

LT
SECTION
LIGHTING SYSTEM

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PRECAUTIONS

PRECAUTIONS

PFP:00011

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

AKS009EE

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

WARNING:

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

Precautions for Battery Service

AKS003RF

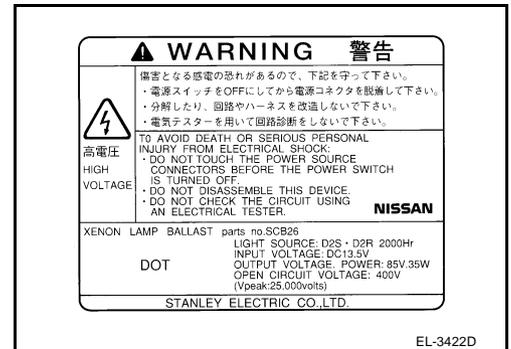
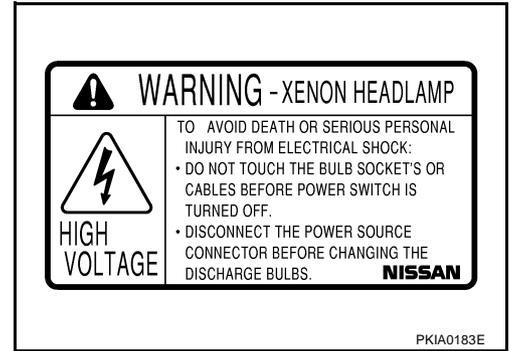
Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

PRECAUTIONS

General Precautions for Service Operations

AKS000SE

- Never work with wet hands.
- Xenon headlamp includes high voltage generating part. Be sure to disconnect battery negative cable (negative terminal) or power fuse before removing, installing, or touching the xenon headlamp (including lamp bulb).
- Turn the lighting switch OFF before disconnecting and connecting the connector.
- When turning the xenon headlamp on and while it is illuminated, never touch the harness, bulb, and socket of the headlamp.
- When checking the headlamp on/off operation, check it on vehicle and with the power connected to the vehicle-side connector.
- Do not touch the headlamp bulb glass surface with bare hands or allow oil or grease to get on it. Do not touch the headlamp bulb just after the headlamp is turned off, because it is very hot.
- Install the xenon headlamp bulb socket correctly. If it is installed improperly, high-voltage leak or corona discharge may occur that can melt the bulb, connector, and housing. Do not illuminate the xenon headlamp bulb out of the headlamp housing. Doing so can cause fire and harm your eyes.
- When the bulb has burned out, wrap it in a thick vinyl bag and discard. Do not break the bulb.
- Leaving the bulb removed from the headlamp housing for a long period of time can deteriorate the performance of the lens and reflector (dirt, clouding). Always prepare a new bulb and have it on hand when replacing the bulb.
- When adjusting the headlamp aiming, turn the aiming adjustment screw only in the tightening direction. (If it is necessary to loosen the screw, first fully loosen the screw, and then turn it in the tightening direction.)
- Do not use organic solvent (paint thinner or gasoline) to clean lamps and to remove old sealant.



Wiring Diagrams and Trouble Diagnosis

AKS000SF

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.

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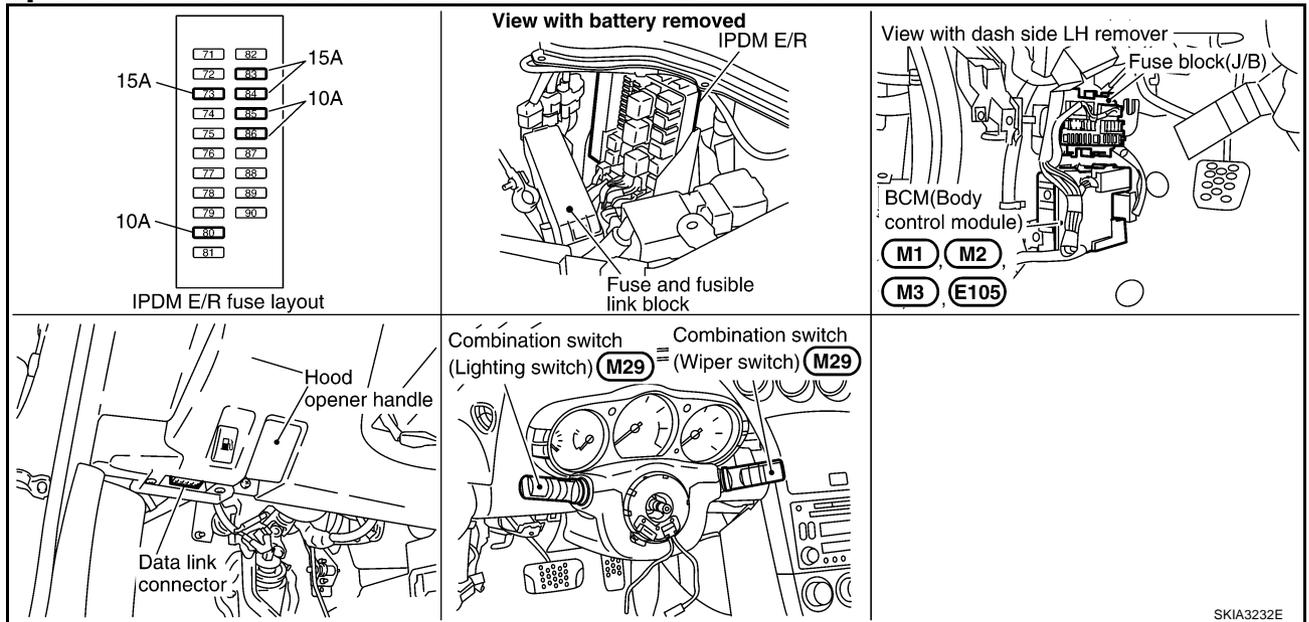
HEADLAMP (FOR USA)

PFP:26010

HEADLAMP (FOR USA)

Component Parts and Harness Connector Location

AKS0097A



SKIA3232E

System Description

AKS0097B

Control of the headlamp system operation is dependent upon the position of the combination switch (lighting switch). When the lighting switch is placed in the 2ND position, the BCM (body control module) receives input signal requesting the headlamps (and tail lamps) illuminate. This input signal is communicated to the IPDM E/R (intelligent power distribution module engine room) across the CAN communication lines. The CPU (central processing unit) of the IPDM E/R (intelligent power distribution module engine room) controls the headlamp high and headlamp low relay coils. These relays, when energized, direct power to the respective headlamps, which then illuminate.

OUTLINE

Power is supplied at all times

- to headlamp high relay [located in IPDM E/R (intelligent power distribution module engine room)], and
- to headlamp low relay [located in IPDM E/R (intelligent power distribution module engine room)], and
- to BCM (body control module) terminal 7
- through 40A fusible link (letter F, located in fuse and fusible link block)
- through 15A fuse [No.73, located in IPDM E/R (intelligent power distribution module engine room)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)].

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

- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in fuse block (J/B)]
- to CPU (central processing unit) [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No.80, located in IPDM E/R (intelligent power distribution module engine room)]

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17, E43 and F152.

Low Beam Operation

With the lighting switch in 2ND position, the BCM receives input signal requesting by combination switch reading function (Refer to [LT-76. "Combination Switch Reading Function"](#)) the headlamps to illuminate. This input

HEADLAMP (FOR USA)

signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the headlamp low relay coil, which when energized, power is supplied.

- through 15A fuse [No. 83, located in IPDM E/R]
- through IPDM E/R terminal 27
- to headlamp RH terminal 7, and
- through 15A fuse [No. 84, located in IPDM E/R]
- through IPDM E/R terminal 21
- to headlamp LH terminal 7.

Ground is supplied

- to each headlamp terminal 8
- through grounds E17,E43 and F152 and.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the headlamp high relay coil, which when energized, directs power

- to 10A fuse [No. 86, located in IPDM E/R]
- through IPDM E/R terminal 24
- to headlamp RH terminal 3, and
- to 10A fuse [No. 85, located in IPDM E/R]
- through IPDM E/R terminal 22
- to headlamp LH terminal 3.

Ground is supplied

- to headlamp RH terminal 4
- through grounds E17,E43 and F152, and
- to headlamp LH terminal 4
- through grounds E17,E43 and F152

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

Unified meter and A/C amp receives signal from the BCM across the CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

Refer to [LT-76. "Combination Switch Reading Function"](#) .

EXTERIOR LAMP BATTERY SAVER CONTROL

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

Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamps are turned off.

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

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to [BL-96. "VEHICLE SECURITY \(THEFT WARNING\) SYSTEM"](#) .

XENON HEADLAMP

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

Following are some of the many advantages of the xenon type headlamp.

- The light produced by the headlamps is a white color comparable to sunlight that is easy on the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.

HEADLAMP (FOR USA)

- The light features a high relative spectral distribution at wavelengths to which the human eye is most sensitive. This means that even in the rain, more light is reflected back from the road surface toward the vehicle, for added visibility.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

CAN Communication System Description

AKS0097C

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

CAN Communication Unit

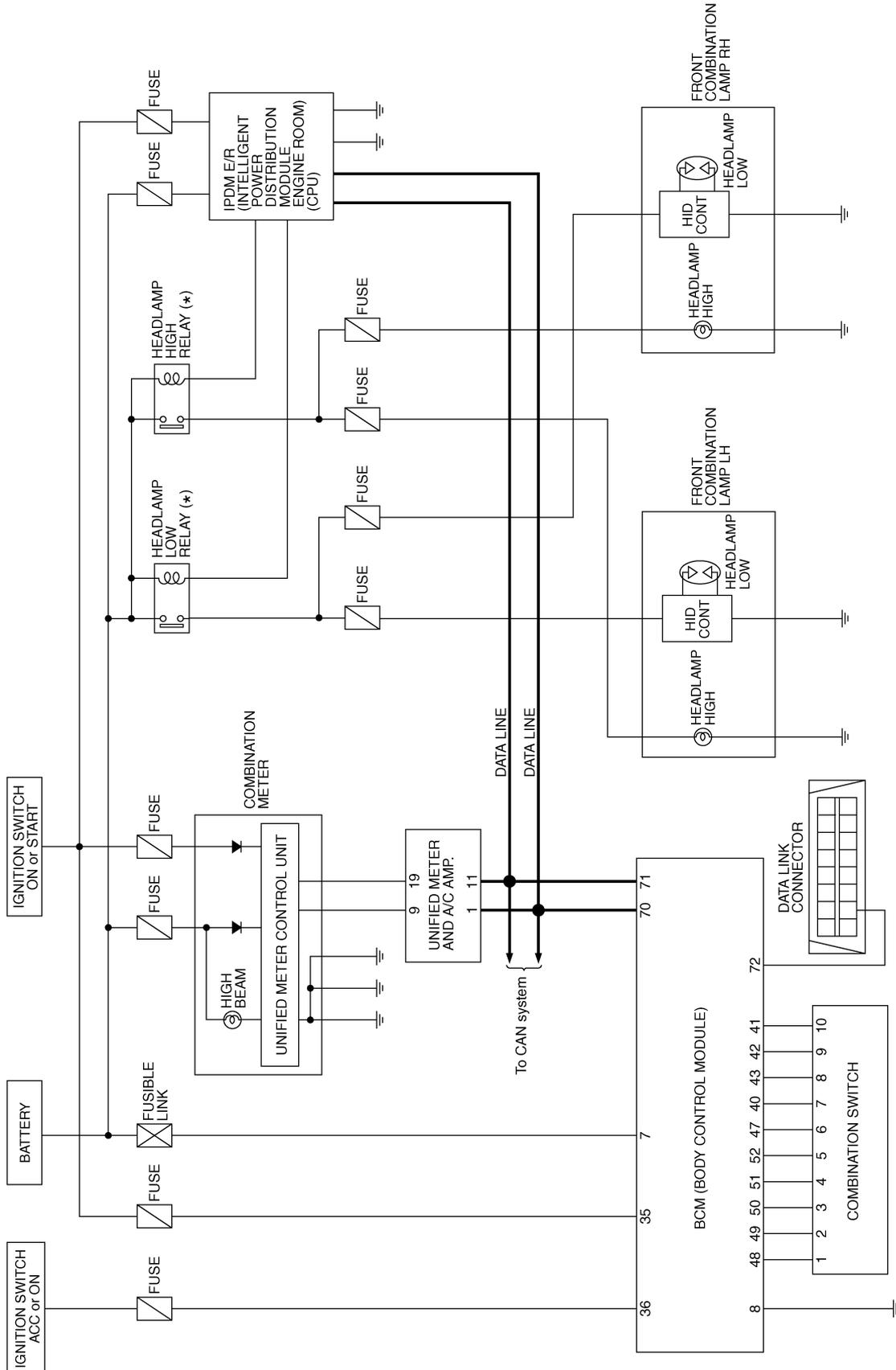
AKS0097D

Refer to [LAN-4, "CAN Communication Unit"](#) .

HEADLAMP (FOR USA)

Schematic

AKS0097E



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

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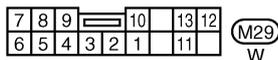
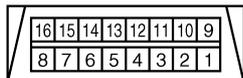
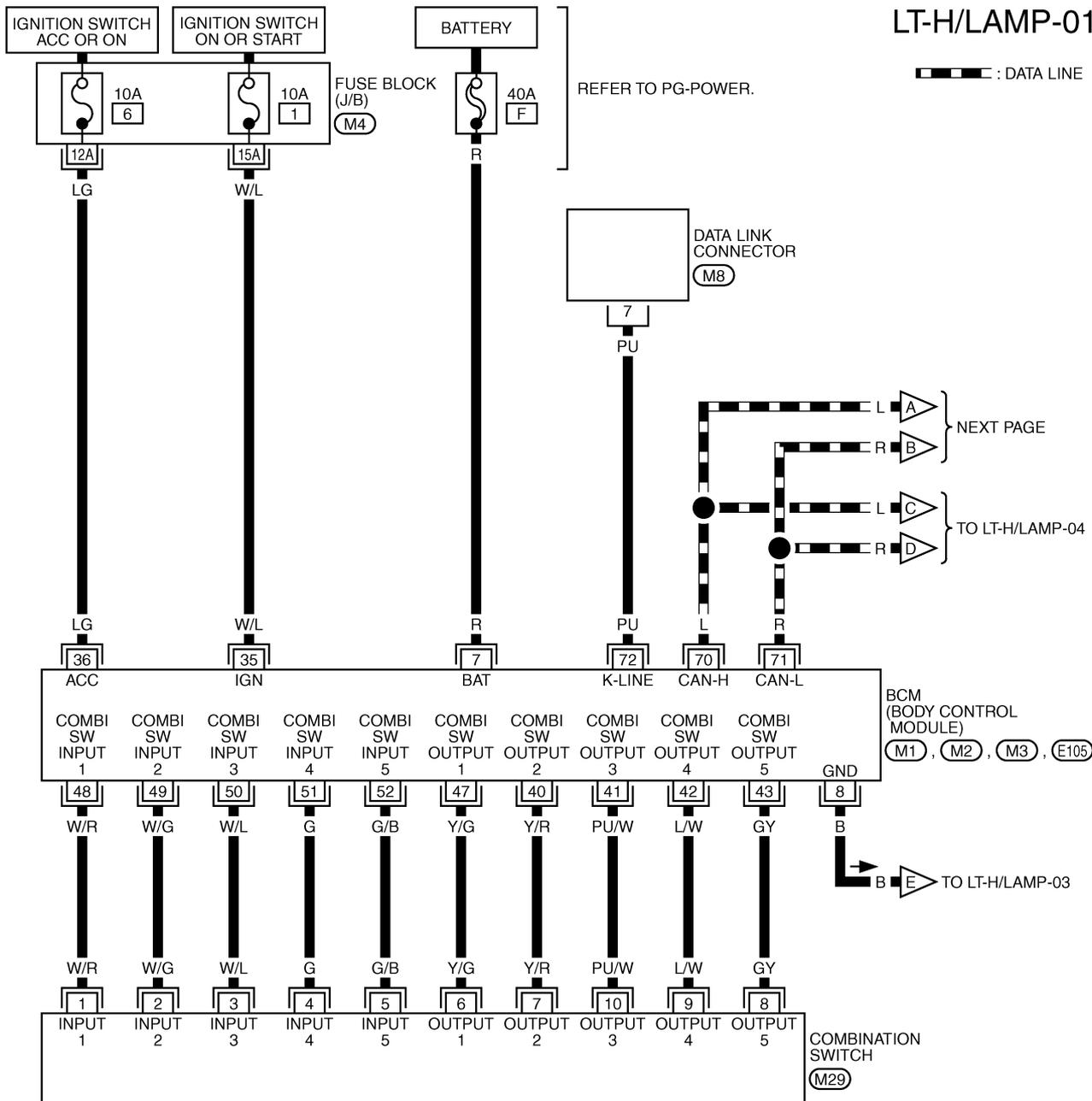
HEADLAMP (FOR USA)

AKS0097F

Wiring Diagram — H/LAMP —

LT-H/LAMP-01

▬ : DATA LINE



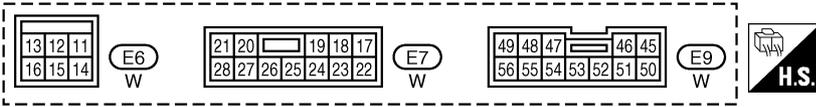
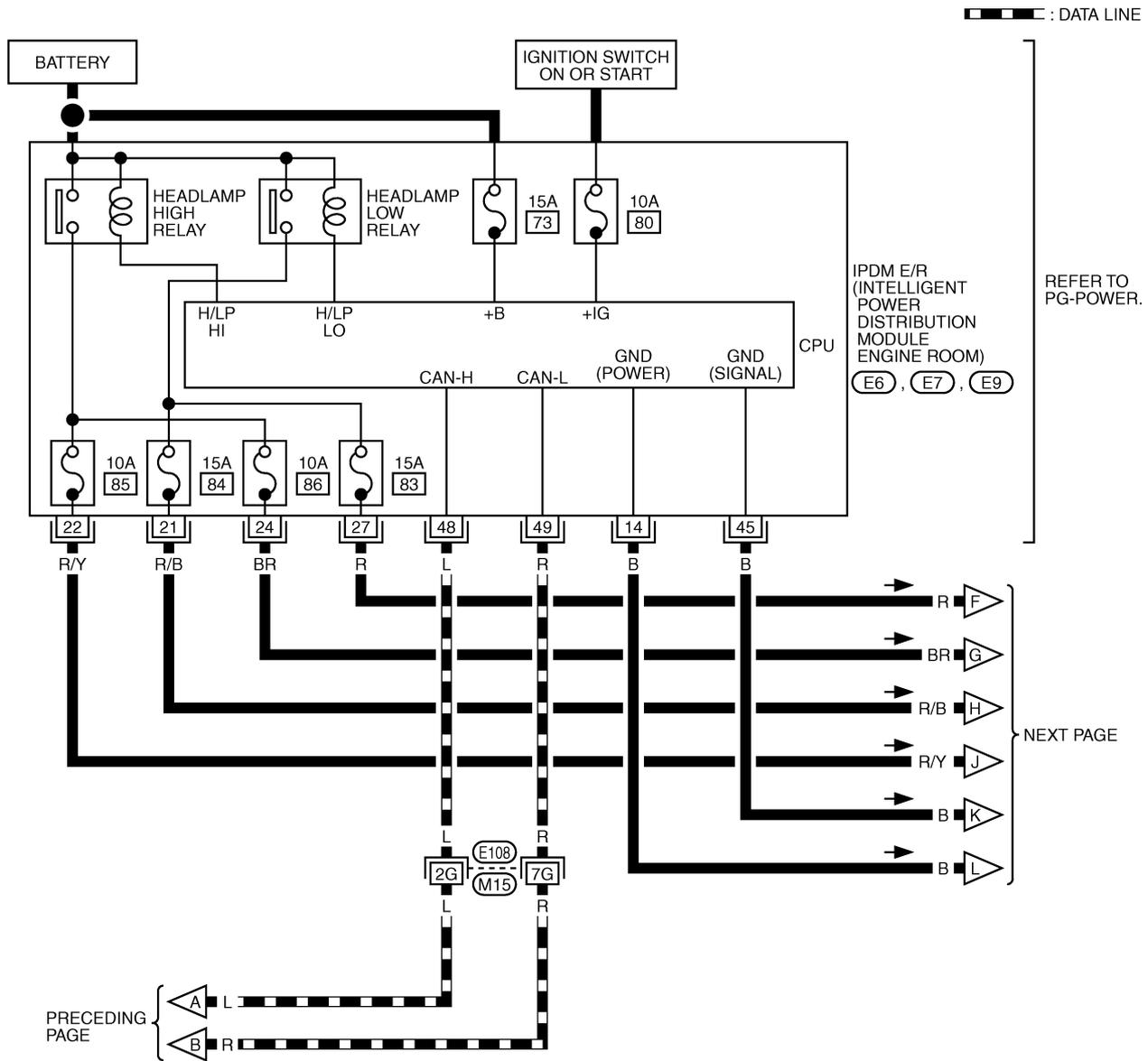
REFER TO THE FOLLOWING.

- (M4) - FUSE BLOCK-JUNCTION BOX (J/B)
- (M1), (M2), (M3), (E105) - ELECTRICAL UNITS

TKWT0426E

HEADLAMP (FOR USA)

LT-H/LAMP-02

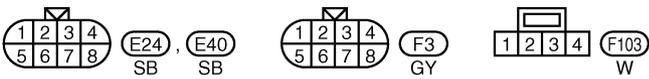
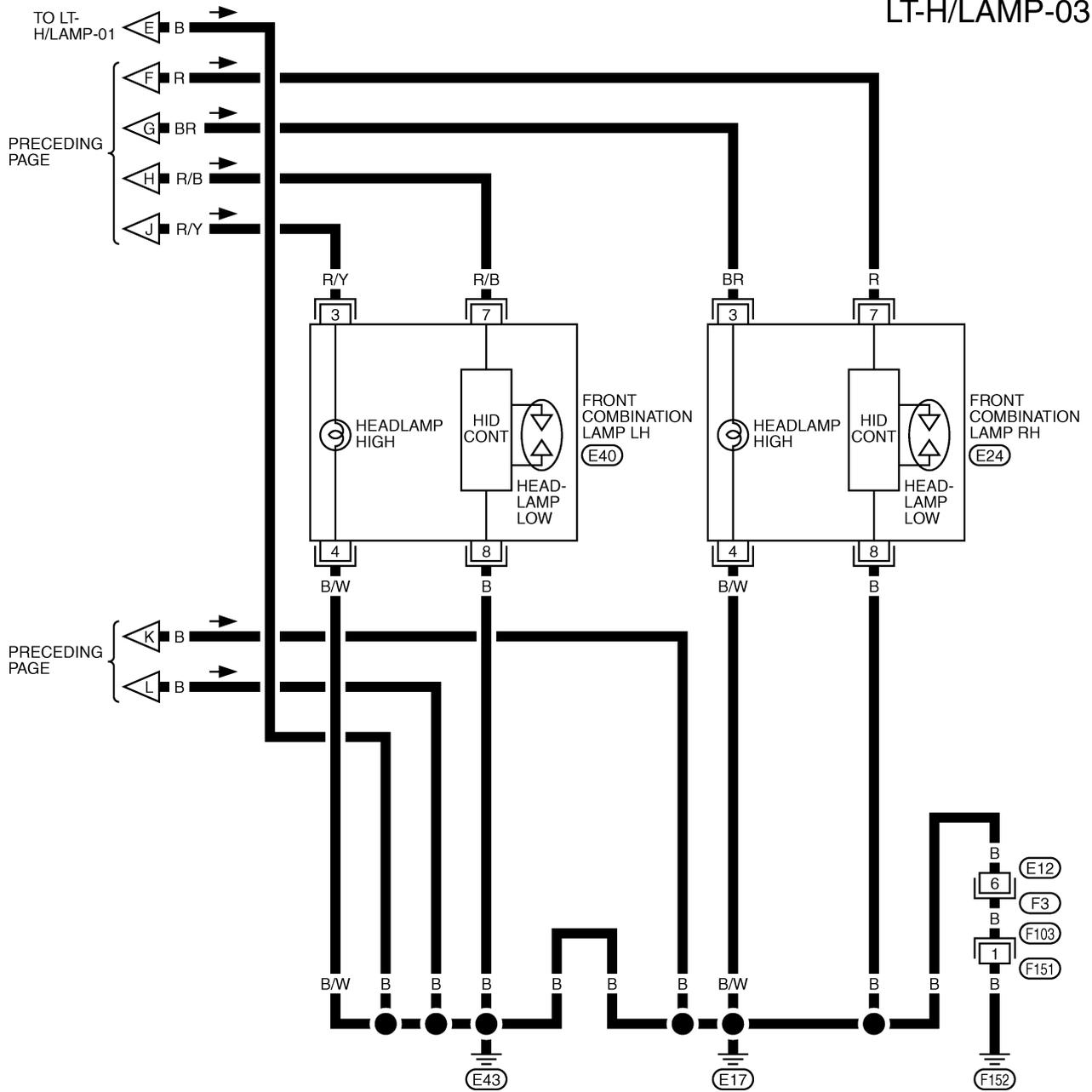


REFER TO THE FOLLOWING.

(E108) -SUPER MULTIPLE JUNCTION (SMJ)

HEADLAMP (FOR USA)

LT-H/LAMP-03

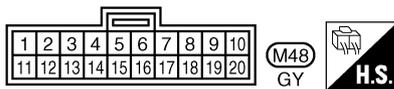
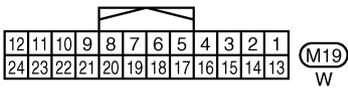
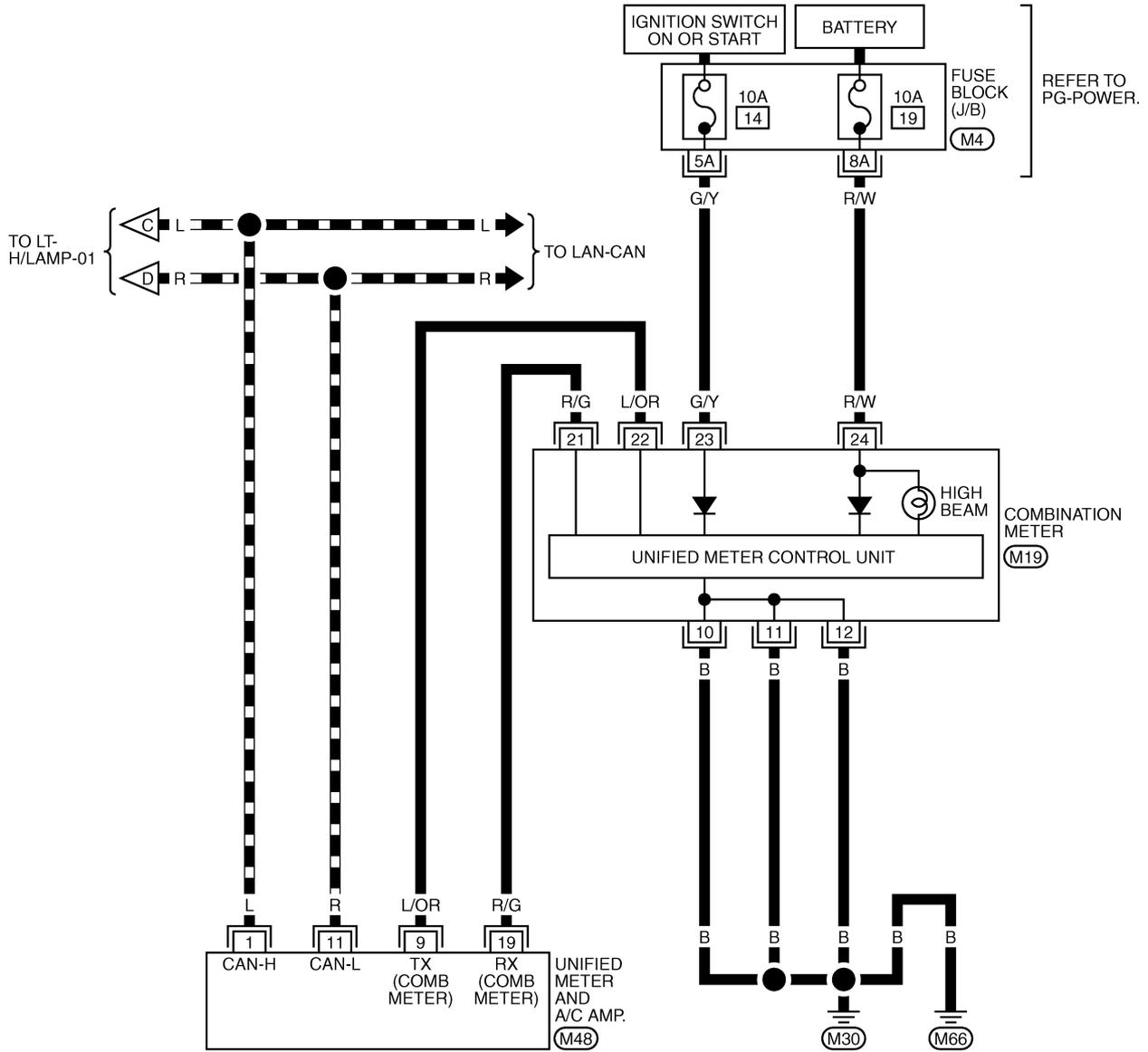


TKWT0832E

HEADLAMP (FOR USA)

LT-H/LAMP-04

▬ : DATA LINE



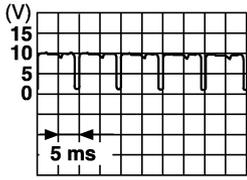
REFER TO THE FOLLOWING.
 (M4) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0429E

HEADLAMP (FOR USA)

Terminals and Reference Value for BCM

AKS0097G

Terminal No.	Wire color	Item	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	R	Battery power supply	OFF	—	Battery voltage
8	B	Ground	ON	—	Approx. 0 V
35	W/L	Ignition switch (ON)	ON	—	Battery voltage
36	LG	Ignition switch (ACC)	ACC	—	Battery voltage
40	Y/R	Combination switch output 2	ON	Lighting, turn, wiper OFF	
41	PU/W	Combination switch output 3			
42	L/W	Combination switch output 4			
43	GY	Combination switch output 5			
47	Y/G	Combination switch output 1			
48	W/R	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	W/G	Combination switch input 2			
50	W/L	Combination switch input 3			
51	G	Combination switch input 4			
52	G/B	Combination switch input 5			
70	L	CAN-H	—	—	—
71	R	CAN-L	—	—	—
72	PU	K-LINE	—	—	—

SKIA1119J

How to Proceed With Trouble Diagnosis

AKS0097H

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-6, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-15, "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.

HEADLAMP (FOR USA)

AKS00971

Preliminary Check INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86

Refer to [LT-10, "Wiring Diagram — H/LAMP —"](#) .

OK or NG

OK >> GO TO 2.

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

2. POWER SUPPLY CIRCUIT CHECK FOR BCM

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

Terminals		(-)	Ignition switch position		
Connector	Terminal (Wire color)		OFF	ACC	ON
	(+)				
E105	7 (R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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

3. GROUND CIRCUIT CHECK FOR BCM

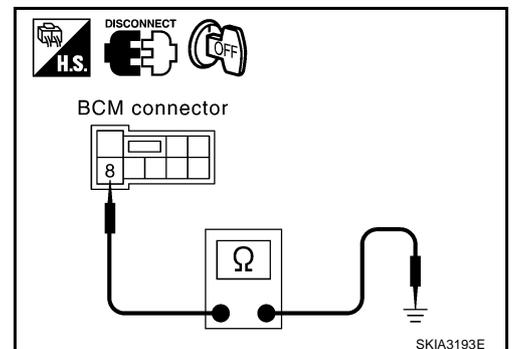
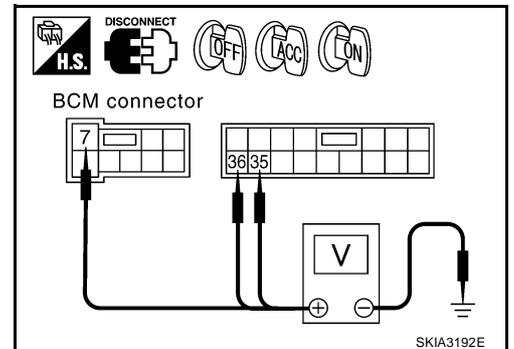
Check continuity between BCM harness connector and ground.

Terminals		Continuity
Connector	Terminal (wire color)	
E105	8 (B)	Ground Yes

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



HEADLAMP (FOR USA)

AKS0097J

CONSULT-II Function

- CONSULT-II performs the following functions communicating with BCM.

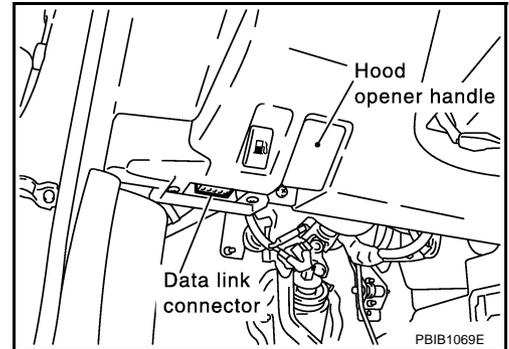
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result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

CONSULT-II BASIC OPERATION

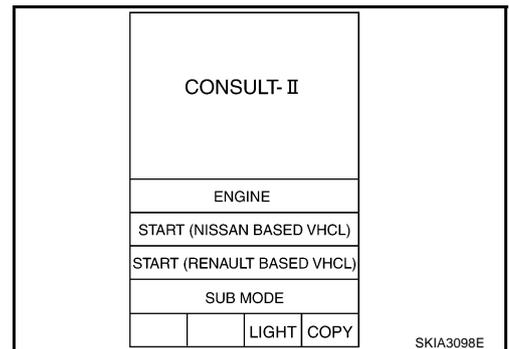
CAUTION:

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

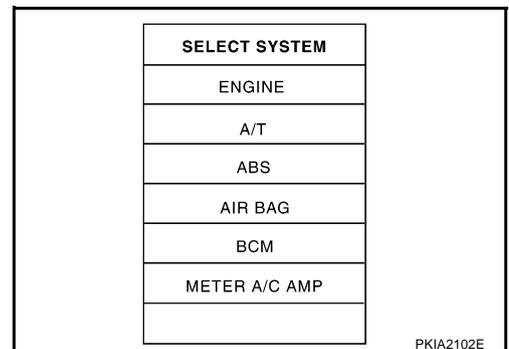
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



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

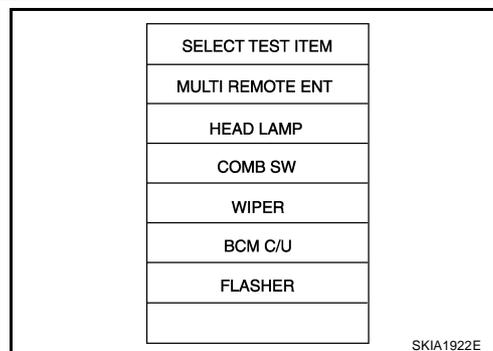


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



HEADLAMP (FOR USA)

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



A
B
C
D

WORK SUPPORT

Operation Procedure

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

E
F
G

Display Item List

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

H
I

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 "DATA MONITOR" screen.

LT

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

L
M

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.
AUTO LIGHT SW ^{Note} "OFF"	—
TAIL LAMP SW "ON/OFF"	Displays status (lighting switch 1st or 2nd position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
HEAD LAMP SW "ON/OFF"	Displays status (headlamp switch: ON/Others: OFF) of headlamp switch judged 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.

HEADLAMP (FOR USA)

Monitor item		Contents
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 ^{Note}	"OFF"	—
DOOR SW - DR	"ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR ^{Note}	"OFF"	—
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR ^{Note}	[0V]	Display always indicates "0.00V"

NOTE:

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP (LOW)	Allows headlamp relay to operate by switching ON-OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP ^{Note}	—

NOTE:

This item is displayed, but cannot test it.

Headlamp High Beam Does Not Illuminate (Both Sides)

AKS0097K

1. HEAD LAMP AUTO ACTIVE TEST

1. Start auto active test. Refer to [PG-19, "Auto Active Test"](#) .
2. Check whether headlamp HI operates.

OK or NG

- OK >> GO TO 4.
- NG >> GO TO 2.

HEADLAMP (FOR USA)

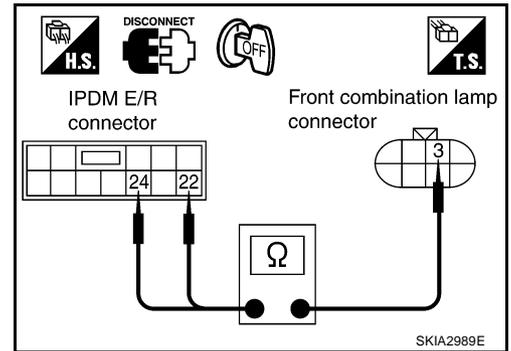
2. HEADLAMPS CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front combination lamp LH or RH connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 24(BR) and front combination lamp RH harness connector E24 terminal 3(BR).

Continuity should exist

4. Check continuity between IPDM E/R harness connector E7 terminal 22(R/Y) and front combination lamp LH harness connector E40 terminal 3(R/Y).

Continuity should exist



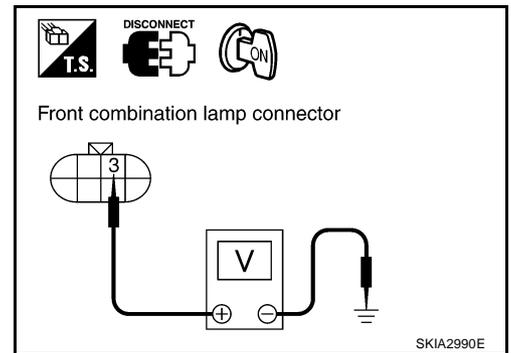
OK or NG

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

3. HEADLAMP INPUT SIGNAL CHECK

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to [PG-19, "Auto Active Test"](#). When headlamp HI is operating, check voltage between front combination lamp LH or RH and ground.

Terminals			(-)	Voltage
(+)		Terminal (wire color)		
Connector				Ground
RH	E24	3 (BR)	Ground	
LH	E40	3 (R/Y)		



OK or NG

- OK >> Check headlamp bulbs.
- NG >> Replace IPDM E/R.

4. COMBINATION SWITCH CIRCUIT CHECK

Select BCM on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 5.

CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to [BCS-13, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-81, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

HEADLAMP (FOR USA)

5. COMBINATION SWITCH INPUT SIGNAL CHECK

Select BCM on CONSULT-II. With "HEADLAMP" data monitor, check that "HI BEAM SW" turns ON-OFF linked with operation of lighting switch.

OK or NG

- OK >> Replace BCM.
- NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
ACC ON SW	ON
AUTO LIGHT SW	OFF
TAIL LAMP SW	OFF
HEAD LAMP SW	OFF
HI BEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF

LKIA0074E

Headlamp High Beam Does Not Illuminate (One Side)

AKS0097L

1. CHECK BULB

Inspect bulbs of lamps which do not illuminate.

OK or NG

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

2. HEAD LAMP LH OR RH CIRCUIT CHECK

1. Disconnect IPDM E/R connector and front combination lamp LH or RH connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 24(BR) and front combination lamp RH harness connector E24 terminal 3(BR).

Continuity should exist

3. Check continuity between IPDM E/R harness connector E7 terminal 22(R/Y) and front combination lamp LH harness connector E40 terminal 3(R/Y).

Continuity should exist

OK or NG

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

High-Beam Indicator Lamp Does Not Illuminate

AKS0097M

1. CHECK BULB

Inspect bulb of high-beam indicator lamp.

OK or NG

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

Headlamp Low Beam Does Not Illuminate (Both Sides)

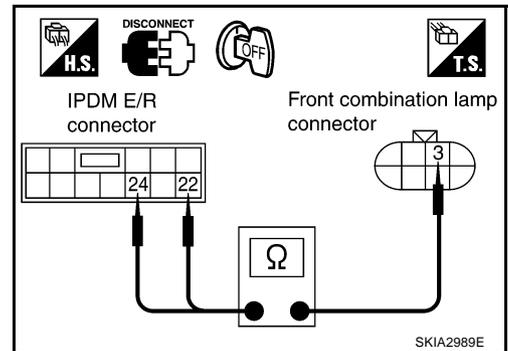
AKS0097N

1. HEADLAMP AUTO ACTIVE TEST

1. Start auto active test. Refer to [PG-19, "Auto Active Test"](#).
2. Check whether headlamp LO operates.

OK or NG

- OK >> GO TO 4.
- NG >> GO TO 2.



HEADLAMP (FOR USA)

2. HEADLAMPS CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front combination lamp LH or RH connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 27(R) and front combination lamp RH harness connector E24 terminal 7(R).

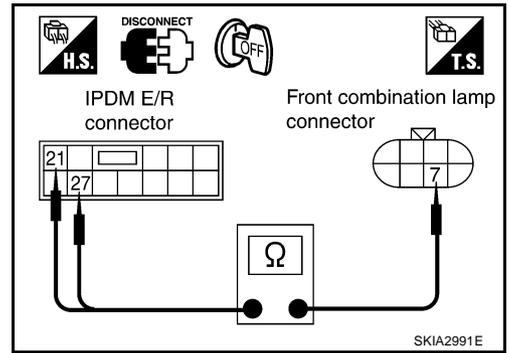
Continuity should exist

4. Check continuity between IPDM E/R harness connector E7 terminal 21(R/B) and front combination lamp LH harness connector E40 terminal 7(R/B).

Continuity should exist

OK or NG

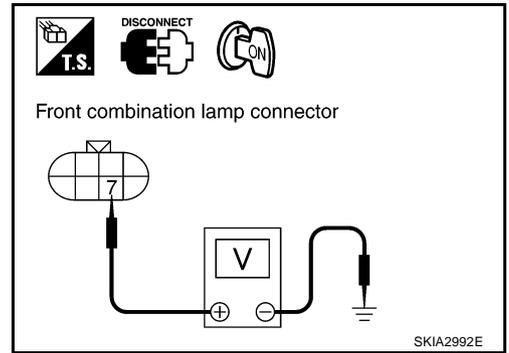
- OK >> GO TO 3.
- NG >> Repair harness or connector.



3. HEADLAMP INPUT SIGNAL CHECK

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to [PG-19, "Auto Active Test"](#). When headlamp LO is operating, check voltage between front combination lamp LH or RH and ground.

Terminals			(-)	Voltage
(+)				
Connector		Terminal (wire color)		
RH	E24	7(R)	Ground	Battery voltage
LH	E40	7(R/B)		



OK or NG

- OK >> Inspect headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs.
- NG >> Replace IPDM E/R.

4. COMBINATION SWITCH CIRCUIT CHECK

Select BCM on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

- No malfunction detected>> GO TO 5.
- CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to [BCS-13, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).
- OPEN DETECT 1 - 5>> Combination Switch System malfunction. Refer to [LT-81, "Combination Switch Inspection According to Self-Diagnostic Results"](#).
- HEAD LAMP 1 SW or HEAD LAMP 2 SW>> Replace lighting switch.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

HEADLAMP (FOR USA)

5. COMBINATION SWITCH INPUT SIGNAL CHECK

Select BCM on CONSULT-II. With "HEADLAMP" data monitor, check that "HEAD LAMP SW" and "HEAD LAMP SW 2" turn ON-OFF with operation of lighting switch.

OK or NG

OK >> Replace BCM.

NG >> ● Replace lighting switch.

- If one of "HEAD LAMP SW" and "HEAD LAMP SW 2" is NG, replace both BCM and lighting switch.

DATA MONITOR	
MONITOR	
HEAD LAMP SW	OFF
HIBEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF
DOOR SW-AS	OFF
DOOR SW-RR	OFF
HEAD LAMP SW2	OFF
OPTICAL SENSOR	0.00V

SKIA3661E

Headlamp Low Beam Does Not Illuminate (One Side)

AKS00970

1. CHECK BULB

Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate.

OK or NG

OK >> GO TO 2.

NG >> ● (step1) Replace xenon bulb with other side bulb or new one. (If headlamp illuminate correctly, replace the xenon bulb)

- (step2) Replace the ballasts (HID control unit) with other side ballasts or new one. (If headlamp illuminate correctly, replace the ballasts)

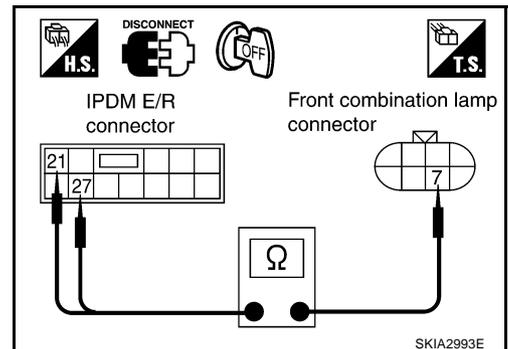
2. HEAD LAMP LH OR RH CIRCUIT CHECK

1. Disconnect IPDM E/R connector and front combination lamp LH or RH connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 27(R) and front combination lamp RH harness connector E24 terminal 7(R).

Continuity should exist

3. Check continuity between IPDM E/R harness connector E7 terminal 21(R/B) and front combination lamp LH harness connector E40 terminal 7(R/B).

Continuity should exist



OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.

Headlamps Do Not Turn OFF

AKS0097P

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

- IPDM E/R detects CAN communication malfunction and activates fail-safe operation. Refer to [BCS-13, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) and inspect CAN system.

OK or NG

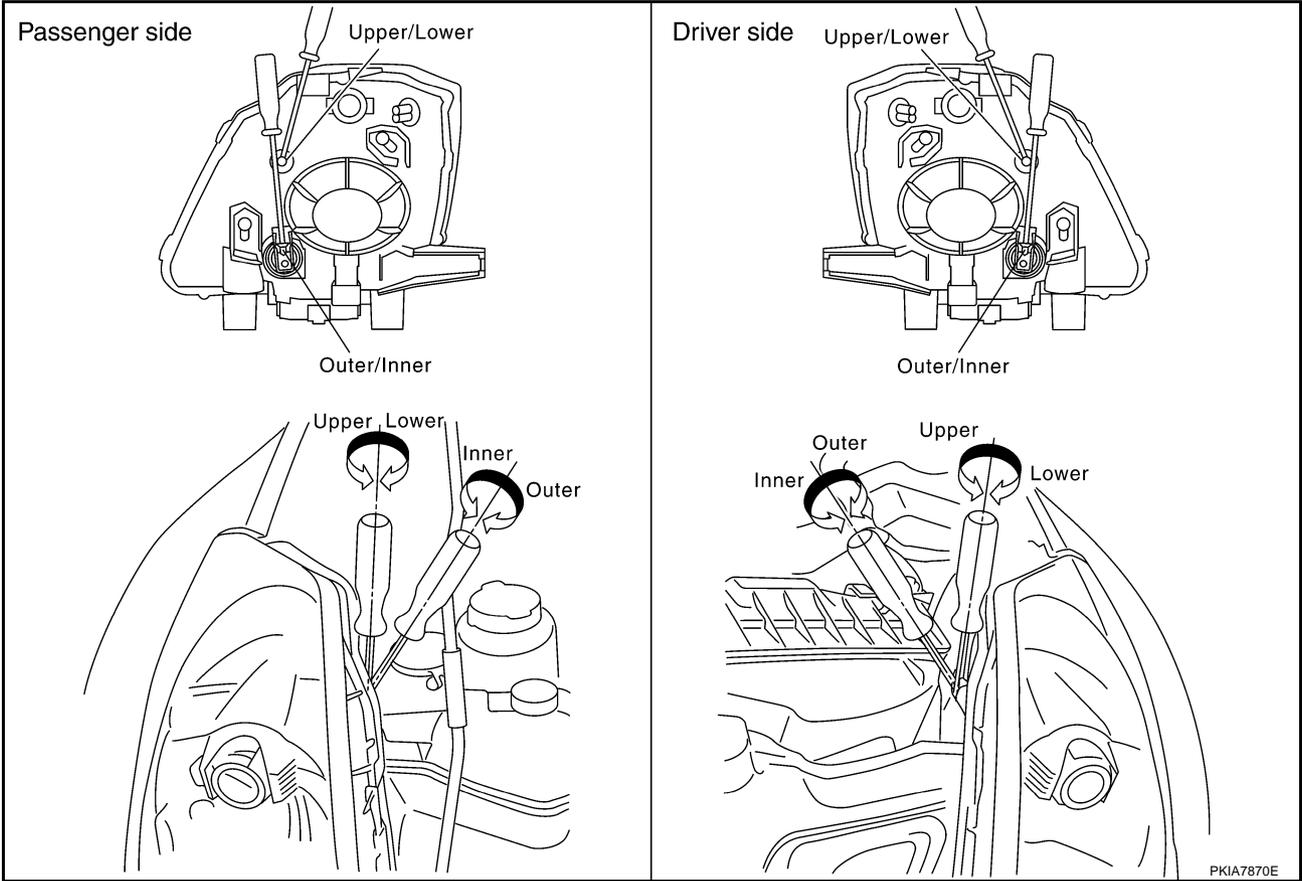
OK >> Replace IPDM E/R.

NG >> Repair malfunctioning part.

HEADLAMP (FOR USA)

Aiming Adjustment

AKS0097Q



PREPARATION BEFORE ADJUSTING

For details, refer to the regulations in your own country.

Before performing aiming adjustment, check the following.

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

LOW BEAM AND HIGH BEAM

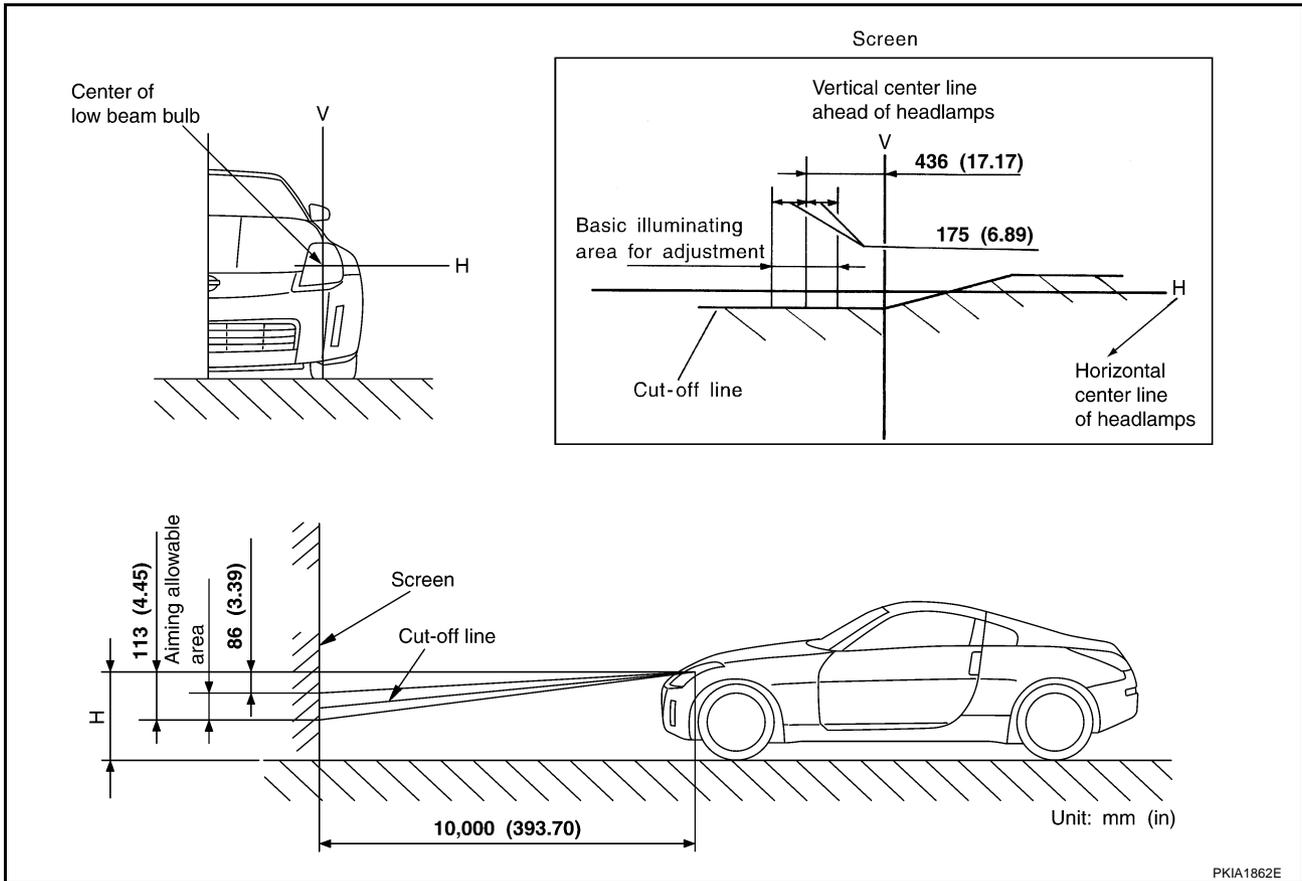
1. Turn headlamp low beam on.
2. Use adjusting screws to perform aiming adjustment.

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HEADLAMP (FOR USA)

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

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

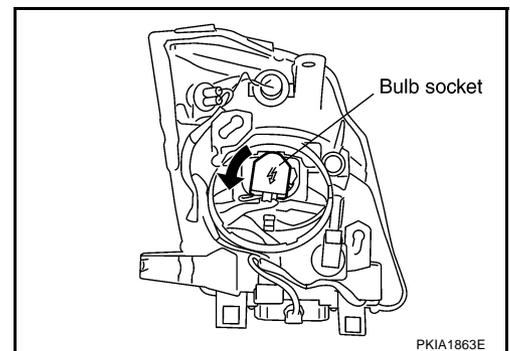
Bulb Replacement HEADLAMP (UPPER) LOW BEAM

1. Turn lighting switch OFF.
2. Remove headlamp. Refer to [LT-26, "Removal and Installation"](#).
3. Turn plastic cap counterclockwise and unlock it.
4. Turn bulb socket counterclockwise and unlock it.
5. Unlock retaining spring and remove bulb from headlamp.
6. Install in reverse order of removal.

NOTE:

After installation, aiming adjustment. Refer to [LT-23, "Aiming Adjustment"](#).

Headlamp (upper) low beam (Xenon) : 12V - 35W (D2R)



HEADLAMP (FOR USA)

HEADLAMP (LOWER) HIGH BEAM

1. Turn lighting switch OFF. A
2. Open the driver and front passenger window, and then disconnect the battery negative cable. B

CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged. C

3. Remove fender protector (front). Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section. D
4. Turn plastic cap counterclockwise and unlock it.
5. Disconnect bulb socket.
6. Unlock retaining spring and remove bulb from headlamp. E
7. Install in reverse order of removal.

Headlamp (lower) high beam : 12V - 55W (H7) F

PARKING LAMP (CLEARANCE LAMP)

1. Turn lighting switch OFF. G
2. Remove fender protector (front). Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section. H
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Install in reverse order of removal. I

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

FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF. K
2. Remove fender protector (front). Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section. L
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Install in reverse order of removal. M

Front turn signal lamp : 12V - 21W

FRONT SIDE MARKER LAMP

1. Turn lighting switch OFF. LT
2. Remove fender protector (front). Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section. L
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Install in reverse order of removal. M

Front side marker lamp : 12V - 5W

CAUTION:

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

HEADLAMP (FOR USA)

AKS0097S

Removal and Installation

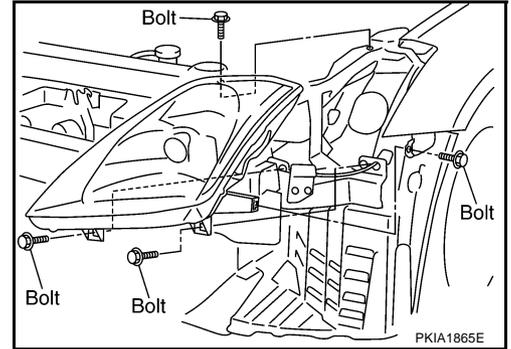
REMOVAL

1. Open the driver and front passenger window, and then disconnect the battery negative cable.

CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

2. Remove front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
3. Remove headlamp mounting bolts.
4. Pull head lamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

Installation in the reverse order if removal. Be careful of the following.

Headlamp mounting bolt:



: 6.1 N·m (0.62 kg·m, 54 in·lb)

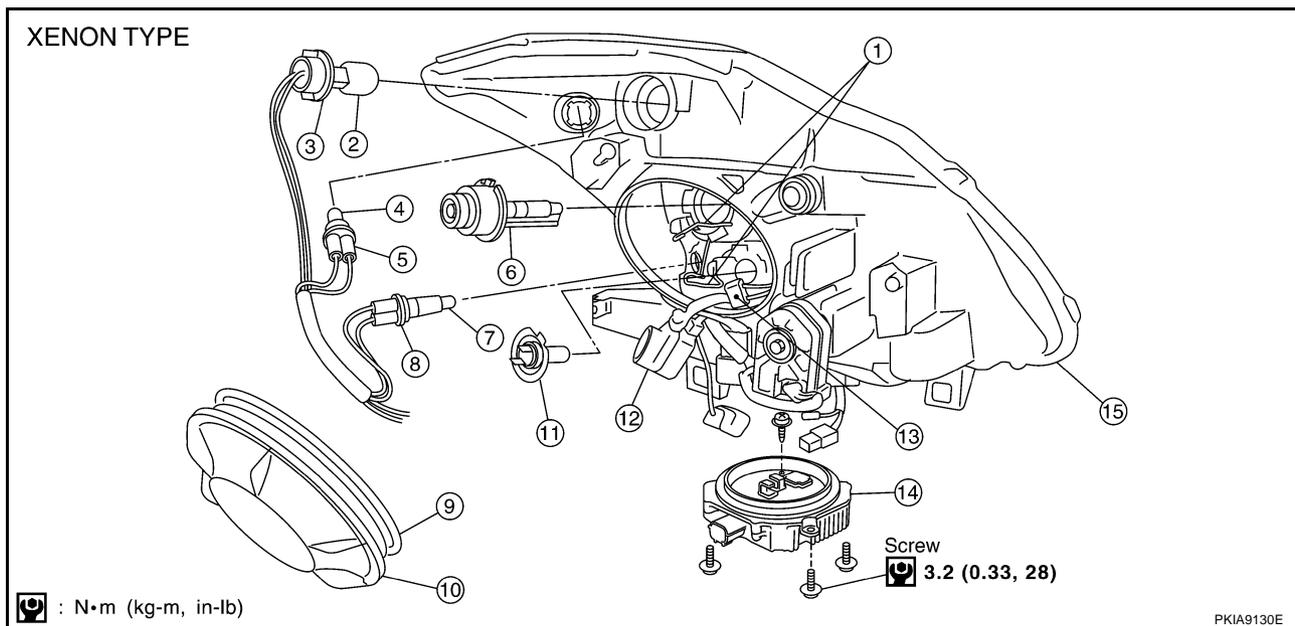
NOTE:

After installation, perform aiming adjustment. Refer to [LT-23, "Aiming Adjustment"](#) .

HEADLAMP (FOR USA)

Disassembly and Assembly

AKS0097T



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

DISASSEMBLY

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

HEADLAMP (FOR USA)

ASSEMBLY

Assemble in reverse order of disassembly. Be careful of the following:

HID control unit mounting screw:

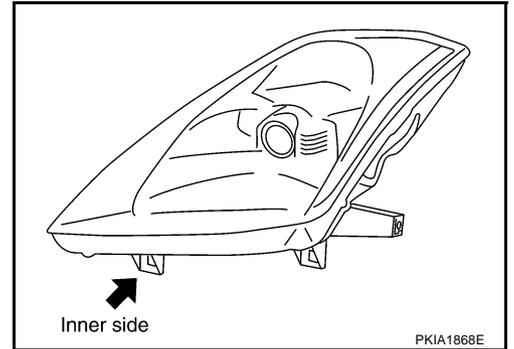
 :3.2 N·m (0.33 kg-m, 28 in-lb)

CAUTION:

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

Servicing to Replace Headlamps When Damaged

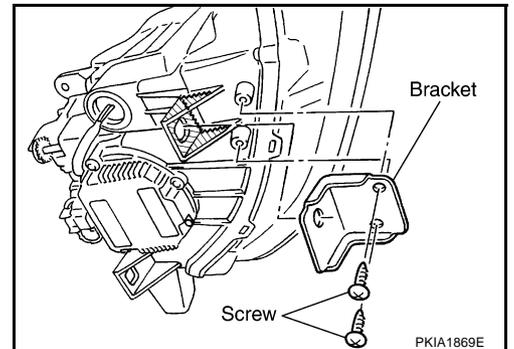
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

1. Remove headlamps. Refer to [LT-26, "Removal and Installation"](#).
2. Cut damaged section of installation part, then shape with sandpaper.
3. Attach each correction bracket to headlamp housing boss with 2 screws.

RH headlamp	Inner side	26040 CD000
LH headlamp	Inner side	26090 CD000



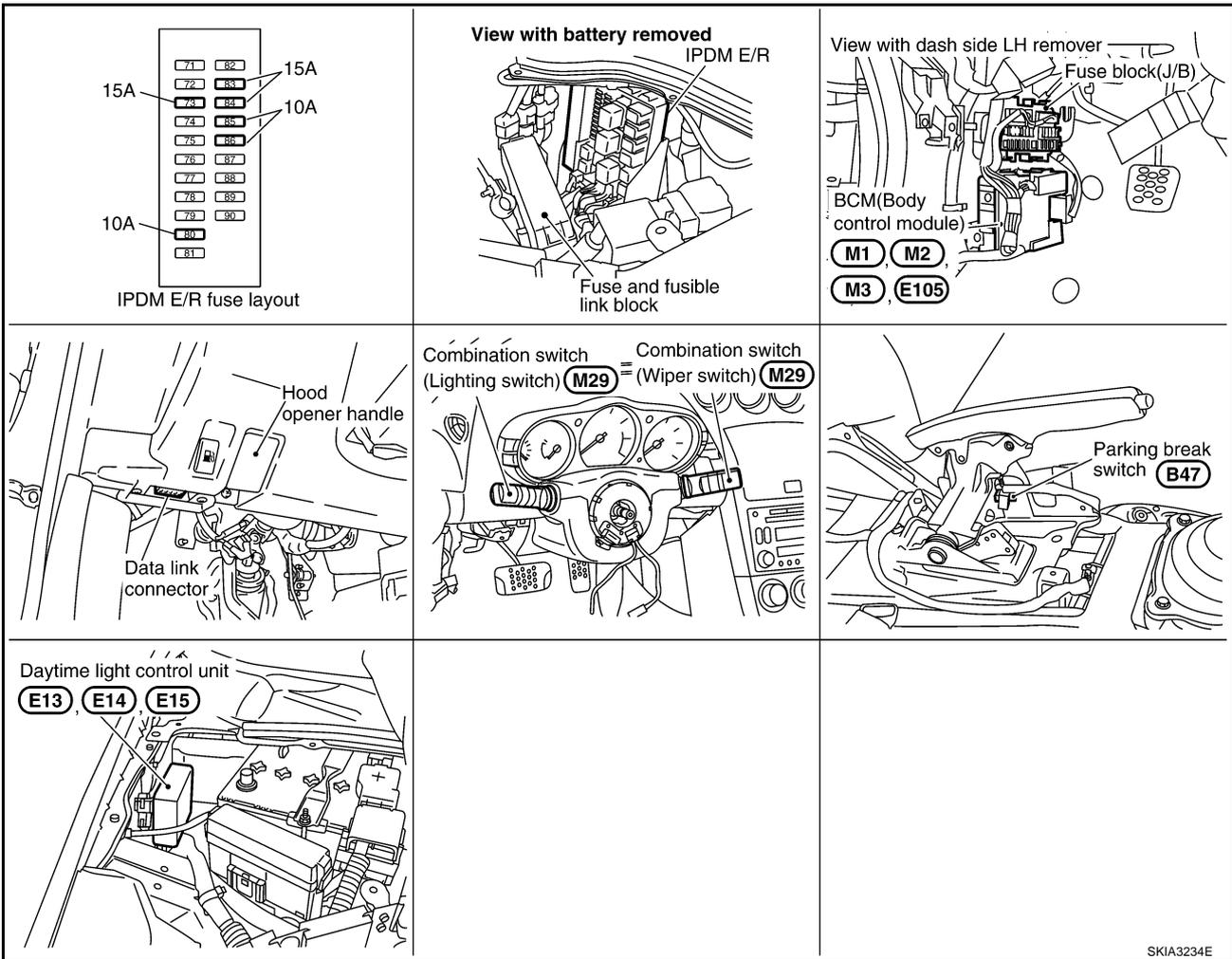
HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

PF26010

Component Parts and Harness Connector Location

AKS0097V



System Description

AKS0097W

The headlamp system for Canada vehicles is equipped with a daytime light control unit that activates the high beam headlamps at approximately half illumination whenever the engine is running. If the parking brake is applied before the engine is started the daytime lights will not be illuminated. The daytime lights will illuminate once the parking brake is released. Thereafter, the daytime lights will continue to operate when the parking brake is applied.

And battery saver system is controlled by the BCM (body control module).

Power is supplied at all times

- to headlamp high relay [located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- to BCM (body control module) terminal 7
- through 40A fusible link [letter F, located in fuse and fusible link block].

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

- to daytime light control unit terminal 3
- through 10A fuse [No. 88, located in IPDM E/R (intelligent power distribution module engine room)], and
- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in fuse block (J/B)].

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in fuse block (J/B)].

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

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HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

- to daytime light control unit terminal 2
- through 10A fuse [No. 9, located in fuse block (J/B)].

Ground is supplied

- to daytime light control unit terminal 16
- through grounds E17, E43 and F152, and
- to BCM (body control module) terminal 8
- through grounds E17, E43 and F152.

HEADLAMP OPERATION

Low Beam Operation

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

- Through 15A fuse [No. 83, located in IPDM E/R]
- through IPDM E/R terminal 27
- to front combination lamp RH terminal 7, and
- Through 15A fuse [No. 84, located in IPDM E/R]
- through IPDM E/R terminal 21
- to front combination lamp LH terminal 7.

Ground is supplied

- to front combination lamp RH terminal 8
- through grounds E17, E43 and F152, and
- to front combination lamp LH terminal 8
- through grounds E17, E43 and F152.

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation (When Engine Stopped)/Flash-to-Pass Operation

With the lighting switch in 2ND position and placed in HIGH or PASS position, the BCM receives input signal requesting the headlamp high beams to illuminate. This input signal is communicated to the IPDM E/R across the CAN communication lines. The CPU in the IPDM E/R controls the headlamp high relay coil turned on, which when energized, directs power

- to front combination lamp LH terminal 3
- through daytime light control unit terminals 7 and 4
- to IPDM E/R terminal 22
- through 10A fuse [No.85, located in IPDM E/R], and
- to front combination lamp RH terminal 3
- through daytime light control unit terminals 6 and 5
- to IPDM E/R terminal 24
- through 10A fuse [No.86, located in IPDM E/R]

Ground is supplied

- to front combination lamp LH terminal 4
- through daytime light control unit terminals 9 and 14 and
- through grounds F152, E17 and E43
- to front combination lamp RH terminal 4
- through grounds E17, E43 and F152.

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

Unified meter and A/C amp. receives signal from the BCM across the CAN communication lines, and then combination meter indicator illuminates high beam.

COMBINATION SWITCH READING FUNCTION

Refer to [LT-76. "Combination Switch Reading Function"](#) .

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

EXTERIOR LAMP BATTERY SAVER CONTROL

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

Under this condition, the headlamps remain illuminated for 5 minutes, then the headlamps are turned off. Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

DAYTIME LIGHT OPERATION

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

- through daytime light control unit terminal 7
- to front combination lamp LH terminal 3
- through front combination lamp LH terminal 4
- to daytime light control unit terminal 9
- through daytime light control unit terminal 6
- to front combination lamp RH terminal 3.

Ground is supplied

- to front combination lamp RH terminal 4
- through grounds E17, E43 and F152, and
- to daytime light control unit terminal 14
- through grounds E17, E43 and F152.

Because the high beam headlamps are now wired in series, they operate at half illumination.

If the lighting switch is in the HIGH position, daytime light operation is canceled. On this occasion, power is supplied

- through IPDM E/R terminal 21
- to daytime light control unit terminal 2

Daytime light control unit is canceled power supplying from front combination lamp RH terminal 7 to terminal 8 (series power supplying is canceled). And then low beam is ON.

OPERATION

After starting the engine with the lighting switch in the "OFF" or 1ST position, the headlamp high beam automatically turns on. Lighting switch operations other than the above are the same as conventional light systems.

Engine		With engine stopped									With engine running								
		OFF			1ST			2ND			OFF			1ST			2ND		
		Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P	Hi	Lo	P
Head-lamp	High beam	-	-	-	-	-	×	×	-	×	●*	●*	×	●*	●*	×	×	-	×
	Low beam	-	-	-	-	-	×	×	×	×	-	-	×	-	-	×	×	×	×
Tail lamp		-	-	-	×	×	×	×	×	×	-	-	-	×	×	×	×	×	×
License and instrument illumination lamp		-	-	-	×	×	×	×	×	×	-	-	-	×	×	×	×	×	×

- Hi: "HIGH BEAM" position
- Lo: "LOW BEAM" position
- P: "FLASH TO PASS" position
- ×: Lamp "ON"
- -: Lamp "OFF"
- ●: Lamp dims. (Added functions)
- *: When starting the engine with the parking brake released, the daytime light will come ON. When starting the engine with the parking brake pulled, the daytime light will not come ON.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

XENON HEADLAMP

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

Following are some of the many advantages of the xenon type headlamp.

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

CAN Communication System Description

AKS0097X

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

CAN Communication Unit

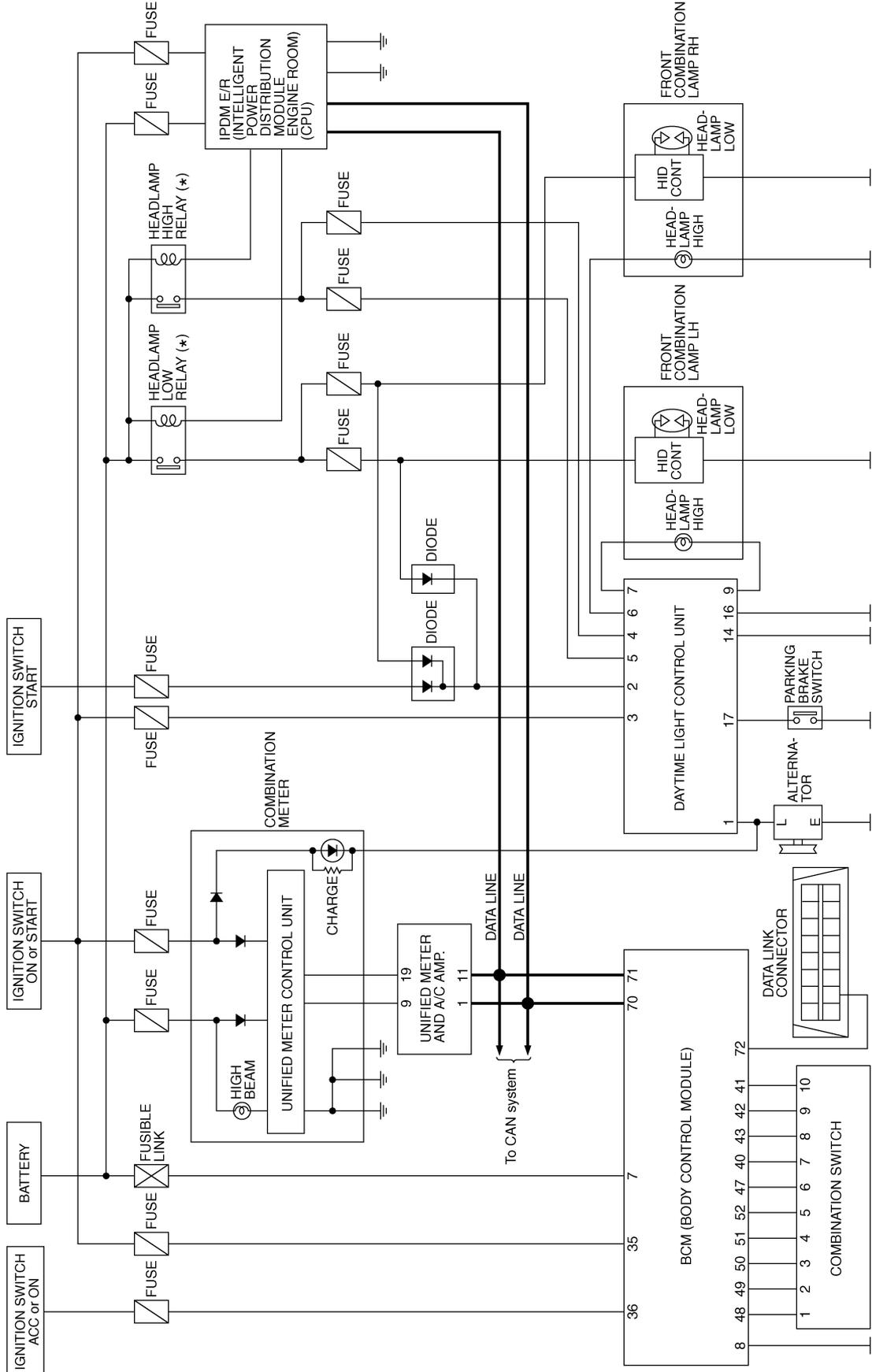
AKS0097Y

Refer to [LAN-4, "CAN Communication Unit"](#) .

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Schematic

AKS0097Z



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

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LT

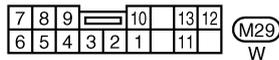
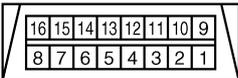
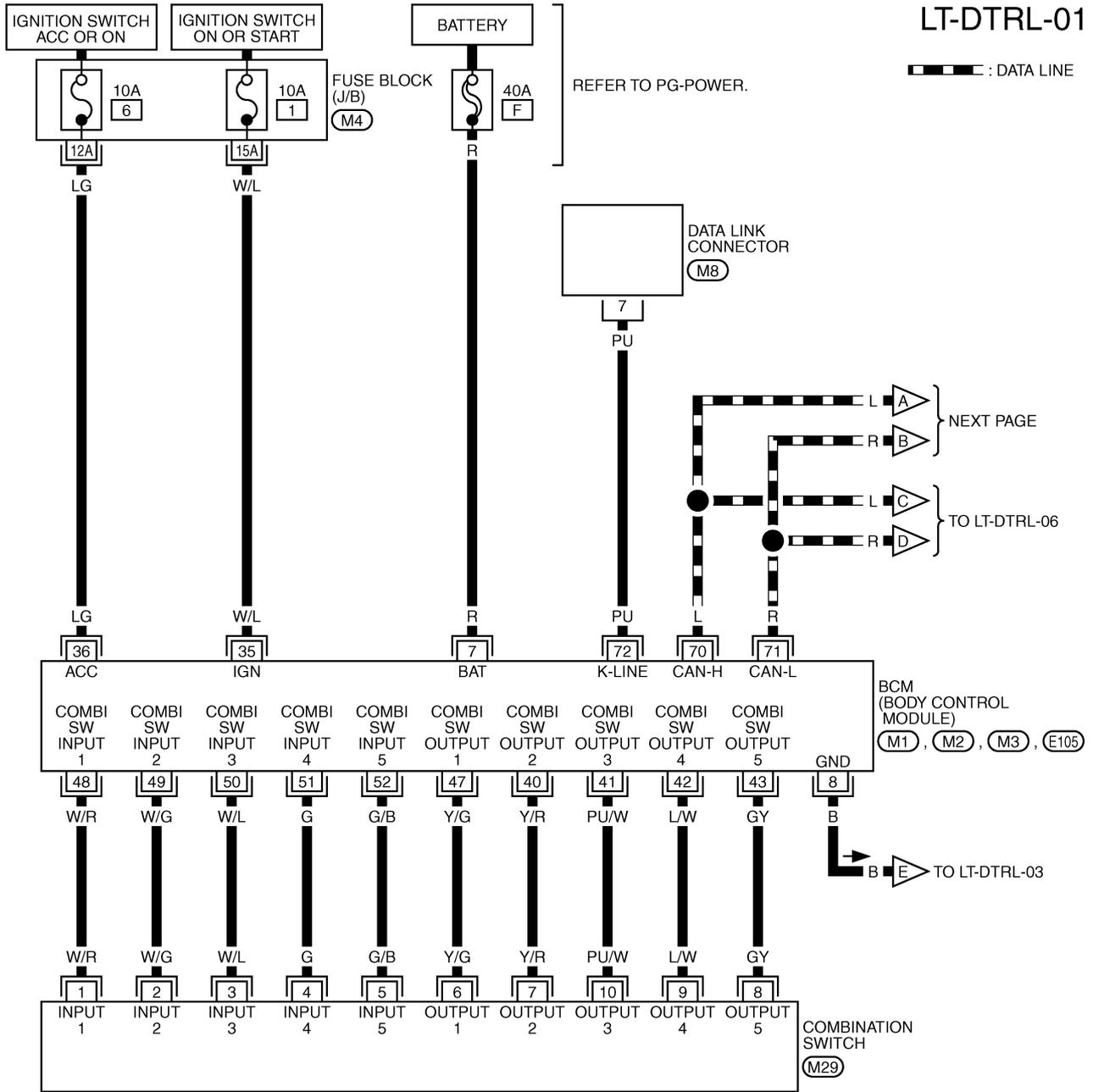
HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

AKS00980

Wiring Diagram — DTRL —

LT-DTRL-01

▬ : DATA LINE



REFER TO THE FOLLOWING.

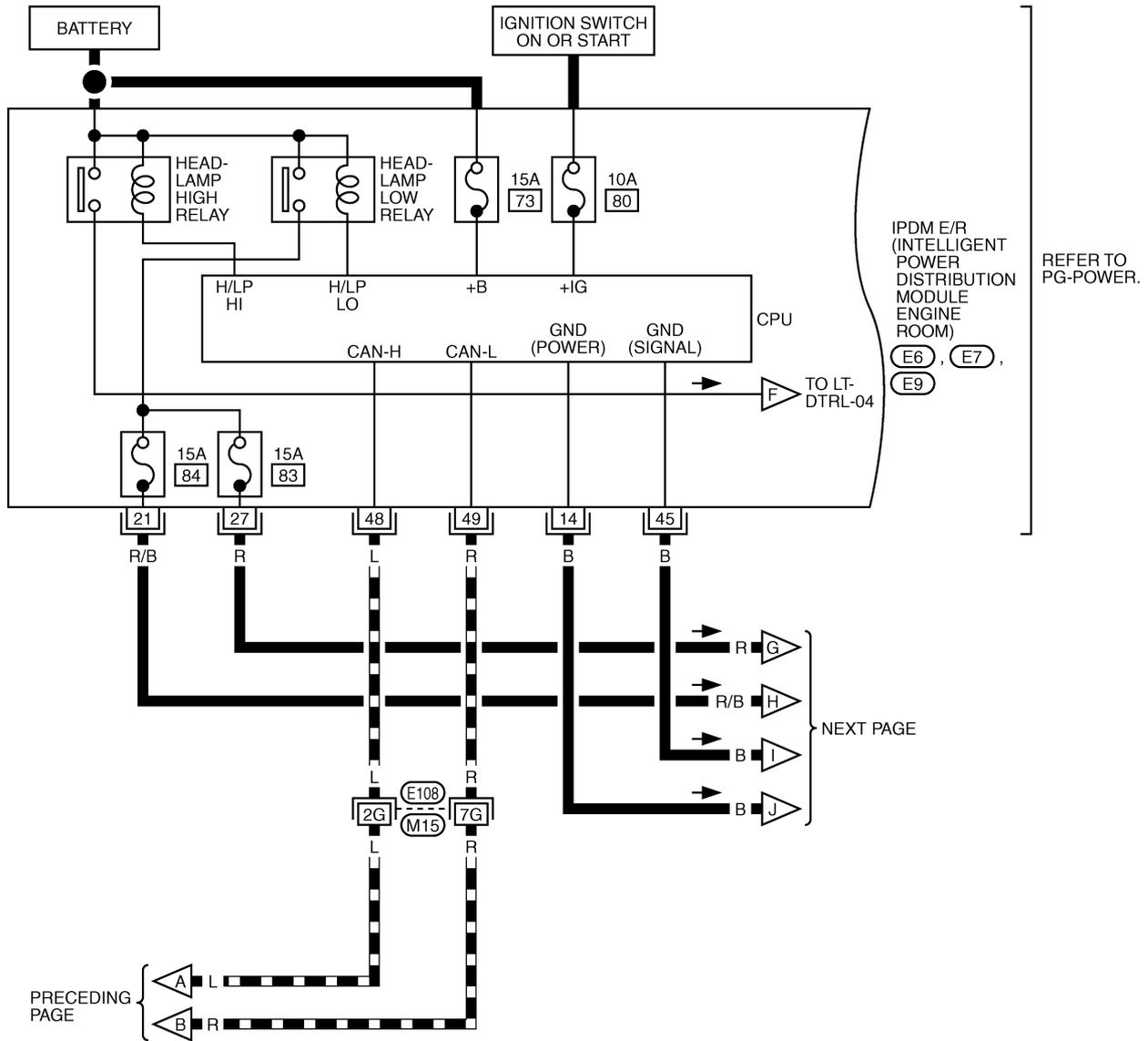
- (M4) - FUSE BLOCK-JUNCTION BOX (J/B)
- (M1), (M2), (M3), (E105) - ELECTRICAL UNITS

TKWT0435E

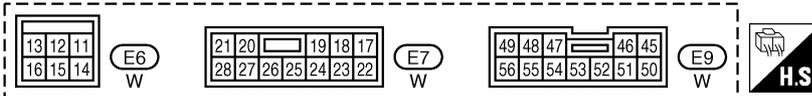
HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-02

▬ : DATA LINE



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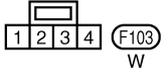
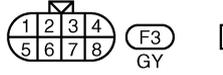
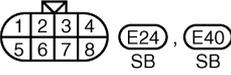
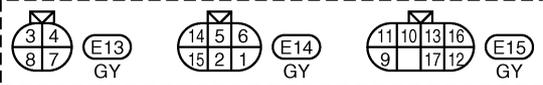
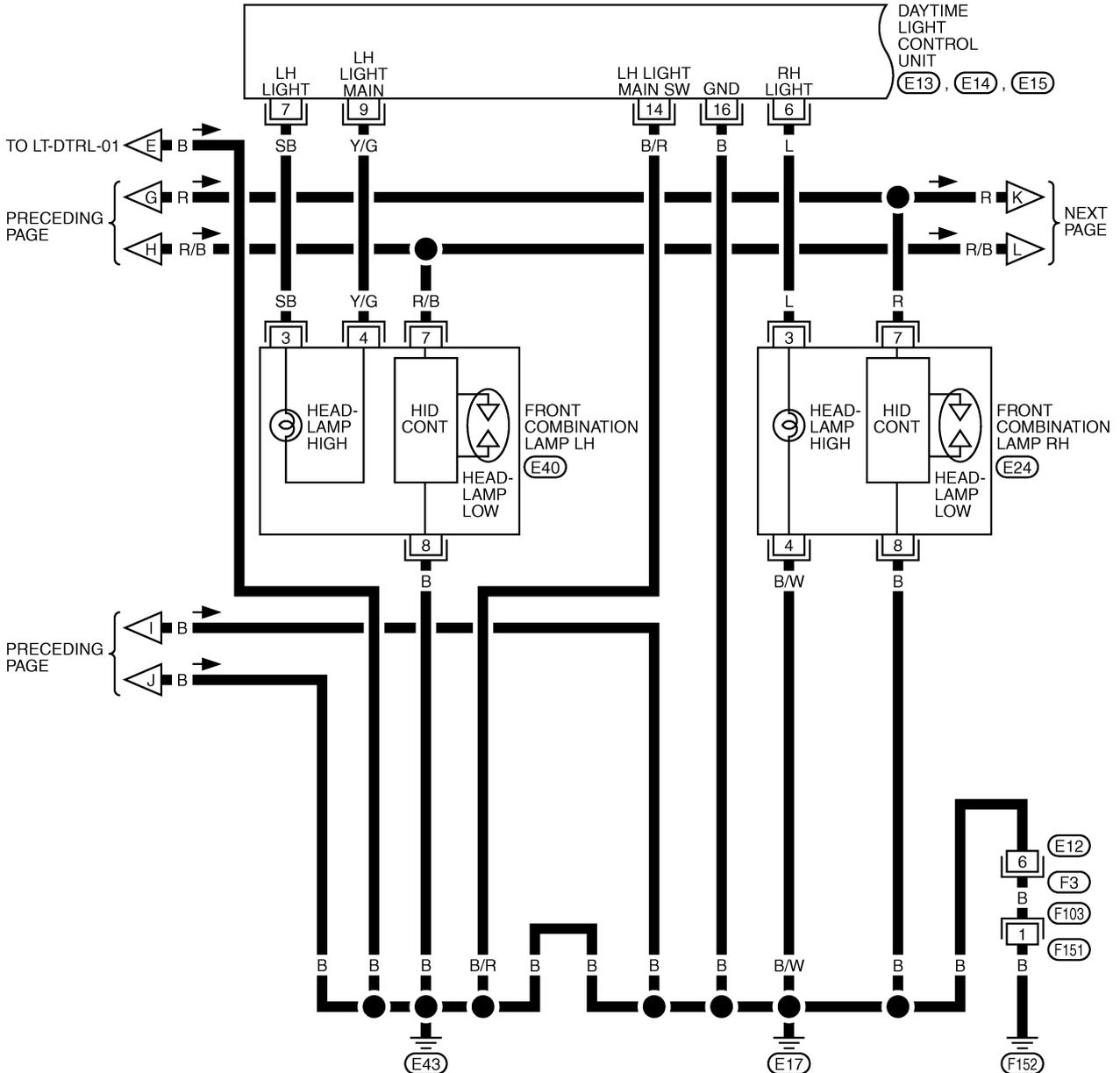


REFER TO THE FOLLOWING.

E108 -SUPER MULTIPLE JUNCTION (SMJ)

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

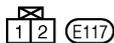
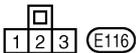
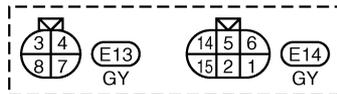
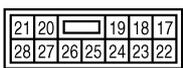
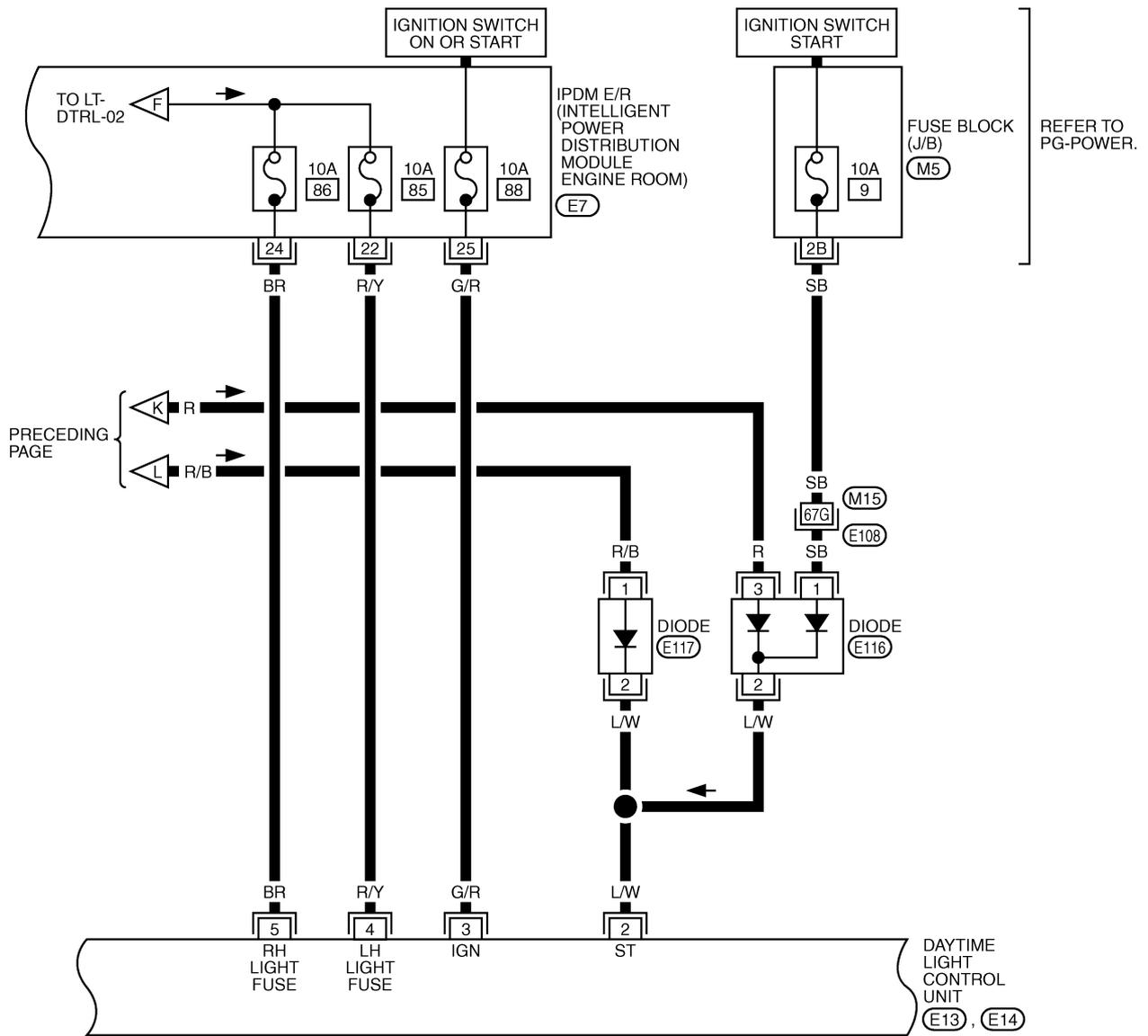
LT-DTRL-03



TKWT1052E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-04



REFER TO THE FOLLOWING.

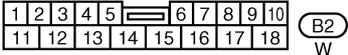
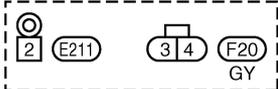
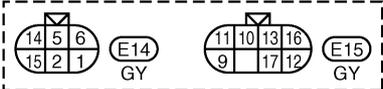
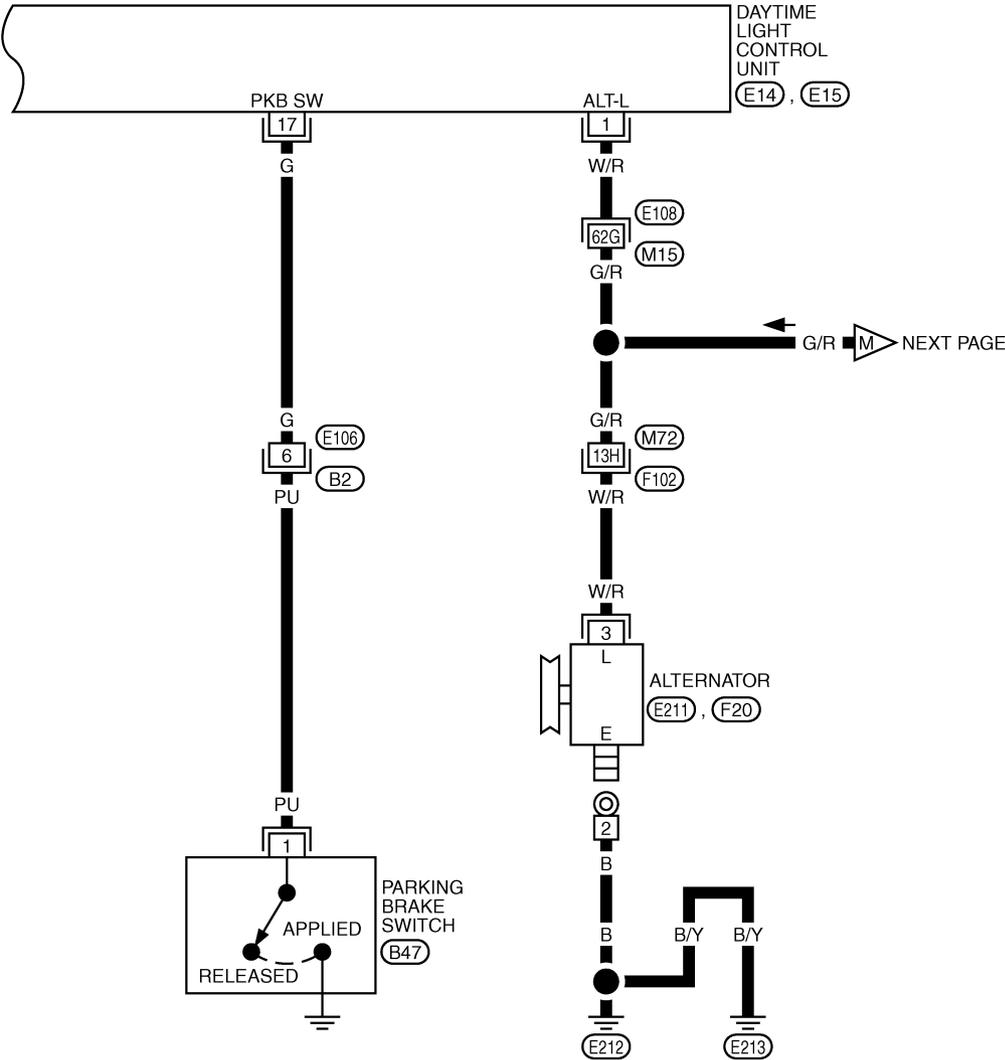
(E108) -SUPER MULTIPLE JUNCTION (SMJ)

(M5) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT1053E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-05

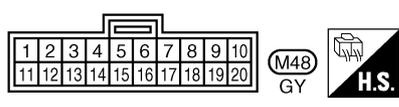
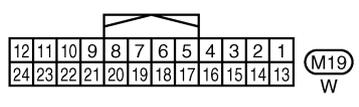
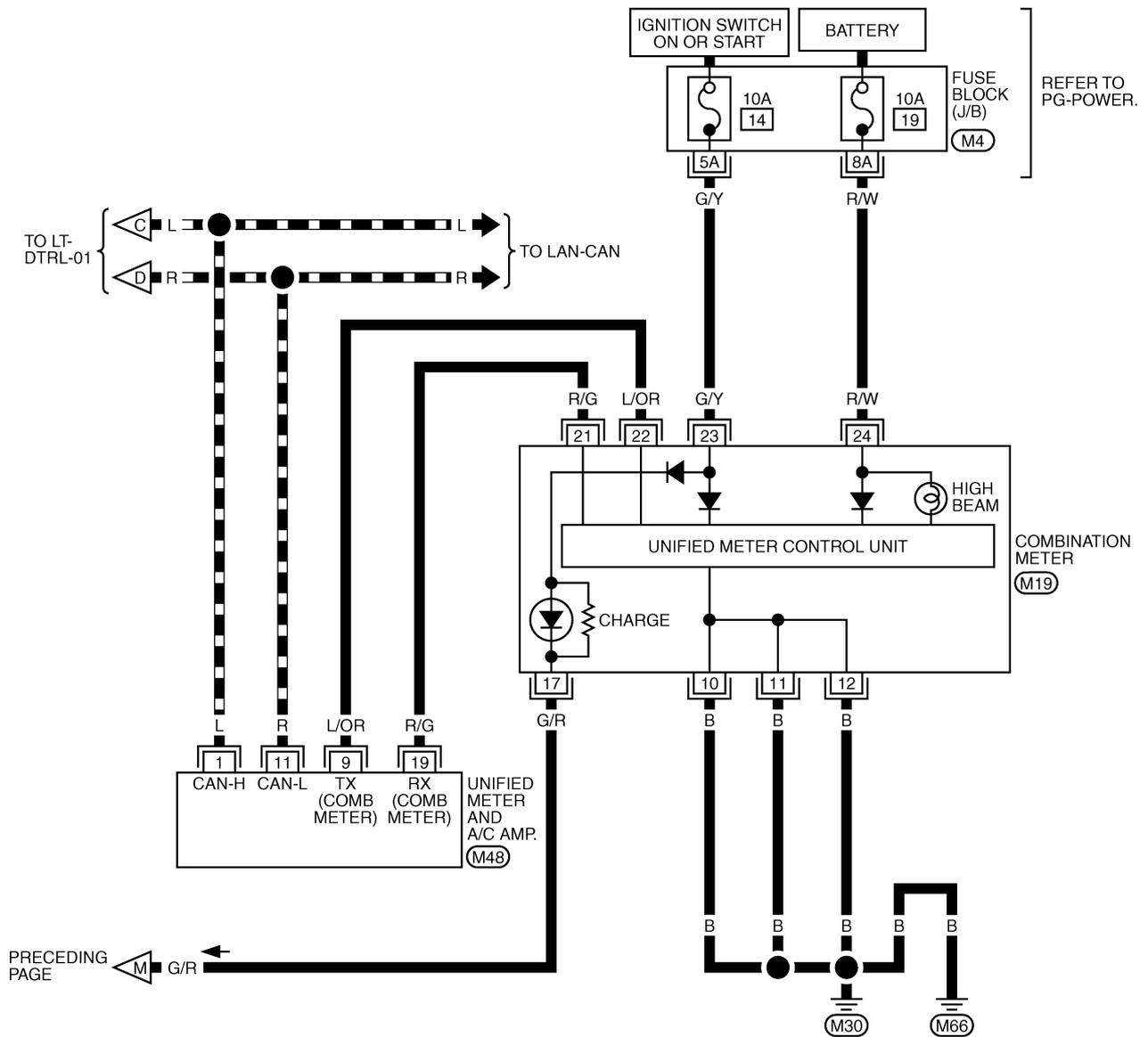


REFER TO THE FOLLOWING.
 (E108), (F102) -SUPER MULTIPLE
 JUNCTION (SMJ)

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

LT-DTRL-06

▬ : DATA LINE



REFER TO THE FOLLOWING.
 (M4) - FUSE BLOCK-JUNCTION BOX (J/B)

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Terminals and Reference Value for Daytime Light Control Unit

AKS00981

Terminal No.	Wire color	Item	Condition	Reference value
1	W/R	Alternator	When turning ignition switch to "ON"	Less than 1V
			When engine is running	Battery voltage
			When turning ignition switch to "OFF"	Less than 1V
2	L/W	Start signal	When turning ignition switch to "START"	Battery voltage
			When turning ignition switch to "ON" from "START"	Less than 1V
			When turning ignition switch to "OFF"	Less than 1V
3	G/R	Ignition power supply	When turning ignition switch to "ON"	Battery voltage
4	R/Y	Lighting switch (LH hi beam)	When turning lighting switch to "HI BEAM"	Battery voltage
5	BR	Lighting switch (RH hi beam)	When turning lighting switch to "HI BEAM"	Battery voltage
6	L	RH hi beam	When lighting switch is turned to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Battery voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Battery voltage
7	SB	LH hi beam	When lighting switch is turned to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Battery voltage
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Battery voltage
9	Y/G	LH hi beam (ground)	When turning lighting switch to the 2ND position with "HI BEAM" or "FLASH TO PASS" position	Less than 1V
			When releasing parking brake with engine running and turning lighting switch to "OFF" (daytime light operation) CAUTION: Block wheels and ensure selector lever is in N or P position.	Less than 1V
14	B/R	Ground	—	—
16	B	Ground	—	—
17	G	Parking brake switch	When parking brake is released	Battery voltage
			When parking brake is allied	Less than 1.7V

How to Proceed With Trouble Diagnosis

AKS00982

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-29, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-41, "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

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

AKS00983

Preliminary Check INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	F
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	83
		84
		85
		86
		88
DAYTIME LIGHT CONTROL UNIT	Ignition switch START position	9
	Ignition switch ON or START position	88

Refer to [LT-34, "Wiring Diagram — DTRL —"](#).

OK or NG

OK >> GO TO 2.

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

2. POWER SUPPLY CIRCUIT CHECK FOR BCM

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

Terminals		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal (Wire color)				
E105	7 (R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

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

3. GROUND CIRCUIT CHECK FOR BCM

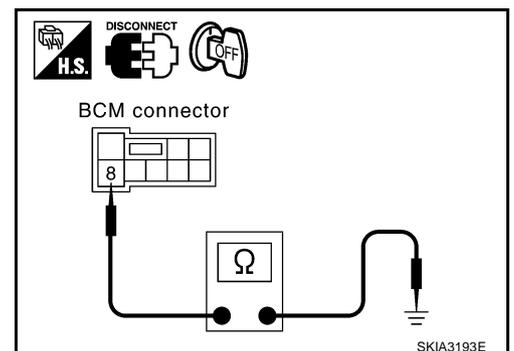
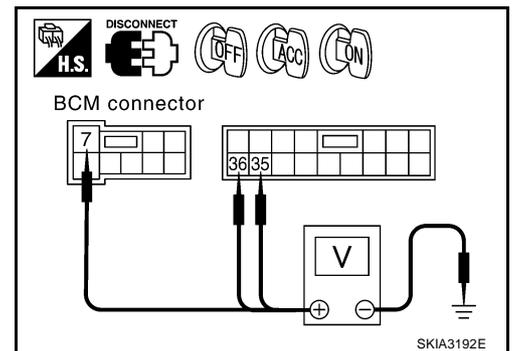
Check continuity between BCM harness connector and ground.

Terminals		Continuity
Connector	Terminal (wire color)	
E105	8 (B)	Ground
		Yes

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

CONSULT-II Function

AKS00984

- CONSULT-II performs the following functions communicating with BCM.

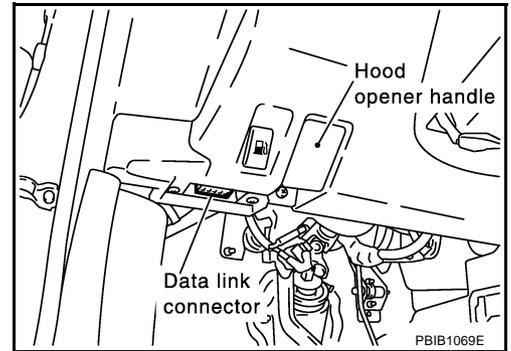
BCM diagnosis part	Check item, diagnosis mode	Description
HEAD LAMP	WORK SUPPORT	Changes the setting for each function.
	DATA MONITOR	Displays BCM input data in real time.
	ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.
BCM C/U	CAN DIAG SUPPORT MNTR	The result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

CONSULT-II BASIC OPERATION

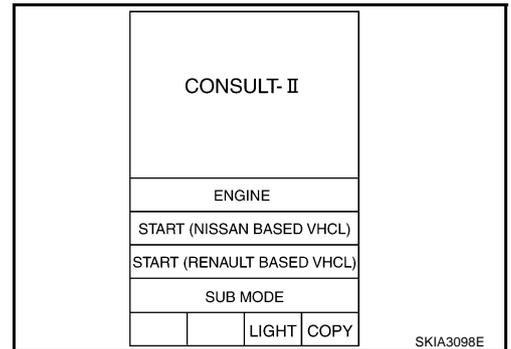
CAUTION:

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

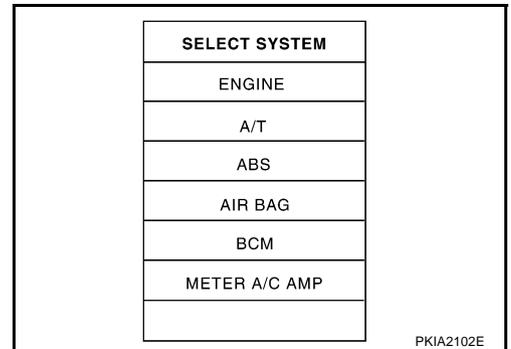
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



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

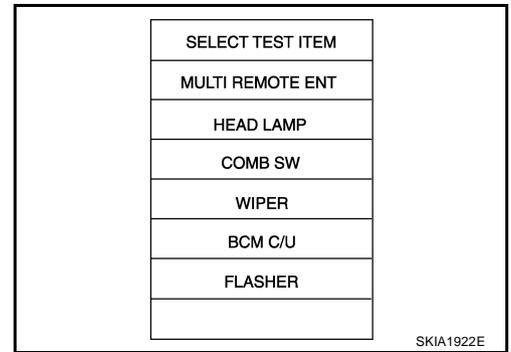


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

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



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WORK SUPPORT

Operation Procedure

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

Display Item List

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

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
ACC ON SW "ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
AUTO LIGHT SW ^{Note} "OFF"	—
TAIL LAMP SW "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
HEAD LAMP SW "ON/OFF"	Displays status (headlamp switch: ON/Others: OFF) of headlamp switch judged 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.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Monitor item		Contents
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 ^{Nete}	"OFF"	—
DOOR SW - DR	"ON/OFF"	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of the passenger door as judged from the passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR ^{Nete}	"OFF"	—
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
OPTICAL SENSOR ^{Nete}	[0V]	Display always indicates "0.00V"

NOTE:

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP (LOW)	Allows headlamp relay to operate by switching ON-OFF.
HEAD LAMP (HI)	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP ^{Nete}	—

NOTE:

This item is displayed, but cannot test it.

Daytime Light Control Does Not Operate Properly

AKS00985

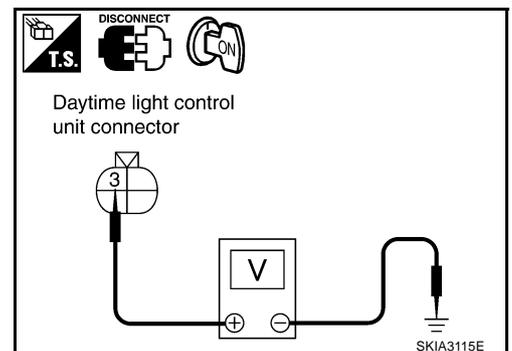
1. DAYTIME LIGHT CONTROL UNIT INSPECTION

1. Disconnect daytime light control unit connector.
2. Turn ignition switch ON.
3. Check voltage between daytime light control unit harness connector E13 terminal 3(G/R) and ground.

Battery voltage should exist

OK or NG

- OK >> GO TO 2.
 NG >> Repair or replace daytime light control unit power supply circuit harness.



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

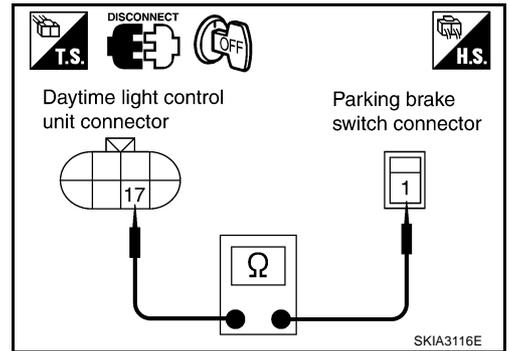
2. PARKING BRAKE SWITCH CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect daytime light control unit connector and parking brake switch connector.
3. Check harness continuity between daytime light control unit harness connector E15 terminal 17(G) and parking brake switch harness connector B47 terminal 1(PU).

Continuity should exist

OK or NG

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



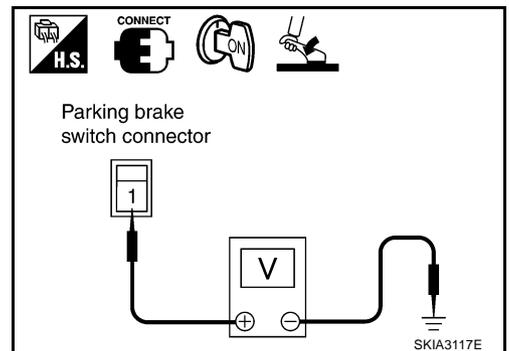
3. PARKING BRAKE SWITCH CHECK

1. Connect daytime light control unit connector and parking brake switch connector.
2. Turn ignition switch ON.
3. Check voltage between parking brake switch connector and ground, when parking brake is released.

Terminals			Condition	Voltage
(+)		(-)		
Connector	Terminal (wire color)			Not released
B47	1(PU)	Ground	Released	Battery voltage

OK or NG

- OK >> GO TO 4.
 NG >> Repair parking brake switch.



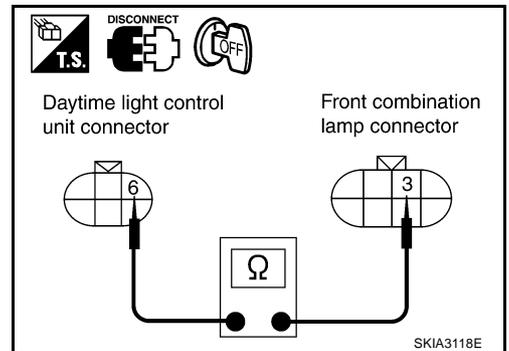
4. DAYTIME LIGHT CONTROL UNIT CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect daytime light control unit connector and front combination lamp RH connector.
3. Check harness continuity between daytime light control unit harness connector E14 terminal 6(L) and front combination lamp RH harness connector E24 terminal 3(L).

Continuity should exist

OK or NG

- OK >> Replace daytime light control unit.
 NG >> Repair harness or connector.



Headlamp High Beam Does Not Illuminate (Both Sides)

AKS00986

1. HEADLAMP AUTO ACTIVE TEST

1. Start auto active test. Refer to [PG-19, "Auto Active Test"](#).
2. Check whether headlamp HI operates.

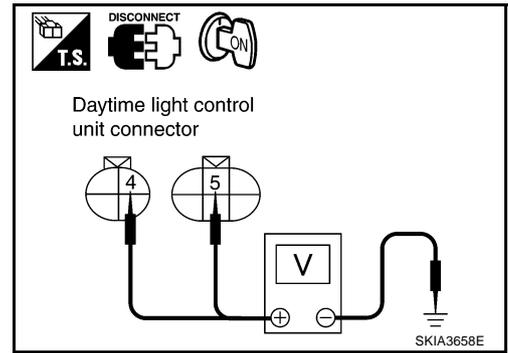
OK or NG

- OK >> GO TO 4.
 NG >> GO TO 2.

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

2. DAYTIME LIGHT CONTROL UNIT INSPECTION

1. Disconnect daytime light control unit connector.
2. Start auto active test. Refer to [PG-19, "Auto Active Test"](#). When headlamp HI is operating, check voltage between daytime light control unit and ground.



Terminals		(-)	Voltage
(+) Connector			
Connector	Terminal (wire color)	Ground	Battery voltage
E13	4 (R/Y)		
E14	5 (BR)		

OK or NG

- OK >> Replace daytime light control unit.
 NG >> GO TO 3

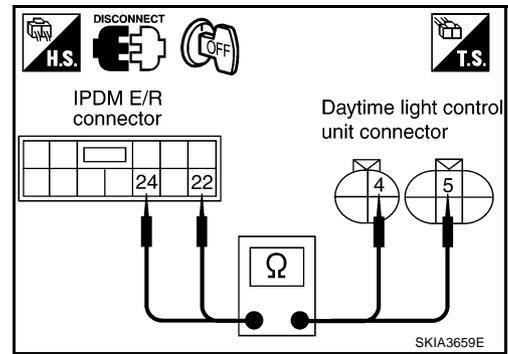
3. IPDM E/R CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check harness continuity daytime light control unit harness connector E13 terminal 4(R/Y) and IPDM E/R harness connector E7terminal 22(R/Y).

Continuity should exist

4. Check harness continuity daytime light control unit harness connector E14 terminal 5(BR) and IPDM E/R harness connector E7terminal 24(BR).

Continuity should exist



OK or NG

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

4. COMBINATION SWITCH CIRCUIT CHECK

Select BCM on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

No malfunction detected>> GO TO 5.

CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to [BCS-13, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-81, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

HEAD LAMP 1 SW or HEAD LAMP 2 SW>> Replace lighting switch.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

5. COMBINATION SWITCH INPUT SIGNAL CHECK

Select BCM on CONSULT-II. With "HEAD LAMP" data monitor, check that "HI BEAM SW" turns ON-OFF linked with operation of lighting switch.

OK or NG

- OK >> Replace BCM.
- NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
ACC ON SW	ON
AUTO LIGHT SW	OFF
TAIL LAMP SW	OFF
HEAD LAMP SW	OFF
HI BEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF

LKIA0074E

RH High Beam Does Not Illuminate But RH Low Beam Illuminates

AKS00987

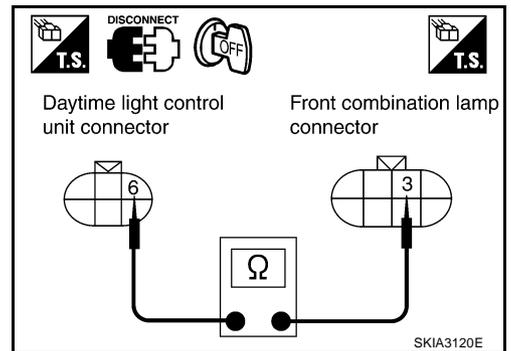
1. DAYTIME LIGHT CONTROL CIRCUIT CHECK

1. Disconnect daytime light control unit connector and front combination lamp RH connector.
2. Check continuity between daytime light control unit harness connector E14 terminal 6(L) and front combination lamp RH harness connector E24 terminal 3(L).

Continuity should exist

OK or NG

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



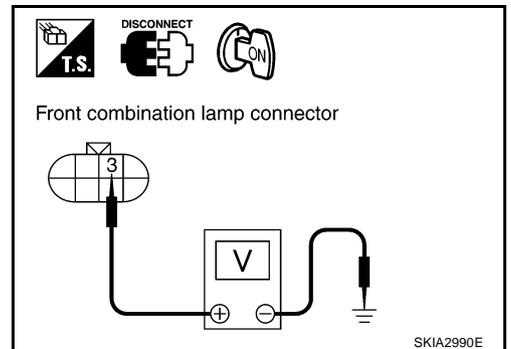
2. HEADLAMP INPUT SIGNAL CHECK

1. Connect daytime light control unit connector.
2. Start auto active test. Refer to [PG-19, "Auto Active Test"](#). When headlamp HI is operating, check voltage between front combination lamp RH harness connector E24 terminal 3(L) and ground.

Battery voltage should exist

OK or NG

- OK >> Check headlamp bulbs.
- NG >> Replace daytime light control unit.



LH High Beam Does Not Illuminate But LH Low Beam Illuminates

AKS00988

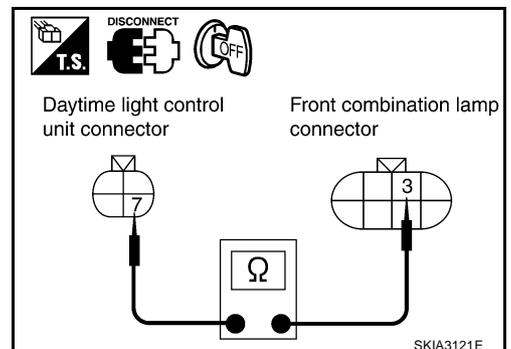
1. DAYTIME LIGHT CONTROL CIRCUIT CHECK

1. Disconnect daytime light control unit connector and front combination lamp LH connector.
2. Check continuity between daytime light control harness connector E13 terminal 7(SB) and front combination lamp LH harness connector E40 terminal 3(SB).

Continuity should exist

OK or NG

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



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

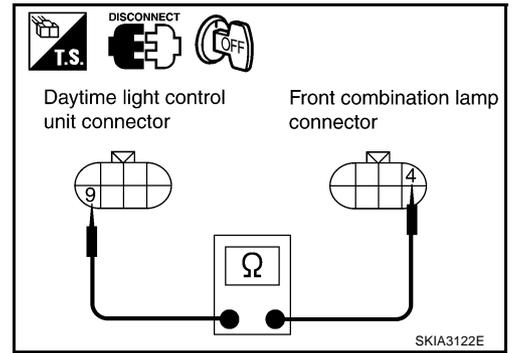
2. DAYTIME LIGHT CONTROL CIRCUIT CHECK

1. Disconnect daytime light control unit connector.
2. Check continuity between daytime light control harness connector E15 terminal 9(Y/G) and front combination lamp LH harness connector E40 terminal 4(Y/G).

Continuity should exist

OK or NG

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



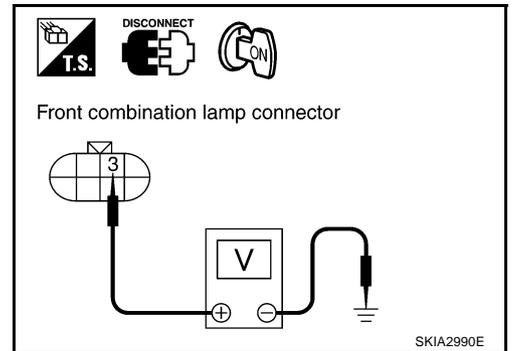
3. HEADLAMP INPUT SIGNAL CHECK

1. Connect daytime light control unit connector.
2. Start auto active test. Refer to [PG-19, "Auto Active Test"](#). When headlamp HI is operating, check voltage between front combination lamp LH harness connector E40 terminal 3(SB) and ground.

Battery voltage should exist

OK or NG

- OK >> Check headlamp bulbs.
NG >> Replace daytime light control unit.



Headlamp Low Beam Does Not Illuminate (Both Sides)

AKS00989

1. HEAD LAMP AUTO ACTIVE TEST

1. Start auto active test. Refer to [PG-19, "Auto Active Test"](#).
2. Check whether headlamp LO operates.

OK or NG

- OK >> GO TO 4.
NG >> GO TO 2.

2. HEAD LAMP LH OR RH CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector and front combination lamp LH or RH connector.
3. Check continuity between IPDM E/R harness connector E7 terminal 27(R) and front combination lamp RH harness connector E24 terminal 7(R).

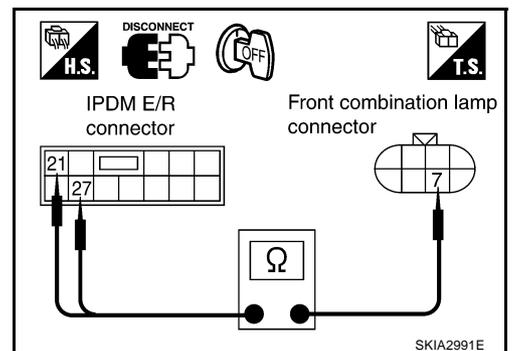
Continuity should exist

4. Check continuity between IPDM E/R harness connector E7 terminal 21(R/B) and front combination lamp LH harness connector E40 terminal 7(R/B).

Continuity should exist

OK or NG

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

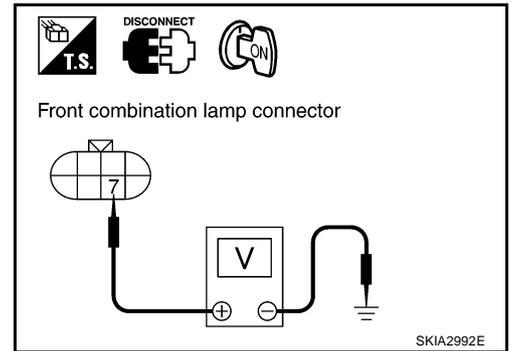


HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

3. HEADLAMP INPUT SIGNAL CHECK

1. Connect IPDM E/R connector.
2. Start auto active test. Refer to [PG-19, "Auto Active Test"](#) . When headlamp LO is operating, check voltage between front combination lamp LH or RH connector terminals and ground.

Terminals			(-)	Voltage
(+)				
Connector		Terminal (wire color)		
RH	E24	7 (R)	Ground	Battery voltage
LH	E40	7 (R/B)		



OK or NG

- OK >> Inspect headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs.
 NG >> Replace IPDM E/R.

4. COMBINATION SWITCH CIRCUIT CHECK

Select BCM on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

- No malfunction detected>> GO TO 5.
 CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to [BCS-13, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#) .
 OPEN DETECT 1 - 5>> Combination Switch System malfunction. Refer to [LT-81, "Combination Switch Inspection According to Self-Diagnostic Results"](#) .
 HEAD LAMP 1 SW or HEAD LAMP 2 SW>> Replace lighting switch.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

5. COMBINATION SWITCH INPUT SIGNAL CHECK

Select BCM on CONSULT-II. With "HEAD LAMP" data monitor, check that "HEAD LAMP SW" and "HEAD LAMP SW 2" turn ON-OFF with operation of lighting switch.

OK or NG

- OK >> Replace BCM.
 NG >> ● Replace lighting switch.
 ● If one of "HEAD LAMP SW" and "HEAD LAMP SW 2" is NG, replace both BCM and lighting switch.

DATA MONITOR	
MONITOR	
HEAD LAMP SW	OFF
HIBEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF
DOOR SW-AS	OFF
DOOR SW-RR	OFF
HEAD LAMP SW2	OFF
OPTICAL SENSOR	0.00V

SKIA3661E

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

RH Low Beam Does Not Illuminate But RH High Beam Illuminates

AKS0098A

1. CHECK BULB

- Inspect bulb of lamp which does not illuminate.
- Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate. (Xenon models)

OK or NG

OK >> GO TO 2.

- NG >> ● (step1) Replace xenon bulb with other side bulb or new one. (If eclampsia illuminate correctly, replace the xenon bulb.)
- (step2) Replace the ballasts (HID control unit) with other side ballasts or new one. (If eclampsia illuminate correctly, replace the ballasts.)

2. HEADLAMPS CIRCUIT CHECK

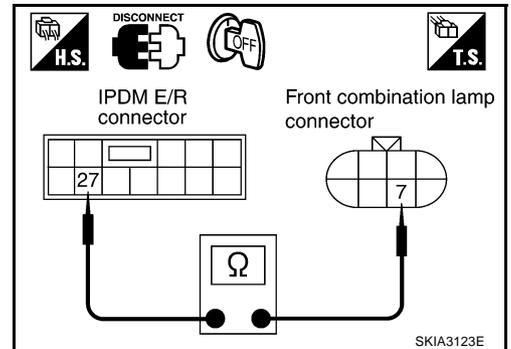
1. Disconnect IPDM E/R connector and front combination lamp RH connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 27(R) and front combination lamp RH harness connector E24 terminal 7(R).

Continuity should exist

OK or NG

OK >> Replace IPDM E/R.

NG >> Repair harness or connector.



LH Low Beam Does Not Illuminate But LH High Beam Illuminates

AKS0098B

1. CHECK BULB

Inspect ballasts (HID control unit) and xenon bulb of lamp which does not illuminate.

OK or NG

OK >> GO TO 2.

- NG >> ● (step1) Replace xenon bulb with other side bulb or new one. (If eclampsia illuminate correctly, replace the xenon bulb.)
- (step2) Replace the ballasts (HID control unit) with other side ballasts or new one. (If eclampsia illuminate correctly, replace the ballasts.)

2. HEADLAMPS CIRCUIT CHECK

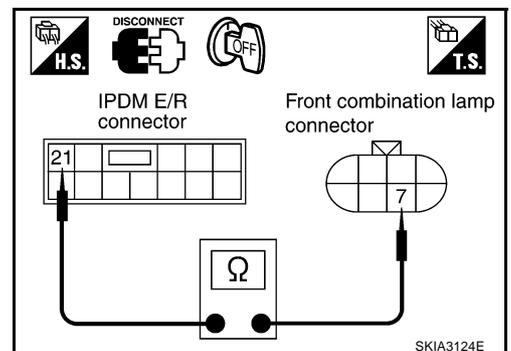
1. Disconnect IPDM E/R connector and front combination lamp LH connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 21(R/B) and front combination lamp LH harness connector E40 terminal 7(R/B).

Continuity should exist

OK or NG

OK >> Replace IPDM E/R.

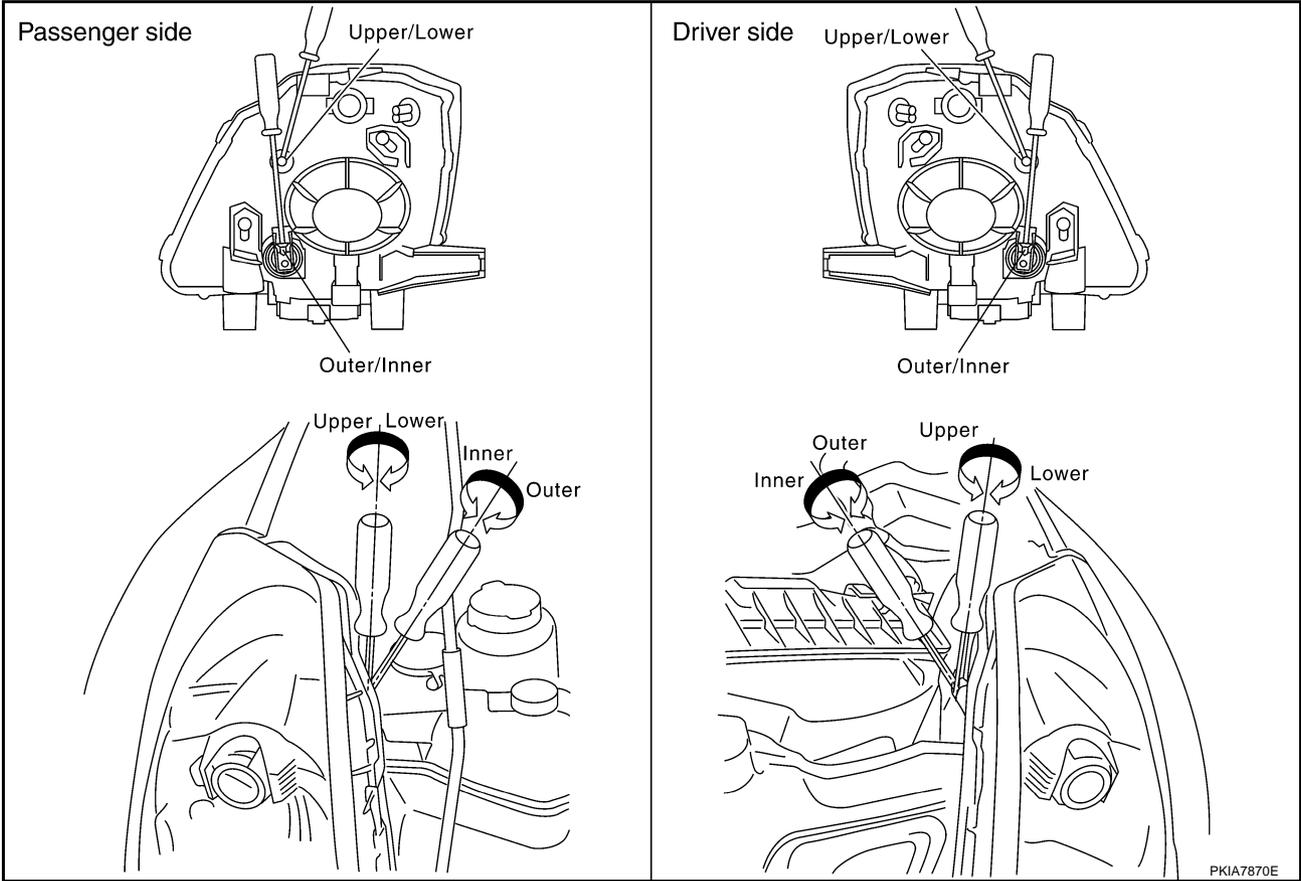
NG >> Repair harness or connector.



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Aiming Adjustment

AKS0098C



PREPARATION BEFORE ADJUSTING

For details, refer to the regulations in your own country.

Before performing aiming adjustment, check the following.

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

LOW BEAM AND HIGH BEAM

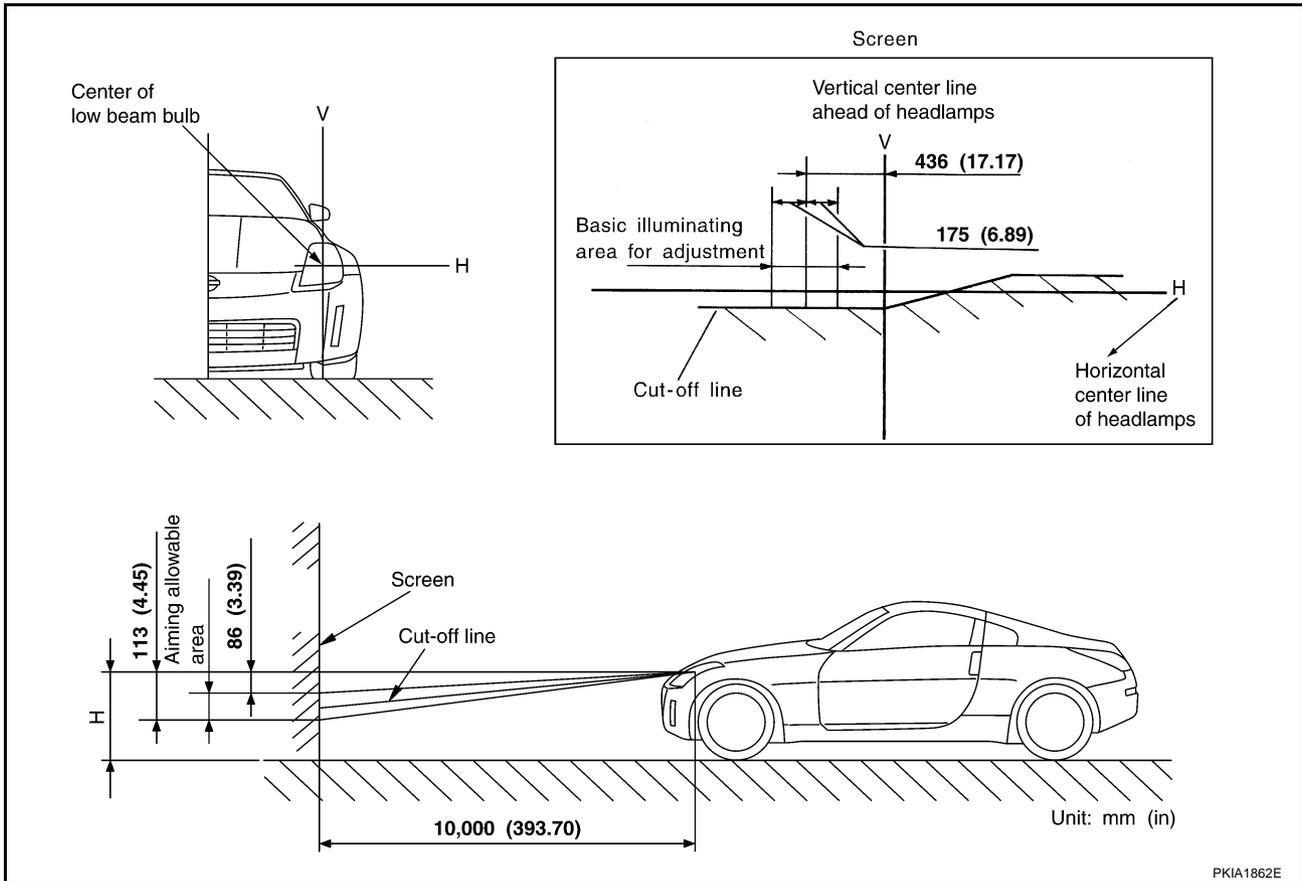
1. Turn headlamp low beam on.
2. Use adjusting screws to perform aiming adjustment.

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HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

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

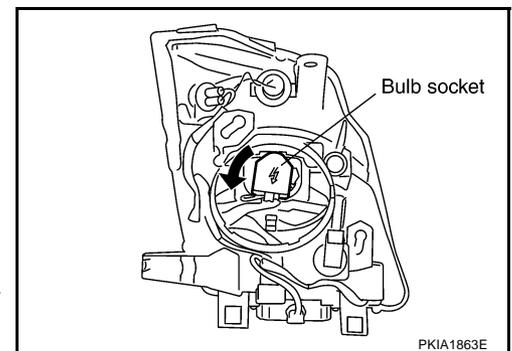
Bulb Replacement HEADLAMP (UPPER) LOW BEAM

1. Turn lighting switch OFF.
2. Remove headlamp. Refer to [LT-54, "Removal and Installation"](#).
3. Turn plastic cap counterclockwise and unlock it.
4. Turn bulb socket counterclockwise and unlock it.
5. Unlock retaining spring and remove bulb from headlamp.
6. Install in reverse order of removal.

NOTE:

After installation, perform aiming adjustment. Refer to [LT-51, "Aiming Adjustment"](#).

**Headlamp (upper) low beam : 12V - 35W (D2R)
(Xenon)**



HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

HEADLAMP (LOWER) HIGH BEAM

1. Turn lighting switch OFF. A
2. Open the driver and front passenger window, and then disconnect the battery negative cable. B

CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged. C

3. Remove fender protector (front). Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section. D
4. Turn plastic cap counterclockwise and unlock it.
5. Disconnect bulb socket.
6. Unlock retaining spring and remove bulb from headlamp. E
7. Install in reverse order of removal.

Headlamp (lower) high beam : 12V - 55W (H7) F

PARKING LAMP (CLEARANCE LAMP)

1. Turn lighting switch OFF. G
2. Remove fender protector (front). Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section. H
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket. I
5. Install in reverse order of removal. J

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

FRONT TURN SIGNAL LAMP

1. Turn lighting switch OFF. LT
2. Remove fender protector (front). Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section. L
3. Turn bulb socket counterclockwise and unlock it. M
4. Remove bulb from its socket.
5. Install in reverse order of removal.

Front turn signal lamp : 12V - 21W

FRONT SIDE MARKER LAMP

1. Turn lighting switch OFF.
2. Remove fender protector (front). Refer to [EI-21, "FENDER PROTECTOR"](#) in "EI" section.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Install in reverse order of removal.

Front side marker lamp : 12V - 5W

CAUTION:

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

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

AKS0098E

Removal and Installation

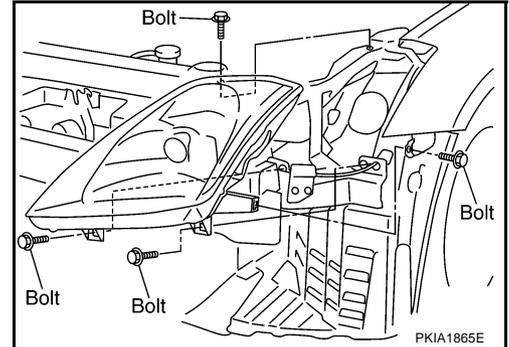
REMOVAL

1. Open the driver and front passenger window, and then disconnect the battery negative cable.

CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

2. Remove front bumper. Refer to [EI-14, "FRONT BUMPER"](#) in "EI" section.
3. Remove headlamp mounting bolts.
4. Pull head lamp toward vehicle front, disconnect connector, and remove headlamp.



INSTALLATION

Installation in the reverse order if removal. Be careful of the following.

Headlamp mounting bolt:



: 6.1N-m (0.62 kg-m, 54 in lb)

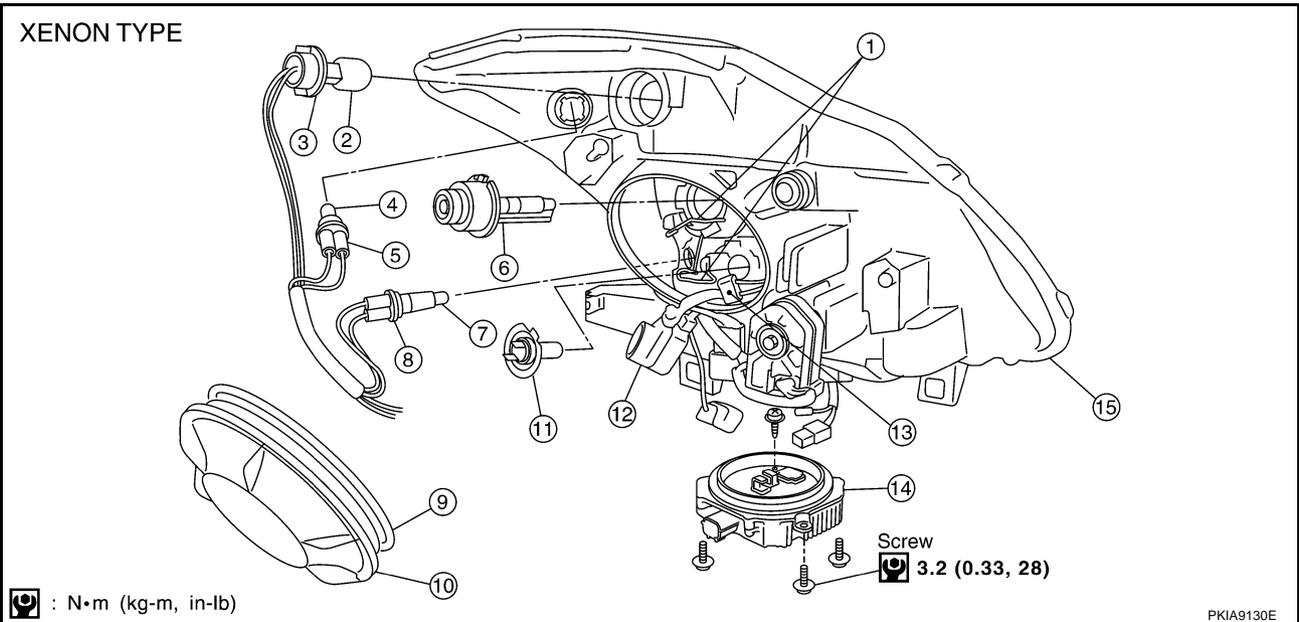
NOTE:

After installation, perform aiming adjustment. Refer to [LT-51, "Aiming Adjustment"](#) .

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

Disassembly and Assembly

AKS0098F



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

DISASSEMBLY

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

HEADLAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM -

ASSEMBLY

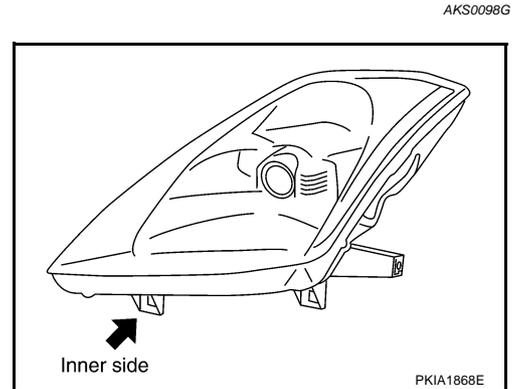
Assemble in reverse order of disassembly. Be careful of the following:

CAUTION:

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

Serving to Replace Headlamps When Damaged

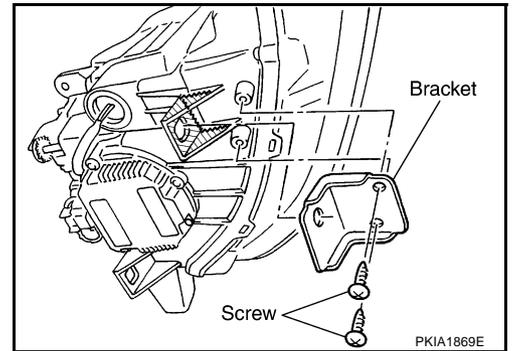
If only installation part as shown in the figure is damaged, and headlamp housing itself is not damaged, repair can be completed easily by installing correction brackets.



INSTALLATION OF HEADLAMP BRACKET

1. Remove headlamps. Refer to [LT-54, "Removal and Installation"](#).
2. Cut damaged section of installation part, then shape with sandpaper.
3. Attach each correction bracket to headlamp housing boss with 2 screws.

RH headlamp	Inner side	26040 CD000
LH headlamp	Inner side	26090 CD000



TURN SIGNAL AND HAZARD WARNING LAMPS

TURN SIGNAL AND HAZARD WARNING LAMPS

PFP:26120

System Description

AKS000UC

TURN SIGNAL OPERATION

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

- through 10A fuse [No. 1, located in fuse block (J/B)]
- to BCM (body control module) terminal 35, and
- through 10A fuse [No. 14, located in fuse block (J/B)]
- to combination meter terminal 23.

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17, E43, and F152, and
- to combination meter terminals 10, 11 and 12,
- through grounds M30 and M66.

LH Turn

When the turn signal switch (combination switch) is moved to the LH position, the BCM (body control module) receives left turn signal by combination switch reading function (Refer to [LT-76, "Combination Switch Reading Function"](#)). Power is supplied

- through BCM (body control module) terminal 22
- to combination lamp LH terminal 2
- to rear combination lamp LH terminal 2.

Ground is supplied

- to front combination lamp LH terminal 1
- through grounds E17, E43 and F152
- to rear combination lamp LH terminal 4
- through grounds T14, B6 and B5.

The BCM also supplies ground to unified meter and A/C amp. terminals 1 and 11 across the CAN communication lines. This input signal is processed by the unified meter control unit in the combination meter through the unified meter and A/C amp., which in turn supplies ground to the left turn signal indicator lamp. With power and ground supplied, the BCM controls the flashing of the LH turn signal lamps.

RH Turn

When the turn signal switch (combination switch) is moved to the RH position, the BCM (body control module) receives right turn signal by combination switch reading function (Refer to [LT-76, "Combination Switch Reading Function"](#)) power is supplied

- through BCM (body control module) terminal 21
- to front combination lamp RH terminal 2
- to rear combination lamp RH terminal 2.

Ground is supplied

- to front combination lamp RH terminal 1
- through grounds E17, E43 and F152
- to rear combination lamp RH terminal 4
- through y grounds T14, B6 and B5.

The BCM also supplies ground to unified meter and A/C amp. terminals 1 and 11 across the CAN communication lines. This input is processed by the unified meter control unit in the combination meter through the unified meter and A/C amp., which in turn supplies ground to the right turn signal indicator lamp. With power and ground supplied, the BCM controls the flashing of the RH turn signal lamps.

HAZARD LAMP OPERATION

Power is supplied at all times

- to BCM (body control module) terminal 7
- through 40A fusible link [letter F, located in fuse and fusible link block], and
- to combination meter terminal 24

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TURN SIGNAL AND HAZARD WARNING LAMPS

- through 10A fuse [No. 19, located in fuse block (J/B)].

Ground is supplied

- to hazard switch terminal 2
- through grounds M30 and M66
- to BCM terminals 8
- through grounds E17, E43 and F152
- to combination meter terminals 10, 11 and 12
- through grounds M30 and M66.

When the hazard switch is depressed, ground is supplied

- to BCM terminal 61
- through hazard lamp switch terminal 1.

The BCM then supplies power

- through BCM terminal 22
- to front combination lamp LH terminal 2
- to rear combination lamp LH terminal 2
- through BCM terminal 21
- to front combination lamp RH terminal 2
- to rear combination lamp RH terminal 2.

Ground is supplied

- to front combination lamp LH terminal 1
- through grounds E17, E43 and F152
- to front combination lamp RH terminal 1
- through grounds E17, E43 and F152
- to rear combination lamp LH terminal 4
- through grounds T14, B6 and B5
- to rear combination lamp RH terminal 4
- through grounds T14, B6 and B5.

The BCM also supplies input to combination meter terminals 1 and 11 across the CAN communication lines. This input is processed by the unified meter control unit in the combination meter through the unified meter and A/C amp., which in turn supplies ground to the left and right turn signal indicator lamps.

With power and ground supplied, the BCM controls the flashing of the hazard warning lamps.

REMOTE KEYLESS ENTRY SYSTEM OPERATION

Power is supplied at all times

- to BCM (body control module) terminal 7
- through 40A fusible link [letter F, located in fuse and fusible link block], and
- to combination meter terminal 24
- through 10A fuse [No. 19, located in fuse block (J/B)].

Ground is supplied

- to BCM terminal 8
- through grounds E17, E43, F152, and
- to combination meter terminals 10,11 and 12
- through grounds M30 and M66.

When the remote keyless entry system is triggered by input signal from the key fob, the BCM supplies power

- through BCM terminal 22
- to front combination lamp LH terminal 2
- to rear combination lamp LH terminal 2
- through BCM terminal 21
- to front combination lamp RH terminal 2
- to rear combination lamp RH terminal 2.

TURN SIGNAL AND HAZARD WARNING LAMPS

Ground is supplied

- to front combination lamp LH terminal 1
- through grounds E17, E43 and F152
- to front combination lamp RH terminal 1
- through grounds E17, E43 and F152
- to rear combination lamp LH terminal 4
- through grounds T14, B6 and B5
- to rear combination lamp RH terminal 4
- through grounds T14, B6 and B5.

The BCM also supplies input signal to combination meter terminals 27 and 28 across the CAN communication lines. This input is processed by the unified meter control unit in the combination meter through the unified meter and A/C amp., which in turn supplies ground to the left and right turn signal indicator lamps.

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

COMBINATION SWITCH READING FUNCTION

Refer to [LT-76, "Combination Switch Reading Function"](#) .

CAN Communication System Description

AKS003N5

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

CAN Communication Unit

AKS003N6

Refer to [LAN-4, "CAN Communication Unit"](#) .

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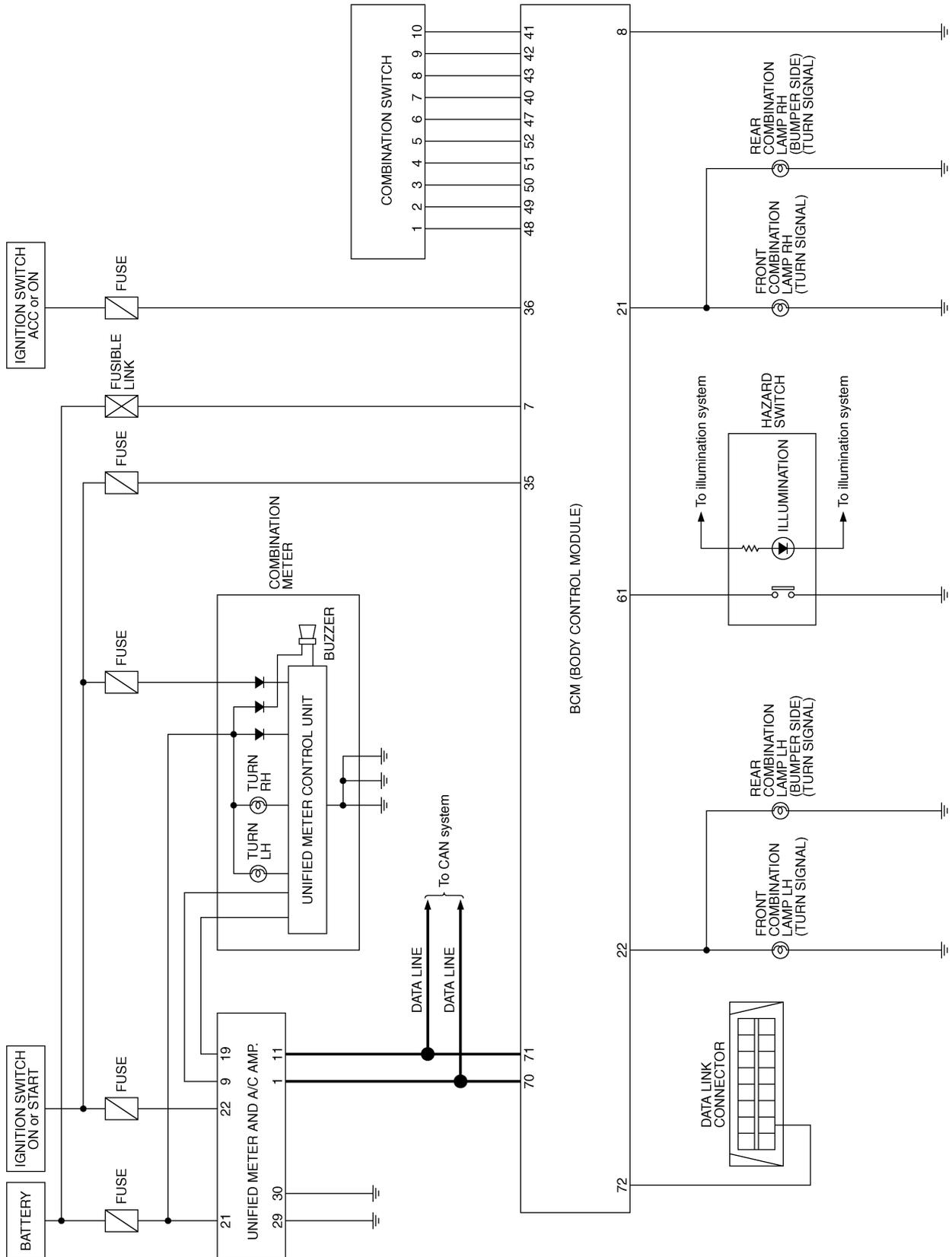
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TURNSIGNAL AND HAZARD WARNING LAMPS

Schematic

AKS000UF



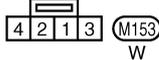
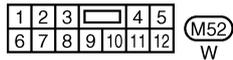
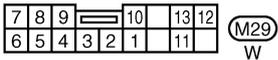
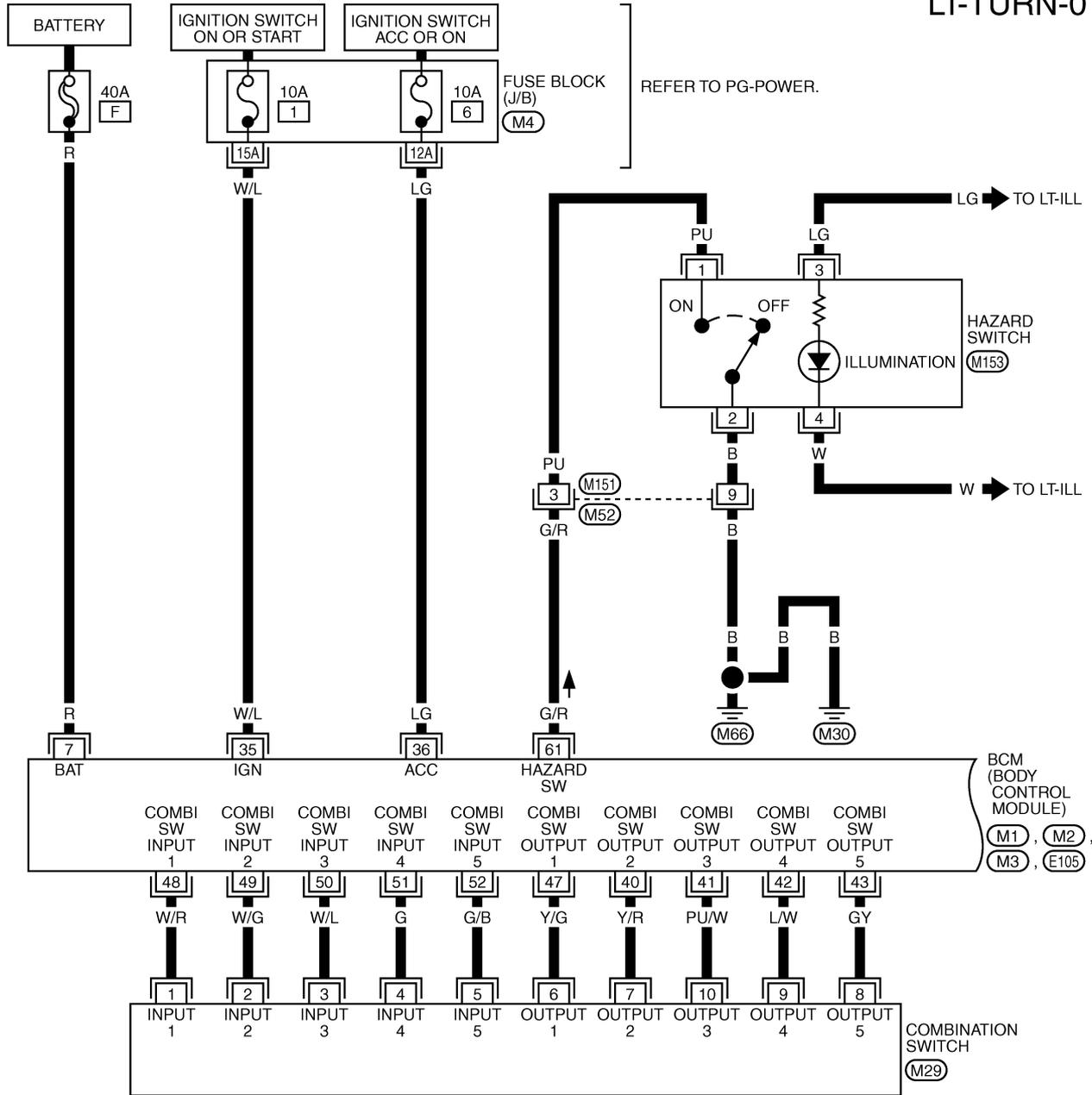
TKWT0448E

TURN SIGNAL AND HAZARD WARNING LAMPS

Wiring Diagram — TURN —

AKS000UG

LT-TURN-01



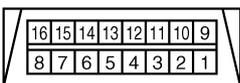
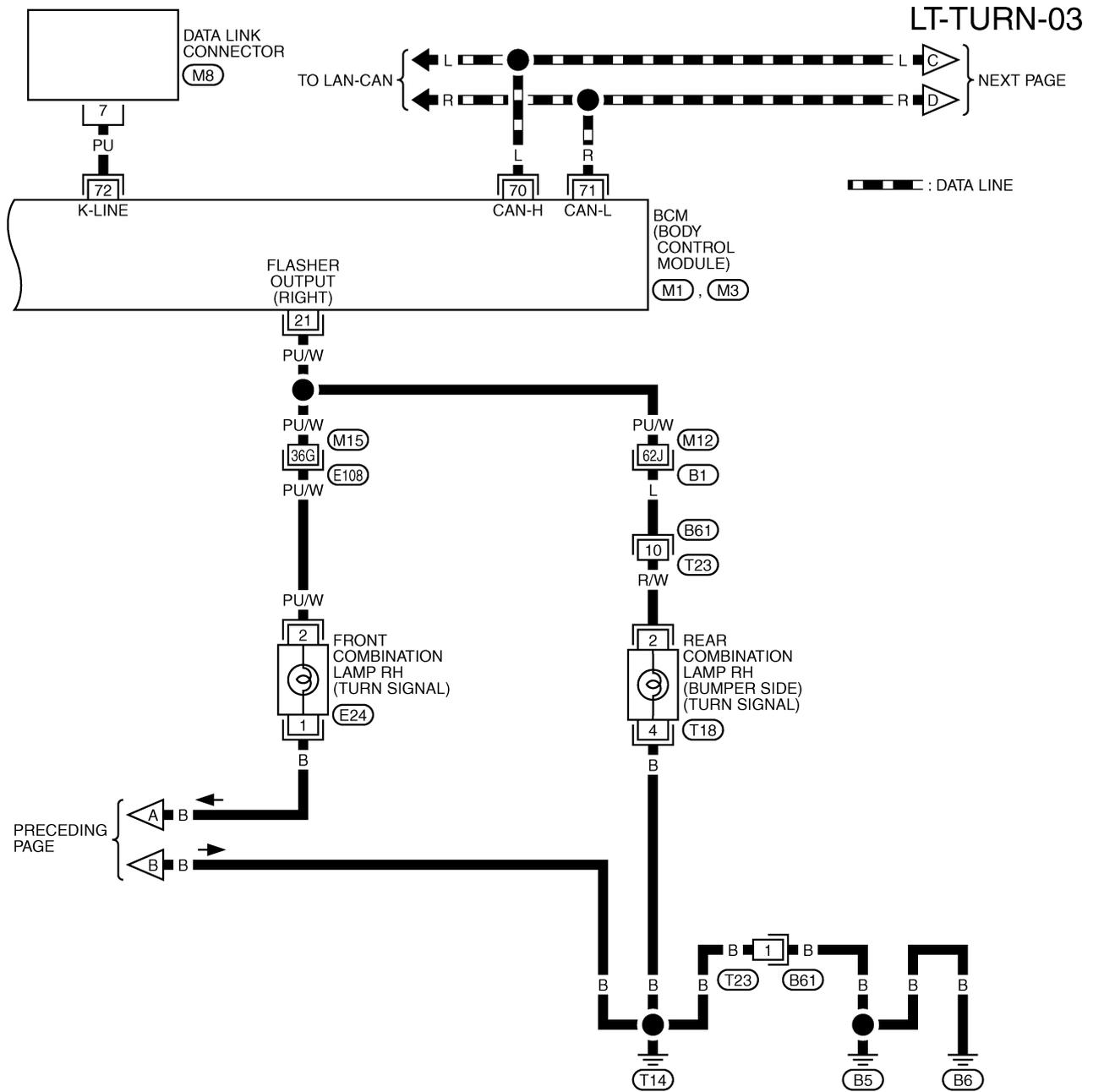
REFER TO THE FOLLOWING.

(M4) -FUSE BLOCK-JUNCTION BOX (J/B)

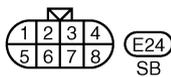
(M1), (M2), (M3), (E105) -ELECTRICAL UNITS

TKWT0449E

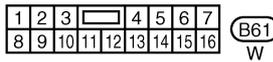
TURN SIGNAL AND HAZARD WARNING LAMPS



(M8) W



(E24) SB



(B61) W



(T18) SB

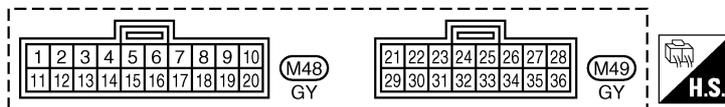
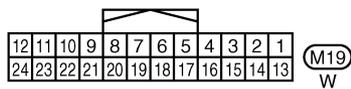
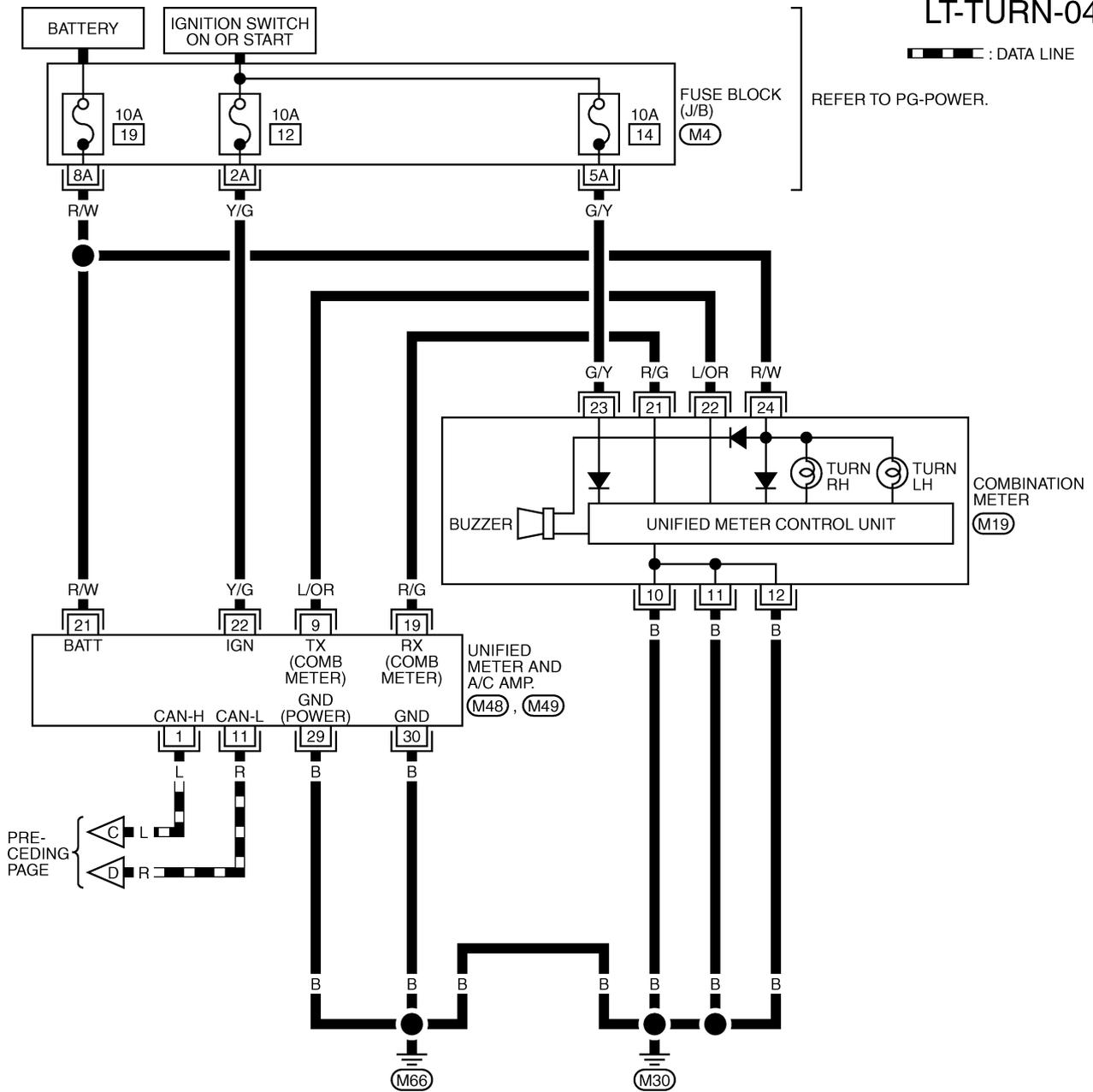
REFER TO THE FOLLOWING.
 (E108), (B1) -SUPER MULTIPLE JUNCTION (SMJ)
 (M1), (M3) -ELECTRICAL UNITS

TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-04

▬ : DATA LINE

REFER TO PG-POWER.



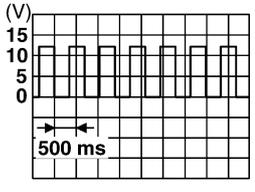
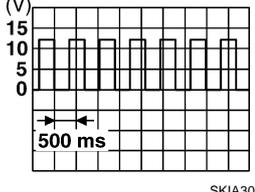
REFER TO THE FOLLOWING.

(M4) - FUSE BLOCK-JUNCTION BOX (J/B)

TURN SIGNAL AND HAZARD WARNING LAMPS

Terminals and Reference Value for BCM

AKS000UH

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
7	R	Battery power supply	OFF	—		Battery voltage
8	B	Ground	ON	—		Approx. 0V
21	PU/W	Turn signal (right)	ON	Combination switch	Turn right ON	
22	G/W	Turn signal (left)	ON	Combination switch	Turn left ON	
35	W/L	Ignition switch (ON)	ON	—		Battery voltage
36	LG	Ignition switch (ACC)	ACC	—		Battery voltage
40	Y/R	Combination switch Output 2	ON	Lighting, turn, wiper OFF		
41	PU/W	Combination switch Output 3				
42	L/W	Combination switch Output 4				
43	GY	Combination switch Output 5				
47	Y/G	Combination switch Output 1				
48	W/R	Combination switch Input 1	ON	Lighting, turn, wiper OFF		4.5V or more
49	W/G	Combination switch Input 2				
50	W/L	Combination switch Input 3				
51	G	Combination switch Input 4				
52	G/B	Combination switch Input 5				
61	P/U	Hazard	OFF	Hazard switch	ON	Approx. 0V
					OFF	Approx. 5V
70	L	CAN-H	—	—		—
71	R	CAN-L	—	—		—
72	PU	K-LINE	—	—		—

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TURN SIGNAL AND HAZARD WARNING LAMPS

AKS000UJ

How to Proceed With Trouble Diagnosis

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-57, "System Description"](#) .
3. Conduct pre-inspection. Refer to [LT-66, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Do the turn signal and hazard warning lamps operate normally? If Yes: Go to 6. If No: Go to 4.
6. INSPECTION END

Preliminary Check

AKS000UJ

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

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

Refer to [LT-61, "Wiring Diagram — TURN —"](#) .

OK or NG

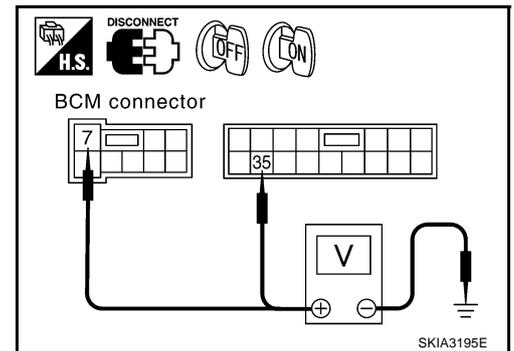
OK >> GO TO 2.

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

2. POWER SUPPLY CIRCUIT CHECK

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

Terminals		(-)	Ignition switch position	
(+)			OFF	ON
Connector	Terminal (Wire color)	Ground	Battery voltage	Battery voltage
E105	7 (R)		0V	Battery voltage
M1	35 (W/L)			



OK or NG

OK >> GO TO 3.

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

3. GROUND CIRCUIT CHECK

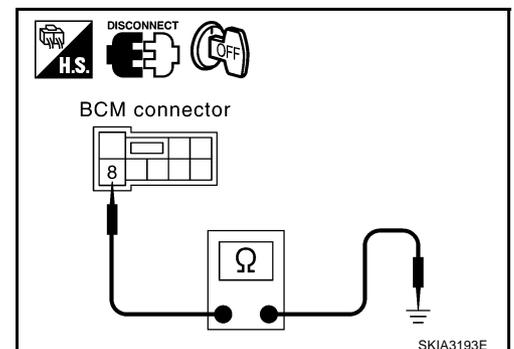
Check continuity between BCM and ground.

Terminals			Continuity
Connector	Terminal (wire color)		
E105	8 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



TURN SIGNAL AND HAZARD WARNING LAMPS

CONSULT-II Function

AKS000UK

CONSULT-II performs the following functions communicating with BCM.

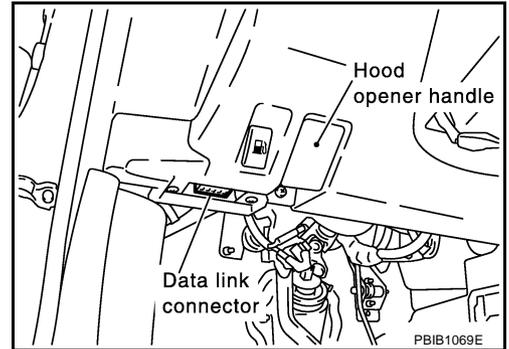
BCM diagnosis part	Check item, diagnosis mode	Description
FLASHER	Data monitor	Displays BCM input data in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

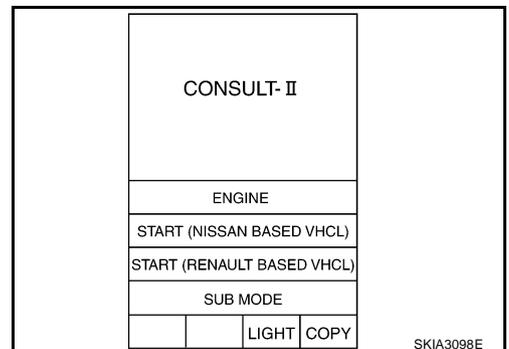
CAUTION:

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

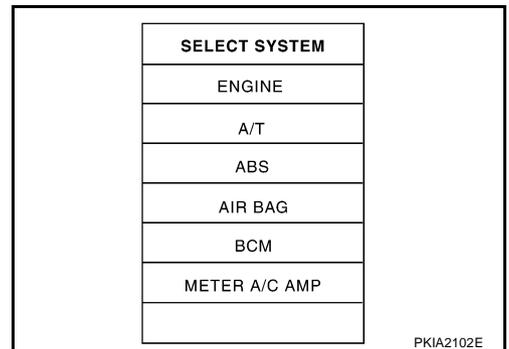
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



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

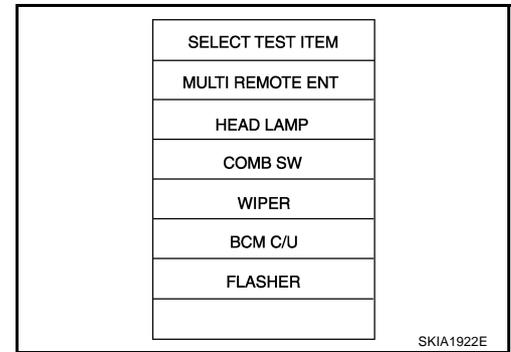


3. Touch "BCM" on "SELECT SYSTEM" screen.
If "BCM" is not indicated, refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



TURN SIGNAL AND HAZARD WARNING LAMPS

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



DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
FLASHER (RIGHT)	Turn signal lamp (right) can be operated by any ON-OFF operations.
FLASHER (LEFT)	Turn signal lamp (left) can be operated by any ON-OFF operations.
FLASHER (RIGHT) (CAN)	Turn signal lamp (right) indicator signal can be output by CAN communication line to gauges by any ON-OFF operations.
FLASHER (LEFT) (CAN)	Turn signal lamp (left) indicator signal can be output by CAN communication line to gauges by any ON-OFF operations.

TURN SIGNAL AND HAZARD WARNING LAMPS

AKS000UL

Turn Signal Lamp Does Not Operate

1. CHECK BULB

Check bulb standard of each turn signal lamp is correct.

OK or NG

- OK >> GO TO 2.
- NG >> Replace turn signal lamp bulb.

2. COMBINATION SWITCH CIRCUIT CHECK

Select BCM on CONSULT-II. Carry out "BCM C/U" self-diagnosis.

Displayed results of self-diagnosis

- Diagnosis system 1 - 5>> Combination switch system malfunction.
- Refer to [LT-81, "Combination Switch Inspection According to Self-Diagnostic Results"](#).
- No malfunction detected>> GO TO 3.

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

LKIA0073E

3. COMBINATION SWITCH INPUT SIGNAL CHECK

Select "BCM" on CONSULT-II. With "FLASHER" data monitor, check that "TURN SIGNAL R" and "TURN SIGNAL L" turn ON-OFF linked with operation of turn signal switch.

- When turn signal switch LH position :TURN SIGNAL L ON**
- When turn signal switch RH position :TURN SIGNAL R ON**

OK or NG

- OK >> GO TO 4.
- NG >> Replace lighting switch.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
HAZARD SW	ON
TURN SIGNAL R	OFF
TURN SIGNAL L	OFF

LKIA0083E

4. ACTIVE TEST

1. Select "BCM" on CONSULT-II. Select "FLASHER" active test.
2. Check that "FLASHER RIGHT" and "FLASHER LEFT" operate.

- Turn signal lamp :Should turn ON**

OK or NG

- OK >> Replace BCM.
- NG >> GO TO 5.

ACTIVE TEST	
FLASHER RIGHT	ON
	OFF

LKIA0084E

TURN SIGNAL AND HAZARD WARNING LAMPS

5. SHORT CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect BCM connector and all turn signal lamp connectors.
3. Check continuity (short circuit) between BCM harness connector M1 terminal 21(PU/W) and ground.

Continuity not should exist

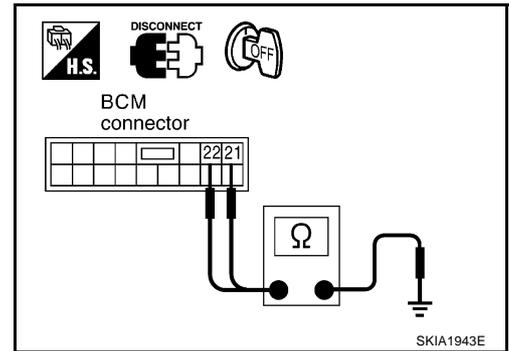
4. Check continuity (short circuit) between BCM harness connector M1 terminal 22(G/W) and ground.

Continuity not should exist

OK or NG

OK >> Replace BCM.

NG >> After repairing harness be sure to disconnect battery negative cable, and then reconnect it.



Hazard Warning Lamps Do Not Operate But Turn Signal Lamps Operate

AKS000UM

1. CHECK BULB

Check that bulb standard of each turn signal lamp is correct.

OK or NG

OK >> GO TO 2.

NG >> Replace turn signal lamp bulb.

2. HAZARD SWITCH INPUT SIGNAL

Select "BCM" on CONSULT-II. Use "FLASHER" data monitor to verify that "HAZARD SW" turns ON-OFF linked with operation of hazard switch.

OK or NG

OK >> Replace BCM.

NG >> GO TO 3.

DATA MONITOR	
MONITOR	
IGN ON SW	ON
HAZARD SW	ON
TURN SIGNAL R	OFF
TURN SIGNAL L	OFF

The reference code 'LKIA0083E' is in the bottom right corner.

3. HAZARD SWITCH SIGNAL CIRCUIT CHECK

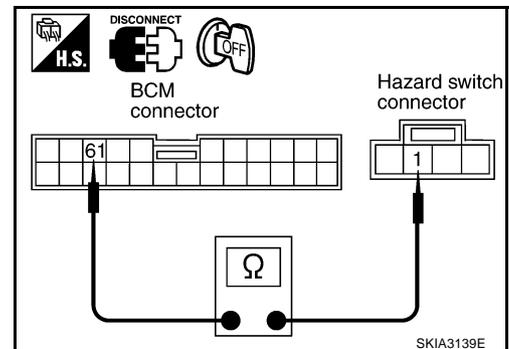
1. Turn ignition switch OFF.
2. Disconnect BCM connector and hazard switch connectors.
3. Check continuity between BCM harness connector M3 terminal 61(G/R) and hazard switch connector M153 terminal 1(PU).

Continuity should exist

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



TURN SIGNAL AND HAZARD WARNING LAMPS

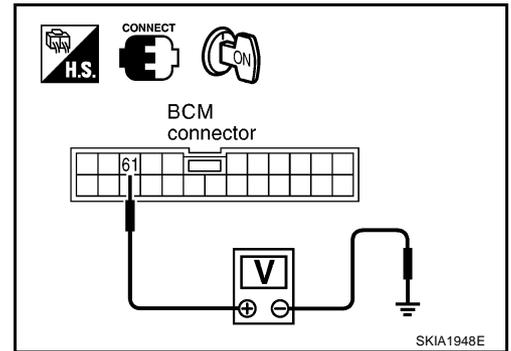
4. HAZARD SIGNAL INPUT CHECK

1. Connect BCM connector.
2. Check voltage between BCM harness connector and ground.

Terminals		(-)	Voltage
(+)			
Connector	Terminal (wire color)		
M3	61 (G/R)	Ground	Approx. 5V

OK or NG

- OK >> GO TO 5.
 NG >> Replace BCM.



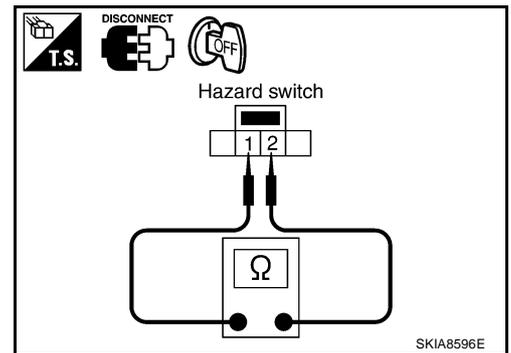
5. HAZARD SWITCH CHECK

Check continuity between hazard switch connectors.

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

OK or NG

- OK >> GO TO 6.
 NG >> Replace hazard switch.



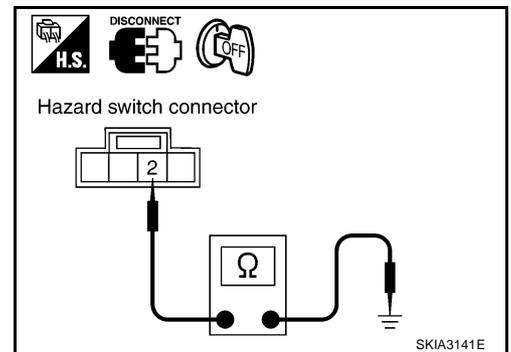
6. HAZARD SWITCH GROUND CIRCUIT CHECK

Check continuity between hazard switch harness connector M153 terminal 2(B) and ground.

Continuity should exist

OK or NG

- OK >> Replace BCM.
 NG >> Repair or replace harness.



Turn Signal Indicator Lamp Does Not Operate

1. CHECK BULB

Inspect bulb of turn signal indicator lamp in combination meter.

OK or NG

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

TURN SIGNAL AND HAZARD WARNING LAMPS

Bulb Replacement (Front Turn Signal Lamp)

AKS000UO

Refer to [LT-24, "Bulb Replacement"](#) in "HEADLAMP (FOR USA)".

Bulb Replacement (Rear Turn Signal Lamp)

AKS000UQ

Refer to [LT-109, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

Removal and Installation of Front Turn Signal Lamp

AKS000UR

Refer to [LT-26, "Removal and Installation"](#) in "HEADLAMP (FOR USA)".

Removal and Installation of Rear Turn Signal Lamp

AKS000UT

Refer to [LT-110, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

LIGHTING AND TURN SIGNAL SWITCH

LIGHTING AND TURN SIGNAL SWITCH

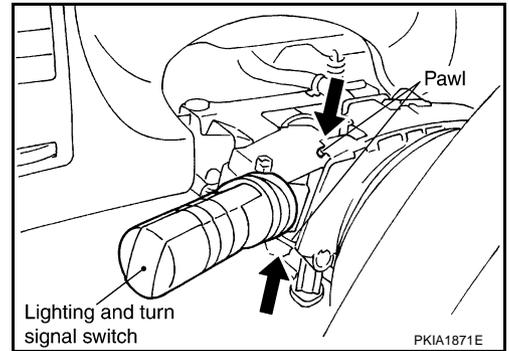
PFP:25540

Removal and Installation

AKS000UU

REMOVAL

1. Remove steering column lower cover. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Remove column upper cover and combination meter assembly. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
3. While pressing pawls in direction as shown in the figure, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Installation in the reverse order of removal.

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HAZARD SWITCH

HAZARD SWITCH

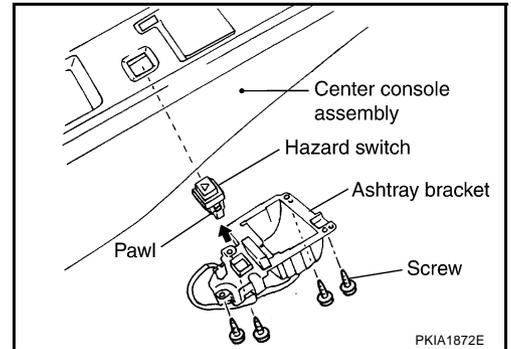
PFP:25290

Removal and Installation

AKS000UV

REMOVAL

1. Remove center console assembly. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Disconnect hazard switch connector.
3. Remove ashtray bracket assembly from center console assembly.
4. Press pawl on reverse side and remove the hazard switch.



INSTALLATION

Install in the reverse order of removal.

COMBINATION SWITCH

PF:25567

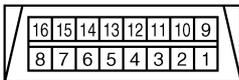
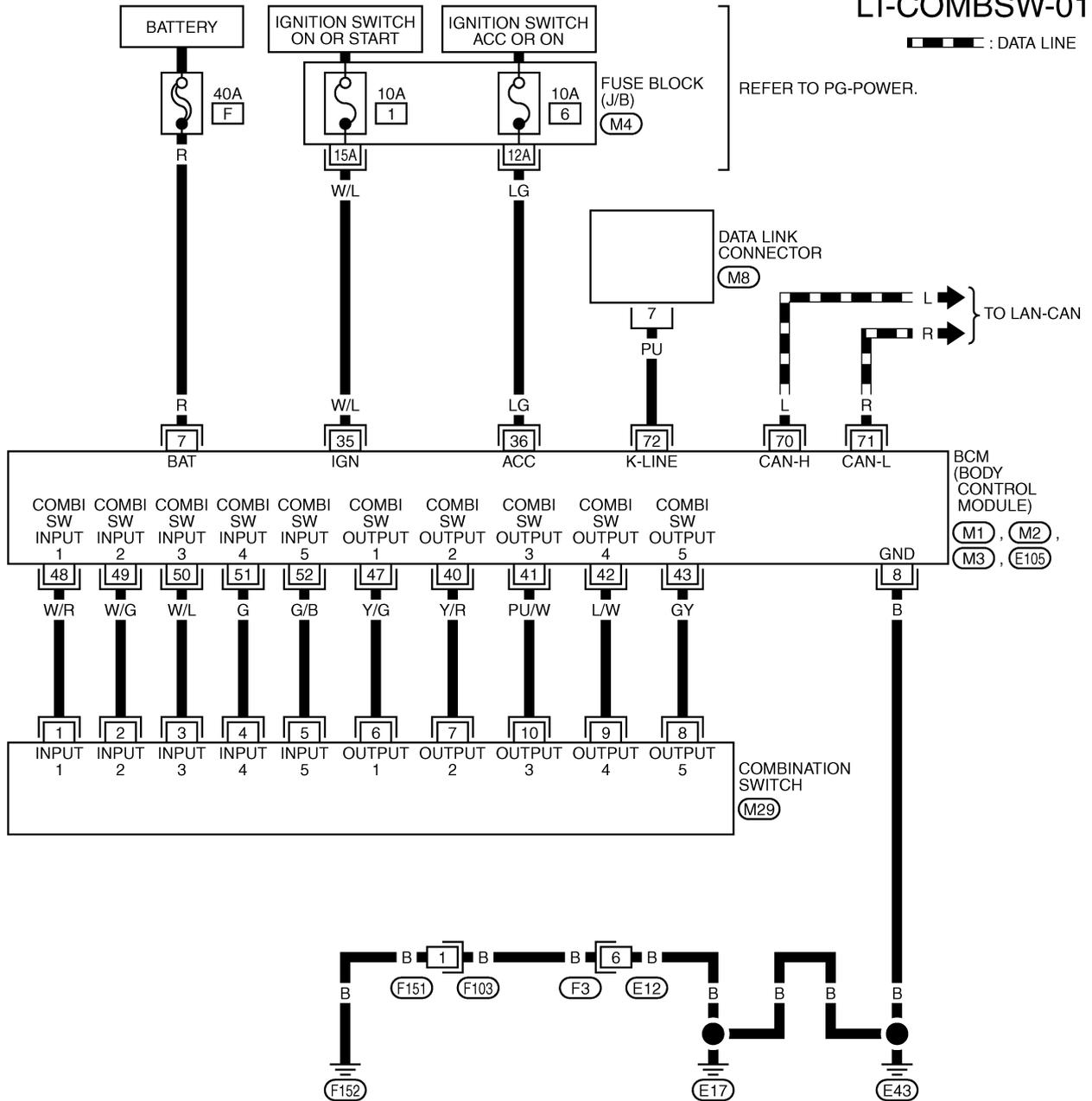
COMBINATION SWITCH

Wiring Diagram—COMBSW—

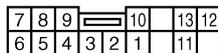
AKS00377

LT-COMBSW-01

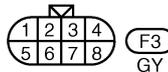
— : DATA LINE



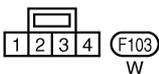
(M8)
W



(M29)
W



(F3)
GY



(F103)
W

REFER TO THE FOLLOWING.

(M4) -FUSE BLOCK-JUNCTION BOX (J/B)

(M1), (M2), (M3), (E105) -ELECTRICAL UNITS

TKWT0857E

COMBINATION SWITCH

AKS000UW

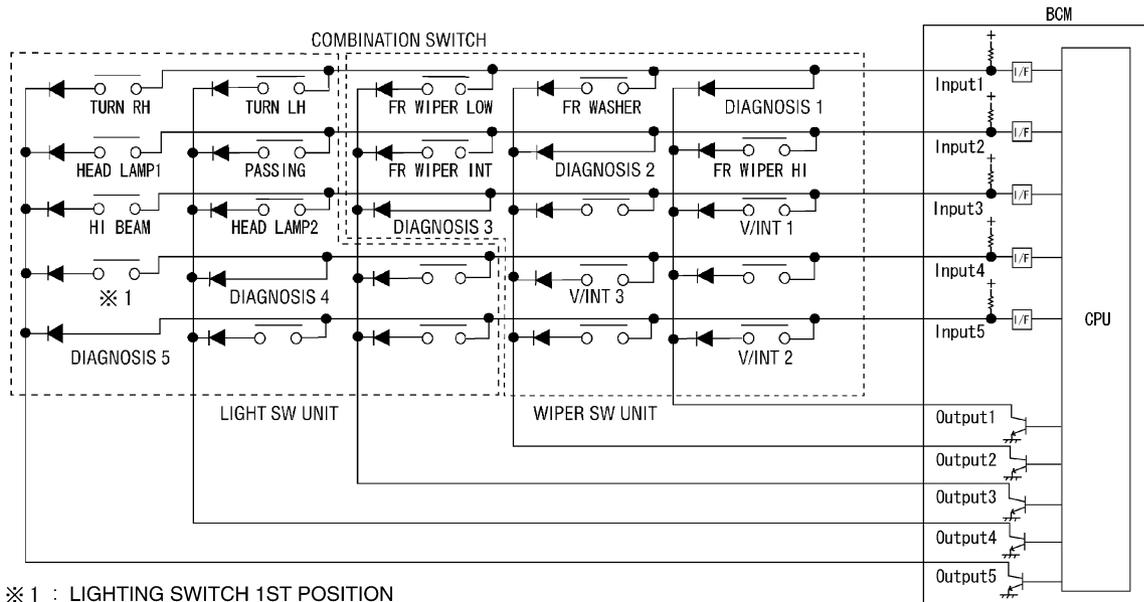
Combination Switch Reading Function

1. Description

- BCM reads combination switch (light, wiper washer, turn signal) status, and controls various electrical components according to the results.
- BCM reads information of 20 switches and 5 diagnostic results by combining five output terminals (OUTPUT 1 - 5) and five input terminals (INPUT 1 - 5).

2. Operation description

- BCM outputs battery voltage from input terminals (INPUT 1 - 5) all the time. At the same time output terminals (OUTPUT 1 - 5) activate transistors in turn, and allow current to flow. At this time, if any (1 or more) of the switches are ON, the input terminals corresponding to these switches detect current flow, and the interface of BCM detects the condition. Then BCM judges switches are ON.



PKIA3701E

3. BCM - Operation table of combination switches

- BCM reads operation status of combination switches by the combination shown in the table.

	COMB SW INPUT 1		COMB SW INPUT 2		COMB SW INPUT 3		COMB SW INPUT 4		COMB SW INPUT 5	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
COMB SW OUTPUT 1	DIAGNOSIS 1 OK	DIAGNOSIS 1 NG	FR WIPER HI ON	FR WIPER HI OFF	V/INT 1 ON	V/INT 1 OFF	—	—	V/INT 2 ON	V/INT 2 OFF
COMB SW OUTPUT 2	FR WASHER ON	FR WASHER OFF	DIAGNOSIS 2 OK	DIAGNOSIS 2 NG	—	—	V/INT 3 ON	V/INT 3 OFF	—	—
COMB SW OUTPUT 3	FR WIPER LOW ON	FR WIPER LOW OFF	FR WIPER INT ON	FR WIPER INT OFF	DIAGNOSIS 3 OK	DIAGNOSIS 3 NG	—	—	—	—
COMB SW OUTPUT 4	TURN LH ON	TURN LH OFF	PASSING ON	PASSING OFF	HEAD LAMP 2 ON	HEAD LAMP 2 OFF	DIAGNOSIS 4 OK	DIAGNOSIS 4 NG	—	—
COMB SW OUTPUT 5	TURN RH ON	TURN RH OFF	HEAD LAMP ON	HEAD LAMP OFF	HI BEAM ON	HI BEAM OFF	LIGHTING SWITCH 1ST POSITION ON	LIGHTING SWITCH 1ST POSITION OFF	DIAGNOSIS 5 OK	DIAGNOSIS 5 NG

PKIA3702E

NOTE:

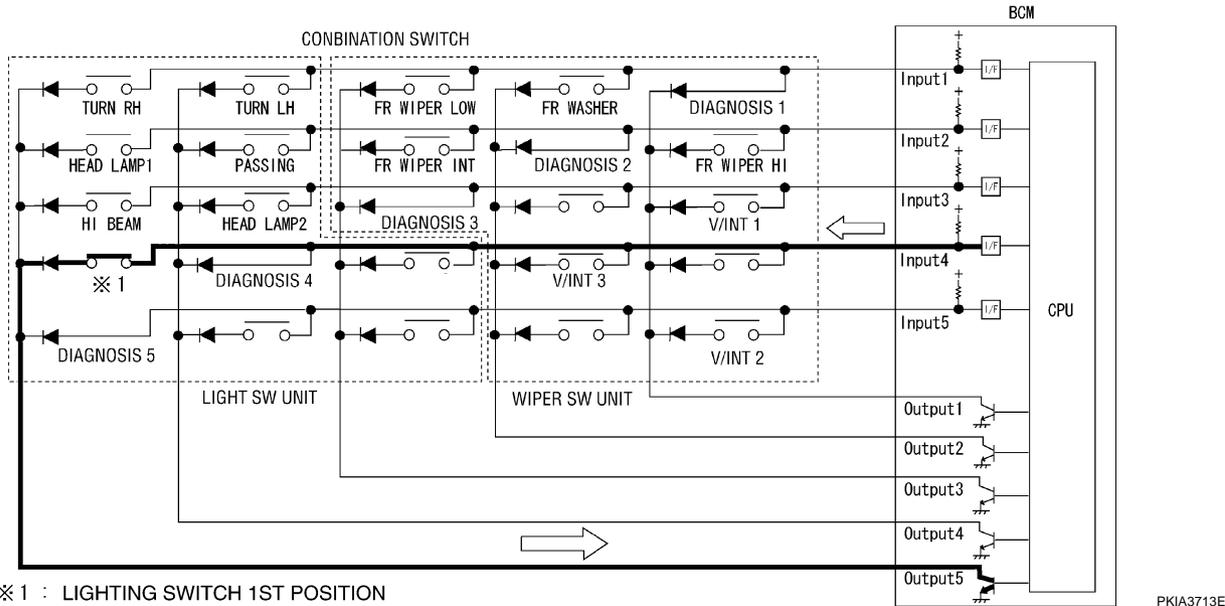
Dual switches are set for head lamps.

4. Example (When lighting switch 1st position switch is turned ON)

LT-76

COMBINATION SWITCH

- When lighting switch 1st position switch is turned ON, contact in combination switch turns ON. At this time if OUTPUT 5 transistor is activated, BCM detects current flow in INPUT 4.
- When OUTPUT 5 transistor is ON, BCM detects current flow in INPUT 4, and judges lighting switch 1st position switch is ON. Then BCM sends tail lamp ON signal to IPDM E/R using CAN communication.
- When OUTPUT 5 transistor is activated again, BCM detects current flow in INPUT 4, and confirms lighting switch 1st position switch is continuously ON.



NOTE:

Each OUTPUT terminal transistor is activated at 10 ms intervals. Therefore, after a switch is turned ON, the electrical loads are activated with a time delay, but this time delay is so short that it cannot be noticed.

5. Operation mode

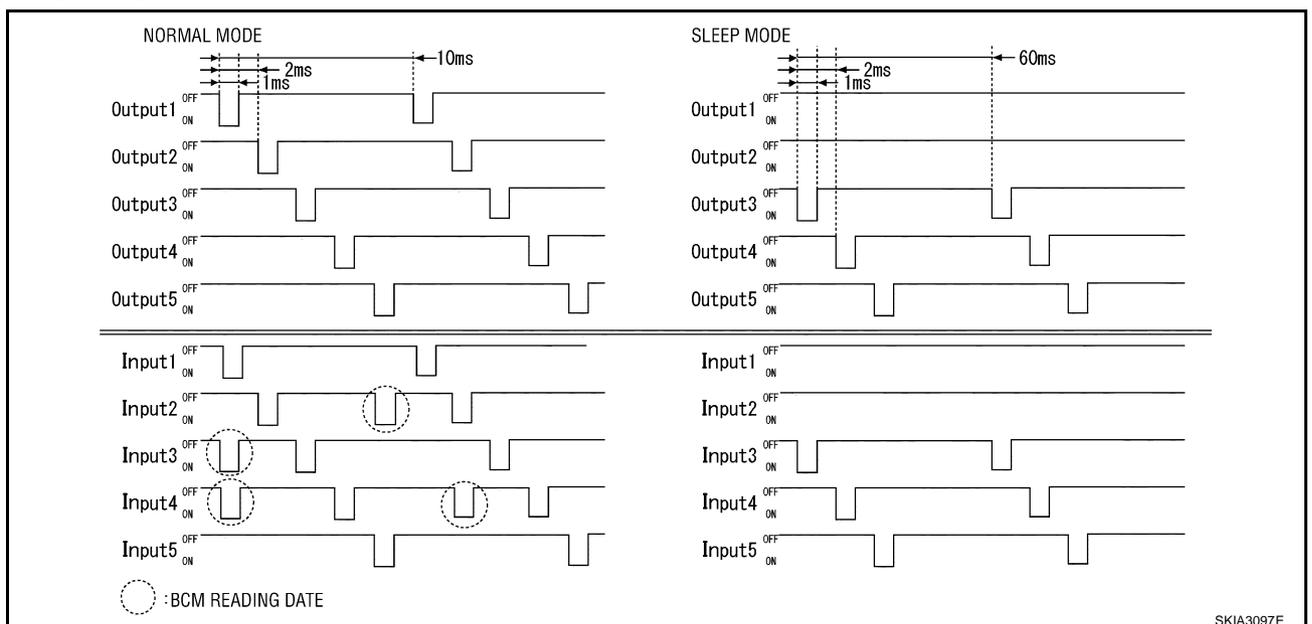
- Combination switch reading function has operation modes shown below.

a. Normal mode

- When BCM is not in sleep mode, each OUTPUT (1 - 5) terminal turns ON-OFF at 10 ms intervals.

b. Sleep mode

- When BCM is in sleep mode, transistors of OUTPUT 1 and 2 stop the output, and BCM enters low-current-consumption mode. OUTPUTS (3 - 5) turn ON-OFF at 60 ms intervals, and receive lighting switch input only.



COMBINATION SWITCH

CONSULT-II Function

AKS000UX

CONSULT-II performs the following functions communicating with BCM.

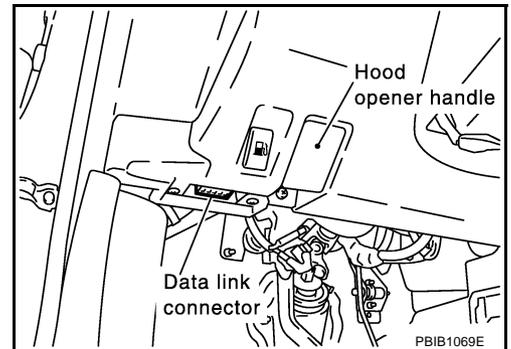
BCM diagnosis part	Check item, diagnosis mode	Description
Combination switch	DATA MONITOR	Displays BCM input data in real time.

CONSULT-II BASIC OPERATION

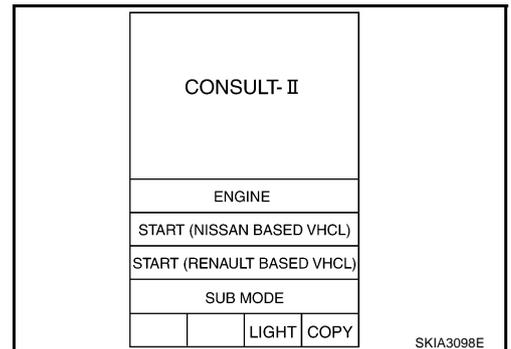
CAUTION:

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

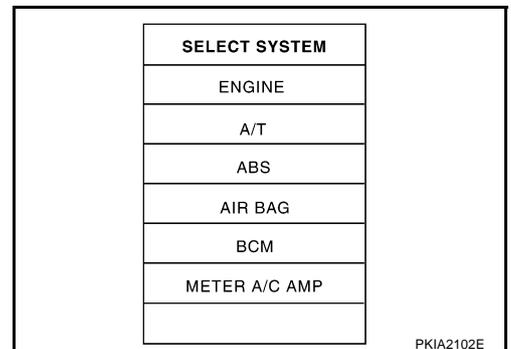
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



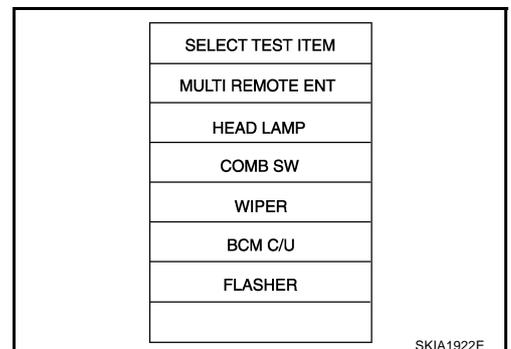
2. Touch "START(NISSAN BASED VHCL)".



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



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



COMBINATION SWITCH

DATA MONITOR

Operation Procedure

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

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

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

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COMBINATION SWITCH

Display Item List

Monitor item name "OPERATION OR UNIT"	Contents
TAIL LAMP SW "ON/OFF"	Displays status (lighting switch 1st position: ON/Others: OFF) of lighting 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.
HI BEAM SW "ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam 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 ^{Note} "OFF"	—
FR FOG SW ^{Note} "OFF"	—
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.
INT VOLUME [1 - 7]	Displays intermittent operation knob setting (1 - 7), determined from wiper switch signal.
RR WIPER ON "ON/OFF"	Displays "Rear Wiper Switch (ON)/Other (OFF)" status, determined from wiper switch signal.
RR WIPER INT "ON/OFF"	Displays "Rear 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.
RR WASHER SW "ON/OFF"	Displays "Rear Washer Switch (ON)/Other (OFF)" status, determined from wiper 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.

NOTE:

This item is displayed, but cannot monitor it.

COMBINATION SWITCH

Combination Switch Inspection According to Self-Diagnostic Results

AKS003MU

1. SELF-DIAGNOSTIC RESULT CHECK

CAUTION:

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

1. Connect to CONSULT-II, and select "BCM" on "SELECT SYSTEM" screen.
2. Select "BCM control unit" on "SELECT WORK ITEM" screen, and select "SELF-DIAG RESULTS".
3. Check display content in self-diagnostic results.

CONSULT-II display code	Self-diagnostic result content	Malfunctioning switch system	Detection conditions	Possible causes
B2049	OPEN DETECT 1	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● FRONT WIPER HI ● Intermittent control 1 ● RR WIPER INT ● Intermittent control 2 Pattern 2 <ul style="list-style-type: none"> ● FR WASHER ● FRONT WIPER LOW ● TURN LH ● TURN RH 	BCM terminal No. 48 (Input 1) does not change. (Open circuit in diagnosis 1 system line or open malfunction in output 1 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Wiper switch ● BCM
B2050	OPEN DETECT 2	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● FR WASHER ● RR WASHER ● Intermittent control 3 ● RR WIPER LOW Pattern 2 <ul style="list-style-type: none"> ● FRONT WIPER HI ● FRONT WIPER INT ● PASSING ● HEAD LAMP 1 	BCM terminal No. 49 (Input 2) does not change. (Open circuit in diagnosis 2 system line or open malfunction in output 2 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Wiper switch ● BCM
B2051	OPEN DETECT 3	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● FRONT WIPER LOW ● FRONT WIPER INT Pattern 2 <ul style="list-style-type: none"> ● Intermittent control 1 ● RR WASHER ● HEAD LAMP 2 ● HI BEAM 	BCM terminal No. 50 (Input 3) does not change. (Open circuit in diagnosis 3 system line or open malfunction in output 3 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Wiper switch (Front wiper Lo, INT) ● BCM
B2052	OPEN DETECT 4	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● TURN LH ● PASSING ● HEAD LAMP 2 Pattern 2 <ul style="list-style-type: none"> ● RR WIPER INT ● Intermittent control 3 ● Lighting switch 1st position 	BCM terminal No. 51 (Input 4) does not change. (Open circuit in diagnosis 4 system line or open malfunction in output 4 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Lighting switch ● BCM

COMBINATION SWITCH

CONSULT-II display code	Self-diagnostic result content	Malfunctioning switch system	Detection conditions	Possible causes
B2053	OPEN DETECT 5	In the case you are not able to turn on the switch by pattern 1 or 2. Pattern 1 <ul style="list-style-type: none"> ● TURN RH ● HEAD LAMP 1 ● HI BEAM ● TAIL LAMP Pattern 2 <ul style="list-style-type: none"> ● Intermittent control 2 ● RR WIPER LOW 	BCM terminal No. 52 (Input 5) does not change. (Open circuit in diagnosis 5 system line or open malfunction in output 5 transistor.)	<ul style="list-style-type: none"> ● Harness between BCM and combination switch ● Lighting switch ● BCM
B2054	HEADLAMP 1 SW NG	HEAD LAMP 1 malfunction	Headlamp 1 switch OFF Headlamp 2 switch ON	Lighting switch
B2055	HEADLAMP 2 SW NG	HEAD LAMP 2 malfunction	Headlamp 1 switch ON Headlamp 2 switch OFF	Lighting switch

Display content

No malfunction>>Inspection End

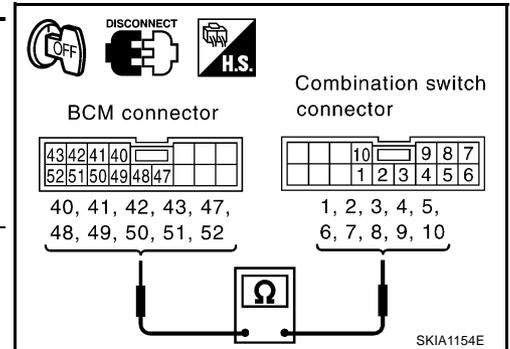
Malfunction in diagnosis system>>GO TO 2.

Malfunction in headlamp switch system>>Replace Lighting switch.

2. HARNESS INSPECTION

1. Disconnect BCM connector and combination switch connector.
2. Check continuity between BCM harness connector of suspect system and combination switch harness connector terminals.

Self-diagnostic result content	Terminals				Continuity	
	BCM (+)		Combination switch (-)			
	Connector	Terminal (wire color)	Connector	Terminal (wire color)		
OPEN DETECT 1	M2	Input 1	48 (W/R)	M29	1 (W/R)	Yes
		Output 1	47 (Y/G)		6 (Y/G)	
OPEN DETECT 2		Input 2	49 (W/G)		2 (W/G)	
		Output 2	40 (Y/R)		7 (Y/R)	
OPEN DETECT 3		Input 3	50 (W/L)		3 (W/L)	
		Output 3	41 (PU/W)		10 (PU/W)	
OPEN DETECT 4		Input 4	51 (G)		4 (G)	
		Output 4	42 (L/W)		9 (L/W)	
OPEN DETECT 5		Input 5	52 (G/B)		5 (G/B)	
		Output 5	43 (GY)		8 (GY)	



OK or NG

OK >> GO TO 3.

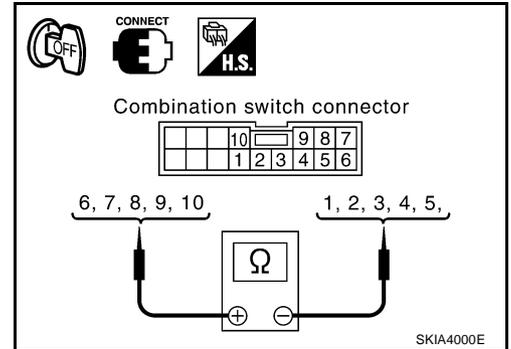
NG >> Repair harness.

COMBINATION SWITCH

3. CHECK 1: COMBINATION SWITCH

1. Connect combination switch connector.
2. Check continuity for combination switch harness connector between input and output terminals of applicable malfunctioning system.

Self-diagnostic result content	Combination switch			Continuity
	Connector	Input (-) Terminal (Wire color)	Output (+) Terminal (Wire color)	
OPEN DETECT 1	M29	1 (W/R)	6 (Y/G)	Yes
OPEN DETECT 2		2 (W/G)	7 (Y/R)	
OPEN DETECT 3		3 (W/L)	10 (PU/W)	
OPEN DETECT 4		4 (G)	9 (L/W)	
OPEN DETECT 5		5 (G/B)	8 (GY)	



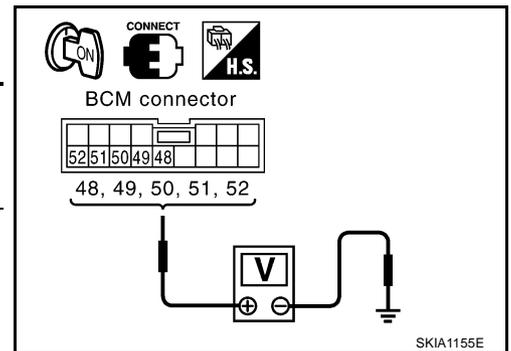
OK or NG

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

4. INSPECTION OF BCM INPUT TERMINAL VOLTAGE

Connect BCM connector, and check BCM input terminal voltage of suspect system.

Self-diagnostic result content	Terminals				Voltage
	Connector	BCM (+)		(-)	
		Terminal (wire color)			
OPEN DETECT 1	M2	Input 1	48 (W/R)	Ground	4.5V or more
OPEN DETECT 2		Input 2	49 (W/G)		
OPEN DETECT 3		Input 3	50 (W/L)		
OPEN DETECT 4		Input 4	51 (G)		
OPEN DETECT 5		Input 5	52 (G/B)		



OK or NG

- OK >> GO TO 5.
- NG >> Replace BCM.

COMBINATION SWITCH

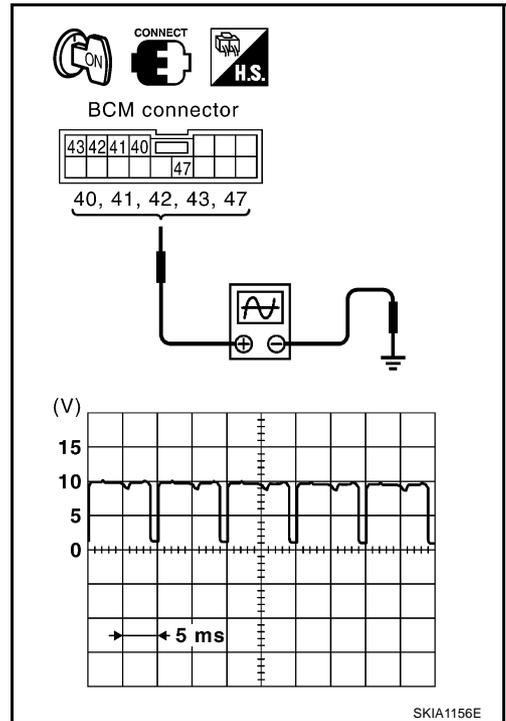
5. BCM OUTPUT TERMINAL INSPECTION

Connect combination switch connector, and check BCM output terminal voltage waveform of applicable malfunctioning system.

Self-diagnostic result content	Terminals	
	BCM	
	Connector	Terminal (wire color)
OPEN DETECT 1	M2	Output 1 47 (Y/G)
OPEN DETECT 2		Output 2 40 (Y/R)
OPEN DETECT 3		Output 3 41 (PU/W)
OPEN DETECT 4		Output 4 42 (L/W)
OPEN DETECT 5		Output 5 43 (GY)

OK or NG

- OK >> Combination switch malfunction, go to 6.
- NG >> Replace BCM.



SKIA1156E

COMBINATION SWITCH

6. CHECK 2: COMBINATION SWITCH

Following the table below, check switches by procedure of appropriate malfunctioning system.

Self-diagnostic result content	Procedure									
	1	2		3	4		5	6		7
OPEN DETECT 1	Wiper switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	—	—	—
			NG	Switch base replacement		NG	Confirm symptom again.			
OPEN DETECT 2	Wiper switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	—	—	—
			NG	Switch base replacement		NG	Confirm symptom again.			
OPEN DETECT 3	Wiper switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
			NG	Lighting switch replacement		NG	Switch base replacement		NG	Confirm symptom again.
OPEN DETECT 4	Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
			NG	Wiper switch replacement		NG	Switch base replacement		NG	Confirm symptom again.
OPEN DETECT 5	Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
			NG	Wiper switch replacement		NG	Switch base replacement		NG	Confirm symptom again.

>> INSPECTION END

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COMBINATION SWITCH

Malfunctioning Operation of Lamps and Wipers

AKS003MV

1. SYMPTOM CHECK

Confirm symptom, and confirm malfunctioning system No. from the table below.

Malfunctioning system	Symptom	Possible causes
1	When the ignition switch is ON position <ul style="list-style-type: none"> ● LH Turn signal lamp and RH Turn signal lamp on ● Front wiper on (LOW speed) 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 1 terminal and combination switch – Between combination switch and BCM OUTPUT 1 ● BCM ● Combination switch
2	When the ignition switch is ON position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) ● Front wiper on (HI speed) 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 2 terminal and combination switch – Between combination switch and BCM OUTPUT 2 ● BCM ● Combination switch
	When the ignition switch is OFF position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) 	
3	When the ignition switch is ON position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) ● Rear wiper ON 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 3 terminal and combination switch – Between combination switch and BCM OUTPUT 3 ● BCM ● Combination switch
	When the ignition switch is OFF position <ul style="list-style-type: none"> ● Headlamp on (HI and LO) 	
4	When the ignition switch is ON position <ul style="list-style-type: none"> ● Parking lamp and tail lamp on 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 4 terminal and combination switch – Between combination switch and BCM OUTPUT 4 ● BCM ● Combination switch
	When the ignition switch is OFF position <ul style="list-style-type: none"> ● Parking lamp and tail lamp on 	
5	When the ignition switch is ON position <ul style="list-style-type: none"> ● Rear wiper ON When front wiper conducts intermittent operation <ul style="list-style-type: none"> ● Intermittent interval does not change at intermittent operation dial position 2 and 3. ● Intermittent interval does not change at intermittent operation dial position 4 and 7. ● Intermittent interval does not change at intermittent operation dial position 5 and 6. 	<ul style="list-style-type: none"> ● Short between the following harness and ground <ul style="list-style-type: none"> – Between BCM INPUT 5 terminal and combination switch – Between combination switch and BCM OUTPUT 5 ● BCM ● Combination switch

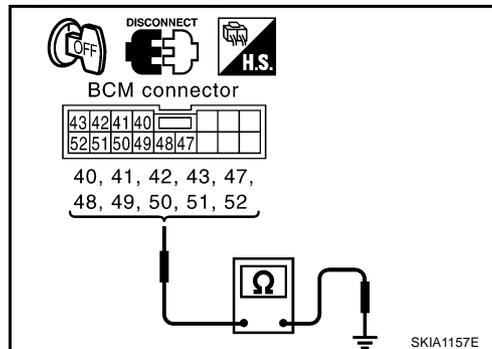
>> GO TO 2.

COMBINATION SWITCH

2. HARNESS INSPECTION

1. Disconnect BCM connector and combination switch connector.
2. Check continuity between BCM harness connector of Malfunctioning system and ground.

Malfunctioning system	Terminals			Continuity	
	Connector	BCM			
		Terminal (wire color)			
1	M2	Input 1	48 (W/R)	Ground	No
		Output 1	47 (Y/G)		
2		Input 2	49 (W/G)		
		Output 2	40 (Y/R)		
3		Input 3	50 (W/L)		
		Output 3	41 (PU/W)		
4		Input 4	51 (G)		
		Output 4	42 (L/W)		
5		Input 5	52 (G/B)		
		Output 5	43 (GY)		



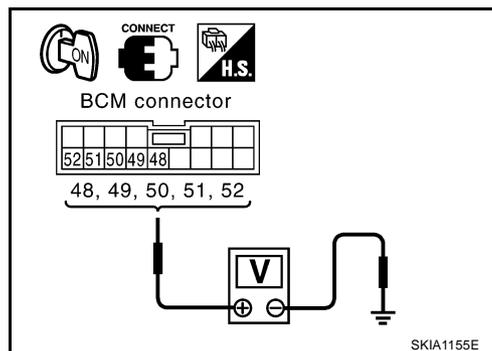
OK or NG

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

3. INSPECTION OF BCM INPUT TERMINAL VOLTAGE

Connect BCM connector. Check voltage between BCM input terminal of applicable malfunctioning system and ground.

Malfunctioning system	Terminals			Voltage	
	Connector	BCM (+)			(-)
		Terminal (wire color)			
1	M2	48 (W/R)	Ground	4.5V or more	
2		49 (W/G)			
3		50 (W/L)			
4		51 (G)			
5		52 (G/B)			



OK or NG

- OK >> Combination switch malfunction, go to 4.
 NG >> Replace BCM.

4. COMBINATION SWITCH INSPECTION

Following the table below, check combination switch.

Procedure									
1	2		3	4		5	6		7
Lighting switch replacement	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End	Confirm self-diagnostic results again.	OK	Inspection End
		NG	Wiper switch replacement		NG	Replacement of switch base		NG	Confirm symptom again.

>> Inspection End

COMBINATION SWITCH

Removal and Installation

AKS000UY

For details, refer to [LT-73, "Removal and Installation"](#) in "SRS" section.

Switch Circuit Inspection

AKS000UZ

For details, refer to [LT-81, "Combination Switch Inspection According to Self-Diagnostic Results"](#) .

STOP LAMP

STOP LAMP

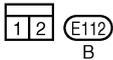
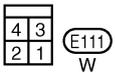
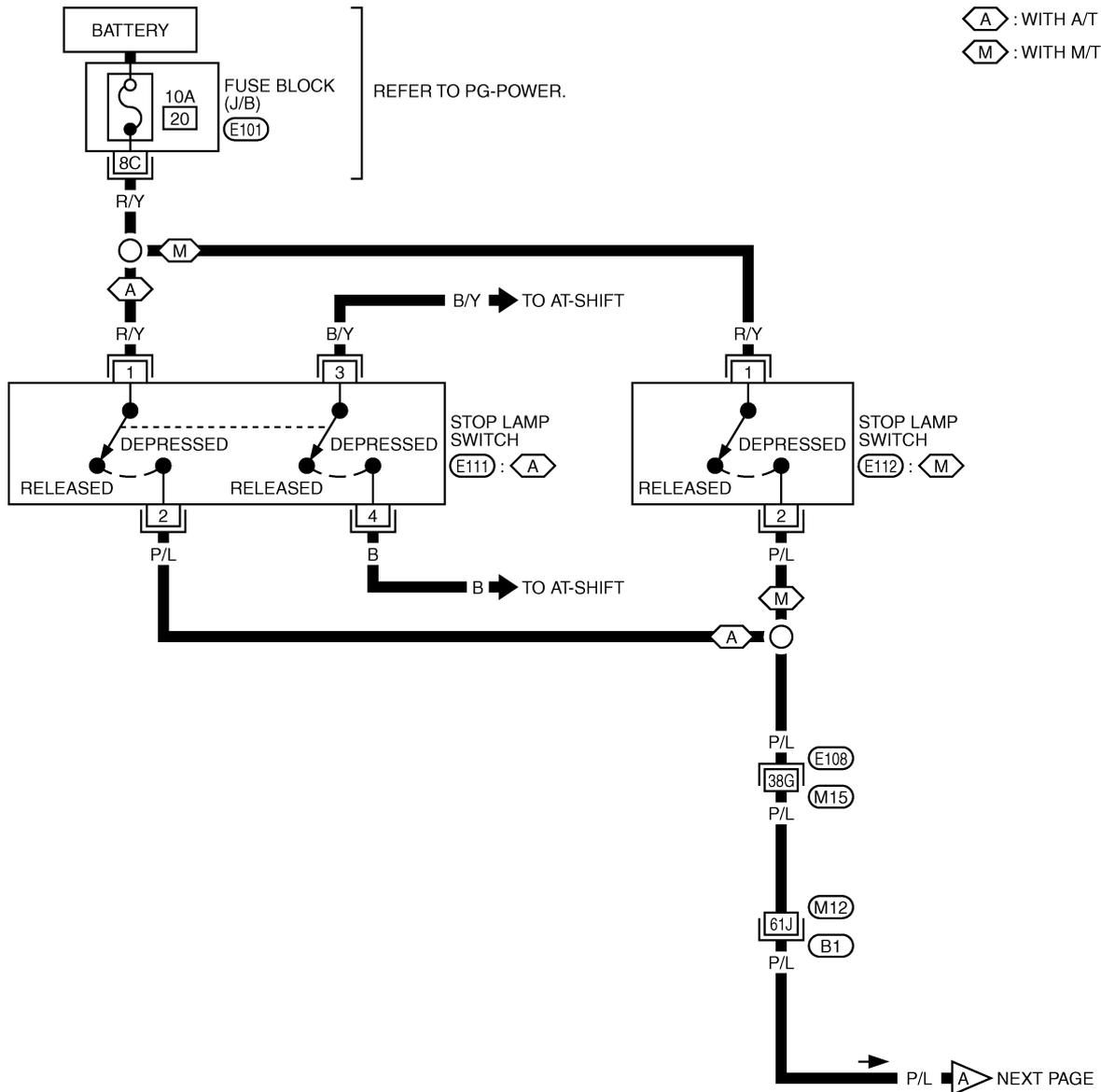
Wiring Diagram — STOP/L —

PFP:26550

AKS000V0

LT-STOP/L-01

⬡ A : WITH A/T
⬡ M : WITH M/T



REFER TO THE FOLLOWING.
 (E108), (B1) -SUPER MULTIPLE JUNCTION (SMJ)
 (E101) -FUSE BLOCK-JUNCTION BOX (J/B)

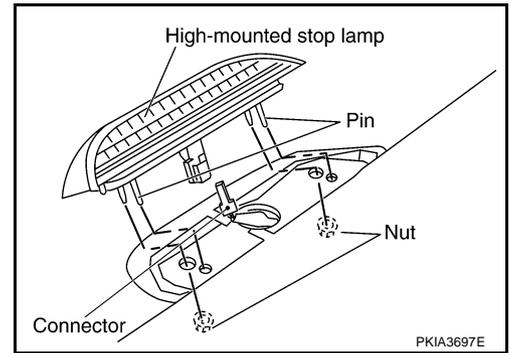
STOP LAMP

High-Mounted Stop Lamp

BULB REPLACEMENT, REMOVAL AND INSTALLATION

AKS003U0

1. Turn ignition switch ON, and turn soft-top OPEN/CLOSE switch ON.
2. When the storage lid is fully opened, soft-top OPEN/CLOSE switch to OFF.
3. Remove battery negative cable.
4. Disconnect high-mounted stop lamp connector.
5. Remove high-mounted stop lamp. Be sure to pull toward the arrow in the figure.
6. Remove high-mounted stop lamp assembly from storage lid.
7. Install in the reverse order of removal.



High-mounted stop lamp : LED

Stop Lamp

BULB REPLACEMENT

AKS000V1

Refer to [LT-109, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

REMOVAL AND INSTALLATION

Refer to [LT-110, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

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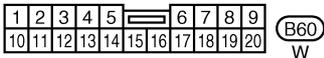
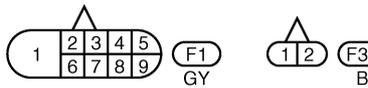
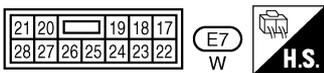
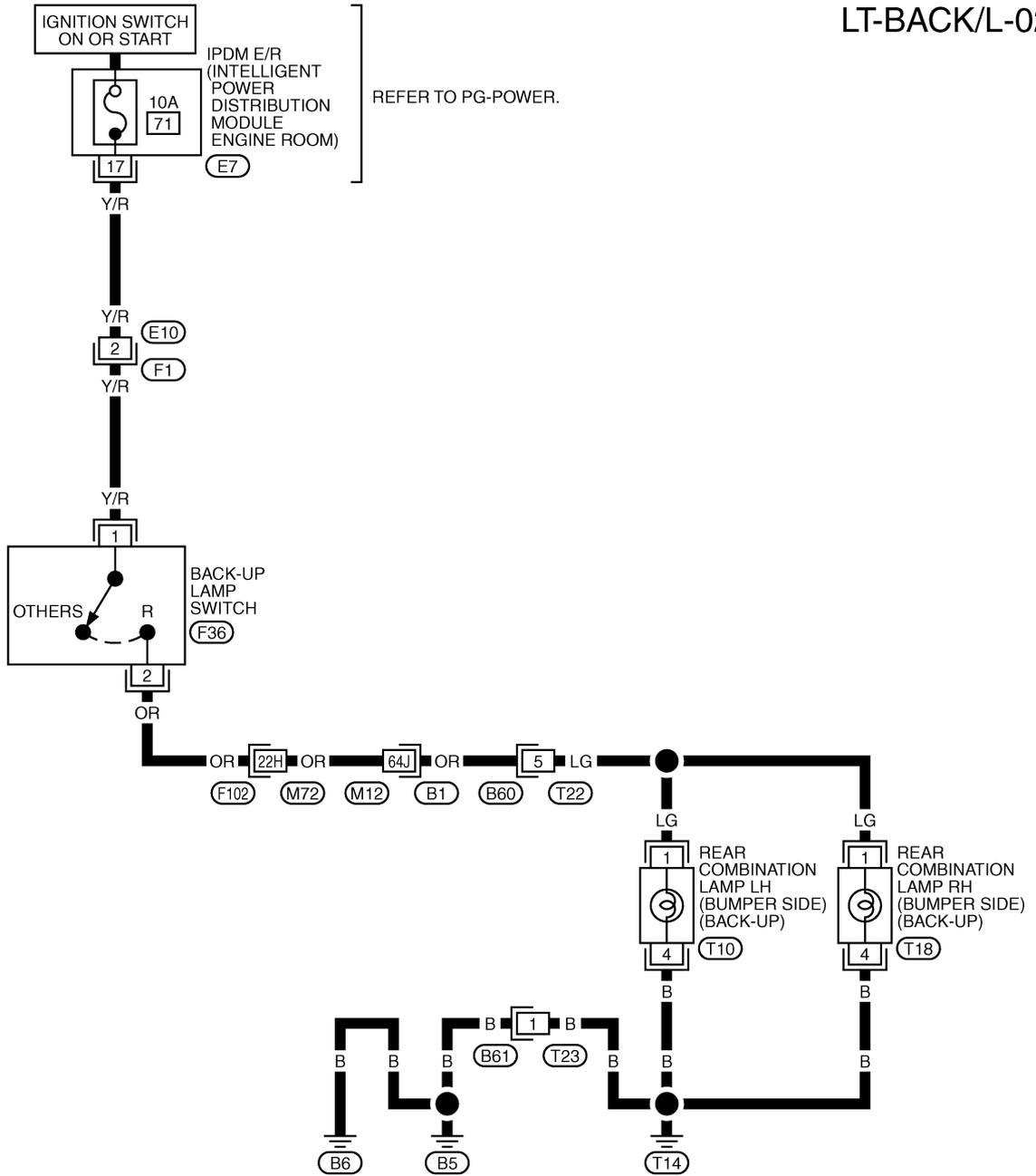
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BACK-UP LAMP

LT-BACK/L-02



REFER TO THE FOLLOWING.
 (F102), (B1) -SUPER MULTIPLE JUNCTION (SMJ)

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BACK-UP LAMP

Bulb Replacement

AKS000V8

Refer to [LT-109, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

Removal and Installation

AKS000V9

Refer to [LT-110, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

PARKING, LICENSE PLATE AND TAIL LAMPS

PFP:26550

System Description

AKS000VA

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

Power is supplied at all times

- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 75, located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- to BCM (body control module) terminal 7
- through 40A fusible link (letter F, located in fuse and fusible link block).

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

- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in fuse block (J/B)].

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17, E43 and F152.

OPERATION BY LIGHTING SWITCH

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

- through IPDM E/R terminal 37
- to front combination lamp LH terminals 5 and 6
- to front combination lamp RH terminals 5 and 6
- to rear combination lamp LH terminals 2 and 5
- to rear combination lamp RH terminals 2 and 5
- to license plate lamp terminal 2.

Ground is supplied at all times

- to front combination lamp LH terminal 1
- through grounds E17, E43 and F152, and
- to front combination lamp RH terminal 1
- through grounds E17, E43 and F152, and
- to front side marker lamp LH terminal 1
- through grounds E17, E43 and F152, and
- to front side marker lamp RH terminal 1
- through grounds E17, E43 and F152, and
- to rear combination lamp LH terminals 3 and 4
- through grounds D105, B5, B6 and T14, and
- to rear combination lamp RH terminals 3 and 4
- through grounds D105, B5, B6 and T14, and
- to license plate lamp terminal 1
- through grounds D105, B5, B6 and T14.

PARKING, LICENSE PLATE AND TAIL LAMPS

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

COMBINATION SWITCH READING FUNCTION

Refer to [LT-76, "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 function is activated.

Under this condition, the parking, license plate, side marker and tail lamps remain illuminated for 5 minutes, then the parking, license plate, side marker and tail lamps are turned off.

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

CAN Communication System Description

AKS003N7

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

CAN Communication Unit

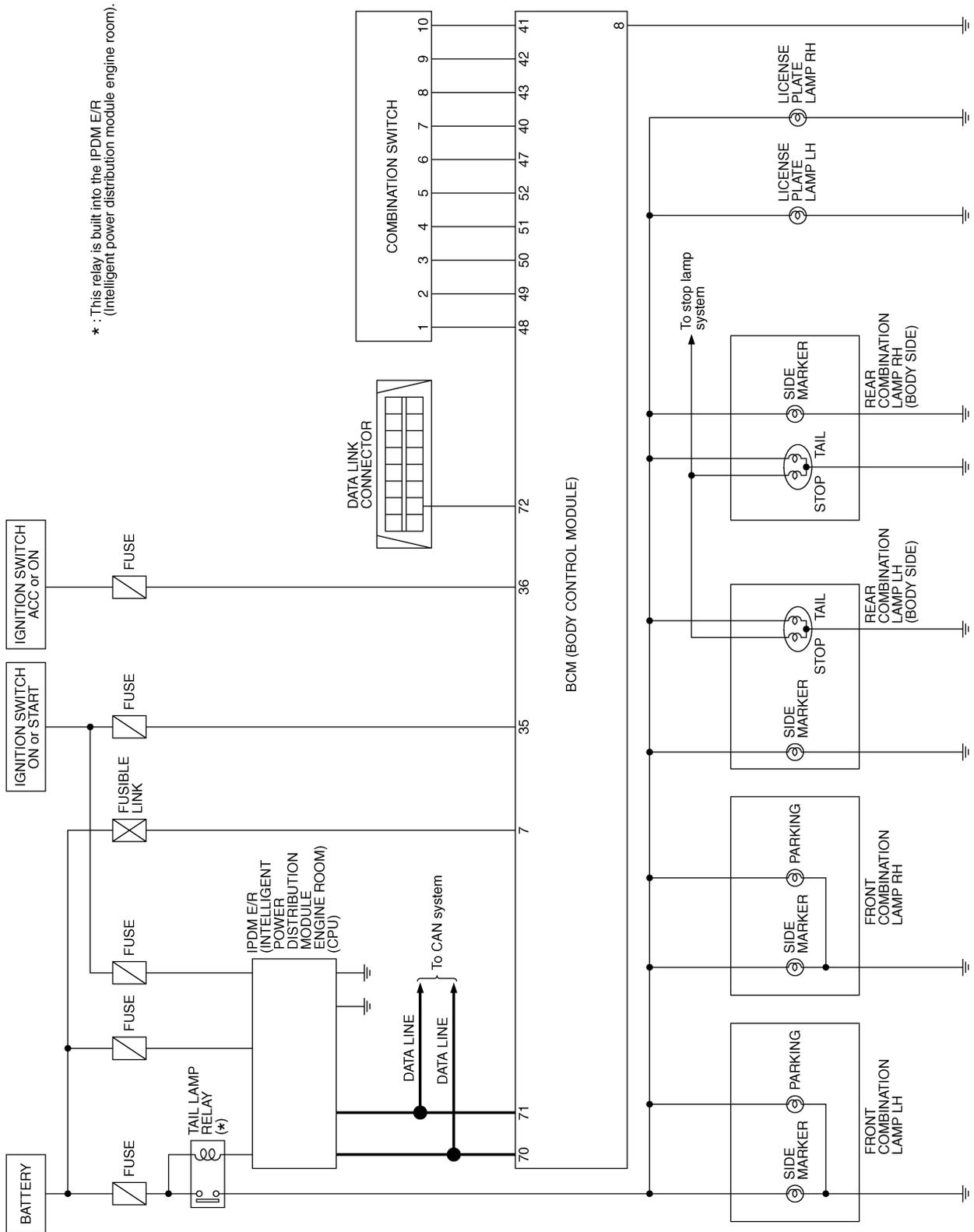
AKS003N8

Refer to [LAN-4, "CAN Communication Unit"](#) .

PARKING, LICENSE PLATE AND TAIL LAMPS

Schematic

AKS000VD



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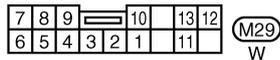
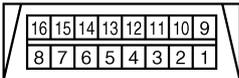
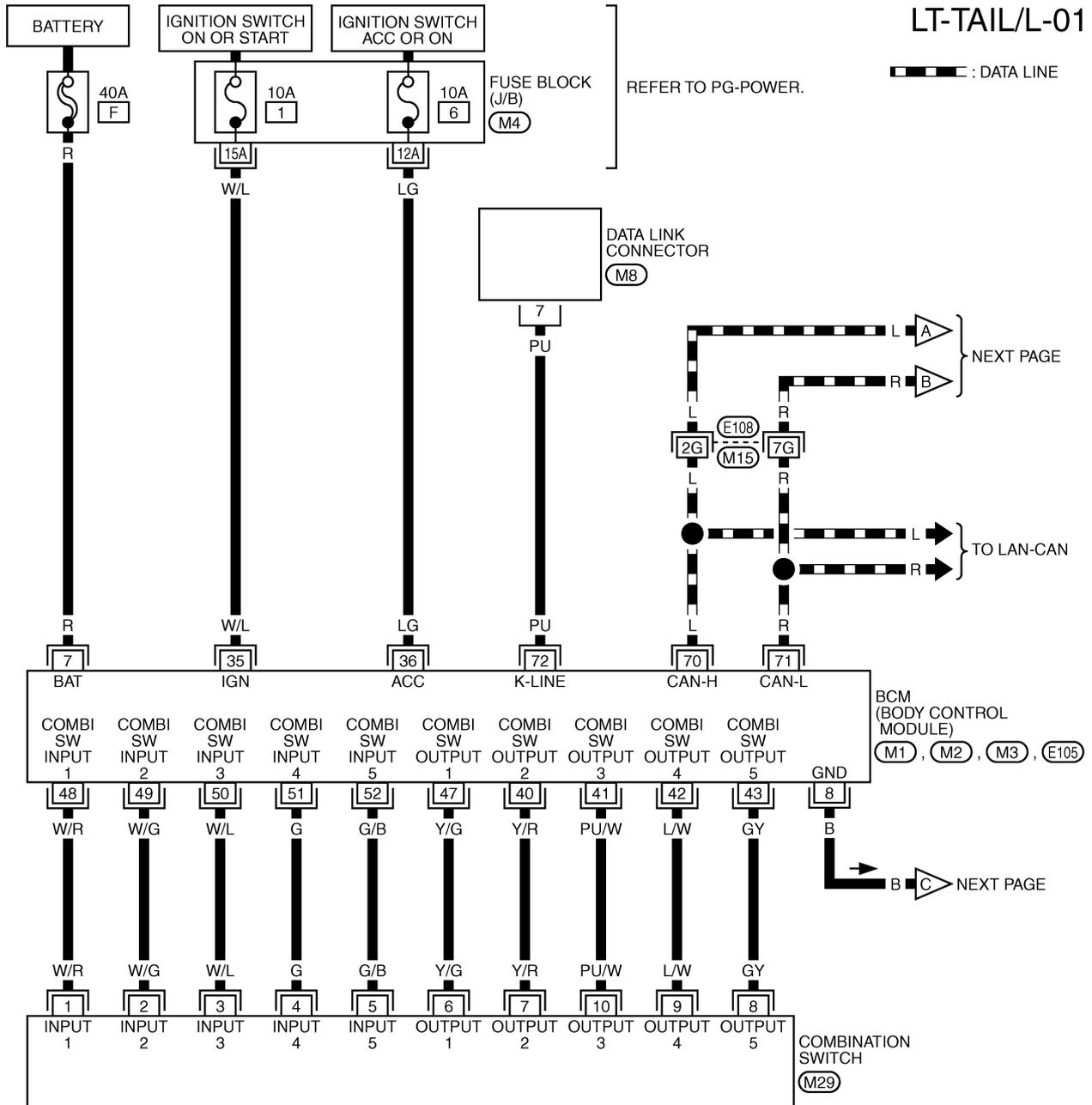
PARKING, LICENSE PLATE AND TAIL LAMPS

AKS000VE

Wiring Diagram — TAIL/L —

LT-TAIL/L-01

— : DATA LINE



REFER TO THE FOLLOWING.

(E108) -SUPER MULTIPLE JUNCTION (SMJ)

(M4) -FUSE BLOCK-JUNCTION BOX (J/B)

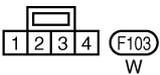
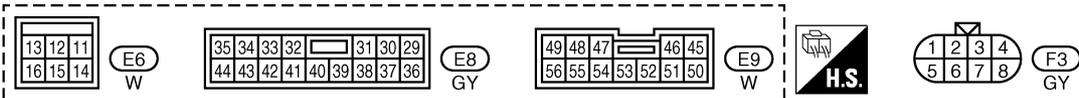
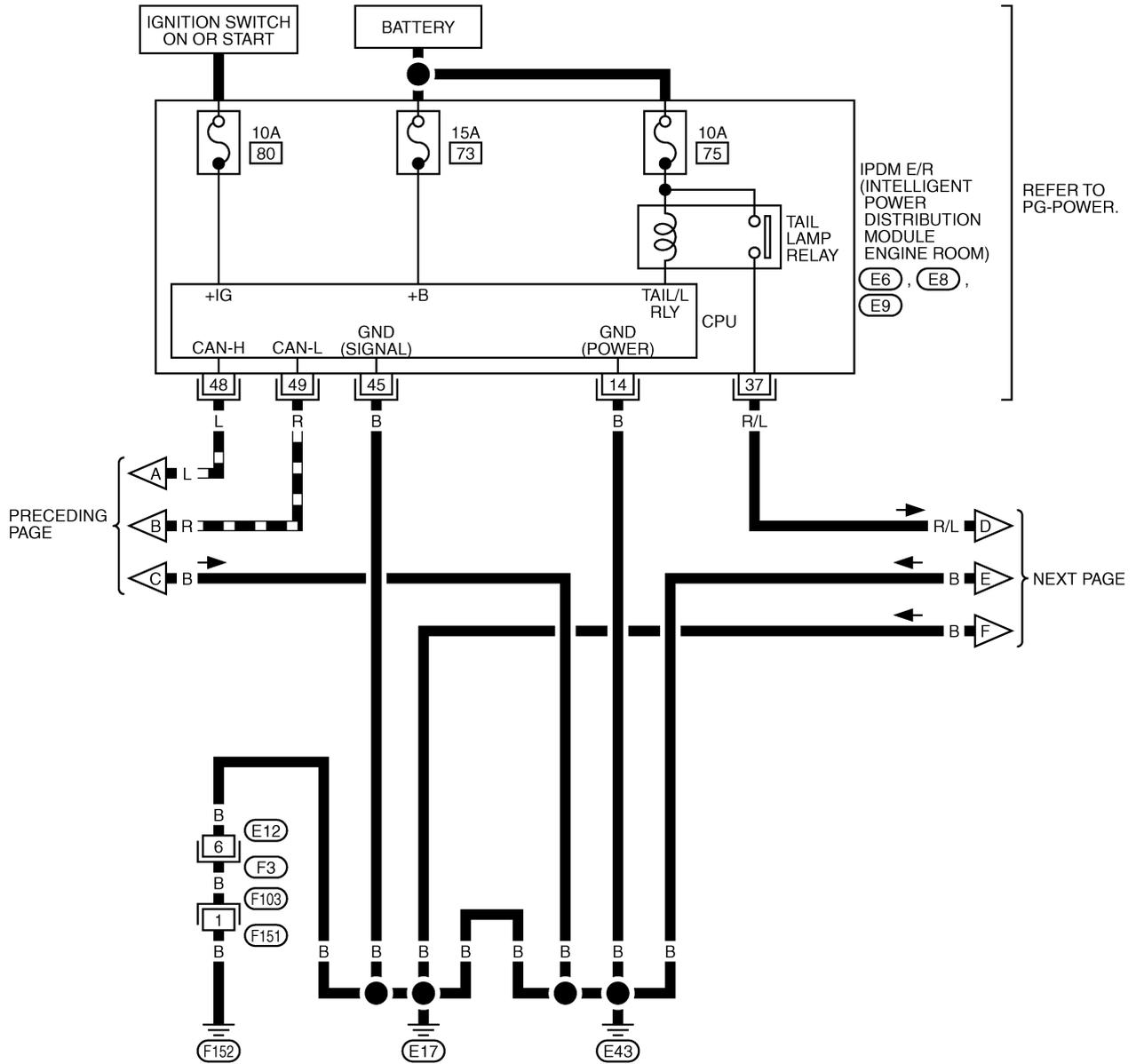
(M1), (M2), (M3), (E105) -ELECTRICAL UNITS

TKWT0457E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-02

DATA LINE

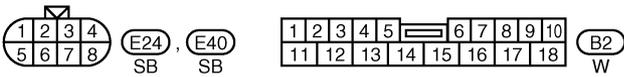
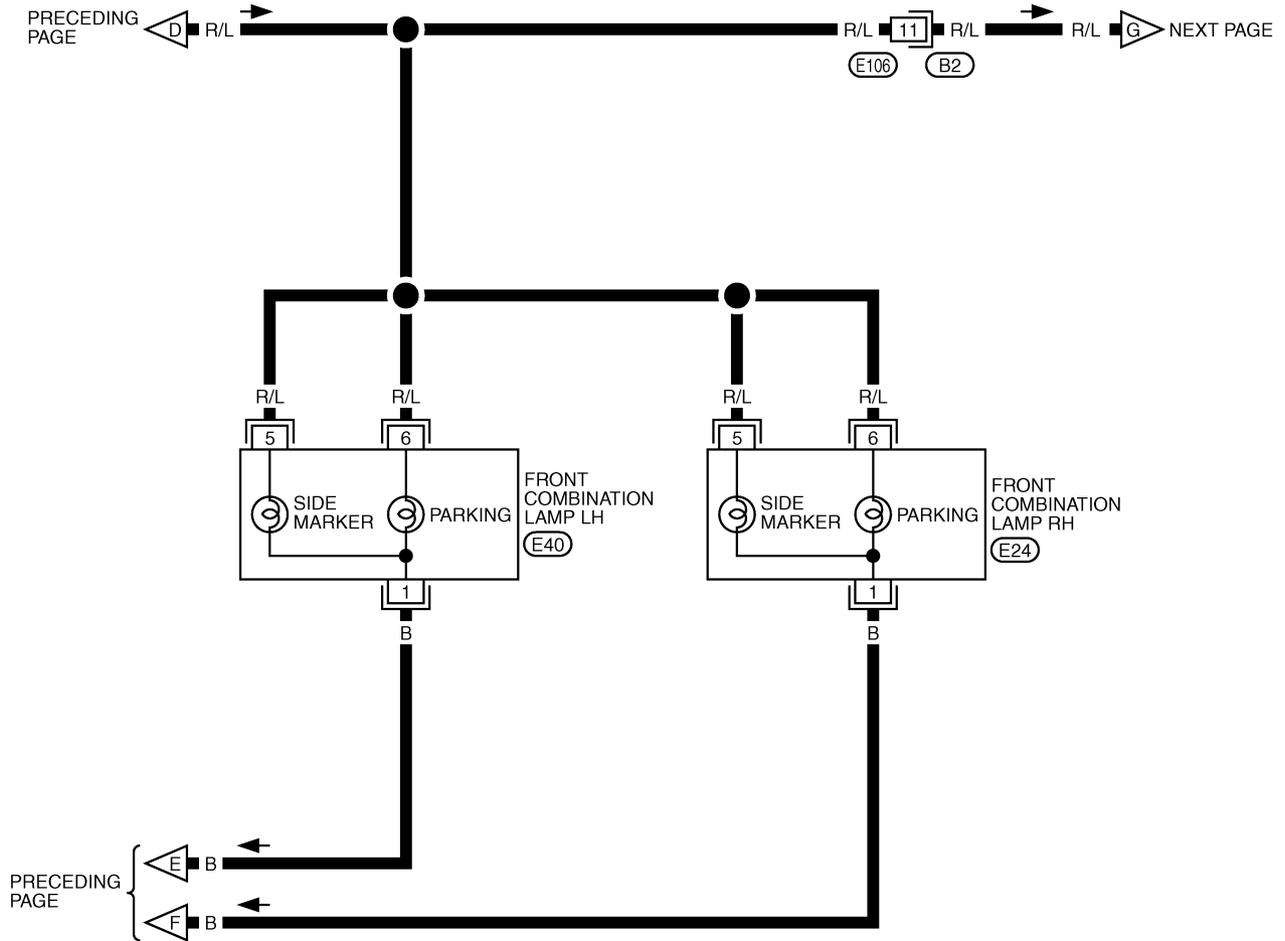


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PARKING, LICENSE PLATE AND TAIL LAMPS

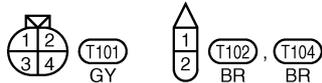
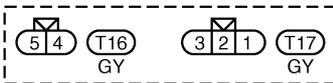
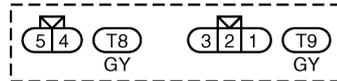
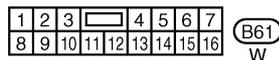
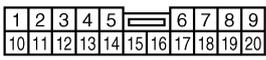
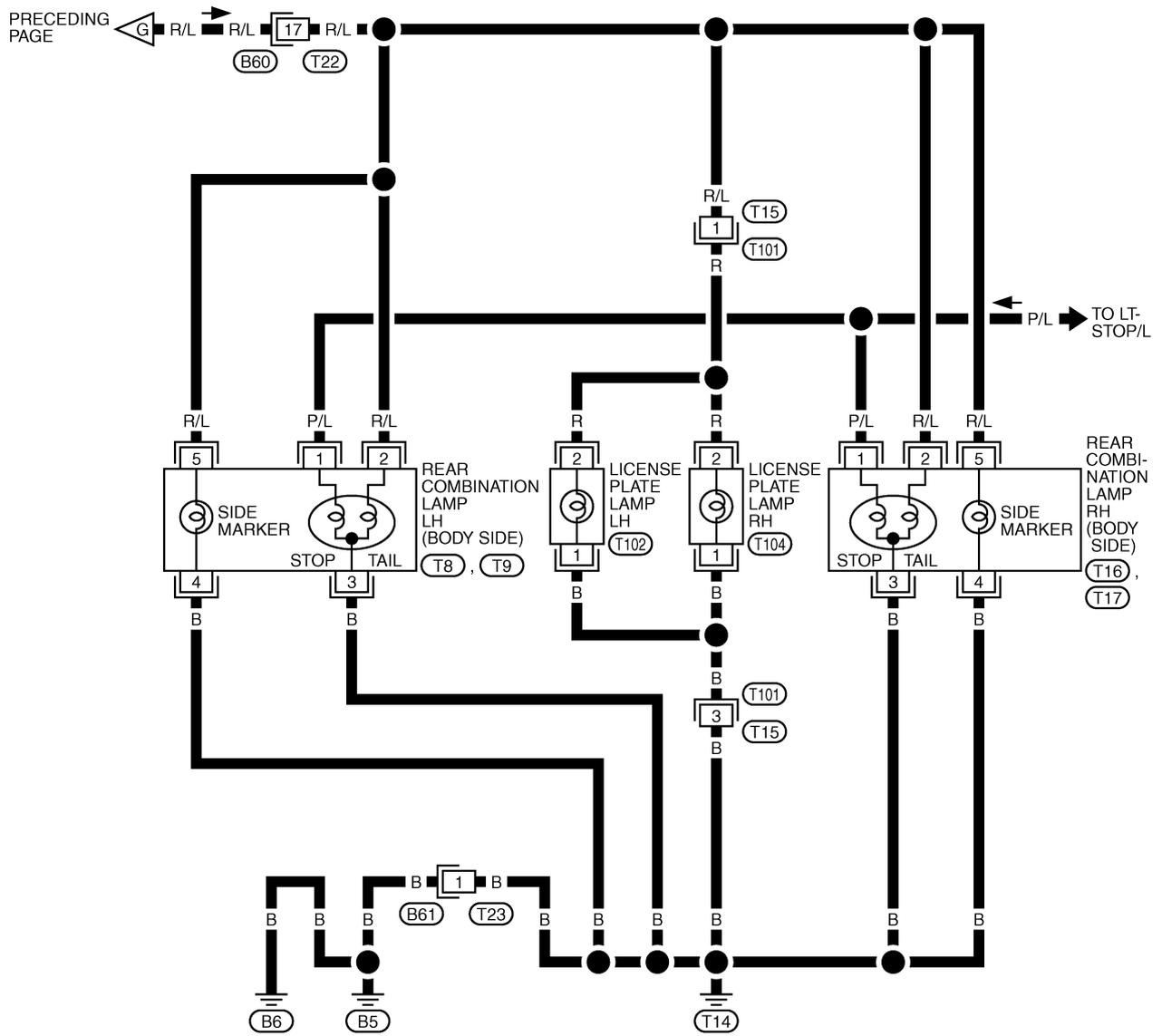
LT-TAIL/L-03



TKWT1062E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-04



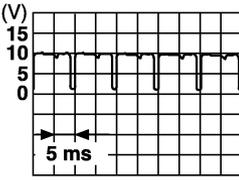
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TKWT1063E

PARKING, LICENSE PLATE AND TAIL LAMPS

Terminals and Reference Value for BCM

AKS000VF

Terminal No.	Wire color	Item	Measuring condition		Reference value
			Ignition switch	Operation or condition	
7	R	Battery power supply	OFF	—	Battery voltage
8	B	Ground	—	—	—
35	W/L	Ignition switch (ON)	ON	—	Battery voltage
36	LG	Ignition switch (ACC)	ACC	—	Battery voltage
40	Y/R	Combination switch output 2	ON	Lighting, turn, wiper OFF	
41	PU/W	Combination switch output 3			
42	L/W	Combination switch output 4			
43	GY	Combination switch output 5			
47	Y/G	Combination switch output 1			
48	W/R	Combination switch input 1	ON	Lighting, turn, wiper OFF	4.5V or more
49	W/G	Combination switch input 2			
50	W/L	Combination switch input 3			
51	G	Combination switch input 4			
52	G/B	Combination switch input 5			
70	L	CAN-H	—	—	—
71	R	CAN-L	—	—	—
72	PU	K-LINE	—	—	—

SKIA1119J

How to Proceed With Trouble Diagnosis

AKS000VG

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-95, "System Description"](#) .
3. Carry out the Preliminary Check. Refer to [LT-102, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Do the parking, license plate and tail lamps operate normally? If YES: GO TO 6. If NO: GO TO 4.
6. INSPECTION END

Preliminary Check

AKS000VH

INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

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

Refer to [LT-98, "Wiring Diagram — TAIL/L —"](#) .

OK or NG

OK >> GO TO 2.

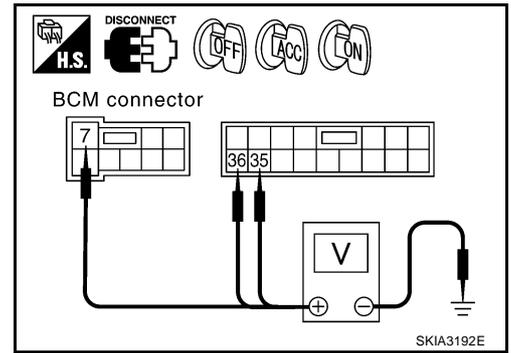
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

PARKING, LICENSE PLATE AND TAIL LAMPS

2. POWER SUPPLY CIRCUIT CHECK

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

Terminals		(-)	Ignition switch position		
Connector	Terminal (Wire color)		OFF	ACC	ON
E105	7 (R)	Ground	Battery voltage	Battery voltage	Battery voltage
M1	35 (W/L)		0V	0V	Battery voltage
M1	36 (LG)		0V	Battery voltage	Battery voltage



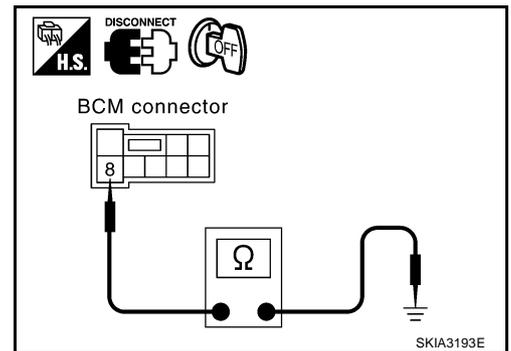
OK or NG

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

3. GROUND CIRCUIT CHECK

Check continuity between BCM harness connector and ground.

Terminals		Ground	Continuity
Connector	Terminal (wire color)		
E105	8 (B)	Ground	Yes



OK or NG

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

CONSULT-II Function

Refer to [LT-16, "CONSULT-II Function"](#) in HEAD LAMP (FOR USA).

Refer to [LT-42, "CONSULT-II Function"](#) in HEAD LAMP (FOR CANADA) - DAYTIME LIGHT SYSTEM - .

Parking, License Plate and Tail Lamps Do Not Illuminate

1. INSPECTION 1 BETWEEN IPDM E/R AND PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS

1. Start auto active test. Refer to [PG-19, "Auto Active Test"](#) .
2. Check whether parking, license plate, side marker and tail lamps operate.

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

OK or NG

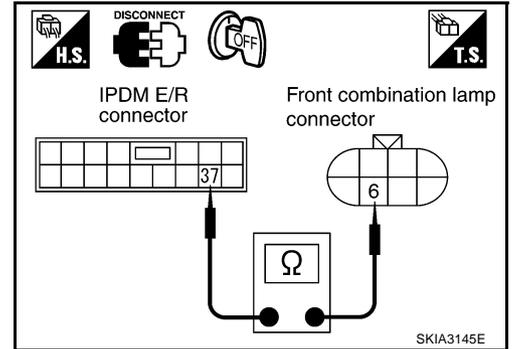
- OK >> GO TO 4.
 NG >> GO TO 2.

PARKING, LICENSE PLATE AND TAIL LAMPS

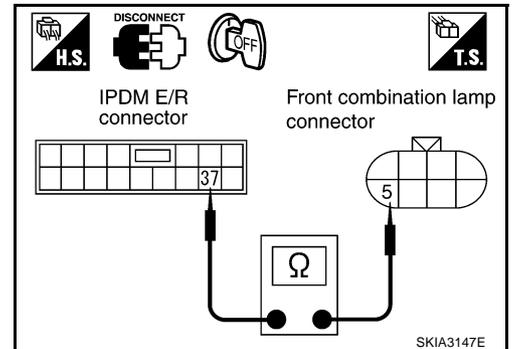
2. INSPECTION 2 BETWEEN IPDM E/R AND PARKING, LICENSE PLATE, SIDE MARKER AND TAIL LAMPS

1. Disconnect IPDM E/R connector, license plate lamp connector and front/rear combination lamp connectors.
2. Check harness continuity between IPDM E/R connector and license plate lamp and front/rear combination lamp connectors.

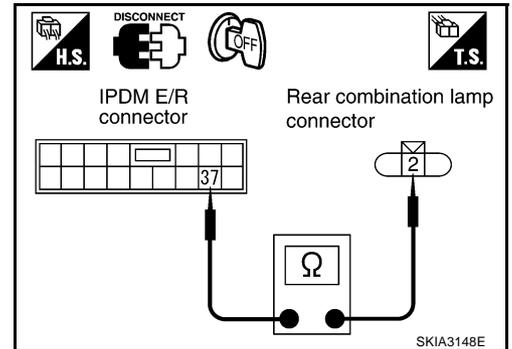
Terminals					Continuity
IPDM E/R		Front combination lamp (Parking)			
Connector	Terminal (wire color)	Connector	Terminal (wire color)		
E8	37 (R/L)	RH	E24	6 (R/L)	Yes
		LH	E40	6 (R/L)	



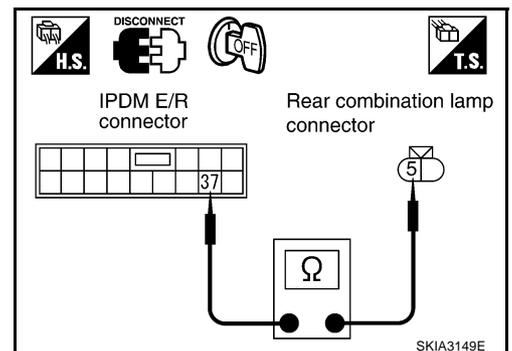
Terminals					Continuity
IPDM E/R		Front combination lamp (side marker)			
Connector	Terminal (wire color)	Connector	Terminal (wire color)		
E8	37 (R/L)	RH	E24	5 (R/L)	Yes
		LH	E40	5 (R/L)	



Terminals					Continuity
IPDM E/R		Rear combination lamp (Tail)			
Connector	Terminal (wire color)	Connector	Terminal (wire color)		
E8	37(R/L)	RH	T17	2 (R/L)	Yes
		LH	T9	2 (R/L)	



Terminals					Continuity
IPDM E/R		Rear combination lamp (side marker)			
Connector	Terminal (wire color)	Connector	Terminal (wire color)		
E8	37(R/L)	RH	T16	5 (R/L)	Yes
		LH	T8	5 (R/L)	



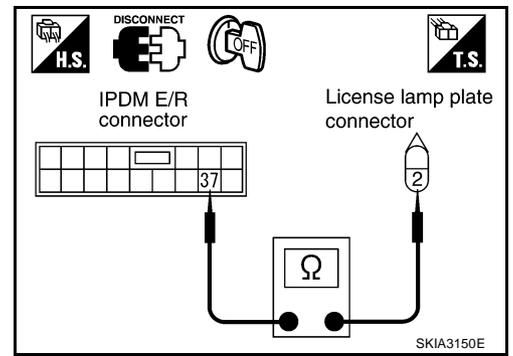
PARKING, LICENSE PLATE AND TAIL LAMPS

Terminals				Continuity
IPDM E/R		Licence plate lamp		
Connector	Terminal (wire color)	Connector	Terminal (wire color)	
E8	37 (R/L)	RH	T104	2 (R)
		LH	T102	2 (R)

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector between IPDM E/R and turn signal lamp, between IPDM E/R and rear combination (tail and side marker) lamp, and between IPDM E/R and license lamp.



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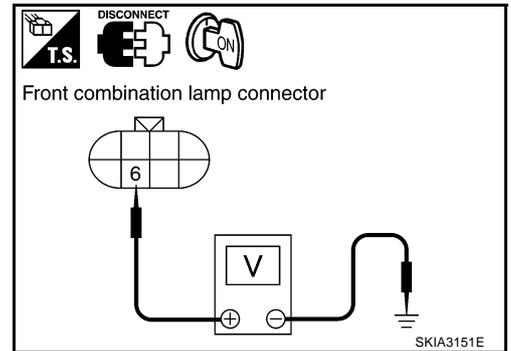
PARKING, LICENSE PLATE AND TAIL LAMPS

3. IPDM E/R INSPECTION

Start auto active test. Refer to [PG-19, "Auto Active Test"](#) .

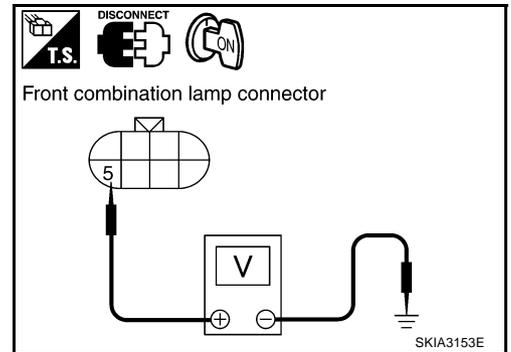
- When tail lamp relay is operating, check voltage between front combination lamp and ground.

Terminals				Voltage
(+)		(-)	Ground	
Connector	Terminal (wire color)			
RH	E24	6 (R/L)	Ground	Battery voltage
LH	E40			



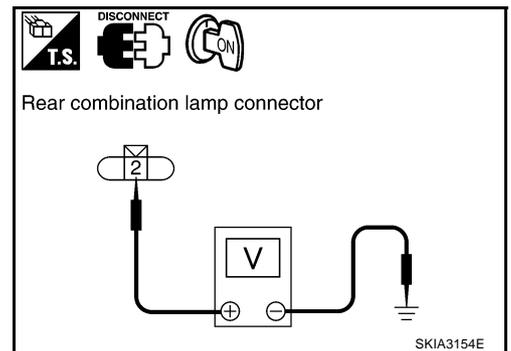
- When tail lamp relay is operating, check voltage between front combination (side marker) lamp and ground.

Terminals				Voltage
(+)		(-)	Ground	
Connector	Terminal (wire color)			
RH	E24	5 (R/L)	Ground	Battery voltage
LH	E40			



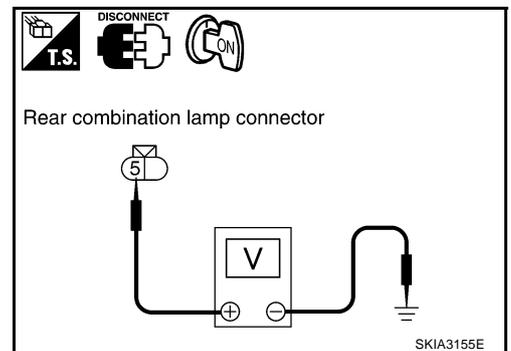
- When tail lamp relay is operating, check voltage between rear combination (tail) lamp and ground.

Terminals				Voltage
(+)		(-)	Ground	
Connector	Terminal (wire color)			
RH	T17	2 (R/L)	Ground	Battery voltage
LH	T9			



- When tail lamp relay is operating, check voltage between rear combination (side marker) lamp and ground.

Terminals				Voltage
(+)		(-)	Ground	
Connector	Terminal (wire color)			
RH	T16	5 (R/L)	Ground	Battery voltage
LH	T8			



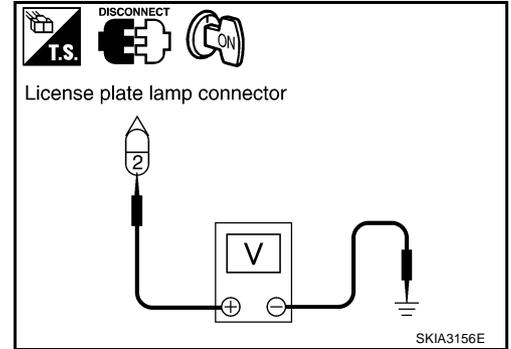
PARKING, LICENSE PLATE AND TAIL LAMPS

5. When tail lamp relay is operating, check voltage between license plate lamp terminal 2 and ground.

Terminals		Terminal (wire color)	(-)	Voltage
(+)				
Connector				
RH	T104	2 (R)	Ground	Battery voltage
LH	T102			

OK or NG

- OK >> Check ground circuit of parking, license plate and tail lamps.
- NG >> Replace IPDM E/R.



4. COMBINATION SWITCH CIRCUIT CHECK

Select BCM on CONSULT-II. Carry out "BCM C/U" self-diagnosis.
Displayed results of self-diagnosis

No malfunction detected>> GO TO 5.

CAN communications or CAN system>> Inspect the BCM CAN communications system. Refer to [BCS-13, "CAN Communication Inspection Using CONSULT-II \(Self-Diagnosis\)"](#).

OPEN DETECT 1 - 5>> Combination switch system malfunction. Refer to [LT-81, "Combination Switch Inspection According to Self-Diagnostic Results"](#).

SELF-DIAG RESULTS	
DTC RESULTS	TIME
NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED	

5. COMBINATION SWITCH CIRCUIT CHECK

Select BCM on CONSULT-II. With "HEAD LAMP" data monitor, check that "TAIL LAMP SW" turns ON-OFF linked with operation of lighting switch.

OK or NG

- OK >> Replace BCM.
- NG >> Replace lighting switch. Refer to [LT-73, "LIGHTING AND TURN SIGNAL SWITCH"](#).

DATA MONITOR	
MONITOR	
IGN ON SW	ON
ACC ON SW	ON
AUTO LIGHT SW	ON
TAIL LAMP SW	OFF
HEAD LAMP SW	OFF
HI BEAM SW	OFF
PASSING SW	OFF
FR FOG SW	OFF
DOOR SW-DR	OFF

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

AKS000VK

1. IPDM E/R INSPECTION

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

OK or NG

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

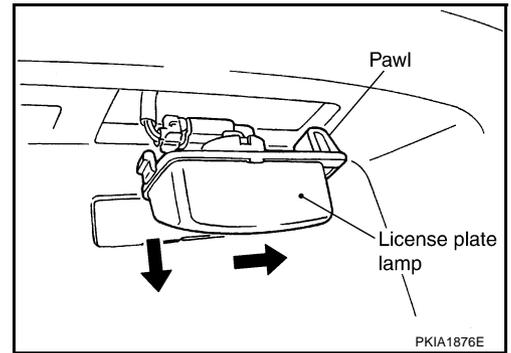
PARKING, LICENSE PLATE AND TAIL LAMPS

License Plate Lamp

AKS000VL

BULB REPLACEMENT, REMOVAL AND INSTALLATION

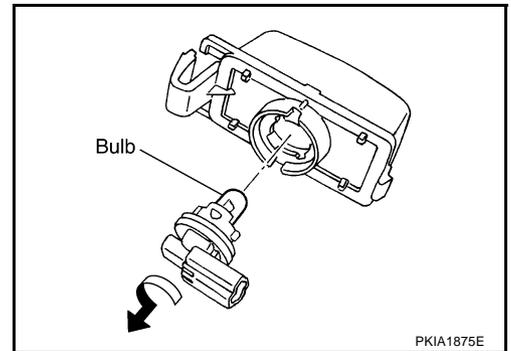
1. While pressing the license plate lamp to right side, pull left side of it and remove.
2. Disconnect the license plate lamp connector.



3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from it's socket.

License plate lamp : 12V - 5W

5. Install in the reverse order of removal.



Front Parking (Clearance) Lamp

BULB REPLACEMENT

AKS003RP

For bulb replacement, refer to [LT-24, "Bulb Replacement"](#) in "HEAD LAMP (FOR USA)".

REMOVAL AND INSTALLATION

For front parking (clearance) lamp removal and installation procedures, refer to [LT-108, "REMOVAL AND INSTALLATION"](#) in "HEAD LAMP (FOR USA)".

Tail Lamp

AKS003RQ

BULB REPLACEMENT

For bulb replacement, refer to [LT-109, "Bulb Replacement"](#) in "REAR COMBINATION LAMP".

REMOVAL AND INSTALLATION

For tail lamp removal and installation procedures, refer to [LT-110, "Removal and Installation"](#) in "REAR COMBINATION LAMP".

REAR COMBINATION LAMP

PF26554

REAR COMBINATION LAMP

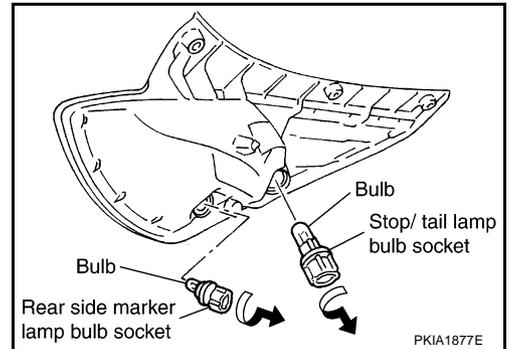
Bulb Replacement

REAR FENDER SIDE (STOP & TAIL LAMP BULB, REAR SIDE MARKER LAMP BULB)

1. Remove rear combination lamp. Refer to [LT-110, "Removal and Installation"](#)
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.
4. Install in the reverse order of removal.

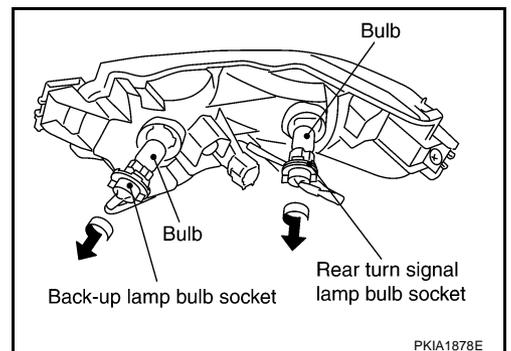
**Stop/tail lamp
(rear fender side) : 12V - 21/5W**

**Rear side marker lamp
(rear fender side) : 12V - 5W**



REAR BUMPER SIDE (BACK-UP LAMP BULB, REAR TURN SIGNAL LAMP BULB)

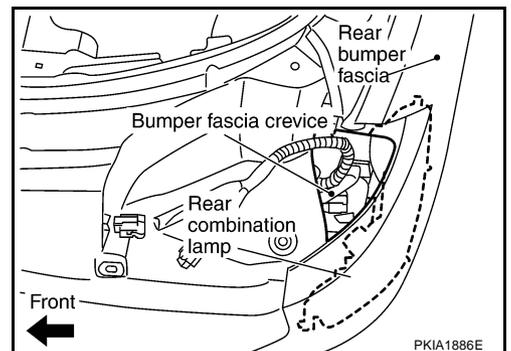
1. Remove rear combination lamp. Refer to [LT-110, "Removal and Installation"](#)
2. Turn bulb socket counterclockwise and unlock it through the bumper fascia crevice.



3. Remove bulb.
4. Install in the reverse order of removal.

**Rear turn signal lamp
(rear bumper side) : 12V - 21W (umber bulb)**

**Back-up lamp
(rear bumper side) : 12V - 21W**



REAR COMBINATION LAMP

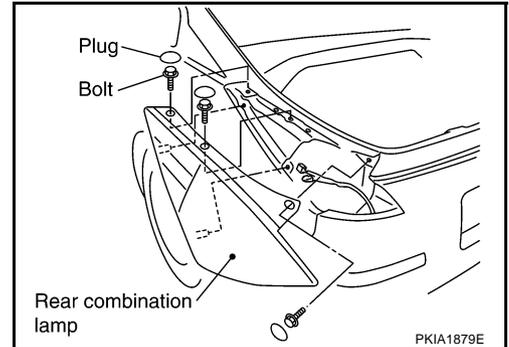
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Removal and Installation

REMOVAL

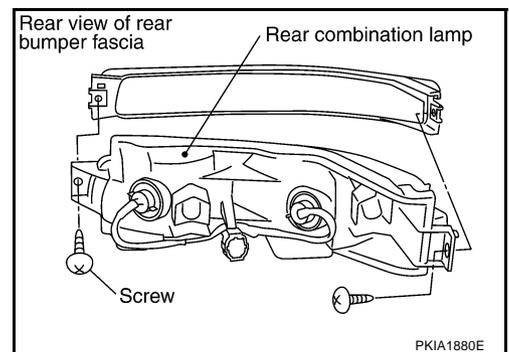
Rear Fender Side

1. Remove plugs and remove rear combination lamp mounting bolts.
2. Pull the rear combination lamp toward side of the vehicle and remove from the vehicle.
3. Disconnect rear combination lamp connector.



Rear Bumper Side

1. Remove rear bumper fascia. Refer to [EI-17, "REAR BUMPER"](#) in "EI" section.
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting screws.
4. Remove rear combination lamp from rear bumper fascia.



INSTALLATION

Install in the reverse order of removal. Be careful of the following:

Rear combination lamp mounting bolt (Rear fender side)

 : 5.2 N·m (0.53 kg·m, 46 in·lb)

Rear combination lamp mounting screw (Rear bumper side)

 : 3.2 N·m (0.33 kg·m, 28 in·lb)

VANITY MIRROR LAMP

VANITY MIRROR LAMP

PFP:96400

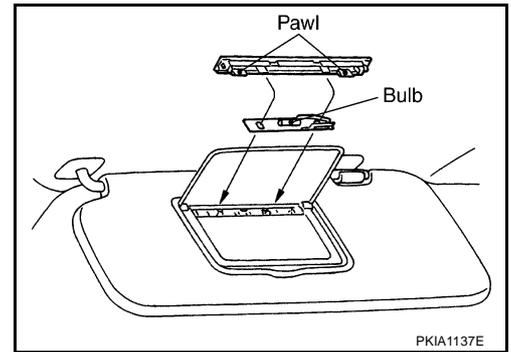
Bulb Replacement

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

Vanity mirror lamp : 12V - 1.32W

3. Install in the reverse order of removal.

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TRUNK ROOM LAMP

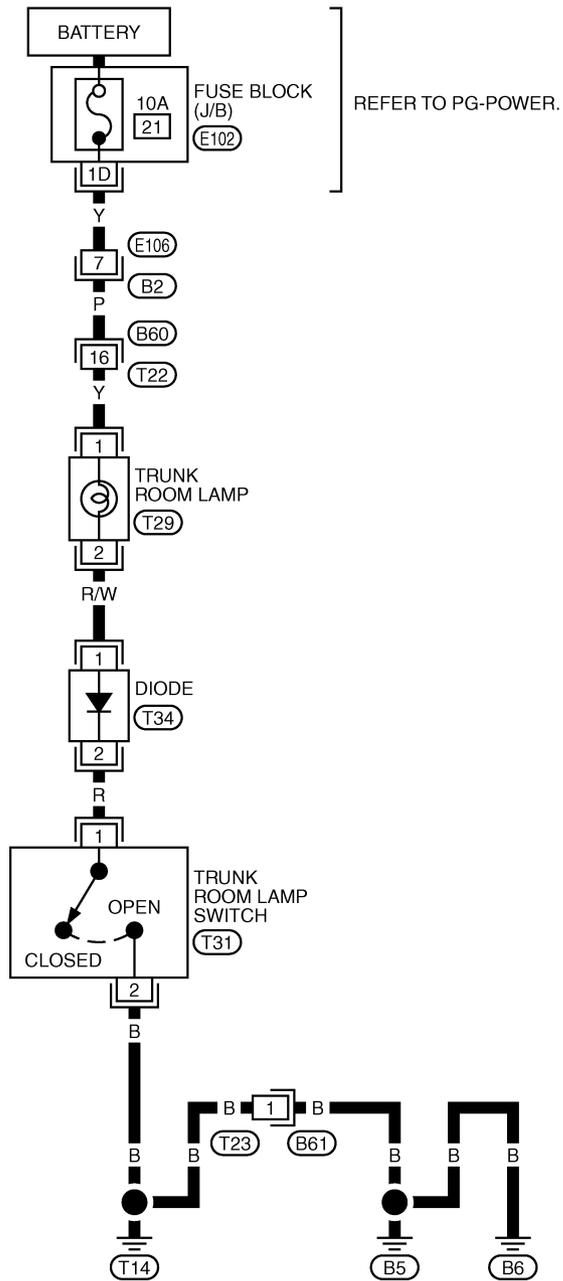
PFP:26470

TRUNK ROOM LAMP

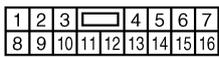
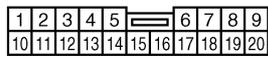
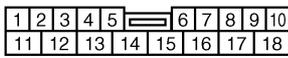
Wiring Diagram — INT/L —

AKS00996

LT-INT/L-01



REFER TO PG-POWER.



REFER TO THE FOLLOWING.

(E102) - FUSE BLOCK-JUNCTION BOX (J/B)

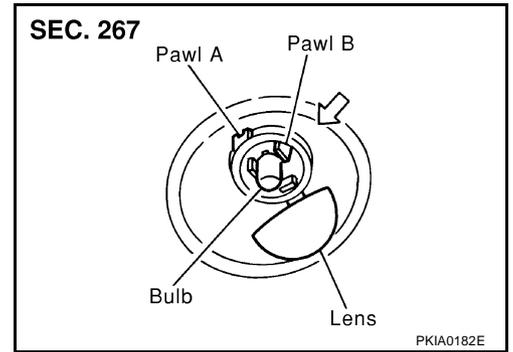
TRUNK ROOM LAMP

Bulb Replacement, Removal and Installation of Trunk Room Lamp

AKS00997

1. Unfold pawl A and remove lens.
2. Remove trunk room lamp while pressing pawl B in the direction of the arrow.
3. Disconnect trunk room lamp connector.

Trunk room lamp : 12V - 3.4W



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REAR FLOOR BOX LAMP

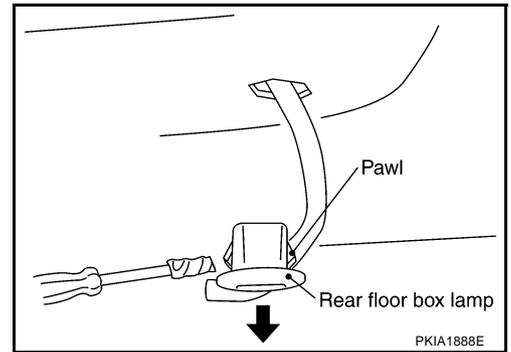
REAR FLOOR BOX LAMP

PFP:68520

Bulb Replacement, Removal and Installation

AKS003MW

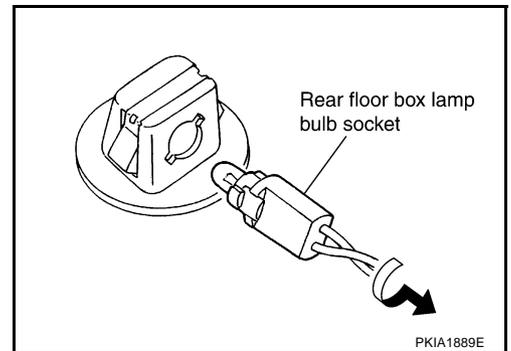
1. Pull out rear floor box lamp using screwdriver or similar tool.



2. Turn bulb socket counterclockwise to release lock and remove it.

Rear floor box lamp :12V - 1.4W

3. Install in the reverse order of removal.



ASHTRAY ILLUMINATION

ASHTRAY ILLUMINATION

PFP:25860

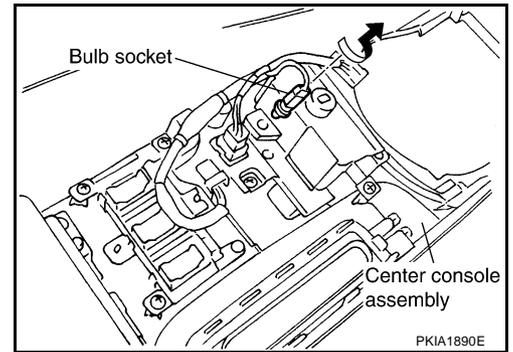
Bulb Replacement, Removal and Installation

AKS000VY

1. Remove center console assembly. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) in "IP" section.
2. Turn bulb socket counterclockwise to undo lock and remove bulb socket.

Ashtray illumination : 12V - 1.4W

3. Install in the reverse order of removal.



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INTERIOR ROOM LAMP

PFP:26410

System Description

AKS000W0

When spot lamp switch is in DOOR position, spot lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch driver side and assist side, unlock and lock signal from key fob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.

When spot lamp turns ON, there is a gradual brightening over 1 second. When spot lamp turns OFF, there is a gradual dimming over 1 second.

The spot lamp timer is controlled by the BCM (body control module).

Spot lamp timer control settings can be changed with CONSULT-II.

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 10A fuse [No.21, located in fuse block (J/B)]
- to key switch terminal 2
- through 40A fusible link [letter F, located in fuse and fusible link block]
- to BCM terminal 7.

When the key is removed from ignition key cylinder, power is interrupted

- through key switch terminal 1
- to BCM terminal 62.

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

- through 10A fuse [No.1, located in fuse block (J/B)]
- to BCM terminal 35.

When all door is closed, power is supplied

- through BCM terminal 24
- to stop lamp terminal 3 and
- to vanity mirror lamp terminal 1.

Ground is supplied

- to BCM terminal 8
- through grounds E17, E43 and F152.

When the front driver side door is opened, ground is supplied

- through case ground of front door switch (driver side)
- to BCM terminal 14.

When the front passenger side door is opened, ground is supplied

- through case ground of front door switch (passenger side)
- to BCM terminal 10.

When the back door is opened, ground is supplied

- through case ground of back door switch
- to BCM terminal 18.

When the front driver side door or passenger side is unlocked by the door lock and unlock switch, BCM receives unlock signal with power window serial link

- through grounds M30 and M66
- to power window main switch terminal 15 (door lock and unlock switch) or power window sub switch 11
- from power window main switch terminal 12 or power window sub switch16
- to BCM terminal 74

When the front driver side door is unlocked by the front door key cylinder switch, BCM receives information by communicating with power window main switch

- through grounds M30 and M66
- to front door key cylinder switch terminal 2
- from front door key cylinder switch terminal 1
- to power window main switch terminal 7

INTERIOR ROOM LAMP

- from power window main switch terminal 12
- to BCM terminal 74.

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

- through BCM terminal 32
- to spot lamp terminal 2.

With power and ground are supplied, the interior lamp illuminates.

SWITCH OPERATION

When spot lamp switch is ON, ground is supplied

- through grounds M30 and M66
- to spot lamp terminal 1.

And power is supplied

- from BCM terminal 24
- to spot lamp terminal 3.

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

- through grounds M30 and M66
- to vanity mirror lamp terminal 2.

And power is supplied

- from BCM terminal 24
- to vanity mirror lamp terminal 1.

SPOT LAMP TIMER OPERATION

When spot lamp switch is in DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 seconds) for spot lamp ON/OFF.

In addition, when spot lamp turns ON or OFF there is gradual brightening or dimming over 1 second.

Power is supplied

- to 10A fuse [No. 21 (located in fuse block (J/B))]
- through key switch terminal 2.

When all doors are closed (all door switches OFF) and key is removed from key cylinder (key switch OFF), power will not be supplied to BCM terminal 62.

Ground is supplied

- from BCM terminal 74
- to power window main switch (front door lock and unlock switch) terminal 12 (door lock and unlock switch with interruption detection function for all door window).

At this time, BCM detects that driver door is unlocked. It determines that spot lamp timer operation conditions are met, and turns the spot lamp ON for 30 seconds.

When all doors are closed (all door switches OFF) and key is in key cylinder (key switch ON),

Power is supplied

- through key switch terminal 1
- to BCM terminal 62.

When key is removed from key switch (key switch OFF), power supply to BCM terminal 62 is terminated. BCM detects that key has been removed. It determines that spot lamp timer conditions are met, and turns the spot lamp ON for 30 seconds.

When driver door opens → closes, and the key is not inserted in the key switch (key switch OFF), BCM terminal 14 changes between 0V (door open) → 5V (door closed). The BCM determines that conditions for spot lamp operation are met and turns the interior lamp ON for 30 seconds.

Timer control is canceled under the following conditions.

- Driver door is locked (When locked key fob or power window main switch (doorlock and unlock switch, door key cylinder switch)
- Driver door is opened (driver door switch turns ON)
- Ignition switch ON.

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INTERIOR ROOM LAMP

INTERIOR LAMP BATTERY SAVER CONTROL

If the room lamp remains illuminated by the door switch open signal, or if the room lamp switch is in the ON position for more than 30 minutes after the ignition switch is turned to the OFF position, the BCM will automatically turn off the spot lamp, step lamp, and/or personal lamp and vanity mirror lamp.

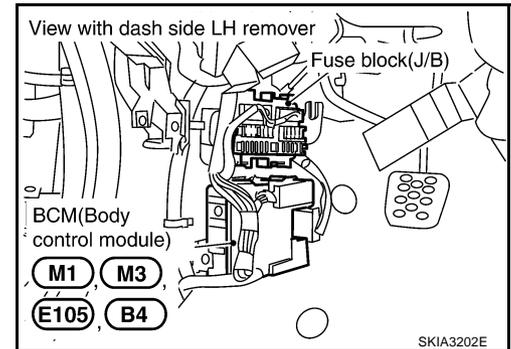
After lamps turn OFF by the battery saver system, the lamps illuminate again when:

- signal from key fob, or door lock and unlock switch, or key cylinder is locked or unlocked,
- door is opened or closed,
- key is removed from ignition key cylinder or inserted in ignition key cylinder.

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

Component Parts and Harness Connector Location

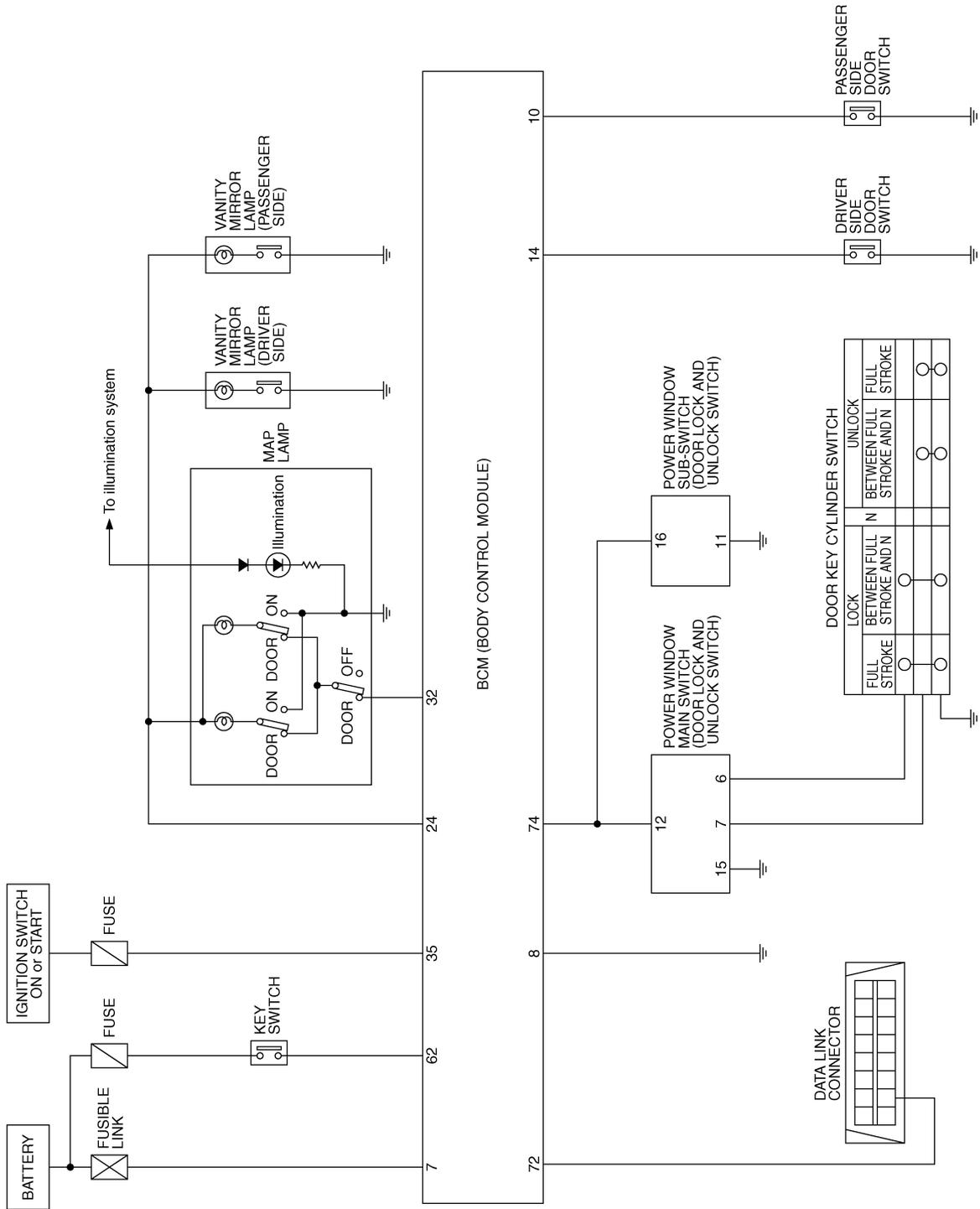
AKS000W1



INTERIOR ROOM LAMP

Schematic

AKS000W2



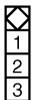
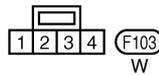
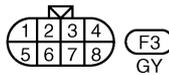
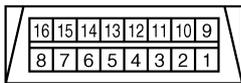
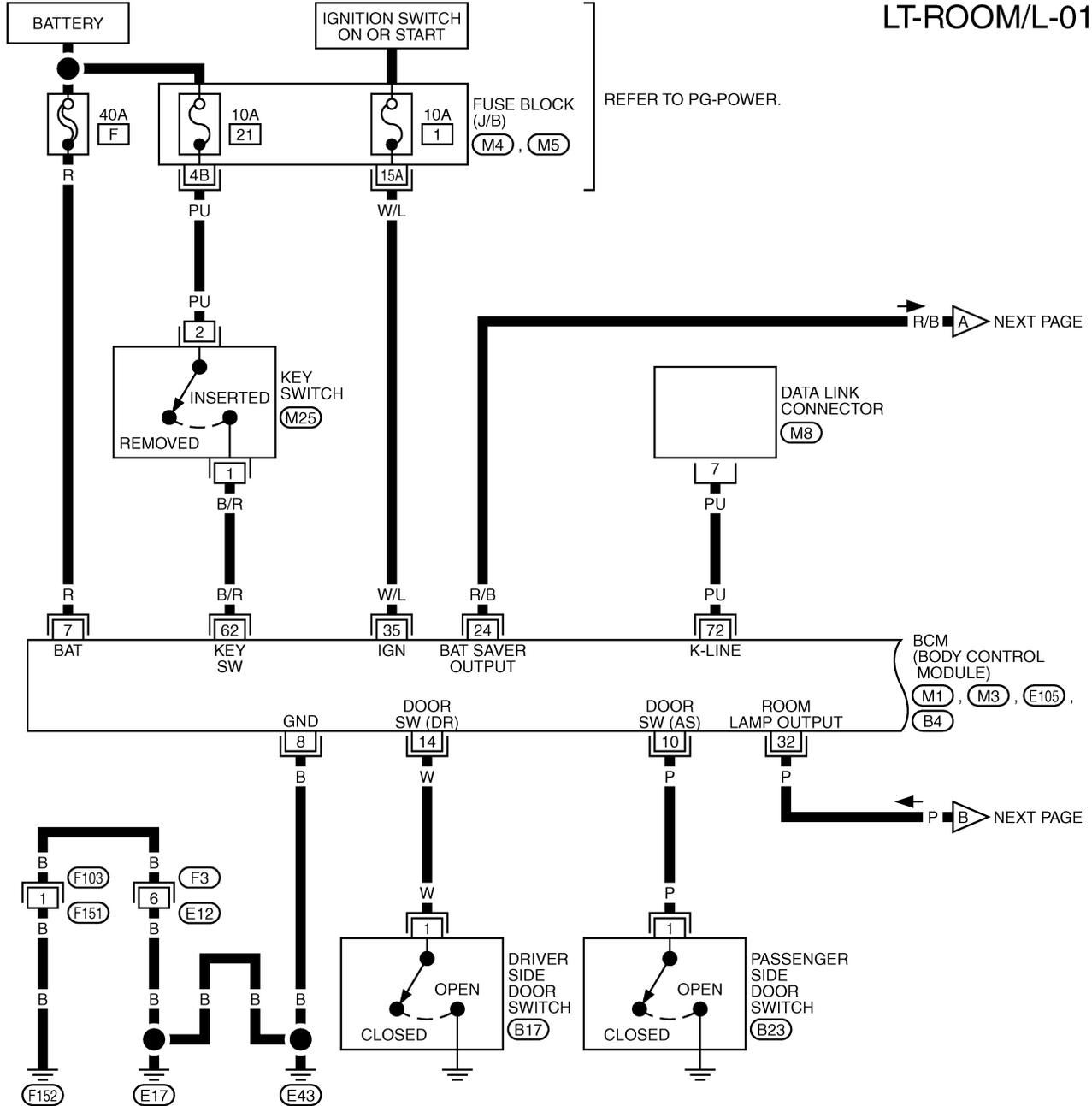
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INTERIOR ROOM LAMP

Wiring Diagram — ROOM/L —

AKS000W3

LT-ROOM/L-01

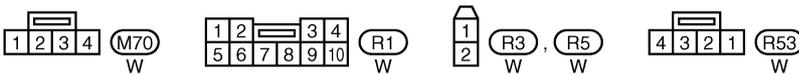
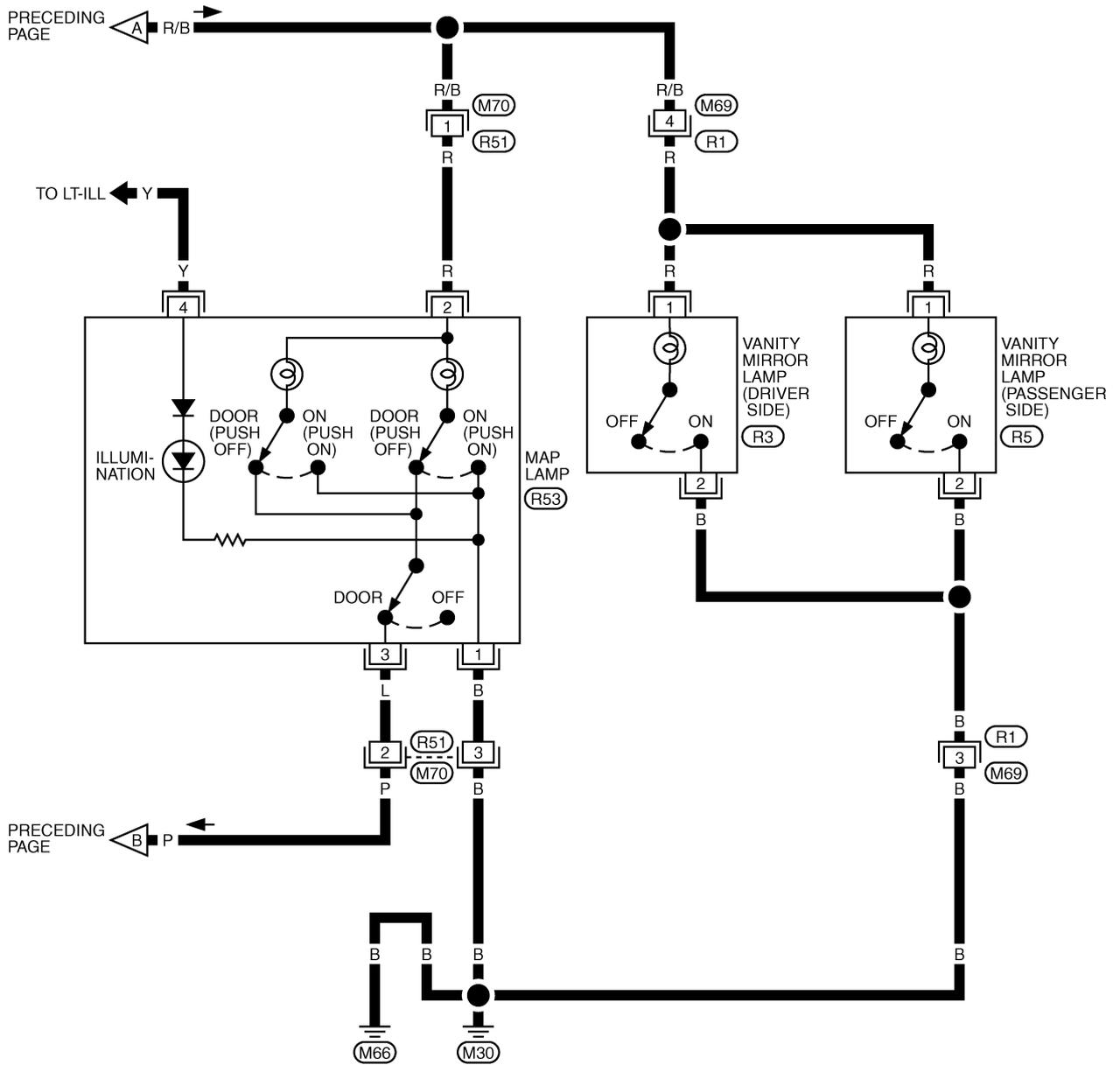


REFER TO THE FOLLOWING.
 (M4), (M5) - FUSE BLOCK-JUNCTION BOX (J/B)
 (M1), (M3), (E105), (B4)
 - ELECTRICAL UNITS

TKWT1066E

INTERIOR ROOM LAMP

LT-ROOM/L-02

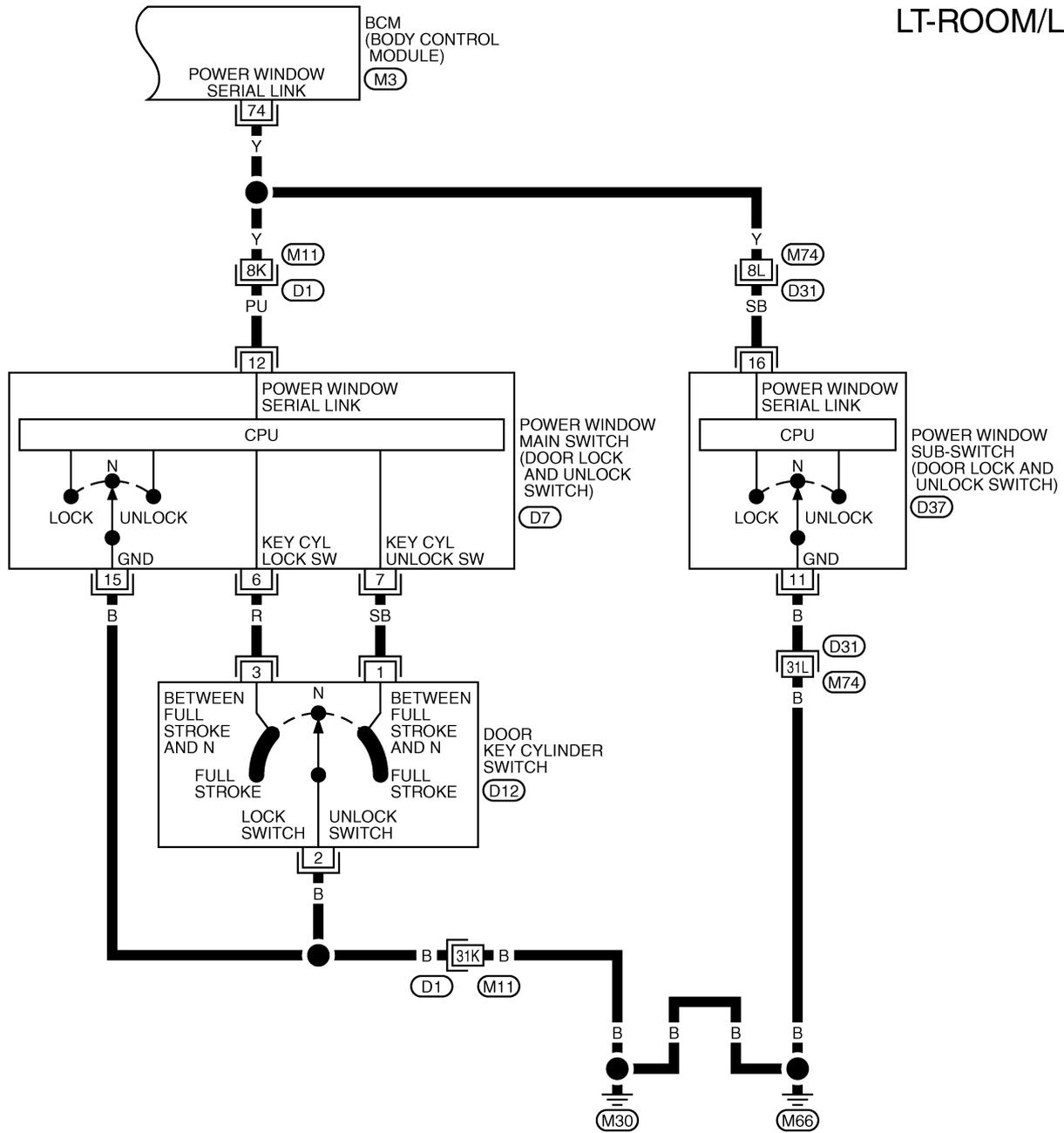


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TKWT1067E

INTERIOR ROOM LAMP

LT-ROOM/L-03



7	6	5	4	3	2	1
16	15	14	13	12	11	10
9	8					

(D7) W (D37) W

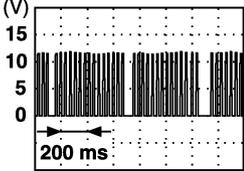
(3 2 1) (D12) BR

REFER TO THE FOLLOWING.
 (D1) , (D31) -SUPER MULTIPLE JUNCTION (SMJ)
 (M3) -ELECTRICAL UNITS

INTERIOR ROOM LAMP

Terminals and Reference Value for BCM

AKS000W4

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
7	R	Battery power supply	OFF	—		Battery voltage
8	B	Ground	ON	—		Approx. 0V
10	P	Front door switch AS signal	OFF	Front door switch AS	ON (open)	Approx. 0V
					OFF (closed)	Approx. 5V
14	W	Front door switch DR signal	OFF	Front door switch DR	ON (open)	Approx. 0V
					OFF (closed)	Approx. 5V
24	R/B	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF		Approx. 0V
			ON	—		Battery voltage
32	P	Spot lamp output signal	ON	Spot lamp switch: DOOR position	Any door switch ON (open)	Approx. 0V
					All door switch OFF (closed)	Battery voltage
35	W/L	IGN power supply	ON	—		Battery voltage
62	B/R	Key detection switch signal	OFF	Vehicle key is removed.		Approx. 0V
				Vehicle key is inserted.		Battery voltage
74	Y	Power window switch serial link	—	—		 <p style="text-align: right; font-size: small;">PIIA2344J</p>

How to Proceed With Trouble Diagnosis

AKS000W5

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-116, "System Description"](#).
3. Carry out the Preliminary Check. Refer to [LT-124, "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

INTERIOR ROOM LAMP

AKS000W6

Preliminary Check INSPECTION FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

- Check for blown BCM fuses.

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

Refer to [LT-120, "Wiring Diagram — ROOM/L —"](#) .

OK or NG

OK >> GO TO 2.

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

2. POWER SUPPLY CIRCUIT CHECK

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

Terminals		(-)	Ignition switch position	
(+)			OFF	ON
Connector	Terminal (Wire color)	Ground	Battery voltage	Battery voltage
E105	7 (R)		0V	Battery voltage
M1	35 (W/L)			

OK or NG

OK >> GO TO 3.

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

3. GROUND CIRCUIT CHECK

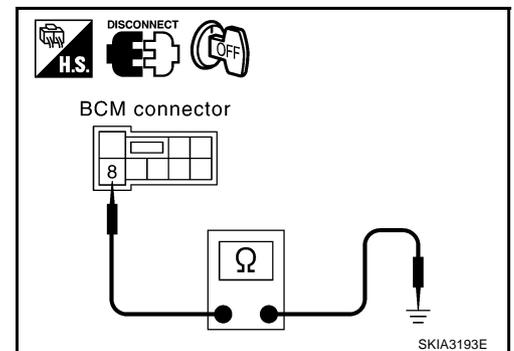
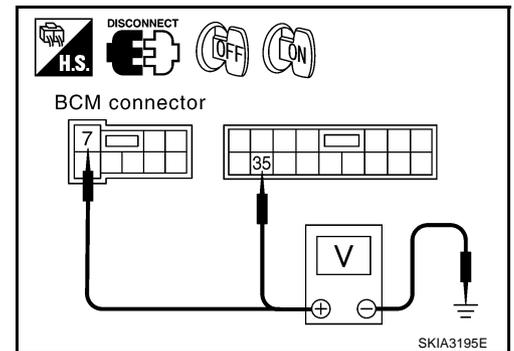
Check continuity between BCM harness connector and ground.

Terminals			Continuity
Connector	Terminal (wire color)		
E105	8 (B)	Ground	Yes

OK or NG

OK >> INSPECTION END

NG >> Check harness ground circuit.



INTERIOR ROOM LAMP

AKS000W7

CONSULT-II Function

CONSULT-II performs the following functions communicating with BCM.

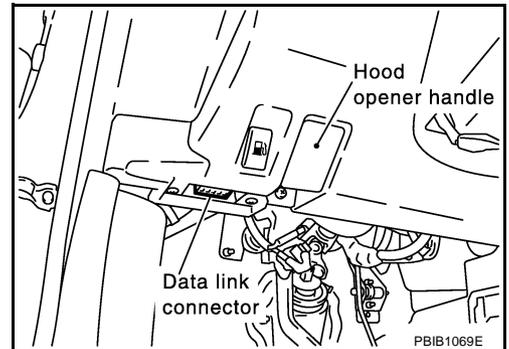
BCM diagnosis part	Check item, diagnosis mode	Description
INTERIOR LAMP	Work support	Changes the setting for each function.
	Data monitor	Displays BCM input data in real time.
	Active test	Operation of electrical loads can be checked by sending driving signal to them.

CONSULT-II BASIC OPERATION

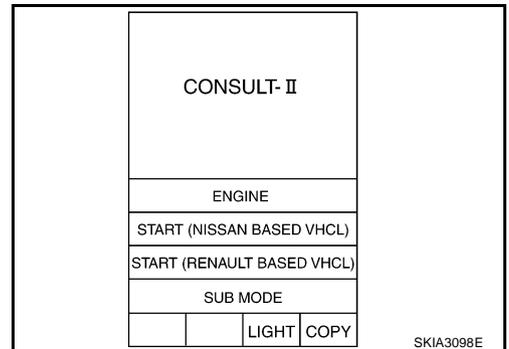
CAUTION:

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

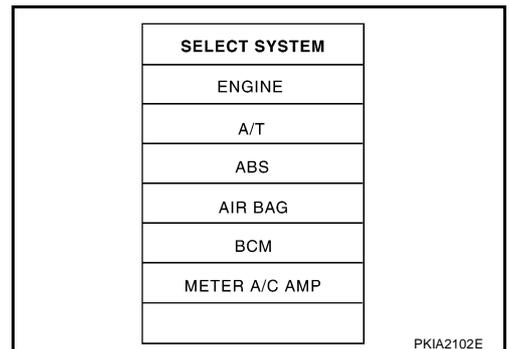
1. With the ignition switch OFF, connect CONSULT-II and CONSULT-II CONVERTER to the data link connector, then turn ignition switch ON.



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

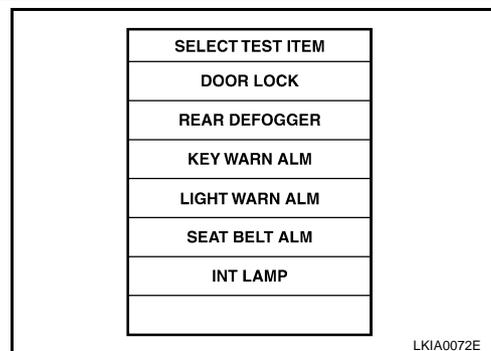


3. Touch "BCM" on "SELECT SYSTEM" screen. If "BCM" is not indicated, refer to [GI-39, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



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 "ROOM LAMP TIMER SET" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SET".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Display Item List

Item	Description	CONSULT-II	Factory setting
ROOM LAMP TIMER SET	Spot lamp ON/OFF can be selected for when driver door lock is released (unlocked).	ON	×
		OFF	—

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item name "operation or unit"	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 driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS "ON/OFF"	Displays "Door open (ON)/Door closed (OFF)" status, determined from passenger door switch signal.
LOCK SW DR/AS "ON/OFF"	Displays "Door locked (ON)" status, determined from locking detection switch in driver door and passenger door.

INTERIOR ROOM LAMP

Monitor item name "operation or unit"		Contents
UNLK SW DR/AS	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from locking detection switch in driver door and passenger door.
KEY CYL LK SW	"ON/OFF"	Displays "Door locked (ON)" status, determined from key cylinder lock switch in driver door.
KEY CYL UN SW	"ON/OFF"	Displays "Door unlocked (OFF)" status, determined from key cylinder lock switch in driver door.
LK BUTTON/SIG	"ON/OFF"	Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.
UN BUTTON/SIG	"ON/OFF"	Displays "Unlocked (ON)/Other (OFF)" status, determined from unlock signal.
DOOR SW - RR ^{Note}	"OFF"	—

NOTE:

This item is displayed, but cannot monitor it.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
INT LAMP	Spot lamp can be operated by any ON-OFF operations.
IGN ILLUMI ^{Note}	—

NOTE:

This item is displayed, but cannot test it.

Map Lamp Control Does Not Operate

AKS000W8

1. INSPECTION BETWEEN EACH SWITCH AND BCM

Select BCM on CONSULT-II. Use "INT LAMP" data monitor to check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-127, "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	OFF
LOCK SW DR/AS	OFF
UNLK SW DR/AS	OFF
KEY CYL LK SW	OFF
KEY CYL UN SW	OFF
LK BUTTON/SIG	OFF

LKIA0085E

2. INSPECTION 1 BETWEEN BCM AND MAP LAMP

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

OK or NG

- OK >> Replace BCM.
 NG >> GO TO 3.

ACTIVE TEST	
INT LAMP	ON
	OFF

LKIA0092E

INTERIOR ROOM LAMP

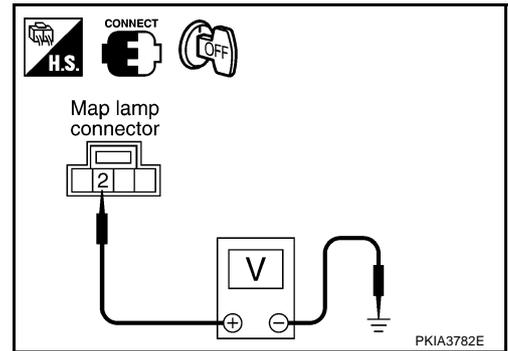
3. INSPECTION 2 BETWEEN BCM AND MAP LAMP

Check voltage between map lamp harness connector R52 terminal 2 (R) and ground.

Battery voltage should exist

OK or NG

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



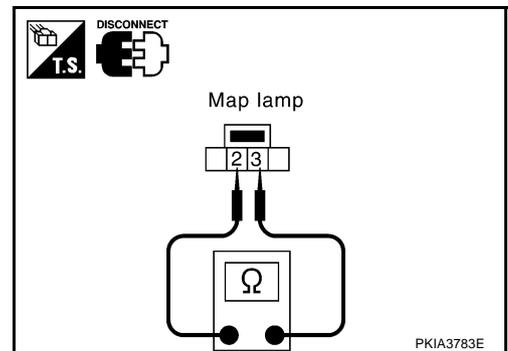
4. MAP LAMP CHECK

1. Disconnect map lamp connector.
2. Check continuity between map lamp connectors.

Terminal	Condition	Continuity
2	Spot lamp DOOR switch is ON	Yes
	Spot lamp DOOR switch is OFF	No

OK or NG

- OK >> GO TO 5
- NG >> Replace map lamp



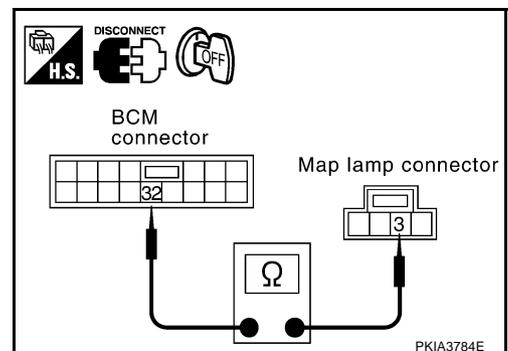
5. MAP LAMP CIRCUIT CHECK

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M1 terminal 32 (P) and map lamp harness connector R53 terminal 3 (L).

Continuity should exist

OK or NO

- OK >> Replace BCM.
- NG >> Repair harness or connector.



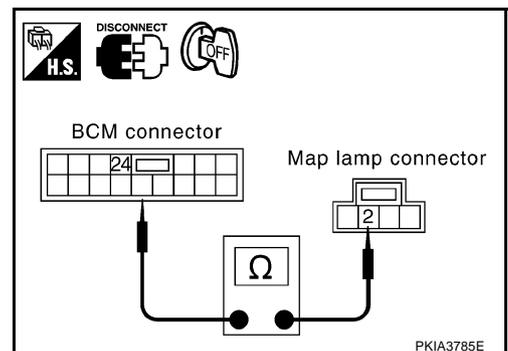
6. MAP LAMP CIRCUIT CHECK

1. Disconnect BCM connector and map lamp connector.
2. Check continuity between BCM harness connector M1 terminal 24(R/B) and map lamp harness connector R53 terminal 2 (R).

Continuity should exist

OK or NG

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



INTERIOR ROOM LAMP

7. SHORT CIRCUIT CHECK

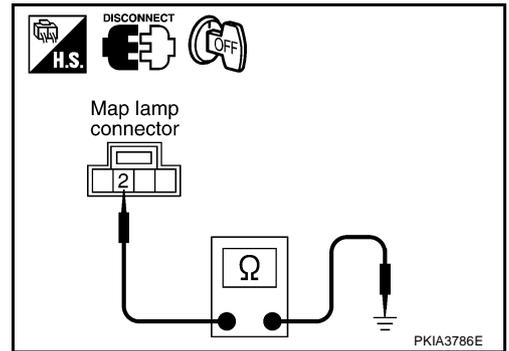
Check continuity between map lamp harness connector R53 terminal 2 (R) and ground.

Continuity not should exist

OK or NG

OK >> Replace BCM.

NG >> After repairing harness, be sure to disconnect battery negative cable, and then reconnect it.



Map Lamp Illumination Does Not Operate

1. POWER SUPPLY CIRCUIT CHECK

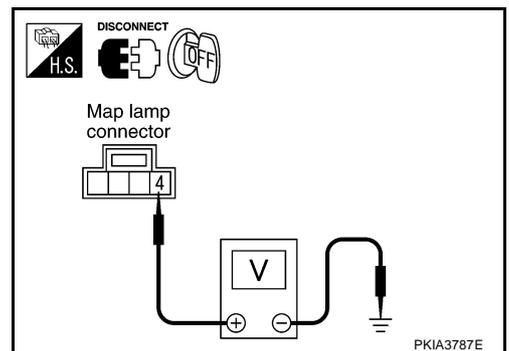
1. Disconnect map lamp connector.
2. Turn lighting switch 1st position
3. Check voltage between map lamp harness connector R53 terminal 4 (Y) and ground.

Battery voltage should exist

OK or NG

OK >> GO TO 2.

NG >> Repair harness or connector.



2. GROUND CIRCUIT CHECK

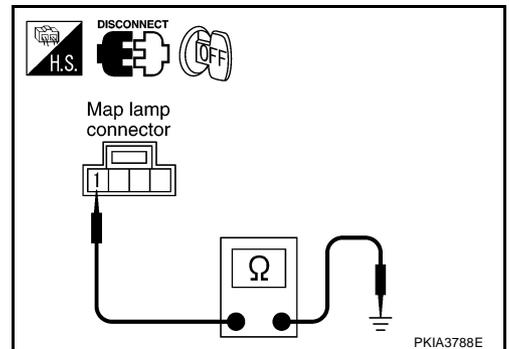
Check continuity between map lamp harness connector R53 terminal 1 (B) and ground.

Continuity not should exist

OK or NG

OK >> Replace map lamp.

NG >> Repair harness or connector.



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INTERIOR ROOM LAMP

Bulb Replacement

AKS00999

1. Open the driver and front passenger window, and then disconnect the battery negative cable.

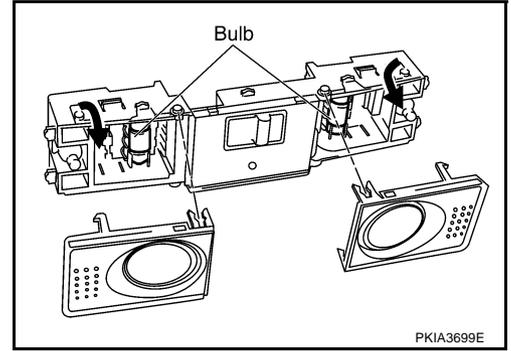
CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

2. Remove the lens using clip driver or suitable tool.
3. Remove the bulb.

Spot lamp :12V - 8 W

4. Install in the reverse order of removal.

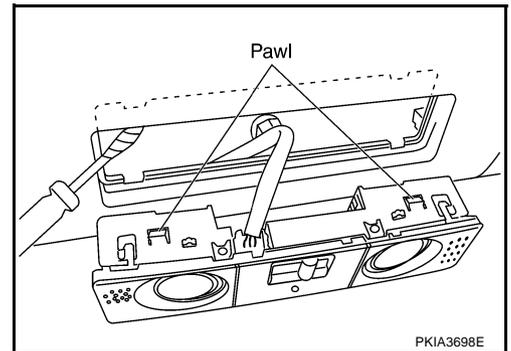


Removal and Installation

REMOVAL

AKS0099A

1. Insert a clip driver or suitable tool and disengage the pawl fittings of the map lamp.
2. Disconnect map lamp connector and remove map lamp.



INSTALLATION

Install in the reverse order of removal.

ILLUMINATION**System Description**

AKS000WC

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, the BCM 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 (intelligent power distribution module engine room) controls the tail lamp relay coil. This relay, when energized, directs power to the illumination lamps, which then illuminate.

Power is supplied at all times

- to tail lamp relay [located in IPDM E/R (intelligent power distribution module engine room)]
- through 10A fuse [No. 75, located in IPDM E/R (intelligent power distribution module engine room)].

Power is also supplied at all times

- to BCM (body control module) terminal 7
- through 40A fusible link (letter F, located in fuse and fusible link block).

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

- to BCM (body control module) terminal 35
- through 10A fuse [No. 1, located in fuse block (J/B)].

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

- to BCM (body control module) terminal 36
- through 10A fuse [No. 6, located in fuse block (J/B)].

Ground is supplied

- to BCM (body control module) terminal 8
- through grounds E17, E43 and F152.

ILLUMINATION OPERATION BY LIGHTING SWITCH

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

- through IPDM E/R terminal 37
- to AV and NAVI control unit terminal 9
- to AV and NAVI switch terminal 2
- to VDC off switch terminal 3
- to A/T illumination terminal 3
- to hazard switch terminal 3
- to ashtray terminal 1
- to heated seat switch driver side terminal 5
- to heated seat switch passenger side terminal 5
- to luggage floor box lamp terminal 1
- to audio unit terminal 8.

Ground is supplied at all times

- to luggage floor box lamp terminal 2
- through grounds D105, B5, B6, and T14
- to ashtray illumination terminal 2
- through grounds M30 and M66.

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, 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.

ILLUMINATION

When the lighting switch is turned from OFF to 1ST or 2ND position after illumination lamps are turned off by the battery saver control, and illumination lamps illuminate again.
Exterior lamp battery saver control mode can be changed by the function setting of CONSULT-II.

CAN Communication System Description

AKS003NH

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

CAN Communication Unit

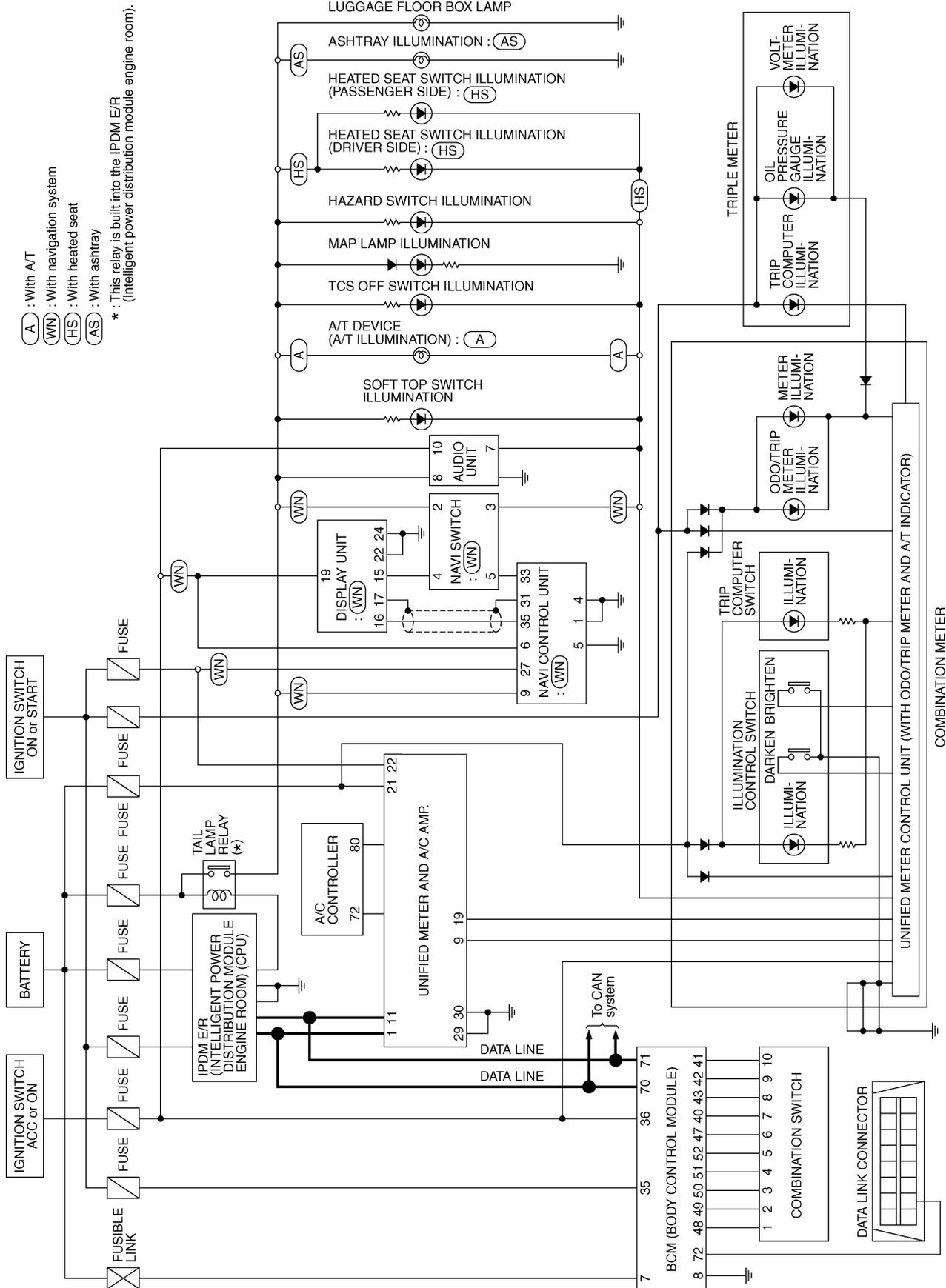
AKS003NI

Refer to [LAN-4, "CAN Communication Unit"](#) .

ILLUMINATION

AKS000WF

Schematic



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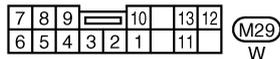
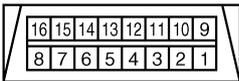
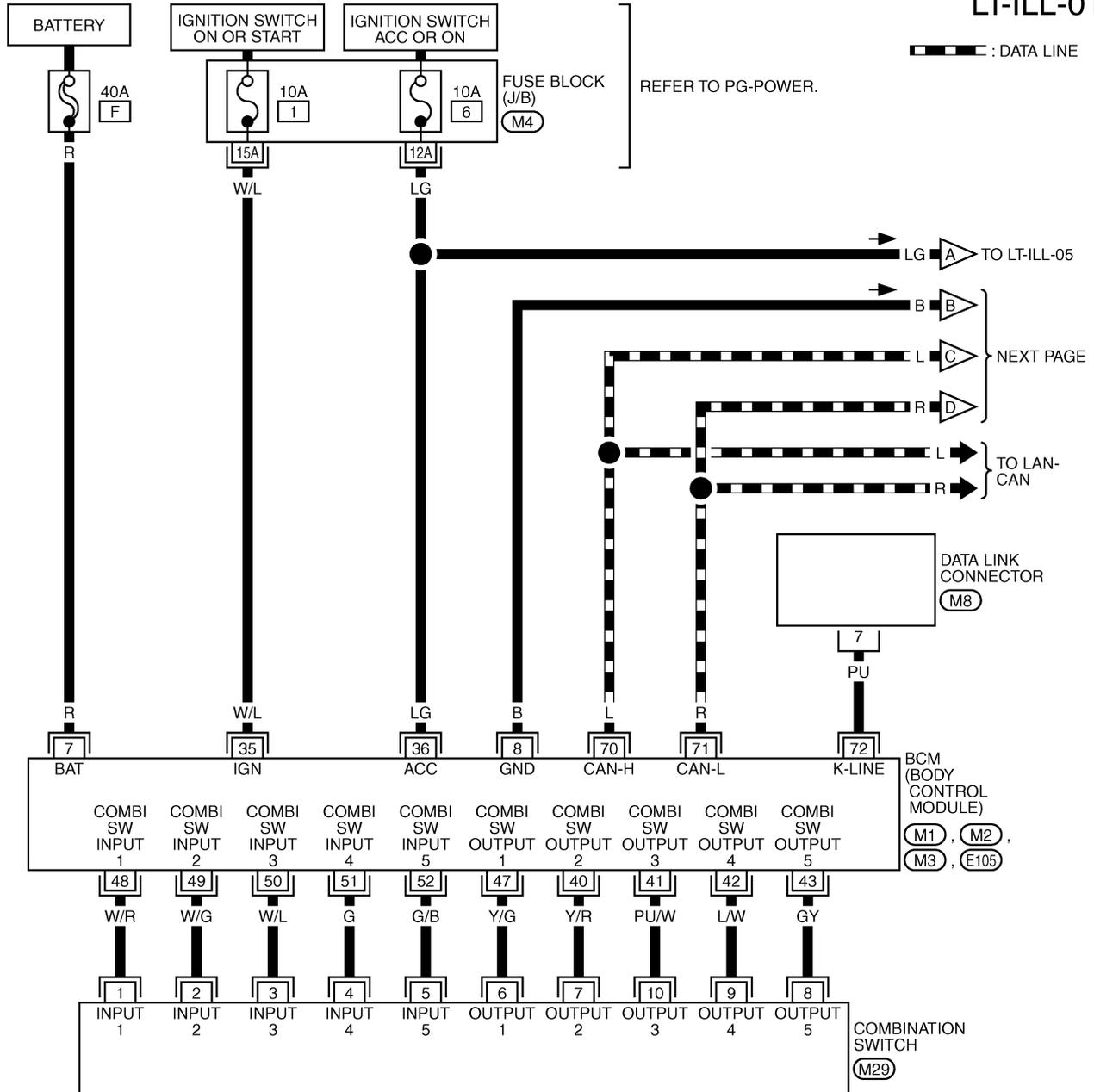
LT

ILLUMINATION

AKS000WG

Wiring Diagram — ILL —

LT-ILL-01



REFER TO THE FOLLOWING.

(M4) - FUSE BLOCK-JUNCTION BOX (J/B)

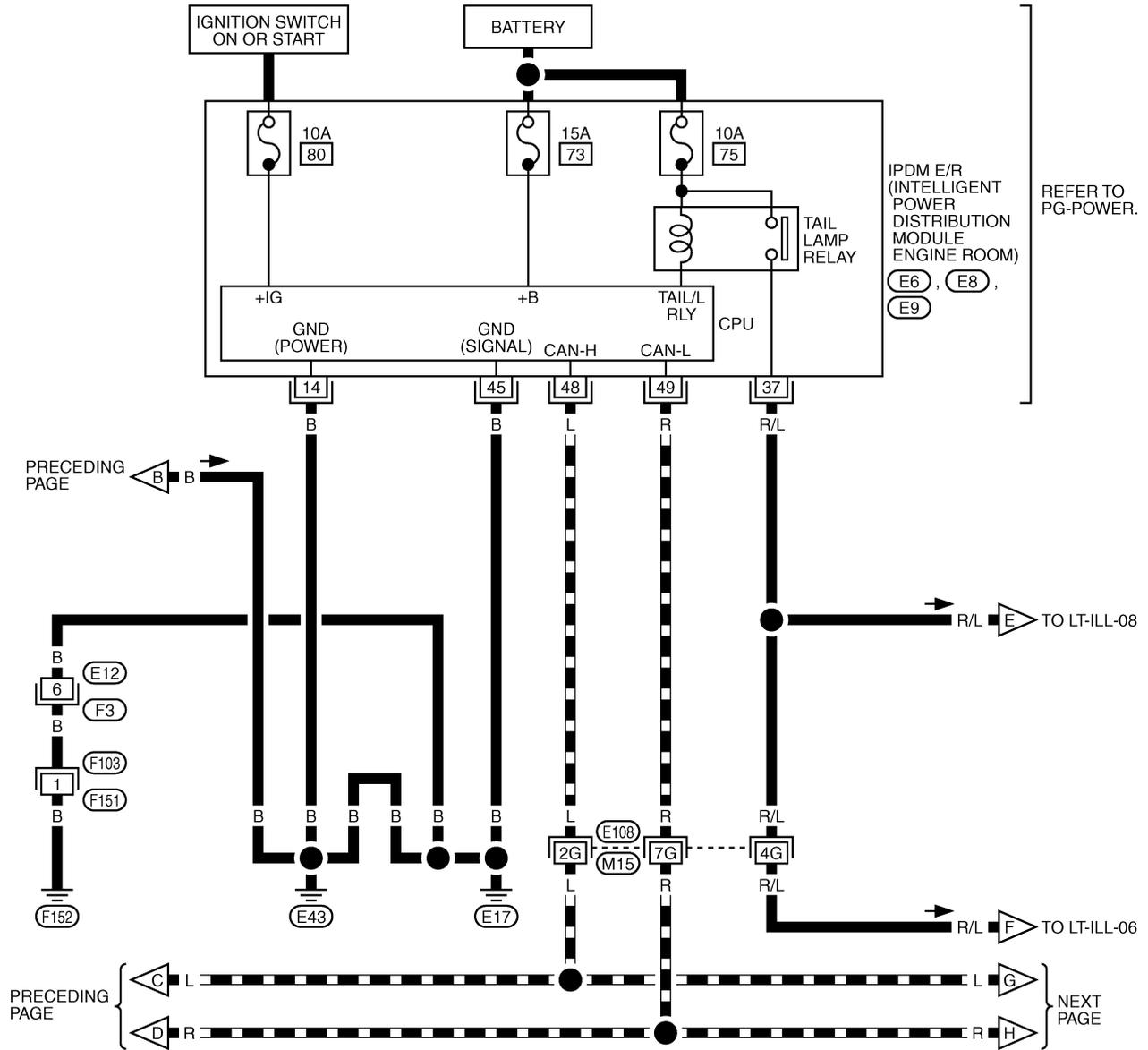
(M1), (M2), (M3), (E105) - ELECTRICAL UNITS

TKWT0468E

ILLUMINATION

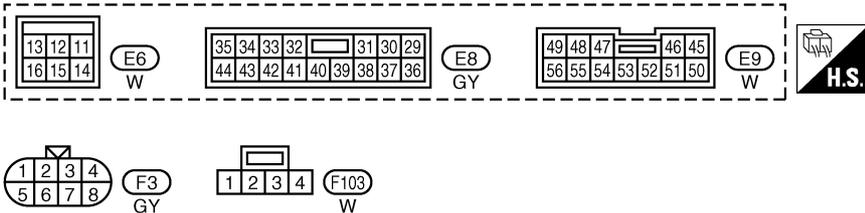
LT-ILL-02

▬ : DATA LINE



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LT

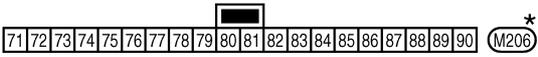
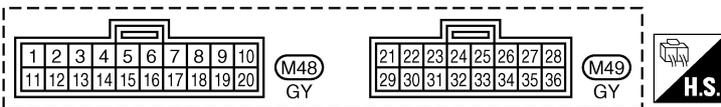
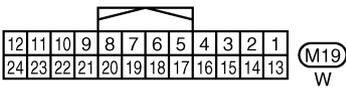
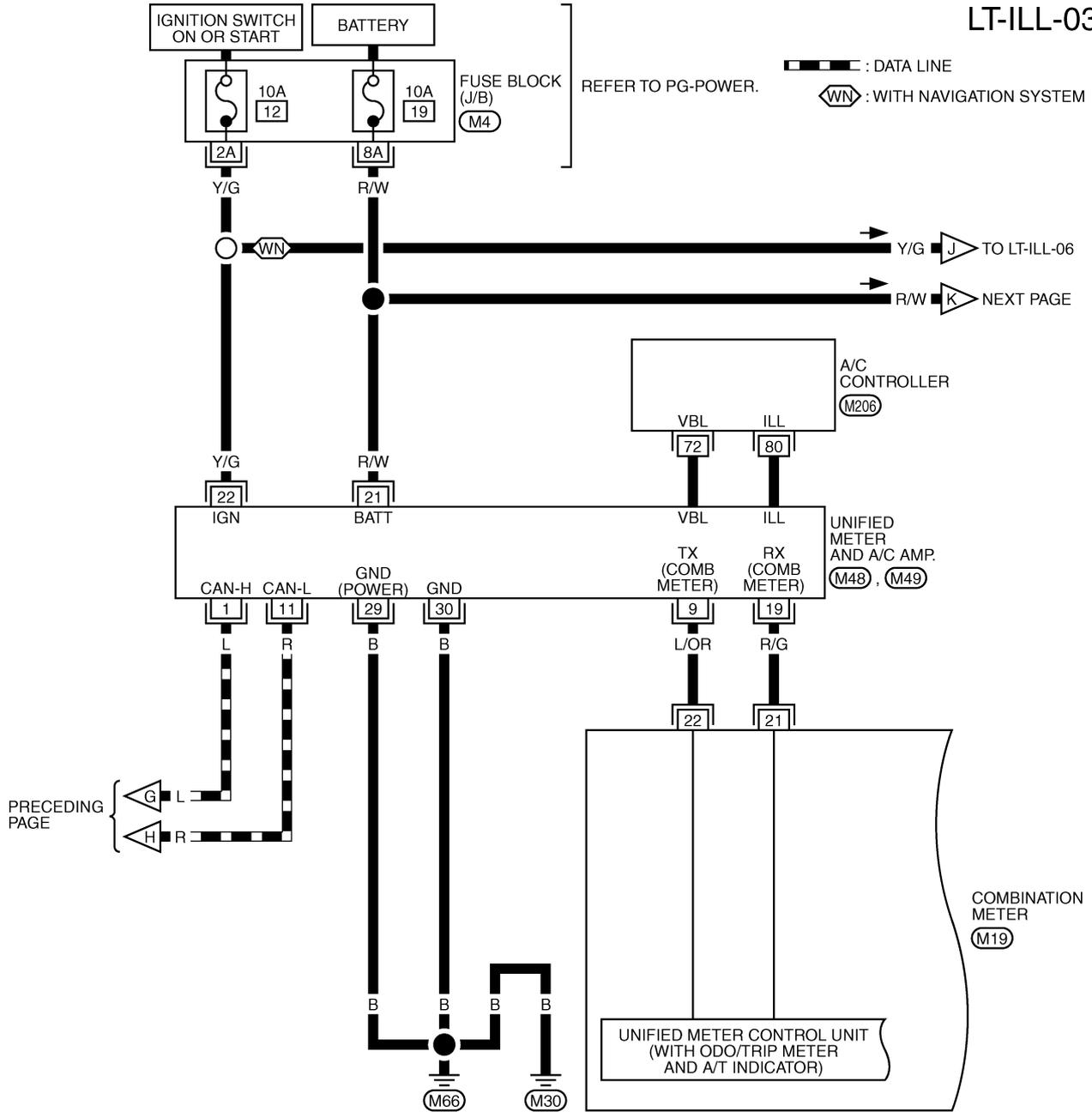


REFER TO THE FOLLOWING.
E108 -SUPER MULTIPLE JUNCTION (SMJ)

TKWT1070E

ILLUMINATION

LT-ILL-03



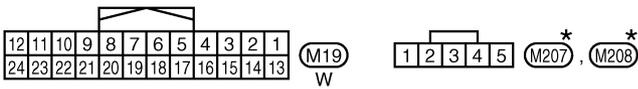
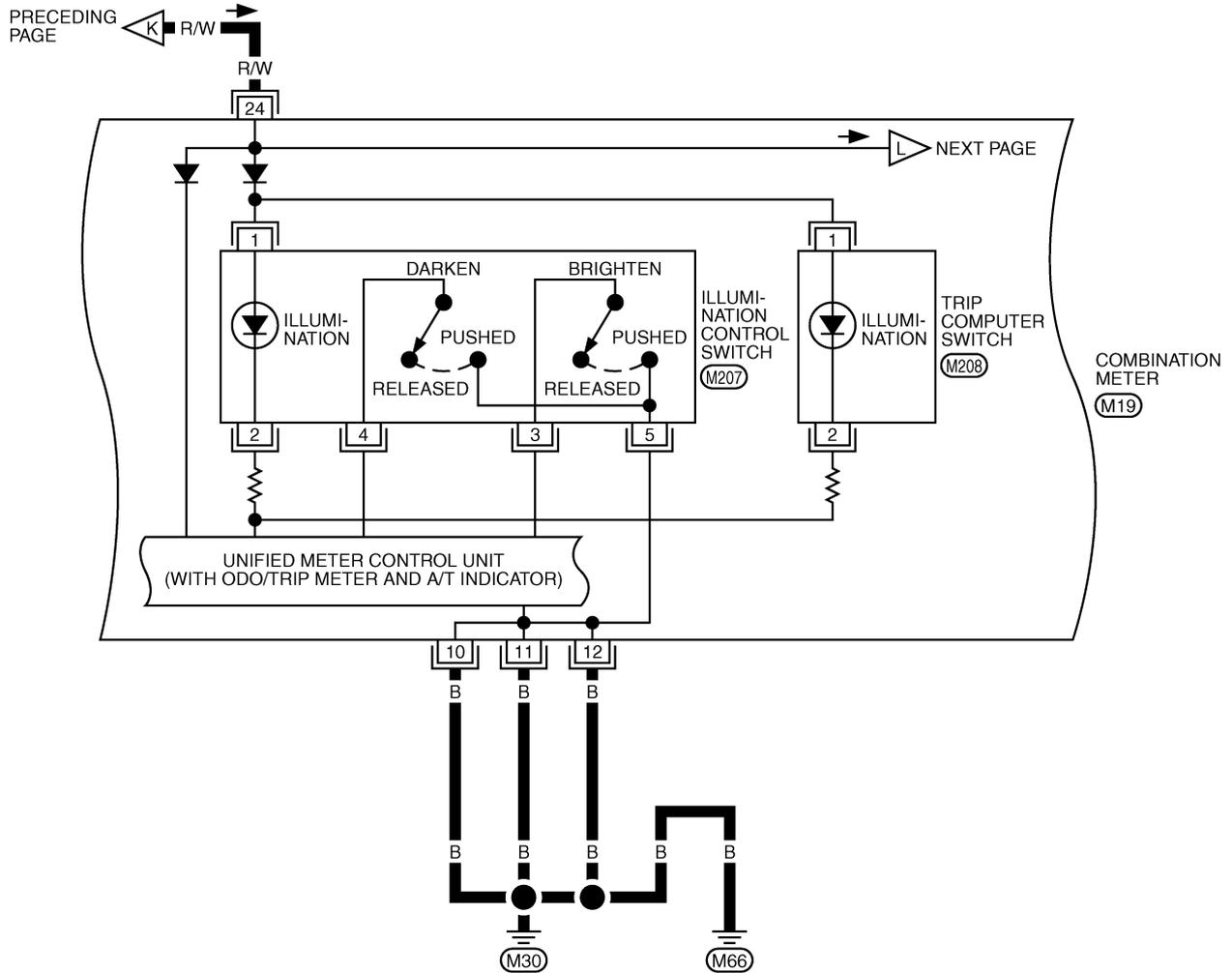
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
 (M4) -FUSE BLOCK-JUNCTION BOX (J/B)

ILLUMINATION

LT-ILL-04

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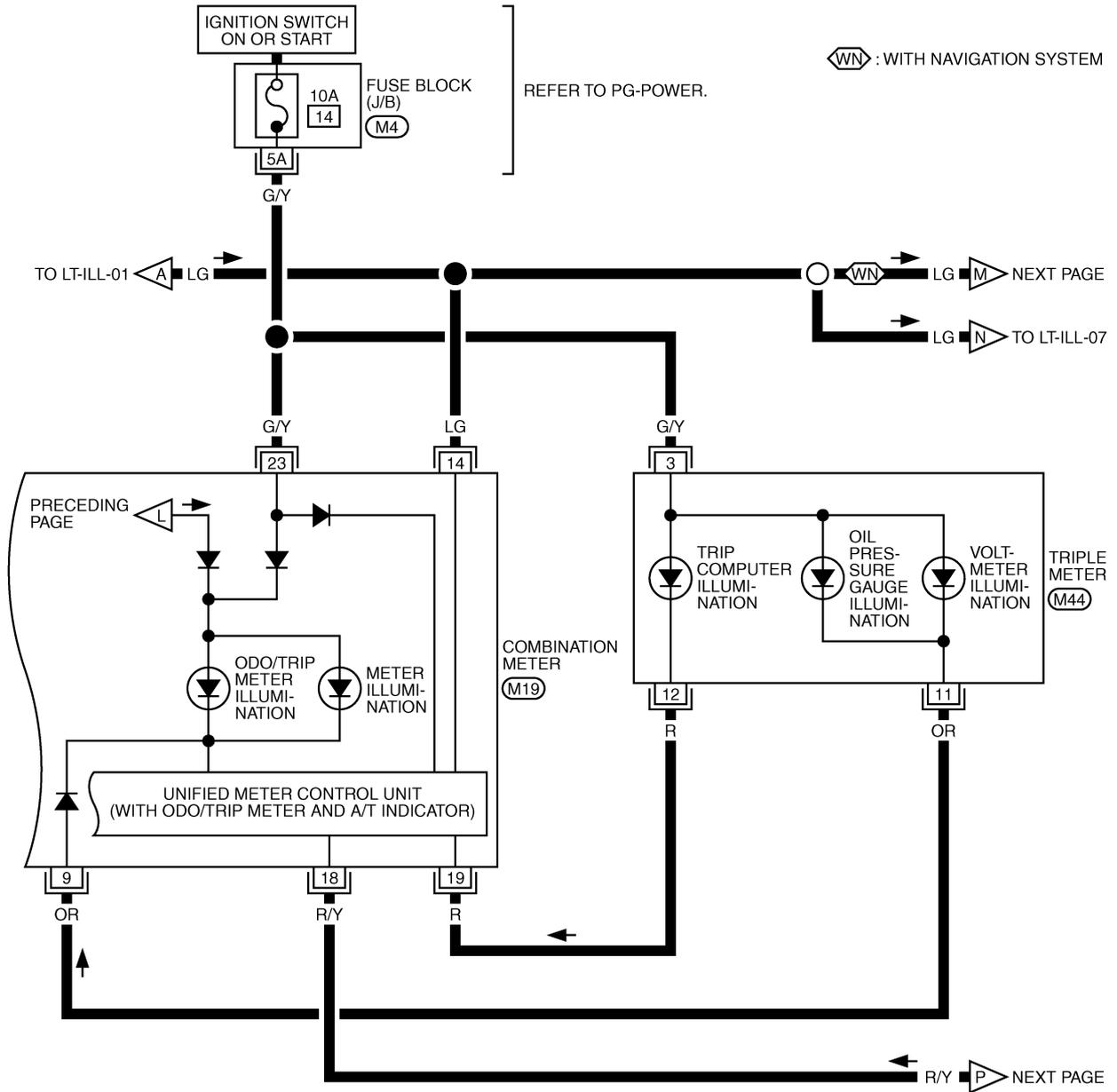


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT0471E

ILLUMINATION

LT-ILL-05



12	11	10	9	8	7	6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13

(M19)
W

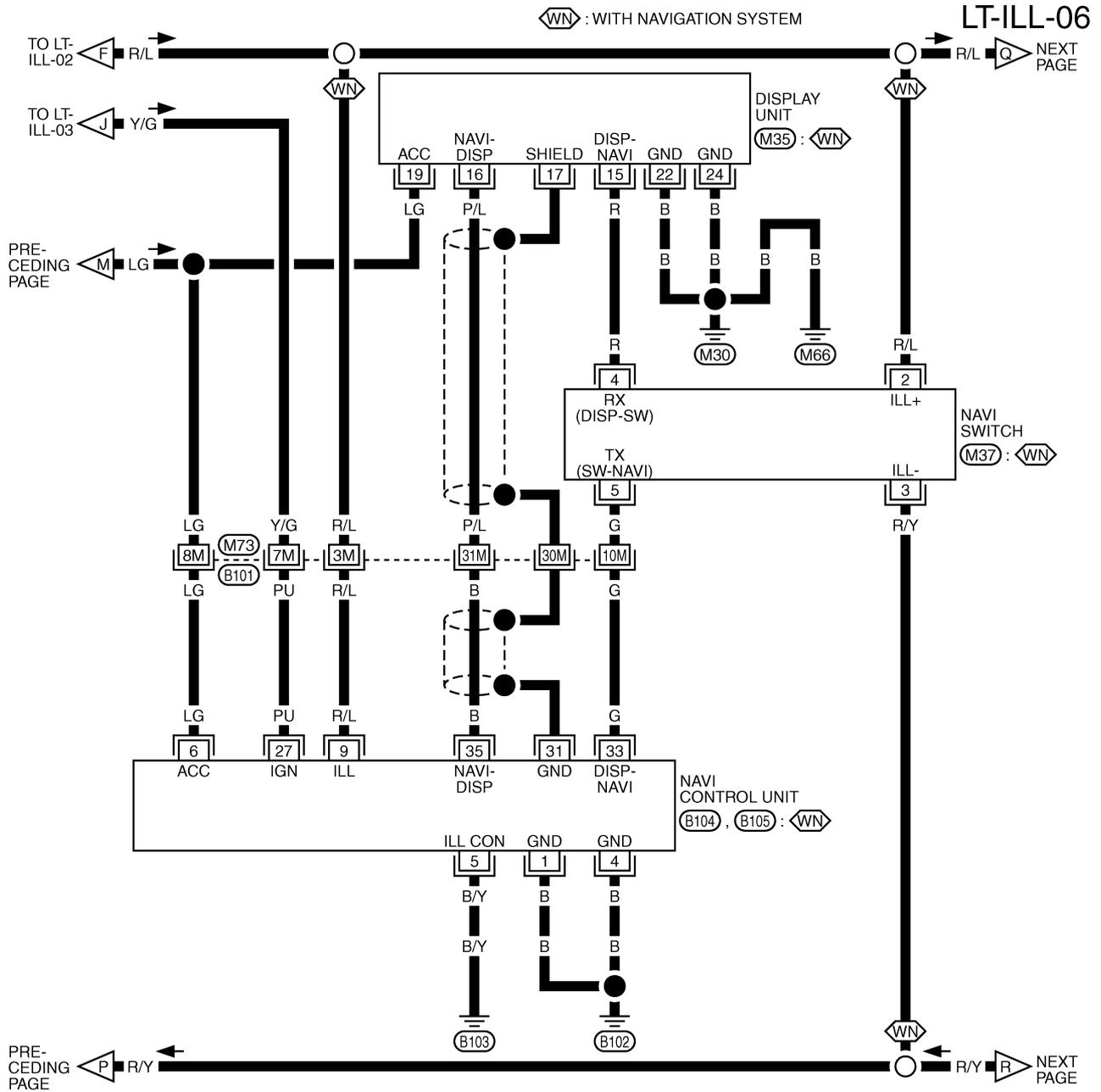
6	5	4	3	2	1
12	11	10	9	8	7

(M44)
W

REFER TO THE FOLLOWING.
(M4) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT0472E

ILLUMINATION



24	22	20	18	16	14	10	8	6	4	2		
23	21	19	17	15	13	12	11	9	7	5	3	1

(M35) GY

3	2	1		
8	7	6	5	4

(M37) W

24	21	18	15	13	11	9	6	3
23	20	17	14	12	10	8	5	2
22	19	16	7	4	1			

(B104) W

48	45	42	39	37	35	33	30	27
47	44	41	38	36	34	32	29	26
46	43	40	31	28	25			

(B105) GY

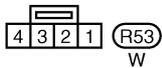
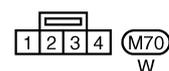
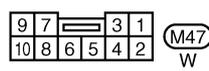
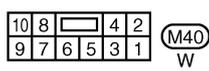
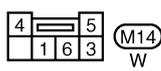
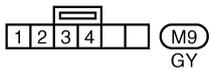
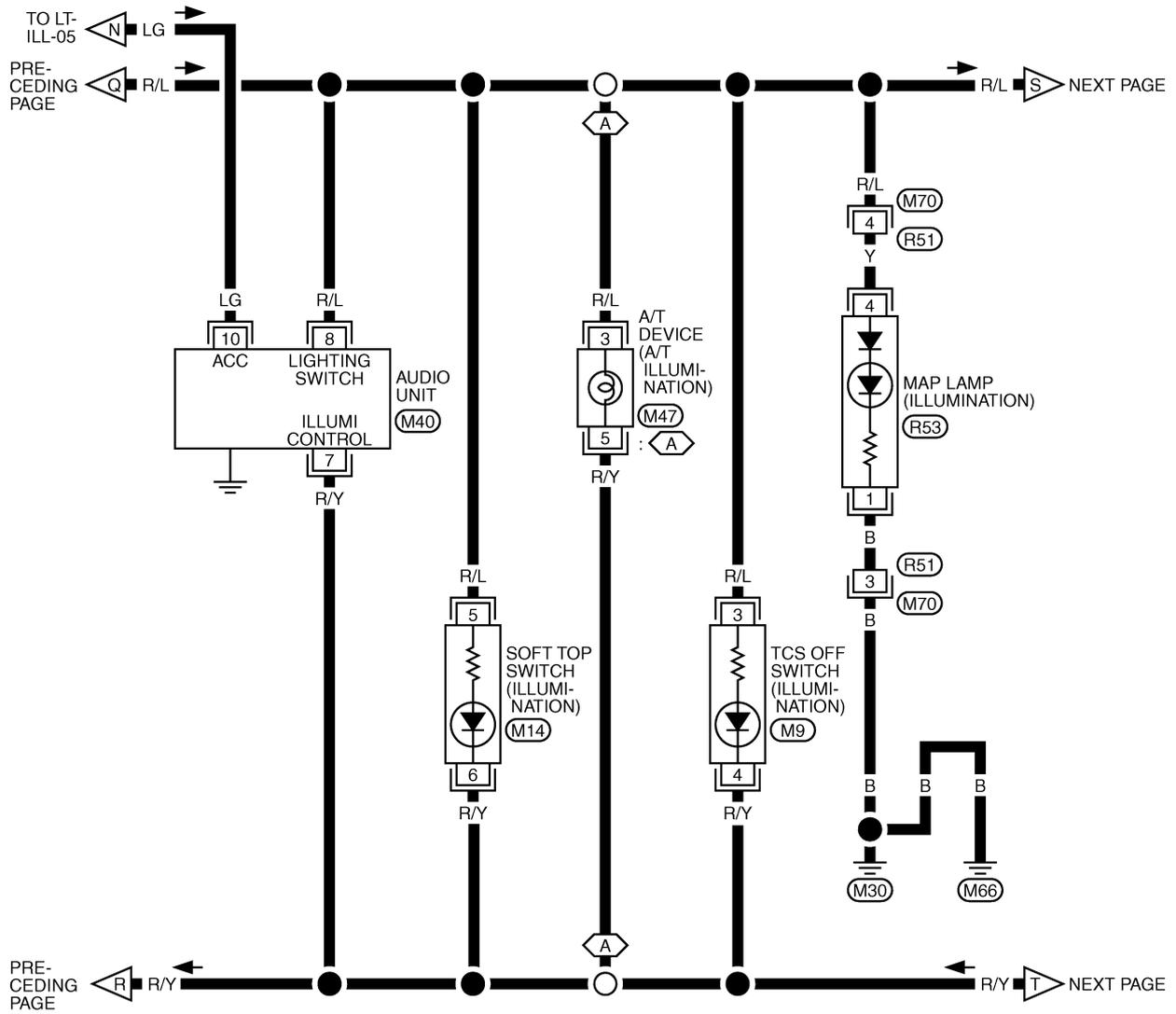
REFER TO THE FOLLOWING.
 (B101) -SUPER MULTIPLE JUNCTION (SMJ)

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ILLUMINATION

LT-ILL-07

: WITH A/T



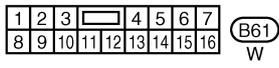
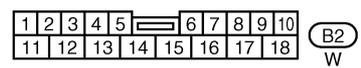
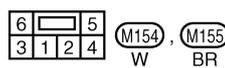
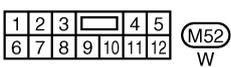
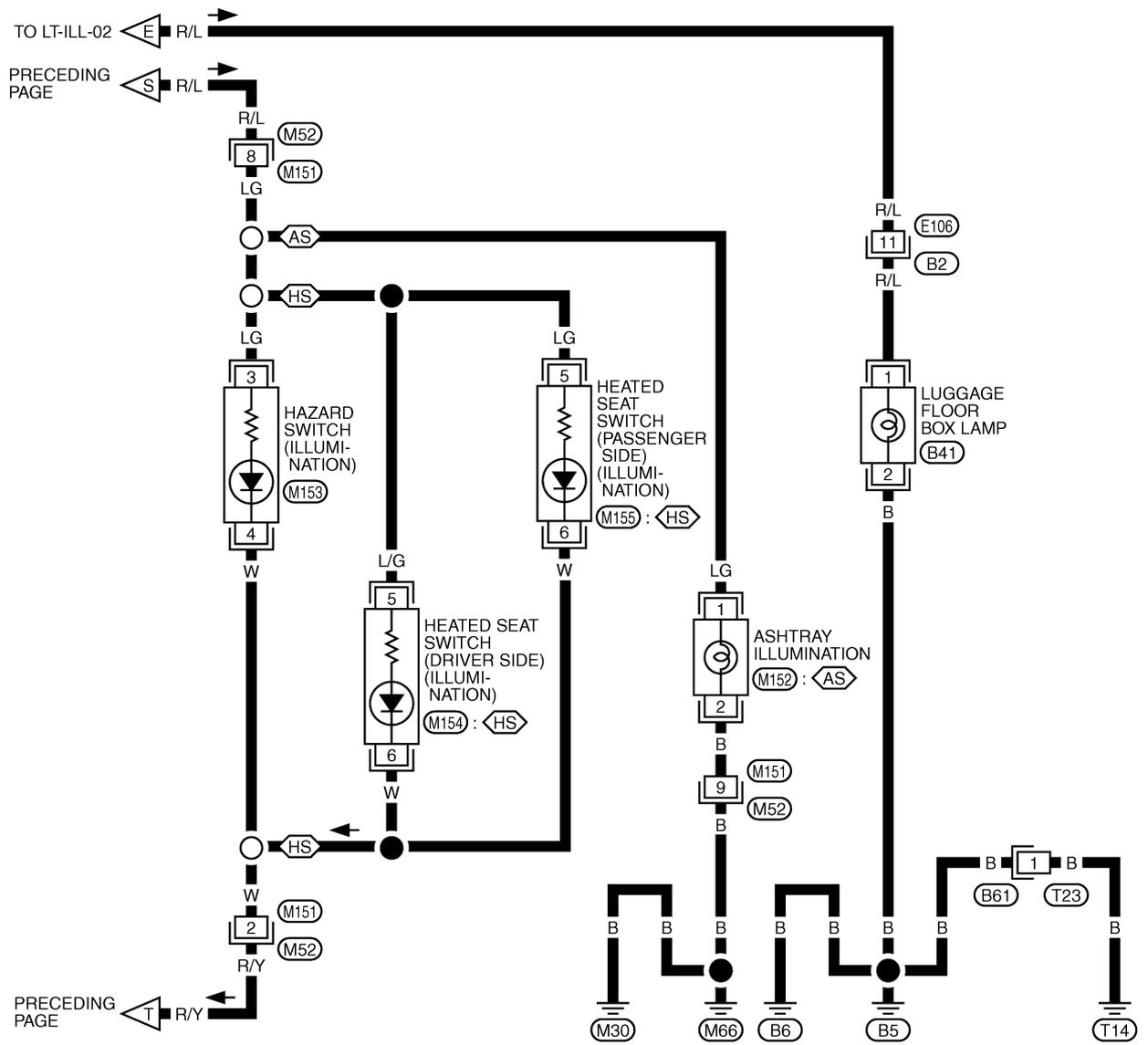
TKWT1072E

ILLUMINATION

LT-ILL-08

AS : WITH ASHTRAY

HS : WITH HEATED SEAT



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BULB SPECIFICATIONS

BULB SPECIFICATIONS

PFP:26297

Headlamp

AKS000WI

Item	Wattage (W)
Low (Halogen type)	55 (H7)
Low (Xenon type)	35 (D2R)
High (Halogen type)	55 (H1)
High (Xenon type)	55 (H7)

Exterior Lamp

AKS000WJ

Item	Wattage (W)	
Front combination lamp	Front Turn signal lamp	21 (amber)
	Parking lamp	5
	Front side marker lamp	5
Rear combination lamp	Stop/Tail lamp	21/5
	Rear Turn signal lamp	21
	Back-up lamp	21
	Rear side marker lamp	5
License plate lamp	5	
High-mounted stop lamp (back door mount)	LED	

Interior Lamp/Illumination

AKS000WK

Item	Wattage (W)
Rear floor box lamp	1.4
Ashtray illumination lamp	1.4
Spot lamp	8
Trunk room lamp	3.4
Vanity mirror lamp	1.32