

SECTION **LT**
LIGHTING SYSTEM

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PRECAUTIONS

PRECAUTIONS

PPF:00011

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

NKS002V3

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

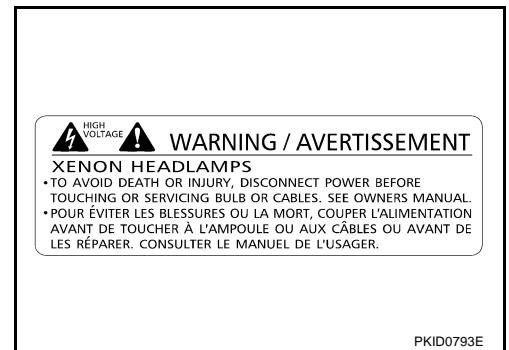
WARNING:

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

General Precautions for Service Operations

NKS002V4

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



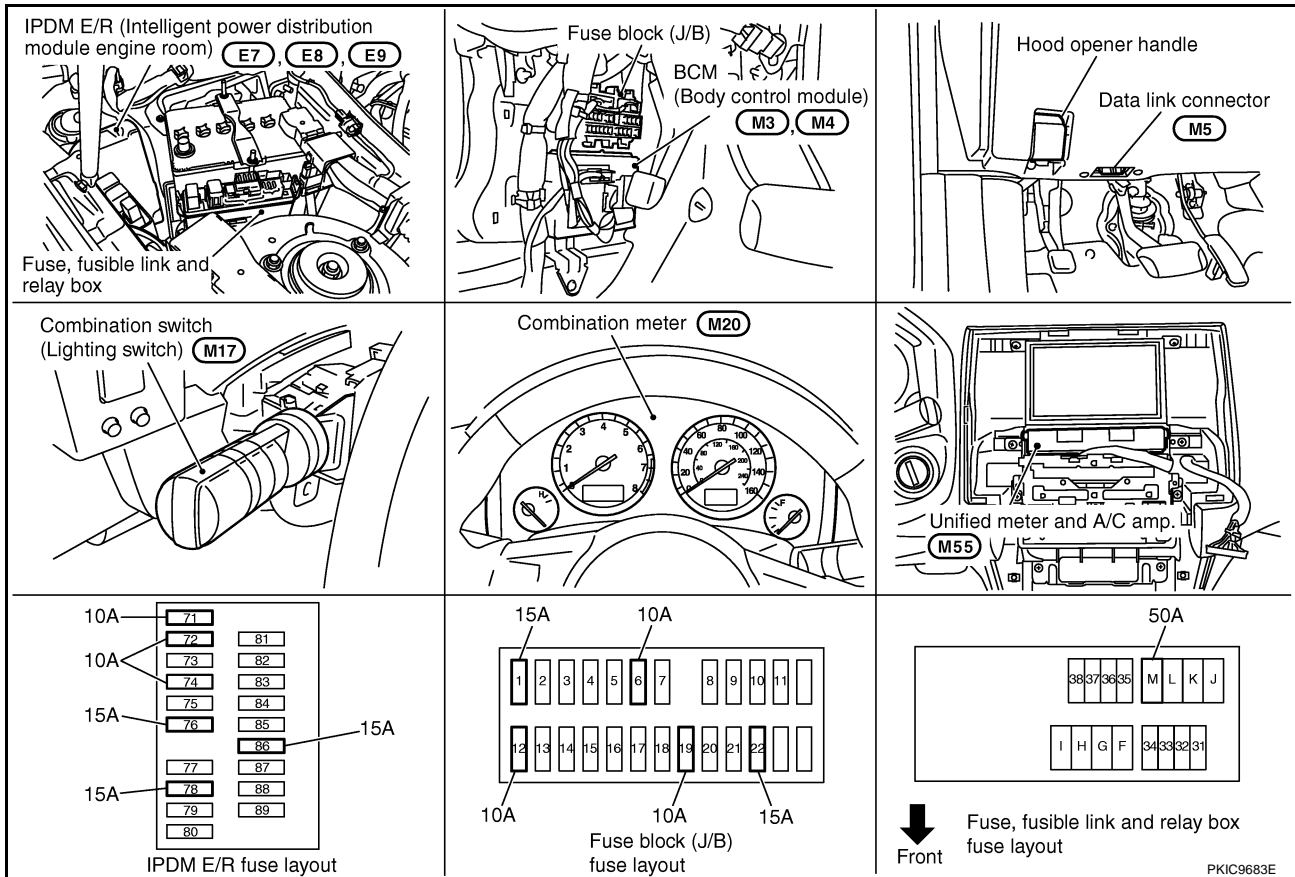
HEADLAMP - XENON TYPE -

HEADLAMP - XENON TYPE -

PFP:26010

Component Parts and Harness Connector Location

NKS002V5



System Description

NKS002V6

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) through the CAN communication lines. The CPU (central processing unit) located in the IPDM E/R controls the headlamp high and headlamp low relay coils. These relays, when energized, direct power to the respective headlamps, which then illuminate. If voltage is applied to a high beam solenoid, the bulb shade will move, even a xenon head lamp bulb comes out, and a high beam and a low beam are changed.

OUTLINE

Power is supplied at all times

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

HEADLAMP - XENON TYPE -

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

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

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

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

Ground is supplied

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

HEADLAMP OPERATION

Low Beam Operation

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

- through 15A fuse (No. 76, located in IPDM E/R)
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 6,
- through 15A fuse (No. 86, located in IPDM E/R)
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 6.

Ground is supplied

- to front combination lamp RH and LH terminals 7
- through grounds E21, E50 and E51,

With power and ground supplied, low beam headlamps illuminate.

High Beam Operation/Flash-to-Pass Operation

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

- through 15A fuse (No. 76, located in IPDM E/R)
- through IPDM E/R terminal 20
- to front combination lamp RH terminal 6,
- through 15A fuse (No. 86, located in IPDM E/R)
- through IPDM E/R terminal 30
- to front combination lamp LH terminal 6,
- through 10A fuse (No. 72, located in IPDM E/R)
- through IPDM E/R terminal 27
- to front combination lamp RH terminal 5,
- through 10A fuse (No. 74, located in IPDM E/R)
- through IPDM E/R terminal 28
- to front combination lamp LH terminal 5.

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HEADLAMP - XENON TYPE -

Ground is supplied

- to front combination lamp RH and LH terminals 7
- through grounds E21, E50 and E51,

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

If voltage is applied to a high beam solenoid, the bulb shade will move, even a xenon head lamp bulb comes out, and a high beam and a low beam are changed.

The unified meter and A/C amp. that received the high beam request signal by BCM through the CAN communication makes a high beam indicator lamp turn on in combination meter.

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

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

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

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

AUTO LIGHT OPERATION (IF EQUIPPED)

Refer to [LT-55, "System Description"](#) .

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to [BL-180, "VEHICLE SECURITY \(THEFT WARNING\) SYSTEM"](#) .

XENON HEADLAMP

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

Followings are some advantages of the xenon type headlamp.

- The light produced by the headlamps is white color similar to sunlight that is easy to the eyes.
- Light output is nearly double that of halogen headlamps, affording increased area of illumination.
- Counter-reflected luminance increases and the contrast enhances on the wet road in the rain. That makes visibility go up more than the increase of the light volume.
- Power consumption is approximately 25 percent less than halogen headlamps, reducing battery load.

CAN Communication System Description

NKS002V7

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

NKS002V8

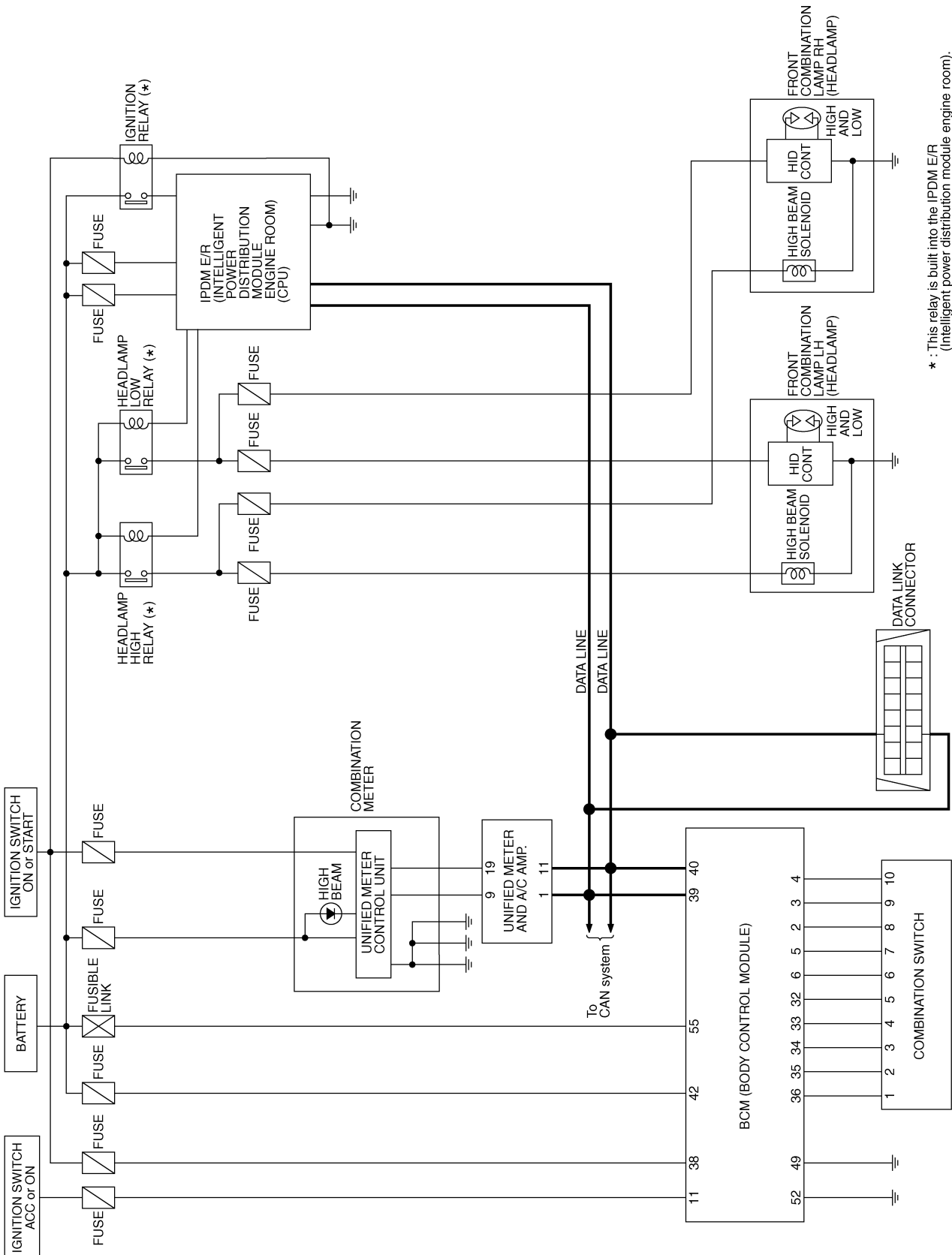
Refer to [LAN-49, "CAN System Specification Chart"](#) .

HEADLAMP - XENON TYPE -

Schematic

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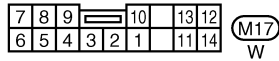
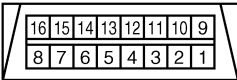
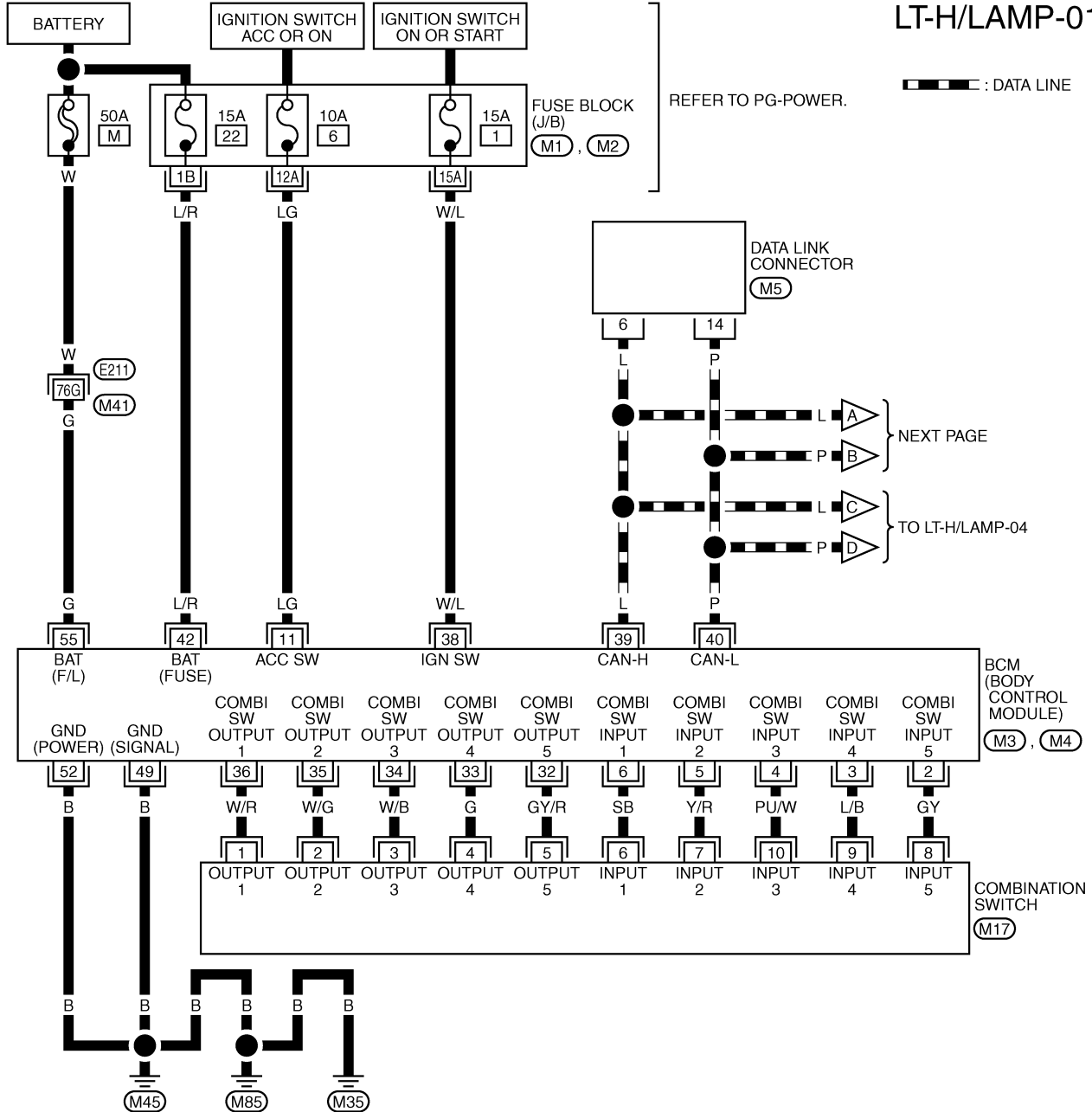
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HEADLAMP - XENON TYPE -

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Wiring Diagram — H/LAMP —

LT-H/LAMP-01



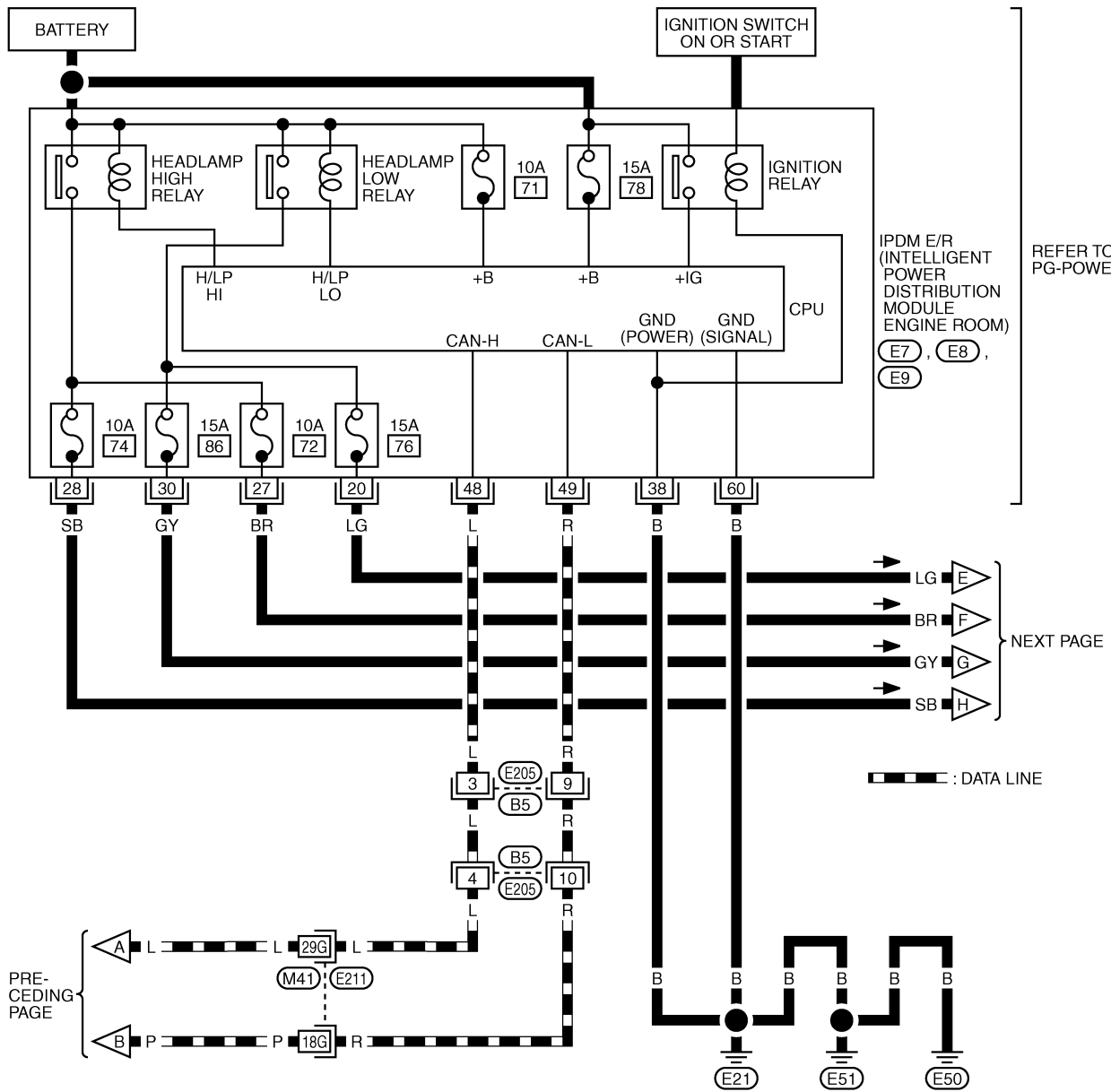
REFER TO THE FOLLOWING.

- (E211) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

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HEADLAMP - XENON TYPE -

LT-H/LAMP-02



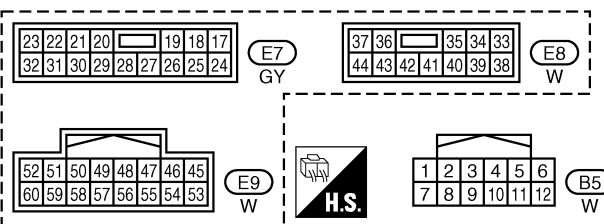
REFER TO PG-POWER.

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E7), (E8), (E9)

NEXT PAGE

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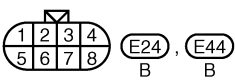
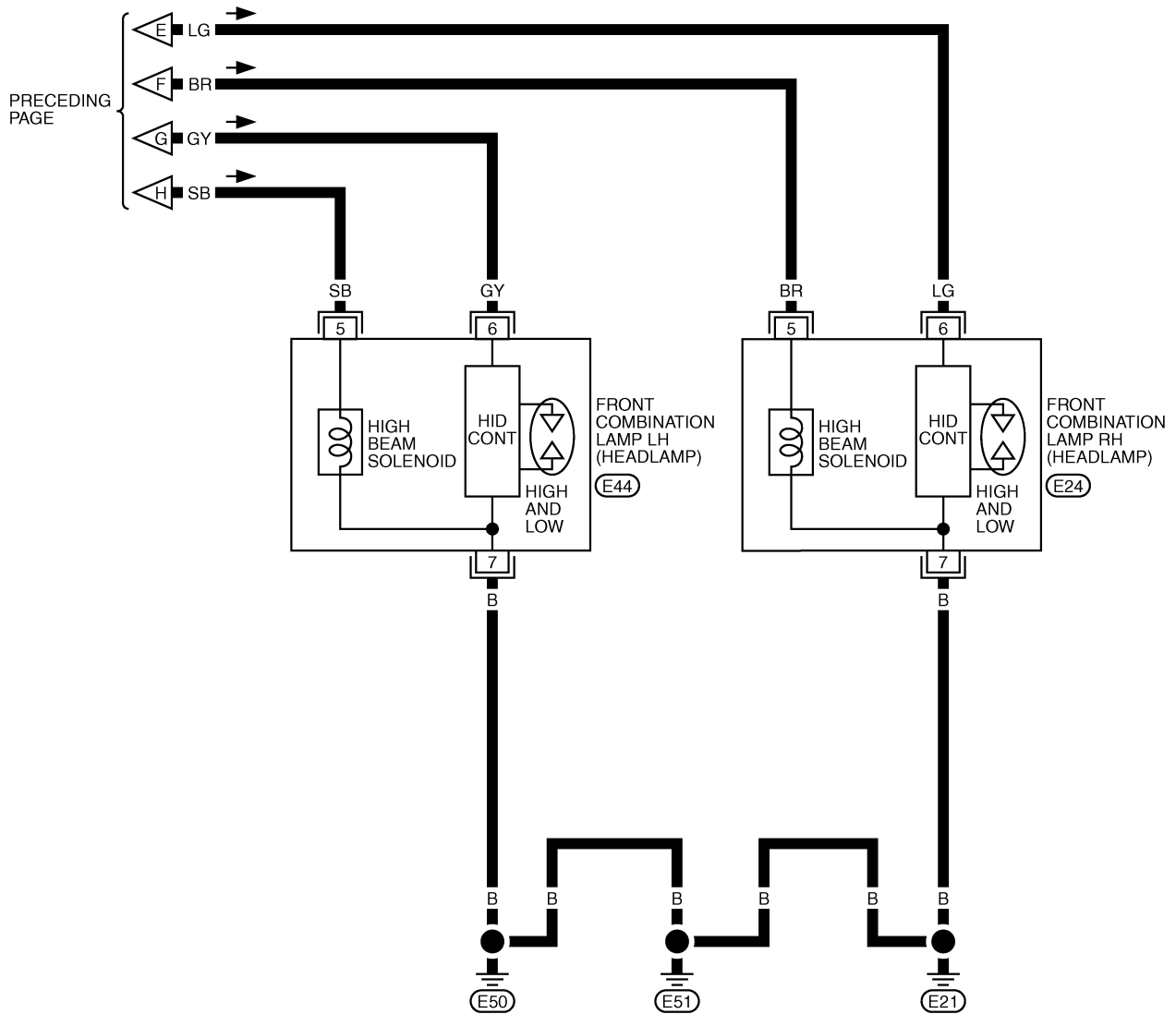
REFER TO THE FOLLOWING.
(E211) -SUPER MULTIPLE JUNCTION (SMJ)

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HEADLAMP - XENON TYPE -

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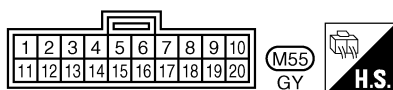
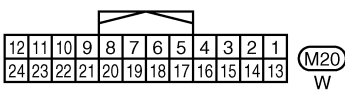
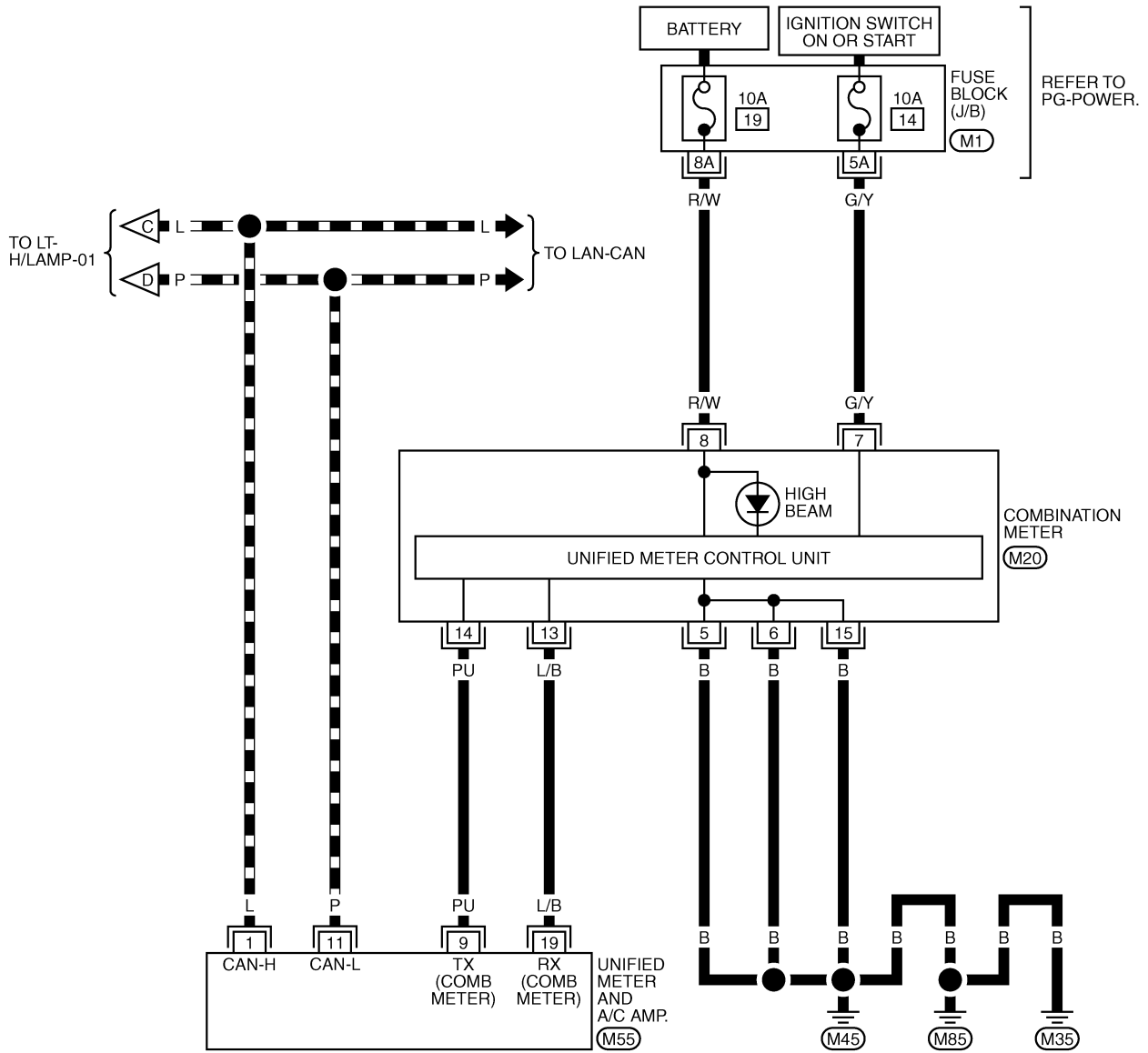


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HEADLAMP - XENON TYPE -

LT-H/LAMP-04

▬ : DATA LINE



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

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HEADLAMP - XENON TYPE -

NKS002VB

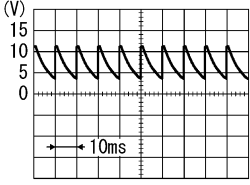
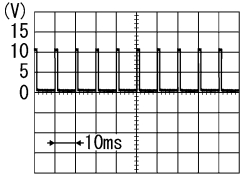
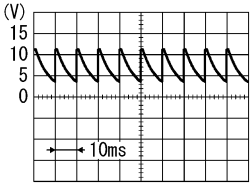
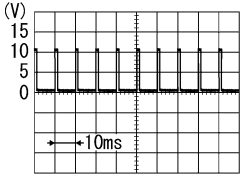
Terminals and Reference Values for BCM

CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.
- Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-II. Refer to [LT-117, "DATA MONITOR"](#) .

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
				Lighting switch HIGH beam (Operates only HIGH beam switch)	<p style="text-align: right;">PKIB4959J</p>	Approx. 1.0 V
					Lighting switch 2ND	<p style="text-align: right;">PKIB4953J</p>
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch 2ND ● Lighting switch PASSING (Operates only PASSING switch) 	<p style="text-align: right;">PKIB4959J</p>
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage

HEADLAMP - XENON TYPE -

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF  Approx. 7.2 V
					Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch 2ND ● Lighting switch HI beam (Operates only HI beam switch)  Approx. 1.2 V
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF  Approx. 7.2 V
					Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch 2ND ● Lighting switch PASSING (Operates only PASSING switch)  Approx. 1.2 V
38	W/L	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN - H	—	—	—
40	P	CAN - L	—	—	—
42	L/R	Battery power supply	OFF	—	Battery voltage
49	B	Ground	ON	—	Approx. 0 V
52	B	Ground	ON	—	Approx. 0 V
55	G	Battery power supply	OFF	—	Battery voltage

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HEADLAMP - XENON TYPE -

Terminals and Reference Values for IPDM E/R

NKS002VC

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

How to Proceed With Trouble Diagnosis

NKS002VD

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-6, "System Description"](#) .
3. Perform Preliminary Check. Refer to [LT-16, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does headlamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

NKS002VE

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses.

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

Refer to [LT-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-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

HEADLAMP - XENON TYPE -

2. CHECK POWER SUPPLY CIRCUIT

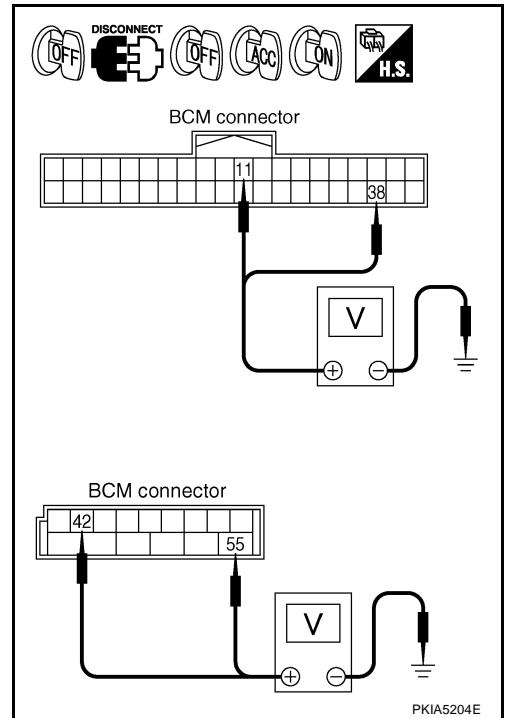
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M3	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK GROUND CIRCUIT

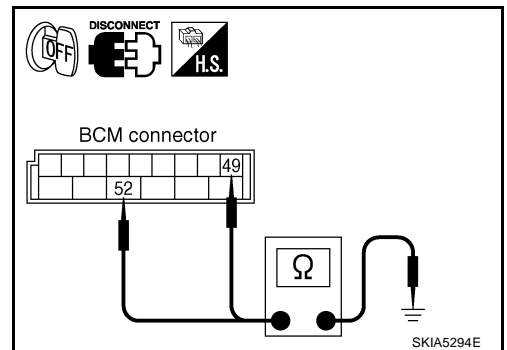
Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M4	49		Ground
	52		

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



HEADLAMP - XENON TYPE -

CONSULT-II Functions (BCM)

NKS002VF

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

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

CONSULT-II BASIC OPERATION

Refer to [GI-38, "CONSULT-II Start Procedure"](#) .

WORK SUPPORT

Operation Procedure

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

Display Item List

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

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

HEADLAMP - XENON TYPE -

Monitor item	Contents
LIGHT SW 1 ST	"ON/OFF" Displays status (lighting switch 1ST or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW ^{NOTE 1}	"ON/OFF" Displays status of lighting switch as judged from lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	"ON/OFF" Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF" Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
RR FOG SW ^{NOTE 3}	"OFF" —
DOOR SW - DR	"ON/OFF" Displays status of driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF" Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	"ON/OFF" Displays status of rear door as judged from rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL	"ON/OFF" Displays status of rear door as judged from rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF" Displays status of back door as judged from back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	"ON/OFF" Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF" Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN ^{NOTE 2}	"ON/OFF" Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW ^{NOTE 2}	"ON/OFF" Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
CARGO LAMP SW ^{NOTE 3}	"OFF" —
OPTICAL SENSOR ^{NOTE 1}	"0 - 5 V" Displays "outside brightness (close to 5 V when light/close to 0 V when dark)" judged from optical sensor signal.

NOTE:

1. Vehicles without auto light system display this item, but cannot be monitored.
2. Vehicles without daytime light system display this item, but cannot be monitored.
3. This item is displayed, but cannot be monitored.

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HEADLAMP - XENON TYPE -

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 "OFF" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP	Allows front fog lamp relay to operate by switching ON-OFF.
DTRL ^{NOTE 1}	Allows daytime light lamp operate by switching ON-OFF
CORNERING LAMP ^{NOTE 2}	—

NOTE:

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

CONSULT-II Functions (IPDM E/R)

NKS002VG

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

Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-19, "SELF-DIAG RESULTS" .
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

Refer to [GI-38, "CONSULT-II Start Procedure"](#) .

DATA MONITOR

Operation Procedure

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

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

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

HEADLAMP - XENON TYPE -

All Signals, Main Signals, Selection From Menu

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

NOTE:

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

ACTIVE TEST

Operation Procedure

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

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

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HEADLAMP - XENON TYPE -

Headlamp Does Not Change To High Beam (Both Sides)

NKS002VH

1. CHECK COMBINATION SWITCH INPUT SIGNAL

④ With CONSULT-II

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

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

⊗ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#).

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#).

DATA MONITOR			
MONITOR			
HI BEAM SW	ON		
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7585E

2. HEADLAMP ACTIVE TEST

④ With CONSULT-II

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

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

⊗ Without CONSULT-II

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Make sure headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

ACTIVE TEST			
LAMPS	OFF		
		HI	
LO	FOG		
		RECORD	
MODE	BACK	LIGHT	COPY

SKIA5774E

3. CHECK IPDM E/R

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

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

OK or NG

OK >> Replace IPDM E/R.

NG >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).

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

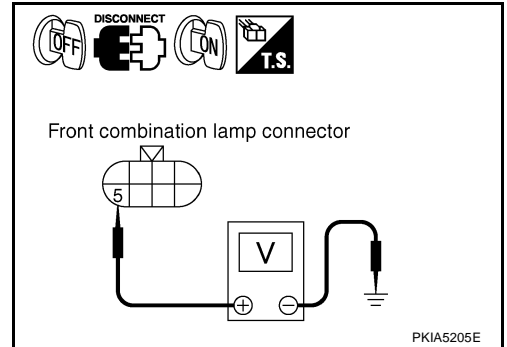
PKIA7638E

HEADLAMP - XENON TYPE -

4. CHECK HEADLAMP INPUT SIGNAL

☑ With CONSULT-II

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



(+)		Terminal	(-)	Voltage
Front combination lamp connector				
RH	E24	5	Ground	Battery voltage
LH	E44	5		

☒ Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
4. When headlamp high beam is operating, check voltage between front combination lamp RH and LH harness connectors and ground.

(+)		Terminal	(-)	Voltage
Front combination lamp connector				
RH	E24	5	Ground	Battery voltage
LH	E44	5		

OK or NG

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

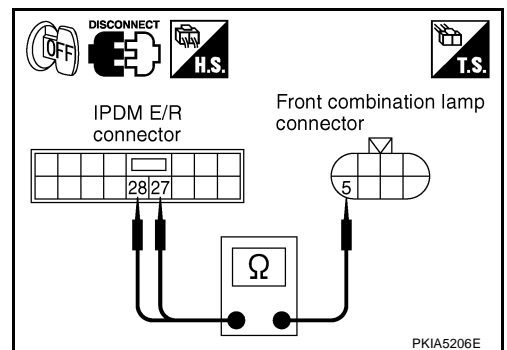
5. CHECK HEADLAMP CIRCUIT

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

27 - 5 : Continuity should exist.

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

28 - 5 : Continuity should exist.



OK or NG

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

HEADLAMP - XENON TYPE -

6. CHECK HEADLAMP GROUND

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

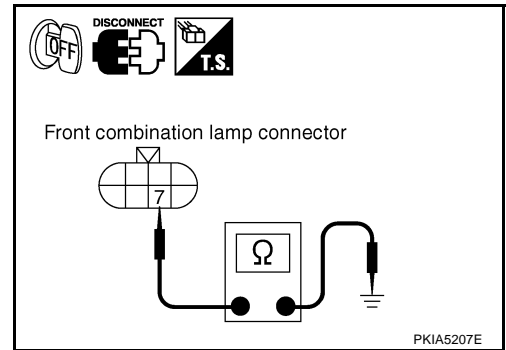
7 – Ground : Continuity should exist.

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

7 – Ground : Continuity should exist.

OK or NG

- OK >> Replace front combination lamp.
 NG >> Repair harness or connector.



Headlamp Does Not Change To High Beam (One Side)

NKS002VI

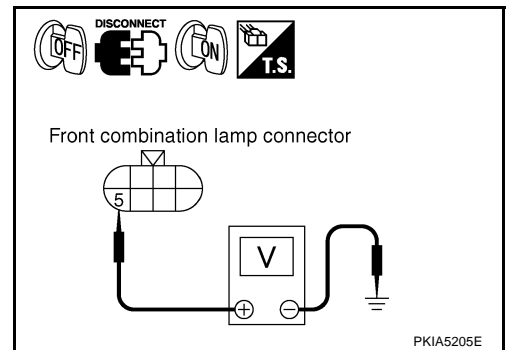
1. CHECK HEADLAMP INPUT SIGNAL

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

(+)		Terminal	(-)	Voltage
Front combination lamp connector				
RH	E24	5	Ground	Battery voltage
LH	E44	5		

OK or NG

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



2. CHECK HEADLAMP CIRCUIT

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

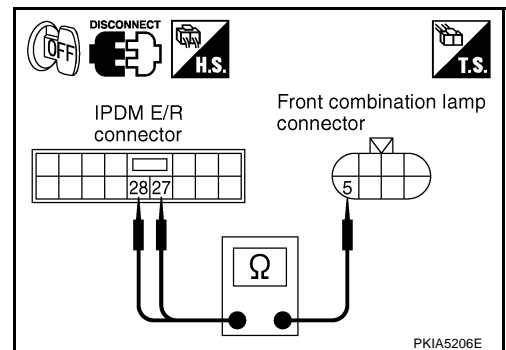
27 – 5 : Continuity should exist.

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

28 – 5 : Continuity should exist.

OK or NG

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



HEADLAMP - XENON TYPE -

3. CHECK HEADLAMP GROUND

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

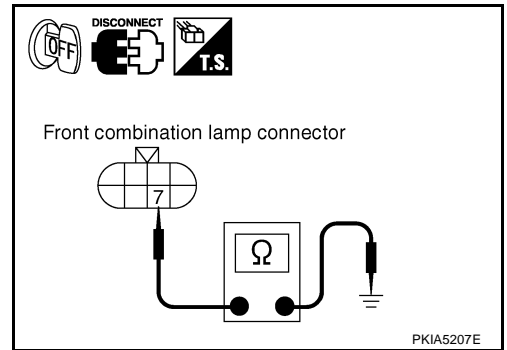
7 – Ground : Continuity should exist.

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

7 – Ground : Continuity should exist.

OK or NG

- OK >> Replace front combination lamp.
- NG >> Repair harness or connector.



Headlamp Low Beam Does Not Illuminate (Both Sides)

NKS002VK

1. CHECK COMBINATION SWITCH INPUT SIGNAL

☑ With CONSULT-II

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

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

☒ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#).

OK or NG

- OK >> GO TO 2.
- NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#).

DATA MONITOR			
MONITOR			
HEAD LAMP SW1	ON		
HEAD LAMP SW2	ON		
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7586E

2. HEADLAMP ACTIVE TEST

☑ With CONSULT-II

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

Headlamp low beam should operate.

☒ Without CONSULT-II

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Make sure headlamp low beam operation.

Headlamp low beam should operate.

OK or NG

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

ACTIVE TEST			
LAMPS		OFF	
		HI	
LO		FOG	
MODE	BACK	LIGHT	COPY

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HEADLAMP - XENON TYPE -

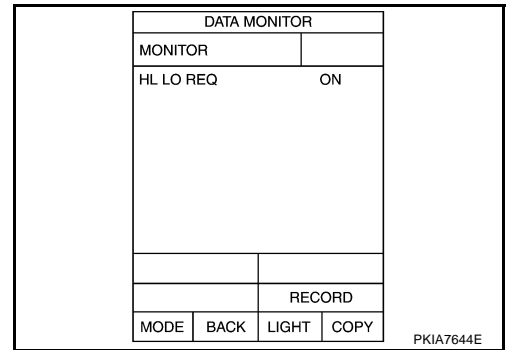
3. CHECK IPDM E/R

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

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

OK or NG

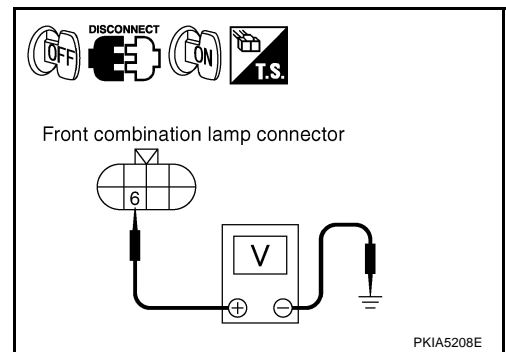
- OK >> Replace IPDM E/R.
 NG >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .



4. CHECK HEADLAMP INPUT SIGNAL

Ⓜ With CONSULT-II

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



(+)		Terminal	(-)	Voltage
Front combination lamp connector				
RH	E24	6	Ground	Battery voltage
LH	E44	6		

ⓧ Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Start auto active test. Refer to [PG-21, "Auto Active Test"](#) .
4. When headlamp low beam is operating, check voltage between front combination lamp RH and LH harness connectors and ground.

(+)		Terminal	(-)	Voltage
Front combination lamp connector				
RH	E24	6	Ground	Battery voltage
LH	E44	6		

OK or NG

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

HEADLAMP - XENON TYPE -

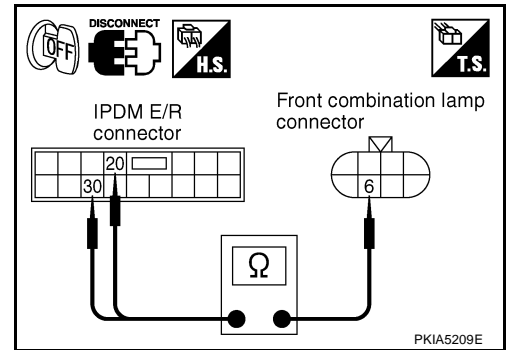
5. CHECK HEADLAMP CIRCUIT

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

20 – 6 : Continuity should exist.

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

30 – 6 : Continuity should exist.



OK or NG

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

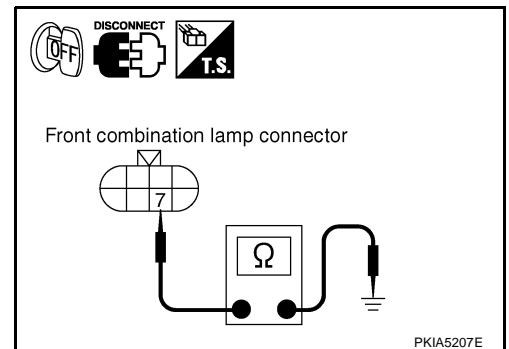
6. CHECK HEADLAMP GROUND

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

7 – Ground : Continuity should exist.

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

7 – Ground : Continuity should exist.



OK or NG

- OK >> Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to [LT-32, "Xenon Headlamp Trouble Diagnosis"](#).
- NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

NKS002VL

1. CHECK BULB

Check ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to [LT-32, "Xenon Headlamp Trouble Diagnosis"](#).

OK or NG

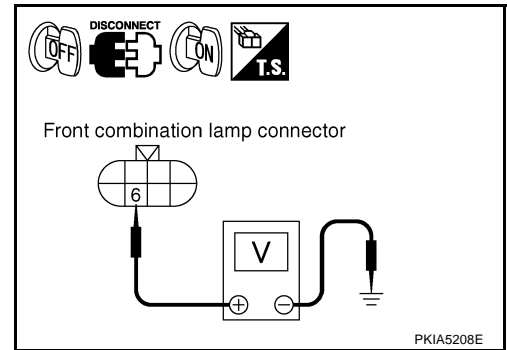
- OK >> GO TO 2.
- NG >> Replace malfunctioning part.

HEADLAMP - XENON TYPE -

2. CHECK HEADLAMP INPUT SIGNAL

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

(+)		Terminal	(-)	Voltage
Front combination lamp connector				
RH	E24	6	Ground	Battery voltage
LH	E44	6		



OK or NG

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

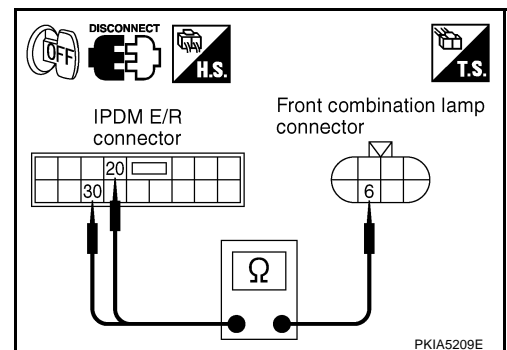
3. CHECK HEADLAMP CIRCUIT

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

20 – 6 : Continuity should exist.

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

30 – 6 : Continuity should exist.



OK or NG

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

4. CHECK HEADLAMP GROUND

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

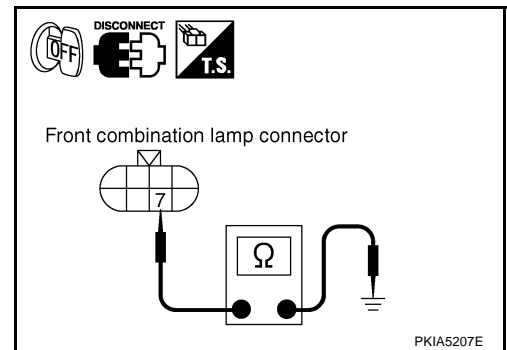
7 – Ground : Continuity should exist.

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

7 – Ground : Continuity should exist.

OK or NG

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



HEADLAMP - XENON TYPE -

Headlamp RH Low Beam and High Beam Does Not Illuminate

NKS002VM

1. CHECK BULB

Inspect ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to [LT-32, "Xenon Headlamp Trouble Diagnosis"](#).

OK or NG

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

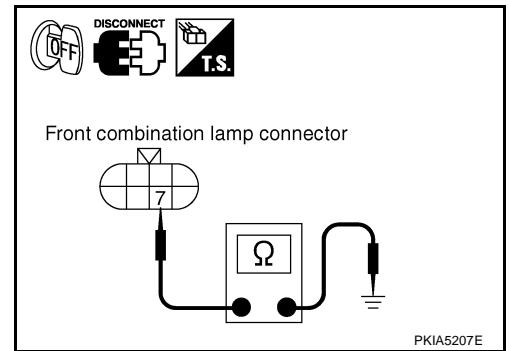
2. CHECK HEADLAMP GROUND

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

7 – Ground : Continuity should exist.

OK or NG

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



3. CHECK HEADLAMP CIRCUIT

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

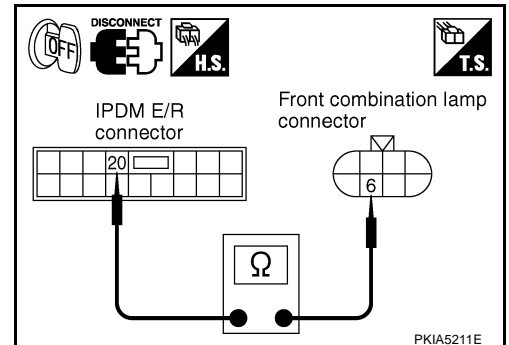
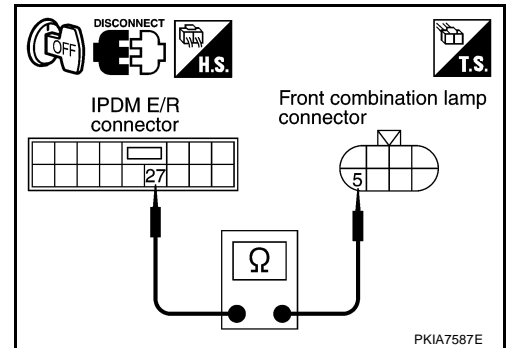
27 – 5 : Continuity should exist.

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

20 – 6 : Continuity should exist.

OK or NG

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



Headlamp LH Low Beam and High Beam Does Not Illuminate

NKS002VN

1. CHECK BULB

Inspect ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to [LT-32, "Xenon Headlamp Trouble Diagnosis"](#).

OK or NG

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

HEADLAMP - XENON TYPE -

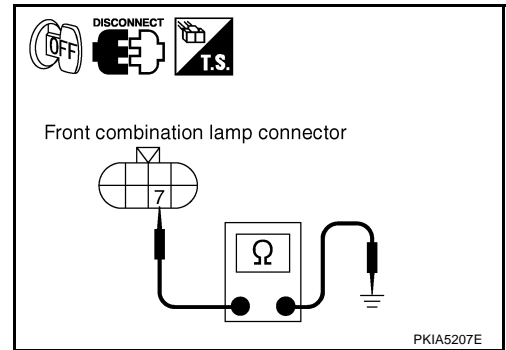
2. CHECK HEADLAMP GROUND

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

7 – Ground : **Continuity should exist.**

OK or NG

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



3. CHECK HEADLAMP CIRCUIT

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

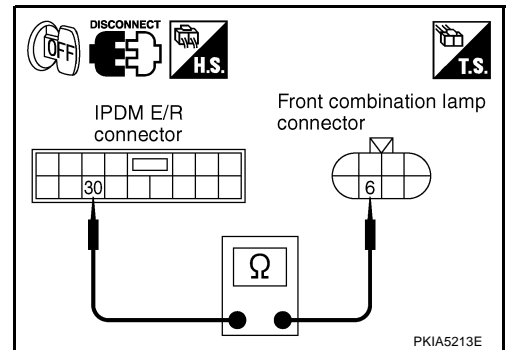
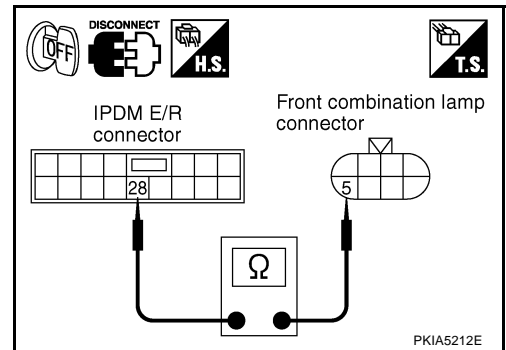
28 – 5 : **Continuity should exist.**

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

30 – 6 : **Continuity should exist.**

OK or NG

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



Headlamps Do Not Turn OFF

1. CHECK HEADLAMP TURN OFF

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

OK or NG

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

NKS002VO

HEADLAMP - XENON TYPE -

2. CHECK COMBINATION SWITCH INPUT SIGNAL

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

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

OK or NG

OK >> Replace IPDM E/R.

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#) .

DATA MONITOR			
MONITOR			
HEAD LAMP SW1	OFF		
HEAD LAMP SW2	OFF		
		Page Down	
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7588E

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

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

Display of self-diagnosis results

NO DTC>> Replace IPDM E/R.

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

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

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HEADLAMP - XENON TYPE -

General Information for Xenon Headlamp Trouble Diagnosis

NKS002VP

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

Caution:

NKS002VQ

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

Xenon Headlamp Trouble Diagnosis

NKS002VR

1. CHECK 1: XENON HEADLAMP LIGHTING

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

OK or NG

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

2. CHECK 2: XENON HEADLAMP LIGHTING

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

OK or NG

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

3. CHECK 3: XENON HEADLAMP LIGHTING

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

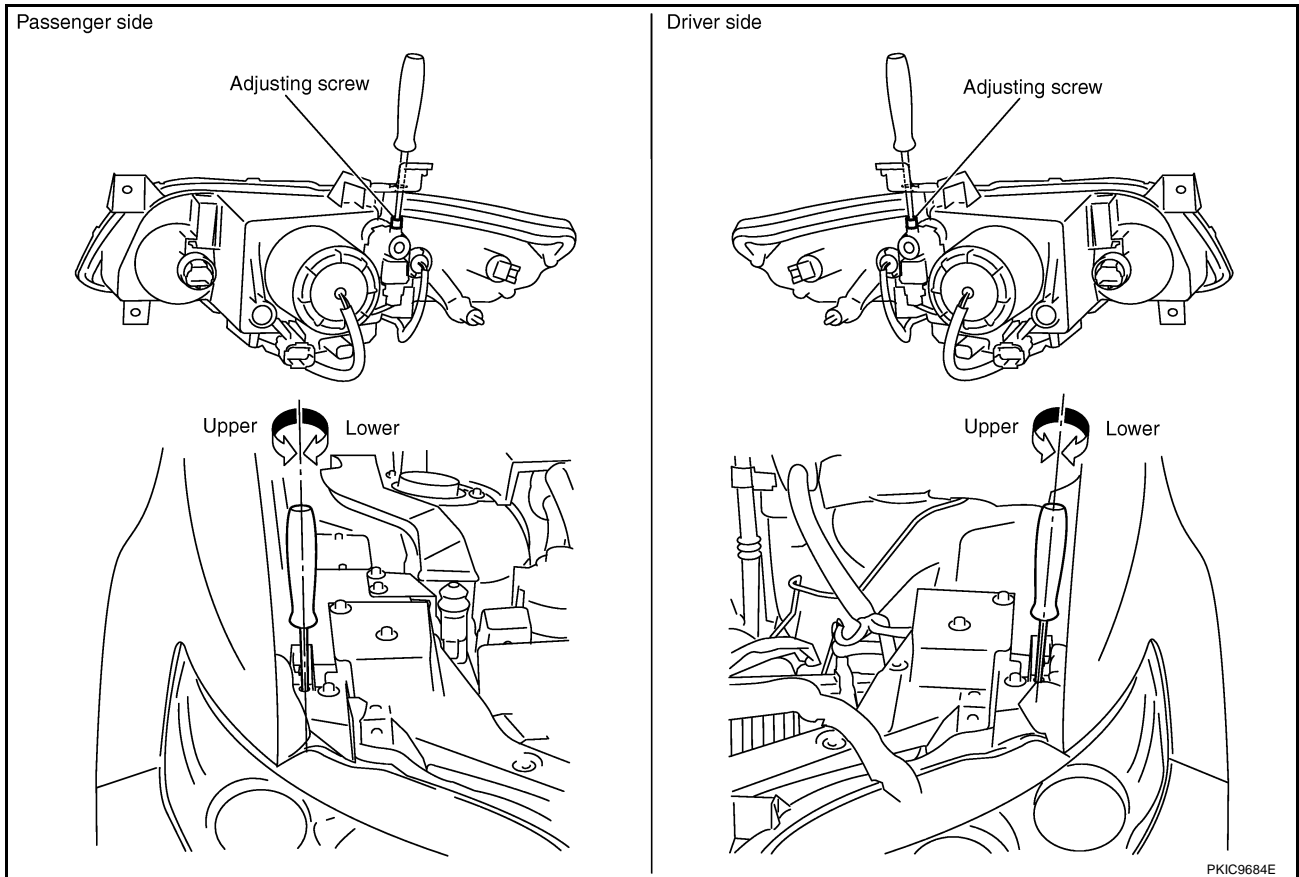
OK or NG

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

HEADLAMP - XENON TYPE -

Aiming Adjustment

NKS002VS



PREPARATION BEFORE ADJUSTING

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

Before performing aiming adjustment, check the following.

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

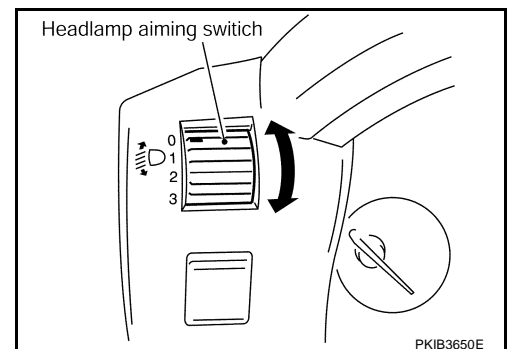
LOW BEAM AND HIGH BEAM

1. Turn headlamp low beam ON.

CAUTION:

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

2. Use adjusting screws to perform aiming adjustment.

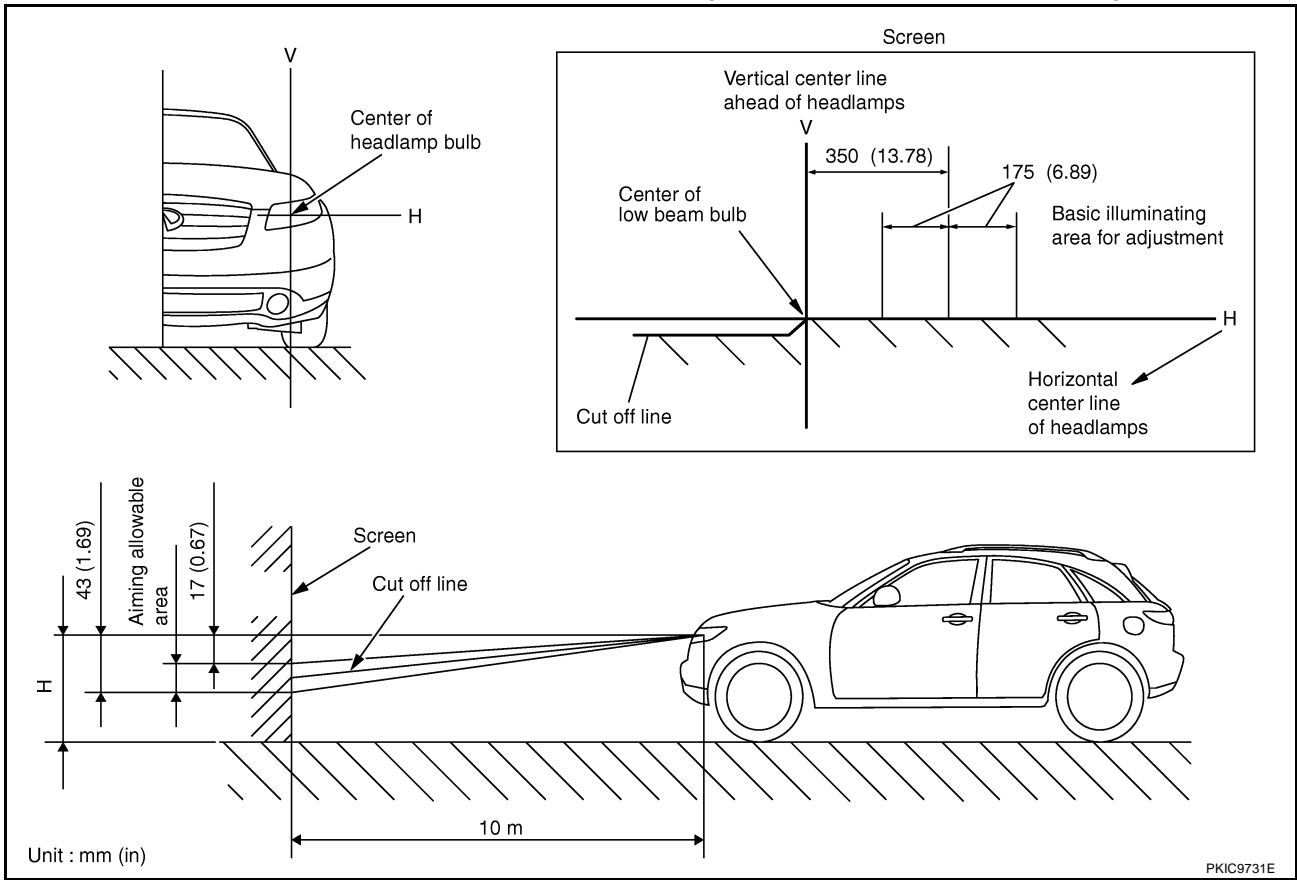


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HEADLAMP - XENON TYPE -

ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



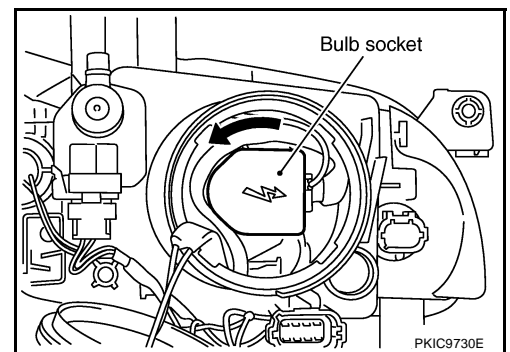
If the vehicle front body has been repaired and/or headlamp assembly has been replaced, check aiming. Use the aiming chart shown in the figure.

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

Bulb Replacement HEADLAMP HIGH/LOW BEAM

NKS002VT

1. Turn lighting switch OFF.
2. Disconnect the battery cable from the negative terminal or remove power fuse.
3. Remove air cleaner case (when replacing LH bulb). Refer to [EM-177, "AIR CLEANER AND AIR DUCT"](#) (VK45) or refer to [EM-17, "AIR CLEANER AND AIR DUCT"](#) (VQ35).
4. Remove radiator reservoir tank (when replacing RH bulb). Refer to [CO-41, "RADIATOR"](#) (VK45) or refer to [CO-14, "RADIATOR"](#) (VQ35).
5. Turn plastic cap counterclockwise and unlock it.
6. Turn bulb socket counterclockwise and unlock it.
7. Unlock retaining spring and remove bulb from headlamp.
8. Installation is the reverse order of removal.



NOTE:

After installation, perform aiming adjustment. Refer to [LT-33, "Aiming Adjustment"](#).

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

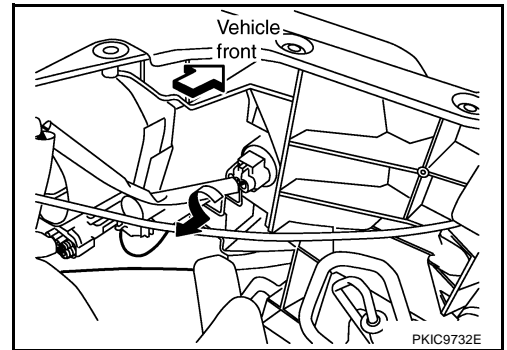
HEADLAMP - XENON TYPE -

DAYTIME/PARKING LAMP

1. Turn lighting switch OFF.
2. Remove air cleaner case (when replacing LH bulb of VK45). Refer to [EM-177, "AIR CLEANER AND AIR DUCT"](#) .
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Installation is the reverse order of removal.

Daytime/Parking lamp

: 12 V - 21/5 W

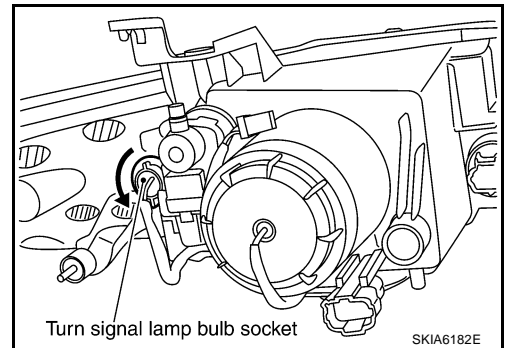


FRONT TURN SIGNAL LAMP

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

Front turn signal lamp

: 12 V - 21 W (amber)

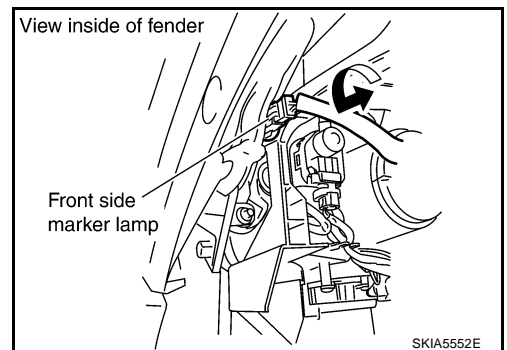


FRONT SIDE MARKER LAMP

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

Front side marker lamp

: 12 V - 3.8 W



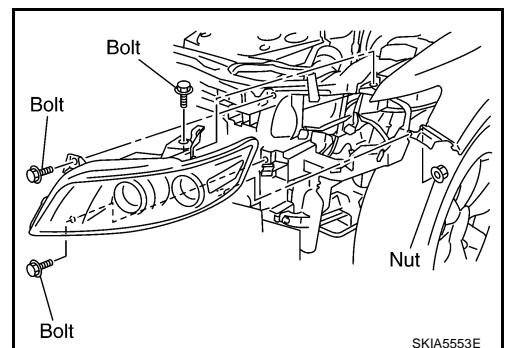
CAUTION:

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

Removal and Installation

REMOVAL

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



HEADLAMP - XENON TYPE -

INSTALLATION

Installation is the reverse order of removal.

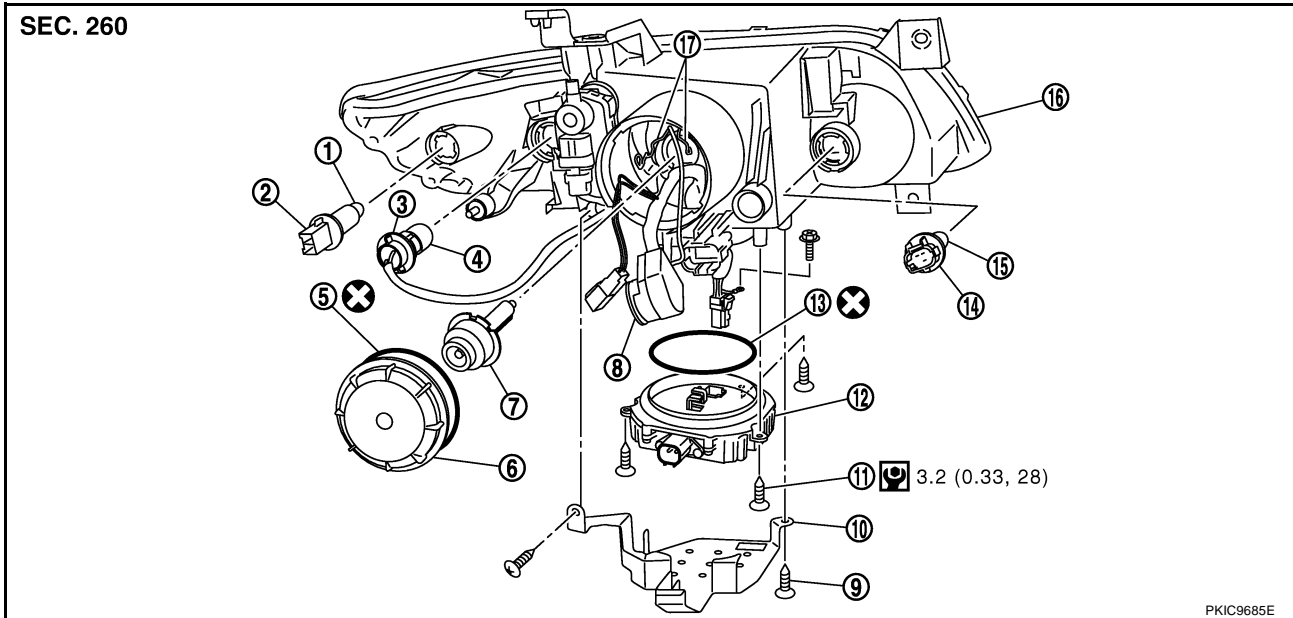
Headlamp mounting bolt  : 6.1 N·m (0.62 kg·m, 54 in·lb)

NOTE:

After installation, perform aiming adjustment. Refer to [LT-33, "Aiming Adjustment"](#).


Disassembly and Assembly


NKS002VV



PKIC9685E

- | | | |
|--------------------------------|--------------------------------------|--|
| 1. Side marker lamp bulb | 2. Side marker lamp bulb socket | 3. Front turn signal lamp bulb socket |
| 4. Front turn signal lamp bulb | 5. Seal packing | 6. Plastic cap |
| 7. Xenon bulb (high/low) | 8. Xenon bulb socket (high/low) | 9. HID control unit cover mounting screw |
| 10. HID control unit cover | 11. HID control unit mounting screw | 12. HID control unit |
| 13. Seal packing | 14. Daytime/Parking lamp bulb socket | 15. Daytime/Parking lamp bulb |
| 16. Headlamp housing assembly | 17. Retaining spring | |

 : Always replace after every disassembly

 : N·m (kg·m, in·lb)

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 (high/low).
4. Remove HID control unit cover mounting screw.
5. Remove HID control unit cover.
6. Disconnect HID control unit connector.
7. Remove HID control unit mounting screws.
8. Remove HID control unit.
9. Turn daytime/parking lamp bulb socket counterclockwise and unlock it.
10. Remove daytime/parking lamp bulb from its socket.
11. Turn front turn signal lamp bulb socket counterclockwise and unlock it.
12. Remove front turn signal lamp bulb from its socket.
13. Turn front side marker lamp bulb socket counterclockwise and unlock it.
14. Remove front side marker lamp bulb from its socket.

ASSEMBLY

Assembly is the reverse order of disassembly.

HEADLAMP - XENON TYPE -

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.

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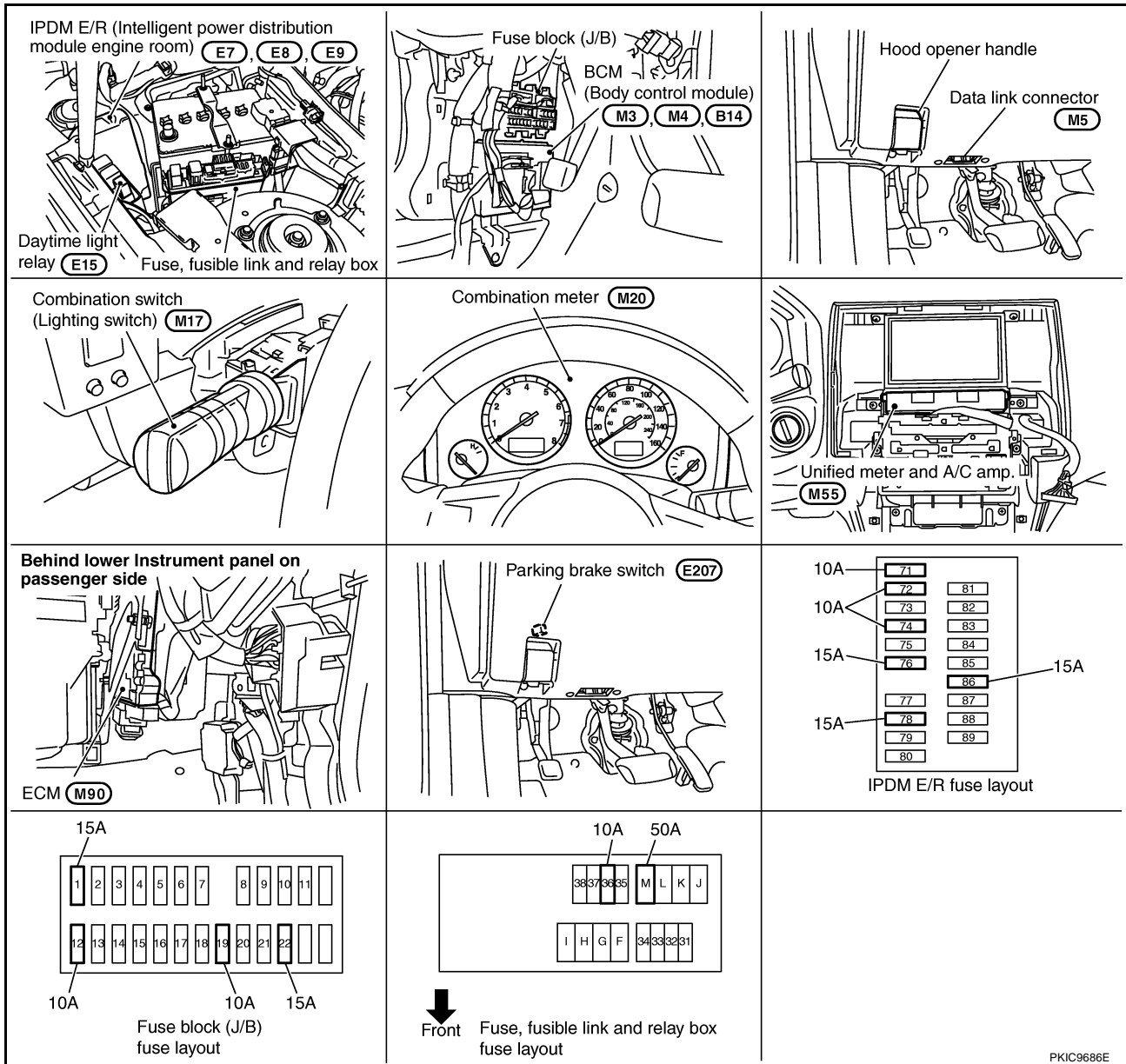
DAYTIME LIGHT SYSTEM

DAYTIME LIGHT SYSTEM

PF2:284B2

Component Parts and Harness Connector Location

NKS002VW



PKIC9686E

System Description

NKS002VX

Daytime light system turns ON daytime light lamps while driving. Daytime light lamps are not turned ON if engine is activated with parking brake ON. Release parking brake to turn ON daytime light lamps. The lamps turn OFF when the lighting switch is in the 2ND position or AUTO position (headlamp is ON) and when the lighting switch is in the PASSING position (daytime light lamps are not turned OFF only by parking brake itself).

The parking brake signal and engine run or stop signal are sent to BCM (body control module) by CAN communication line, and control daytime light system.

OUTLINE

Power is supplied at all times

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

DAYTIME LIGHT SYSTEM

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

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

- through 10A fuse [No. 12, located in fuse block (J/B)]
- to combination meter terminal 7,
- through 15A fuse [No. 1, located in fuse block (J/B)]
- to BCM terminal 38.

Ground is supplied

- to combination meter terminals 5, 6 and 15
- through grounds M35, M45 and M85,
- to BCM terminals 49 and 52
- through grounds M35, M45 and M85.

DAYTIME LIGHT OPERATION

Once the parking brake is turned OFF after ignition switch ON, if the lighting switch is turned OFF while engine running, the BCM sends daytime light request signal (ON) through CAN communication.

When receiving daytime light request signal (ON), combination meter turns ON daytime light relay. And power is supplied

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

Ground is supplied

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

With power and grounds supplied, the daytime light lamps illuminate.

COMBINATION SWITCH READING FUNCTION

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

AUTO LIGHT OPERATION

Refer to [LT-55, "System Description"](#) .

CAN Communication System Description

NKS002VY

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

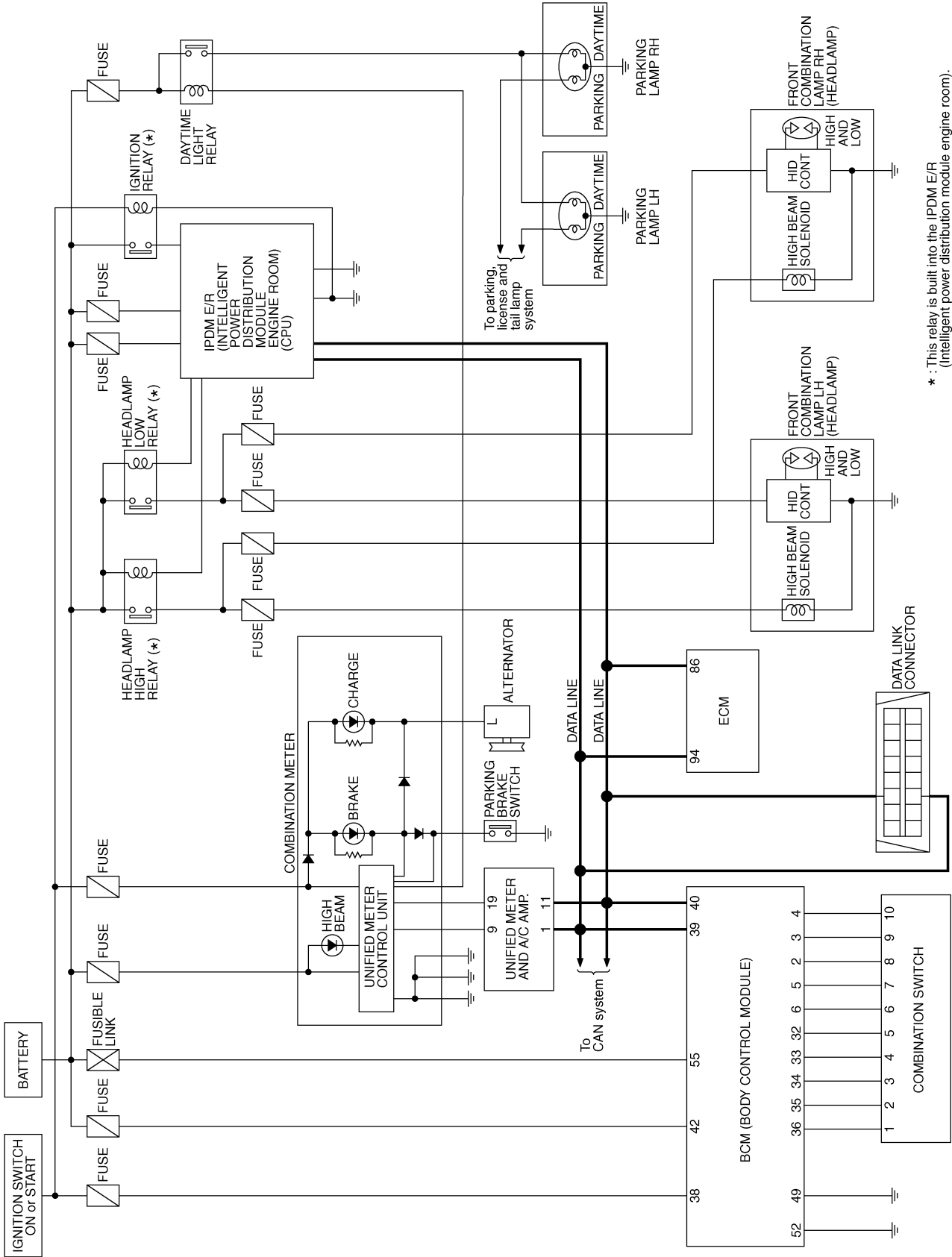
NKS002VZ

Refer to [LAN-49, "CAN System Specification Chart"](#) .

DAYTIME LIGHT SYSTEM

Schematic

NKS002W0



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

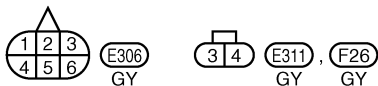
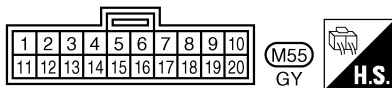
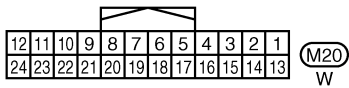
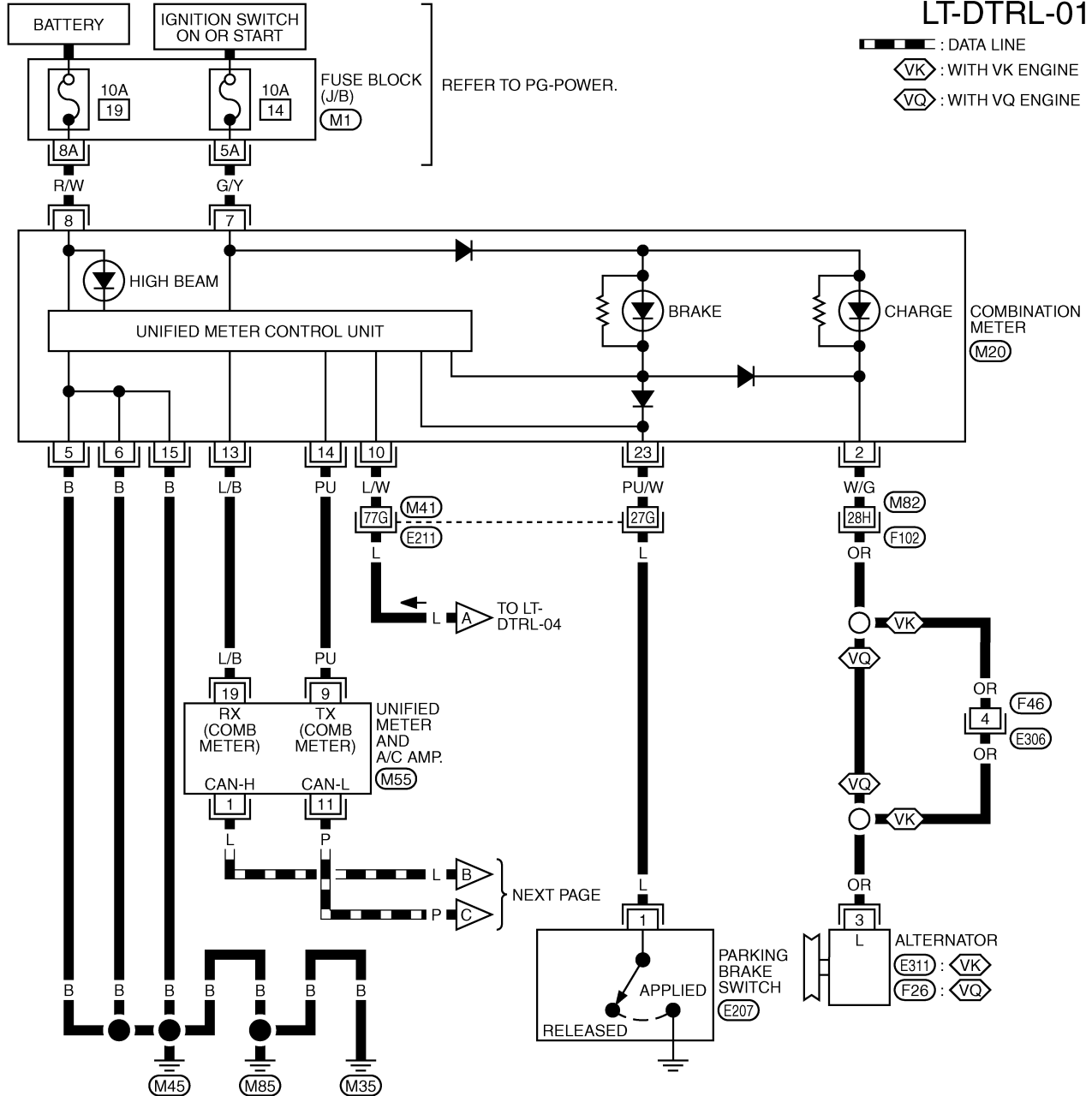
TKWM4293E

DAYTIME LIGHT SYSTEM

Wiring Diagram — DTRL —

NKS002W1

LT-DTRL-01



REFER TO THE FOLLOWING.

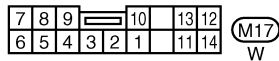
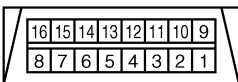
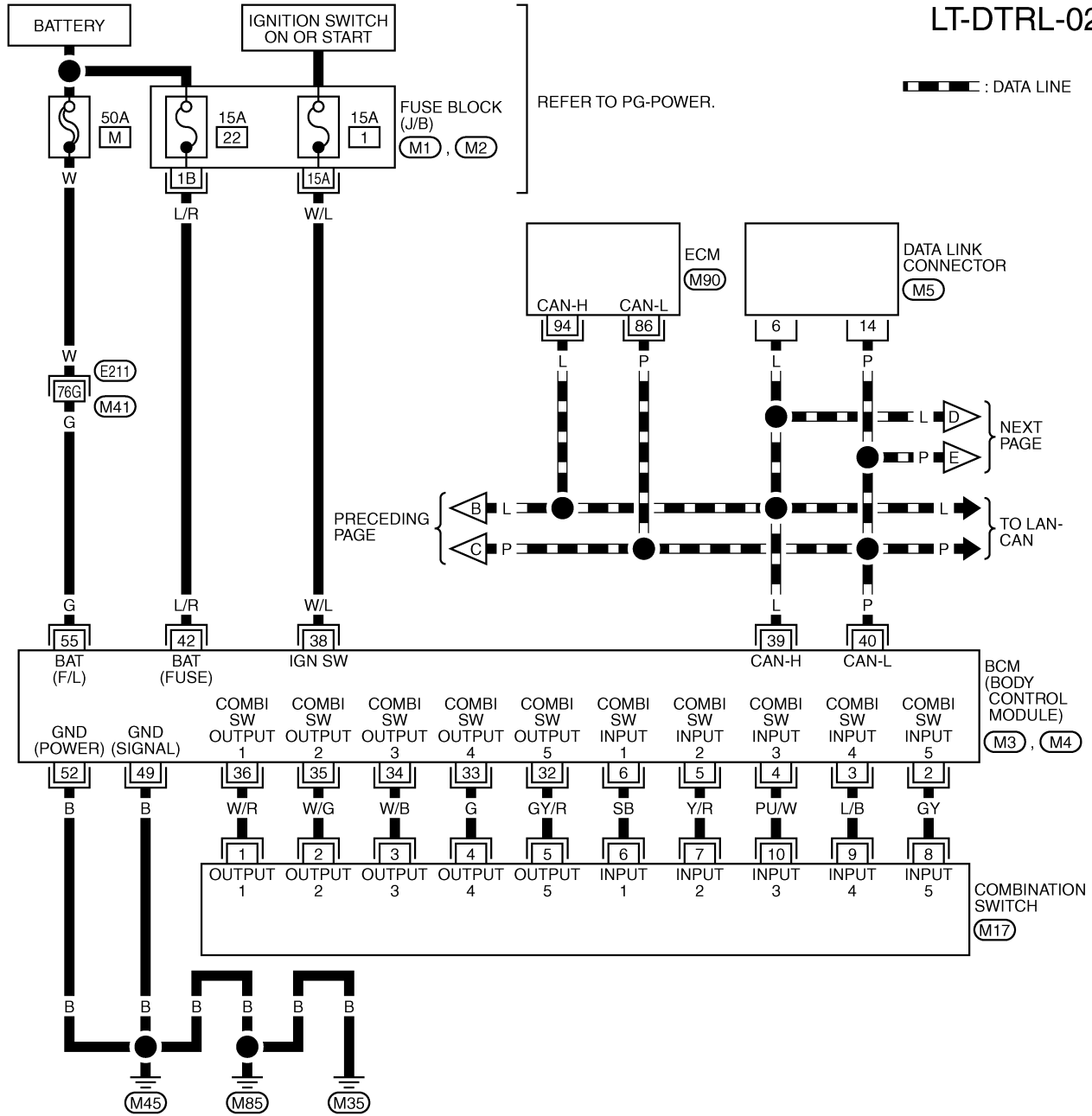
E211, F102 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWM4294E

DAYTIME LIGHT SYSTEM

LT-DTRL-02



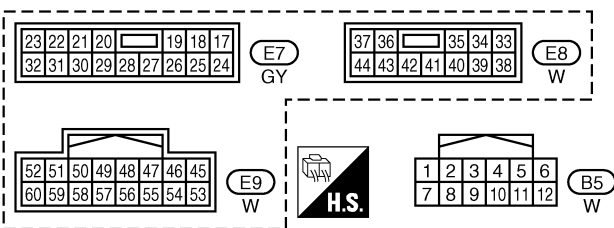
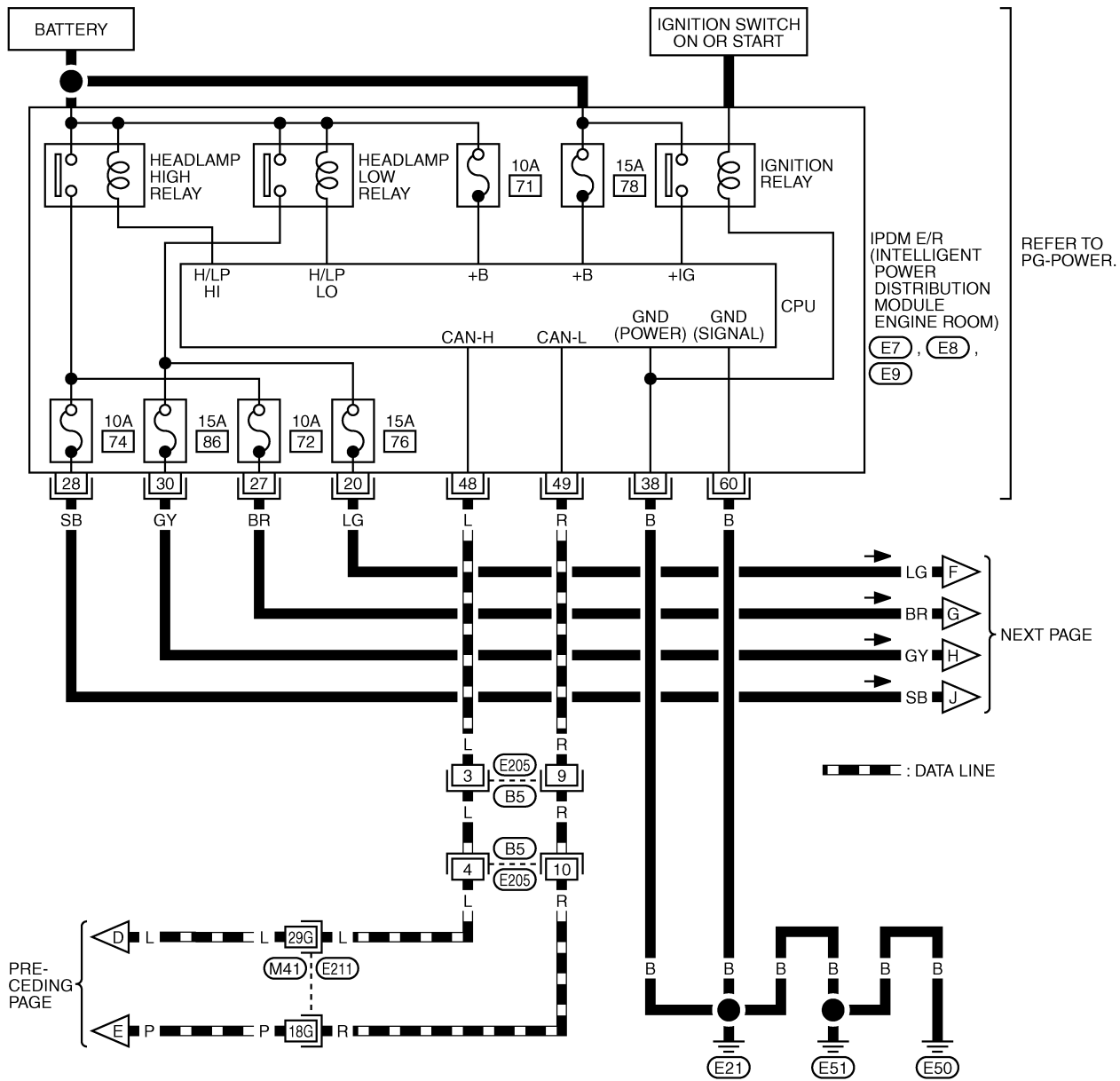
REFER TO THE FOLLOWING.

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

TKWM4295E

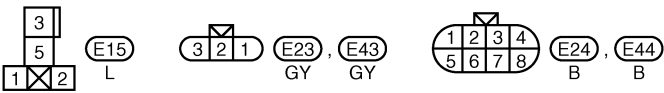
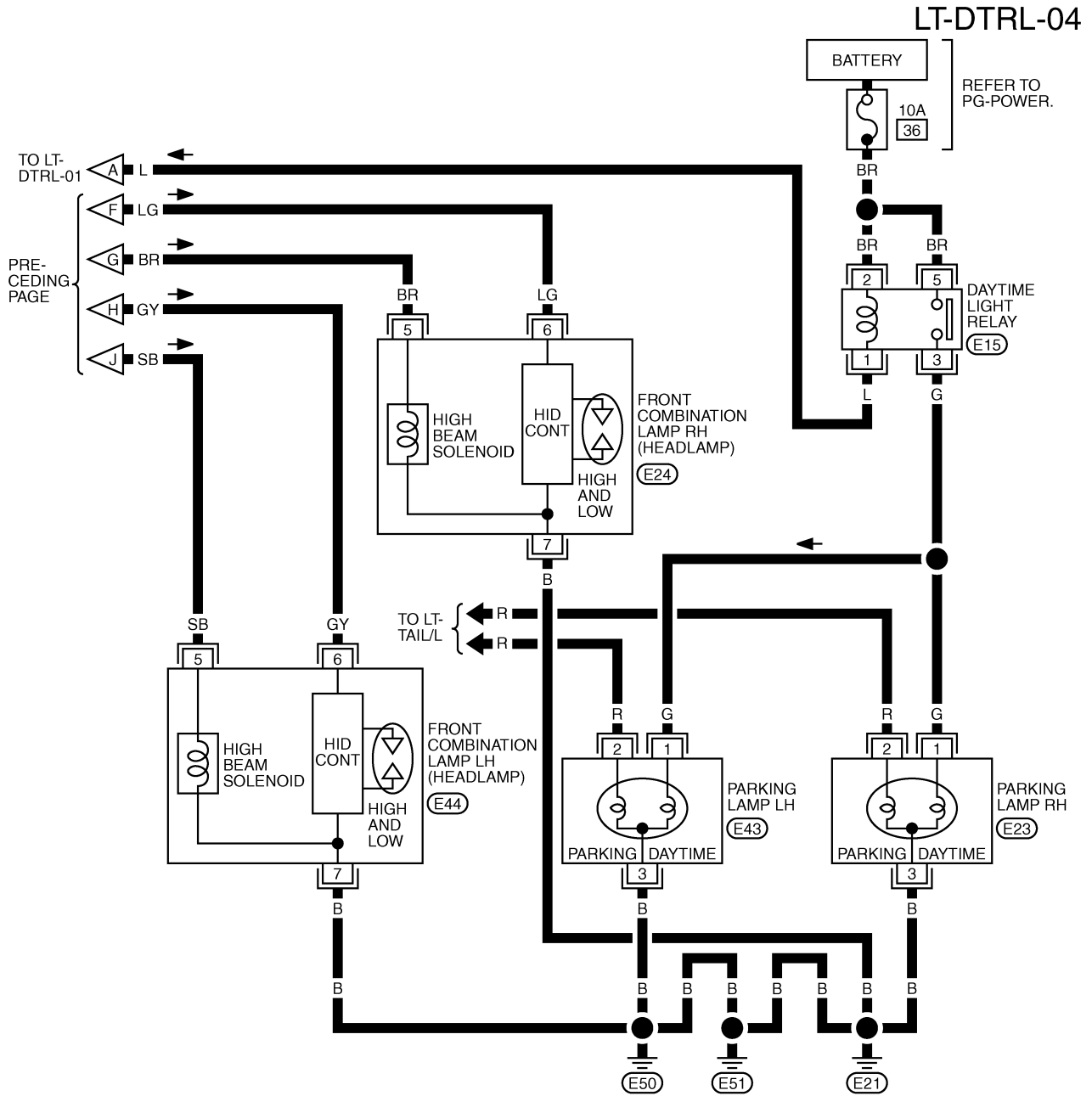
DAYTIME LIGHT SYSTEM

LT-DTRL-03



TKWM4296E

DAYTIME LIGHT SYSTEM



TKWM4489E

DAYTIME LIGHT SYSTEM

Terminals and Reference Values for BCM

NKS002W2

CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.
- Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-II. Refer to [LT-117, "DATA MONITOR"](#) .

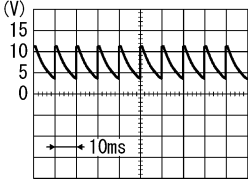
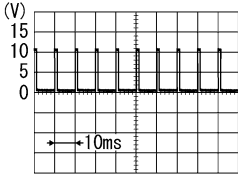
Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
				Lighting switch 2ND	<p>Approx. 2.0 V</p>	
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
				Front fog lamp switch (Operate only front fog lamp switch)	<p>Approx. 0.8 V</p>	
				Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch 2ND ● Lighting switch PASSING (Operates only PASSING switch) 	<p>Approx. 1.0 V</p>	
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
				Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch AUTO 	<p>Approx. 1.0 V</p>	

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DAYTIME LIGHT SYSTEM

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	<p style="text-align: right;">PKIB4960J</p> <p style="text-align: center;">Approx. 7.2 V</p>
					Front fog lamp switch (Operates only front fog lamp switch)	<p style="text-align: right;">PKIB4956J</p> <p style="text-align: center;">Approx. 1.0 V</p>
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	<p style="text-align: right;">PKIB4960J</p> <p style="text-align: center;">Approx. 7.2 V</p>
					Lighting switch AUTO	<p style="text-align: right;">PKIB4958J</p> <p style="text-align: center;">Approx. 1.2 V</p>
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	<p style="text-align: right;">PKIB4960J</p> <p style="text-align: center;">Approx. 7.2 V</p>
					Lighting switch 2ND	<p style="text-align: right;">PKIB4958J</p> <p style="text-align: center;">Approx. 1.2 V</p>

DAYTIME LIGHT SYSTEM

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF  PKIB4960J Approx. 7.2 V
					Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch 2ND ● Lighting switch PASSING (Operates only PASSING switch)  PKIB4956J Approx. 1.2 V
38	W/L	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN – H	—	—	—
40	P	CAN – L	—	—	—
42	L/R	Battery power supply	OFF	—	Battery voltage
49	B	Ground	ON	—	Approx. 0 V
52	B	Ground	ON	—	Approx. 0 V
55	G	Battery power supply	OFF	—	Battery voltage

How to Proceed With Trouble Diagnosis

NKS002W3

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-38, "System Description"](#) .
3. Perform Preliminary Check. Refer to [LT-48, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does daytime light lamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

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DAYTIME LIGHT SYSTEM

NKS002W4

Preliminary Check CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses.

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

Refer to [LT-41, "Wiring Diagram — DTRL —"](#) .

OK or NG

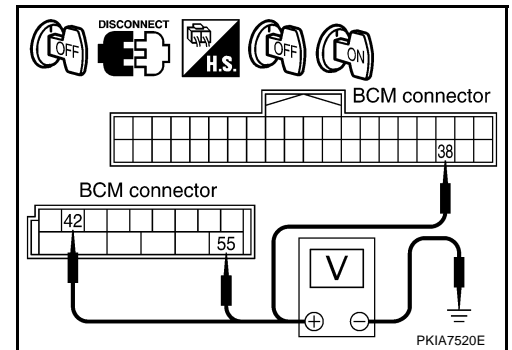
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

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

(+)		(-)	Ignition switch position	
BCM connector	Terminal		OFF	ON
M3	38	Ground	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

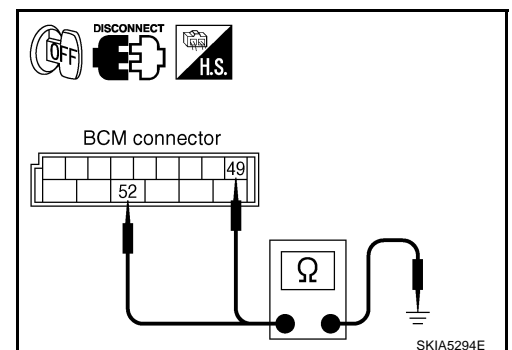
Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M4	49		Ground
	52		

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



DAYTIME LIGHT SYSTEM

INSPECTION PARKING BRAKE SWITCH CIRCUIT

1. CHECK BRAKE INDICATOR

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

OK or NG

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

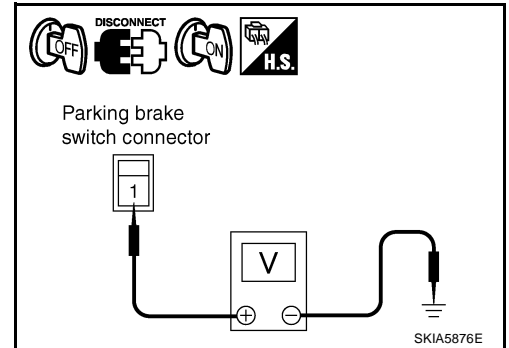
2. CHECK PARKING BRAKE SWITCH SIGNAL

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

1 – Ground : Battery voltage.

OK or NG

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



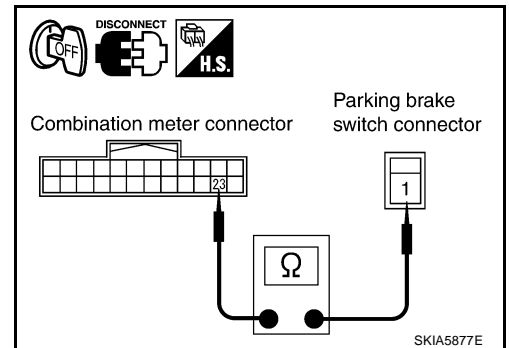
3. CHECK PARKING BRAKE SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between combination meter harness connector M20 terminal 23 and parking brake switch harness connector E207 terminal 1.

1 – 23 : Continuity should exist.

OK or NG

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



DAYTIME LIGHT SYSTEM

CONSULT-II Functions (BCM)

NKS002W5

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

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

CONSULT-II BASIC OPERATION

Refer to [GI-38, "CONSULT-II Start Procedure"](#).

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

Monitor item		Contents
IGN ON SW	"ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from ignition switch signal.
ACC ON SW	"ON/OFF"	Displays "ACC (ON)/OFF, Ignition OFF (OFF)" status judged from ignition switch signal.
HI BEAM SW	"ON/OFF"	Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF"	Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 1 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF"	Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	"ON/OFF"	Displays status (lighting switch 1ST or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW ^{NOTE 1}	"ON/OFF"	Displays status of lighting switch as judged from lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	"ON/OFF"	Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF"	Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
RR FOG SW ^{NOTE 3}	"OFF"	—
DOOR SW - DR	"ON/OFF"	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF"	Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	"ON/OFF"	Displays status of rear door as judged from rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)

DAYTIME LIGHT SYSTEM

Monitor item	Contents
DOOR SW - RL "ON/OFF"	Displays status of rear door as judged from rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW "ON/OFF"	Displays status of back door as judged from back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R "ON/OFF"	Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L "ON/OFF"	Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN ^{NOTE 2} "ON/OFF"	Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW ^{NOTE 2} "ON/OFF"	Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
CARGO LAMP SW ^{NOTE 3} "OFF"	—
OPTICAL SENSOR ^{NOTE 1} "0 – 5 V"	Displays "outside brightness (close to 5 V when light/close to 0 V when dark)" judged from optical sensor signal.

NOTE:

1. Vehicles without auto light system display this item, but cannot be monitored.
2. Vehicles without daytime light system display this item, but cannot be monitored.
3. This item is displayed, but cannot be monitored.

ACTIVE TEST

Operation Procedure

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

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF
HEAD LAMP	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP	Allows front fog lamp relay to operate by switching ON-OFF
DTRL ^{NOTE 1}	Allows daytime light lamp operate by switching ON-OFF
CORNERING LAMP ^{NOTE 2}	—

NOTE:

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

DAYTIME LIGHT SYSTEM

NKS002W6

Daytime Light Control Does Not Operate Properly

1. CHECK DAYTIME LIGHT RELAY POWER SUPPLY CIRCUIT

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

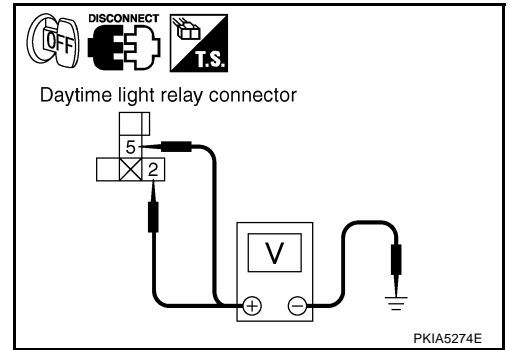
2 – Ground : Battery voltage.

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

5 – Ground : Battery voltage.

OK or NG

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



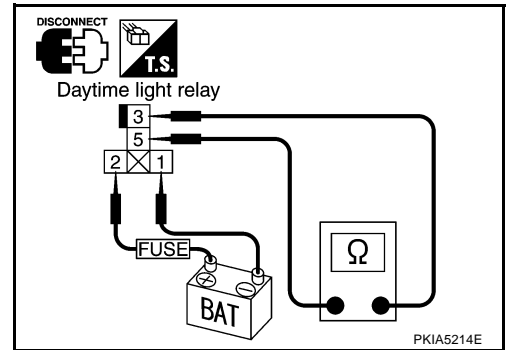
2. CHECK DAYTIME LIGHT RELAY

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

3 – 5 : Continuity should exist.

OK or NG

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



3. CHECK DAYTIME LIGHT RELAY CIRCUIT

1. Disconnect parking lamp RH and LH connectors.
2. Check continuity between daytime light relay connector E15 terminal 3 and parking lamp RH harness connector E23 terminal 1.

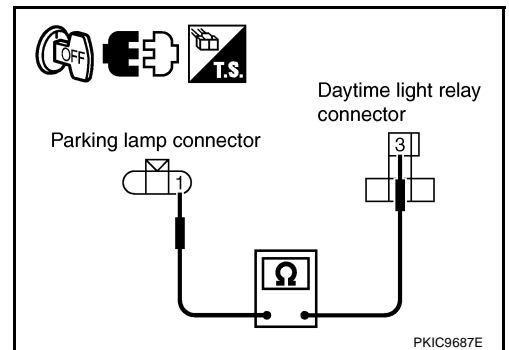
3 – 1 : Continuity should exist.

3. Check continuity between daytime light relay connector E15 terminal 3 and parking lamp LH harness connector E43 terminal 1.

3 – 1 : Continuity should exist.

OK or NG

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



DAYTIME LIGHT SYSTEM

4. CHECK GROUND

1. Check continuity between parking lamp RH harness connector E23 terminal 3 and ground.

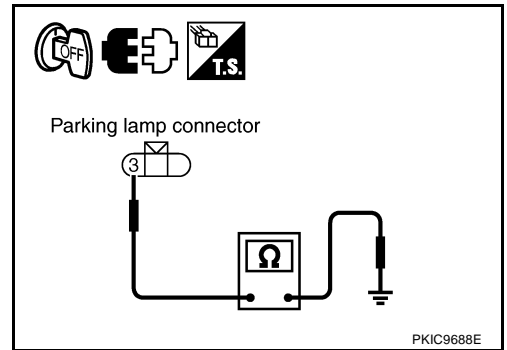
3 – Ground : Continuity should exist.

2. Check continuity between parking lamp LH harness connector E43 terminal 3 and ground.

3 – Ground : Continuity should exist.

OK or NG

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



5. CHECK BULB

Inspect bulbs of lamp which do not illuminate.

OK or NG

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

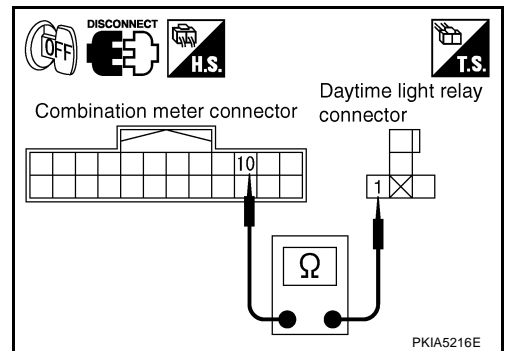
6. CHECK DAYTIME RELAY CIRCUIT

1. Disconnect combination meter connector.
2. Check continuity between daytime lamp relay harness connector E15 terminal 1 and combination meter harness connector M20 terminal 10.

1 – 10 : Continuity should exist.

OK or NG

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



7. CHECK INPUT SIGNAL

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

Engine running : ENGINE RUN ON

Engine stop : ENGINE RUN OFF

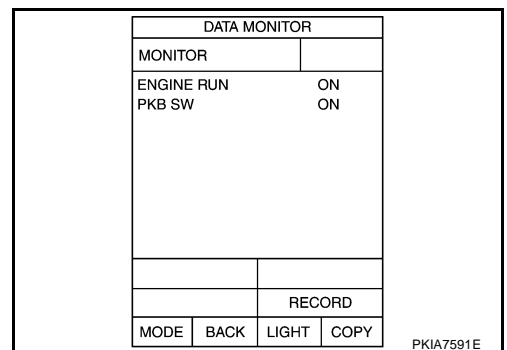
4. Select "BCM" on CONSULT-II. With "HEAD LAMP" data monitor, make sure "PKB SW" turns ON-OFF linked with operation of parking brake switch.

Parking brake ON : PKB SW ON

Parking brake OFF : PKB SW OFF

OK or NG

- OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .
NG >> GO TO 8.



DAYTIME LIGHT SYSTEM

8. CHECKING CAN COMMUNICATIONS

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

Displayed self-diagnosis results

NO DTC>> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .

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

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

PKIA7627E

Aiming Adjustment

Refer to [LT-33, "Aiming Adjustment"](#) .

NKS002W7

Bulb Replacement

Refer to [LT-34, "Bulb Replacement"](#) .

NKS002W8

Removal and Installation

Refer to [LT-35, "Removal and Installation"](#) .

NKS002W9

Disassembly and Assembly

Refer to [LT-36, "Disassembly and Assembly"](#) .

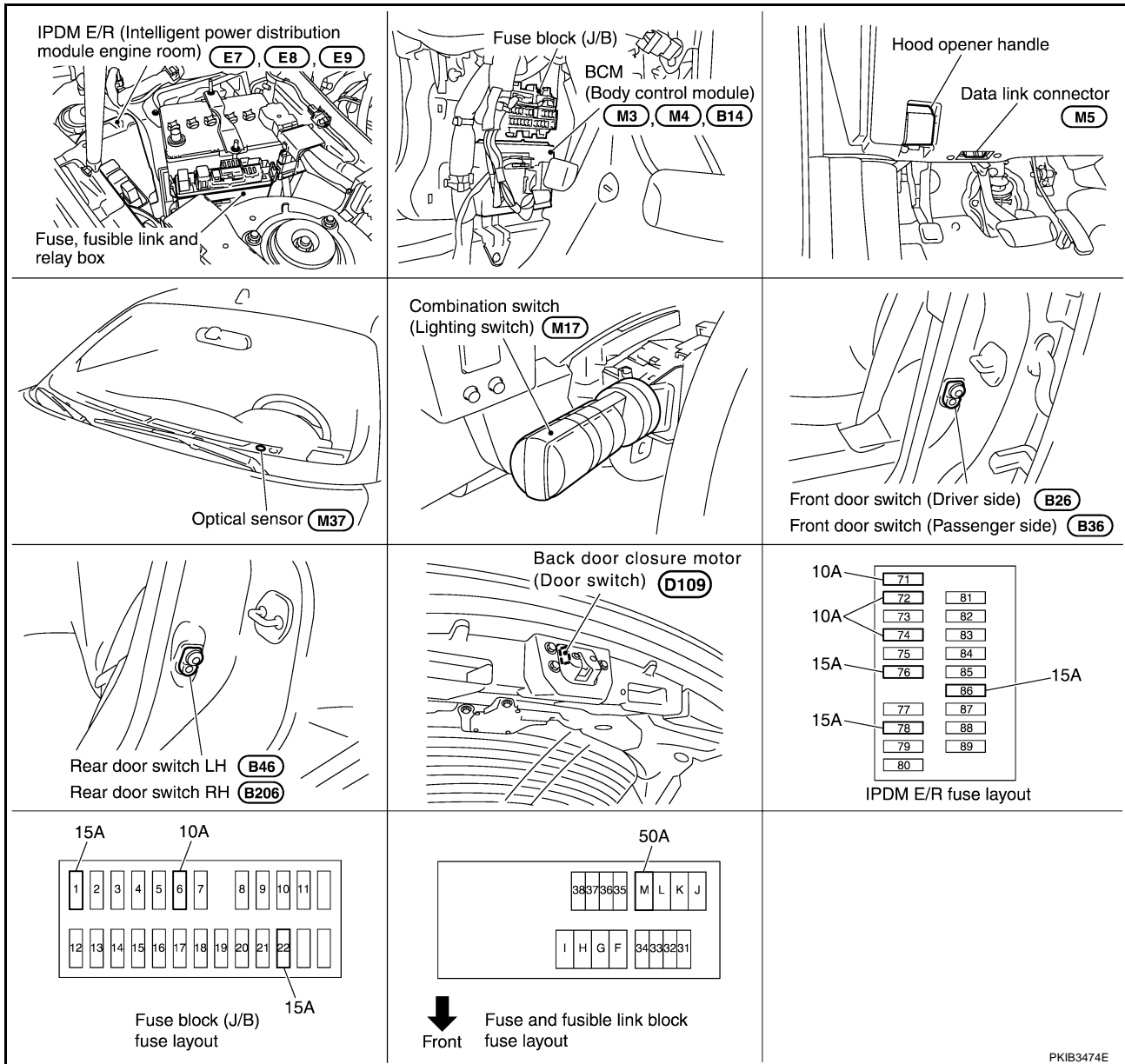
NKS002WA

AUTO LIGHT SYSTEM

PF28491

Component Parts and Harness Connector Location

NKS002WB



System Description

NKS002WC

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

OUTLINE

The auto light control system has an optical sensor inside it that detects outside brightness. When the lighting switch is in AUTO position, it automatically turns ON/OFF the parking lamps and the headlamps in accordance with the ambient light. Sensitivity can be adjusted in four steps. For the details of the setting, Refer to [LT-64, "SETTING CHANGE FUNCTIONS"](#).

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

Optical sensor, power is supplied

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

Optical sensor, ground is supplied

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

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AUTO LIGHT SYSTEM

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

- from optical sensor terminal 2
- to BCM terminal 14

The headlamps will then illuminate. For a description of headlamp operation, Refer to [LT-55, "System Description"](#).

COMBINATION SWITCH READING FUNCTION

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

DELAY TIMER FUNCTION

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

Timer types are a 5 minute timer and a 45 second timer

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

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

CAN Communication System Description

NKS002WD

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

NKS002WE

Refer to [LAN-49, "CAN System Specification Chart"](#).

Major Components and Functions

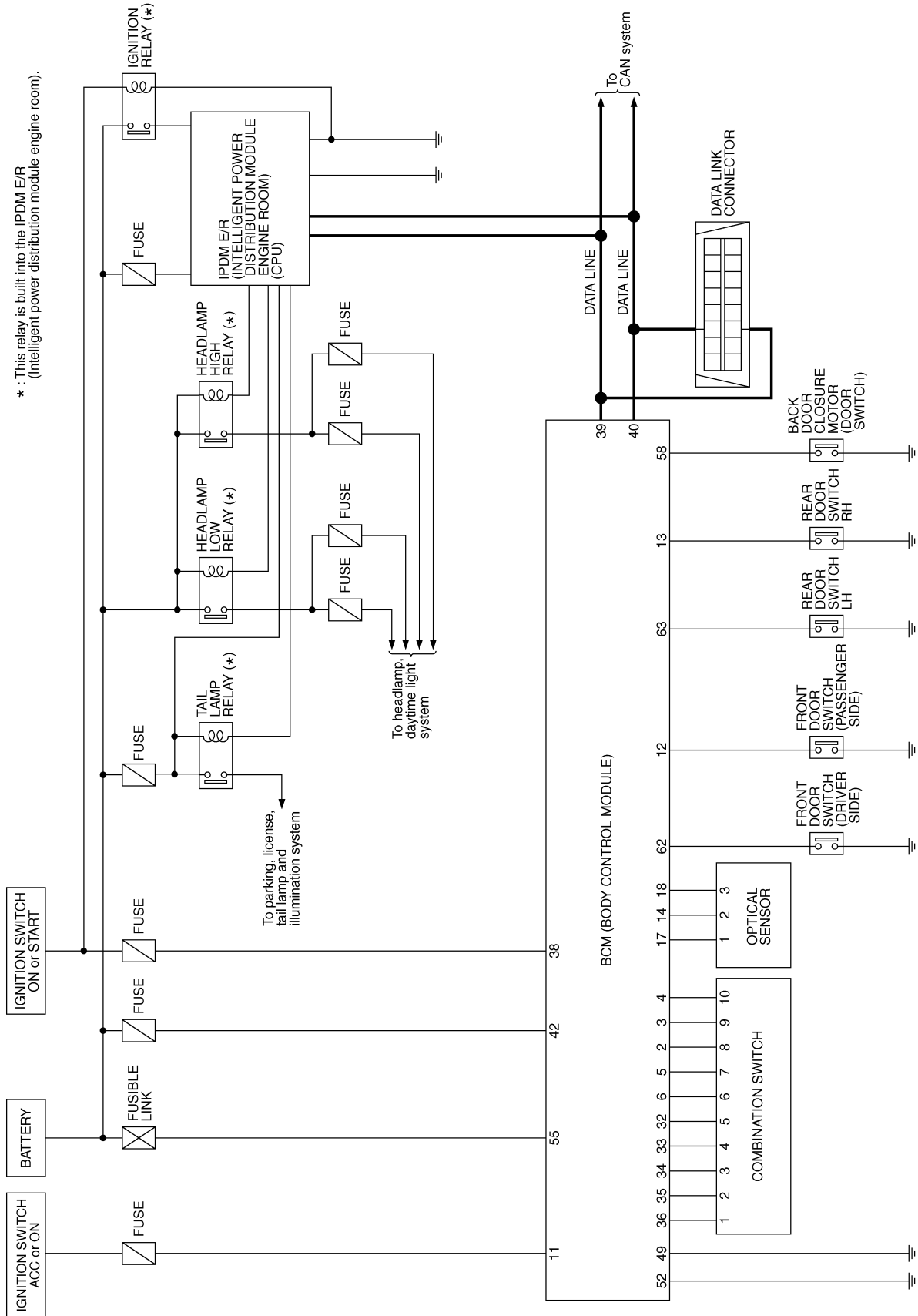
NKS002WF

Components	Functions
BCM	● Turns on/off circuits of tail light and headlamp according to signals from light sensor, lighting switch (AUTO), driver door switch, passenger door switch, rear door switch, and ignition switch (ON, OFF).
Optical sensor	● Converts outside brightness (lux) to voltage, and sends it to BCM. (Detects brightness of 800 to 2,500 lux)

AUTO LIGHT SYSTEM

Schematic

NKS002WG



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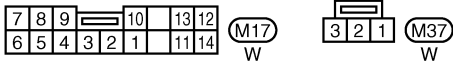
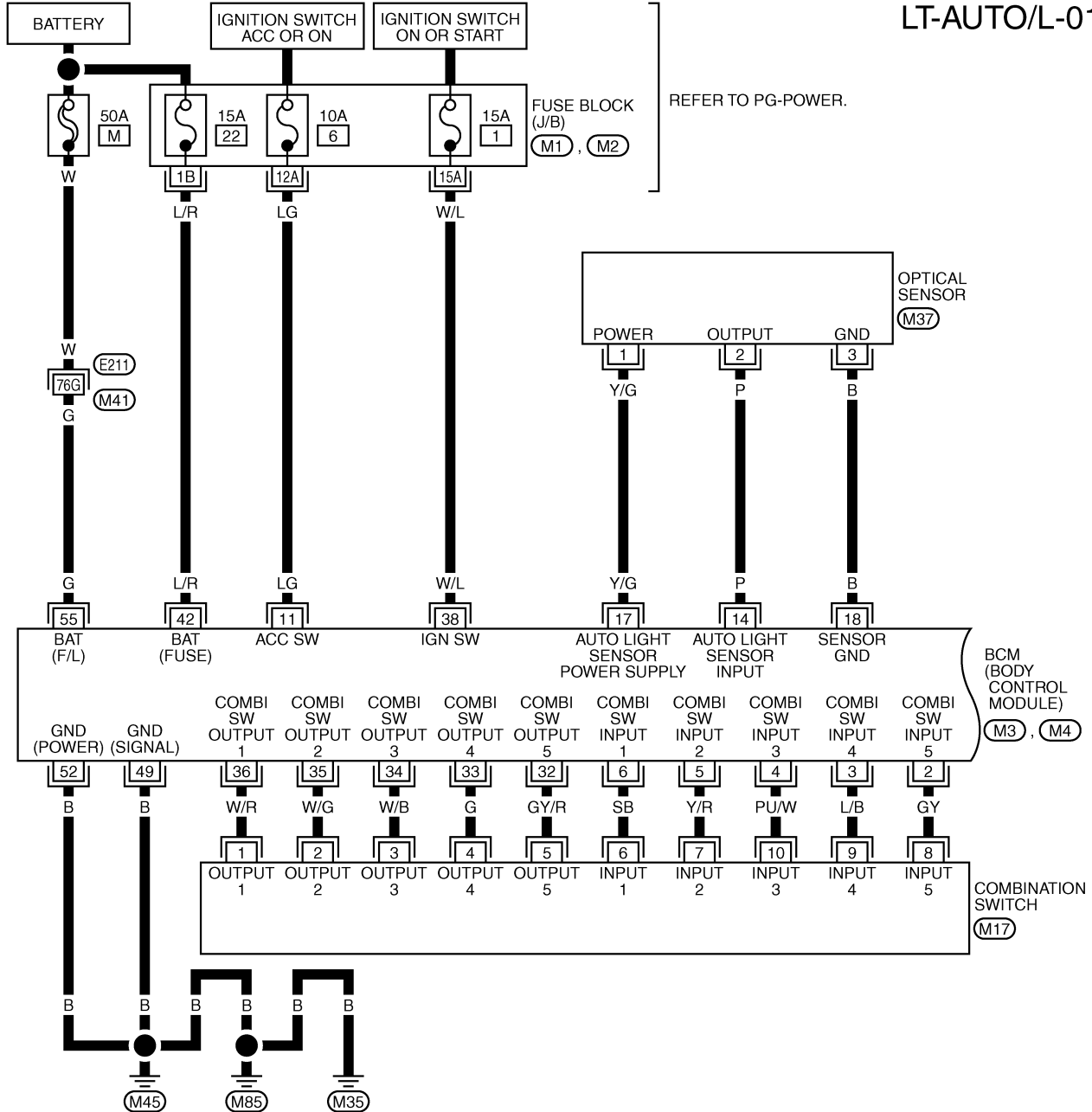
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AUTO LIGHT SYSTEM

Wiring Diagram — AUTO/L —

NKS002WH

LT-AUTO/L-01



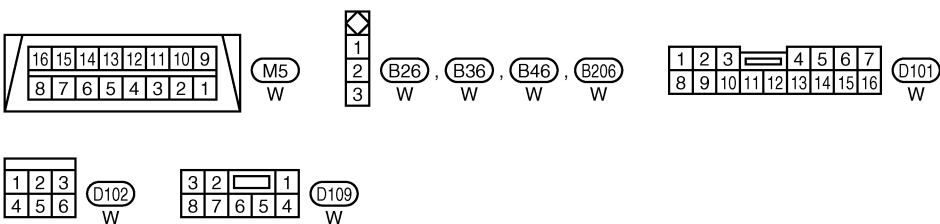
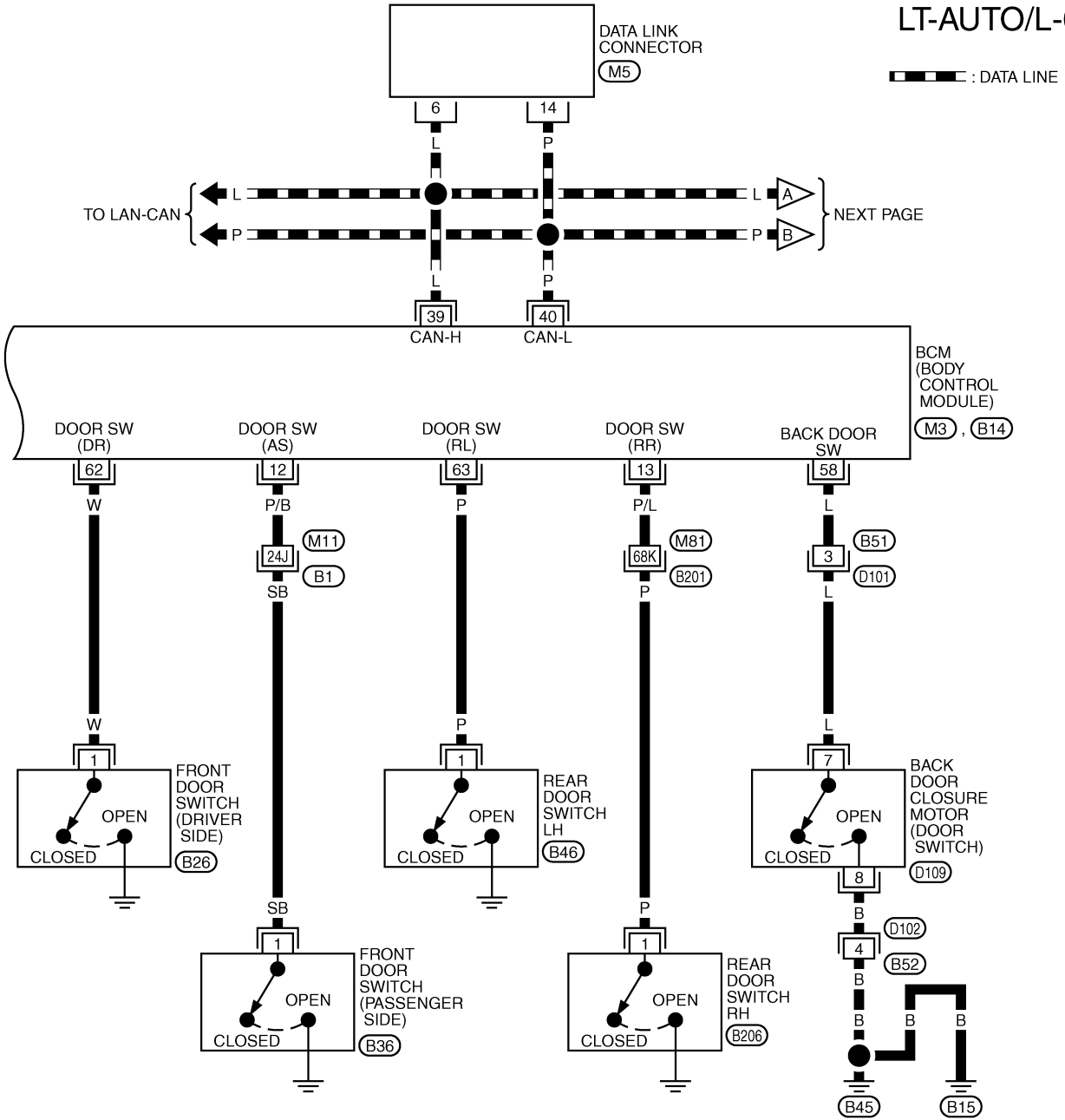
REFER TO THE FOLLOWING.

- (E211) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

TKWM4297E

AUTO LIGHT SYSTEM

LT-AUTO/L-02

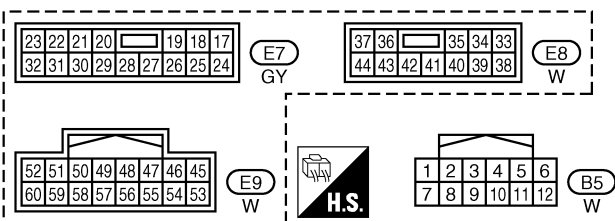
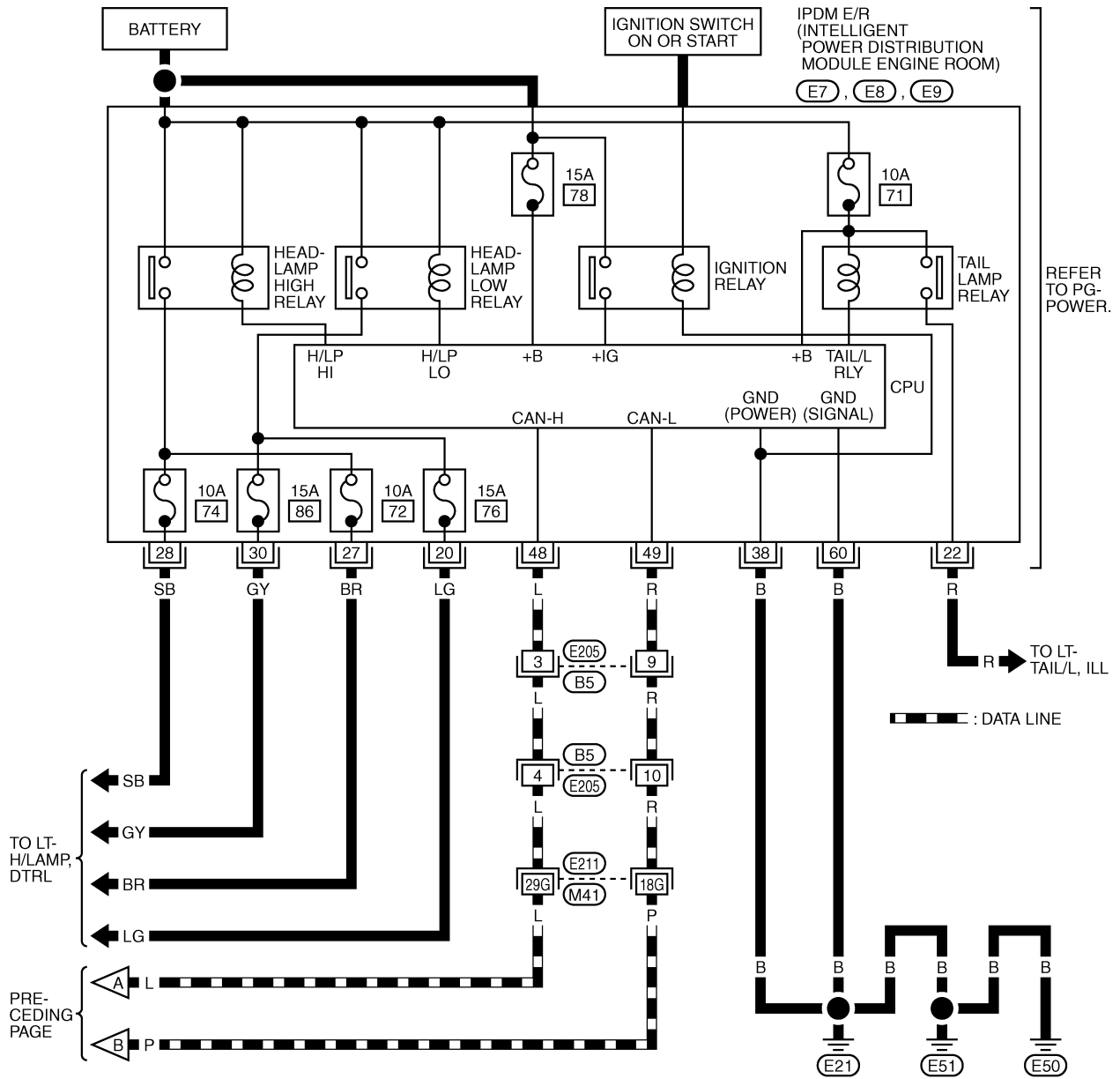


REFER TO THE FOLLOWING.
 (B1), (B201) -SUPER MULTIPLE JUNCTION (SMJ)
 (M3), (B14) -ELECTRICAL UNITS

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AUTO LIGHT SYSTEM

LT-AUTO/L-03



REFER TO THE FOLLOWING.

(E21) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4299E

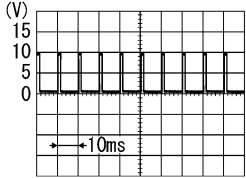
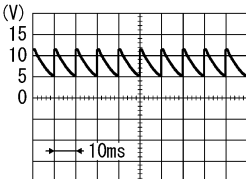
AUTO LIGHT SYSTEM

Terminals and Reference Values for BCM

NKS002WI

CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.
- Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-II. Refer to [LT-117, "DATA MONITOR"](#) .

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
4	L/B	Combination switch input 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Lighting switch AUTO	 <p>Approx. 1.0 V</p>
11	LG	Ignition switch (ACC)	ACC	—	Battery voltage	
12	P/B	Front door switch (Passenger side) signal	OFF	Front door switch (Passenger side)	ON (open)	Approx. 0 V
					OFF (closed)	 <p>Approx. 7.5 - 8.0 V</p>
13	P/L	Rear door switch RH signal	OFF	Rear door switch RH (Personal lamp RH ON or OFF position)	ON (open)	Approx. 0 V
					OFF (closed)	Battery voltage
14	P	Optical sensor signal	ON	When optical sensor is illuminated	3.1 V or more ^{Note}	
				When optical sensor is not illuminated	0.6 V or less	
17	Y/G	Optical sensor power supply	ON	—	Approx. 5 V	
18	B	Sensor ground	ON	—	Approx. 0 V	

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AUTO LIGHT SYSTEM

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	<p style="text-align: right; font-size: small;">PKIB4960J</p>
					Lighting switch AUTO	<p style="text-align: right; font-size: small;">PKIB4958J</p>
38	W/L	Ignition switch (ON)	ON	—	Battery voltage	
39	L	CAN – H	—	—	—	
40	P	CAN – L	—	—	—	
42	L/R	Battery power supply	OFF	—	Battery voltage	
49	B	Ground	ON	—	Approx. 0 V	
52	B	Ground	ON	—	Approx. 0 V	
55	G	Battery power supply	OFF	—	Battery voltage	
58	L	Back door switch signal	OFF	Back door closure motor (door switch)	ON (open)	Approx. 0 V
					OFF (closed)	Battery voltage
62	W	Front door switch (Driver side) signal	OFF	Front door switch (Driver side)	ON (open)	Approx. 0 V
					OFF (closed)	<p style="text-align: right; font-size: small;">PKIB4960J</p>
63	P	Rear door switch LH signal	OFF	Rear door switch LH	ON (open)	Approx. 0 V
					OFF (closed)	Battery voltage

NOTE:

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

AUTO LIGHT SYSTEM

Terminals and Reference Values for IPDM E/R

NKS002WJ

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
20	LG	Headlamp low (RH)	ON	Lighting switch 2ND position	OFF	Approx. 0 V
					ON	Battery voltage
22	R	Parking, license plate, side marker and tail lamps	ON	Lighting switch 1ST position	OFF	Approx. 0 V
					ON	Battery voltage
27	BR	Headlamp high (RH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0 V
					ON	Battery voltage
28	SB	Headlamp high (LH)	ON	Lighting switch HIGH or PASS position	OFF	Approx. 0 V
					ON	Battery voltage
30	GY	Headlamp low (LH)	ON	Lighting switch 2ND position	OFF	Approx. 0 V
					ON	Battery voltage
38	B	Ground	ON	—	Approx. 0 V	
48	L	CAN – H	—	—	—	
49	R	CAN – L	—	—	—	
60	B	Ground	ON	—	Approx. 0 V	

How to Proceed With Trouble Diagnosis

NKS002WK

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-55, "System Description"](#) .
3. Perform Preliminary Check. Refer to [LT-64, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction. Refer to [LT-69, "Symptom Chart"](#) .
5. Does auto light system operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

LT

AUTO LIGHT SYSTEM

NKS002WL

Preliminary Check SETTING CHANGE FUNCTIONS

Sensitivity of auto light system can be adjusted using CONSULT-II. Refer to [LT-66, "WORK SUPPORT"](#) .

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses.

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

Refer to [LT-58, "Wiring Diagram — AUTO/L —"](#) .

OK or NG

OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

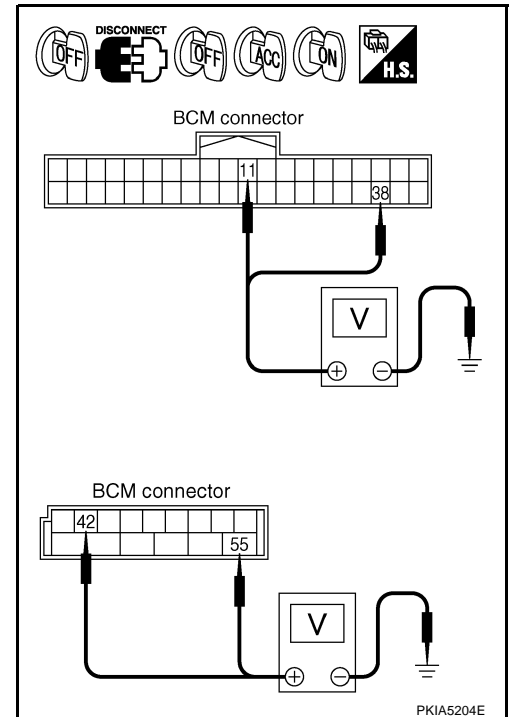
- Turn ignition switch OFF.
- Disconnect BCM connector.
- Check voltage between BCM harness connector and ground.

(+)		(-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M3	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



AUTO LIGHT SYSTEM

3. CHECK GROUND CIRCUIT

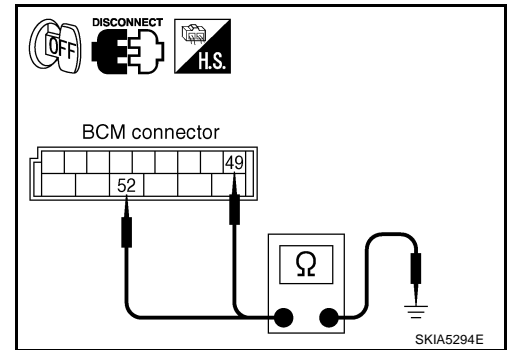
Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M4	49		Yes
	52		

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



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AUTO LIGHT SYSTEM

CONSULT-II Functions (BCM)

NKS002WM

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

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

CONSULT-II BASIC OPERATION

Refer to [GI-38, "CONSULT-II Start Procedure"](#) .

WORK SUPPORT

Operation Procedure

1. Touch "HEAD LAMP" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch "CUSTOM A/LIGHT SETTING" or "ILL DELAY SET" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "NORMAL" or "MODE 2 – 4" of setting to be changed (CUSTOM A/LIGHT SETTING), Touch "MODE 1 – 8" of setting to be changed (ILL DELAY SET).
6. Touch "SETTING CHANGE".
7. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
8. Touch "END".

Work Support Setting Item

Work item	Description
CUSTOM A/LIGHT SETTING	Auto light sensitivity can be changed in this mode. Sensitivity can be adjusted in four modes. <ul style="list-style-type: none">● MODE 1 (Normal)/ MODE 2 (sensitive)/MODE 3 (Desensitized)/MODE4 (Insensitive)
ILL DELAY SET	Auto light delay off timer period can be changed in this mode. Selects auto light delay off timer period among eight modes. <ul style="list-style-type: none">● MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (30 sec.)/MODE 4 (60 sec.)/MODE 5 (90 sec.)/MODE 6 (120 sec.)/MODE 7 (150 sec.)/MODE 8 (180 sec.)

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

AUTO LIGHT SYSTEM

Monitor item	Contents
HI BEAM SW	"ON/OFF" Displays status (high beam switch: ON/Others: OFF) of high beam switch judged from lighting switch signal.
HEAD LAMP SW 1	"ON/OFF" Displays status (headlamp switch 1: ON/Others: OFF) of headlamp switch 1 judged from lighting switch signal.
HEAD LAMP SW 2	"ON/OFF" Displays status (headlamp switch 2: ON/Others: OFF) of headlamp switch 2 judged from lighting switch signal.
LIGHT SW 1 ST	"ON/OFF" Displays status (lighting switch 1ST or 2ND position: ON/Others: OFF) of lighting switch judged from lighting switch signal.
AUTO LIGHT SW ^{NOTE 1}	"ON/OFF" Displays status of lighting switch as judged from lighting switch signal. (AUTO position: ON/Other than AUTO position: OFF)
PASSING SW	"ON/OFF" Displays status (flash-to-pass switch: ON/Others: OFF) of flash-to-pass switch judged from lighting switch signal.
FR FOG SW	"ON/OFF" Displays status (front fog lamp switch: ON/Others: OFF) of front fog lamp switch judged from lighting switch signal.
RR FOG SW ^{NOTE 3}	"OFF" —
DOOR SW - DR	"ON/OFF" Displays status of driver door as judged from driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	"ON/OFF" Displays status of passenger door as judged from passenger door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RR	"ON/OFF" Displays status of rear door as judged from rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL	"ON/OFF" Displays status of rear door as judged from rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW	"ON/OFF" Displays status of back door as judged from back door switch signal. (Door is open: ON/Door is closed: OFF)
TURN SIGNAL R	"ON/OFF" Displays status (Turn right: ON/Others: OFF) as judged from lighting switch signal.
TURN SIGNAL L	"ON/OFF" Displays status (Turn left: ON/Others: OFF) as judged from lighting switch signal.
ENGINE RUN ^{NOTE 2}	"ON/OFF" Displays status (Engine running: ON/Others: OFF) as judged from engine status signal.
PKB SW ^{NOTE 2}	"ON/OFF" Displays status (Parking brake switch: ON/Others: OFF) as judged from parking brake switch signal.
CARGO LAMP SW ^{NOTE 3}	"OFF" —
OPTICAL SENSOR ^{NOTE 1}	"0 – 5 V" Displays "outside brightness (close to 5 V when light/close to 0 V when dark)" judged from optical sensor signal.

NOTE:

1. Vehicles without auto light system display this item, but cannot be monitored.
2. Vehicles without daytime light system display this item, but cannot be monitored.
3. This item is displayed, but cannot be monitored.

AUTO LIGHT SYSTEM

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 "OFF" deactivates the operation.

Display Item List

Test item	Description
TAIL LAMP	Allows tail lamp relay to operate by switching ON-OFF.
HEAD LAMP	Allows headlamp relay to operate by switching ON-OFF.
FR FOG LAMP	Allows fog lamp relay to operate by switching ON-OFF.
DTRL ^{NOTE 1}	Allows day time light lamp operate by switching ON-OFF.
CORNERING LAMP ^{NOTE 2}	—

NOTE:

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

CONSULT-II Functions (IPDM E/R)

NKS002WN

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

Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-19, "SELF-DIAG RESULTS" .
DATA MONITOR	The input/output data of IPDM E/R is displayed in real time.
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.
ACTIVE TEST	IPDM E/R sends a drive signal to electronic components to check their operation.

CONSULT-II BASIC OPERATION

Refer to [GI-38, "CONSULT-II Start Procedure"](#).

DATA MONITOR

Operation Procedure

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

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

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

AUTO LIGHT SYSTEM

All Signals, Main Signals, Selection From Menu

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

NOTE:

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

ACTIVE TEST

Operation Procedure

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

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

Symptom Chart

NKS002W0

Trouble phenomenon	Malfunction system and reference
<ul style="list-style-type: none"> ● Parking, license plate, side marker and tail lamps and headlamps will not illuminate when outside of the vehicle becomes dark. (Lighting switch 1ST position and 2ND position operate normally.) ● Parking, license plate, side marker and tail lamps and headlamp will not go out when outside of the vehicle becomes light. (Lighting switch 1ST position and 2nd position operate normally.) ● Headlamps go out when outside of the vehicle becomes light, but parking lamps stay on. 	<ul style="list-style-type: none"> ● Refer to LT-66, "WORK SUPPORT" . ● Refer to LT-70, "Lighting Switch Inspection" . ● Refer to LT-70, "Optical sensor System Inspection" . <p>If above systems are normal, replace BCM.</p>
Shut off delay feature will not operate.	<ul style="list-style-type: none"> ● CAN communication line inspection between BCM and combination meter. Refer to BCS-13, "CAN Communication Inspection Using CONSULT-II (Self-Diagnosis)" . ● Refer to BL-40, "Check Door Switch" . <p>If above system is normal, replace BCM.</p>

AUTO LIGHT SYSTEM

Lighting Switch Inspection

NKS002WP

1. CHECK LIGHTING SWITCH INPUT SIGNAL

④ With CONSULT-II

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

When lighting switch is AUTO : AUTO LIGHT SW ON position

⊗ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#).

OK or NG

OK >> INSPECTION END

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#).

DATA MONITOR			
MONITOR			
AUTO LIGHT SW		ON	
RECORD			
MODE	BACK	LIGHT	COPY

PKIA7595E

Optical sensor System Inspection

NKS002WQ

1. CHECK OPTICAL SENSOR INPUT SIGNAL

④ With CONSULT-II

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

Illuminated

OPTICAL SENSOR : 3.1 V or more

Not illuminated

OPTICAL SENSOR : 0.6 V or less

CAUTION:

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

⊗ Without CONSULT-II

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

Illuminated

OPTICAL SENSOR : 3.1 V or more

Not illuminated

OPTICAL SENSOR : 0.6 V or less

CAUTION:

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

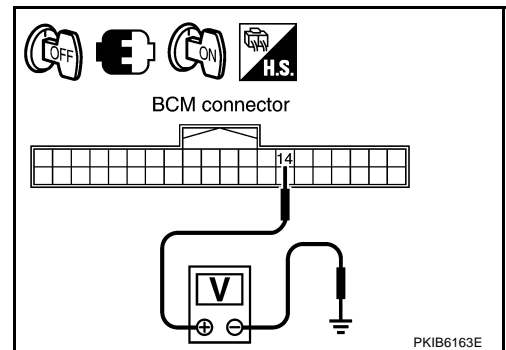
OK or NG

OK >> INSPECTION END

NG >> GO TO 2.

DATA MONITOR			
MONITOR			
OPTICAL SENSOR		0.75V	
RECORD			
MODE	BACK	LIGHT	COPY

PKIA7596E



AUTO LIGHT SYSTEM

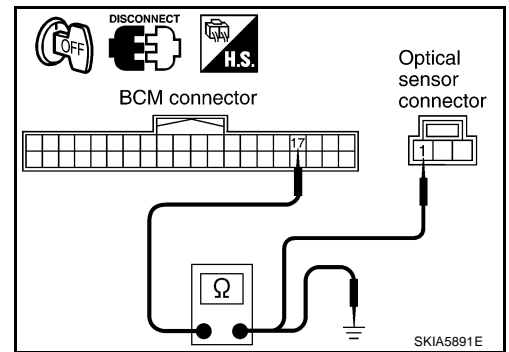
2. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

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

17 – 1 : Continuity should exist.

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

17 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

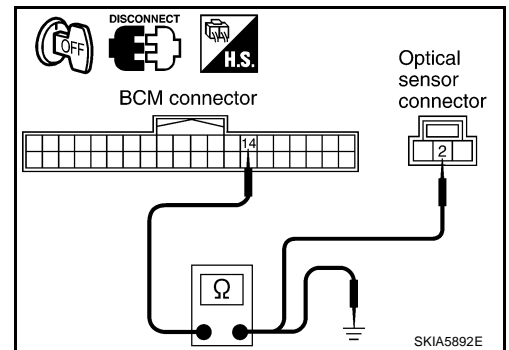
3. CHECK OPTICAL SENSOR SIGNAL CIRCUIT

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

14 – 2 : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M3 terminal 14 and ground.

14 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

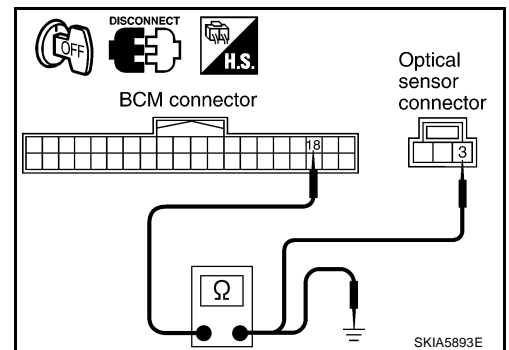
4. CHECK OPTICAL SENSOR GROUND CIRCUIT

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

18 – 3 : Continuity should exist.

2. Check continuity (short circuit) between BCM harness connector M3 terminal 18 and ground.

18 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.

AUTO LIGHT SYSTEM

5. CHECK OPTICAL SENSOR VOLTAGE

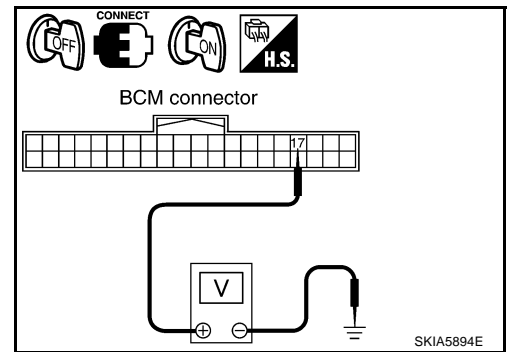
1. Connect BCM connector.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M3 terminal 17 and ground.

17 – Ground : Approx. 5 V

OK or NG

OK >> Replace optical sensor.

NG >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .

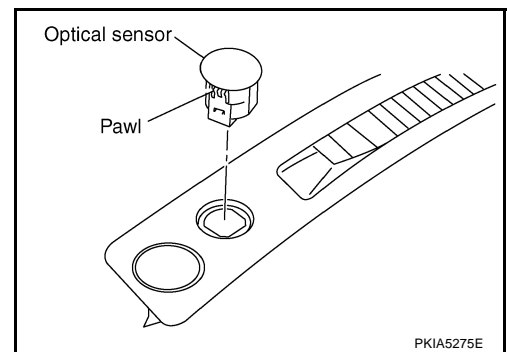


NKS002WR

Removal and Installation of Optical Sensor

REMOVAL

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



INSTALLATION

Installation is the reverse order of removal.

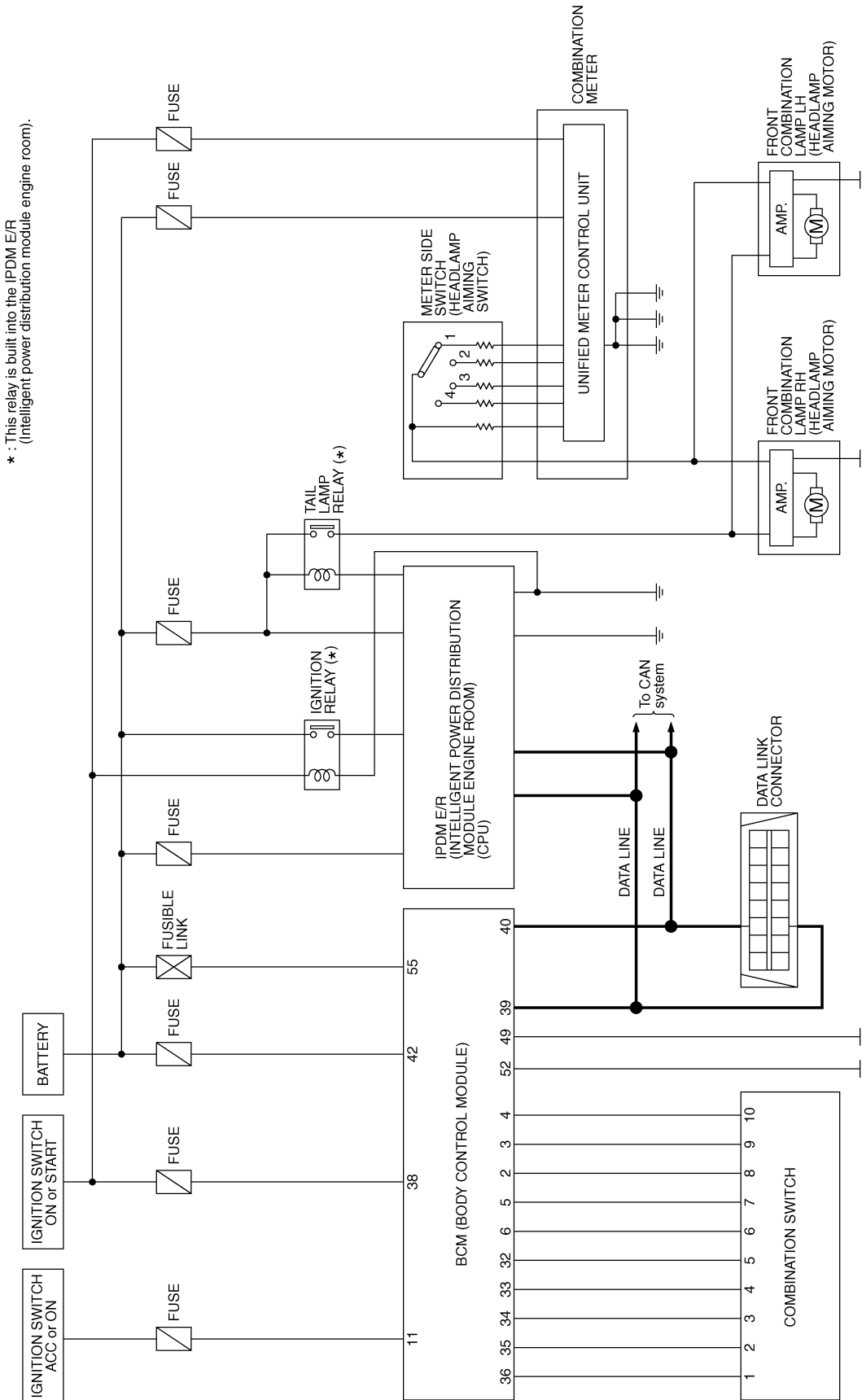
HEADLAMP AIMING CONTROL

HEADLAMP AIMING CONTROL

Schematic

PF26010

NKS002WS



TKWH0337E

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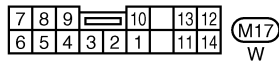
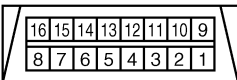
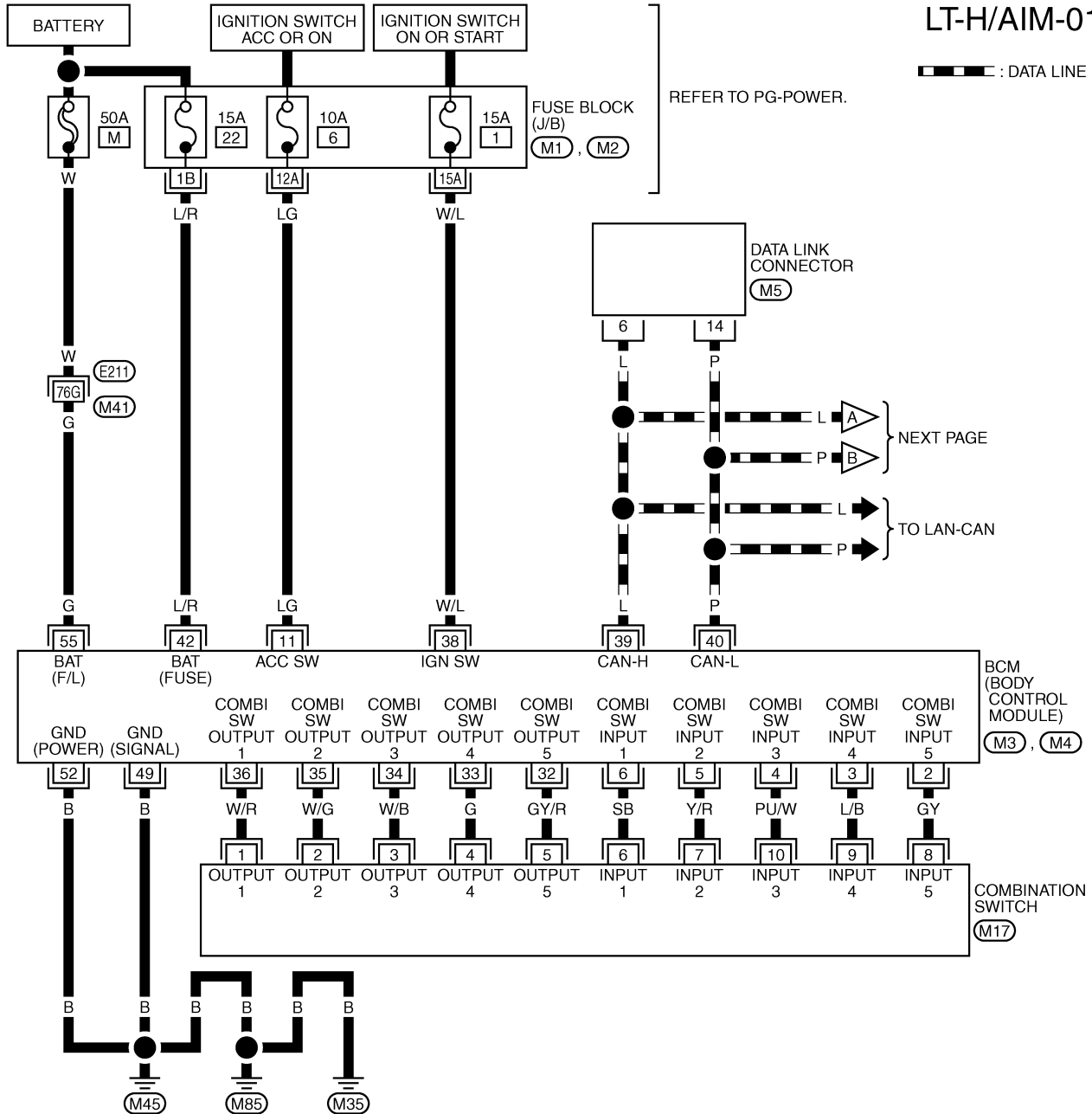
HEADLAMP AIMING CONTROL

NKS002WT

Wiring Diagram — H/AIM —

LT-H/AIM-01

▬ : DATA LINE



REFER TO THE FOLLOWING.

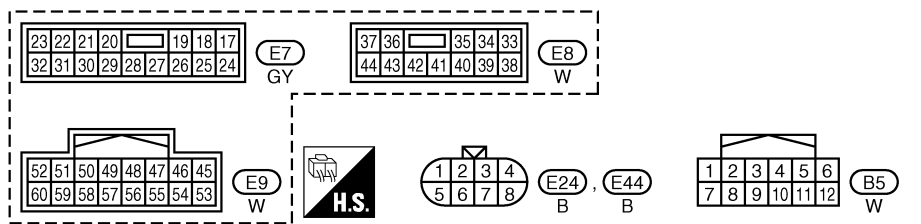
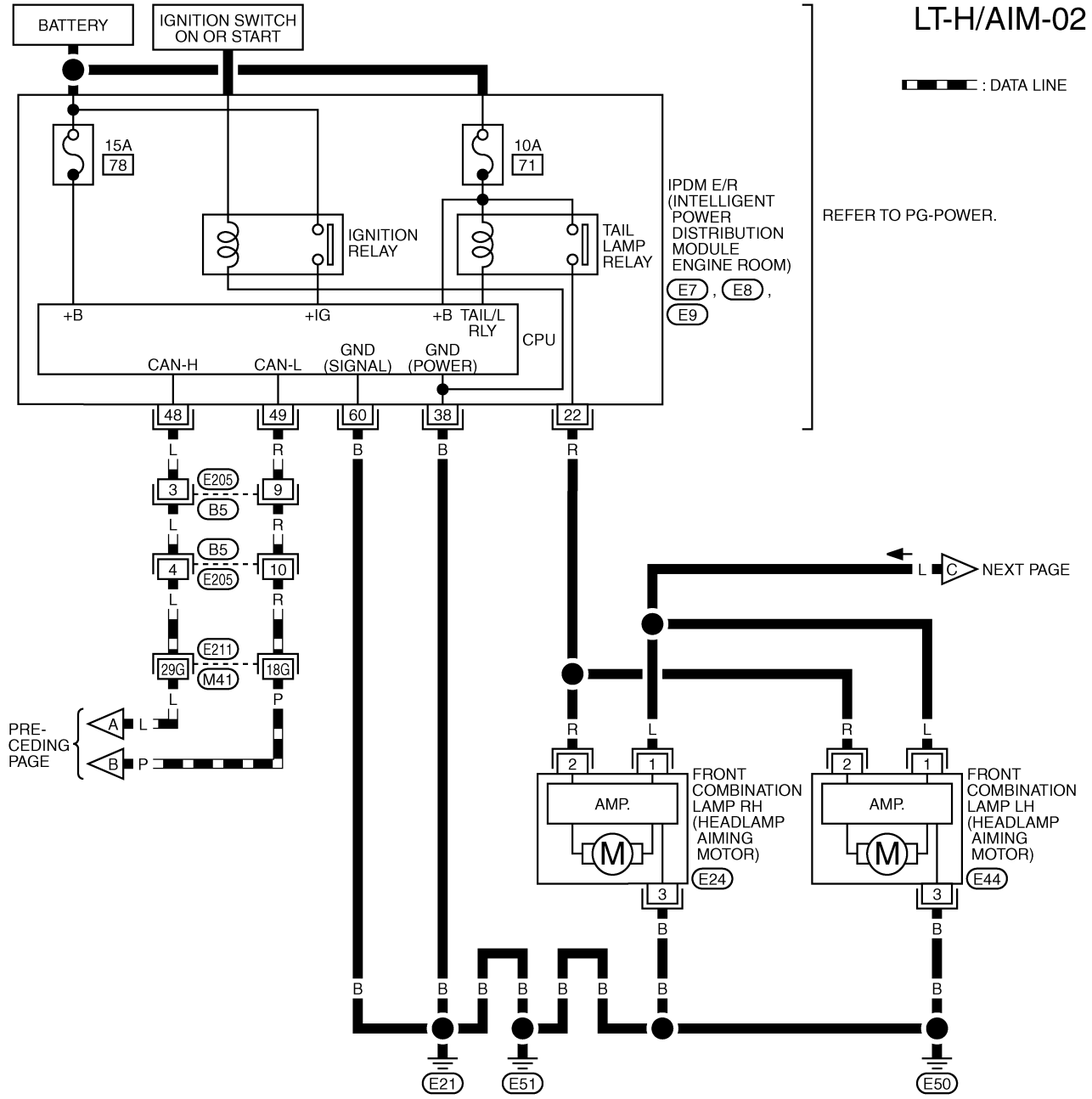
- (E211) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

TKWM4300E

HEADLAMP AIMING CONTROL

LT-H/AIM-02

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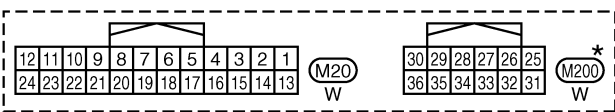
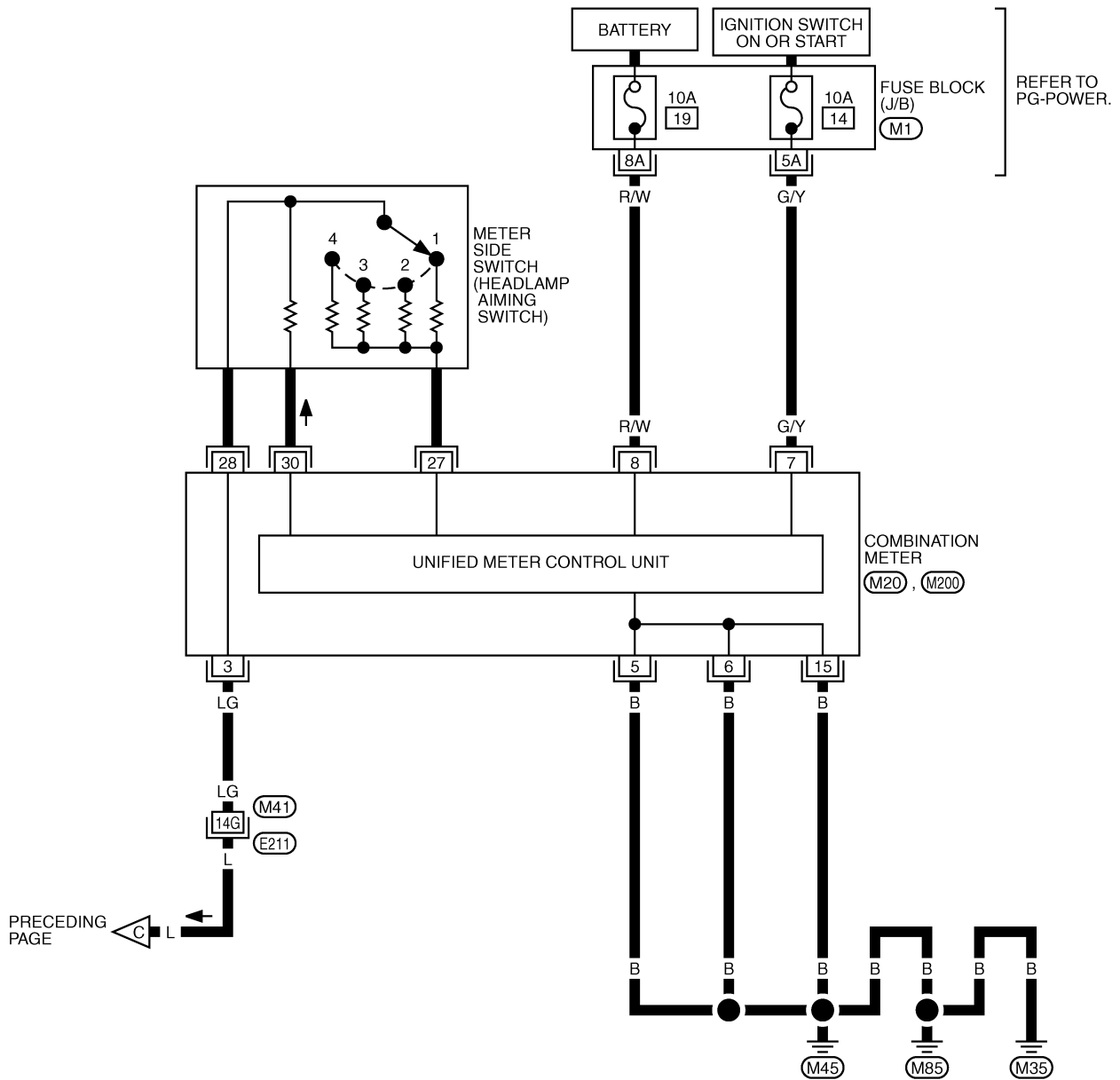


REFER TO THE FOLLOWING.
 (E21) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4301E

HEADLAMP AIMING CONTROL

LT-H/AIM-03



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

REFER TO THE FOLLOWING.

- (E211) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1) -FUSE BLOCK-JUNCTION BOX (J/B)

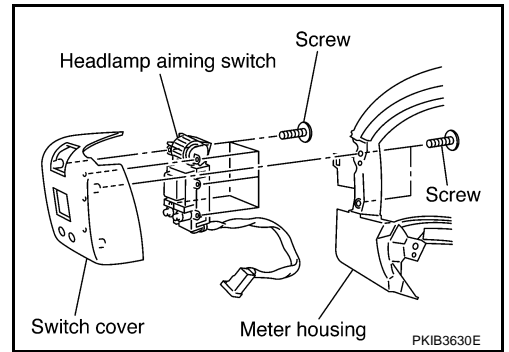
TKWM4302E

HEADLAMP AIMING CONTROL

Removal and Installation

REMOVAL

1. Remove combination meter. Refer to [DI-25, "Removal and Installation of Combination Meter"](#) .
2. Remove screws for removing headlamp aiming switch from meter housing.
3. Remove screws and then remove headlamp aiming switch.

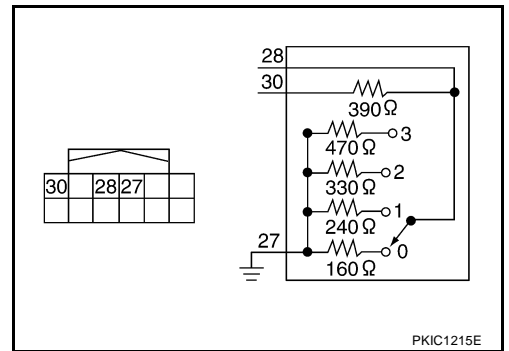


INSTALLATION

Installation is the reverse order of removal.

Switch Circuit Inspection

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



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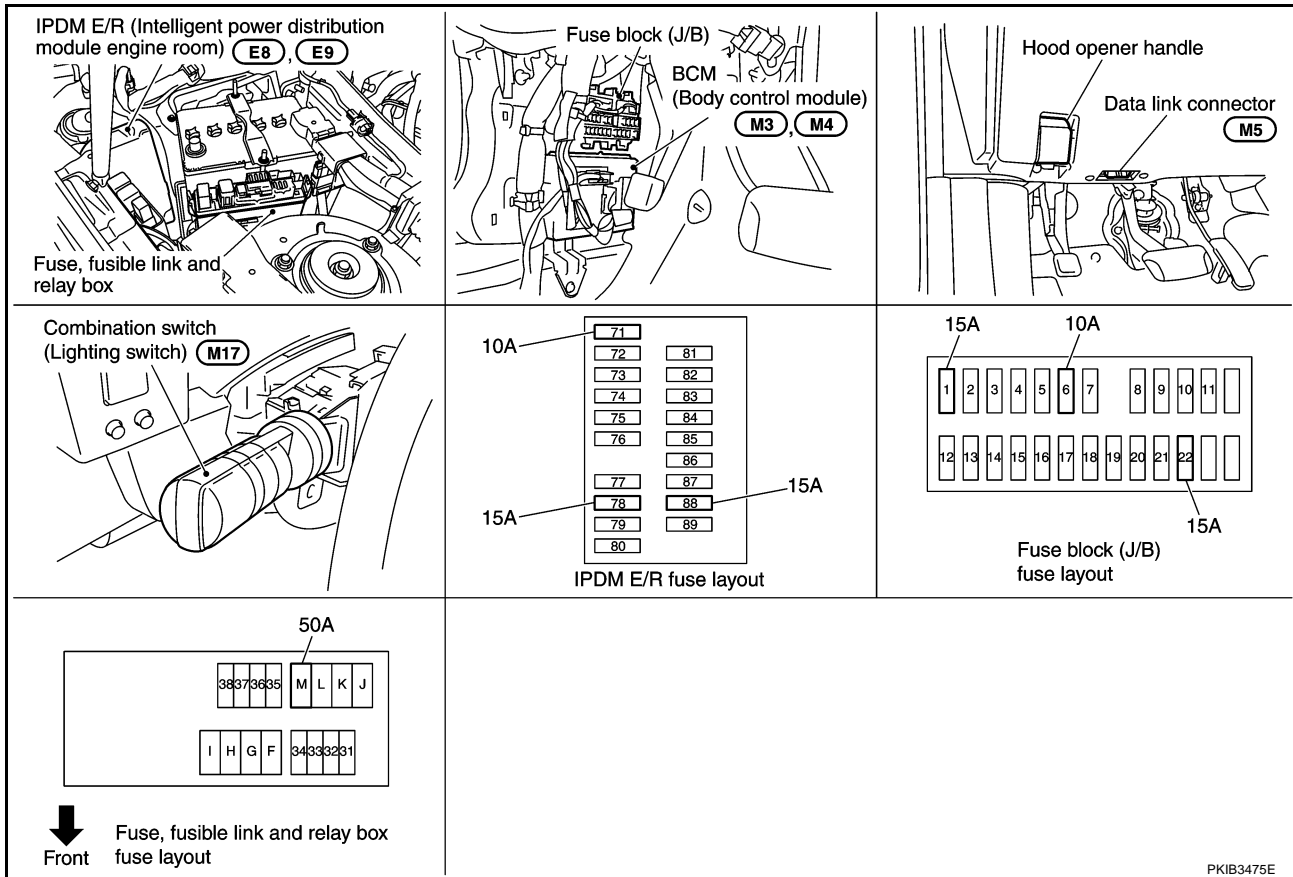
FRONT FOG LAMP

FRONT FOG LAMP

PFP:26150

Component Parts and Harness Connector Location

NKS002WW



System Description

NKS002WX

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

OUTLINE

Power is supplied at all times

- to ignition relay, located in IPDM E/R, from battery direct,
- through 15A fuse (No. 88, located in IPDM E/R)
- to front fog lamp relay, located in IPDM E/R,
- through 15A fuse (No. 78, located in IPDM E/R)
- to CPU located in IPDM E/R,
- through 10A fuse (No. 71, located in IPDM E/R)
- to CPU located in IPDM E/R,
- through 50A fusible link (letter M, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM terminal 42.

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

- to ignition relay (located IPDM E/R)
- through 15A fuse [No. 1, located in fuse block (J/B)]

FRONT FOG LAMP

- to BCM terminal 38.

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

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

Ground is supplied

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

FRONT FOG LAMP OPERATION

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

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

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

Ground is supplied

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

With power and grounds supplied, front fog lamps illuminate.

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

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

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

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

CAN Communication System Description

NKS002WY

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

NKS002WZ

Refer to [LAN-49. "CAN System Specification Chart"](#) .

A

B

C

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I

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LT

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M

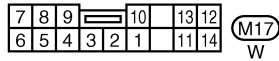
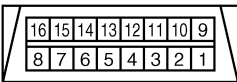
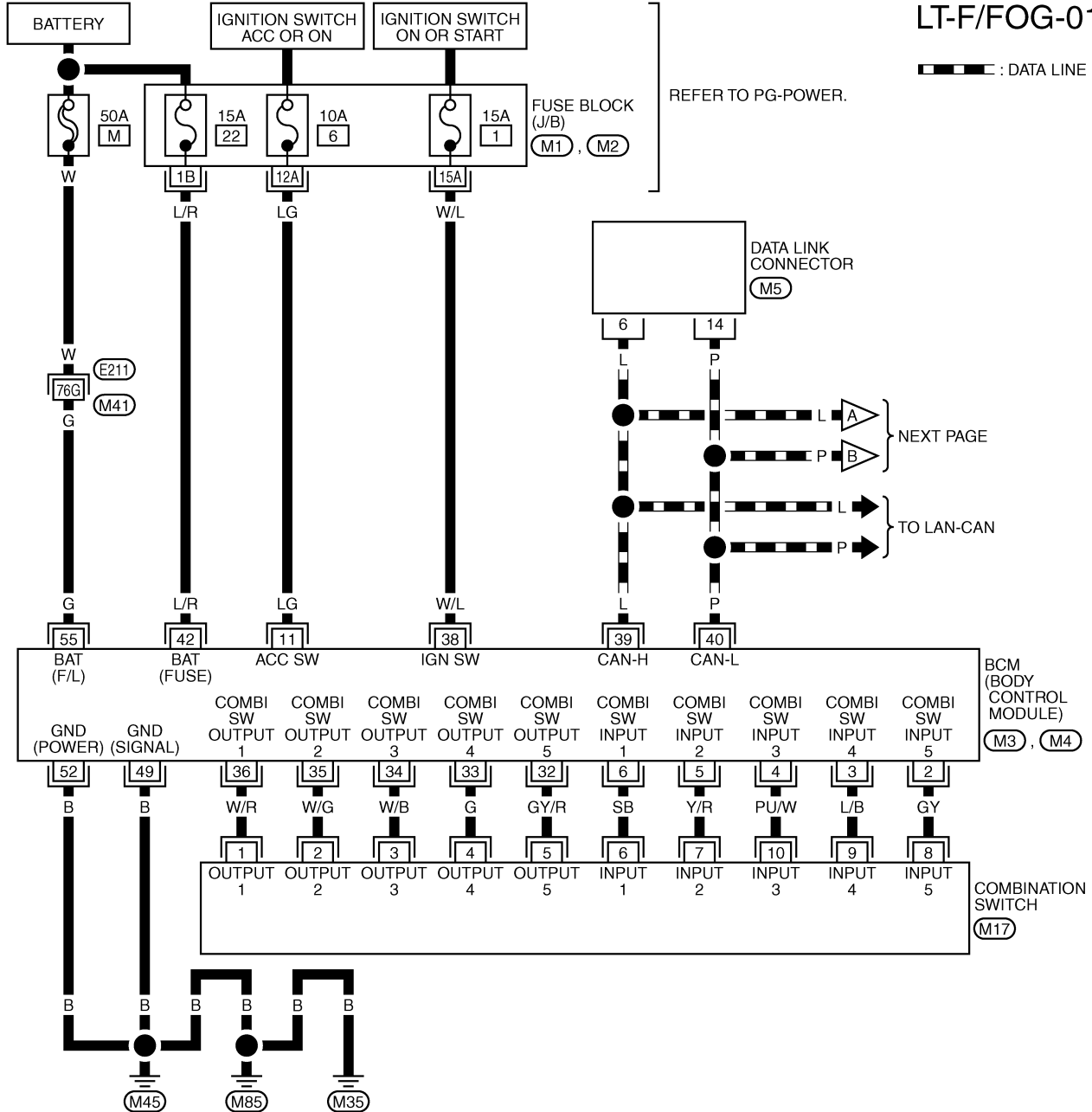
FRONT FOG LAMP

Wiring Diagram — F/FOG —

NKS002X0

LT-F/FOG-01

▬ : DATA LINE



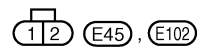
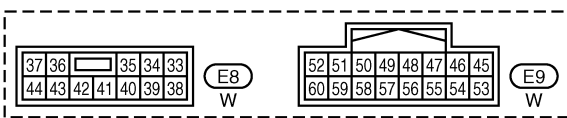
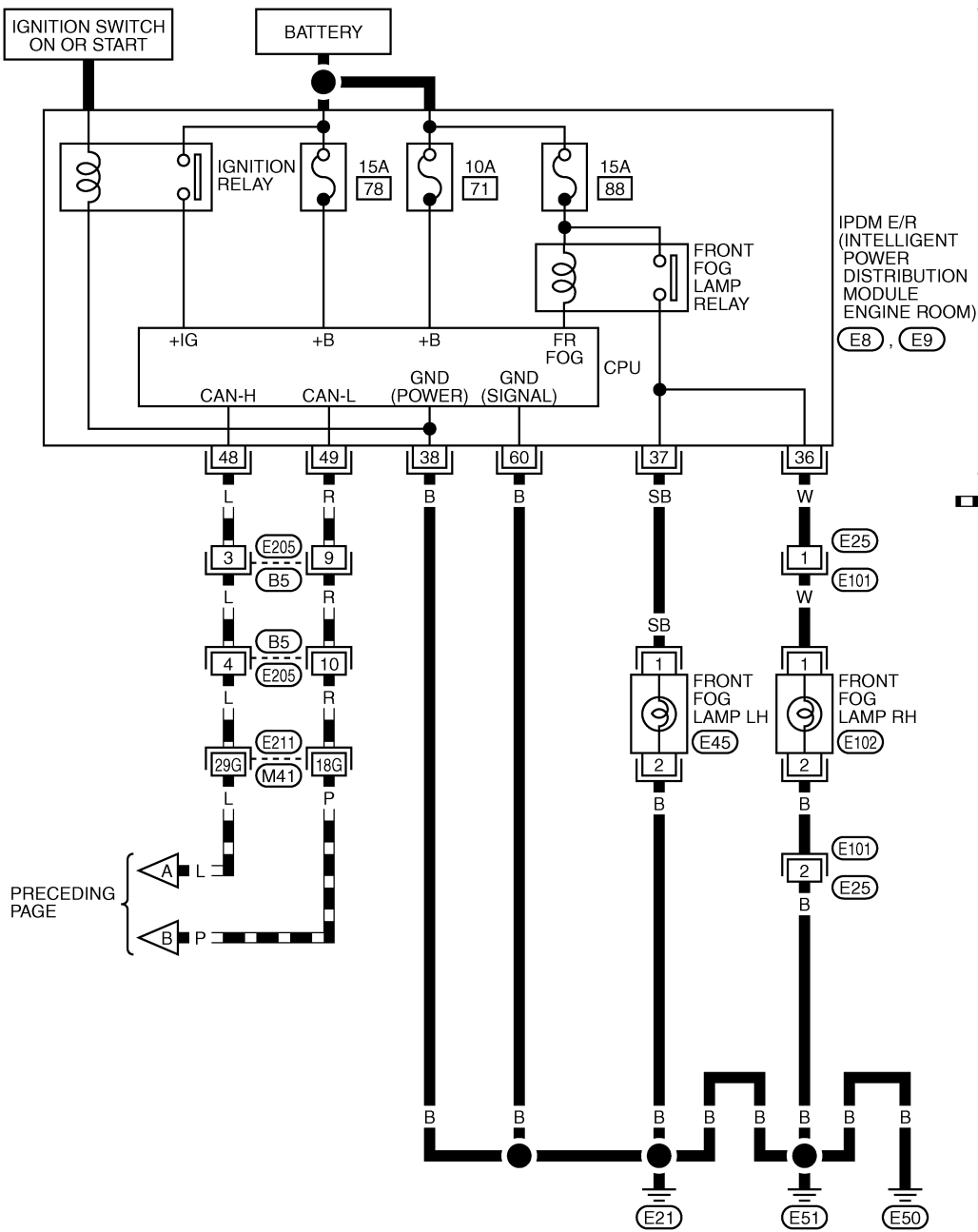
REFER TO THE FOLLOWING.

- (E211) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

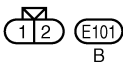
TKWM4303E

FRONT FOG LAMP

LT-F/FOG-02



REFER TO THE FOLLOWING.
 (E21) -SUPER MULTIPLE JUNCTION (SMJ)



A
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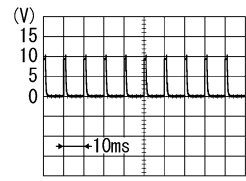
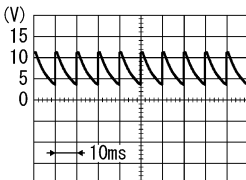
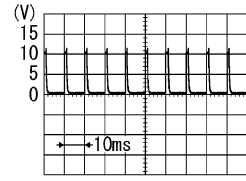
FRONT FOG LAMP

Terminals and Reference Values for BCM

NKS002X1

CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.
- Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-II. Refer to [LT-117, "DATA MONITOR"](#) .

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
				Lighting, turn, wiper switch (Wiper intermittent dial position 4)	Front fog lamp switch (Operates only front fog lamp switch)	 <p style="text-align: center;">Approx. 0.8 V</p>
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 <p style="text-align: center;">Approx. 7.2 V</p>
					Front fog lamp switch (Operates only front fog lamp switch)	 <p style="text-align: center;">Approx. 1.0 V</p>
38	W/L	Ignition switch (ON)	ON	—		Battery voltage
39	L	CAN – H	—	—		—
40	P	CAN – L	—	—		—
42	L/R	Battery power supply	OFF	—		Battery voltage
49	B	Ground	ON	—		Approx. 0 V
52	B	Ground	ON	—		Approx. 0 V
55	G	Battery power supply	OFF	—		Battery voltage

FRONT FOG LAMP

Terminals and Reference Values for IPDM E/R

NKS002X2

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

How to Proceed With Trouble Diagnosis

NKS002X3

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-78, "System Description"](#) .
3. Perform Preliminary Check. Refer to [LT-83, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does front fog lamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

NKS002X4

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses.

Unit	Power source	Fuse and fusible link No.
BCM	Battery	M
		22
	Ignition switch ON or START position	1
	Ignition switch ACC or ON position	6
IPDM E/R	Battery	88

Refer to [LT-80, "Wiring Diagram — F/FOG —"](#) .

OK or NG

OK >> GO TO 2.

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

FRONT FOG LAMP

2. CHECK POWER SUPPLY CIRCUIT

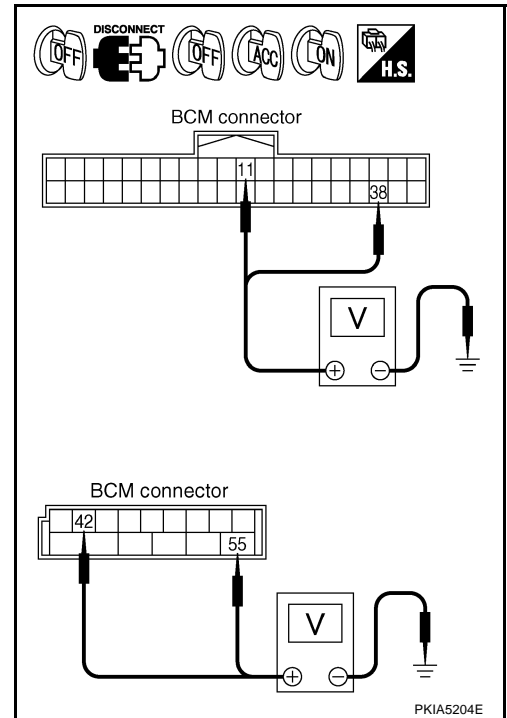
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M3	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK GROUND CIRCUIT

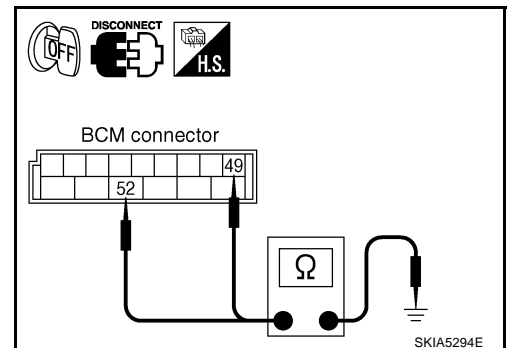
Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M4	49		Ground
	52		

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



CONSULT-II Functions (BCM)

Refer to [LT-18, "CONSULT-II Functions \(BCM\)"](#).

CONSULT-II Functions (IPDM E/R)

Refer to [LT-20, "CONSULT-II Functions \(IPDM E/R\)"](#).

NKS002X5

NKS002X6

FRONT FOG LAMP

Front Fog Lamps Do Not Illuminate (Both Sides)

NKS002X7

1. CHECK COMBINATION SWITCH INPUT SIGNAL

④ With CONSULT-II

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

**When lighting switch is : FR FOG SW ON
front fog lamp ON position**

DATA MONITOR			
MONITOR			
FR FOG SW	ON		
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7598E

⊗ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#) .

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#) .

2. FRONT FOG LAMP ACTIVE TEST

④ With CONSULT-II

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

Front fog lamp should operate.

ACTIVE TEST			
LAMPS	OFF		
		HI	
LO	FOG		
		RECORD	
MODE	BACK	LIGHT	COPY

SKIA5774E

⊗ Without CONSULT-II

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#) .
2. Make sure front fog lamp operation.

Front fog lamp should operate.

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

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

**When lighting switch is : FR FOG REQ ON
front fog lamp ON position**

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

SKIA5898E

OK or NG

OK >> Replace IPDM E/R.

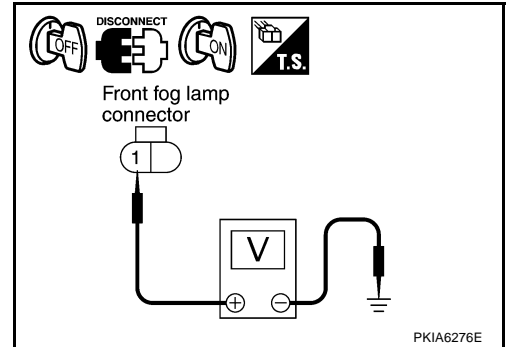
NG >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .

FRONT FOG LAMP

4. CHECK FRONT FOG LAMP INPUT SIGNAL

☑ With CONSULT-II

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



Front fog lamp connector		(+)	(-)	Voltage
RH	E102	1	Ground	Battery voltage
LH	E45	1		

☒ Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connectors.
3. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
4. When front fog lamp is operating, check voltage between front fog lamp RH and LH harness connectors and ground.

Front fog lamp connector		(+)	(-)	Voltage
RH	E102	1	Ground	Battery voltage
LH	E45	1		

OK or NG

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

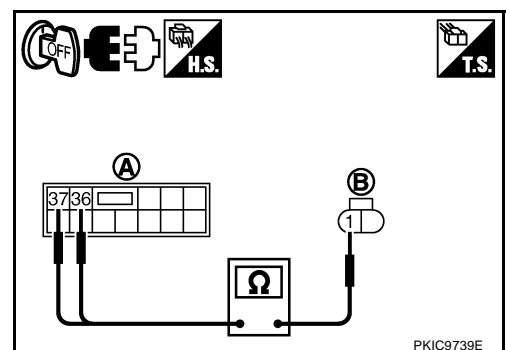
5. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector (A) and front fog lamp (RH and LH) harness connector (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E8	36	E102	1	Yes
LH		37	E45	1	

OK or NG

- OK >> Replace IPDM E/R. Refer to [PG-28, "Removal and Installation of IPDM E/R"](#).
NG >> Repair harness or connector.



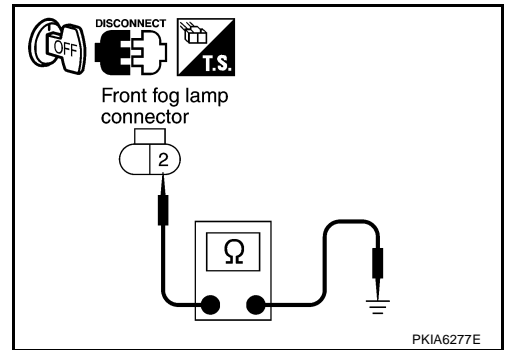
FRONT FOG LAMP

6. CHECK FRONT FOG LAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front fog lamp RH harness connector E102 terminal 2 and ground.
2 – Ground : Continuity should exist.
3. Check continuity between front fog lamp LH harness connector E45 terminal 2 and ground.
2 – Ground : Continuity should exist.

OK or NG

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



Front Fog Lamp Does Not Illuminate (One Side)

NKS002X8

1. CHECK BULB

Check bulb of lamp which does not illuminate.

OK or NG

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

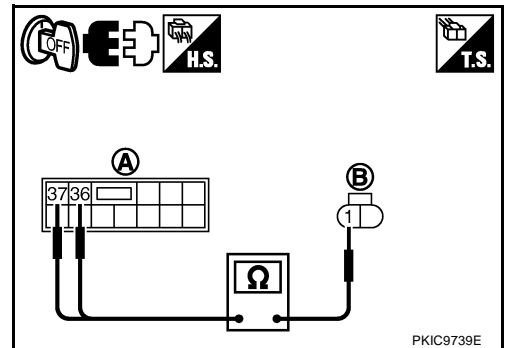
2. CHECK FRONT FOG LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector (A) and front fog lamp (RH and LH) harness connector (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	E8	36	E102	1	Yes
LH		37	E45	1	

OK or NG

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

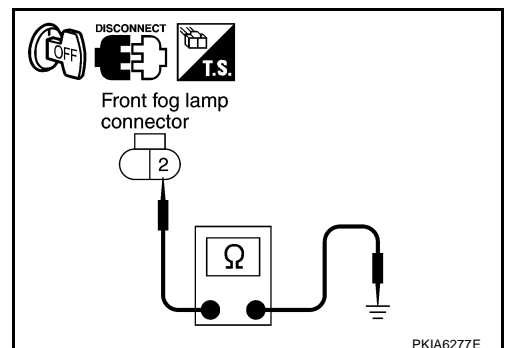


3. CHECK FRONT FOG LAMP GROUND

1. Check continuity between front fog lamp RH harness connector E102 terminal 2 and ground.
2 – Ground : Continuity should exist.
2. Check continuity between front fog lamp LH harness connector E45 terminal 2 and ground.
2 – Ground : Continuity should exist.

OK or NG

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



FRONT FOG LAMP

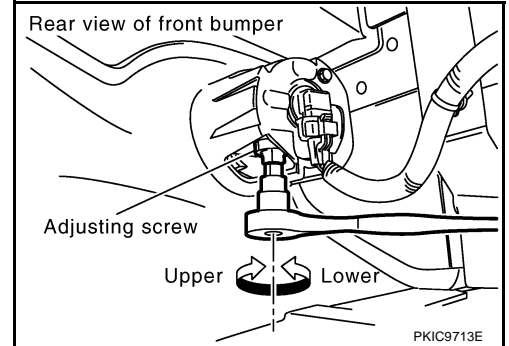
Aiming Adjustment

NKS002X9

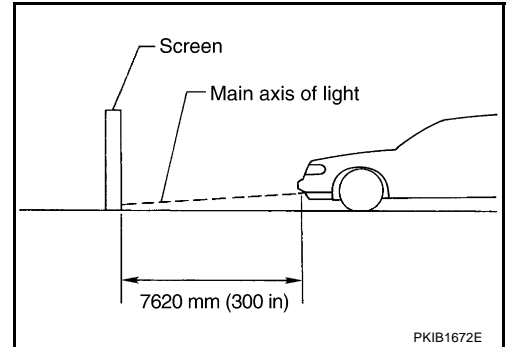
Front fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

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

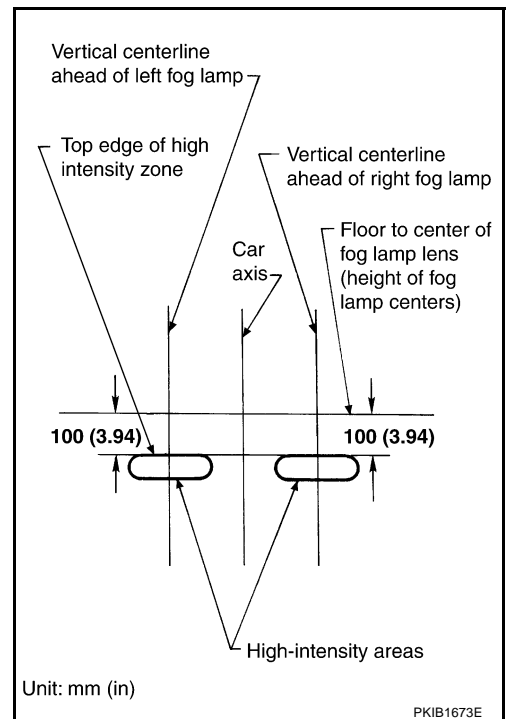
Adjust aiming in the vertical direction by turning adjusting screw.



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



3. Adjust front fog lamps using adjusting screw so that the top edge of the high intensity zone is 100 mm (3.94 in) below the height of front fog lamp centers as shown at left.
 - When performing adjustment, if necessary, cover headlamps and opposite front fog lamp.



FRONT FOG LAMP

Bulb Replacement

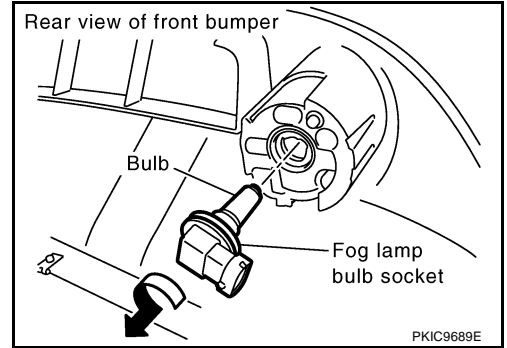
NKS002XA

1. Remove fender protector (front). Refer to [EI-24, "Removal and Installation"](#) , [EI-14, "Removal and Installation"](#) .
2. Disconnect front fog lamp connector.
3. Turn bulb socket counterclockwise and unlock it.

Front fog lamp : 12 V - 35 W (H8)

CAUTION:

- Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off. Burning may result.
- Never leave bulb out of front fog lamp reflector for a long time because dust, moisture smoke, etc. May affect the performance of front fog lamp. When replacing bulb, be sure to replace it with new one.

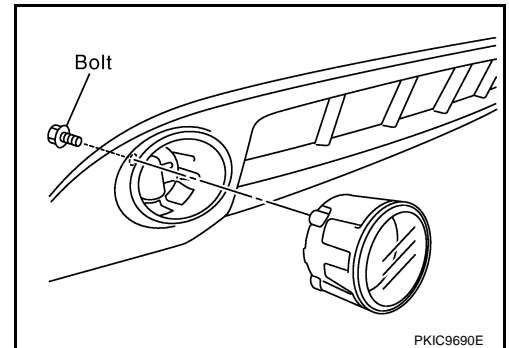


Removal and Installation

REMOVAL

NKS002XB

1. Remove front bumper fascia. Refer to [EI-14, "Removal and Installation"](#) .
2. Remove front fog lamp mounting bolt.
3. Pull out front fog lamp from vehicle and disconnect front fog lamp connector.



INSTALLATION

Installation is the reverse order of removal.

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

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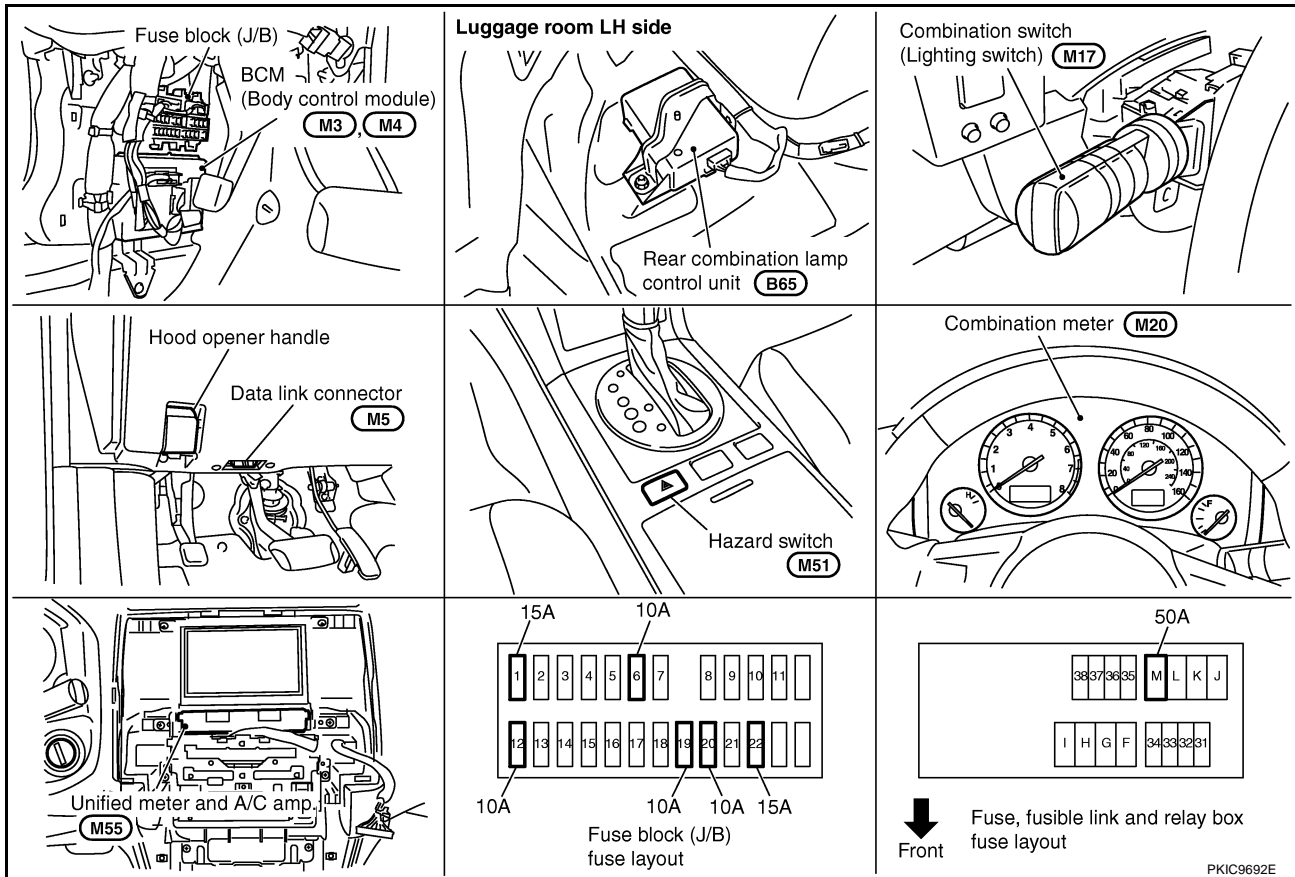
TURN SIGNAL AND HAZARD WARNING LAMPS

TURN SIGNAL AND HAZARD WARNING LAMPS

PF26120

Component Parts and Harness Connector Location

NKS002XC



PKIC9692E

System Description OUTLINE

NKS002XD

Power is supplied at all times

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

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

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

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

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

Ground is supplied

- to rear combination lamp control unit terminal 7
- through grounds E21, E50 and E51,
- to BCM terminals 49 and 52, and

TURN SIGNAL AND HAZARD WARNING LAMPS

- to combination meter terminals 5, 6 and 15
- through grounds M35, M45 and M85.

A

TURN SIGNAL OPERATION

LH Turn Signal Lamp

B

When the turn signal switch is moved to the left position, BCM output turn signal from BCM terminal 45, interpreting it as turn signal is ON.

Connected from BCM terminal 45 to front combination lamp LH terminal 4.

Turn signal lamp turns ON

C

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

D

Connected from BCM terminal 45 to rear combination lamp control unit terminal 4.

Rear turn signal (LED) turns ON

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

E

F

BCM sends signal to the unified meter and A/C amp. through CAN communication, and turns ON turn signal indicator lamp with combination meter.

When rear turn signal lamp (LED) does not turn ON, rear combination lamp control unit sends signal to combination meter. And then unified meter and A/C amp. ends turn LED burnout status signal to BCM through CAN communication lines for speeding up turn signal blinking.

G

RH Turn Signal Lamp

H

When the turn signal switch is moved to right position, BCM output turn signal from BCM terminal 46, interpreting it as turn signal is ON.

Connected from BCM terminal 46 to front combination lamp RH terminal 4.

Turn signal lamp turns ON

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

I

J

Connected from BCM terminal 46 to rear combination lamp control unit terminal 5.

Rear turn signal (LED) turns ON

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

LT

L

BCM sends signal to the unified meter and A/C amp. through CAN communication, and turns ON turn signal indicator lamp with combination meter.

When rear turn signal lamp (LED) does not turn ON, rear combination lamp control unit sends signal to combination meter. And then unified meter and A/C amp. ends turn LED burnout status signal to BCM through CAN communication lines for speeding up turn signal blinking.

M

HAZARD LAMP OPERATION

When the hazard switch is depressed, BCM output turn signal from BCM terminals 45 and 46, interpreting it as turn signal is ON.

Connected from BCM terminal 45 and 46 to front combination lamp RH and LH terminals 4.

Turn signal lamp turns ON

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

Connected from BCM terminals 45 and 46 to rear combination lamp control unit terminals 4 and 5.

Rear turn signal (LED) turns ON

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

TURN SIGNAL AND HAZARD WARNING LAMPS

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

And hazard switch is depressed, ground is supplied

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

BCM sends signal to the unified meter and A/C amp. through CAN communication, and turns ON turn signal indicator lamp with combination meter.

When rear turn signal lamp (LED) does not turn ON, rear combination lamp control unit sends signal to combination meter. And then unified meter and A/C amp. ends turn LED burnout status signal to BCM through CAN communication lines for speeding up turn signal blinking.

REMOTE CONTROL ENTRY SYSTEM OPERATION

When the remote control entry system is triggered by input from key fob, BCM output turn signal from BCM terminals 45 and 46, interpreting it as turn signal is ON.

Connected from BCM terminals 45 and 46 to front combination lamp RH and LH terminals 4.

Turn signal lamp turns ON

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

Connected from BCM terminals 45 and 46 to rear combination lamp control unit terminals 4 and 5.

Rear turn signal (LED) turns ON

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

BCM sends signal to the unified meter and A/C amp. through the CAN communication, and turns ON turn signal indicator lamp with combination meter.

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

COMBINATION SWITCH READING FUNCTION

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

CAN Communication System Description

NKS002XE

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

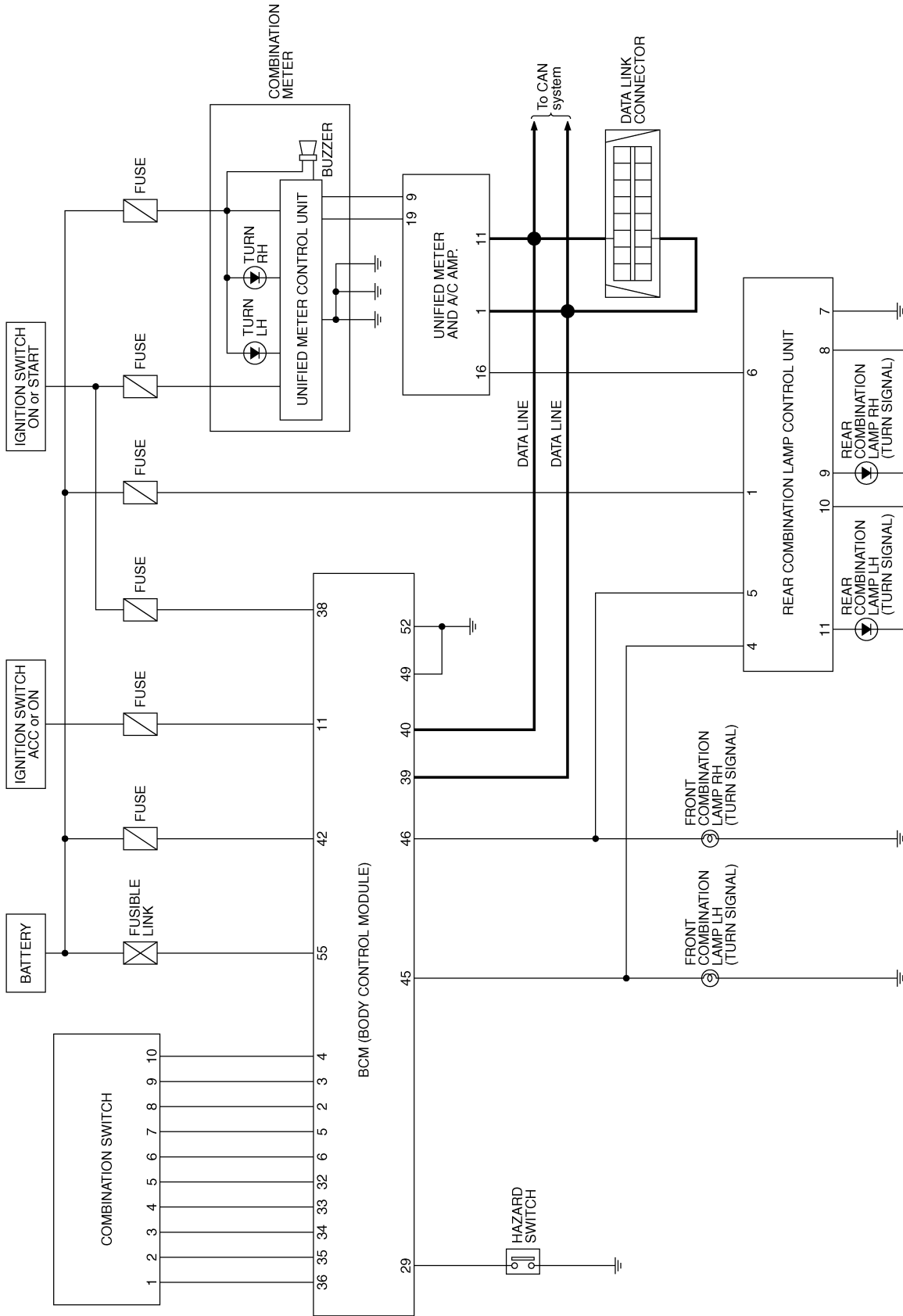
NKS002XF

Refer to [LAN-49, "CAN System Specification Chart"](#) .

TURN SIGNAL AND HAZARD WARNING LAMPS

Schematic

NKS002XG



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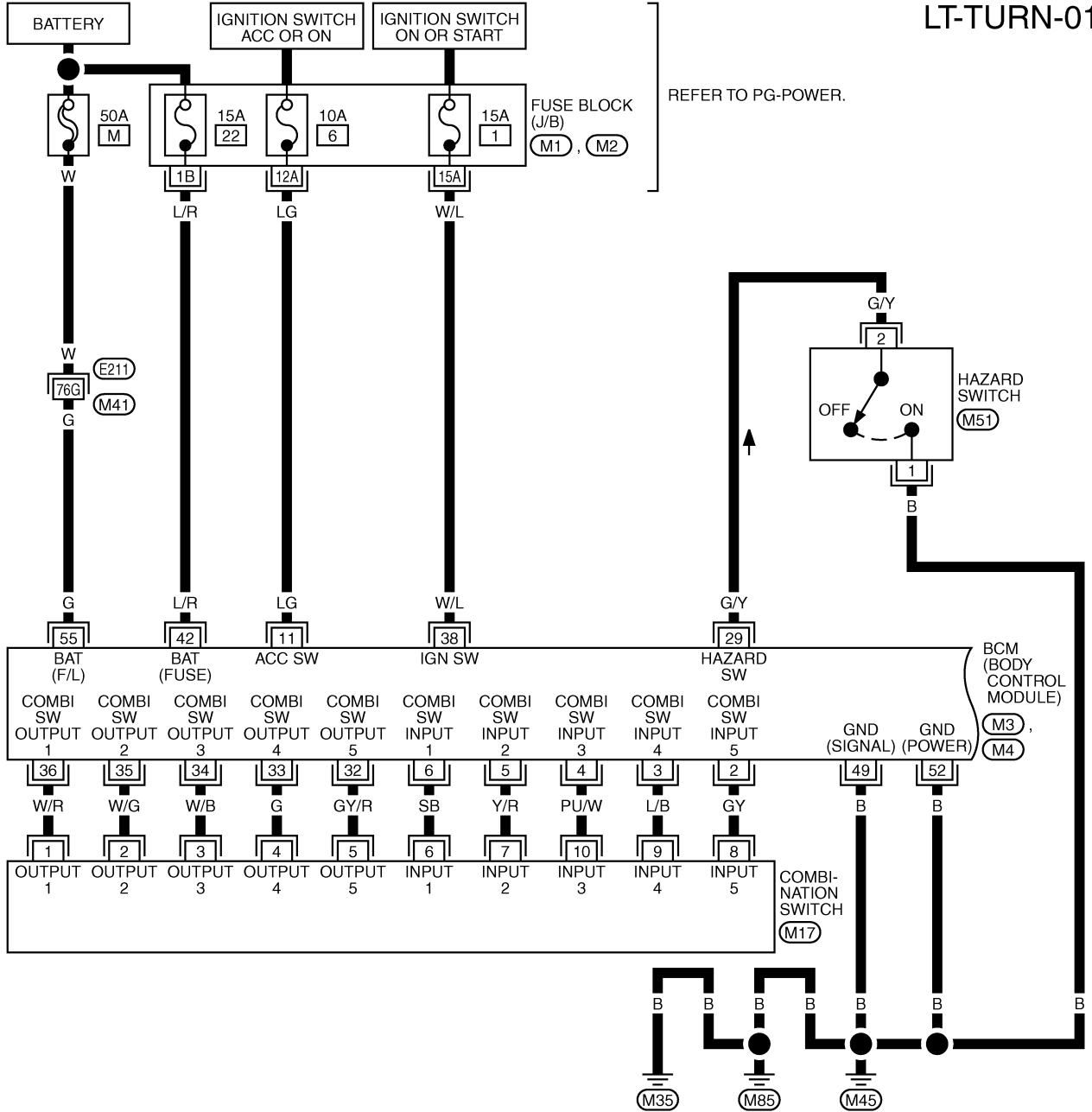
LT

TURN SIGNAL AND HAZARD WARNING LAMPS

NKS002XH

Wiring Diagram — TURN —

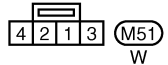
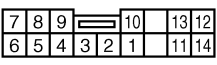
LT-TURN-01



REFER TO PG-POWER.

BCM (BODY CONTROL MODULE) (M3), (M4)

COMBINATION SWITCH (M17)



REFER TO THE FOLLOWING.
 (E21) -SUPER MULTIPLE JUNCTION (SMJ)
 (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
 (M3), (M4) -ELECTRICAL UNITS

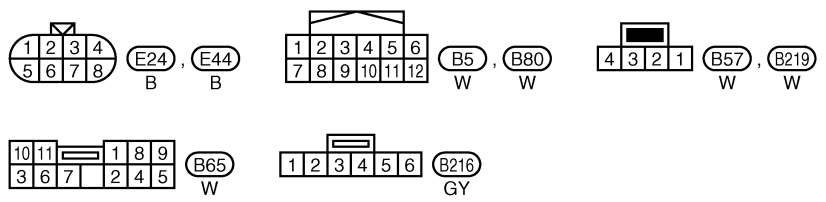
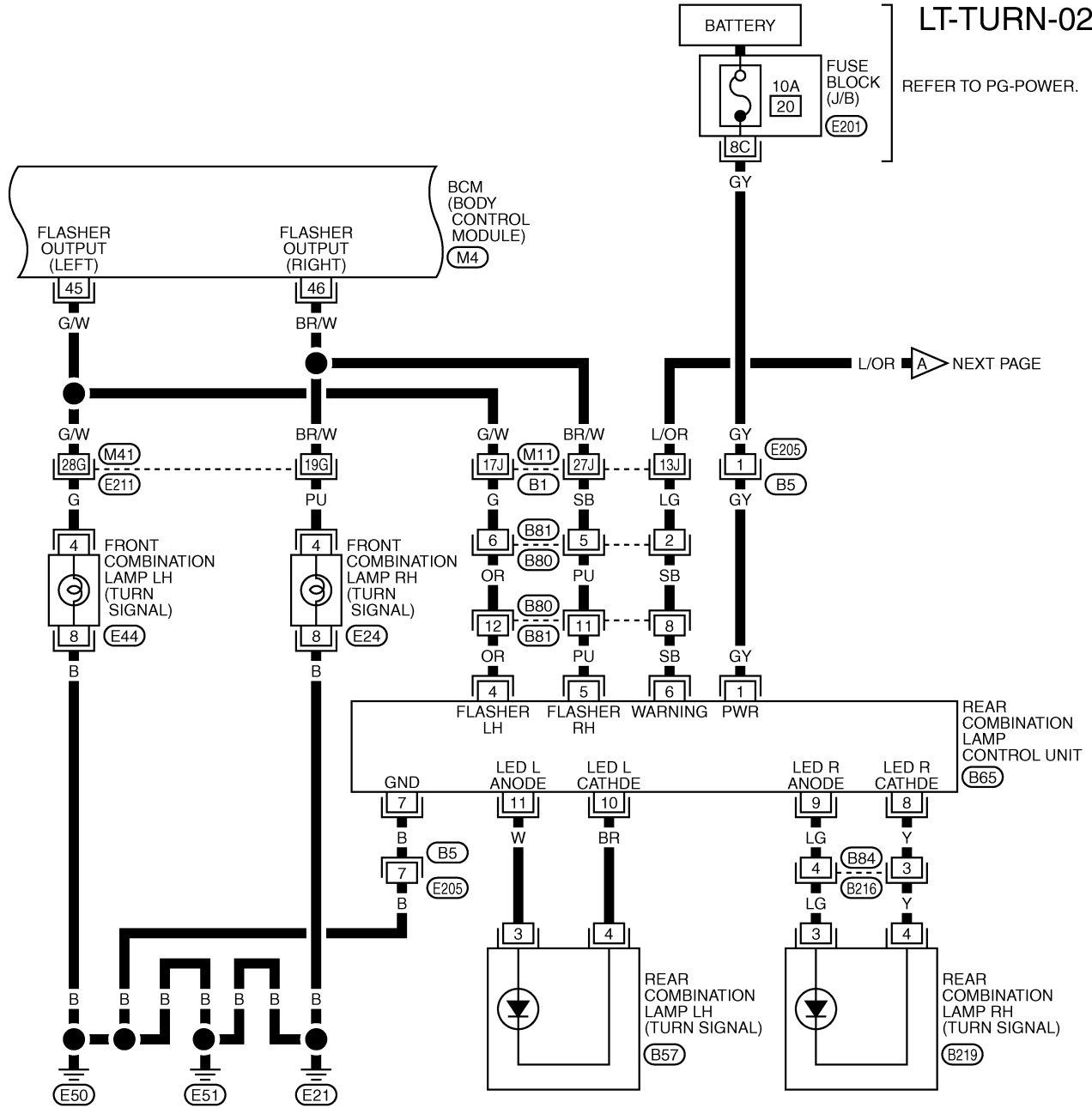
TKWM4306E

TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-02

REFER TO PG-POWER.

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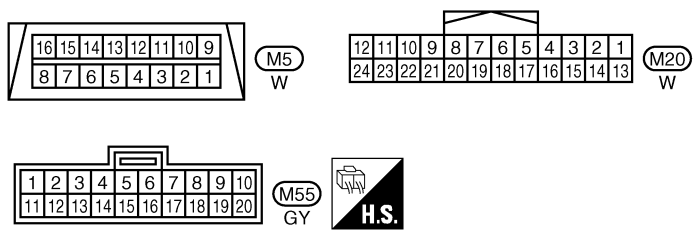
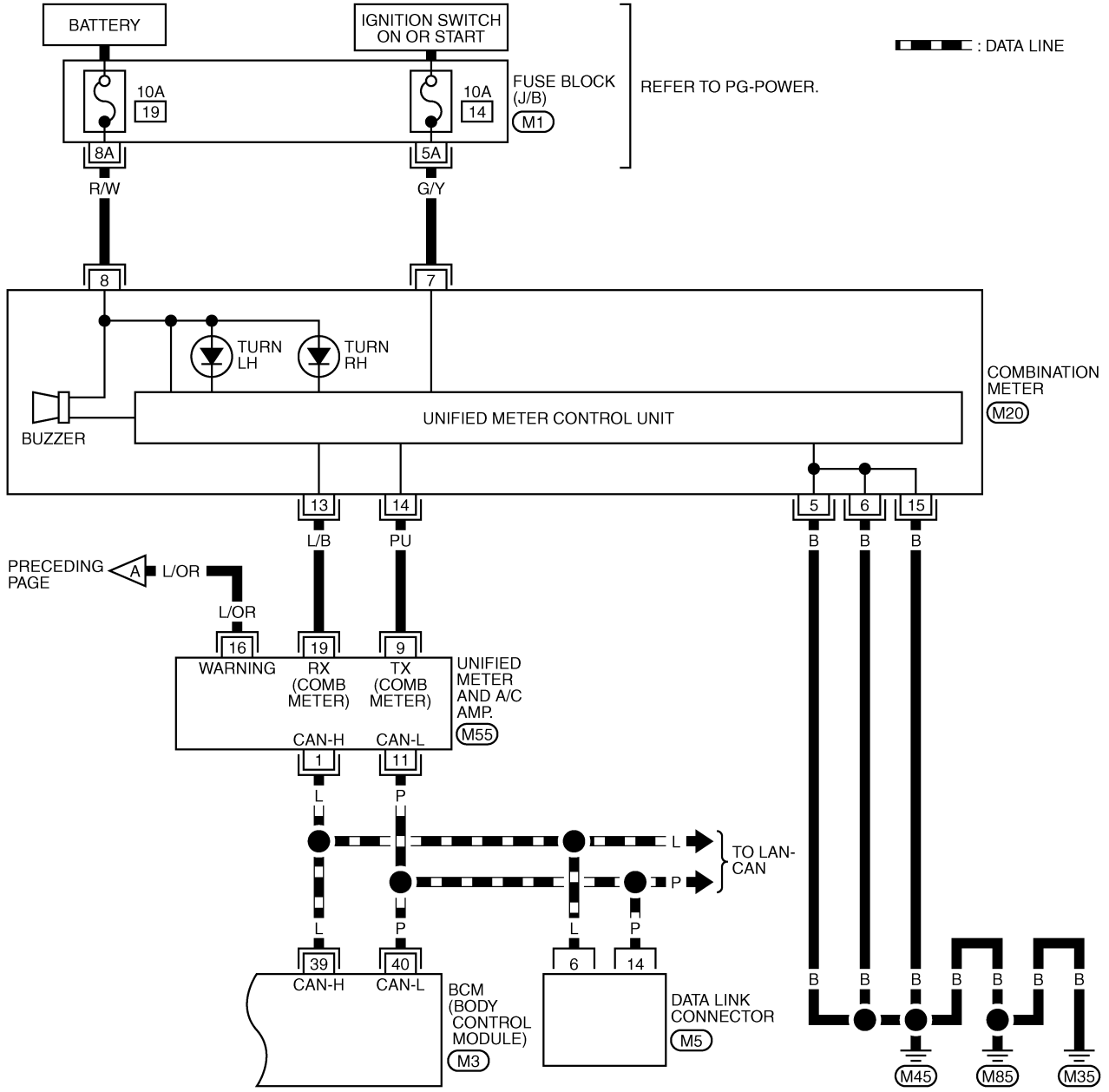
REFER TO THE FOLLOWING.

- (E21), (B1) -SUPER MULTIPLE JUNCTION (SMJ)
- (E201) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M4) -ELECTRICAL UNITS

TKWM4307E

TURN SIGNAL AND HAZARD WARNING LAMPS

LT-TURN-03



REFER TO THE FOLLOWING.

- (M1) - FUSE BLOCK-JUNCTION BOX (J/B)
- (M3) - ELECTRICAL UNITS

TKWM4308E

TURN SIGNAL AND HAZARD WARNING LAMPS

Terminals and Reference Values for BCM

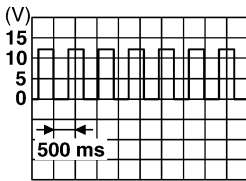
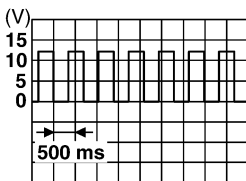
NKS002X1

CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.
- Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-II. Refer to [LT-117, "DATA MONITOR"](#).

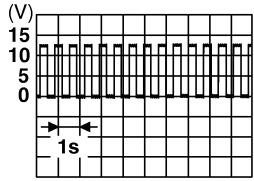
Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Turn signal switch to right	<p style="text-align: right;">PKIB4959J</p>
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Turn signal switch to left	<p style="text-align: right;">PKIB4959J</p>
11	LG	Ignition switch (ACC)	ACC	—	Battery voltage	
29	G/Y	Hazard switch signal	OFF	Hazard switch	ON	Approx. 0 V
					OFF	Battery voltage
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	<p style="text-align: right;">PKIB4960J</p>
					Any of the conditions below	<ul style="list-style-type: none"> ● Turn signal switch to right ● Turn signal switch to left <p style="text-align: right;">PKIB4958J</p>
38	W/L	Ignition switch (ON)	ON	—	Battery voltage	
39	L	CAN – H	—	—	—	
40	P	CAN – L	—	—	—	

TURN SIGNAL AND HAZARD WARNING LAMPS

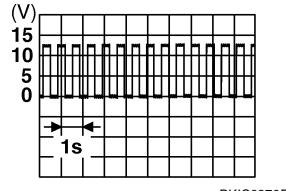
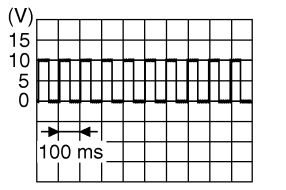
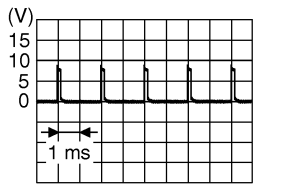
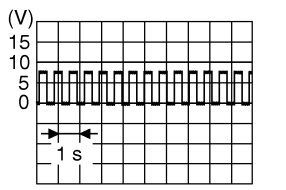
Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
42	L/R	Battery power supply	OFF	—	Battery voltage
45	G/W	Flasher output (left)	ON	Combination switch Turn left ON	 SKIA3009J
46	BR/W	Flasher output (right)	ON	Combination switch Turn right ON	 SKIA3009J
49	B	Ground	ON	—	Approx. 0 V
52	B	Ground	ON	—	Approx. 0 V
55	G	Battery power supply	OFF	—	Battery voltage

Terminals and Reference Value for Rear Combination Lamp Control Unit

NKS004R6

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
1	GY	Ignition switch (ON)	ON	—	Battery voltage
2	R	Tail lamp signal	—	Lighting switch OFF	Approx. 0 V
				Lighting switch 1ST	Battery voltage
3	P	Stop lamp signal	—	Brake pedal released (stop lamp switch OFF)	Approx. 0 V
				Brake pedal depressed (stop lamp switch ON)	Battery voltage
4	OR	Turn signal lamp LH signal	ON	Turn signal switch OFF, hazard switch OFF	Approx. 0 V
			ON	Turn signal switch LH	 PKIC6370E
			—	Hazard switch ON	

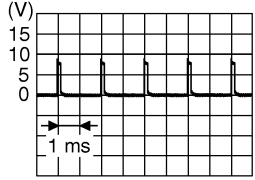
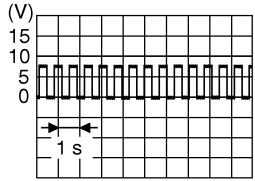
TURN SIGNAL AND HAZARD WARNING LAMPS

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
5	PU	Turn signal lamp RH signal	ON	Turn signal switch OFF, hazard switch OFF	Approx. 0 V
			ON	Turn signal switch RH	 Approx. 6.0 V
			—	Hazard switch ON	
6	SB	Warning output signal	ON	When turn signal lamp operates normally	 Approx. 5.0 V
				Except when turn signal lamp operates normally	Approx. 9.9 V
7	B	Ground	ON	—	Approx. 0 V
8	Y	Rear combination lamp RH ground	ON	—	Approx. 0 V
9	LG	Rear combination lamp drive signal (RH)	—	Lighting switch OFF, brake pedal released (stop lamp switch OFF), turn signal switch OFF, hazard switch OFF	Approx. 0 V
				Lighting switch 1ST	 Approx. 0.3 V
			ON	Turn signal switch RH	Battery voltage
			—	Hazard switch ON	 Approx. 3.7 V
10	BR	Rear combination lamp LH ground	ON	—	Approx. 0 V

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TURN SIGNAL AND HAZARD WARNING LAMPS

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
11	W	Rear combination lamp drive signal (LH)	—	Lighting switch OFF, brake pedal released (stop lamp switch OFF), turn signal switch OFF, hazard switch OFF	Approx. 0 V
				Lighting switch 1ST	 <p style="text-align: right; font-size: small;">PKIC9670E</p>
			ON	Brake pedal depressed (stop lamp switch ON) Turn signal switch LH	Battery voltage
			—	Hazard switch ON	 <p style="text-align: right; font-size: small;">PKIC9671E</p>

How to Proceed With Trouble Diagnosis

NKS002XJ

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-90, "System Description"](#).
3. Perform preliminary check. Refer to [LT-100, "Preliminary Check"](#).
4. Check symptom and repair or replace the cause of malfunction.
5. Do turn signal and hazard warning lamps operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

NKS002XK

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses.

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

Refer to [LT-94, "Wiring Diagram — TURN —"](#).

OK or NG

OK >> GO TO 2.

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

TURN SIGNAL AND HAZARD WARNING LAMPS

2. CHECK POWER SUPPLY CIRCUIT

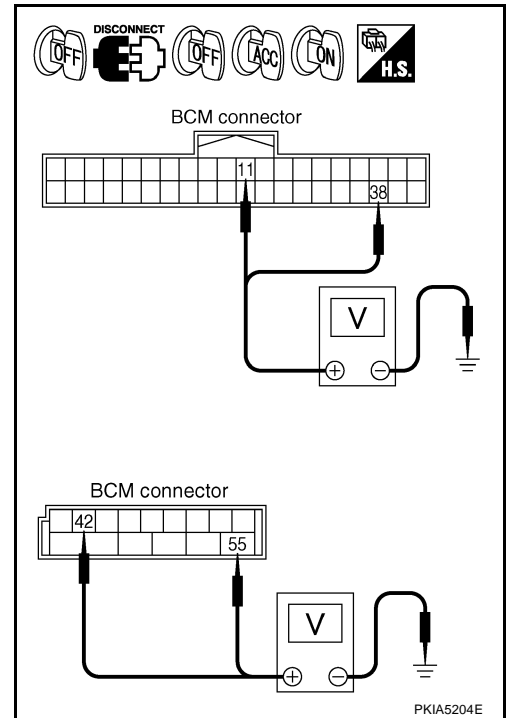
1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector and ground.

(+)		(-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M3	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK GROUND CIRCUIT

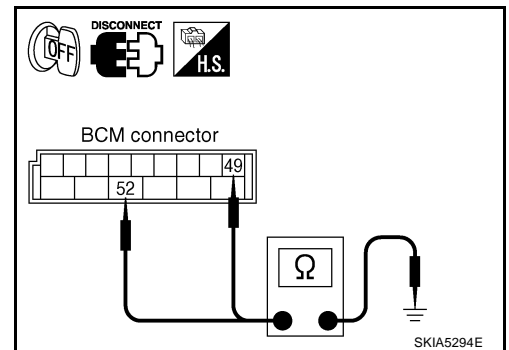
Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M4	49		Ground
	52		

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



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TURN SIGNAL AND HAZARD WARNING LAMPS

CONSULT-II Functions (BCM)

NKS002XL

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

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

CONSULT-II BASIC OPERATION

Refer to [GI-38, "CONSULT-II Start Procedure"](#) .

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 "SELECT MONITOR ITEM" screen.

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

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

Display Item List

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

ACTIVE TEST

Operation Procedure

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

Display Item List

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

TURN SIGNAL AND HAZARD WARNING LAMPS

NKS002XM

Turn Signal Lamps Do Not Operate

1. CHECK COMBINATION SWITCH INPUT SIGNAL

Ⓜ With CONSULT-II

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

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

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

ⓧ Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#).

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#).

DATA MONITOR			
MONITOR			
TURN SIGNAL R	ON		
TURN SIGNAL L	ON		
RECORD			
MODE	BACK	LIGHT	COPY

PKIA7600E

2. ACTIVE TEST

Ⓜ With CONSULT-II

1. Select "FLASHER" during active test. Refer to [LT-102, "ACTIVE TEST"](#).
2. Touch "RH" or "LH" screen.
3. Make sure turn signal lamp RH and LH operates.

Turn signal lamps should operate.

ⓧ Without CONSULT-II

GO TO 3.

OK or NG

OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).

NG >> GO TO 3.

ACTIVE TEST			
FLASHER	OFF		
RH	LH	OFF	
RECORD			
MODE	BACK	LIGHT	COPY

PKIA5276E

3. CHECK TURN SIGNAL LAMPS CIRCUIT

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

45 - 4 : Continuity should exist.

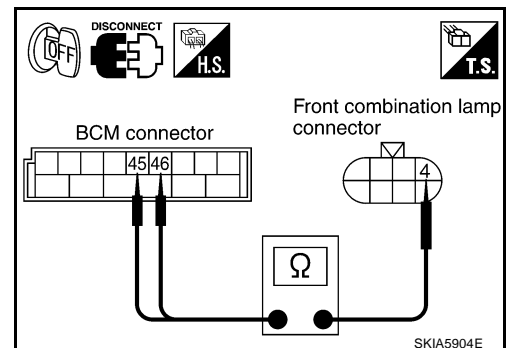
4. Check continuity between BCM harness connector M4 terminal 46 and front combination lamp RH harness connector E24 terminal 4.

46 - 4 : Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



TURN SIGNAL AND HAZARD WARNING LAMPS

4. CHECK GROUND

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

8 – Ground : Continuity should exist.

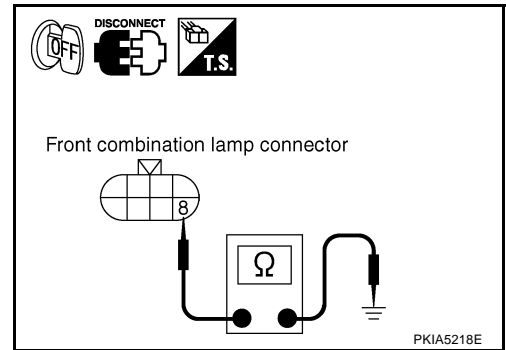
2. Check continuity between front combination lamp RH harness connector E24 terminal 8 and ground.

8 – Ground : Continuity should exist.

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



5. CHECK TURN SIGNAL LAMPS SHORT CIRCUIT

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

4 – Ground : Continuity should not exist.

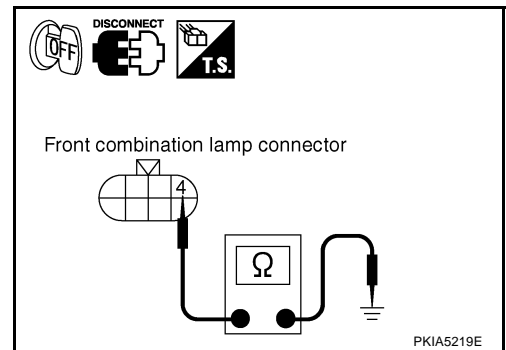
3. Check continuity (short circuit) between front combination lamp RH harness connector E24 terminal 4 and ground.

4 – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 6.

NG >> Repair harness or connector.



6. CHECK BULB

Check bulb standard of each turn signal lamp is correct.

OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#) .

NG >> Replace turn signal lamp bulb.

TURN SIGNAL AND HAZARD WARNING LAMPS

NKS002XN

Rear Turn Signal Lamp Does Not Operate

1. CHECK TAIL LAMPS AND STOP LAMPS

Make sure tail lamps and stop lamps is illuminated.

OK or NG

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

2. CHECK TURN SIGNAL LAMPS CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 45 and rear combination lamp control unit harness connector B65 terminal 4.

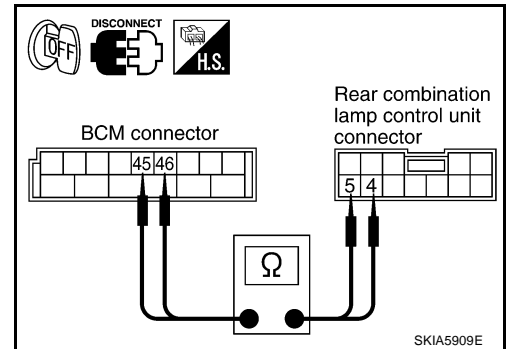
45 – 4 : Continuity should exist.

3. Check continuity between BCM harness connector M4 terminal 46 and rear combination lamp control unit harness connector B65 terminal 5.

46 – 5 : Continuity should exist.

OK or NG

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



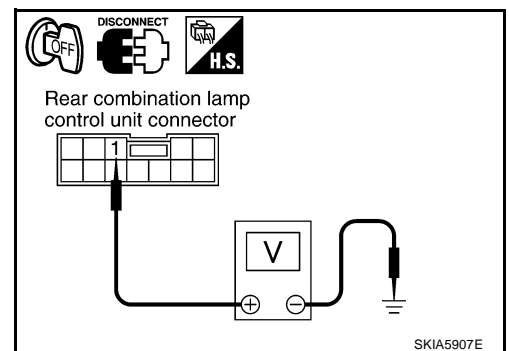
3. CHECK POWER SUPPLY CIRCUIT

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

1 – Ground : Battery voltage.

OK or NG

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



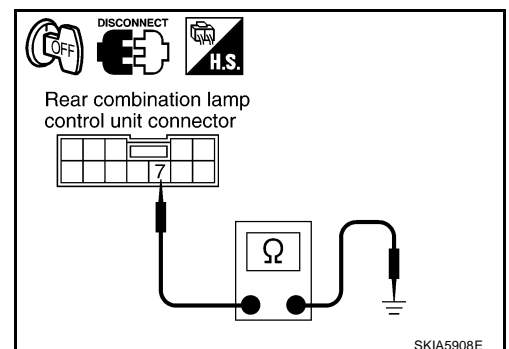
4. CHECK GROUND CIRCUIT

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

7 – Ground : Continuity should exist.

OK or NG

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



TURN SIGNAL AND HAZARD WARNING LAMPS

5. CHECK REAR COMBINATION LAMPS CIRCUIT

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

11 – 3 : Continuity should exist.

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

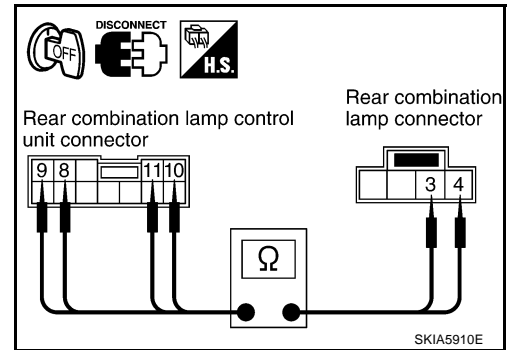
10 – 4 : Continuity should exist.

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

9 – 3 : Continuity should exist.

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

8 – 4 : Continuity should exist.



OK or NG

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

Hazard Warning Lamp Does Not Operate But Turn Signal Lamp Operate

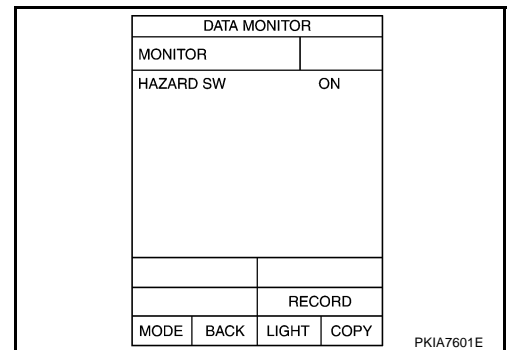
NKS002XO

1. CHECK HAZARD SWITCH INPUT SIGNAL

☑ With CONSULT-II

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

When hazard switch is ON position : HAZARD SW ON



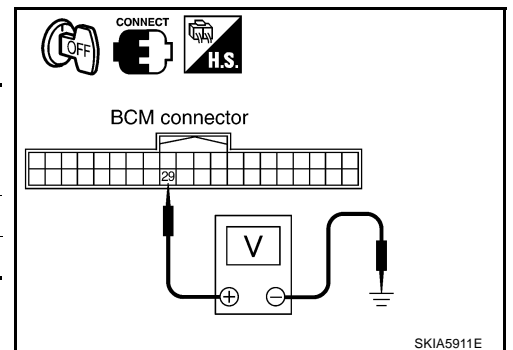
☒ Without CONSULT-II

Check voltage between BCM harness connector M3 terminal 29 and ground.

(+)		(-)	Condition	Voltage
BCM connector	Terminal			
M3	29	Ground	Hazard switch is ON	Approx. 0 V
			Hazard switch is OFF	Battery voltage

OK or NG

- OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> GO TO 2.



TURN SIGNAL AND HAZARD WARNING LAMPS

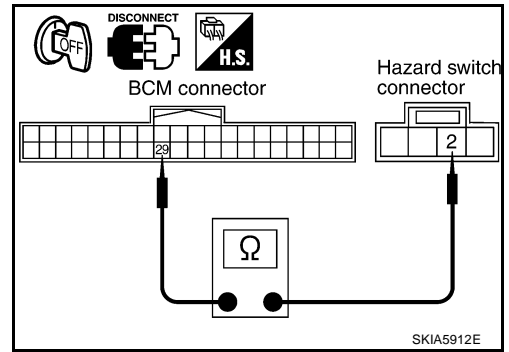
2. CHECK HAZARD SWITCH CIRCUIT

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

29 – 2 : Continuity should exist.

OK or NG

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



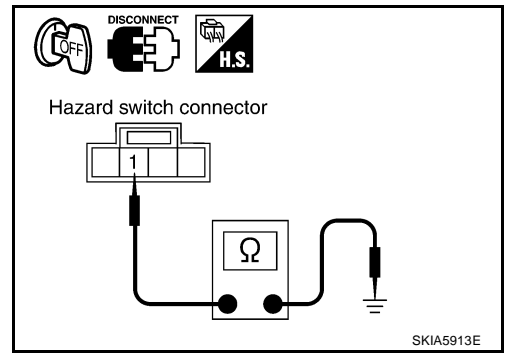
3. CHECK GROUND

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

1 – Ground : Continuity should exist.

OK or NG

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



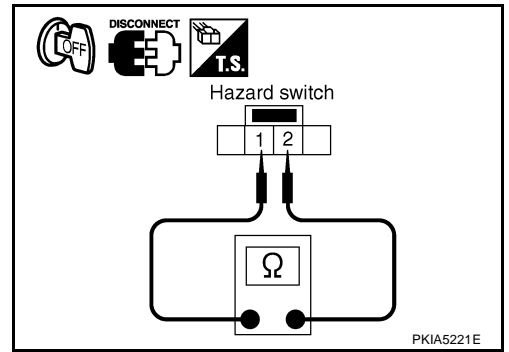
4. CHECK HAZARD SWITCH

Check continuity hazard switch.

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

OK or NG

- OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#) .
- NG >> Replace hazard switch.



TURN SIGNAL AND HAZARD WARNING LAMPS

Bulb Replacement (Front Turn Signal Lamp)

NKS002XQ

Refer to [LT-34, "Bulb Replacement"](#) .

Bulb Replacement (Rear Turn Signal Lamp)

NKS002XR

Refer to [LT-151, "Bulb Replacement"](#) .

Removal and Installation of Front Turn Signal Lamp

NKS002XS

Refer to [LT-35, "Removal and Installation"](#) .

Removal and Installation of Rear Turn Signal Lamp

NKS002XT

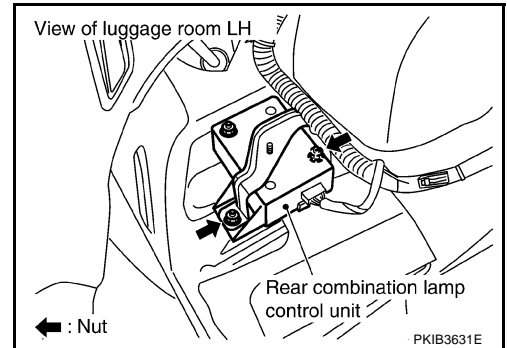
Refer to [LT-151, "Removal and Installation"](#) .

Removal and Installation of Rear Combination Lamp Control Unit

NKS002XU

REMOVAL

1. Remove luggage side box (LH). Refer to [EI-45, "Removal and Installation"](#) .
2. Remove nuts (2), and remove rear combination lamp control unit.



INSTALLATION

Installation is the reverse order of removal.

LIGHTING AND TURN SIGNAL SWITCH

LIGHTING AND TURN SIGNAL SWITCH

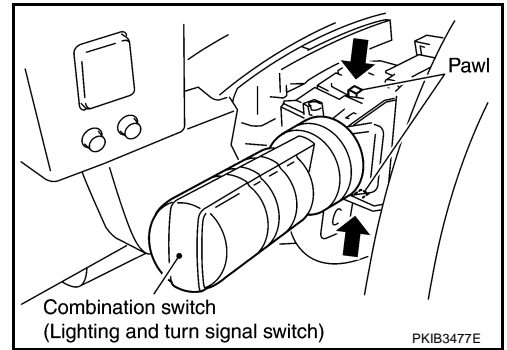
PFP:25540

Removal and Installation

NKS002XV

REMOVAL

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



INSTALLATION

Installation is the reverse order of removal.

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HAZARD SWITCH

HAZARD SWITCH

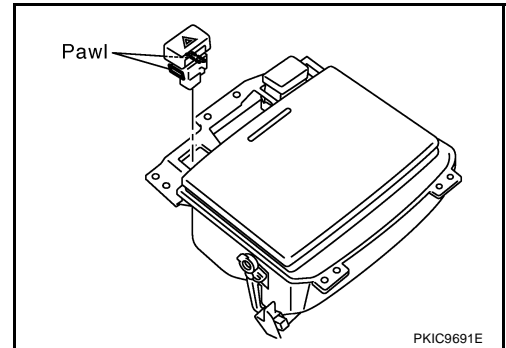
PFP:25290

Removal and Installation

NKS002XW

REMOVAL

1. Remove A/T console finisher. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
2. Disconnect the hazard switch connector.
3. Remove the drink holder.
4. Press pawl on reverse side and remove hazard switch.



INSTALLATION

Installation is the reverse order of removal.

COMBINATION SWITCH

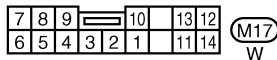
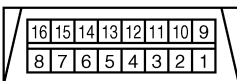
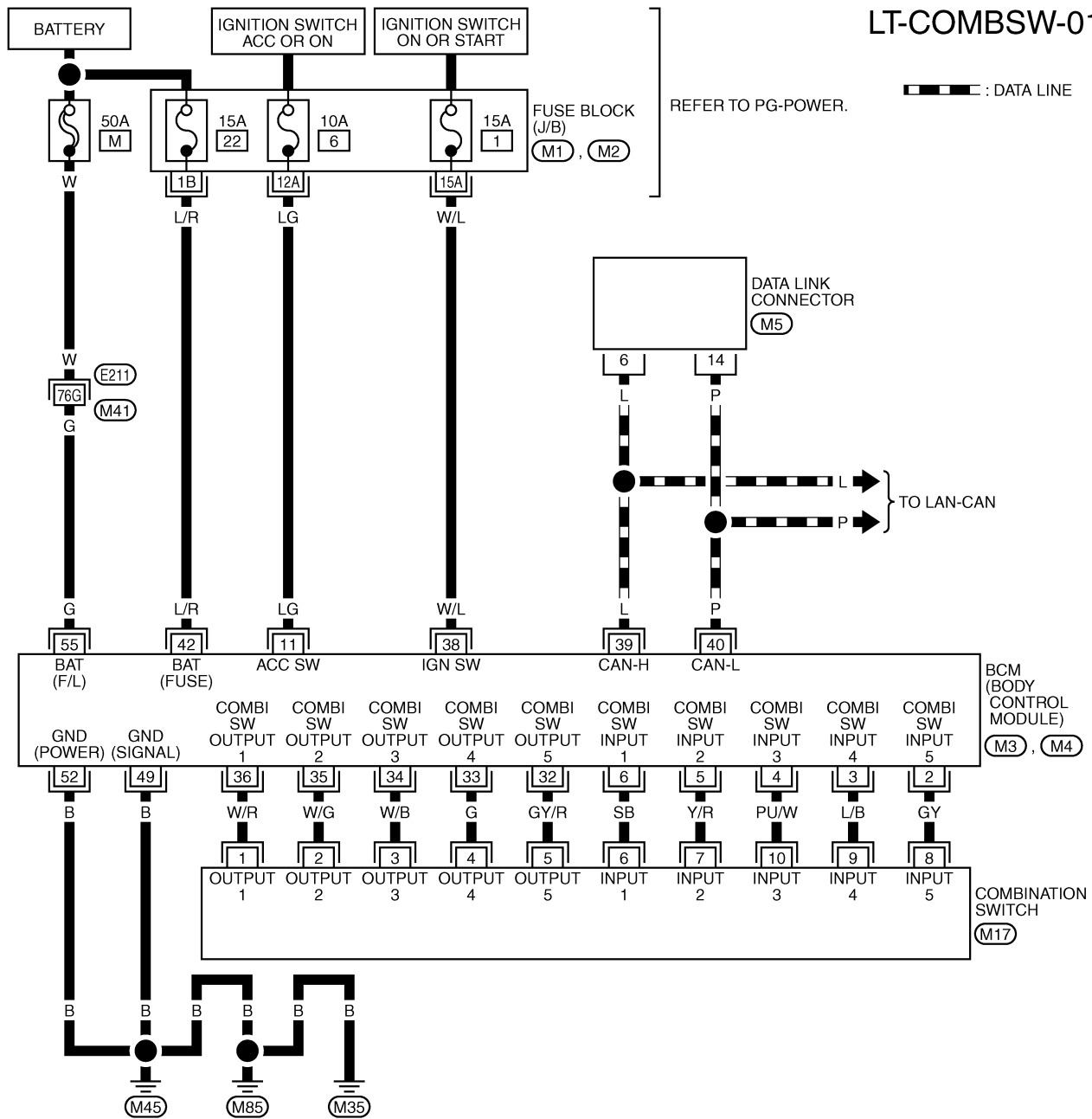
PPF:25567

COMBINATION SWITCH

Wiring Diagram — COMBSW —

NKS002XX

LT-COMBSW-01



REFER TO THE FOLLOWING.

- (E21) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

TKWM4309E

COMBINATION SWITCH

NKS003N5

Combination Switch Reading Function

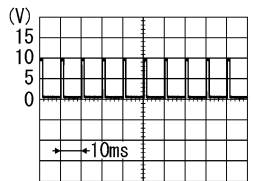
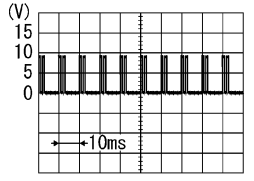
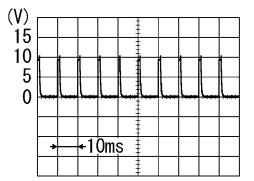
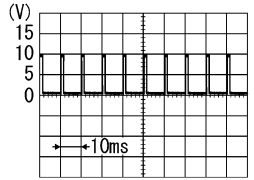
For details, refer to [BCS-3, "COMBINATION SWITCH READING FUNCTION"](#).

Terminals and Reference Values for BCM

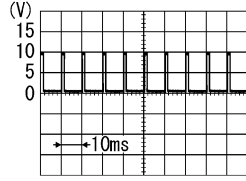
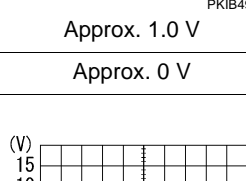
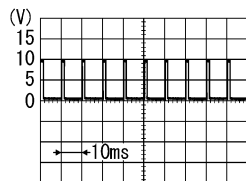
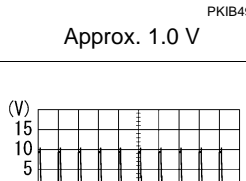
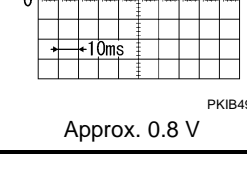
NKS003N6

CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal and wiper switch OFF not to be fluctuated by overloaded.
- Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-II. Refer to [LT-117, "DATA MONITOR"](#).

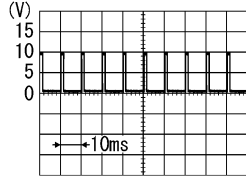
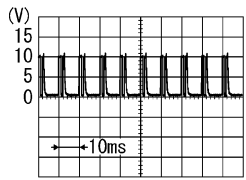
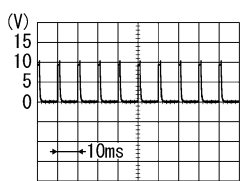
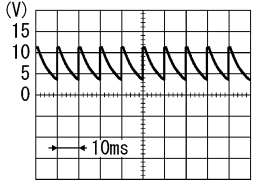
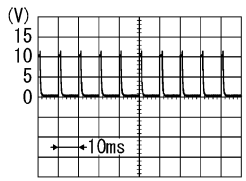
Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
2	G/Y	Combination switch input 5	ON	OFF	Approx. 0 V
				Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch 1ST ● Lighting switch HIGH BEAM (Operates only HIGH BEAM switch) ● Turn signal switch to right 	 <p>PKIB4959J</p> Approx. 1.0 V
3	L/B	Combination switch input 4	ON	Lighting switch 2ND	 <p>PKIB4953J</p> Approx. 2.0 V
				Front fog lamp switch (Operates only front fog lamp switch)	 <p>PKIB4955J</p> Approx. 0.8 V
3	L/B	Combination switch input 4	ON	Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch 2ND ● Lighting switch PASSING (Operates only PASSING switch) ● Turn signal switch to left 	 <p>PKIB4959J</p> Approx. 0.8 V

COMBINATION SWITCH

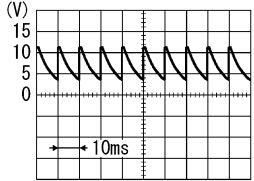
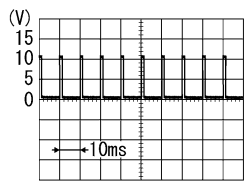
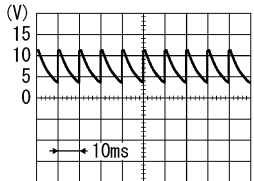
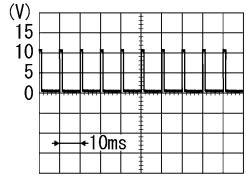
Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
4	PU/W	Combination switch input 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF Approx. 0 V 
				Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch AUTO ● Front wiper switch MIST ● Front wiper switch INT ● Front wiper switch LO 	Approx. 1.0 V 
5	Y/R	Combination switch input 2	ON	Lighting, turn, wiper switch	OFF Approx. 0 V 
				Any of the conditions below <ul style="list-style-type: none"> ● Front washer switch (Wiper intermittent dial position 4) ● Rear washer switch (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 5 ● Wiper intermittent dial position 6 	Approx. 1.0 V 
				Rear wiper switch ON (Wiper intermittent dial position 4)	Approx. 0.8 V 

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COMBINATION SWITCH

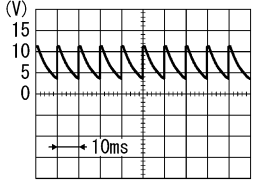
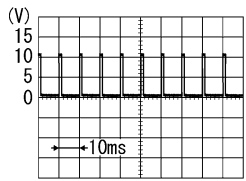
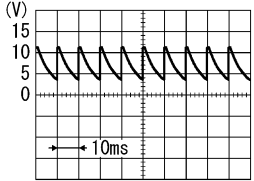
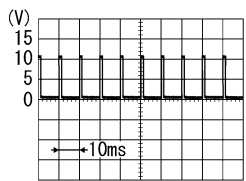
Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
6	SB	Combination switch input 1	ON	Lighting, turn, wiper switch	OFF Any of the conditions below <ul style="list-style-type: none"> ● Front wiper switch HI (Wiper intermittent dial position 4) ● Rear wiper switch INT (Wiper intermittent dial position 4) ● Wiper intermittent dial position 3 	Approx. 0 V 
					Any of the conditions below <ul style="list-style-type: none"> ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 2 	
					Any of the conditions below <ul style="list-style-type: none"> ● Wiper intermittent dial position 6 ● Wiper intermittent dial position 7 	
11	LG	Ignition switch (ACC)	ACC	—	Battery voltage	
32	GY/R	Combination switch output 5	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	
					Any of the conditions below <ul style="list-style-type: none"> ● Front fog lamp switch (Operates only front fog lamp switch) (Wiper intermittent dial position 4) ● Rear wiper switch ON (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 2 ● Wiper intermittent dial position 6 ● Wiper intermittent dial position 7 	

COMBINATION SWITCH

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch	<p>OFF (Wiper intermittent dial position 4)</p>  <p style="text-align: right; font-size: small;">PKIB4960J</p> <p style="text-align: center;">Approx. 7.2 V</p>
				<p>Any of the conditions below</p> <ul style="list-style-type: none"> ● Lighting switch AUTO (Wiper intermittent dial position 4) ● Lighting switch 1ST (The same result with lighting switch 2ND) (Wiper intermittent dial position 4) ● Rear wiper switch INT (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 5 ● Wiper intermittent dial position 6 	 <p style="text-align: right; font-size: small;">PKIB4958J</p> <p style="text-align: center;">Approx. 1.2 V</p>
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper switch	<p>OFF (Wiper intermittent dial position 4)</p>  <p style="text-align: right; font-size: small;">PKIB4960J</p> <p style="text-align: center;">Approx. 7.2 V</p>
				<p>Any of the conditions below</p> <ul style="list-style-type: none"> ● Lighting switch 2ND (Wiper intermittent dial position 4) ● Lighting switch HIGH BEAM (Operates only HIGH BEAM switch) (Wiper intermittent dial position 4) ● Rear washer switch (Wiper intermittent dial position 4) ● Wiper intermittent dial position 1 ● Wiper intermittent dial position 2 ● Wiper intermittent dial position 3 	 <p style="text-align: right; font-size: small;">PKIB4958J</p> <p style="text-align: center;">Approx. 1.2 V</p>

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COMBINATION SWITCH

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
35	W/G	Combination switch output 2	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF  <p style="text-align: right; font-size: small;">PKIB4960J</p> <p style="text-align: center;">Approx. 7.2 V</p>
					Any of the conditions below <ul style="list-style-type: none"> ● Lighting switch 2ND ● Lighting switch PASSING (Operates only PASSING switch) ● Front wiper switch INT ● Front wiper switch HI  <p style="text-align: right; font-size: small;">PKIB4958J</p> <p style="text-align: center;">Approx. 1.2 V</p>
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF  <p style="text-align: right; font-size: small;">PKIB4960J</p> <p style="text-align: center;">Approx. 7.2 V</p>
					Any of the conditions below <ul style="list-style-type: none"> ● Turn signal switch to right ● Turn signal switch to left ● Front wiper switch MIST ● Front wiper switch LO ● Front washer switch  <p style="text-align: right; font-size: small;">PKIB4958J</p> <p style="text-align: center;">Approx. 1.2 V</p>
38	W/L	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN – H	—	—	—
40	P	CAN – L	—	—	—
42	L/R	Battery power supply	OFF	—	Battery voltage
49	B	Ground	ON	—	Approx. 0 V
52	B	Ground	ON	—	Approx. 0 V
55	G	Battery power supply	OFF	—	Battery voltage

COMBINATION SWITCH

CONSULT-II Functions (BCM)

NKS002XZ

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

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

CONSULT-II BASIC OPERATION

Refer to [GI-38, "CONSULT-II Start Procedure"](#).

DATA MONITOR

Operation Procedure

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

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

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

Display Item List

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

NOTE:

This item is displayed, but cannot be monitored

COMBINATION SWITCH

Combination Switch Inspection

NKS002Y0

1. SYSTEM CHECK

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

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

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

2. SYSTEM CHECK

Ⓜ With CONSULT-II

CAUTION:

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

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

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

PKIA7602E

ⓧ Without CONSULT-II

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

Check results

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

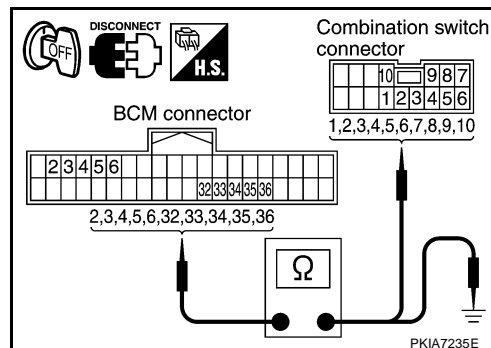
Other switches in malfunctioning system do not operate normally.>> GO TO 3.

COMBINATION SWITCH

3. CHECK HARNESS

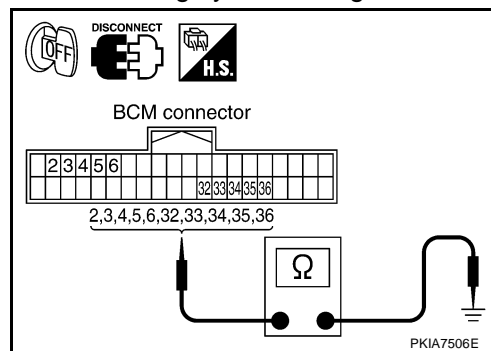
1. Turn ignition switch OFF.
2. Disconnect BCM connector and combination switch connector.
3. Check for continuity between BCM harness connector of the suspect system and the corresponding combination switch harness connector.

Suspect system	BCM		Combination switch		Continuity	
	Connector	Terminal	Connector	Terminal		
1	M3	Input 1	6	M17	6	Yes
		Output 1	36		1	
2		Input 2	5		7	
		Output 2	35		2	
3		Input 3	4		10	
		Output 3	34		3	
4		Input 4	3		9	
		Output 4	33		4	
5		Input 5	2		8	
		Output 5	32		5	



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

Suspect system	BCM connector	Terminal		Continuity	
1	M3	Input 1	6	Ground	No
		Output 1	36		
2		Input 2	5		
		Output 2	35		
3		Input 3	4		
		Output 3	34		
4		Input 4	3		
		Output 4	33		
5		Input 5	2		
		Output 5	32		



OK or NG

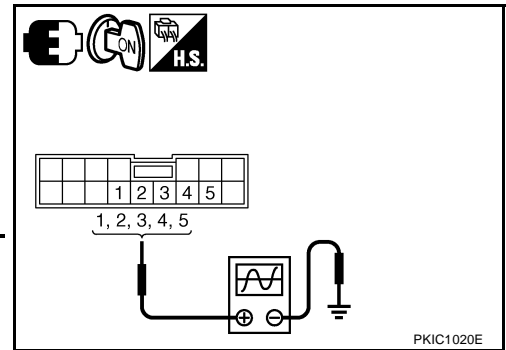
OK >> GO TO 4.

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

COMBINATION SWITCH

4. CHECK BCM OUTPUT TERMINAL

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



Suspect system	(+)		(-)	Reference value
	Combination switch connector	Terminal		
1	M17	1	Ground	
2		2		
3		3		
4		4		
5		5		

OK or NG

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

NG >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .

5. CHECK COMBINATION SWITCH

Referring to table below, perform combination switch inspection.

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

>> INSPECTION END

Removal and Installation

NKS002Y1

Refer to [LT-109, "LIGHTING AND TURN SIGNAL SWITCH"](#) and [WW-37, "Removal and Installation of Front Wiper and Washer Switch"](#) .

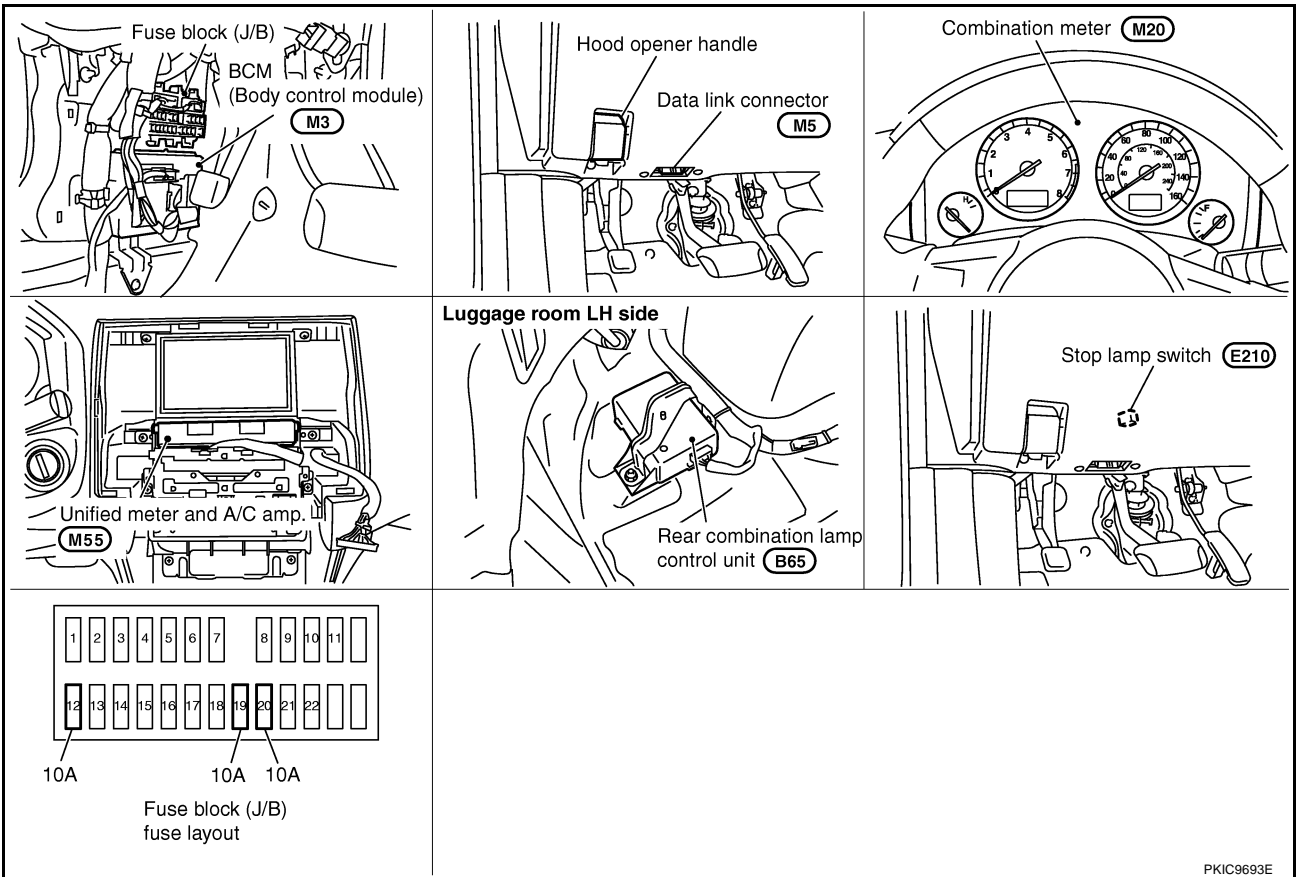
STOP LAMP

STOP LAMP

PF2:26550

Component Parts and Harness Connector Location

NKS002Y2



System Description

NKS002Y3

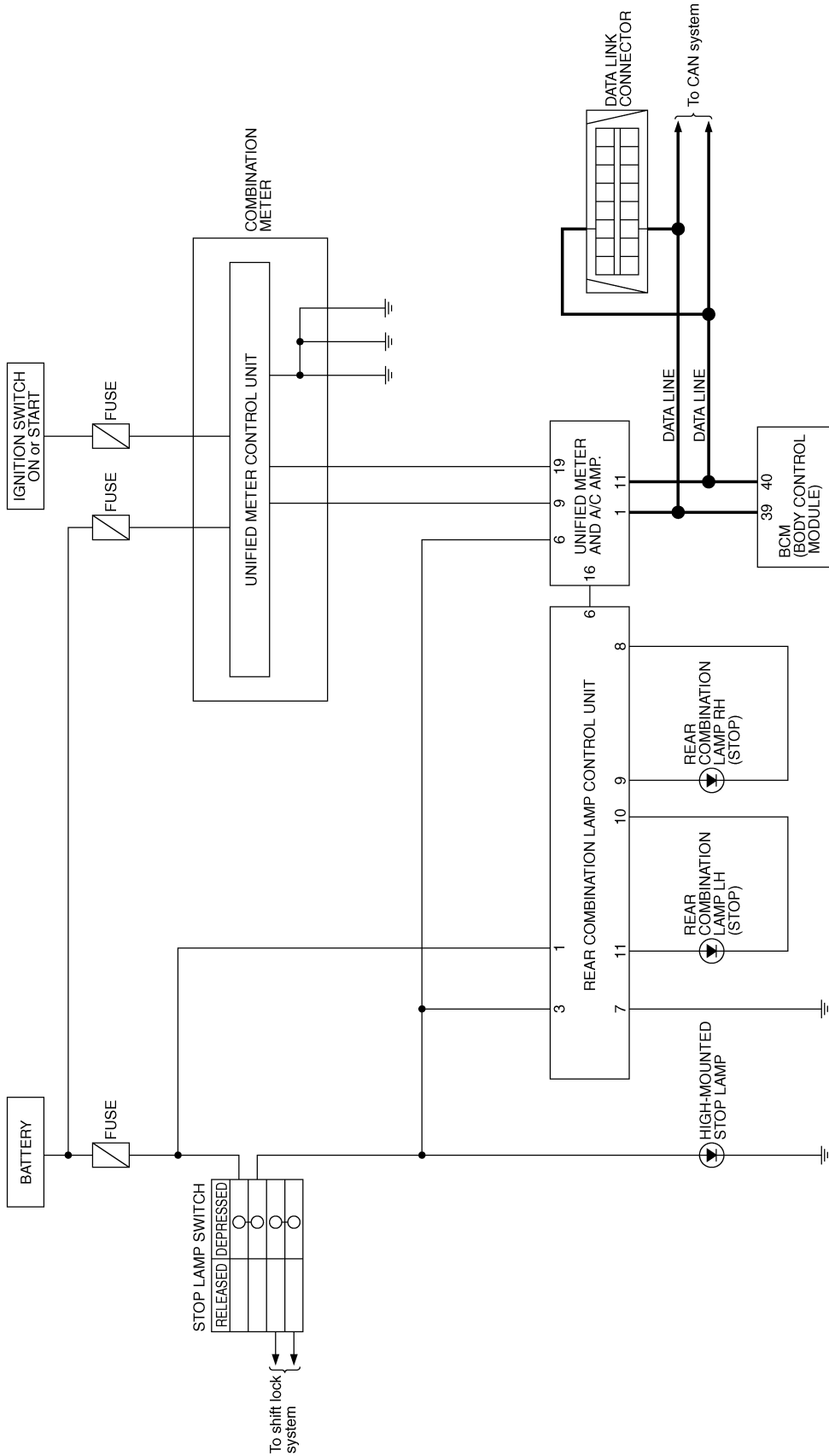
The current that flows by Rear combination lamp control unit is controlled, and a stop lamp (LED) is made to turn on.

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STOP LAMP

Schematic

NKS002Y4



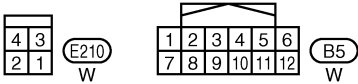
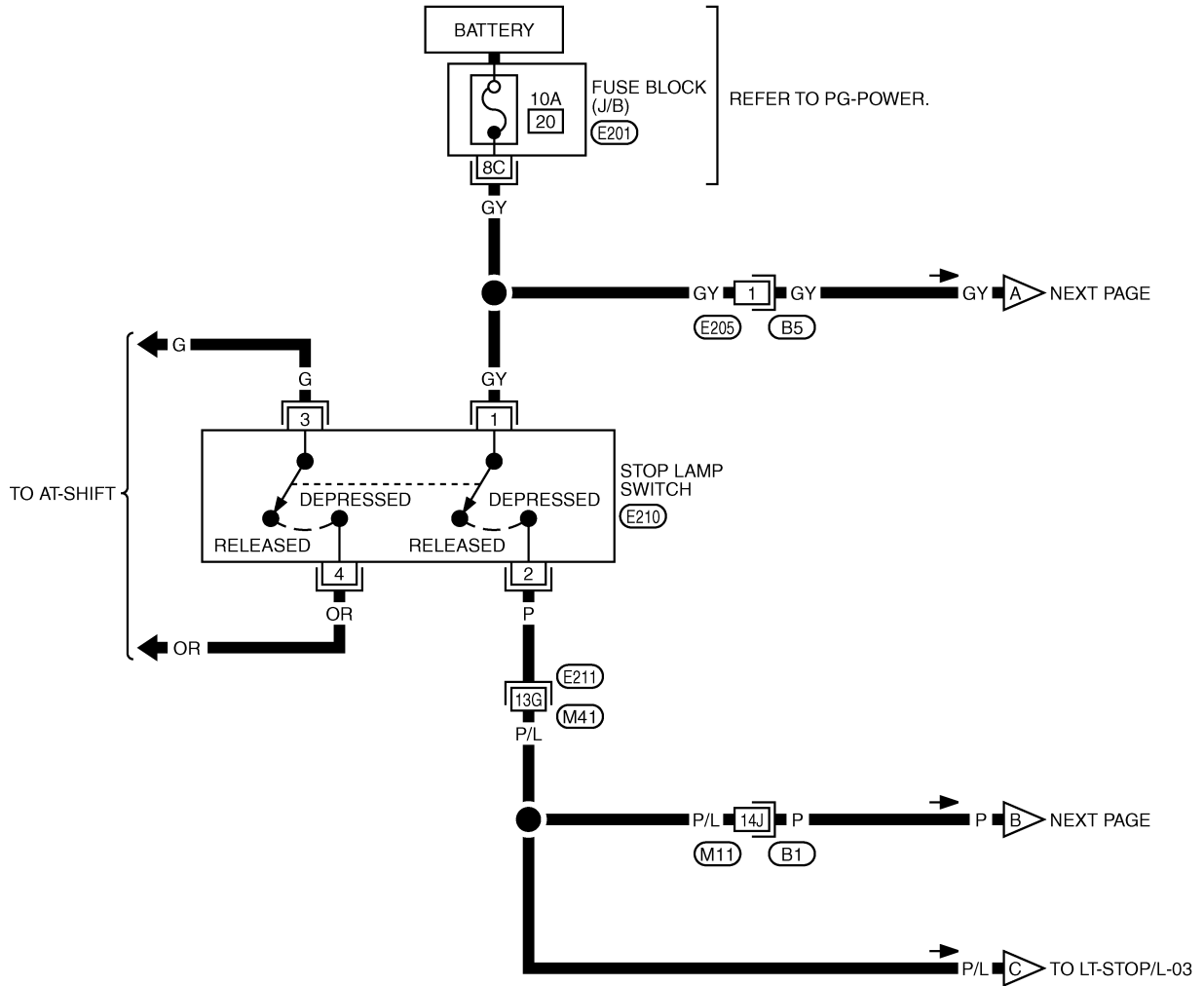
TKWM0625E

STOP LAMP

Wiring Diagram — STOP/L —

NKS002Y5

LT-STOP/L-01

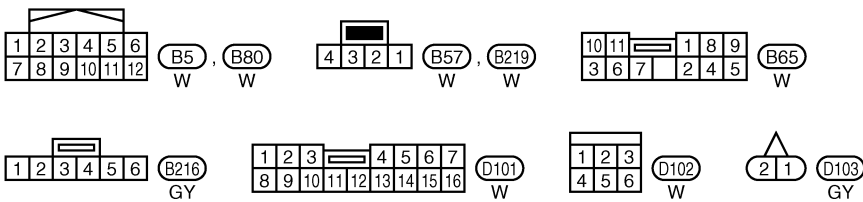
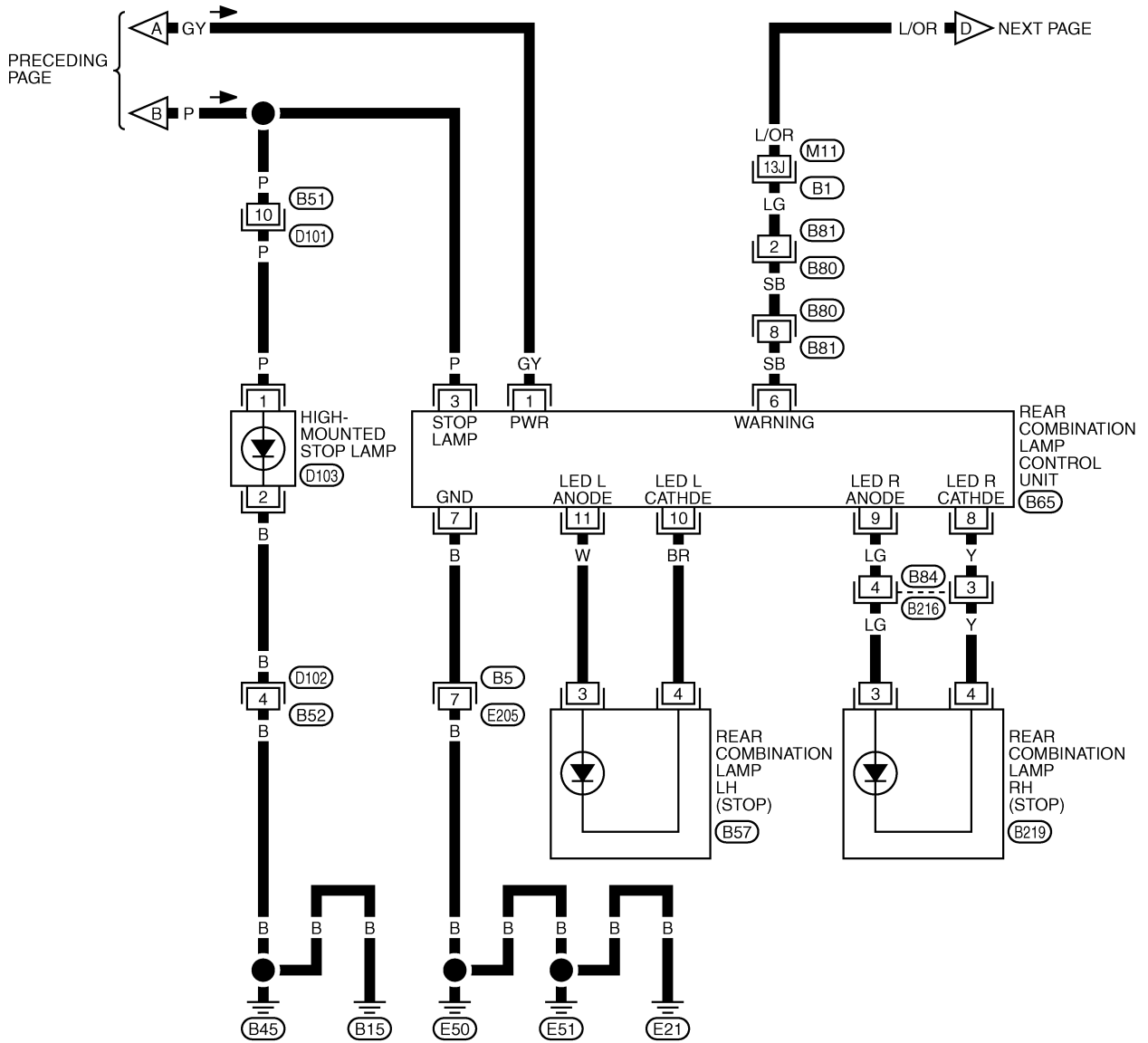


REFER TO THE FOLLOWING.
 (E211), (B1) -SUPER MULTIPLE JUNCTION (SMJ)
 (E201) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM4310E

STOP LAMP

LT-STOP/L-02



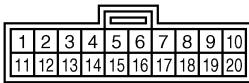
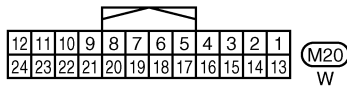
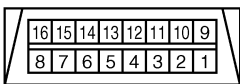
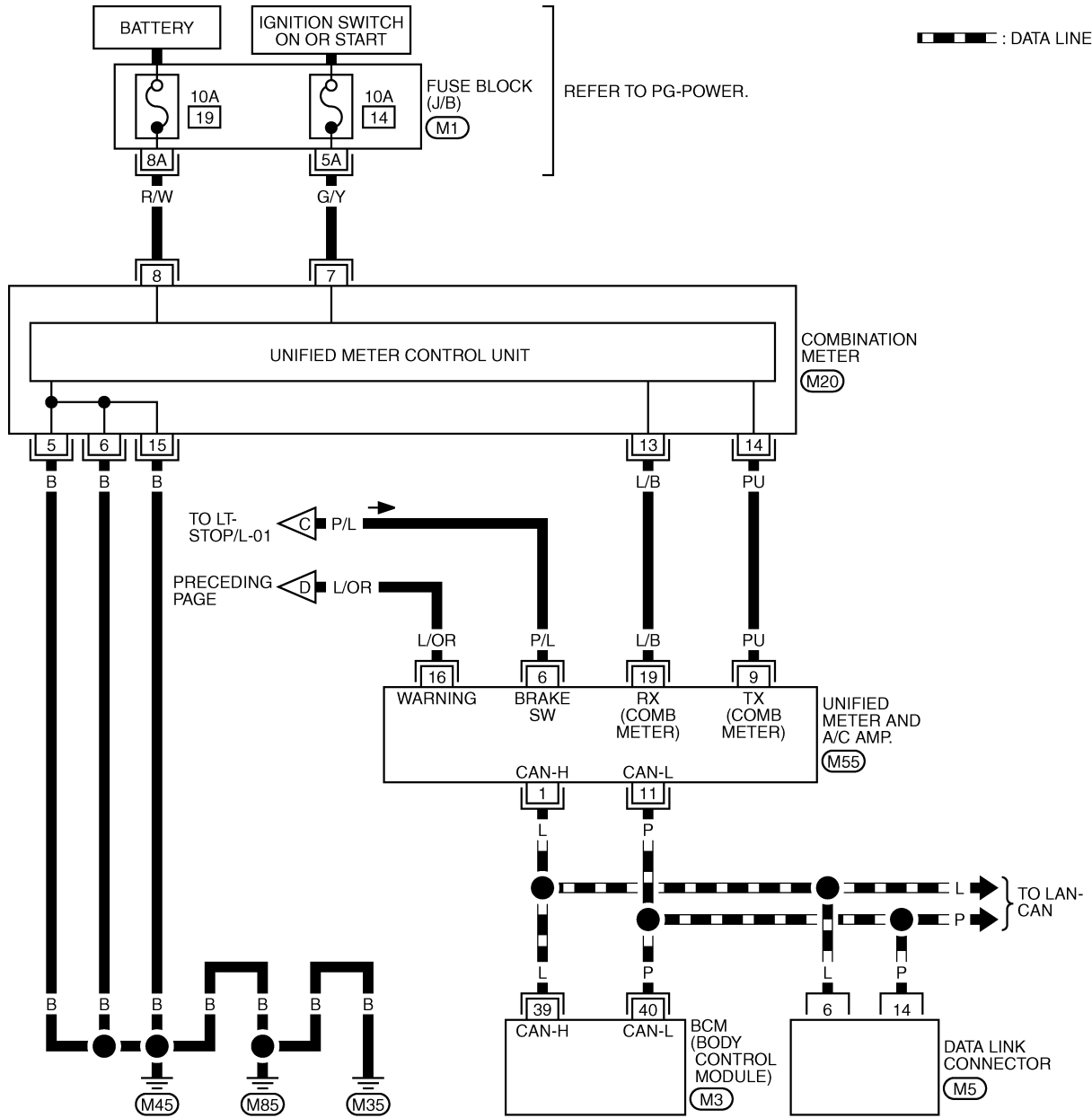
REFER TO THE FOLLOWING.
 (B1) -SUPER MULTIPLE
 JUNCTION (SMJ)

TKWM4311E

STOP LAMP

LT-STOP/L-03

▬ : DATA LINE



REFER TO THE FOLLOWING.

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

(M3) - ELECTRICAL UNITS

TKWM4312E

STOP LAMP

Terminals and Reference Value for Rear Combination Lamp Control Unit

NKS003N9

Refer to [LT-126, "Terminals and Reference Value for Rear Combination Lamp Control Unit"](#).

Stop Lamp Does Not Operate

NKS002Y6

1. CHECK TAIL LAMP AND TURN SIGNAL LAMP

Make sure tail lamps and turn signal lamps is illuminated.

OK or NG

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

2. CHECK FUSE

Check fuse No.20 is blow out.

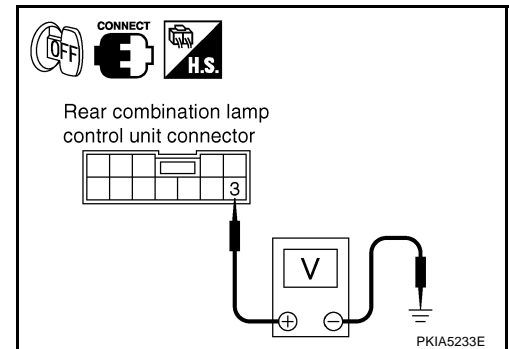
OK or NG

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

3. CHECK INPUT SIGNAL

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

(+)		(-)	Condition	Voltage
BCM con- nector	Terminal			
B65	3	Ground	Stop lamp switch is ON. (Depressed)	Battery voltage
			Stop lamp switch is OFF. (Released)	Approx. 0 V



OK or NG

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

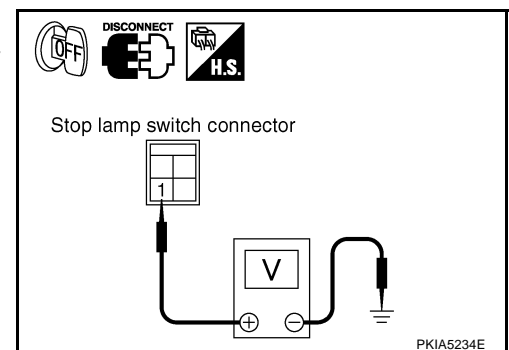
4. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

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

1 – Ground : Battery voltage.

OK or NG

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



STOP LAMP

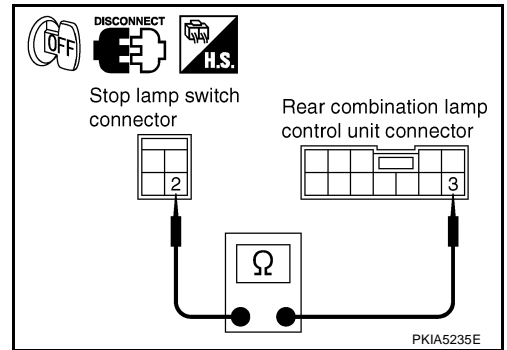
5. CHECK STOP LAMP SWITCH CIRCUIT

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

2 – 3 : Continuity should exist.

OK or NG

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



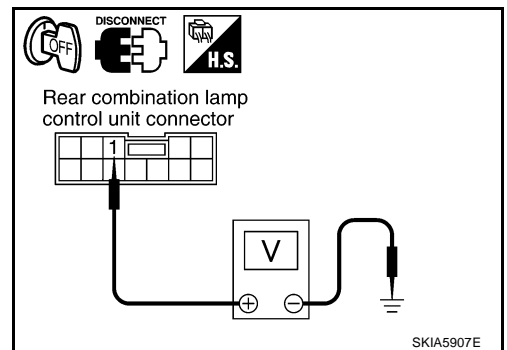
6. CHECK POWER SUPPLY CIRCUIT

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

1 – Ground : Battery voltage.

OK or NG

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



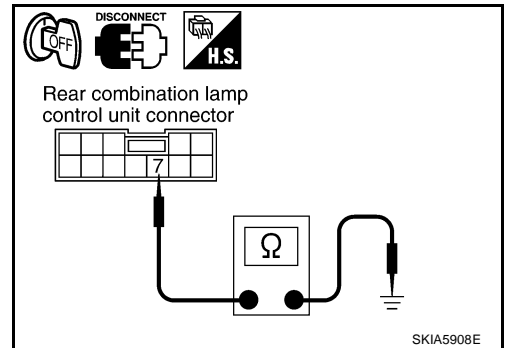
7. CHECK GROUND CIRCUIT

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

7 – Ground : Continuity should exist.

OK or NG

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



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STOP LAMP

8. CHECK STOP LAMPS CIRCUIT

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

11 – 3 : Continuity should exist.

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

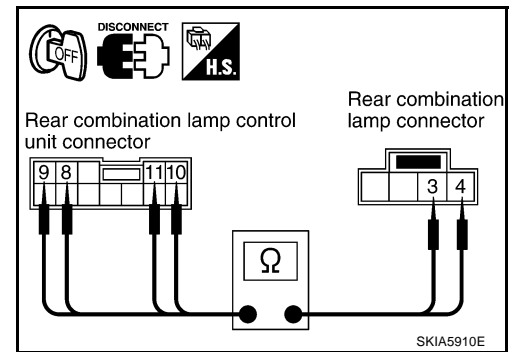
10 – 4 : Continuity should exist.

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

9 – 3 : Continuity should exist.

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

8 – 4 : Continuity should exist.



OK or NG

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

High-Mounted Stop Lamp BULB REPLACEMENT, REMOVAL AND INSTALLATION

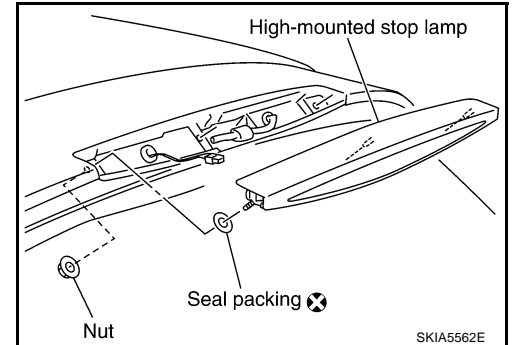
NKS002Y7

1. Remove cap from back door finisher and remove nuts. Refer to [EI-47, "Removal and Installation"](#) .
2. Disconnect high-mounted stop lamp connector.
3. Remove washer tube from high-mounted stop lamp, and remove high-mounted stop lamp from the rear air spoiler.
4. Remove seal packing from the rear air spoiler.
5. Installation is the reverse order of removal.

High-mounted stop lamp : LED

CAUTION:

Seal packing cannot be reused.



Stop Lamp BULB REPLACEMENT

NKS002Y8

Refer to [LT-151, "Bulb Replacement"](#) .

REMOVAL AND INSTALLATION

Refer to [LT-151, "Removal and Installation"](#) .

Rear Combination Lamp Control Unit REMOVAL AND INSTALLATION

NKS002Y9

Refer to [LT-108, "Removal and Installation of Rear Combination Lamp Control Unit"](#) .

BACK-UP LAMP

PPF:26550

BACK-UP LAMP

Wiring Diagram — BACK/L —

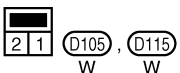
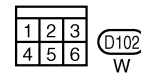
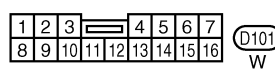
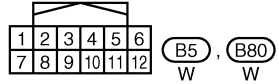
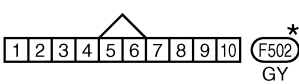
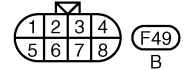
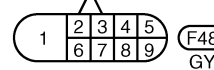
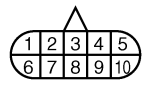
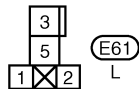
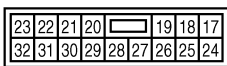
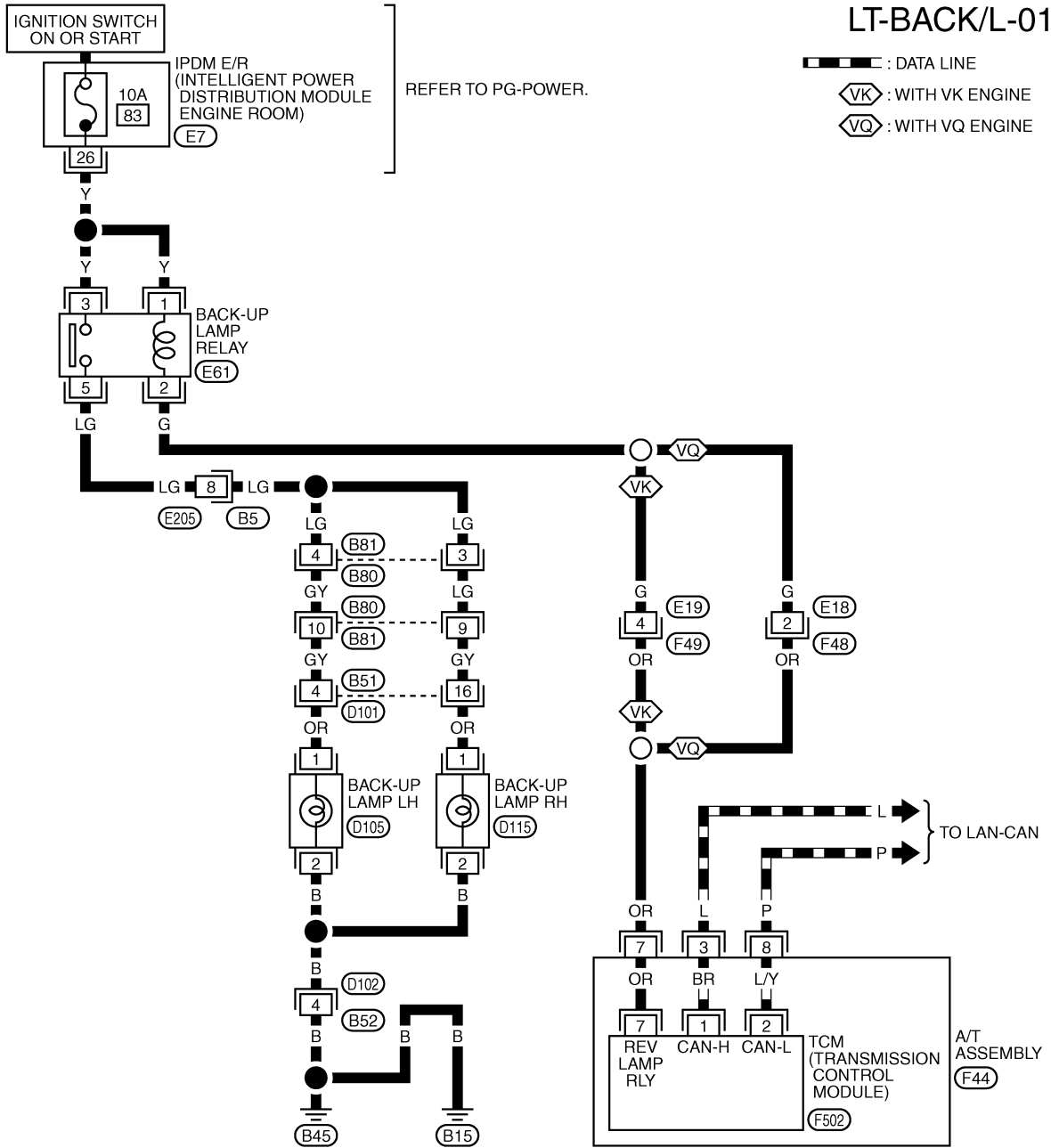
NKS003GW

LT-BACK/L-01

— : DATA LINE

◊VK◊ : WITH VK ENGINE

◊VQ◊ : WITH VQ ENGINE



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

TKWM4313E

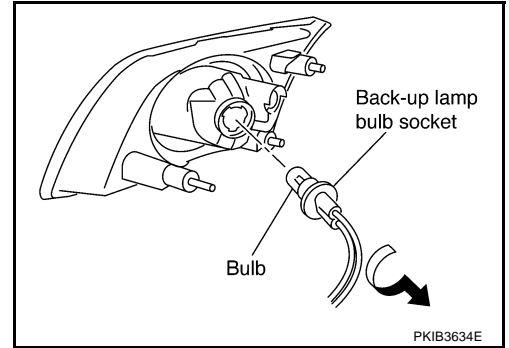
BACK-UP LAMP

Bulb Replacement

1. Remove rear combination lamp (back door side).
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.

Back-up lamp : 12 V - 18 W

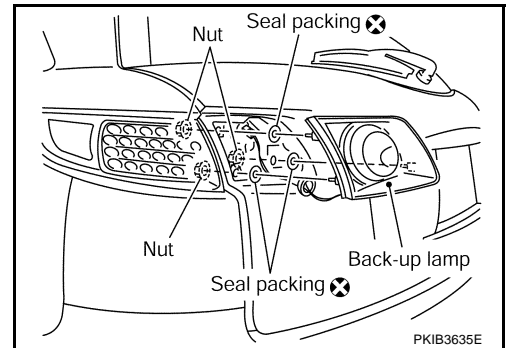
NKS003GX



Removal and Installation

1. Remove back door finisher. Refer to [EI-47, "Removal and Installation"](#).
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting nuts.
4. Remove rear combination lamp from back door.
5. Remove seal packing from back door.

NKS003GY



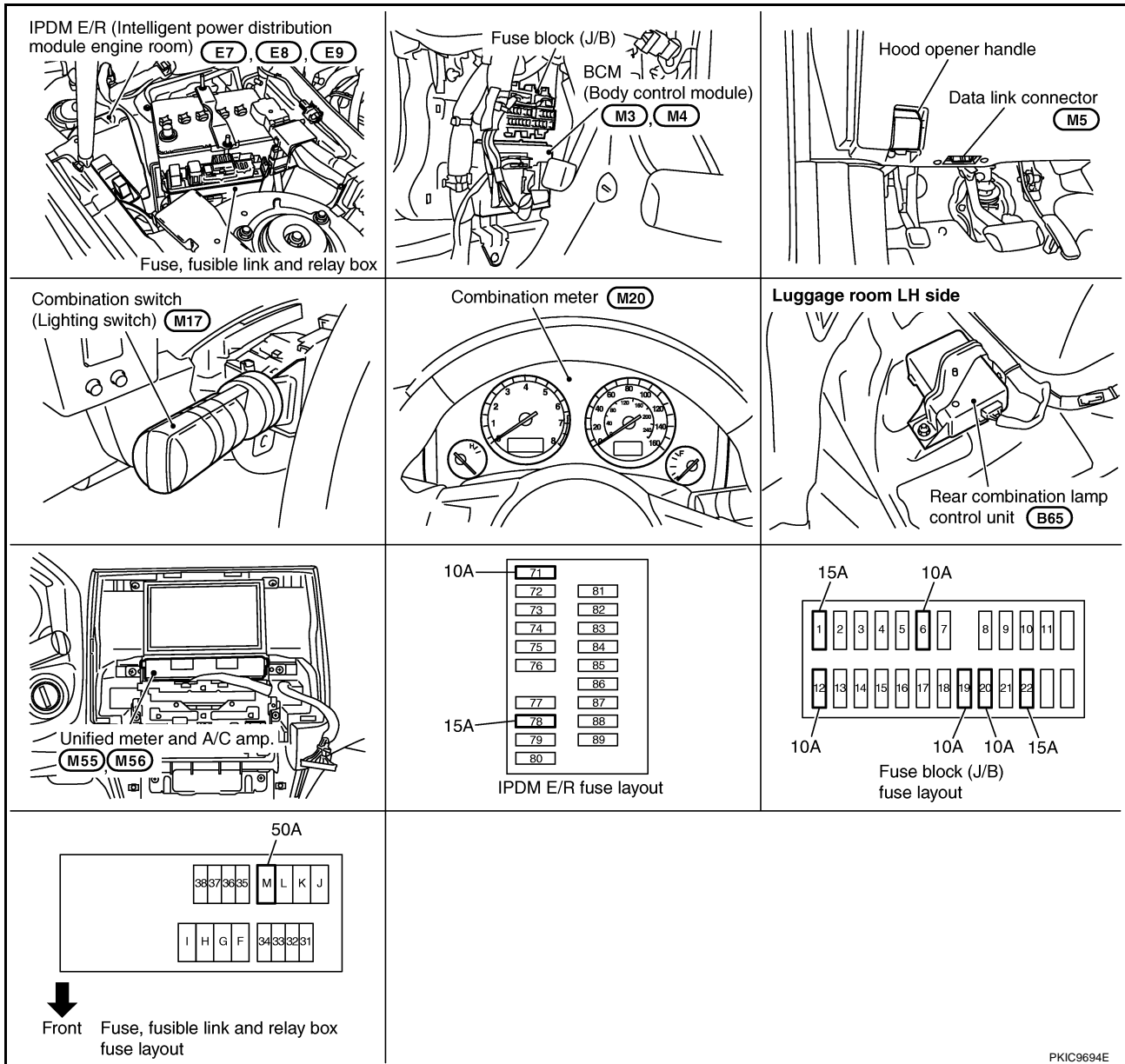
PARKING, LICENSE PLATE AND TAIL LAMPS

PARKING, LICENSE PLATE AND TAIL LAMPS

PPF:26550

Component Parts and Harness Connector Location

NKS003GZ



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System Description

NKS003H0

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

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

OUT LINE

Power is supplied at all times

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

PARKING, LICENSE PLATE AND TAIL LAMPS

- to CPU located in IPDM E/R,
- through 15A fuse (No. 78, located in IPDM E/R)
- to CPU located in IPDM E/R.
- through 50A fusible link (letter M, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 15A fuse [No. 22, located in fuse block (J/B)]
- to BCM terminal 42,
- through 10A fuse [No. 20, located in fuse block (J/B)]
- to rear combination lamp control unit terminal 1,
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8 and
- to unified meter and A/C amp. terminal 21.

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

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

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

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

Ground is supplied

- to rear combination lamp control unit terminal 7 and
- to IPDM E/R terminals 38 and 60
- through grounds E21, E50 and E51,
- to BCM terminals 49 and 52
- to combination meter terminals 5, 6 and 15, and
- to unified meter and A/C amp. terminals 29 and 30
- through grounds M35, M45 and M85.

OPERATION BY LIGHTING SWITCH

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

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

Ground is supplied at all times

- to front side marker lamp LH terminal 2
- through grounds E21, E50 and E51,

PARKING, LICENSE PLATE AND TAIL LAMPS

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

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

COMBINATION SWITCH READING FUNCTION

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

EXTERIOR LAMP BATTERY SAVER CONTROL

When the combination switch (lighting switch) is in the 1ST (or 2ND) position, and the ignition switch is turned from ON or ACC to OFF, the battery saver control feature is activated.

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

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

CAN Communication System Description

NKS003H1

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

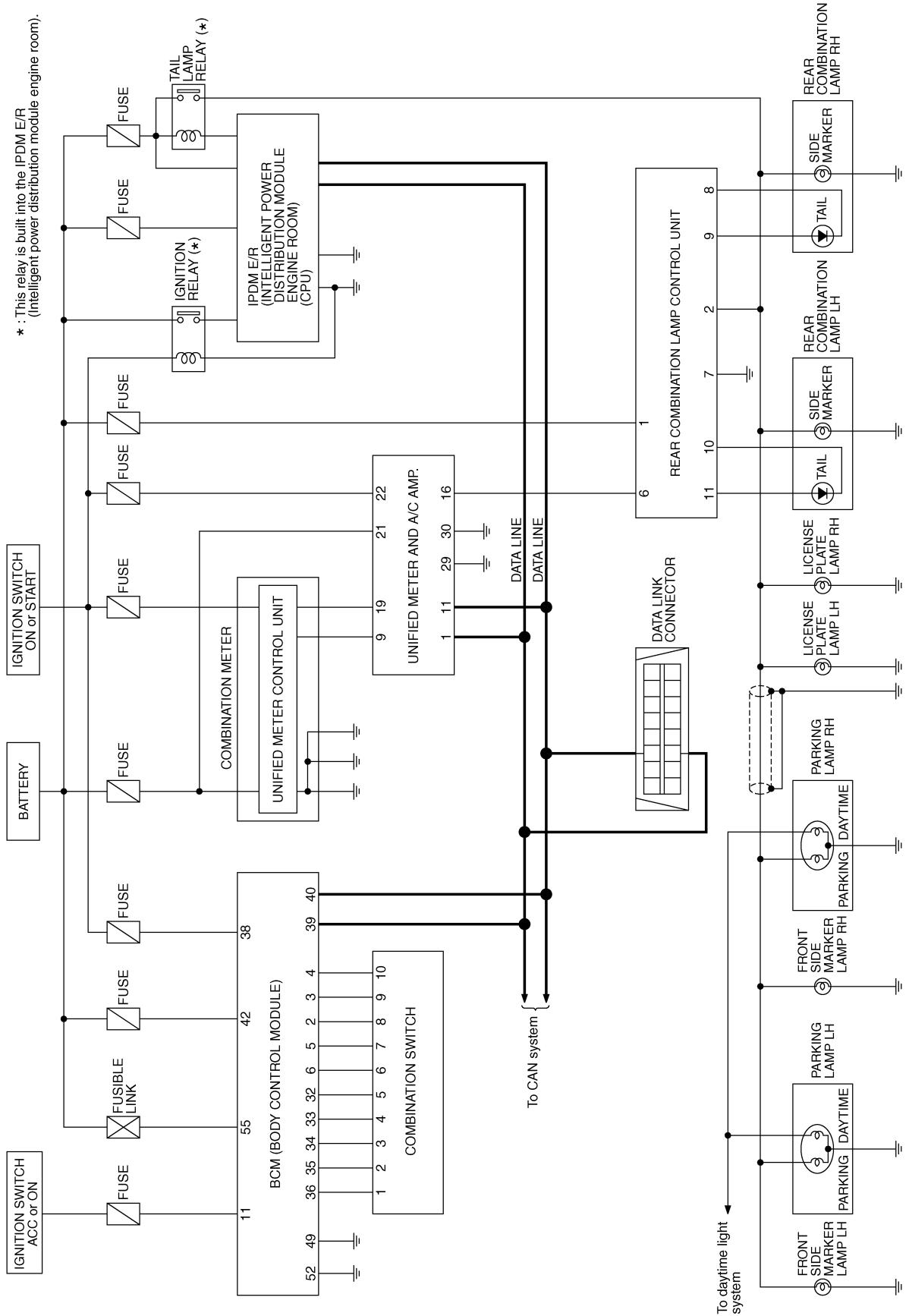
NKS003H2

Refer to [LAN-49, "CAN System Specification Chart"](#) .

PARKING, LICENSE PLATE AND TAIL LAMPS

Schematic

NKS003H3



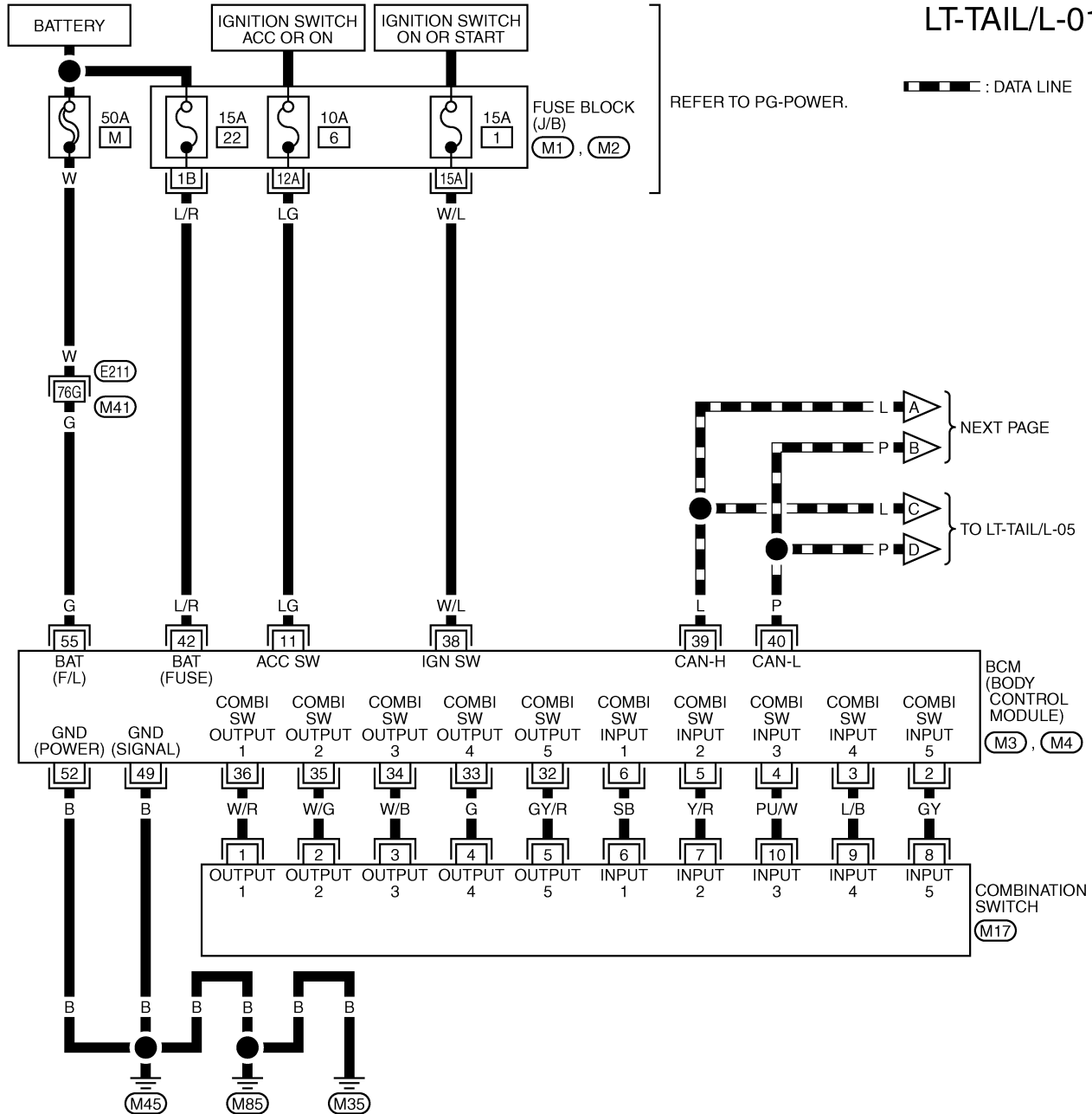
TKWM4321E

PARKING, LICENSE PLATE AND TAIL LAMPS

Wiring Diagram — TAIL/L —

NKS003H4

LT-TAIL/L-01



— — — — — : DATA LINE

REFER TO PG-POWER.

NEXT PAGE

TO LT-TAIL/L-05

BCM (BODY CONTROL MODULE) (M3), (M4)

COMBINATION SWITCH (M17)

7	8	9	10	13	12
6	5	4	3	2	1

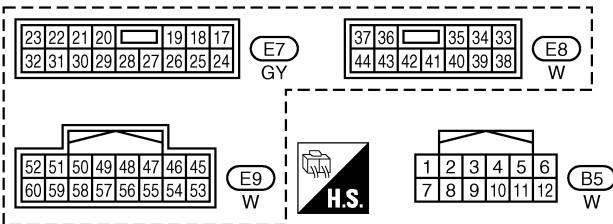
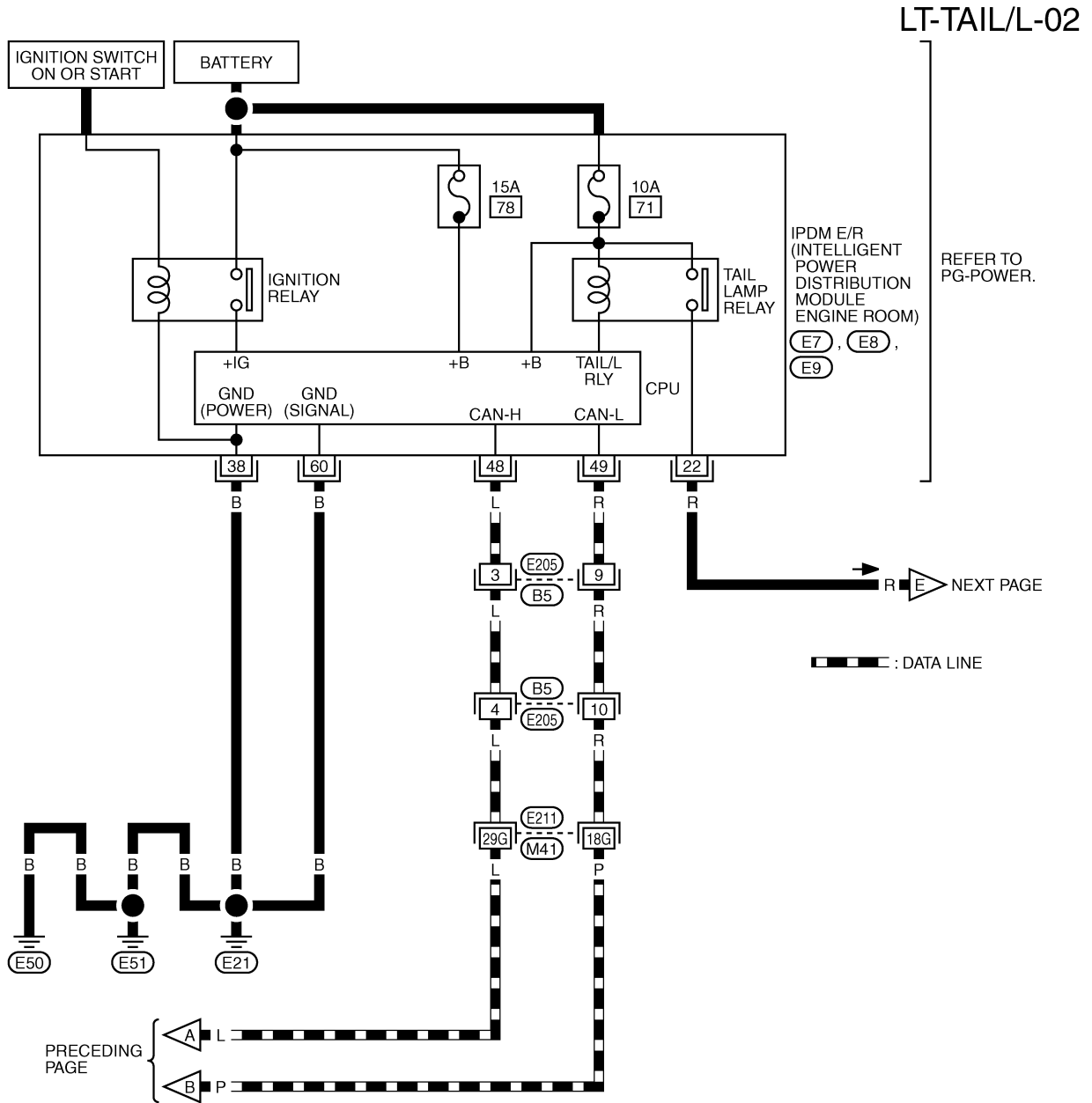
(M17) W

REFER TO THE FOLLOWING.

- (E211) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

TKWM4322E

PARKING, LICENSE PLATE AND TAIL LAMPS



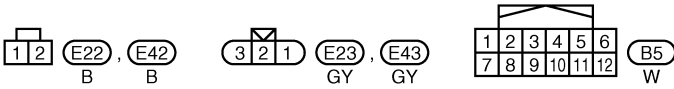
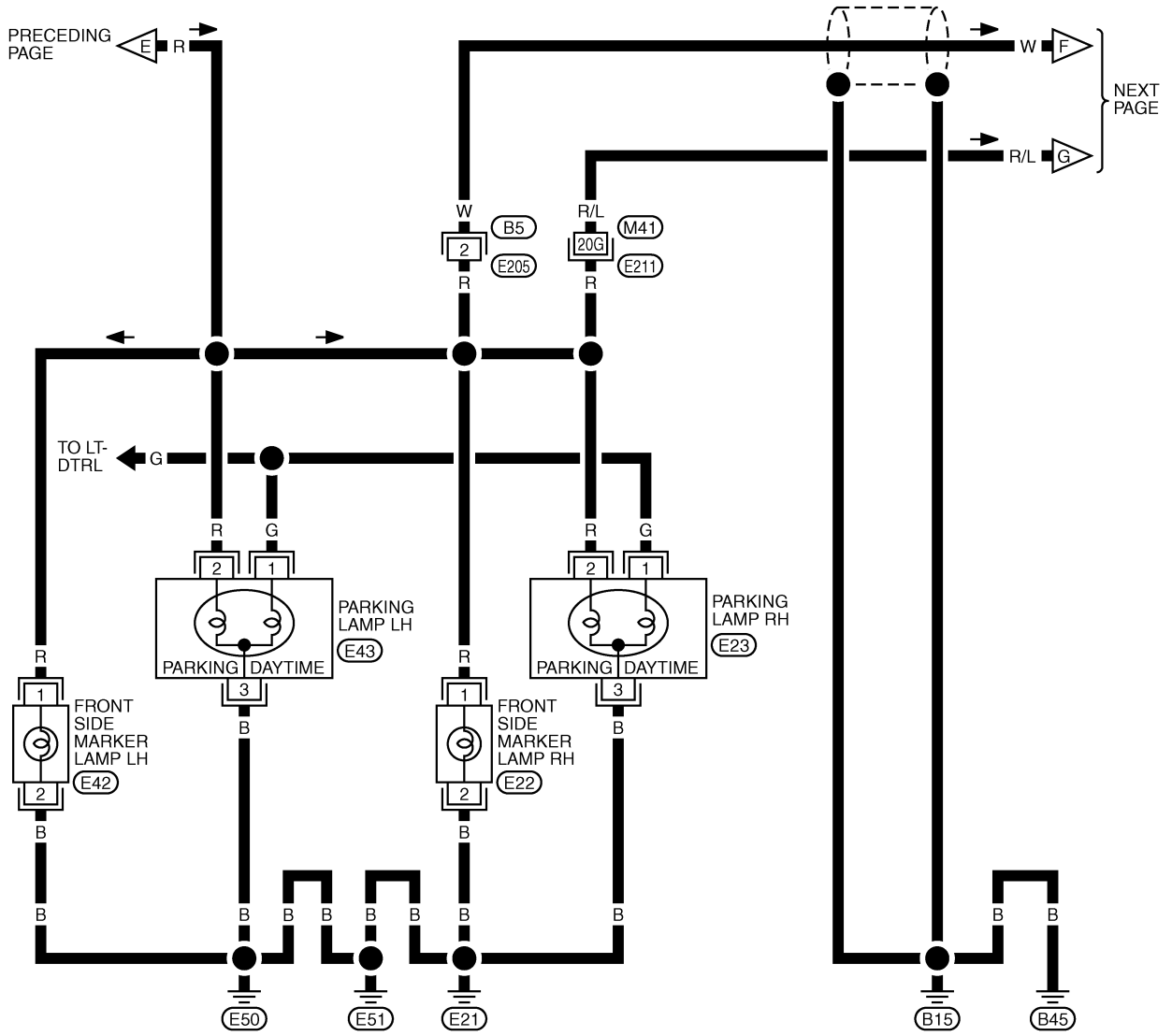
REFER TO THE FOLLOWING.
 (E211) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4323E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-03

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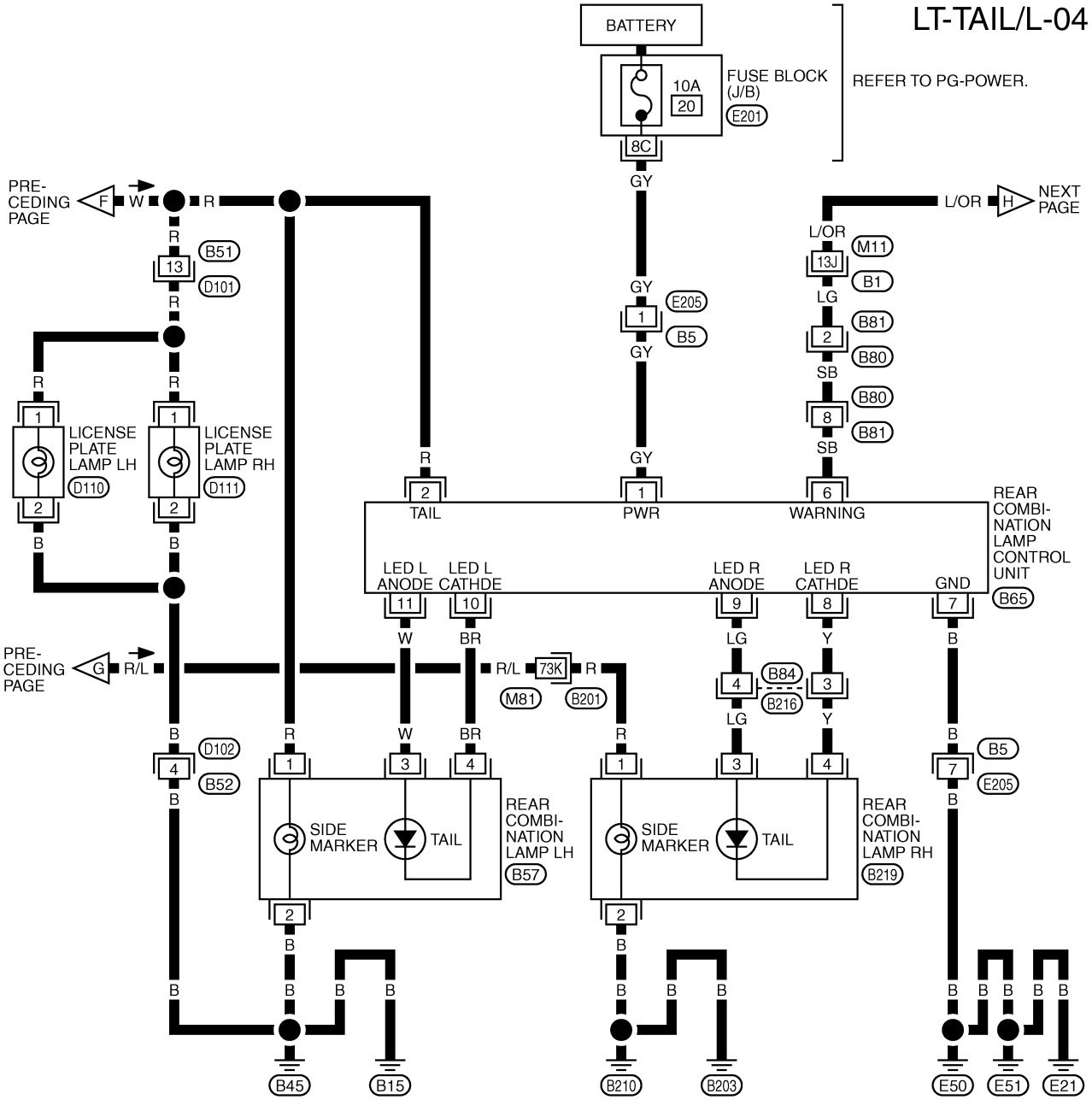


REFER TO THE FOLLOWING.
 (E21) -SUPER MULTIPLE JUNCTION (SMJ)

LT

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-04

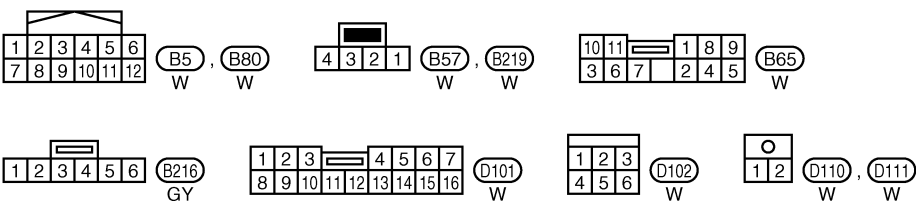


REFER TO PG-POWER.

PRE-CEDED PAGE

NEXT PAGE

PRE-CEDED PAGE



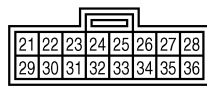
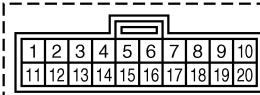
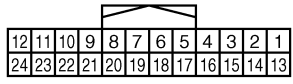
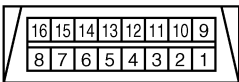
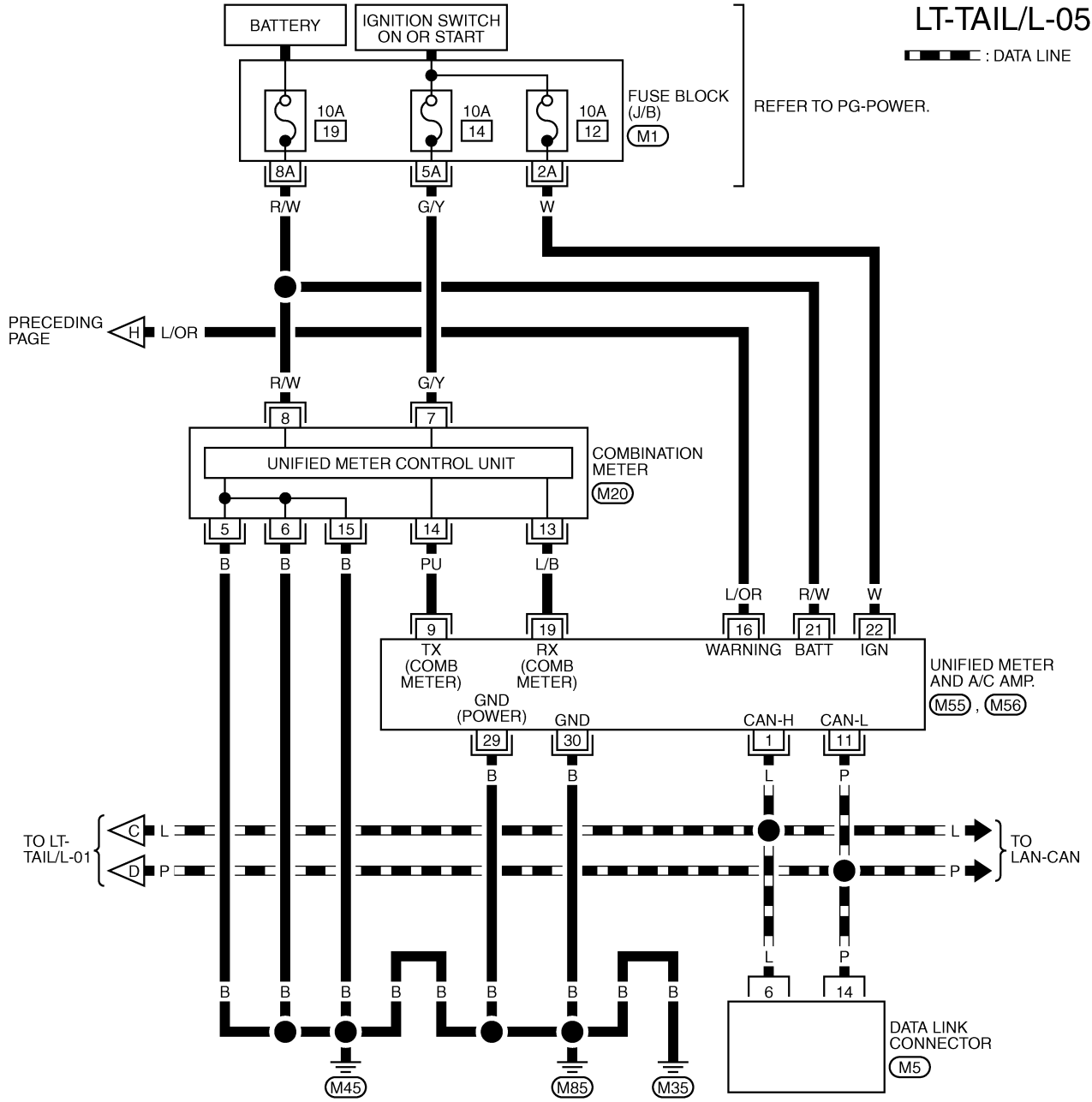
REFER TO THE FOLLOWING.
 (B1), (B201) -SUPER MULTIPLE JUNCTION (SMJ)
 (E201) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM4325E

PARKING, LICENSE PLATE AND TAIL LAMPS

LT-TAIL/L-05

▬ : DATA LINE



REFER TO THE FOLLOWING.

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

TKWM4326E

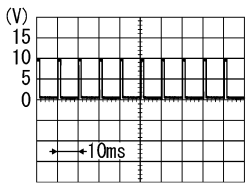
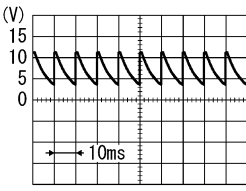
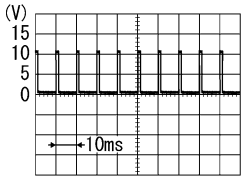
PARKING, LICENSE PLATE AND TAIL LAMPS

NKS003H5

Terminals and Reference Values for BCM

CAUTION:

- Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.
- Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-II. Refer to [LT-117, "DATA MONITOR"](#) .

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
2	GY	Combination switch input 5	ON	OFF	Approx. 0 V
				Lighting, turn, wiper switch (Wiper intermittent dial position 4) Lighting switch 1ST	 <p style="text-align: center;">Approx. 1.0 V</p>
11	LG	Ignition switch (ACC)	ACC	—	Battery voltage
33	G	Combination switch output 4	ON	OFF	 <p style="text-align: center;">Approx. 7.2 V</p>
				Lighting switch 1ST (The same result with lighting switch 2ND)	 <p style="text-align: center;">Approx. 1.2 V</p>
38	W/L	Ignition switch (ON)	ON	—	Battery voltage
39	L	CAN - H	—	—	—
40	P	CAN - L	—	—	—
42	L/R	Battery power supply	OFF	—	Battery voltage
49	B	Ground	ON	—	Approx. 0 V
52	B	Ground	ON	—	Approx. 0 V
55	G	Battery power supply	OFF	—	Battery voltage

PARKING, LICENSE PLATE AND TAIL LAMPS

Terminals and Reference Values for IPDM E/R

NKS003H6

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

Terminals and Reference Value for Rear Combination Lamp Control Unit

NKS003NA

Refer to [LT-98, "Terminals and Reference Value for Rear Combination Lamp Control Unit"](#) .

How to Proceed With Trouble Diagnosis

NKS003H7

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-131, "System Description"](#) .
3. Perform Preliminary Check. Refer to [LT-141, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Do parking, license plate, side marker and tail lamps operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

NKS003HB

CHECK POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses.

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

Refer to [LT-135, "Wiring Diagram — TAIL/L —"](#) .

OK or NG

OK >> GO TO 2.

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

PARKING, LICENSE PLATE AND TAIL LAMPS

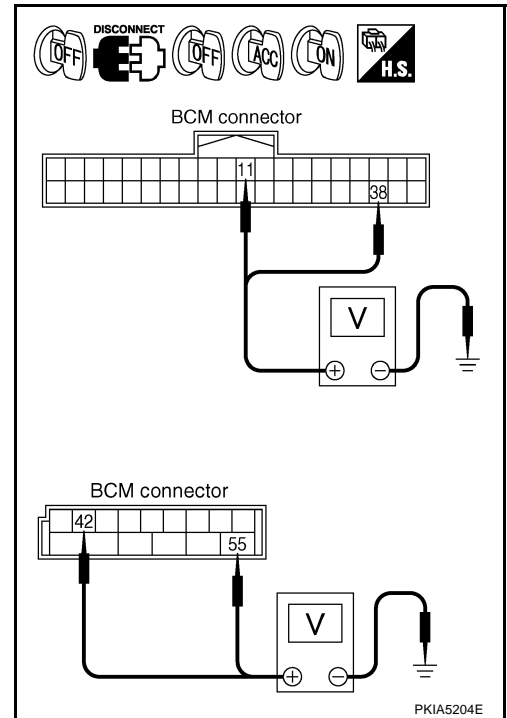
2. CHECK POWER SUPPLY CIRCUIT

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

(+)		(-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M3	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

OK or NG

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



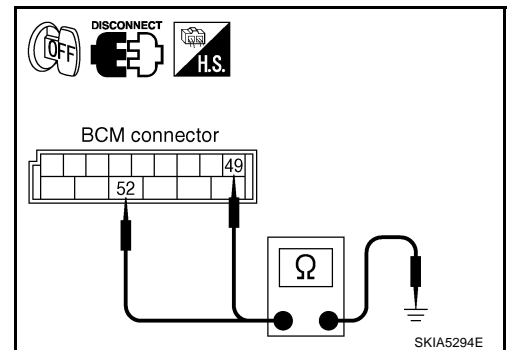
3. CHECK GROUND CIRCUIT

Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M4	49	Ground	Yes
	52		

OK or NG

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



CONSULT-II Functions (BCM)

Refer to [LT-18, "CONSULT-II Functions \(BCM\)"](#).

CONSULT-II Functions (IPDM E/R)

Refer to [LT-20, "CONSULT-II Functions \(IPDM E/R\)"](#).

NKS003H9

NKS003HA

PARKING, LICENSE PLATE AND TAIL LAMPS

Parking, License Plate and Side Marker Lamps Do Not Illuminate

NKS003HB

1. CHECK COMBINATION SWITCH INPUT SIGNAL

① With CONSULT-II

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

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

② Without CONSULT-II

Refer to [LT-118, "Combination Switch Inspection"](#).

OK or NG

OK >> GO TO 2.

NG >> Check combination switch (lighting switch). Refer to [LT-118, "Combination Switch Inspection"](#).

DATA MONITOR			
MONITOR			
LIGHT SW 1ST		ON	
		RECORD	
MODE	BACK	LIGHT	COPY

PKIA7607E

2. ACTIVE TEST

① With CONSULT-II

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

Parking, license plate and side marker lamps should operate.

② Without CONSULT-II

1. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
2. Make sure parking, license plate and side marker lamps operation.

Parking, license plate and side marker lamps should operate.

OK or NG

OK >> GO TO 3.

NG >> GO TO 4.

3. CHECK IPDM E/R

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

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

OK or NG

OK >> Replace IPDM E/R.

NG >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).

ACTIVE TEST			
TAIL LAMP		OFF	
ON			
MODE	BACK	LIGHT	COPY

SKIA5957E

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

SKIA5958E

PARKING, LICENSE PLATE AND TAIL LAMPS

4. CHECK INPUT SIGNAL

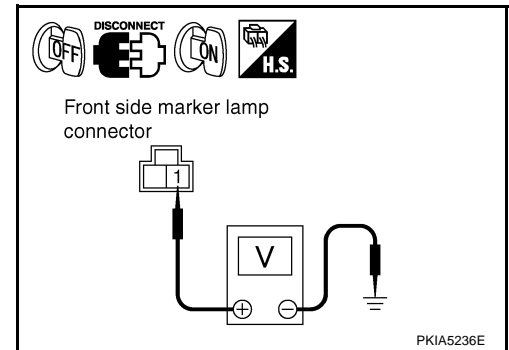
☑ With CONSULT-II

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

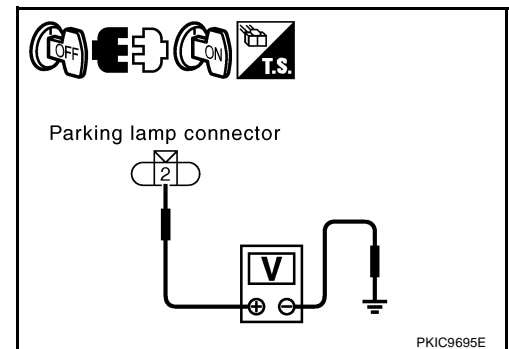
☒ Without CONSULT-II

1. Turn ignition switch OFF.
2. Disconnect front side marker, parking lamp, license plate lamp and rear combination lamp connectors.
3. Start auto active test. Refer to [PG-21, "Auto Active Test"](#).
4. When parking, license plate and side marker is operating, check voltage between front side marker lamp, parking lamp, license plate lamp, rear combination lamp harness connector and ground.

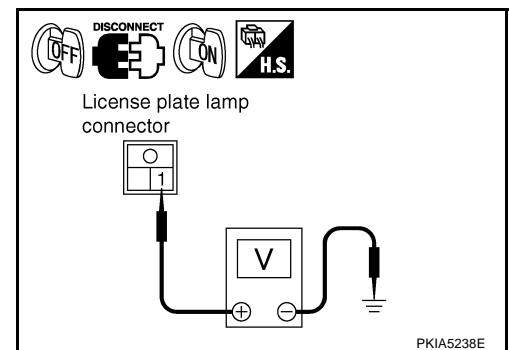
(+)		Terminal	(-)	Voltage
Front side marker lamp connector				
RH	E22	1	Ground	Battery voltage
LH	E42			



(+)		Terminal	(-)	Voltage
Parking lamp connector				
RH	E23	2	Ground	Battery voltage
LH	E43			



(+)		Terminal	(-)	Voltage
License plate lamp connector				
RH	D111	1	Ground	Battery voltage
LH	D110			

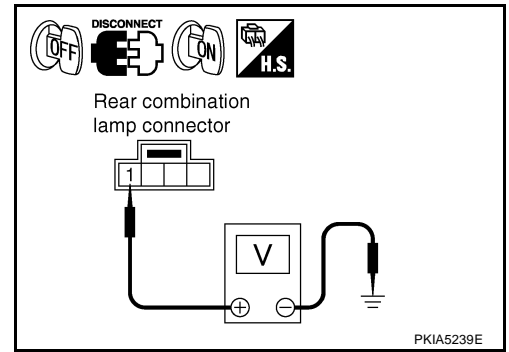


PARKING, LICENSE PLATE AND TAIL LAMPS

(+)		Terminal	(-)	Voltage
Rear combination lamp connector				
RH	B219			
LH	B57			

OK or NG

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



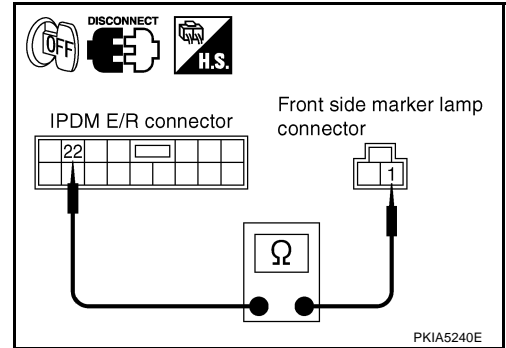
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PARKING, LICENSE PLATE AND TAIL LAMPS

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

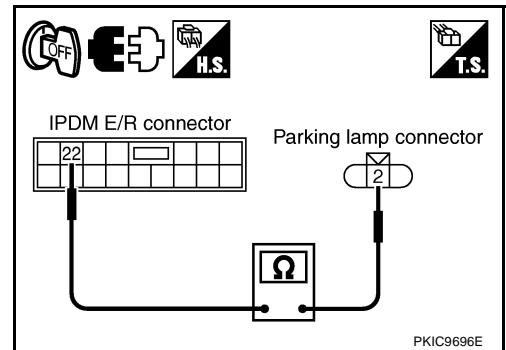
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front side marker lamp harness connector.

IPDM E/R		Front side marker lamp		Continuity	
Connector	Terminal	Connector	Terminal		
E7	22	RH	E22	1	Yes
		LH	E42		



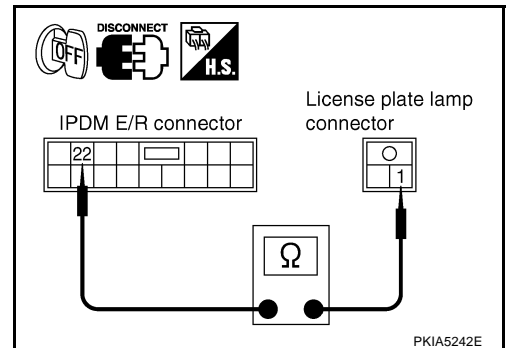
4. Check continuity between IPDM E/R harness connector and parking lamp harness connector.

IPDM E/R		Parking lamp		Continuity	
Connector	Terminal	Connector	Terminal		
E7	22	RH	E23	2	Yes
		LH	E43		



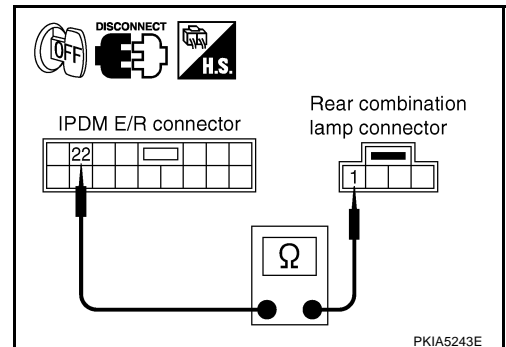
5. Check continuity between IPDM E/R harness connector and license plate lamp harness connector.

IPDM E/R		License plate lamp		Continuity	
Connector	Terminal	Connector	Terminal		
E7	22	RH	D111	1	Yes
		LH	D110		



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

IPDM E/R		Rear combination lamp		Continuity	
Connector	Terminal	Connector	Terminal		
E7	22	RH	B219	1	Yes
		LH	B57		



OK or NG

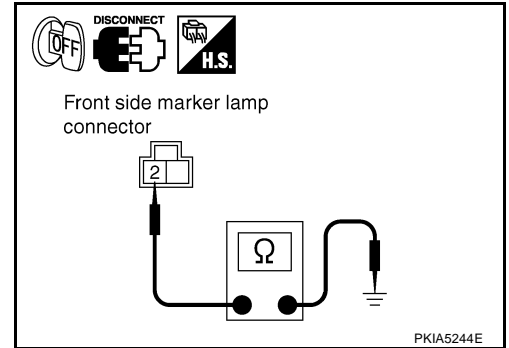
- OK >> Replace IPDM E/R.
 NG >> Repair harness or connector.

PARKING, LICENSE PLATE AND TAIL LAMPS

6. CHECK GROUND

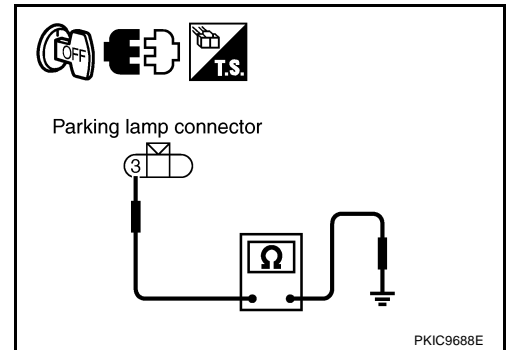
1. Turn ignition switch OFF.
2. Check continuity between front side marker lamp harness connector and ground.

Front side marker lamp connector		Terminal	Ground	Continuity
RH	E22	2		Ground
LH	E42			



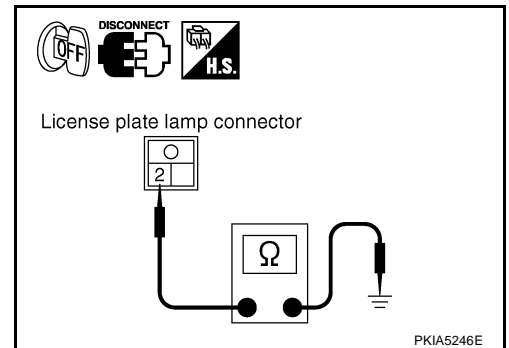
3. Check continuity between parking lamp harness connector and ground.

Parking lamp connector		Terminal	Ground	Continuity
RH	E23	3		Ground
LH	E43			



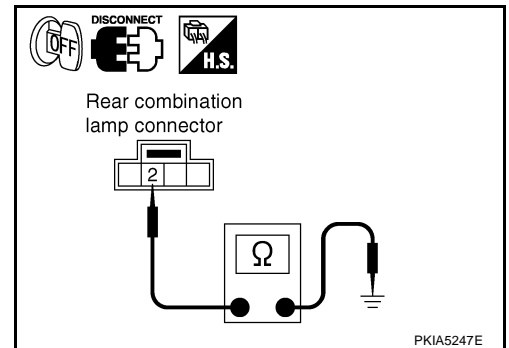
4. Check continuity between license plate lamp harness connector and ground.

License plate lamp connector		Terminal	Ground	Continuity
RH	D111	2		Ground
LH	D110			



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

Rear combination lamp connector		Terminal	Ground	Continuity
RH	B219	2		Ground
LH	B57			



OK or NG

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

Tail Lamp Does Not Operate

1. CHECK STOP LAMP AND TURN SIGNAL LAMP

Make sure stop lamps and turn signal lamps is illuminated.

OK or NG

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

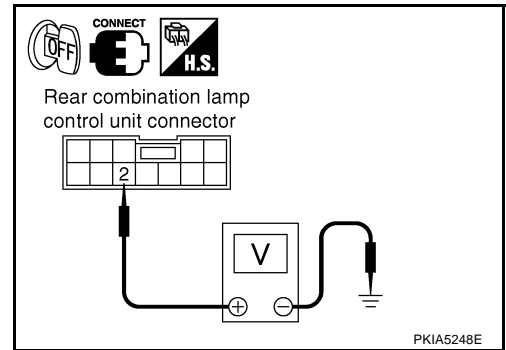
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PARKING, LICENSE PLATE AND TAIL LAMPS

2. CHECK INPUT SIGNAL

Check voltage between rear combination lamp control unit harness connector and ground.

(+)		(-)	Condition	Voltage
Rear combination lamp control unit connector	Terminal			
B65	2	Ground	Lighting switch 1ST position is ON	Battery voltage
			Lighting switch 1ST position is OFF	Approx. 0 V



OK or NG

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

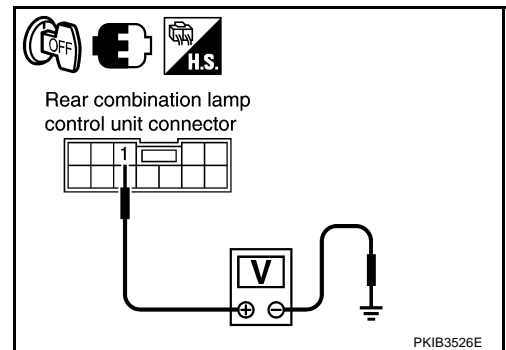
3. CHECK POWER SUPPLY CIRCUIT

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

1 – Ground : Battery voltage.

OK or NG

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



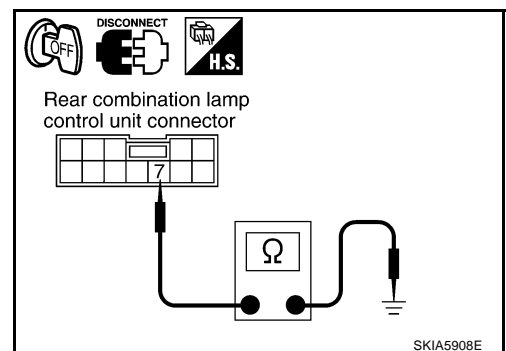
4. CHECK GROUND CIRCUIT

1. Disconnect rear combination lamp control unit connector.
2. Check continuity between rear combination lamp control unit harness connector B65 terminal 7 and ground.

7 – Ground : Continuity should exist.

OK or NG

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



PARKING, LICENSE PLATE AND TAIL LAMPS

5. CHECK REAR COMBINATION LAMPS CIRCUIT

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

11 – 3 : Continuity should exist.

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

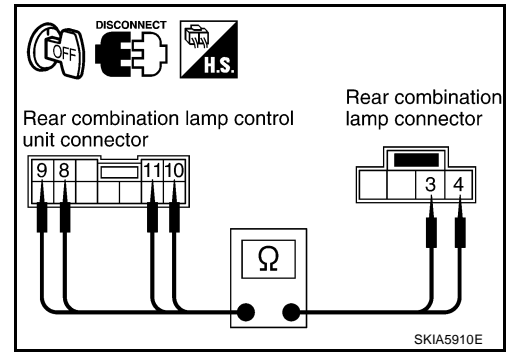
10 – 4 : Continuity should exist.

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

9 – 3 : Continuity should exist.

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

8 – 4 : Continuity should exist.



OK or NG

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

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

NKS003HD

1. CHECK IPDM E/R

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

OK or NG

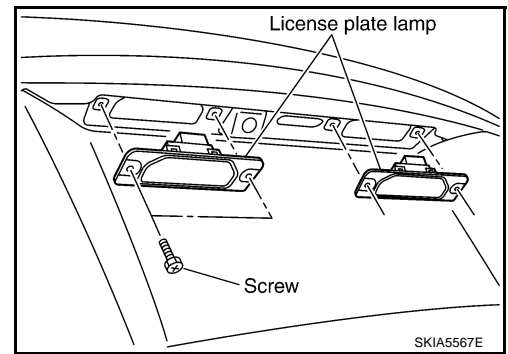
- OK >> Ignition relay malfunction. Refer to [PG-18, "Function of Detecting Ignition Relay Malfunction"](#).
- NG >> INSPECTION END

PARKING, LICENSE PLATE AND TAIL LAMPS

License Plate Lamp BULB REPLACEMENT, REMOVAL AND INSTALLATION

NKS003HE

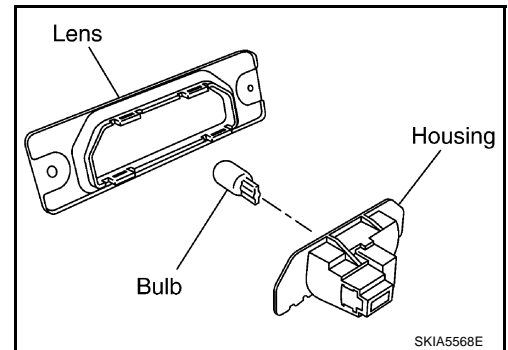
1. Remove screws and remove license plate lamp from back door.
2. Disconnect license plate lamp connector.



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

License plate lamp : 12 V - 5 W

5. Installation is the reverse order of removal.



Front Parking Lamp BULB REPLACEMENT

Refer to [LT-34, "Bulb Replacement"](#) .

REMOVAL AND INSTALLATION

Refer to [LT-35, "Removal and Installation"](#) .

Tail Lamp

BULB REPLACEMENT

Refer to [LT-151, "Bulb Replacement"](#) .

REMOVAL AND INSTALLATION

Refer to [LT-151, "Removal and Installation"](#) .

Front Side Marker Lamp

BULB REPLACEMENT

Refer to [LT-34, "Bulb Replacement"](#) .

REMOVAL AND INSTALLATION

Refer to [LT-35, "Removal and Installation"](#) .

Rear Side Marker Lamp

BULB REPLACEMENT

Refer to [LT-151, "Bulb Replacement"](#) .

REMOVAL AND INSTALLATION

Refer to [LT-151, "Removal and Installation"](#) .

Rear Combination Lamp Control Unit

REMOVAL AND INSTALLATION

Refer to [LT-108, "Removal and Installation of Rear Combination Lamp Control Unit"](#) .

NKS003HF

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NKS003HI

NKS003HJ

REAR COMBINATION LAMP

REAR COMBINATION LAMP

PPF:26554

Bulb Replacement

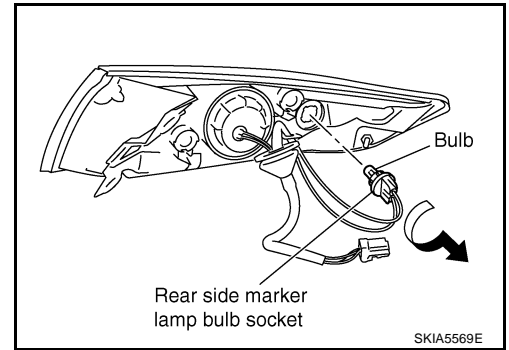
NKS003HK

REAR FENDER SIDE (REAR SIDE MARKER LAMP BULB)

1. Remove rear combination lamp (rear fender side).
2. Turn bulb socket counterclockwise and unlock it.
3. Remove bulb.

Stop/tail lamp and rear turn signal lamp : LED (Replace together with rear combination lamp assembly.)

Rear side marker lamp : 12 V - 3.8 W



BACK DOOR SIDE (BACK-UP LAMP)

Refer to [LT-130, "Bulb Replacement"](#)

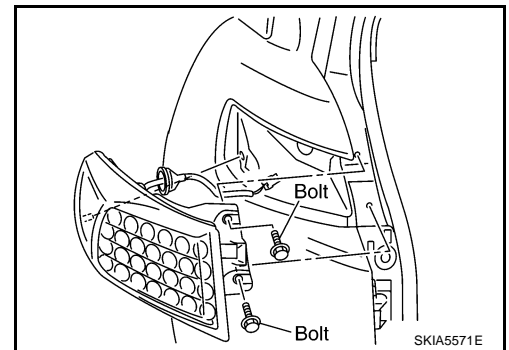
Removal and Installation

NKS003HL

REMOVAL

Rear Fender Side

1. Remove bumper side cover A. Refer to [EI-17, "Removal and Installation"](#).
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting bolts.
4. Pull rear combination lamp toward side of the vehicle and remove from the vehicle.



Back Door Side

Refer to [LT-130, "Removal and Installation"](#)

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

Seal packing cannot be reused.

Rear combination lamp (rear fender side) mounting nut

 : 3.2 N-m (0.33 kg-m, 28 in-lb)

Rear combination lamp (Back Door side) mounting nut

 : 5.5 N-m (0.56 kg-m, 49 in-lb)

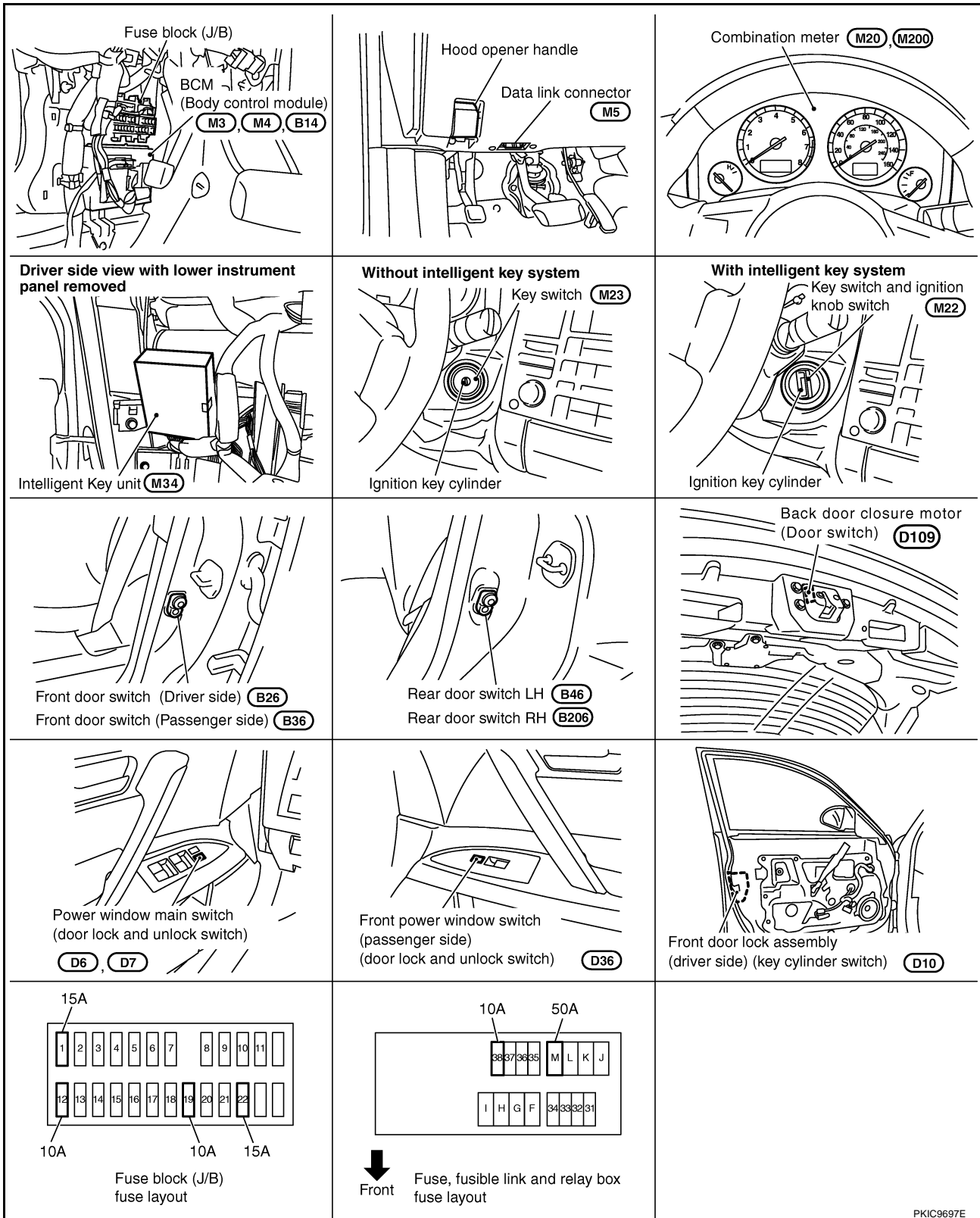
INTERIOR ROOM LAMP

PFP:26410

NKS002 YM

INTERIOR ROOM LAMP

Component Parts and Harness Connector Location



PKIC9697E

System Description

NKS002 YN

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

INTERIOR ROOM LAMP

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

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

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

Ignition keyhole illumination turns ON at time when driver door is opened (door switch ON) or removed keyfob from key cylinder. Illumination turns OFF when driver door is closed (door switch OFF).

Step lamp turns ON at time when driver door or passenger door is opened (door switch ON). Lamp turns OFF when the driver, passenger doors are closed (all door switches OFF).

POWER SUPPLY AND GROUND

Power is supplied at all times (without Intelligent Key system)

- through 15A fuse [No. 22, located in fuse block (J/B)]
- to key switch terminal 2 and
- to BCM terminal 42,
- through 50A fusible link (letter M, located in fuse, fusible link and relay box)
- to BCM terminal 55,
- through 10A fuse [No. 19, located in fuse block (J/B)]
- to combination meter terminal 8.

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

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

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

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

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

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

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

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

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

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

Ground is supplied

- to BCM terminals 49 and 52, and
- to combination meter terminal 5, 6 and 15
- through grounds terminals M35, M45 and M85.

When driver side door is opened, ground is supplied

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

When passenger side door is opened, ground is supplied

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INTERIOR ROOM LAMP

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

When rear door RH is opened, ground is supplied

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

When rear door LH is opened, ground is supplied

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

When driver side door is unlocked by door lock and unlock switch, BCM receives a ground signal

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

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

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

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

- to interior room lamp terminal 1 (without DVD player),
- to map lamp terminal 2,
- to front door inside handle illumination (driver side and passenger side) terminal 2, and
- to rear door inside handle illumination (LH and RH) terminal 2
- through BCM terminal 48.

With power and supplied, interior lamp illuminates.

SWITCH OPERATION

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

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

And power is supplied

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

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

- through BCM terminal 47
- to front step lamp (driver side and passenger side) terminals 2 and
- to rear step lamp (RH and LH) terminals 2.

And power is supplied

- from BCM terminal 41
- to front step lamp (driver side and passenger side) terminals 1 and

INTERIOR ROOM LAMP

- to rear step lamp (RH and LH) terminals 1.

When rear door switch RH is ON (door is opened), ground is supplied

- to personal lamp RH terminal 1
- through rear door switch RH terminal 1
- through case ground of rear door switch RH.

And power is supplied

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

When rear door switch LH is ON (door is opened), ground is supplied

- to personal lamp LH terminal 1
- through rear door switch LH terminal 1
- through case ground of rear door switch LH.

And power is supplied

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

When map lamp switch is ON, ground is supplied

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

And power is supplied

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

When interior room lamp switch is ON, ground supplied (without DVD player)

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

And power is supplied (without DVD player)

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

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

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

And power is supplied

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

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

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

And power is supplied

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

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

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

And power is supplied

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

ROOM LAMP TIMER OPERATION

Without Intelligent Key System

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

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INTERIOR ROOM LAMP

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

Power is supplied

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

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

Ground is supplied

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

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

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

Power is supplied

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

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

When driver door opens → closes, and key is not inserted in key switch (key switch OFF), BCM terminal 62 changes between 0V (door open) → 12V (door closed). BCM determines that conditions for interior room lamp and map lamp operation are met and turns interior room lamp ON for 30 seconds.

Timer control is canceled under the following conditions.

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

With Intelligent Key System

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

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

Power is supplied

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

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

And not turned ignition knob switch, power will not be supplied to Intelligent Key unit.

Ground is supplied

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

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

Key is in ignition key cylinder (key switch ON), or turned ignition knob switch,

Power is supplied

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

When the key is removed from key switch (key switch OFF), power supply to BCM terminal 37 is terminated. And turned ignition knob switch, power supply to Intelligent Key unit is terminated. BCM detects that key has been removed, determines that interior room lamp and map lamp timer conditions are met, and turns interior room lamp and map lamp ON for 30 seconds.

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

INTERIOR ROOM LAMP

Timer control is canceled under the following conditions.

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

INTERIOR LAMP BATTERY SAVER CONTROL

If lamps are left "ON", they will not be turned out even when door is closed.

BCM turns off lamps automatically to save battery 30 minutes after ignition switch is turned off.

BCM controls lamps listed below:

- Ignition key hole illumination D
- Front step lamp (driver side) D
- Front step lamp (passenger side) D
- Rear step lamp RH E
- Rear step lamp LH E
- Front door inside handle illumination (driver side) F
- Front door inside handle illumination (passenger side) F
- Rear door inside handle illumination RH G
- Rear door inside handle illumination LH G
- Personal lamp RH G
- Personal lamp LH G
- Interior room lamp (without DVD player) H
- Map lamp H
- Vanity mirror lamp I
- Luggage room lamp I

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

- signal from keyfob, or power window main switch (door lock and unlock switch) or key cylinder is locked or unlocked, J
- door is opened or closed, J
- key is removed from ignition key cylinder or inserted in ignition key cylinder, or turned ignition knob switch. J

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

LT

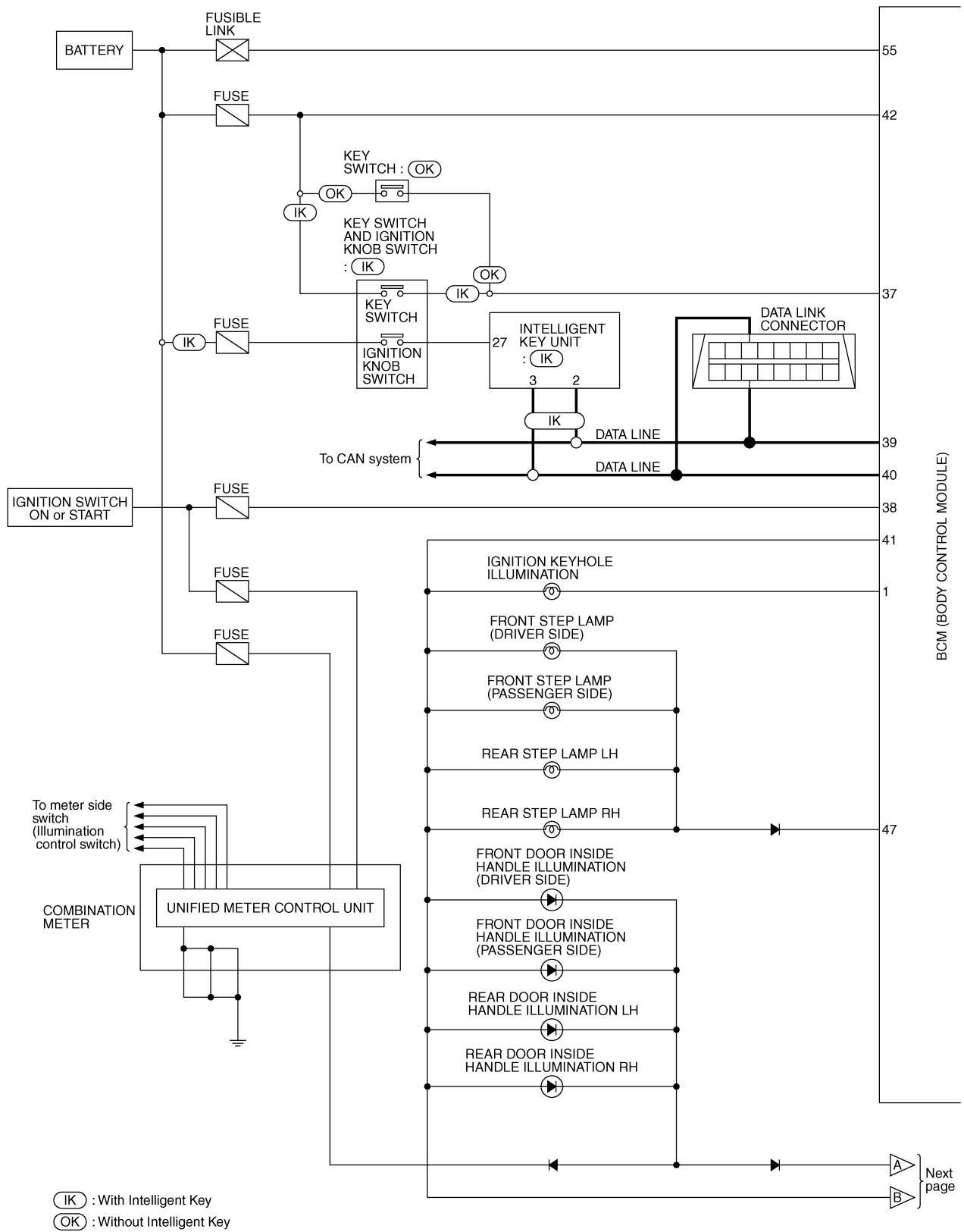
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INTERIOR ROOM LAMP

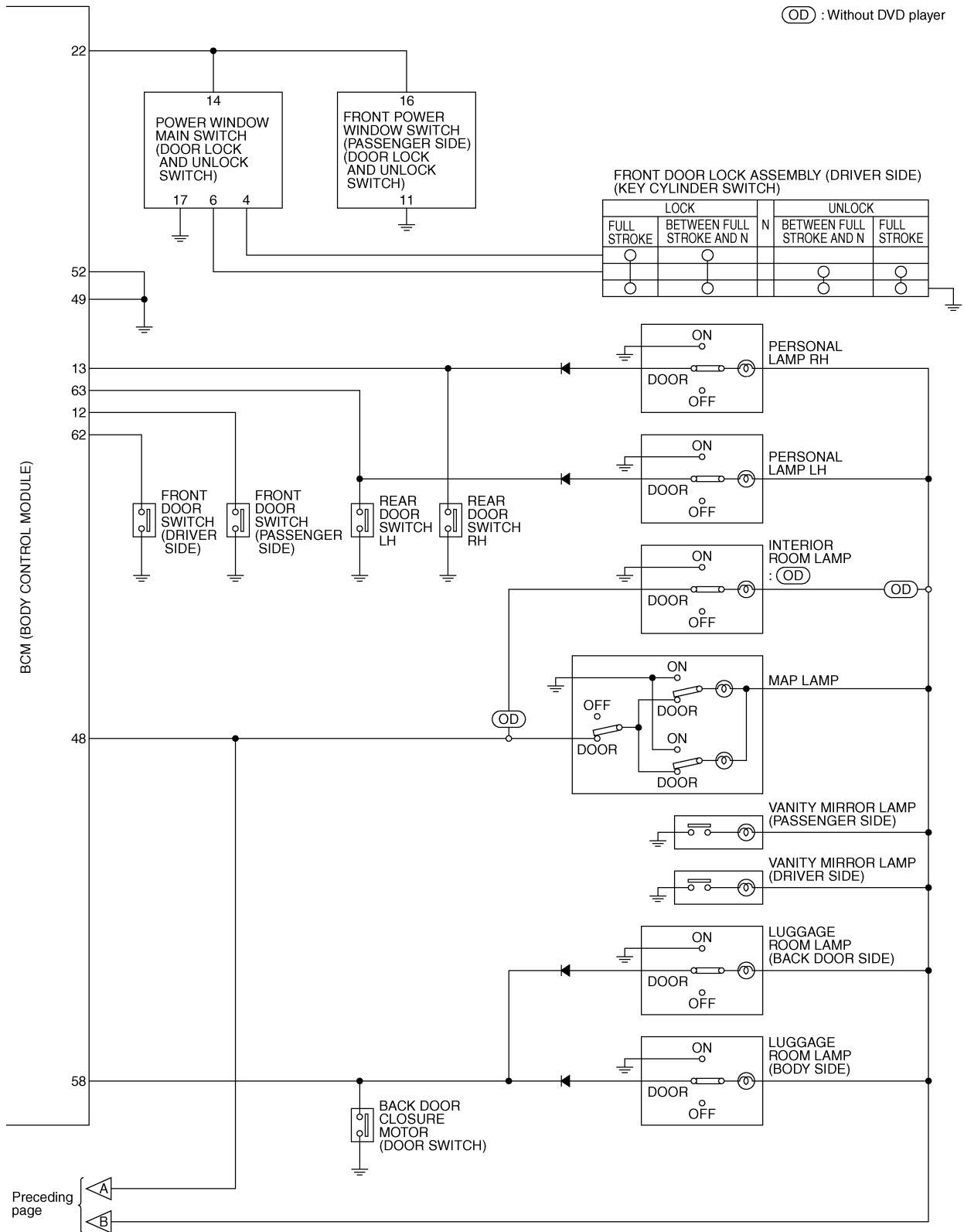
Schematic

NKS002YO



TKWH0228E

INTERIOR ROOM LAMP



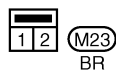
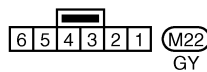
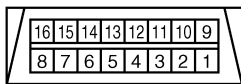
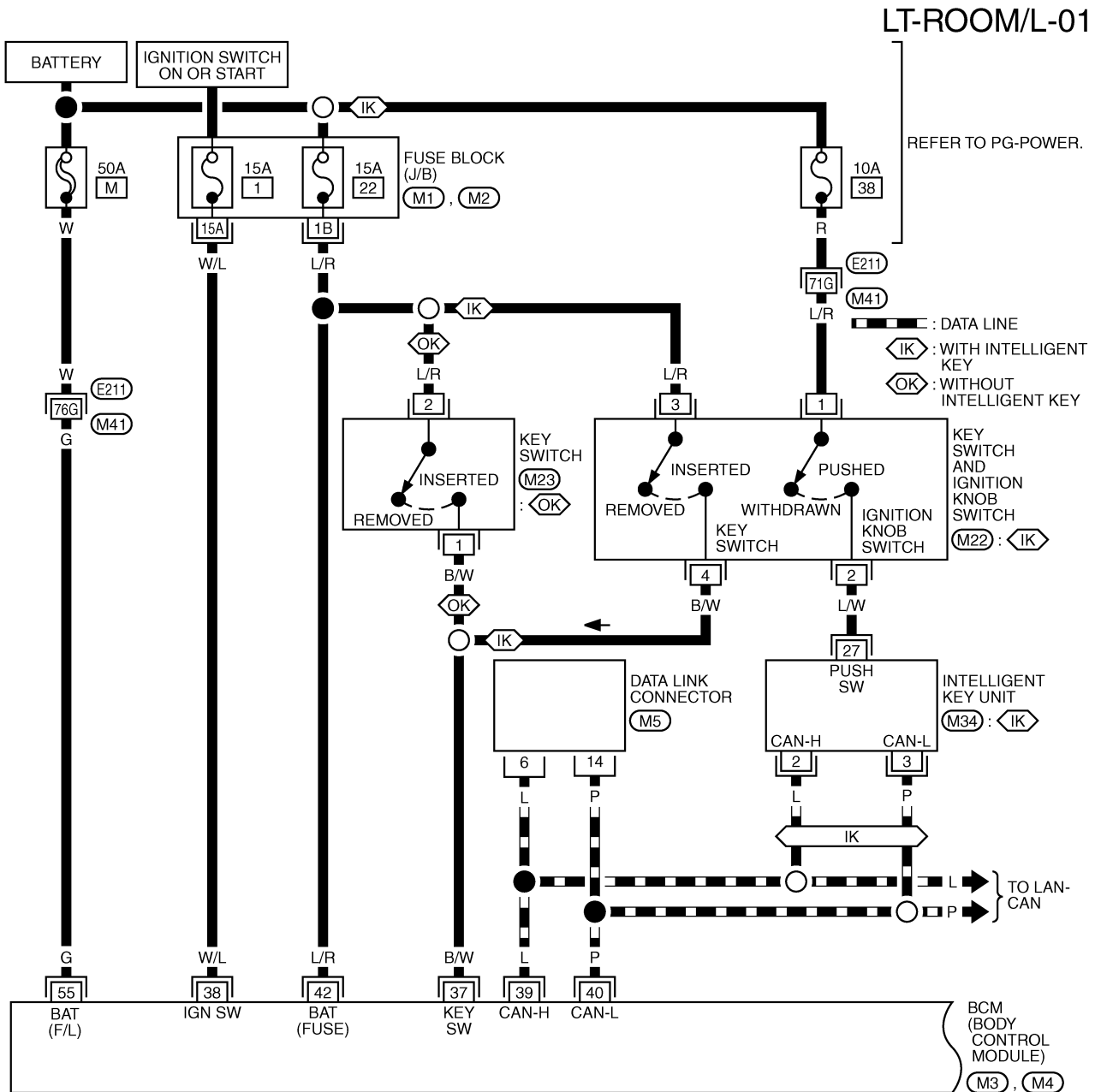
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INTERIOR ROOM LAMP

Wiring Diagram — ROOM/L —

NKS002YP

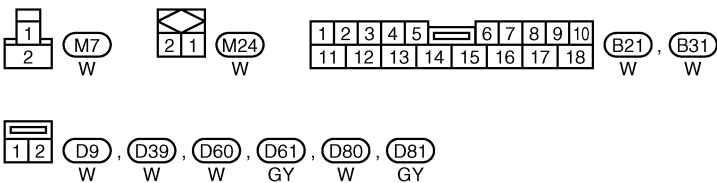
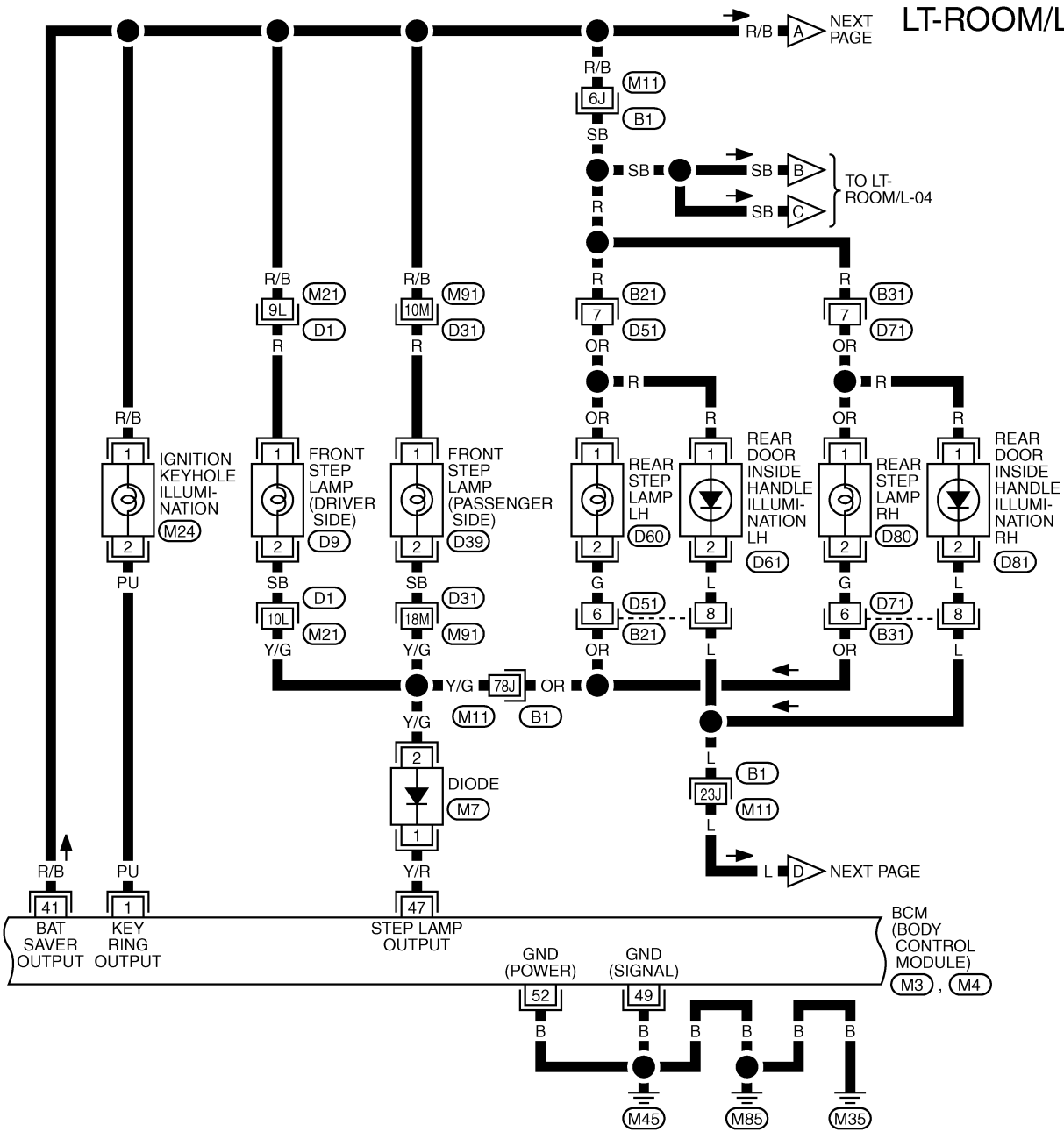


- REFER TO THE FOLLOWING.
- (E21) -SUPER MULTIPLE JUNCTION (SMJ)
 - (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
 - (M3), (M4), (M34) -ELECTRICAL UNITS

TKWM4314E

INTERIOR ROOM LAMP

LT-ROOM/L-02

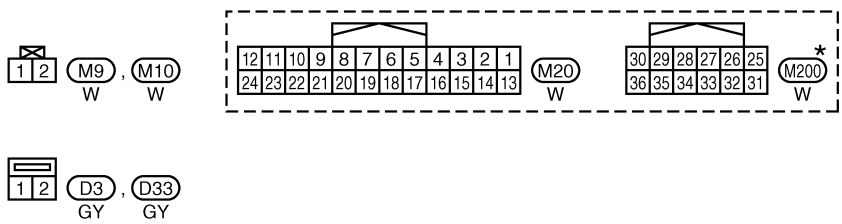
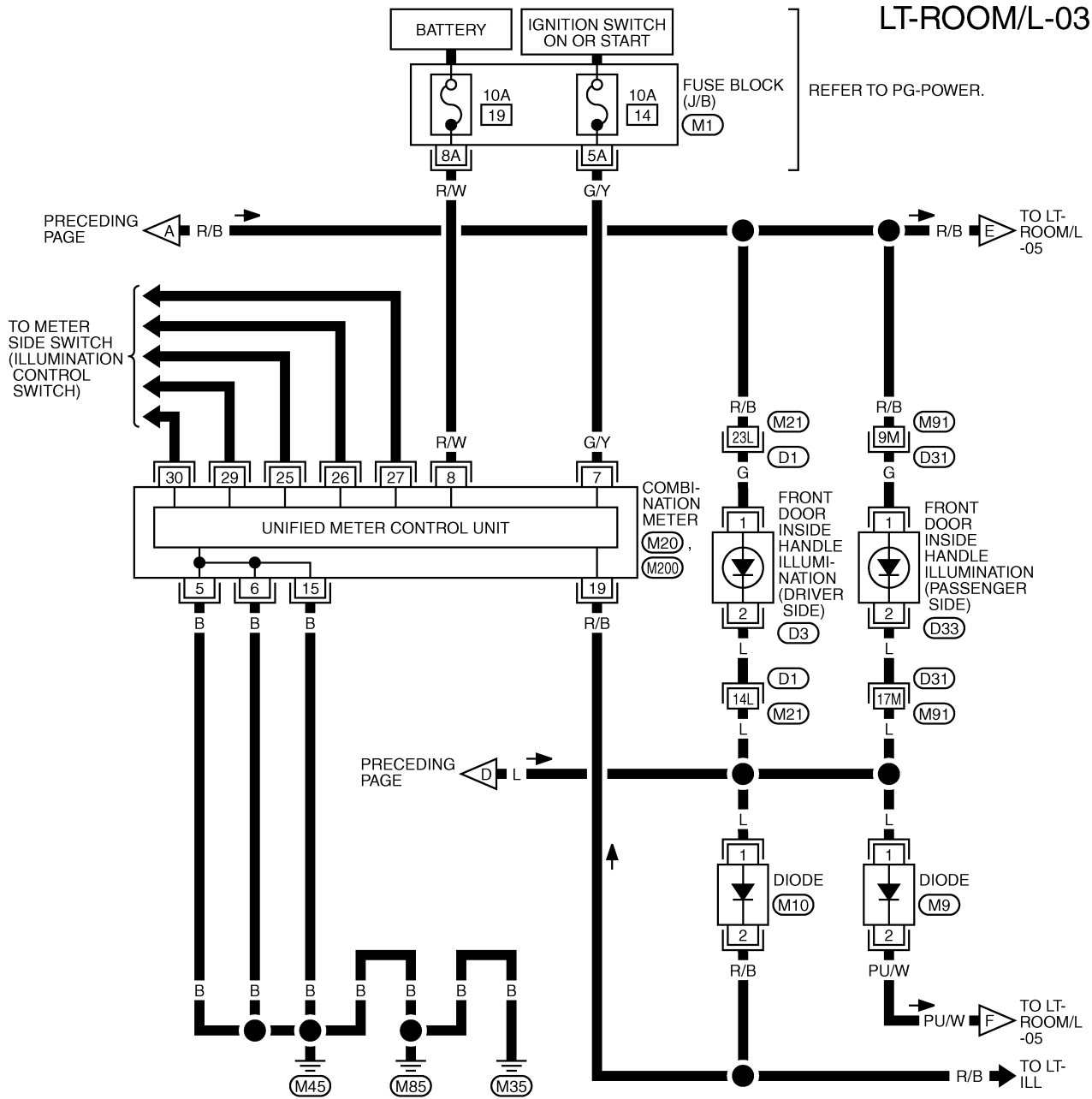


REFER TO THE FOLLOWING.
 (B1), (D1), (D31) -SUPER
 MULTIPLE JUNCTION (SMJ)
 (M3), (M4) -ELECTRICAL
 UNITS

TKWM4315E

INTERIOR ROOM LAMP

LT-ROOM/L-03



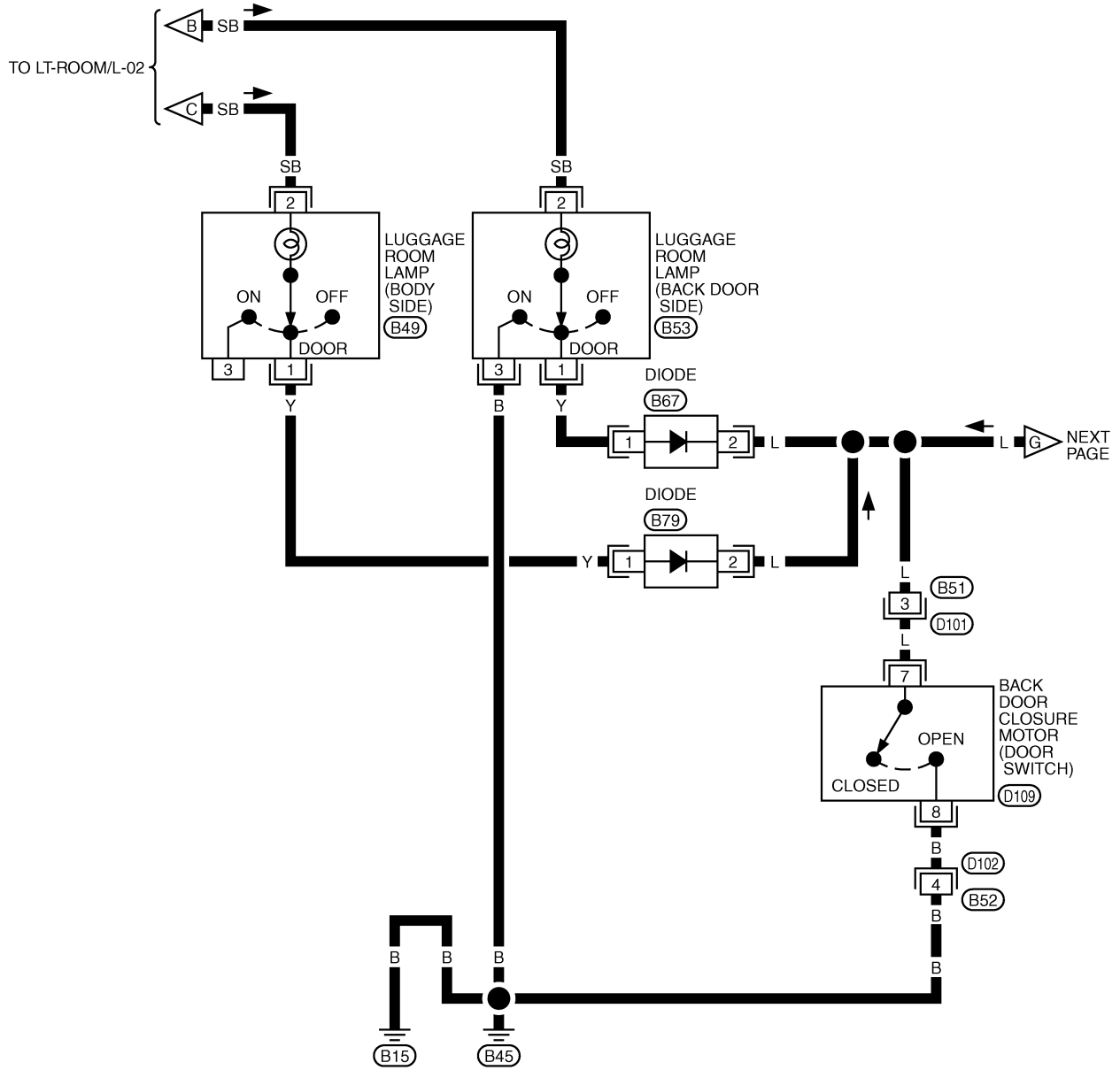
REFER TO THE FOLLOWING.
 (D1), (D31) -SUPER MULTIPLE JUNCTION (SMJ)
 (M1) -FUSE BLOCK-JUNCTION BOX (J/B)

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

TKWM4316E

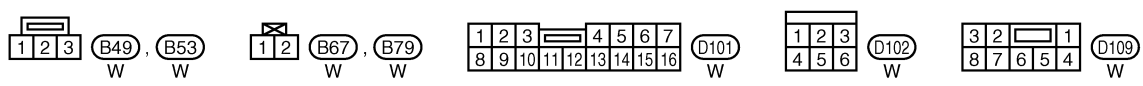
INTERIOR ROOM LAMP

LT-ROOM/L-04



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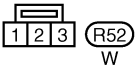
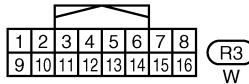
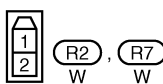
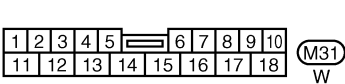
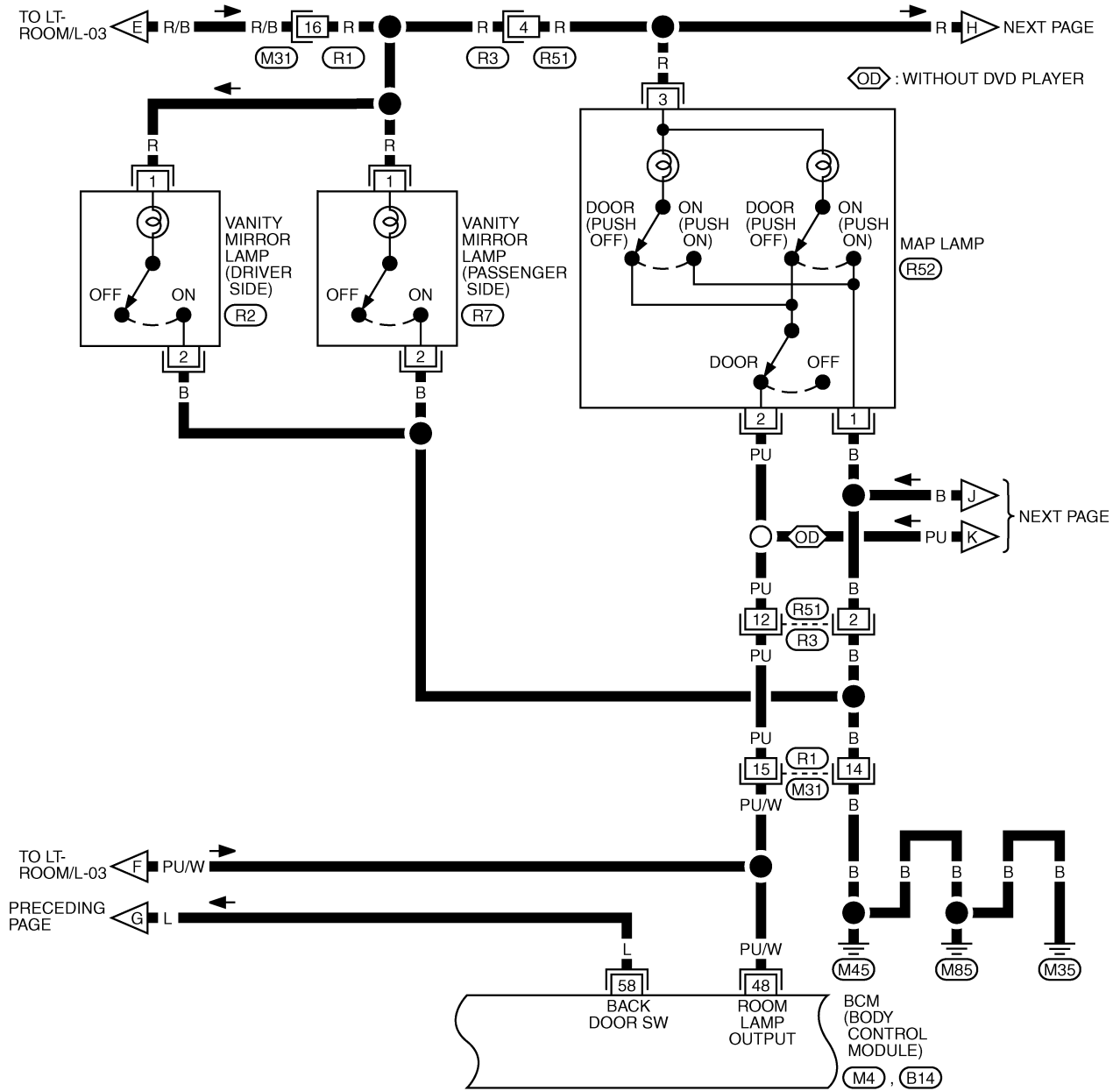
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INTERIOR ROOM LAMP

LT-ROOM/L-05



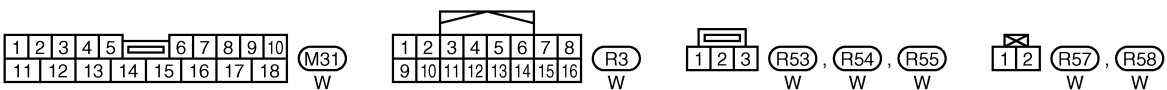
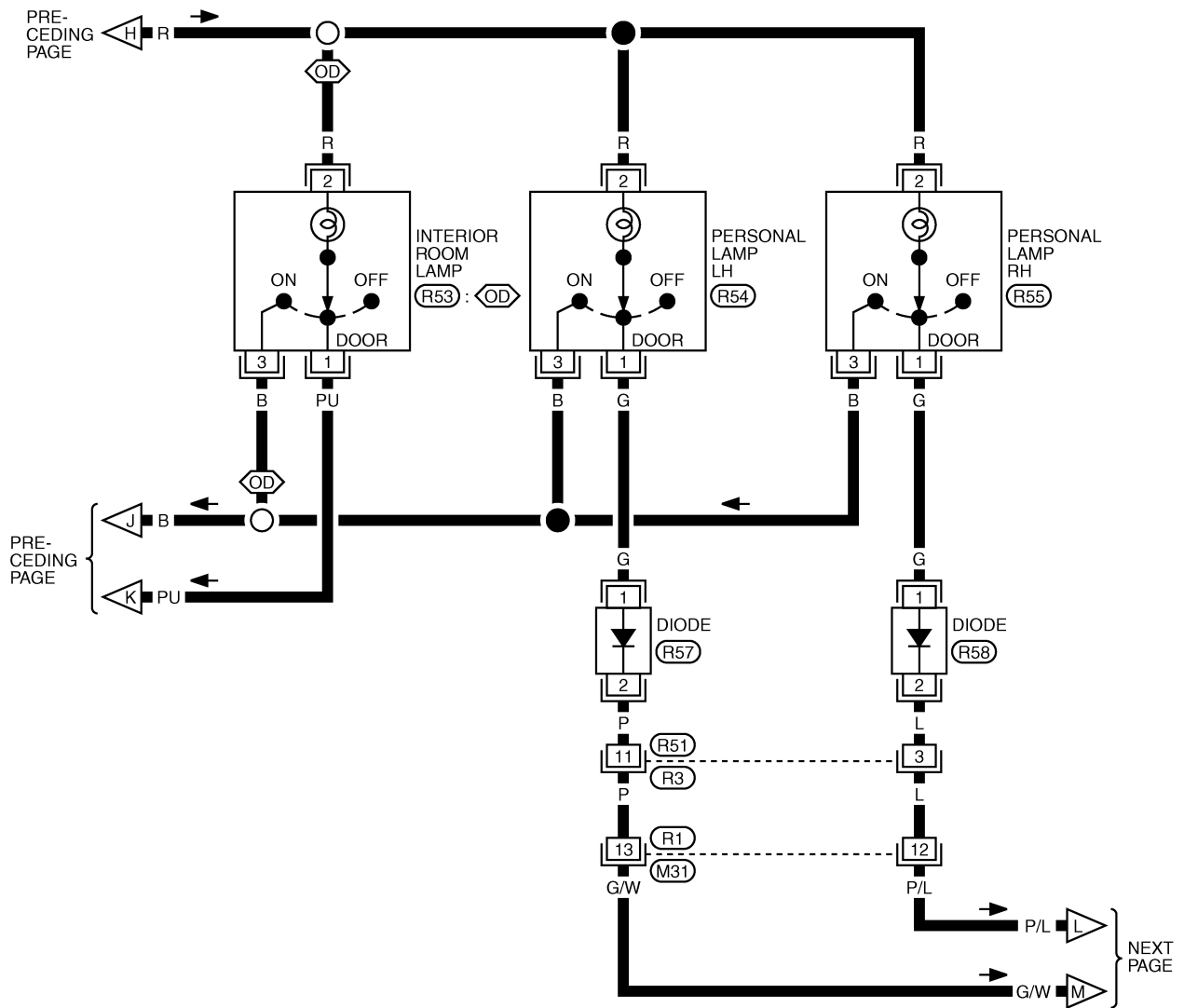
REFER TO THE FOLLOWING.
(M4), (B14) -ELECTRICAL UNITS

TKWM4317E

INTERIOR ROOM LAMP

LT-ROOM/L-06

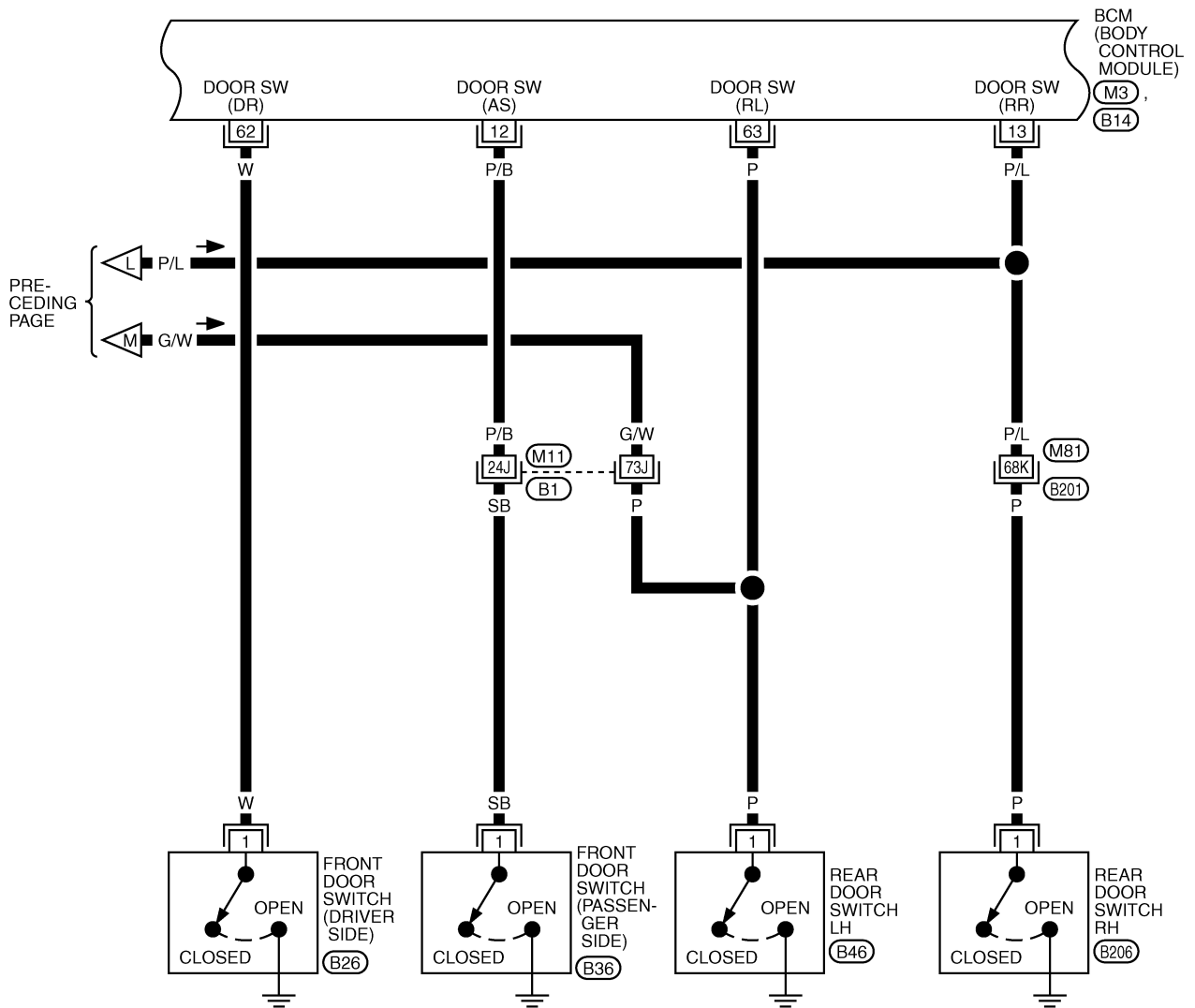
Ⓞ : WITHOUT DVD PLAYER



TKWM4318E

INTERIOR ROOM LAMP

LT-ROOM/L-07



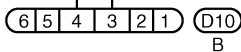
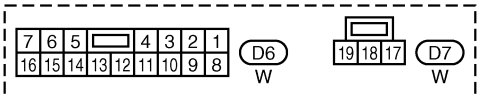
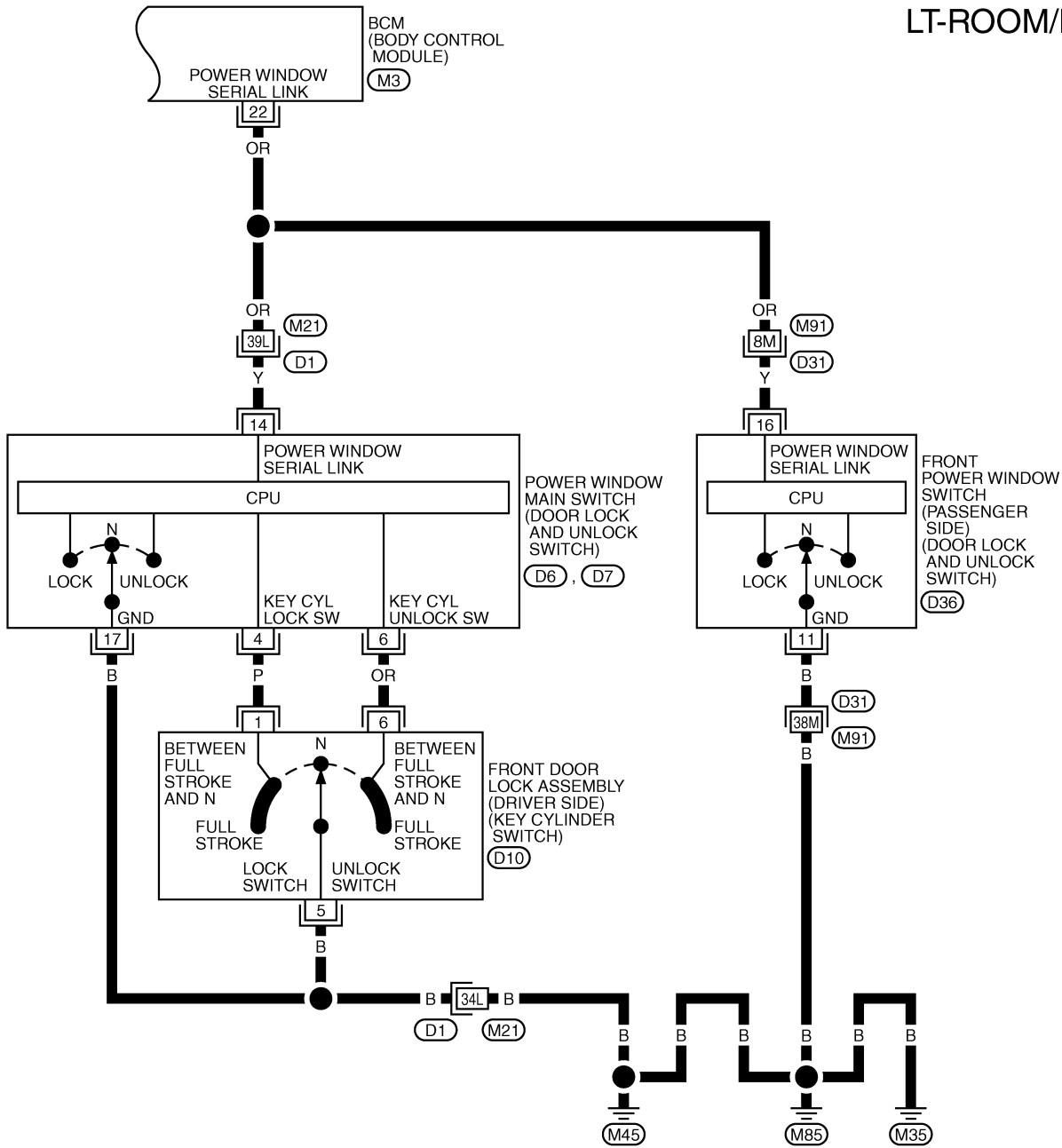
1	
2	(B26), (B36), (B46), (B206)
3	W, W, W, W

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

TKWM4319E

INTERIOR ROOM LAMP

LT-ROOM/L-08



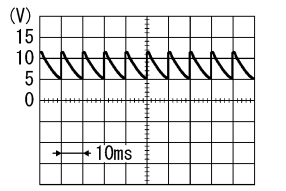
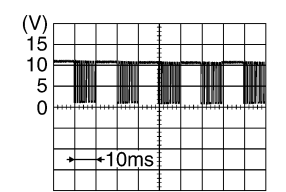
REFER TO THE FOLLOWING.
 (D1), (D31) -SUPER MULTIPLE JUNCTION (SMJ)
 (M3) -ELECTRICAL UNITS

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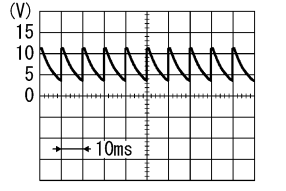
INTERIOR ROOM LAMP

Terminals and Reference Values for BCM

NKS002YQ

Terminal No.	Wire color	Signal name	Measuring condition		Reference value	
			Ignition switch	Operation or condition		
1	PU	Ignition keyhole illumination signal	OFF	Ignition keyhole illumination	Illuminated	Battery voltage
					Not illuminated	Approx. 0 V
12	P/B	Front door switch (passenger) signal	OFF	Front door switch (passenger side)	ON (open)	Approx. 0 V
					OFF (closed)	 <p style="text-align: right;">SKIB3419J</p> Approx. 7.5 - 8.0 V
13	P/L	Rear door switch RH signal	OFF	Rear door switch RH	ON (open)	Approx. 0 V
					OFF (closed)	Battery voltage
22	OR	Power window switch serial link	—	Power window main switch (door lock and unlock switch) and power window sub-switch (front passenger side) (door lock and unlock switch)	Lock or unlock switch ON	 <p style="text-align: right;">PKIC0930E</p> Approx. 9.0 - 9.5 V
					OFF	
37	B/W	Key-in detection switch signal	OFF	Vehicle key is removed.	Approx. 0 V	
				Vehicle key is inserted.	Battery voltage	
38	W/L	Ignition power supply	ON	—	Battery voltage	
39	L	CAN - H	—	—	—	
40	P	CAN - L	—	—	—	
41	R/B	Battery saver output signal	OFF	30 minutes after ignition switch is turned to OFF	Approx. 0 V	
			ON	—	Battery voltage	
42	L/R	Battery power supply	OFF	—	Battery voltage	
47	Y/R	Step lamp signal	OFF	Any door is open (ON)	Approx. 0 V	
				All doors are closed (OFF)	Battery voltage	
48	PU/W	Interior room lamp, map lamp, front door inside handle and rear door inside handle illumination output signal	OFF	Any door switch	ON (open)	Approx. 0 V
					OFF (closed)	Battery voltage
49	B	Ground	ON	—	Approx. 0 V	
52	B	Ground	ON	—	Approx. 0 V	
55	G	Battery power supply	OFF	—	Battery voltage	
58	L	Back door switch signal	OFF	Back door closure motor (door switch)	ON (open)	Approx. 0 V
					OFF (closed)	Battery voltage

INTERIOR ROOM LAMP

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
62	W	Front door switch (driver side) signal	OFF	Front door switch (driver side)	ON (open)	Approx. 0 V
					OFF (closed)	<div style="text-align: center;">  <p style="text-align: right; font-size: small;">PKIB4960J</p> </div>
63	P	Rear door switch LH signal	OFF	Rear door switch LH	ON (open)	Approx. 0 V
					OFF (closed)	Battery voltage

How to Proceed With Trouble Diagnosis

NKS002 YR

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to [LT-152, "System Description"](#) .
3. Perform Preliminary Check. Refer to [LT-170, "Preliminary Check"](#) .
4. Check symptom and repair or replace the cause of malfunction.
5. Does interior room lamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

LT

INTERIOR ROOM LAMP

NKS002YS

Preliminary Check CHECK FOR POWER SUPPLY AND GROUND CIRCUIT

1. CHECK FUSES

Check for blown fuses.

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

Refer to [LT-160, "Wiring Diagram — ROOM/L —"](#) .

OK or NG

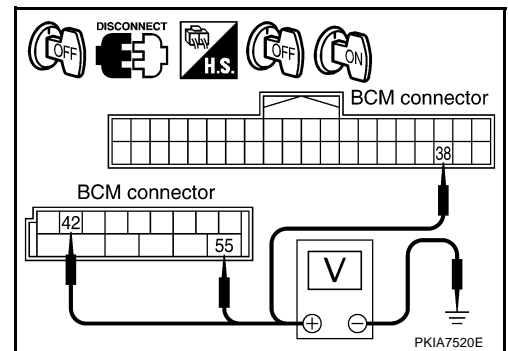
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect BCM connector.
- Check voltage between BCM harness connector and ground.

(+)		(-)	Ignition switch position	
BCM connector	Terminal		OFF	ON
M3	38	Ground	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

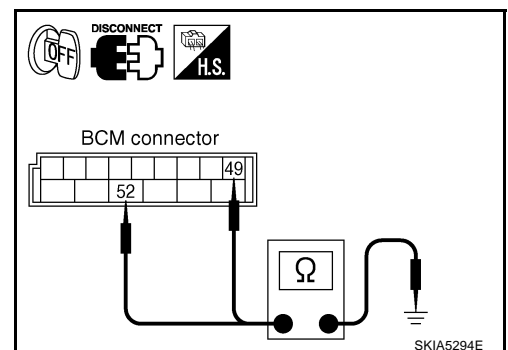
Check continuity between BCM harness connector and ground.

BCM connector	Terminal	Ground	Continuity
M4	49		Ground
	52		

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



INTERIOR ROOM LAMP

CONSULT-II Functions (BCM)

NKS002YT

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

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

Refer to [GI-38, "CONSULT-II Start Procedure"](#).

WORK SUPPORT (INT LAMP)

Operation Procedure

1. Touch "INT LAMP" on "SELECT TEST ITEM" screen.
2. Touch "WORK SUPPORT" on "SELECT DIAG MODE" screen.
3. Touch "SET I/L D- UNLCK INTCON" on "SELECT WORK ITEM" screen.
4. Touch "START".
5. Touch "CHANGE SETT".
6. The setting will be changed and "CUSTOMIZING COMPLETED" will be displayed.
7. Touch "END".

Display Item List

Item	Description	CONSULT-II
SET I/L D-UNLCK INTCON	The 30 seconds glowing function interior room lamps and ignition keyhole illumination can be selected when driver door is released (unlocked).	ON/OFF
ROOM LAMP ON TIME SET	The time in order to escalate illumination can be adjusted when interior room lamps and ignition keyhole illumination is turned on.	MODE 1 - 7
ROOM LAMP OFF TIME SET	The time in order to diminish illumination can be adjusted when interior room lamps and ignition keyhole illumination is turned off.	MODE 1 - 7

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

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

DATA MONITOR (INT LAMP)

Operation Procedure

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

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

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

INTERIOR ROOM LAMP

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
KEY ON SW "ON/OFF"	Displays "Key inserted (ON)/key removed (OFF)" status judged from the key switch signal.
DOOR SW - DR "ON/OFF"	Displays status of the 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 passenger door switch signal. (Door open (ON)/Door closed (OFF))
DOOR SW - RR "ON/OFF"	Displays status of rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL "ON/OFF"	Displays status of rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW "ON/OFF"	Displays status of the back door as judged from back door switch signal. (Door open (ON)/Door closed (OFF))
KEY CYL LK - SW "ON/OFF"	Displays "Door locked (ON) status, determined from key cylinder lock switch in driver door.
KEY CYL UN - SW "ON/OFF"	Displays "Door unlocked (OFF) status, determined from key cylinder lock switch in driver door.
CDL LOCK SW "ON/OFF"	Displays "Door locked (ON)/Door unlocked (OFF) status, determined from locking detection switch in driver door.
CDL UNLOCK SW "ON/OFF"	Displays "Door unlocked (OFF)" status, determined from locking detection switch in passenger door.
I - KEY LOCK ^{NOTE 1} "ON/OFF"	Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.
I - KEY UNLOCK ^{NOTE 1} "ON/OFF"	Displays "Unlocked (ON)/Other (OFF)" status, determined from unlock signal.
KEYLESS LOCK ^{NOTE 2} "ON/OFF"	Displays status (door is locked: ON/other: OFF) of remote keyless entry system lock signal from the remote key less entry receiver signal.
KEYLESS UNLOCK ^{NOTE 2} "ON/OFF"	Displays status (door is unlocked: ON/other: OFF) of remote keyless entry system unlock signal from the remote key less entry receiver signal.

NOTE:

- 1: Vehicle with Intelligent Key system display this item.
- 2: Vehicle with remote keyless entry system display this item.

ACTIVE TEST (INT LAMP)

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 "OFF" deactivates the operation.

Display Item List

Test item	Description
INT LAMP	Interior room lamp can be operated by any ON-OFF operations.
IGN ILLUM	Ignition key hole illumination can be operated by ON-OFF operation.
STEP LAMP TEST	All step lamp can be operated by ON-OFF operation.
LUGGAGE LAMP TEST ^{NOTE}	—

NOTE:

This item is displayed, but cannot be tested.

INTERIOR ROOM LAMP

WORK SUPPORT (BATTERY SAVER)

Operation Procedure

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

Display Item List

Item	Description	CONSULT-II
ROOM LAMP TIME SET	Interior lamp battery saver timer setting can be changed.	MODE 1: 30min MODE 2: 60min

DATA MONITOR (BATTERY SAVER)

Operation Procedure

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

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

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

Display Item List

Monitor item	Contents
IGN ON SW "ON/OFF"	Displays "IGN position (ON)/OFF, ACC position (OFF)" judged from the ignition switch signal.
KEY ON SW "ON/OFF"	Displays "Key inserted (ON)/key removed (OFF)" status judged from the key switch signal.
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 passenger door switch signal. (Door open (ON)/Door closed (OFF))
DOOR SW - RR "ON/OFF"	Displays status of rear door as judged from the rear door switch (RH) signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - RL "ON/OFF"	Displays status of rear door as judged from the rear door switch (LH) signal. (Door is open: ON/Door is closed: OFF)
BACK DOOR SW "ON/OFF"	Displays status of the back door as judged from back door switch signal. (Door open (ON)/Door closed (OFF))
KEY CYL LK - SW "ON/OFF"	Displays "Door locked (ON) status, determined from key cylinder lock switch in driver door.
KEY CYL UN - SW "ON/OFF"	Displays "Door unlocked (OFF) status, determined from key cylinder lock switch in driver door.
CDL LOCK SW "ON/OFF"	Displays "Door locked (ON)/Door unlocked (OFF) status, determined from locking detection switch in driver door.
CDL UNLOCK SW "ON/OFF"	Displays "Door unlocked (OFF)" status, determined from locking detection switch in passenger door.
I - KEY LOCK ^{NOTE 1} "ON/OFF"	Displays "Locked (ON)/Other (OFF)" status, determined from lock signal.

INTERIOR ROOM LAMP

Monitor item	Contents
I – KEY UNLOCK ^{NOTE 1} “ON/OFF”	Displays “Unlocked (ON)/Other (OFF)” status, determined from unlock signal.
KEYLESS LOCK ^{NOTE 2} “ON/OFF”	Displays status (door is locked: ON/other: OFF) of remote keyless entry system lock signal from the remote key less entry receiver signal.
KEYLESS UNLOCK ^{NOTE 2} “ON/OFF”	Displays status (door is unlocked: ON/other: OFF) of remote keyless entry system unlock signal from the remote key less entry receiver signal.

NOTE:

- 1: Vehicle with Intelligent Key system display this item.
- 2: Vehicle with remote keyless entry system display this item.

ACTIVE TEST (BATTERY SAVER)

Operation Procedure

1. Touch “BATTERY SAVER” 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 “OFF” deactivates the operation.

Display Item List

Test item	Description
BATTERY SAVER	Interior room lamp can be operated by ON–OFF operations.

Interior Room Lamp Control Does Not Operate

NKS002YU

1. CHECK EACH SWITCH

Select “BCM” on CONSULT-II. With “INT LAMP” data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-172, "Display Item List"](#) for switches and their functions.

OK or NG

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

DATA MONITOR			
MONITOR			
IGN ON SW		ON	
KEY ON SW		ON	
DOOR SW-DR		ON	
DOOR SW-AS		ON	
DOOR SW-RR		OFF	
DOOR SW-RL		OFF	
BACK DOOR SW		OFF	
KEY CYL LK-SW		OFF	
KEY CYL UN-SW		OFF	
		Page Down	
		RECORD	
MODE	BACK	LIGHT	COPY

PKIB3532E

2. ACTIVE TEST

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

OK or NG

- OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .
 NG >> GO TO 3.

ACTIVE TEST			
INT LAMP		ON	
		OFF	
MODE	BACK	LIGHT	COPY

PKIA7641E

INTERIOR ROOM LAMP

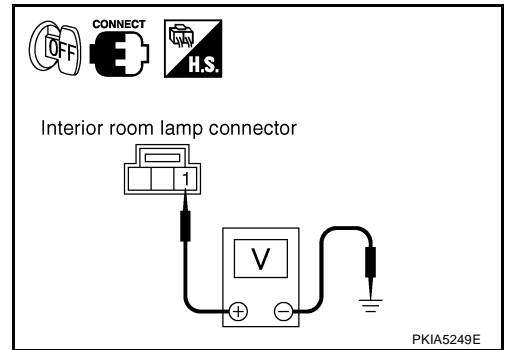
3. CHECK INTERIOR ROOM LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between interior room lamp harness connector R53 terminal 1 and ground.

1 – Ground : Battery voltage.

OK or NG

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



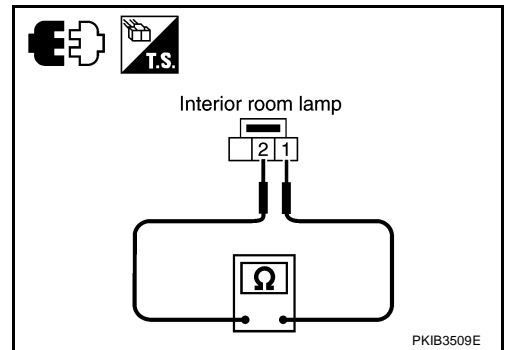
4. CHECK INTERIOR ROOM LAMP

1. Disconnect interior room lamp connector.
2. Check continuity between interior room lamp.

Interior room lamp		Condition	Continuity
1	2	Interior room lamp switch is DOOR.	Yes
		Interior room lamp switch is OFF or ON.	No

OK or NG

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



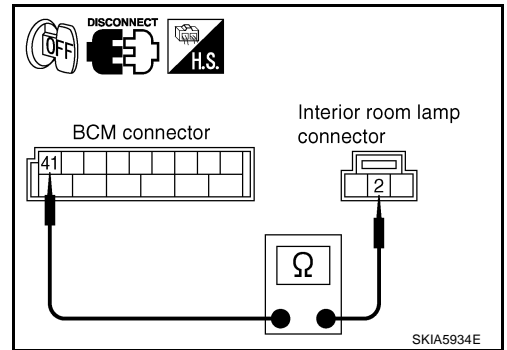
5. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 41 and interior room lamp harness connector R53 terminal 2.

41 – 2 : Continuity should exist.

OK or NG

- OK >> Replace BCM if interior room lamp does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



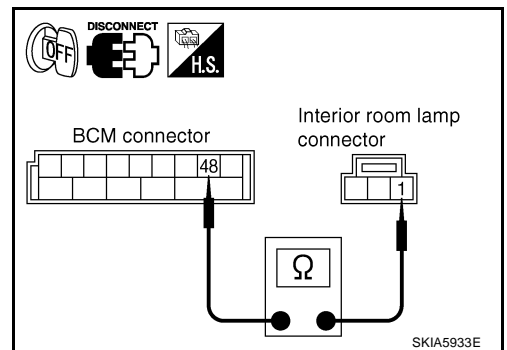
6. CHECK INTERIOR ROOM LAMP CIRCUIT

1. Disconnect BCM connector and interior room lamp connector.
2. Check continuity between BCM harness connector M4 terminal 48 and interior room lamp harness connector R53 terminal 1.

48 – 1 : Continuity should exist.

OK or NG

- OK >> Replace BCM if interior room lamp does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



INTERIOR ROOM LAMP

NKS002YV

Map Lamp Control Does Not Operate

1. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-172, "Display Item List"](#) for switches and their functions.

OK or NG

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

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF
Page Down	
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MODE	BACK
LIGHT	COPY

PKIB3532E

2. ACTIVE TEST

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

Map lamp should operate.

OK or NG

- OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> GO TO 3.

ACTIVE TEST	
INT LAMP	ON
OFF	
MODE	BACK
LIGHT	COPY

PKIA7641E

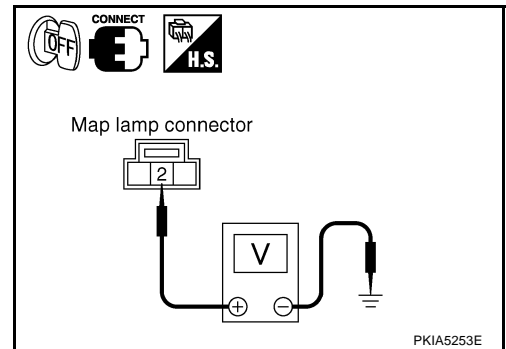
3. CHECK MAP LAMP INPUT

- Turn ignition switch OFF.
- Check voltage between map lamp harness connector R52 terminal 2 and ground.

2 – Ground : Battery voltage.

OK or NG

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



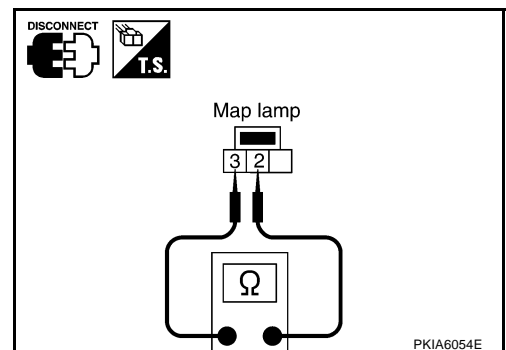
4. CHECK MAP LAMP

- Disconnect map lamp connector.
- Check continuity between map lamp.

Map lamp		Condition	Continuity
2	3	Map lamp switch is DOOR.	Yes
		Map lamp switch is OFF.	No

OK or NG

- OK >> GO TO 5.
- NG >> Replace Map lamp.



INTERIOR ROOM LAMP

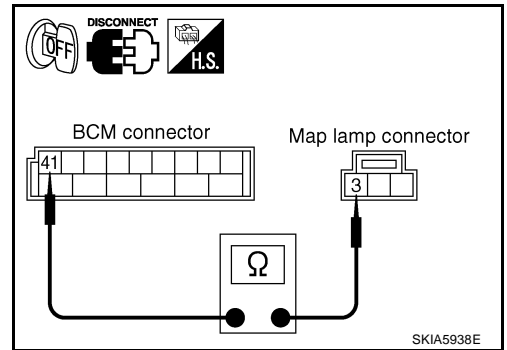
5. CHECK MAP LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M4 terminal 41 and map lamp harness connector R52 terminal 3.

41 – 3 : Continuity should exist.

OK or NG

- OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#) .
- NG >> Repair harness or connector.



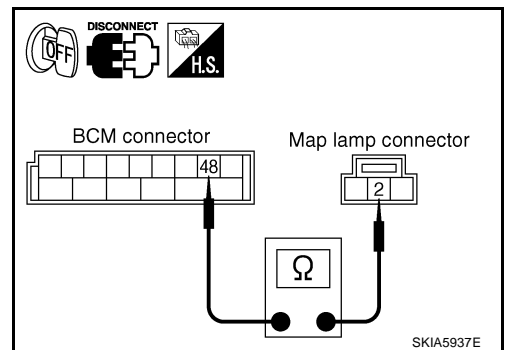
6. CHECK MAP LAMP CIRCUIT

1. Disconnect BCM connector and map lamp connector.
2. Check continuity between BCM harness connector M4 terminal 48 and map lamp harness connector R52 terminal 2.

48 – 2 : Continuity should exist.

OK or NG

- OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#) .
- NG >> Repair harness or connector.



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INTERIOR ROOM LAMP

NKS002YW

Personal Lamp Control Does Not Operate

1. CHECK REAR DOOR SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor to make sure switch "DOOR SW-RR" and "DOOR SW-RL" turn ON-OFF linked with rear door (RH and LH) operation.

OK or NG

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

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF
CDL LOCK SW	OFF
Page Down	
RECORD	
MODE	BACK
LIGHT	COPY

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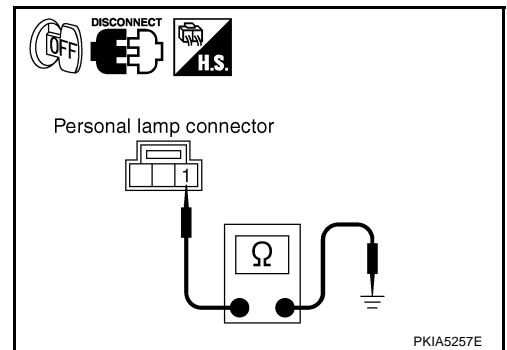
2. CHECK PERSONAL LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect personal lamp connector.
3. Open rear door.
4. Check continuity between personal lamp harness connector and ground.

Personal lamp connector		Terminal	Ground	Continuity
RH	R55	1		Yes
LH	R54	1		

OK or NG

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



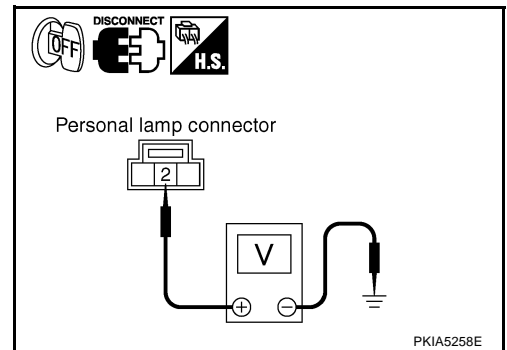
3. CHECK PERSONAL LAMP INPUT

Check voltage between personal lamp harness connector and ground.

Personal lamp connector		(+) Terminal	(-) Ground	Voltage
RH	R55	2	Ground	Battery voltage
LH	R54			

OK or NG

- OK >> Replace personal lamp. Refer to [LT-185, "PERSONAL LAMP"](#).
- NG >> GO TO 4.



INTERIOR ROOM LAMP

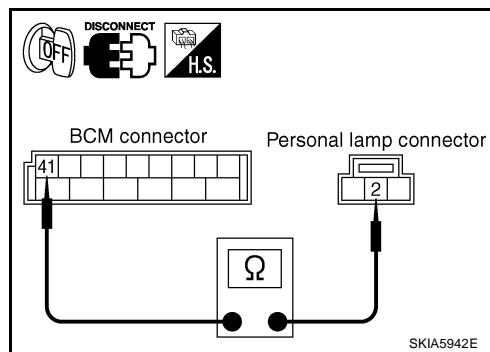
4. CHECK PERSONAL LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector and personal lamp harness connector.

BCM		Personal lamp		Continuity
Connector	Terminal	Connector	Terminal	
M4	41	RH	R55	Yes
		LH	R54	

OK or NG

- OK >> Replace BCM if personal lamp does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



Ignition Key Hole Illumination Control Does Not Operate

NKS002YX

1. CHECK EACH SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor to make sure switches listed in display item list turn ON-OFF linked with switch operation. Refer to [LT-172, "Display Item List"](#) for switches and their functions.

OK or NG

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

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF
Page Down	
RECORD	
MODE	BACK
LIGHT	COPY

PKIB3532E

2. ACTIVE TEST

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

Ignition key hole illumination should operate.

OK or NG

- OK >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> GO TO 3.

ACTIVE TEST	
IGN ILLUM	ON
OFF	
MODE	BACK
LIGHT	COPY

PKIA7642E

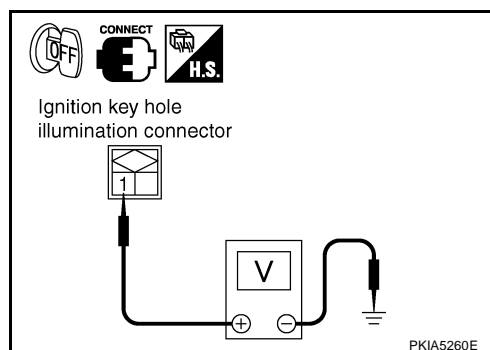
3. CHECK IGNITION KEY HOLE ILLUMINATION INPUT

1. Turn ignition switch OFF.
2. Check voltage between ignition key hole illumination harness connector M24 terminal 1 and ground.

1 – Ground : Battery voltage.

OK or NG

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



INTERIOR ROOM LAMP

4. CHECK IGNITION KEY HOLE ILLUMINATION BULB

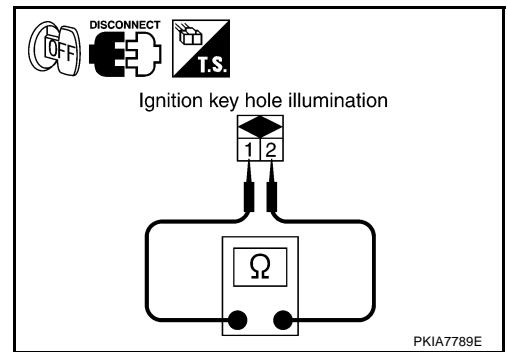
1. Disconnect ignition key hole illumination connector.
2. Check continuity between ignition key hole illumination terminals 1 and 2.

1 – 2 : Continuity should exist.

OK or NG

OK >> GO TO 5.

NG >> Replace ignition key hole illumination. Refer to [.LT-182, "IGNITION KEY HOLE ILLUMINATION \(without Intelligent Key\)"](#) or ["LT-182, "IGNITION KEY HOLE ILLUMINATION \(with Intelligent Key\)"](#)



5. CHECK IGNITION KEY HOLE ILLUMINATION CIRCUIT

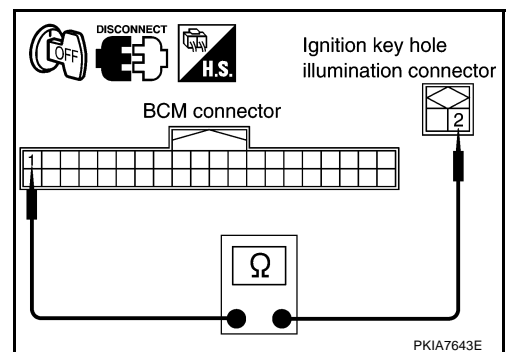
1. Disconnect BCM connector.
2. Check continuity between BCM harness connector M3 terminal 1 and ignition key hole illumination harness connector M24 terminal 2.

1 – 2 : Continuity should exist.

OK or NG

OK >> Replace BCM if ignition key hole illumination does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#).

NG >> Repair harness or connector.



6. CHECK IGNITION KEY HOLE ILLUMINATION CIRCUIT

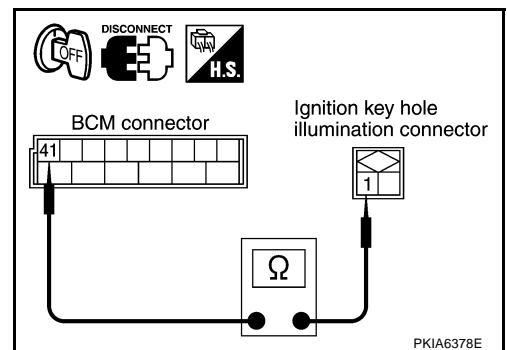
1. Disconnect BCM connector and ignition key hole illumination connector.
2. Check continuity between BCM harness connector M4 terminal 41 and ignition key hole illumination harness connector M24 terminal 1.

41 – 1 : Continuity should exist.

OK or NG

OK >> Replace BCM if ignition key hole illumination does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#).

NG >> Repair harness or connector.



INTERIOR ROOM LAMP

NKS002YY

All Step Lamps Do Not Operate

1. CHECK EACH DOOR SWITCH

Select "BCM" on CONSULT-II. With "INT LAMP" data monitor to make sure switches listed below turn ON-OFF linked with switch operation.

Switch name	CONSULT screen
Driver side door switch	DOOR SW - DR
Passenger side door switch	DOOR SW - AS
Rear RH side door switch	DOOR SW - RR
Rear LH side door switch	DOOR SW - RL

DATA MONITOR	
MONITOR	
IGN ON SW	ON
KEY ON SW	ON
DOOR SW-DR	ON
DOOR SW-AS	ON
DOOR SW-RR	OFF
DOOR SW-RL	OFF
BACK DOOR SW	OFF
KEY CYL LK-SW	OFF
KEY CYL UN-SW	OFF
Page Down	
RECORD	
MODE	BACK
LIGHT	COPY

PKIB3532E

OK or NG

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

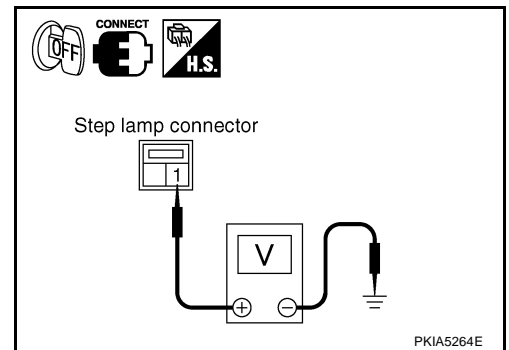
2. CHECK STEP LAMP INPUT

- Turn ignition switch OFF.
- Check voltage between front door driver side step lamp harness connector D9 terminal 1 and ground.

1 – Ground : **Battery voltage.**

OK or NG

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



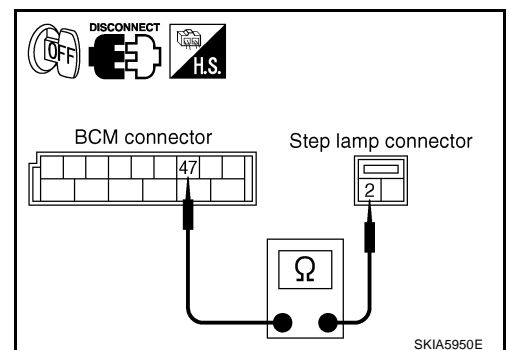
3. CHECK STEP LAMP CIRCUIT

- Disconnect BCM connector and front door driver side step lamp connector.
- Check continuity between BCM harness connector M4 terminal 47 and front door driver side step lamp harness connector D9 terminal 2.

47 – 2 : **Continuity should exist.**

OK or NG

- OK >> Replace BCM if step lamp does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#).
- NG >> Repair harness or connector.



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INTERIOR ROOM LAMP

4. CHECK STEP LAMP CIRCUIT

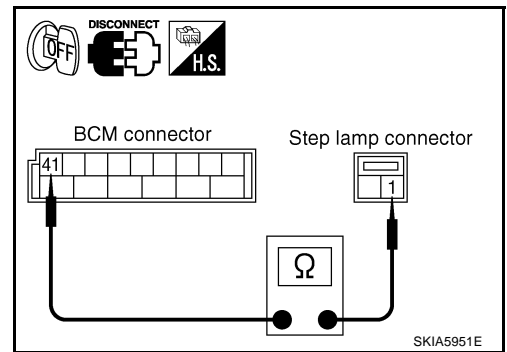
1. Disconnect BCM connector and front door driver side step lamp connector.
2. Check continuity between BCM harness connector M4 terminal 41 and front door driver side step lamp harness connector D9 terminal 1.

41 – 1 : Continuity should exist.

OK or NG

OK >> Replace BCM if step lamp does not work after setting the connector again. Refer to [BCS-14, "Removal and Installation of BCM"](#) .

NG >> Repair harness or connector.



All Interior Room Lamps Do Not Operate

NKS002YZ

1. CHECK POWER SUPPLY CIRCUIT

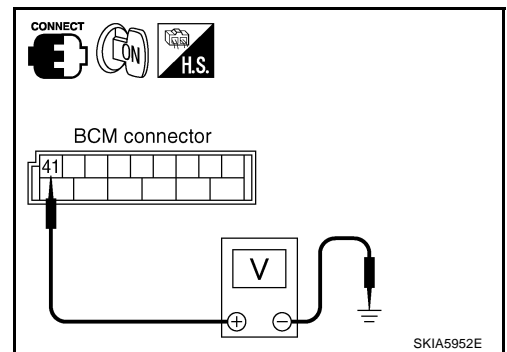
1. All interior room lamps switch are OFF.
2. Turn ignition switch ON.
3. Check voltage between BCM harness connector M4 terminal 41 and ground.

41 – Ground : Battery voltage.

OK or NG

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

NG >> Replace BCM. Refer to [BCS-14, "Removal and Installation of BCM"](#) .



Bulb Replacement

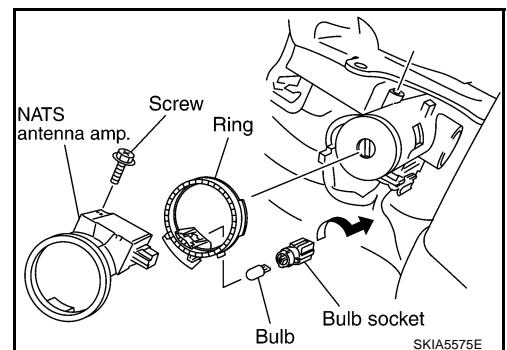
IGNITION KEY HOLE ILLUMINATION (WITHOUT INTELLIGENT KEY)

NKS002ZO

1. Remove combination meter. Refer to [DI-25, "Removal and Installation of Combination Meter"](#) .
2. Remove screw and remove NATS antenna amp.
3. Pull out ring and turn bulb socket to left to release lock.

Ignition key hole illumination : 12 V - 0.8 W

4. Installation is the reverse order of removal.

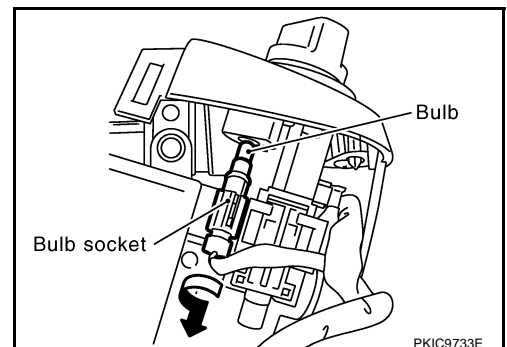


IGNITION KEY HOLE ILLUMINATION (WITH INTELLIGENT KEY)

1. Remove instrument lower panel (driver side). Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
2. Turn the bulb socket counterclockwise and unlock it.

Ignition key hole illumination : 12 V - 0.8 W

3. Installation is the reverse order of removal.



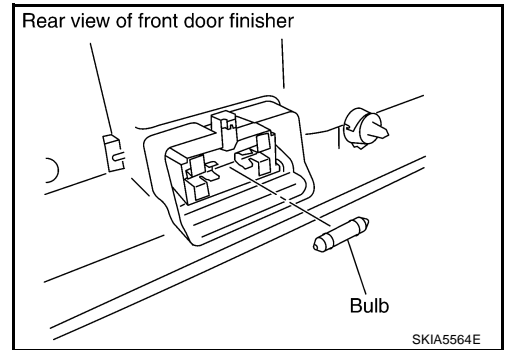
INTERIOR ROOM LAMP

FRONT STEP LAMP

1. Remove door finisher. Refer to [EI-36, "Removal and Installation"](#)
2. Insert a screwdriver in lens and remove lens.
3. Remove bulb.

Step lamp : 12 V - 5 W

4. Installation is the reverse order of removal.

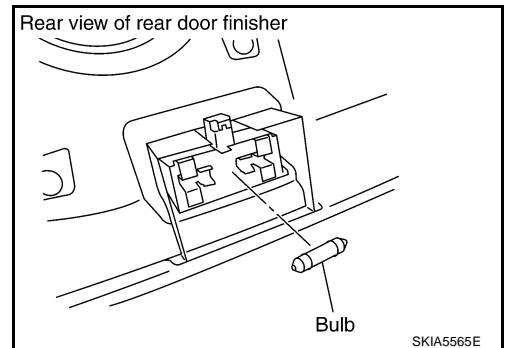


REAR STEP LAMP

1. Remove door finisher. Refer to [EI-36, "Removal and Installation"](#)
2. Insert a screwdriver in lens and remove lens.
3. Remove bulb.

Step lamp : 12 V - 5 W

4. Installation is the reverse order of removal.

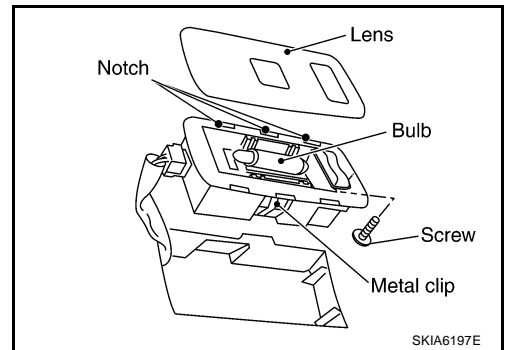


LUGGAGE ROOM LAMP

1. Remove luggage room lamp. Refer to [LT-184, "LUGGAGE ROOM LAMP"](#).
2. Remove screw from luggage room lamp.
3. Insert a suitable tool and remove lens.
4. Remove bulb.

Luggage room lamp : 12 V - 8 W

5. Installation is the reverse order of removal.

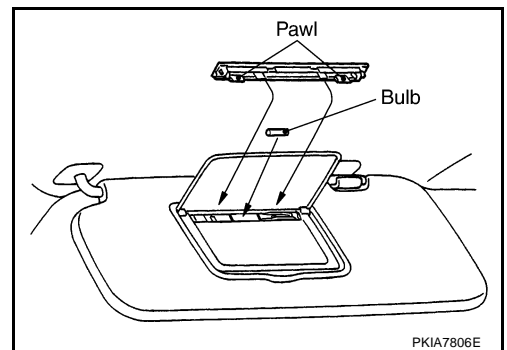


VANITY MIRROR LAMP

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

Vanity mirror lamp : 12 V - 1.32 W

3. Installation is the reverse order of removal.



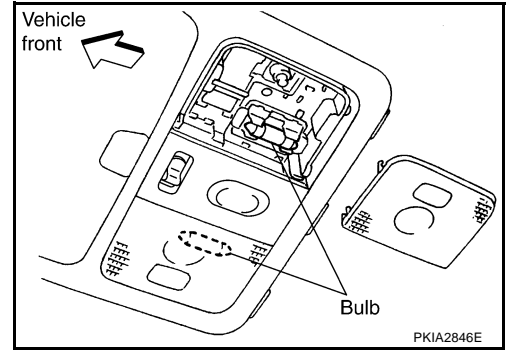
INTERIOR ROOM LAMP

MAP LAMP

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

Map lamp : 12 V - 8 W

3. Installation is the reverse order of removal.

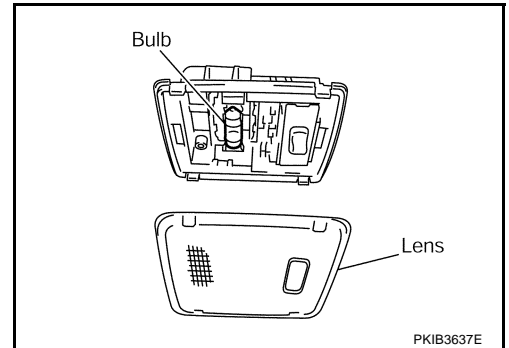


INTERIOR ROOM LAMP

1. Remove interior room lamp. Refer to [LT-184, "Removal and Installation"](#) .
2. Insert a suitable tool and remove lens.
3. Remove bulb.

Interior room lamp :12 V - 10 W

4. Installation is the reverse order of removal.

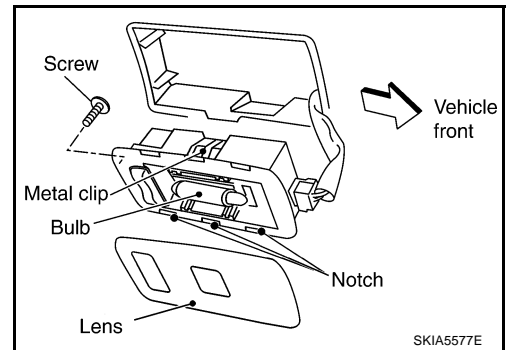


PERSONAL LAMP

1. Remove personal lamp. Refer to [LT-185, "PERSONAL LAMP"](#) .
2. Remove screw from personal lamp.
3. Insert a screwdriver or similar tool and remove lens.
4. Remove bulb.

Personal lamp : 12 V - 8 W

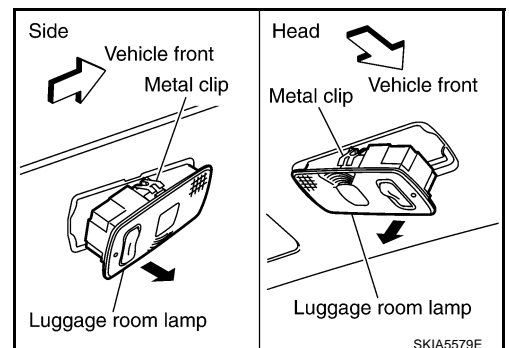
5. Installation is the reverse order of removal.



Removal and Installation LUGGAGE ROOM LAMP

Removal

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



Installation

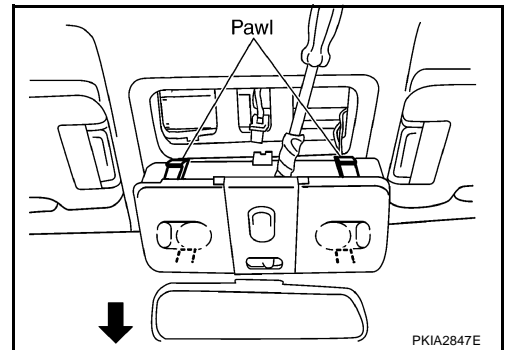
Installation is the reverse order of removal.

INTERIOR ROOM LAMP

MAP LAMP

Removal

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



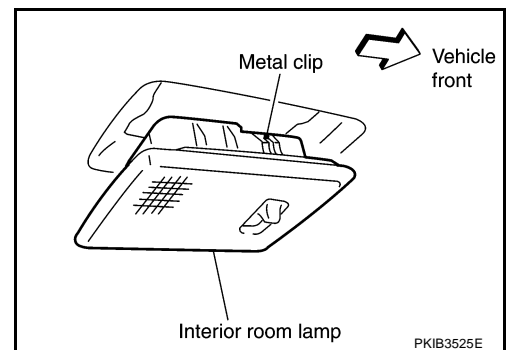
Installation

Installation is the reverse order of removal.

INTERIOR ROOM LAMP

Removal

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



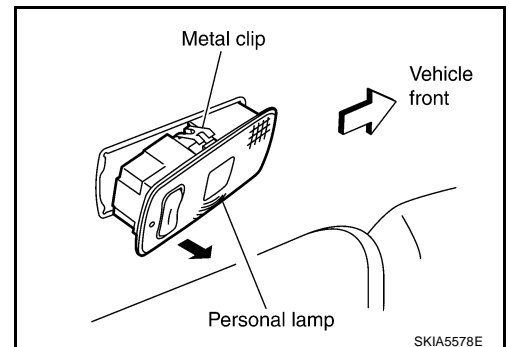
Installation

Installation is the reverse order of removal.

PERSONAL LAMP

Removal

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



Installation

Installation is the reverse order of removal.

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ILLUMINATION

System Description

NKS002Z2

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

Power is supplied at all times

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

Power is also supplied at all times

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

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

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

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

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to combination meter terminal 4 and
- to BCM terminal 11.

Ground is supplied

- to BCM terminals 49 and 52
- to unified meter and A/C amp. terminals 29 and 30, and
- to combination meter terminals 5, 6, and 15
- through grounds M35, M45, and M85,
- to IPDM E/R terminals 38 and 60
- through grounds E21, E50, and E51.

ILLUMINATION OPERATION BY LIGHTING SWITCH

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

- through IPDM E/R terminal 22
- to glove box lamp terminal 1
- to A/T device (illumination) terminal 11
- to snow mode switch (illumination) terminal 5
- to VDC off switch (illumination) terminal 3

ILLUMINATION

- to clock (illumination) terminal 3
- to hazard switch (illumination) terminal 3
- to heated seat switch (driver side) (illumination) terminal 5
- to heated seat switch (passenger side) (illumination) terminal 5
- to door mirror remote control switch (illumination) terminal 16
- to LDW switch (illumination) terminal 5
- to combination switch (spiral cable) terminal 26
- to microphone terminal 2 (with telephone system)
- to A/C and AV switch (illumination) terminal 3
- to DVD player (illumination) terminal 12
- to coin box illumination terminal 2 and
- to rear power window switch LH and RH (illumination) terminals 6,
- through combination switch (spiral cable) terminal 18
- to audio steering switch (illumination)
- to icc steering switch (illumination) (with icc) and
- to ascd steering switch (illumination) (without icc)

Illumination control

- through combination meter terminal 19
- to A/T device (illumination) terminal 12
- to snow mode switch (illumination) terminal 6
- to VDC off switch (illumination) terminal 4
- to clock (illumination) terminal 4
- to hazard switch (illumination) terminal 4
- to heated seat switch (driver side) (illumination) terminal 6
- to heated seat switch (passenger side) (illumination) terminal 6
- to door mirror remote control switch terminal 15
- to LDW switch (illumination) terminal 4,
- to combination switch (spiral cable) terminal 27
- to A/C and AV switch (illumination) terminal 4 and
- to DVD player (illumination) terminal 10,
- through combination switch (spiral cable) terminal 21
- to audio steering switch (illumination)
- to icc steering switch (illumination) (with icc) and
- to ascd steering switch (illumination) (without icc)

Ground is supplied at all times

- to glove box lamp terminal 2 and
- to coin box illumination terminal 3
- through grounds M35, M45 and M85,
- to rear power window switch LH and RH (illumination) terminals 7
- through grounds B15 and B45.

With power and ground supplied, illumination lamps illuminate.

EXTERIOR LAMP BATTERY SAVER CONTROL

When the lighting switch is in the 1ST or 2ND position (or if auto light system is activated), and ignition switch is turned from ON or ACC to OFF, battery saver control function is activated.

Under this condition, illumination lamps remain illuminated for 5 minutes, then illumination lamps are turned off.

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

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

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ILLUMINATION

CAN Communication System Description

NKS002Z3

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

NKS002Z4

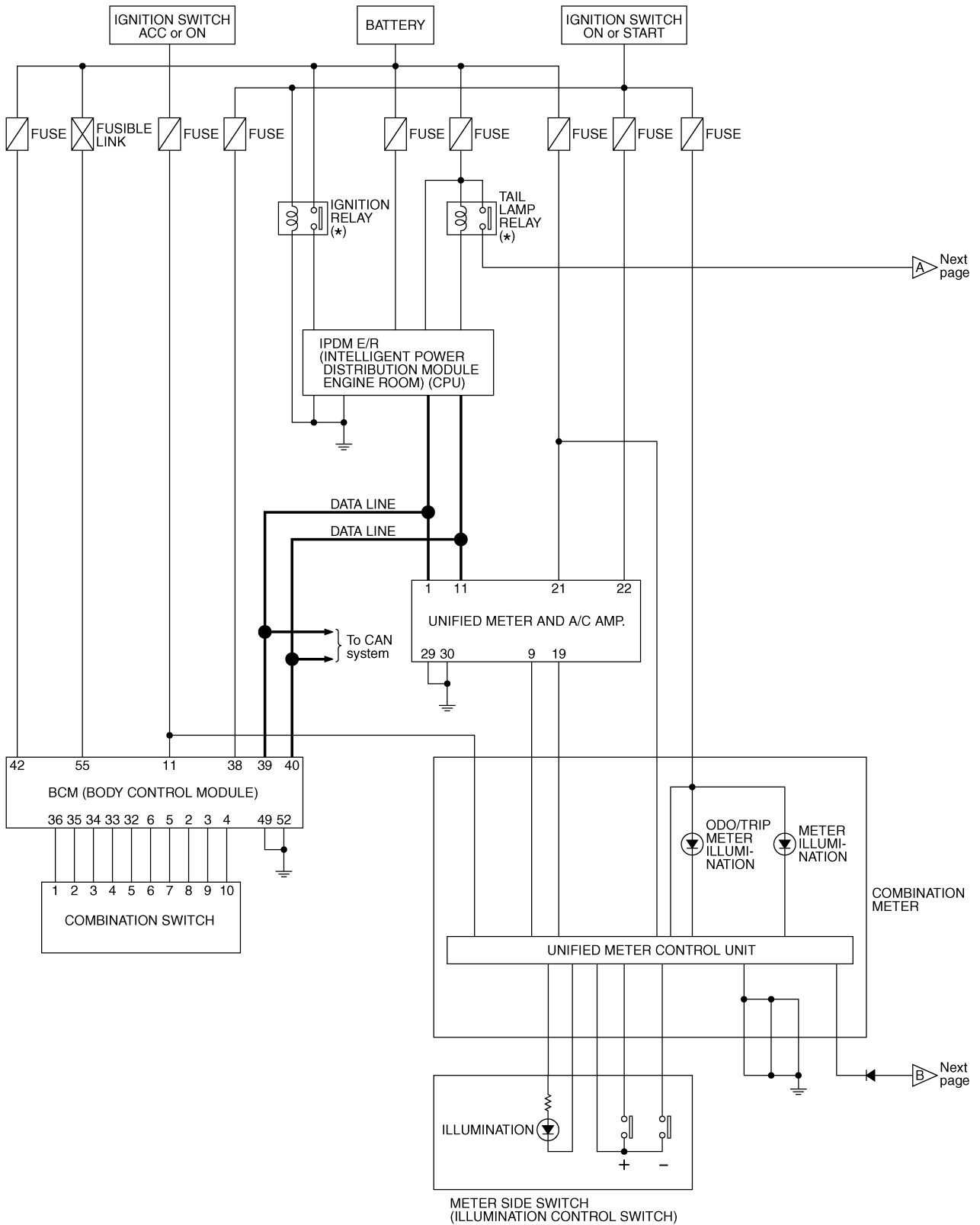
Refer to [LAN-49, "CAN System Specification Chart"](#) .

ILLUMINATION

Schematic

NKS002Z5

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A Next page

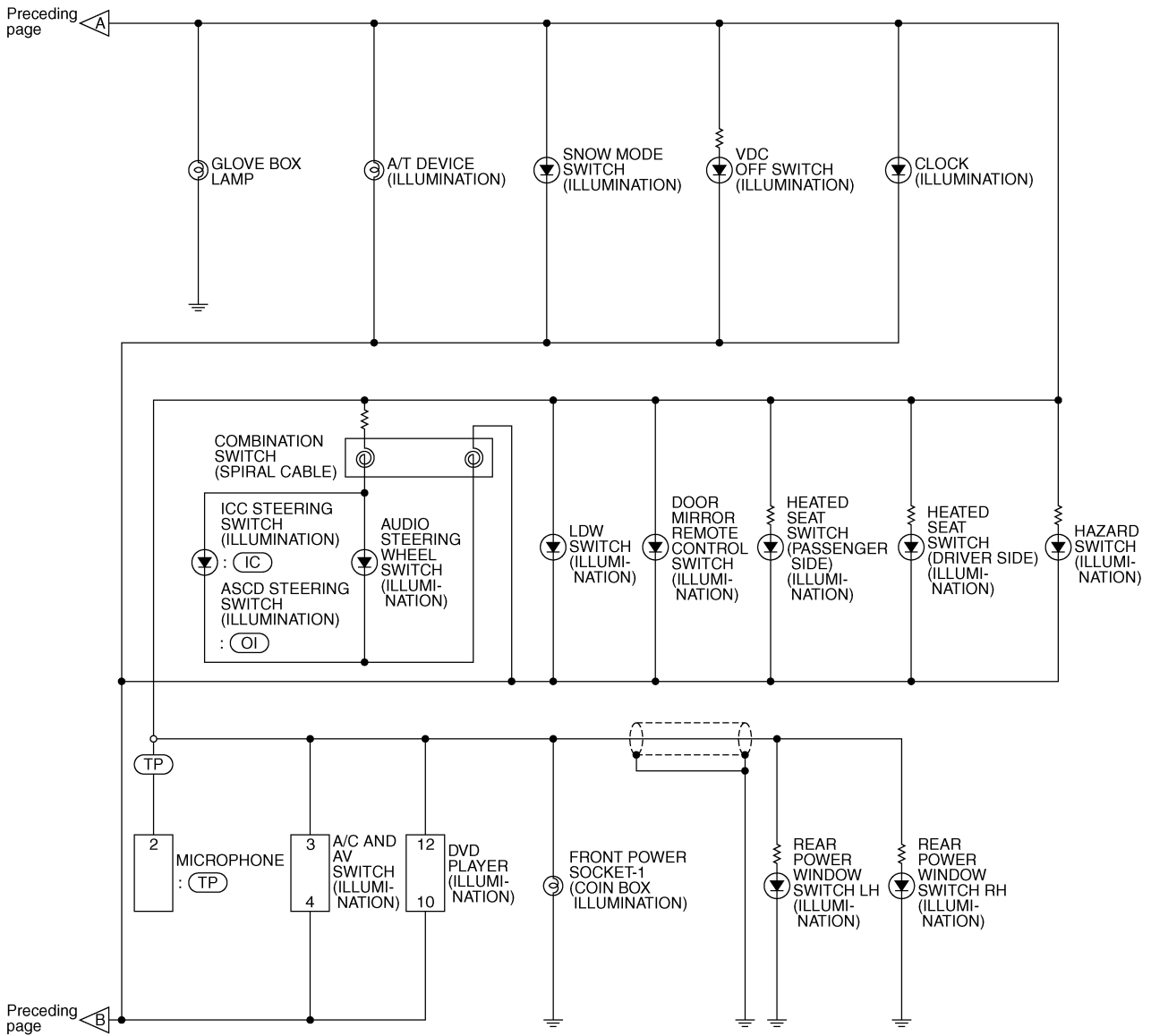
B Next page

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

TKWM4327E

ILLUMINATION

- (IC) : With ICC
- (OI) : Without ICC
- (TP) : With telephone system



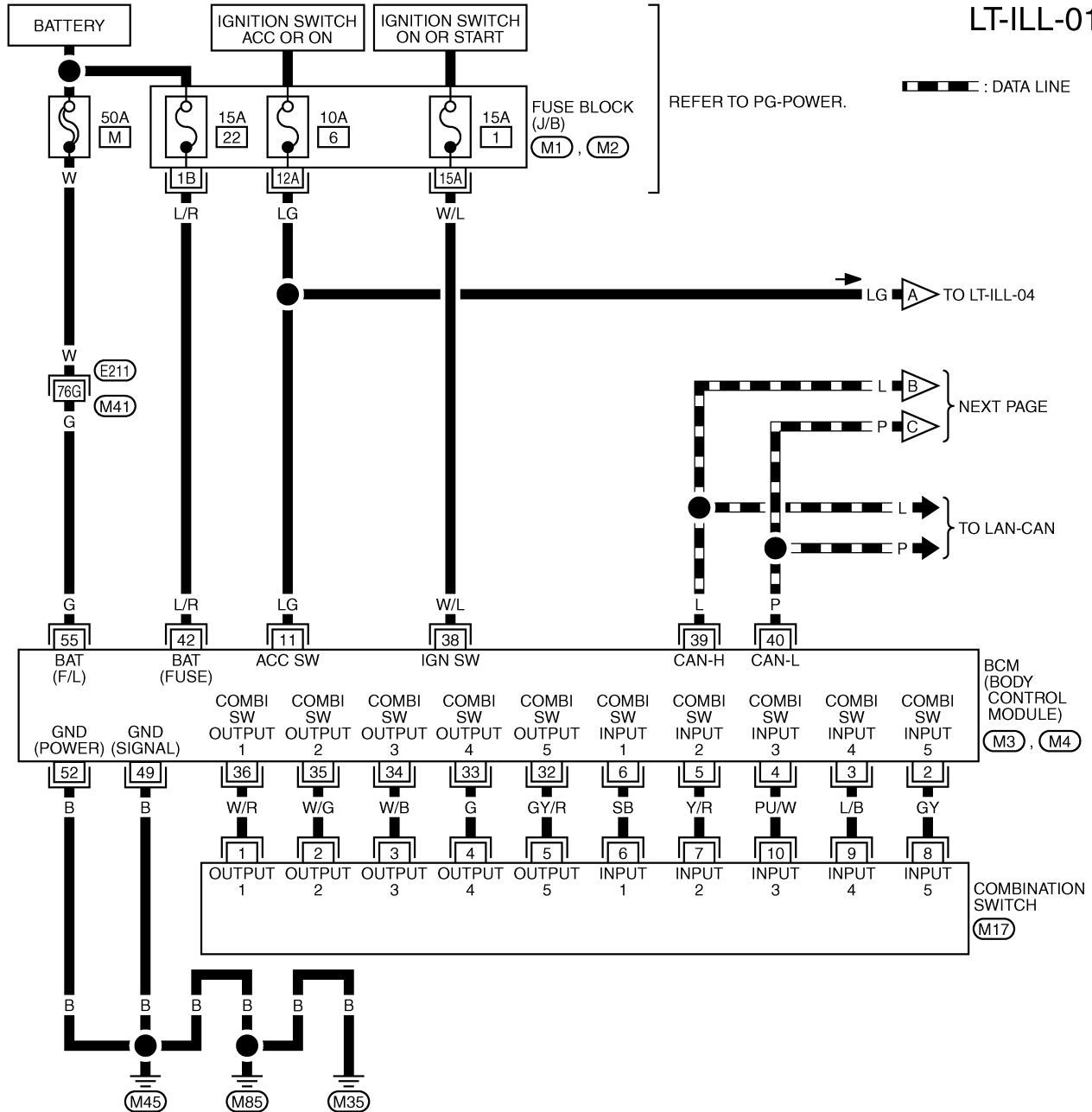
TKWM4328E

ILLUMINATION

Wiring Diagram — ILL —

NKS002Z6

LT-ILL-01



7	8	9	10	13	12
6	5	4	3	2	1
					(M17)
					W

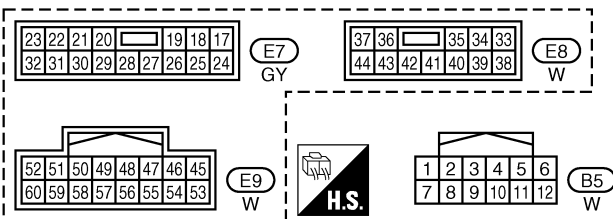
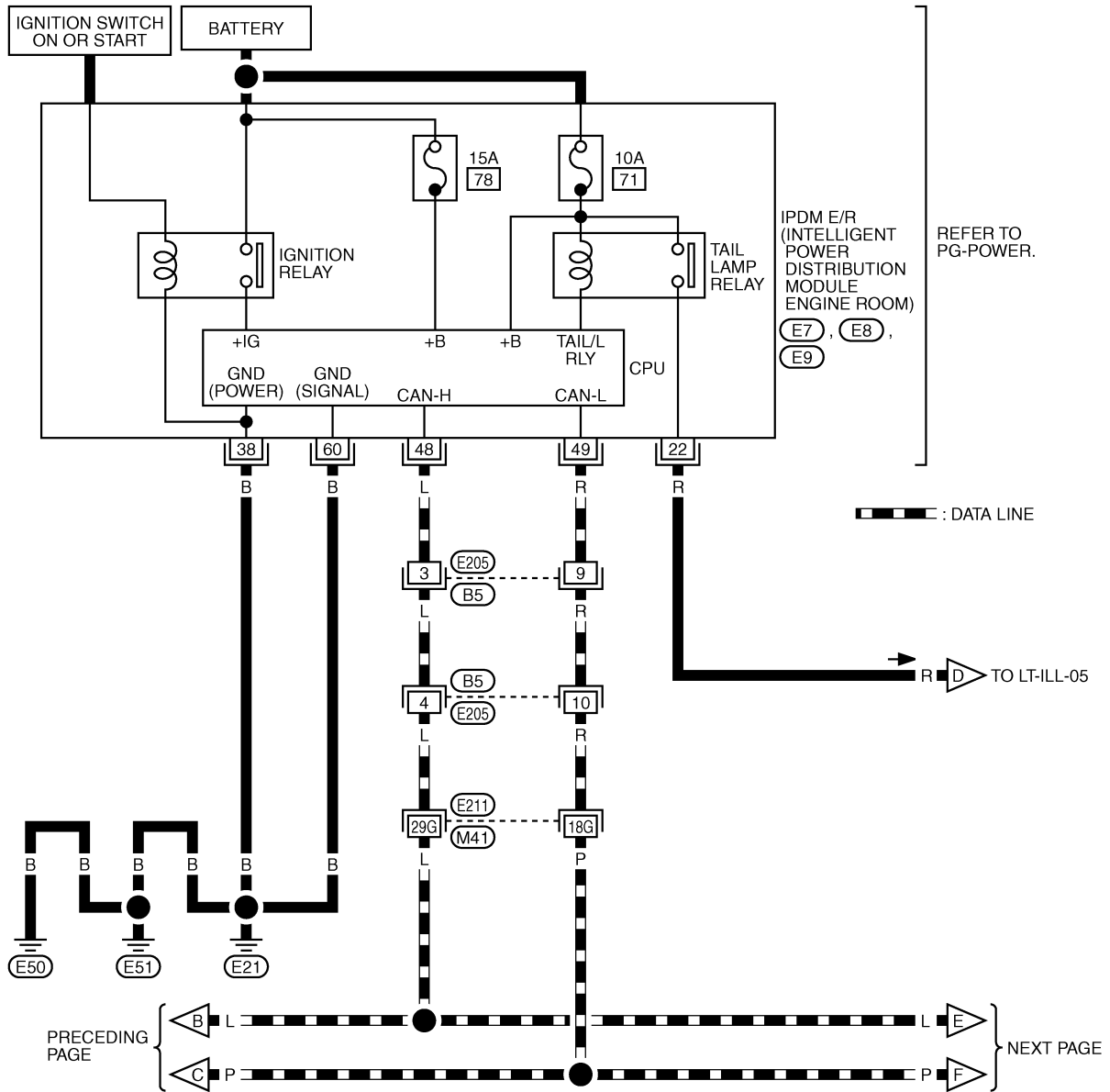
REFER TO THE FOLLOWING.

- (E21) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

TKWM4329E

ILLUMINATION

LT-ILL-02



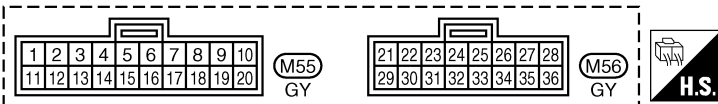
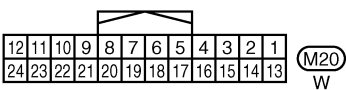
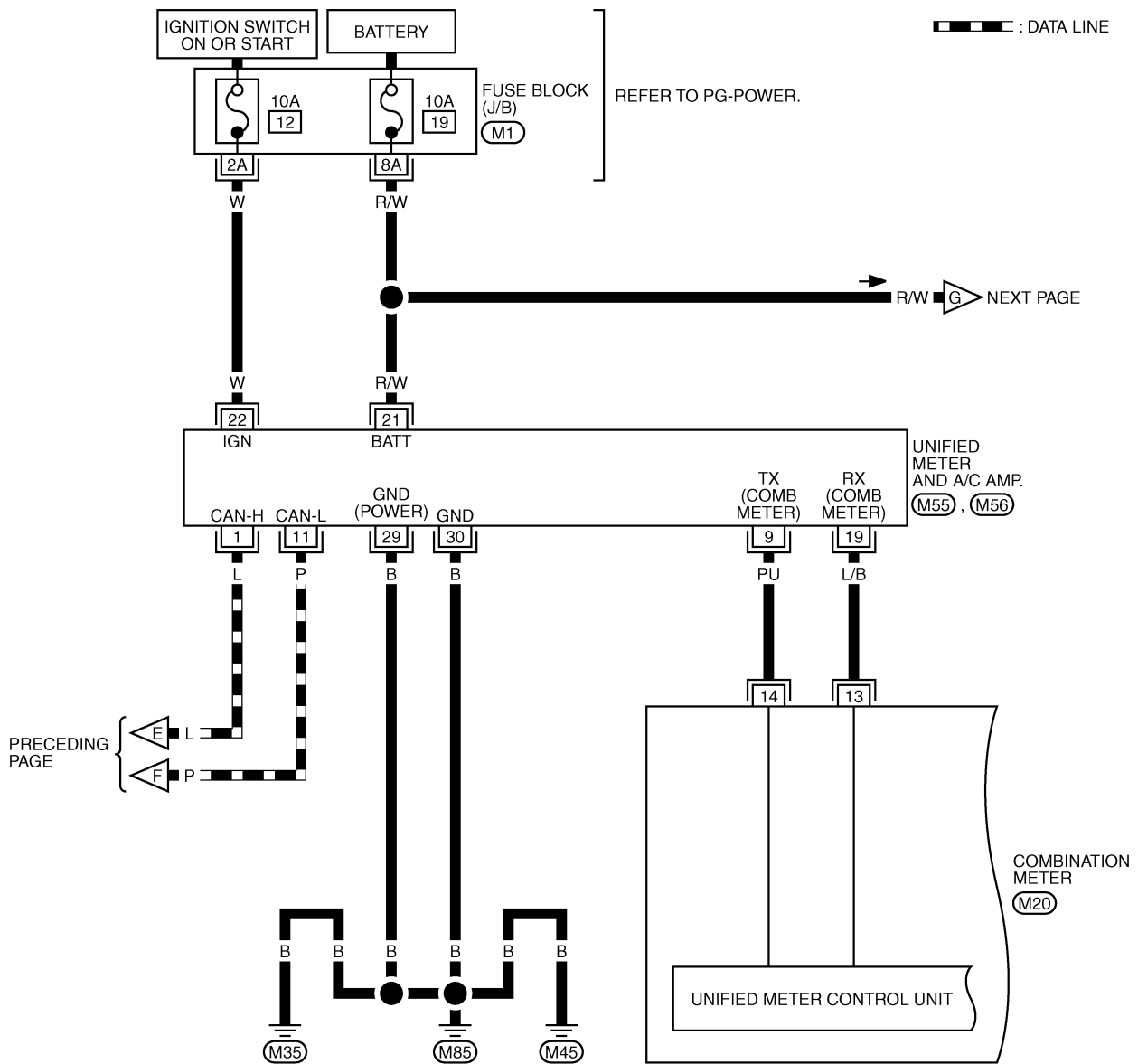
REFER TO THE FOLLOWING.

(E211) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4330E

ILLUMINATION

LT-ILL-03

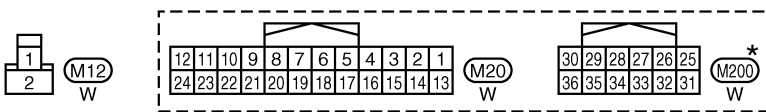
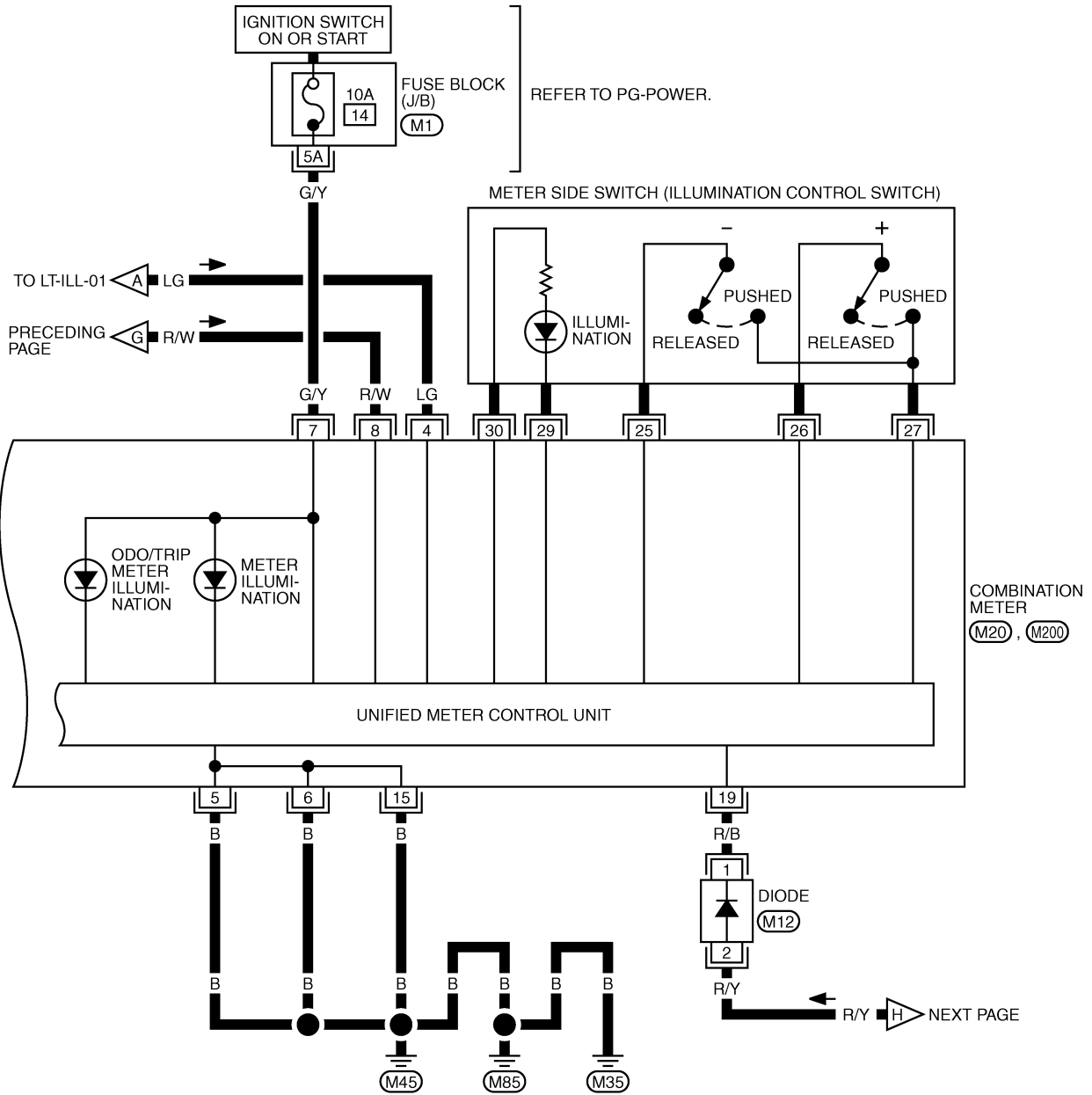


REFER TO THE FOLLOWING.
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWM4331E

ILLUMINATION

LT-ILL-04



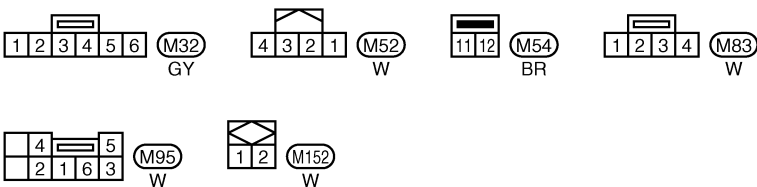
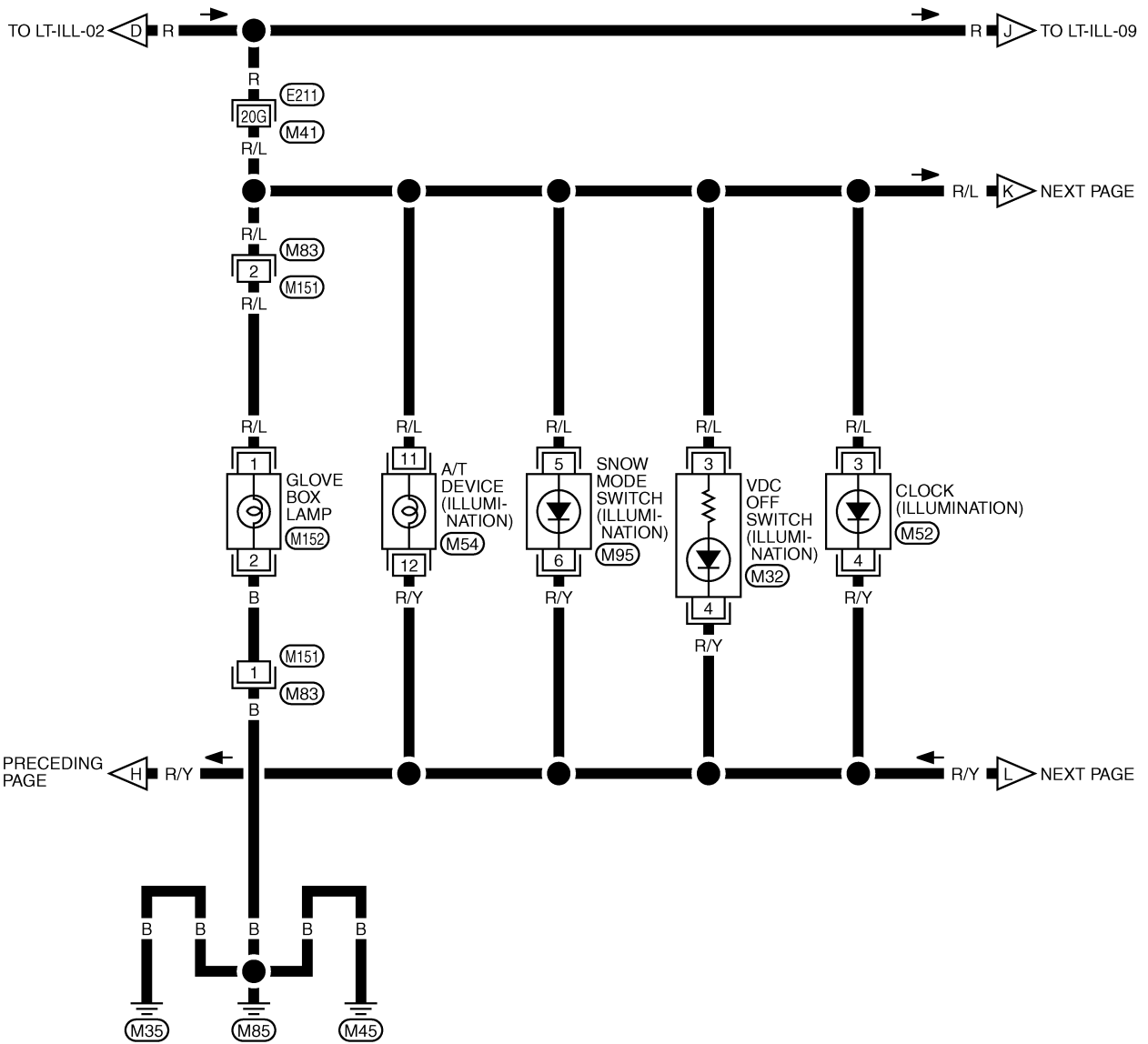
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWM4332E

ILLUMINATION

LT-ILL-05

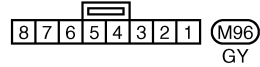
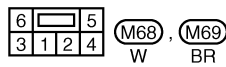
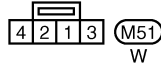
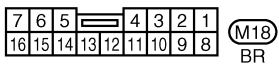
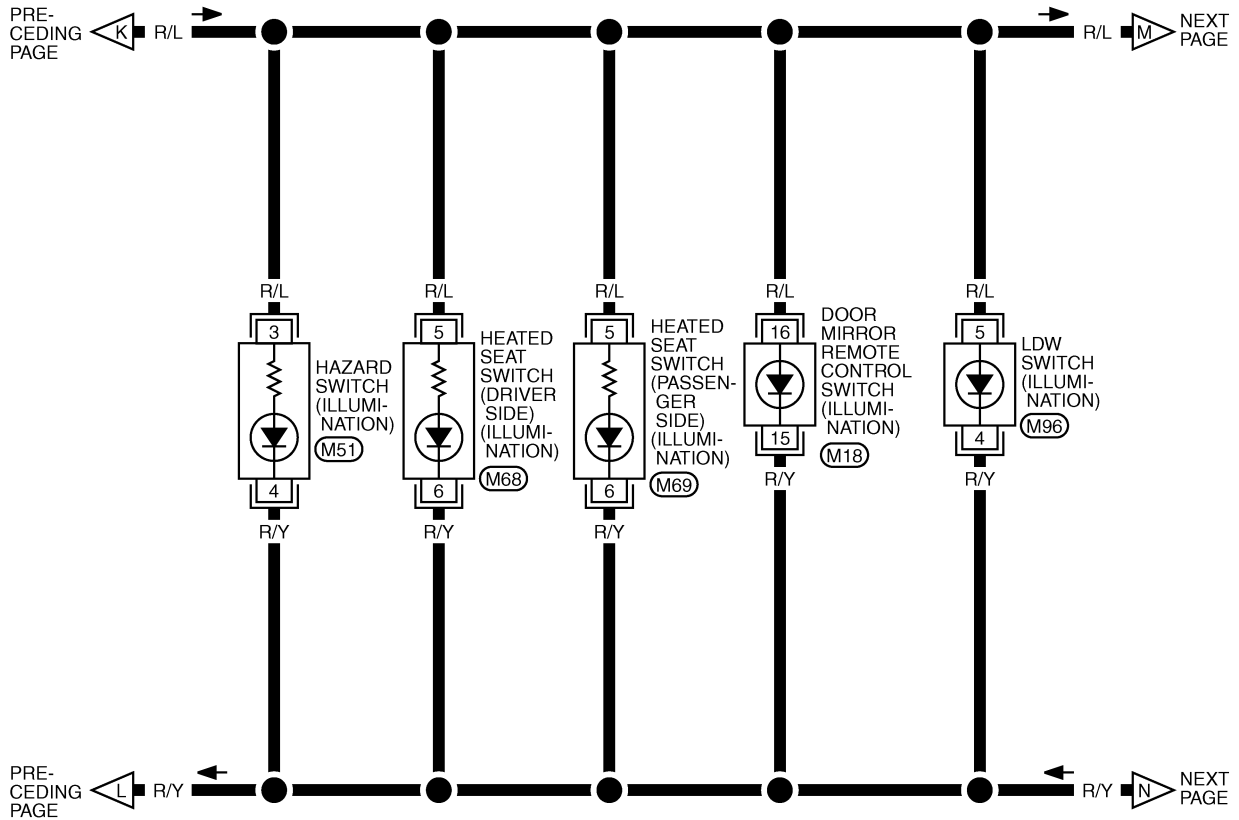


REFER TO THE FOLLOWING.
 (E211) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4333E

ILLUMINATION

LT-ILL-06

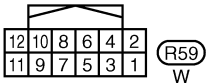
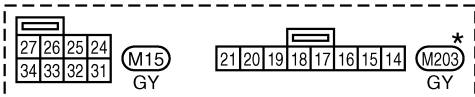
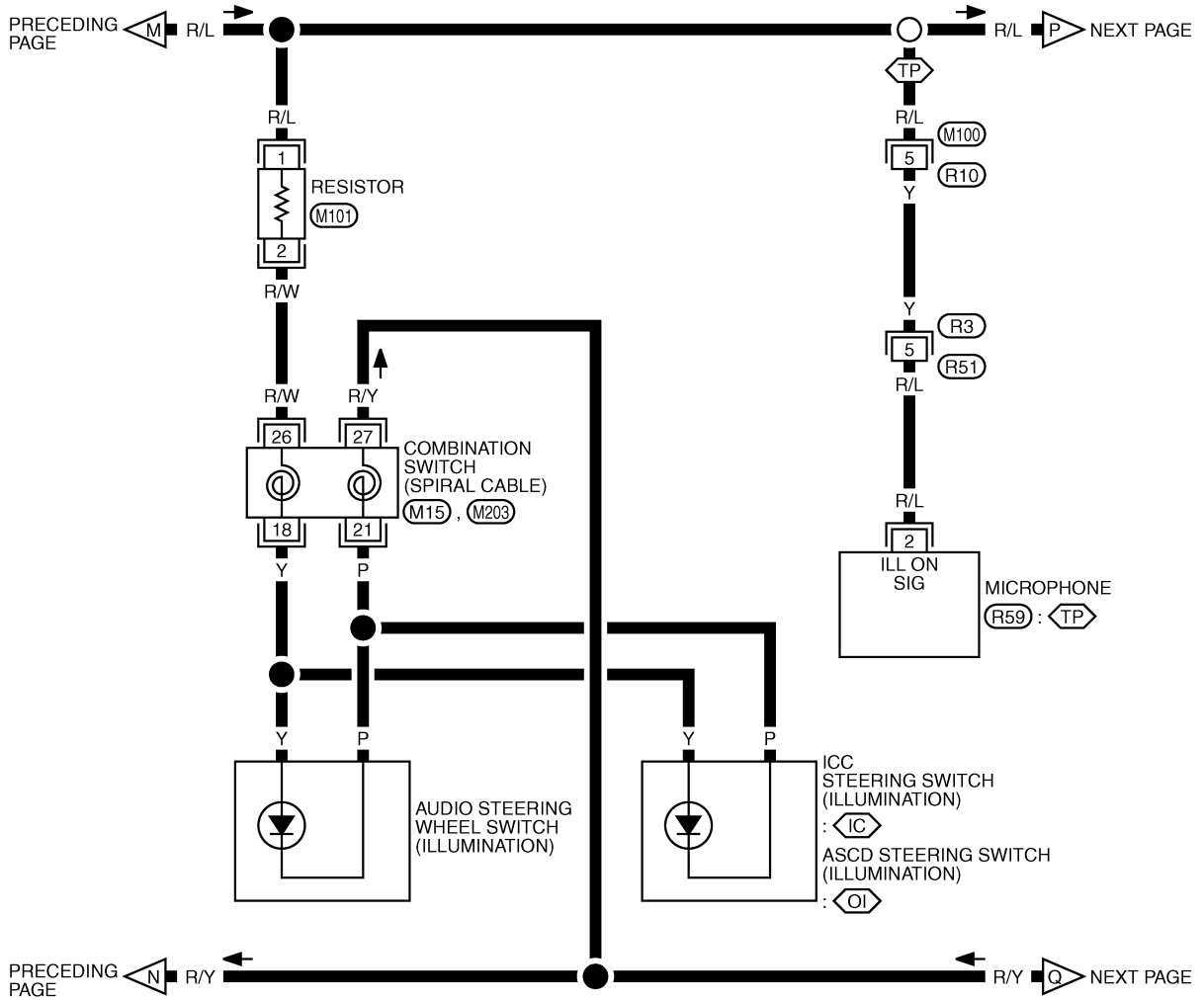


TKWM4334E

ILLUMINATION

LT-ILL-07

- ⬡(IC) : WITH ICC
- ⬡(OI) : WITHOUT ICC
- ⬡(TP) : WITH TELEPHONE SYSTEM

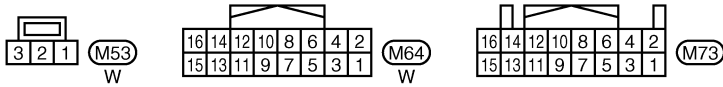
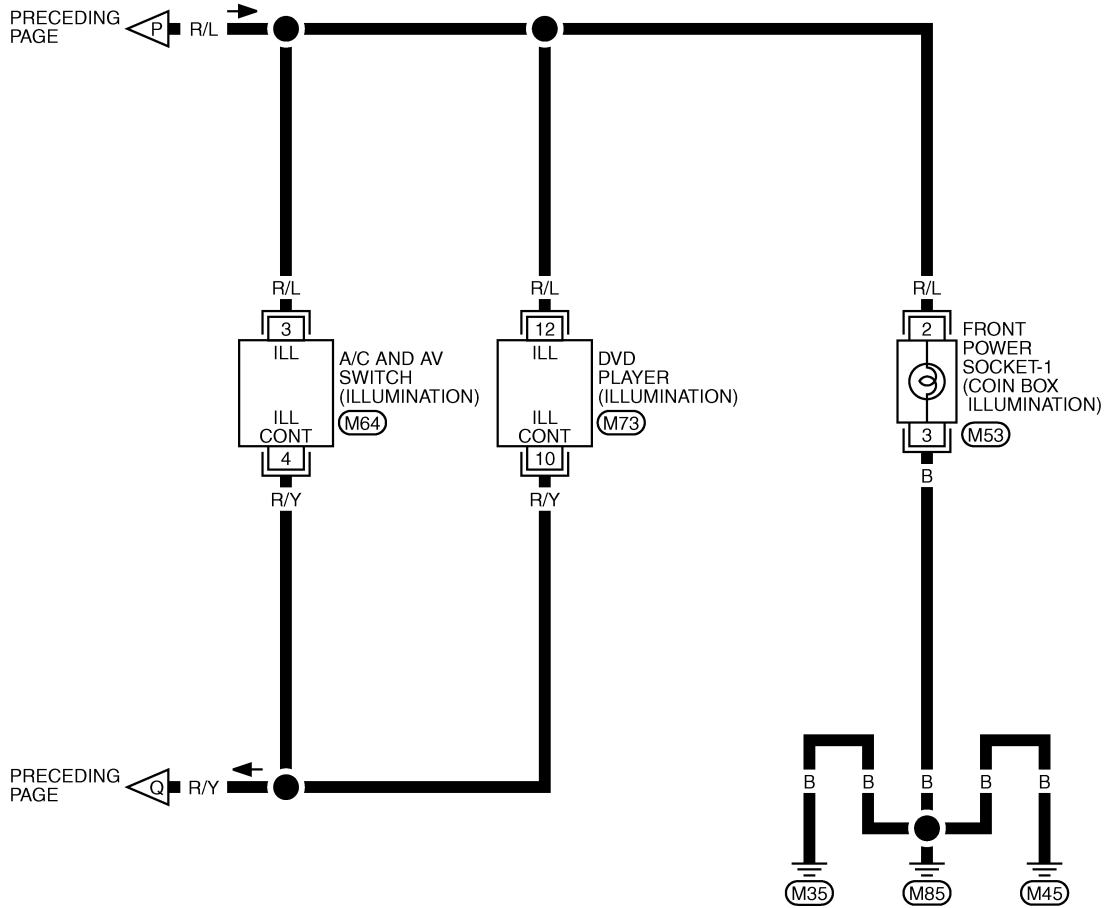


*: THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT", PG SECTION.

TKWM4335E

ILLUMINATION

LT-ILL-08

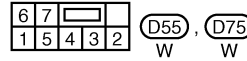
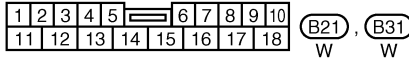
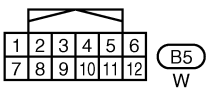
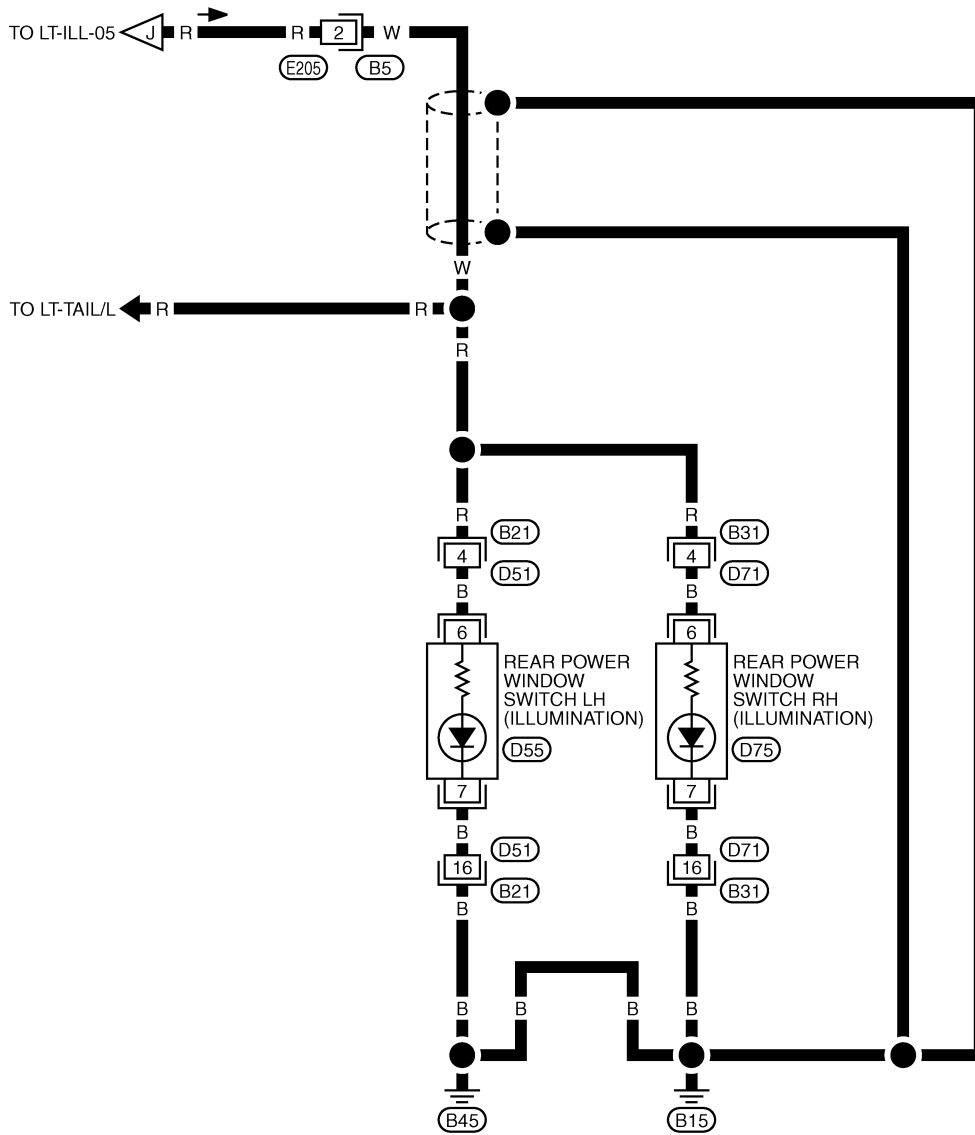


TKWM4336E

ILLUMINATION

LT-ILL-09

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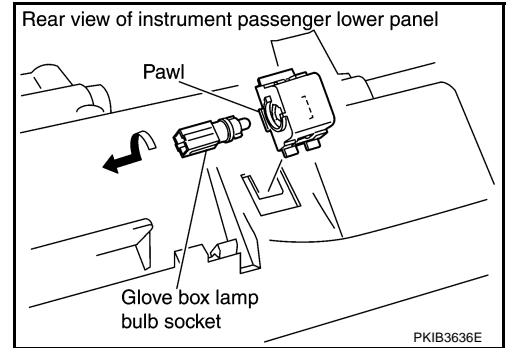
TKWM4337E

ILLUMINATION

NKS003N7

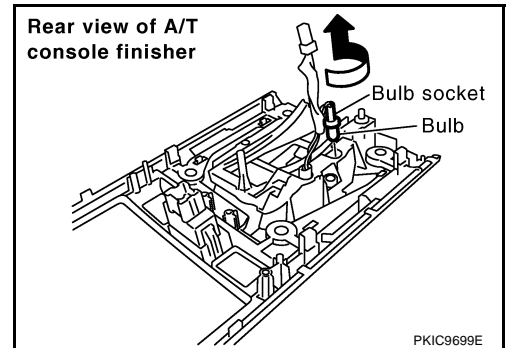
Bulb Replacement GLOVE BOX LAMP

1. Remove instrument passenger lower panel. Refer to [IP-18, "INSTRUMENT PASSENGER LOWER PANEL"](#).
2. Turn bulb socket left to release lock and remove it.
Glove box lamp : 12 V - 1.4 W
3. Installation is the reverse order of removal.



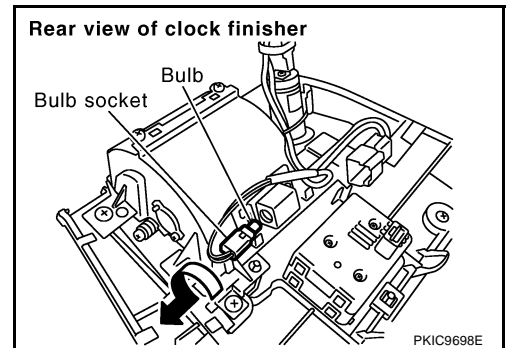
A/T DEVICE ILLUMINATION

1. Remove A/T console finisher. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#).
2. Turn bulb socket left to release lock and remove it.
A/T device illumination : 12 V - 1.4 W
3. Installation is the reverse order of removal.



COIN BOX ILLUMINATION

1. Remove instrument clock finisher. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#).
2. Turn bulb socket left to release lock and remove it.
Coin box illumination : 12 V - 1.4 W
3. Installation is the reverse order of removal.



Removal and Installation ILLUMINATION CONTROL SWITCH

NKS002Z7

Refer to [DI-27, "Removal and Installation of Odo/Trip Meter and Illumination Control Switch"](#).

BULB SPECIFICATIONS

BULB SPECIFICATIONS

PPF:26297

Headlamp

NKS002Z8

Item	Wattage (W)
High/Low (Xenon type)	35 (D2S)

Exterior Lamp

NKS002Z9

Item	Wattage (W)	
Front combination lamp	Front turn signal lamp	21 (amber)
	Daytime/Parking lamp	21/5
	Front side marker lamp	3.8
Rear combination lamp	Stop/Tail lamp and Rear Turn signal lamp	LED
	Rear side marker lamp	3.8
Front fog lamp	35 (H8)	
Back-up lamp	18	
License plate lamp	5	
High-mounted stop lamp (back door mount)	LED	

Interior Lamp/Illumination

NKS002ZA

Item	Wattage (W)
Map lamp	8
Interior room lamp	10
Personal lamp	8
Luggage room lamp	8
Step lamp	5
Glove box lamp	1.4
Vanity mirror lamp	1.32
Ignition key hole illumination	0.8
A/T device illumination lamp	1.4
Coin box illumination lamp	1.4

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BULB SPECIFICATIONS
