SECTION LT
LIGHTING SYSTEM

CONTENTS

SERVICE INFORMATION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000001612924

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 “SUPPLEMENTAL RESTRAINT SYSTEM” and “SEAT BELTS” 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 “SUPPLEMENTAL RESTRAINT SYSTEM”.**
- **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 Precaution for Service Operation

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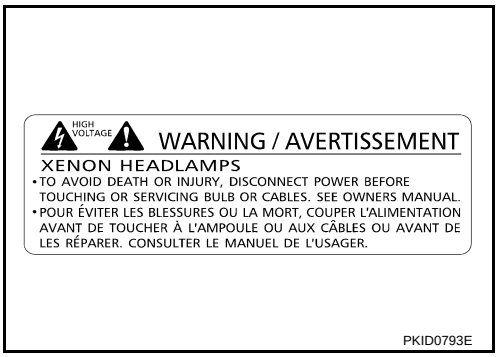

- Never work with wet hands.
- Xenon headlamp includes high voltage generating part. Be sure to disconnect battery negative cable (negative terminal) or power fuse before removing, installing, or touching the xenon headlamp (including lamp bulb).
- Turn the lighting switch OFF before disconnecting and 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 -

Component Parts and Harness Connector Location

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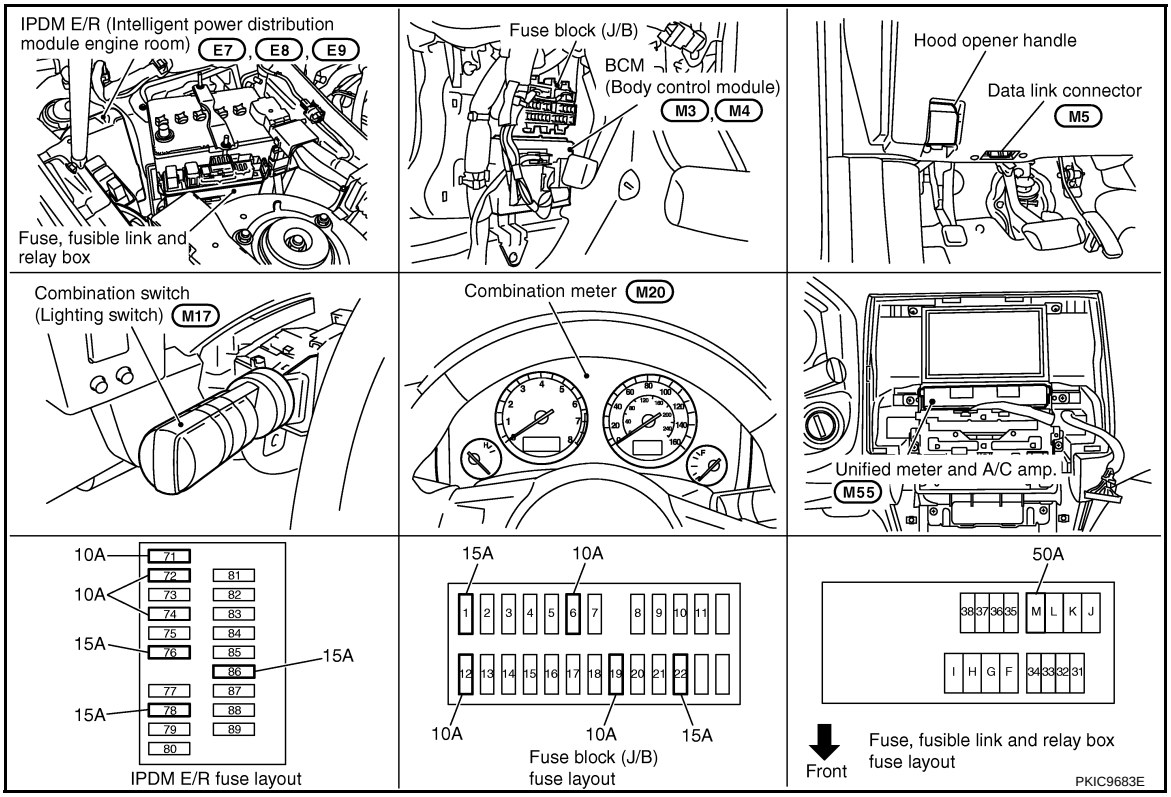

System Description

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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.

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.

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-4, "System Description".

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-III.

AUTO LIGHT OPERATION (IF EQUIPPED)

Refer to LT-47, "System Description".

VEHICLE SECURITY SYSTEM

The vehicle security system will flash the high beams if the system is triggered. Refer to BL-163.

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

INFOID:0000000001328267

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

INFOID:0000000001328268

Refer to LAN-43, "CAN System Specification Chart".

Schematic

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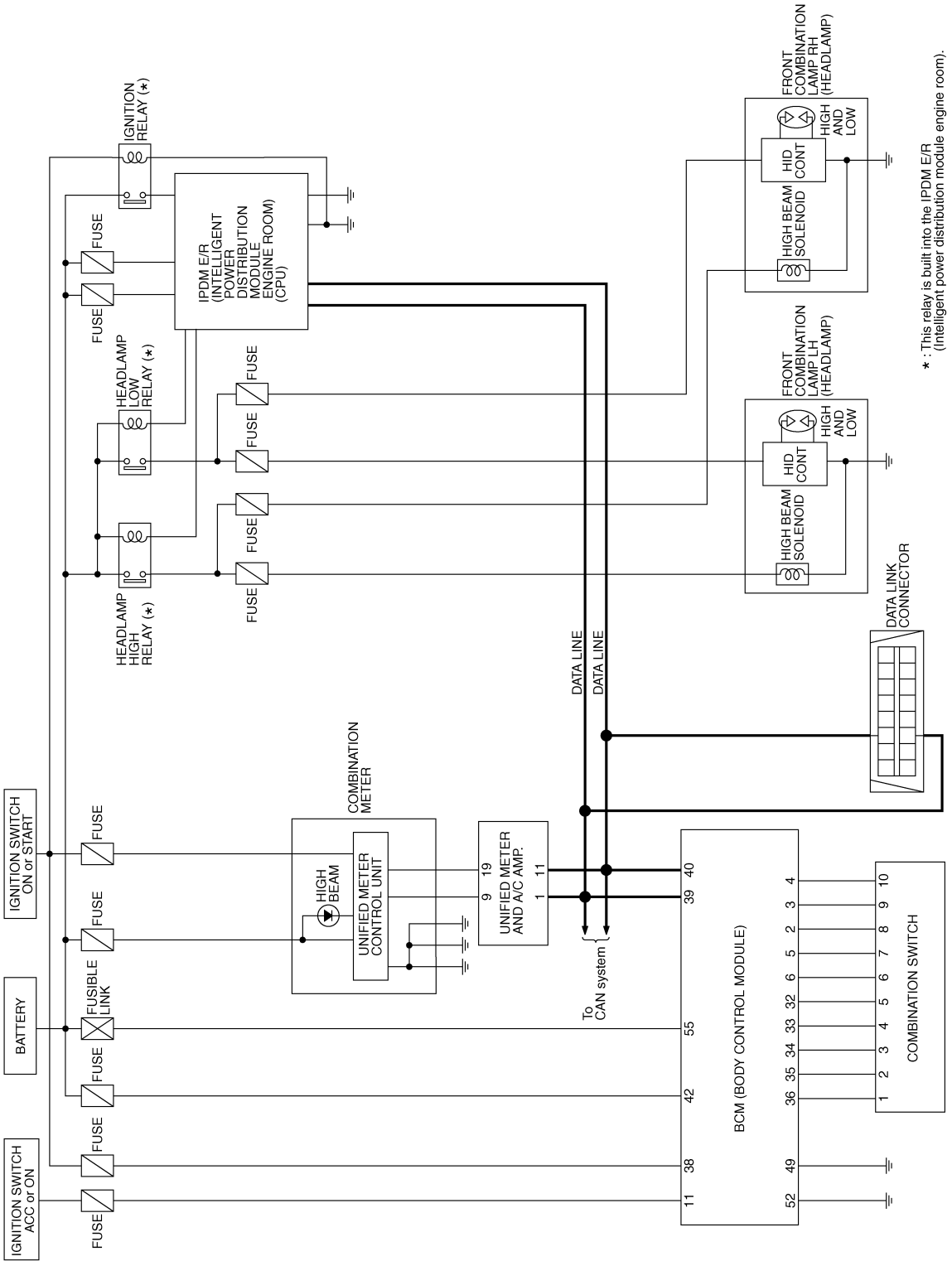

Wiring Diagram - H/LAMP -

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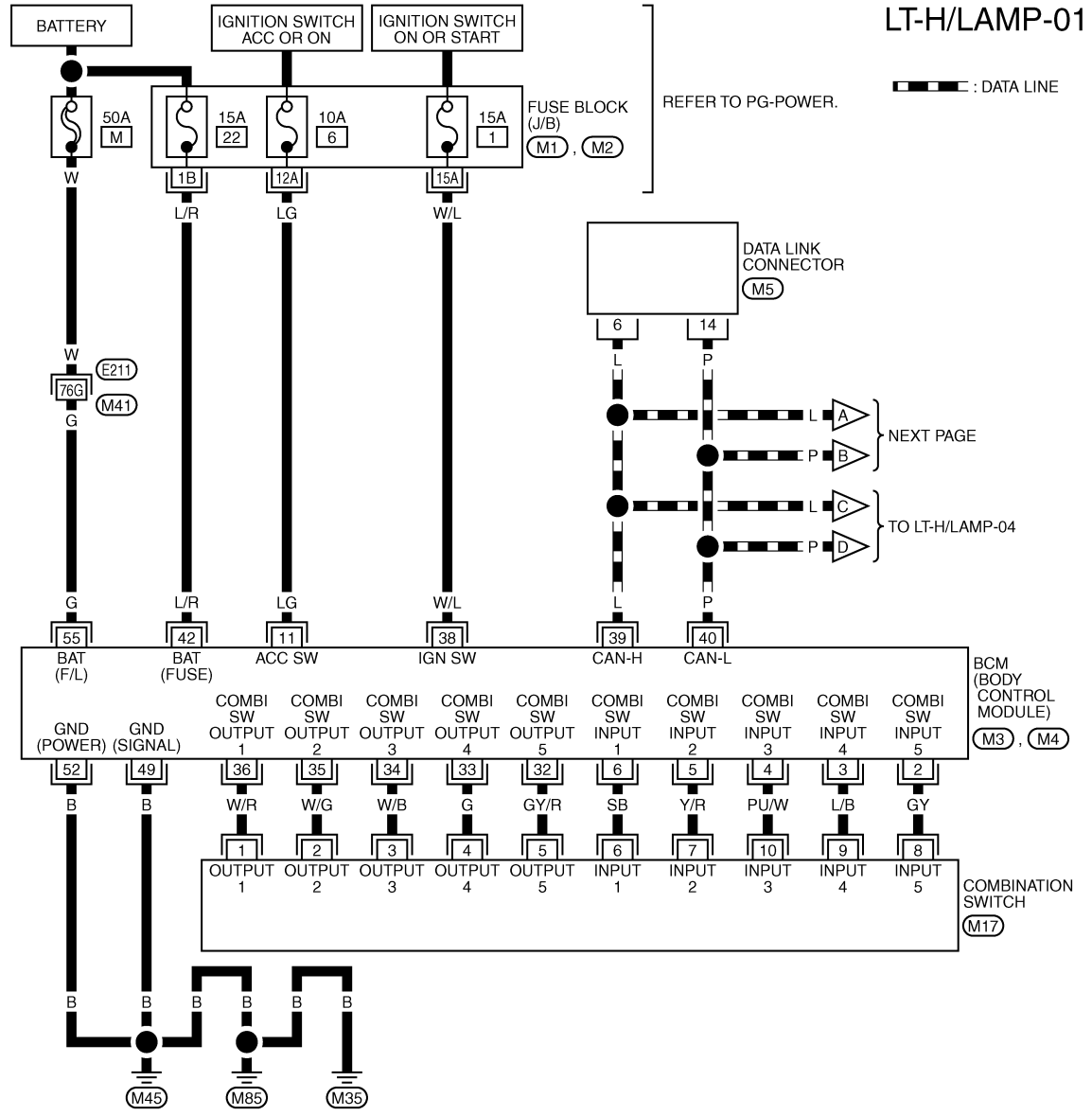
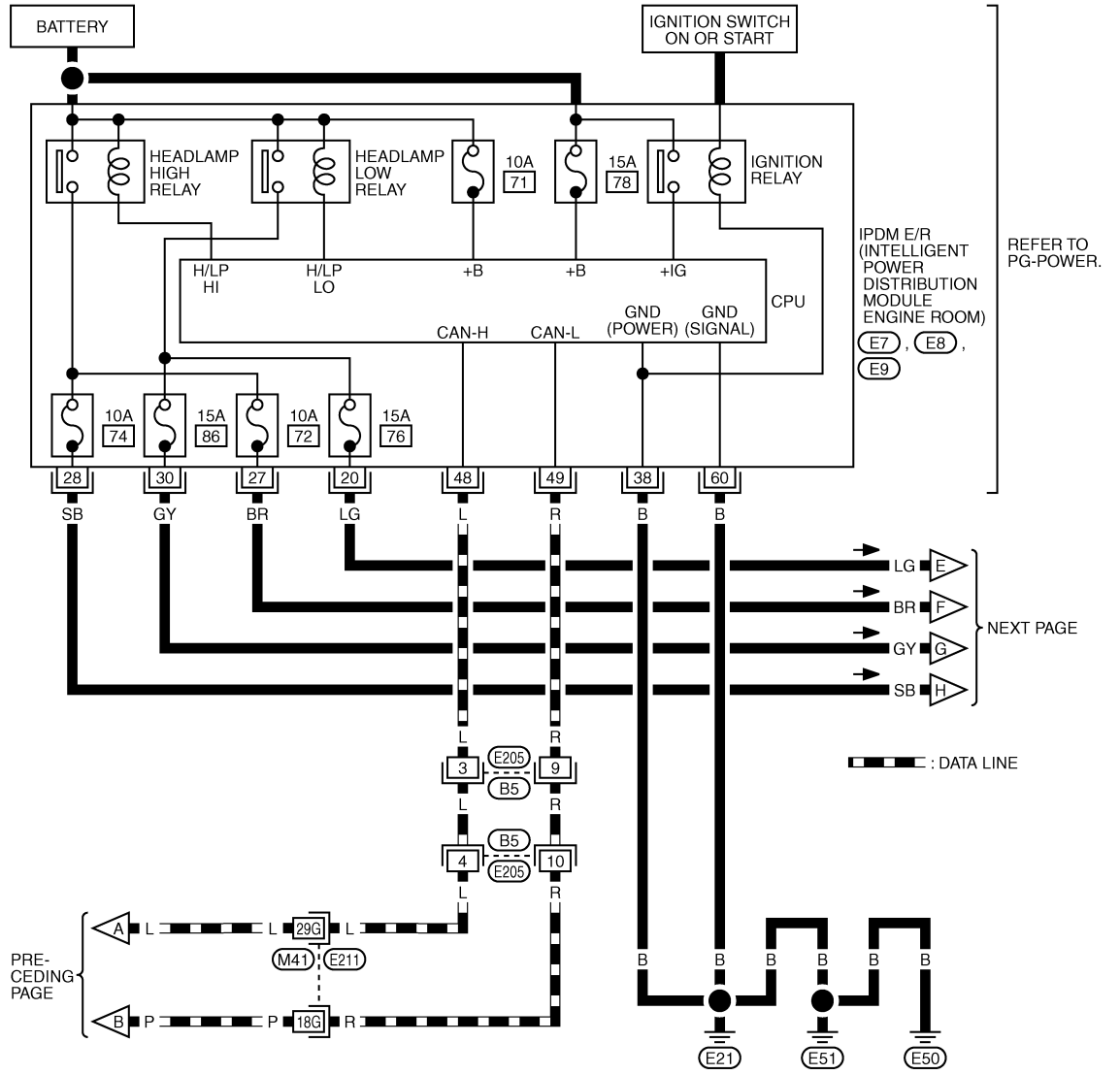
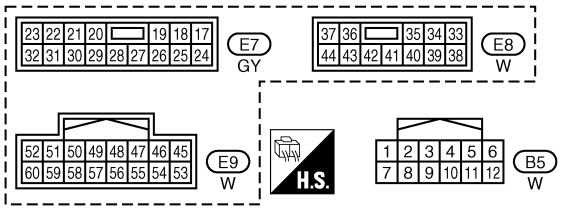


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)
M3 , M4 -ELECTRICAL UNITS

TKWM4290E

LT-H/LAMP-02

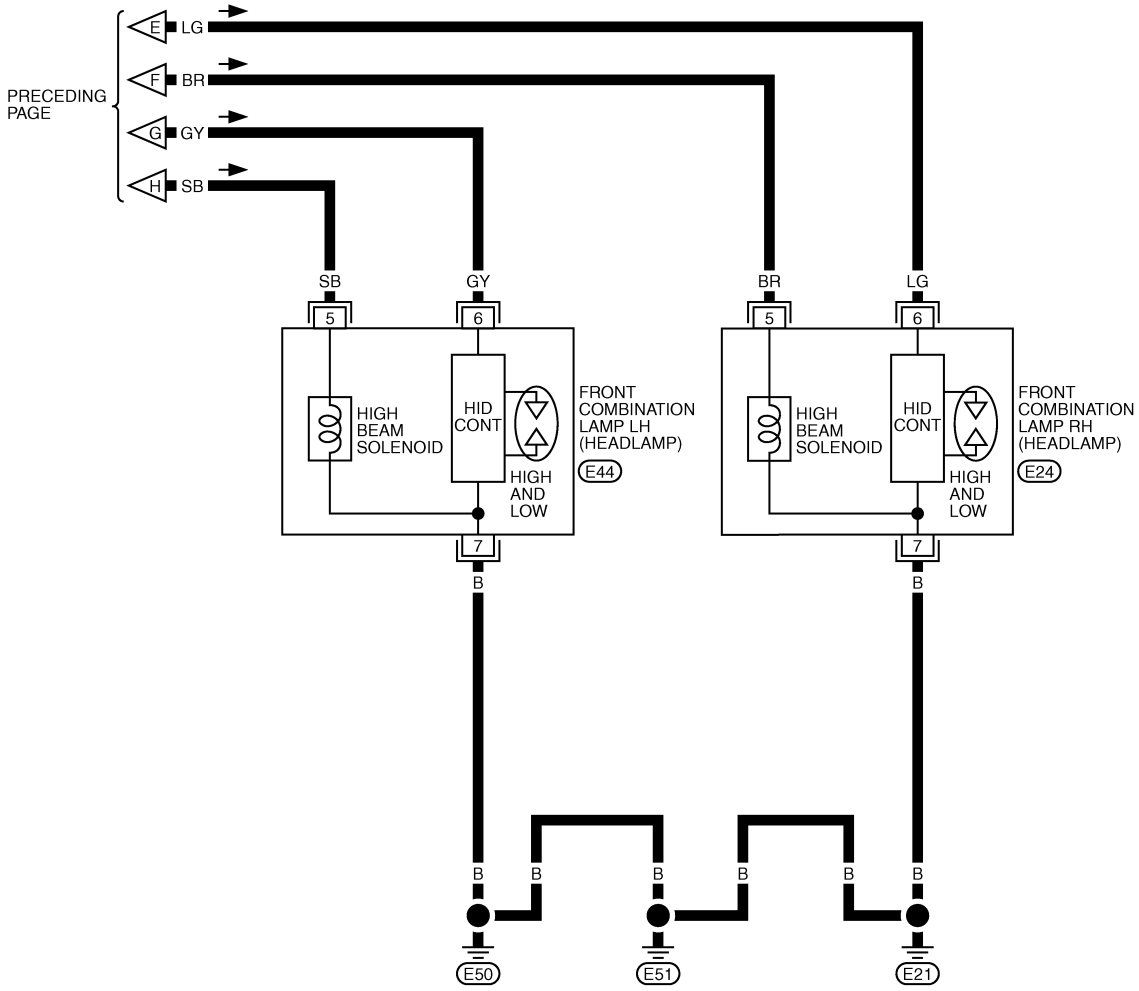


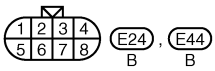


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4291E

LT-H/LAMP-03





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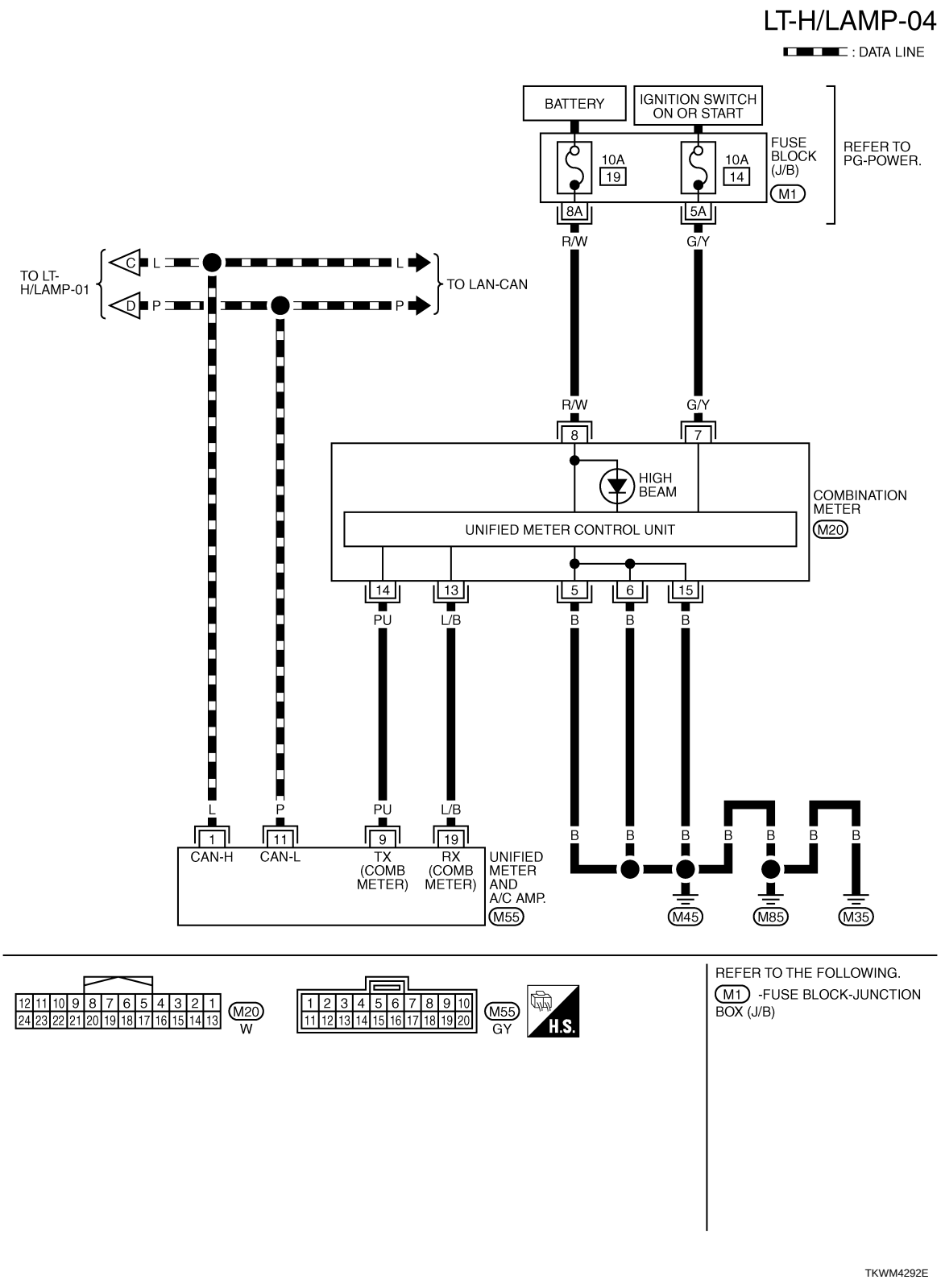


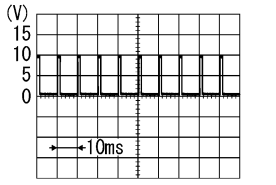
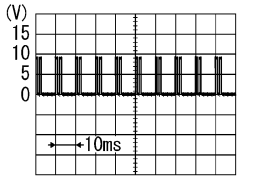
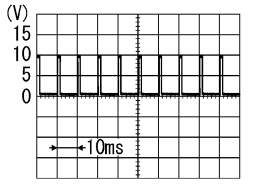
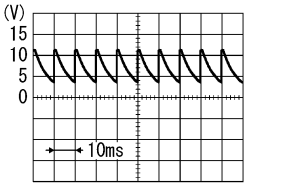
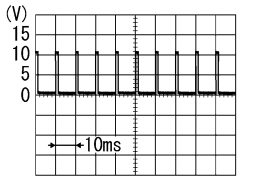
TKWM4292E

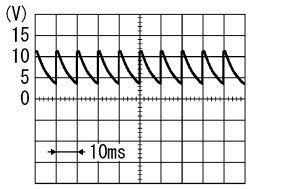
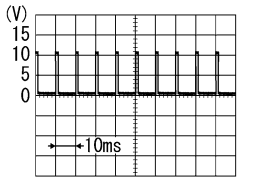
Terminal and Reference Value for BCM

INFOID:0000000001328271

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-III. Refer to LT-103, "CONSULT-III Functions (BCM)".**

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)	 PKIB4959J Approx. 1.0 V
					Lighting switch 2ND	 PKIB4953J Approx. 2.0 V
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 • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4959J Approx. 1.0 V
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch HI beam (Operates only HI beam switch)	 PKIB4958J Approx. 1.2 V

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 • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4958J 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

Terminal and Reference Value for IPDM E/R

INFOID:0000000001328272

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

INFOID:0000000001328273

1. Confirm the symptom or customer complaint.

2. Understand operation description and function description. Refer to LT-5, "System Description".
3. Perform Preliminary Check. Refer to LT-15, "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

INFOID:0000000001328274

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-9, "Wiring Diagram - H/LAMP -".

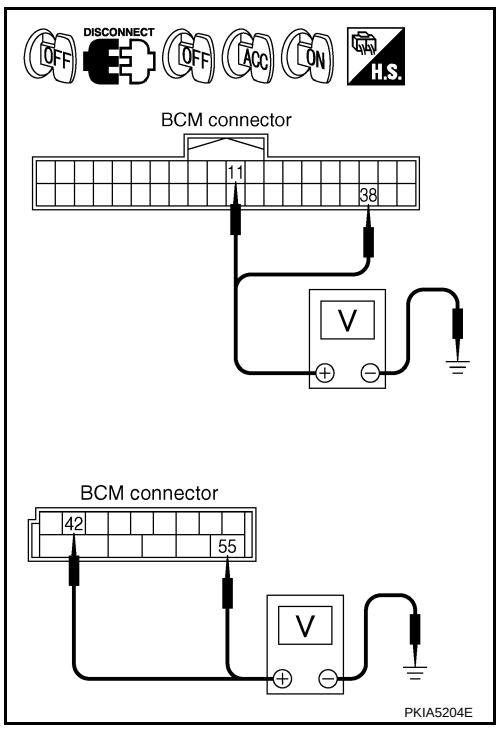
OK or NG

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

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



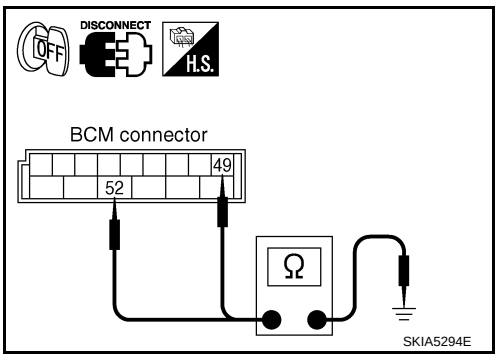
OK or NG

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		Yes
	52		



OK or NG

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

CONSULT-III Functions (BCM)

INFOID:0000000001328275

CONSULT-III 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-III BASIC OPERATION

Refer to GI-34, "Description".

WORK SUPPORT

Display Item List

Item	Description	CONSULT-III	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

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”	—

Monitor item		Contents
DOOR SW - DR	“ON/OFF”	Displays status of driver door as judged from driver door switch signal. (Door is open: ON/ Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays 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.

ACTIVE TEST

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-III Functions (IPDM E/R)

INFOID:0000000001328276

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

Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-18, "CONSULT-III Function (IPDM E/R)".
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-III BASIC OPERATION

Refer to GI-34, "Description".

DATA MONITOR

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-III 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

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

Headlamp Does Not Change To High Beam (Both Sides)

INFOID:0000000001381742

1.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select “HI BEAM SW” of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

When lighting switch is HIGH BEAM : HI BEAM SW ON

CHECK THE COMBINATION SWITCH
Refer to LT-104, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-104, "Combination Switch Inspection".

2.HEADLAMP ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select “LAMPS” of IPDM E/R active test item.
2. With operating the test item, check the headlamp high beam operation.

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

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-20, "Auto Active Test".
2. Check that the headlamp high beam operation.

Headlamp high beam should operate.

OK or NG

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

3.CHECK IPDM E/R

CONSULT-III DATA MONITOR
1. Select “HL LO REQ” and “HL HI REQ” of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status

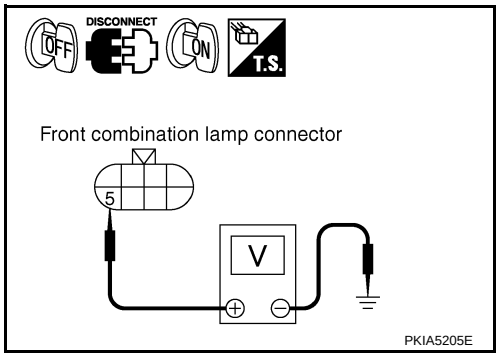
When lighting switch is	**: HL LO REQ ON**
HIGH BEAM	**: HL HI REQ ON**

OK or NG

OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".

4. CHECK HEADLAMP INPUT SIGNAL

CONSULT-III ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Select “LAMPS” of IPDM E/R active test item
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connectors and ground.
   NOTE:
   Headlamp high beam repeats ON–OFF every 1 second.



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

IPDM E/R AUTO ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Start auto active test. Refer to PG-20, "Auto Active Test".
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connectors and ground.
   NOTE:
   Headlamp high beam repeats ON–OFF every 1 second.

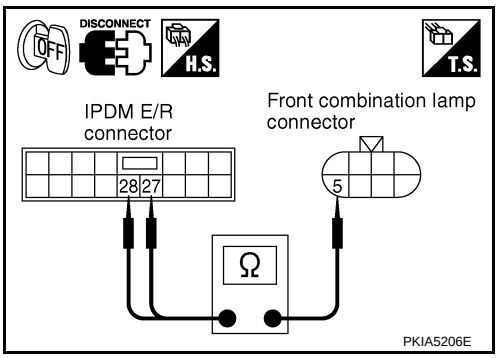
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	5	Ground	Battery voltage
LH	E44	5		

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 and front combination lamp (RH and LH) harness connectors.



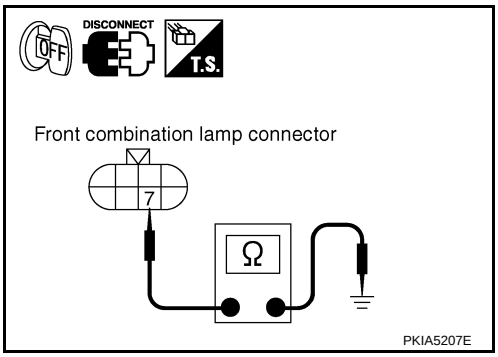
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	27	E24	5	Yes
LH		28	E44	5	

OK or NG

OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

Check continuity between front combination lamp (RH and LH) harness connectors and ground.



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	7		Yes
LH	E44	7		

OK or NG

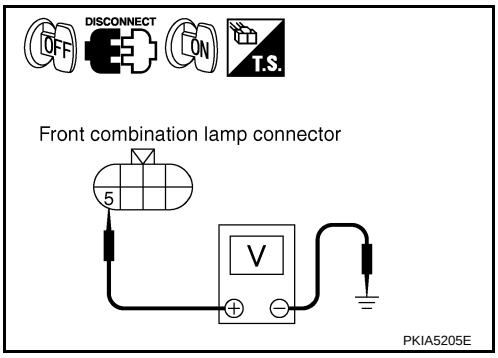
OK >> Check headlamp harness, connector and bulb.
NG >> Repair harness or connector.

Headlamp Does Not Change To High Beam (One Side)

INFOID:0000000001381743

1. CHECK HEADLAMP INPUT SIGNAL

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



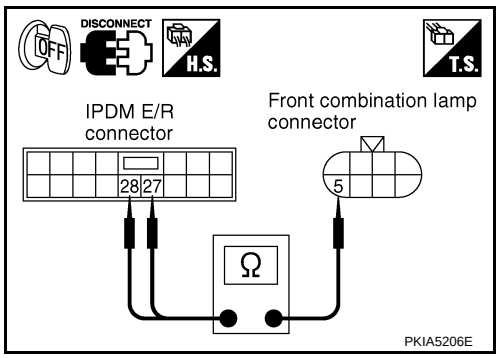
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	5	Ground	Battery voltage
LH	E44	5		

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 and front combination lamp RH or LH harness connector.



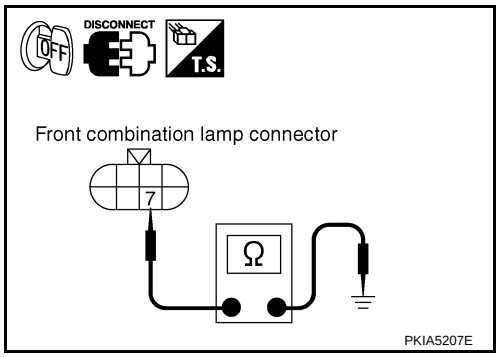
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	27	E24	5	Yes
LH		28	E44	5	

OK or NG

OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

3. CHECK HEADLAMP GROUND

Check continuity between front combination lamp RH or LH harness connector and ground.



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	7		Yes
LH	E44	7		

OK or NG

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

Headlamp Low Beam Does Not Illuminate (Both Sides)

INFOID:0000000001381744

1. CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select “HEAD LAMP SW1” and “HEAD LAMP SW2” of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

When lighting switch is 2ND position : HEAD LAMP SW1 ON
: HEAD LAMP SW2 ON

CHECK THE COMBINATION SWITCH
Refer to LT-104, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-104, "Combination Switch Inspection".

2. HEADLAMP ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select “LAMPS” of IPDM E/R active test item.
2. With operating the test item, check the headlamp low beam operation.

Headlamp low beam should operate.

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-20, "Auto Active Test".
2. Check that the headlamp low beam operation.

Headlamp low beam should operate.

OK or NG

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

3.CHECK IPDM E/R

CONSULT-III DATA MONITOR
1. Select “HL LO REQ” of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status.

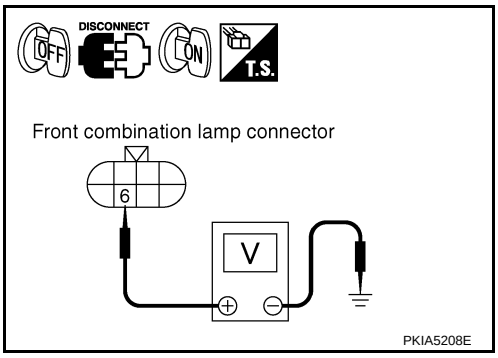
When lighting switch is 2ND position : HL LO REQ ON

OK or NG

OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".

4.CHECK HEADLAMP INPUT SIGNAL

CONSULT-III ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Select “LAMPS” of IPDM E/R active test item.
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connectors and ground.



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

IPDM E/R AUTO ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front combination lamp RH and LH connectors.
3. Start auto active test. Refer to PG-20, "Auto Active Test".
4. With operating the test item, check voltage between front combination lamp (RH and LH) harness connectors and ground.

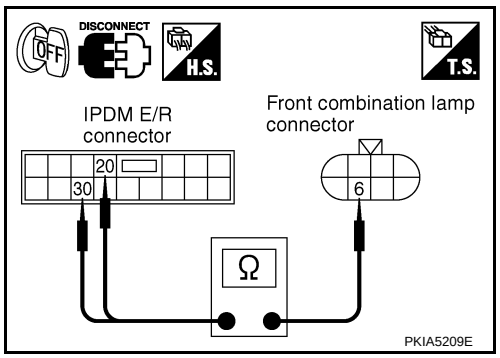
Terminals				Voltage (Approx.)
(+)			(-)	
Front combination lamp connector		Terminal		
RH	E24	6	Ground	Battery voltage
LH	E44	6		

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 and front combination lamp (RH and LH) harness connectors.



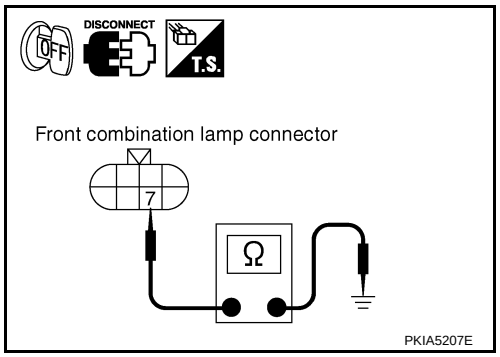
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	20	E24	6	Yes
LH		30	E44	6	

OK or NG

OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

6. CHECK HEADLAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front combination lamp (RH and LH) harness connectors and ground.



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	7		Yes
LH	E44	7		

OK or NG

OK >> Check headlamp harness and connectors, ballasts (HID control unit), and xenon bulbs. Refer to LT-27, "Xenon Headlamp Trouble Diagnosis".
NG >> Repair harness or connector.

Headlamp Low Beam Does Not Illuminate (One Side)

INFOID:0000000001381745

1. CHECK BULB

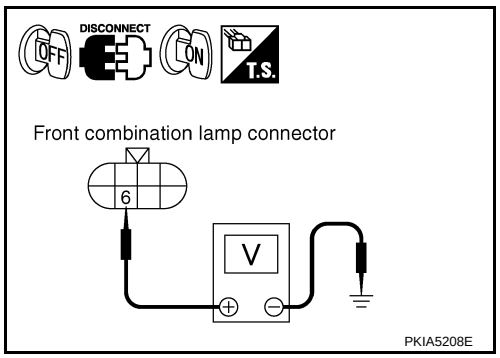
Check ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-27, "Xenon Headlamp Trouble Diagnosis".

OK or NG

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

2. CHECK HEADLAMP INPUT SIGNAL

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



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

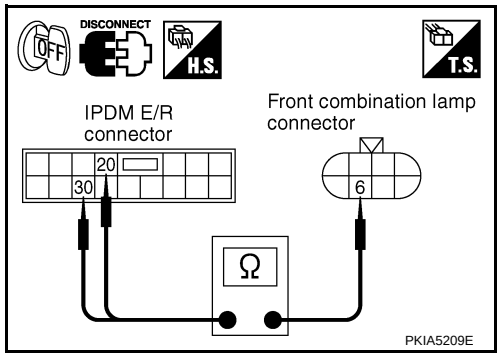
OK or NG

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 and front combination lamp RH or LH harness connector.



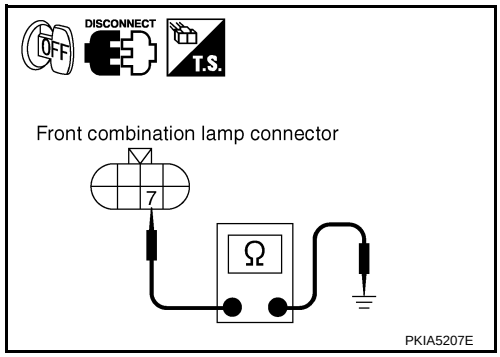
Terminals					Continuity
IPDM E/R			Front combination lamp		
Connector		Terminal	Connector	Terminal	
RH	E7	20	E24	6	Yes
LH		30	E44	6	

OK or NG

OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

4.CHECK HEADLAMP GROUND

Check continuity between front combination lamp RH or LH harness connector and ground.



Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	7		Yes
LH	E44	7		

OK or NG

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

Headlamp RH Low Beam and High Beam Does Not Illuminate

INFOID:0000000001381746

1.CHECK BULB

Inspect ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-27, "Xenon Headlamp Trouble Diagnosis".

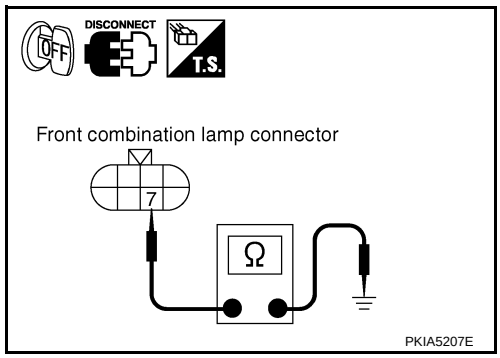
OK or NG

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.



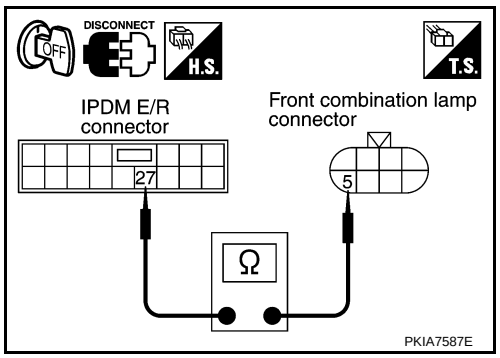
OK or NG

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

3.CHECK HEADLAMP CIRCUIT

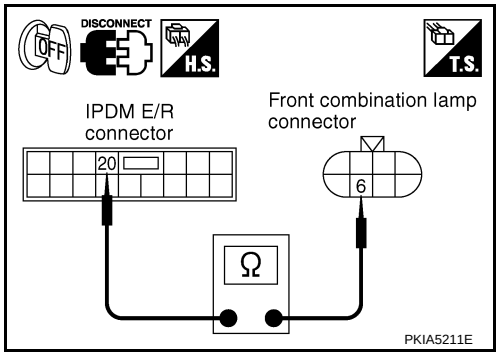
1. Disconnect IPDM E/R connector.
2. Check continuity between IPDM E/R harness connector E7 terminal 27 and front combination lamp RH harness connector E24 terminal 5.

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. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

Headlamp LH Low Beam and High Beam Does Not Illuminate

INFOID:0000000001381747

1.CHECK BULB

Inspect ballast (HID control unit) and xenon bulb of lamp which does not illuminate. Refer to LT-27, "Xenon Headlamp Trouble Diagnosis".

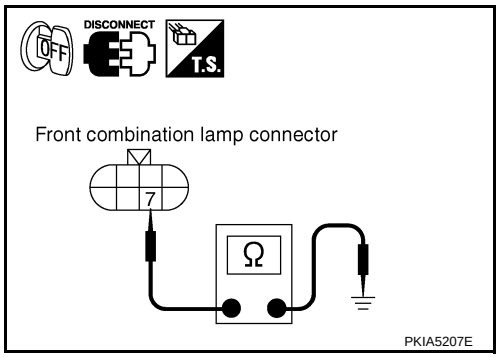
OK or NG

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

2.CHECK HEADLAMP GROUND

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

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



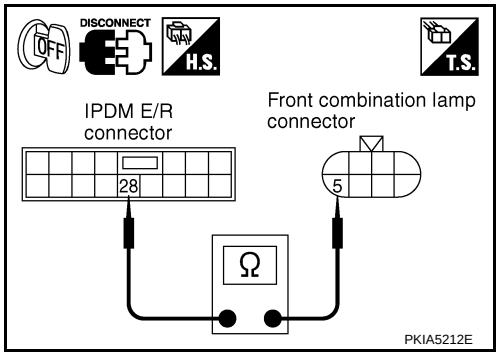
OK or NG

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

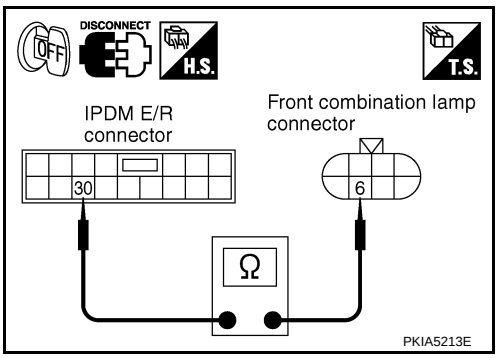
3.CHECK HEADLAMP CIRCUIT

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. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

Headlamps Does Not Turn OFF

INFOID:0000000001381748

1.CHECK HEADLAMP TURN OFF

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

OK or NG

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

2.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR

1. Select “HEAD LAMP1” and “HEAD LAMP2” of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

When lighting switch is OFF : HEAD LAMP SW1 OFF
: HEAD LAMP SW2 OFF

OK or NG

OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Check combination switch (lighting switch). Refer to LT-104, "Combination Switch Inspection".

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

Perform self-diagnosis for “BCM” with CONSULT-III.

Display of self-diagnosis results

NO DTC>> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
CAN COMM CIRCUIT>> Refer to LAN-43, "CAN System Specification Chart".

General Information for Xenon Headlamp Trouble Diagnosis

INFOID:0000000001328284

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:

INFOID:0000000001328285

- 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

INFOID:0000000001328286

1.CHECK 1: XENON HEADLAMP LIGHTING

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

OK or NG

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

2.CHECK 2: XENON HEADLAMP LIGHTING

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

OK or NG

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

3.CHECK 3: XENON HEADLAMP LIGHTING

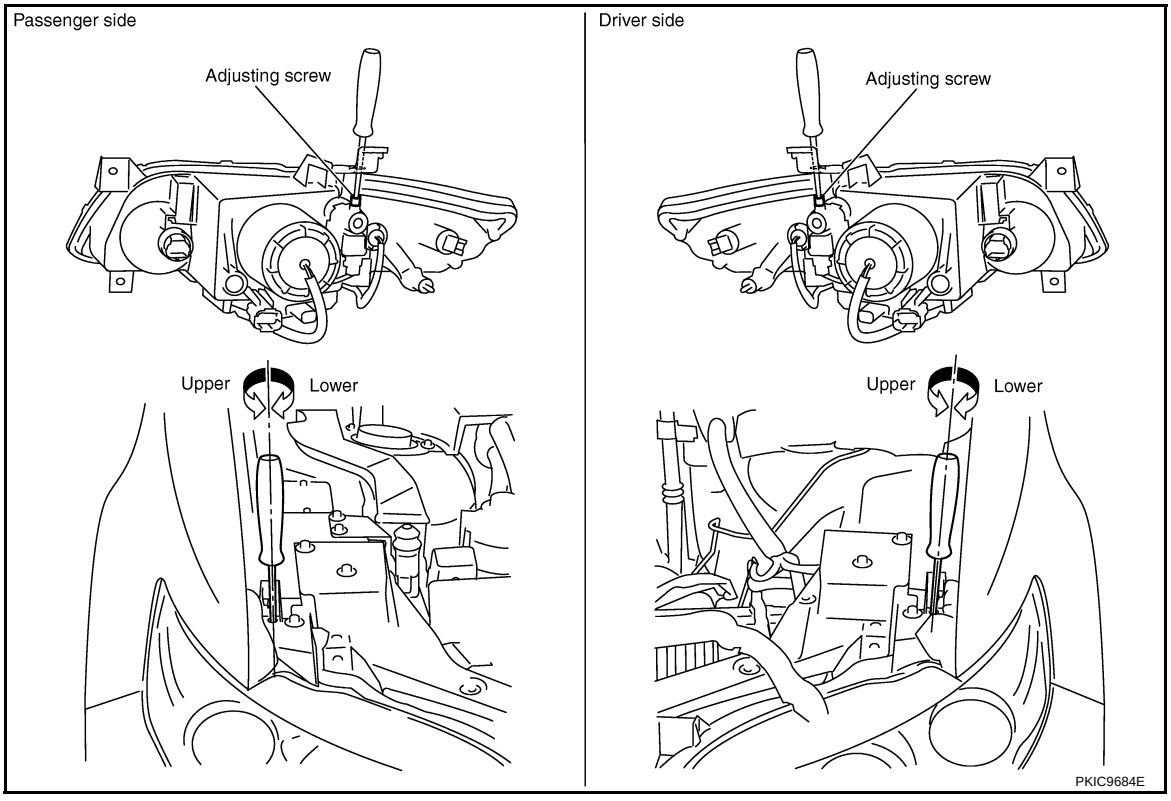
Install normal xenon lamp housing assembly to corresponding xenon headlamp, and check if lamp lights up.

OK or NG

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

Aiming Adjustment

INFOID:0000000001328287



PREPARATION BEFORE ADJUSTING

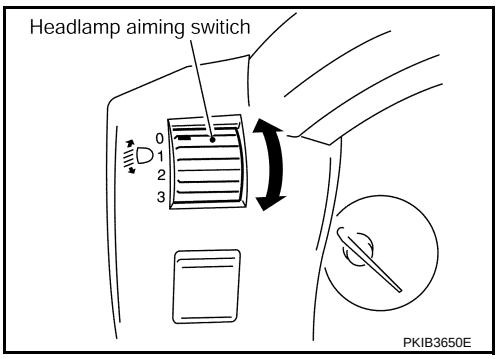
For details, refer to the regulations in your own country.

Before performing aiming adjustment, check the following.

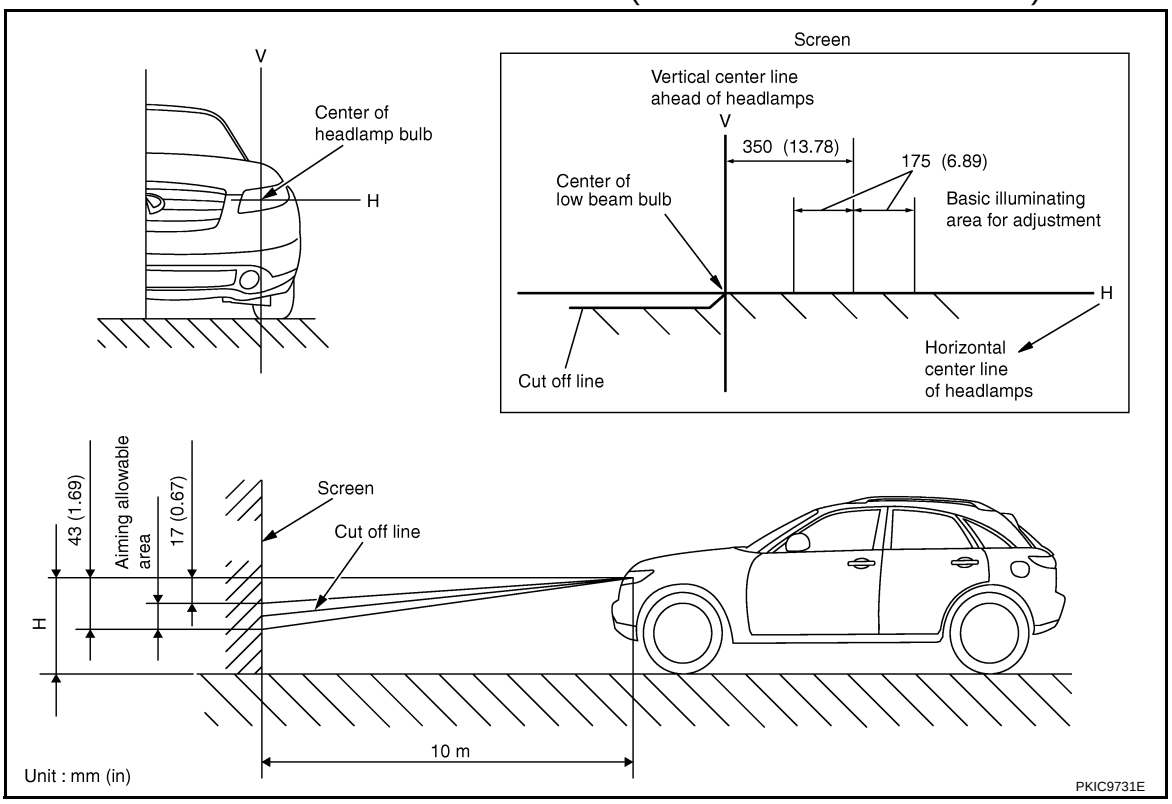
1. Keep all tires inflated to correct pressures.
2. Place vehicle on level ground.
3. Set that there is no-load in vehicle other than the driver (or equivalent weight placed in driver's position). Coolant, engine oil filled up to correct level and full fuel tank.

LOW BEAM AND HIGH BEAM

1. Turn headlamp low beam ON.
   CAUTION:
   Be sure aiming switch is set to “0” when performing aiming adjustment.
2. Use adjusting screws to perform aiming adjustment.



ADJUSTMENT USING AN ADJUSTMENT SCREEN (LIGHT/DARK BORDERLINE)



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

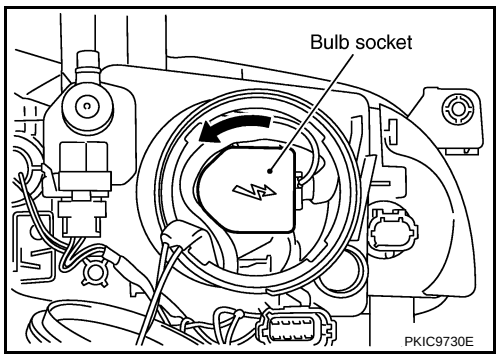
- Basic illumination area for adjustment should be within the range shown on the aiming chart. Adjust headlamp accordingly.

Bulb Replacement

INFOID:0000000001328288

HEADLAMP HIGH/LOW BEAM

1. Turn lighting switch OFF.
2. Disconnect the battery cable from the negative terminal or remove power fuse.
3. Remove air cleaner case (when replacing LH bulb). Refer to EM-173 (VK45) or refer to EM-17 (VQ35).
4. Remove radiator reservoir tank (when replacing RH bulb). Refer to CO-40 (VK45) or refer to CO-13 (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.

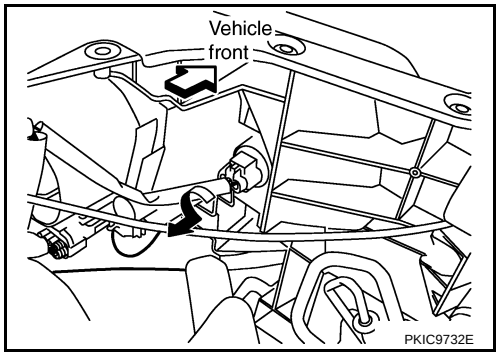


NOTE:
After installation, perform aiming adjustment. Refer to LT-27, "Aiming Adjustment".

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

DAYTIME/PARKING LAMP

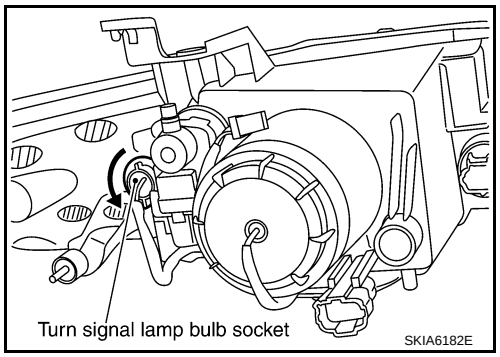
1. Turn lighting switch OFF.
2. Remove air cleaner case (when replacing LH bulb of VK45). Refer to EM-173.
3. Turn bulb socket counterclockwise and unlock it.
4. Remove bulb from its socket.
5. Installation is the reverse order of removal.



Daytime/Parking lamp : 12 V - 21/5 W

FRONT TURN SIGNAL LAMP

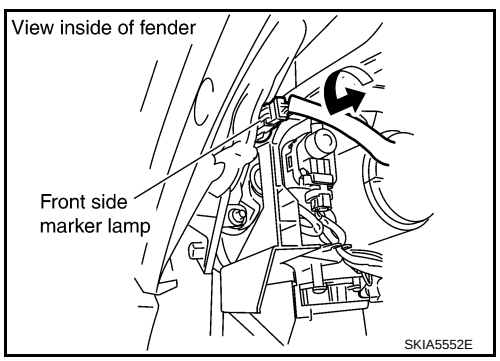
1. Turn lighting switch OFF.
2. Turn bulb socket counterclockwise with suitable tool and unlock it.
3. Remove bulb from its socket.
4. Installation is the reverse order of removal.



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:

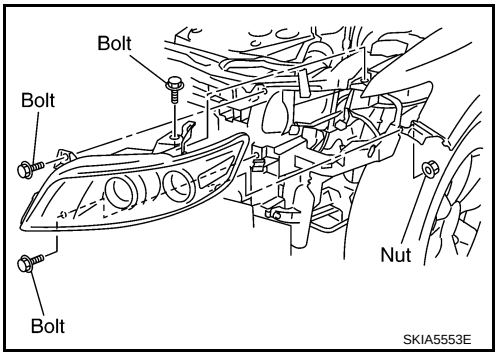
After installing bulb, be sure to install plastic cap and bulb socket securely to insure watertightness.

Removal and Installation

INFOID:0000000001328289

REMOVAL

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



INSTALLATION

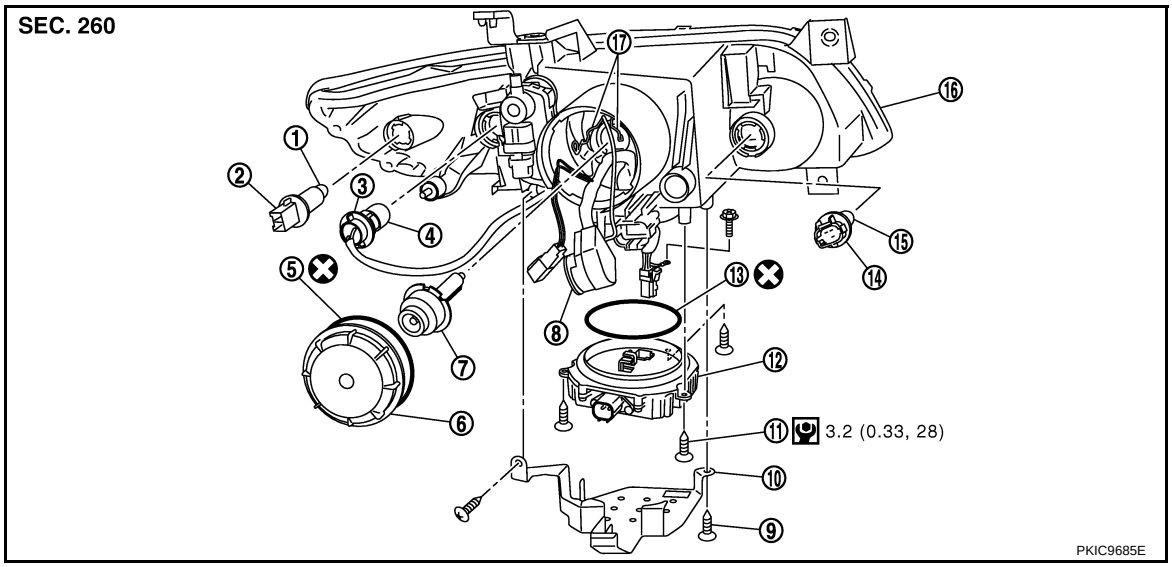
Installation is the reverse order of removal.

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

NOTE:
After installation, perform aiming adjustment. Refer to LT-27, "Aiming Adjustment".

Disassembly and Assembly

INFOID:0000000001328290



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	

:Alway 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.

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

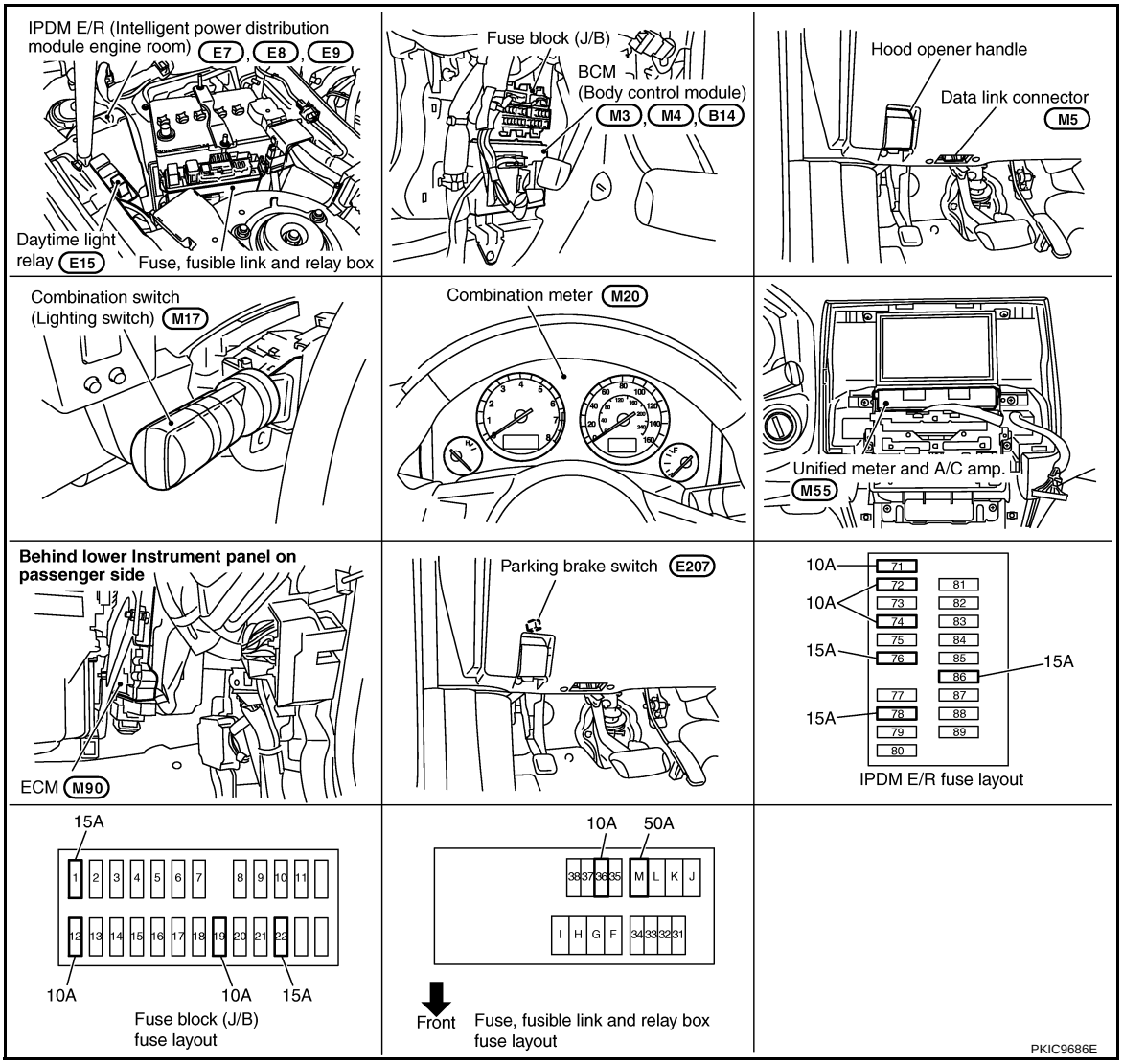
CAUTION:

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

DAYTIME LIGHT SYSTEM

Component Parts and Harness Connector Location

INFOID:0000000001328291



System Description

INFOID:0000000001328292

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)
- 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-4, "System Description".

AUTO LIGHT OPERATION

Refer to LT-47, "System Description".

CAN Communication System Description

INFOID:0000000001328293

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.

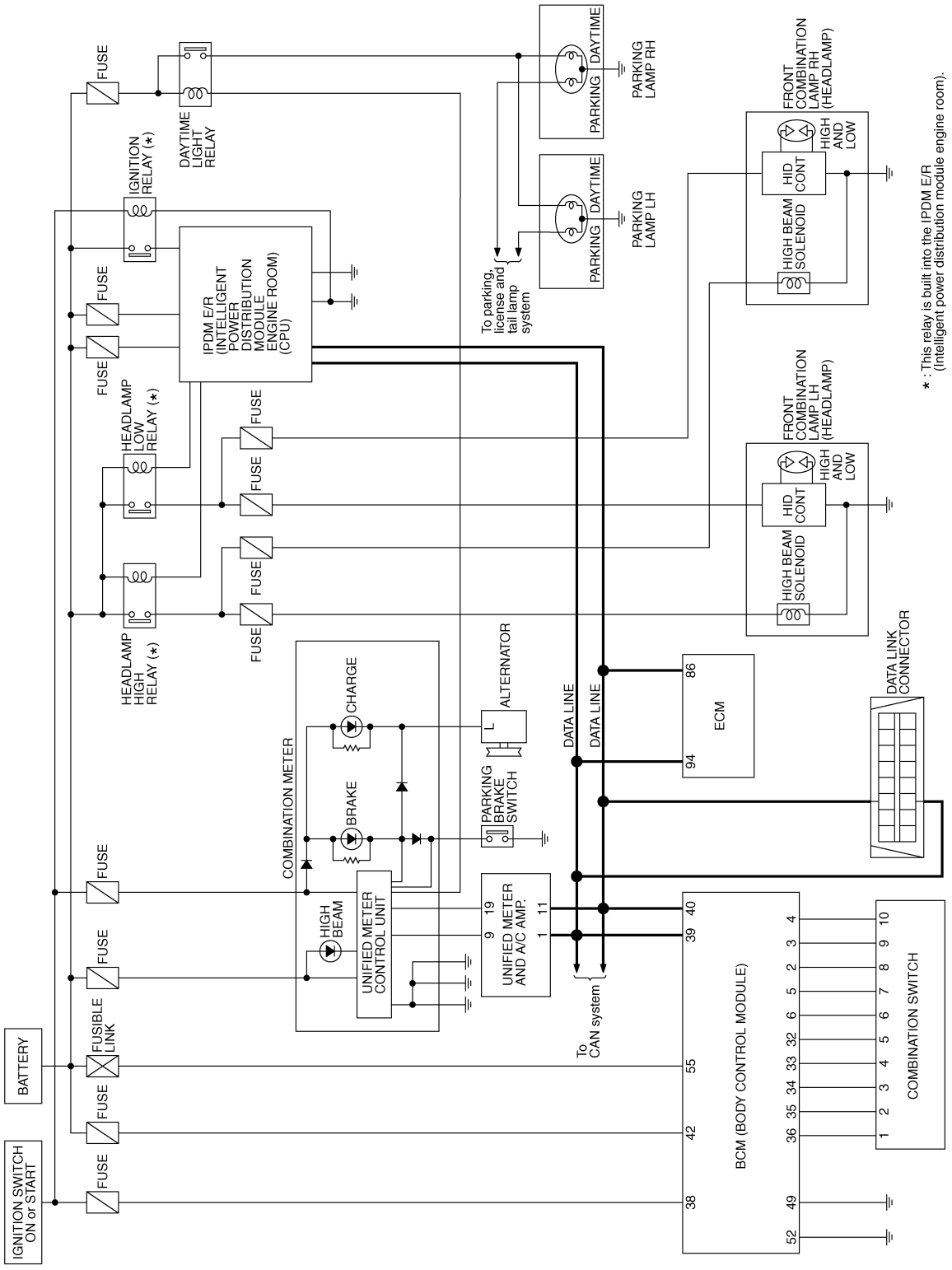
CAN Communication Unit

INFOID:0000000001328294

Refer to LAN-43, "CAN System Specification Chart".

Schematic

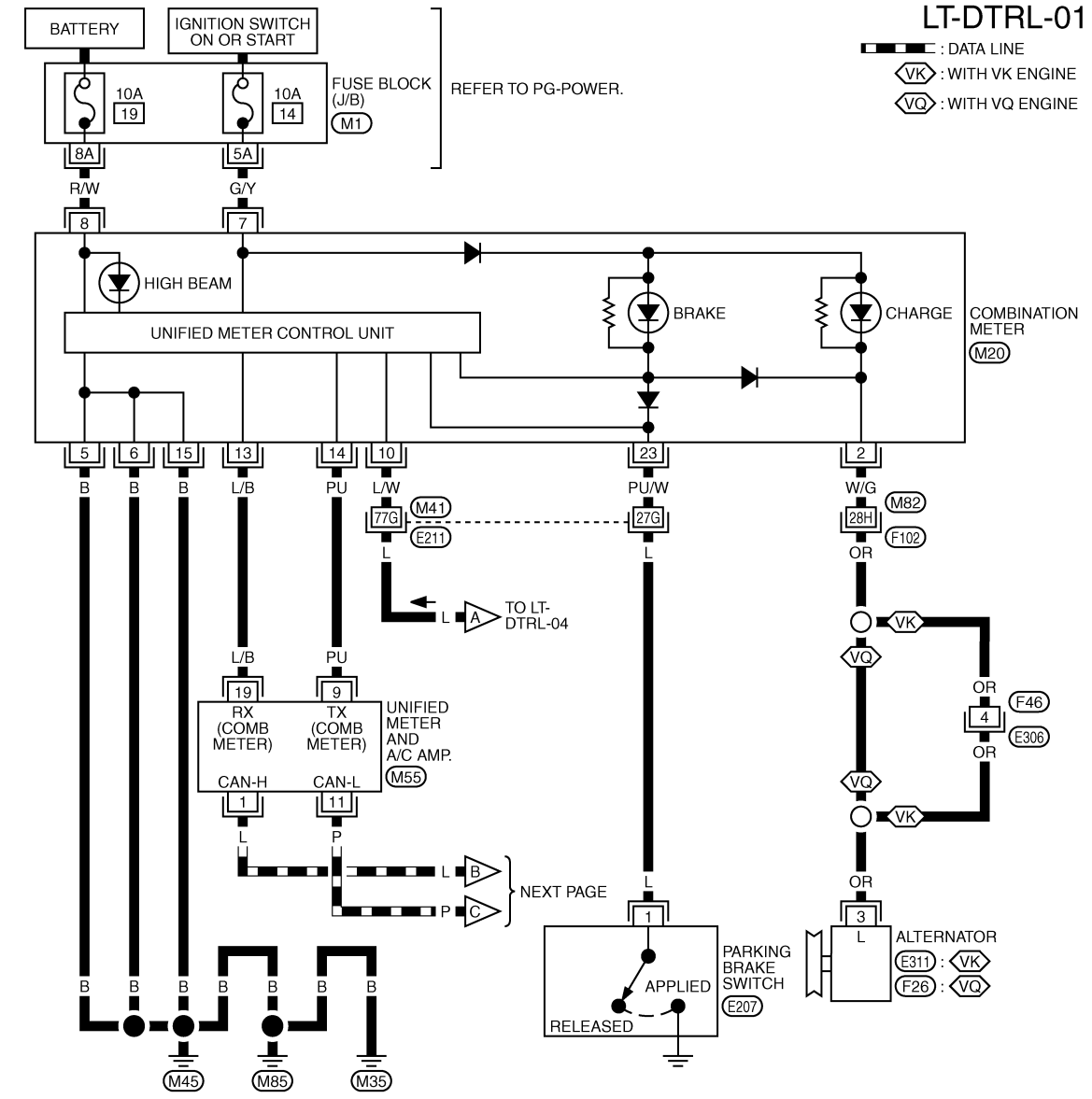
INFOID:0000000001328295

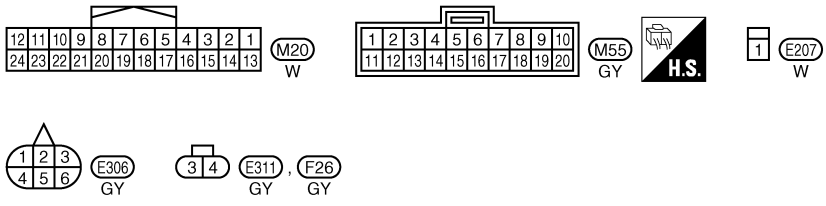


TKWM4293E

Wiring Diagram - DTRL -

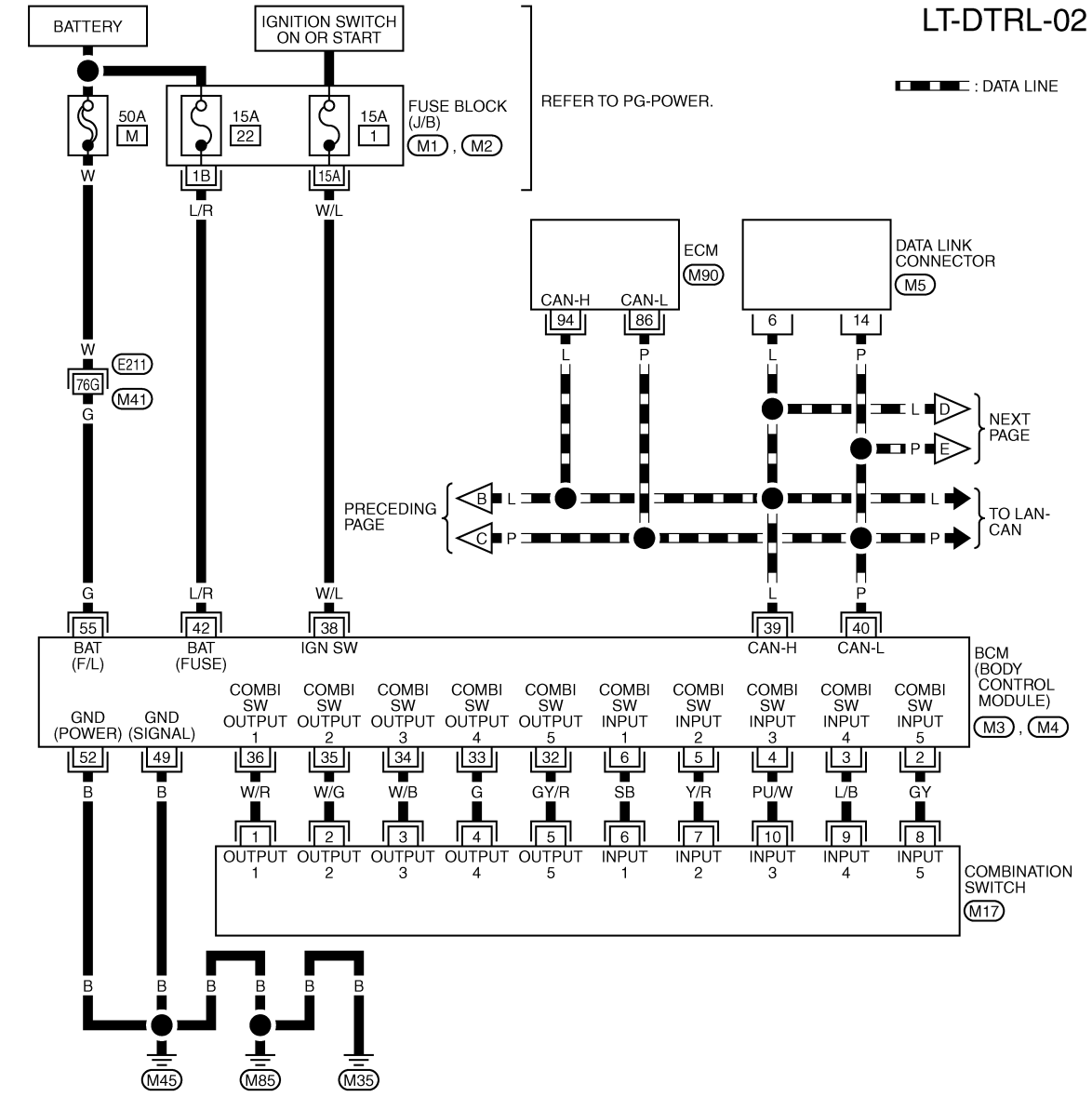
INFOID:0000000001328296



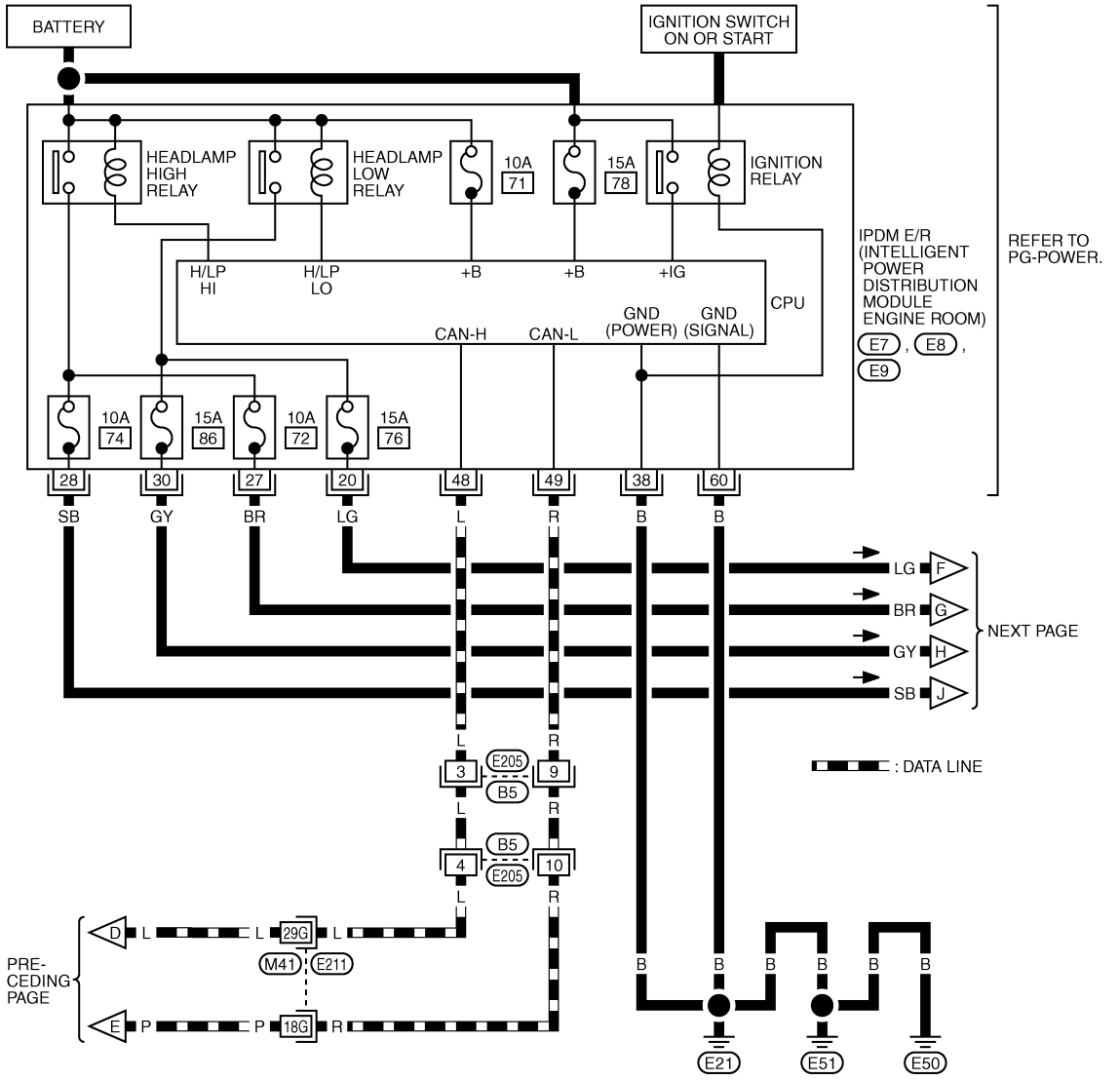


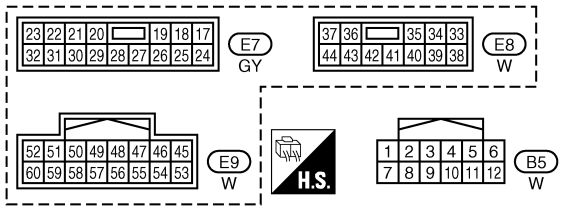
REFER TO THE FOLLOWING.
E211 , F102 -SUPER MULTIPLE JUNCTION (SMJ)
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM4294E


LT-DTRL-02
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
50A M
15A 22
15A 1
FUSE BLOCK (J/B) M1, M2
REFER TO PG-POWER.
1B
15A
W
L/R
W/L
ECM M90
DATA LINK CONNECTOR M5
CAN-H 94
CAN-L 86
6
14
E211
76G
M41
NEXT PAGE
PRECEDING PAGE
TO LAN-CAN
55
42
38
39
40
BAT (F/L)
BAT (FUSE)
IGN SW
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M3, M4
GND (POWER)
GND (SIGNAL)
COMBI SW OUTPUT 1
COMBI SW OUTPUT 2
COMBI SW OUTPUT 3
COMBI SW OUTPUT 4
COMBI SW OUTPUT 5
COMBI SW INPUT 1
COMBI SW INPUT 2
COMBI SW INPUT 3
COMBI SW INPUT 4
COMBI SW INPUT 5
52
49
36
35
34
33
32
6
5
4
3
2
B
B
W/R
W/G
W/B
G
GY/R
SB
Y/R
PU/W
L/B
GY
OUTPUT 1
OUTPUT 2
OUTPUT 3
OUTPUT 4
OUTPUT 5
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
COMBINATION SWITCH M17
M45
M85
M35
M5 W
M17 W
REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)
M3, M4, M90 -ELECTRICAL UNITS
TKWM4295E

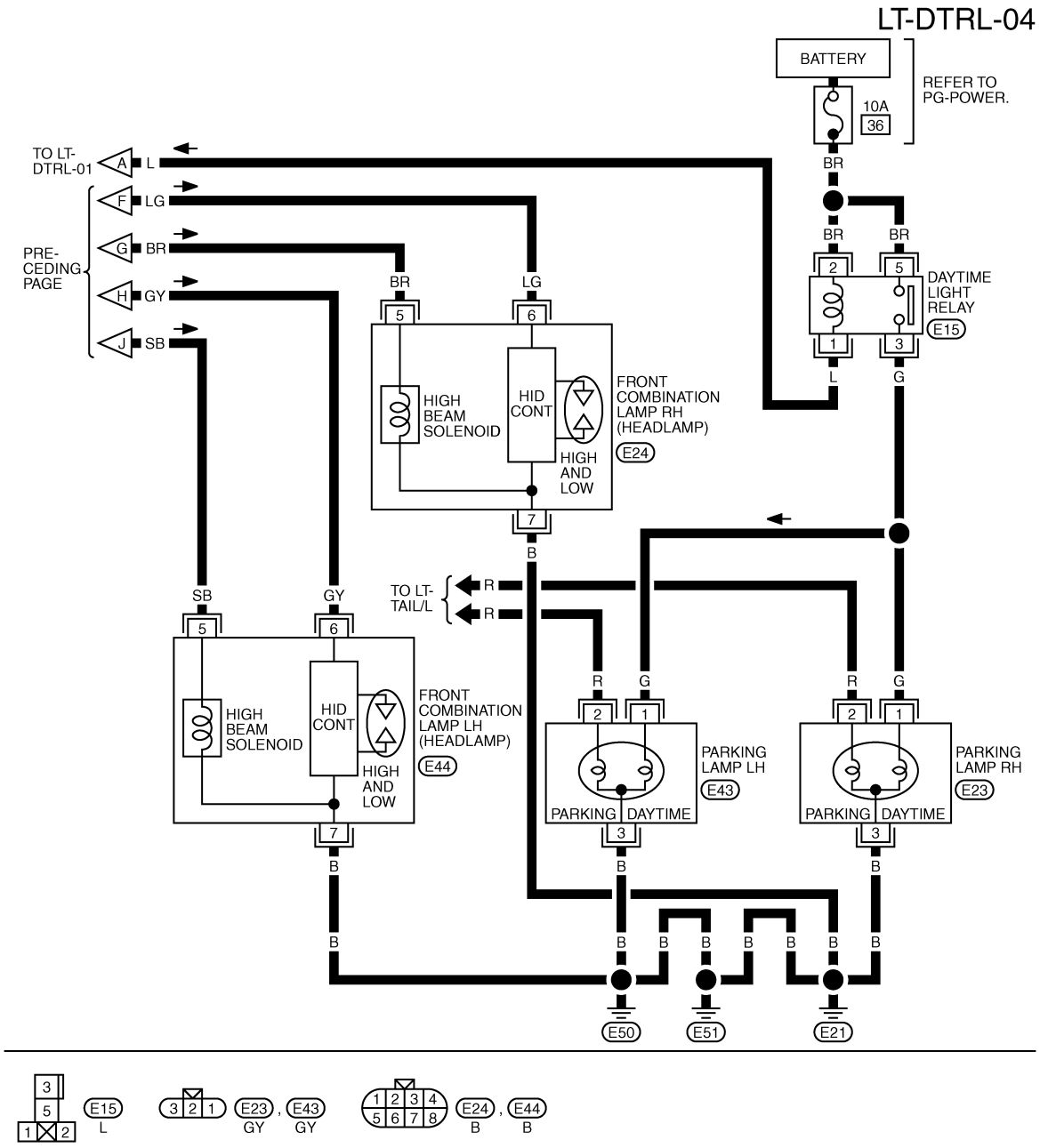
LT-DTRL-03





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

TKWM4296E



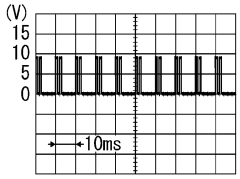
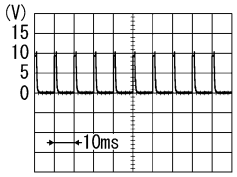
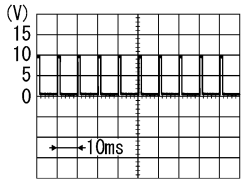
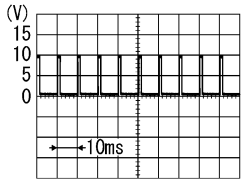
TKWM4489E

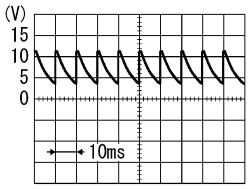
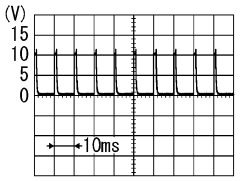
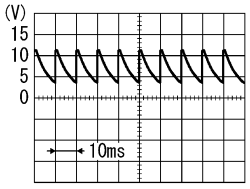
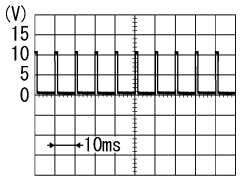
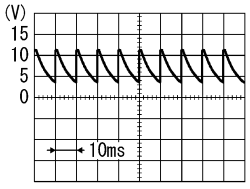
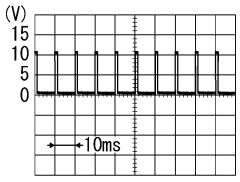
Terminal and Reference Value for BCM

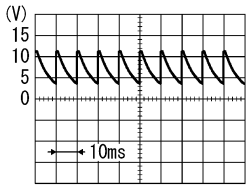
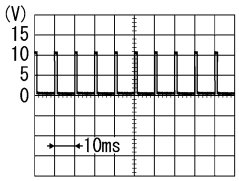
INFOID:0000000001328297

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-III. Refer to LT-103, "CONSULT-III Functions (BCM)".**

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	 PKIB4953J Approx. 2.0 V
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)	 PKIB4955J Approx. 0.8 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4959J Approx. 1.0 V
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 • Lighting switch AUTO	 PKIB4959J Approx. 1.0 V

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	 PKIB4960J Approx. 7.2 V
					Front fog lamp switch (Operates only front fog lamp switch)	 PKIB4956J Approx. 1.0 V
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Lighting switch AUTO	 PKIB4958J Approx. 1.2 V
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Lighting switch 2ND	 PKIB4958J Approx. 1.2 V

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 • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch)	 PKIB4958J 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

INFOID:0000000001328298

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-32, "System Description".
3. Perform Preliminary Check. Refer to LT-41, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does daytime light lamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

INFOID:0000000001328299

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

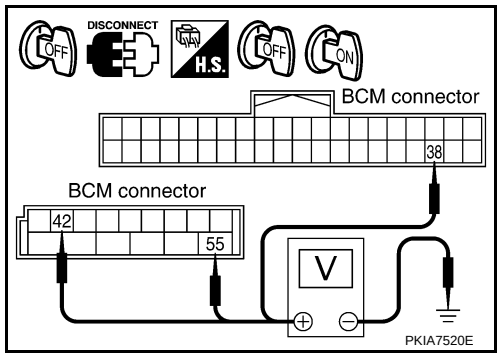
Refer to LT-35, "Wiring Diagram - DTRL -".

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.

2.CHECK POWER SUPPLY CIRCUIT

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



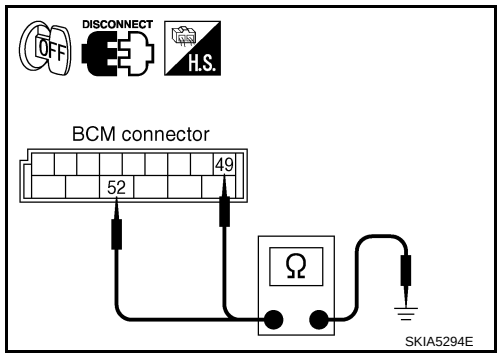
(+)		(-)	Ignition switch position	
BCM connector	Terminal		OFF	ON
M3	38	Ground	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage

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		Yes
	52		

OK or NG

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

INSPECTION PARKING BRAKE SWITCH CIRCUIT

1.CHECK BRAKE INDICATOR

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

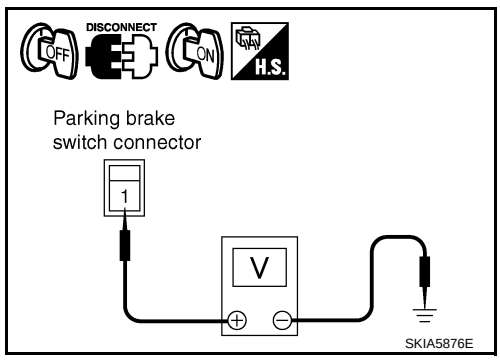
OK or NG

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

2.CHECK PARKING BRAKE SWITCH SIGNAL

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

1 – Ground : Battery voltage.



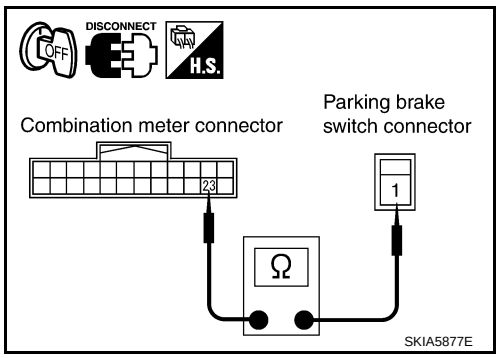
OK or NG

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.

CONSULT-III Functions (BCM)

INFOID:0000000001328300

CONSULT-III 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-III BASIC OPERATION

Refer to GI-34, "Description".

DATA MONITOR

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)

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

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 Control Does Not Operate Properly

INFOID:0000000001328301

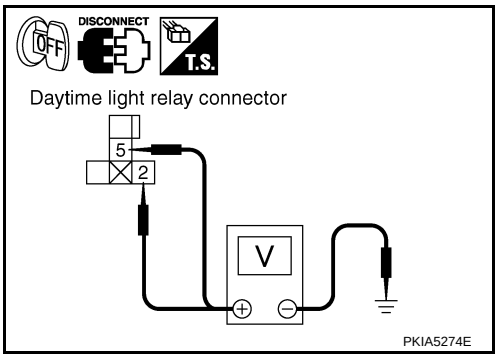
1.CHECK DAYTIME LIGHT RELAY POWER SUPPLY CIRCUIT

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.

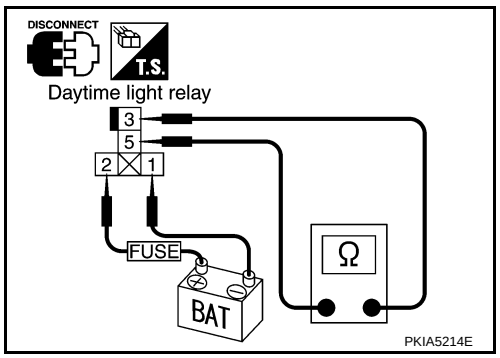
2.CHECK DAYTIME LIGHT RELAY

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.

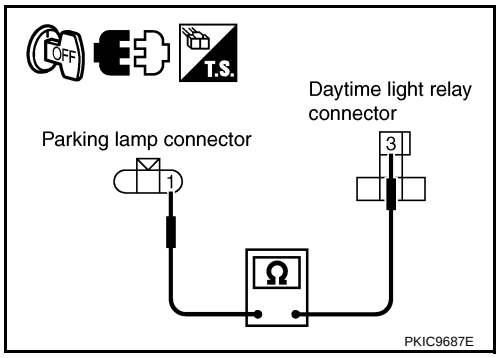
3 – 1 : Continuity should exist.

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.



4. CHECK GROUND

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

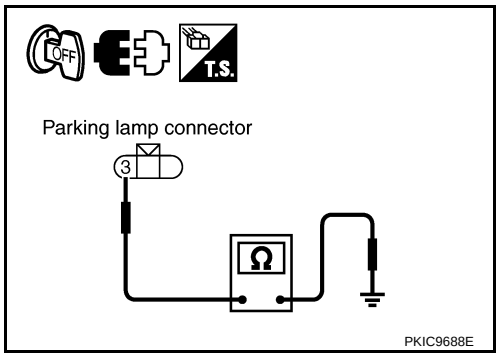
3 – Ground : Continuity should exist.

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.

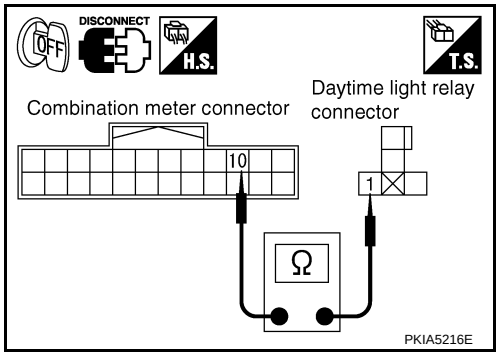
6. CHECK DAYTIME RELAY CIRCUIT

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

CONSULT-III DATA MONITOR
1. Select “HEAD LAMP” of BCM data monitor item.
2. With the engine running or stopped, check the monitor status.

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

3. Select “HEAD LAMP” of BCM data monitor item.
4. With operating the parking brake switch, check the monitor status.

Parking brake ON	**: PKB SW ON**
Parking brake OFF	**: PKB SW OFF**

OK or NG

OK >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".
NG >> GO TO 8.

8.CHECKING CAN COMMUNICATIONS

1. Select “self-diagnosis” of BCM”.
2. Check display content in self-diagnosis results.

Displayed self-diagnosis results

NO DTC>> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".
CAN COMM CIRCUIT>> Check BCM CAN communication system. Refer to PG-24, "U1000 CAN COMM CIRCUIT".

Aiming Adjustment

INFOID:0000000001328302

Refer to LT-27, "Aiming Adjustment".

Bulb Replacement

INFOID:0000000001328303

Refer to LT-28, "Bulb Replacement".

Removal and Installation

INFOID:0000000001328304

Refer to LT-30, "Removal and Installation".

Disassembly and Assembly

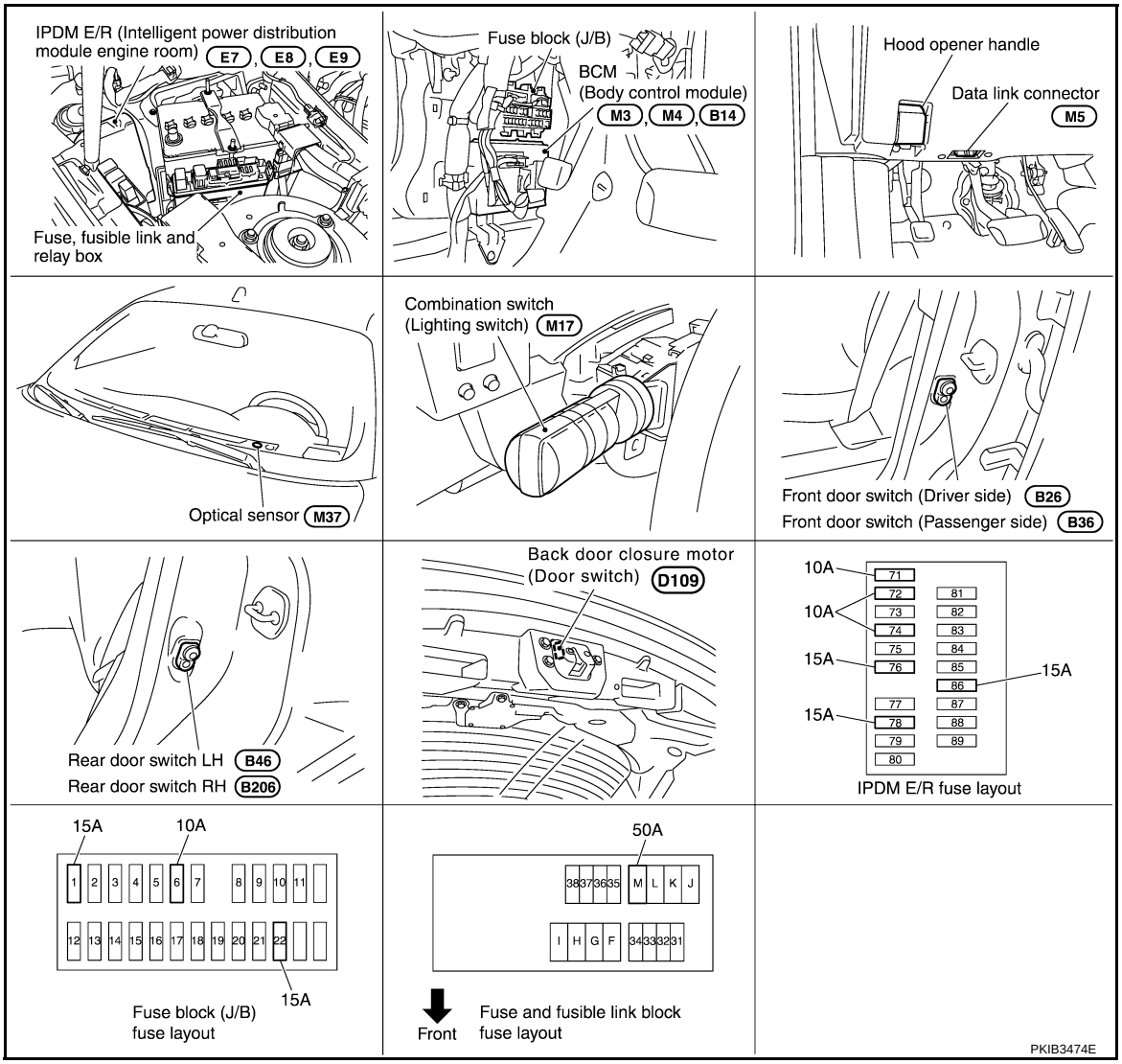
INFOID:0000000001328305

Refer to LT-30, "Disassembly and Assembly".

AUTO LIGHT SYSTEM

Component Parts and Harness Connector Location

INFOID:0000000001328306



System Description

INFOID:0000000001328307

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-55, "Preliminary Check".
Optical sensor control mode can be changed by the function setting of CONSULT-III or display.
Optical sensor, power is supplied

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

Optical sensor, ground is supplied

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

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

- from optical sensor terminal 2
- to BCM terminal 14

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

COMBINATION SWITCH READING FUNCTION

Refer to BCS-4, "System Description".

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-III or display.

CAN Communication System Description

INFOID:0000000001328308

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

INFOID:0000000001328309

Refer to LAN-43, "CAN System Specification Chart".

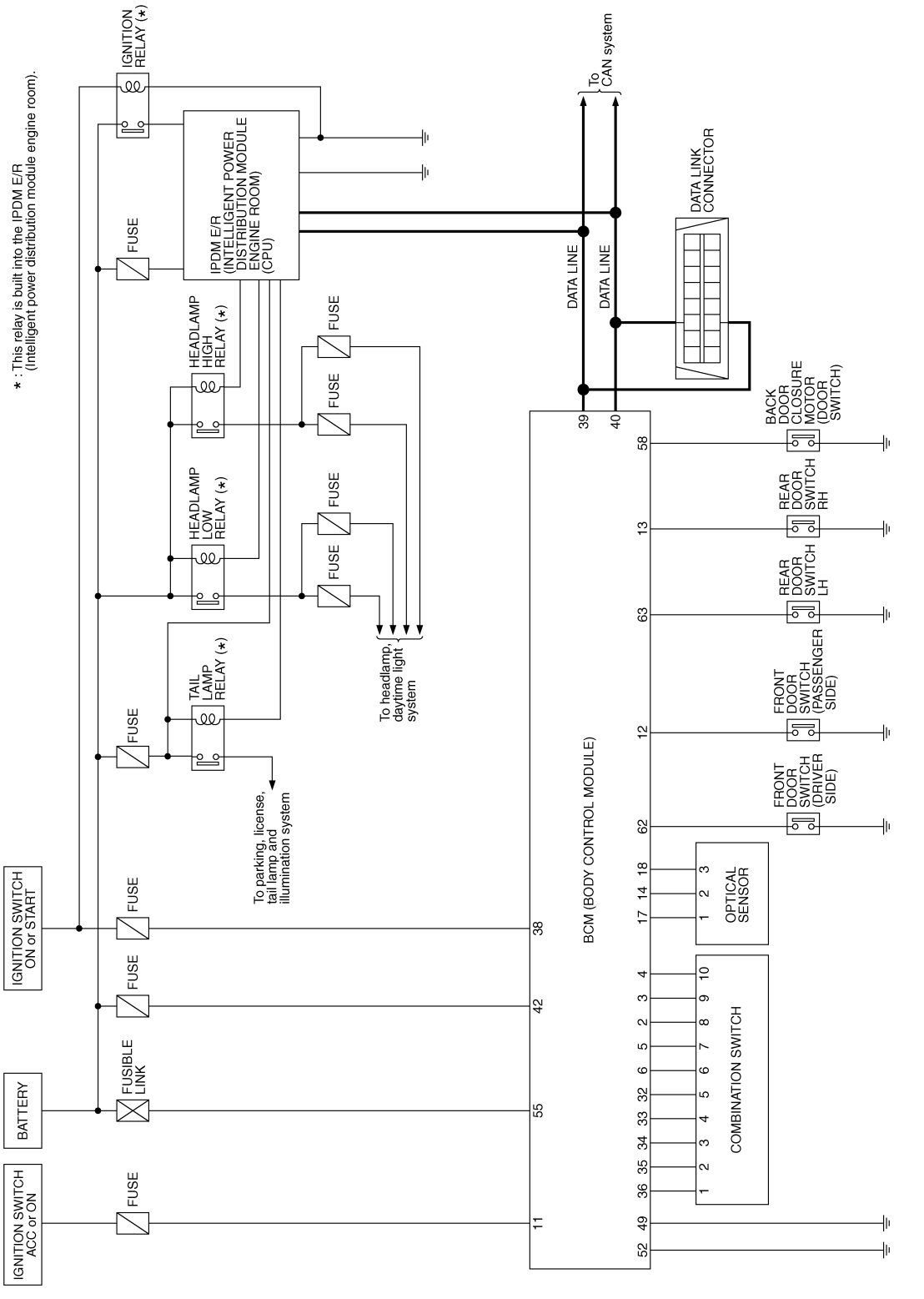
Major Component and Functions

INFOID:0000000001328310

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)

Schematic

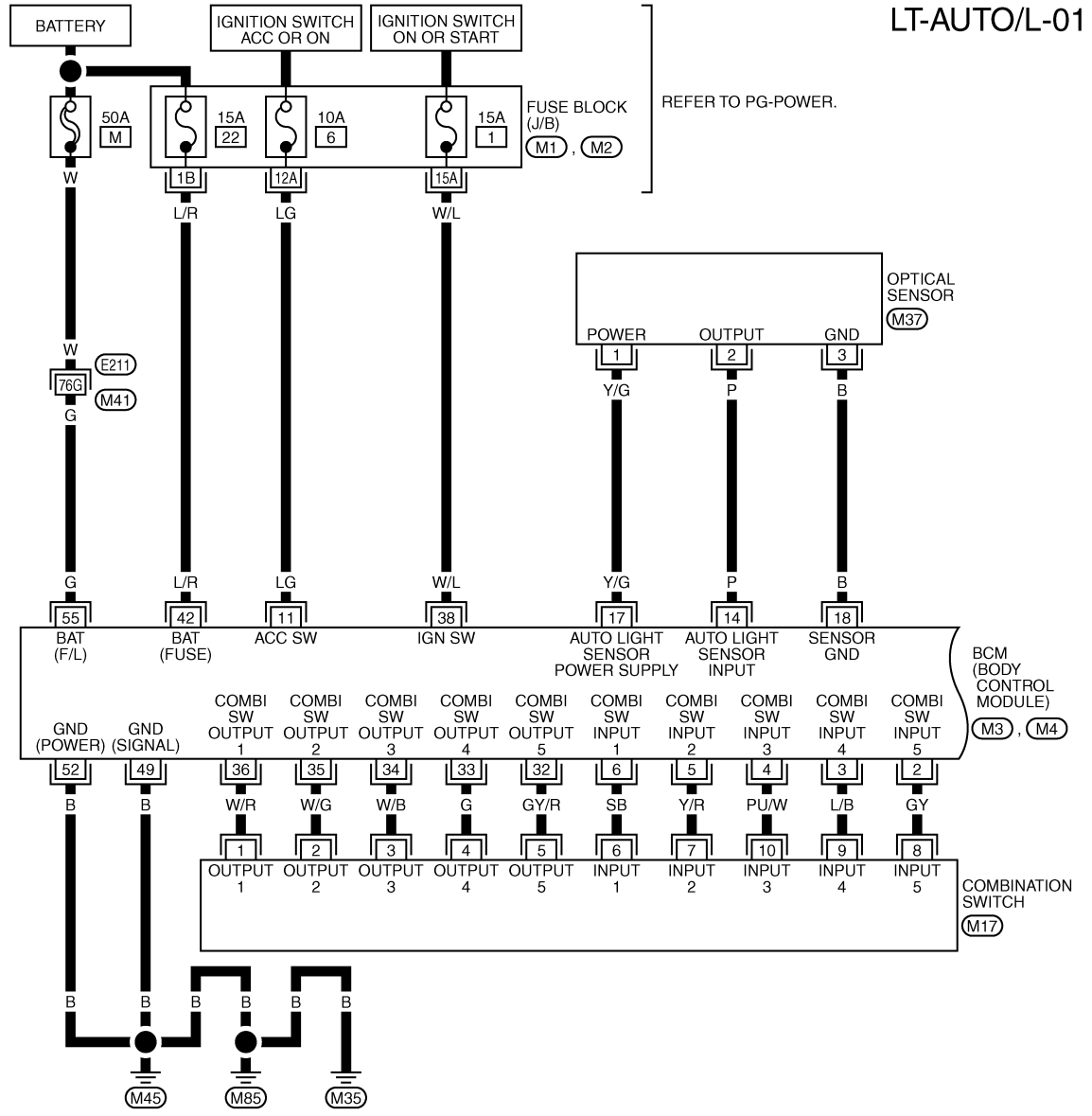
INFOID:0000000001328311

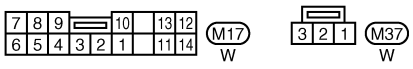


TKWM0611E

Wiring Diagram - AUTO/L -

INFOID:0000000001328312





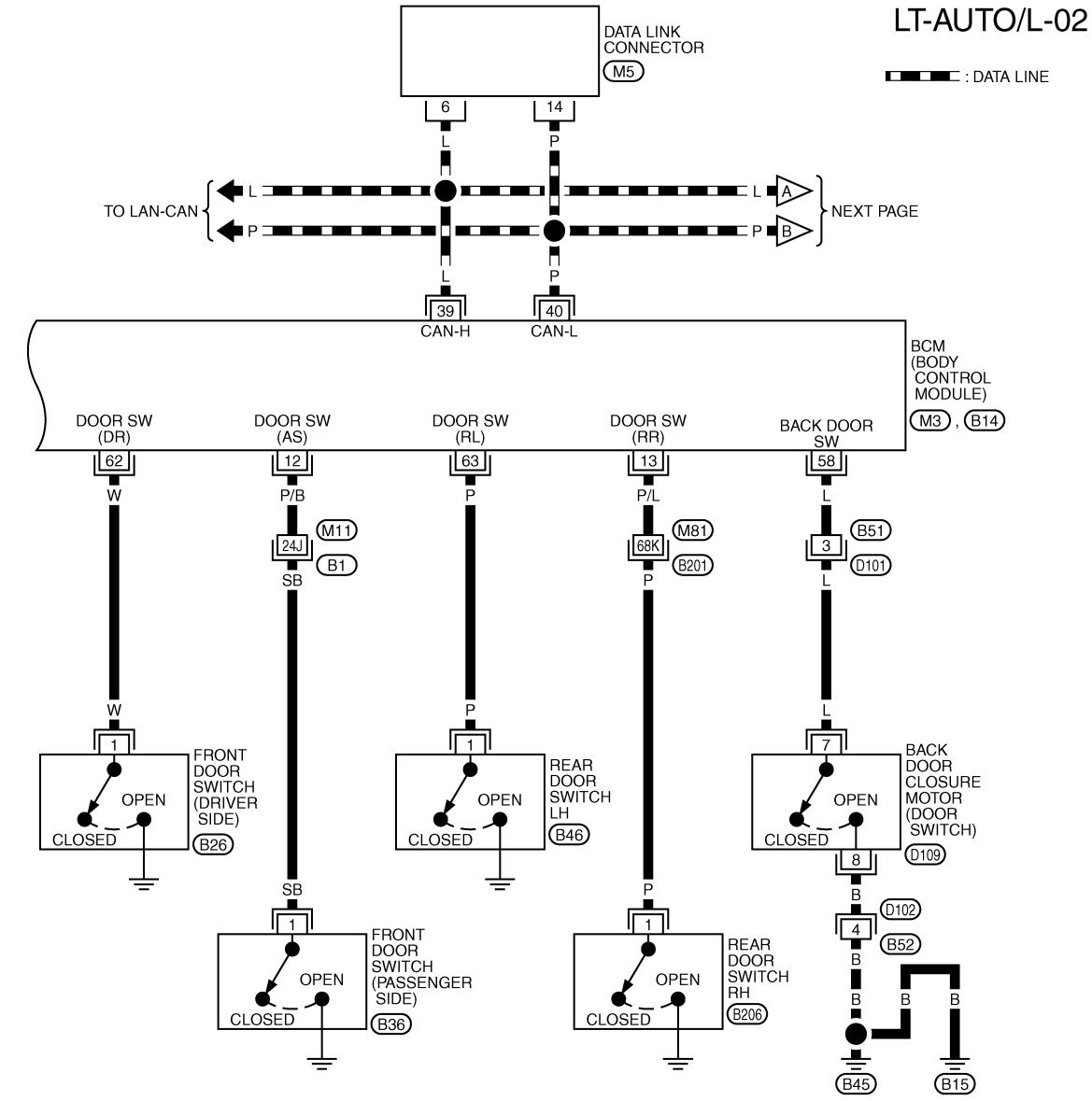
REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE JUNCTION (SMJ)

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

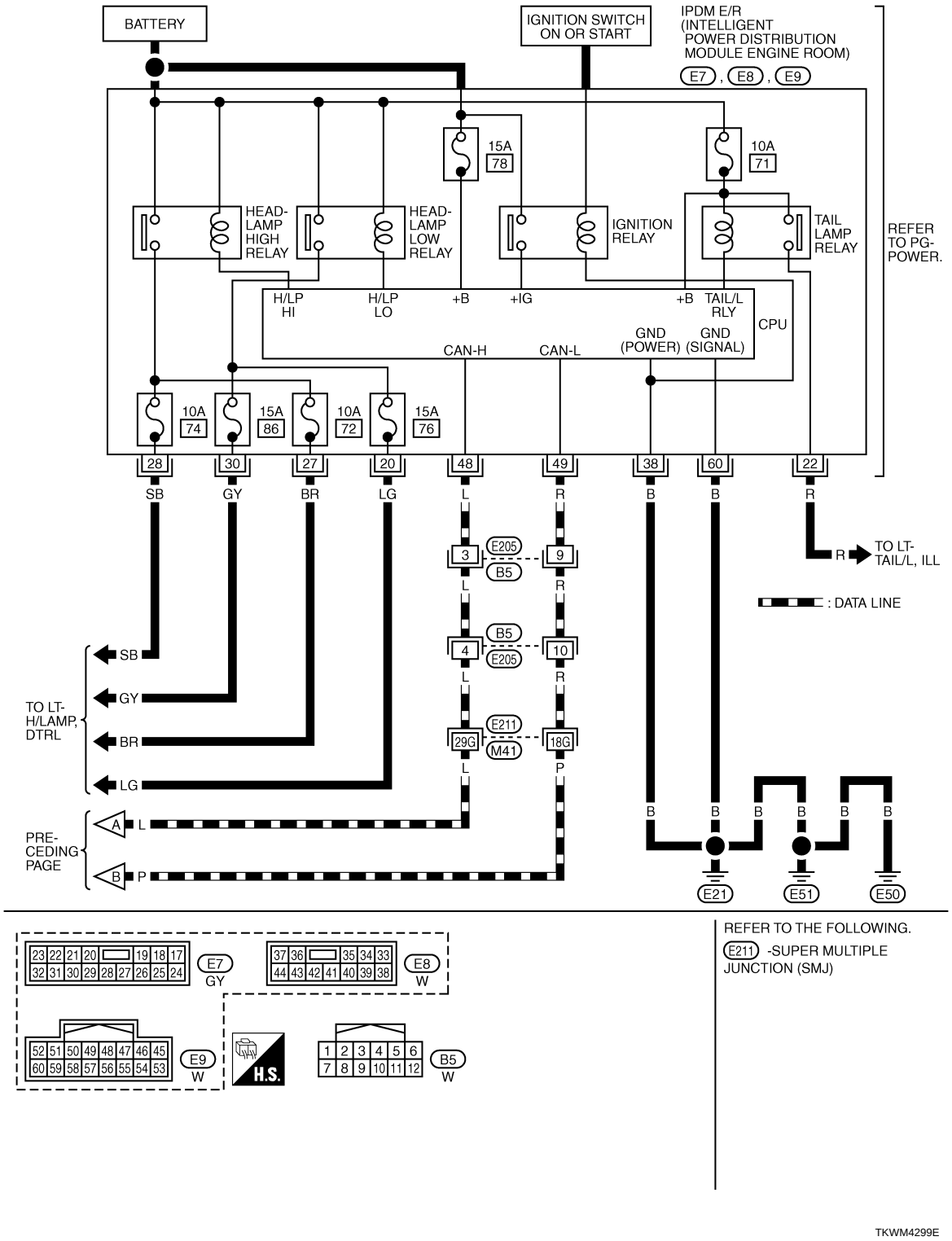
M3, M4 -ELECTRICAL UNITS

TKWM4297E


LT-AUTO/L-02
DATA LINK CONNECTOR
M5
: DATA LINE
6
14
L
P
TO LAN-CAN
L
P
A
B
NEXT PAGE
39
40
CAN-H
CAN-L
BCM (BODY CONTROL MODULE)
M3 , B14
DOOR SW (DR)
DOOR SW (AS)
DOOR SW (RL)
DOOR SW (RR)
BACK DOOR SW
62
12
63
13
58
W
P/B
P
P/L
L
M11
24J
B1
M81
68K
B201
B51
3
D101
SB
P
L
1
OPEN
CLOSED
FRONT DOOR SWITCH (DRIVER SIDE)
B26
REAR DOOR SWITCH LH
B46
7
BACK DOOR CLOSURE MOTOR (DOOR SWITCH)
D109
8
B
D102
4
B52
FRONT DOOR SWITCH (PASSENGER SIDE)
B36
REAR DOOR SWITCH RH
B206
B45
B15
M5
W
B26 , B36 , B46 , B206
W
D101
W
D102
W
D109
W
REFER TO THE FOLLOWING.
B1 , B201 -SUPER MULTIPLE JUNCTION (SMJ)
M3 , B14 -ELECTRICAL UNITS

TKWM4298E

LT-AUTO/L-03



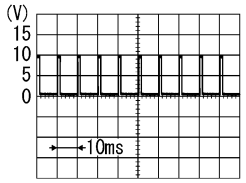
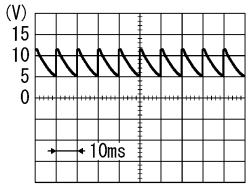
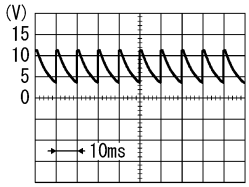
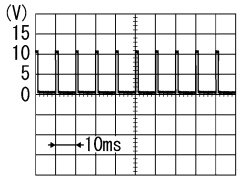
TKWM4299E

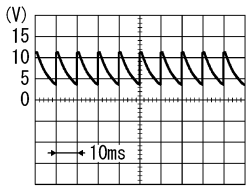
Terminal and Reference Value for BCM

INFOID:0000000001328313

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-III. Refer to LT-103, "CONSULT-III Functions (BCM)".**

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
					Lighting switch AUTO	 PKIB4959J Approx. 1.0 V
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)	 SKIB3419J Approx. 7.5 - 8.0 V
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
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Lighting switch AUTO	 PKIB4958J 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

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
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)	 PKIB4960J Approx. 7.0 - 7.5 V
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.

Terminal and Reference Value for IPDM E/R

INFOID:0000000001328314

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

INFOID:0000000001328315

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-47, "System Description".
3. Perform Preliminary Check. Refer to LT-55, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction. Refer to LT-58, "Symptom Chart".

5. Does auto light system operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

INFOID:0000000001328316

SETTING CHANGE FUNCTIONS

Sensitivity of auto light system can be adjusted using CONSULT-III. Refer to LT-56, "CONSULT-III Functions (BCM)".

CHECK POWER SUPPLY AND GROUND CIRCUIT

1.CHECK FUSES

Check for blown fuses.

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

Refer to LT-50, "Wiring Diagram - AUTO/L -".

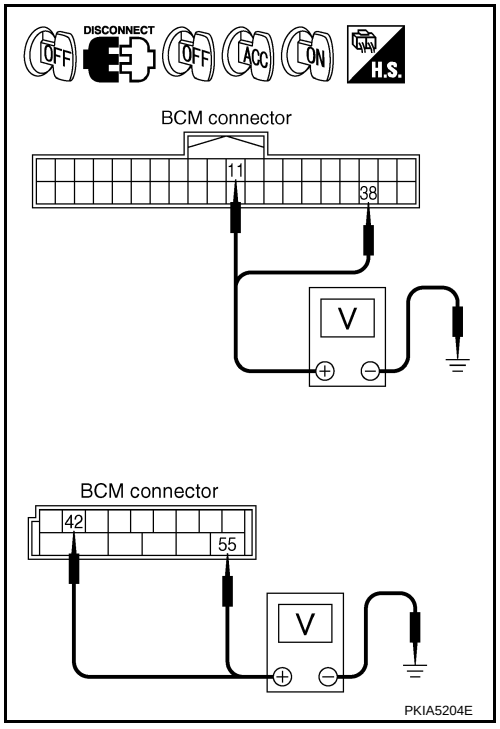
OK or NG

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

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



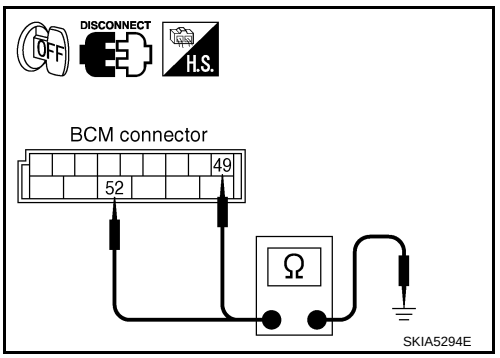
OK or NG

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		Yes
	52		



OK or NG

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

CONSULT-III Functions (BCM)

INFOID:0000000001328317

CONSULT-III 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-III BASIC OPERATION

Refer to GI-34, "Description".

WORK SUPPORT

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. • MODE 1 (Normal)/ MODE 2 (sensitive)/MODE 3 (Desensitized)/MODE4 (Insensitive)
ILL DELAY SET	Auto light delay off timer period can be changed in this mode. Selects auto light delay off timer period among eight modes. • MODE 1 (45 sec.)/MODE 2 (OFF)/MODE 3 (30 sec.)/MODE 4 (60 sec.)/MODE 5 (90 sec.)/MODE 6 (120 sec.)/ MODE 7 (150 sec.)/MODE 8 (180 sec.)

DATA MONITOR

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.

Monitor item		Contents
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.

ACTIVE TEST

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-III Functions (IPDM E/R)

INFOID:0000000001328318

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

Check Item, Diagnosis Mode	Description
SELF-DIAGNOSTIC RESULTS	Refer to PG-18, "CONSULT-III Function (IPDM E/R)".
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-III BASIC OPERATION

Refer to GI-34, "Description".

DATA MONITOR

All Signals, Main Signals, Selection From Menu

Item name	CONSULT-III 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

Test item	CONSULT-III 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

INFOID:0000000001328319

Trouble phenomenon	Malfunction system and reference
• 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.	• Refer to LT-56, "CONSULT-III Functions (BCM)". • Refer to LT-58, "Lighting Switch Inspection". • Refer to LT-59, "Optical sensor System Inspection". If above systems are normal, replace BCM.
Shut off delay feature will not operate.	• CAN communication line inspection between BCM and combination meter. Refer to PG-24, "U1000 CAN COMM CIRCUIT". • Refer to BL-38, "Check Door Switch". If above system is normal, replace BCM.

Lighting Switch Inspection

INFOID:0000000001381749

1. CHECK LIGHTING SWITCH INPUT SIGNAL

Ⓜ CONSULT-III DATA MONITOR
1. Select “AUTO LIGHT SW” of BCM (HEAD LAMP) data monitor item.
2. With operating the lighting switch AUTO, check the monitor status.

When lighting switch is AUTO position : AUTO LIGHT SW ON

Ⓧ CHECK THE COMBINATION SWITCH
Refer to LT-104, "Combination Switch Inspection".

OK or NG

OK >> INSPECTION END
NG >> Check combination switch (lighting switch). Refer to LT-104, "Combination Switch Inspection".

Optical sensor System Inspection

INFOID:0000000001381750

1. CHECK OPTICAL SENSOR INPUT SIGNAL

CONSULT-III DATA MONITOR

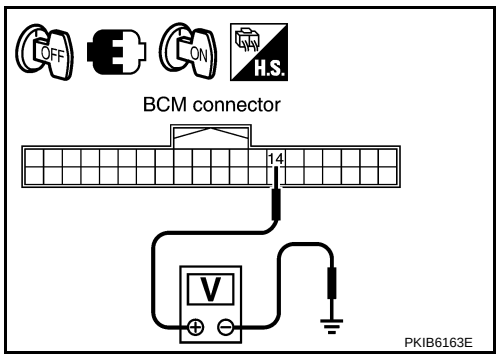
1. Turn ignition switch ON.
2. Select “OPTICAL SENSOR” of BCM (HEAD LAMP) data monitor item.
3. Turn the lighting switch AUTO.
4. With the optical sensor illuminating, check the monitor status.

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.

CHECK BCM

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.

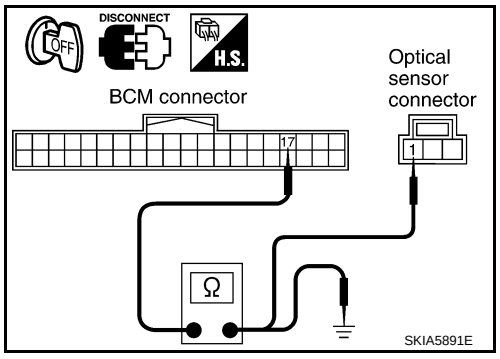
2. CHECK OPTICAL SENSOR POWER SUPPLY CIRCUIT

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.

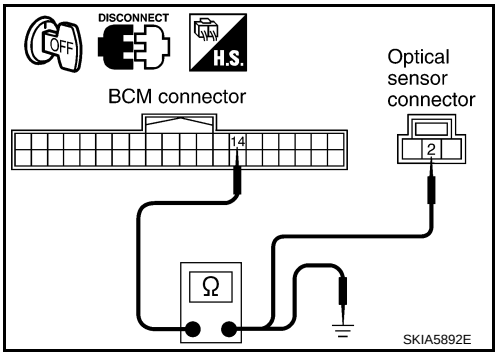
3. CHECK OPTICAL SENSOR SIGNAL CIRCUIT

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.

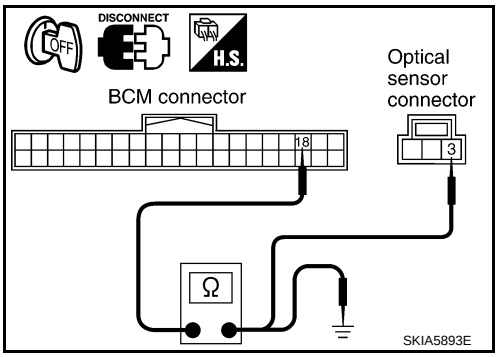
4. CHECK OPTICAL SENSOR GROUND CIRCUIT

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.



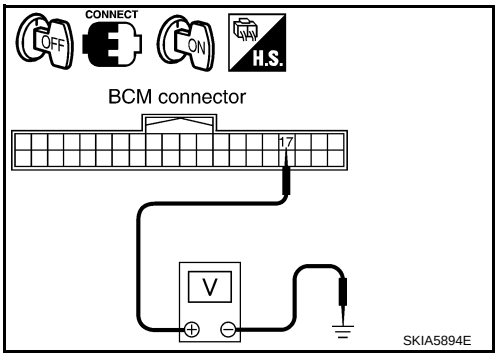
OK or NG

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

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

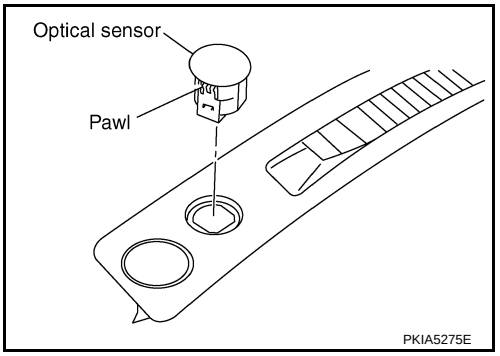
OK >> Replace optical sensor.
NG >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".

Removal and Installation of Optical Sensor

INFOID:0000000001328322

REMOVAL

1. Insert a screwdriver or similar tool and remove front defroster grill (LH). Refer to IP-11, "Removal and Installation".
2. Disconnect optical sensor connector.
3. Remove optical sensor.



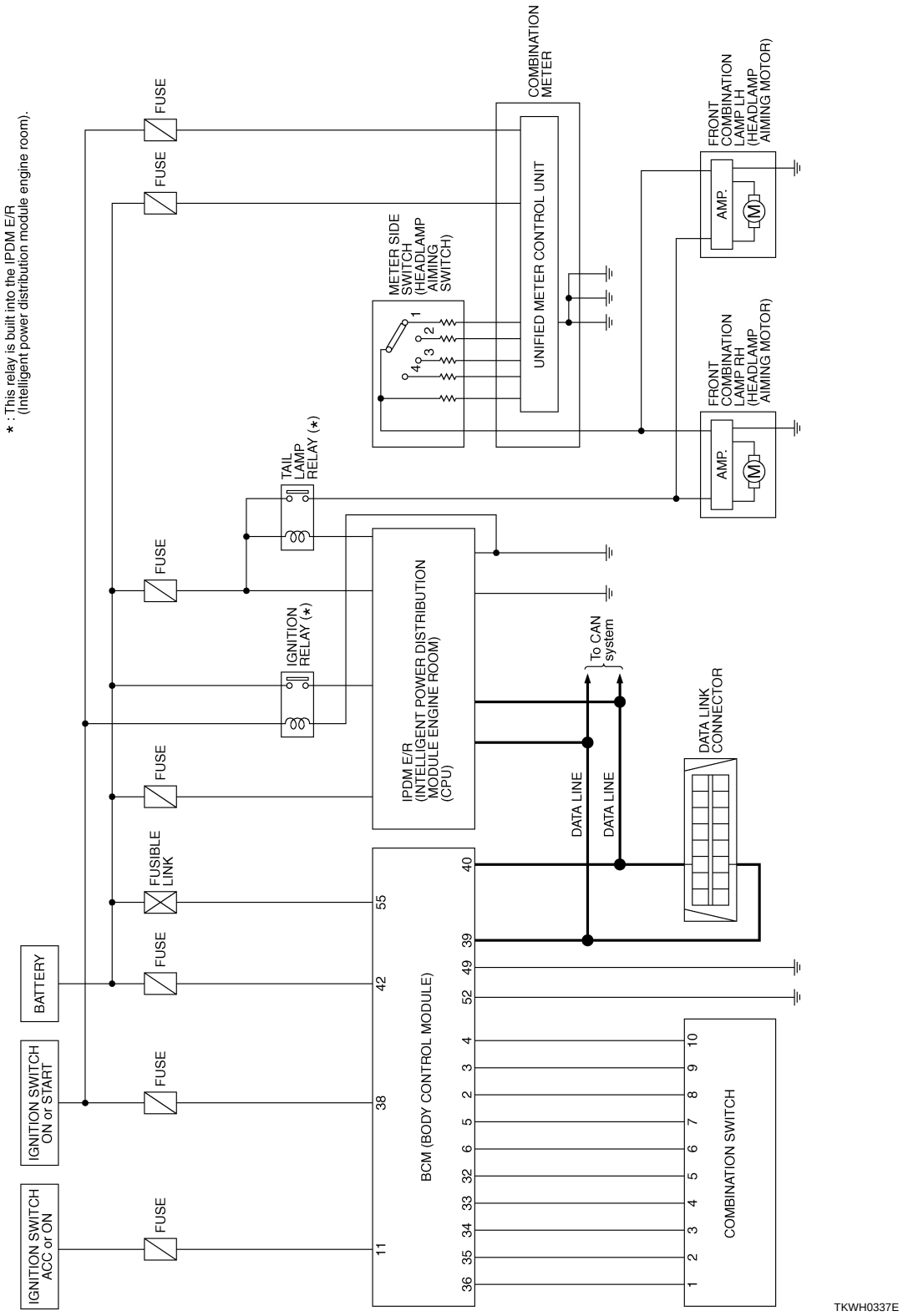
INSTALLATION

Installation is the reverse order of removal.

HEADLAMP AIMING CONTROL

Schematic

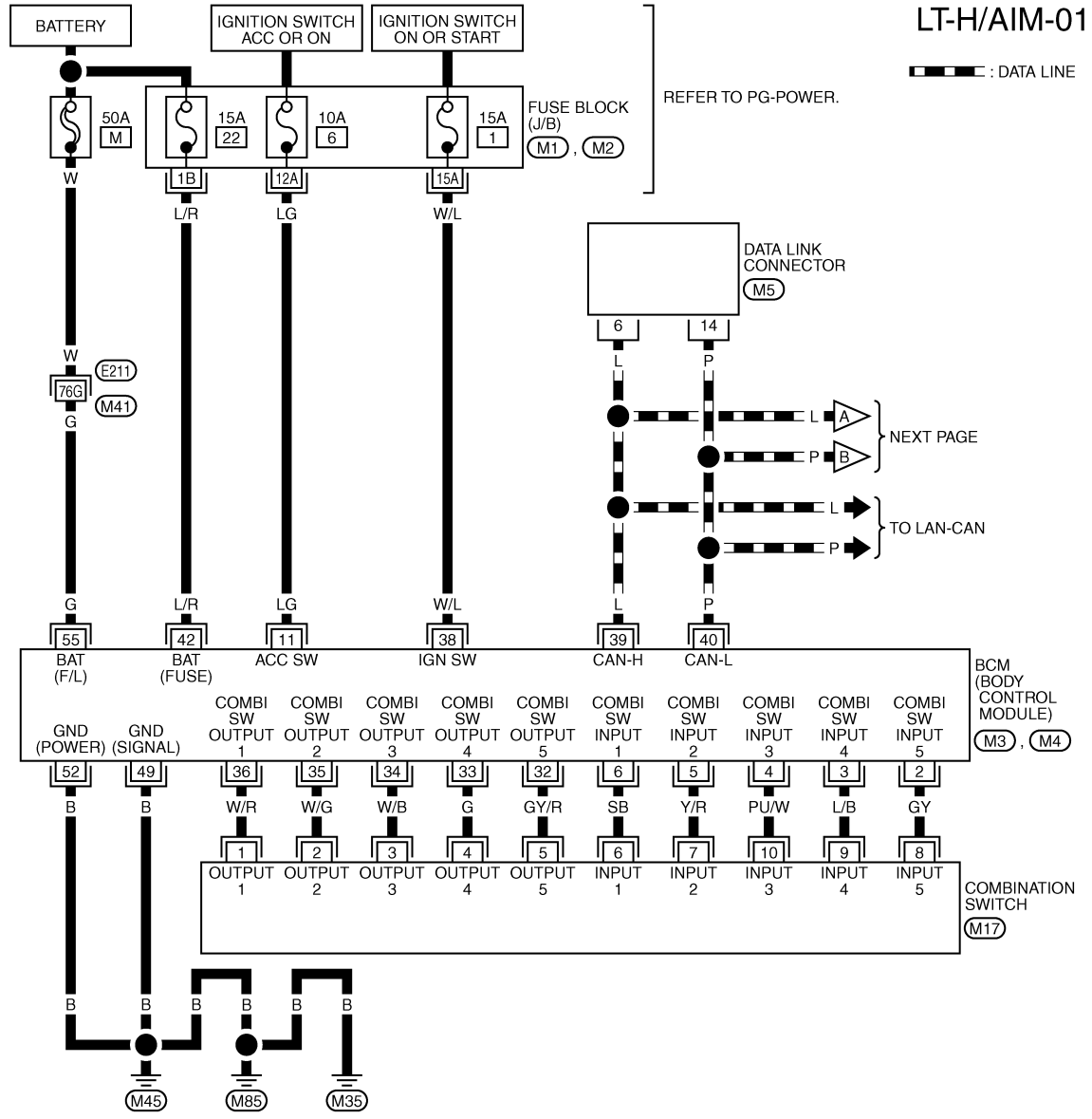
INFOID:0000000001328323



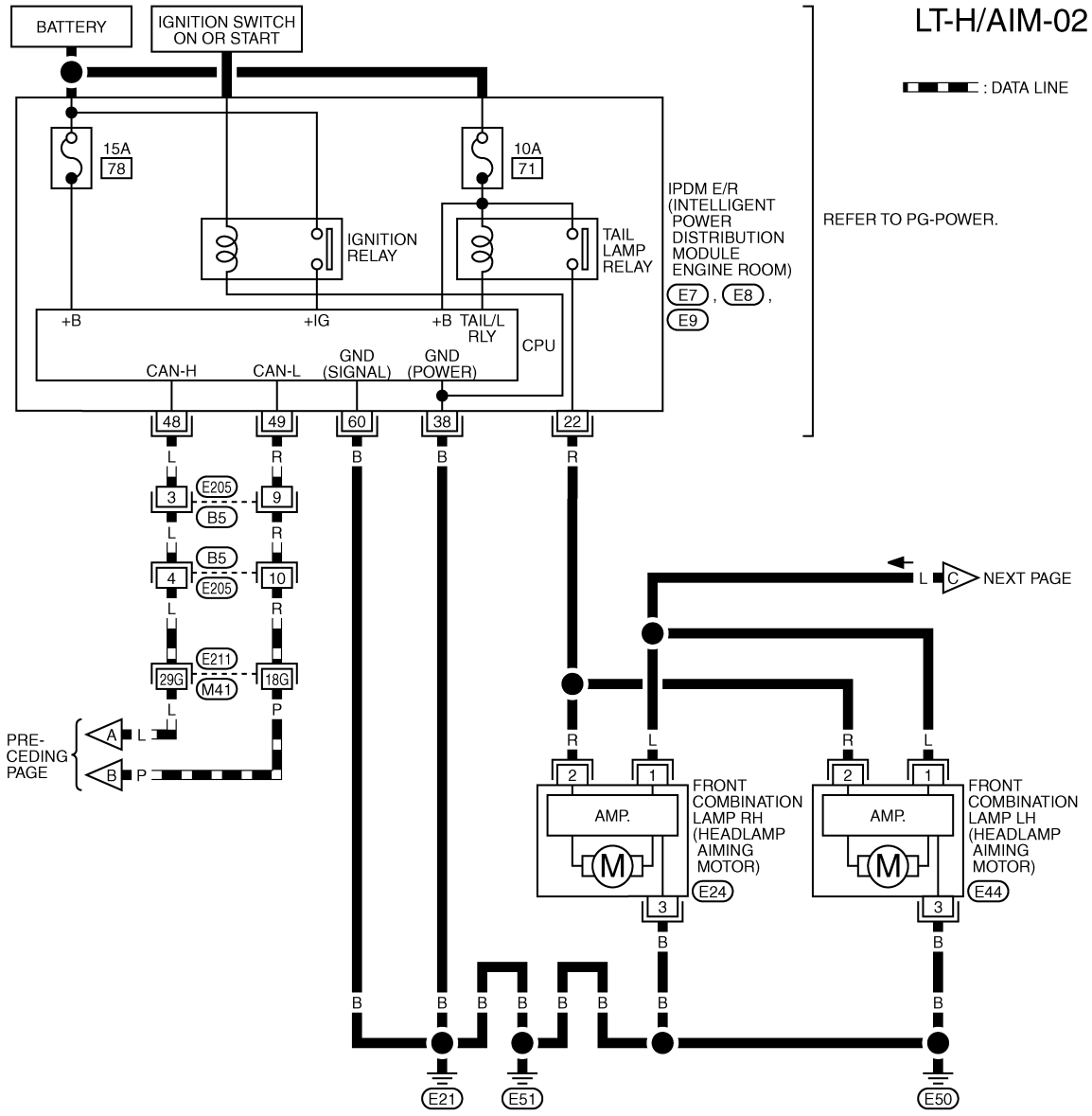
TKWH0337E

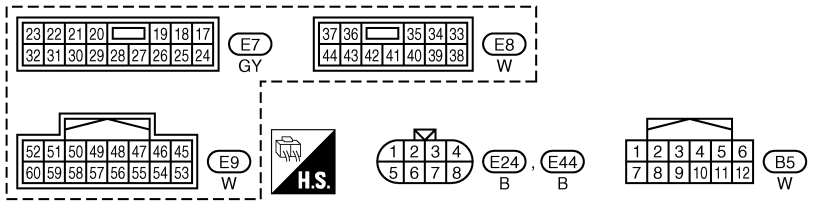
Wiring Diagram - H/AIM -

INFOID:0000000001328324



TKWM4300E

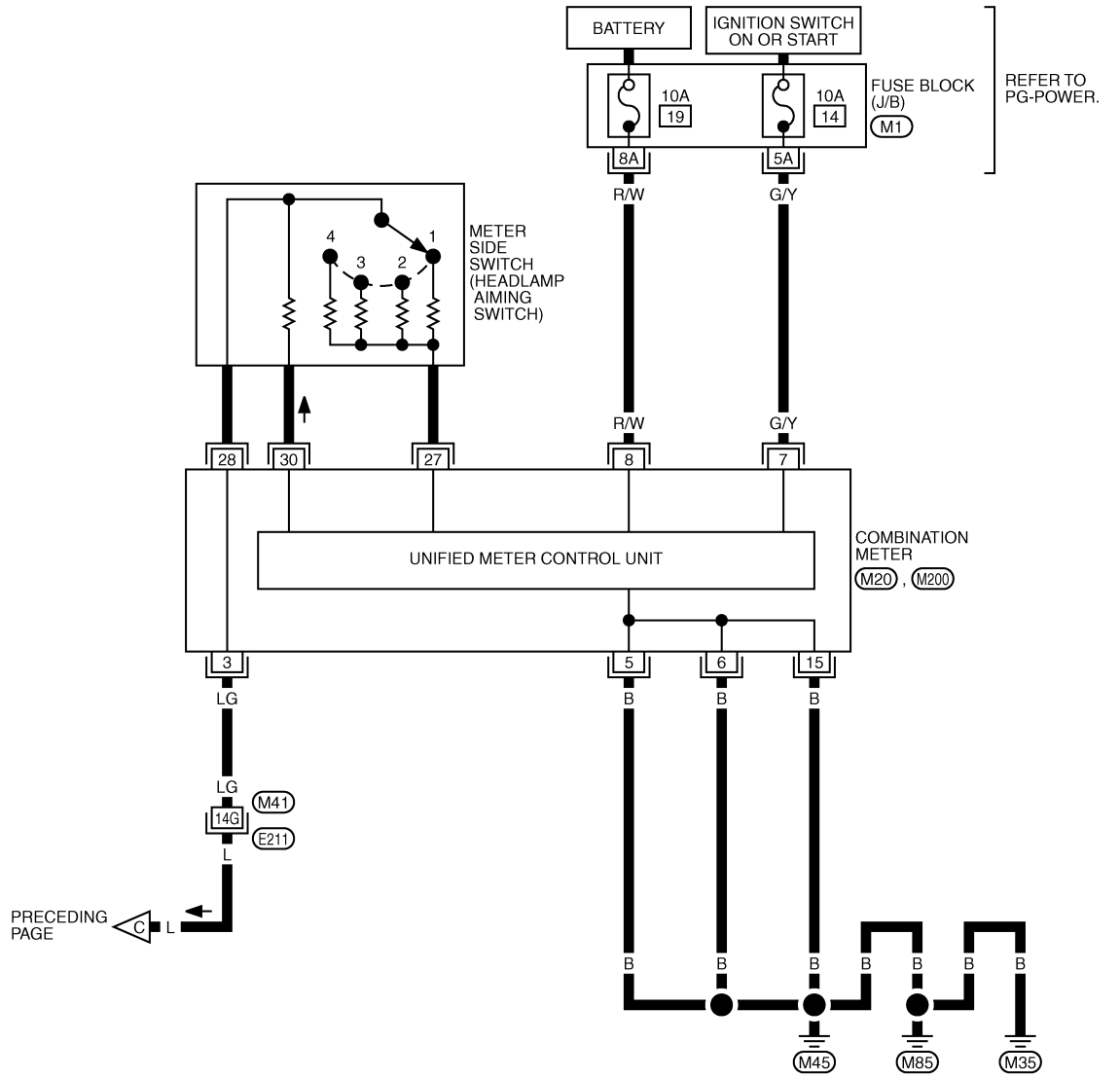


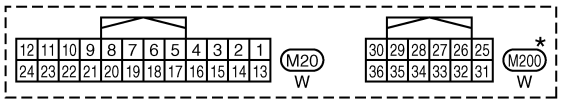


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4301E

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)

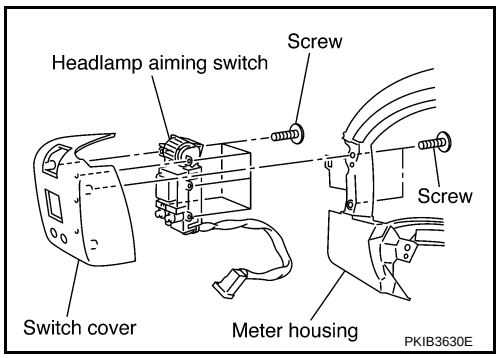
TKWM4302E

Removal and Installation

INFOID:0000000001328325

REMOVAL

1. Remove combination meter. Refer to DI-22, "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.



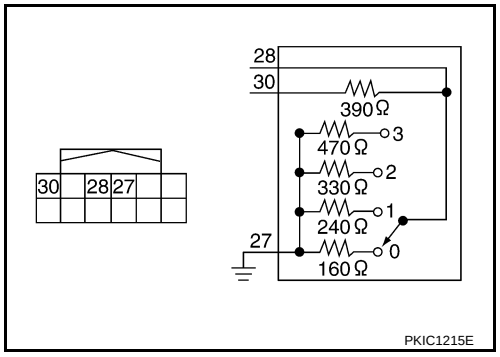
INSTALLATION

Installation is the reverse order of removal.

Switch Circuit Inspection

INFOID:0000000001328326

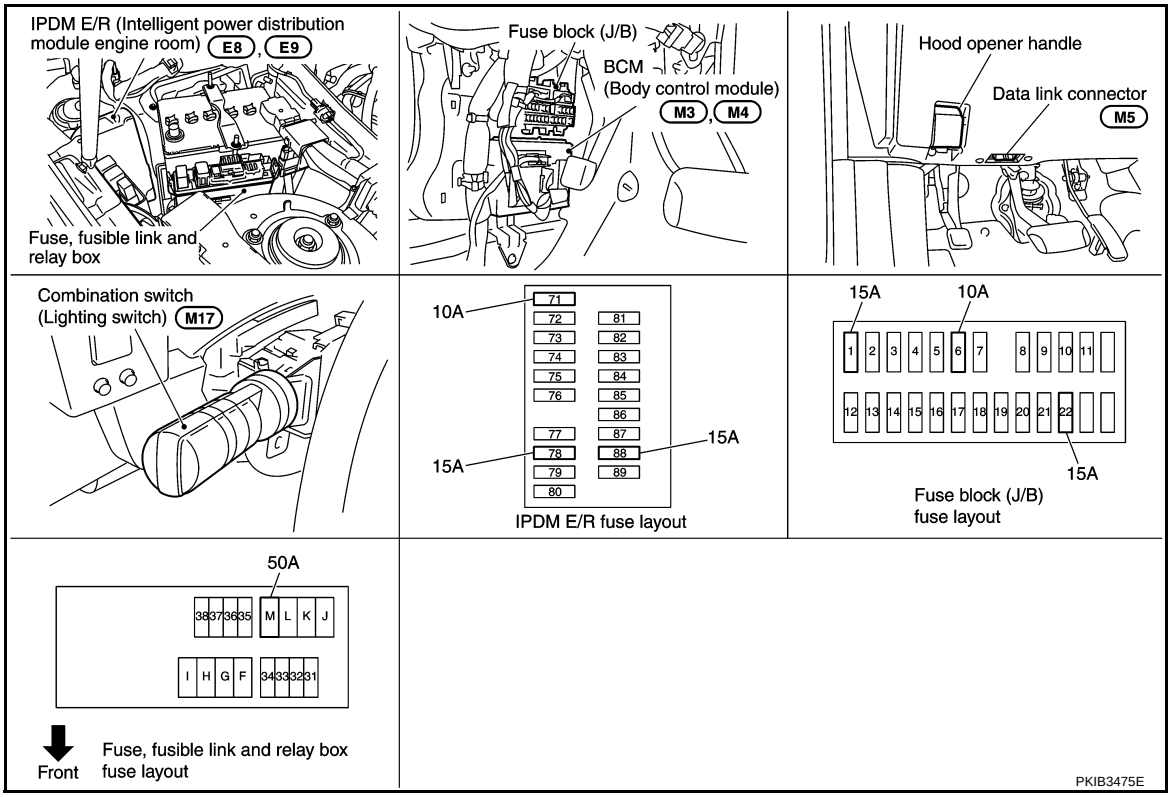
Using a circuit tester, check resistance between the headlamp aiming switch connector terminals in each operation status of the aiming switch.



FRONT FOG LAMP

Component Parts and Harness Connector Location

INFOID:0000000001328327



System Description

INFOID:0000000001328328

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)]
- 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-4, "System Description".

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-III.

CAN Communication System Description

INFOID:0000000001328329

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.

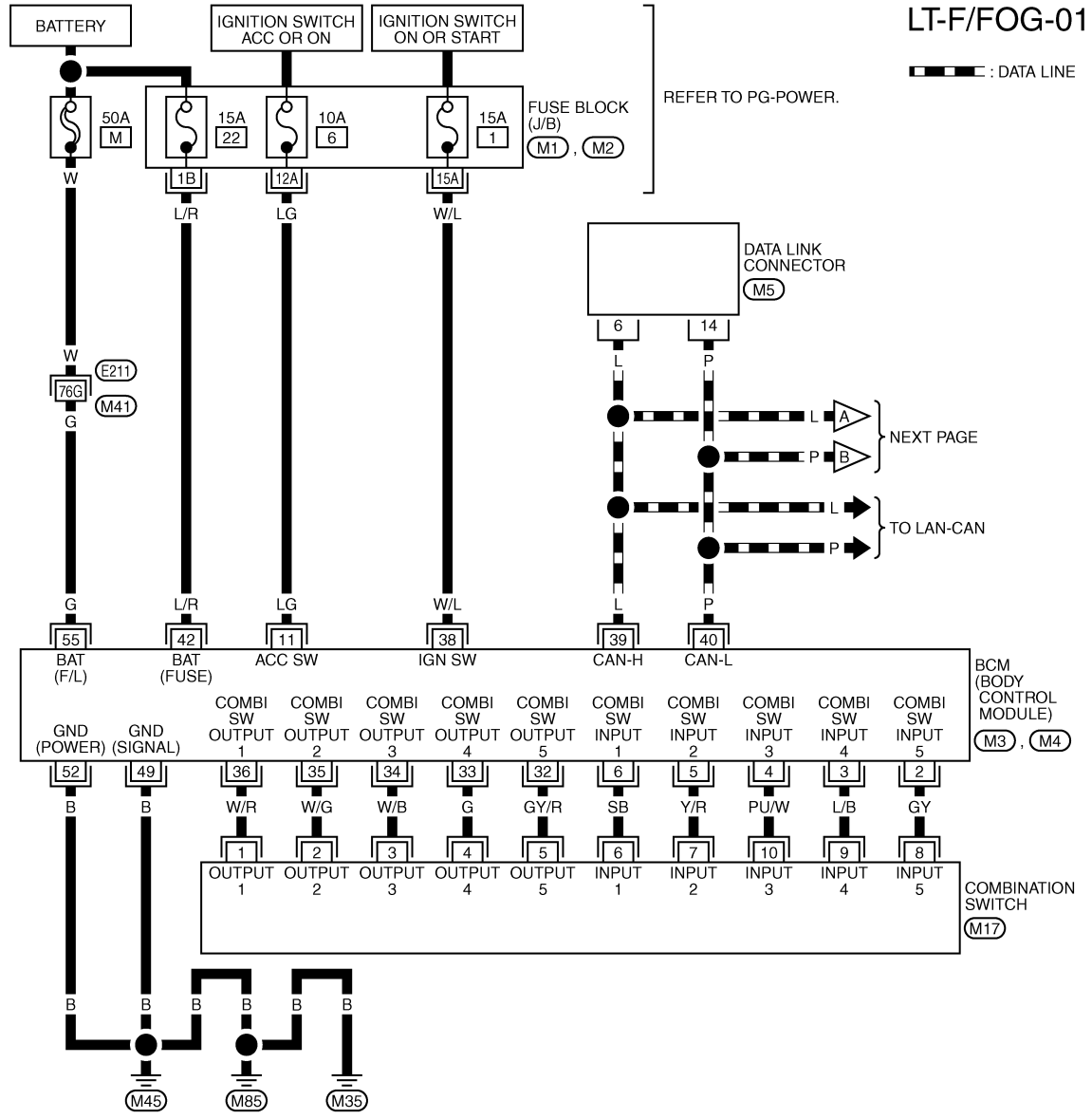
CAN Communication Unit

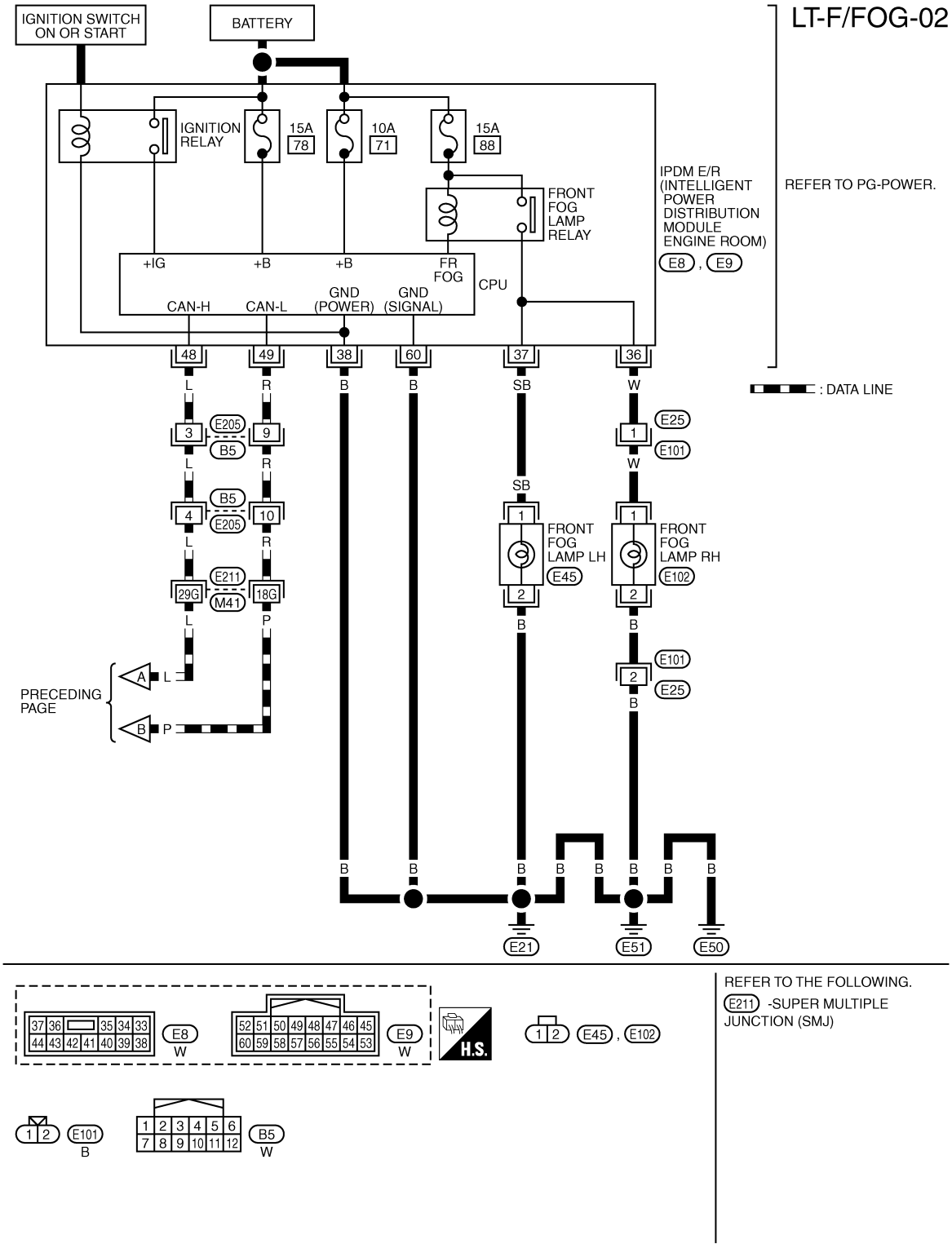
INFOID:0000000001328330

Refer to LAN-43, "CAN System Specification Chart".

Wiring Diagram - F/FOG -

INFOID:0000000001328331





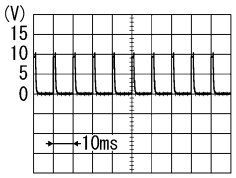
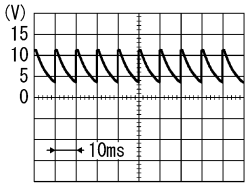
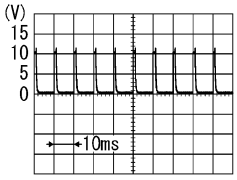
TKWM4304E

Terminal and Reference Value for BCM

INFOID:0000000001328332

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-III. Refer to LT-103, "CONSULT-III Functions (BCM)".**

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
					Front fog lamp switch (Operates only front fog lamp switch)	 PKIB4955J Approx. 0.8 V
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	 PKIB4960J Approx. 7.2 V
					Front fog lamp switch (Operates only front fog lamp switch)	 PKIB4956J Approx. 1.0 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

Terminal and Reference Value for IPDM E/R

INFOID:0000000001328333

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

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
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

INFOID:0000000001328334

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-66, "System Description".
3. Perform Preliminary Check. Refer to LT-71, "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

INFOID:0000000001328335

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-68, "Wiring Diagram - F/FOG -".

OK or NG

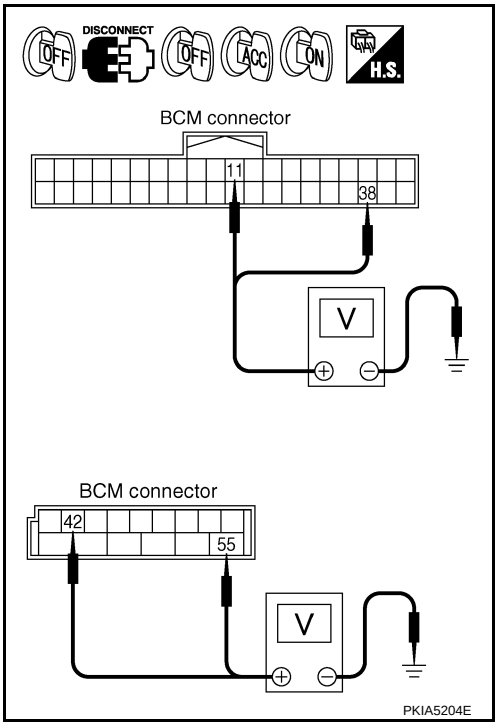
OK >> GO TO 2.

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

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



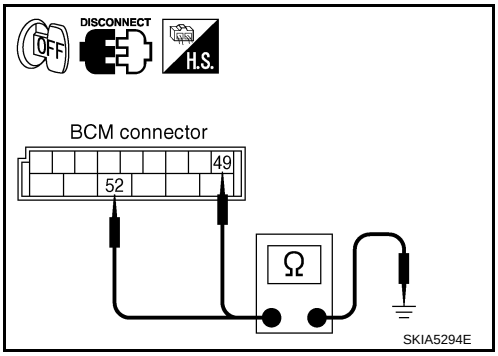
OK or NG

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		Yes
	52		



OK or NG

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

CONSULT-III Functions (BCM)

INFOID:0000000001328336

Refer to LT-16, "CONSULT-III Functions (BCM)".

CONSULT-III Functions (IPDM E/R)

INFOID:0000000001328337

Refer to LT-17, "CONSULT-III Functions (IPDM E/R)".

Front Fog Lamps Do Not Illuminate (Both Sides)

INFOID:0000000001381751

1.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select “FR FOG SW” of BCM (HEAD LAMP) data monitor item.
2. With operating the front fog lamp switch, check the monitor status.

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

CHECK THE COMBINATION SWITCH
Refer to LT-104, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-104, "Combination Switch Inspection".

2. FRONT FOG LAMP ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select “LAMPS” of IPDM E/R active test item.
2. With operating the test item, check that the front fog lamp is turned ON.

Front fog lamp should operate.

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-20, "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

CONSULT-III DATA MONITOR
1. Select “FR FOG REQ” of IPDM E/R data monitor item.
2. Turn lighting switch 1ST.
3. With operating the front fog lamp switch, check the monitor status.

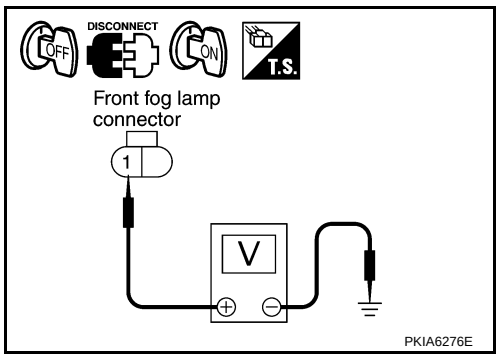
When lighting switch is front fog lamp ON position : FR FOG REQ ON

OK or NG

OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".

4. CHECK FRONT FOG LAMP INPUT SIGNAL

CONSULT-III ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connectors.
3. Select “LAMPS” of IPDM E/R active test item.
4. With operating the test items, check the voltage between the IPDM E/R harness connector and the ground.



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

IPDM E/R AUTO ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front fog lamp RH and LH connectors.
3. Start auto active test. Refer to PG-20, "Auto Active Test".
4. When front fog lamp operates, check voltage between front fog lamp (RH and LH) harness connectors and ground.

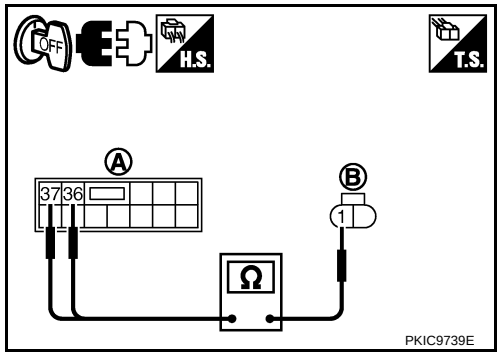
Terminals				Voltage (Approx.)
(+)			(-)	
Front fog lamp connector		Terminal		
RH	E102	1	Ground	Battery voltage
LH	E45	1		

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 connectors (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-24, "Removal and Installation of IPDM E/R".
NG >> Repair harness or connector.

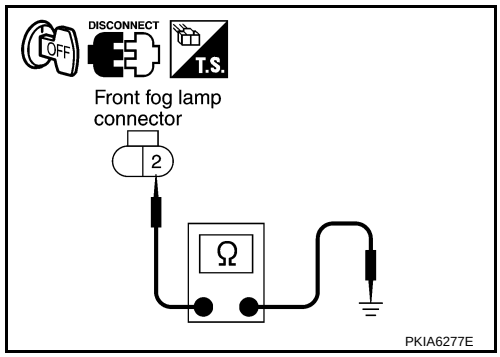
6. CHECK FRONT FOG LAMP GROUND

1. Turn ignition switch OFF.
2. Check continuity between front fog lamp (RH and LH) harness connectors 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)

INFOID:0000000001381752

1. CHECK BULB

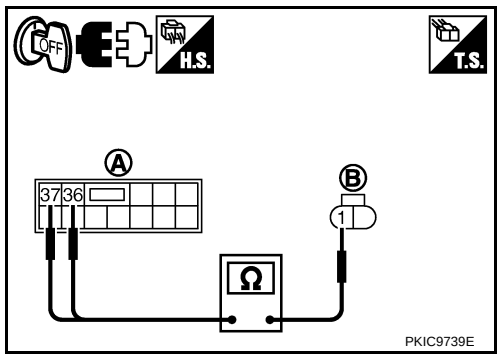
Check bulb of lamp which does not illuminate.

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 or LH harness connectors (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.

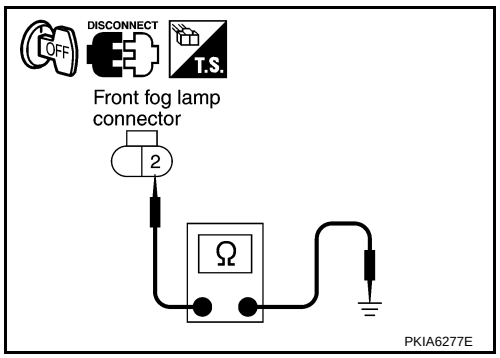
3. CHECK FRONT FOG LAMP GROUND

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. Refer to PG-24, "Removal and Installation of IPDM E/R".

NG >> Repair harness or connector.

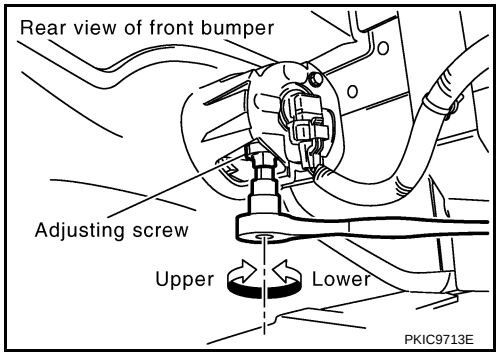
Aiming Adjustment

INFOID:0000000001328340

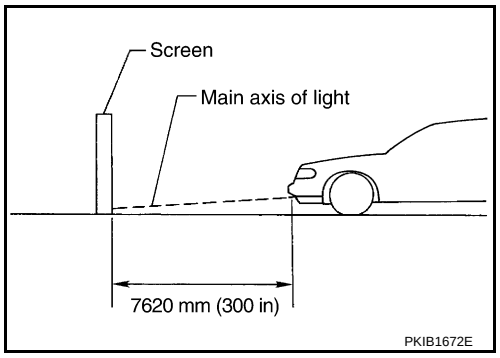
Front fog lamp is a semi-sealed beam type which uses a replaceable halogen bulb. Before performing aiming adjustment, make sure of the following.

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

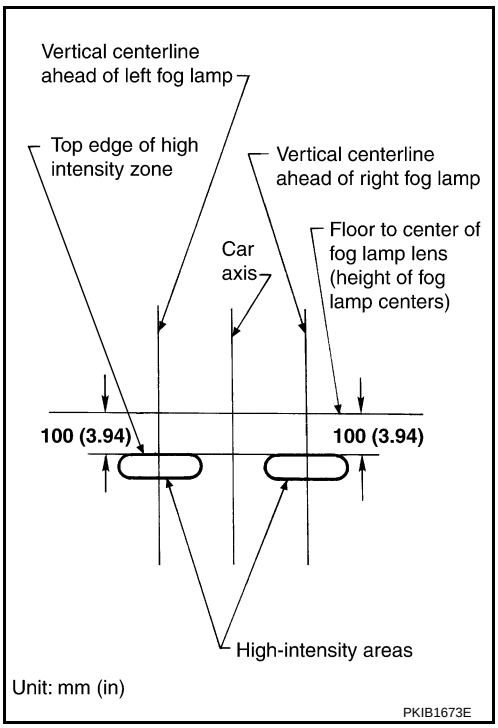
Adjust aiming in the vertical direction by turning adjusting screw.



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



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

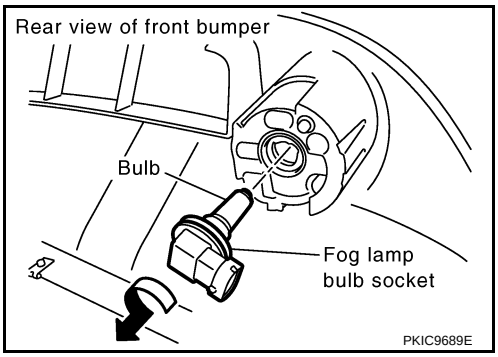


Bulb Replacement

INFOID:0000000001328341

1. Remove fender protector (front). Refer to EI-24, "Component Parts Location", EI-14, "Component Parts Location".
2. Disconnect front fog lamp connector.
3. Turn bulb socket counterclockwise and unlock it.

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



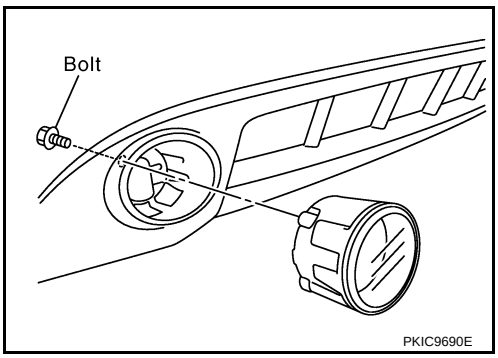
CAUTION:
- **Never touch the glass of bulb directly by hand. Keep grease and other oily matters away from it. Never touch bulb by hand while it is lit or right after being turned off. Burning may result.**
- **Never leave bulb out of front fog lamp reflector for a long time because dust, moisture smoke,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

Removal and Installation

INFOID:0000000001328342

REMOVAL

1. Remove front bumper fascia. Refer to EI-14, "Component Parts Location".
2. Remove front fog lamp mounting bolt.
3. Pull out front fog lamp from vehicle and disconnect front fog lamp connector.



INSTALLATION

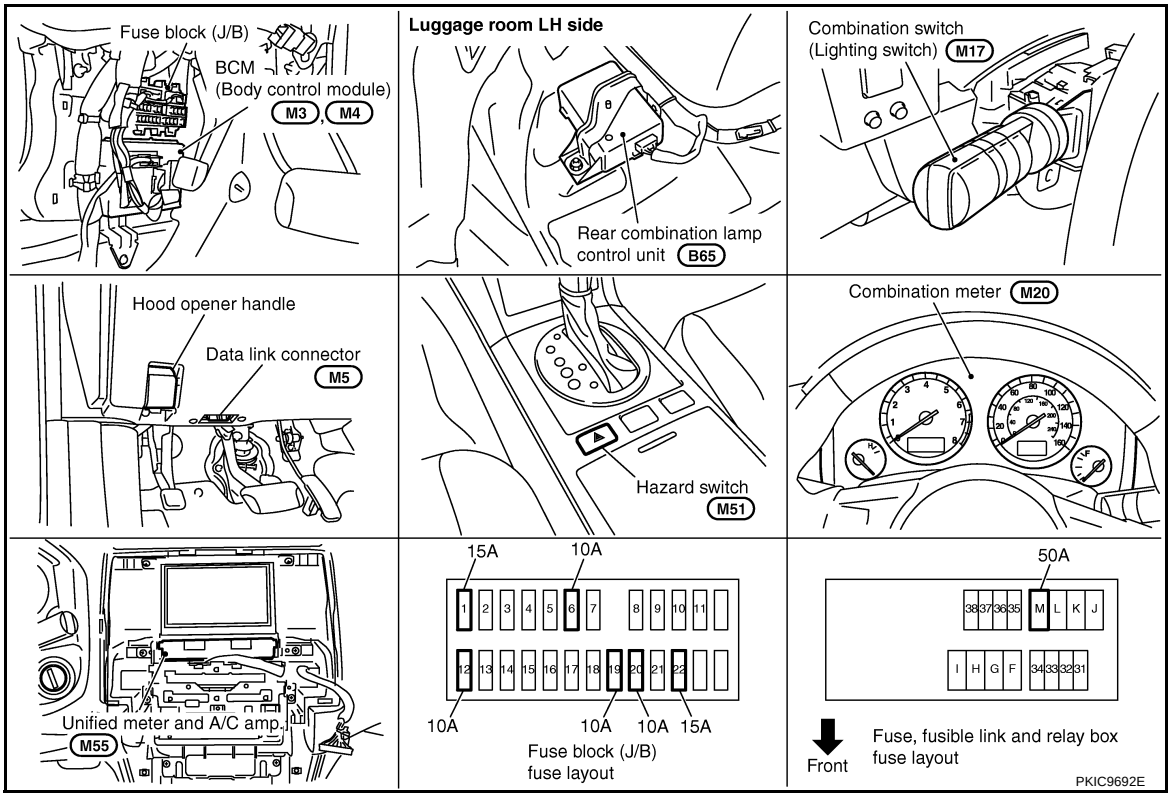
Installation is the reverse order of removal.

Front fog lamp mounting bolt : **5.5 N·m (0.55 kg-m, 49 in-lb)**

TURN SIGNAL AND HAZARD WARNING LAMPS

Component Parts and Harness Connector Location

INFOID:0000000001328343



System Description

INFOID:0000000001328344

OUTLINE

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

TURN SIGNAL OPERATION

LH Turn Signal Lamp

When the turn signal switch is moved to the left position, BCM output turn signal from BCM terminal 45, interpreting it as turn signal is ON.
Connected from BCM terminal 45 to front combination lamp LH terminal 4.
Turn signal lamp turns ON
- through front combination lamp LH terminal 8
- to grounds E21, E50 and E51.

Connected from BCM terminal 45 to rear combination lamp control unit terminal 4.
Rear turn signal (LED) turns ON
- through rear combination lamp control unit terminal 11
- to rear combination lamp LH terminal 3,
- through rear combination lamp LH terminal 4
- to rear combination lamp control unit terminal 10.

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

RH Turn Signal Lamp

When the turn signal switch is moved to right position, BCM output turn signal from BCM terminal 46, interpreting it as turn signal is ON.
Connected from BCM terminal 46 to front combination lamp RH terminal 4.
Turn signal lamp turns ON
- through front combination lamp RH terminal 8
- to grounds E21, E50 and E51.

Connected form BCM terminal 46 to rear combination lamp control unit terminal 5.
Rear turn signal (LED) turns ON
- through rear combination lamp control unit terminal 9
- to rear combination lamp RH terminal 3,
- through rear combination lamp RH terminal 4
- to rear combination lamp control unit terminal 8.

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

HAZARD LAMP OPERATION

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 form BCM terminals 45 and 46 to rear combination lamp control unit terminals 4 and 5.
Rear turn signal (LED) turns ON
- through rear combination lamp control unit terminal 11
- to rear combination lamp LH terminal 3,
- through rear combination lamp LH terminal 4
- to rear combination lamp control unit terminal 10,
- through rear combination lamp control unit terminal 9
- to rear combination lamp RH terminal 3,
- through rear combination lamp RH terminal 4
- to rear combination lamp control unit terminal 8.

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 form BCM terminals 45 and 46 to rear combination lamp control unit terminals 4 and 5.
Rear turn signal (LED) turns ON
- through rear combination lamp control unit terminal 11
- to rear combination lamp LH terminal 3,
- through rear combination lamp LH terminal 4
- to rear combination lamp control unit terminal 10,
- through rear combination lamp control unit terminal 9
- to rear combination lamp RH terminal 3,
- through rear combination lamp RH terminal 4
- to rear combination lamp control unit terminal 8.

BCM sends signal to the unified meter and A/C amp. through the CAN communication, 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-4, "System Description".

CAN Communication System Description

INFOID:0000000001328345

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.

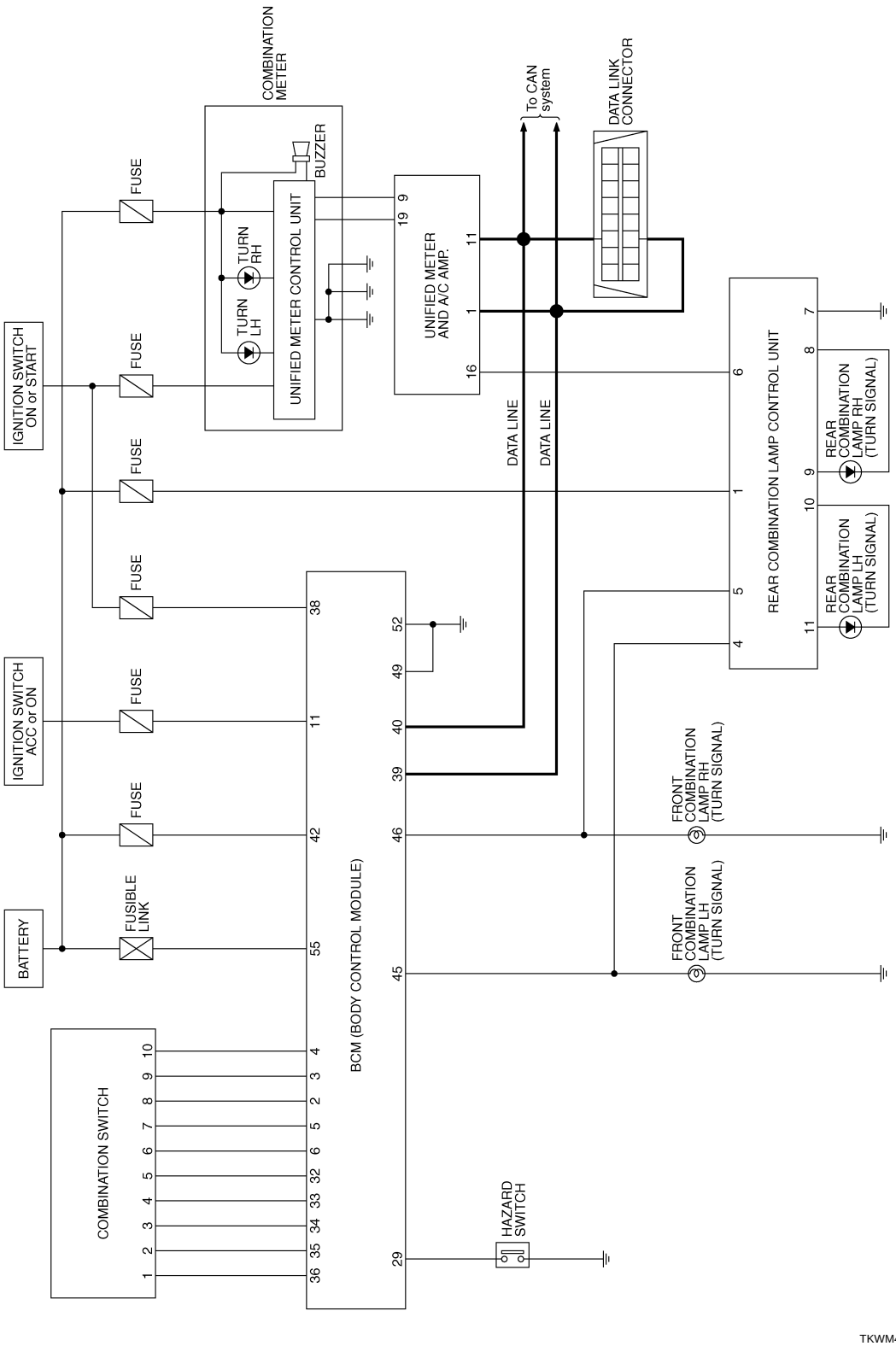
CAN Communication Unit

INFOID:0000000001328346

Refer to LAN-43, "CAN System Specification Chart".

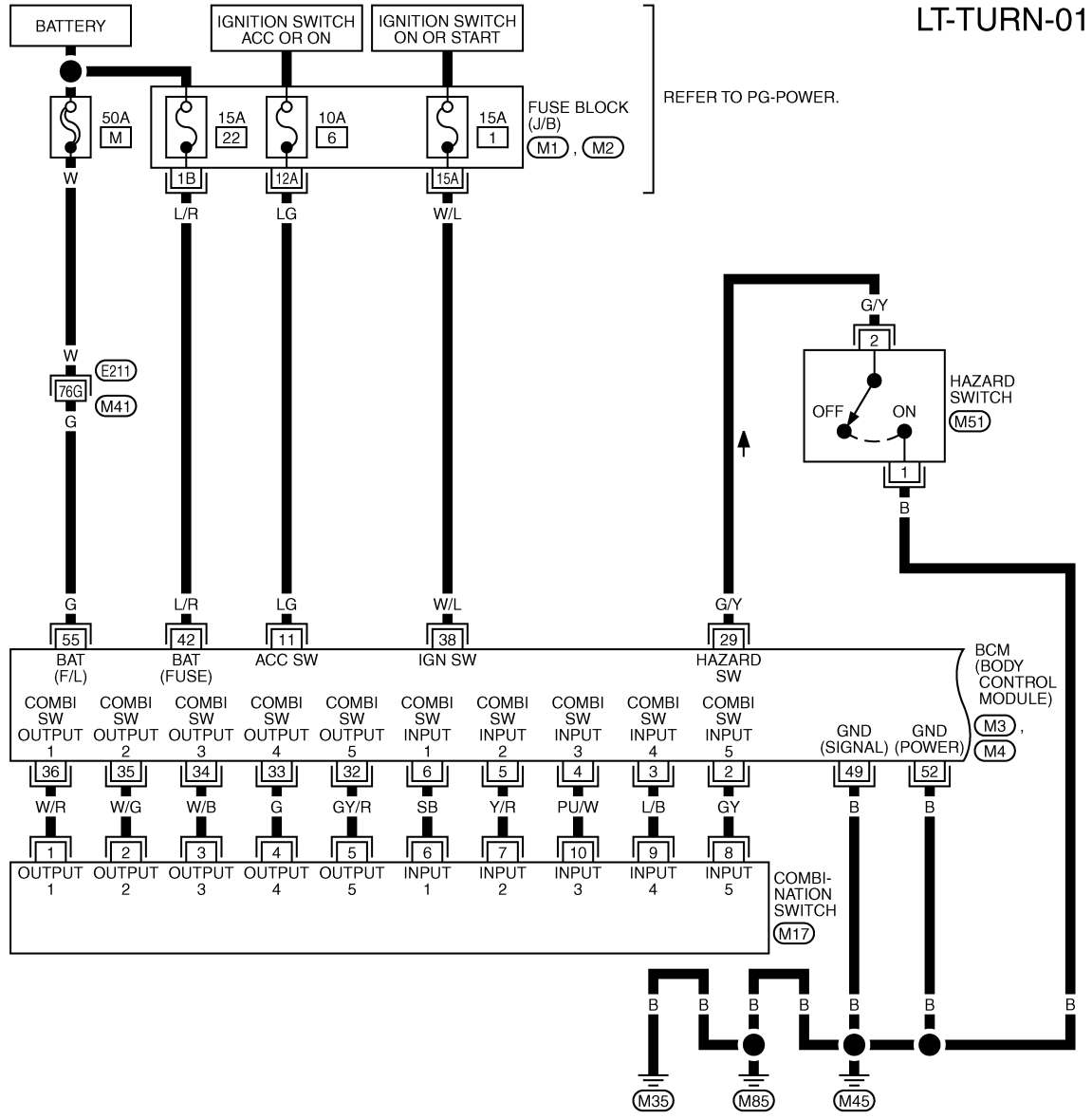
Schematic

INFOID:0000000001328347

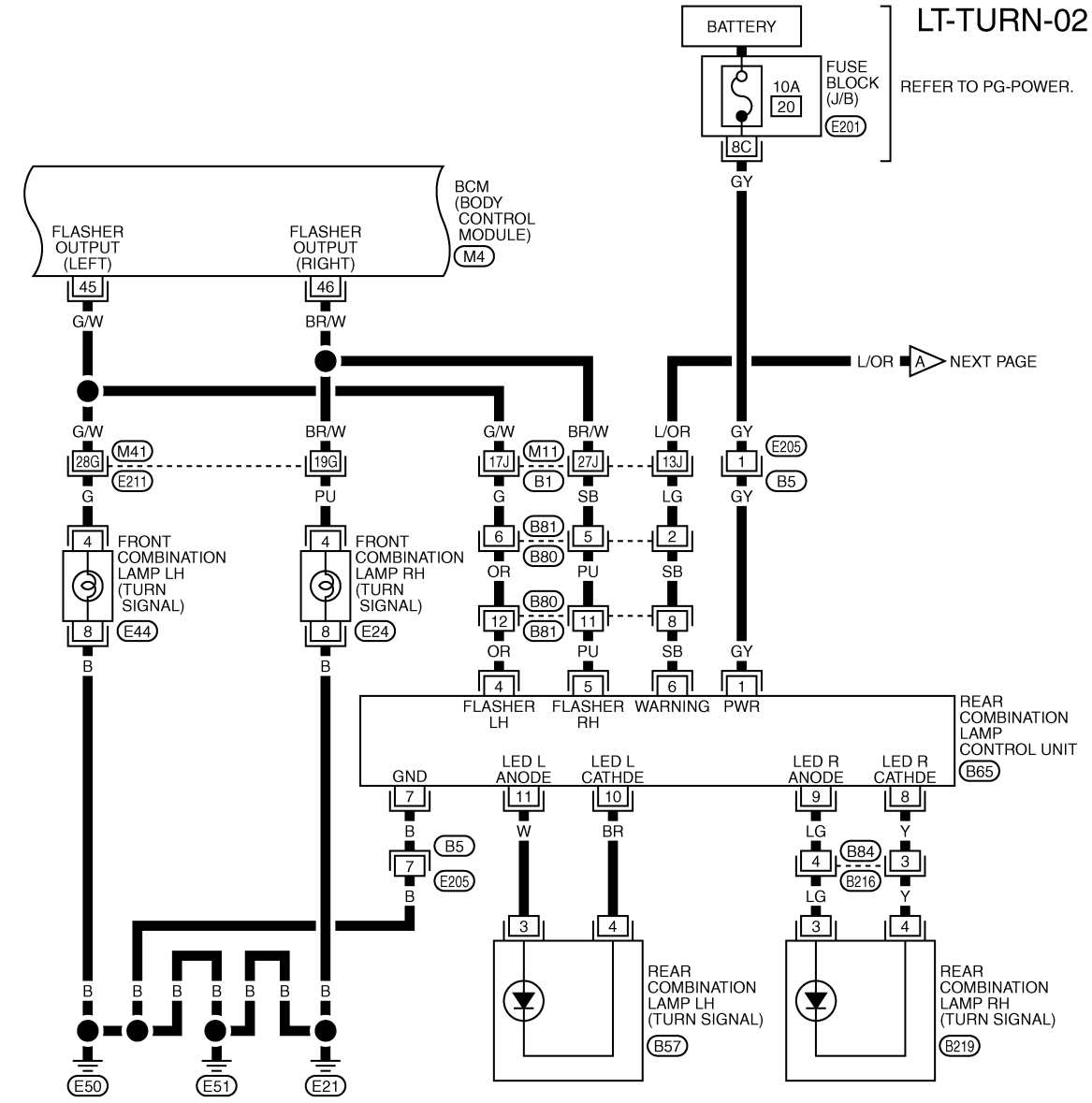


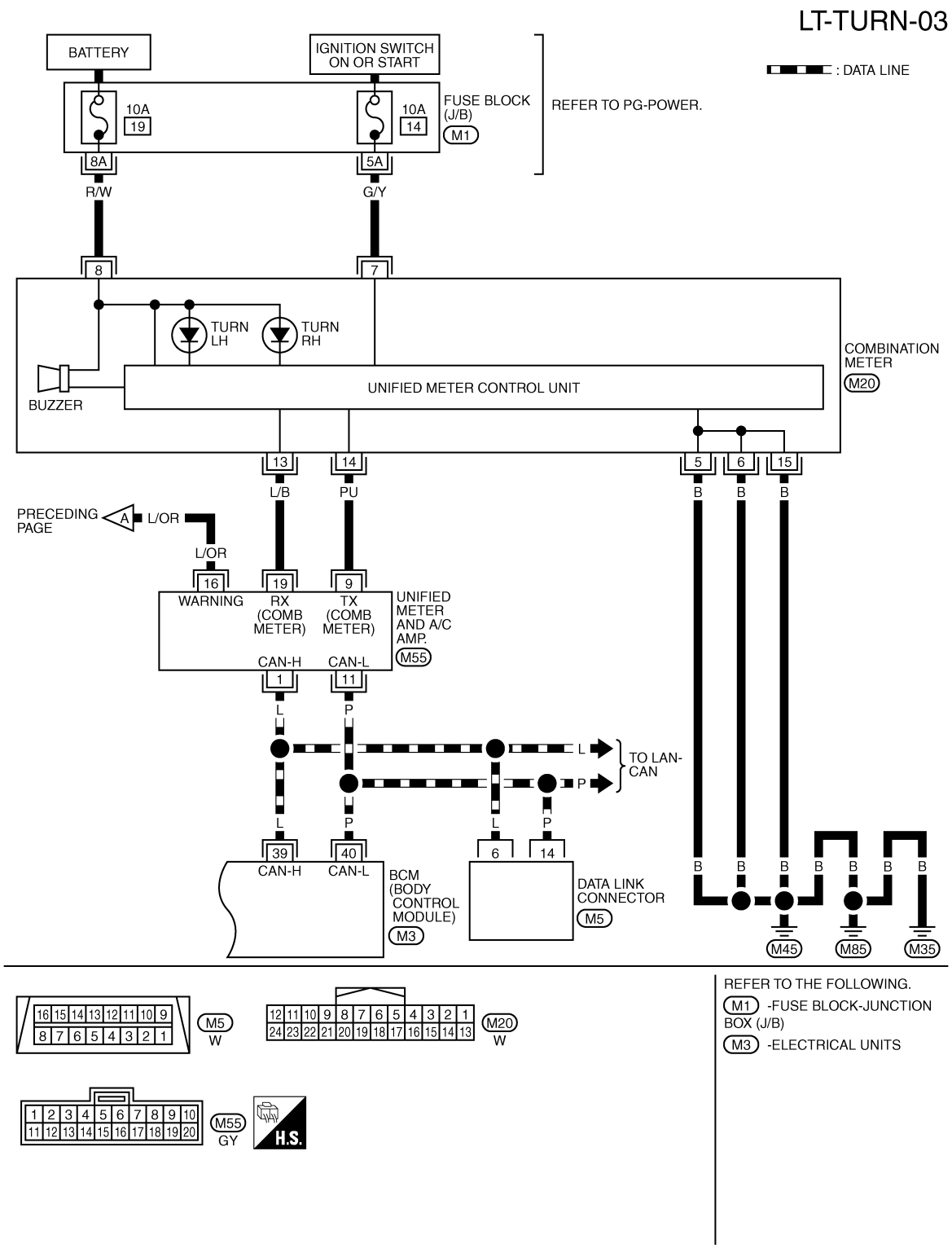
Wiring Diagram - TURN -

INFOID:0000000001328348



TKWM4306E


LT-TURN-02
BATTERY
FUSE BLOCK (J/B)
E201
10A
20
8C
REFER TO PG-POWER.
GY
BCM (BODY CONTROL MODULE)
M4
FLASHER OUTPUT (LEFT)
FLASHER OUTPUT (RIGHT)
45
46
G/W
BR/W
L/OR
A
NEXT PAGE
M41
E211
28G
19G
M11
B1
17J
27J
13J
E205
B5
1
G
PU
SB
LG
GY
FRONT COMBINATION LAMP LH (TURN SIGNAL)
FRONT COMBINATION LAMP RH (TURN SIGNAL)
E44
E24
B81
B80
6
5
2
12
11
8
OR
PU
SB
FLASHER LH
FLASHER RH
WARNING
PWR
REAR COMBINATION LAMP CONTROL UNIT
B65
GND
LED L ANODE
LED L CATHDE
LED R ANODE
LED R CATHDE
7
11
10
9
8
W
BR
LG
Y
B84
B216
3
4
REAR COMBINATION LAMP LH (TURN SIGNAL)
REAR COMBINATION LAMP RH (TURN SIGNAL)
B57
B219
E50
E51
E21
E24, E44
B
B5, B80
W
B57, B219
B65
W
B216
GY
REFER TO THE FOLLOWING.
E211, B1 -SUPER MULTIPLE JUNCTION (SMJ)
E201 -FUSE BLOCK-JUNCTION BOX (J/B)
M4 -ELECTRICAL UNITS
TKWM4307E



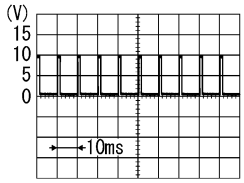
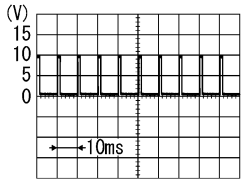
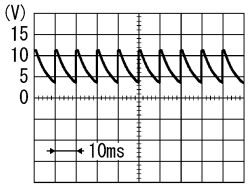
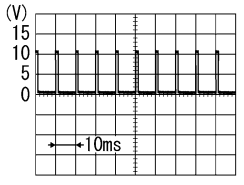
TKWM4308E

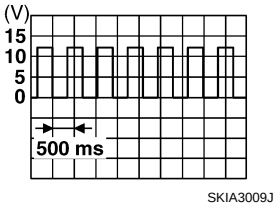
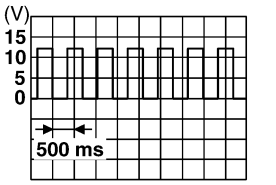
Terminal and Reference Value for BCM

INFOID:0000000001328349

CAUTION:

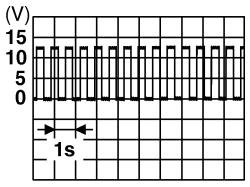
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal switch and wiper switch OFF not to be fluctuated by overloaded.**
- **Turn wiper intermittent dial position to 4 except when checking waveform or voltage of wiper intermittent dial position. Wiper intermittent dial position can be confirmed on CONSULT-III. Refer to LT-103, "CONSULT-III Functions (BCM)".**

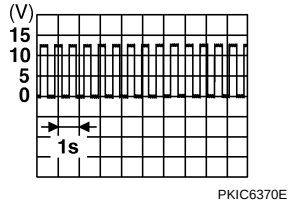
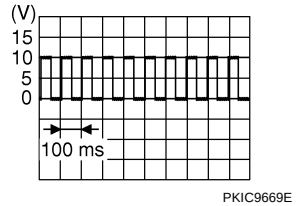
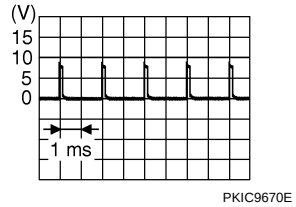
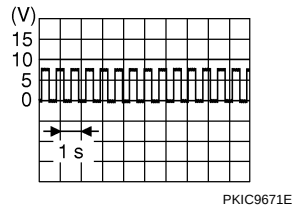
Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	GY	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Turn signal switch to right	 PKIB4959J Approx. 1.0 V
3	L/B	Combination switch input 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Turn signal switch to left	 PKIB4959J Approx. 1.0 V
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	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Turn signal switch to right • Turn signal switch to left	 PKIB4958J 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

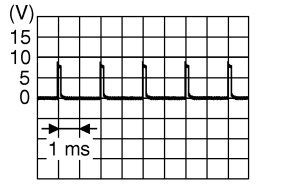
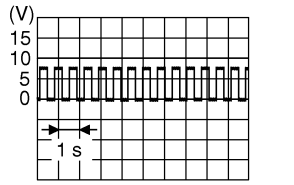
Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
45	G/W	Flasher output (left)	ON	Combination switch	Turn left ON	 SKIA3009J
46	BR/W	Flasher output (right)	ON	Combination switch	Turn right ON	 SKIA3009J
49	B	Ground	ON	—		Approx. 0 V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

Terminal and Reference Value for Rear Combination Lamp Control Unit

INFOID:0000000001328350

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 Approx. 6.0 V
			—	Hazard switch ON	

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	 PKIC6370E Approx. 6.0 V
			—	Hazard switch ON	
6	SB	Warning output signal	ON	When turn signal lamp operates normally	 PKIC9669E 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	 PKIC9670E Approx. 0.3 V
				Brake pedal depressed (stop lamp switch ON)	Battery voltage
			ON	Turn signal switch RH	 PKIC9671E Approx. 3.7 V
			—	Hazard switch ON	
10	BR	Rear combination lamp LH ground	ON	—	Approx. 0 V

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	 PKIC9670E Approx. 0.3 V
				Brake pedal depressed (stop lamp switch ON)	Battery voltage
			ON	Turn signal switch LH	 PKIC9671E Approx. 3.7 V
			—	Hazard switch ON	

How to Proceed with Trouble Diagnosis

INFOID:0000000001328351

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-88, "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

INFOID:0000000001328352

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-82, "Wiring Diagram - TURN -".

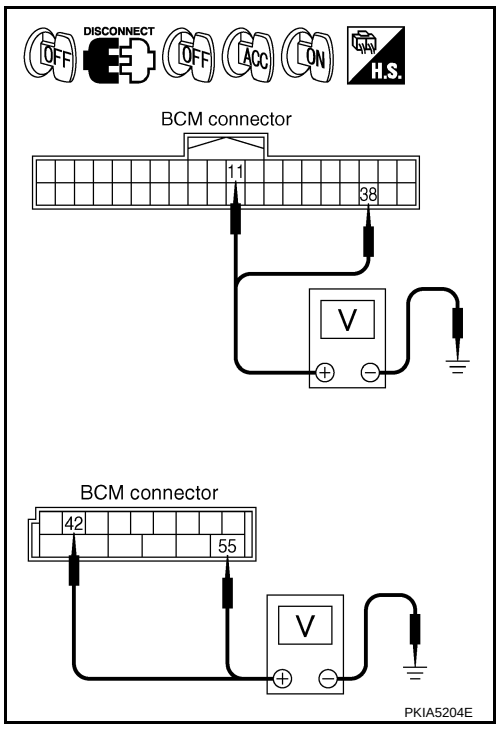
OK or NG

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

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



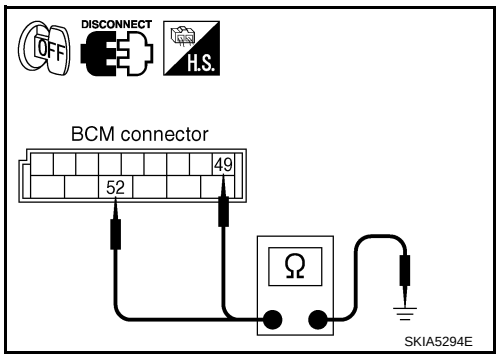
OK or NG

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		Yes
	52		



OK or NG

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

CONSULT-III Functions (BCM)

INFOID:0000000001328353

CONSULT-III 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-III BASIC OPERATION

Refer to GI-34, "Description".

DATA MONITOR

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.

Monitor item		Contents
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

Display Item List

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

Turn Signal Lamp Does Not Operate

INFOID:0000000001381753

1.CHECK BULB

Check bulb standard of each turn signal lamp is correct.

OK or NG

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

2.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select “TURN SIGNAL R” and “TURN SIGNAL L” of BCM (FLASHER) data monitor item.
2. With operating the test item, check the monitor status.

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

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

CHECK THE COMBINATION SWITCH
Refer to LT-104, "Combination Switch Inspection".

OK or NG

OK >> GO TO 3.
NG >> Check combination switch (lighting switch). Refer to LT-104, "Combination Switch Inspection".

3.ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select “FLASHER” of BCM (FLASHER) active test item.
2. With operating the test item, check the turn signal lamp operation.

Turn signal lamp should operate.

GO TO 4

OK or NG

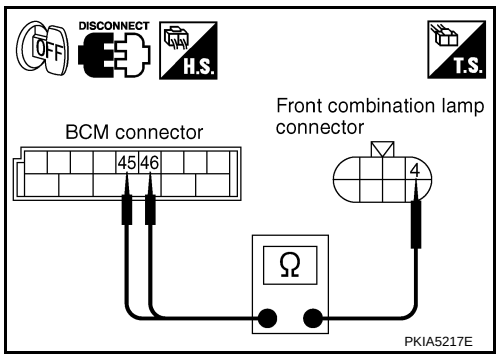
OK >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".
NG >> GO TO 4.

4.CHECK TURN SIGNAL LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BCM connector, front combination lamp (RH and LH) connectors, side turn signal lamp (RH and LH) connectors and rear combination lamp (RH and LH) connectors.

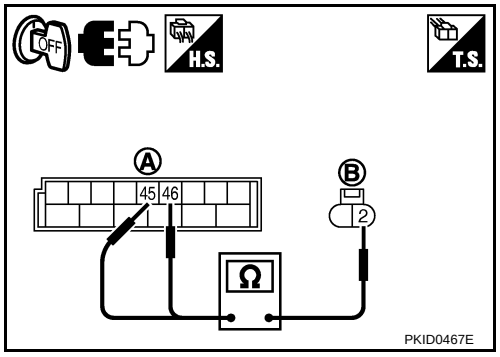
3. Check continuity between BCM harness connector and front combination lamp (RH and LH) harness connectors.

Circuit	BCM		Front combination lamp		Continuity
	Connector	Terminal	Connector	Terminal	
RH	M4	46	E24	4	Yes
LH		45	E44		



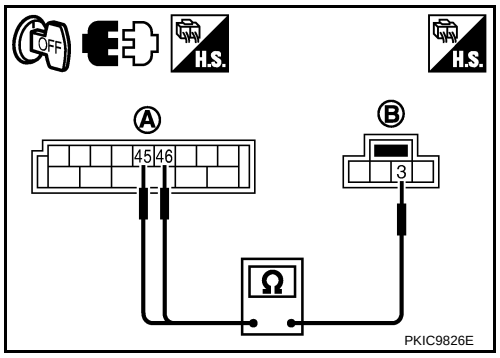
4. Check continuity between BCM harness connector (A) and side turn signal lamp (RH and LH) harness connectors (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	M4	46	B67	2	Yes
LH		45	B68		



5. Check continuity between BCM harness connector (A) and rear combination lamp (RH and LH) harness connectors (B).

Circuit	A		B		Continuity
	Connector	Terminal	Connector	Terminal	
RH	M4	46	B219	3	Yes
LH		45	B57		



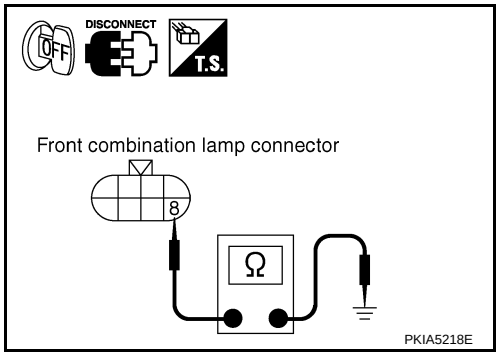
OK or NG

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

5. CHECK GROUND

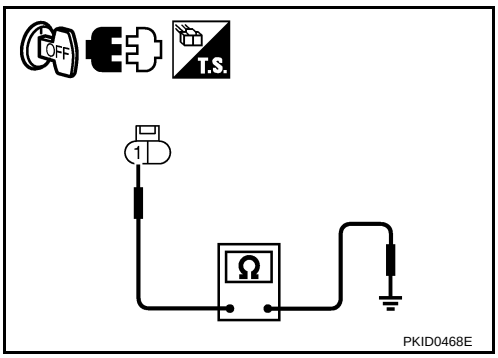
1. Check continuity between front combination lamp (RH and LH) harness connectors and ground.

Front combination lamp connector		Terminal	Ground	Continuity
RH	E24	8		Yes
LH	E44			



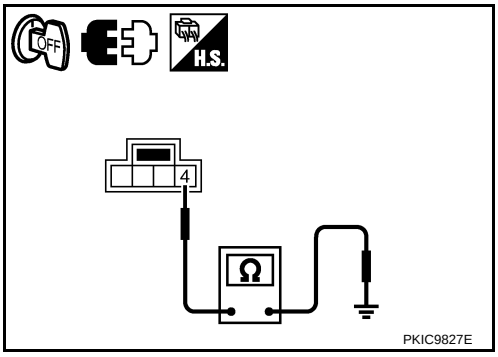
2. Check continuity between side turn signal lamp (RH and LH) harness connectors and ground.

Side turn signal lamp connector		Terminal	Ground	Continuity
RH	E67	1		Yes
LH	E68			



3. Check continuity between rear combination lamp (RH and LH) harness connectors and ground.

Rear combination lamp connector		Terminal	Ground	Continuity
RH	B219	4		Yes
LH	B57			



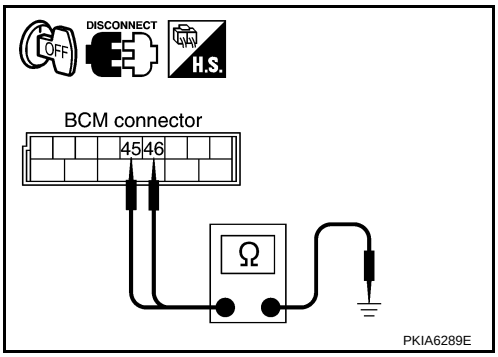
OK or NG

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

6.CHECK SHORT CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity (short circuit) between BCM harness connector and ground.

BCM connector		Terminal	Ground	Continuity
RH	M4	46		No
LH		45		



OK or NG

OK >> Replace BCM if turn signal lamps does not work after setting the connector again. Refer to BCS-13, "Removal and Installation of BCM".
NG >> Repair harness or connector.

Rear Turn Signal Lamp Does Not Operate

INFOID:0000000001328355

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.

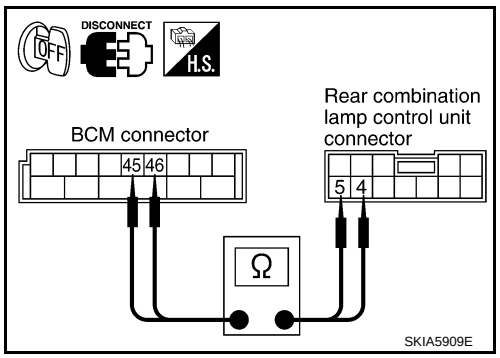
2.CHECK TURN SIGNAL LAMPS CIRCUIT

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.



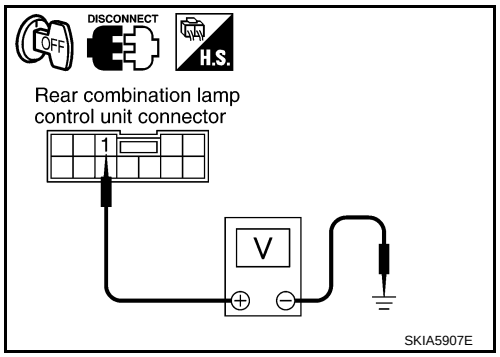
OK or NG

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.



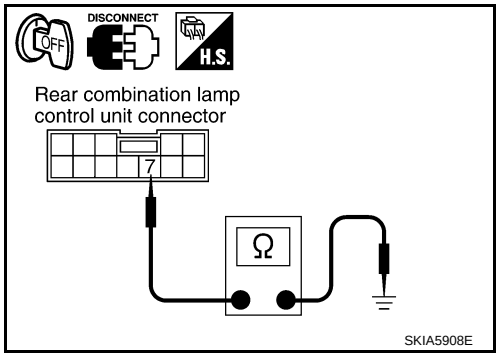
OK or NG

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.

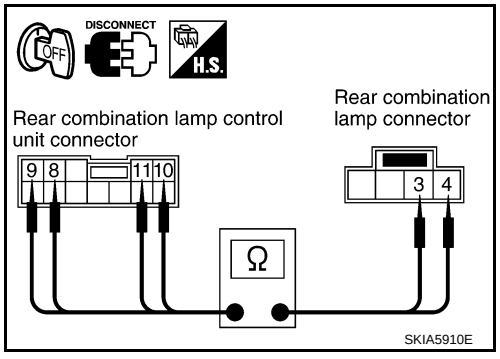
5. CHECK REAR COMBINATION LAMPS CIRCUIT

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 Operates

INFOID:0000000001381754

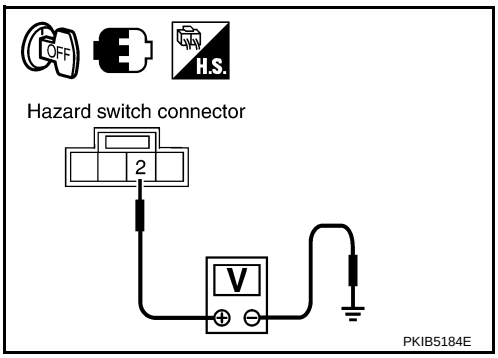
1.CHECK HAZARD SWITCH INPUT SIGNAL

With CONSULT-III
1. Select “HAZARD SW” of BCM (FLASHER) data monitor item.
2. With operating the hazard switch, check the monitor status.

When hazard switch is ON position : HAZARD SW ON

Without CONSULT-III
Check voltage between hazard switch harness connector and ground.

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



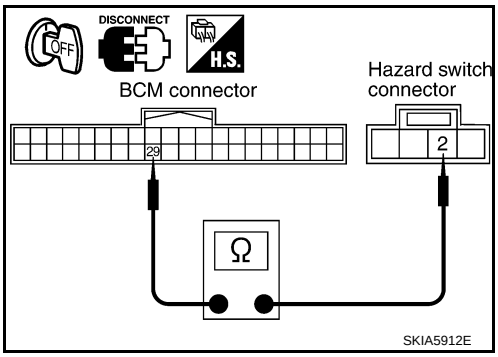
OK or NG

OK >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".
NG >> GO TO 3.

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.



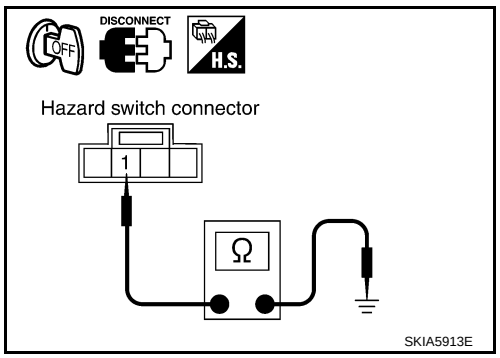
OK or NG

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.

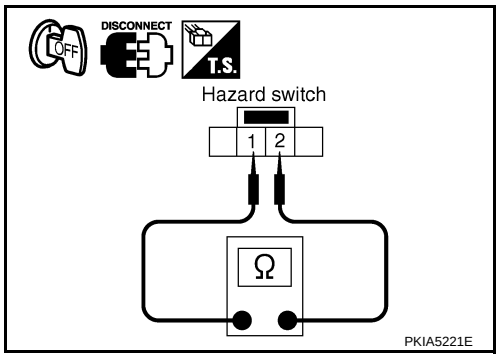


OK or NG

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-13, "Removal and Installation of BCM".
NG >> Replace hazard switch.

Bulb Replacement (Front Turn Signal Lamp)

INFOID:0000000001328357

Refer to LT-28, "Bulb Replacement".

Bulb Replacement (Rear Turn Signal Lamp)

INFOID:0000000001328358

Refer to LT-137, "Bulb Replacement".

Removal and Installation of Front Turn Signal Lamp

INFOID:0000000001328359

Refer to LT-30, "Removal and Installation".

Removal and Installation of Rear Turn Signal Lamp

INFOID:0000000001328360

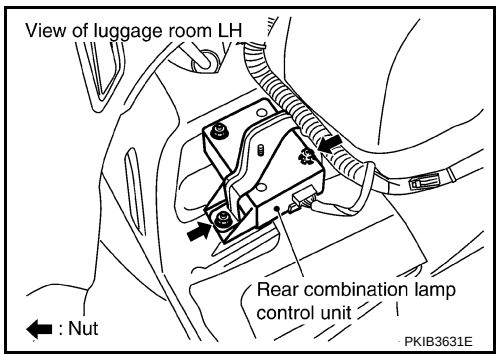
Refer to LT-137, "Removal and Installation".

Removal and Installation of Rear Combination Lamp Control Unit

INFOID:0000000001328361

REMOVAL

1. Remove luggage side box (LH). Refer to EI-45, "Component Parts Location".
2. Remove nuts (2), and remove rear combination lamp control unit.



INSTALLATION

Installation is the reverse order of removal.

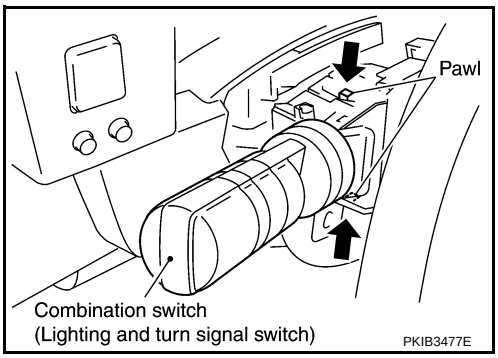
LIGHTING AND TURN SIGNAL SWITCH

Removal and Installation

INFOID:0000000001328362

REMOVAL

1. Remove steering column cover. Refer to IP-10.
2. While pressing pawls in direction as shown in the figure, pull lighting and turn signal switch toward driver door and disconnect from the base.



INSTALLATION

Installation is the reverse order of removal.

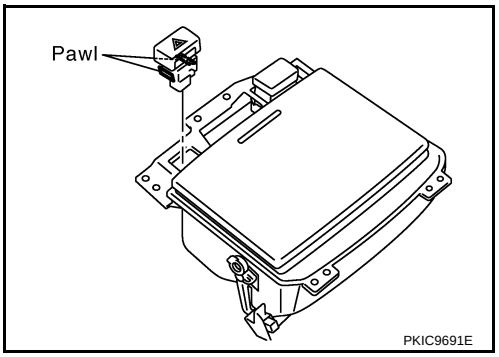
HAZARD SWITCH

Removal and Installation

INFOID:0000000001328363

REMOVAL

1. Remove A/T console finisher. Refer to IP-10.
2. Disconnect the hazard switch connector.
3. Remove the drink holder.
4. Press pawl on reverse side and remove hazard switch.



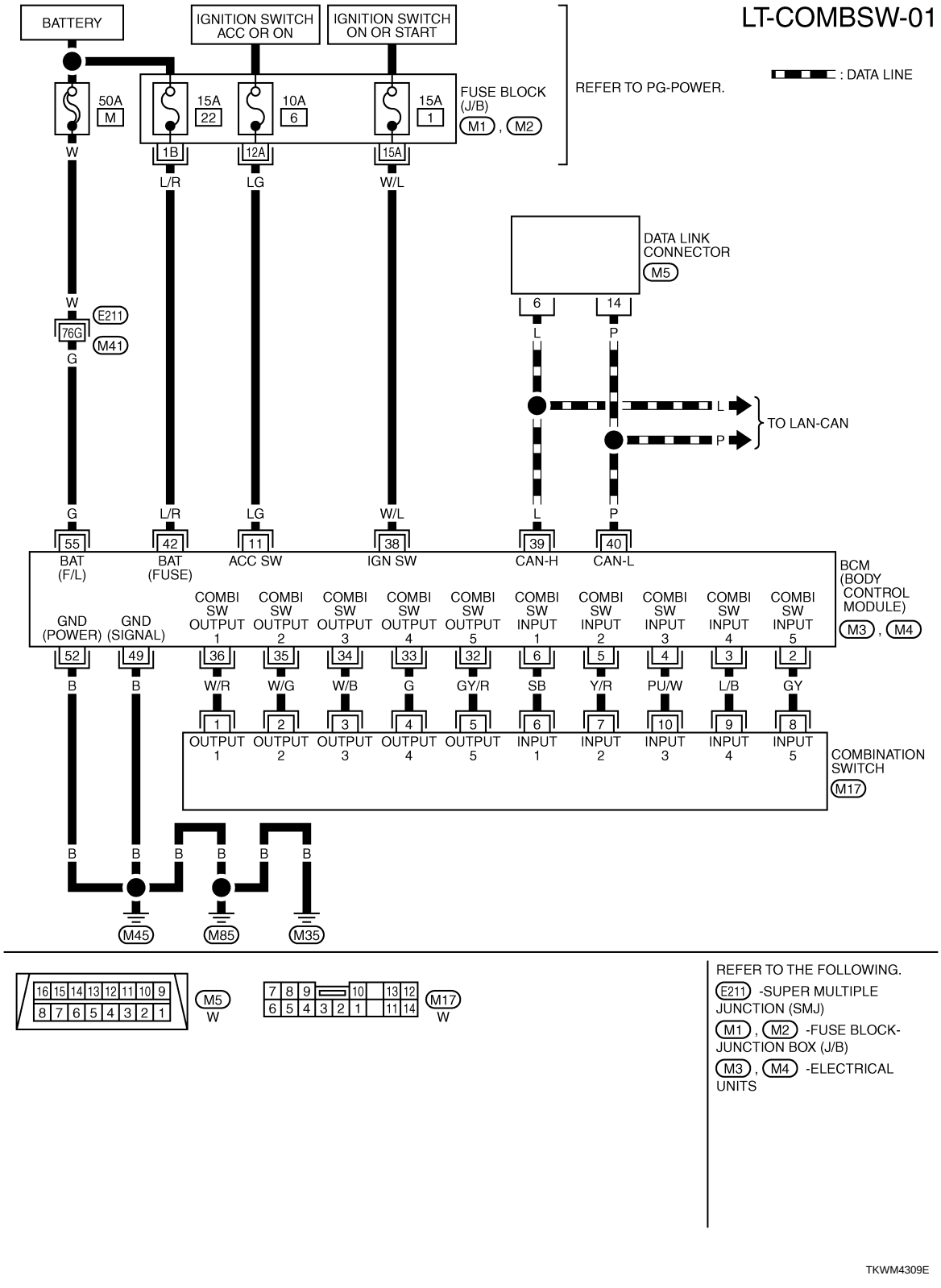
INSTALLATION

Installation is the reverse order of removal.

COMBINATION SWITCH

Wiring Diagram - COMBSW -

INFOID:0000000001328364



TKWM4309E

Combination Switch Reading Function

INFOID:0000000001328365

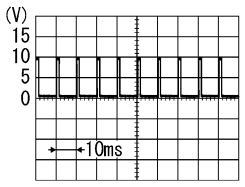
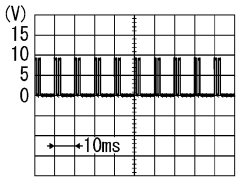
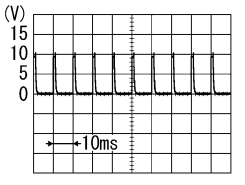
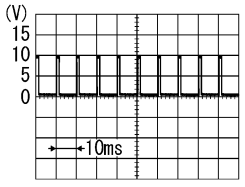
For details, refer to BCS-4, "System Description".

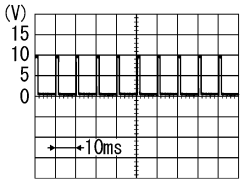
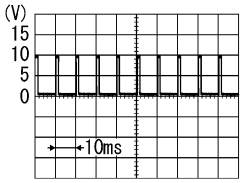
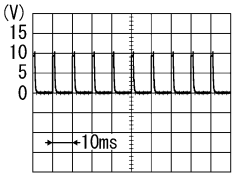
Terminal and Reference Value for BCM

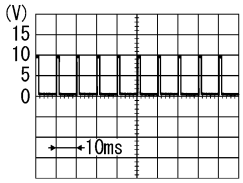
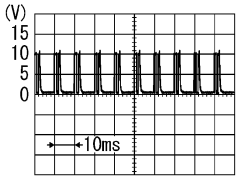
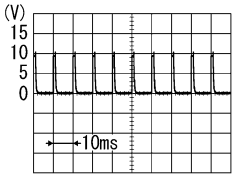
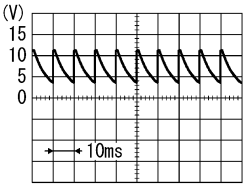
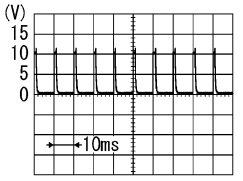
INFOID:0000000001328366

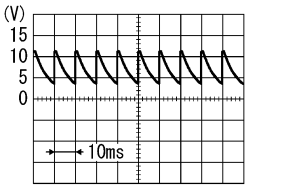
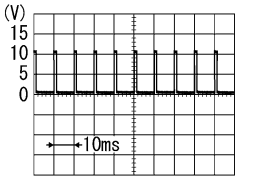
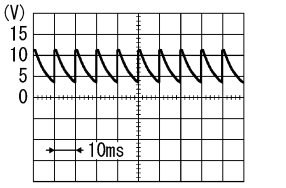
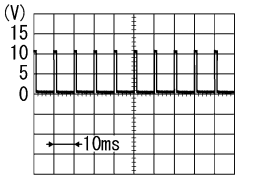
CAUTION:

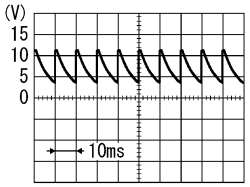
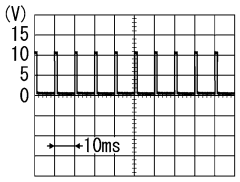
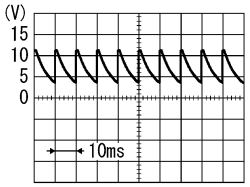
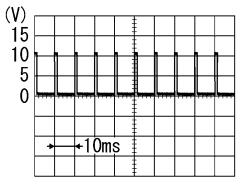
- **Check combination switch system terminal waveform under the loaded condition with lighting switch, turn signal and wiper switch OFF not to be fluctuated by overloaded.**
- **Turn wiper dial position to 4 except when checking waveform or voltage of wiper dial position. Wiper dial position can be confirmed on CONSULT-III. Refer to LT-103, "CONSULT-III Functions (BCM)".**

Terminal No.	Wire color	Signal name	Measuring condition			Reference value
			Ignition switch	Operation or condition		
2	G/Y	Combination switch input 5	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	Approx. 0 V
					Any of the conditions below • Lighting switch 1ST • Lighting switch HIGH BEAM (Operates only HIGH BEAM switch) • Turn signal switch to right	 PKIB4959J Approx. 1.0 V
					Lighting switch 2ND	 PKIB4953J Approx. 2.0 V
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 (Operates only front fog lamp switch)	 PKIB4955J Approx. 0.8 V
					Any of the conditions below • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch) • Turn signal switch to left	 PKIB4959J Approx. 0.8 V

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 • Lighting switch AUTO • Front wiper switch MIST • Front wiper switch INT • Front wiper switch LO	 PKIB4959J 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 • 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	 PKIB4959J Approx. 1.0 V
					Rear wiper switch ON (Wiper intermittent dial position 4)	 PKIB4955J Approx. 0.8 V

Terminal No.	Wire color	Signal name	Measuring condition: Ignition switch	Measuring condition: Operation or condition		Reference value
6	SB	Combination switch input 1	ON	Lighting, turn, wiper switch	OFF	Approx. 0 V
					Any of the conditions below • Front wiper switch HI (Wiper intermittent dial position 4) • Rear wiper switch INT (Wiper intermittent dial position 4) • Wiper intermittent dial position 3	 PKIB4959J Approx. 1.0 V
					Any of the conditions below • Wiper intermittent dial position 1 • Wiper intermittent dial position 2	 PKIB4952J Approx. 1.7 V
					Any of the conditions below • Wiper intermittent dial position 6 • Wiper intermittent dial position 7	 PKIB4955J Approx. 0.8 V
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)	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • 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	 PKIB4956J Approx. 1.0 V

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	OFF (Wiper intermittent dial position 4)	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • 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	 PKIB4958J Approx. 1.2 V
34	W/B	Combination switch output 3	ON	Lighting, turn, wiper switch	OFF (Wiper intermittent dial position 4)	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • 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	 PKIB4958J Approx. 1.2 V

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 • Lighting switch 2ND • Lighting switch PASSING (Operates only PASSING switch) • Front wiper switch INT • Front wiper switch HI	 PKIB4958J Approx. 1.2 V
36	W/R	Combination switch output 1	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Any of the conditions below • Turn signal switch to right • Turn signal switch to left • Front wiper switch MIST • Front wiper switch LO • Front washer switch	 PKIB4958J 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

CONSULT-III Functions (BCM)

INFOID:0000000001328367

CONSULT-III 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-III BASIC OPERATION

Refer to GI-34, "Description".

DATA MONITOR

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 Inspection

INFOID:0000000001381755

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 LAMP 1
INT VOLUME 1	RR WASHER	—	HEAD LAMP	HI BEAM
RR WIPER INT	INT VOLUME 3	AUTO LIGHT	—	LIGHT SW 1
INT VOLUME 2	RR WIPER ON	—	FR FOG	—

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

2.SYSTEM CHECK

CONSULT-III DATA MONITOR

1. Select “COMBI SW” of BCM data monitor item.
2. Confirm that other switches in malfunctioning system operate normally.

Example: When the HI BEAM switch is malfunctioning, confirm that “TURN RH”, “HEAD LAMP 1” and “LIGHT SW 1 ST” in System 5, to which the HI BEAM switch belongs, turn ON-OFF normally.

Without CONSULT-III

Operating combination switch, and confirm that other switches in malfunctioning system operate normally.
Example: When the HI BEAM switch is malfunctioning, confirm that “TURN RH”, “HEAD LAMP 1” and “LIGHT SW 1 ST” in System 5, to which HI BEAM switch belongs, turn ON-OFF normally.

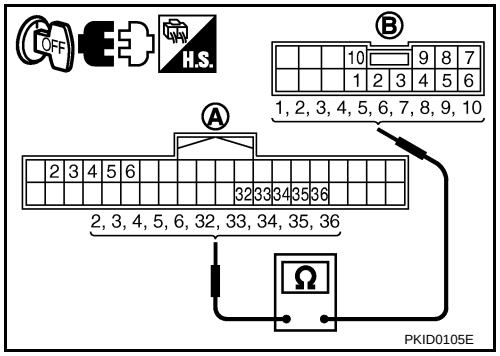
Check results

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

3. CHECK HARNESS BETWEEN COMBINATION SWITCH AND BCM

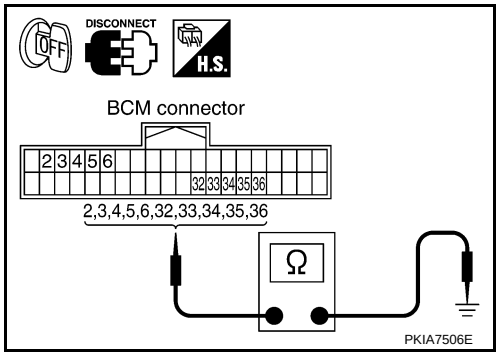
1. Turn ignition switch OFF.
2. Disconnect BCM connector and combination switch connector.
3. Check for continuity between BCM harness connector (A) of the suspect system and the corresponding combination switch connector (B).

Suspect system	A			B		Continuity
	Connector	Terminal		Connector	Terminal	
1	M3	Input 1	6	M27	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 each of 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		



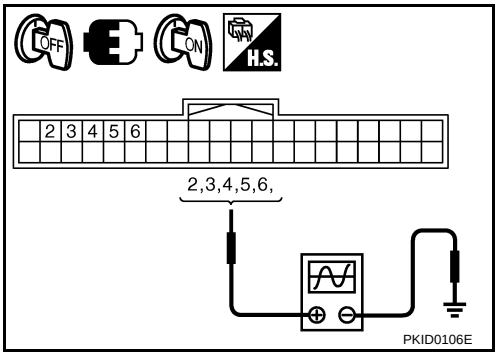
OK or NG

OK >> Check BCM input/output signal of malfunctioning input/output.
- Input: GO TO 4.
- Output: GO TO 5.

NG >> Repair harness or connector.

4. CHECK BCM INPUT SIGNAL

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



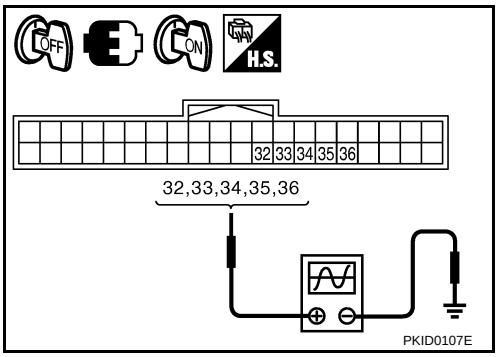
Suspect system	Terminals (+) BCM connector	Terminals (+) Terminal	Terminals (-)	Reference value
1	M3	6	Ground	Refer to LT-99, "Terminal and Reference Value for BCM".
2		5		
3		4		
4		3		
5		2		

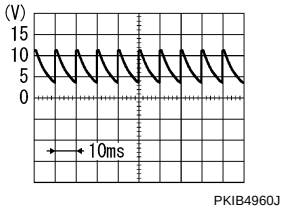
OK or NG

OK >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".
NG >> Open circuit in combination switch, GO TO 6.

5. CHECK BCM OUTPUT SIGNAL

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



Suspect system	Terminals (+) BCM connector	Terminals (+) Terminal	Terminals (-)	Reference value
1	M3	36	Ground	 PKIB4960J Approx. 7.0 - 7.5V
2		35		
3		34		
4		33		
5		32		

OK or NG

OK >> Open circuit in combination switch, GO TO 6.
NG >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".

6. 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

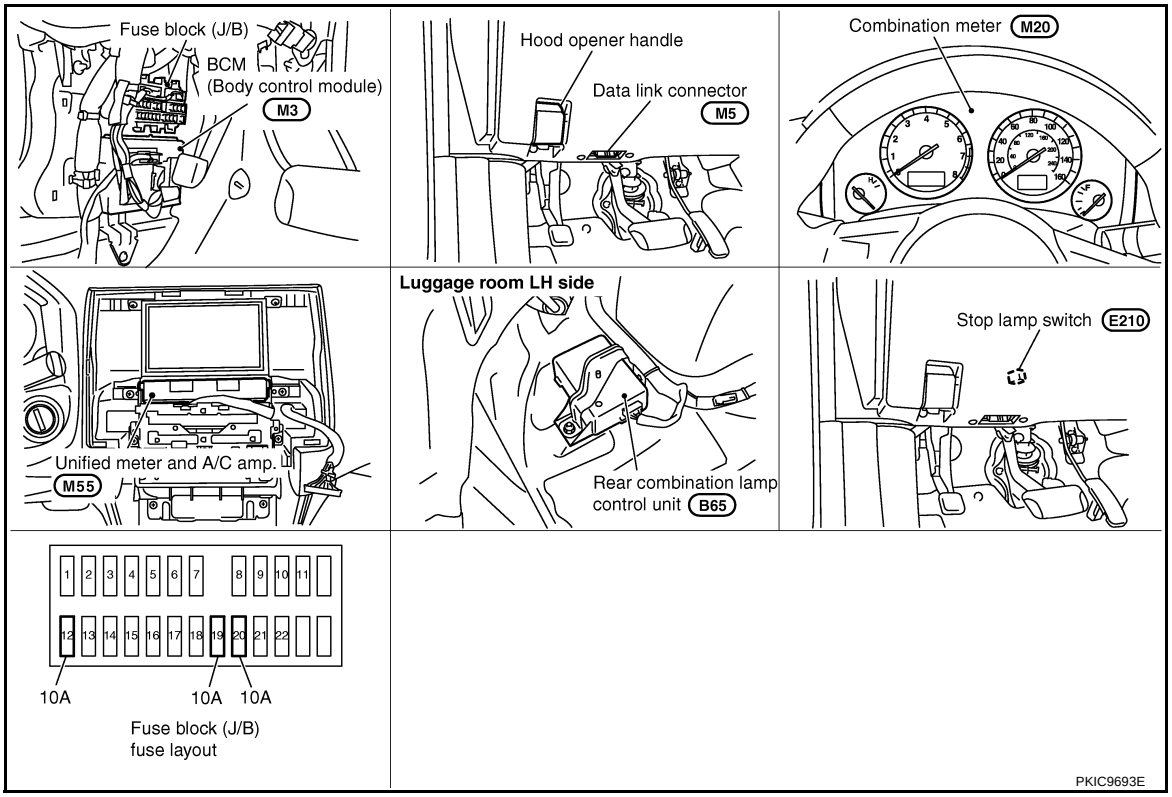
INFOID:0000000001328369

Refer to LT-96 and WW-28, "Removal and Installation of Front Wiper and Washer Switch".

STOP LAMP

Component Parts and Harness Connector Location

INFOID:0000000001328370



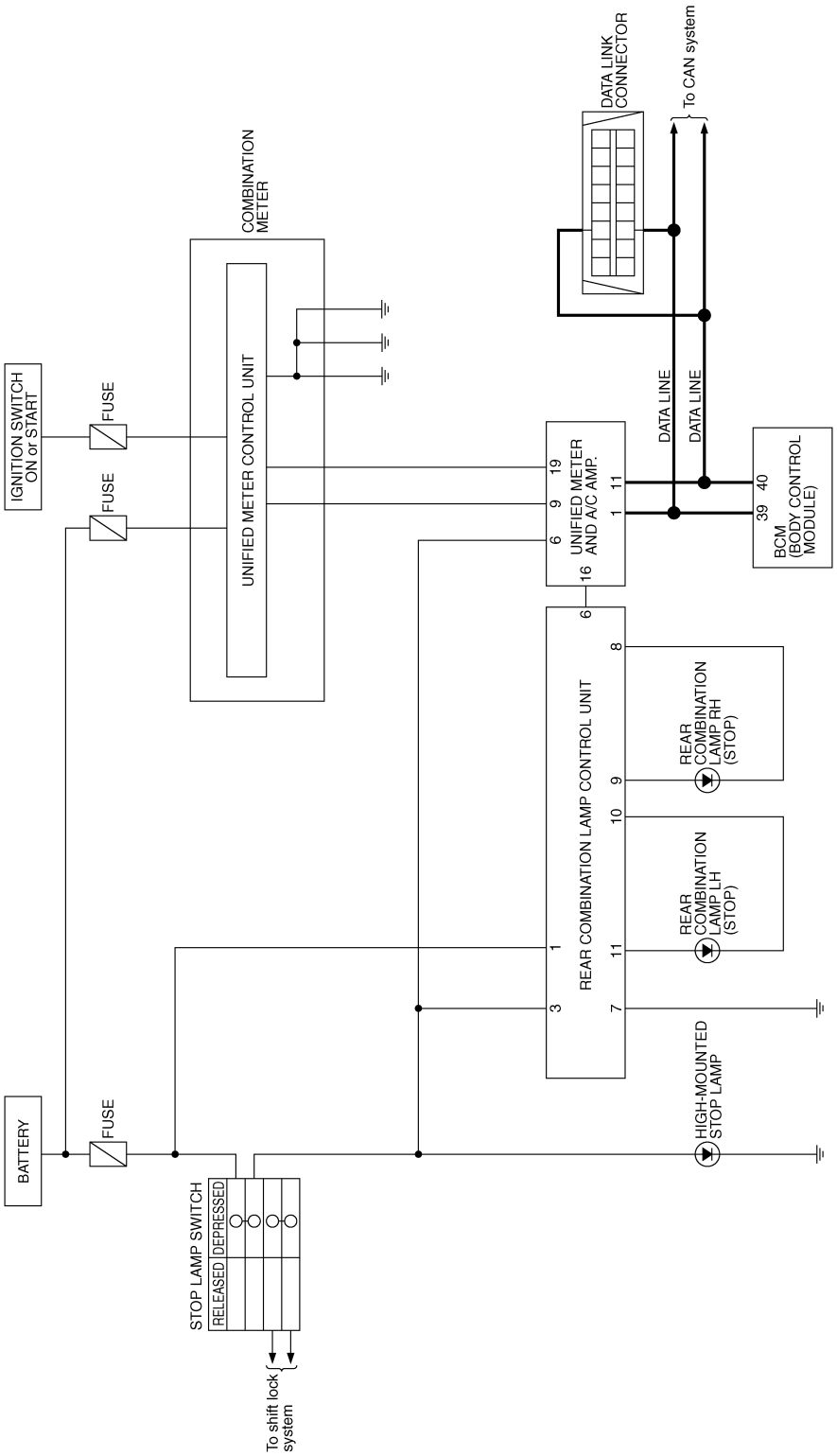
System Description

INFOID:0000000001328371

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

Schematic

INFOID:0000000001328372

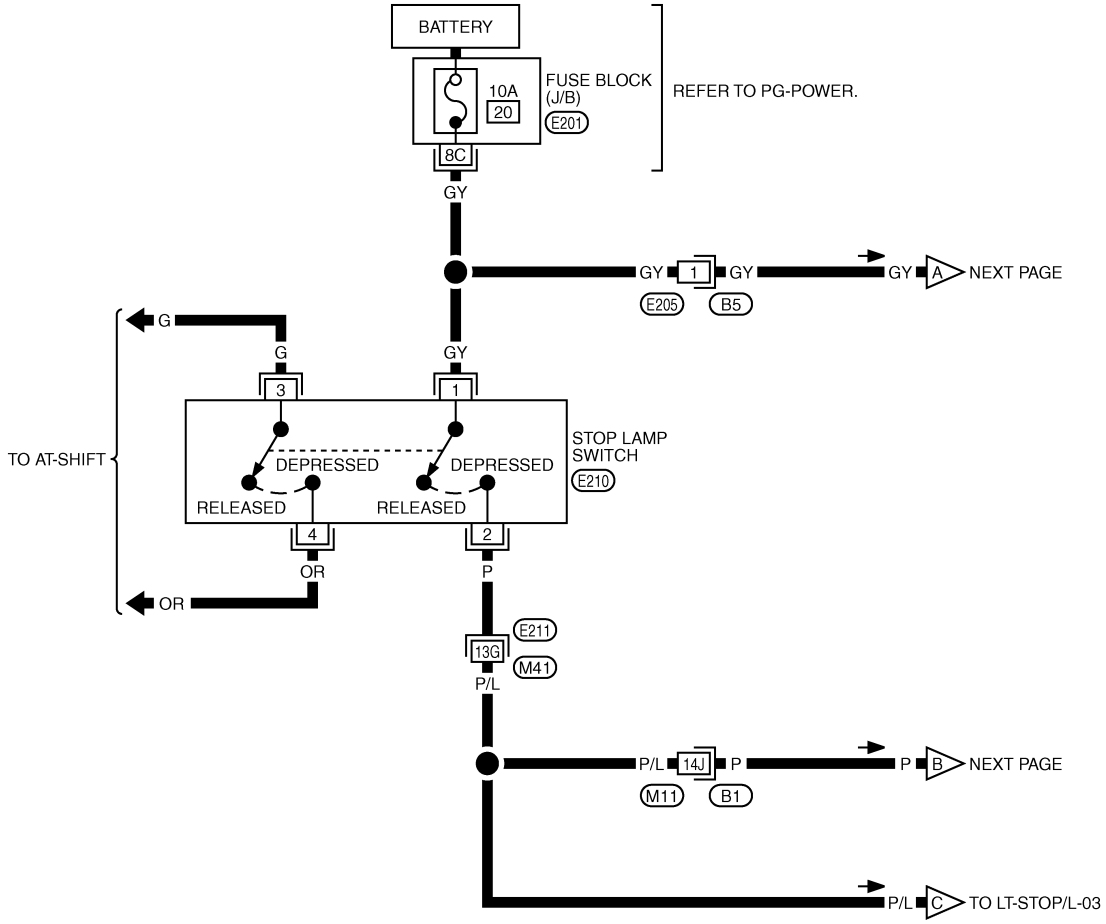


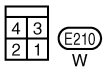
TKWM0625E

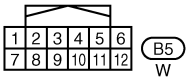
Wiring Diagram - STOP/L -

INFOID:0000000001328373

LT-STOP/L-01



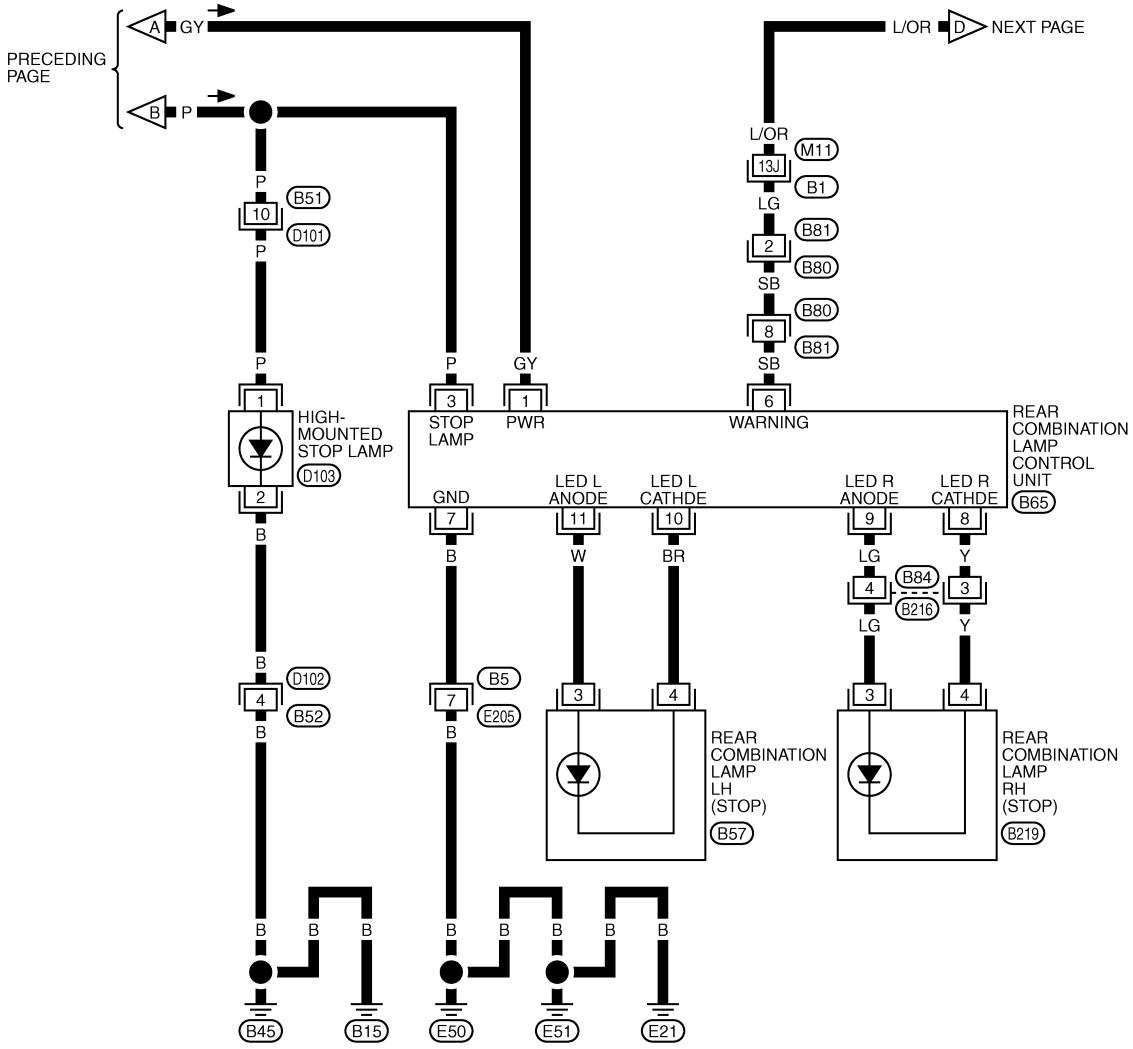


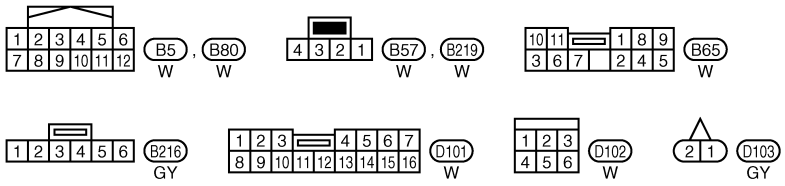


REFER TO THE FOLLOWING.
E211 , B1 -SUPER MULTIPLE JUNCTION (SMJ)
E201 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM4310E

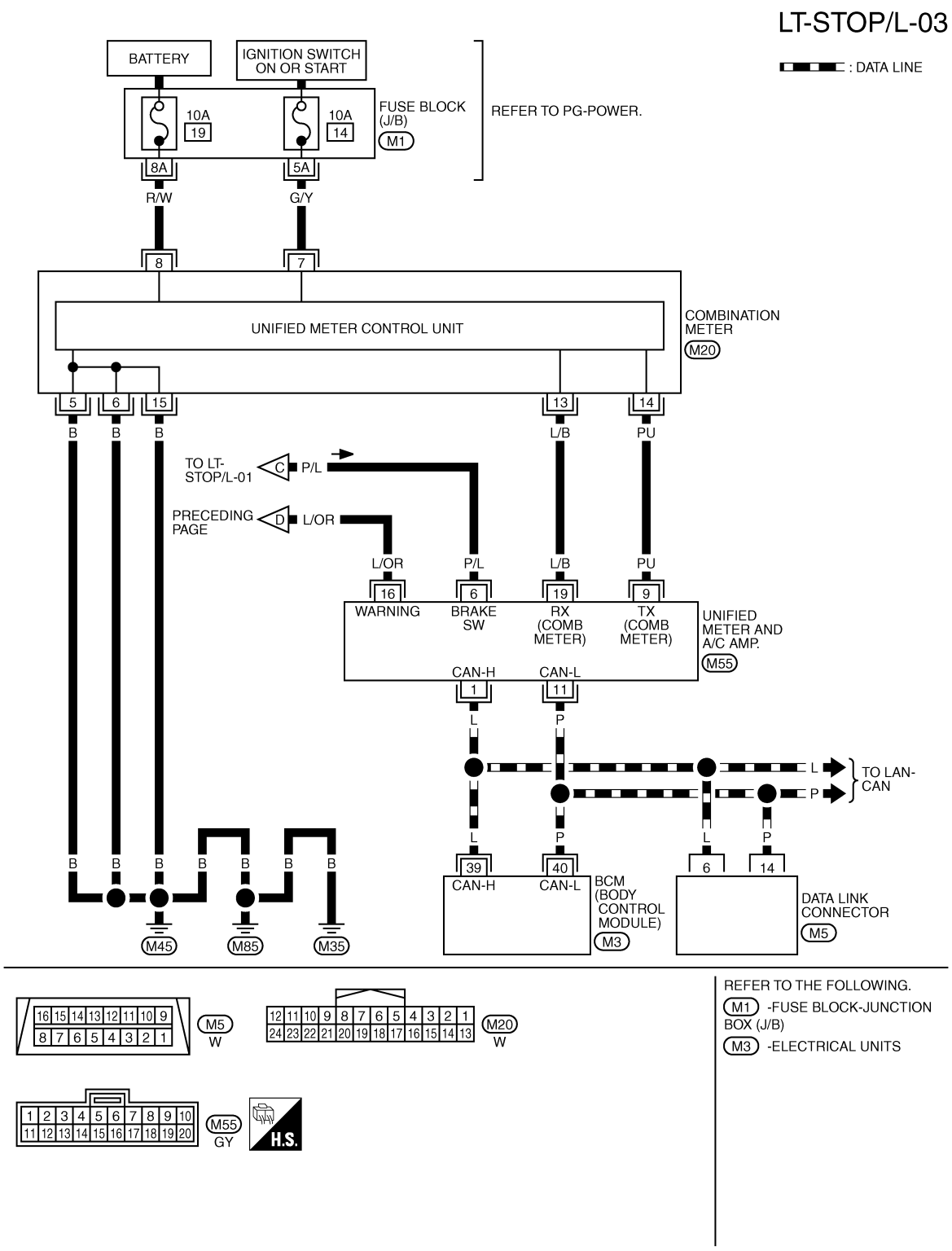
LT-STOP/L-02





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

TKWM4311E



TKWM4312E

Terminal and Reference Value for Rear Combination Lamp Control Unit

INFOID:0000000001328374

Refer to LT-86, "Terminal and Reference Value for Rear Combination Lamp Control Unit"

Stop Lamp Does Not Operate

INFOID:0000000001328375

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

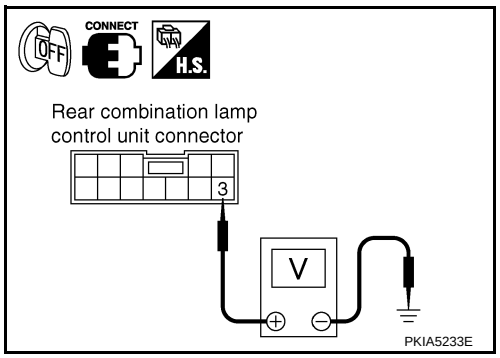
Check fuse No.20 is blow out.

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 connector	Terminal			
B65	3	Ground	Stop lamp switch is ON. (Depressed)	Battery voltage
			Stop lamp switch is OFF. (Released)	Approx. 0 V

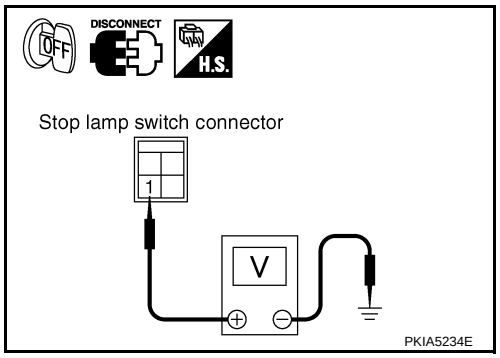
OK or NG

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.



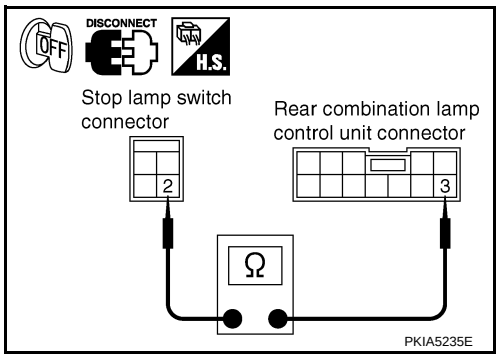
OK or NG

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

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.



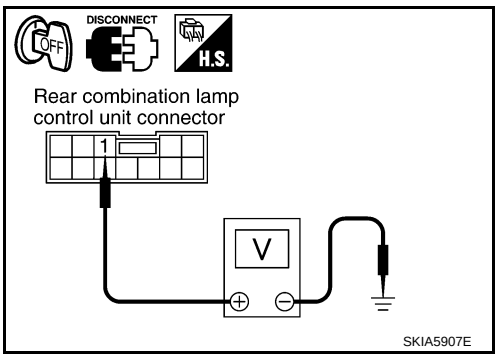
OK or NG

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.



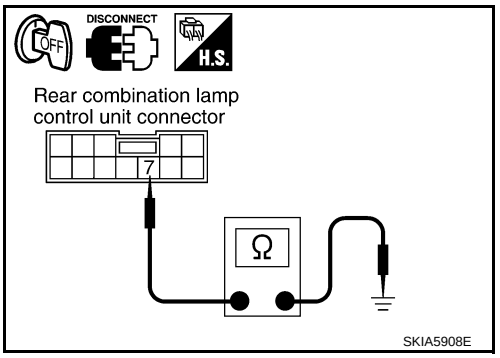
OK or NG

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.

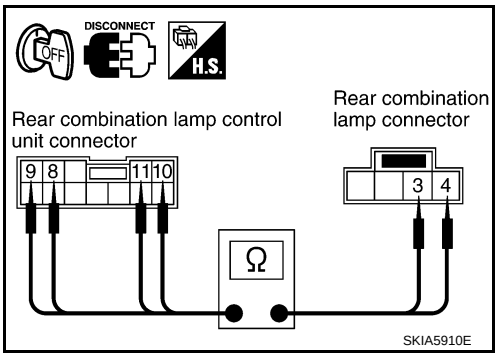
8. CHECK STOP LAMPS CIRCUIT

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

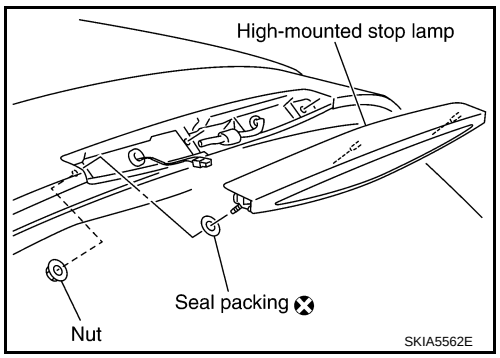
OK >> Replace rear combination lamp control unit or rear combination lamp, and then check if turn signal lamps is illuminated.
NG >> Repair harness or connector.

High-Mounted Stop Lamp

INFOID:0000000001328376

BULB REPLACEMENT, REMOVAL AND INSTALLATION

1. Remove cap from back door finisher and remove nuts. Refer to EI-47, "Component Parts Location".
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

INFOID:0000000001328377

BULB REPLACEMENT

Refer to LT-137, "Bulb Replacement".

REMOVAL AND INSTALLATION

Refer to LT-137, "Removal and Installation".

Rear Combination Lamp Control Unit

INFOID:0000000001328378

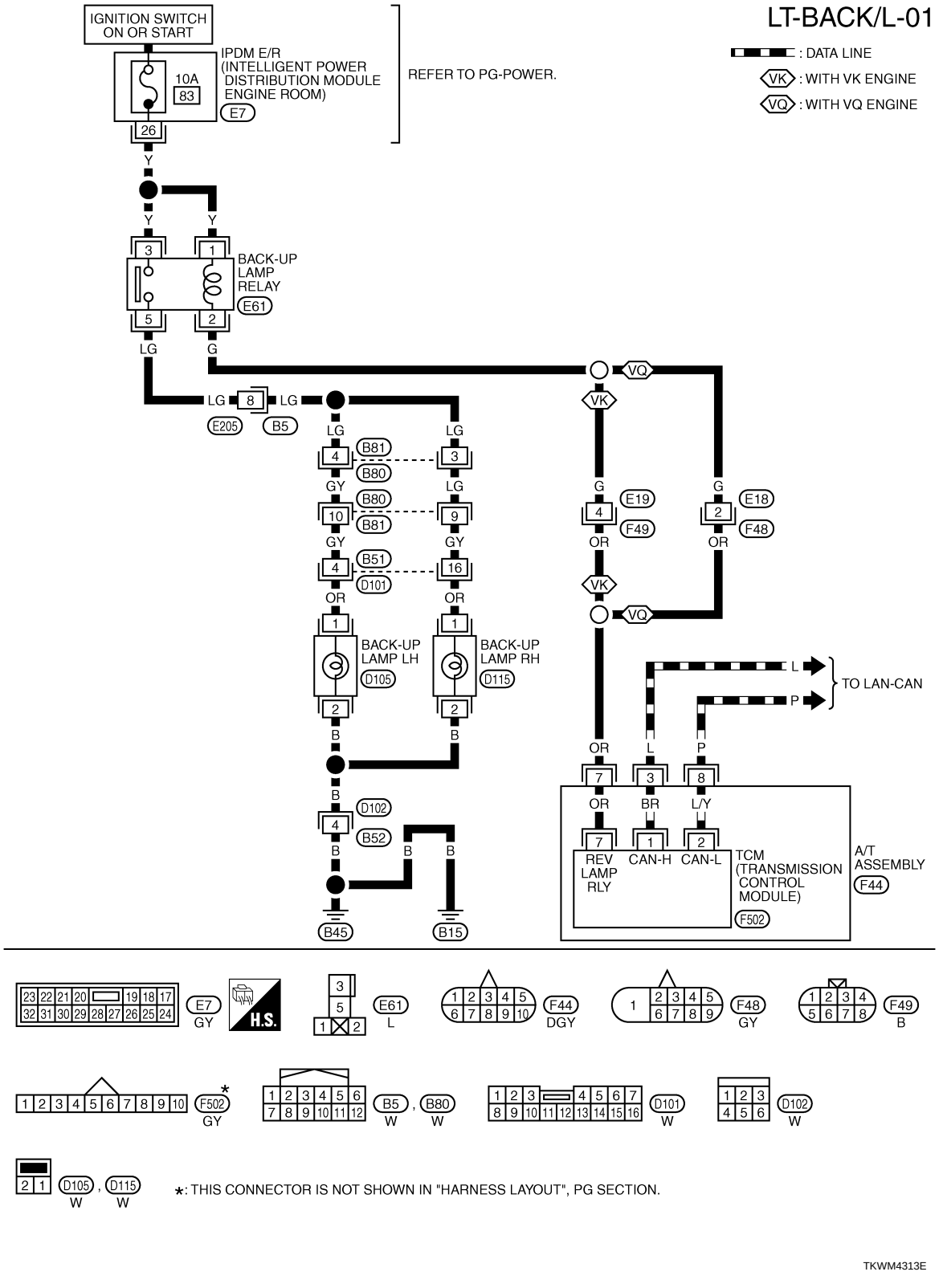
REMOVAL AND INSTALLATION

Refer to LT-95, "Removal and Installation of Rear Combination Lamp Control Unit".

BACK-UP LAMP

Wiring Diagram - BACK/L -

INFOID:0000000001328379



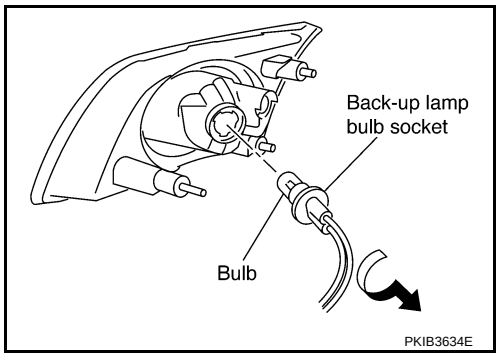
TKWM4313E

Bulb Replacement

INFOID:0000000001328380

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

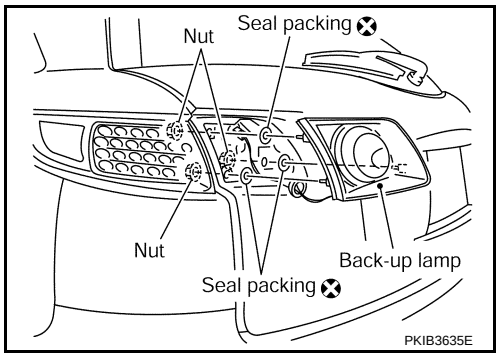
Back-up lamp : 12 V - 18 W



Removal and Installation

INFOID:0000000001328381

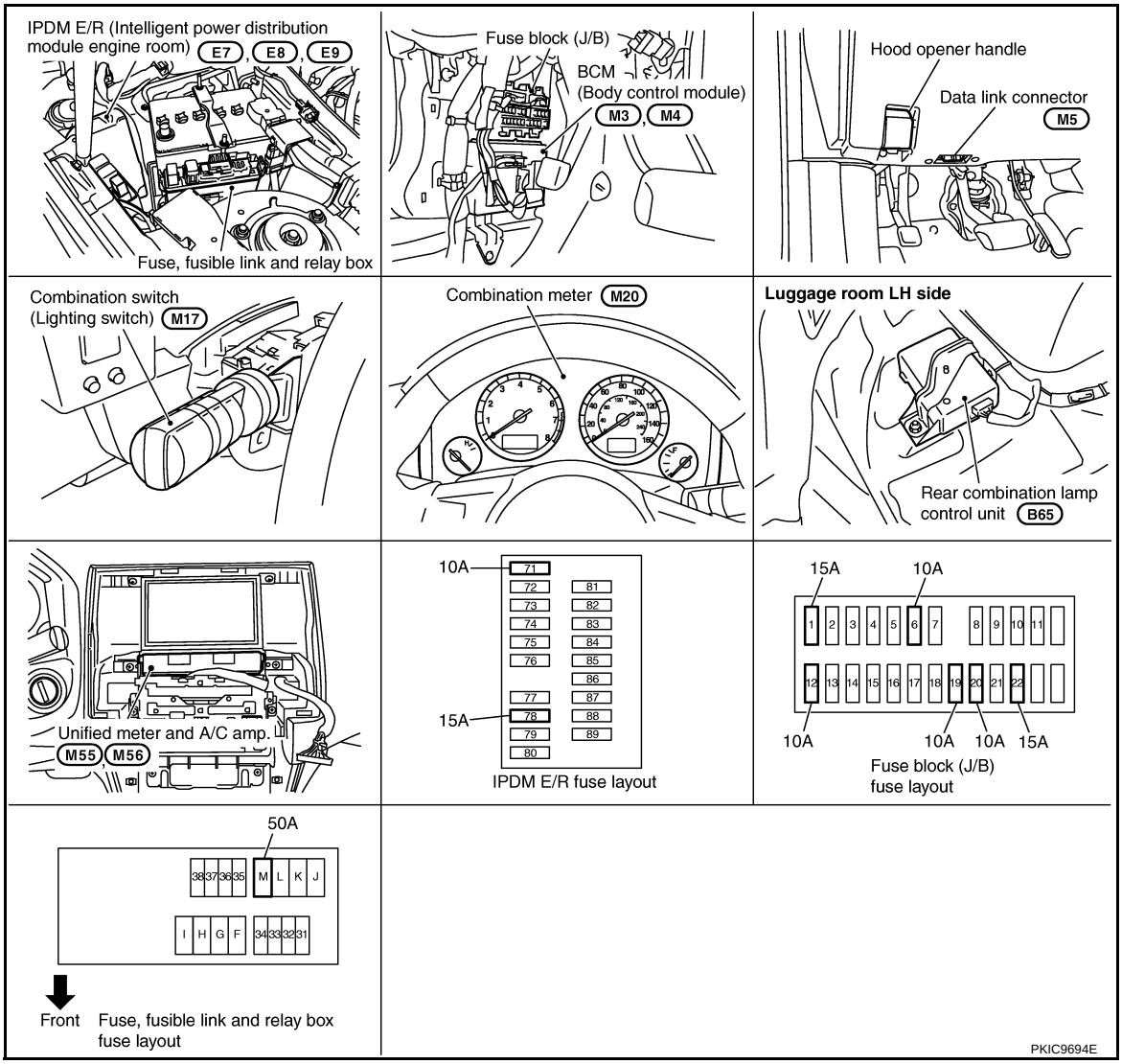
1. Remove back door finisher. Refer to EI-47, "Component Parts Location".
2. Disconnect rear combination lamp connector.
3. Remove rear combination lamp mounting nuts.
4. Remove rear combination lamp from back door.
5. Remove seal packing from back door.



PARKING, LICENSE PLATE AND TAIL LAMPS

Component Parts and Harness Connector Location

INFOID:0000000001328382



System Description

INFOID:0000000001328383

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
- 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,
• 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-4, "System Description".

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-III.

CAN Communication System Description

INFOID:0000000001328384

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.

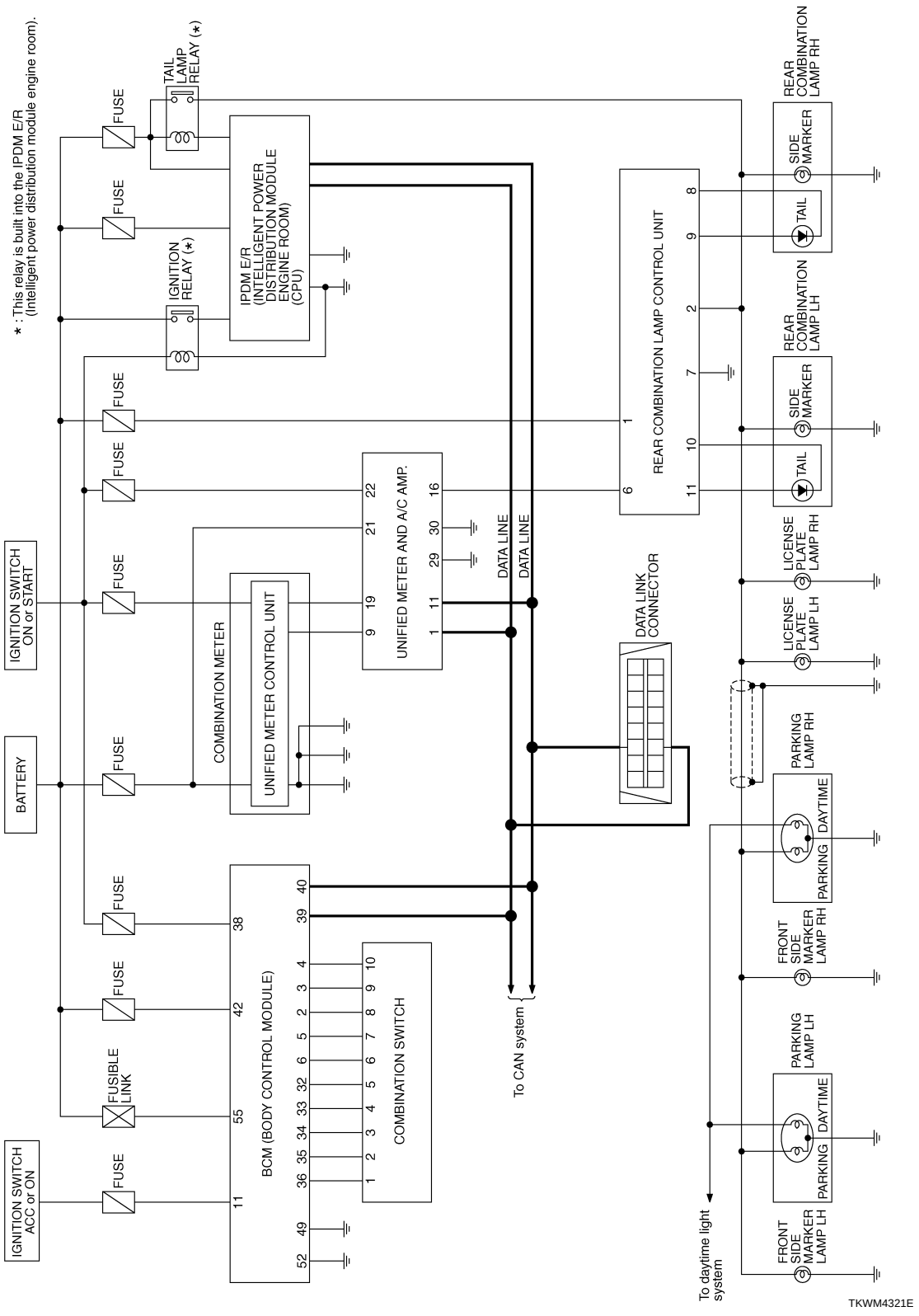
CAN Communication Unit

INFOID:0000000001328385

Refer to LAN-43, "CAN System Specification Chart".

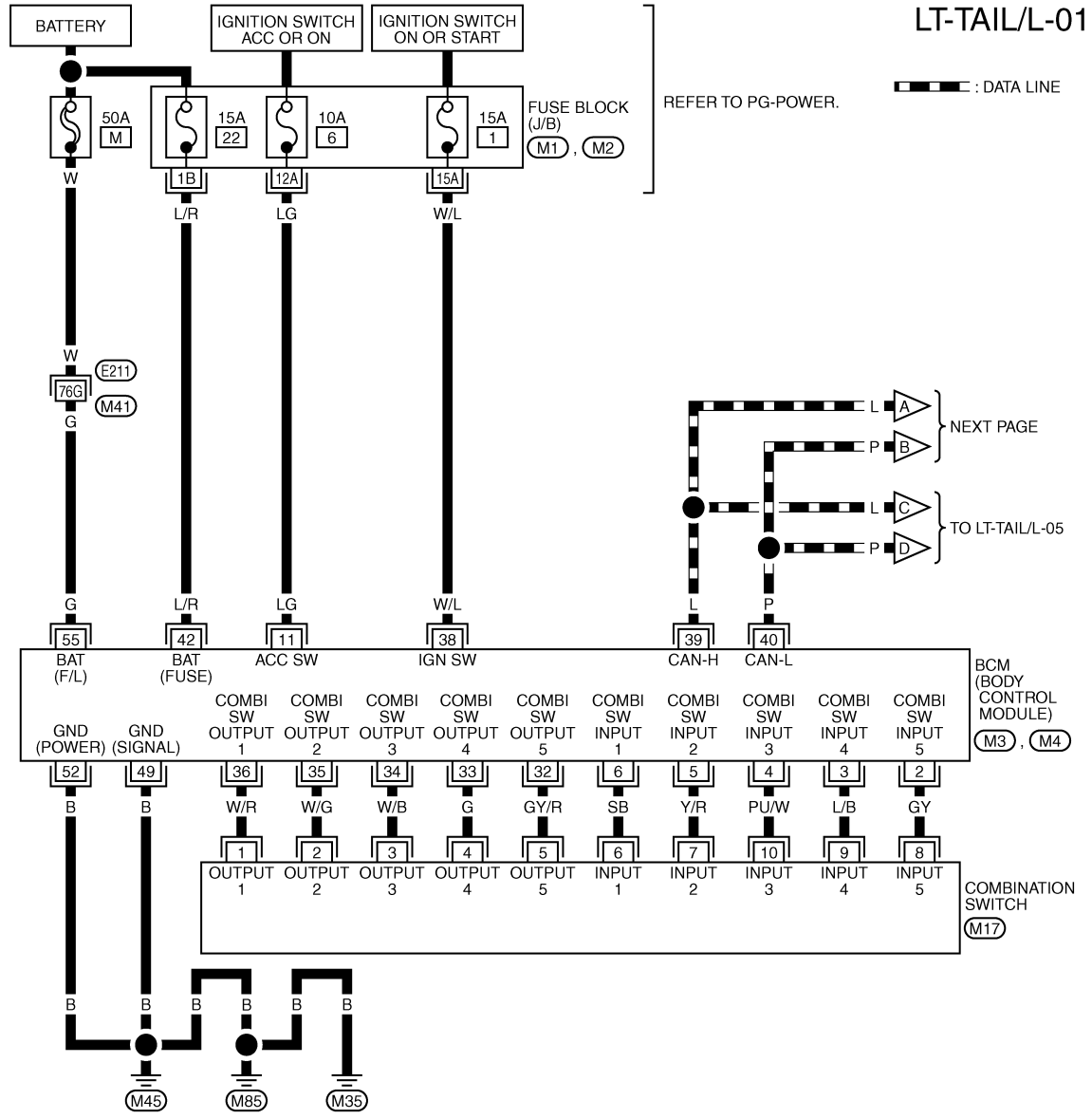
Schematic

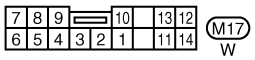
INFOID:0000000001328386



Wiring Diagram - TAIL/L -

INFOID:0000000001328387





REFER TO THE FOLLOWING.

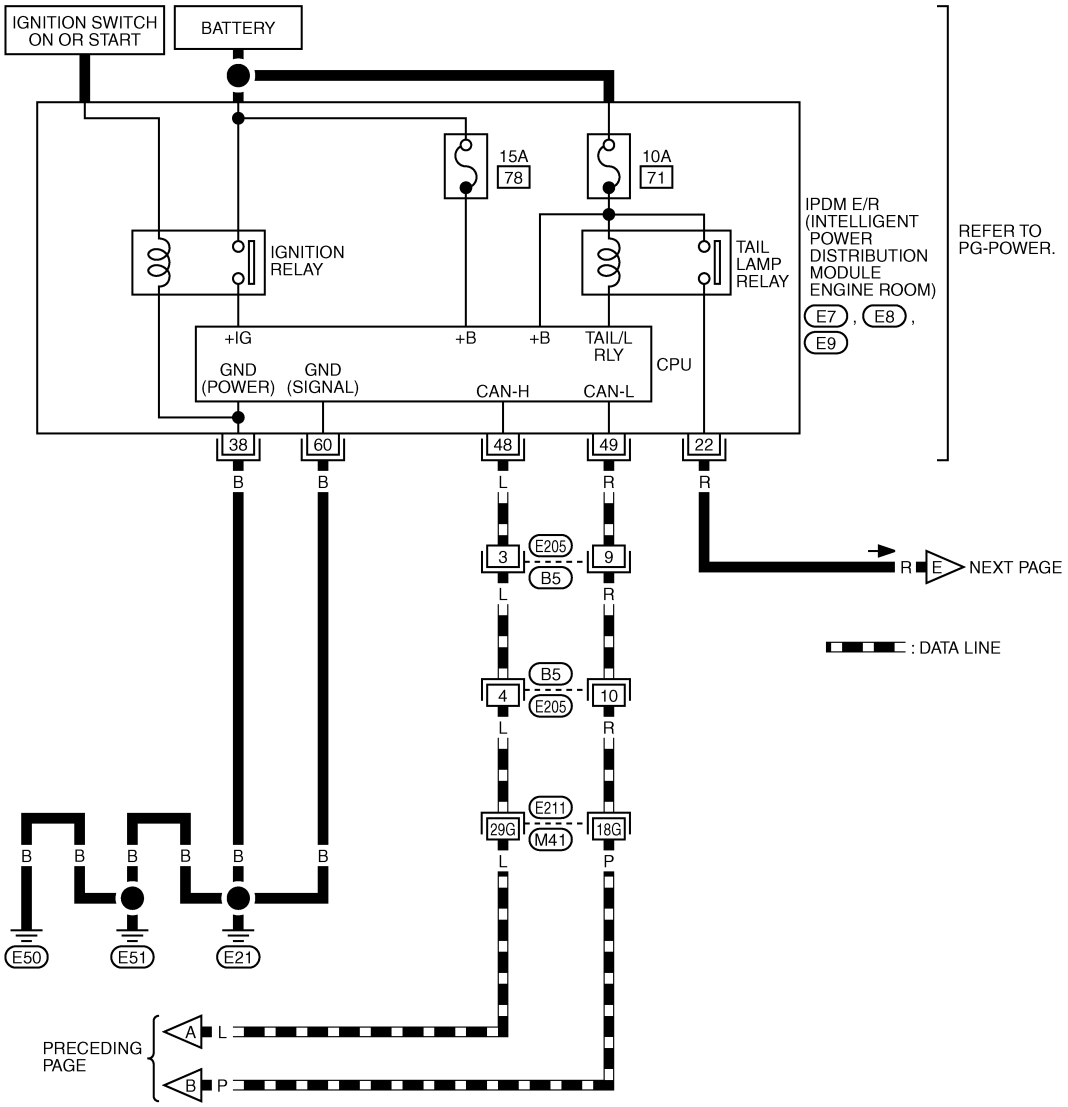
E211 -SUPER MULTIPLE JUNCTION (SMJ)

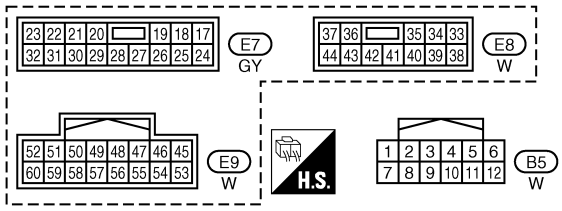
M1, M2 -FUSE BLOCK-JUNCTION BOX (J/B)

M3, M4 -ELECTRICAL UNITS

TKWM4322E

LT-TAIL/L-02

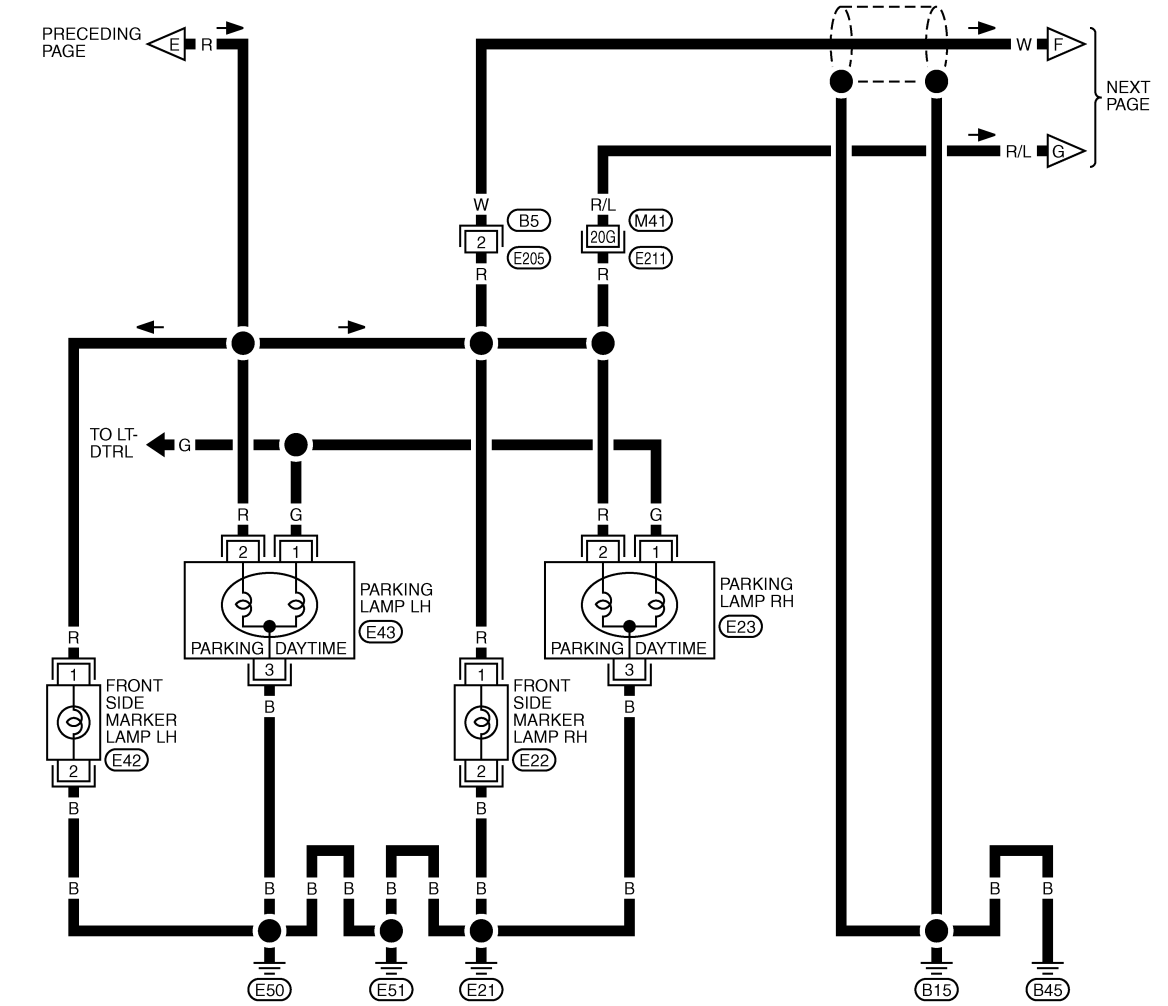


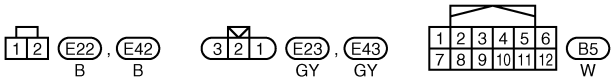


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4323E

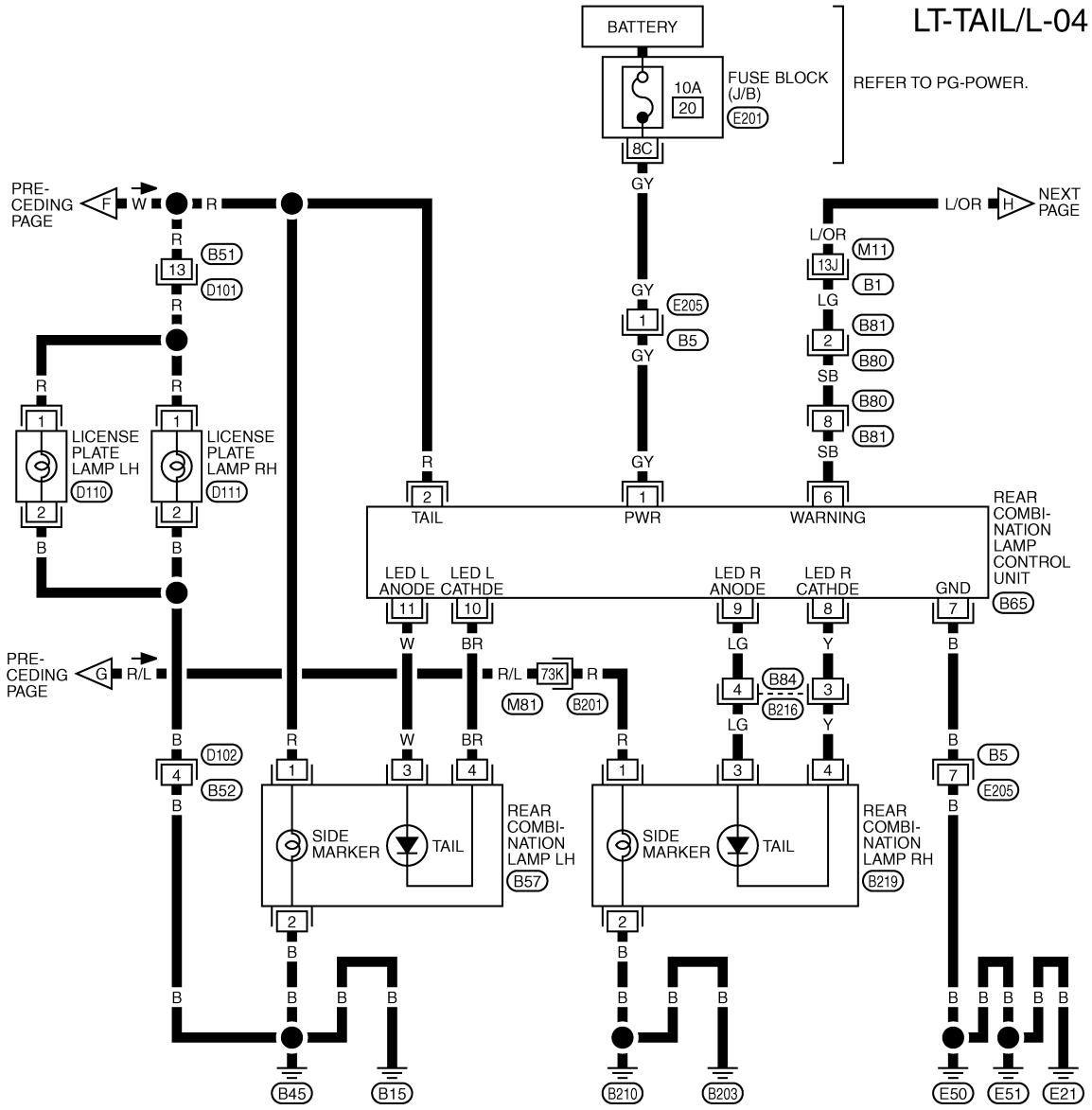
LT-TAIL/L-03

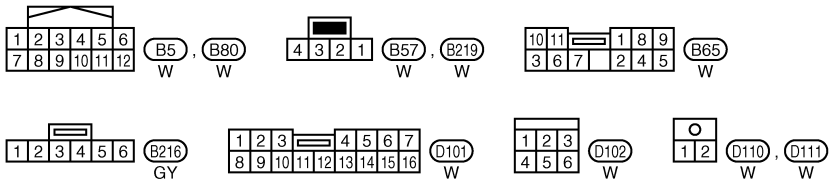




REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM4324E



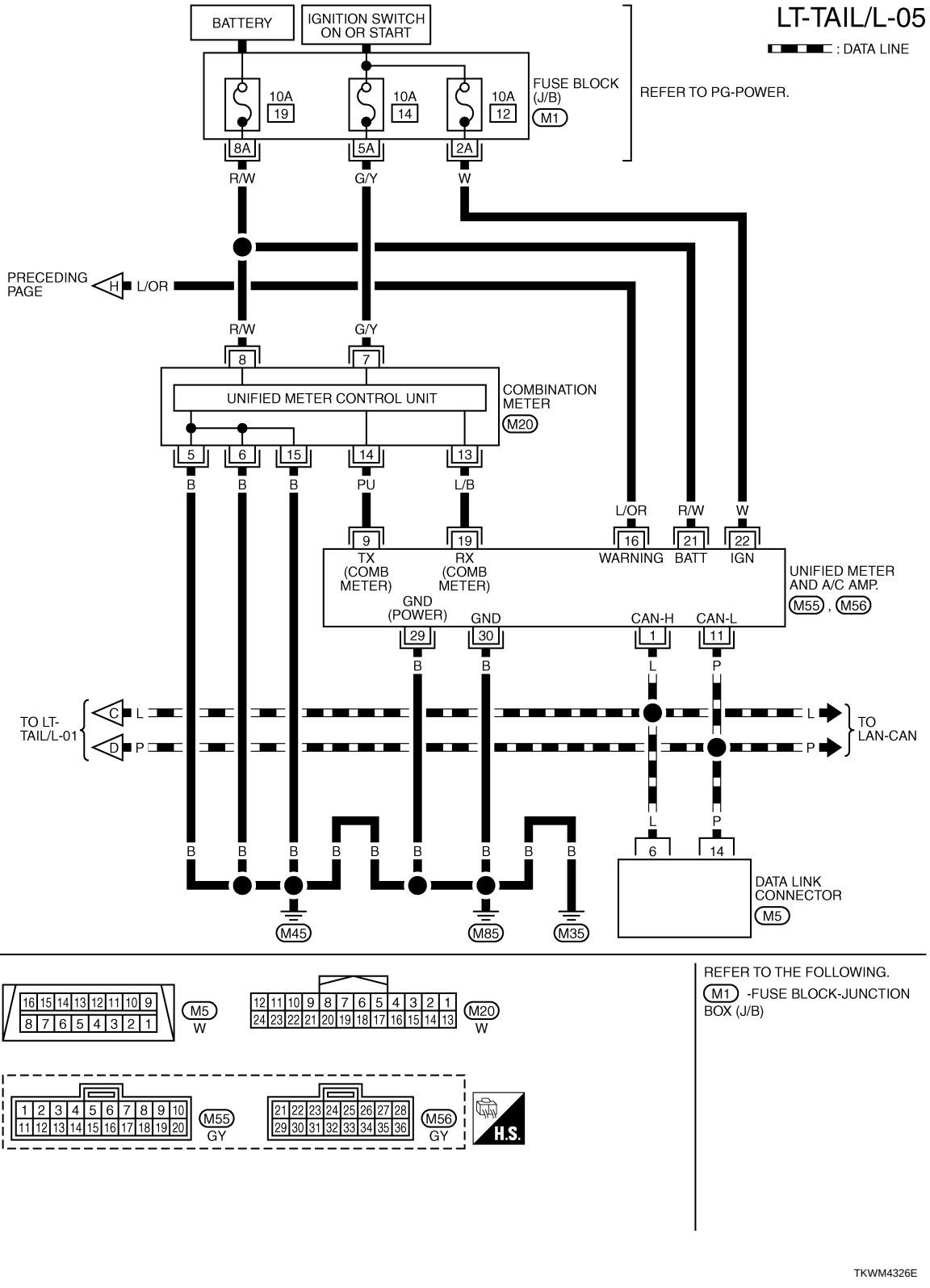


REFER TO THE FOLLOWING.

B1 , B201 -SUPER MULTIPLE JUNCTION (SMJ)

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

TKWM4325E



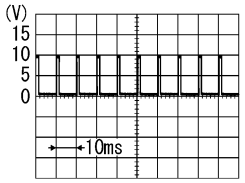
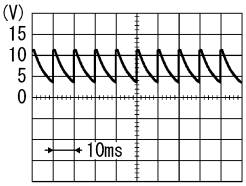
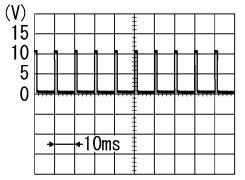
TKWM4326E

Terminal and Reference Value for BCM

INFOID:0000000001328388

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-III. Refer to LT-103, "CONSULT-III Functions (BCM)".**

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 1ST	 PKIB4959J Approx. 1.0 V
11	LG	Ignition switch (ACC)	ACC	—		Battery voltage
33	G	Combination switch output 4	ON	Lighting, turn, wiper switch (Wiper intermittent dial position 4)	OFF	 PKIB4960J Approx. 7.2 V
					Lighting switch 1ST (The same result with lighting switch 2ND)	 PKIB4958J 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

Terminal and Reference Value for IPDM E/R

INFOID:0000000001328389

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	—	—		—

Terminal No.	Wire color	Signal name	Measuring condition		Reference value
			Ignition switch	Operation or condition	
49	R	CAN – L	—	—	—
60	B	Ground	ON	—	Approx. 0 V

Terminal and Reference Value for Rear Combination Lamp Control Unit

INFOID:0000000001328390

Refer to LT-86, "Terminal and Reference Value for Rear Combination Lamp Control Unit".

How to Proceed with Trouble Diagnosis

INFOID:0000000001328391

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-118, "System Description".
3. Perform Preliminary Check. Refer to LT-128, "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

INFOID:0000000001328392

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

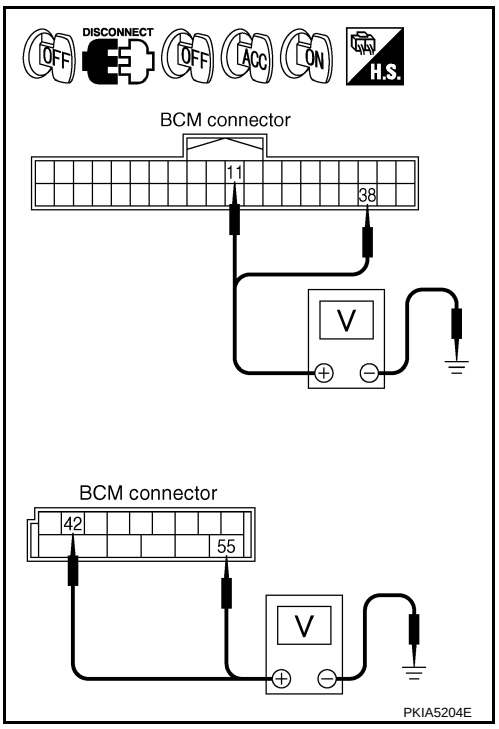
Refer to LT-122, "Wiring Diagram - TAIL/L -".

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.

2.CHECK POWER SUPPLY CIRCUIT

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



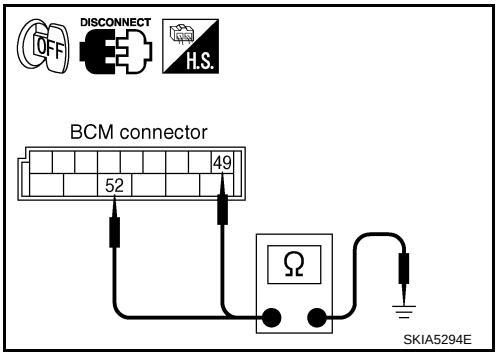
(+)		(-)	Ignition switch position		
BCM connector	Terminal		OFF	ACC	ON
M3	11	Ground	Approx. 0 V	Battery voltage	Battery voltage
	38		Approx. 0 V	Approx. 0 V	Battery voltage
M4	42		Battery voltage	Battery voltage	Battery voltage
	55		Battery voltage	Battery voltage	Battery voltage

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		Continuity
M4	49	Ground	Yes
	52		

OK or NG

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

CONSULT-III Functions (BCM)

INFOID:0000000001328393

Refer to LT-16, "CONSULT-III Functions (BCM)".

CONSULT-III Functions (IPDM E/R)

INFOID:0000000001328394

Refer to LT-17, "CONSULT-III Functions (IPDM E/R)".

Parking, License Plate and Side Marker Lamps Do Not Illuminate

INFOID:0000000001328395

1.CHECK COMBINATION SWITCH INPUT SIGNAL

CONSULT-III DATA MONITOR
1. Select “LIGHT SW 1ST” of BCM data monitor item.
2. With operating the lighting switch, check the monitor status.

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

CHECK COMBINATION SWITCH
Refer to LT-104, "Combination Switch Inspection".

OK or NG

OK >> GO TO 2.
NG >> Check combination switch (lighting switch). Refer to LT-104, "Combination Switch Inspection".

2.ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select “TAIL LAMP” of IPDM E/R active test item.
2. With operating the test item, check the parking, license plate, side marker and tail lamps operation.

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

IPDM E/R AUTO ACTIVE TEST
1. Start auto active test. Refer to PG-20, "Auto Active Test".
2. Check that the parking, license plate, side marker and tail lamps operation.

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

OK or NG

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

3.CHECK IPDM E/R

1. Select “TAIL&CLR REQ” of IPDM E/R data monitor item.
2. With operating the lighting switch, check the monitor status.

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

OK or NG

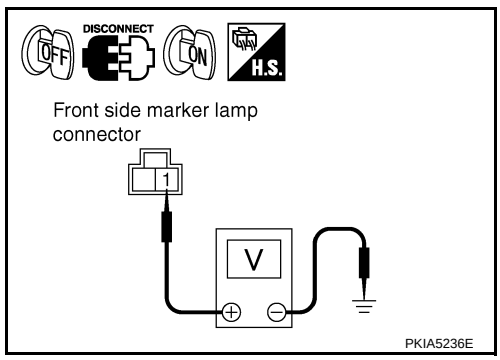
OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".
NG >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".

4.CHECK IPDM E/R

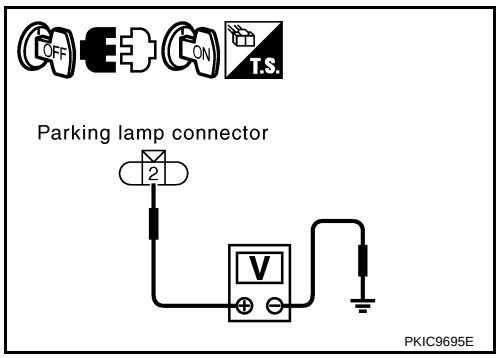
CONSULT-III ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front side marker lamp, parking lamp, license plate lamp and rear combination lamp connectors.
3. Select “TAIL LAMP” of IPDM E/R active test item.
4. With operating the test item, check voltage between front side marker lamp, parking lamp, license plate lamp and rear combination lamp harness connector and ground.

IPDM E/R AUTO ACTIVE TEST
1. Turn ignition switch OFF.
2. Disconnect front side marker lamp, parking lamp, license plate lamp and rear combination lamp connector.
3. Start auto active test. Refer to PG-20, "Auto Active Test".
4. With operating the test item, check voltage between front side marker lamp, parking lamp, license plate lamp and rear combination lamp harness connector and ground.

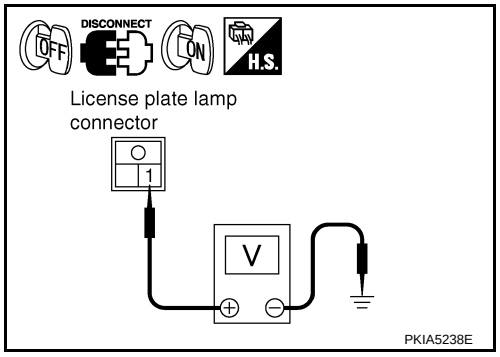
(+)		(-)	Voltage
Front side marker lamp connector	Terminal		
RH E22	1	Ground	Battery voltage
LH E42			



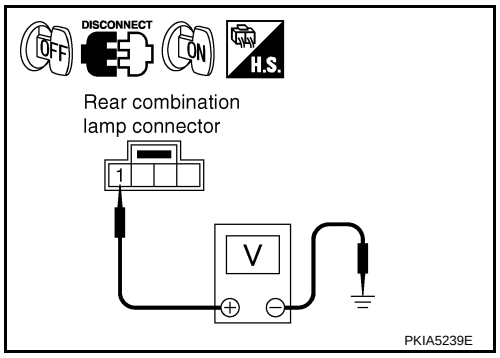
(+)		(-)	Voltage
Parking lamp connector	Terminal		
RH E23	2	Ground	Battery voltage
LH E43			



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



(+)		(-)	Voltage
Rear combination lamp connector	Terminal		
RH B219	1	Ground	Battery voltage
LH B57			



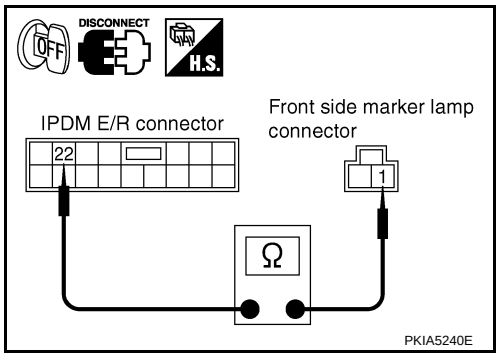
OK or NG

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

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

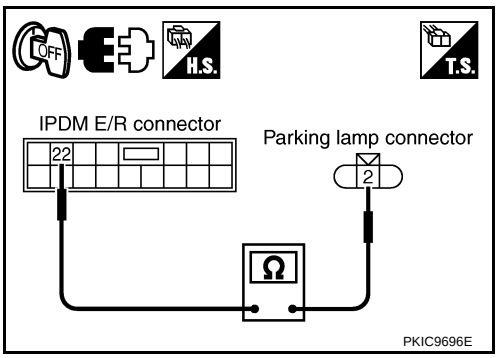
1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector and front side marker lamp harness connector.

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



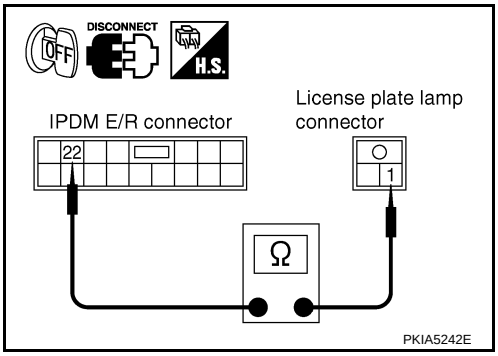
4. Check continuity between IPDM E/R harness connector and parking lamp harness connector.

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



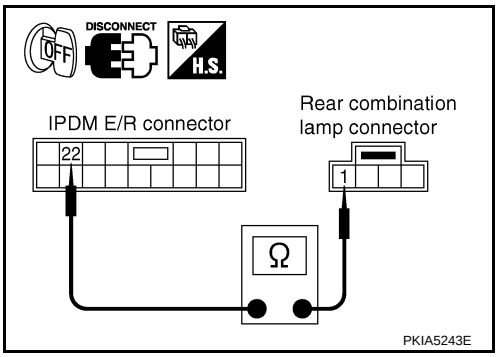
5. Check continuity between IPDM E/R harness connector and license plate lamp harness connector.

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

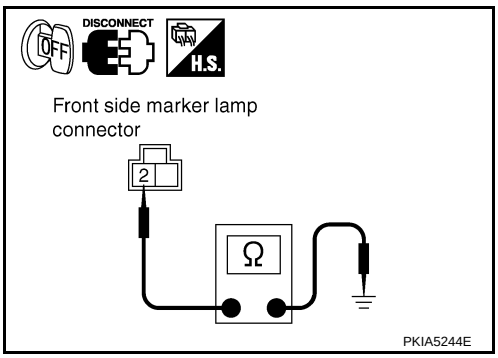
OK >> Replace IPDM E/R. Refer to PG-24, "Removal and Installation of IPDM E/R".

NG >> Repair harness or connector.

6. CHECK GROUND

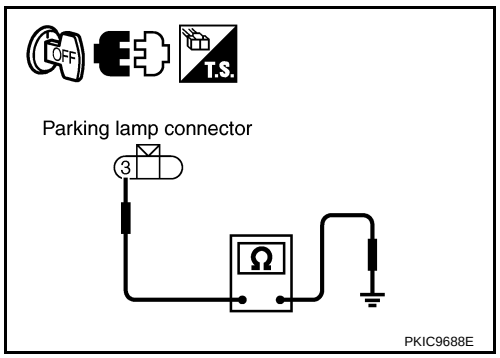
1. Turn ignition switch OFF.
2. Check continuity between front side maker lamp harness connector and ground.

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



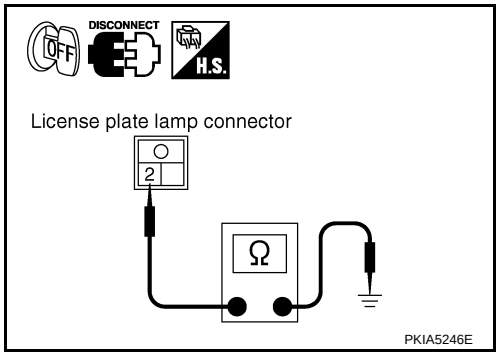
3. Check continuity between parking lamp harness connector and ground.

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



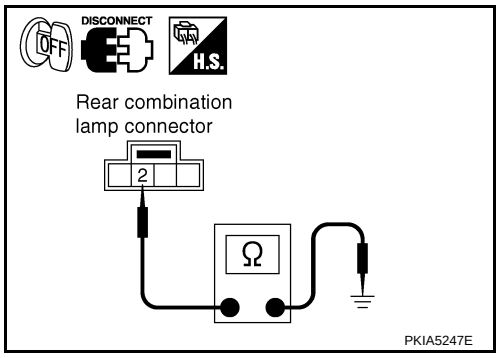
4. Check continuity between license plate lamp harness connector and ground.

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



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

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



OK or NG

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

Tail Lamp Does Not Operate

INFOID:0000000001328396

1.CHECK STOP LAMP AND TURN SIGNAL LAMP

Make sure stop lamps and turn signal lamps is illuminated.

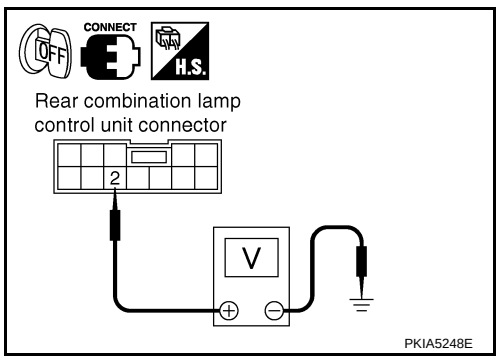
OK or NG

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

2.CHECK INPUT SIGNAL

Check voltage between rear combination lamp control unit harness connector 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



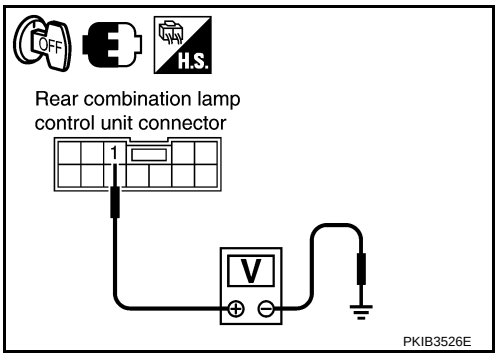
OK or NG

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.



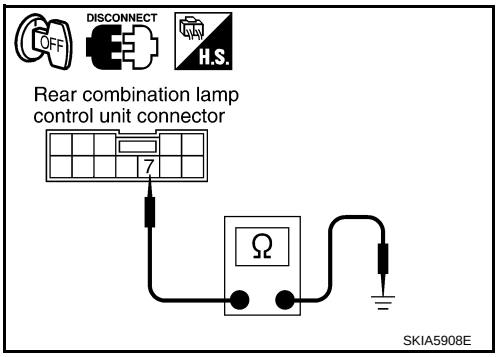
OK or NG

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.

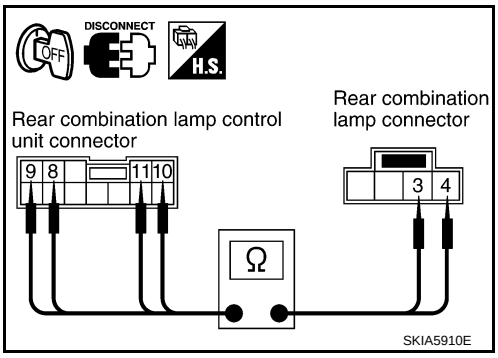
5. CHECK REAR COMBINATION LAMPS CIRCUIT

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 Maker and Tail Lamps Do Not Turn OFF (After Approx. 10

Minutes)

INFOID:0000000001328397

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

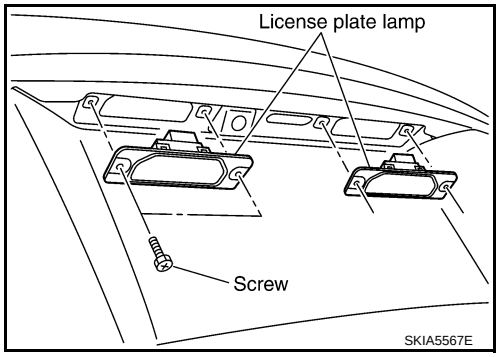
OK >> Ignition relay malfunction. Refer to PG-18, "Function of Detecting Ignition Relay Malfunction".
NG >> INSPECTION END

License Plate Lamp

INFOID:0000000001328398

BULB REPLACEMENT, REMOVAL AND INSTALLATION

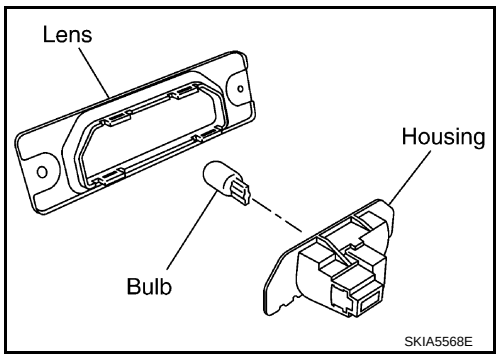
1. Remove screws and remove license plate lamp from back door.
2. Disconnect license plate lamp connector.



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

License plate lamp : 12 V - 5 W

5. Installation is the reverse order of removal.



Front Parking Lamp

INFOID:0000000001328399

BULB REPLACEMENT
Refer to LT-28, "Bulb Replacement".

REMOVAL AND INSTALLATION
Refer to LT-30, "Removal and Installation".

Tail Lamp

INFOID:0000000001328400

BULB REPLACEMENT
Refer to LT-137, "Bulb Replacement".

REMOVAL AND INSTALLATION
Refer to LT-137, "Removal and Installation".

Front Side Marker Lamp

INFOID:0000000001328401

BULB REPLACEMENT
Refer to LT-28, "Bulb Replacement".

REMOVAL AND INSTALLATION

Refer to LT-30, "Removal and Installation".

Rear Side Marker Lamp

INFOID:0000000001328402

BULB REPLACEMENT

Refer to LT-137, "Bulb Replacement".

REMOVAL AND INSTALLATION

Refer to LT-137, "Removal and Installation".

Rear Combination Lamp Control Unit

INFOID:0000000001328403

REMOVAL AND INSTALLATION

Refer to LT-95, "Removal and Installation of Rear Combination Lamp Control Unit".

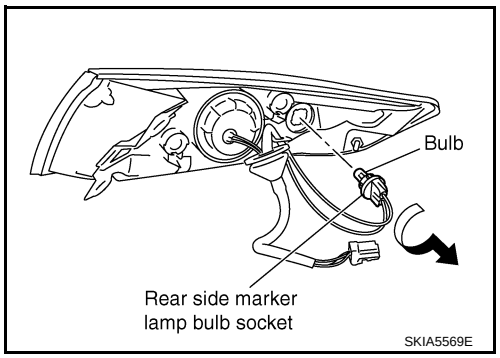
REAR COMBINATION LAMP

Bulb Replacement

INFOID:0000000001328404

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-117, "Bulb Replacement"

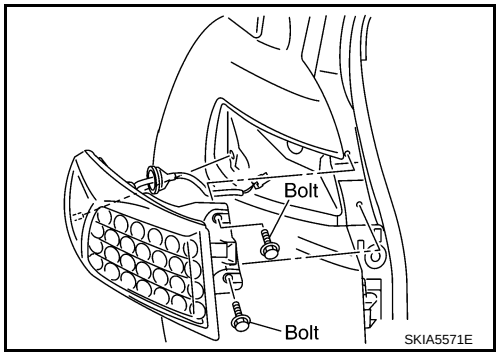
Removal and Installation

INFOID:0000000001328405

REMOVAL

Rear Fender Side

1. Remove bumper side cover A. Refer to EI-17, "Component Parts Location".
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-117, "Removal and Installation"

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

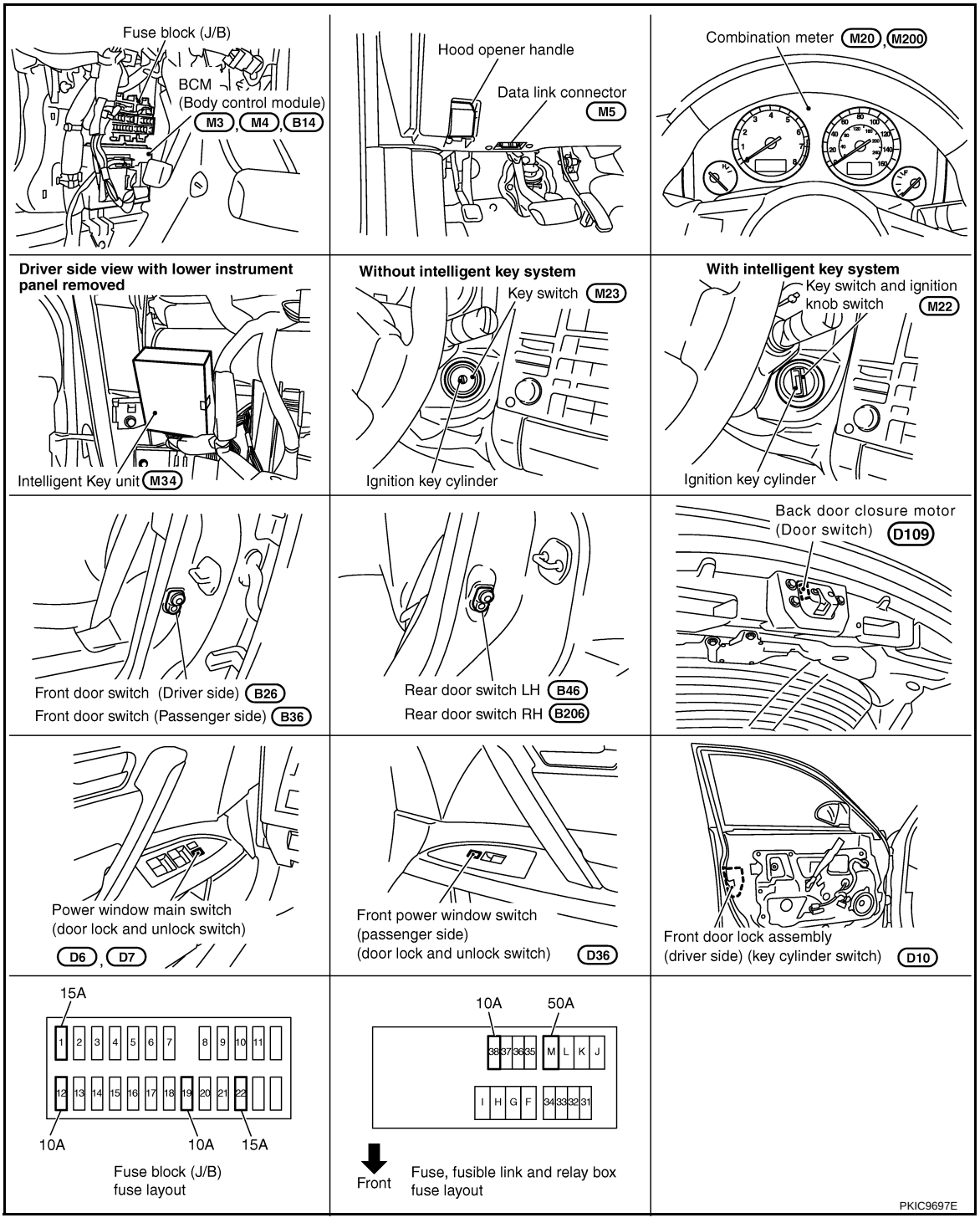
Seal packing cannot be reused.

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

Component Parts and Harness Connector Location

INFOID:0000000001328406



System Description

INFOID:0000000001328407

When the room lamp and personal lamp switch is in DOOR position, room lamp and personal lamp ON/OFF is controlled by timer according to signals from switches including key switch, front door switch driver side, unlock signal from keyfob, door lock and unlock switch, key cylinder lock and unlock switch, ignition switch.
When the room lamp and personal lamp turns ON, there is a gradual brightening over 1 second. When room lamp and personal lamp turns OFF, there is a gradual dimming over 1 second.
The room lamp and personal lamp timer is controlled by the BCM (body control module).
Room lamp and personal lamp timer control settings can be changed with CONSULT-III.

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
- 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
- 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.
In addition, when spot turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied
- to 15A fuse [No. 22, located infuse block (J/B)]
- through key switch terminal 2.

Key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.
Ground is supplied
- from BCM terminal 22
- to power window main switch (door lock and unlock switch) terminal 14.

At the time that driver door are opened, BCM detects that driver door is unlocked. It determines that interior room lamp and map lamp timer operation conditions are met, and turns interior room lamp and map lamp ON for 30 seconds.
Key is in ignition key cylinder (key switch ON),
Power is supplied
- through key switch terminal 1
- to BCM terminal 37.

When the key is removed from key switch (key switch OFF), power supply to BCM terminal 37 is terminated. BCM detects that key has been removed, determines that interior room lamp and map lamp timer conditions are met, and turns interior room lamp and map lamp ON for 30 seconds.
When driver door opens → closes, and key is not inserted in key switch (key switch OFF), BCM terminal 62 changes between 0V (door open) → 12V (door closed). BCM determines that conditions for interior room lamp and map lamp operation are met and turns interior room lamp ON for 30 seconds.
Timer control is canceled under the following conditions.
- Driver door is locked [when locked keyfob or power window main switch (door lock and unlock switch), door key cylinder switch].
- Driver door is opened (driver door switch turns ON).
- Ignition switch ON.

With Intelligent Key System

When the interior room lamp and map lamp switch is in DOOR position, and when all conditions below are met, BCM performs timer control (maximum 30 second) for interior room lamp and map lamp ON/OFF.
In addition, when spot turns ON or OFF there is gradual brightening or dimming over 1 second.
Power is supplied
- to 15A fuse [No. 22, located in fuse and fuse block (J/B)]
- through key switch and ignition knob switch terminal 3.

Key is removed from ignition key cylinder (key switch OFF), power will not be supplied to BCM terminal 37.
And not turned ignition knob switch, power will not be supplied to Intelligent Key unit.
Ground is supplied
- from BCM terminal 22

• to power window main switch (door lock and unlock switch) terminal 14.

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

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

Power is supplied

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

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

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

Timer control is canceled under the following conditions.

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

INTERIOR LAMP BATTERY SAVER CONTROL

If lamps is left “ON”, it 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
• Front step lamp (driver side)
• Front step lamp (passenger side)
• Rear step lamp RH
• Rear step lamp LH
• Front door inside handle illumination (driver side)
• Front door inside handle illumination (passenger side)
• Rear door inside handle illumination RH
• Rear door inside handle illumination LH
• Personal lamp RH
• Personal lamp LH
• Interior room lamp (without DVD player)
• Map lamp
• Vanity mirror lamp
• Luggage room lamp

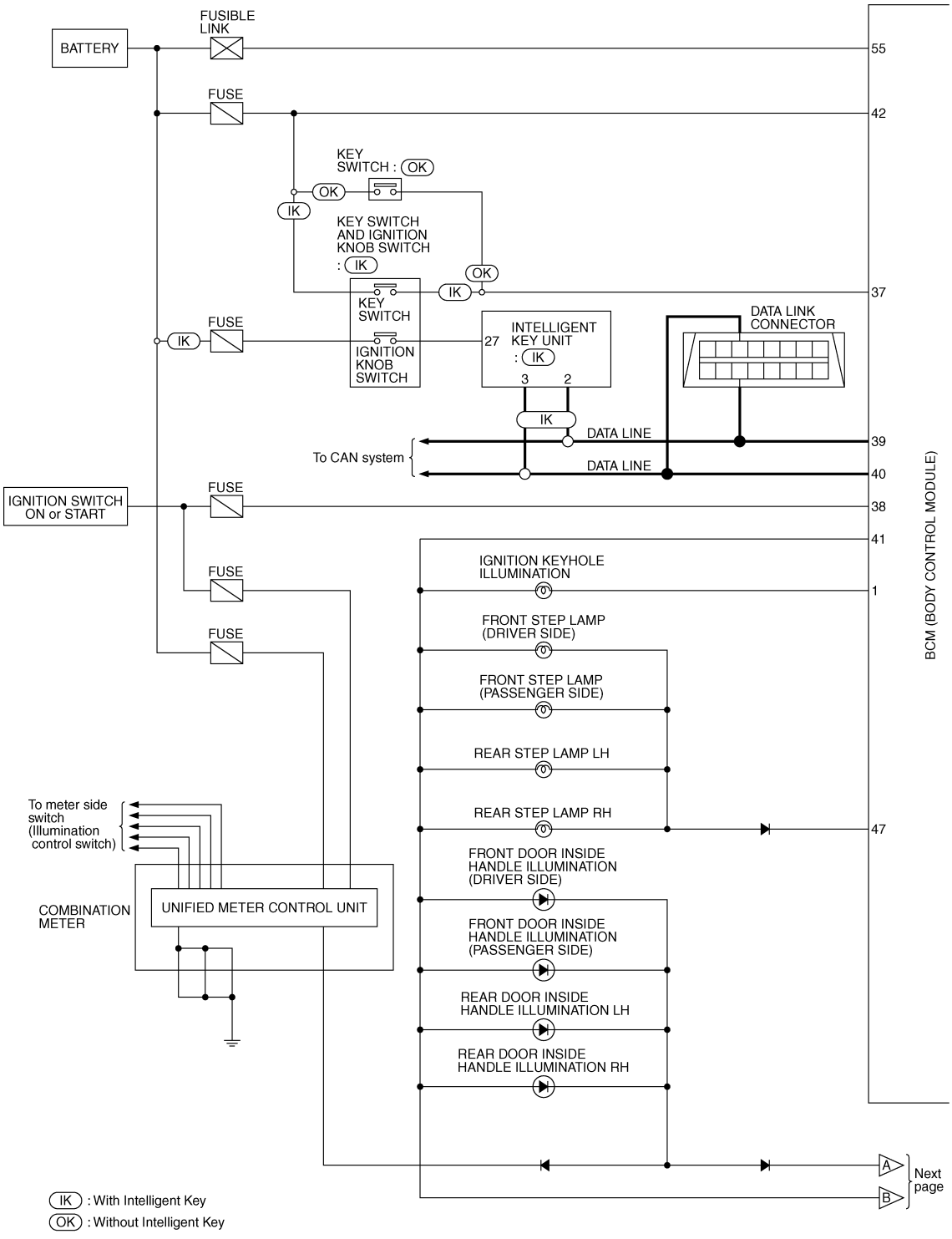
After lamps turn OFF by battery saver system, lamps illuminate again when

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

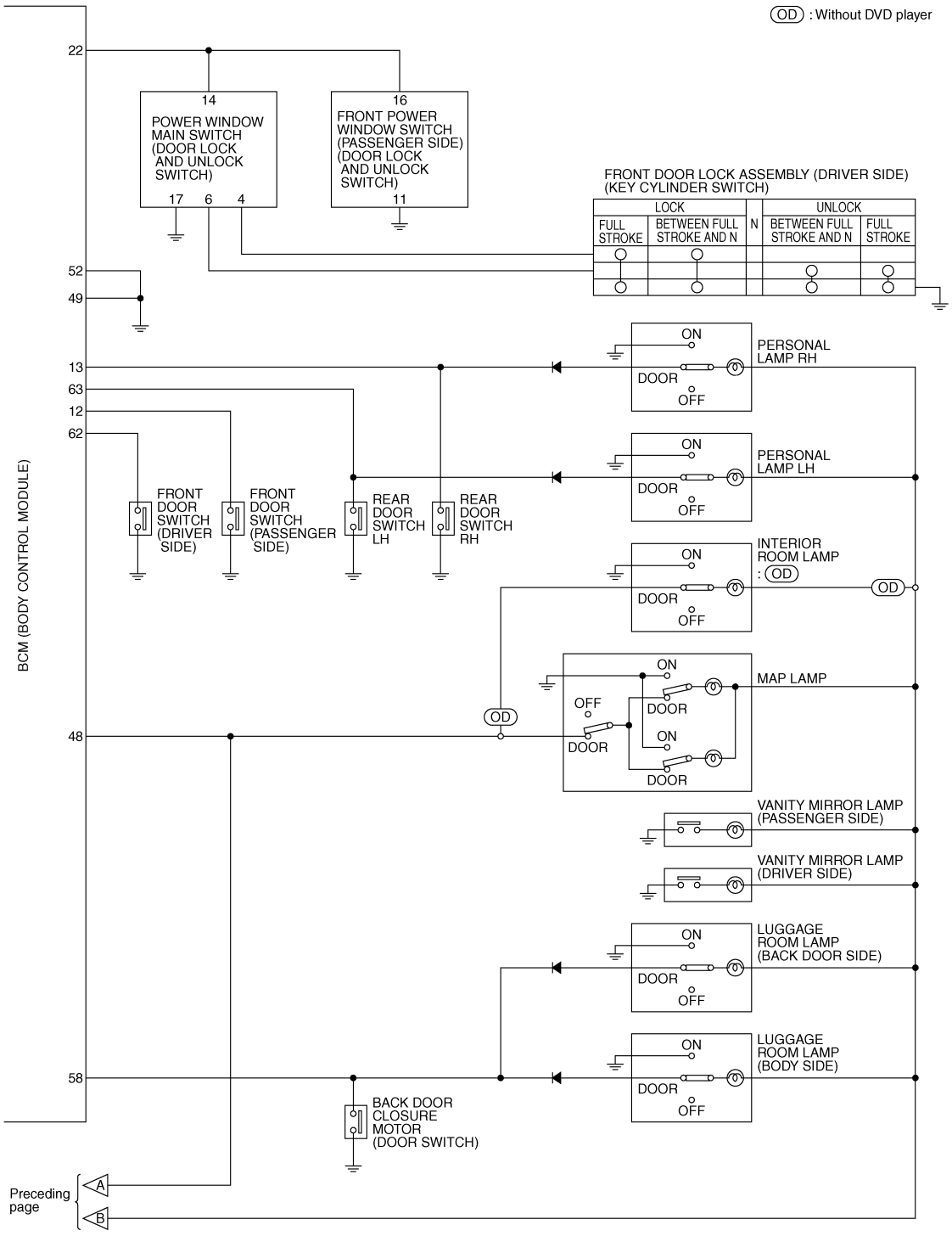
Interior lamp battery saver control period can be changed by the function setting of CONSULT-III.

Schematic

INFOID:0000000001328408



TKWH0228E

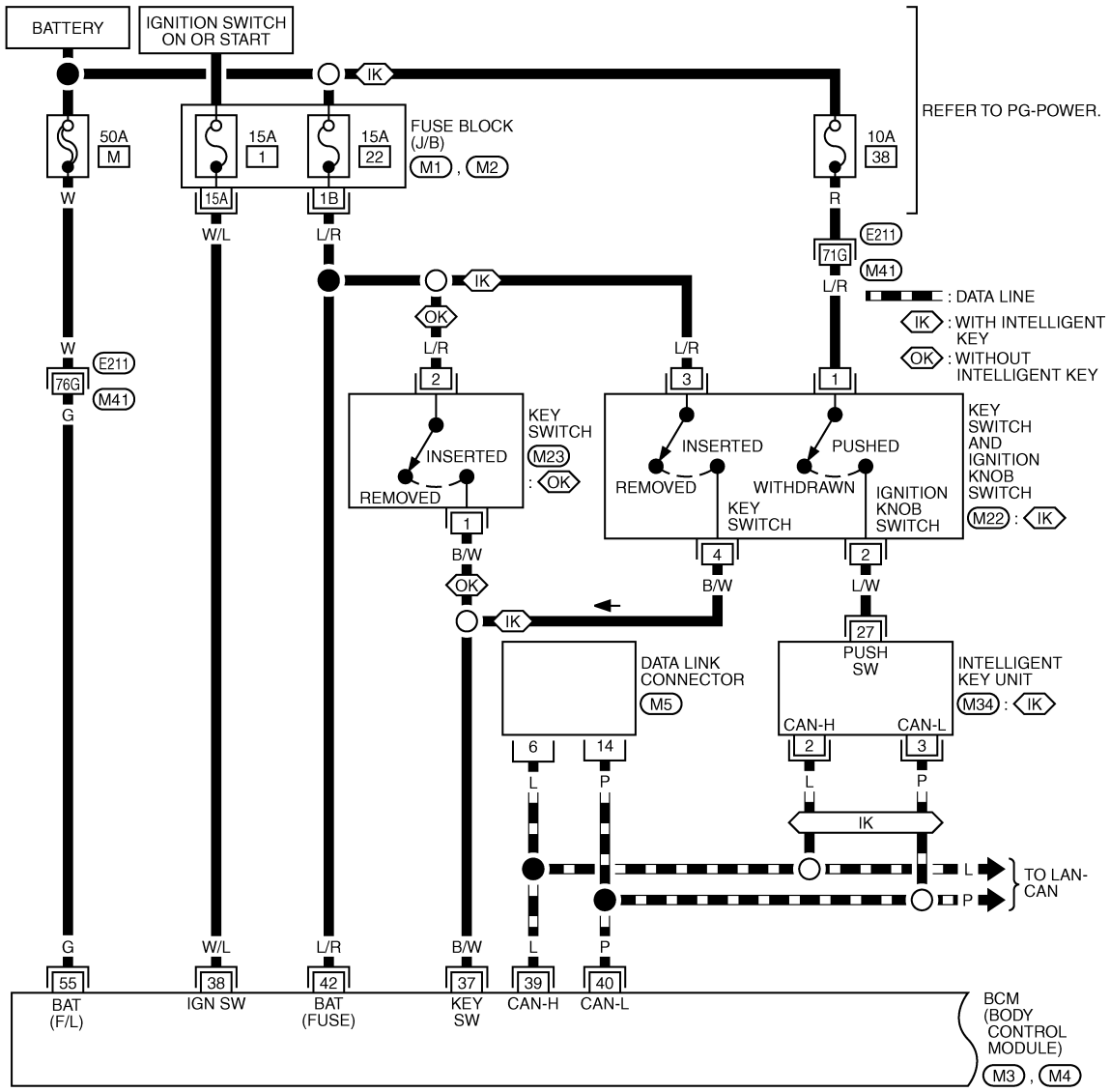

OD : Without DVD player
22
14
POWER WINDOW MAIN SWITCH (DOOR LOCK AND UNLOCK SWITCH)
17 6 4
16
FRONT POWER WINDOW SWITCH (PASSENGER SIDE) (DOOR LOCK AND UNLOCK SWITCH)
11
FRONT DOOR LOCK ASSEMBLY (DRIVER SIDE) (KEY CYLINDER SWITCH)
LOCK
UNLOCK
FULL STROKE
BETWEEN FULL STROKE AND N
N
BETWEEN FULL STROKE AND N
FULL STROKE
52
49
13
63
12
62
BCM (BODY CONTROL MODULE)
FRONT DOOR SWITCH (DRIVER SIDE)
FRONT DOOR SWITCH (PASSENGER SIDE)
REAR DOOR SWITCH LH
REAR DOOR SWITCH RH
ON
DOOR
OFF
PERSONAL LAMP RH
PERSONAL LAMP LH
INTERIOR ROOM LAMP
: OD
OD
MAP LAMP
48
VANITY MIRROR LAMP (PASSENGER SIDE)
VANITY MIRROR LAMP (DRIVER SIDE)
LUGGAGE ROOM LAMP (BACK DOOR SIDE)
LUGGAGE ROOM LAMP (BODY SIDE)
58
BACK DOOR CLOSURE MOTOR (DOOR SWITCH)
Preceding page
A
B

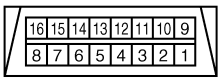
TKWM0823E

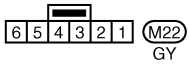
Wiring Diagram - ROOM/L -

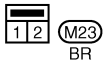
INFOID:0000000001328409

LT-ROOM/L-01



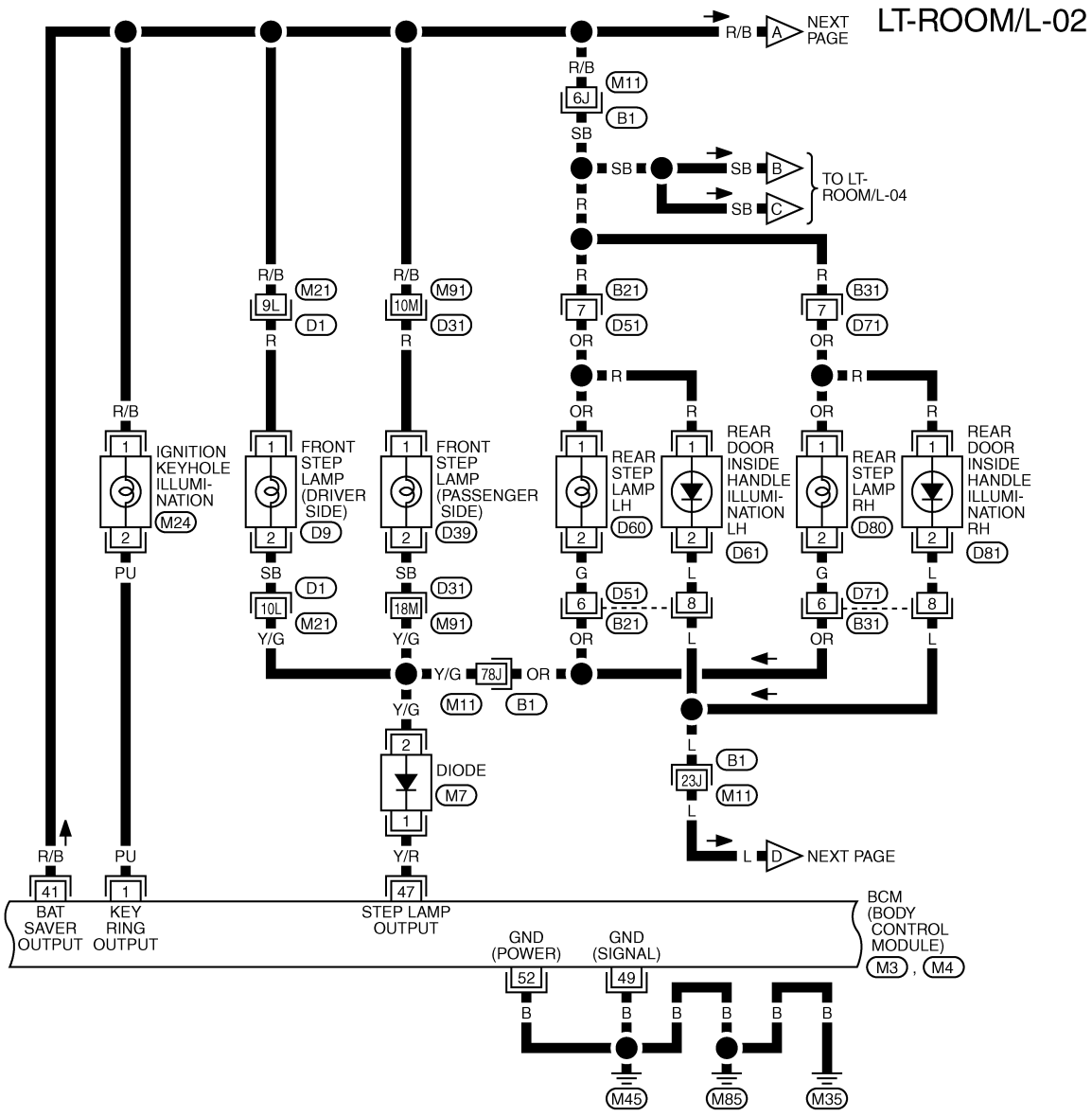




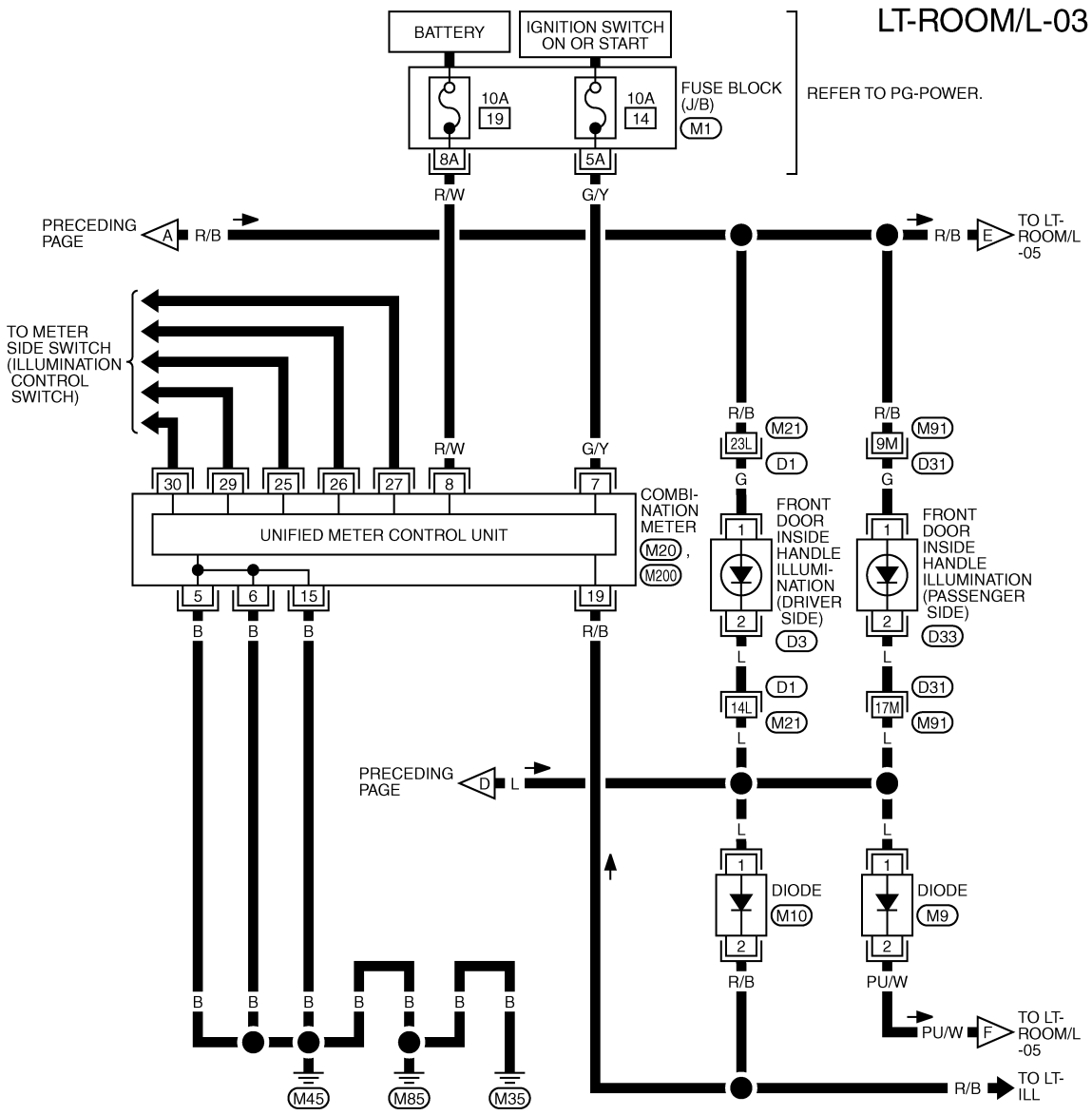


REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)
M1 , M2 -FUSE BLOCK-JUNCTION BOX (J/B)
M3 , M4 , M34 -ELECTRICAL UNITS

TKWM4314E

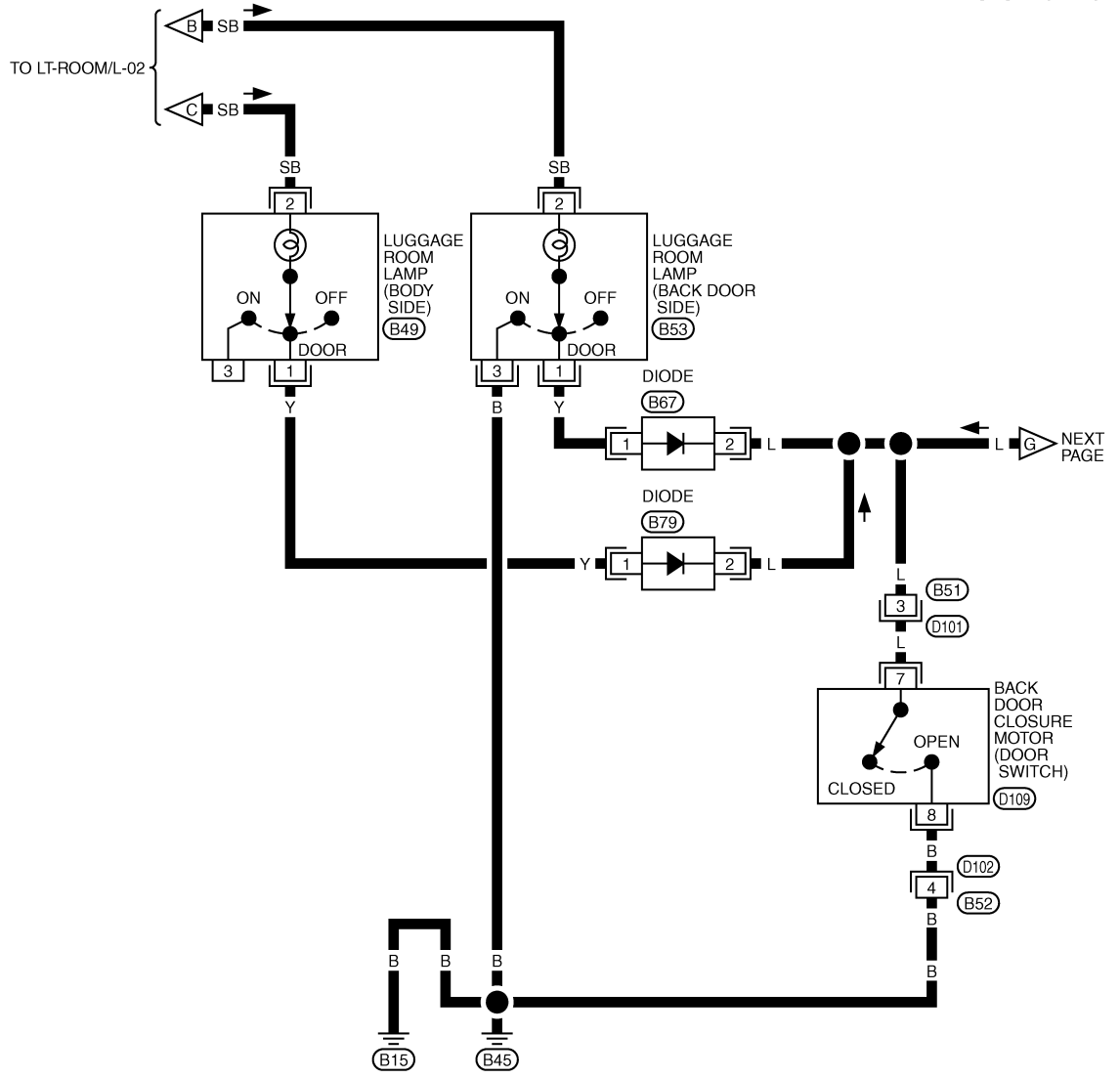

LT-ROOM/L-02
R/B
A
NEXT PAGE
R/B
6J
M11
B1
SB
SB
B
SB
C
TO LT-ROOM/L-04
R
R/B
M21
9L
D1
R/B
M91
10M
D31
R
B21
7
D51
R
B31
7
D71
OR
R
OR
R
R/B
1
IGNITION KEYHOLE ILLUMI-NATION
M24
2
PU
1
FRONT STEP LAMP (DRIVER SIDE)
D9
2
SB
D1
10L
M21
Y/G
1
FRONT STEP LAMP (PASSENGER SIDE)
D39
2
SB
D31
18M
M91
Y/G
1
REAR STEP LAMP LH
D60
2
G
6
D51
B21
OR
1
REAR DOOR INSIDE HANDLE ILLUMI-NATION LH
D61
2
L
8
L
OR
1
REAR STEP LAMP RH
D80
2
G
6
D71
B31
OR
1
REAR DOOR INSIDE HANDLE ILLUMI-NATION RH
D81
2
L
8
L
Y/G
78J
OR
M11
B1
Y/G
2
DIODE
M7
1
Y/R
L
B1
23J
M11
L
L
D
NEXT PAGE
R/B
41
BAT SAVER OUTPUT
PU
1
KEY RING OUTPUT
47
STEP LAMP OUTPUT
BCM (BODY CONTROL MODULE)
M3 , M4
GND (POWER)
52
GND (SIGNAL)
49
B
B
B
B
B
B
M45
M85
M35
1 2 M7 W
2 1 M24 W
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 B21 W , B31 W
1 2 D9 W , D39 W , D60 W , D61 GY , D80 W , D81 GY
REFER TO THE FOLLOWING.
B1 , D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)
M3 , M4 -ELECTRICAL UNITS

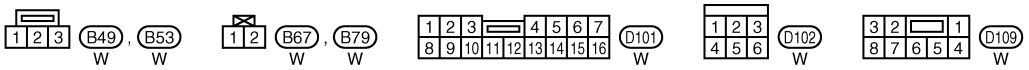
TKWM4315E



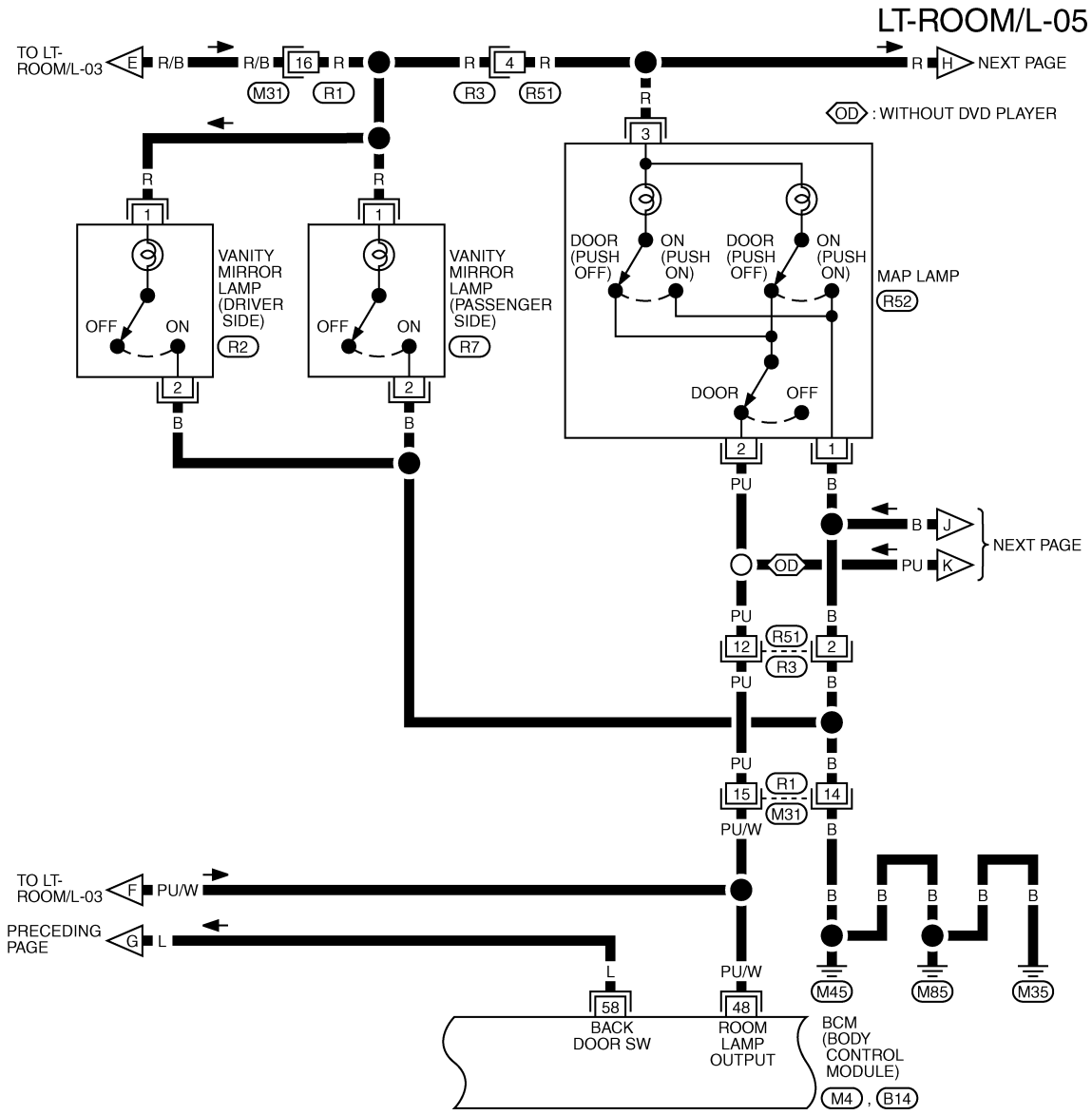
★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

LT-ROOM/L-04

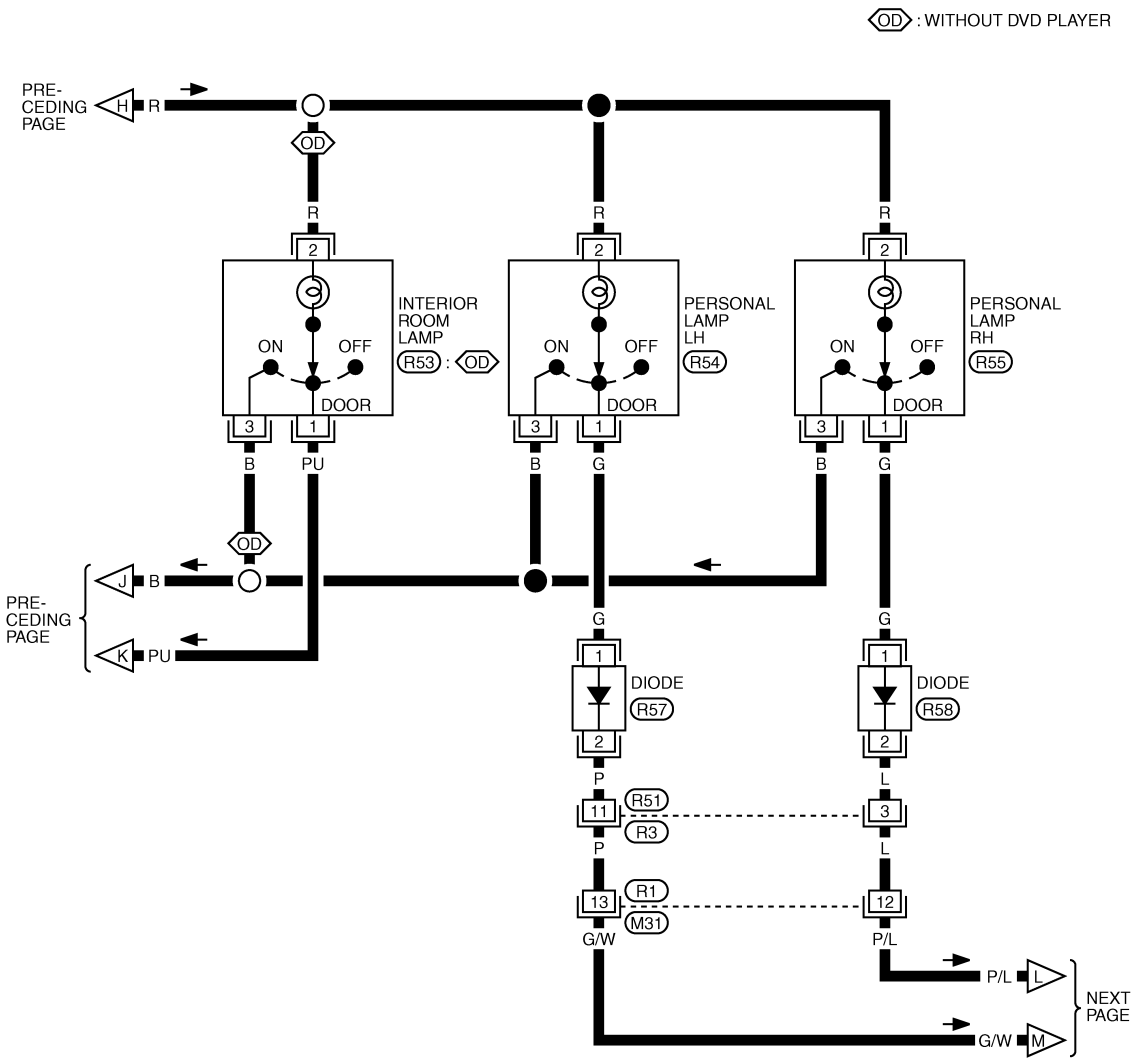


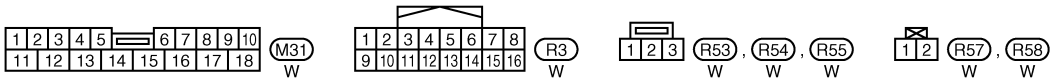


TKWH0231E

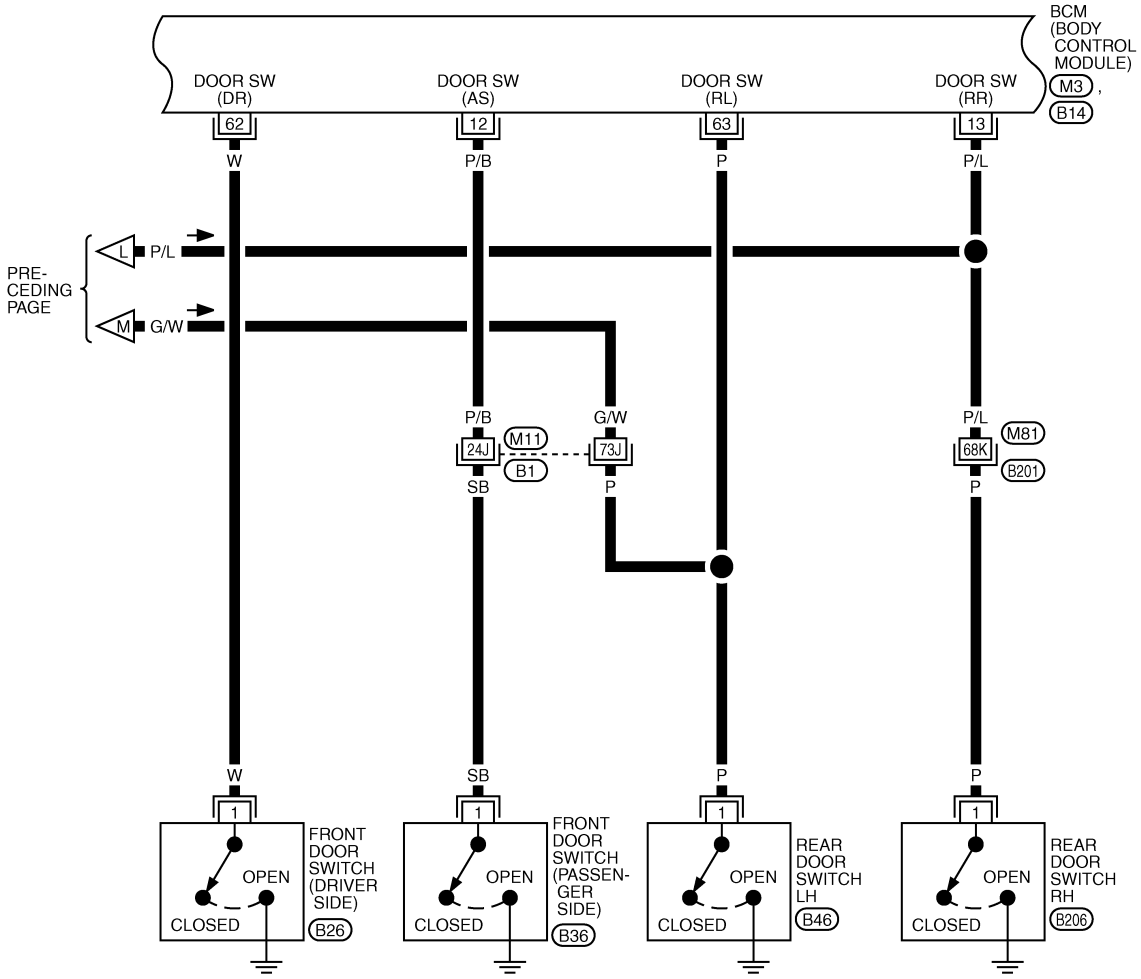

LT-ROOM/L-05
TO LT-ROOM/L-03
E
R/B
M31
16
R1
R
R3
4
R51
H
NEXT PAGE
OD : WITHOUT DVD PLAYER
3
VANITY MIRROR LAMP (DRIVER SIDE)
R2
VANITY MIRROR LAMP (PASSENGER SIDE)
R7
DOOR (PUSH OFF)
ON (PUSH ON)
MAP LAMP
R52
DOOR
OFF
PU
B
J
K
NEXT PAGE
12
2
15
14
PU/W
TO LT-ROOM/L-03
F
PRECEDING PAGE
G
L
58
BACK DOOR SW
48
ROOM LAMP OUTPUT
BCM (BODY CONTROL MODULE)
M4 , B14
M45
M85
M35
M31
W
R2 , R7
R3
R52
REFER TO THE FOLLOWING.
M4 , B14 -ELECTRICAL UNITS
TKWM4317E

LT-ROOM/L-06


OD : WITHOUT DVD PLAYER
PRE-CEDING PAGE
H
R
OD
INTERIOR ROOM LAMP
R53 : OD
PERSONAL LAMP LH
R54
PERSONAL LAMP RH
R55
ON
OFF
DOOR
B
PU
G
J
K
DIODE
R57
R58
P
L
R51
R3
R1
M31
G/W
P/L
NEXT PAGE
M
TKWM4318E


M31
W
R3
W
R53 , R54 , R55
W W W
R57 , R58
W W

LT-ROOM/L-07

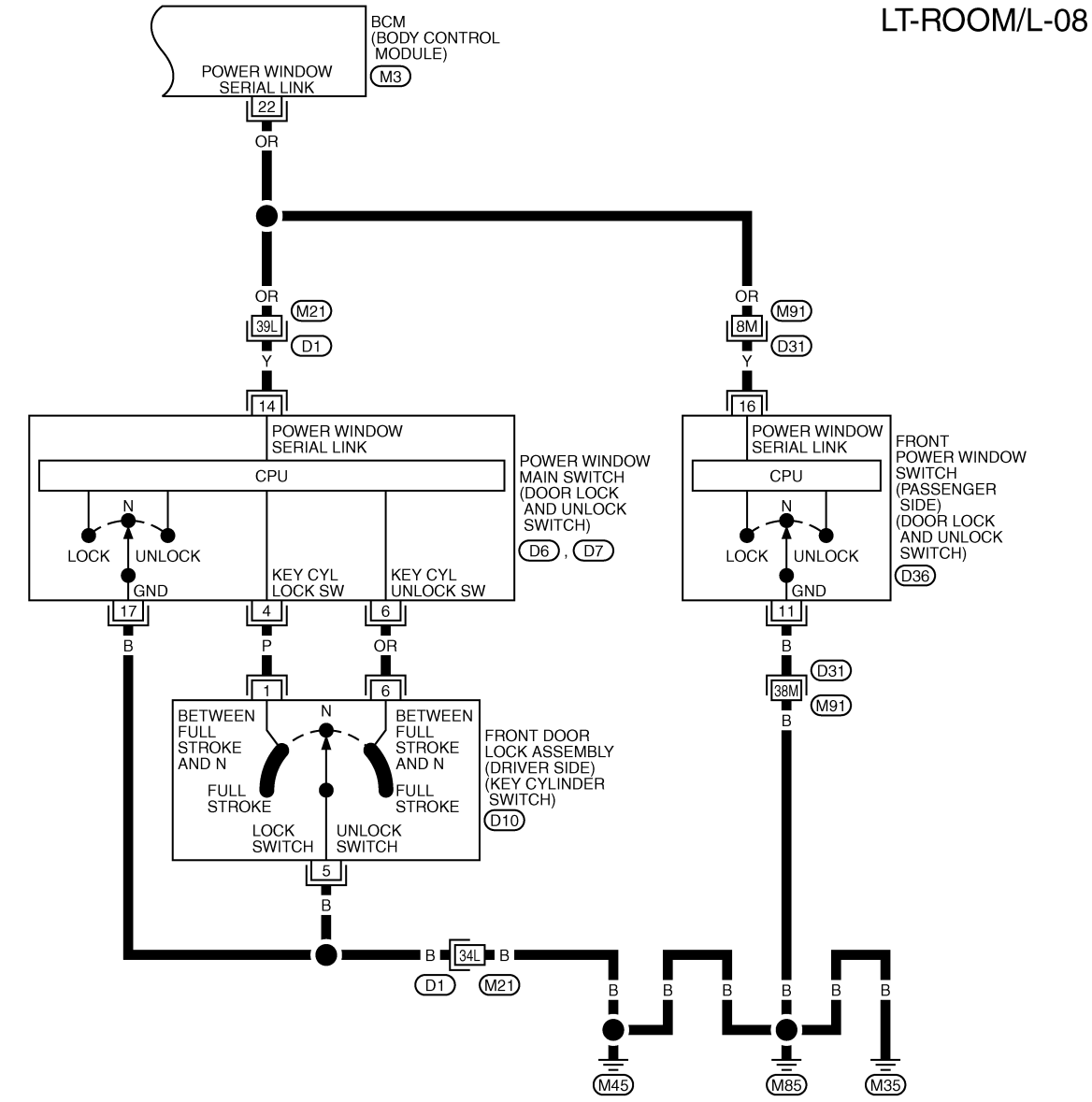


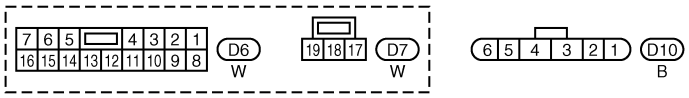
1
2 B26, B36, B46, B206
3 W W W W

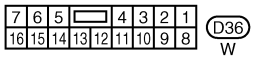
REFER TO THE FOLLOWING.
B1, B201 -SUPER MULTIPLE JUNCTION (SMJ)
M3, B14 -ELECTRICAL UNITS

TKWM4319E

LT-ROOM/L-08





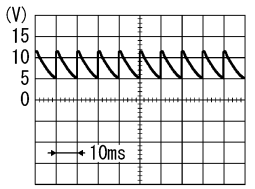
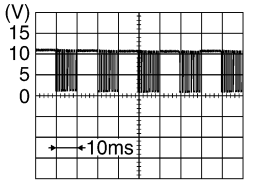


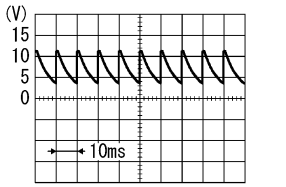
REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)
M3 -ELECTRICAL UNITS

TKWM4320E

Terminal and Reference Value for BCM

INFOID:0000000001328410

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)	 SKIB3419J 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 **NOTE:** Approx. 10 seconds after door lock and unlock switch (driver side and passenger side) is turned “LOCK” or “UNLOCK”.	 PKIC0930E Approx. 9.0 - 9.5 V
					OFF	Battery voltage
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

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)	 PKIB4960J Approx. 7.0 - 7.5 V
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

INFOID:0000000001328411

1. Confirm the symptom or customer complaint.
2. Understand operation description and function description. Refer to LT-138, "System Description".
3. Perform Preliminary Check. Refer to LT-154, "Preliminary Check".
4. Check symptom and repair or replace the cause of malfunction.
5. Does interior room lamp operate normally? If YES, GO TO 6. If NO, GO TO 4.
6. INSPECTION END

Preliminary Check

INFOID:0000000001328412

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

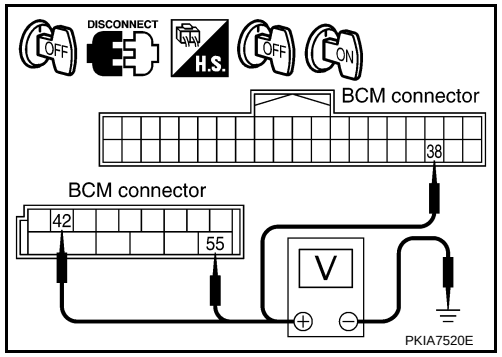
Refer to LT-145, "Wiring Diagram - ROOM/L -".

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.

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

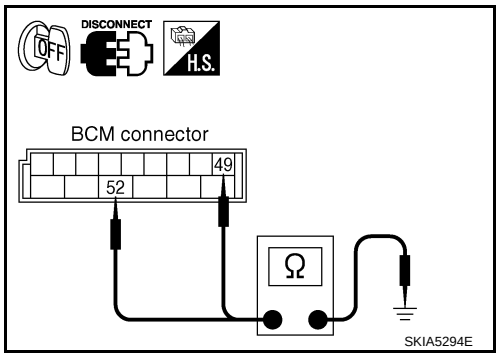
OK or NG

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		Yes
	52		



OK or NG

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

CONSULT-III Functions (BCM)

INFOID:0000000001328413

CONSULT-III 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-III BASIC OPERATION

Refer to GI-34, "Description".

WORK SUPPORT (INT LAMP)

Display Item List

Item	Description	CONSULT-III
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)

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)

Monitor item		Contents
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)

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.

WORK SUPPORT (BATTERY SAVER)

Display Item List

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

DATA MONITOR (BATTERY SAVER)

Display Item List

Monitor item		Contents
IGN ON SW	“ON/OFF”	Displays “IGN position (ON)/OFF, ACC position (OFF)” judged from the ignition switch signal.
KEY ON SW	“ON/OFF”	Displays “Key inserted (ON)/key removed (OFF)” status judged from the key switch signal.

Monitor item		Contents
DOOR SW - DR	“ON/OFF”	Displays status of the driver door as judged from the driver door switch signal. (Door is open: ON/Door is closed: OFF)
DOOR SW - AS	“ON/OFF”	Displays 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 (BATTERY SAVER)

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

INFOID:0000000001381756

1.CHECK EACH SWITCH

CONSULT-III DATA MONITOR

1. Select “INT LAMP” of BCM data monitor item.
2. Check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-155, "CONSULT-III Functions (BCM)" for switches and their functions.

OK or NG

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

2.CHECK BETWEEN BCM AND MAP LAMP

CONSULT-III ACTIVE TEST

1. Select “INT LAMP” of BCM (INT LAMP) active test item.
2. With operating the test item, check the interior room lamp operation (When interior room lamp switch is in DOOR position).

Interior room lamp should operate.

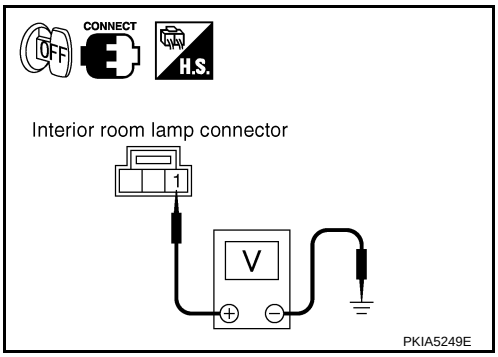
OK or NG

OK >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".
NG >> GO TO 3.

3.CHECK INTERIOR ROOM LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between interior room lamp harness connector R53 terminal 1 and ground.

1 – Ground : Battery voltage.



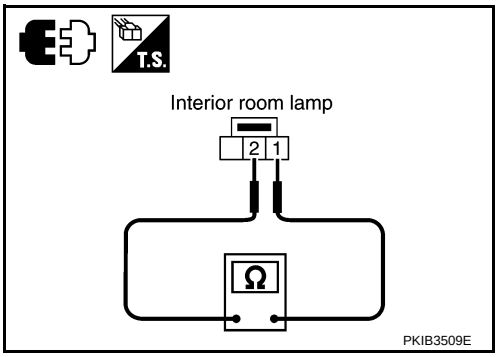
OK or NG

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



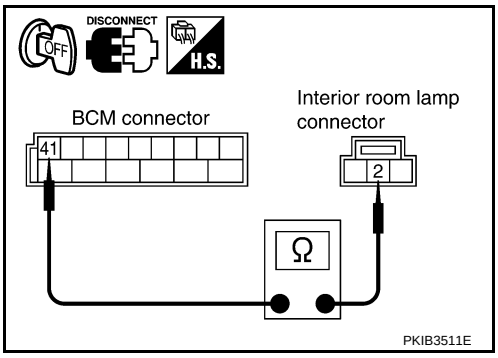
OK or NG

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.



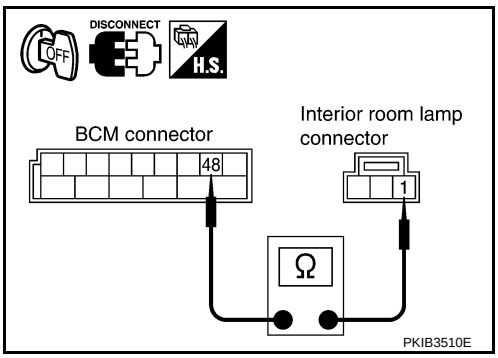
OK or NG

OK >> Replace BCM if interior room lamp does not work after setting the connector again. Refer to BCS-13, "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 LT-155, "CONSULT-III Functions (BCM)".
NG >> Repair harness or connector.

Map Lamp Control Does Not Operate

INFOID:0000000001381757

1.CHECK EACH SWITCH

CONSULT-III DATA MONITOR

1. Select “INT LAMP” of BCM data monitor item.
2. Check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-155, "CONSULT-III Functions (BCM)" for switches and their functions.

OK or NG

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

2.CHECK BETWEEN BCM AND MAP LAMP

CONSULT-III ACTIVE TEST
1. Select “INT LAMP” of BCM (INT LAMP) active test item.
2. With operating the test item, check the map lamp operation (When map lamp switch is in DOOR position).

Map lamp should operate.

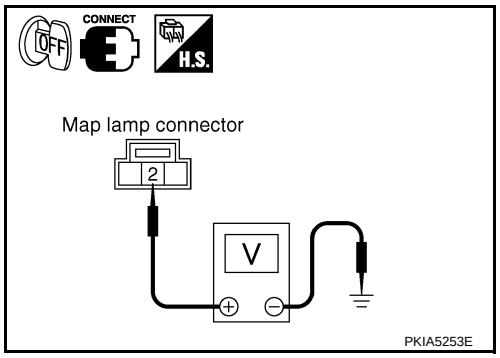
OK or NG

OK >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".
NG >> GO TO 3.

3.CHECK MAP LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between map lamp harness connector R52 terminal 2 and ground.

2 – Ground : Battery voltage.



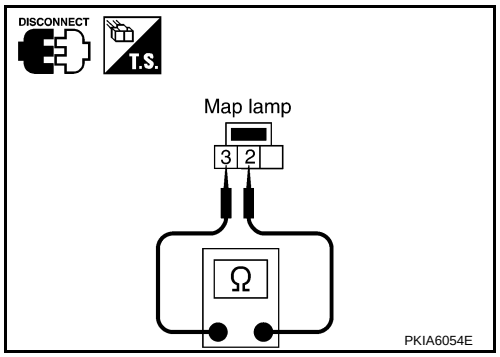
OK or NG

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

4.CHECK MAP LAMP

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

Map lamp		Condition	Continuity
2	3	Map lamp switch is DOOR.	Yes
		Map lamp switch is OFF.	No



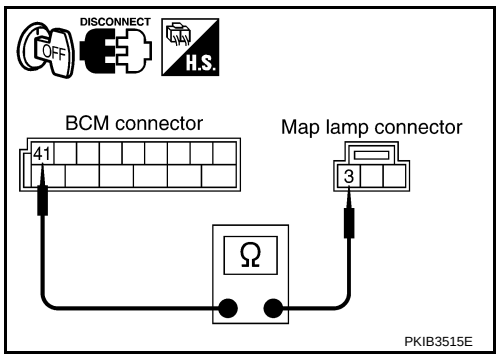
OK or NG

OK >> GO TO 5.
NG >> Replace Map lamp.

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.



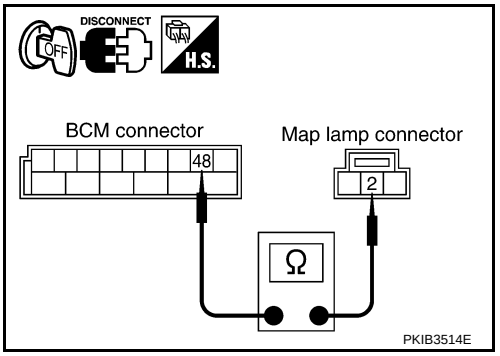
OK or NG

OK >> Replace BCM if map lamp does not work after setting the connector again. Refer to BCS-13, "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-13, "Removal and Installation of BCM".
NG >> Repair harness or connector.

Personal Lamp Control Does Not Operate

INFOID:0000000001381758

1.CHECK REAR DOOR SWITCH

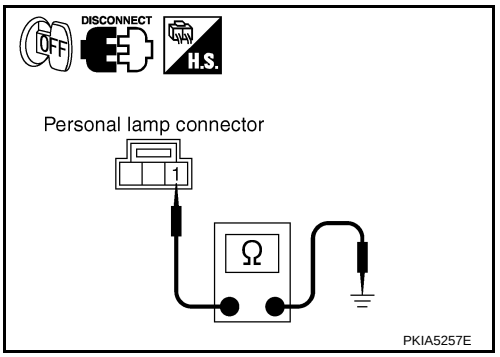
CONSULT-III DATA MONITOR
1. Select “INT LAMP” of BCM data monitor item.
2. Check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-155, "CONSULT-III Functions (BCM)" for switches and their functions.

OK or NG

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

2.CHECK PERSONAL LAMP CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect personal lamp connector.
3. Open rear door.
4. Check continuity between personal lamp (RH and LH) harness connectors and ground.



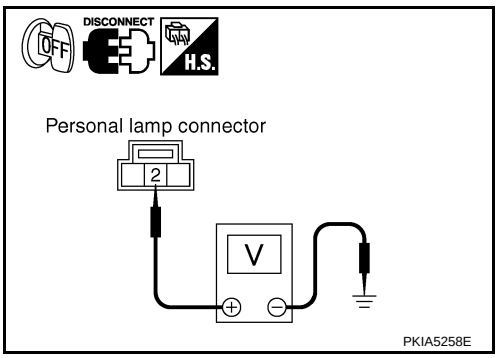
Personal lamp connector		Terminal		Continuity
RH	R55	1	Ground	Yes
LH	R54	1		

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.



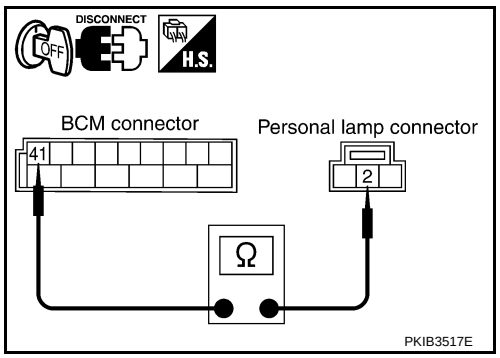
Terminals				Voltage (Approx.)
(+)			(-)	
Personal lamp connector		Terminal		
RH	R55	2	Ground	Battery voltage
LH	R54			

OK or NG

OK >> Replace personal lamp. Refer to LT-166, "Removal and Installation".
NG >> GO TO 4.

4.CHECK PERSONAL LAMP CIRCUIT

1. Disconnect BCM connector.
2. Check continuity between BCM harness connector and personal lamp (RH and LH) harness connectors.



BCM		Personal lamp			Continuity
Connector	Terminal	Connector		Terminal	
M4	41	RH	R55	2	Yes
		LH	R54		

OK or NG

OK >> Replace BCM if personal lamp does not work after setting the connector again. Refer to BCS-13, "Removal and Installation of BCM".
NG >> Repair harness or connector.

Ignition Keyhole Illumination Control Does Not Operate

INFOID:0000000001381759

1.CHECK EACH SWITCH

CONSULT-III DATA MONITOR
1. Select “INT LAMP” of BCM data monitor item.
2. Check that switches listed in display item list turn ON-OFF linked with switch operation. Refer to LT-155, "CONSULT-III Functions (BCM)" for switches and their functions.

OK or NG

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

2.ACTIVE TEST

CONSULT-III ACTIVE TEST
1. Select “IGN ILLUM” of BCM (INT LAMP) active test item.
2. With operating the test item, check the ignition key hole illumination operation (When interior room lamp switch is in DOOR position).

Ignition key hole illumination should operate.

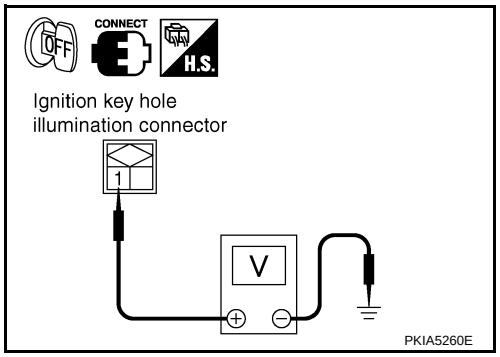
OK or NG

OK >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".
NG >> GO TO 3.

3.CHECK IGNITION KEY HOLE ILLUMINATION INPUT

1. Turn ignition switch OFF.
2. Check voltage between ignition key hole illumination harness connector M24 terminal 1 and ground.

1 – Ground : Battery voltage.



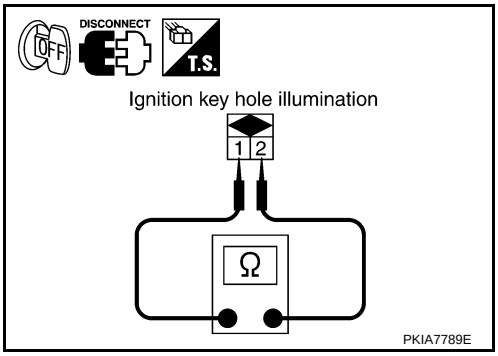
OK or NG

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

4.CHECK IGNITION KEY HOLE ILLUMINATION BULB

1. Disconnect ignition key hole illumination connector.
2. Check continuity between ignition key hole illumination terminals 1 and 2.

1 – 2 : Continuity should exist.



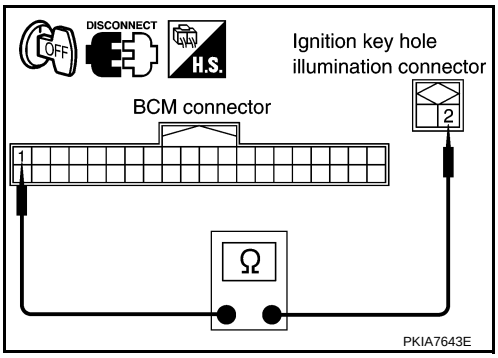
OK or NG

OK >> GO TO 5.
NG >> Replace ignition key hole illumination. Refer to LT-182, "Removal and Installation".

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.



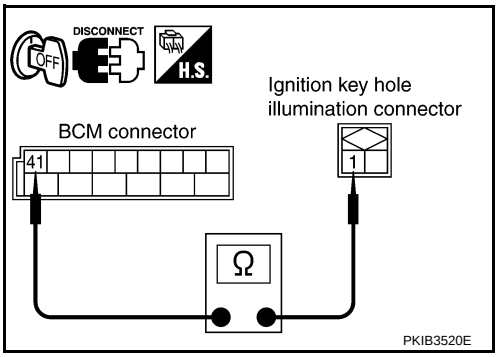
OK or NG

OK >> Replace BCM if ignition key hole illumination does not work after setting the connector again. Refer to BCS-13, "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-13, "Removal and Installation of BCM".
NG >> Repair harness or connector.

All Step Lamps Do Not Operate

INFOID:0000000001381760

1. CHECK EACH DOOR SWITCH

CONSULT-III DATA MONITOR
1. Select “INT LAMP” of BCM data monitor item.
2. Check that switches listed in display item list turn ON-OFF linked with switch operation.

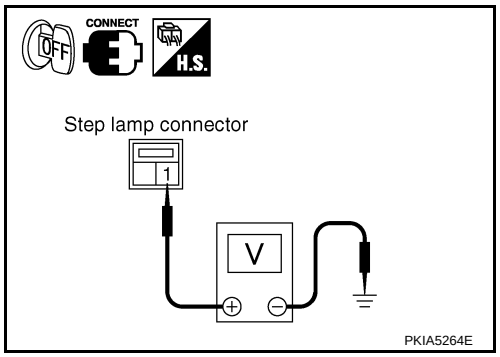
Switch name	CONSULT screen
Driver side door switch	DOOR SW - DR
Passenger side door switch	DOOR SW - AS
Rear RH side door switch	DOOR SW - RR
Rear LH side door switch	DOOR SW - RL

OK or NG

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

2. CHECK STEP LAMP INPUT

1. Turn ignition switch OFF.
2. Check voltage between front step lamp (driver side and passenger side) harness connector and ground.



Terminals			Voltage (Approx.)
(+)		(-)	
Front step lamp connector	Terminal		
Driver side	D9	1	Ground	Battery voltage
Passenger side	D39	1		

3. Check voltage between rear step lamp (LH and RH) harness connector and ground.

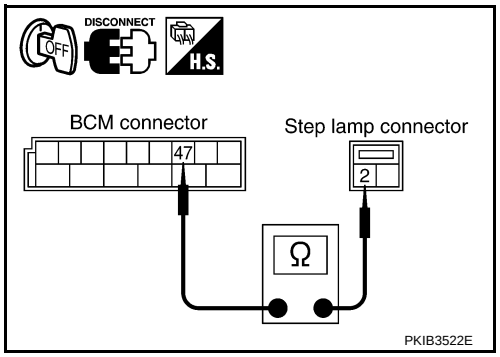
Terminals			Voltage (Approx.)
(+)		(-)	
Rear step lamp connector	Terminal		
LH	D60	1	Ground	Battery voltage
RH	D80	1		

OK or NG

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

3.CHECK STEP LAMP CIRCUIT

1. Disconnect BCM connector and front door driver side step lamp connector.
2. Check continuity between BCM harness connector and front step lamp harness connector.



BCM connector	Terminal	Front step lamp connector		Terminal	Continuity
M4	47	Driver side	D9	2	Yes
		Passenger side	D39	2	

3. Check continuity between BCM harness connector and rear step lamp harness connector.

BCM connector	Terminal	Rear step lamp connector		Terminal	Continuity
M4	47	LH	D80	2	Yes
		RH	D60	2	

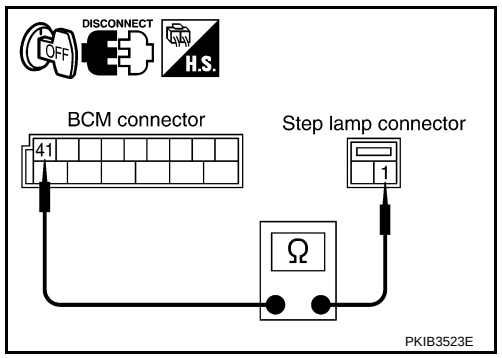
OK or NG

OK >> Replace BCM if step lamp does not work after setting the connector again. Refer to BCS-13, "Removal and Installation of BCM".
NG >> Repair harness or connector.

4.CHECK STEP LAMP CIRCUIT

1. Disconnect BCM connector and front door driver side step lamp connector.

2. Check continuity between BCM harness connector and front step lamp harness connector.



BCM connector	Terminal	Front step lamp connector		Terminal	Continuity
M4	41	Driver side	D9	1	Yes
		Passenger side	D39	1	

3. Check continuity between BCM harness connector and rear step lamp harness connector.

BCM connector	Terminal	Rear step lamp connector		Terminal	Continuity
M4	41	LH	D80	1	Yes
		RH	D60	1	

OK or NG

OK >> Replace BCM if step lamp does not work after setting the connector again. Refer to BCS-13, "Removal and Installation of BCM".

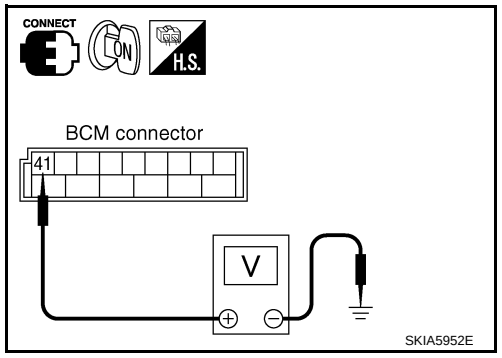
NG >> Repair harness or connector.

All Interior Room Lamps Do Not Operate

INFOID:0000000001328419

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.

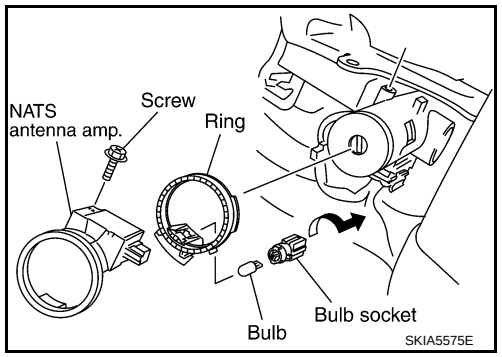
NG >> Replace BCM. Refer to BCS-13, "Removal and Installation of BCM".

Bulb Replacement

INFOID:0000000001328420

IGNITION KEY HOLE ILLUMINATION (without Intelligent Key)

1. Remove combination meter. Refer to DI-22, "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

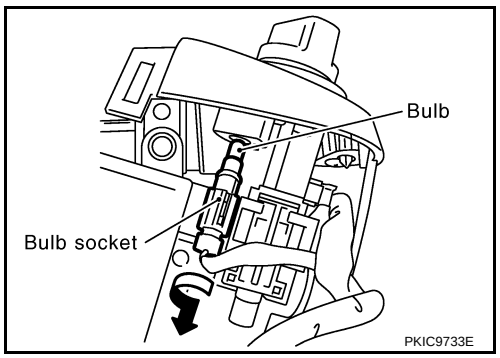
4. Installation is the reverse order of removal.

IGNITION KEY HOLE ILLUMINATION (with Intelligent Key)

1. Remove instrument lower panel (driver side). Refer to IP-10.
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.

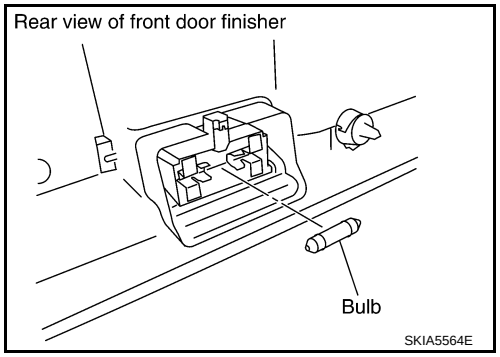


FRONT STEP LAMP

1. Remove door finisher. Refer to EI-36, "Component Parts Location".
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.

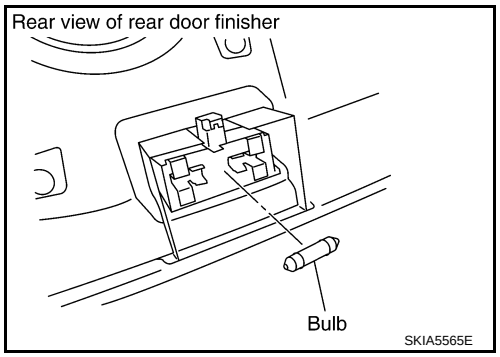


REAR STEP LAMP

1. Remove door finisher. Refer to EI-36, "Component Parts Location".
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.

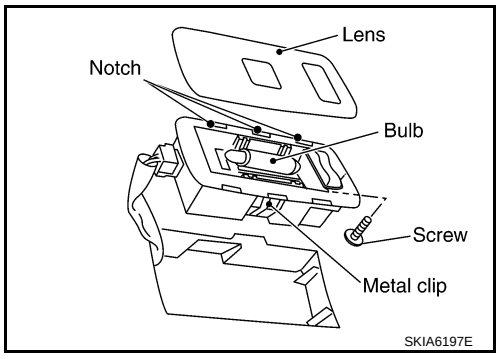


LUGGAGE ROOM LAMP

1. Remove luggage room lamp. Refer to LT-166, "Removal and Installation".
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.

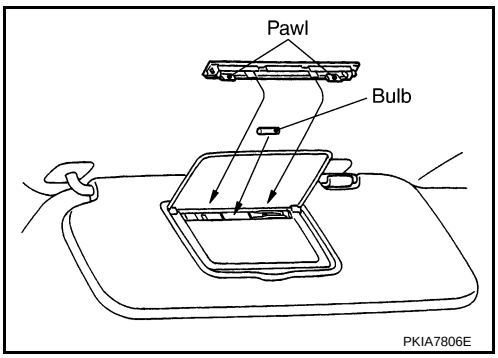


VANITY MIRROR LAMP

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.

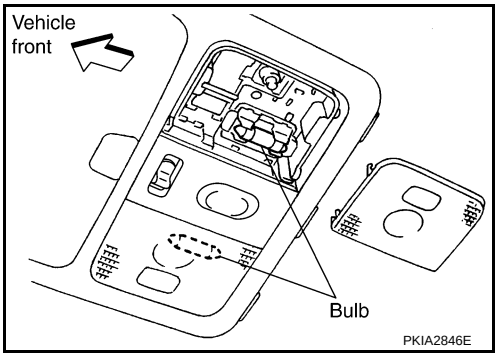


MAP LAMP

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.

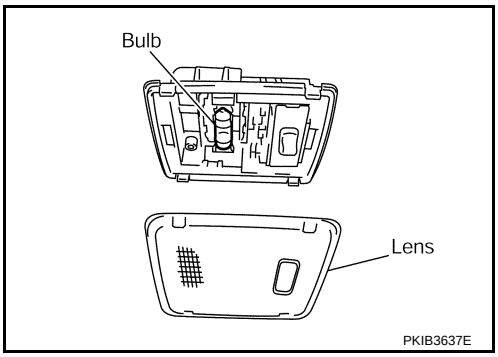


INTERIOR ROOM LAMP

1. Remove interior room lamp. Refer to LT-166, "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.

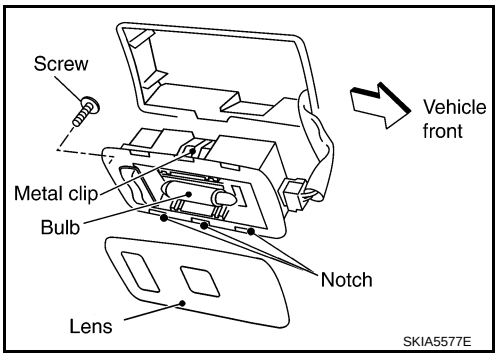


PERSONAL LAMP

1. Remove personal lamp. Refer to LT-166, "Removal and Installation".
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.



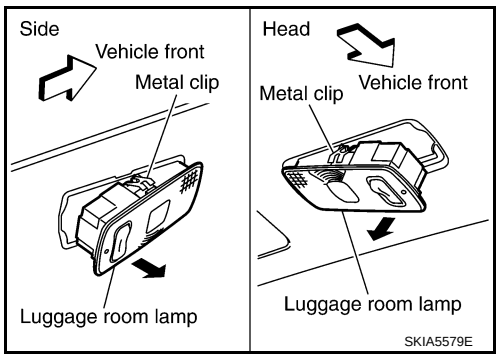
Removal and Installation

INFOID:0000000001328421

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.

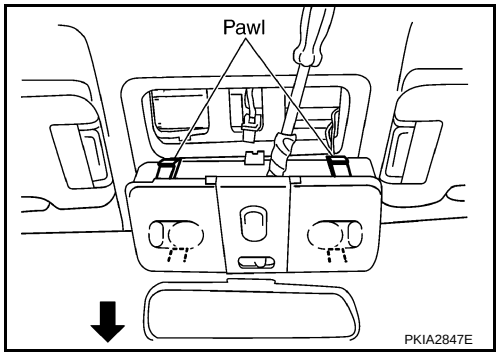


Installation
Installation is the reverse order of removal.

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.

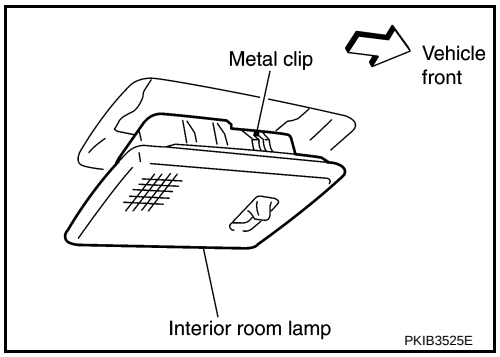


Installation
Installation is the reverse order of removal.

INTERIOR ROOM LAMP

Removal

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



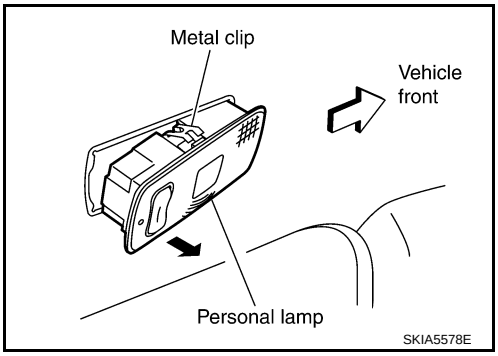
Installation
Installation is the reverse order of removal.

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.

ILLUMINATION

System Description

INFOID:0000000001328422

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
- 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-III.

CAN Communication System Description

INFOID:0000000001328423

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.

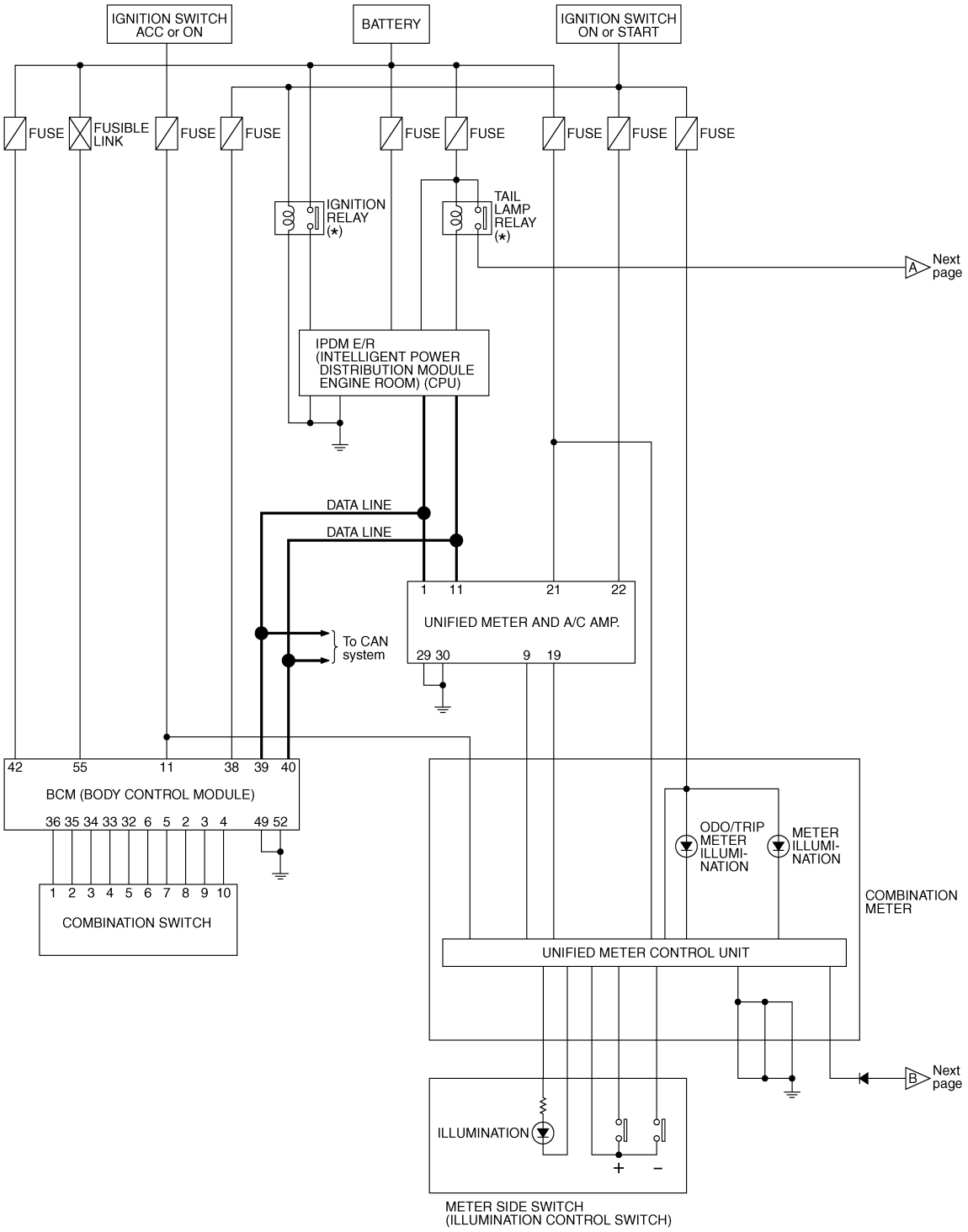
CAN Communication Unit

INFOID:0000000001328424

Refer to LAN-43, "CAN System Specification Chart".

Schematic

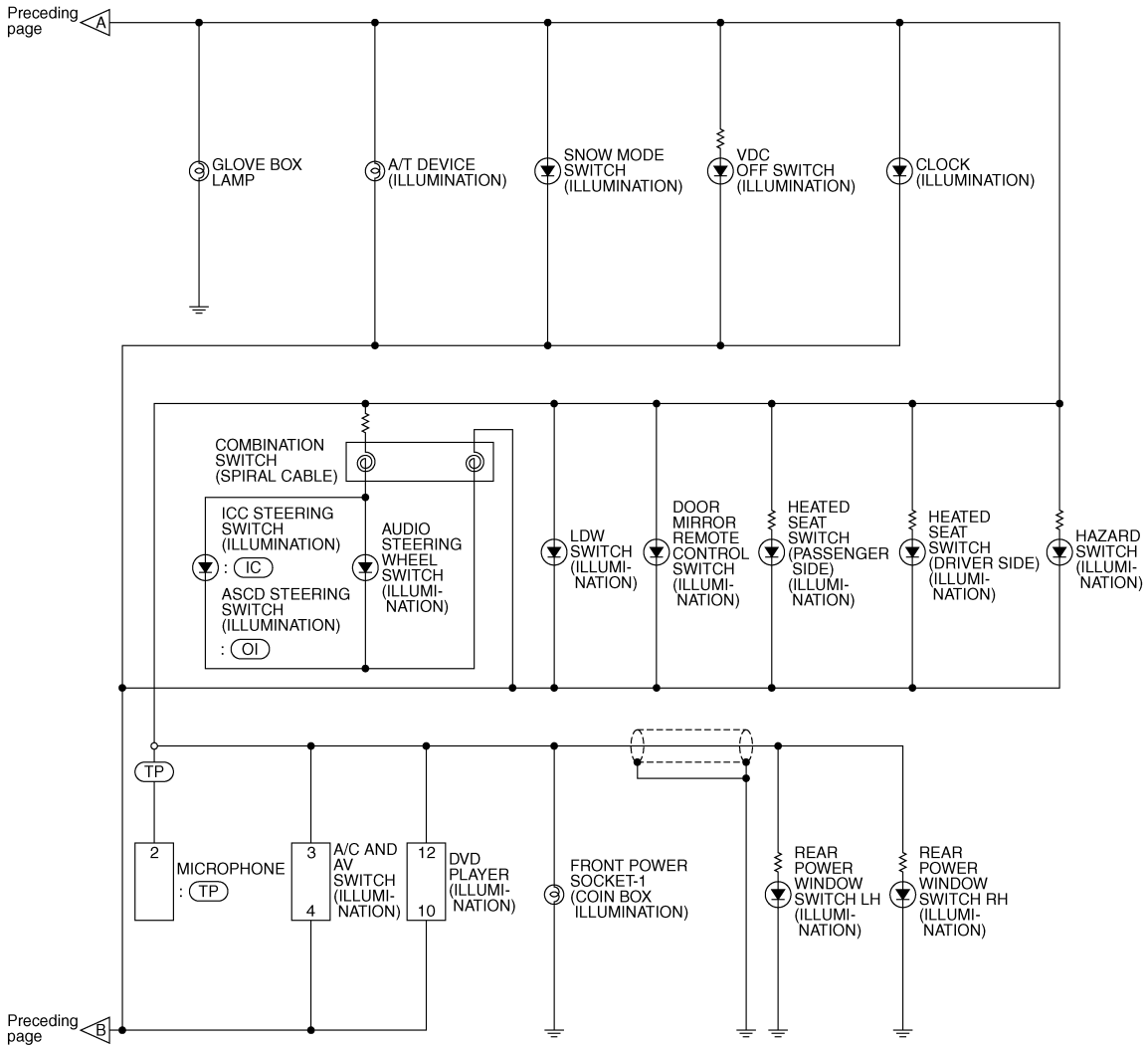
INFOID:0000000001328425



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

TKWM4327E

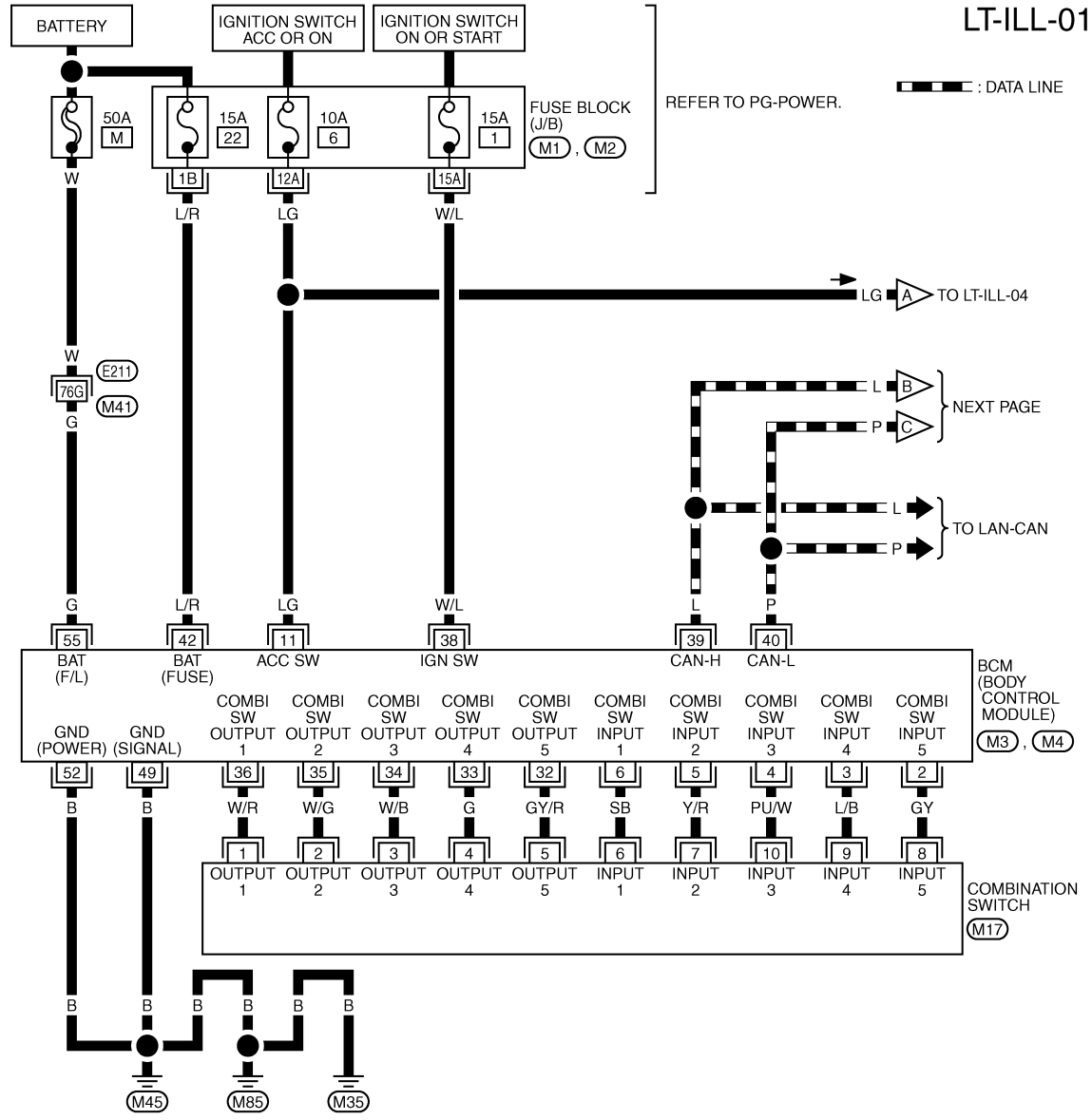
IC : With ICC
OI : Without ICC
TP : With telephone system



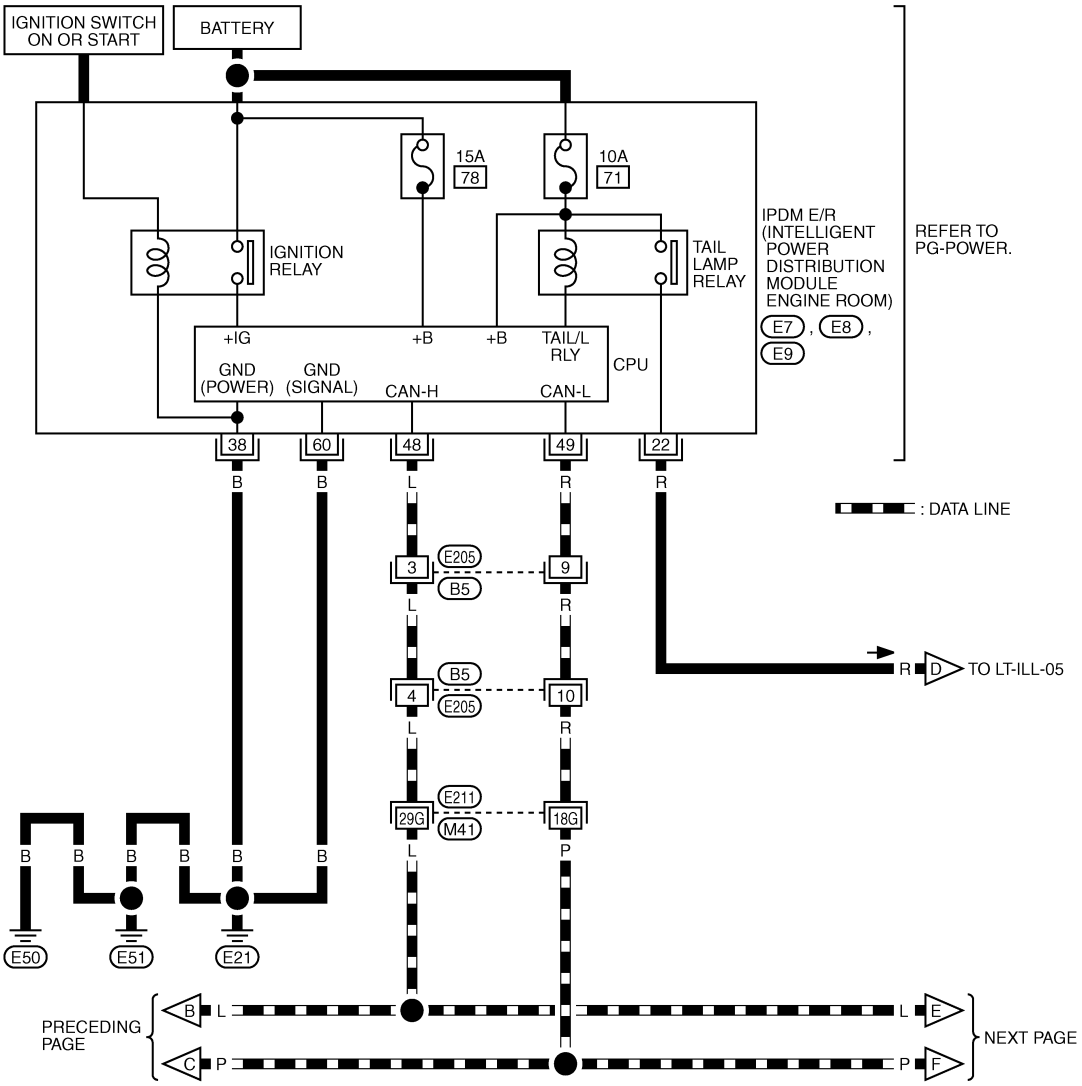
TKWM4328E

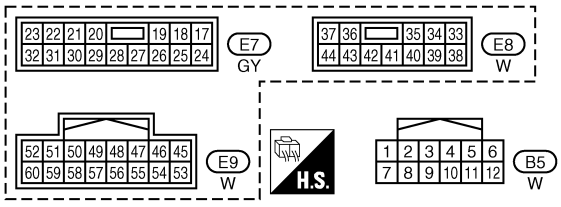
Wiring Diagram - ILL -

INFOID:0000000001328426



LT-ILL-02

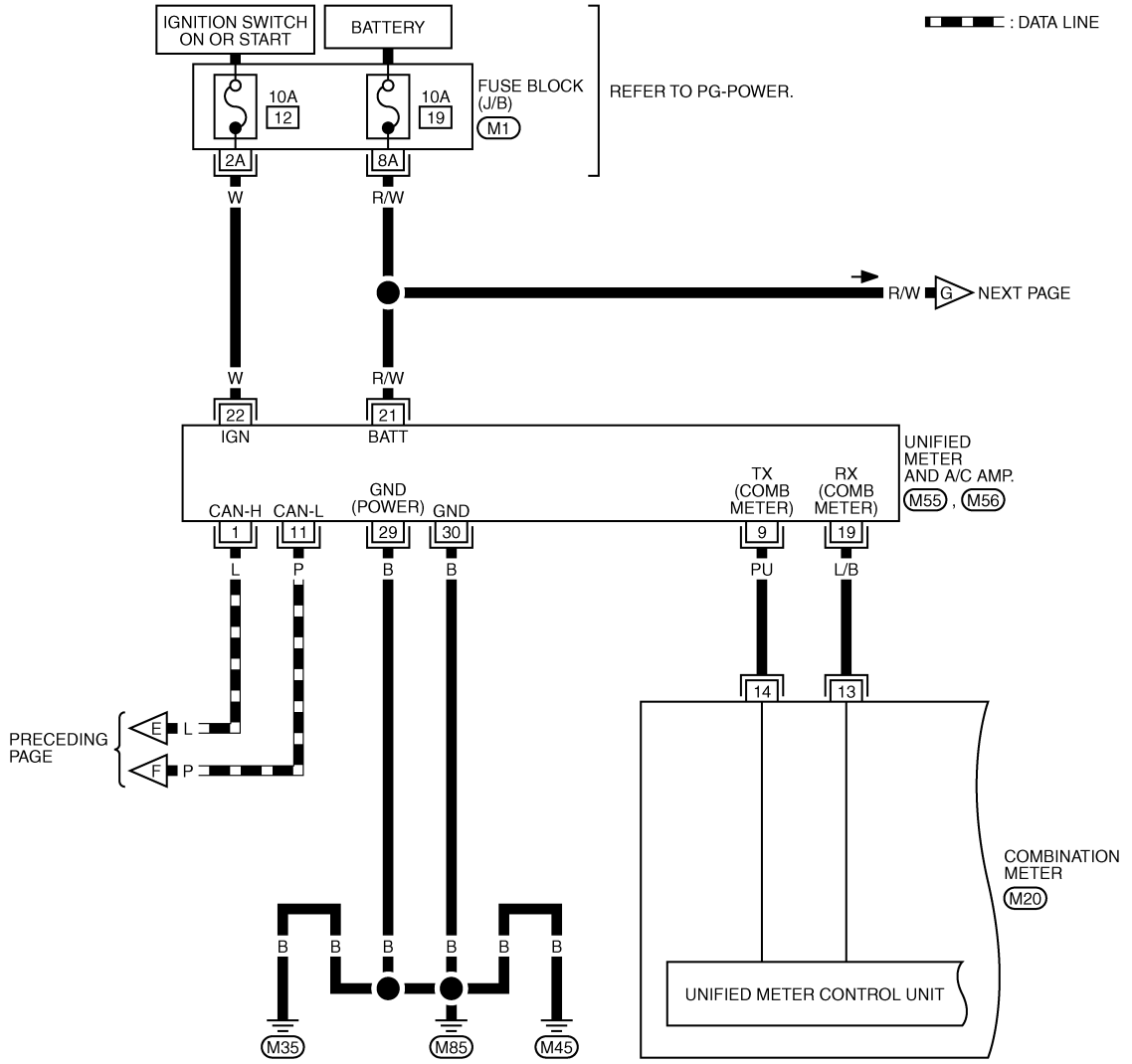




REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

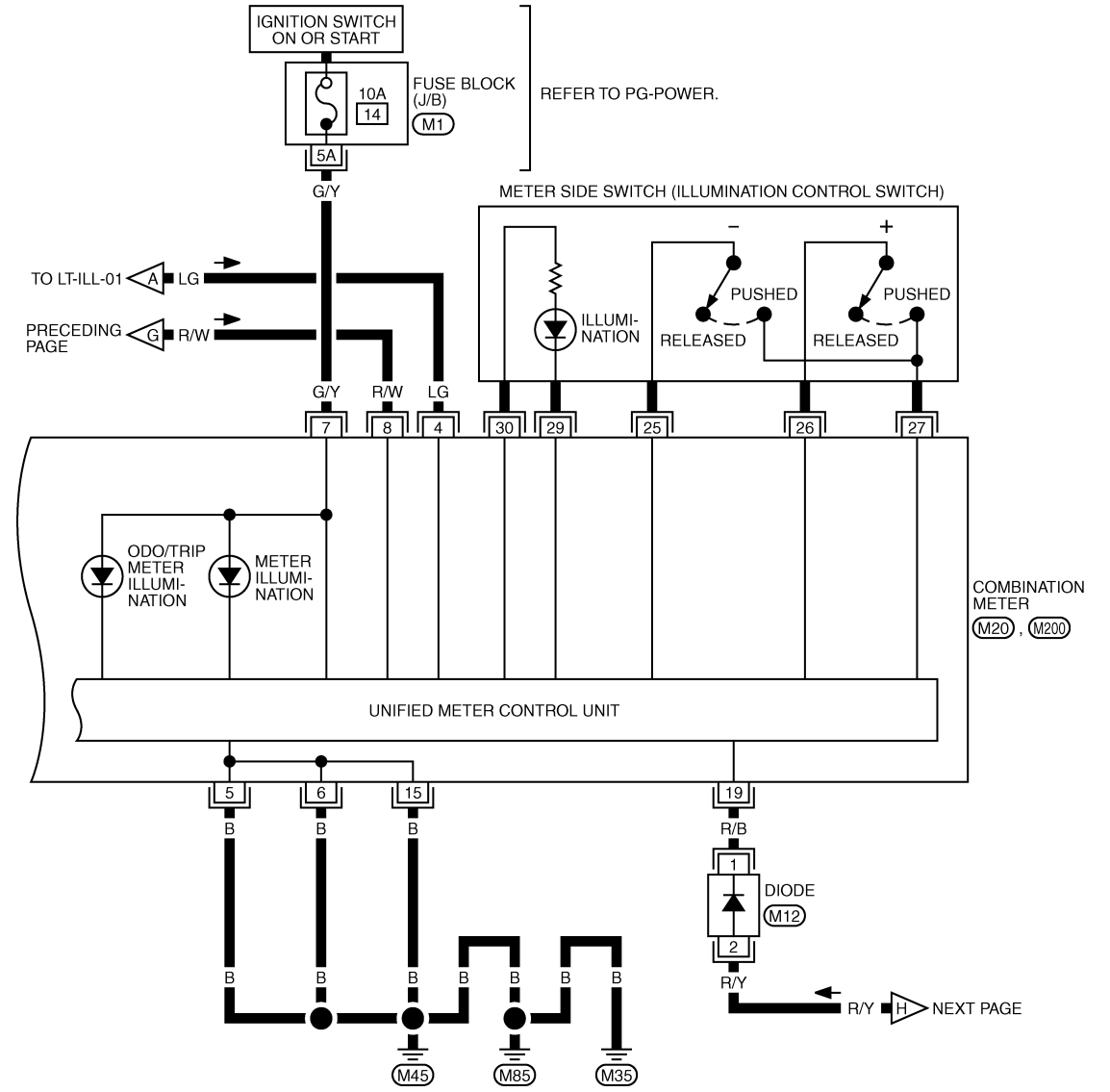
TKWM4330E

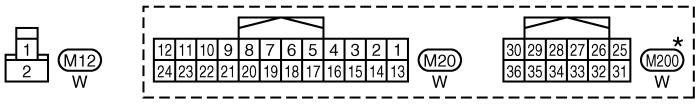
LT-ILL-03



TKWM4331E

LT-ILL-04



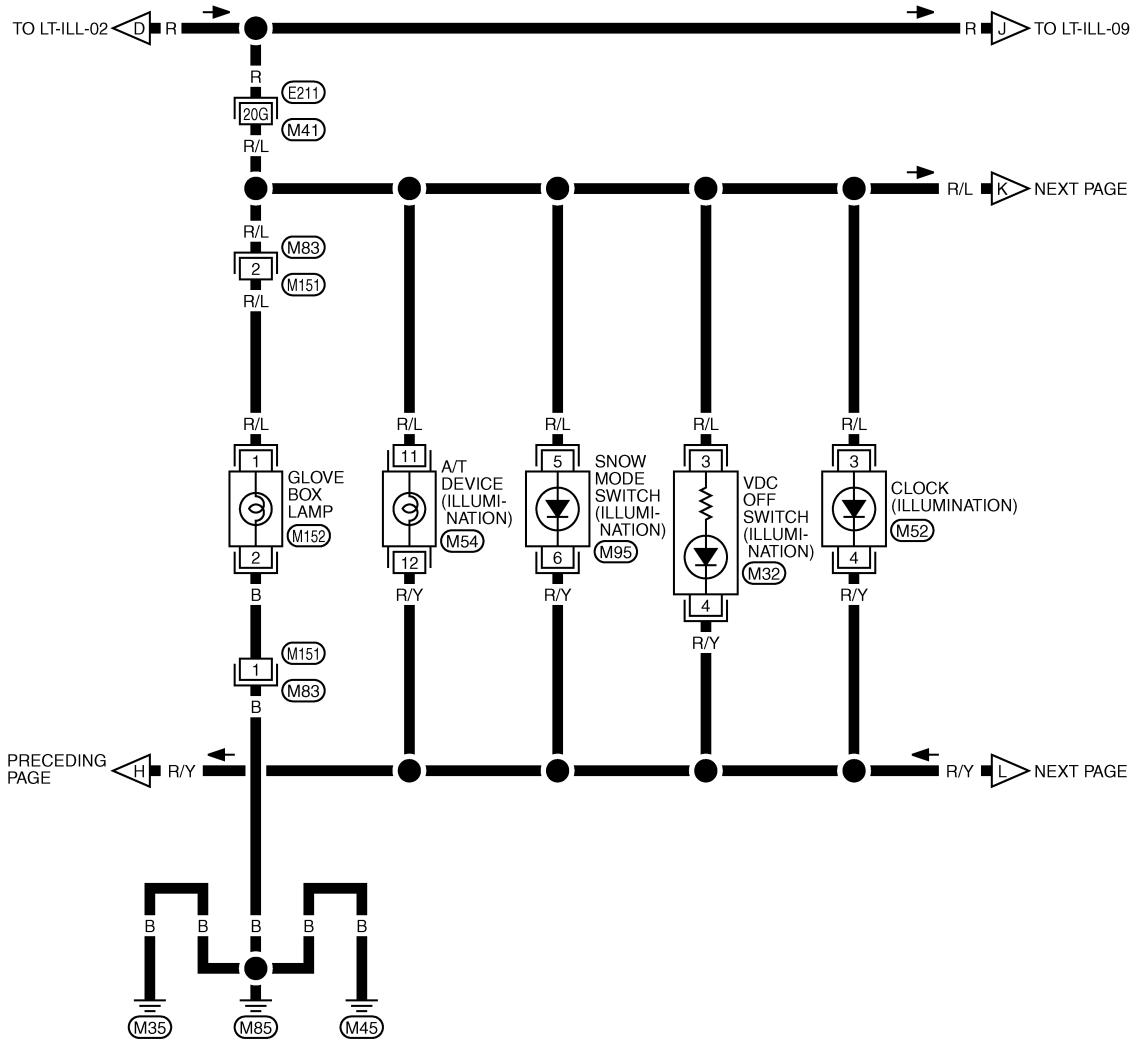


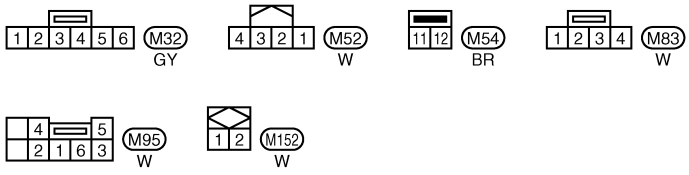
★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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

TKWM4332E

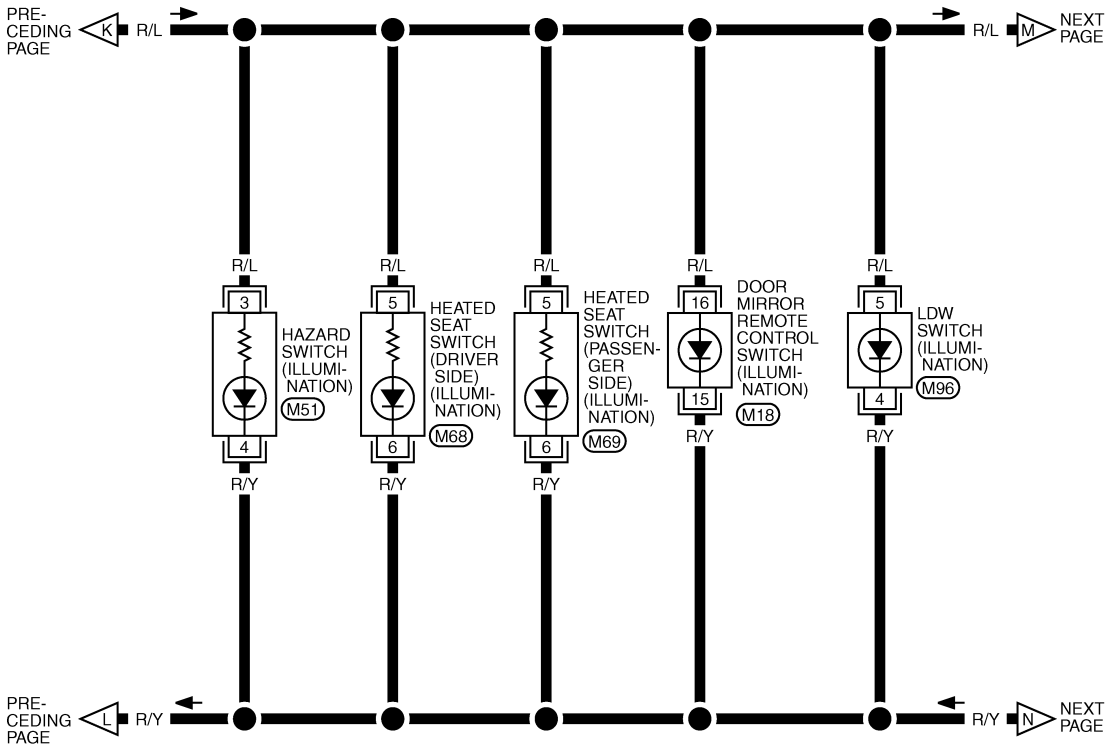
LT-ILL-05

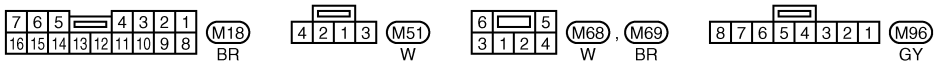




REFER TO THE FOLLOWING.
E211 -SUPER MULTIPLE JUNCTION (SMJ)

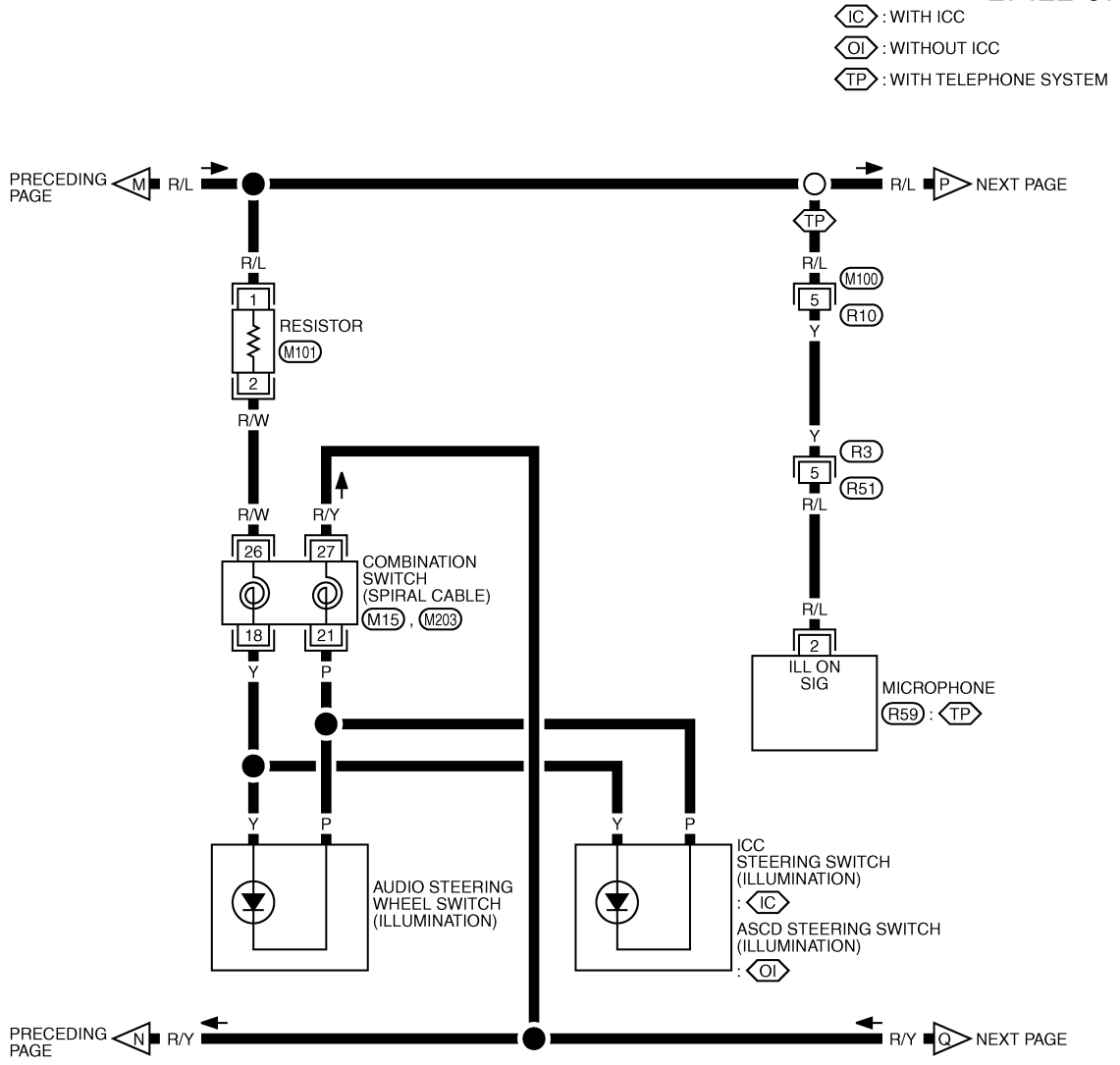
TKWM4333E


PRE-CEDING PAGE
K
R/L
R/L
M
NEXT PAGE
R/L
R/L
R/L
R/L
R/L
3
HAZARD SWITCH (ILLUMI-NATION)
M51
4
R/Y
5
HEATED SEAT SWITCH (DRIVER SIDE) (ILLUMI-NATION)
M68
6
R/Y
5
HEATED SEAT SWITCH (PASSEN-GER SIDE) (ILLUMI-NATION)
M69
6
R/Y
16
DOOR MIRROR REMOTE CONTROL SWITCH (ILLUMI-NATION)
M18
15
R/Y
5
LDW SWITCH (ILLUMI-NATION)
M96
4
R/Y
PRE-CEDING PAGE
L
R/Y
R/Y
N
NEXT PAGE

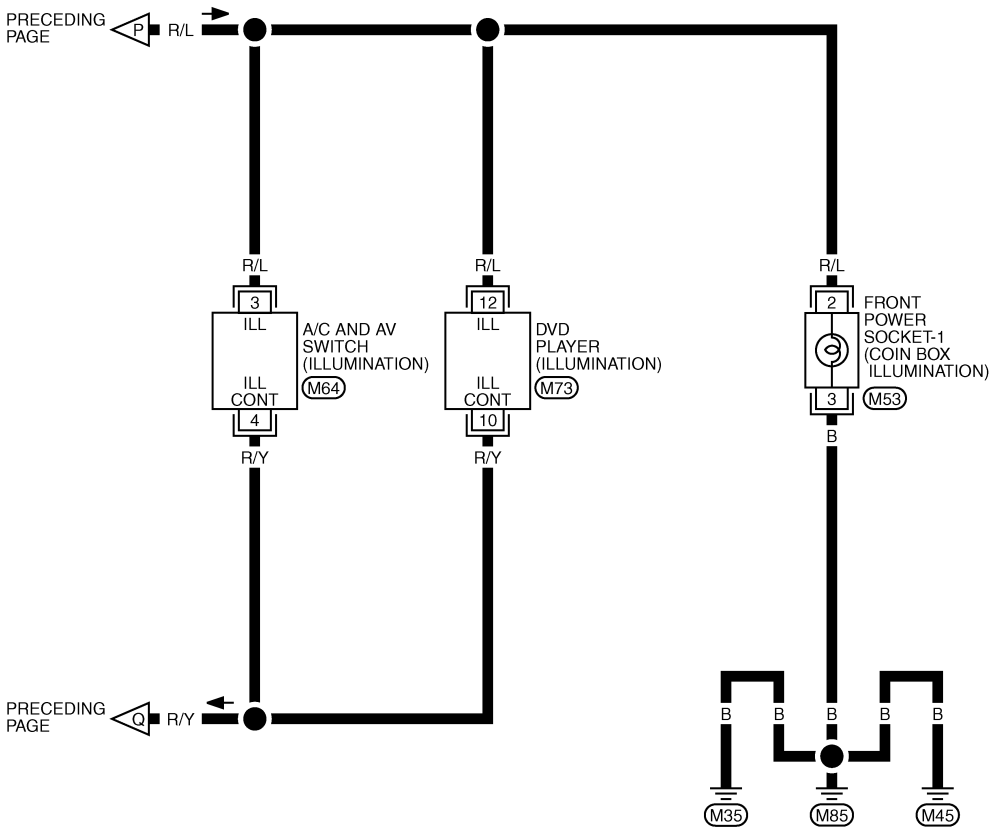

7 6 5 4 3 2 1
16 15 14 13 12 11 10 9 8
M18
BR
4 2 1 3
M51
W
6 5
3 1 2 4
M68
W
M69
BR
8 7 6 5 4 3 2 1
M96
GY

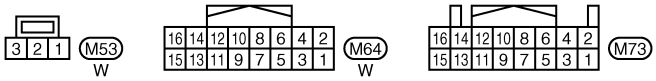
TKWM4334E

LT-ILL-07

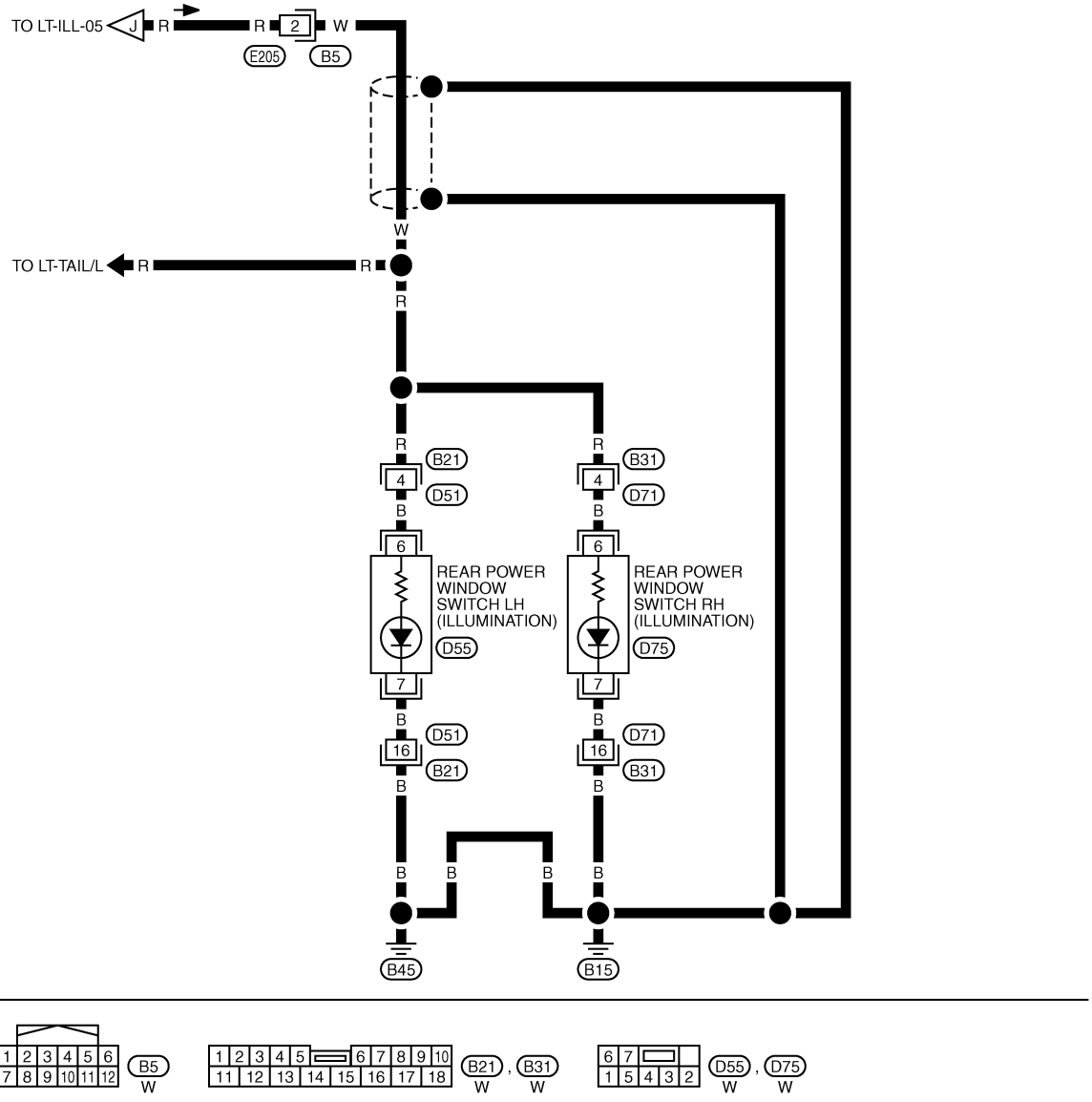


TKWM4335E


PRECEDING PAGE
P
R/L
R/L
3
ILL
ILL CONT
4
R/Y
A/C AND AV SWITCH (ILLUMINATION)
M64
R/L
12
ILL
ILL CONT
10
R/Y
DVD PLAYER (ILLUMINATION)
M73
R/L
2
3
B
FRONT POWER SOCKET-1 (COIN BOX ILLUMINATION)
M53
PRECEDING PAGE
Q
R/Y
B
B
B
B
B
M35
M85
M45


3 2 1
M53
W
16 14 12 10 8 6 4 2
15 13 11 9 7 5 3 1
M64
W
16 14 12 10 8 6 4 2
15 13 11 9 7 5 3 1
M73

TKWM4336E



TKWM4337E

Bulb Replacement

INFOID:0000000001328427

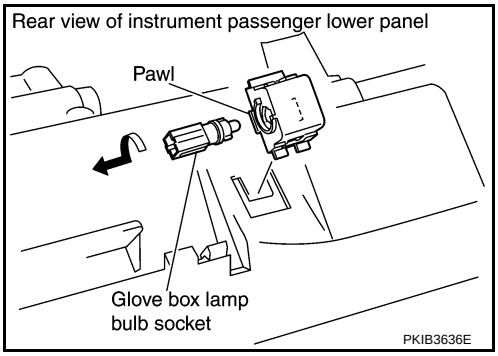
GLOVE BOX LAMP

1. Remove instrument passenger lower panel. Refer to IP-16, "Disassembly and Assembly".

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.

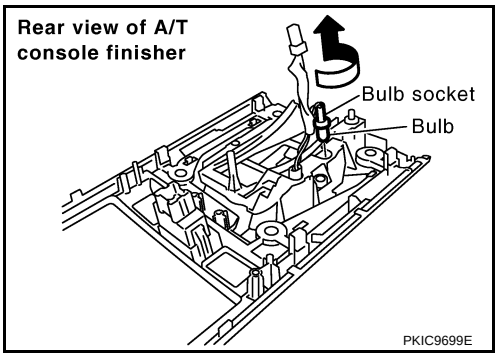


A/T DEVICE ILLUMINATION

1. Remove A/T console finisher. Refer to IP-10.
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.

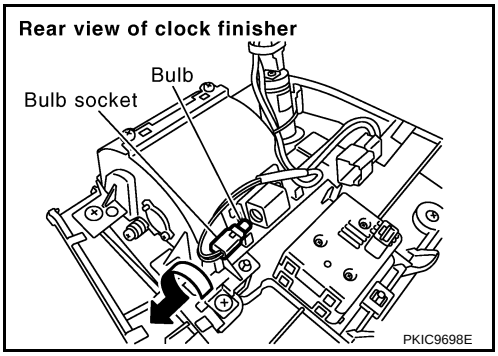


COIN BOX ILLUMINATION

1. Remove instrument clock finisher. Refer to IP-10.
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

INFOID:0000000001328428

ILLUMINATION CONTROL SWITCH

Refer to DI-24, "Removal and Installation of Odo/Trip Meter and Illumination Control Switch".

BULB SPECIFICATIONS

Headlamp

INFOID:0000000001328429

Item	Wattage (W)
High/Low (Xenon type)	35 (D2S)

Exterior Lamp

INFOID:0000000001328430

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

INFOID:0000000001328431

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