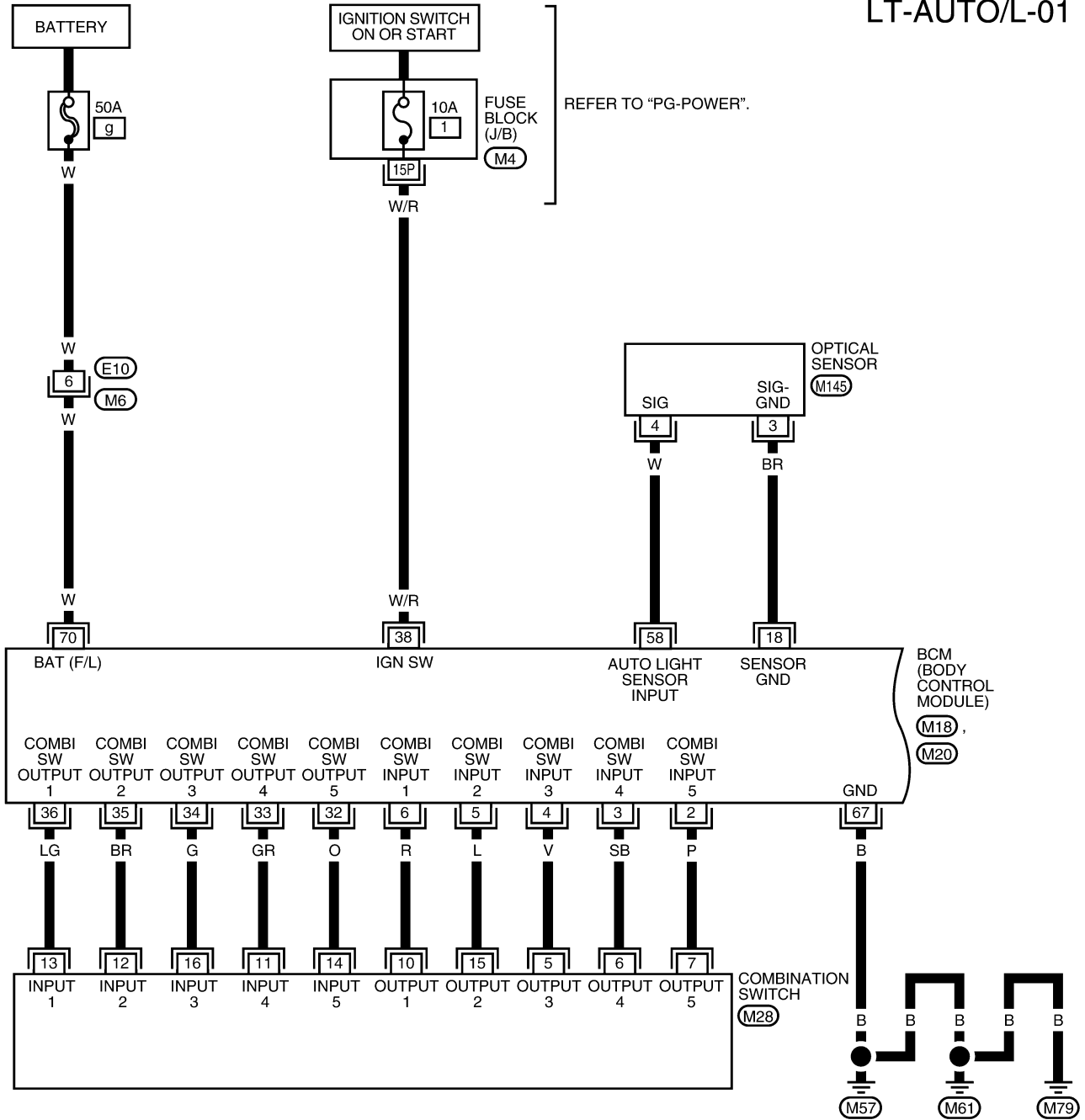
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AUTO LIGHT SYSTEM

Wiring Diagram — AUTO/L —

EKS009KH

LT-AUTO/L-01

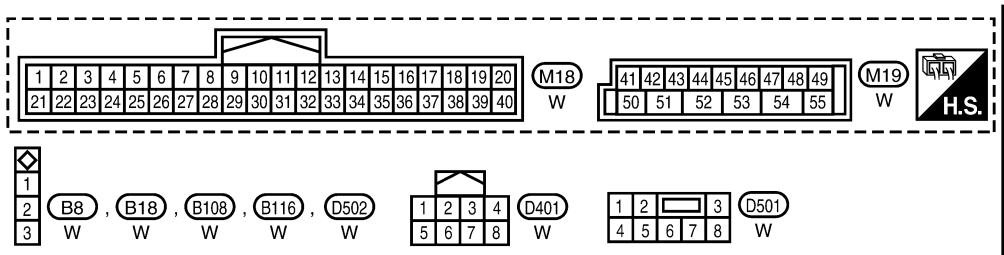
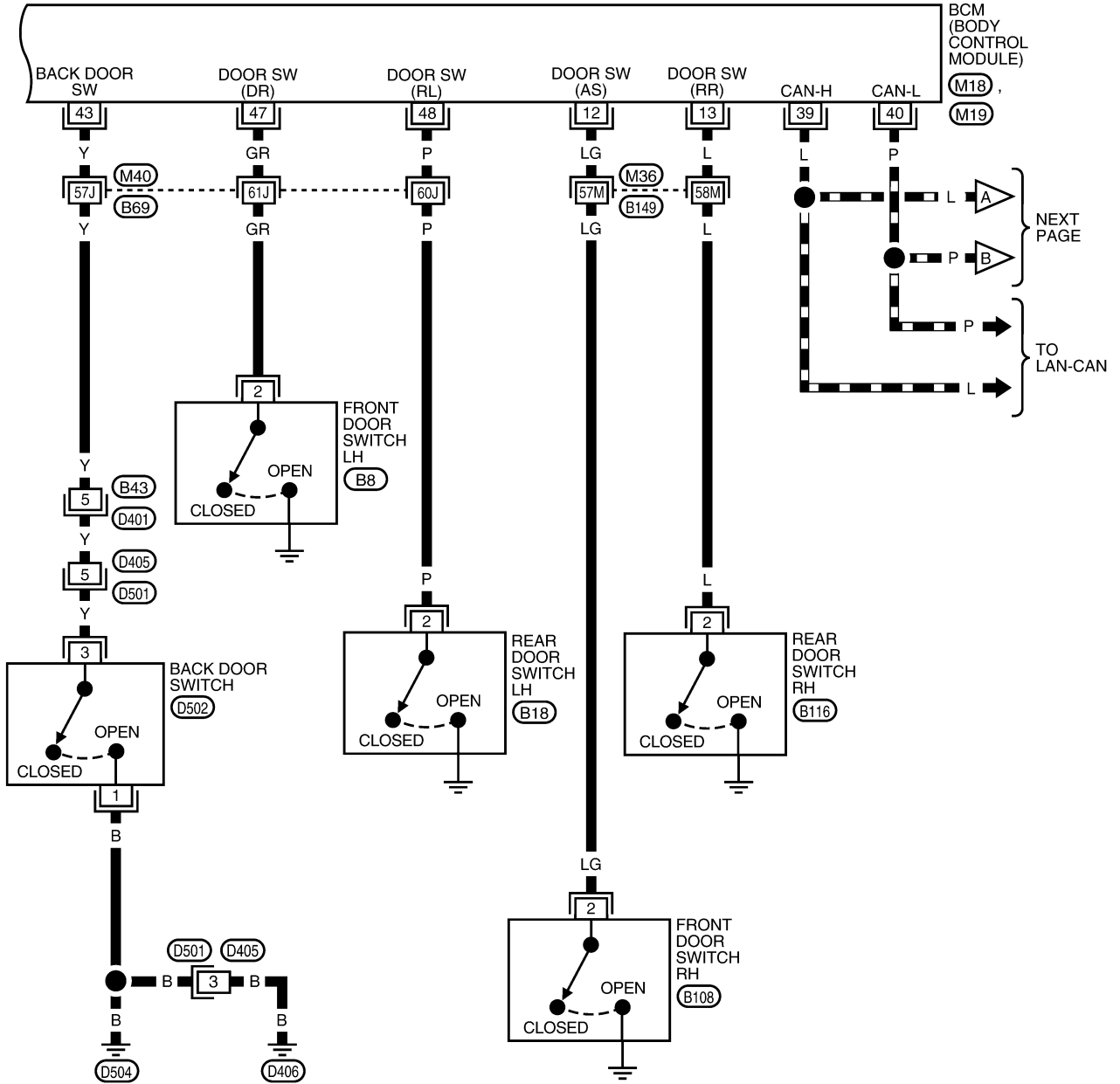


WKWA2027E

AUTO LIGHT SYSTEM

LT-AUTO/L-02

■ : DATA LINE



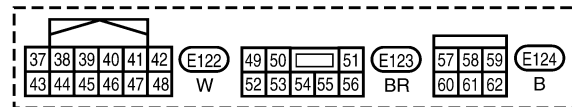
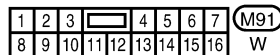
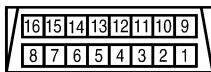
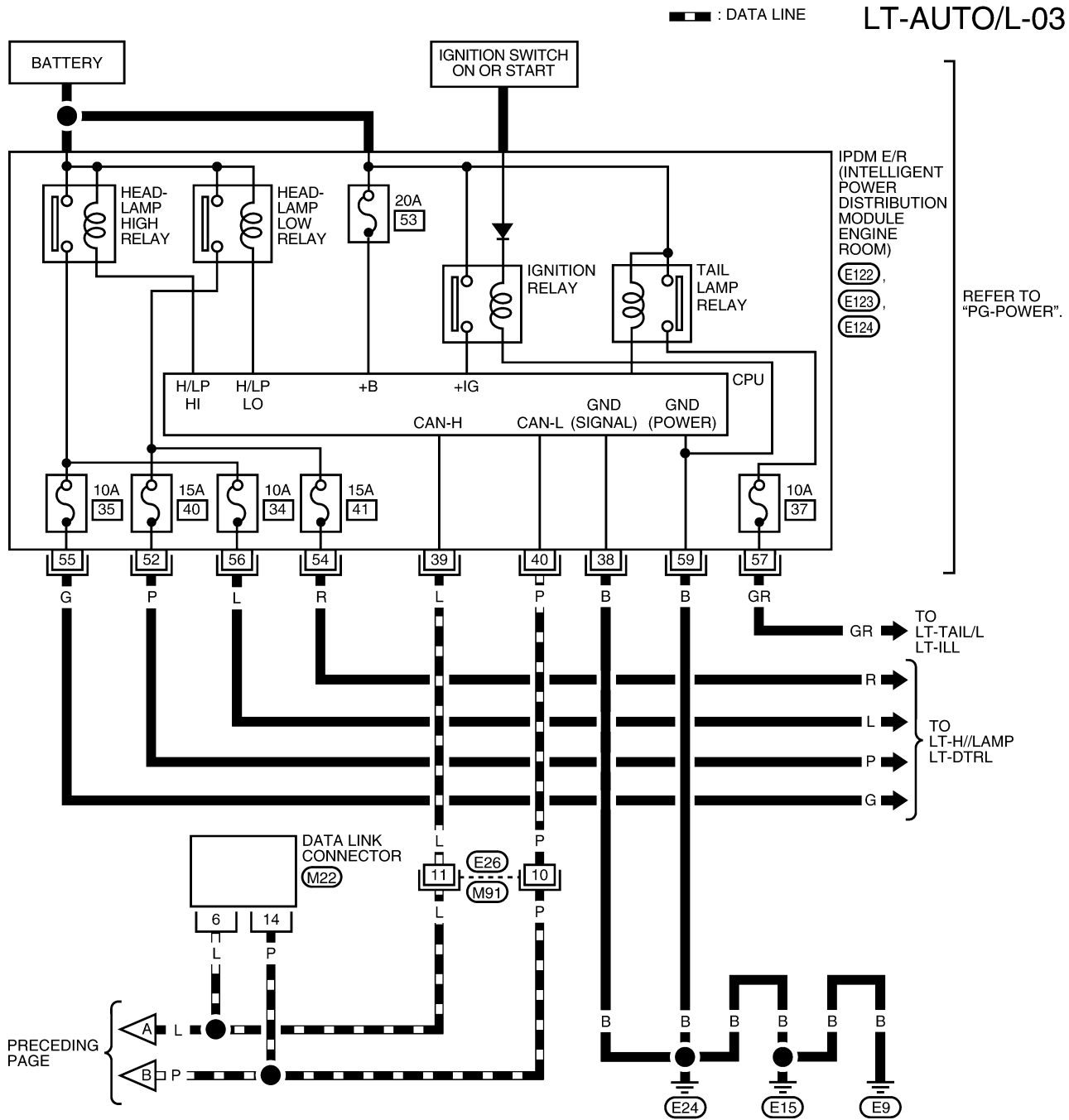
REFER TO THE FOLLOWING.
 (M36), (M40) - SUPER
 MULTIPLE JUNCTION (SMJ)



WKWA2028E

AUTO LIGHT SYSTEM

LT-AUTO/L-03



WKWA2029E

AUTO LIGHT SYSTEM



Terminals and Reference Values for BCM

EKS009KI

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)				
			Ignition switch	Operation or condition					
2	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>				
3	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>				
4	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>				
5	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>				
6	R	Combination switch input 1							
12	LG	Front door switch RH signal	OFF	Front door switch RH	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>ON (open)</td> <td>0V</td> </tr> <tr> <td>OFF (closed)</td> <td>Battery voltage</td> </tr> </table>	ON (open)	0V	OFF (closed)	Battery voltage
ON (open)	0V								
OFF (closed)	Battery voltage								
13	L	Rear door switch RH and back door switch signal	OFF	Rear door switch RH or back door switch	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>ON (open)</td> <td>0V</td> </tr> <tr> <td>OFF (closed)</td> <td>Battery voltage</td> </tr> </table>	ON (open)	0V	OFF (closed)	Battery voltage
ON (open)	0V								
OFF (closed)	Battery voltage								
18	BR	Sensor ground	ON	—	0V				
32	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>				
33	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>				

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AUTO LIGHT SYSTEM

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)	
			Ignition switch	Operation or condition		
34	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E	
35	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E	
36	LG	Combination switch output 1				
38	W/R	Ignition switch (ON)	ON	—	Battery voltage	
39	L	CAN-H	—	—	—	
40	P	CAN-L	—	—	—	
43	Y	Back door switch signal	OFF	Back door switch	ON (open)	0V
					OFF (closed)	Battery voltage
47	GR	Front door switch LH signal	OFF	Front door switch LH	ON (open)	0V
					OFF (closed)	Battery voltage
48	P	Rear door switch LH signal	OFF	Rear door switch LH	ON (open)	0V
					OFF (closed)	Battery voltage
58	W	Optical sensor signal	ON	When optical sensor is illuminated	3.1V or more ^{Note}	
				When optical sensor is not illuminated	0.6V or less	
67	B	Ground	ON	—	0V	
70	W	Battery power supply	OFF	—	Battery voltage	

NOTE:

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

Terminals and Reference Values for IPDM E/R

EKS009KJ

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)	
			Ignition switch	Operation or condition		
38	B	Ground	ON	—	0V	
39	L	CAN-H	—	—	—	
40	P	CAN-L	—	—	—	
52	P	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
54	R	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	0V
					ON	Battery voltage
55	G	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	0V
					ON	Battery voltage

AUTO LIGHT SYSTEM

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
56	L	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF 0V
					ON Battery voltage
57	GR	Parking, license, and tail lamp	ON	Lighting switch 1ST position	OFF 0V
					ON Battery voltage
59	B	Ground	ON	—	0V

How to Proceed With Trouble Diagnosis

EKS009KK

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-46, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-53, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction. Refer to [LT-60, "Trouble Diagnosis Chart by Symptom"](#) .
5. Does the auto light system operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS009KL

SETTING CHANGE FUNCTIONS

- Sensitivity of auto light system can be adjusted using CONSULT-II. Refer to [LT-56, "WORK SUPPORT"](#) .

CHECK BCM CONFIGURATION

1. CHECK BCM CONFIGURATION

Confirm BCM configuration for "AUTO LIGHT" is set to "WITH". Refer to [BCS-14, "READ CONFIGURATION PROCEDURE"](#) .

OK or NG

- OK >> Continue preliminary check. Refer to [LT-53, "CHECK POWER SUPPLY AND GROUND CIRCUIT"](#) .
- NG >> Change BCM configuration for "AUTO LIGHT" to "WITH". Refer to [BCS-16, "WRITE CONFIGURATION PROCEDURE"](#) .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	g
	Ignition switch ON or START position	1
IPDM E/R	Battery	34
		35
		37
		40
		41
		53

Refer to [LT-48, "Wiring Diagram — AUTO/L —"](#) .

OK or NG

- OK >> GO TO 2.
- NG >> If fuse or fusible link is blown, be sure to eliminate cause before installing new fuse or fusible link. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

AUTO LIGHT SYSTEM

2. CHECK POWER SUPPLY CIRCUIT

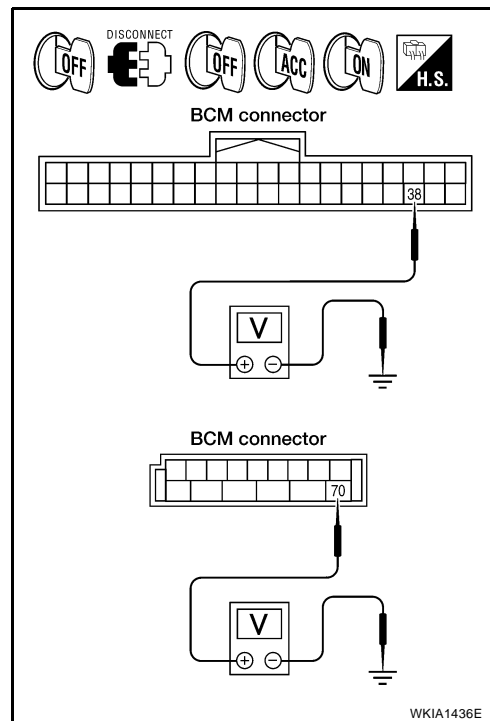
1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

BCM		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal	Ground	0V	0V	Battery voltage
M18	38			Battery voltage	Battery voltage
M20	70				

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

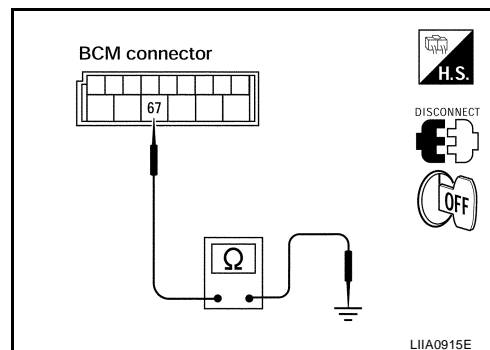
Check continuity between BCM harness connector and ground.

BCM			Continuity
Connector	Terminal		
M20	67	Ground	Yes

OK or NG

OK >> Inspection End.

NG >> Check ground circuit harness.



AUTO LIGHT SYSTEM

CONSULT-II Function (BCM)

EKS009KM

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

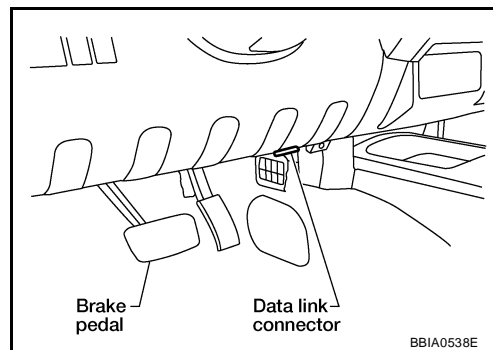
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II OPERATION

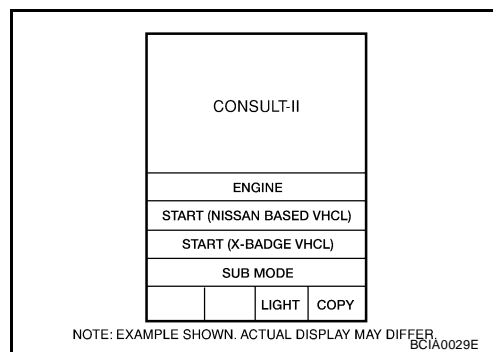
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

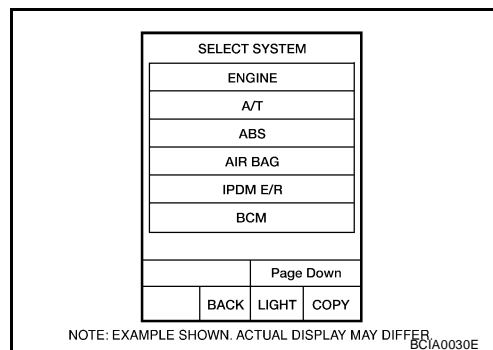
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, go to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



AUTO LIGHT SYSTEM

4. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.

SELECT TEST ITEM			
HEAD LAMP			
WIPER			
FLASHER			
AIR CONDITIONER			
COMB SW			
BCM			
Scroll Up		Page Down	
BACK	LIGHT	COPY	

LKIA0183E

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 "MODE 1-4" of setting to be changed (CUSTOM A/LIGHT SETTING). Touch "MODE1-8" of setting to be changed (ILL DELAY SET).
6. Touch "CHANGE SETT".
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-default)/ MODE 2 (Desensitized)/MODE 3 (Sensitive)/MODE4 (Insensitive)
ILL DELAY SET	Auto light delay off timer period can be changed in this mode. Selects auto light delay off timer period among eight modes. ● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (30 sec.)/MODE 4 (60 sec.)/MODE 5 (90 sec.)/MODE 6 (120 sec.)/MODE 7 (150 sec.)/MODE 8 (180 sec.)

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item	Contents
IGN ON SW	"ON/OFF"
ACC ON SW	"ON/OFF"

IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.

AUTO LIGHT SYSTEM

Monitor item	Contents
HI BEAM SW "ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1 "ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
HEAD LAMP SW 2 "ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1ST "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW "ON/OFF"	Displays status of the lighting switch as judged from the lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW "ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW "ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
DOOR SW-DR "ON/OFF"	Displays status of the front door LH as judged from the front door LH switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS "ON/OFF"	Displays status of the front door RH as judged from the front door RH switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RR "ON/OFF"	Displays status of the rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-RL "ON/OFF"	Displays status of the rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW "ON/OFF"	Displays status of the back door as judged from the back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R "ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L "ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
CARGO LAMP SW "ON/OFF"	Displays status of cargo lamp.
OPTICAL SENSOR [0 - 5V]	Displays "ambient light (close to 5V when dark/close to 0V when light)" judged from optical sensor signal.

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 (HI, LO) to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
CARGO LAMP	Allows cargo lamp to operate by switching ON-OFF.

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AUTO LIGHT SYSTEM

CONSULT-II Function (IPDM E/R)

EKS009KN

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

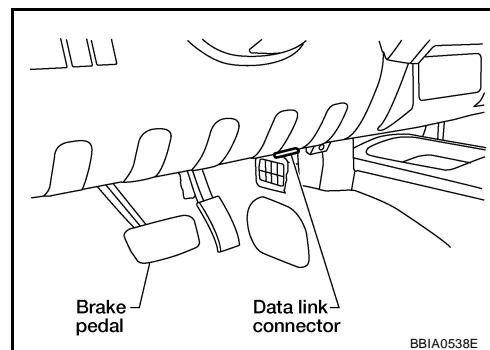
IPDM E/R diagnostic mode	Description
SELF-DIAG RESULTS	Displays IPDM E/R self-diagnosis results.
DATA MONITOR	Displays IPDM E/R input/output data in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.

CONSULT-II OPERATION

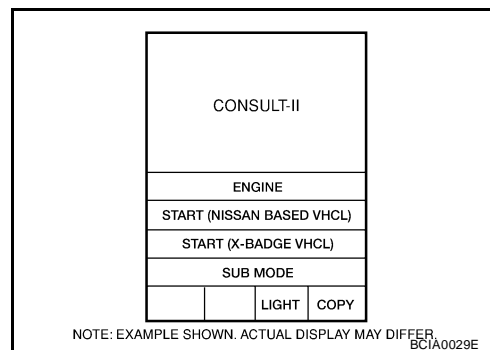
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

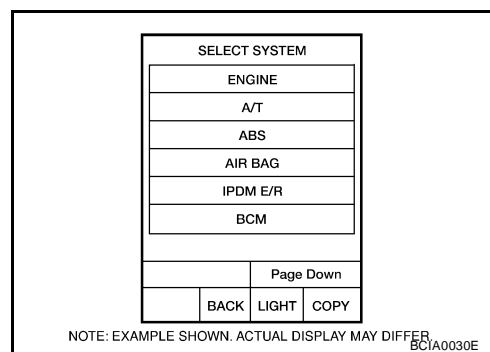
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn the ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

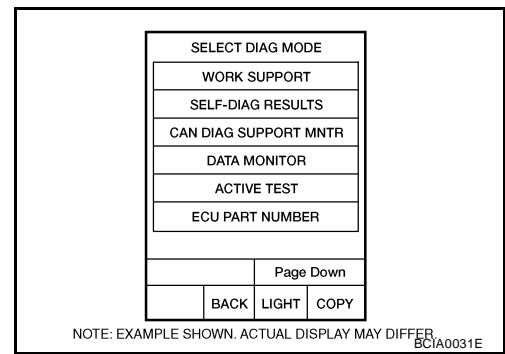


3. Touch "IPDM E/R" on "SELECT SYSTEM" screen.
If "IPDM E/R" is not displayed, go to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



AUTO LIGHT SYSTEM

4. Select the desired part to be diagnosed on the "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 the "SELECT MONITOR ITEM" screen.

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

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

All Items, Main Items, Select Item Menu

Item name	CONSULT-II screen display	Display or unit	Monitor item selection			Description
			ALL SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
Parking, license plate and tail lamps 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 lamps request	FR FOG REQ	ON/OFF	×	×	×	Signal status input from BCM

NOTE:

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

ACTIVE TEST

Operation Procedure

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

AUTO LIGHT SYSTEM

Test item	CONSULT-II screen display	Description
Tail lamp relay output	TAIL LAMP	Allows tail lamp relay to operate by switching operation ON-OFF at your option.
Headlamp relay (HI, LO) output	LAMPS	Allows headlamp relay (HI, LO) to operate by switching operation (OFF, HI, LO) at your option (Headlamp 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.

Trouble Diagnosis Chart by Symptom

EKS009KO

Trouble phenomenon	Malfunction system and reference
<ul style="list-style-type: none"> ● 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. 	<ul style="list-style-type: none"> ● Refer to LT-56, "WORK SUPPORT" . ● Refer to LT-60, "Lighting Switch Inspection" . ● Refer to LT-61, "Optical Sensor System Inspection" . <p>If above systems are normal, replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .</p>
Parking lamps illuminate when outside of the vehicle becomes dark, but headlamps stay off. (Lighting switch 1st position and 2nd position operate normally.)	<ul style="list-style-type: none"> ● Refer to LT-56, "WORK SUPPORT" . ● Refer to LT-61, "Optical Sensor System Inspection" . <p>If above systems are normal, replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .</p>
Auto light adjustment system will not operate. (Lighting switch AUTO, 1st position and 2nd position operate normally.)	<ul style="list-style-type: none"> ● Refer to LT-61, "Optical Sensor System Inspection" . <p>If above system is normal, replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .</p>
Auto light adjustment system will not operate.	<ul style="list-style-type: none"> ● CAN communication line to BCM inspection. Refer to BCS-13, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" .
Shut off delay feature will not operate.	<ul style="list-style-type: none"> ● CAN communication line inspection between BCM and combination meter. Refer to BCS-13, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" . ● Refer to BL-29, "Door Switch Check" . <p>If above system is normal, replace BCM. Refer to BCS-20, "Removal and Installation of BCM" .</p>

Lighting Switch Inspection

EKS009KP

1. CHECK LIGHTING SWITCH INPUT SIGNAL

① 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 in : AUTO LIGHT SW ON
AUTO position**

⊗ Without CONSULT-II

Refer to [LT-94, "Combination Switch Inspection"](#) .

OK or NG

OK >> Inspection End.

NG >> Check lighting switch. Refer to [LT-94, "Combination Switch Inspection"](#) .

DATA MONITOR	
MONITOR	
AUTO LIGHT SW	ON

SKIA4196E

AUTO LIGHT SYSTEM

EKS009KQ

Optical Sensor System Inspection

1. CHECK OPTICAL SENSOR INPUT SIGNAL

④ With CONSULT-II

Select "BCM" on CONSULT-II. With "OPTICAL SENSOR" data monitor, check difference in the voltage when the optical sensor is illuminated and not illuminated.

Illuminated

OPTICAL SENSOR : 3.1V or more

Not illuminated

OPTICAL SENSOR : 0.6V or less

NOTE:

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

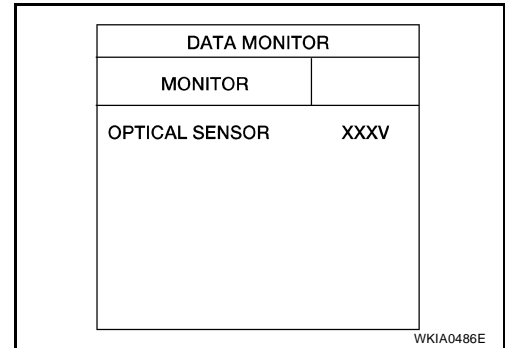
⊗ Without CONSULT-II

GO TO 2.

OK or NG

OK >> Inspection End.

NG >> GO TO 2.



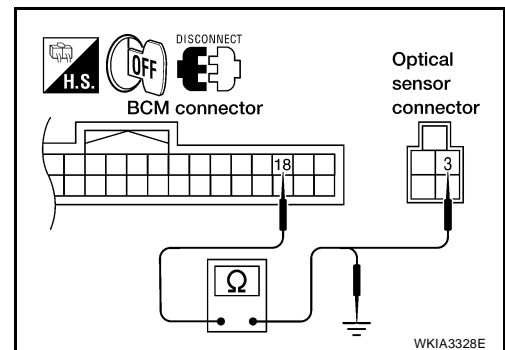
2. CHECK OPTICAL SENSOR SIGNAL GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and optical sensor connector.
3. Check continuity (open circuit) between BCM harness connector M18 terminal 18 and optical sensor harness connector M145 terminal 3.

18 - 3 : Continuity should exist.

4. Check continuity (short circuit) between BCM harness connector M18 terminal 18 and ground.

18 - Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

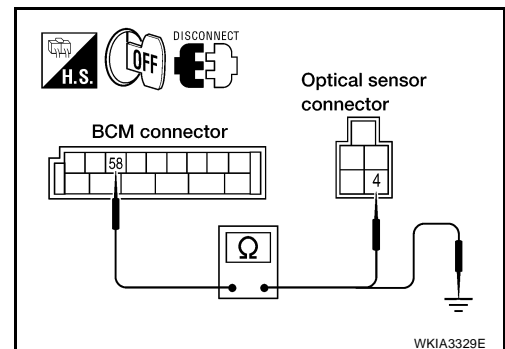
3. CHECK OPTICAL SENSOR SIGNAL CIRCUIT

1. Check continuity (open circuit) between BCM harness connector M20 terminal 58 and optical sensor harness connector M145 terminal 4.

58 - 4 : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M20 terminal 58 and ground.

58 - Ground : Continuity should not exist.



OK or NG

OK >> Replace optical sensor. Refer to [LT-62, "Removal and Installation of Optical Sensor"](#). Recheck sensor output with CONSULT-II. If NG, replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).

NG >> Repair harness or connector.

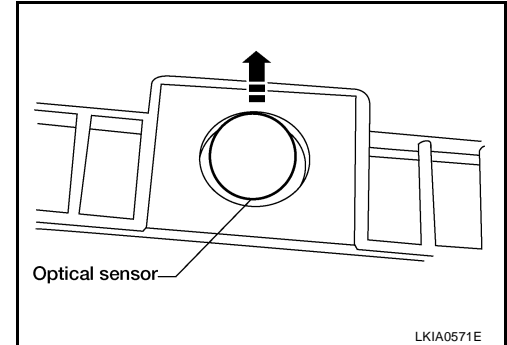
AUTO LIGHT SYSTEM

Removal and Installation of Optical Sensor

EKS009KR

REMOVAL

1. Using a thin blade screwdriver, gently pry upward to release optical sensor from defrost grille.
2. Disconnect the optical sensor connector.



INSTALLATION

Installation is in the reverse order of removal.

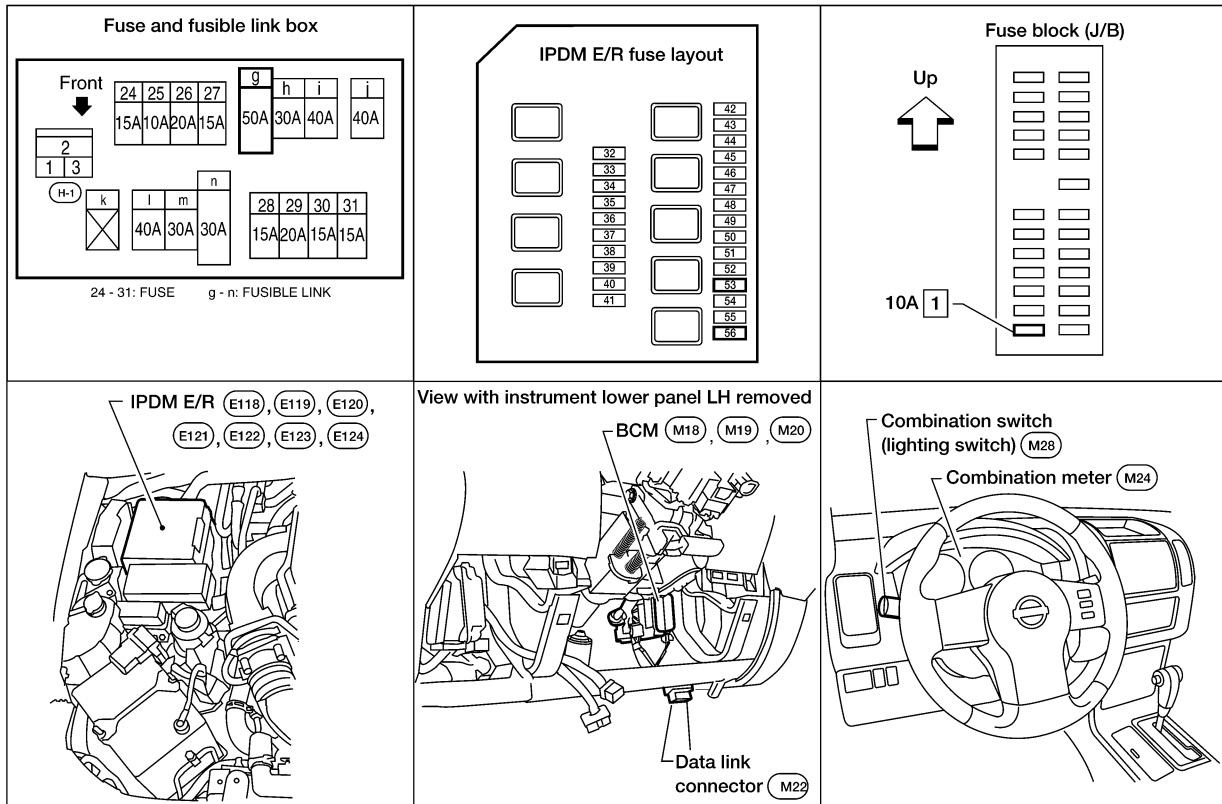
FRONT FOG LAMP

PF2:26150

EKS009KS

FRONT FOG LAMP

Component Parts and Harness Connector Location



WKIA4151E

System Description

EKS009KT

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

OUTLINE

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- to front fog lamp relay, located in the IPDM E/R, and
- through 20A fuse (No. 53, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM terminal 70.

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

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 59

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FRONT FOG LAMP

- through grounds E9, E15 and E24.

FOG LAMP OPERATION

The fog lamp switch is built into the combination switch. The lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the fog lamp switch must be ON for fog lamp operation.

With the fog lamp switch in the ON position, the CPU of the IPDM E/R grounds the coil side of the fog lamp relay. The fog lamp relay then directs power

- through 20A fuse (No. 56, located in the IPDM E/R)
- through IPDM E/R terminal 50
- to front fog lamp LH terminal 1, and
- through IPDM E/R terminal 51
- to front fog lamp RH terminal 1.

Ground is supplied

- to front fog lamp LH and RH terminal 2
- through grounds E9, E15 and E24.

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

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 2ND position (ON), the fog lamp switch is ON, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.

Under this condition, the fog lamps (and headlamps) remain illuminated for 5 minutes, then the fog lamps (and headlamps) are turned off.

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

CAN Communication System Description

EKS009KU

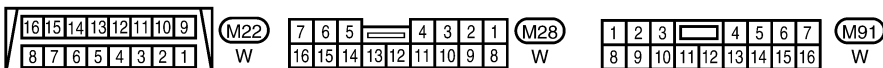
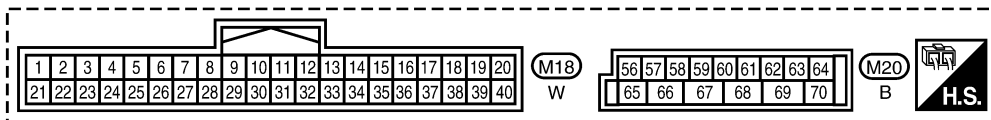
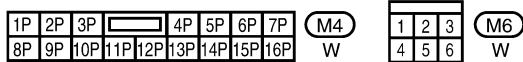
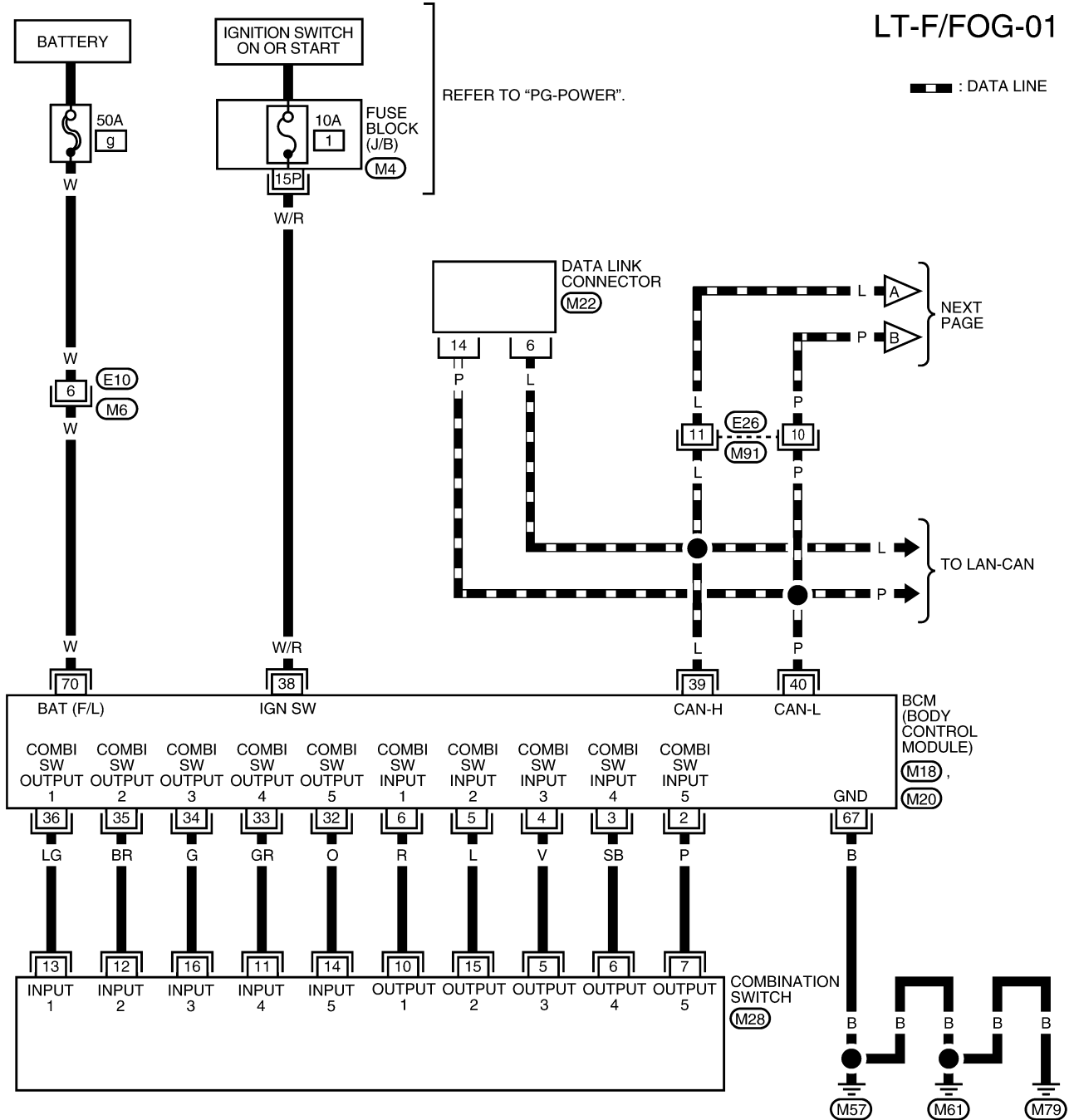
Refer to [LAN-24, "CAN COMMUNICATION"](#) .

FRONT FOG LAMP

Wiring Diagram — F/FOG —

EKS009KV

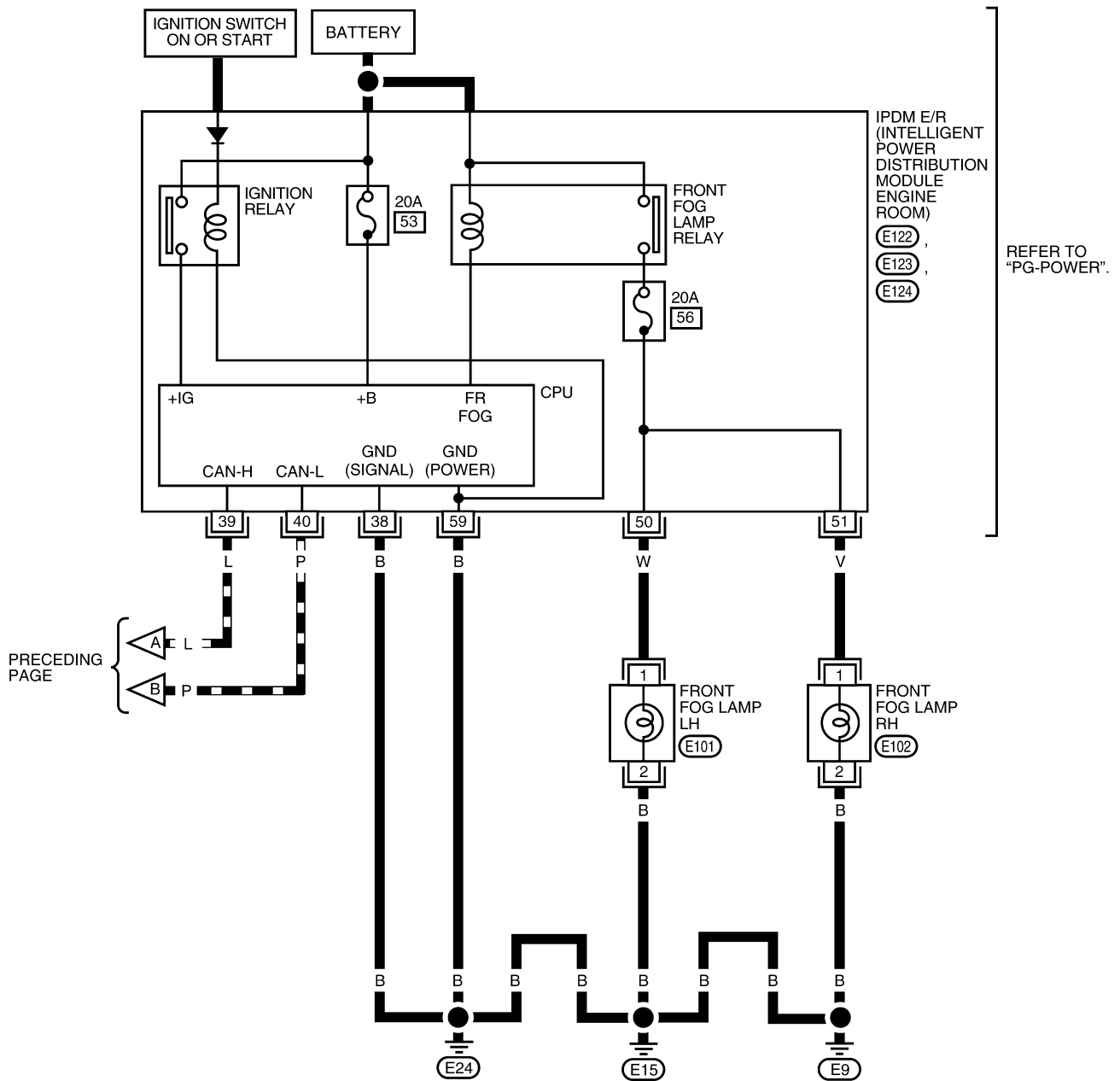
LT-F/FOG-01



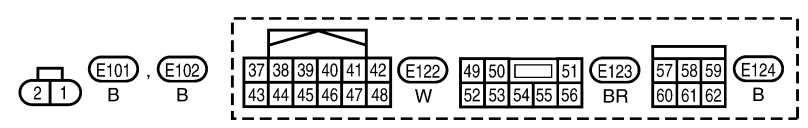
WKWA2030E

FRONT FOG LAMP

LT-F/FOG-02



PRECEDING PAGE

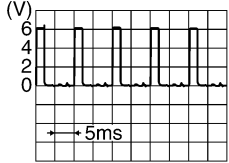

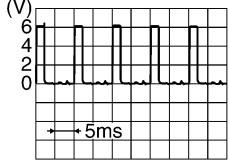
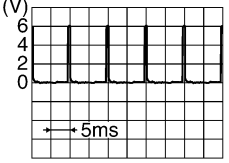
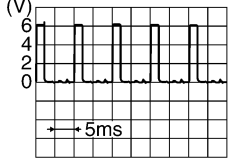
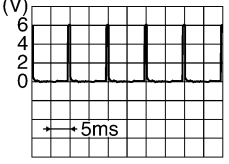
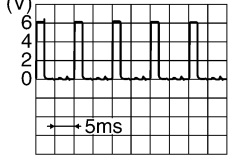


WKWA3082E

FRONT FOG LAMP

Terminals and Reference Values for BCM

EKS009KW

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
3	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
4	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
5	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
6	R	Combination switch input 1			
32	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
33	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
34	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>

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FRONT FOG LAMP

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
35	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
36	LG	Combination switch output 1			
38	W/R	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	P	CAN-L	—	—	—
67	B	Ground	ON	—	0V
70	W	Battery power supply (fusible link)	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

EKS009KX

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)	
			Ignition switch	Operation or condition		
38	B	Ground	ON	—	0V	
39	L	CAN-H	—	—	—	
40	P	CAN-L	—	—	—	
50	W	Front fog lamp LH	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	0V
					ON	Battery voltage
51	V	Front fog lamp RH	ON	Lighting switch must be in the 2ND position or AUTO position (LOW beam is ON) and the front fog lamp switch must be ON	OFF	0V
						ON
59	B	Ground	ON	—	0V	

How to Proceed With Trouble Diagnosis

EKS009KY

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-63, "System Description"](#).
3. Perform the Preliminary Check. Refer to [LT-69, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does the front fog lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

FRONT FOG LAMP

EKS009KZ

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	9
	Ignition switch ON or START position	1
IPDM E/R	Battery	53
	Battery (Fog lamps ON)	56

Refer to [LT-65, "Wiring Diagram — F/FOG —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause before installing new fuse or fusible link.

Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

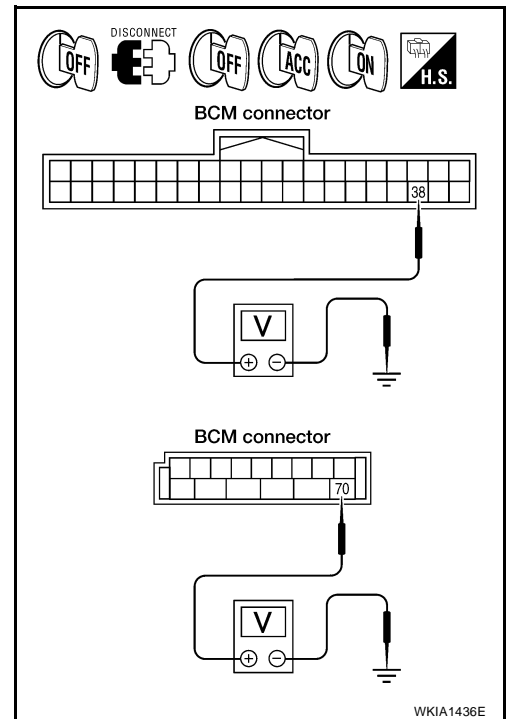
1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

BCM		(-)	Ignition switch position		
(+) Connector			Terminal	OFF	ACC
M18	38	Ground	0V	0V	Battery voltage
M20	70		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

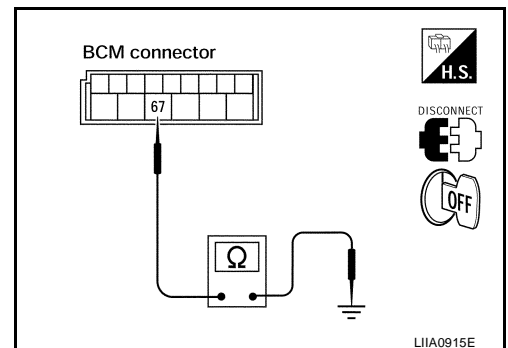
Check continuity between BCM harness connector and ground.

BCM		Continuity
Connector	Terminal	
M20	67	Ground Yes

OK or NG

OK >> Inspection End.

NG >> Check ground circuit harness.



FRONT FOG LAMP

EKS009L0

CONSULT-II Functions

Refer to [LT-15, "CONSULT-II Function \(BCM\)"](#) in HEADLAMP (FOR USA).

Refer to [LT-18, "CONSULT-II Function \(IPDM E/R\)"](#) in HEADLAMP (FOR USA).

Front Fog Lamps Do Not Illuminate (Both Sides)

EKS009L1

1. CHECK COMBINATION SWITCH INPUT SIGNAL

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 in FOG position : FR FOG SW ON

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to [LT-94, "Combination Switch Inspection"](#).

DATA MONITOR	
MONITOR	
FR FOG SW	ON

SKIA5897E

2. FOG LAMP ACTIVE TEST

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
3. Touch "FOG" on "ACTIVE TEST" screen.
4. Make sure fog lamps operate.

Fog lamps should operate.

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

ACTIVE TEST			
EXTERNAL LAMPS		OFF	
		TAIL	
LO		HI	
FOG			
MODE	BACK	LIGHT	COPY

WKIA1438E

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 in FOG position : FR FOG REQ ON

OK or NG

OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).

NG >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).

DATA MONITOR			
MONITOR			
FR FOG REQ		ON	
		Page Down	
RECORD			
MODE	BACK	LIGHT	COPY

SKIA5898E

FRONT FOG LAMP

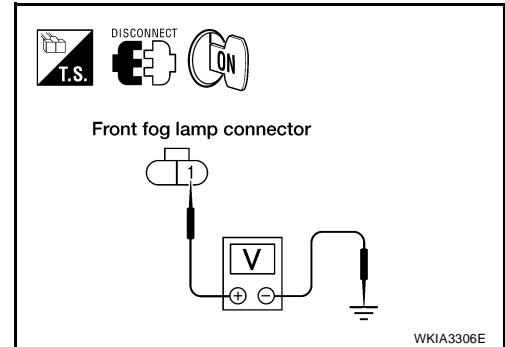
4. IPDM E/R INSPECTION

1. Disconnect front fog lamp connectors.
2. Start auto active test. Refer to [PG-22, "Auto Active Test"](#). When front fog lamp relay is operating, check voltage between left/right front fog lamp connector terminals and ground.

Front fog lamp		Terminal	(-)	Voltage (Approx.)
(+)				
Connector	Terminal			
LH	E101	1	Ground	Battery voltage
RH	E102			

OK or NG

- OK >> Check front fog lamp bulbs and replace as necessary. Refer to [LT-73, "Bulb Replacement"](#).
 NG >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).



Front Fog Lamp Does Not Illuminate (One Side)

EKS009L2

1. BULB INSPECTION

Inspect bulb of lamp which does not illuminate.

OK or NG

- OK >> GO TO 2.
 NG >> Replace lamp bulb. Refer to [LT-73, "Bulb Replacement"](#).

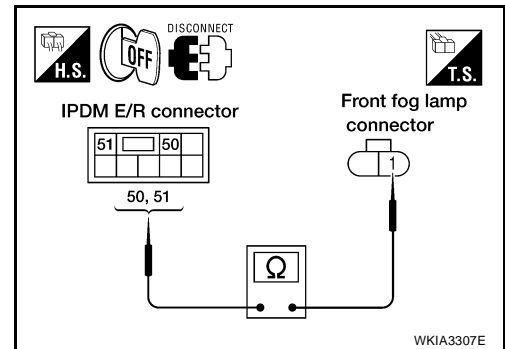
2. INSPECTION BETWEEN IPDM E/R AND FRONT FOG LAMPS

1. Disconnect IPDM E/R connector and inoperative front fog lamp connector.
2. Check continuity between harness connector terminals of IPDM E/R and harness connector terminal of front fog lamps.

IPDM E/R		Front fog lamp		Continuity
Connector	Terminal	Connector	Terminal	
E123	50	LH	E101	Yes
	51	RH	E102	

OK or NG

- OK >> Check ground circuit. If OK, replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#). If NG, repair harness or connector.
 NG >> Check for short circuits and open circuits in harness between IPDM E/R and front fog lamps.



FRONT FOG LAMP

EKS009L3

Aiming Adjustment

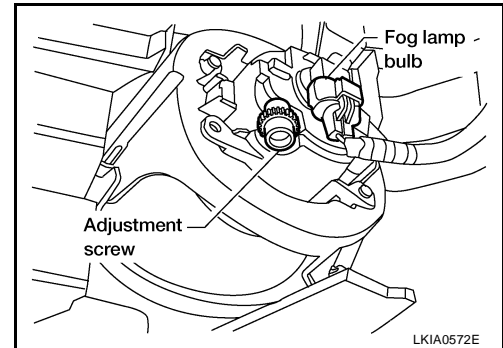
The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

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

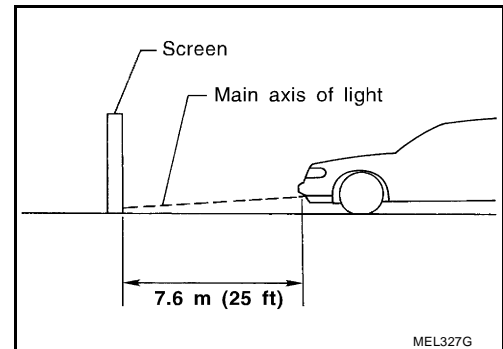
Adjust aiming in the vertical direction by turning the adjustment screw.

NOTE:

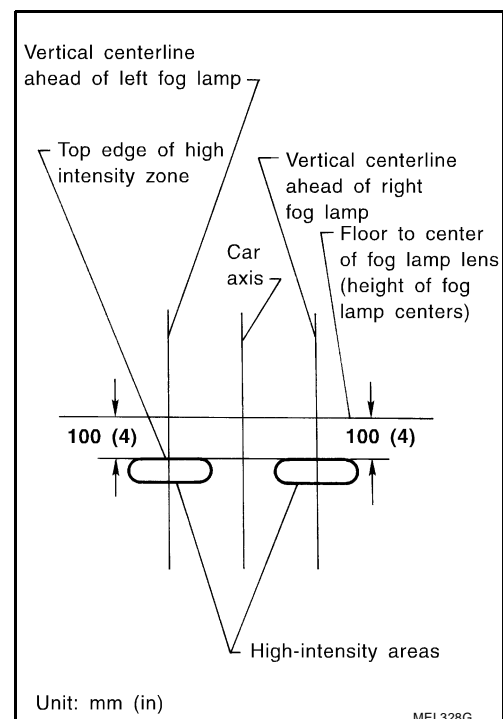
Use a Phillips screwdriver to adjust. Turn screw clockwise to raise pattern and counterclockwise to lower pattern.



1. Set the distance between the screen and the center of the fog lamp lens as shown.



2. Turn front fog lamps ON.
3. Remove front portion of fender protector(s) for adjustment screw access. Refer to [EI-21, "Removal and Installation of Front Fender Protector"](#)
4. Adjust front fog lamps using adjustment screw so that the top edge of the high intensity zone is 100 mm (4 in) below the height of the fog lamp centers as shown.
 - When performing adjustment, if necessary, cover the headlamps and opposite fog lamp.



FRONT FOG LAMP

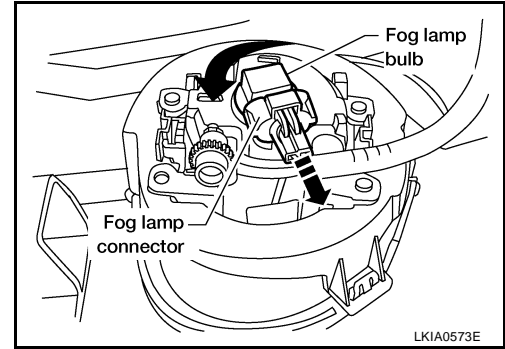
Bulb Replacement

EKS009L4

1. Disconnect fog lamp connector.
2. Turn the bulb counterclockwise to remove it.

CAUTION:

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



Removal and Installation of Fog Lamp

EKS009L5

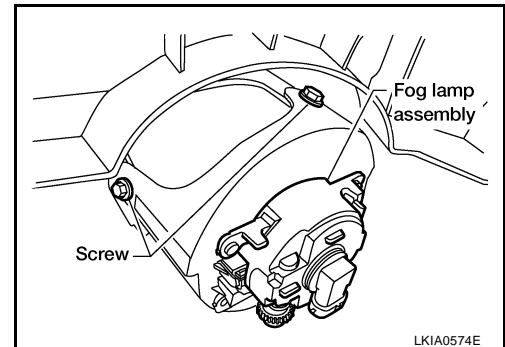
REMOVAL

The fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb.

CAUTION:

- Do not leave fog lamp assembly without bulb for a long period of time. Dust, moisture, smoke, etc. entering the fog lamp body may affect the performance. Remove the bulb from the headlamp assembly just before replacement bulb is installed.
- Grasp only the plastic base when handling the bulb. Never touch the glass envelope. Touching the glass could significantly affect the bulb life and/or fog lamp performance.

1. Remove front portion of fender protector. Refer to [EI-21, "Removal and Installation of Front Fender Protector"](#)
2. Disconnect fog lamp connector.
3. Remove fog lamp screws and pull fog lamp rearward out of front bumper.



INSTALLATION

Installation is in the reverse order of removal.

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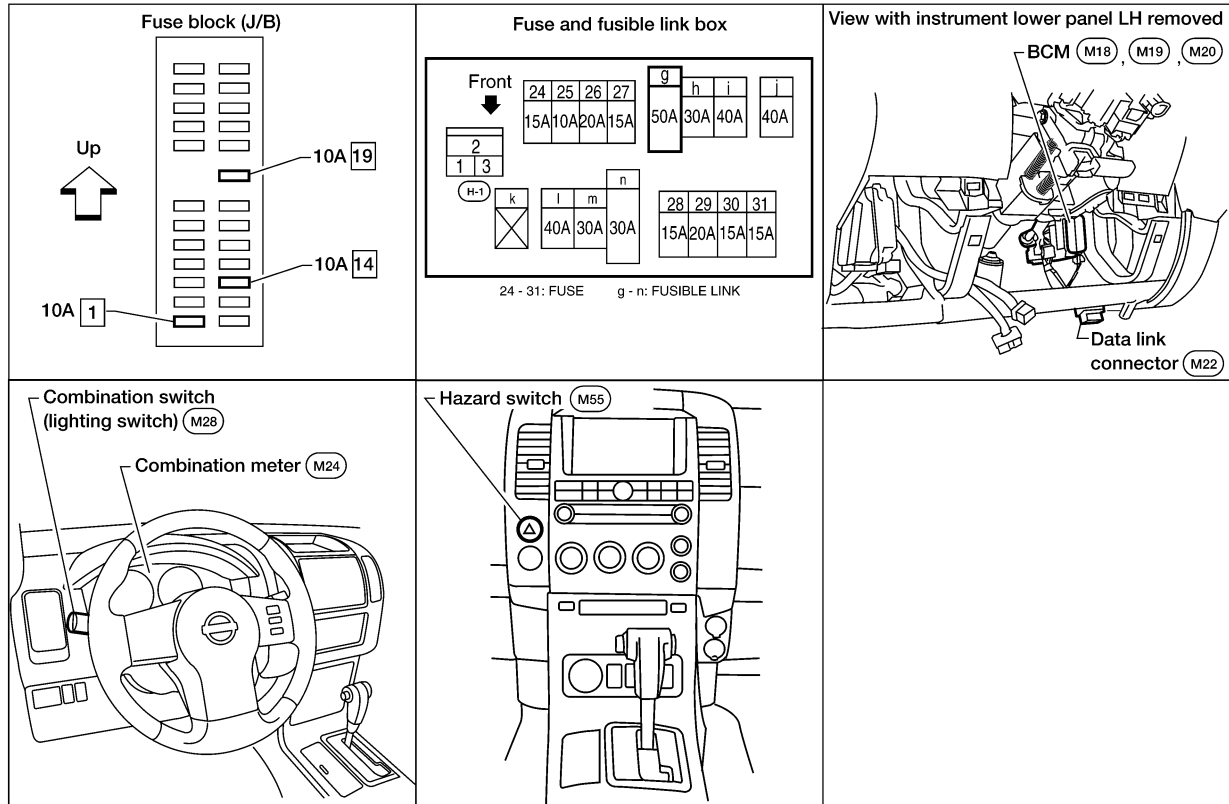
TURN SIGNAL AND HAZARD WARNING LAMPS

TURN SIGNAL AND HAZARD WARNING LAMPS

PF26120

Component Parts and Harness Connector Location

EKS009L6



WKIA4152E

System Description

OUTLINE

EKS009L7

Power is supplied at all times

- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM (body control module) terminal 70, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 3.

TURN SIGNAL OPERATION

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

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse [No. 14, located in the fuse block (J/B)]
- to combination meter terminal 16.

Ground is supplied

- to BCM terminal 67 and
- to combination meter terminals 13 and 23
- through grounds M57, M61 and M79.

LH Turn

When the turn signal switch is moved to the left position, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminal 60.

The BCM supplies power

- through BCM terminal 60
- to front turn signal lamp LH terminal 1

TURN SIGNAL AND HAZARD WARNING LAMPS

- through front turn signal lamp LH terminal 3
- to grounds E9, E15 and E24, and
- to rear combination lamp LH (turn signal) terminal 4
- through rear combination lamp LH (turn signal) terminal 5
- to grounds B7 and B19.

BCM sends signal to combination meter through CAN communication lines and turns on turn signal indicator lamp within combination meter.

RH Turn

When the turn signal switch is moved to the right position, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminal 61.

The BCM supplies power

- through BCM terminal 61
- to front turn signal lamp RH terminal 1
- through front turn signal lamp RH terminal 3
- to grounds E9, E15 and E24, and
- to rear combination lamp RH (turn signal) terminal 4
- through rear combination lamp RH (turn signal) terminal 5
- to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines, and turns on turn signal indicator lamp within combination meter.

HAZARD LAMP OPERATION

Power is supplied at all times

- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 3.

Ground is supplied

- to BCM terminal 67 and
- to combination meter terminals 13 and 23
- through grounds M57, M61 and M79.

When the hazard switch is depressed, ground is supplied

- to BCM terminal 29
- through hazard switch terminal 2
- through hazard switch terminal 1
- through grounds M57, M61 and M79.

When the hazard switch is depressed, the BCM, interpreting it as hazard warning lamps are ON, outputs turn signal from BCM terminals 60 and 61.

The BCM supplies power

- through BCM terminals 60 and 61
- to front turn signal lamp LH and RH terminal 1
- through front turn signal lamp LH and RH terminal 3
- to grounds E9, E15 and E24, and
- to rear combination lamp LH (turn signal) terminal 4
- through rear combination lamp LH (turn signal) terminal 5
- to grounds B7 and B19, and
- to rear combination lamp RH (turn signal) terminal 4
- through rear combination lamp RH (turn signal) terminal 5
- to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines and turns on turn signal indicator lamps within combination meter.

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LT

TURN SIGNAL AND HAZARD WARNING LAMPS

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Power is supplied at all times

- through 50A fusible link (letter **g** , located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 10A fuse [No. 19, located in the fuse block (J/B)]
- to combination meter terminal 3.

Ground is supplied

- to BCM terminal 67 and
- to combination meter terminals 13 and 23
- through grounds M57, M61 and M79.

When the remote keyless entry system is triggered by input from the keyfob, the BCM, interpreting it as turn signal is ON, outputs turn signal from BCM terminals 60 and 61.

The BCM supplies power

- through BCM terminals 60 and 61
- to front turn signal lamp LH and RH terminal 1
- through front turn signal lamp LH and RH terminal 3
- to grounds E9, E15 and E24, and
- to rear combination lamp LH (turn signal) terminal 4
- through rear combination lamp LH (turn signal) terminal 5
- to grounds B7 and B19, and
- to rear combination lamp RH (turn signal) terminal 4
- through rear combination lamp RH (turn signal) terminal 5
- to grounds B117 and B132.

BCM sends signal to combination meter through CAN communication lines, and turns on turn signal indicator lamps within combination meter.

With power and input supplied, the BCM controls the flashing of the hazard warning lamps when keyfob is used to activate the remote keyless entry system.

COMBINATION SWITCH READING FUNCTION

Refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#) .

CAN Communication System Description

Refer to [LAN-24, "CAN COMMUNICATION"](#) .

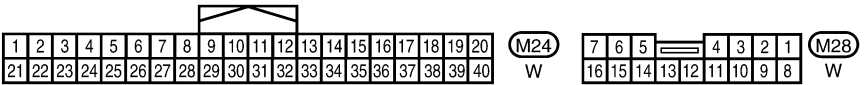
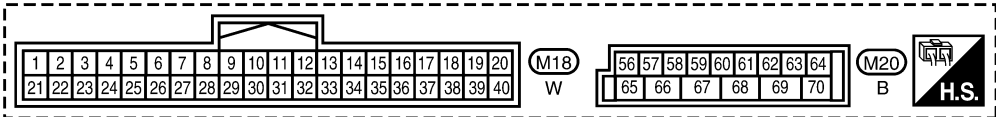
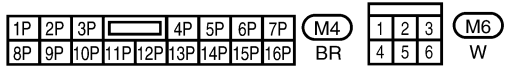
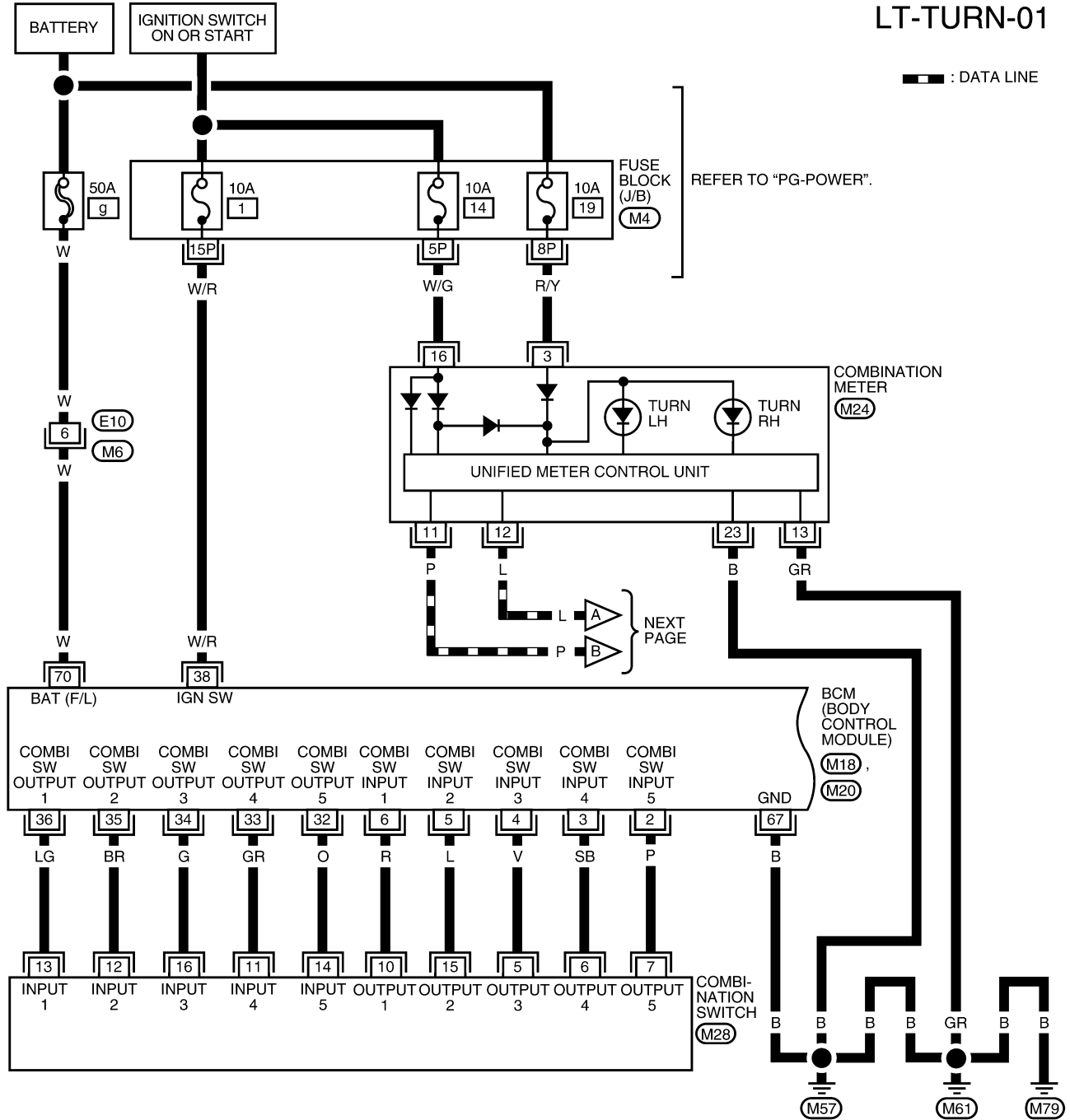
EKS009LB

TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram — TURN —

EKS009L9

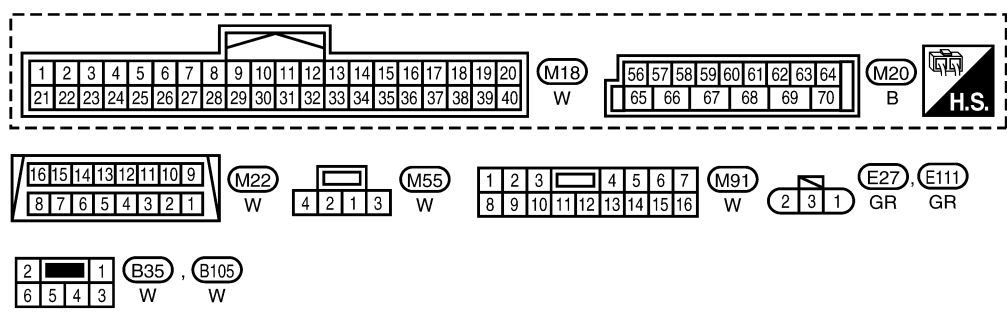
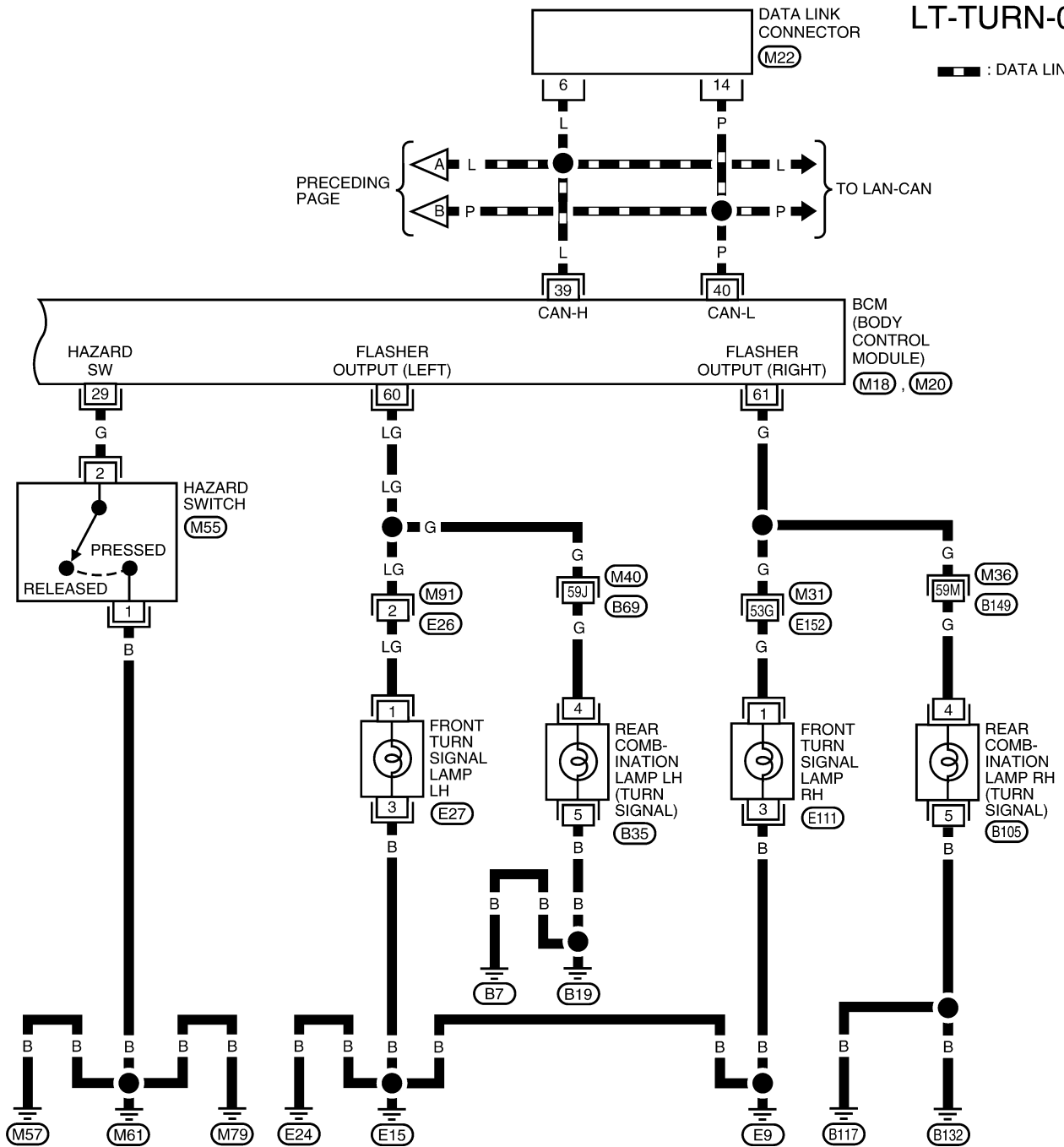
LT-TURN-01



WKWA3083E

TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-02



REFER TO THE FOLLOWING.
 (M31), (M36), (M40) - SUPER
 MULTIPLE JUNCTION (SMJ)

TURN SIGNAL AND HAZARD WARNING LAMPS

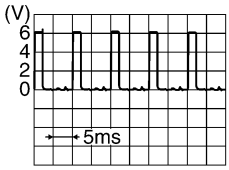
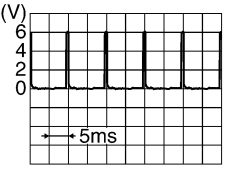
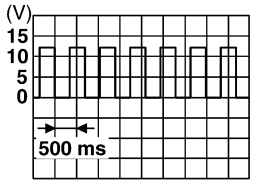
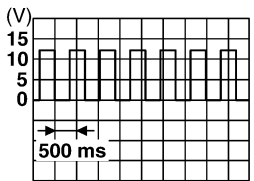
Terminals and Reference Values for BCM

EKS009LA

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)				
			Ignition switch	Operation or condition					
2	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>				
3	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>				
4	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>				
5	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>				
6	R	Combination switch input 1							
29	G	Hazard switch signal	OFF	Hazard switch	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">ON</td> <td style="text-align: center;">0V</td> </tr> <tr> <td>OFF</td> <td style="text-align: center;">5V</td> </tr> </table>	ON	0V	OFF	5V
ON	0V								
OFF	5V								
32	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5291E</p>				
33	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	<p style="text-align: right;">SKIA5292E</p>				

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TURN SIGNAL AND HAZARD WARNING LAMPS

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

How to Proceed With Trouble Diagnosis

EKS009LB

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-74, "System Description"](#).
3. Perform preliminary check. Refer to [LT-81, "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.

TURN SIGNAL AND HAZARD WARNING LAMPS

EKS009LC

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	9
	Ignition switch ON or START position	1

Refer to [LT-77, "Wiring Diagram — TURN —"](#) .

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause before installing new fuse or fusible link.
Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

2. CHECK POWER SUPPLY CIRCUIT

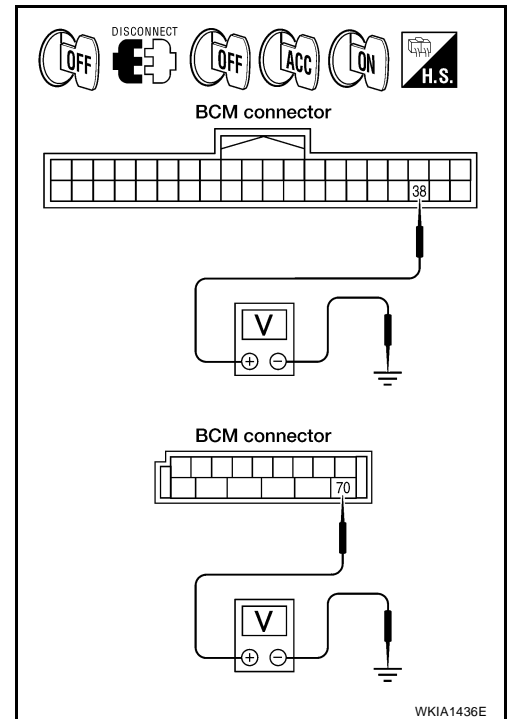
- Disconnect BCM connectors.
- Check voltage between BCM harness connector and ground.

BCM		(-)	Ignition switch position		
Connector	Terminal		OFF	ACC	ON
M18	38	Ground	0V	0V	Battery voltage
M20	70		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

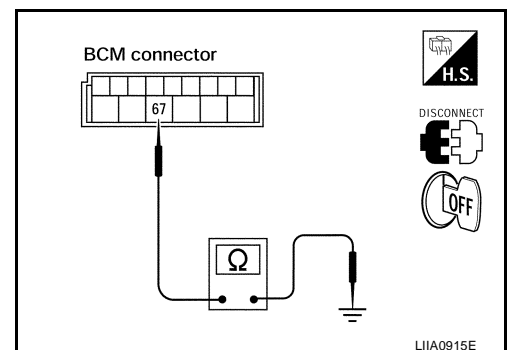
Check continuity between BCM harness connector and ground.

BCM		Continuity
Connector	Terminal	
M20	67	Ground Yes

OK or NG

OK >> Inspection End.

NG >> Check ground circuit harness.



TURN SIGNAL AND HAZARD WARNING LAMPS

CONSULT-II Function (BCM)

EKS009LD

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

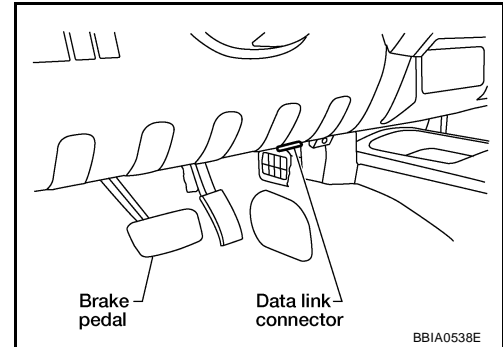
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II OPERATION

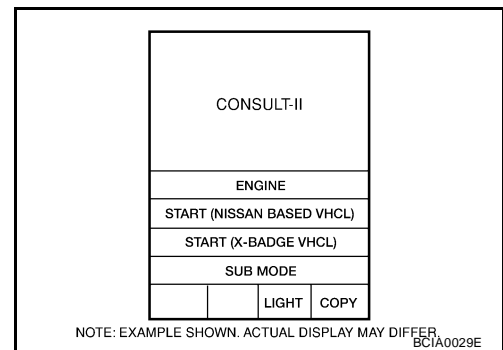
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

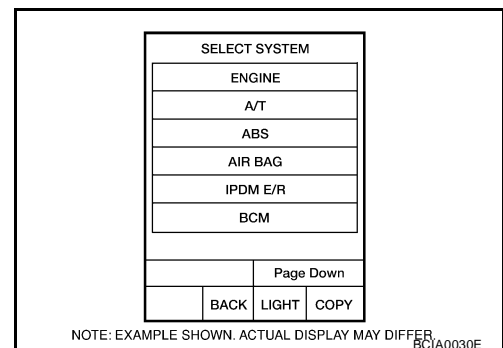
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".



3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, go to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



TURN SIGNAL AND HAZARD WARNING LAMPS

4. Touch "FLASHER" on "SELECT TEST ITEM" screen.

SELECT TEST ITEM			
HEAD LAMP			
WIPER			
FLASHER			
AIR CONDITIONER			
COMB SW			
BCM			
Scroll Up		Page Down	
BACK	LIGHT	COPY	

LKIA0183E

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
HAZARD SW "ON/OFF"	Displays "Hazard ON (ON)/Hazard OFF (OFF)" status, determined from hazard switch signal.
TURN SIGNAL R "ON/OFF"	Displays "Turn right (ON)/Other (OFF)" status, determined from lighting switch signal.
TURN SIGNAL L "ON/OFF"	Displays "Turn left (ON)/Other (OFF)" status, determined from lighting switch signal.
BRAKE SW "ON/OFF"	Displays status of stop lamp switch.

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" or "OFF" deactivates the operation.

Display Item List

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

TURN SIGNAL AND HAZARD WARNING LAMPS

EKS009LE

Turn Signal Lamp Does Not Operate

1. CHECK COMBINATION SWITCH INPUT SIGNAL

④ 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 in : TURN SIGNAL R ON
TURN RH position**

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

⊗ Without CONSULT-II

Refer to [LT-94, "Combination Switch Inspection"](#).

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to [LT-94, "Combination Switch Inspection"](#).

DATA MONITOR	
MONITOR	
TURN SIGNAL R	ON
TURN SIGNAL L	ON

SKIA4499E

2. ACTIVE TEST

④ With CONSULT-II

1. Select "FLASHER" during active test. Refer to [LT-83, "ACTIVE TEST"](#).

2. Make sure "FLASHER RH" and "FLASHER LH" operate.

⊗ Without CONSULT-II

GO TO 3.

OK or NG

OK >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).

NG >> GO TO 3.

ACTIVE TEST			
FLASHER	OFF		
RH	LH		
MODE	BACK	LIGHT	COPY

SKIA6190E

3. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect BCM connector and front turn signal lamp LH and RH connectors.

3. Check continuity between BCM harness connector M20 terminal 60 and front turn signal lamp LH harness connector E27 terminal 1.

60 - 1 : Continuity should exist.

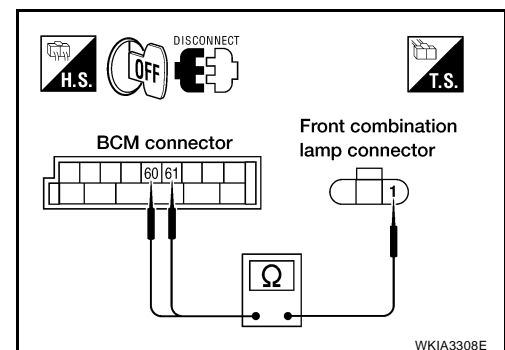
4. Check continuity between BCM harness connector M20 terminal 61 and front turn signal lamp RH harness connector E111 terminal 1.

61 - 1 : Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



TURN SIGNAL AND HAZARD WARNING LAMPS

4. CHECK GROUND

1. Check continuity between front turn signal lamp LH harness connector E27 terminal 3 and ground.

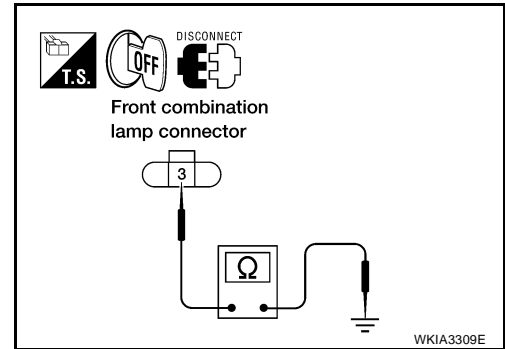
3 - Ground : Continuity should exist.

2. Check continuity between front turn signal lamp RH harness connector E111 terminal 3 and ground.

3 - Ground : Continuity should exist.

OK or NG

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



5. CHECK BULB

Check bulb standard of each turn signal lamp is correct. Refer to [LT-164, "Exterior Lamp"](#) .

OK or NG

- OK >> Replace BCM if turn signal lamps do not work after setting the connector again. Refer to [BCS-20, "Removal and Installation of BCM"](#) .
NG >> Replace turn signal lamp bulb. Refer to [LT-29, "REMOVAL AND INSTALLATION OF FRONT TURN SIGNAL/PARKING LAMP"](#) .

Rear Turn Signal Lamp Does Not Operate

EKS009LF

1. CHECK TAIL LAMPS AND STOP LAMPS

Check bulb standard of each turn signal lamp is correct. Refer to [LT-164, "Exterior Lamp"](#) .

OK or NG

- OK >> GO TO 2.
NG >> Replace turn signal lamp bulb. Refer to [LT-120, "Bulb Replacement"](#) .

2. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Disconnect BCM connector and rear combination lamp connector.

2. Check continuity between BCM harness connector M20 terminal 61 and rear combination lamp RH harness connector B105 terminal 4.

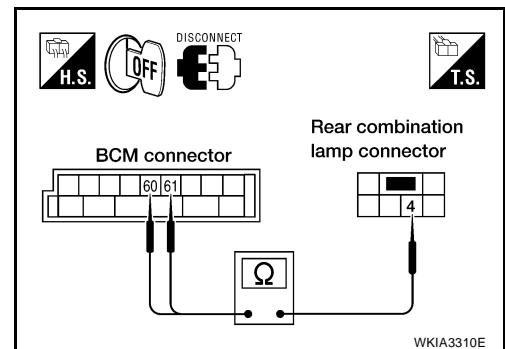
61 - 4 : Continuity should exist.

3. Check continuity between BCM harness connector M20 terminal 60 and rear combination lamp LH harness connector B35 terminal 4.

60 - 4 : Continuity should exist.

OK or NG

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



TURN SIGNAL AND HAZARD WARNING LAMPS

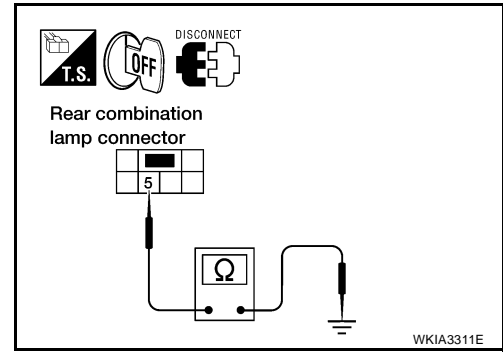
3. CHECK GROUND CIRCUIT

Check continuity between rear combination lamp harness connector B35 (LH) and B105 (RH) terminal 5 and ground.

5 - Ground : Continuity should exist.

OK or NG

- OK >> Check rear combination lamp connector for proper connection. Repair as necessary.
- NG >> Repair harness or connector.



Hazard Warning Lamp Does Not Operate But Turn Signal Lamps Operate

EKS009LG

1. CHECK BULB

Make sure bulb standard of each turn signal lamp is correct. Refer to [LT-164, "Exterior Lamp"](#).

OK or NG

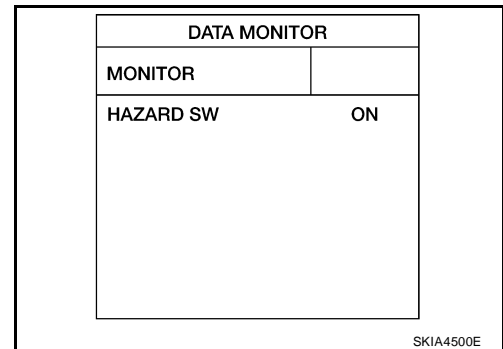
- OK >> GO TO 2.
- NG >> Replace turn signal lamp bulb. Refer to [LT-29, "REMOVAL AND INSTALLATION OF FRONT TURN SIGNAL/PARKING LAMP"](#) for front turn signal bulb. Refer to [LT-120, "Bulb Replacement"](#) for rear turn signal bulb.

2. CHECK HAZARD SWITCH INPUT SIGNAL

Ⓜ With CONSULT-II

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

When hazard switch is in ON position : HAZARD SW ON



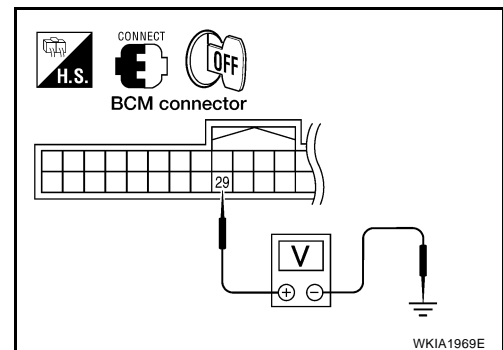
⊗ Without CONSULT-II

Check voltage between BCM harness connector M18 terminal 29 and ground.

BCM		(-)	Condition	Voltage (Approx.)
(+)				
Connector	Terminal			
M18	29	Ground	Hazard switch is ON	0V
			Hazard switch is OFF	5V

OK or NG

- OK >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).
- NG >> GO TO 3.



TURN SIGNAL AND HAZARD WARNING LAMPS

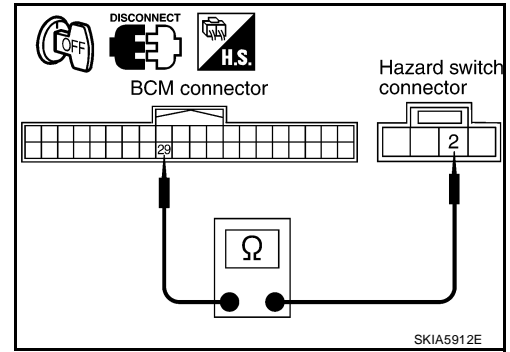
3. CHECK HAZARD SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and hazard switch connector.
3. Check continuity between BCM harness connector M18 terminal 29 and hazard switch harness connector M55 terminal 2.

29 - 2 : Continuity should exist.

OK or NG

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



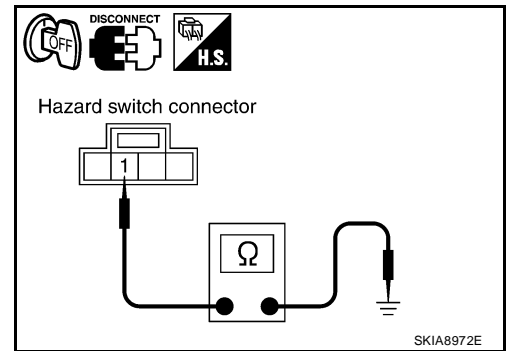
4. CHECK GROUND

Check continuity between hazard switch harness connector M55 terminal 1 and ground.

1 - Ground : Continuity should exist.

OK or NG

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



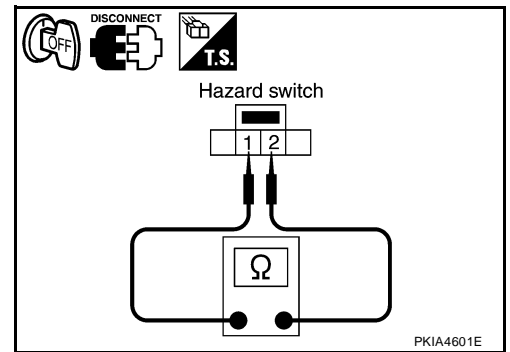
5. CHECK HAZARD SWITCH

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

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

OK or NG

- OK >> Replace BCM if hazard warning lamps do not work after setting the connector again. Refer to [BCS-20, "Removal and Installation of BCM"](#) .
 NG >> Replace hazard switch. Refer to [LT-90, "Removal and Installation"](#) .



Turn Signal Indicator Lamp Does Not Operate

EKS009LH

1. CHECK CAN COMMUNICATION SYSTEM

Check CAN communication. Refer to [LAN-24, "CAN COMMUNICATION"](#) .

OK or NG

- OK >> Replace combination meter. Refer to [IP-13, "COMBINATION METER"](#) .
 NG >> Repair as necessary.

TURN SIGNAL AND HAZARD WARNING LAMPS

Bulb Replacement (Front Turn Signal Lamp)

EKS009LI

Refer to [LT-29, "REMOVAL AND INSTALLATION OF FRONT TURN SIGNAL/PARKING LAMP"](#) .

Bulb Replacement (Rear Turn Signal Lamp)

EKS009LJ

Refer to [LT-120, "Bulb Replacement"](#) in REAR COMBINATION LAMP.

Removal and Installation of Front Turn Signal Lamp

EKS009LK

Refer to [LT-29, "Removal and Installation"](#) .

Removal and Installation of Rear Turn Signal Lamp

EKS009LL

Refer to [LT-120, "Removal and Installation"](#) in REAR COMBINATION LAMP.

LIGHTING AND TURN SIGNAL SWITCH

LIGHTING AND TURN SIGNAL SWITCH

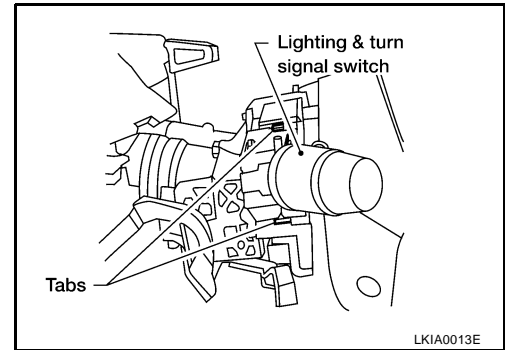
PF25540

Removal and Installation

EKS009LM

REMOVAL

1. Remove steering column cover.
2. Disconnect the lighting and turn signal switch connector.
3. While pressing tabs, pull lighting and turn signal switch toward driver door and release from the steering column.



INSTALLATION

Installation is in the reverse order of removal.

A
B
C
D
E
F
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I
J
LT
L
M

LT

HAZARD SWITCH

PFP:25290

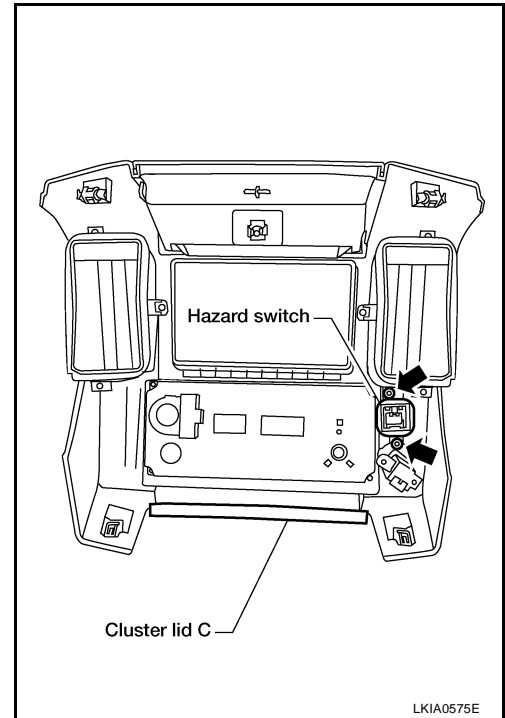
HAZARD SWITCH

Removal and Installation

EKS009LN

REMOVAL

1. Remove cluster lid C. Refer to [IP-11, "CLUSTER LID C"](#).
2. Disconnect the hazard switch connector.
3. Remove the screws and remove the hazard switch.



INSTALLATION

Installation is in the reverse order of removal.

COMBINATION SWITCH

COMBINATION SWITCH

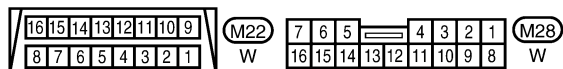
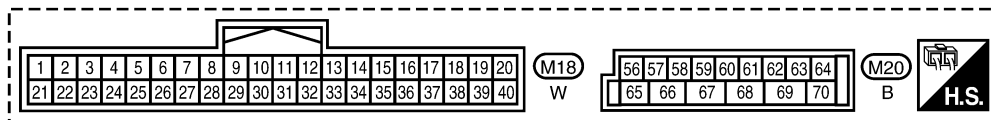
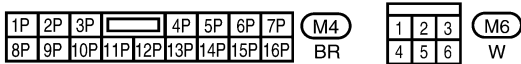
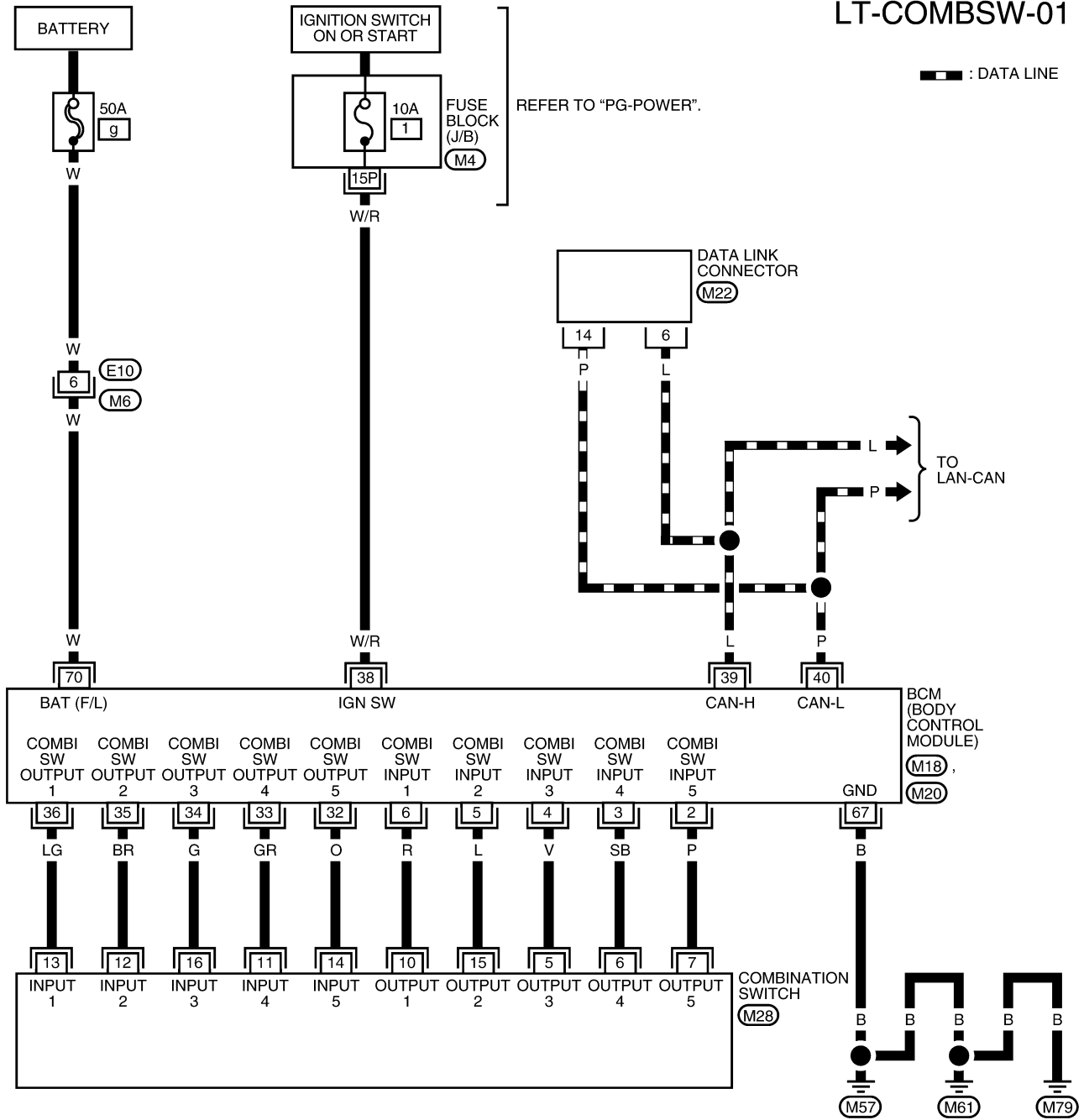
PF25567

Wiring Diagram — COMBSW —

EKS009LO

LT-COMBSW-01

▬ : DATA LINE



WKWA2034E

COMBINATION SWITCH

Combination Switch Reading Function

EKS009LP

For details, refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#).

CONSULT-II Function (BCM)

EKS009LQ

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

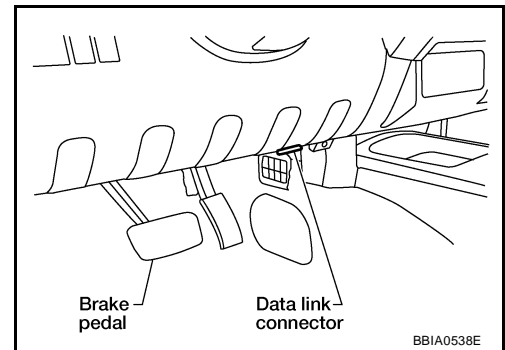
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II OPERATION

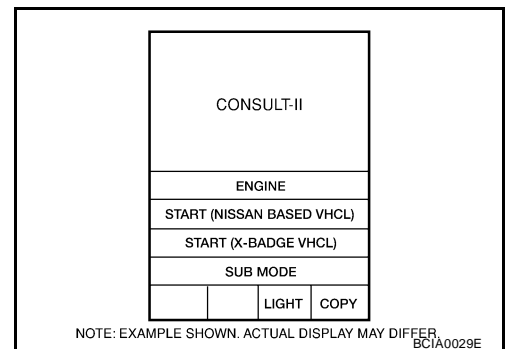
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

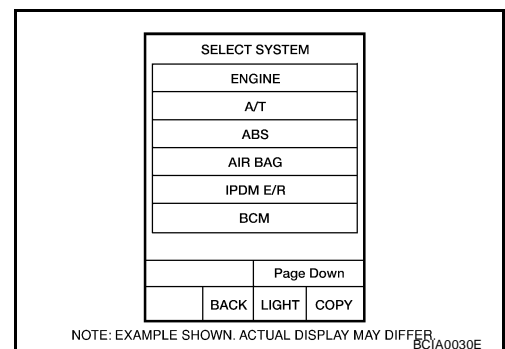
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

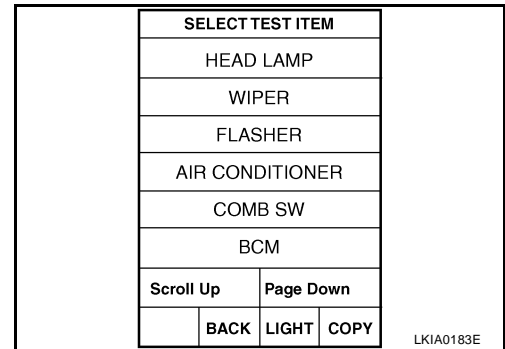


3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, go to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



COMBINATION SWITCH

4. Touch "COMB SW" on "SELECT TEST ITEM" screen.



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 and monitors individual signal.

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

Display Item List

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

COMBINATION SWITCH

EKS009LR

Combination Switch Inspection

1. SYSTEM CHECK

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

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	—	TAIL LAMP
INT VOLUME 2	RR WIPER ON	—	FR FOG	—

>> 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 carries out CAN communication.

1. Connect CONSULT-II, and select "COMB SW" on "SELECT TEST ITEM" screen.
2. Select "DATA MONITOR".
3. Select "START", and confirm that other switches in malfunctioning system operate normally.

Example: When auto light switch is malfunctioning, confirm that "FRONT WIPER LOW" and "FRONT WIPER INT" in System 3, to which the auto light switch belongs, turn ON-OFF normally.

DATA MONITOR			
MONITOR			
TURN SIGNAL R		OFF	
TURN SIGNAL L		OFF	
HIBEAM SW		OFF	
HEAD LAMP SW1		OFF	
HEAD LAMP SW2		OFF	
LIGHT SW 1ST		OFF	
PASSING SW		OFF	
AUTO LIGHT SW		OFF	
FR FOG SW		OFF	
		Page Down	
		RECORD	
MODE	BACK	LIGHT	COPY

SKIA7075E

 Without CONSULT-II

Operate combination switch, and confirm that other switches in malfunctioning system operate normally.

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

Check results

Other switches in malfunctioning system operate normally.>>Replace lighting switch or wiper switch.

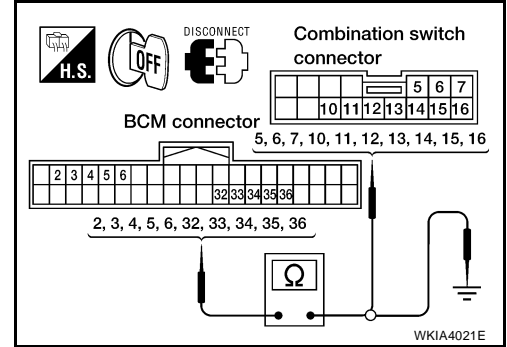
Other switches in malfunctioning system do not operate normally.>>GO TO 3.

COMBINATION SWITCH

3. HARNESS INSPECTION

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

Suspect system	BCM		Combination switch		Continuity
	Connector	Terminal	Connector	Terminal	
1	M18	Input 1	6	M28	10
		Output 1	36		13
2		Input 2	5		15
		Output 2	35		12
3		Input 3	4		5
		Output 3	34		16
4		Input 4	3		6
		Output 4	33		11
5		Input 5	2		7
		Output 5	32		14



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

Suspect system	BCM		Continuity		
	Connector	Terminal			
1	M18	Input 1	6	Ground	No
		Output 1	36		
2		Input 2	5		
		Output 2	35		
3		Input 3	4		
		Output 3	34		
4		Input 4	3		
		Output 4	33		
5		Input 5	2		
		Output 5	32		

OK or NG

OK >> GO TO 4.

NG >> Check harness between BCM and combination switch for open or short circuit.

COMBINATION SWITCH

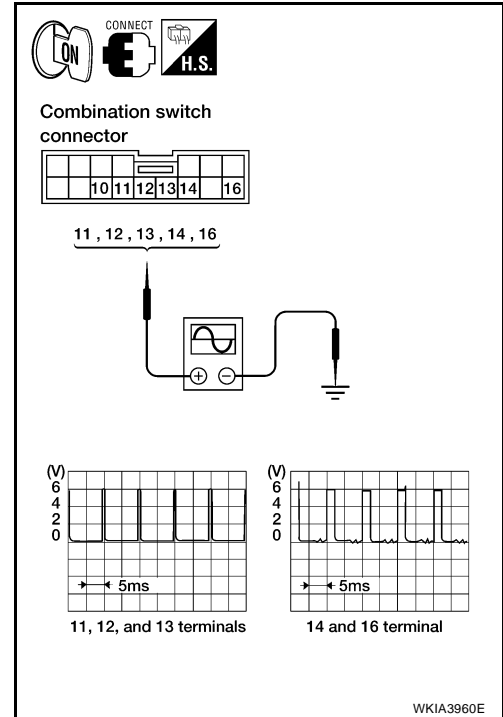
4. BCM OUTPUT TERMINAL INSPECTION

1. Turn lighting switch and wiper switch to OFF.
2. Set wiper dial to position 4.
3. Connect BCM and combination switch connectors.
4. Turn ignition switch ON.
5. Check combination switch input (BCM output) terminal voltage waveform of suspect malfunctioning system.

Suspect system	Combination switch	
	(+)	
	Connector	Terminal
1	M28	Input 1 13
2		Input 2 12
3		Input 3 16
4		Input 4 11
5		Input 5 14

OK or NG

- OK >> Open circuit in combination switch, GO TO 5.
 NG >> Replace BCM. Refer to [BCS-20, "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

For details, refer to [LT-89, "Removal and Installation"](#) .

EKS009LS

Switch Circuit Inspection

For details, refer to [LT-94, "Combination Switch Inspection"](#) .

EKS009LT

STOP LAMP

STOP LAMP

PFP:26550

System Description

EKS009LU

Power is supplied at all times

- through 10A fuse [No. 20, located in fuse block (J/B)]
- to stop lamp switch terminal 1, and
- to stop lamp relay terminals 2 and 3 (with hill descent control and hill start assist).

When the brake pedal is pressed, the stop lamp switch is closed and power is supplied

- through stop lamp switch terminal 2
- to rear combination lamp LH and RH terminal 2
- to high-mounted stop lamp terminal 1
- to ABS actuator and electric unit (control unit) terminal 41.

Ground is supplied

- to rear combination lamp LH terminal 5
- through grounds B7 and B19, and
- to high-mounted stop lamp terminal 2
- through grounds D406 and D504, and
- to rear combination lamp RH terminal 5
- through grounds B117 and B132.

With power and ground supplied, the stop lamps illuminate.

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LT
L
M

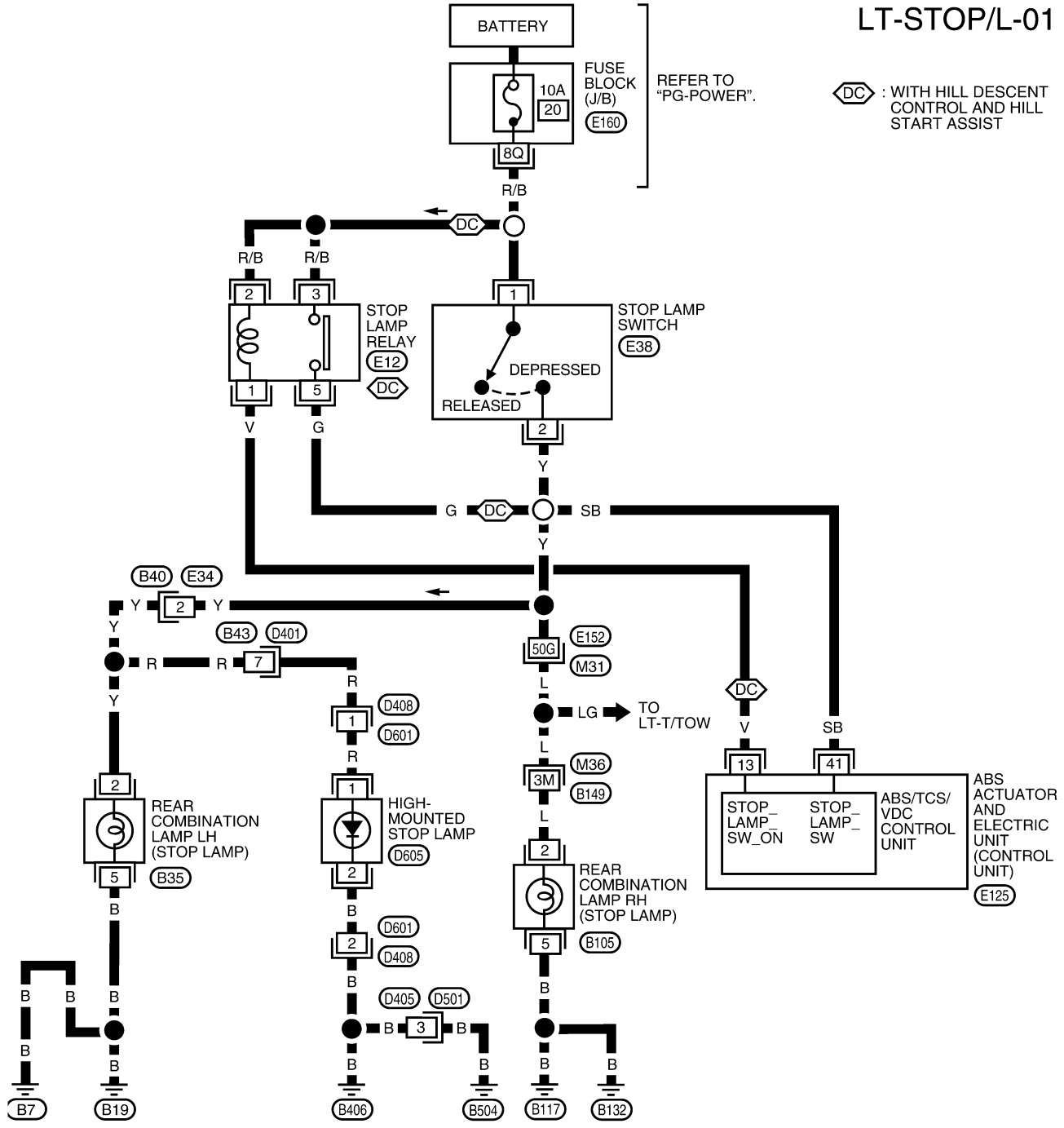
LT

STOP LAMP

Wiring Diagram — STOP/L —

EKS009LV

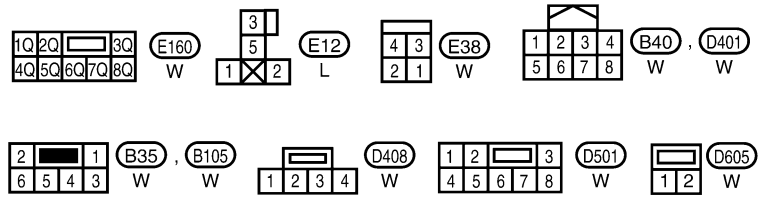
LT-STOP/L-01



DC : WITH HILL DESCENT CONTROL AND HILL START ASSIST

REFER TO "PG-POWER".

REFER TO THE FOLLOWING.
 (M31), (M36) - SUPER MULTIPLE JUNCTION (SMJ)
 (E125) - ELECTRICAL UNITS



STOP LAMP

High-Mounted Stop Lamp BULB REPLACEMENT

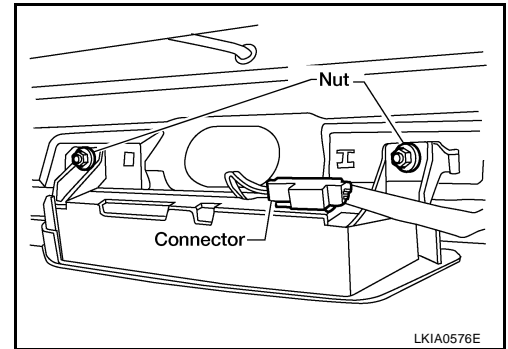
EKS009LW

The high-mounted stop lamp bulbs are not serviceable.

REMOVAL AND INSTALLATION

Removal

1. Remove back door upper finisher.
2. Disconnect the high-mounted stop lamp connector.
3. Remove 2 nuts and remove high-mounted stop lamp.



Installation

Installation is in the reverse order of removal.

Stop Lamp BULB REPLACEMENT

EKS009LX

Refer to [LT-120, "Bulb Replacement"](#) .

REMOVAL AND INSTALLATION

Refer to [LT-120, "Removal and Installation"](#) .

A

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BACK-UP LAMP

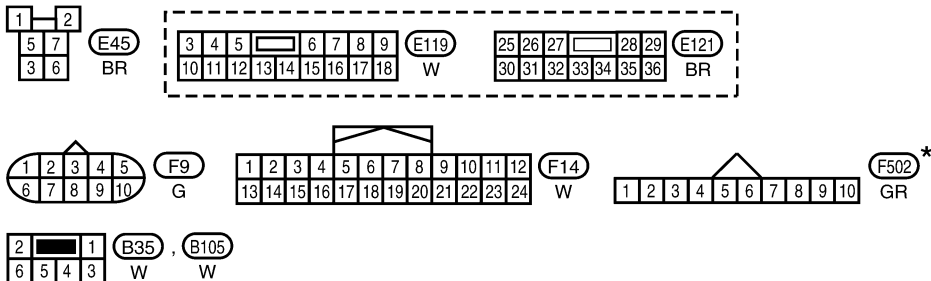
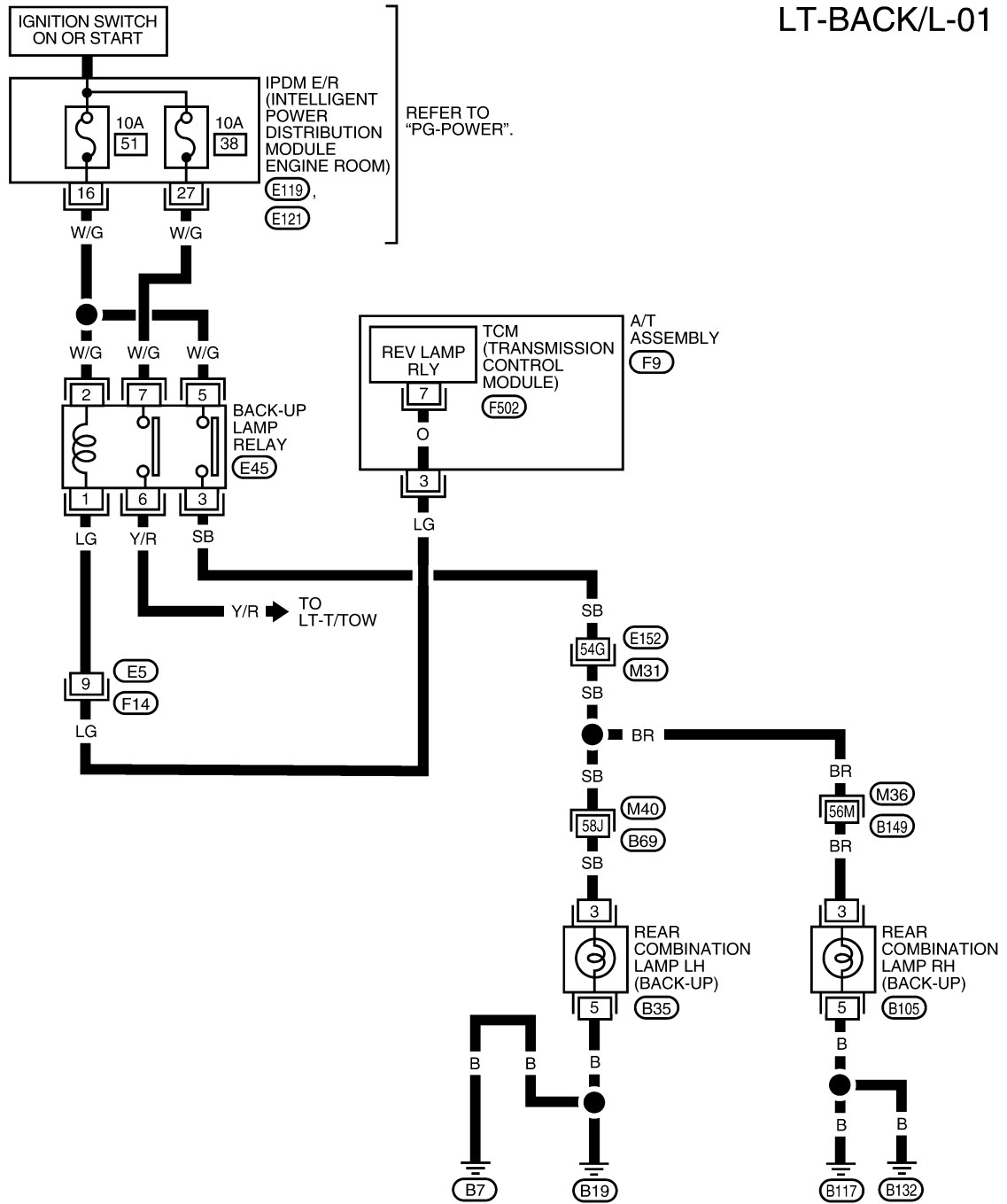
PF2:26550

EKS009LY

BACK-UP LAMP

Wiring Diagram — BACK/L —

LT-BACK/L-01



REFER TO THE FOLLOWING.
 (M31) (M36) (M40) - SUPER
 MULTIPLE JUNCTION (SMJ)

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

WKWA3105E

BACK-UP LAMP

Bulb Replacement

EKS009LZ

Refer to [LT-120, "Bulb Replacement"](#) .

A

Removal and Installation

EKS009M0

Refer to [LT-120, "Removal and Installation"](#) .

B

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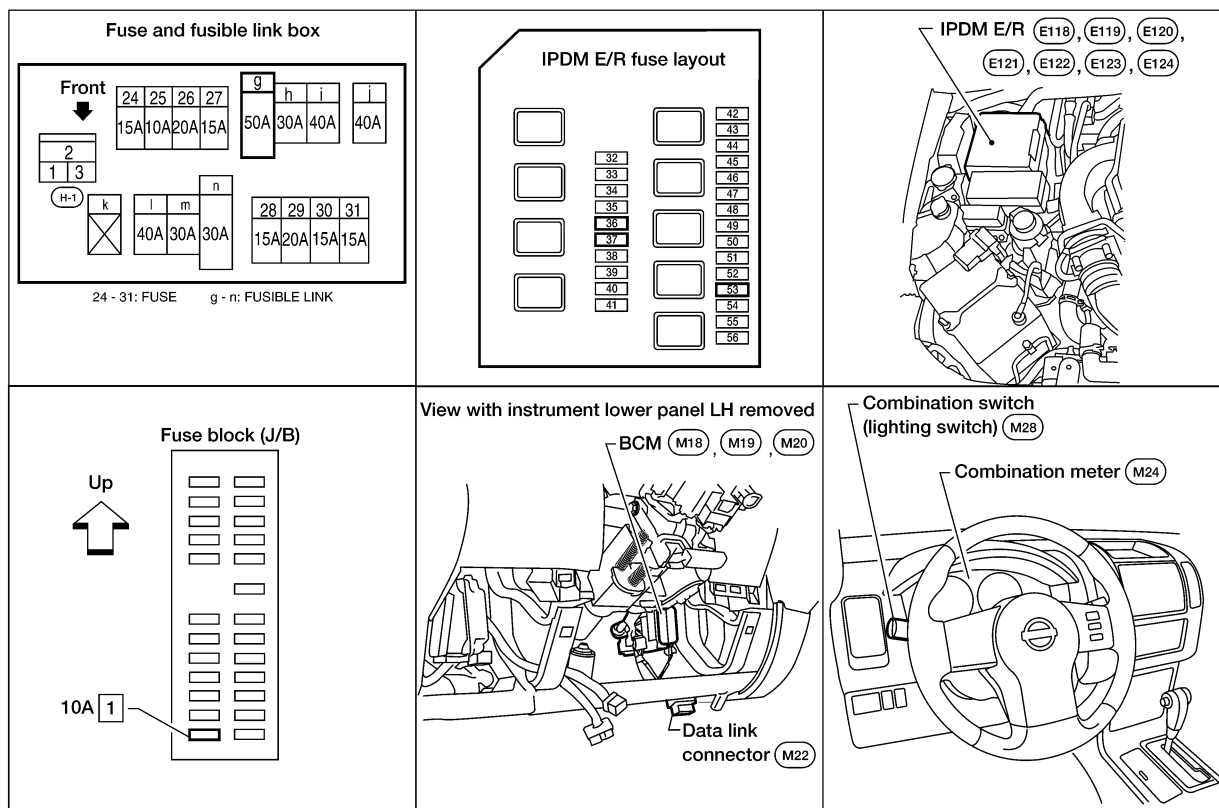
PARKING, LICENSE PLATE AND TAIL LAMPS

PARKING, LICENSE PLATE AND TAIL LAMPS

PF2:26550

Component Parts and Harness Connector Location

EKS009M1



WKIA4153E

System Description

EKS009M2

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

Power is supplied at all times

- to ignition relay, located in the IPDM E/R, and
- to tail lamp relay, located in the IPDM E/R, and
- through 20A fuse (No. 53, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM terminal 70.

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

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 59
- through grounds E9, E15 and E24.

PARKING, LICENSE PLATE AND TAIL LAMPS

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, front side marker, license plate and tail lamps to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the tail lamp relay coil, which when energized, directs power

- through 10A fuse (No. 37, located in the IPDM E/R)
- through IPDM E/R terminal 57
- to license plate lamp LH and RH terminal 1
- to rear combination lamp LH and RH (tail/side marker) terminal 1, and
- through 10A fuse (No. 36, located in the IPDM E/R)
- through IPDM E/R terminals 28 and 49
- to front side marker lamp LH and RH terminal 1
- to front parking lamp LH and RH terminal 2.

Ground is supplied

- to front side marker lamp LH and RH terminal 2
- to front parking lamp LH and RH terminal 3
- through grounds E9, E15 and E24, and
- to license plate lamp LH and RH terminal 2
- through grounds D406 and D504, and
- to rear combination lamp LH (tail/side marker) terminal 5
- through grounds B7 and B19, and
- to rear combination lamp RH (tail/side marker) terminal 5
- through grounds B117 and B132.

With power and ground supplied, the parking, side marker, license plate 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, front side marker, license and tail lamps remain illuminated for 5 minutes, then the parking, front side marker, license plate 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

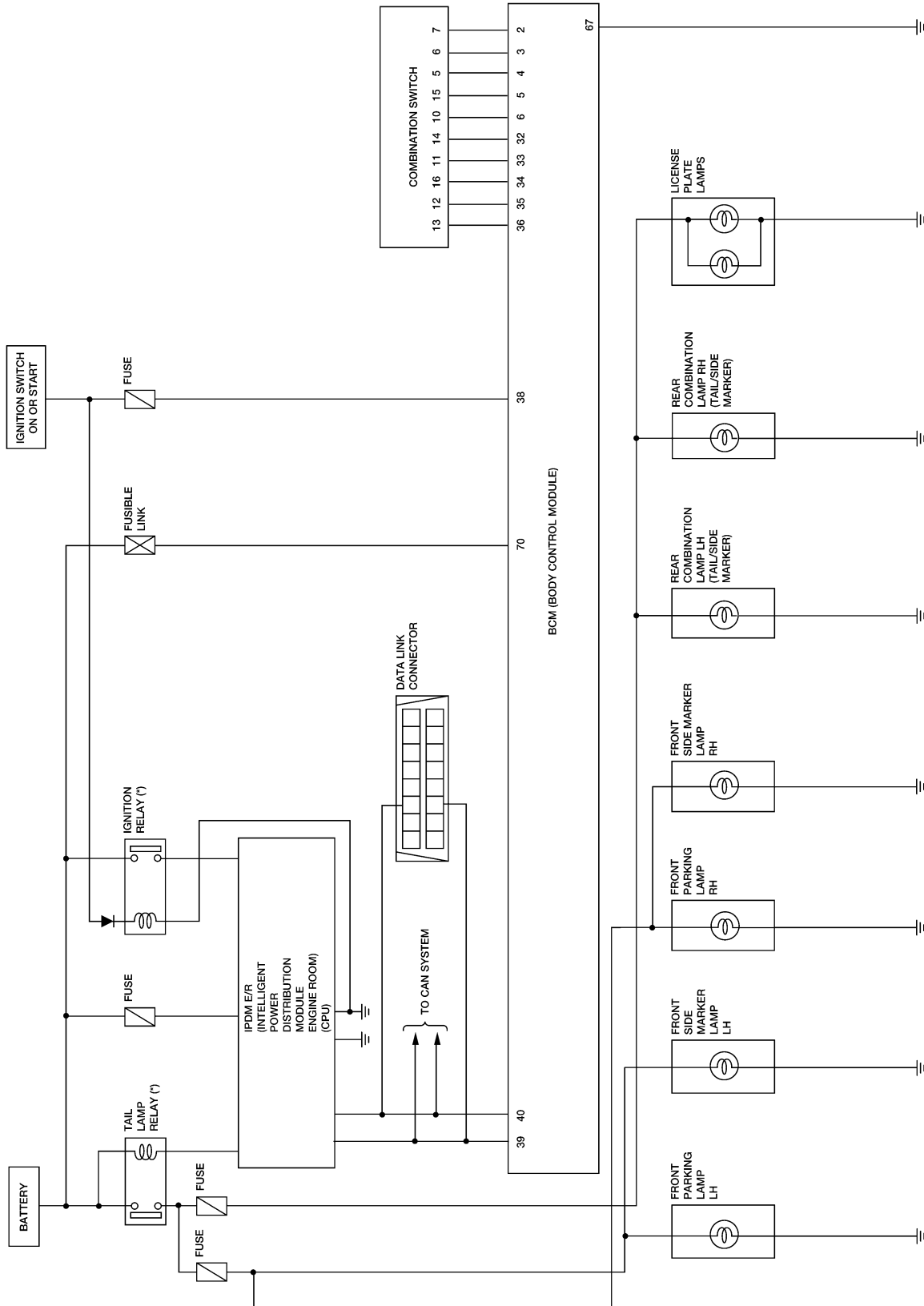
Refer to [LAN-24, "CAN COMMUNICATION"](#) .

EKS009M3

PARKING, LICENSE PLATE AND TAIL LAMPS

Schematic

EKS009M4



* : THIS RELAY IS BUILT INTO THE IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

WKWA3086E

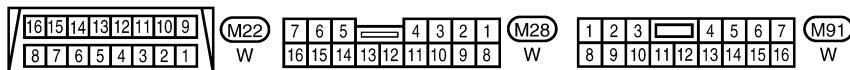
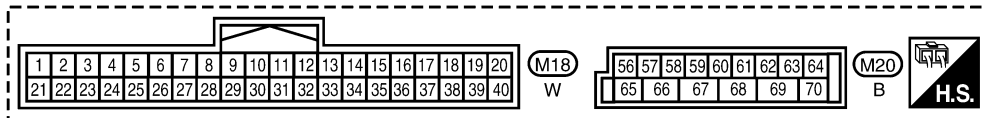
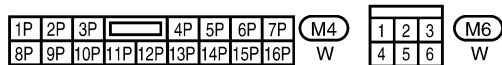
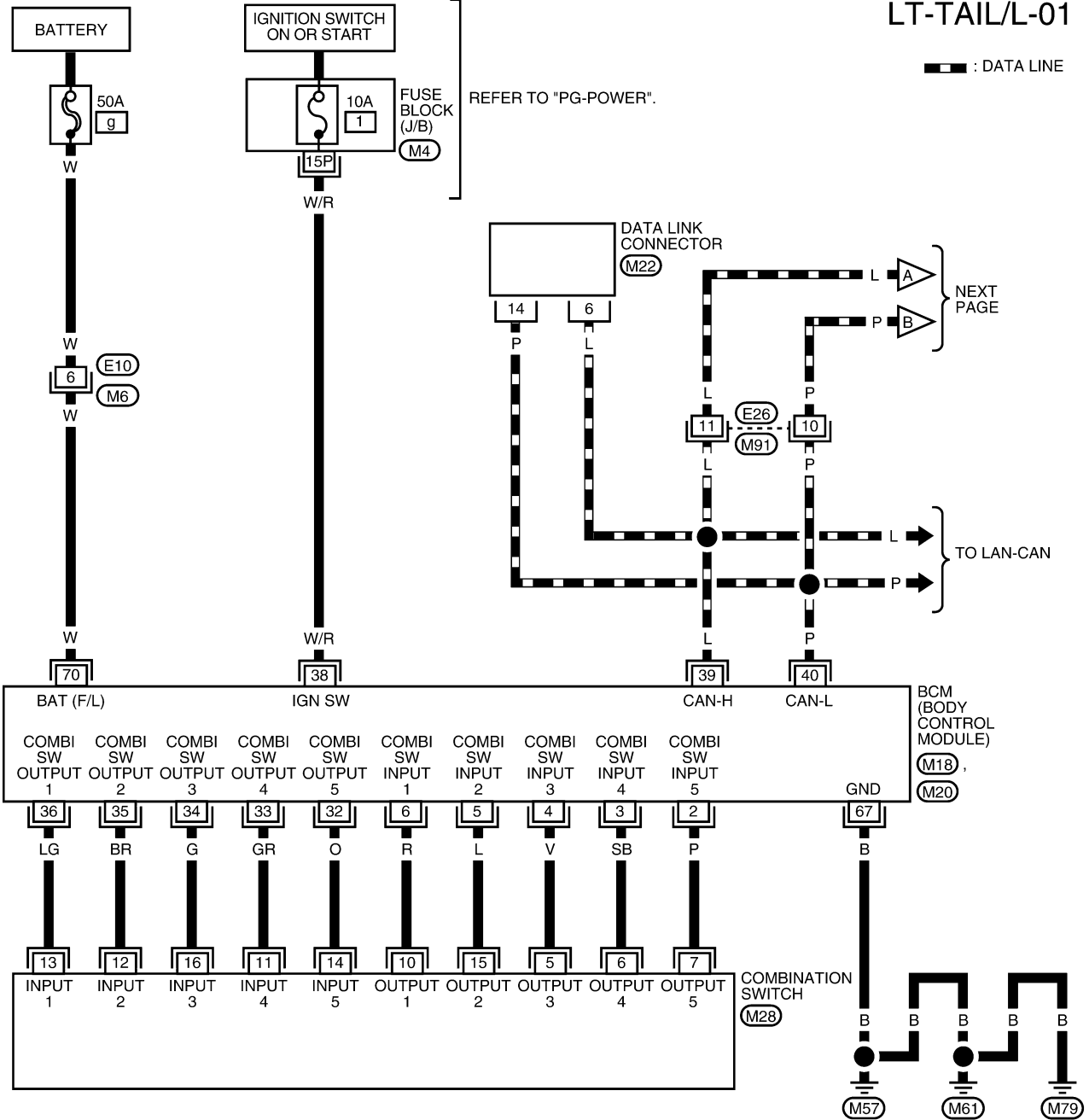
PARKING, LICENSE PLATE AND TAIL LAMPS

Wiring Diagram — TAIL/L —

EKS009M5

LT-TAIL/L-01

▬ : DATA LINE

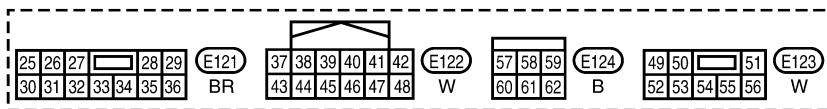
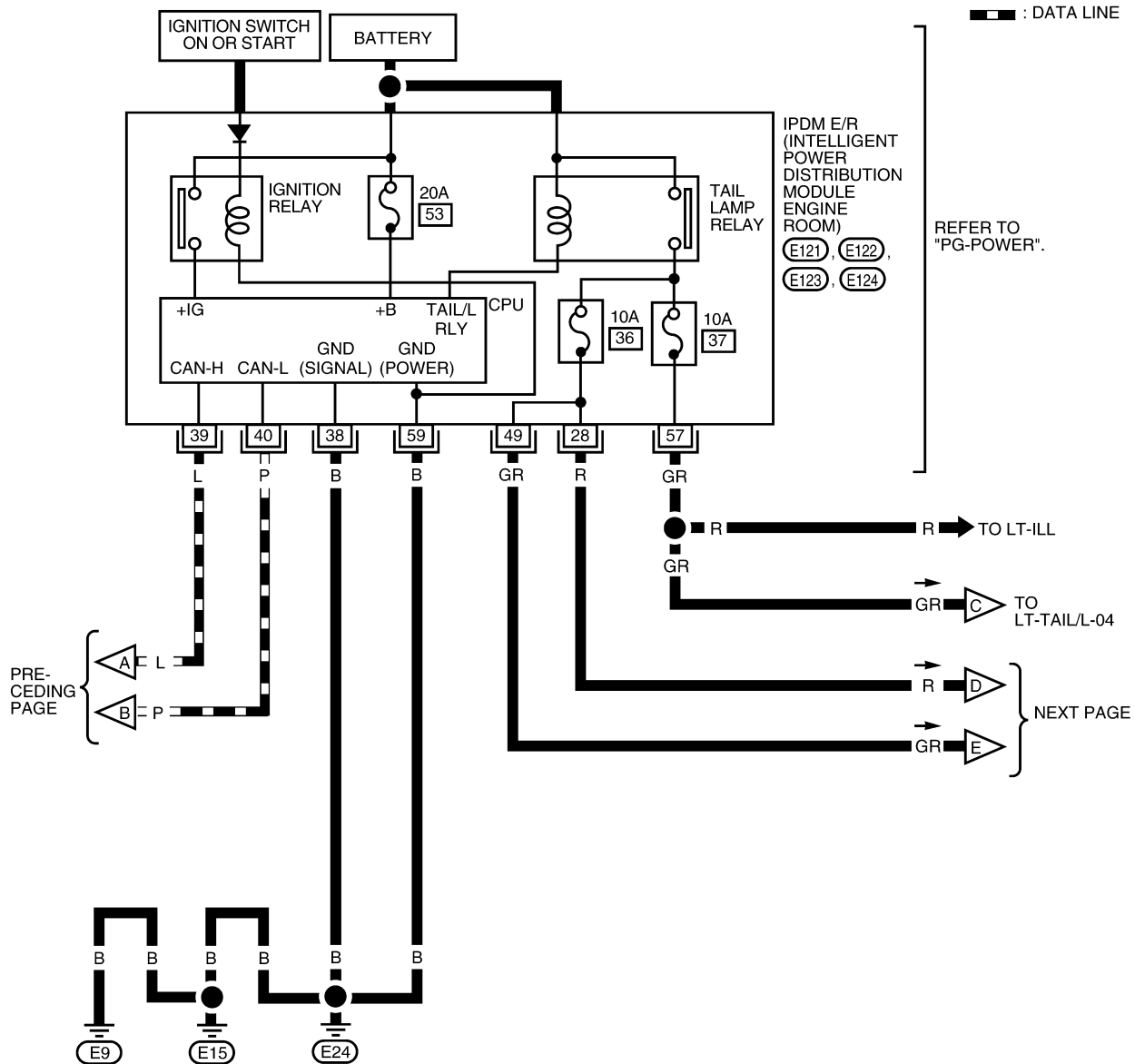


REFER TO THE FOLLOWING.
 (M31) - SUPER MULTIPLE JUNCTION (SMJ)

WKWA2037E

PARKING, LICENSE PLATE AND TAIL LAMPS

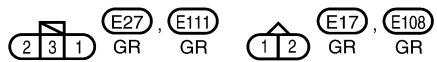
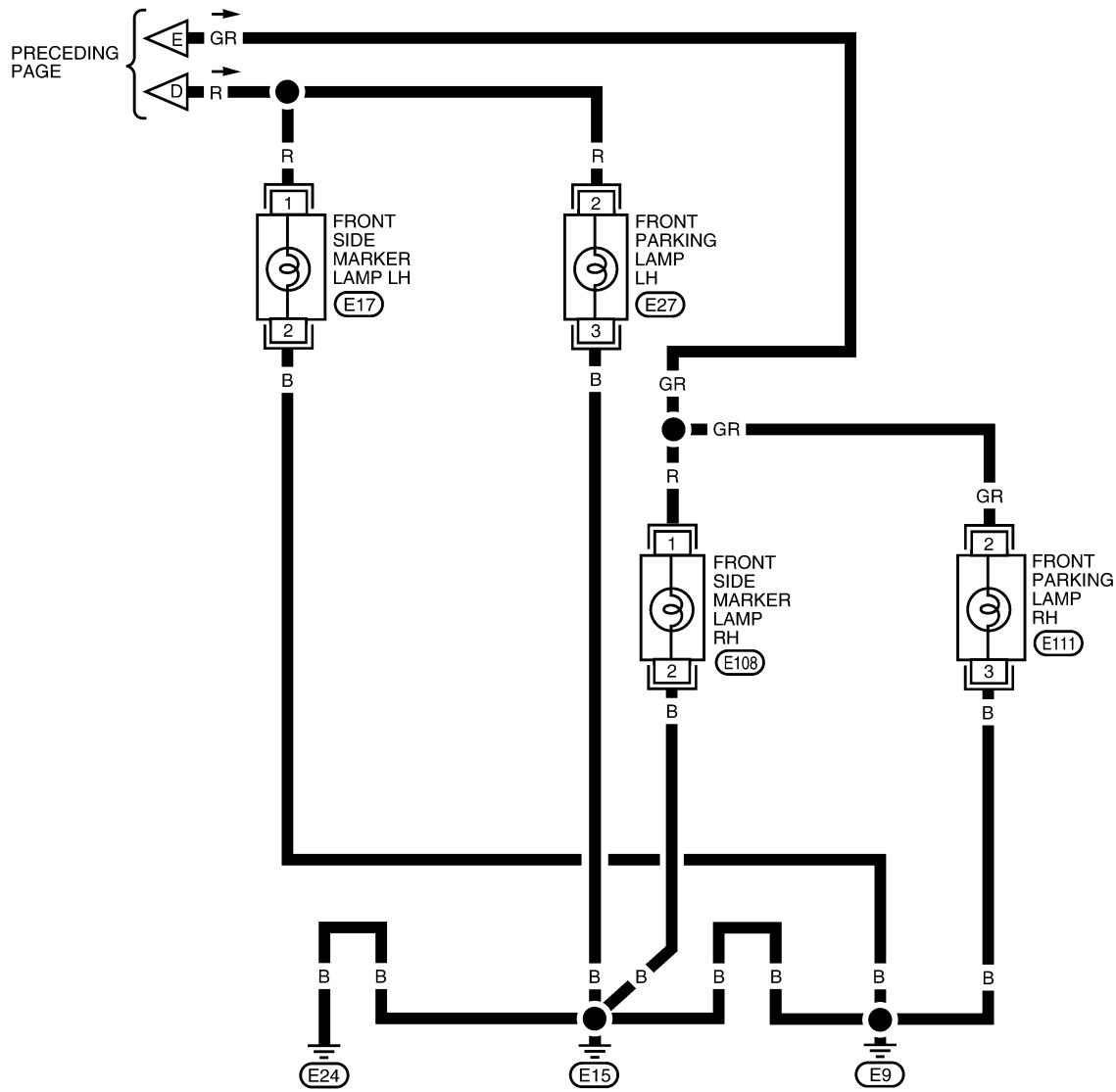
LT-TAIL/L-02



WKWA3087E

PARKING, LICENSE PLATE AND TAIL LAMPS

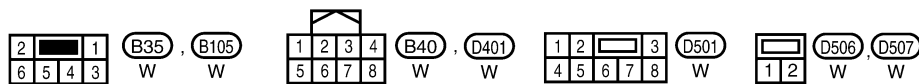
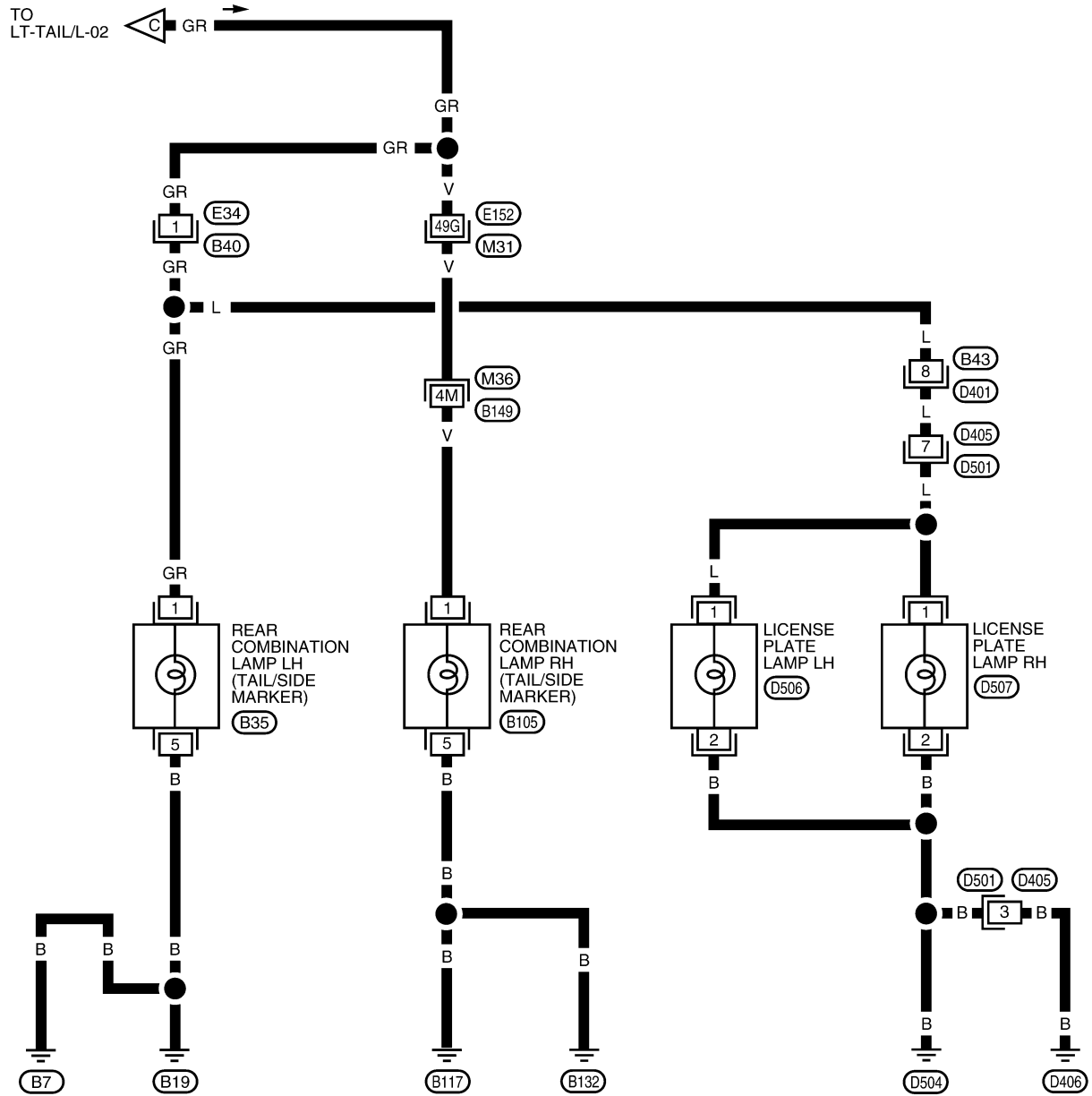
LT-TAIL/L-03



WKWA2039E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-04



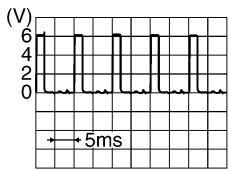
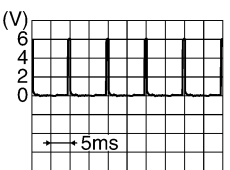
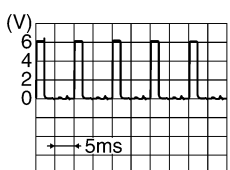




REFER TO THE FOLLOWING.
 (M31), (M36) - SUPER
 MULTIPLE JUNCTION (SMJ)

WKWA2040E

PARKING, LICENSE PLATE AND TAIL LAMPS

Terminals and Reference Values for BCM

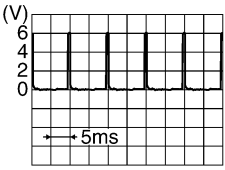
EKS009M6

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
2	P	Combination switch input 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5291E</p>
3	SB	Combination switch input 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5292E</p>
4	V	Combination switch input 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5291E</p>
5	L	Combination switch input 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5292E</p>
6	R	Combination switch input 1			
32	O	Combination switch output 5	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5291E</p>
33	GR	Combination switch output 4	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5292E</p>
34	G	Combination switch output 3	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right;">SKIA5291E</p>

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PARKING, LICENSE PLATE AND TAIL LAMPS

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
35	BR	Combination switch output 2	ON	Lighting, turn, wiper OFF Wiper dial position 4	
36	LG	Combination switch output 1			
38	W/R	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN-H	—	—	—
40	P	CAN-L	—	—	—
67	B	Ground	ON	—	0V
70	W	Battery power supply (fusible link)	OFF	—	Battery voltage

Terminals and Reference Values for IPDM E/R

EKS009M7

Terminal No.	Wire color	Signal name	Measuring condition		Reference value (Approx.)
			Ignition switch	Operation or condition	
28	R	LH front parking and front side marker lamp	ON	Lighting switch 1ST position OFF	0V
				ON	Battery voltage
38	B	Ground	ON	—	0V
39	L	CAN-H	—	—	—
40	P	CAN-L	—	—	—
49	GR	RH front parking and front side marker lamp	ON	Lighting switch 1ST position OFF	0V
				ON	Battery voltage
57	GR	Rear parking, license, and tail lamp	ON	Lighting switch 1ST position OFF	0V
				ON	Battery voltage
59	B	Ground	ON	—	0V

EKS009M8

How to Proceed With Trouble Diagnosis

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-102, "System Description"](#).
3. Carry out the Preliminary Check. Refer to [LT-111, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Do the parking, front side marker, license and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

PARKING, LICENSE PLATE AND TAIL LAMPS

EKS009M9

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	9
	Ignition switch ON or START position	1
IPDM E/R	Battery	53
	Battery (Tail lamps ON)	36
		37

Refer to [LT-105, "Wiring Diagram — TAIL/L —"](#).

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause before installing new fuse or fusible link.
Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#).

2. CHECK POWER SUPPLY CIRCUIT

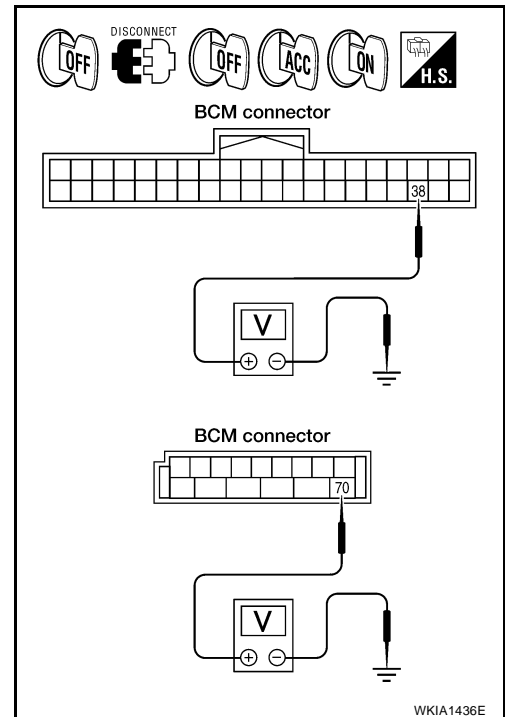
1. Disconnect BCM connectors.
2. Check voltage between BCM harness connector and ground.

BCM		(-)	Ignition switch position		
(+) Connector			Terminal	OFF	ACC
M18	38	Ground	0V	0V	Battery voltage
M20	70		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

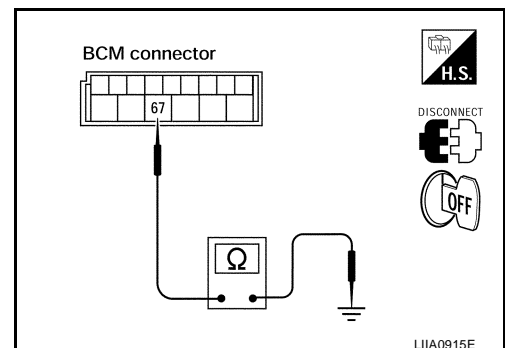
Check continuity between BCM harness connector and ground.

BCM		Continuity
Connector	Terminal	
M20	67	Ground Yes

OK or NG

OK >> Inspection End.

NG >> Check ground circuit harness.



PARKING, LICENSE PLATE AND TAIL LAMPS

CONSULT-II Functions

EKS009MA

Refer to [LT-15, "CONSULT-II Function \(BCM\)"](#) in HEADLAMP (FOR USA).

Refer to [LT-18, "CONSULT-II Function \(IPDM E/R\)"](#) in HEADLAMP (FOR USA).

Parking, Side Marker, License Plate and/or Tail Lamps Do Not Illuminate

EKS009MB

1. CHECK COMBINATION SWITCH INPUT SIGNAL

④ With CONSULT-II

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

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

⊗ Without CONSULT-II

Refer to [LT-94, "Combination Switch Inspection"](#) .

OK or NG

OK >> GO TO 2.

NG >> Check lighting switch. Refer to [LT-94, "Combination Switch Inspection"](#) .

DATA MONITOR	
MONITOR	
LIGHT SW 1ST	ON

SKIA5956E

2. ACTIVE TEST

④ With CONSULT-II

1. Select "IPDM E/R" on CONSULT-II, and select "ACTIVE TEST" on "SELECT DIAG MODE" screen.
2. Select "EXTERNAL LAMPS" on "SELECT TEST ITEM" screen.
3. Touch "TAIL" on "ACTIVE TEST" screen.
4. Make sure parking, front side marker, license plate and tail lamp operation.

Parking, front side marker, license plate and tail lamp should operate

⊗ Without CONSULT-II

1. Start auto active test. Refer to [PG-22, "Auto Active Test"](#) .
2. Make sure parking, front side marker, license plate and tail lamp operation.

Parking, front side marker, license plate and tail lamp should operate

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

ACTIVE TEST			
EXTERNAL LAMPS		OFF	
		TAIL	
LO		HI	
FOG			
MODE	BACK	LIGHT	COPY

WKIA1438E

PARKING, LICENSE PLATE AND TAIL LAMPS

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 in 1ST position : TAIL&CLR REQ ON

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#) .
- NG >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#) .

DATA MONITOR			
MONITOR			
TAIL&CLR REQ		ON	
		RECORD	
MODE	BACK	LIGHT	COPY

SKIA5958E

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PARKING, LICENSE PLATE AND TAIL LAMPS

4. CHECK INPUT SIGNAL

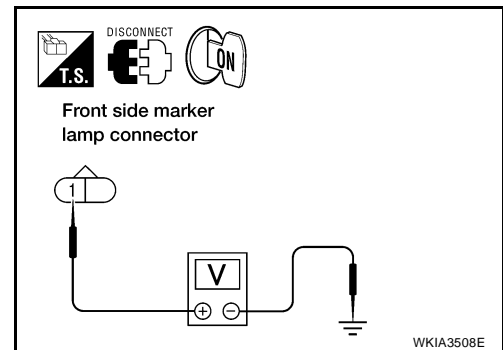
With CONSULT-II

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

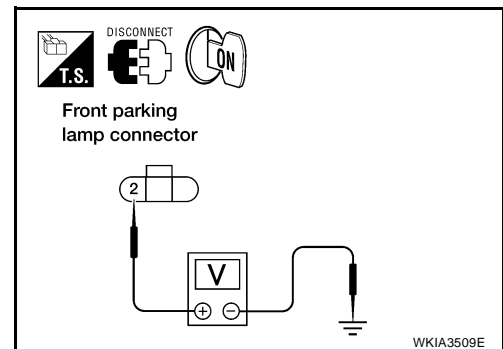
Without CONSULT-II

1. Start auto active test. Refer to [PG-22, "Auto Active Test"](#).
2. When tail lamp is operating, check voltage between front side marker lamp, front parking lamp, license plate lamp, rear combination lamp harness connector and ground.

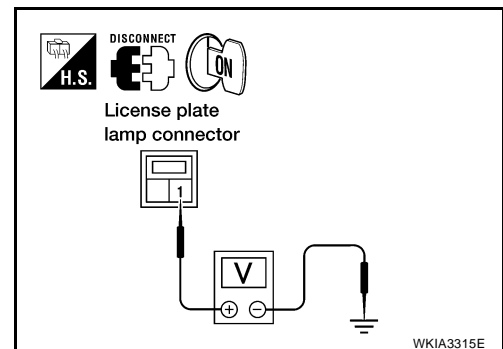
Front side marker lamp		Terminal	(-)	Voltage
(+) Connector				
LH	E17	1	Ground	Battery voltage
RH	E108			



Front parking lamp		Terminal	(-)	Voltage
(+) Connector				
LH	E27	2	Ground	Battery voltage
RH	E111			



License plate lamp		Terminal	(-)	Voltage
(+) Connector				
LH	D506	1	Ground	Battery voltage
RH	D507			

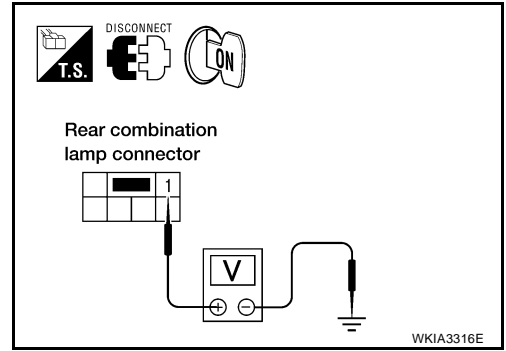


PARKING, LICENSE PLATE AND TAIL LAMPS

Rear combination lamp		(-)	Voltage
(+)			
Connector		Terminal	Ground
LH	B35	1	
RH	B105		

OK or NG

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



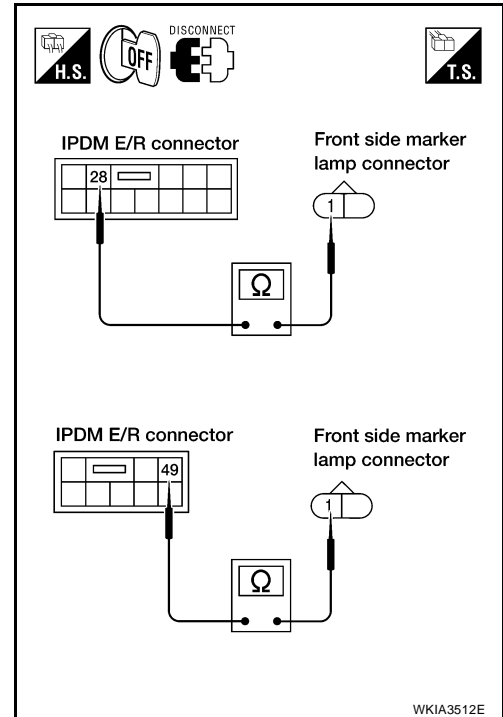
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PARKING, LICENSE PLATE AND TAIL LAMPS

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

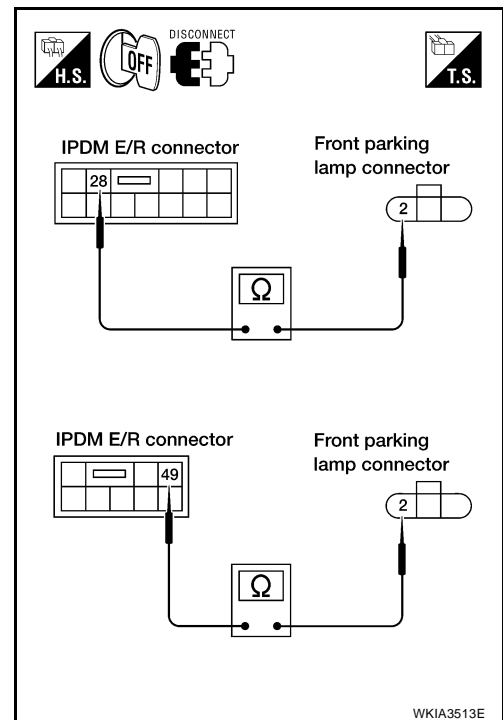
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front side marker lamp harness connector.

IPDM E/R		Front side marker lamp		Continuity
Connector	Terminal	Connector	Terminal	
E121	28	LH	E17	Yes
E123	49	RH	E108	



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

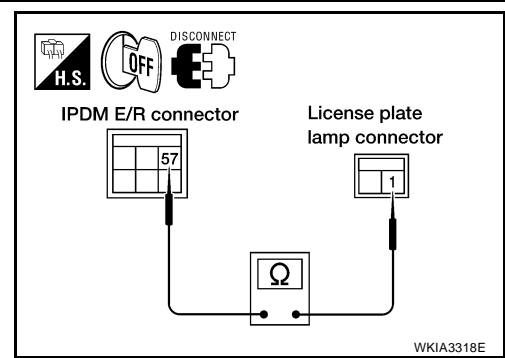
IPDM E/R		Front parking lamp		Continuity
Connector	Terminal	Connector	Terminal	
E121	28	LH	E27	Yes
E123	49	RH	E111	



PARKING, LICENSE PLATE AND TAIL LAMPS

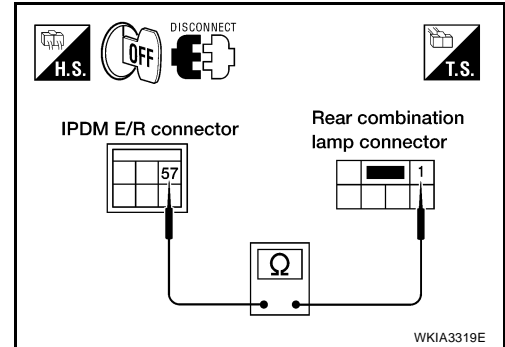
5. Check continuity between IPDM E/R harness connector and license plate lamp harness connector.

IPDM E/R		License plate lamp		Continuity	
Connector	Terminal	Connector	Terminal		
E124	57	LH	D506	1	Yes
		RH	D507		



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

IPDM E/R		Rear combination lamp		Continuity	
Connector	Terminal	Connector	Terminal		
E124	57	LH	B35	1	Yes
		RH	B105		



OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-29, "Removal and Installation of IPDM E/R"](#).
- NG >> Repair harness or connector.

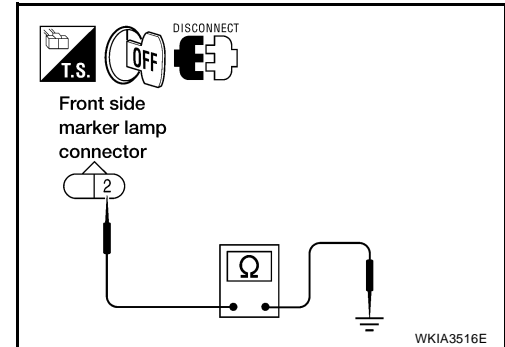
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PARKING, LICENSE PLATE AND TAIL LAMPS

6. CHECK GROUND

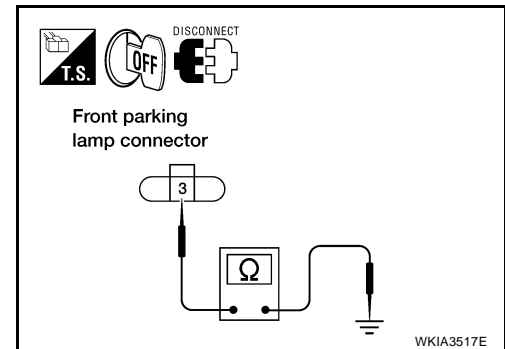
1. Turn ignition switch OFF.
2. Check continuity between front side marker lamp harness connector and ground.

Front side marker lamp		Terminal	Ground	Continuity
Connector				
LH	E17	2	Ground	Yes
RH	E108			



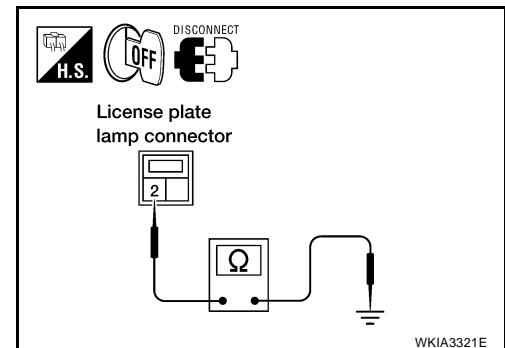
3. Check continuity between front parking lamp harness connector and ground.

Front parking lamp		Terminal	Ground	Continuity
Connector				
LH	E27	3	Ground	Yes
RH	E111			



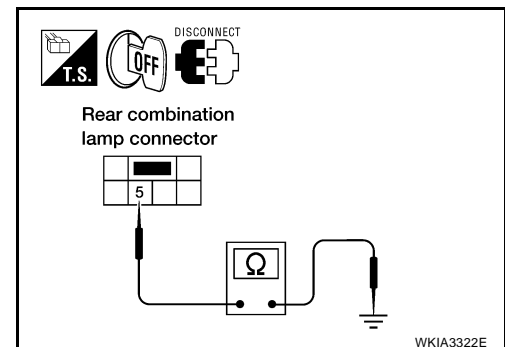
4. Check continuity between license plate lamp harness connector and ground.

License plate lamp		Terminal	Ground	Continuity
Connector				
LH	D506	2	Ground	Yes
RH	D507			



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

Rear combination lamp		Terminal	Ground	Continuity
Connector				
LH	B35	5	Ground	Yes
RH	B105			



OK or NG

- OK >> Check bulbs.
 NG >> Repair harness or connector.

PARKING, LICENSE PLATE AND TAIL LAMPS

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

EKS009MC

1. CHECK IPDM E/R

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

OK or NG

- OK >> Ignition relay malfunction. Refer to [PG-18, "Function of Detecting Ignition Relay Malfunction"](#) .
NG >> Inspection End.

Front Parking Lamp BULB REPLACEMENT

EKS009MD

For bulb replacement, refer to [LT-29, "REMOVAL AND INSTALLATION OF FRONT TURN SIGNAL/PARKING LAMP"](#) .

Tail Lamp BULB REPLACEMENT

EKS009ME

For bulb replacement, refer to [LT-120, "Bulb Replacement"](#) .

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REAR COMBINATION LAMP

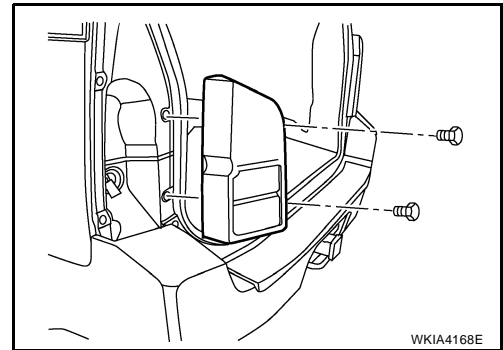
REAR COMBINATION LAMP

PF2:26554

Bulb Replacement REMOVAL

EKS009MF

1. Remove rear combination lamp mounting bolts.
2. Pull rear combination lamp to remove from the vehicle.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb.



INSTALLATION

Installation is in the reverse order of removal.

Removal and Installation REMOVAL

EKS009MG

1. Remove rear combination lamp mounting bolts.
2. Pull rear combination lamp to remove from the vehicle.
3. Disconnect rear combination lamp connector.

INSTALLATION

Installation is in the reverse order of removal.

Rear combination lamp mounting bolts : 2.4 Nm (0.24 kg-m, 21 in-lb)

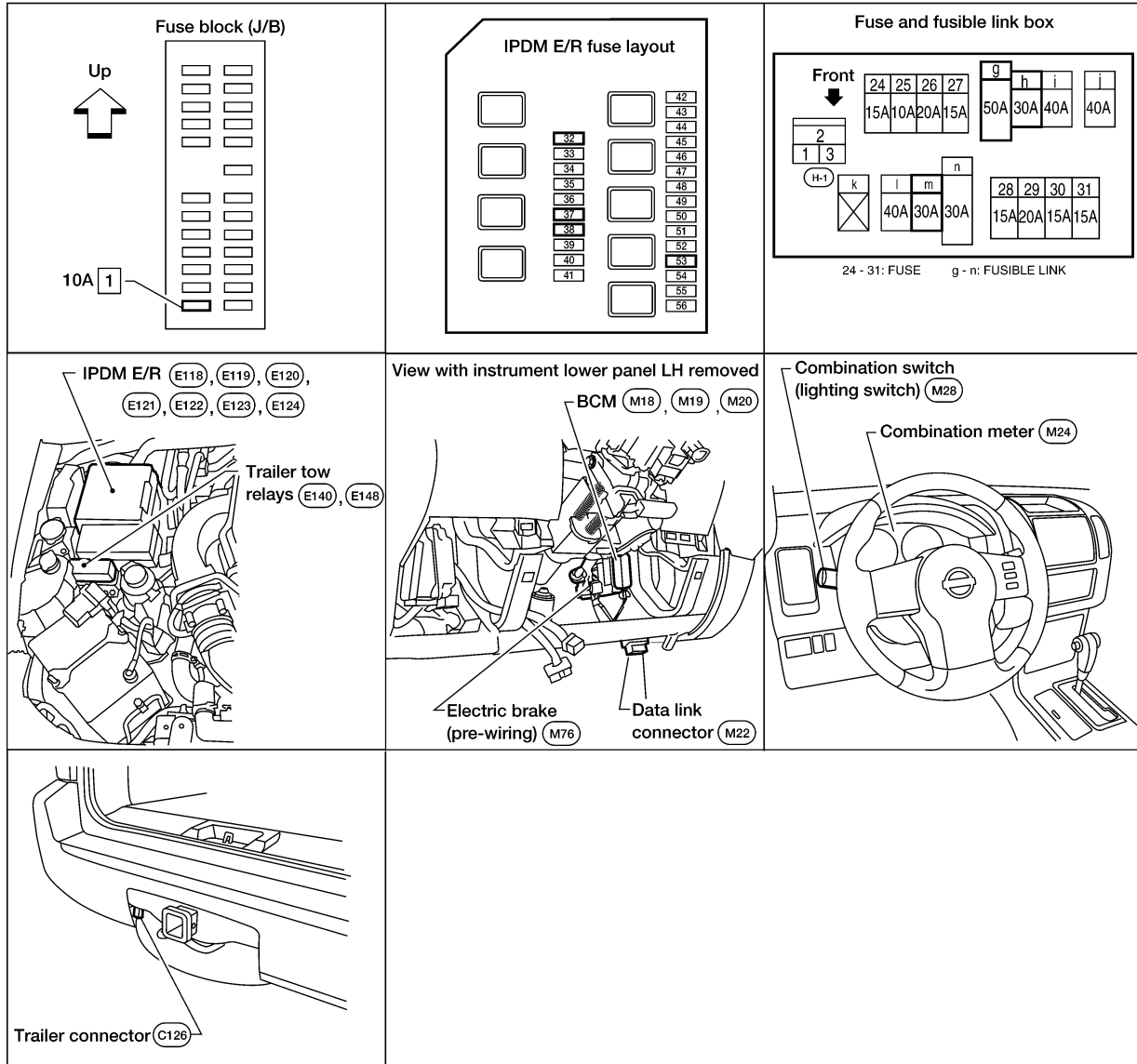
TRAILER TOW

PF9:93020

EKS009MH

TRAILER TOW

Component Parts and Harness Connector Location



WKIA4154E

EKS009MI

System Description

Power is supplied at all times

- to ignition relay, located in the IPDM E/R (intelligent power distribution module engine room), and
- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM (body control module) terminal 70, and
- through 20A fuse (No. 53, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 10A fuse (No. 32, located in the IPDM E/R)
- to IPDM E/R terminal 61
- to trailer tow relay 1 terminal 3, and
- to tail lamp relay, located in the IPDM E/R, and
- through 30A fusible link (letter **m**, located in the fuse and fusible link box)
- to trailer tow relay 2 terminals 3 and 6, and
- through 30A fusible link (letter **h**, located in the fuse and fusible link box)

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TRAILER TOW

- to electric brake (pre-wiring) terminal 5.

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

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38, and
- through 10A fuse (No. 38, located in the IPDM E/R)
- to trailer tow relay 2 terminal 1.

Ground is supplied

- to BCM terminal 67 and
- to electric brake (pre-wiring) terminal 1
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 59
- to trailer tow relay 1 terminal 2
- to trailer tow relay 2 terminal 2
- to trailer connector terminal 1 (trailer tow 7 pin) or terminal 4 (trailer tow 4 pin)
- through grounds E9, E15 and E24.

TRAILER TAIL LAMP OPERATION

The trailer tail lamps are controlled by the trailer tow relay 1.

With the lighting switch in the parking and tail lamp ON (1ST) position, AUTO position (and the auto light system is activated) or headlamp ON (2ND) position, power is supplied from the tail lamp relay

- through 10A fuse (No. 37, located in the IPDM E/R)
- through IPDM E/R terminal 29
- to trailer tow relay 1 terminal 1.

When energized, trailer tow relay 1 tail lamp power is supplied

- through trailer tow relay 1 terminal 5
- to trailer connector terminal 3 (trailer tow 7 pin) or (trailer tow 4 pin).

TRAILER STOP, TURN SIGNAL AND HAZARD LAMP OPERATION

The trailer stop, turn signal and hazard lamps are controlled by the BCM. If either turn signal or the hazard lamps are turned on, the BCM supplies voltage to the trailer lamps to make them flash. If the BCM receives stop lamp switch signal, the BCM supplies voltage to the trailer lamps to make them illuminate.

Left stop, turn signal and hazard lamp output is supplied

- through BCM terminal 52
- to trailer connector terminal 2 (trailer tow 7 pin) or terminal 1 (trailer tow 4 pin).

Right stop, turn signal and hazard lamp output is supplied

- through BCM terminal 51
- to trailer connector terminal 5 (trailer tow 7 pin) or terminal 2 (trailer tow 4 pin).

TRAILER POWER SUPPLY OPERATION

The trailer power supply (trailer tow 7 pin connector only) is controlled by trailer tow relay 2.

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

- through 10A fuse (No. 38, located in the IPDM E/R)
- through IPDM E/R terminal 27
- to trailer tow relay 2 terminal 1.

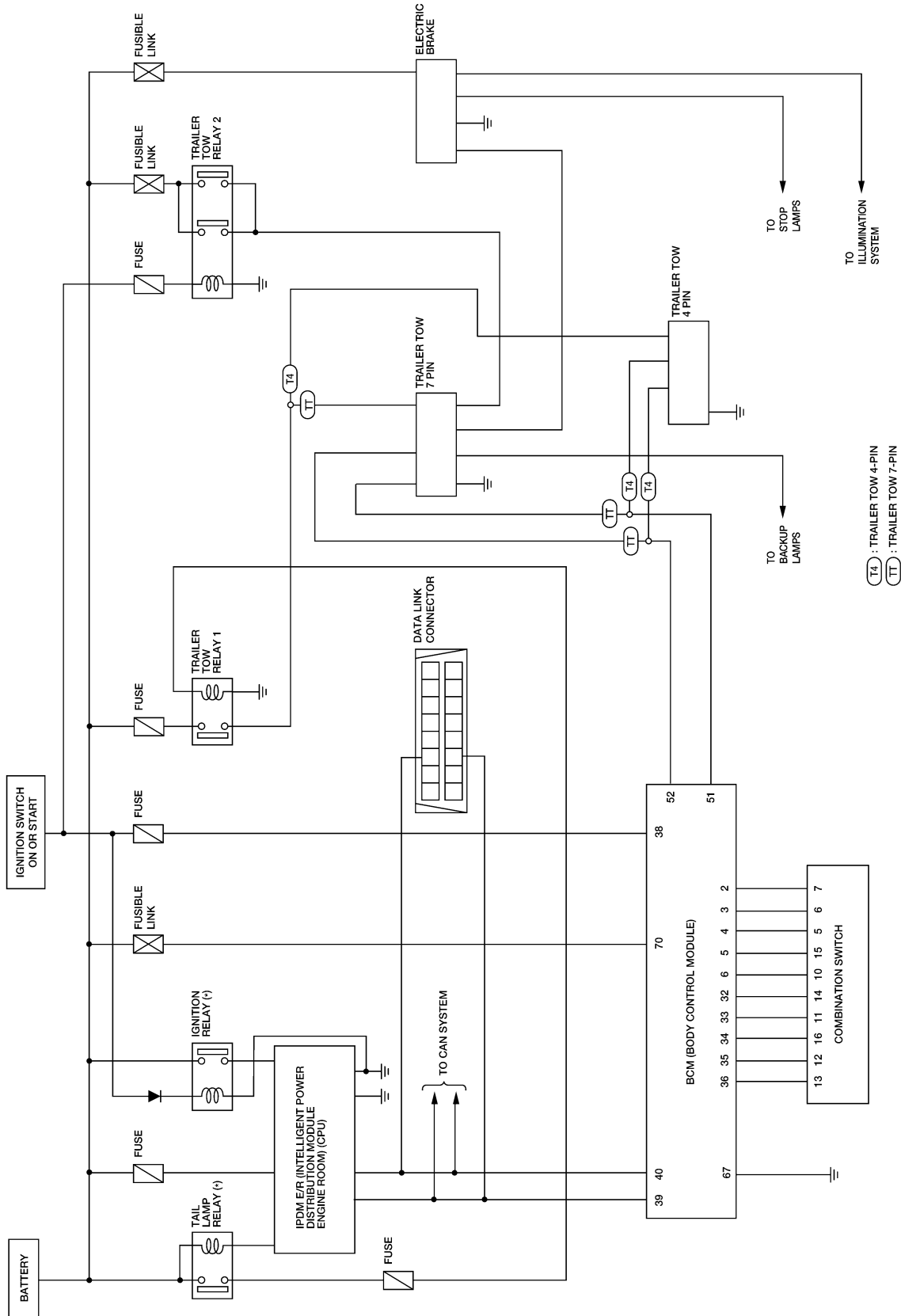
When energized, trailer tow relay 2 power is supplied

- through trailer tow relay 2 terminals 5 and 7
- to trailer connector terminal 4.

TRAILER TOW

Schematic

EKS009MJ



*: THIS RELAY IS BUILT INTO THE IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

(T4) : TRAILER TOW 4-PIN
(TT) : TRAILER TOW 7-PIN

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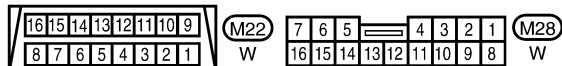
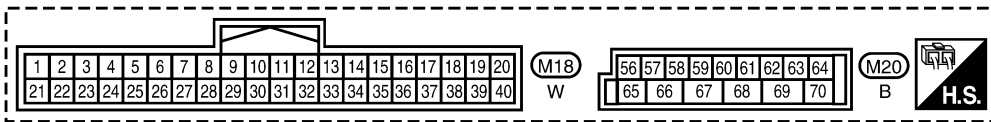
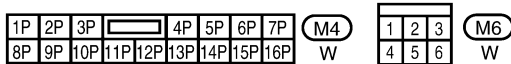
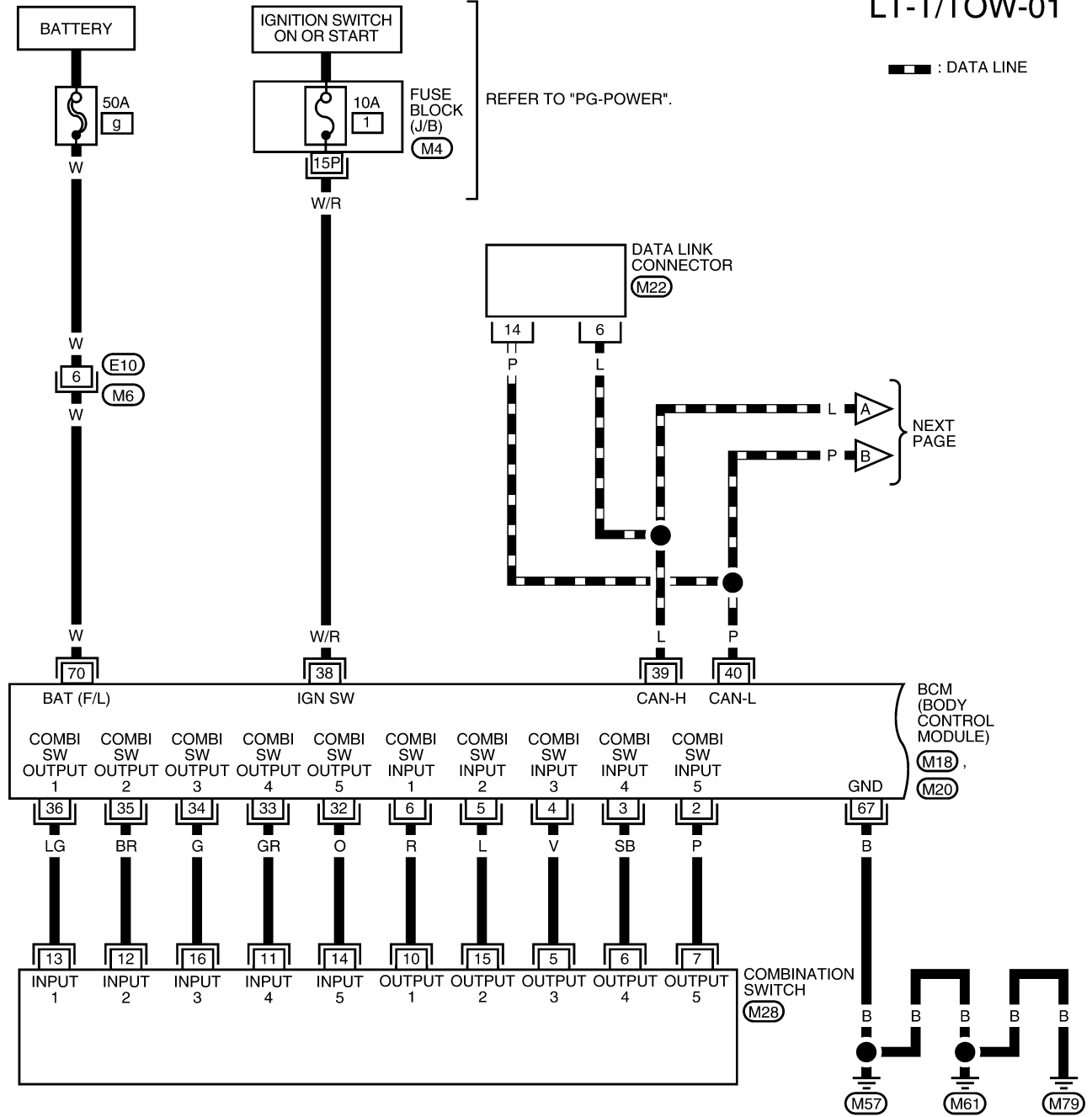
TRAILER TOW

Wiring Diagram — T/TOW —

EKS009MK

LT-T/TOW-01

▬ : DATA LINE

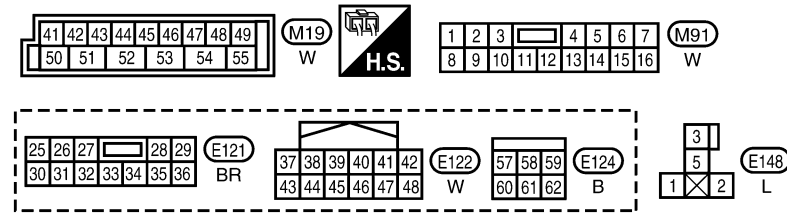
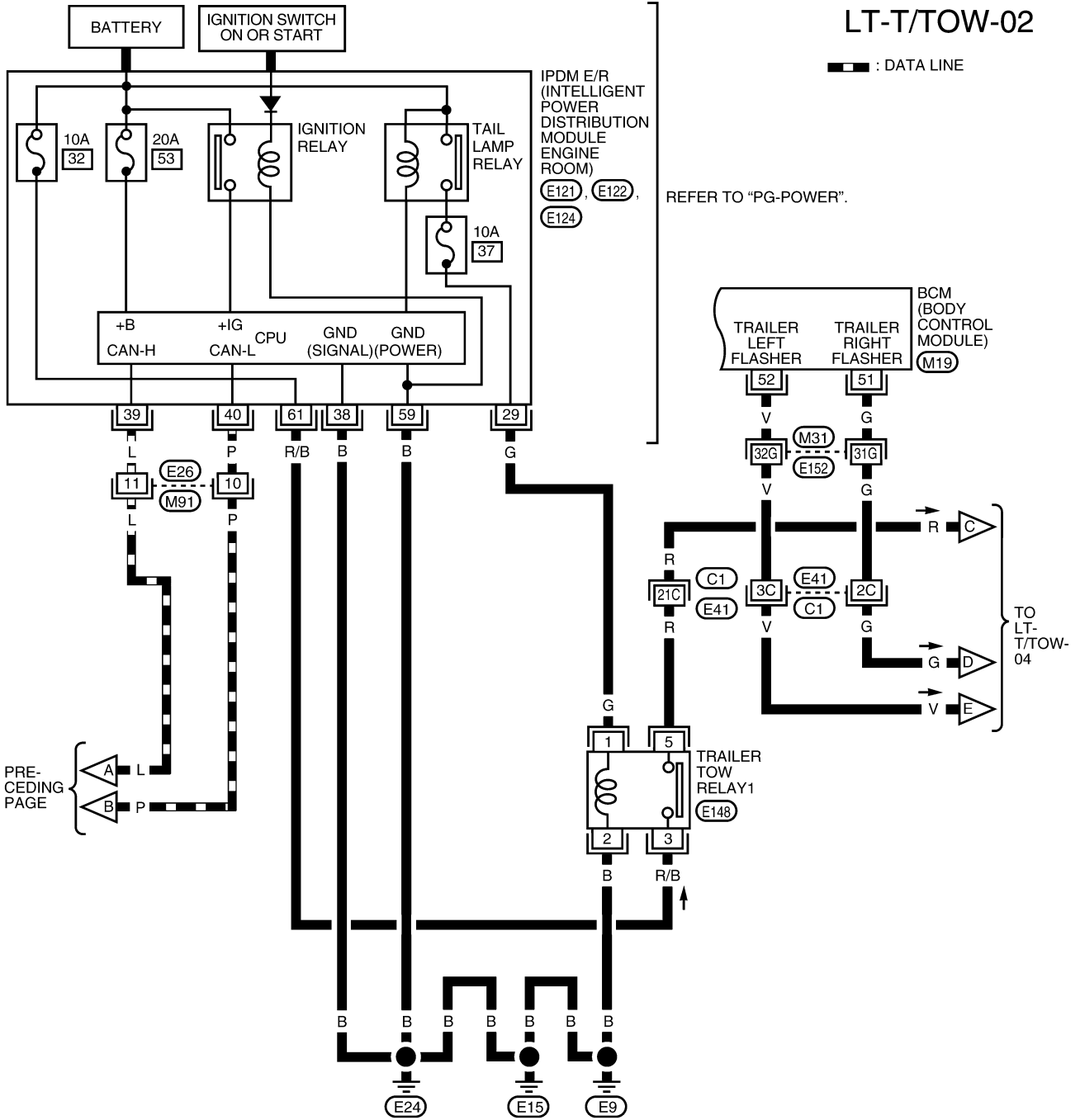


WKWA2067E

TRAILER TOW

LT-T/TOW-02

— : DATA LINE

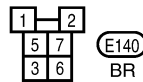
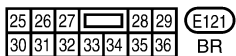
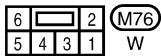
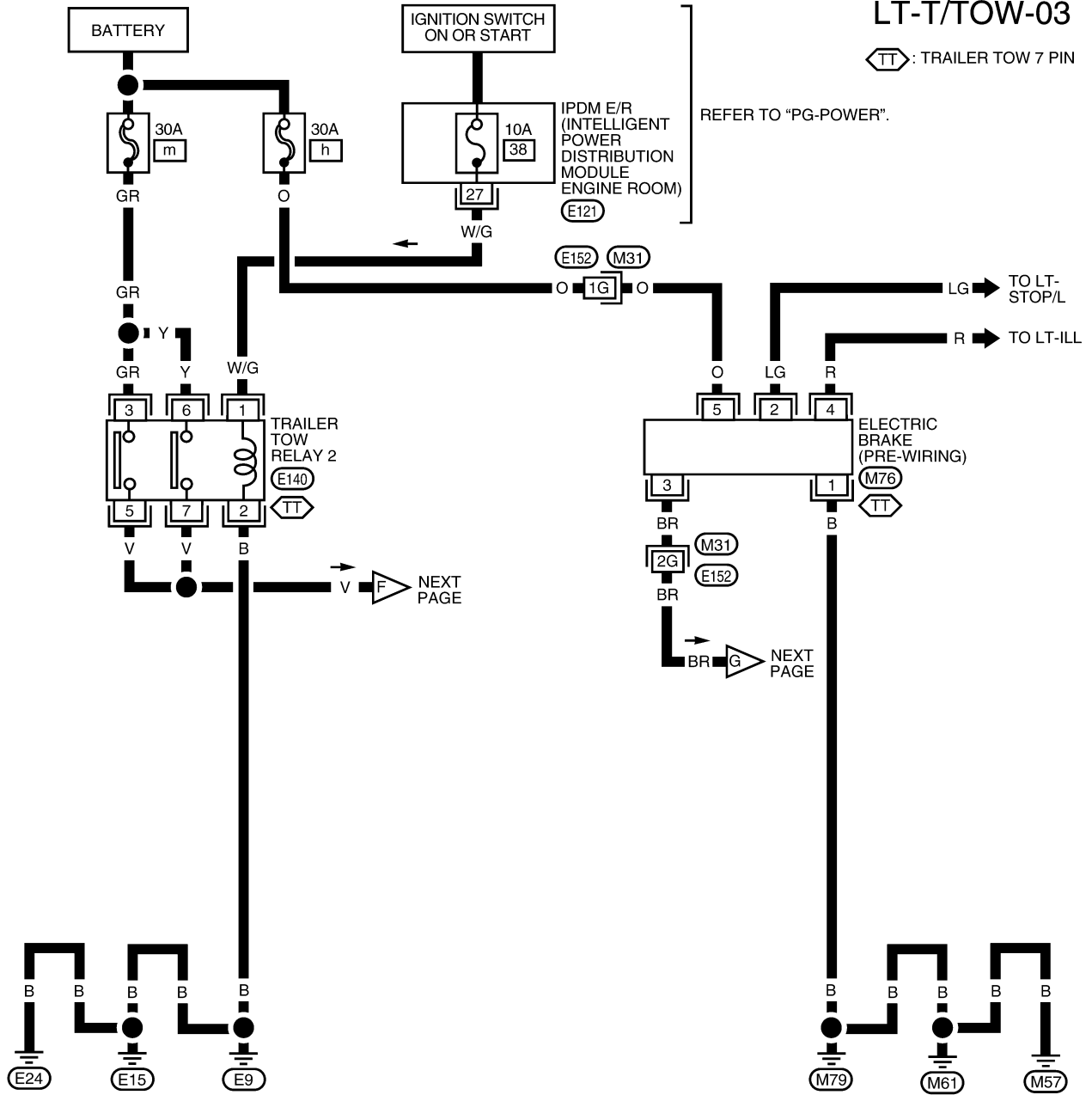


REFER TO THE FOLLOWING.
 (M31), (C1) - SUPER
 MULTIPLE JUNCTION (SMJ)

TRAILER TOW

LT-T/TOW-03

ⓉⓉ : TRAILER TOW 7 PIN



REFER TO THE FOLLOWING.
 M31 - SUPER MULTIPLE
 JUNCTION (SMJ)

WKWA2043E

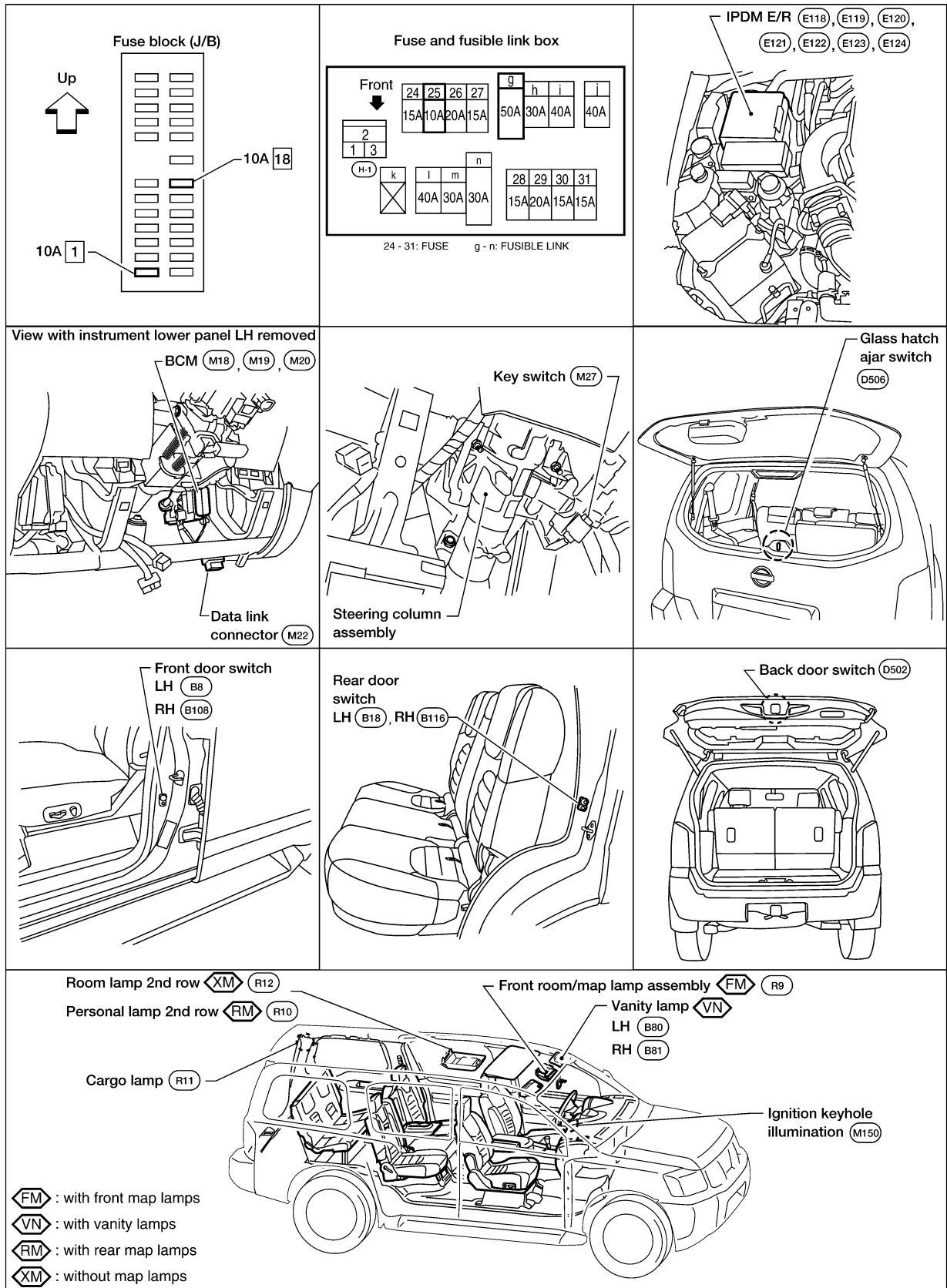
INTERIOR ROOM LAMP

PF:26410

INTERIOR ROOM LAMP

Component Parts and Harness Connector Location

EKS009ML



WKIA4155E

INTERIOR ROOM LAMP

EKS009MM

System Description

When room lamp and personal lamp switch is in DOOR position, room lamp and personal lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch LH, unlock signal from keyfob, door lock and unlock switch, key cylinder switch, ignition switch and glass hatch ajar switch.

When room/map lamp and personal lamp turns ON, there is a gradual brightening over 1 second. When room/map lamp and personal lamp turns OFF, there is a gradual dimming over 1 second.

The room/map lamp and personal lamp timer is controlled by the BCM (body control module).

Room/map lamp and personal lamp timer control settings can be changed with CONSULT-II.

Ignition keyhole illumination turns ON when front door LH is opened (door switch ON) or key is removed from key cylinder. Illumination turns OFF when front door LH is closed (door switch OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse (No. 25, located in the fuse and fusible link box)
- to key switch terminal 2, and
- through 10A fuse [No. 18, located in the fuse block (J/B)]
- to BCM terminal 57, and
- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM terminal 70.

When the key is inserted in key switch, power is supplied

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

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

- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67
- through grounds M57, M61 and M79.

When the front door LH is opened, ground is supplied

- to BCM terminal 47
- through front door switch LH terminal 2
- through case ground of front door switch LH.

When the front door RH is opened, ground is supplied

- to BCM terminal 12
- through front door switch RH terminal 2
- through case ground of front door switch RH.

When the rear door LH is opened, ground is supplied

- to BCM terminal 48
- through rear door switch LH terminal 2
- through case ground of rear door switch LH.

When the rear door RH is opened, ground is supplied

- to BCM terminal 13
- through rear door switch RH terminal 2
- through case ground of rear door switch RH.

When the glass hatch is opened, ground is supplied

- to BCM terminal 42
- through glass hatch ajar switch terminal 1
- through case ground of glass hatch ajar switch.

When the liftgate is opened, ground is supplied

- to BCM terminal 43
- through back door switch terminal 3

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INTERIOR ROOM LAMP

- through back door switch terminal 1
- through grounds D406 and D504.

When the front door LH or RH is unlocked by the door lock and unlock switch, BCM receives ground signal

- to BCM terminal 46
- through main power window and door lock/unlock switch terminal 11 or power window and door lock/unlock switch RH terminal 2
- through main power window and door lock/unlock switch terminal 14 or power window and door lock/unlock switch RH terminal 3
- through grounds M57, M61 and M79.

When the front door LH is unlocked by the key, the BCM receives ground signal

- to BCM terminal 7
- through front door lock assembly LH (key cylinder switch) terminal 3
- through front door lock assembly LH (key cylinder switch) terminal 4
- through grounds M57, M61 and M79.

When a signal, or combination of signals is received by BCM, ground is supplied

- to front room/map lamp assembly terminal 2
- to personal lamp 2nd row terminal 2 (with rear map lamps)
- to room lamp 2nd row terminal 1
- through BCM terminal 63, and
- to cargo lamp terminal 1
- through BCM terminal 49.

With power and ground supplied, the lamps illuminate.

SWITCH OPERATION

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

- to front room/map lamp assembly terminal 2
- to personal lamp 2nd row terminal 2 (with rear map lamps)
- to room lamp 2nd row terminal 1
- through BCM terminal 63, and
- to ignition keyhole illumination terminal 2
- through BCM terminal 1.

And power is supplied

- through BCM terminal 56
- to ignition keyhole illumination terminal 1
- to front room/map lamp assembly terminal 1
- to vanity lamp LH and RH terminal 1 (if equipped)
- to personal lamp 2nd row terminal 1 (with rear map lamps)
- to room lamp 2nd row terminal 2
- to cargo lamp terminal 2.

When front room/map lamp switch is ON, ground is supplied

- to front room/map lamp assembly terminal 3
- through grounds M57, M61 and M79.

When vanity lamp (LH and RH) (if equipped) is ON, ground is supplied

- to vanity lamp (LH and RH) terminal 2
- through grounds B7 and B19.

When personal lamp 2nd row (with rear map lamps) is ON, ground is supplied

- to personal lamp 2nd row terminal 3
- through grounds M57, M61 and M79.

When room lamp 2nd row is ON, ground is supplied through room lamp case ground.

When cargo lamp switch is ON, ground is supplied through cargo lamp case ground.

INTERIOR ROOM LAMP

ROOM LAMP TIMER OPERATION

When 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.

Power is supplied

- through 10A fuse [No. 25, located in the fuse block (J/B)]
- to 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

- to BCM terminal 46
- through main power window and door lock/unlock switch terminal 11.

At the time that front door LH is opened, BCM detects that front door LH is unlocked. It determines that interior room lamp and map lamp timer operation conditions are met, and turns the interior room lamps ON for 30 seconds.

Key is in ignition key cylinder (key switch ON), power is supplied

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

When key is removed from key switch and key lock solenoid (key switch OFF), power supply to BCM terminal 37 is terminated. BCM detects that key has been removed, determines that interior room lamp and map lamp timer conditions are met, and turns the interior room lamps ON for 30 seconds.

When front door LH opens → closes, and the key is not inserted in the key switch (key switch OFF), BCM terminal 47 changes between 0V (door open) → 12V (door closed). The BCM determines that conditions for interior room lamp operation are met and turns the interior room lamp ON for 30 seconds.

Timer control is canceled under the following conditions.

- Front door LH is locked [when locked by keyfob, main power window and door lock/unlock switch, or front door lock assembly LH (key cylinder switch)]
- Front door LH is opened (front door switch LH turns ON)
- Ignition switch ON.

INTERIOR LAMP BATTERY SAVER CONTROL

If interior lamp is left ON, it will not be turned off 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:

- Vanity lamp (if equipped)
- Front room/map lamp
- Cargo lamp
- Personal lamp 2nd row (with rear map lamps)
- Room lamp 2nd row
- Ignition keyhole illumination

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

- signal received from keyfob, main power window and door lock/unlock switch or front door lock assembly LH (key cylinder switch) is locked or unlocked
- door is opened or closed
- key is removed from ignition key cylinder or inserted in ignition key cylinder.

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

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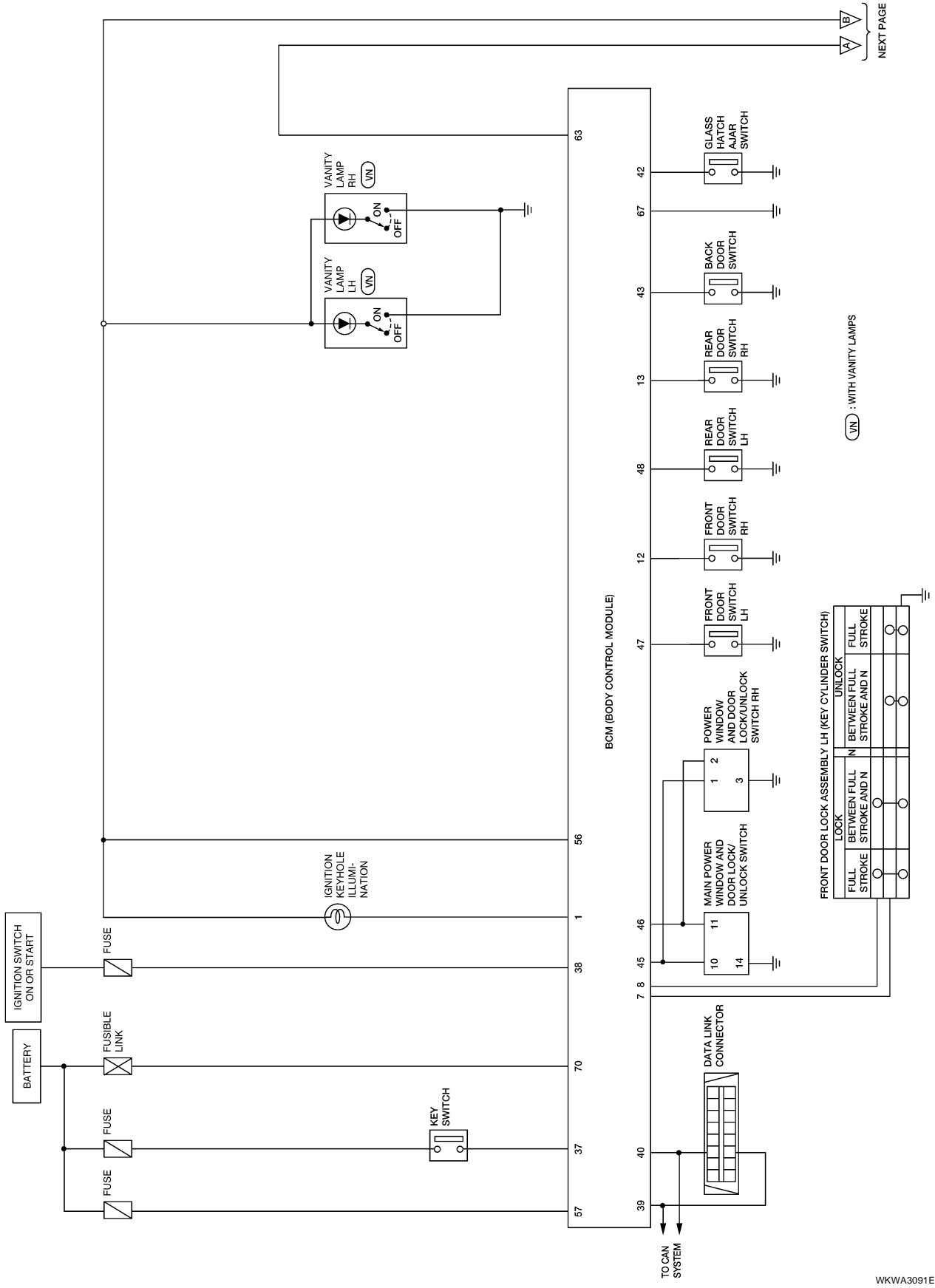
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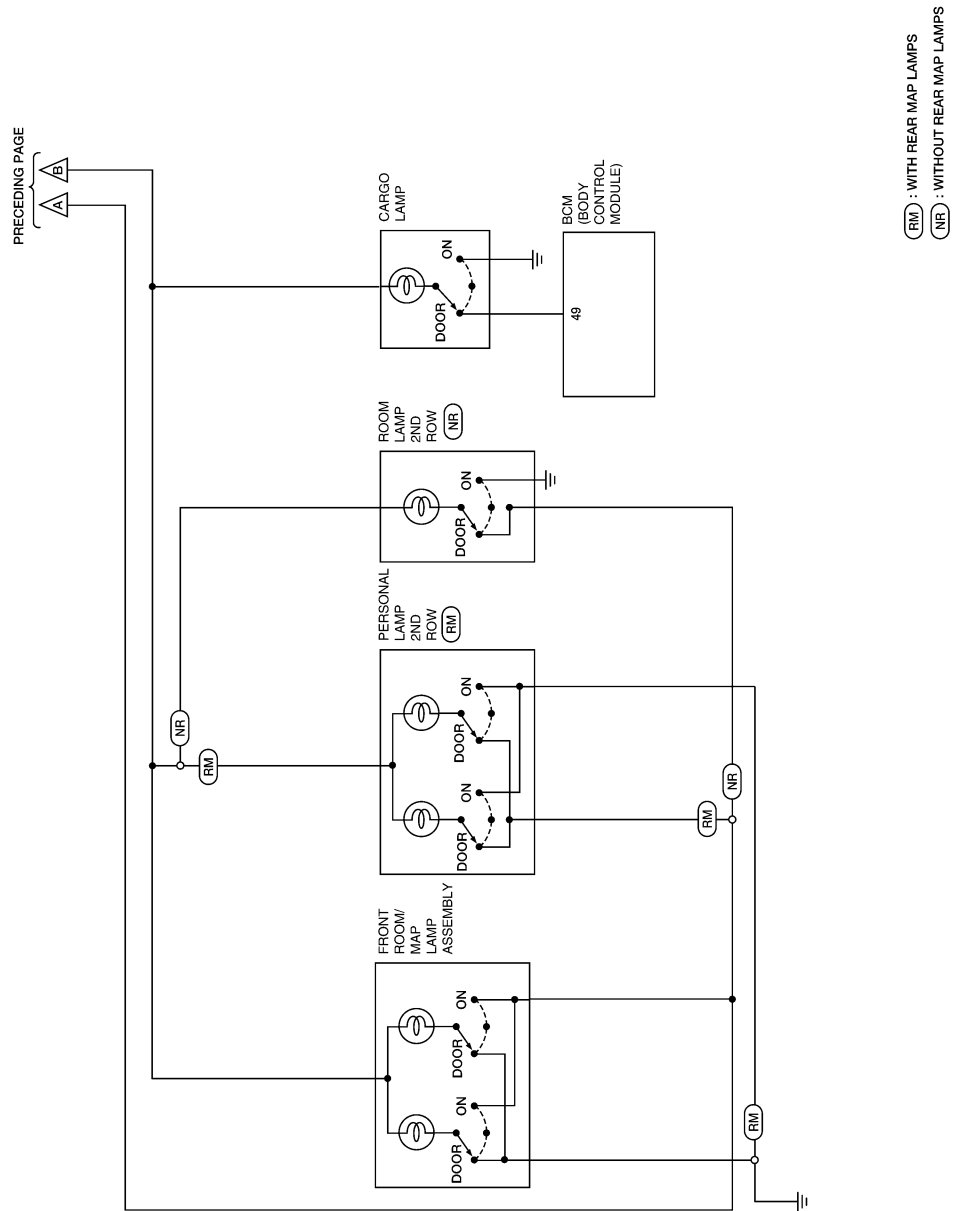
INTERIOR ROOM LAMP

Schematic

EKS00D8A



INTERIOR ROOM LAMP



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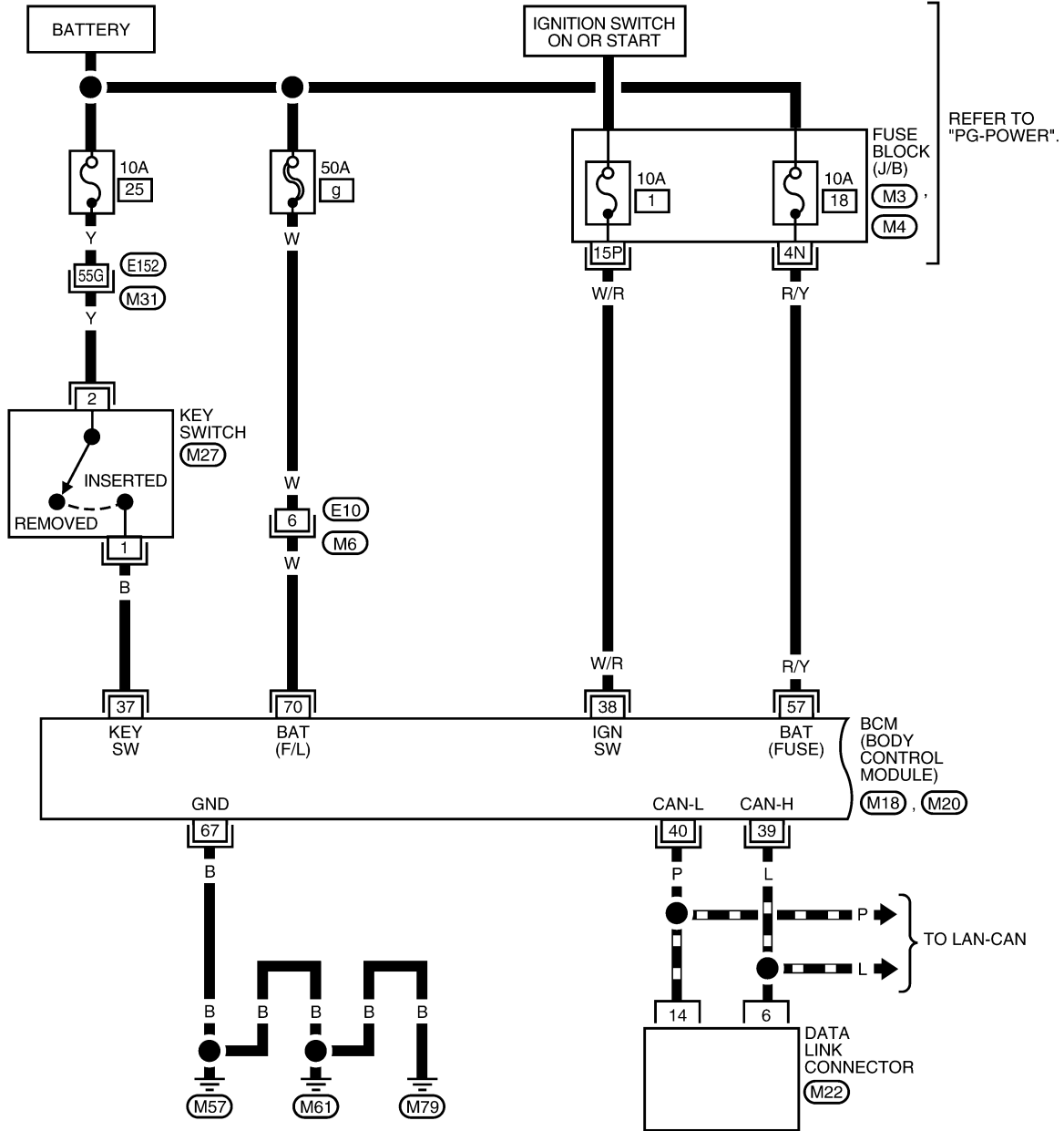
INTERIOR ROOM LAMP

Wiring Diagram — INT/L —

EKS009MO

LT-INT/L-01

— : DATA LINE

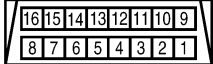
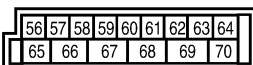
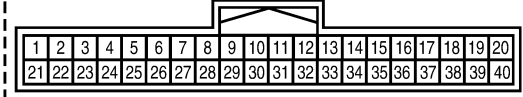
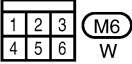
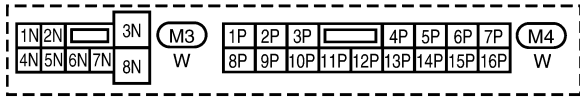


REFER TO "PG-POWER".

BCM (BODY CONTROL MODULE) (M18), (M20)

TO LAN-CAN

DATA LINK CONNECTOR (M22)



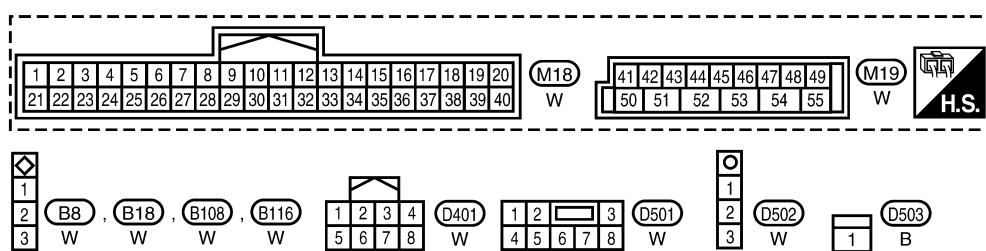
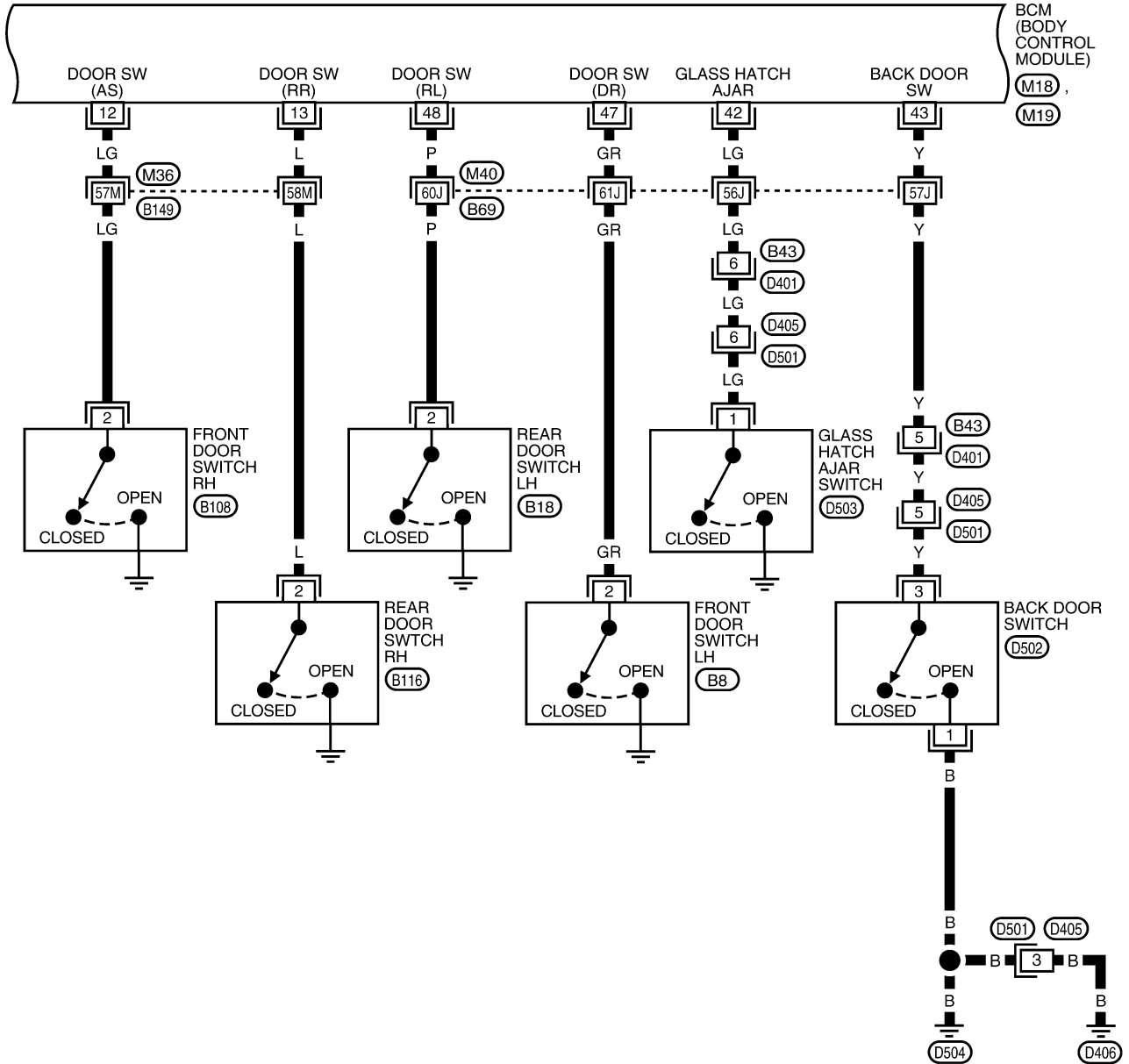
REFER TO THE FOLLOWING.

(M31) - SUPER MULTIPLE JUNCTION (SMJ)

WKWA2044E

INTERIOR ROOM LAMP

LT-INT/L-02

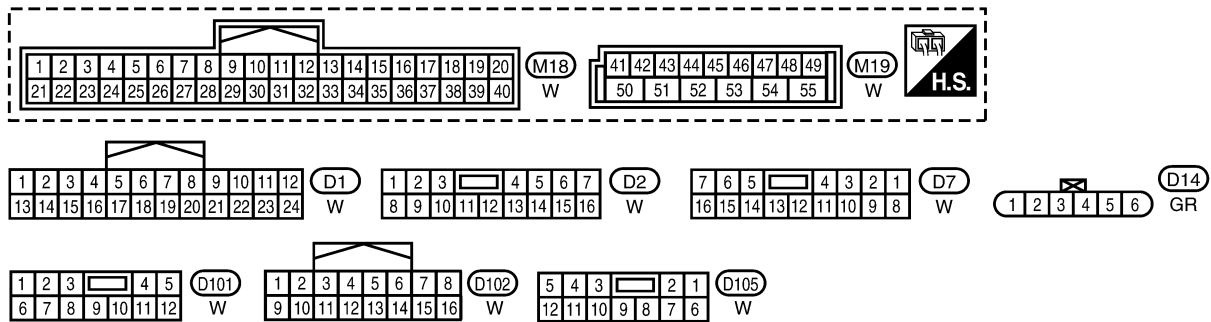
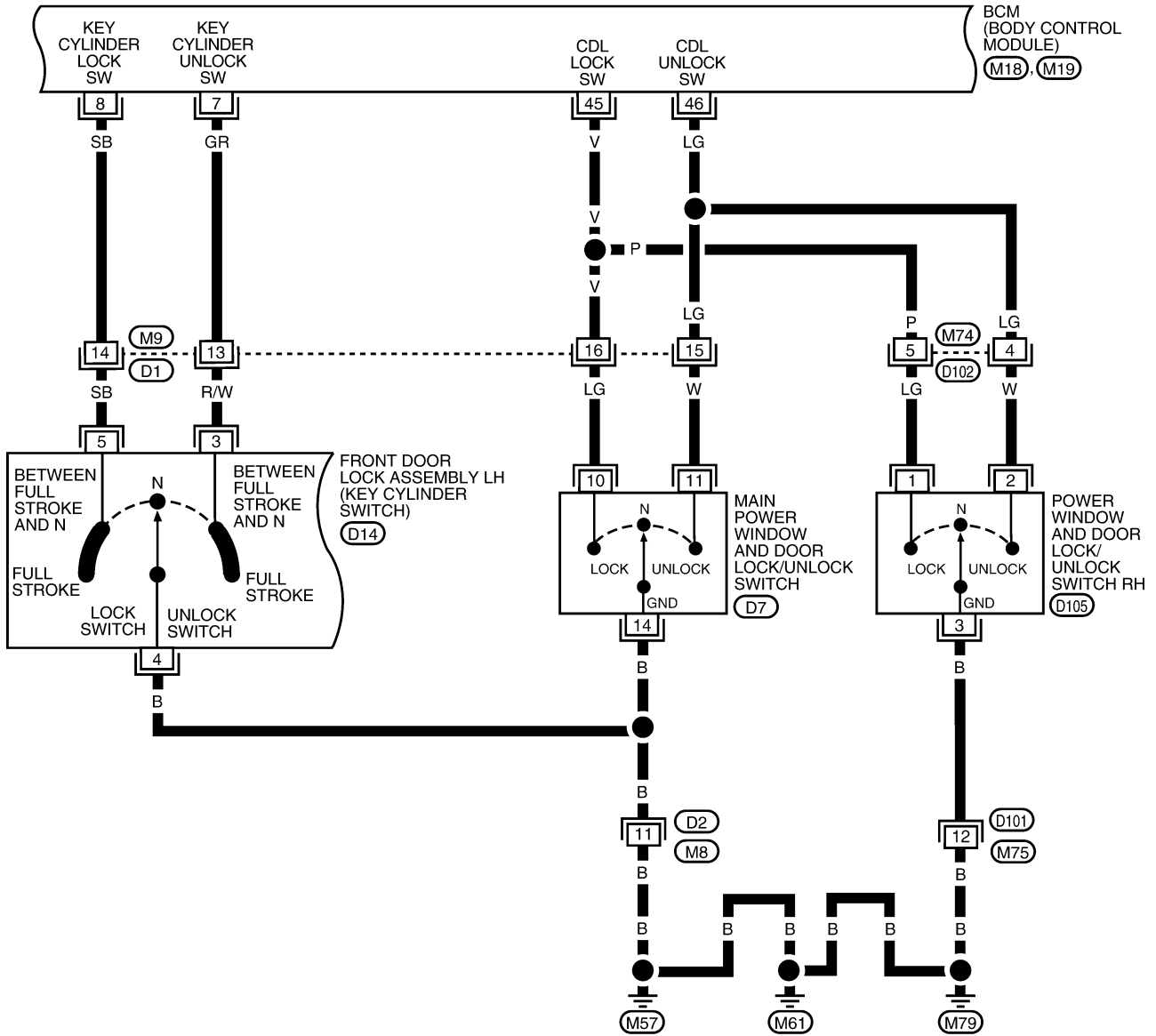


REFER TO THE FOLLOWING.
(M36), (M40) - SUPER
MULTIPLE JUNCTION (SMJ)

WKWA2063E

INTERIOR ROOM LAMP

LT-INT/L-03

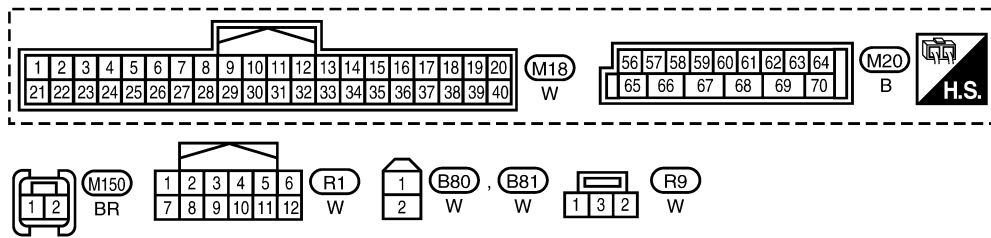
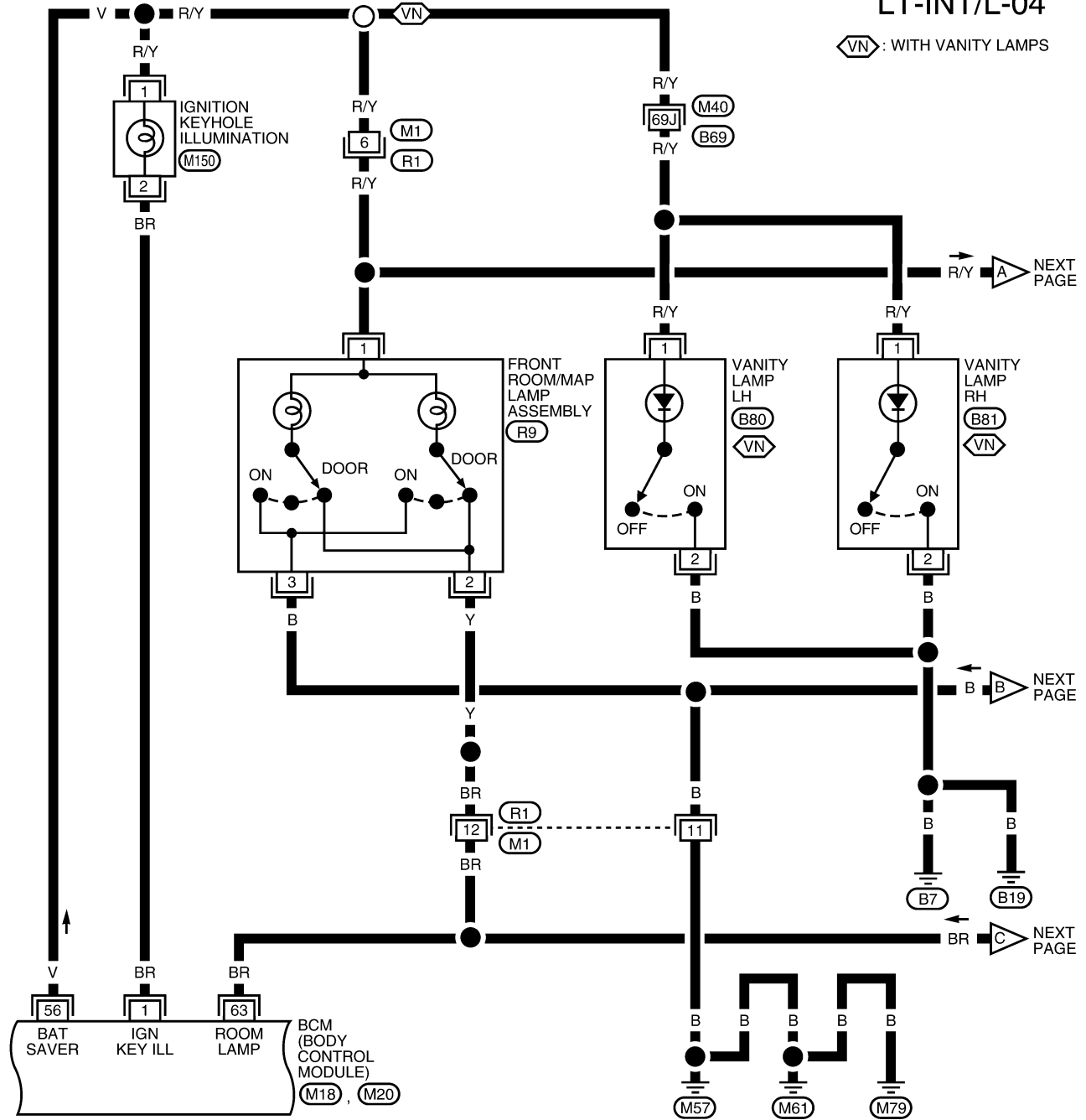


WKWA2070E

INTERIOR ROOM LAMP

LT-INT/L-04

ⓋN : WITH VANITY LAMPS



REFER TO THE FOLLOWING.
 (M40) - SUPER MULTIPLE JUNCTION (SMJ)

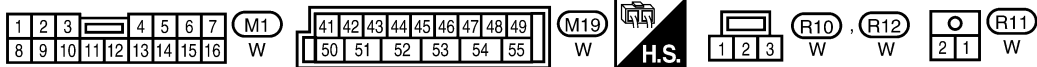
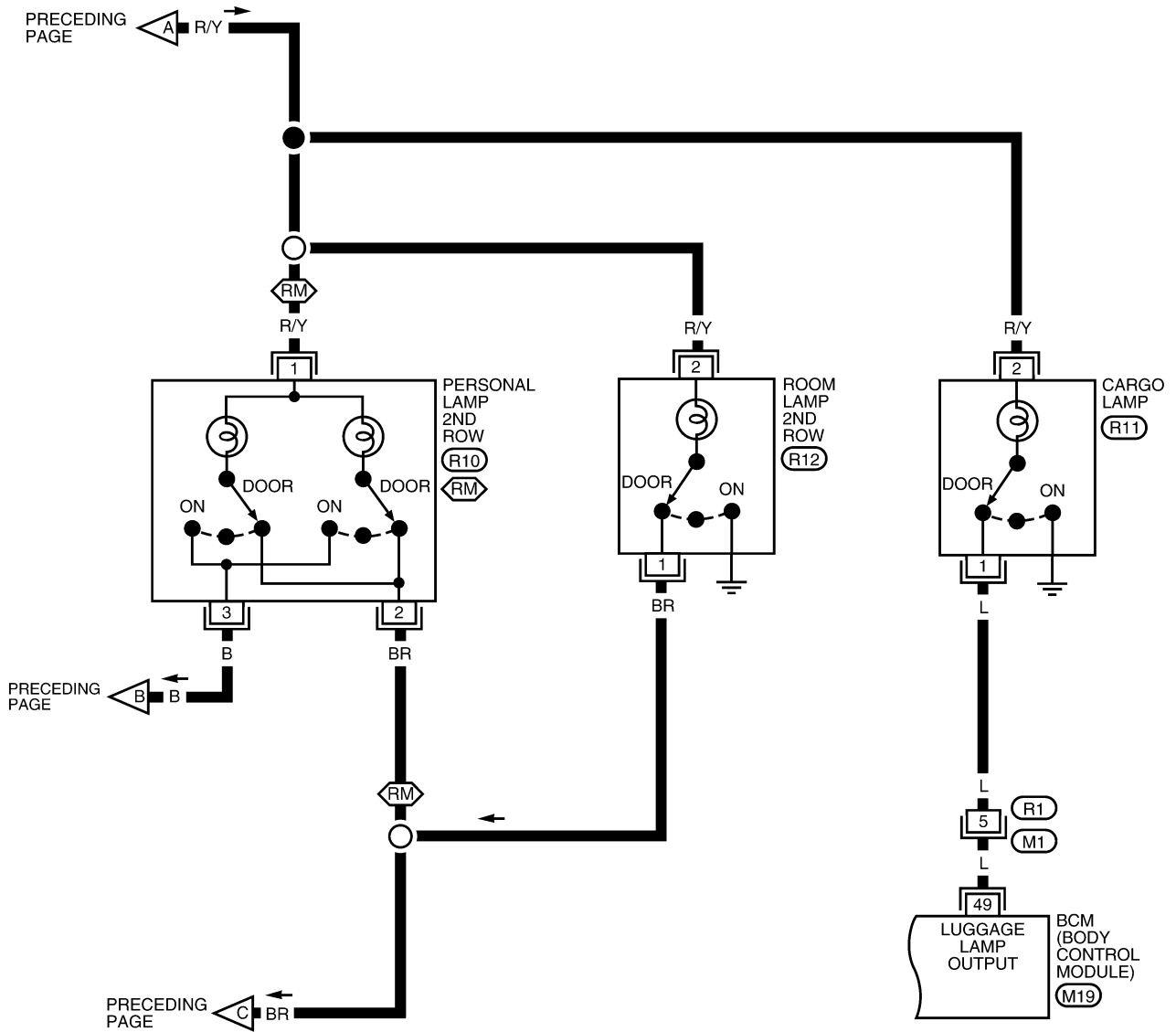


WKWA3093E

INTERIOR ROOM LAMP

LT-INT/L-05

 : WITH REAR MAP LAMPS



WKWA3094E

INTERIOR ROOM LAMP

Terminals and Reference Values for BCM

EKS009MP

Terminal No.	Wire color	Signal name	Measuring condition			Reference value (Approx.)	
			Ignition switch	Operation or condition			
1	BR	Ignition keyhole illumination signal	OFF	Door is locked. (SW OFF)		Battery voltage	
				Door is unlocked. (SW ON)		0V	
7	GR	LH key cylinder switch unlock signal	OFF	LH key cylinder switch	ON (open, 2nd turn)	Momentary 1.5V	
8	SB	LH key cylinder switch lock signal			OFF (closed)	0V	
					On (open)	Momentary 1.5V	
					OFF (closed)	0V	
12	LG	Front door switch RH signal	OFF	Front door switch RH	ON (open)	0V	
					OFF (closed)	Battery voltage	
13	L	Rear door switch RH signal	OFF	Rear door switch RH	ON (open)	0V	
					OFF (closed)	Battery voltage	
37	B	Key-in switch detection signal	OFF	Vehicle key is removed.		0V	
				Vehicle key is inserted.		Battery voltage	
38	W/R	Ignition power supply	ON	—		Battery voltage	
39	L	CAN-H	—	—		—	
40	P	CAN-L	—	—		—	
42	LG	Glass hatch ajar switch signal	OFF	Glass hatch ajar switch	ON (open)	0V	
					OFF (closed)	Battery voltage	
43	Y	Back door switch signal	OFF	Back door switch	ON (open)	0V	
					OFF (closed)	Battery voltage	
45	V	CDL lock switch signal	OFF	LH or RH door lock/unlock switch	ON (lock)	Momentary 1.5V	
					OFF	0V	
46	LG	CDL unlock switch signal	OFF	LH or RH door lock/unlock switch	ON (unlock)	Momentary 1.5V	
					OFF	0V	
47	GR	Front door switch LH signal	OFF	Front door switch LH	ON (open)	0V	
					OFF (closed)	Battery voltage	
48	P	Rear door switch LH signal	OFF	Rear door switch LH	ON (open)	0V	
					OFF (closed)	Battery voltage	
49	L	Luggage lamp output	OFF	Any door is open (ON)		0V	
				All doors are closed (OFF)		Battery voltage	
56	V	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF		0V	
			ON	—		Battery voltage	
57	R/Y	Battery power supply	OFF	—		Battery voltage	
63	BR	Interior room/map lamp signal	OFF	Each interior lamp switch: DOOR position	Any door switch	ON (open)	0V
						OFF (closed)	Battery voltage
67	B	Ground	ON	—		0V	
70	W	Battery power supply	OFF	—		Battery voltage	

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INTERIOR ROOM LAMP

EKS009MO

How to Proceed With Trouble Diagnosis

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-129, "System Description"](#).
3. Carry out the Preliminary Check. Refer to [LT-140, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Does the interior room lamp operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. Inspection End.

Preliminary Check

EKS009MR

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES OR FUSIBLE LINK

Check for blown BCM fuses or fusible link.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	9
		18
	Ignition switch ON or START position	1

Refer to [LT-134, "Wiring Diagram — INT/L —"](#).

OK or NG

OK >> GO TO 2.

NG >> If fuse or fusible link is blown, be sure to eliminate cause before installing new fuse or fusible link.
Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#).

2. CHECK POWER SUPPLY CIRCUIT

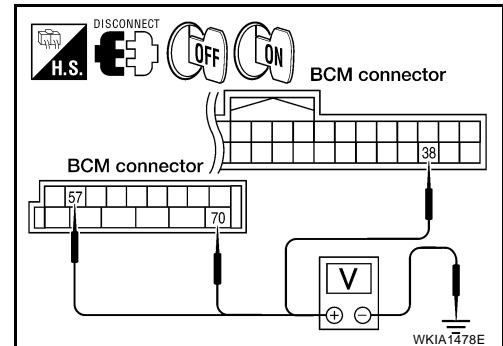
1. Disconnect BCM connectors.
2. Check voltage between BCM connector and ground.

BCM (+)		(-)	Ignition switch position	
Connector	Terminal		OFF	ON
M20	57	Ground	Battery voltage	Battery voltage
	70		Battery voltage	Battery voltage
M18	38		0V	Battery voltage

OK or NG

OK >> GO TO 3.

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



3. CHECK GROUND CIRCUIT

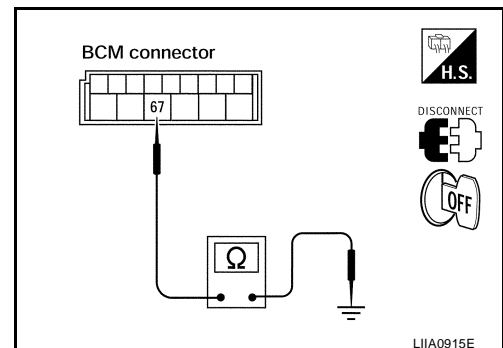
Check continuity between BCM and ground.

BCM		Continuity
Connector	Terminal	
M20	67	Ground Yes

OK or NG

OK >> Inspection End.

NG >> Check harness ground circuit.



INTERIOR ROOM LAMP

CONSULT-II Function (BCM)

EKS009MS

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

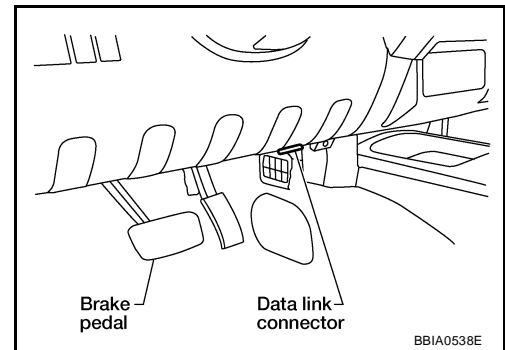
BCM diagnostic test item	Diagnostic mode	Description
Inspection by part	WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.
	DATA MONITOR	Displays BCM input/output data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
	SELF-DIAG RESULTS	Displays BCM self-diagnosis results.
	CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
	ECU PART NUMBER	BCM part number can be read.
	CONFIGURATION	Performs BCM configuration read/write functions.

CONSULT-II OPERATION

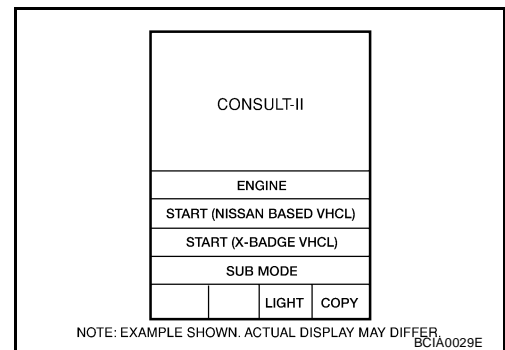
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carries out CAN communication.

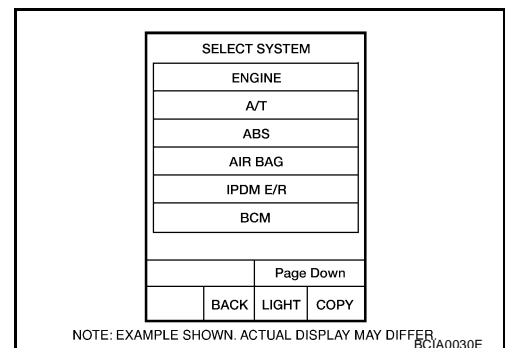
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



2. Touch "START (NISSAN BASED VHCL)".

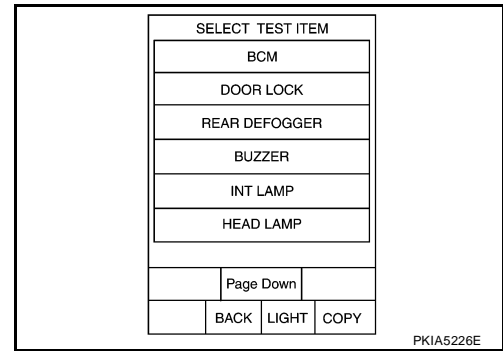


3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, go to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



INTERIOR ROOM LAMP

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 operating function of the interior room lamps and the ignition keyhole illumination can be selected when front door LH is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned on.	MODE 1 - 7
ROOM LAMP OFF TIME SET	The time in order to diminish illumination can be adjusted when the interior room lamps and the ignition keyhole illumination is turned off.	MODE 1 - 7

Reference between "MODE" and "TIME" for "TURN ON/OFF".

MODE	1	2	3	4	5	6	7
Time (sec.)	0.5	1	2	3	4	5	0

DATA MONITOR

Operation Procedure

1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
2. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
3. Touch either "ALL SIGNALS" or "SELECTION FROM MENU" on "SELECT MONITOR ITEM" screen.

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

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

INTERIOR ROOM LAMP

Display Item List

Monitor item	Contents
IGN ON SW	"ON/OFF" Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
KEY ON SW	"ON/OFF" Displays "Key inserted (ON)/key removed (OFF)" status judged from the key switch signal.
DOOR SW-DR	"ON/OFF" Displays status of the front door LH as judged from the front door switch LH signal. (Door is open: ON/Door is closed: OFF)
DOOR SW-AS	"ON/OFF" Displays "Door open (ON)/Door closed (OFF)" status, determined from front door switch RH 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 front door LH.
KEY CYL UN-SW	"ON/OFF" Displays "Door unlocked (OFF)" status, determined from key cylinder lock switch in front door LH.
CDL LOCK SW	"ON/OFF" Displays "ON/OFF" condition of lock signal from lock/unlock switch LH and RH.
CDL UNLOCK SW	"ON/OFF" Displays "ON/OFF" condition of unlock signal from lock/unlock switch LH and RH.
KEYLESS LOCK	"ON/OFF" Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.
KEYLESS UNLOCK	"ON/OFF" Displays "Unlocked (ON)/Other (OFF)" status, determined from unlock signal.

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" or "OFF" 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 keyhole illumination can be operated by ON-OFF operation.

Room/Map Lamp Control Does Not Operate

EKS009MT

1. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-143, "Display Item List"](#) for switches and their functions.

OK or NG

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

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

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INTERIOR ROOM LAMP

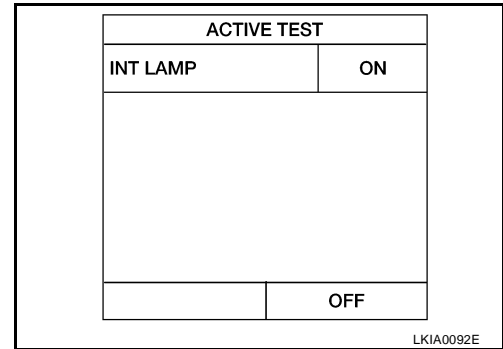
2. ACTIVE TEST

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

Room lamps should turn on.

OK or NG

- OK >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).
- NG >> GO TO 3.



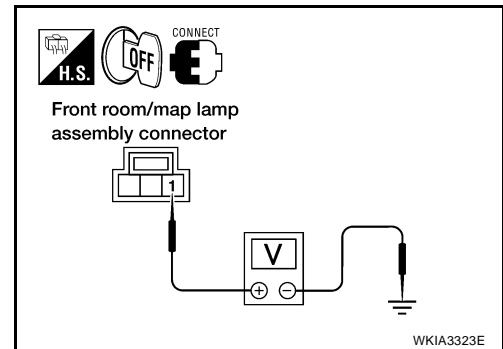
3. CHECK INTERIOR ROOM LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between front room/map lamp assembly harness connector R9 terminal 1 and ground.

1 - Ground : Battery voltage should exist.

OK or NG

- OK >> GO TO 4.
- NG >> GO TO 5.



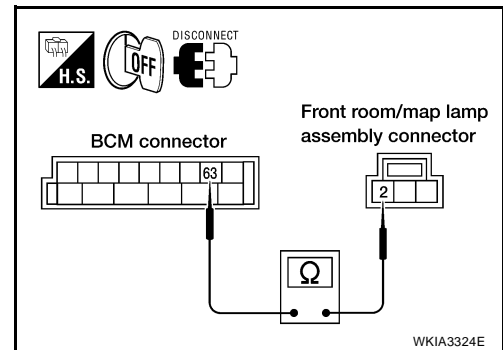
4. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M20 terminal 63 and front room/map lamp assembly harness connector R9 terminal 2.

63 - 2 : Continuity should exist.

OK or NG

- OK >> Replace BCM if interior lamp does not work after setting the connector again. Refer to [BCS-20, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



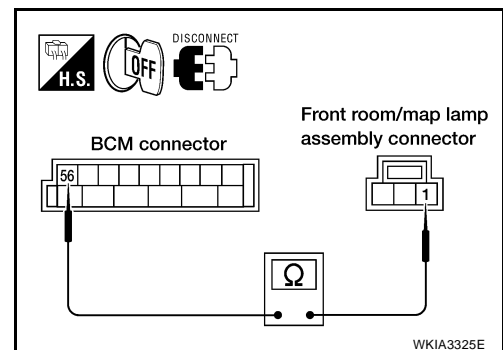
5. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Disconnect BCM connector and front room/map lamp assembly connector.
2. Check continuity between BCM harness connector M20 terminal 56 and front room/map lamp assembly harness connector R9 terminal 1.

56 - 1 : Continuity should exist.

OK or NG

- OK >> Replace BCM if interior lamp does not work after setting the connector again. Refer to [BCS-20, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector between BCM and room/map lamp.



INTERIOR ROOM LAMP

Personal Lamp Control Does Not Operate (Room/Map Lamps Operate)

EKS009MU

1. CHECK EACH DOOR SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-130, "SWITCH OPERATION"](#) for switches and their function.

OK or NG

- OK >> GO TO 2.
- NG >> Inspect malfunctioning door switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

SKIA5930E

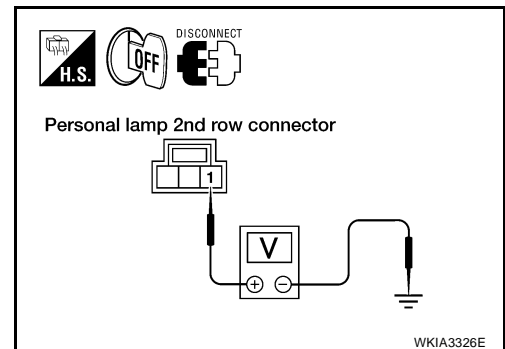
2. CHECK PERSONAL LAMP OUTPUT

1. Turn ignition switch OFF.
2. Confirm lamp switch is in the DOOR position.
3. Disconnect personal lamp 2nd row connector.
4. Open any door.
5. Check voltage between personal lamp 2nd row harness connector R10 terminal 1 and ground.

1 - Ground : Battery voltage should exist.

OK or NG

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



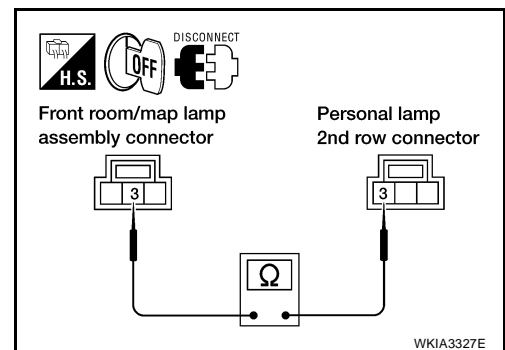
3. CHECK PERSONAL LAMP CONTROL CIRCUIT

1. Disconnect front room/map lamp assembly connector.
2. Check continuity between front room/map lamp assembly harness connector R9 terminal 3 and personal lamp 2nd row harness connector R10 terminal 3.

3 - 3 : Continuity should exist.

OK or NG

- OK >> Replace personal lamp 2nd row.
- NG >> Repair harness or connector.



INTERIOR ROOM LAMP

EKS009MW

All Interior Room Lamps Do Not Operate

1. CHECK POWER SUPPLY CIRCUIT

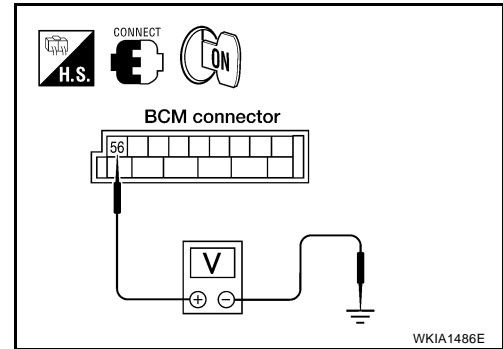
1. All interior room lamp switches are OFF.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M20 terminal 56 and ground.

56 - Ground : Battery voltage should exist.

OK or NG

OK >> Repair harness or connector. To prevent making a short circuit, be sure to disconnect battery negative cable after repairing harness, and then reconnect.

NG >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).



Ignition Keyhole Illumination Control Does Not Operate

EKS00FPU

1. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor, make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-143, "Display Item List"](#) for switches and their functions.

OK or NG

OK >> GO TO 2.

NG >> Inspect malfunctioning switch system.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF

SKIA5930E

2. ACTIVE TEST

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

OK or NG

OK >> Replace BCM. Refer to [BCS-20, "Removal and Installation of BCM"](#).

NG >> GO TO 3.

ACTIVE TEST	
IGN ILLUM	ON
	OFF

SKIA3992E

INTERIOR ROOM LAMP

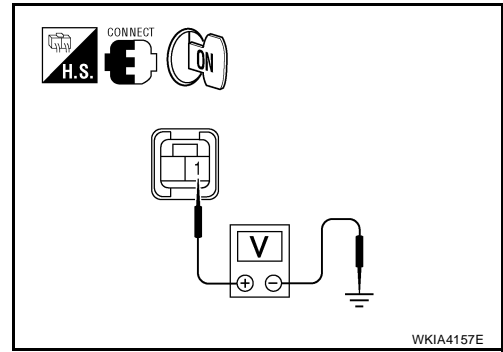
3. CHECK IGNITION KEYHOLE ILLUMINATION POWER SUPPLY INPUT

1. Check voltage between ignition keyhole illumination harness connector M150 terminal 1 and ground.

Terminals		(-)	Voltage (Approx.)
(+)			
Ignition keyhole illumination connector	Terminal		
M150	1	Ground	Battery voltage

OK or NG

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



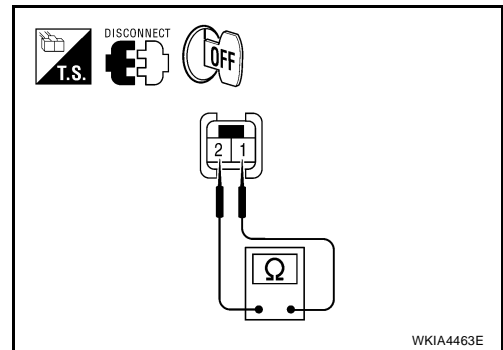
4. CHECK IGNITION KEYHOLE ILLUMINATION BULB

1. Turn ignition switch OFF.
2. Disconnect ignition keyhole illumination connector.
3. Check continuity between ignition keyhole illumination terminals 1 and 2.

Terminals		Continuity
Ignition keyhole illumination terminal		
1	2	Yes

OK or NG

- OK >> GO TO 5.
- NG >> Replace ignition keyhole illumination bulb.



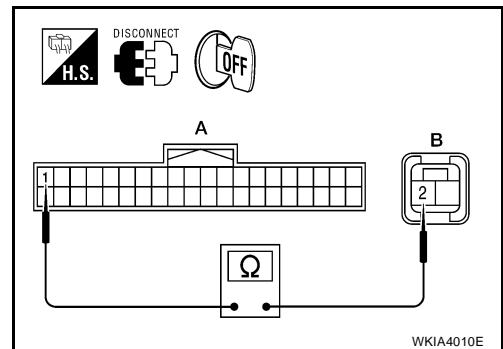
5. CHECK IGNITION KEYHOLE ILLUMINATION CONTROL CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M18 terminal 1 and ignition keyhole illumination harness connector M150 terminal 2.

A		B		Continuity
BCM connector	Terminal	Ignition keyhole illumination connector	Terminal	
M18	1	M150	2	Yes

OK or NG

- OK >> Replace BCM if ignition keyhole illumination does not work after setting the connector again. Refer to [BCS-20, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



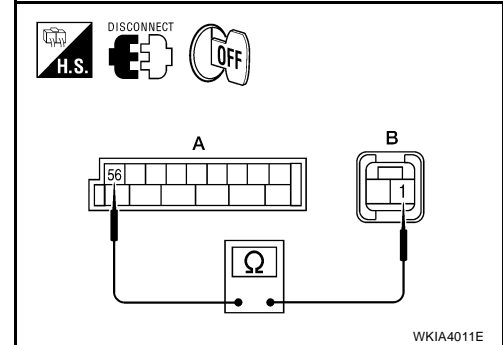
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INTERIOR ROOM LAMP

6. CHECK IGNITION KEYHOLE ILLUMINATION POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector and ignition keyhole illumination connector.
3. Check continuity between BCM harness connector M20 terminal 56 and ignition keyhole illumination harness connector M150 terminal 1.

A		B		Continuity
BCM connector	Terminal	Ignition keyhole illumination connector	Terminal	
M20	56	M150	1	Yes



OK or NG

- OK >> Replace BCM if ignition keyhole illumination does not work after setting the connector again. Refer to [BCS-20. "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.

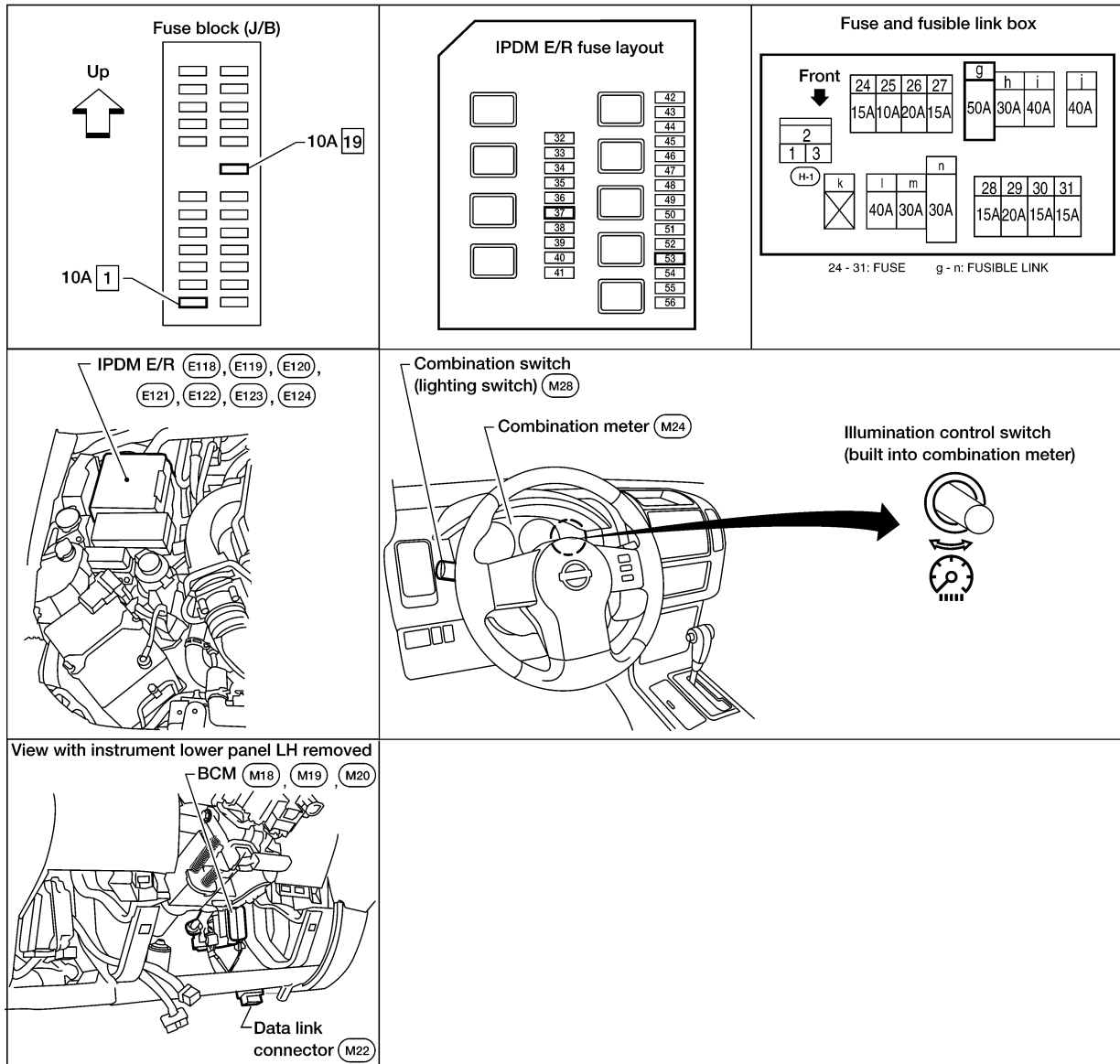
ILLUMINATION

ILLUMINATION

PF27545

Component Parts and Harness Connector Location

EKS009MX



WKIA4156E

System Description

EKS009MY

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

- to ignition relay, located in the IPDM E/R, and
- to tail lamp relay, located in the IPDM E/R, and
- through 50A fusible link (letter **g**, located in the fuse and fusible link box)
- to BCM terminal 70, and
- through 20A fuse (No. 53, located in the IPDM E/R)
- to CPU of the IPDM E/R, and
- through 10A fuse [No.19, located in fuse block (J/B)]

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ILLUMINATION

- to combination meter terminal 3.

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

- to ignition relay, located in the IPDM E/R, and
- through 10A fuse [No. 1, located in the fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to BCM terminal 67 and
- to combination meter terminals 13 and 23
- through grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 59
- through grounds E9, E15 and E24.

ILLUMINATION OPERATION BY LIGHTING SWITCH

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

- through 10A fuse (No. 37, located in the IPDM E/R)
- through IPDM E/R terminal 57
- to AV switch terminal 3 (with NAVI)
- to hazard switch terminal 3
- to audio unit terminal 8
- to glove box lamp terminal 1
- to display control unit terminal 14 (with NAVI)
- to 4WD shift switch terminal 7 (with 4-wheel drive)
- to front air control terminal 8
- to DVD player terminal 12 (with DVD entertainment system)
- to NAVI control unit terminal 25 (with NAVI)
- to rear air control terminal 1 (with auto A/C)
- to pedal adjusting switch terminal 5 (with adjustable pedals without memory)
- to door mirror remote control switch terminal 16
- to electric brake (pre-wiring) terminal 4 (with trailer tow 7 pin)
- to A/T device terminal 3
- to front heated seat switch LH and RH terminal 5 (with heated seats)
- to VDC OFF switch terminal 3 and
- to HDC switch terminal 5 (with hill descent control and hill start assist).

Illumination is controlled

- through combination meter terminal 22
- to AV switch terminal 4 (with NAVI)
- to hazard switch terminal 4
- to audio unit terminal 7
- to 4WD switch terminal 8 (with 4-wheel drive)
- to front air control terminal 9
- to DVD player terminal 10 (with DVD entertainment system)
- to pedal adjusting switch terminal 6 (with adjustable pedals without memory)
- to door mirror remote control switch terminal 15
- to A/T device terminal 5
- to front heated seat switch LH and RH terminal 6 (with heated seats)
- to VDC OFF switch terminal 4 and
- to HDC switch terminal 6 (with hill descent control and hill start assist).

ILLUMINATION

Ground is supplied

- to glove box lamp terminal 2
- to display control unit terminal 3 (with NAVI)
- to electric brake (pre-wiring) terminal 1 (with trailer tow 7 pin) and
- to rear air control terminal 3 (with auto A/C)
- through grounds M57, M61 and M79, and
- to NAVI control unit terminal 30 (with NAVI)
- through grounds B117 and B132.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

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

When the lighting switch is turned from OFF to 1ST or 2ND position (or if auto light system is activated) after illumination lamps are turned off by the battery saver control, the illumination lamps illuminate again.

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

CAN Communication System Description

EKS009MZ

Refer to [LAN-24, "CAN COMMUNICATION"](#) .

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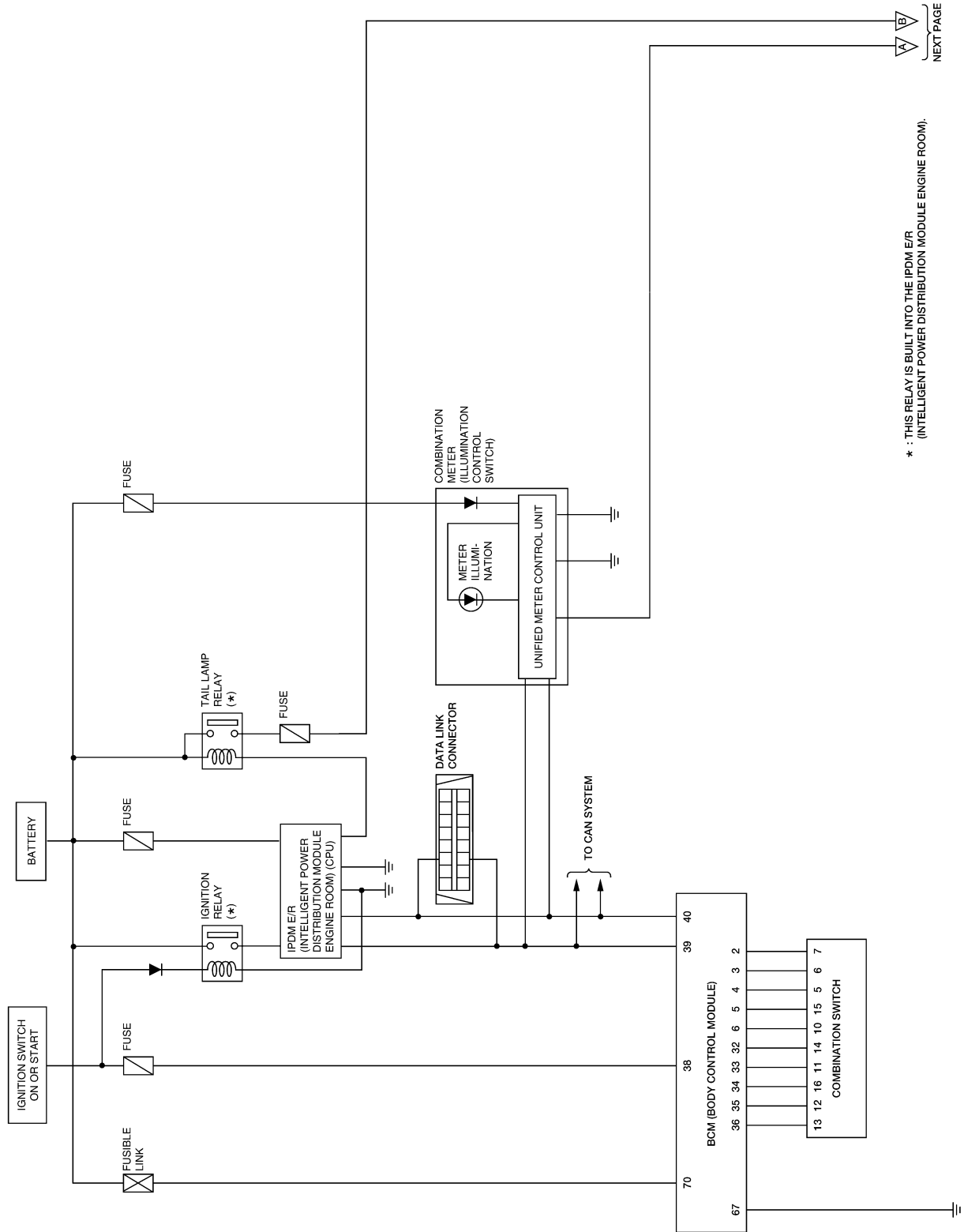
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ILLUMINATION

Schematic

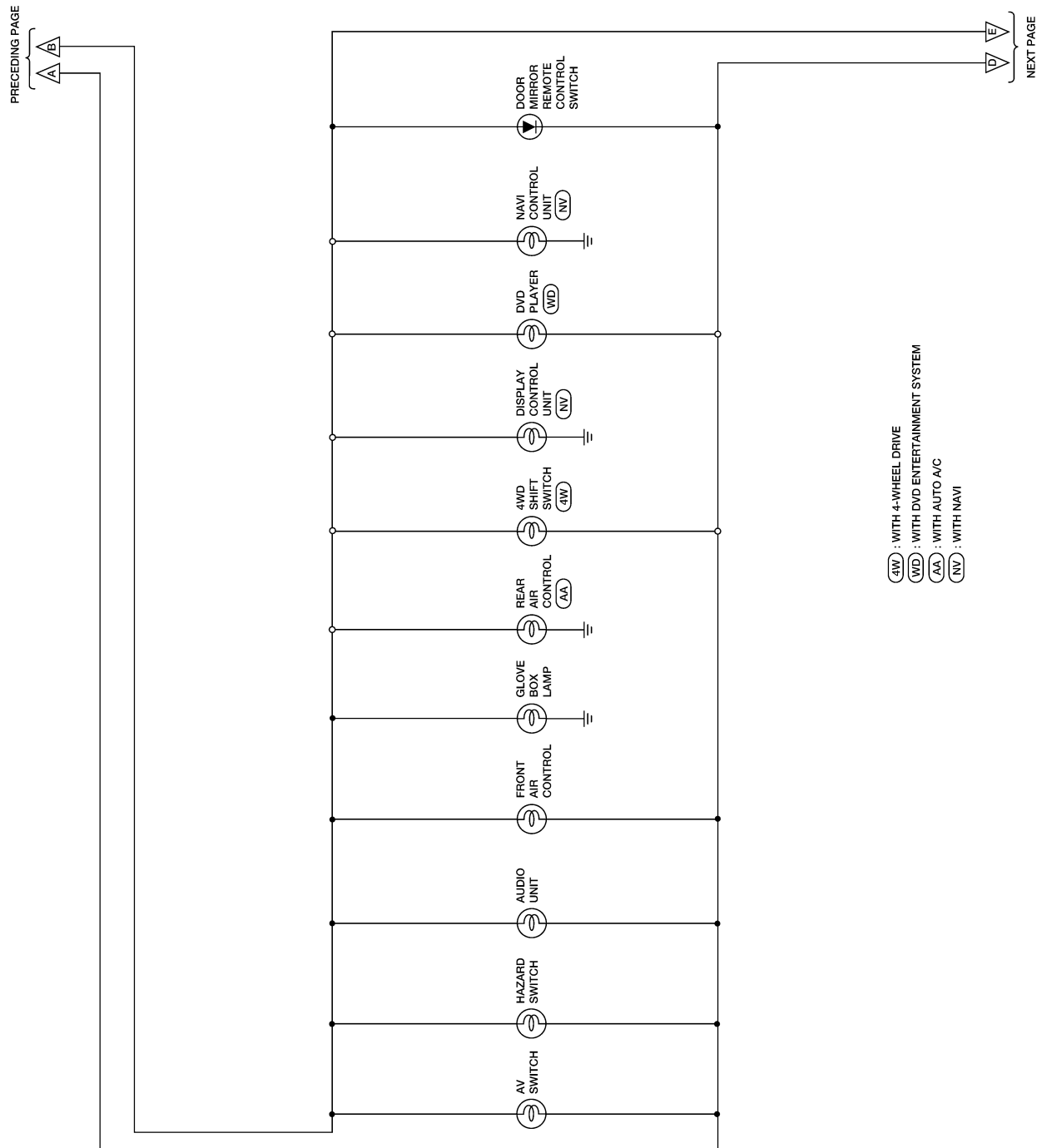
EKS009N0



* : THIS RELAY IS BUILT INTO THE IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM).

WKWA3095E

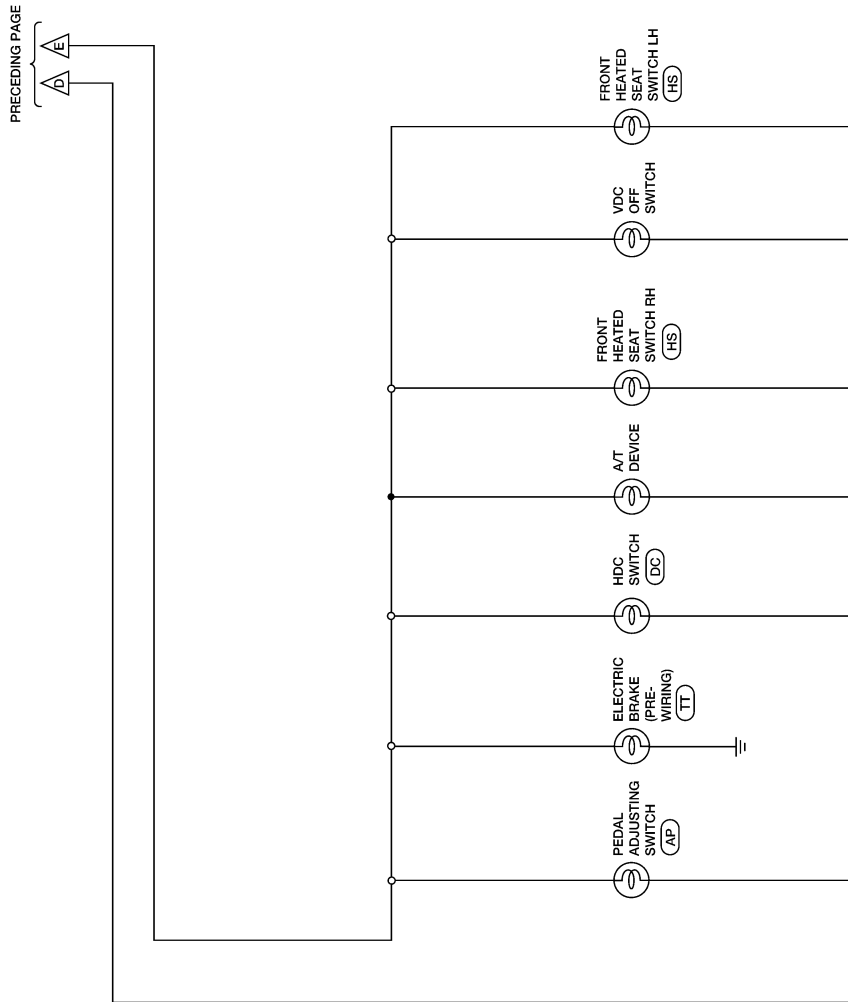
ILLUMINATION



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WKWA2074E

ILLUMINATION



- (HS) : WITH HEATED SEATS
- (DC) : WITH HILL DESCENT CONTROL AND HILL START ASSIST
- (AP) : WITH ADJUSTABLE PEDALS WITHOUT MEMORY
- (TT) : TRAILER TOW 7 PIN

WKWA3096E

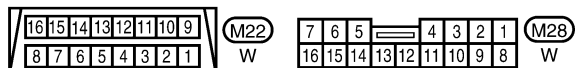
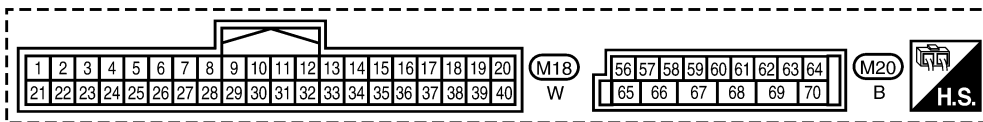
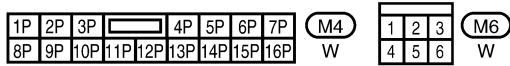
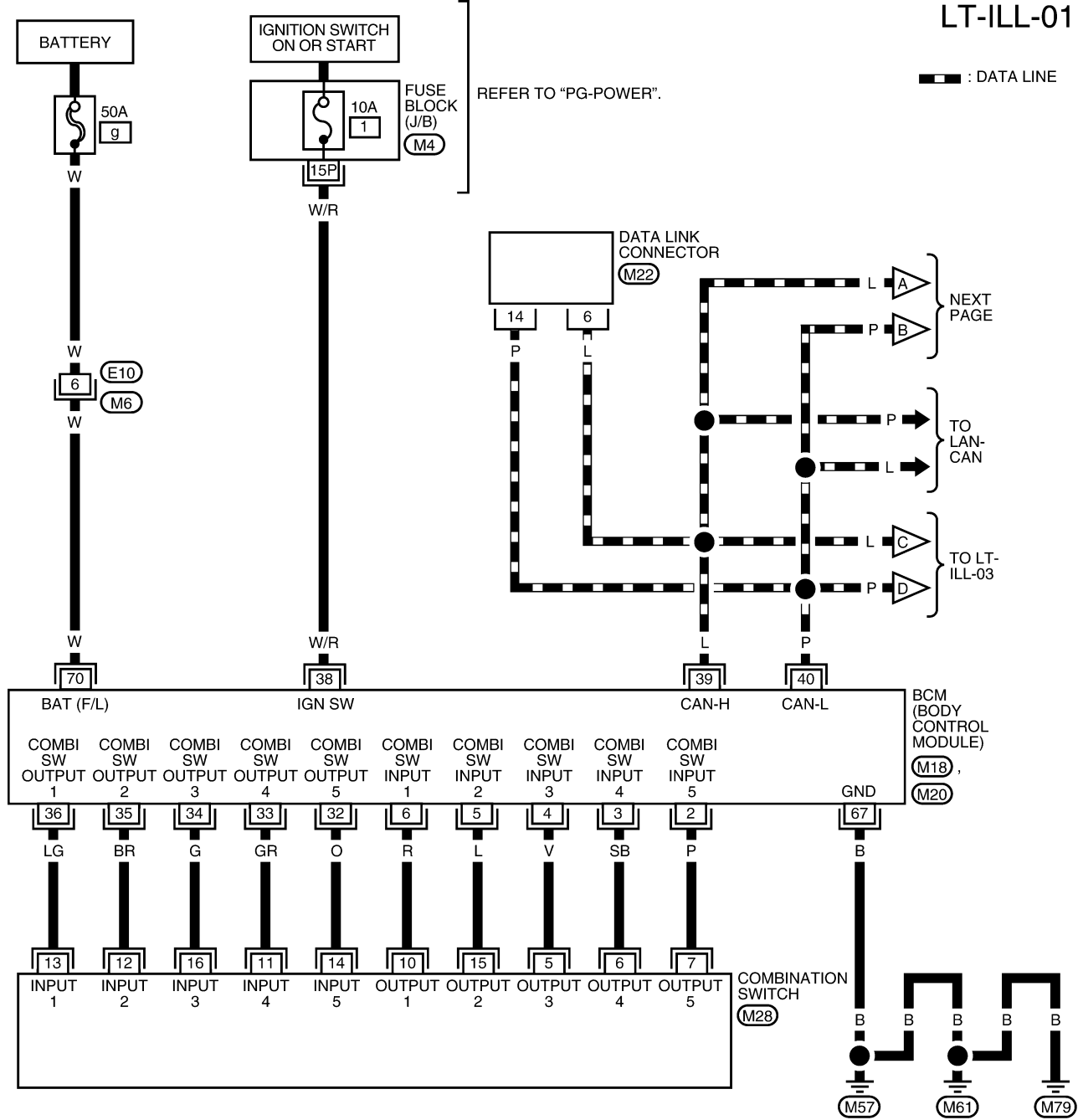
ILLUMINATION

Wiring Diagram — ILL —

EKS009N1

LT-ILL-01

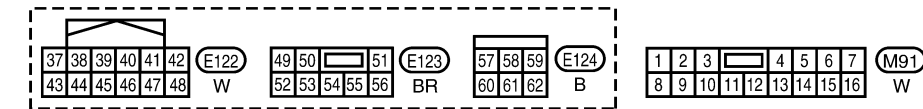
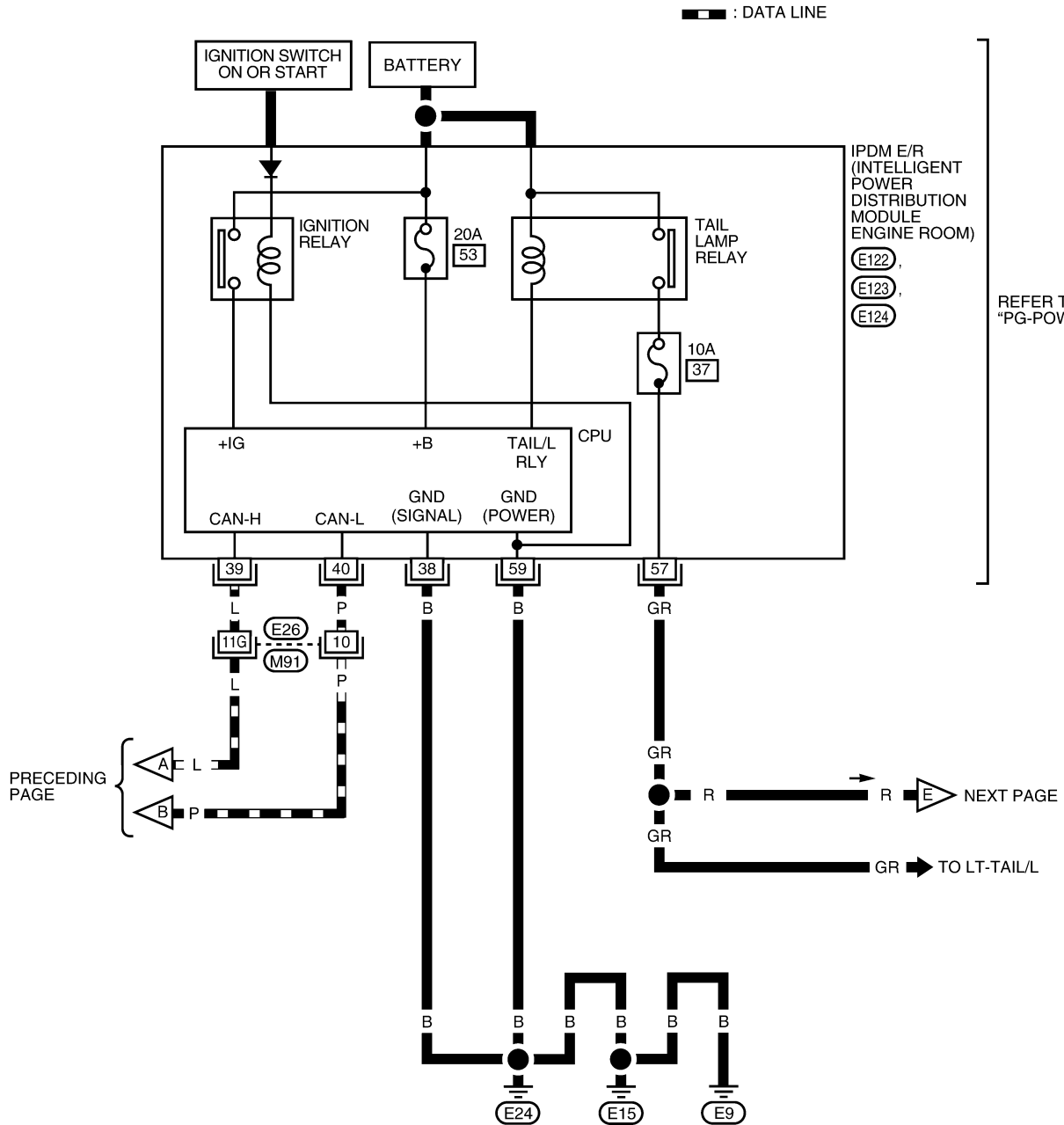
— : DATA LINE



WKWA3097E

ILLUMINATION



LT-ILL-02

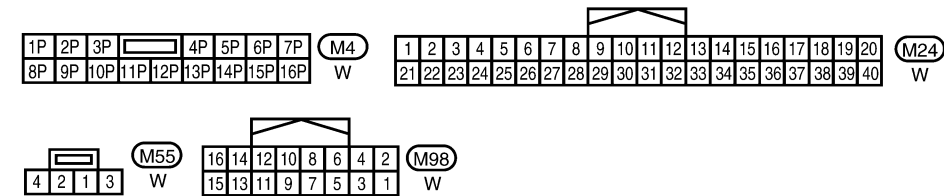
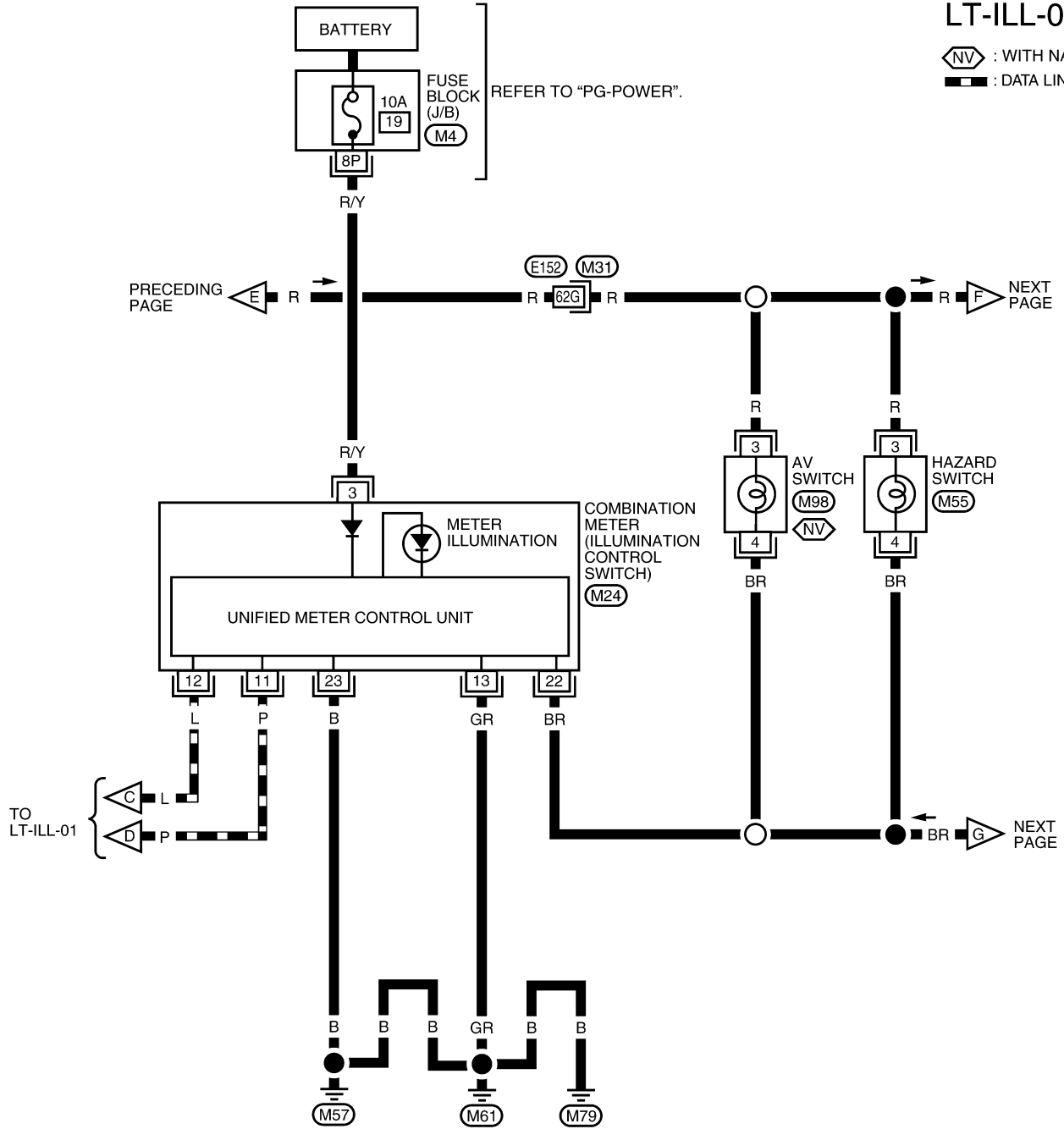


WKWA2077E

ILLUMINATION

LT-ILL-03

 : WITH NAVI
 : DATA LINE

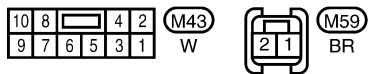
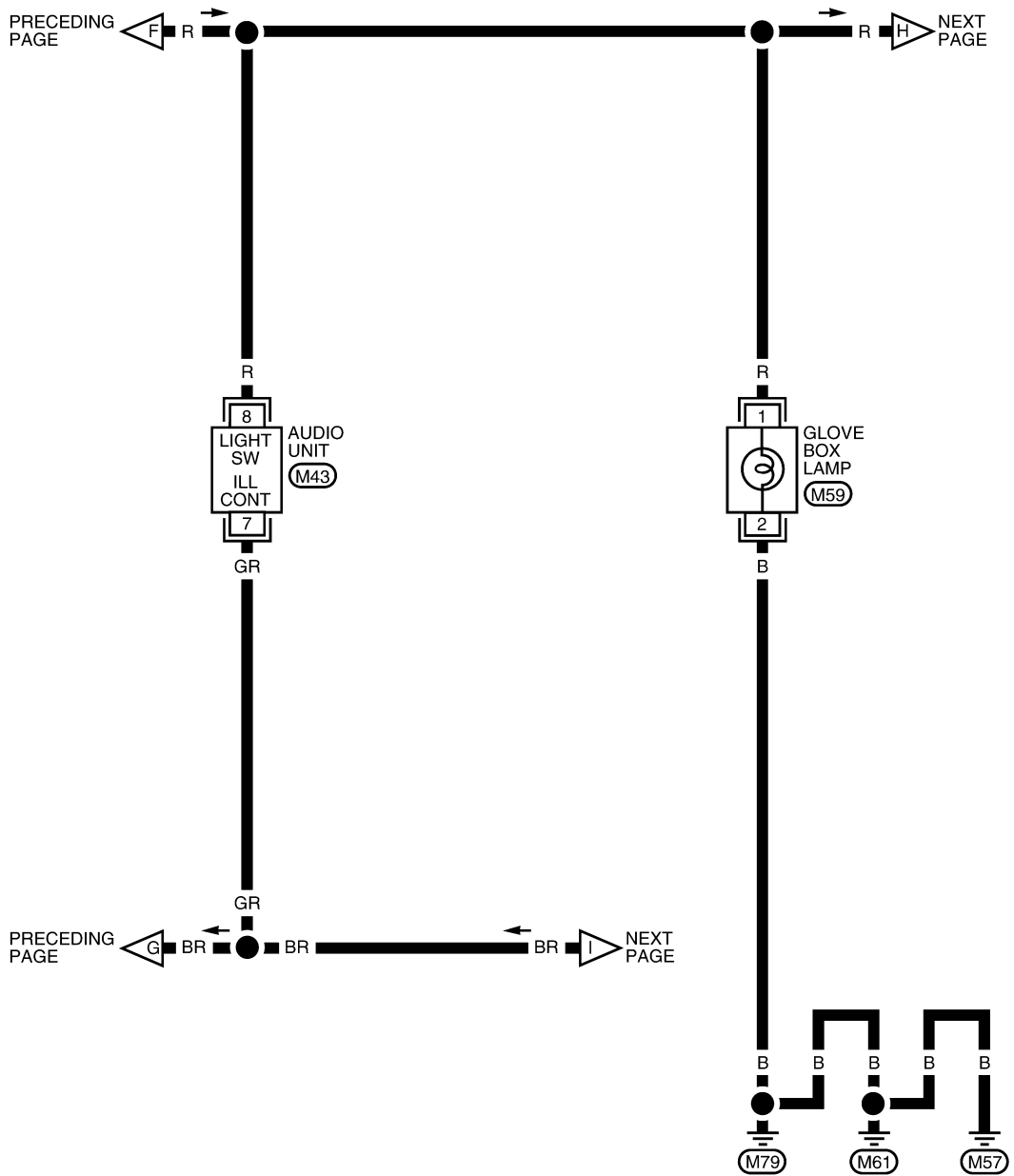


REFER TO THE FOLLOWING.
 (M31) - SUPER MULTIPLE JUNCTION (SMJ)

WKWA3098E

ILLUMINATION


LT-ILL-04



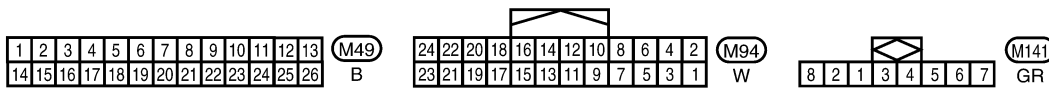
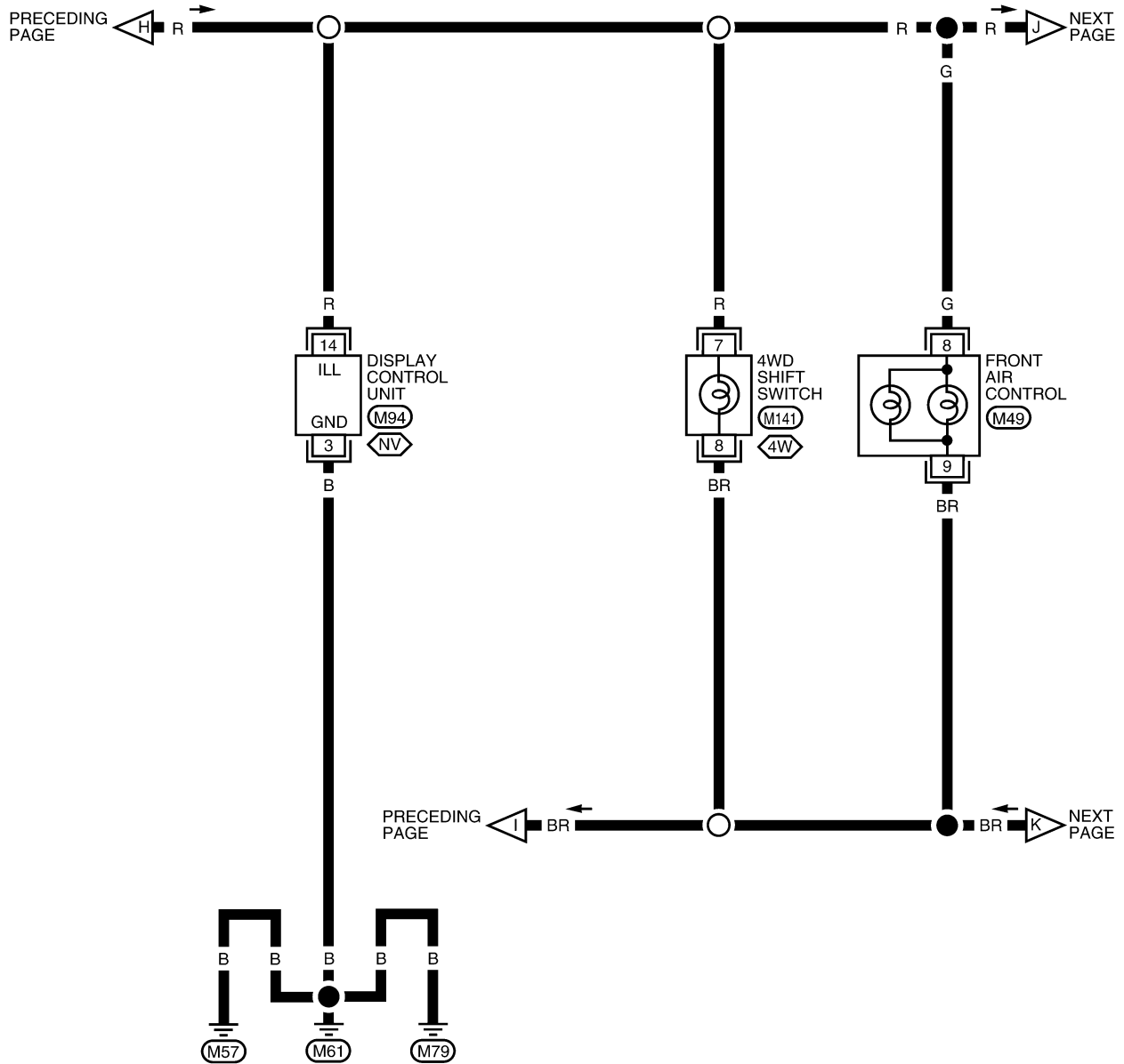
WKWA2079E

ILLUMINATION

LT-ILL-05

 : WITH 4-WHEEL DRIVE




 : WITH NAVI

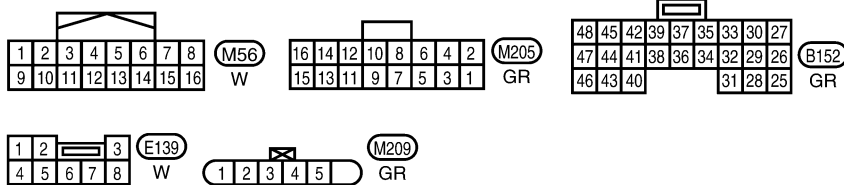
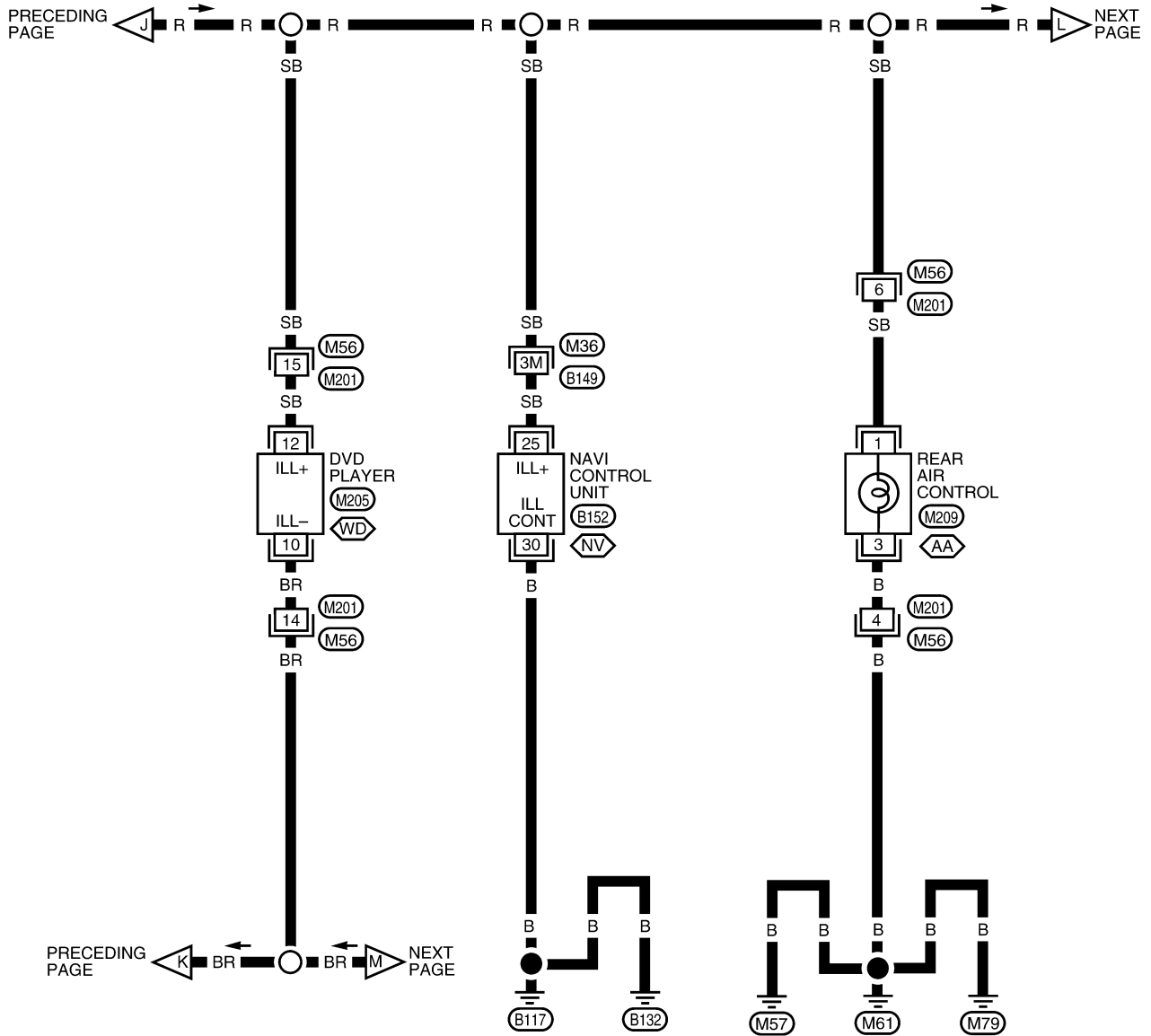



WKWA2080E

ILLUMINATION

LT-ILL-06

-  : WITH NAVI
-  : WITH DVD ENTERTAINMENT SYSTEM
-  : WITH AUTO A/C



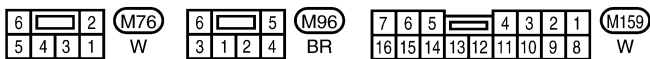
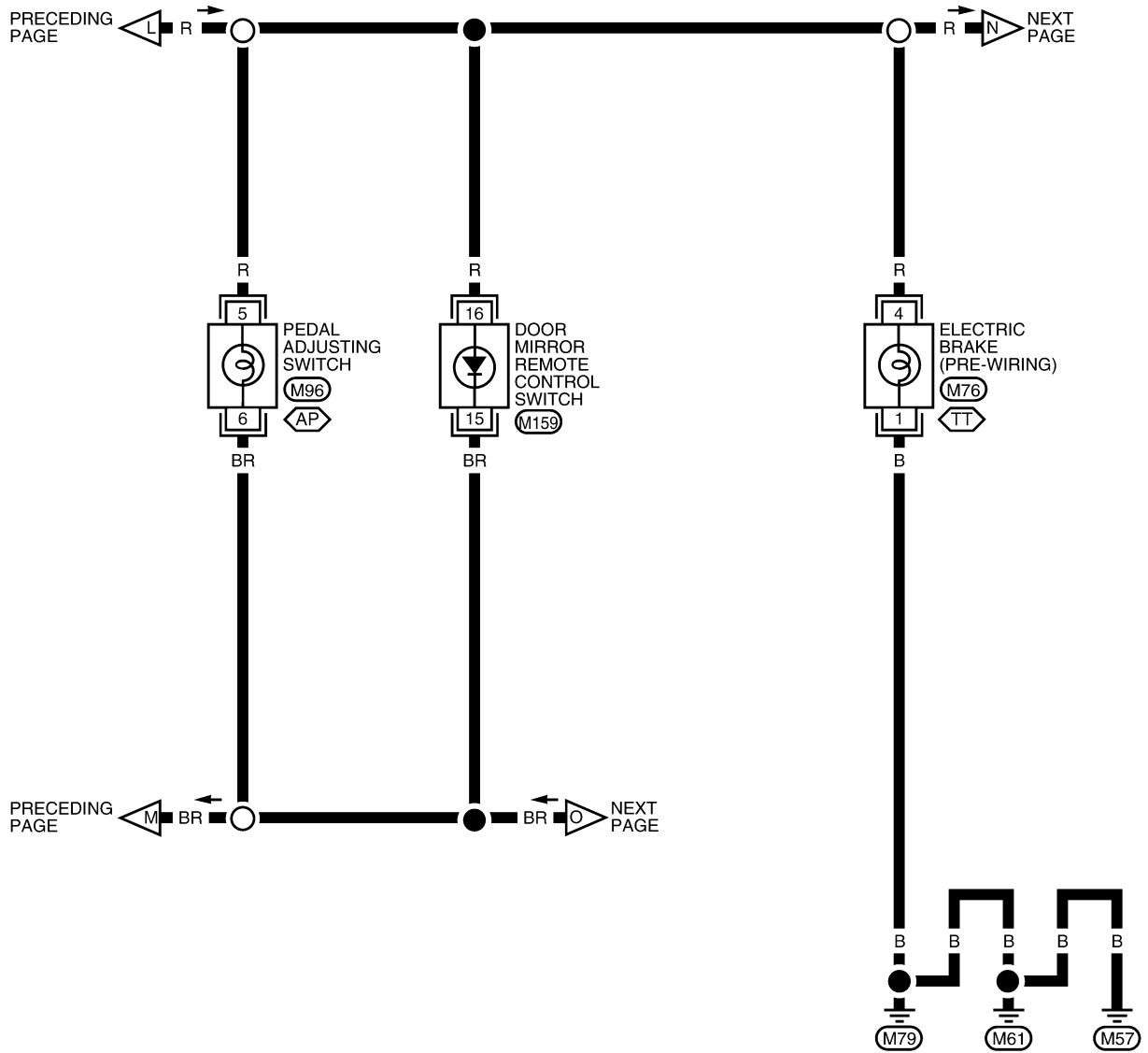
REFER TO THE FOLLOWING.
 - SUPER MULTIPLE JUNCTION (SMJ)

WKWA2081E

ILLUMINATION

LT-ILL-07

⬡(TT) : TRAILER TOW 7 PIN
 ⬡(AP) : WITH ADJUSTABLE PEDALS WITHOUT MEMORY

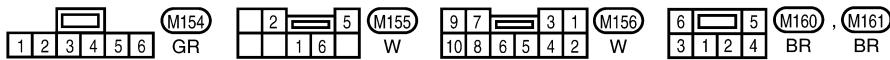
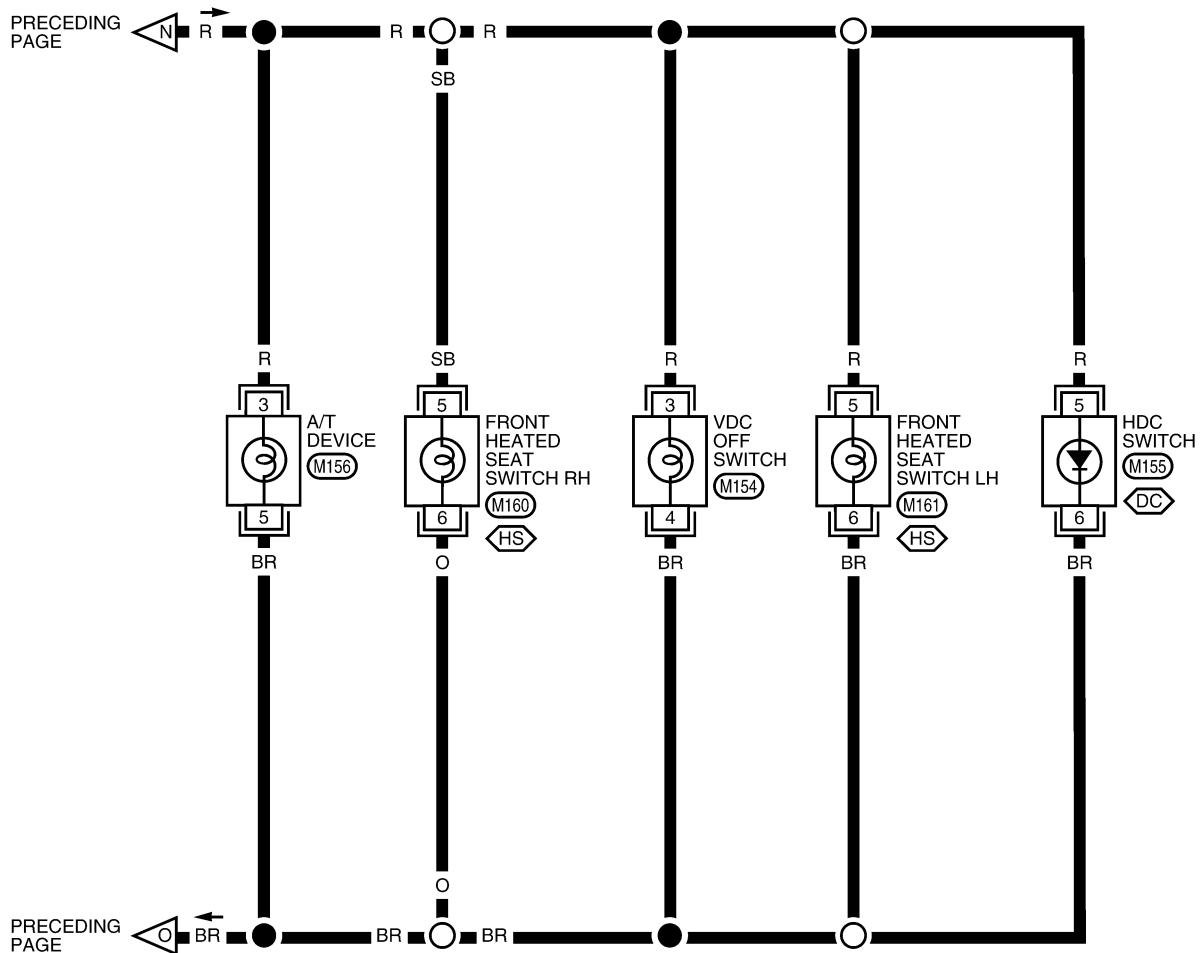


WKWA2082E

ILLUMINATION

LT-ILL-08

HS : WITH HEATED SEATS
DC : WITH HILL DESCENT CONTROL AND HILL START ASSIST



WKWA2083E

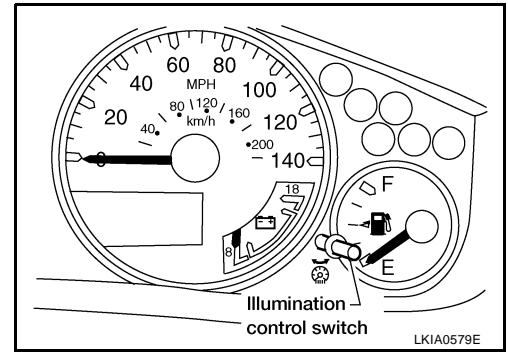
ILLUMINATION

Removal and Installation

ILLUMINATION CONTROL SWITCH

The illumination control switch is a function of the combination meter, and not serviced separately. For replacement, refer to [IP-13, "COMBINATION METER"](#)

EKS009N2



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BULB SPECIFICATIONS

BULB SPECIFICATIONS

PFP:26297

Headlamp

EKS009N3

Item	Wattage (W)*
Low/High	65/55 (HB5)

*: Always check with the Parts Department for the latest parts information.

Exterior Lamp

EKS009N4

Item	Wattage (W)*	
Front combination lamp	Turn signal lamp/parking lamp	28/8
	Side marker	3.8
Rear combination lamp	Stop/Tail lamp	27/8
	Turn signal lamp	27
	Back-up lamp	18
Front fog lamp	55	
License plate lamp	5	
High-mounted stop lamp	*	

*: Always check with the Parts Department for the latest parts information.

Interior Lamp/Illumination

EKS009N5

Item	Wattage (W)*
Glove box lamp	3.4
Room/Map lamp	8
A/T device lamp	3
Cargo lamp	8
Vanity lamp	*
Personal lamp	8

*: Always check with the Parts Department for the latest parts information.